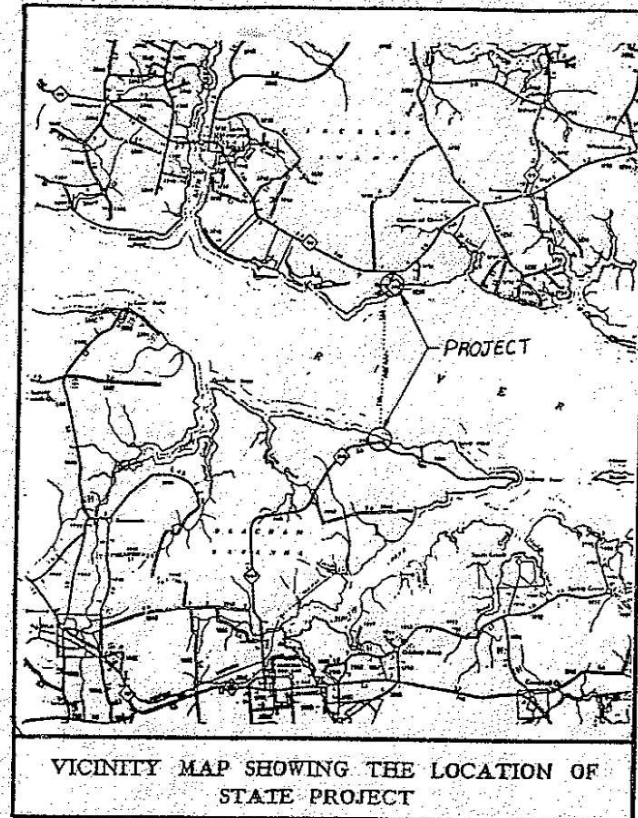


PROJECT: 8.1150701

F-2800

STRUCTURE



VICINITY MAP SHOWING THE LOCATION OF STATE PROJECT

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

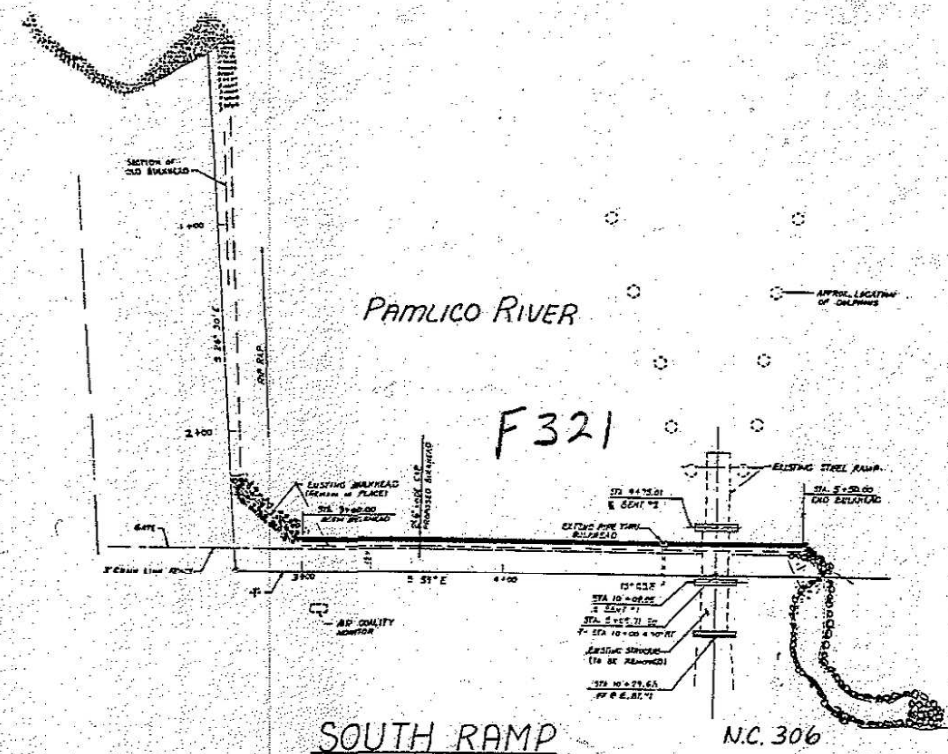
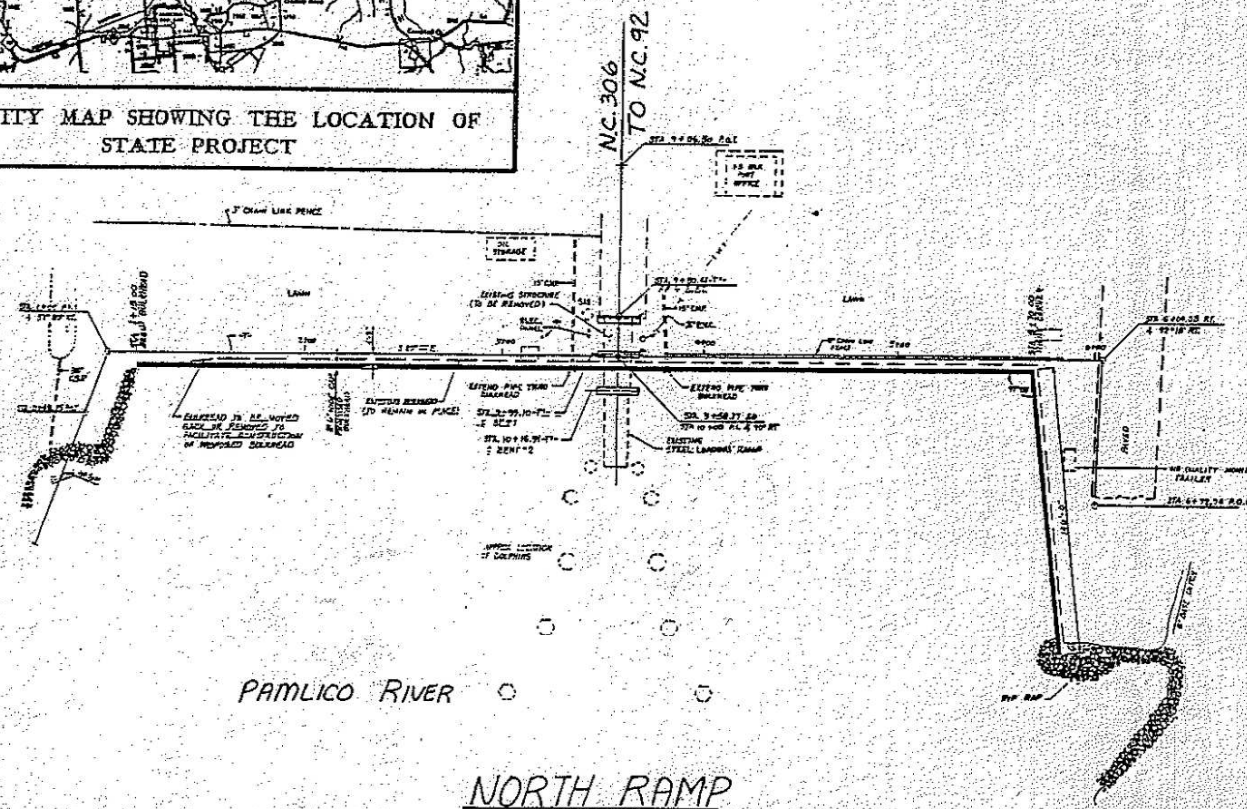
BEAUFORT COUNTY

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

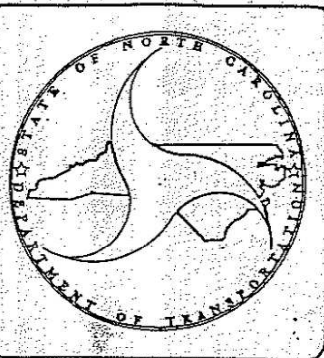
LOCATION : N.C. 306 AT PAMLICO RIVER FERRY

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

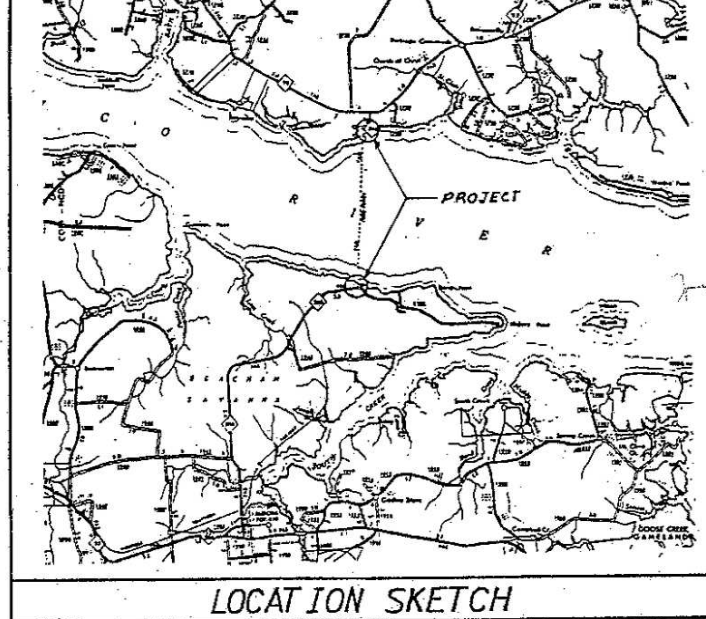
STATE	STATE PROJECT REFERENCE NO.	PROJECT NO.
N.C.	8.1150701	
STATE PROJECT NO.	F.B.D.N.H.S. NO.	DESCRIPTION
8.1150701	FBDNHS-306(00D)	CONST.
2.110013		P.E.



#060321



Prepared In the Office of: DIVISION OF HIGHWAYS 1974 STANDARD SPECIFICATIONS		STRUCTURE DESIGN UNIT G. M. WHITE, P.E. PROJECT ENGINEER N. N. BULLOCK, P.E. PROJECT DESIGN ENGINEER
LETTING DATE: <u>APRIL 29, 1993</u>		
STRUCTURE DESIGN UNIT		DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA Dr. Martin STATE HIGHWAY ENGINEER - DESIGN DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 4465 DONALD R. MORRISON



ALL REINFORCING 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.

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 17'-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 - 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 - 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

	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 POLYETHYLENE
	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 PROVISION

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 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 POLYETHYLENE
	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
STATION: 10+00.00
10+00.00 -

SHEET 3 OF 3

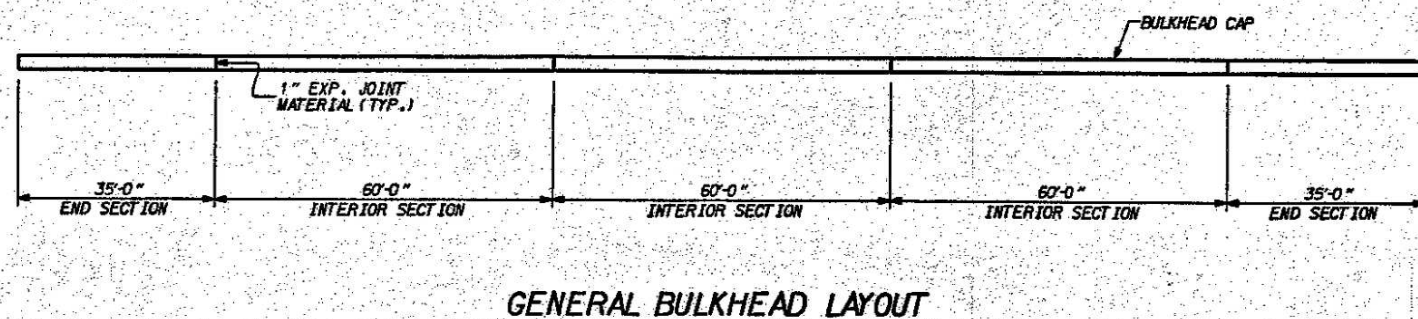
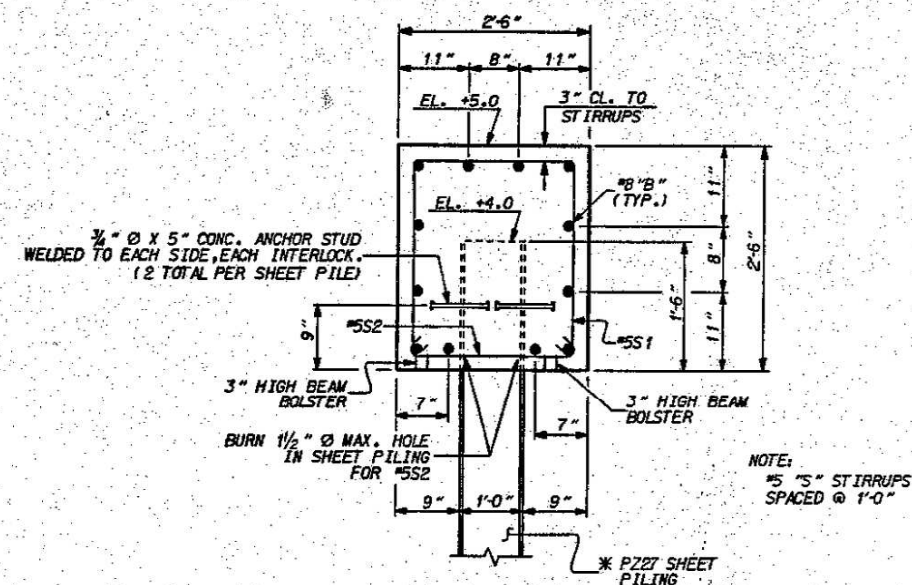
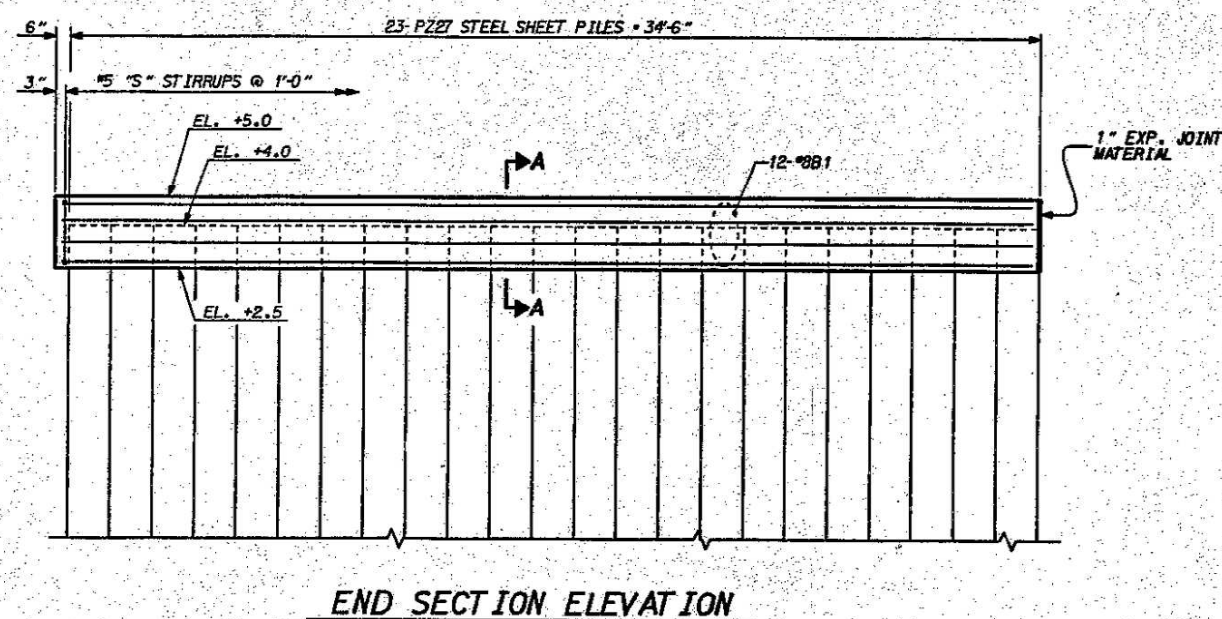
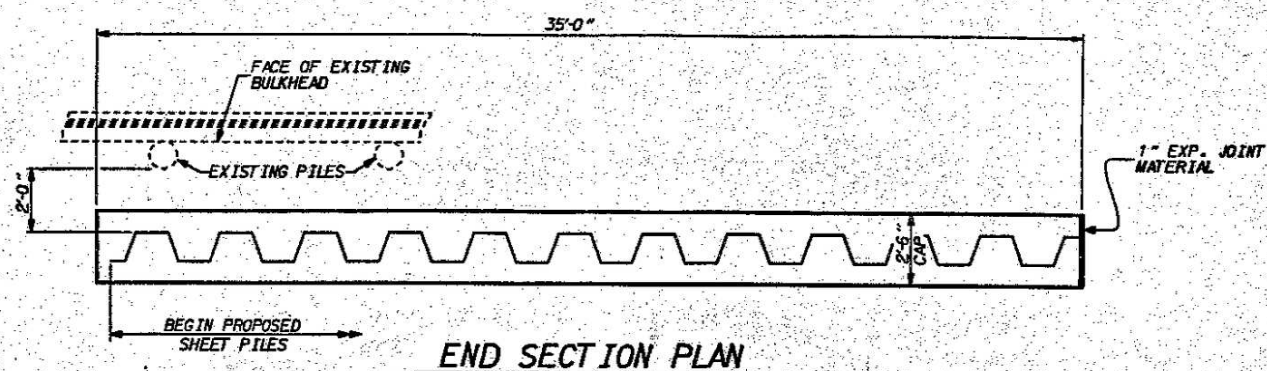
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALPH

PAMLICO RIVER FERRY
BILL OF MATERIAL

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

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

14-SEP-1992 10:52
Z:\P205023\FERRYBILL.DWG
DBOWEN

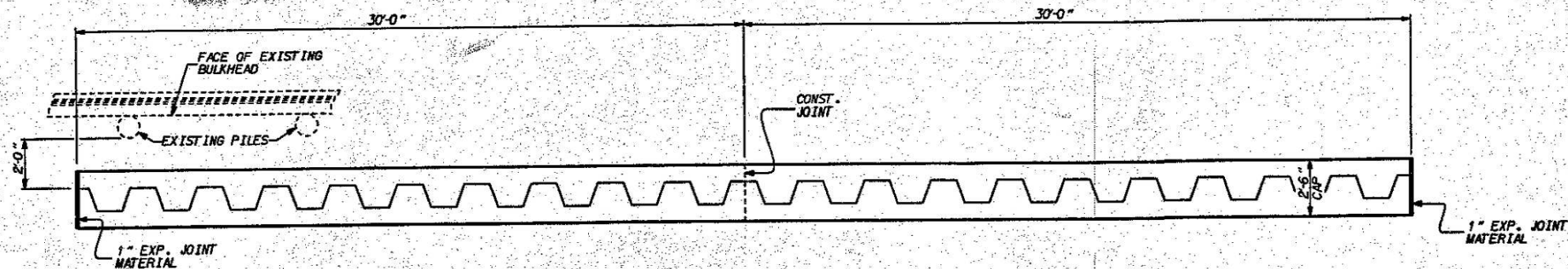


PROJECT NO. 81150701
BEAUFORT COUNTY
 STATION: 10+00.00 -T-SR
 SHEET 1 OF 2

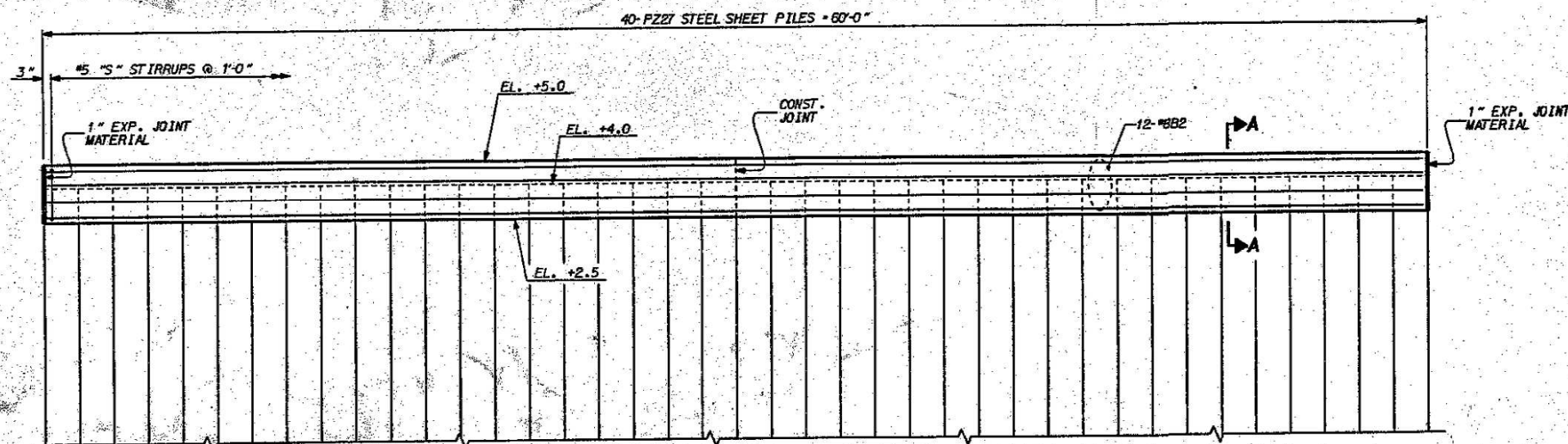
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**PAMLICO RIVER FERRY
SOUTH RAMP
BULKHEAD END SECTION**
(2 REQUIRED)

AUGUST						199	
REVISONS						SHEET NO	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7	
1			3			TOTAL	
2			4			SHEETS	
						28	

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



INTERIOR SECTION PLAN



INTERIOR SECTION ELEVATION

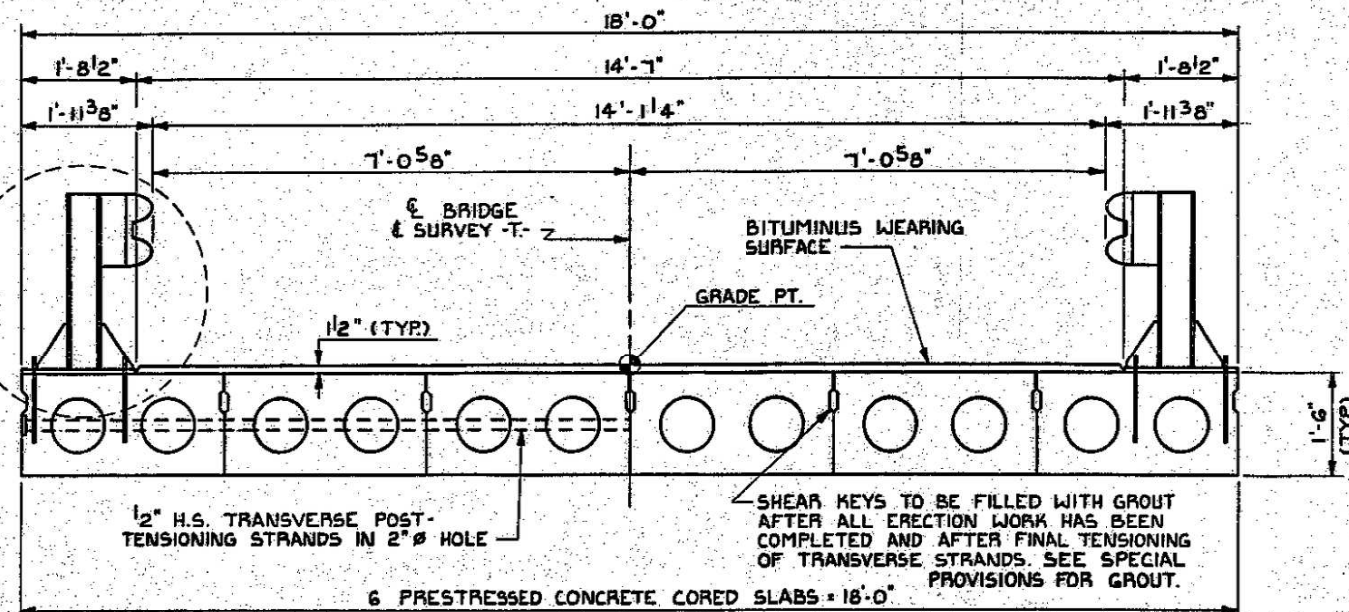
BAR TYPES		BILL OF MATERIAL				
	B1	24	#8	STR	34-6	2211
	B2	36	#8	STR	59-6	5719
	S1	250	#5	1	6-11	1804
	S2	250	#5	2	2-11	761
REINFORCING STEEL					10,495	LBS.
CLASS A CONCRETE					57.9	CU. YDS.
* 1'-6" STEEL SHEET PILES					8217.0	SQ. FT.
* PZ27 STEEL SHEET PILES						

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					
(3 REQUIRED)					
AUGUST 1992					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
SHEET NO.					5-8
TOTAL SHEETS					28

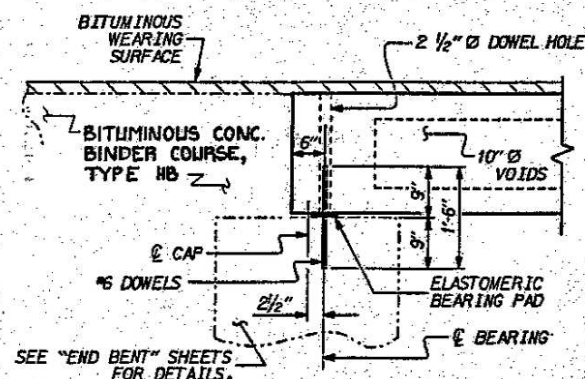
DRAWN BY: W.D. CRUTCHER DATE: 08-92
 CHECKED BY: F.R. Dims DATE: 3-9-92

FOR DETAILS, SEE
GUARDRAIL SHEET



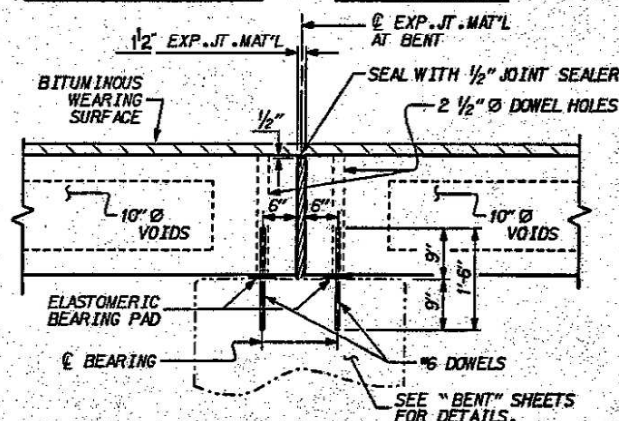
TYPICAL SECTION

FIXED END



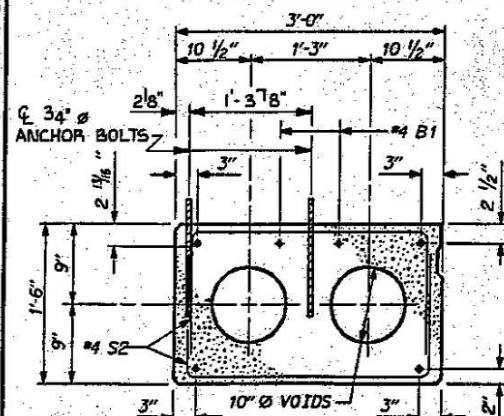
SECTION AT END BENT

EXPANSION END

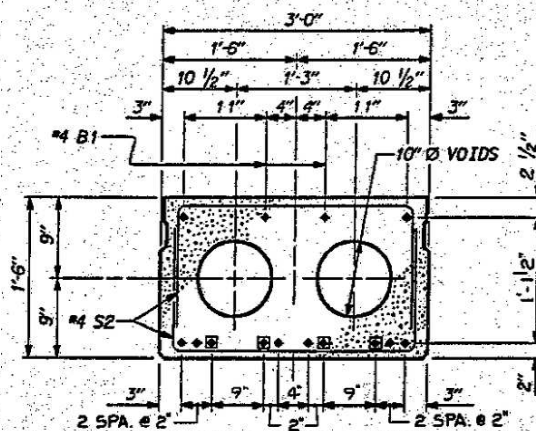


SECTION AT BENT

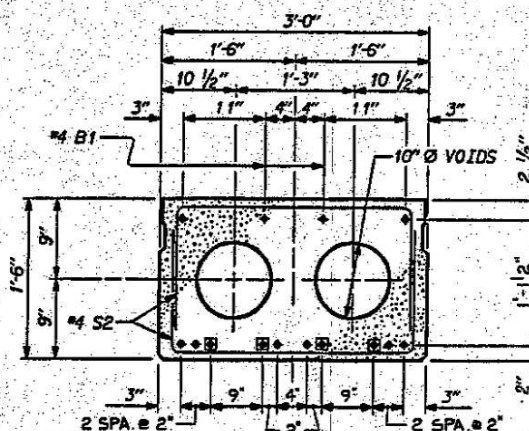
□ BOND SHALL BE BROKEN AT THESE STRANDS FOR A DISTANCE OF 4'-0" FROM END OF CORED SLAB UNIT.



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



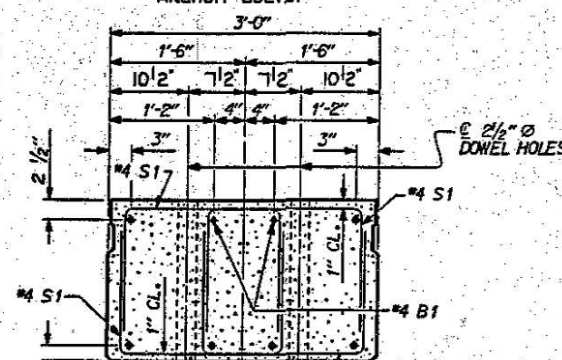
INTERIOR SLAB SECTION
1/2" STRESS RELIEVED
STRAND LAYOUT



INTERIOR SLAB SECTION
1/2" LOW RELAXATION
STRAND LAYOUT

PART PLAN-EXTERIOR SECTION

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



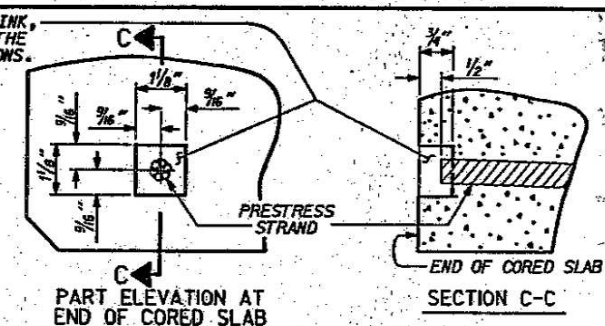
END ELEVATION

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.

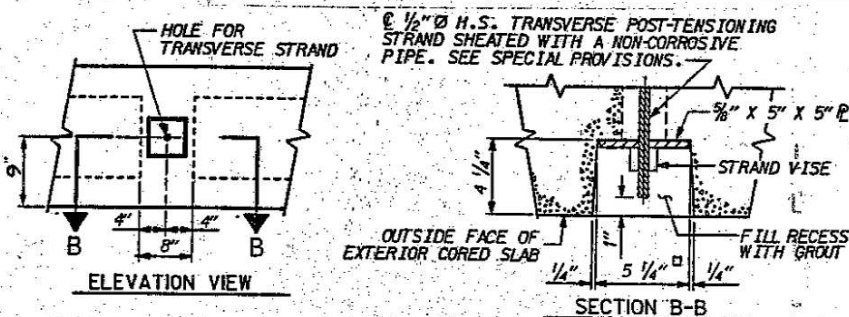
SHEAR KEY DETAIL

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

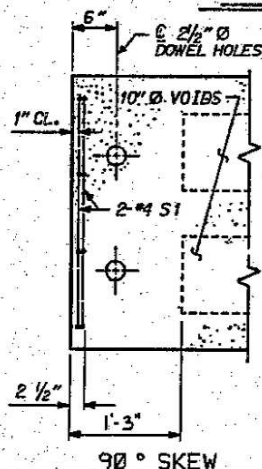
FILL THE RECESS WITH A NON-SHRINK, NON-METALLIC GROUT APPROVED BY THE ENGINEER. SEE SPECIAL PROVISIONS.



GROUTED RECESS AT END OF
PRETENSIONED STRAND-CORED SLABS



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



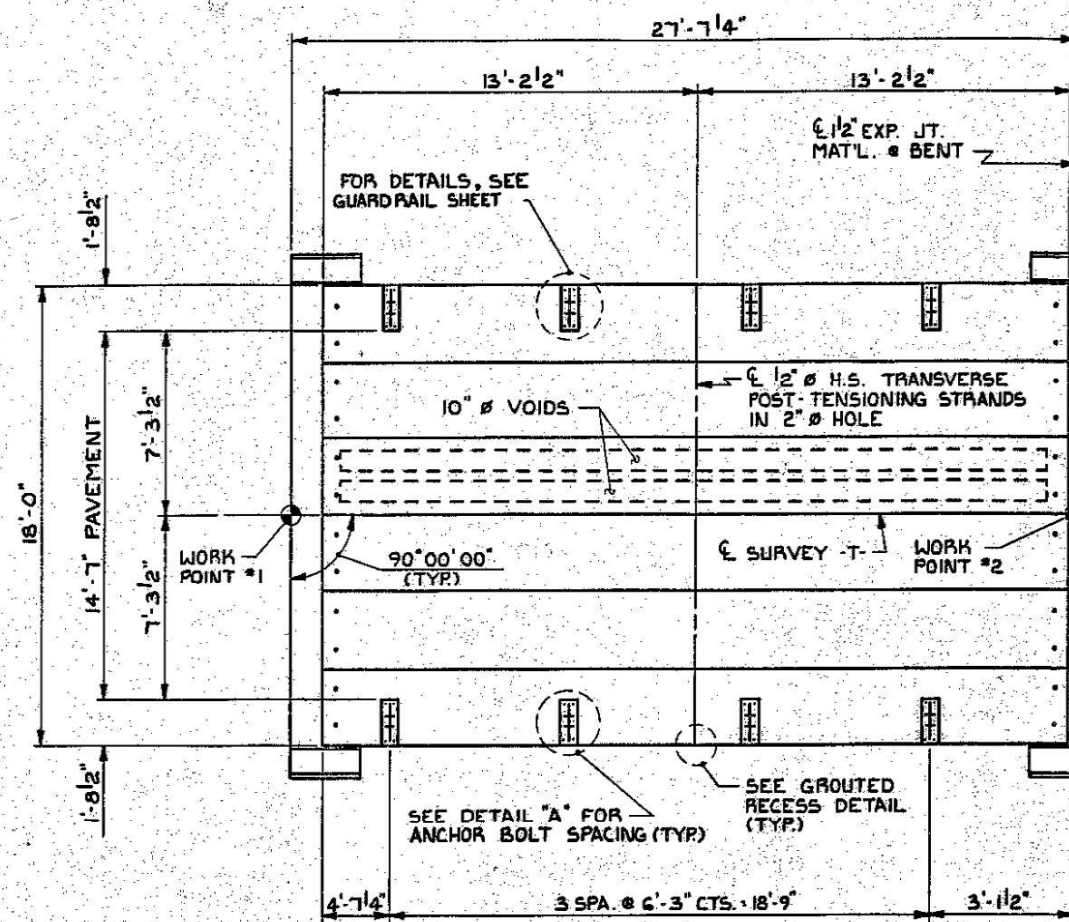
90° SKEW

PROJECT NO. 81150701
BEAUFORT COUNTY
STATION: 10+00.00-T-S R
SHEET 1 OF 3

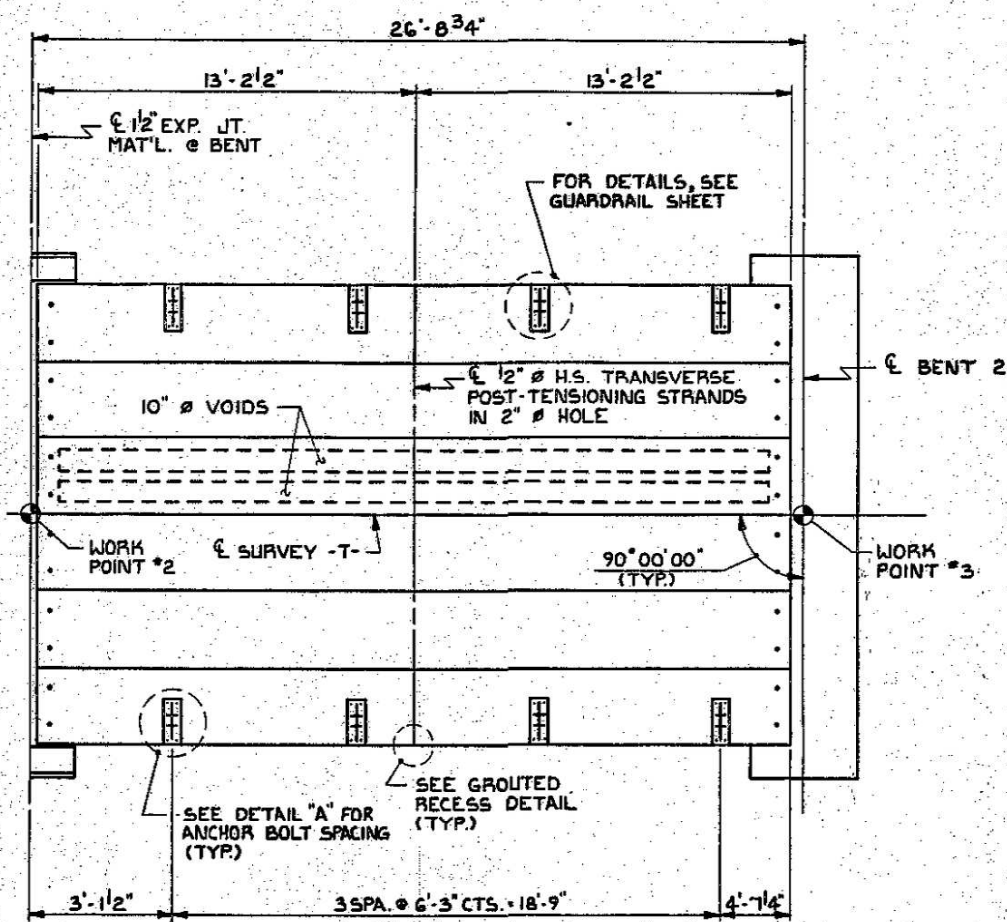
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD 3'-0" X 1'-6" PRESTRESSED CONCRETE CORED SLAB UNIT SOUTH RAMP					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
					SHEET NO. S-12
					TOTAL 28

REVISED BY W.J.H. CHECKED BY C.R.R. 3-1-90
REVISED BY W.J.H. CHECKED BY F.C.J. 8-28-89
RECEIVED 8-28-89

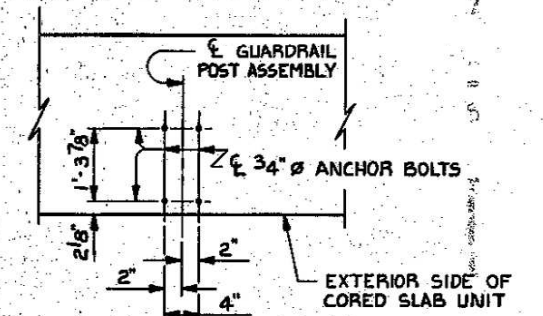
ASSEMBLED BY: L.A. HALL DATE: 2-3-92 SPECIAL
CHECKED BY: F.B. Mims DATE: 7-11-92
DRAWN BY: W.J. HARRIS DATE: 4-31-89
CHECKED BY: F.C. JONES DATE: 5-16-89 STANDARD



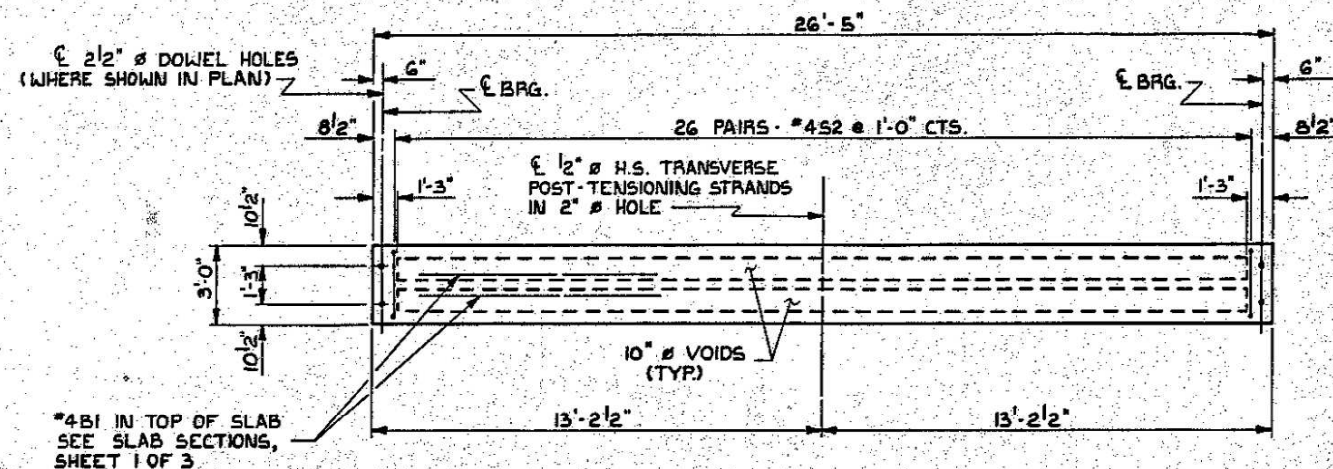
PLAN OF SPAN "A"



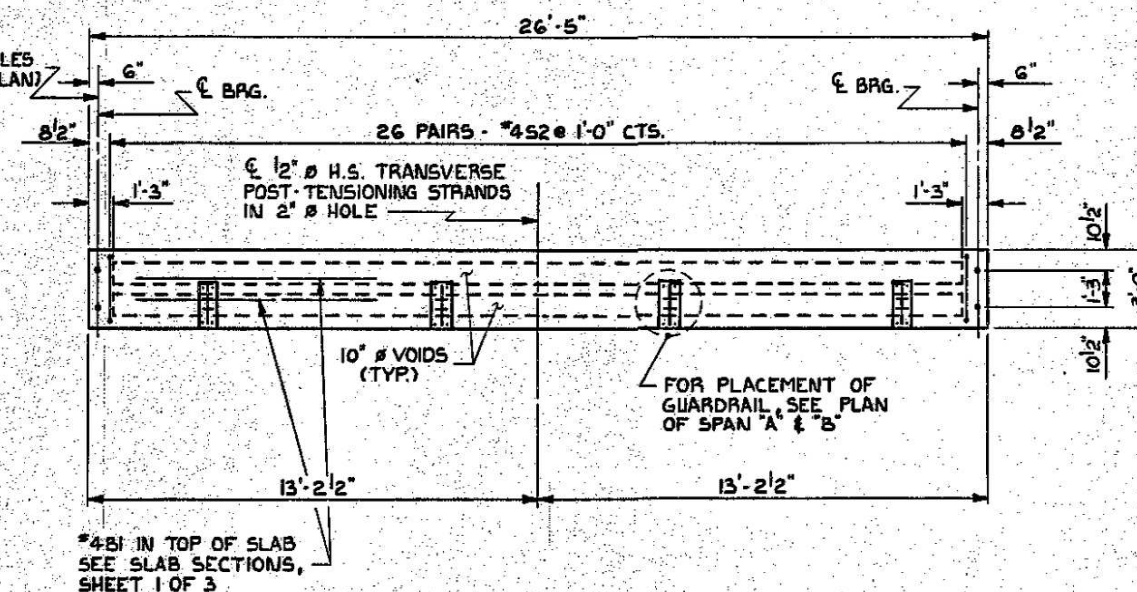
PLAN OF SPAN "B"



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. 81150701
BEAUFORT COUNTY
STATION: 10+00.00 - T-SR
SHEET 2 OF 3

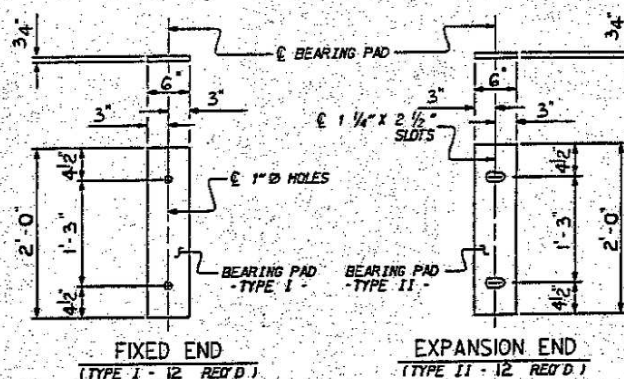
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PLAN OF SPANS
CORED SLAB DETAILS
SOUTH RAMP

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			5-13
2			4			TOTAL SHEETS 28

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

REVISED BY W.J.M. CHECKED BY F.C.J. 3-1-90
REVISED BY W.J.M. CHECKED BY F.C.J. 8-22-89
REDAWN 8-22-89
REVISED BY E.L.R. CHECKED BY G.R.P. 1-13-91 R
REVISED BY E.L.R. CHECKED BY G.R.P. 5-15-91
REVISED BY W.J.H. CHECKED BY G.R.P. 10-1-90

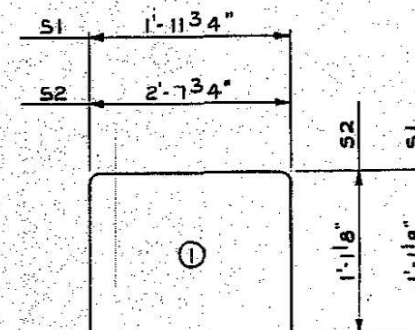
ASSEMBLED BY: L.A. HALL	DATE: 9-9-92	SPECIAL
CHECKED BY: F.A. Mims	DATE: 7-11-92	
DRAWN BY: W.J. HARRIS	DATE: 4-31-89	STANDARD
CHECKED BY: F.C. JONES	DATE: 5-16-89	



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	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" ↑		
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD **	0" ↓	0" ↓		
FINAL CAMBER	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 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.

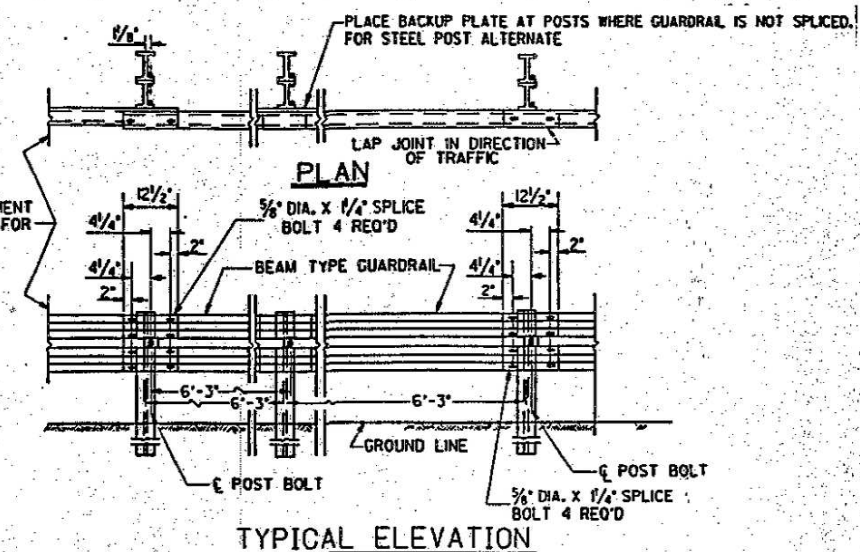
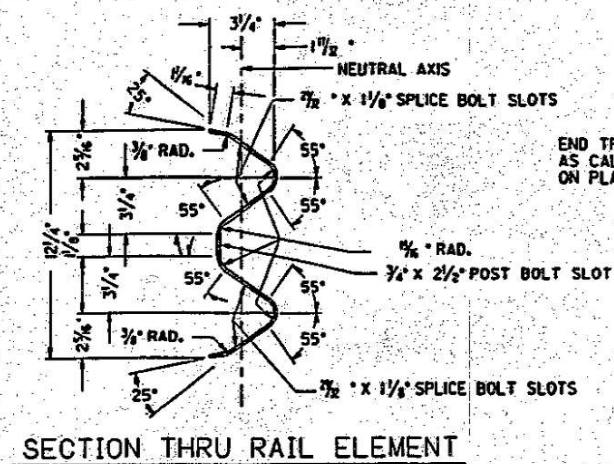
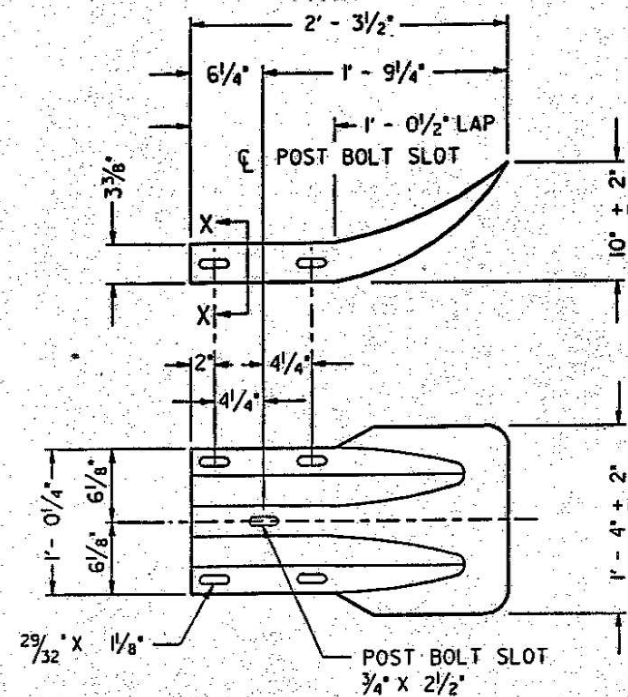
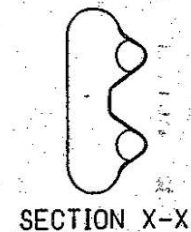
CORED SLABS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	4	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
RALPH
STANDARD
3'-0" X 1'-6"
PRESTRESSED
CONCRETE CORED
SLAB UNIT
SOUTH RAMP

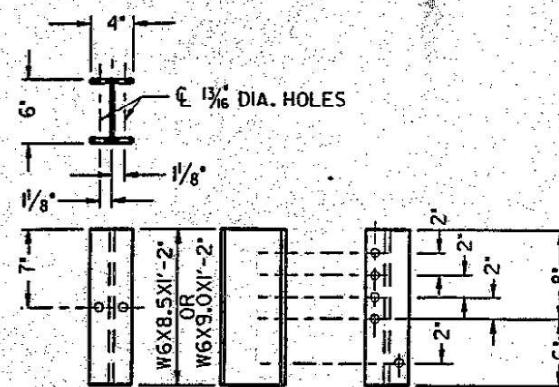
REVISIONS				SHEET NO.
NO.	BY	DATE	NO.	
1			3	S-14
2			4	TOTAL SHEETS 28



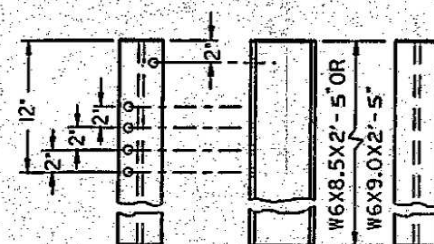
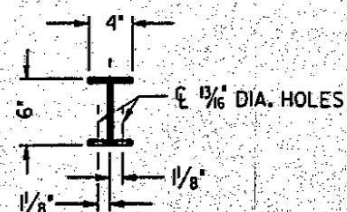
NOTES FOR GUARDRAIL POST ANCHORED TO STRUCTURE:
POST AND POST BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF A.S.T.M. A-36 AND SHALL
BE GALVANIZED AFTER FABRICATION TO CONFORM TO THE REQUIREMENTS OF A.S.T.M. A-123.

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.

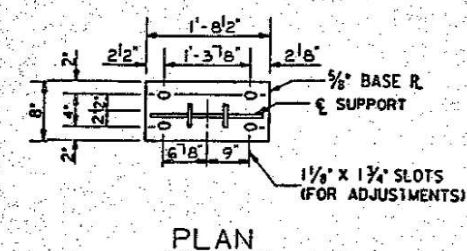
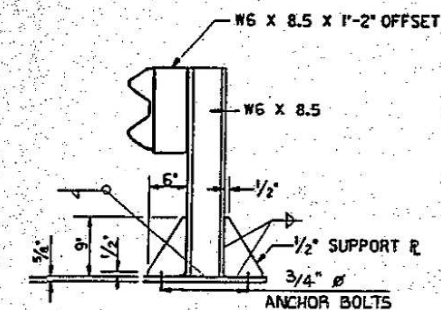
ANCHORS SHALL BE GALVANIZED TO CONFORM TO THE REQUIREMENTS OF ASTM A-153.



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



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



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

10+00.00-T-SR

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DEPARTMENT OF TRANSPORTATION
RALEIGH

RALEIGH

GUARDRAIL
DETAILS
NORTH RAMP & SOUTH RAMP

DETAILS
NORTH RAMP & SOUTH RAMP

REVISIONS						SHEET NO. S-15
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 28
2			4			

SHEET
NO.
5-15

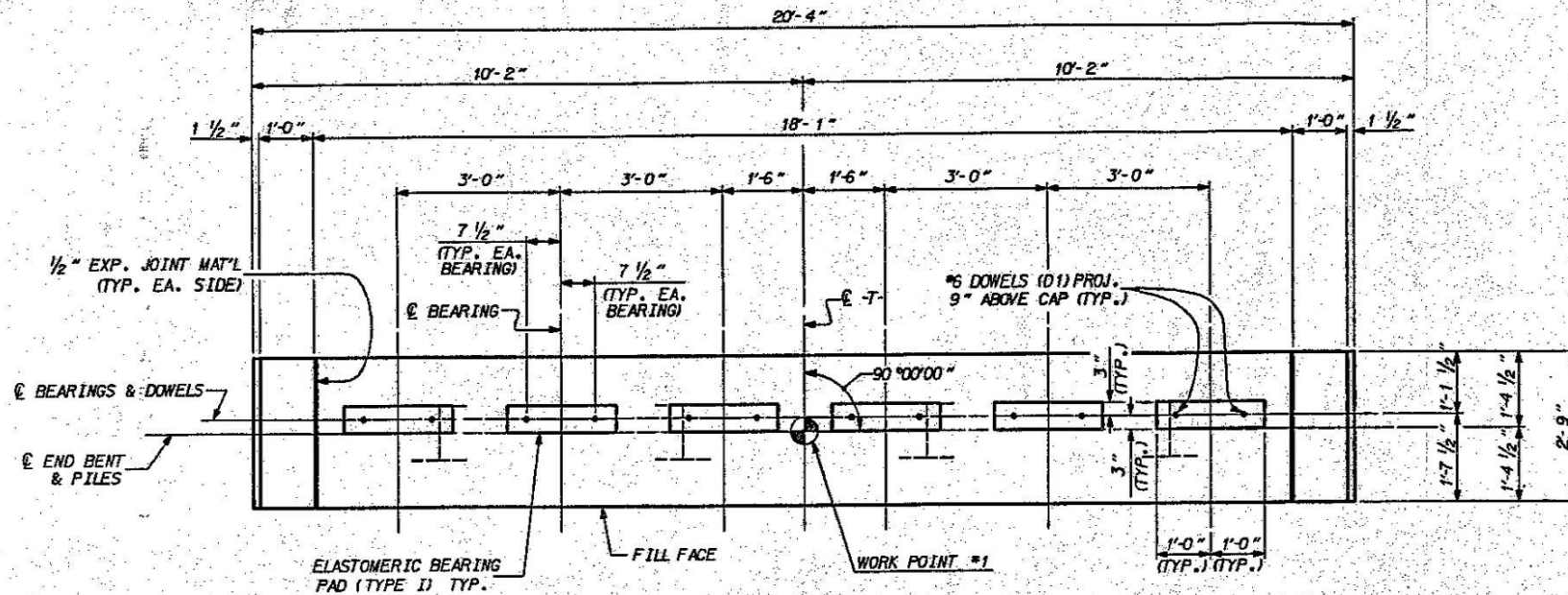
NO.
F-15

FORM

**TOTAL
SHEETS**

7438 DRAWN BY L. A. HALL DATE 9-10-92
CHECKED BY P. E. KELLY DATE 9-11-92

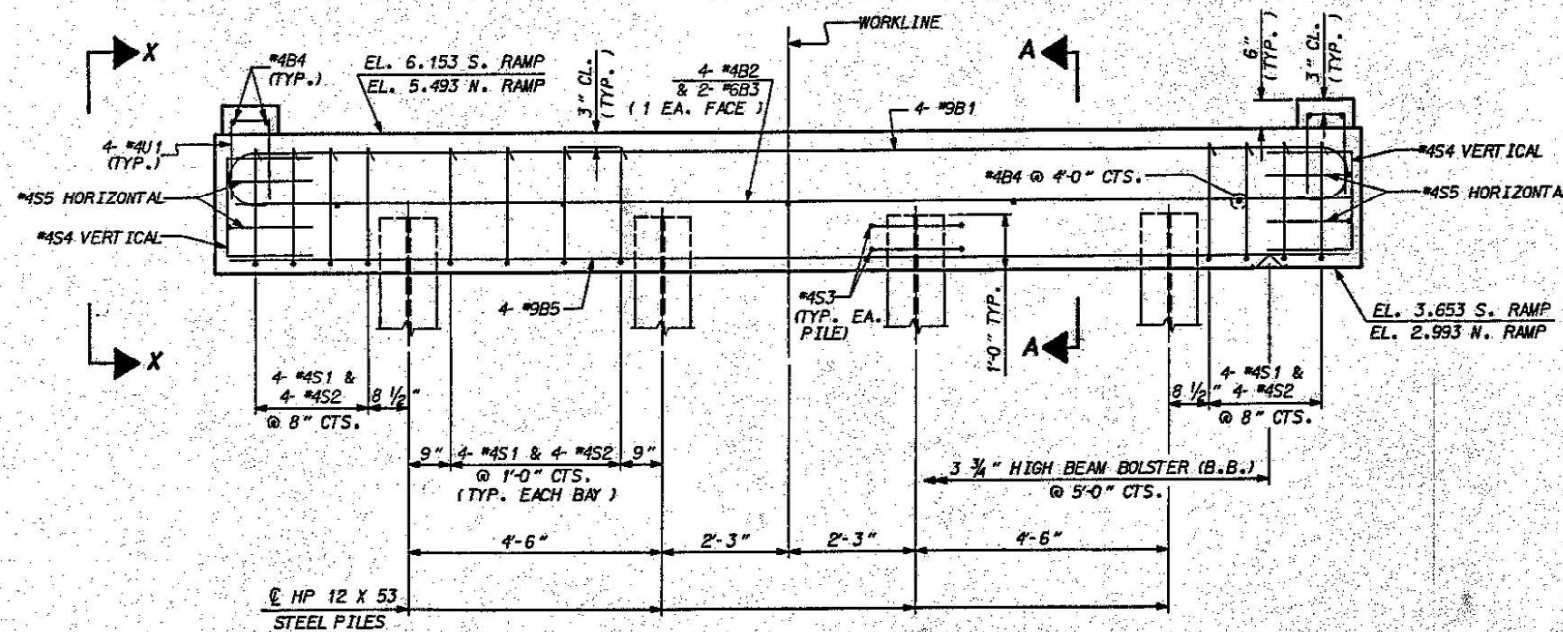
7438 DRAWN BY L. A. HALL DATE 7-10-92
CHECKED BY P. E. KELLY DATE 9-11-92



PLAN

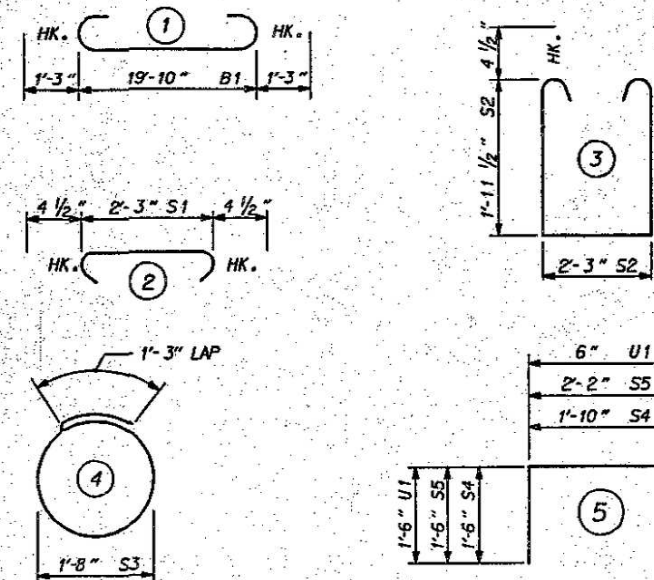
NOTES

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

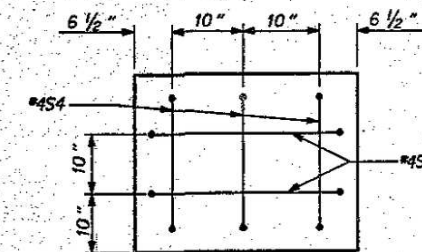
BAR TYPES



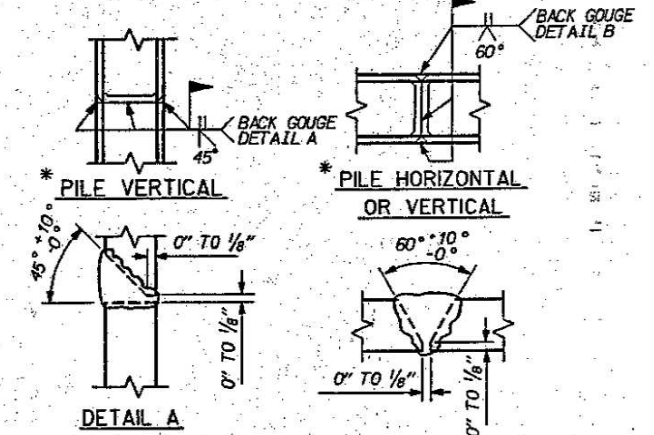
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

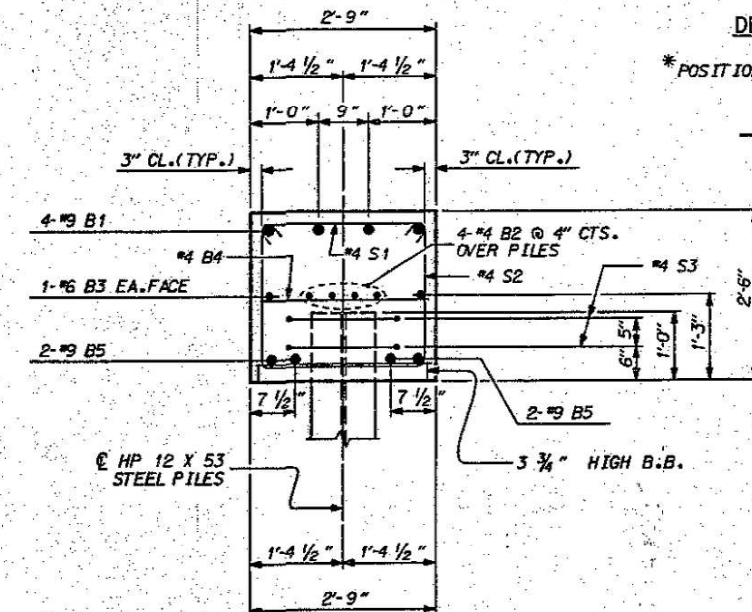
END BENT #1					
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	4	9	1	22'-4"	304
B2	4	4	STR	19'-10"	53
B3	2	6	STR	19'-10"	60
B4	9	4	STR	2'-3"	14
B5	4	9	STR	19'-10"	270
D1	12	6	STR	1'-6"	27
S1	20	4	2	3'-0"	40
S2	20	4	3	6'-11"	92
S3	8	4	4	6'-6"	35
S4	6	4	5	4'-10"	19
S5	4	4	5	5'-2"	14
U1	8	4	5	3'-6"	19
EPOXY COATED 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	



VIEW X-X
(TYP. EACH END)



PILE SPLICE DETAILS

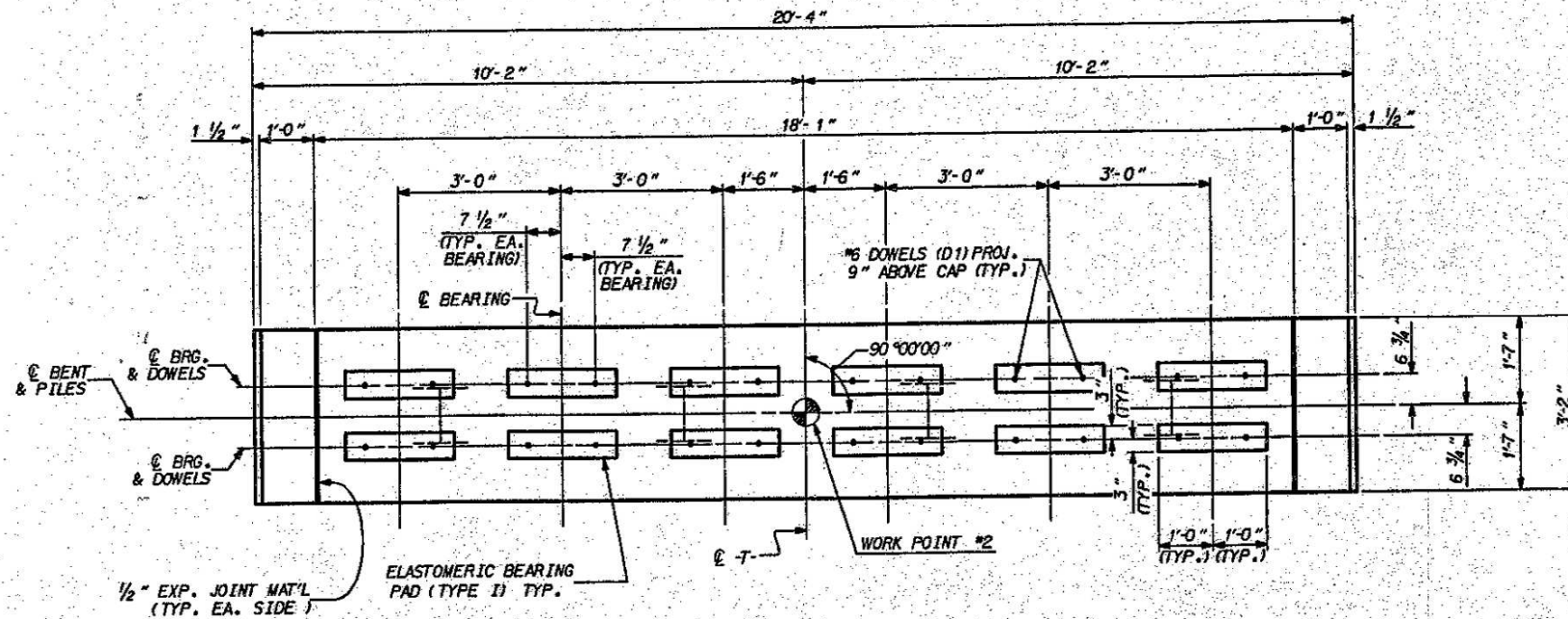


SECTION A-A

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					
REVISIONS			SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
			316		
			28		

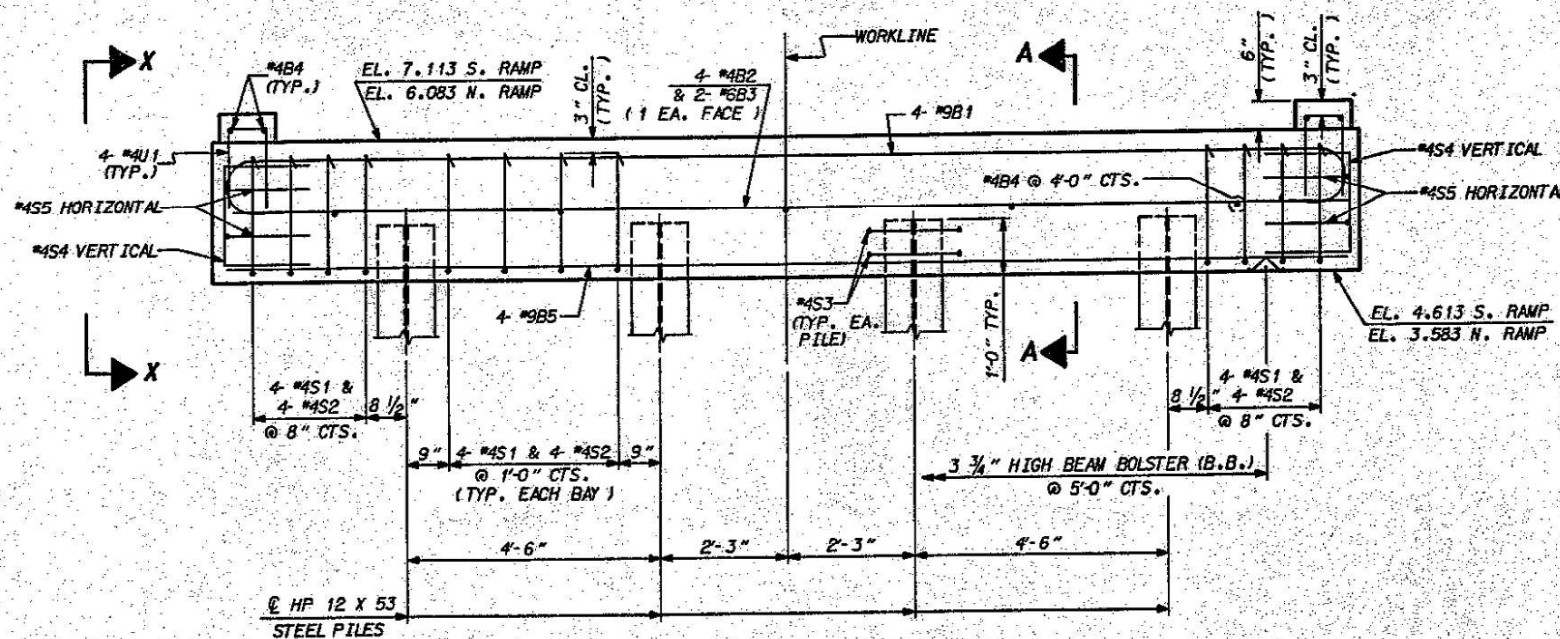
DRAWN BY: D.K. BOWEN DATE: 9/9/92
CHECKED BY: P.E. KELLY DATE: 9/11/92



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 25 TONS PER PILE.
ALL REINFORCING STEEL SHALL BE EPOXY COATED.



ELEVATION

BAR TYPES

BILL OF MATERIAL

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'-8"	16
B5	4	9	STR	19'-10"	270
D1	24	6	STR	1'-6"	54
S1	20	4	2	3'-5"	46
S2	20	4	3	7'-4"	98
S3	8	4	4	6'-6"	35
S4	6	4	5	4'-10"	19
S5	4	4	5	5'-6"	15

EPOXY COATED
REINFORCING STEEL LBS. 989

CLASS "A" CONCRETE
POUR #1 CAP C.Y. 6.1

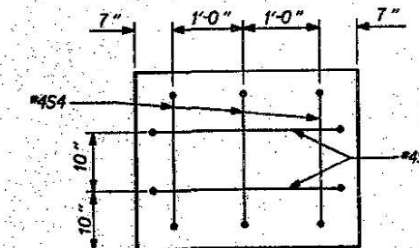
ABOVE QUANTITIES ARE FOR 1 BENT

HP 12 X 53 STEEL PILES

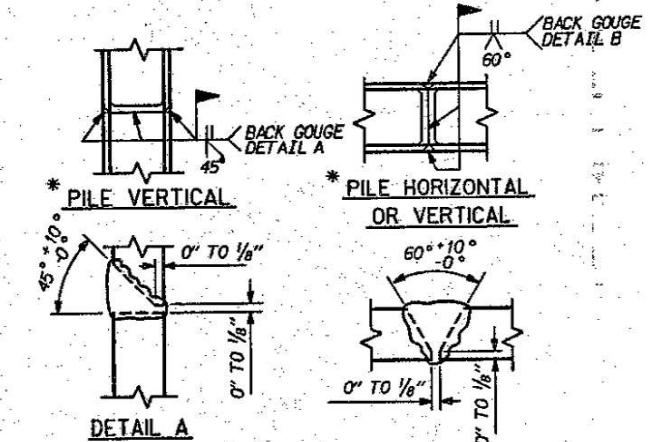
NORTH RAMP NO. 4 LIN. FEET 184
SOUTH RAMP NO. 4 LIN. FEET 164

ALL BAR DIMENSIONS ARE OUT TO OUT.

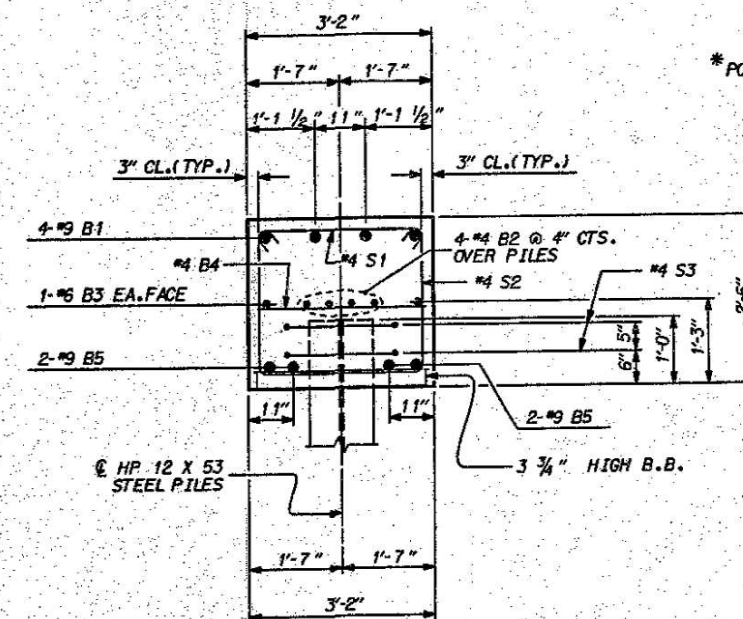
ALL BAR DIMENSIONS ARE OUT TO OUT.



VIEW X-X
(TYP. EACH END)



PILE SPLICE DETAILS

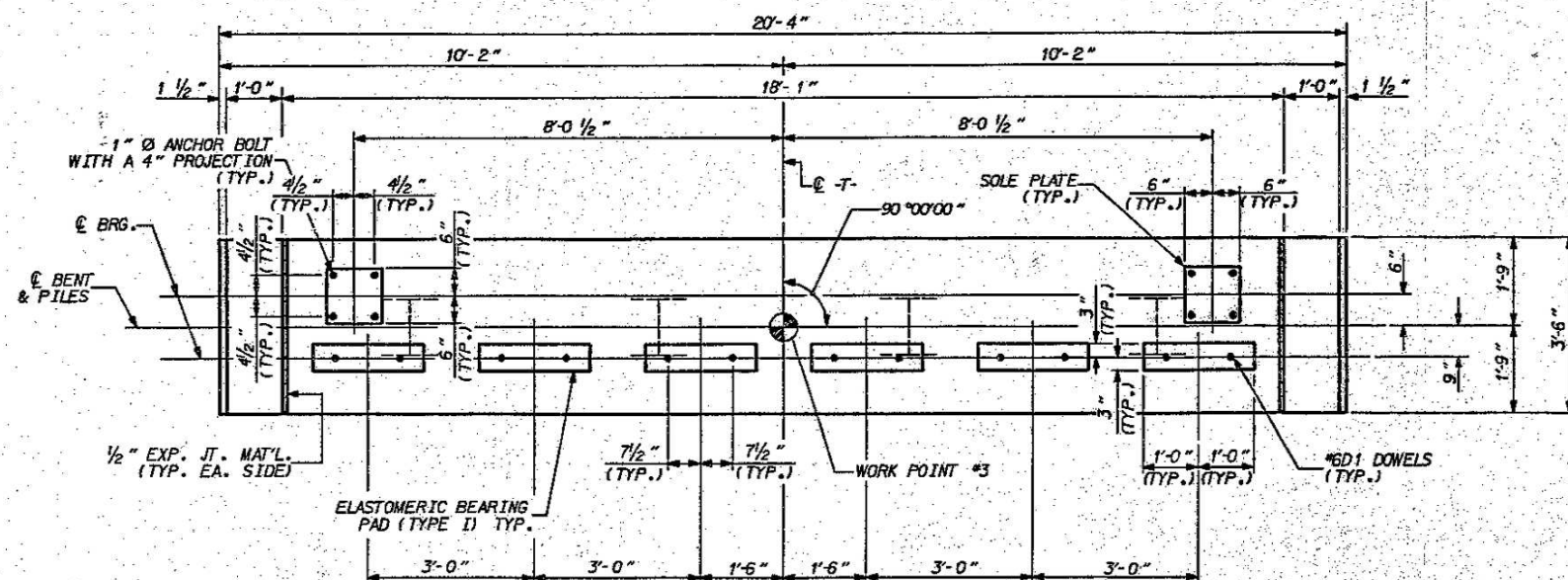


SECTION A-A

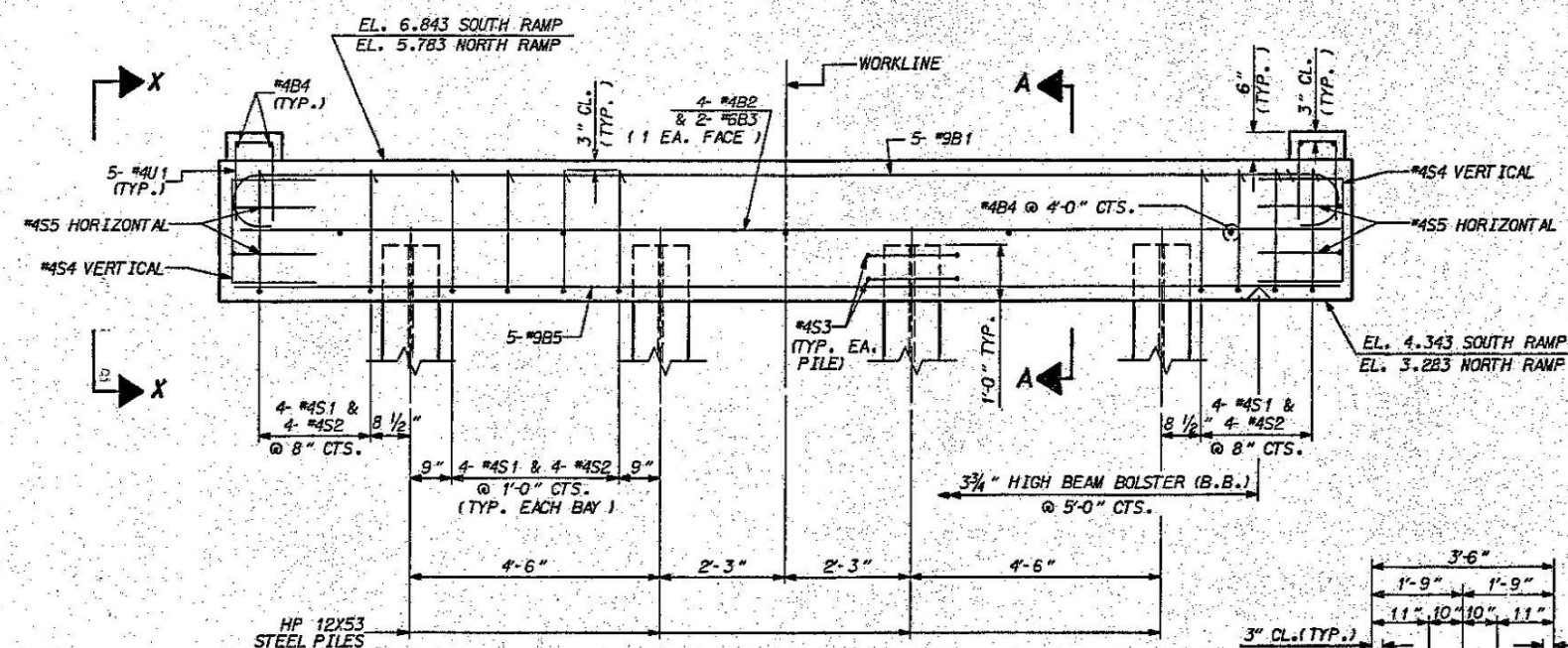
PROJECT NO. **8.1150701**
BEAUFORT COUNTY
STATION: **10+00.00 -T-NR**
10+00.00-T-SR

STATE OF NORTH CAROLINA					1992	
DEPARTMENT OF TRANSPORTATION					SHEET NO.	
RALEIGH					5-17	
PAMLICO RIVER FERRY					TOTAL	
SOUTH RAMP AND					SHEETS	
NORTH RAMP					28	
BENT #1						
SEPTEMBER						
REVISIONS						
NO.	DATE	BY	DATE	BY		
1						
2						

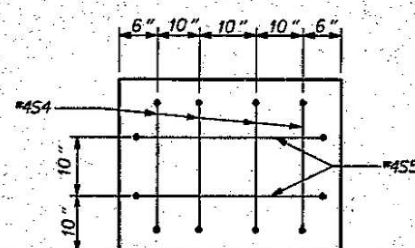
DRAWN BY: **D.K. BOWEN** DATE: **9/3/92**
CHECKED BY: **P.E. KELLY** DATE: **9/11/92**



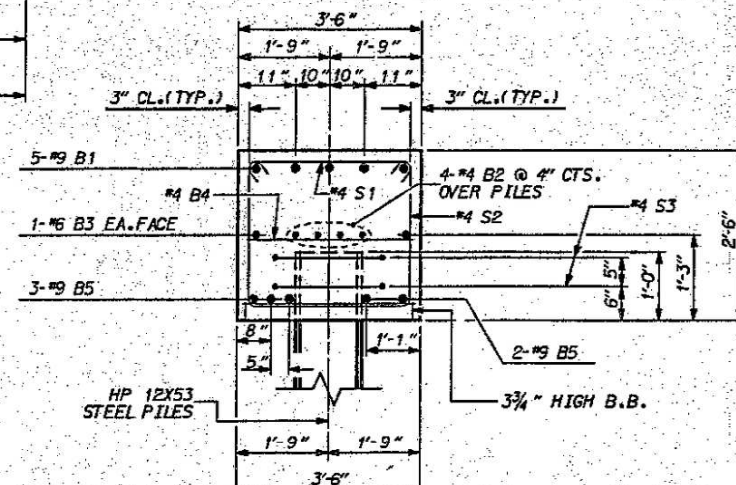
PLAN



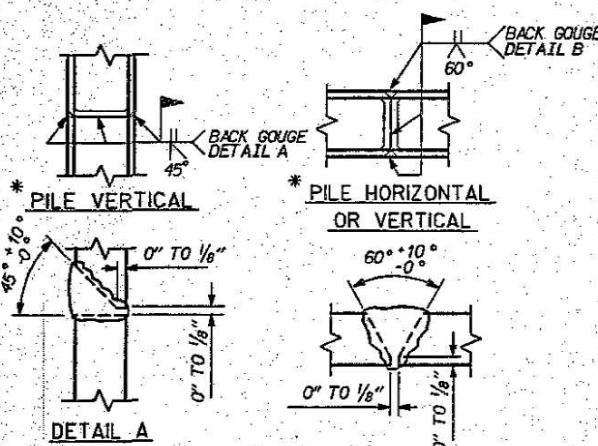
ELEVATION



VIEW X-X
(TYP. EACH END)



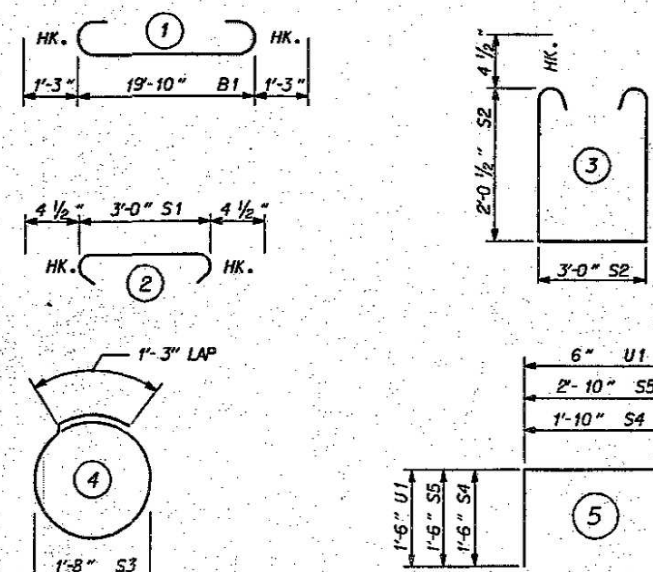
SECTION A-A



* POSITION OF PILE DURING WELDING. DETAIL B

PILE SPLICE DETAILS

BAR TYPES



BILL OF MATERIAL

BENT #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	5	9	1	22'-4"	380
B2	4	4	STR	19'-10"	53
B3	2	6	STR	19'-10"	60
B4	9	4	STR	3'-0"	18
B5	5	9	STR	19'-10"	337
D1	12	6	STR	1'-6"	19
S1	20	4	2	3'-9"	50
S2	20	4	3	7'-10"	105
S3	8	4	4	6'-6"	35
S4	8	4	5	4'-10"	26
S5	4	4	5	5'-10"	16
U1	10	4	5	3'-6"	23

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.

PROJECT NO. 8.1150701

BEAUFORT COUNTY

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RAI 6041

PAMLICO RIVER FERRY
NORTH AND SOUTH RAMP
BENT #2

SEPTEMBER

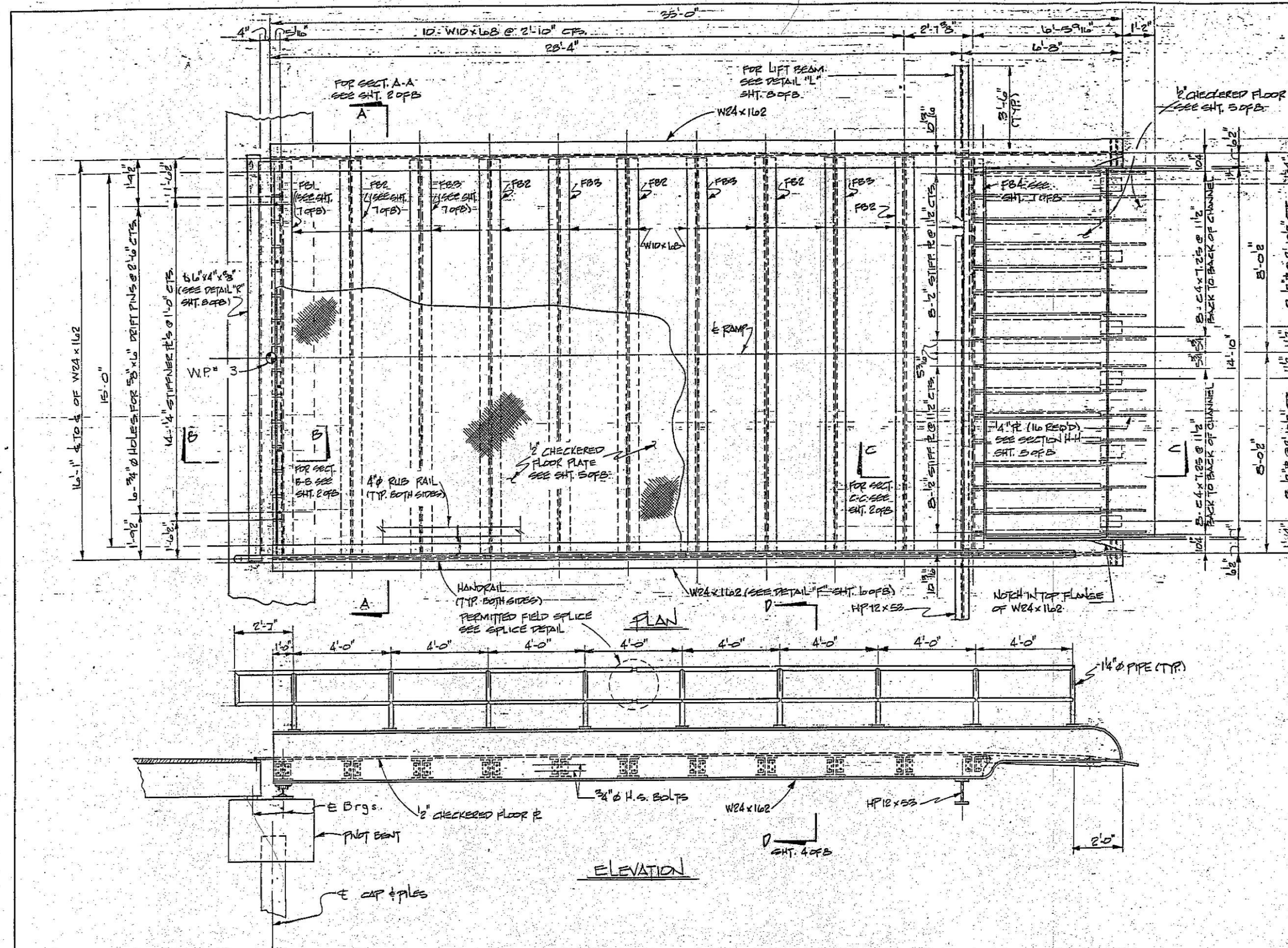
1992

REVISIONS

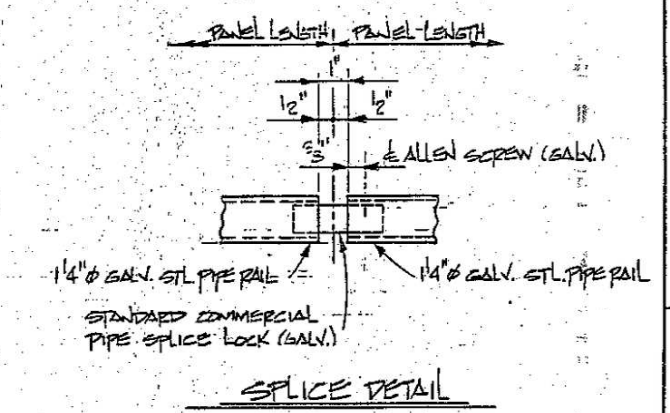
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

S-18
 TOTAL
 SHEETS
 28

DRAWN BY : W.D. CRUTCHER DATE : 9/4/92
CHECKED BY : P.E. KELLY DATE : 9/11/92



- NOTES**
- ALL BOLTS, WASHERS, NUTS, AND OTHER HARDWARE TO BE GALVANIZED.
 - ALL BOLTS TO BE HIGH STRENGTH (A325), UNLESS NOTED OTHERWISE.
 - DECK BOLTS TO BE A307 CARRIAGE BOLTS, SQUARE NECK WITH WASHER, NUT, AND JAN NUT.
 - ALL DECK PLATES TO BE GALVANIZED AFTER FABRICATION. ALL WELDING REQUIRED ON END RAMPS TO BE COMPLETED BEFORE GALVANIZING.
 - ALL STEEL A36 UNLESS NOTED OTHERWISE.
 - ALL GIRDERS, BEAMS, ANGLES, CHANNELS, PLATES, RODS, AND PIPES TO BE GALVANIZED.
 - ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.
 - AT FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS SHALL BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURIED WITH A SHARP POINTED TOOL.
 - DECK PLATES SHALL RECEIVE AN EPOXY SKID RESISTANT OVERLAY.
 - FOR EPOXY SKID RESISTANT OVERLAY, SEE SPECIAL PROVISIONS.
 - CHARPY V-NOTCH TEST REQUIRED FOR W24 X 162 GIRDERS AND W10 X 68 FLOOR BEAMS, SEE SPECIAL PROVISIONS.
 - 1-1/4" PIPE RAIL TO BE GALVANIZED AFTER FABRICATION.



- NOTES**
- ALL HOT DIPPED GALVANIZED CONTACT SURFACES IN BOLTED CONNECTIONS USING HIGH STRENGTH BOLTS SHALL BE FREE OF OIL OR OTHER COATINGS AND SHALL BE ROUGHENED BY A LIGHT SANDBLASTING PRIOR TO ASSEMBLY. THE SANDBLASTING SHALL BE A LIGHT "BRUSH OFF" WHICH WILL PRODUCE A LIGHT GRAY APPEARANCE. THE SANDBLASTING SHALL NOT BE SEVERE ENOUGH TO PRODUCE ANY BREAK OR DISCONTINUITY IN THE ZINC SURFACE.
 - FOR VINYL PAINT SYSTEM FOR GALVANIZED STRUCTURAL STEEL, SEE SPECIAL PROVISIONS.

PROJECT NO. 8.1150701

BEAUFORT COUNTY

STATION: 10+00.0 T-SR

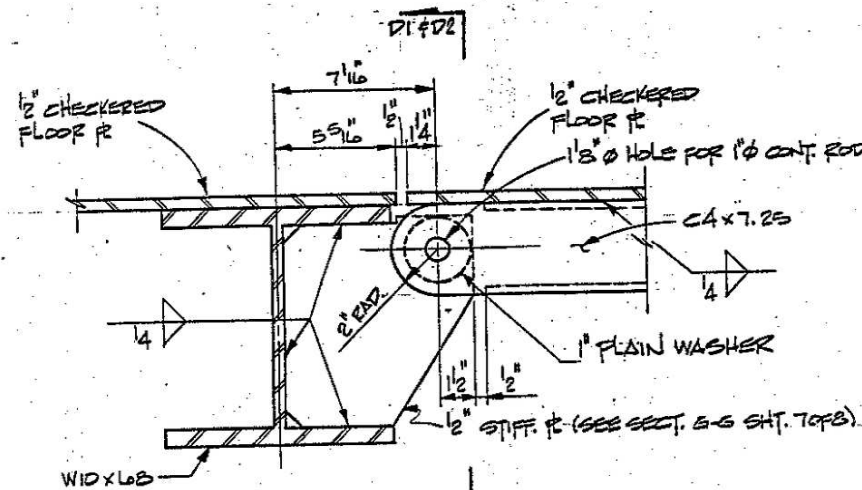
10+00.0 T-UR

SHEET 1 OF 3

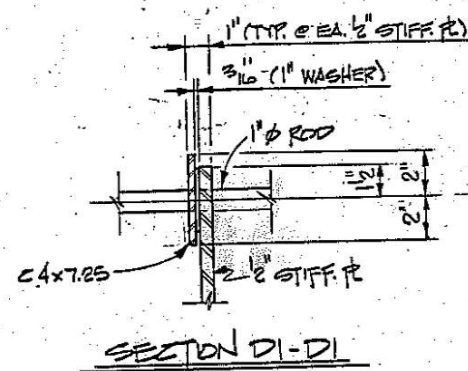
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PAMLICO RIVER FERRY
NORTH RAMP AND SOUTH RAMP

SEPT. 1992					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
TOTAL SHEETS					28

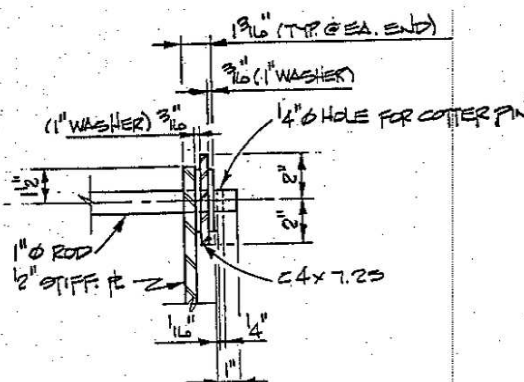
DRAWN BY F.A. MIMMS DATE 9-1-92
CHECKED BY W.D. CRUTCHER DATE 9-4-92



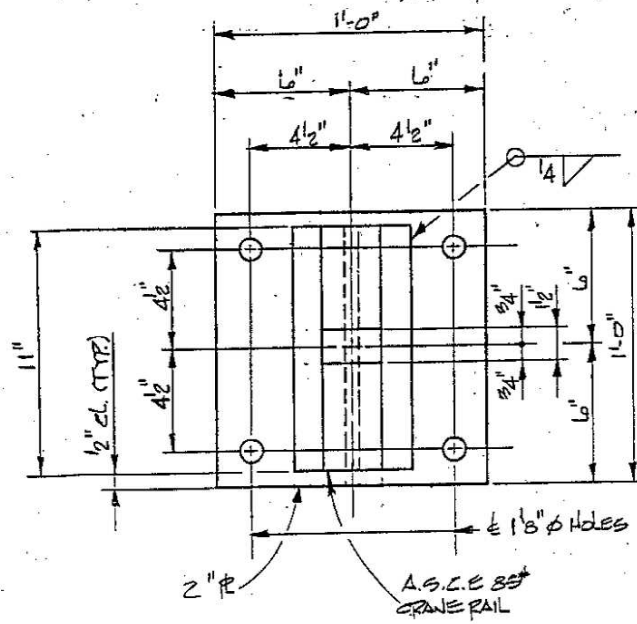
DETAIL "D"



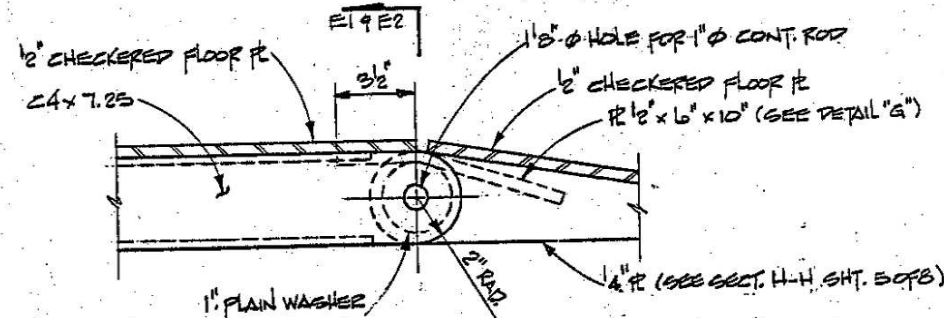
SECTION D1-D1



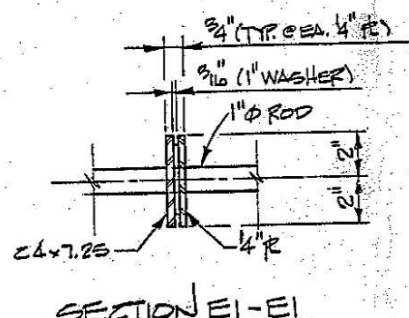
SECTION D2-D2
(FAR SIDE END SHOWN)



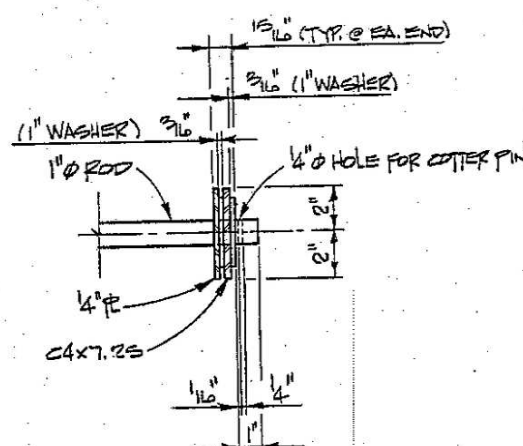
PLAN



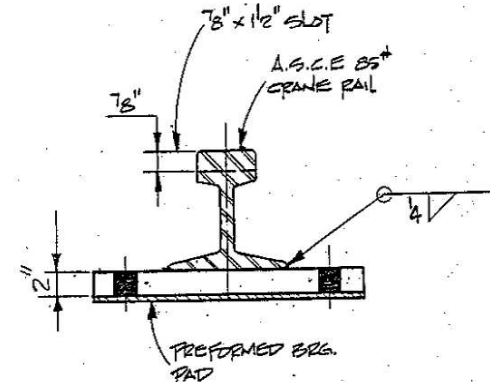
DETAIL "E"



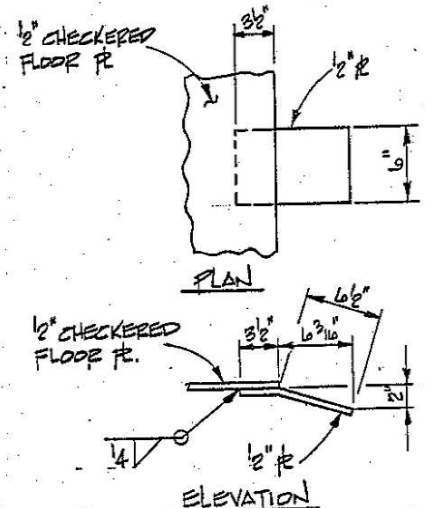
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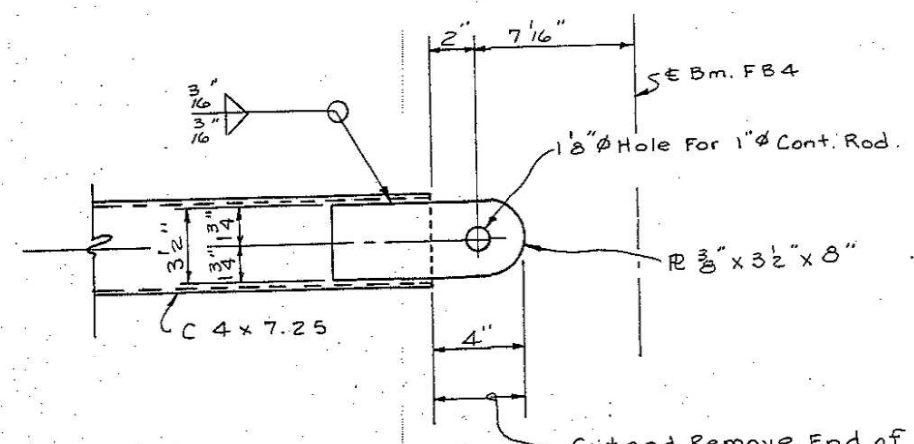
SECTION E2-E2
(FAR SIDE END SHOWN)



ELEVATION



DETAIL "G"



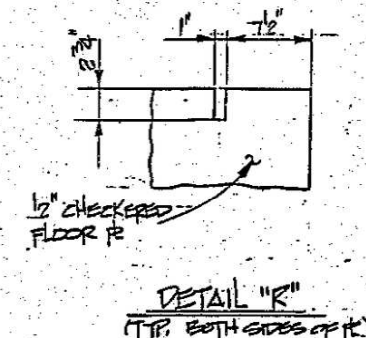
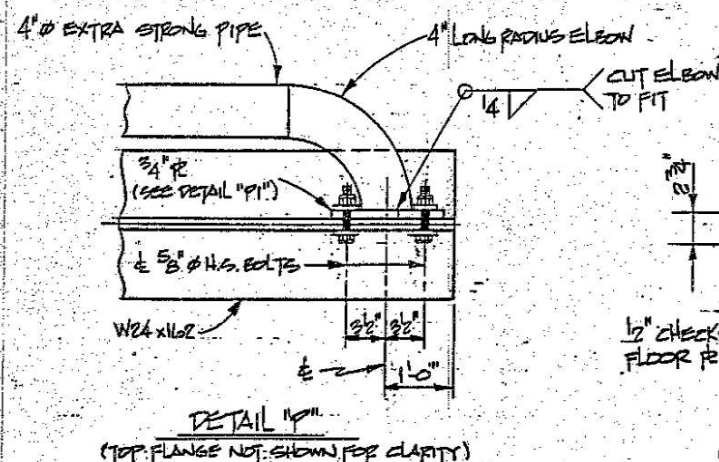
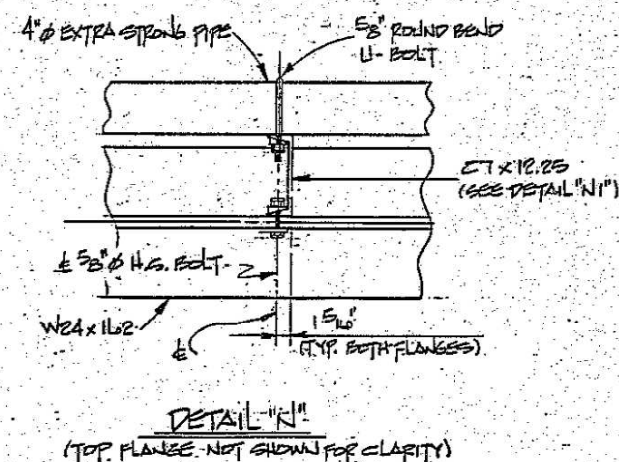
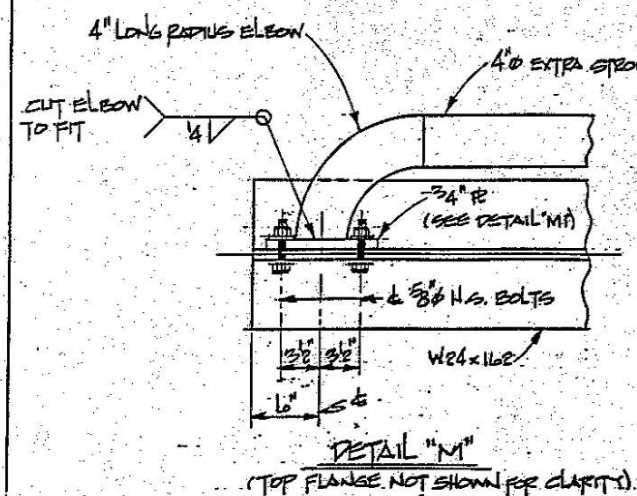
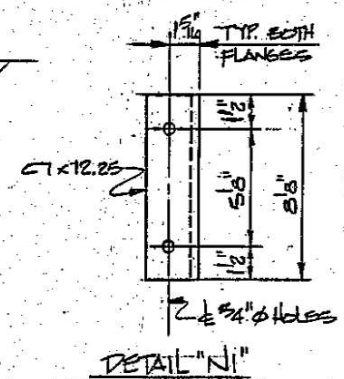
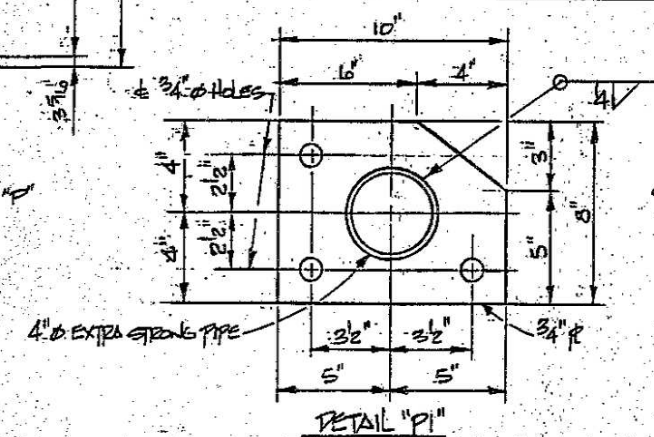
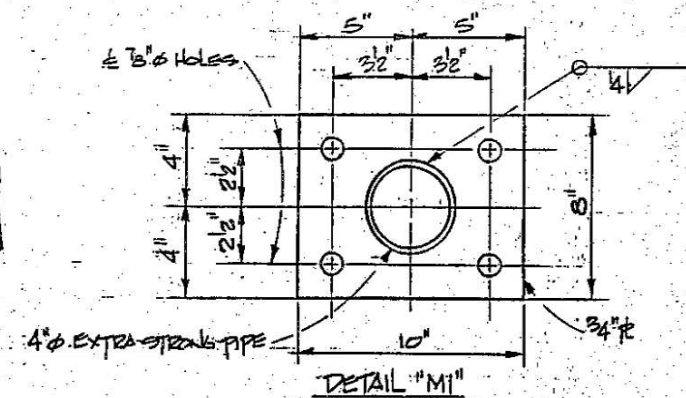
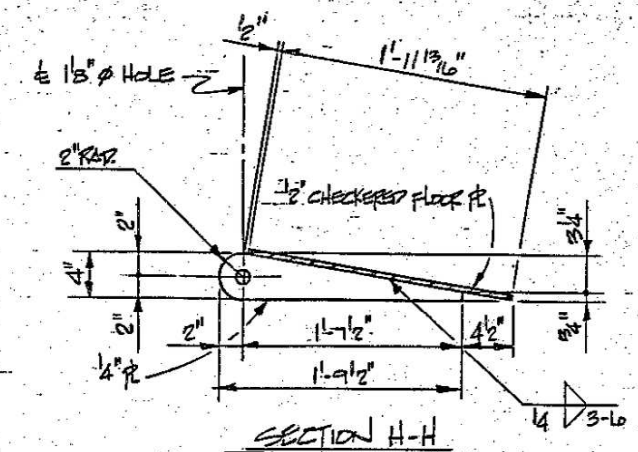
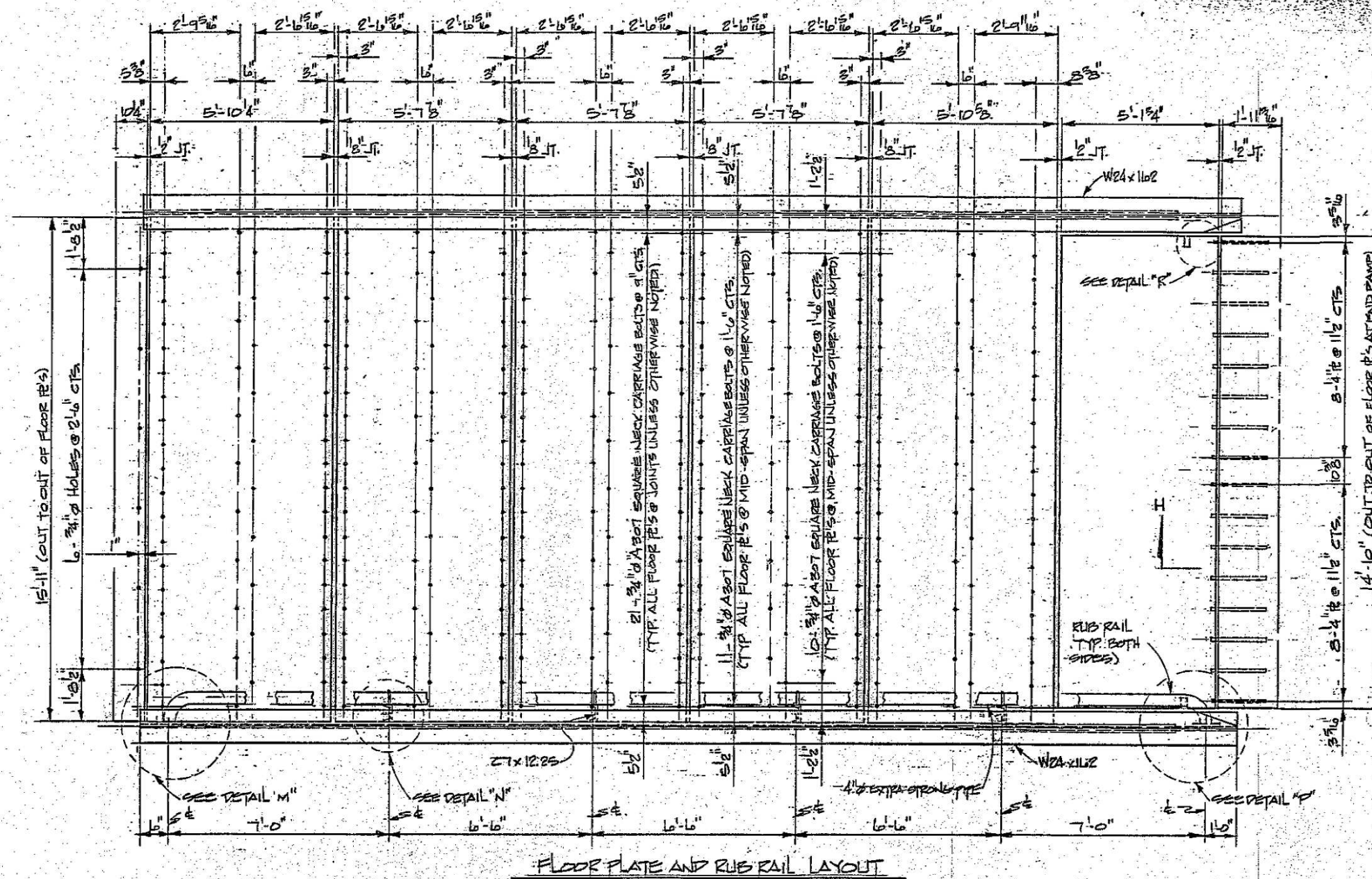
DETAIL FOR PLACEMENT OF END PLATE AT FB4
(See Sheet 7 of 8)

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

PROJECT NO. S1160701
BEAUFORT COUNTY

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

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



PROJECT NO. 8.1150701

BEAUFORT COUNTY

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

SHEET 5 OF 8

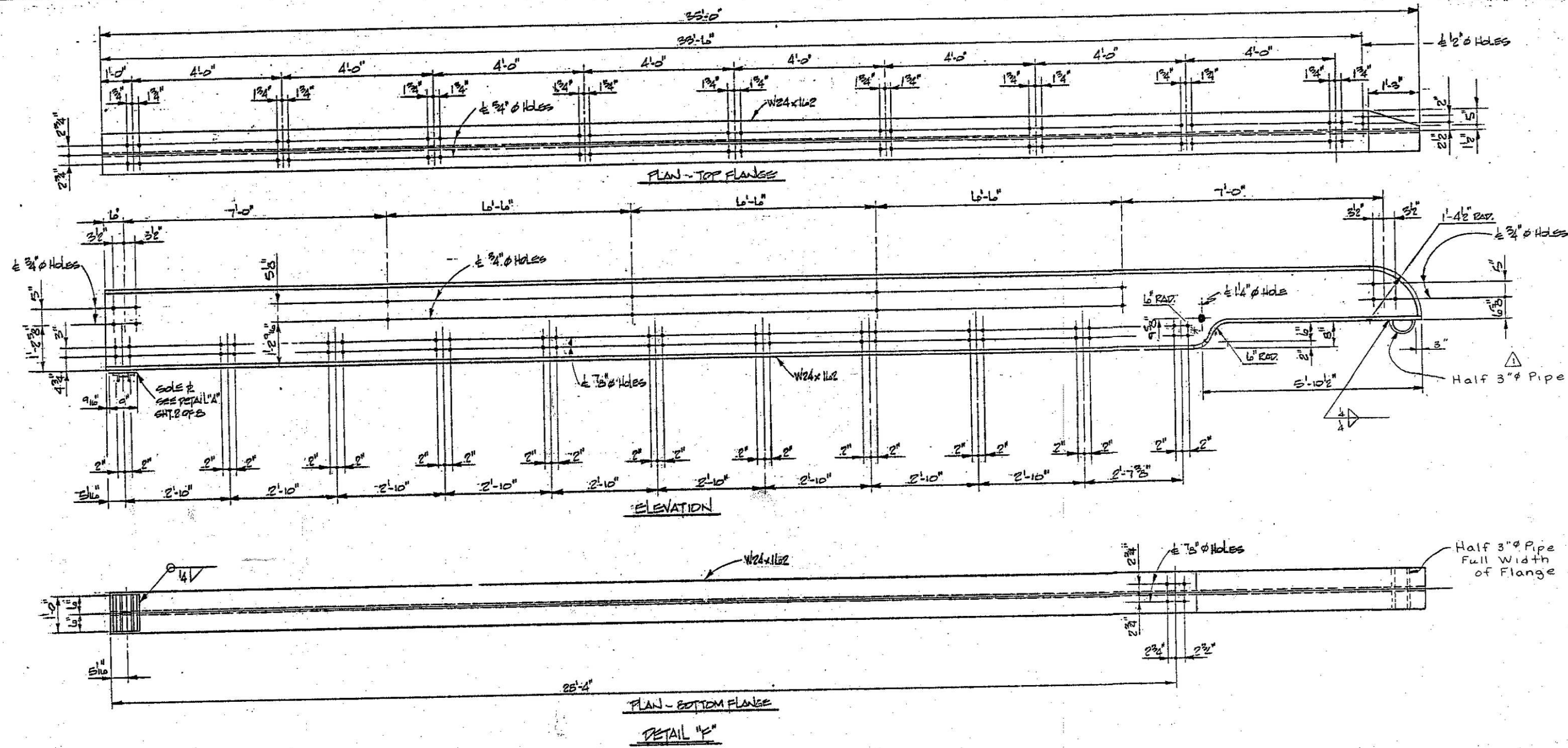
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PAMLICO RIVER FERRY
NORTH RAMP AND SOUTH
RAMP

SEPT.

1992

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

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



PROJECT NO. 8.1150701

BEAUFORT COUNTY

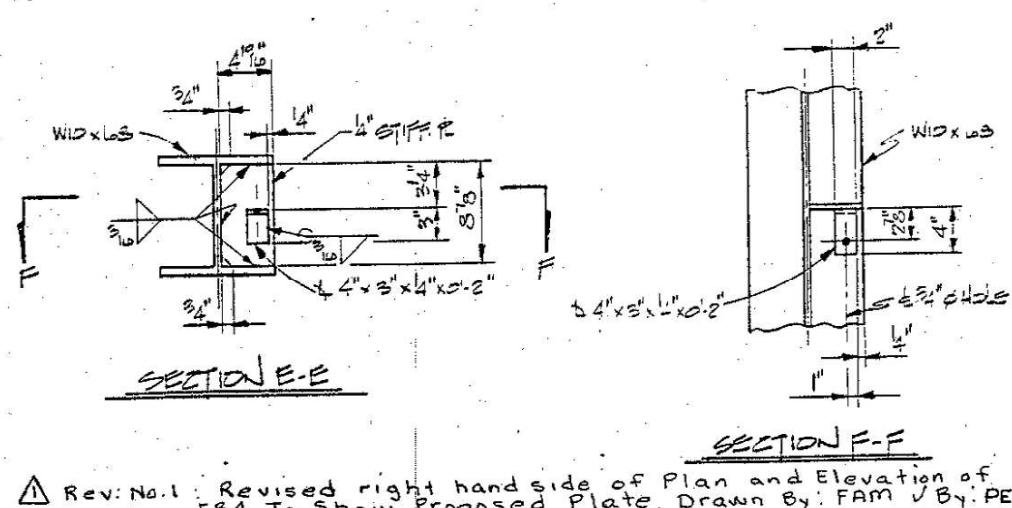
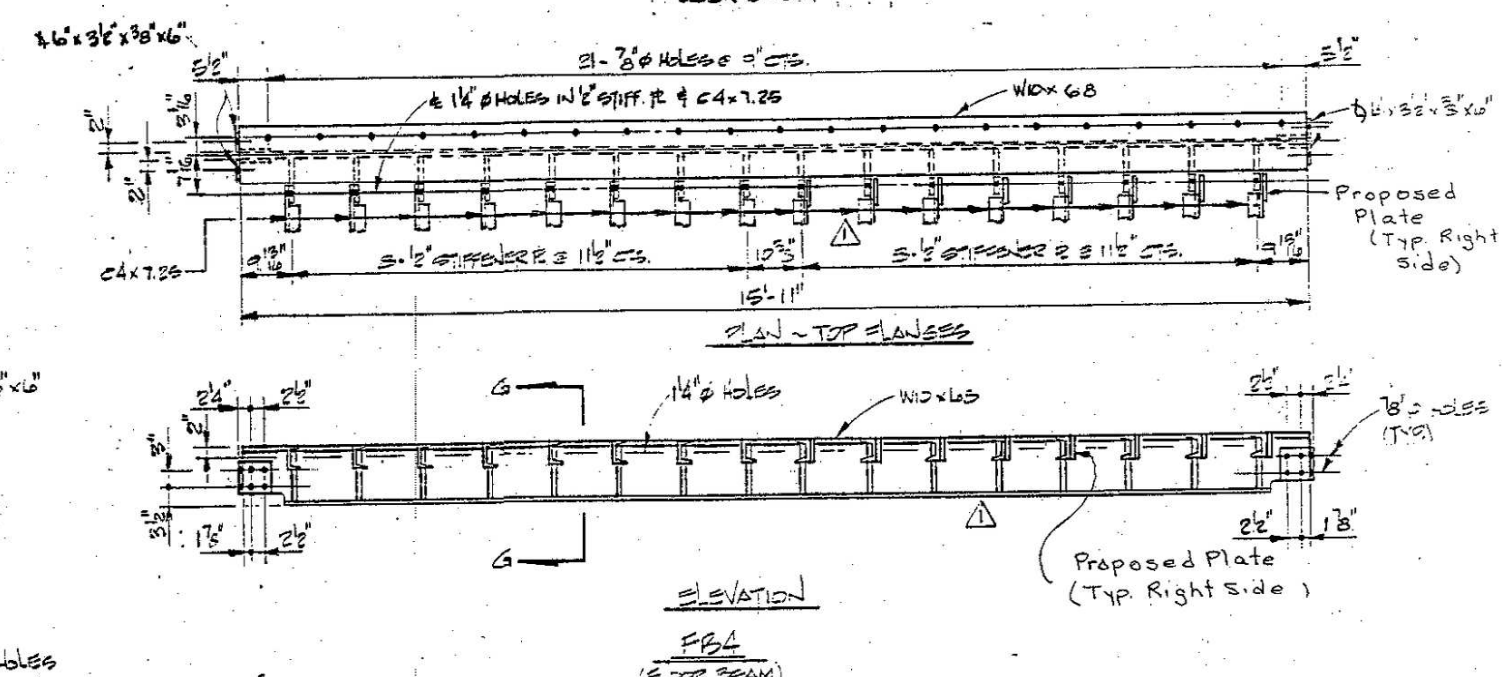
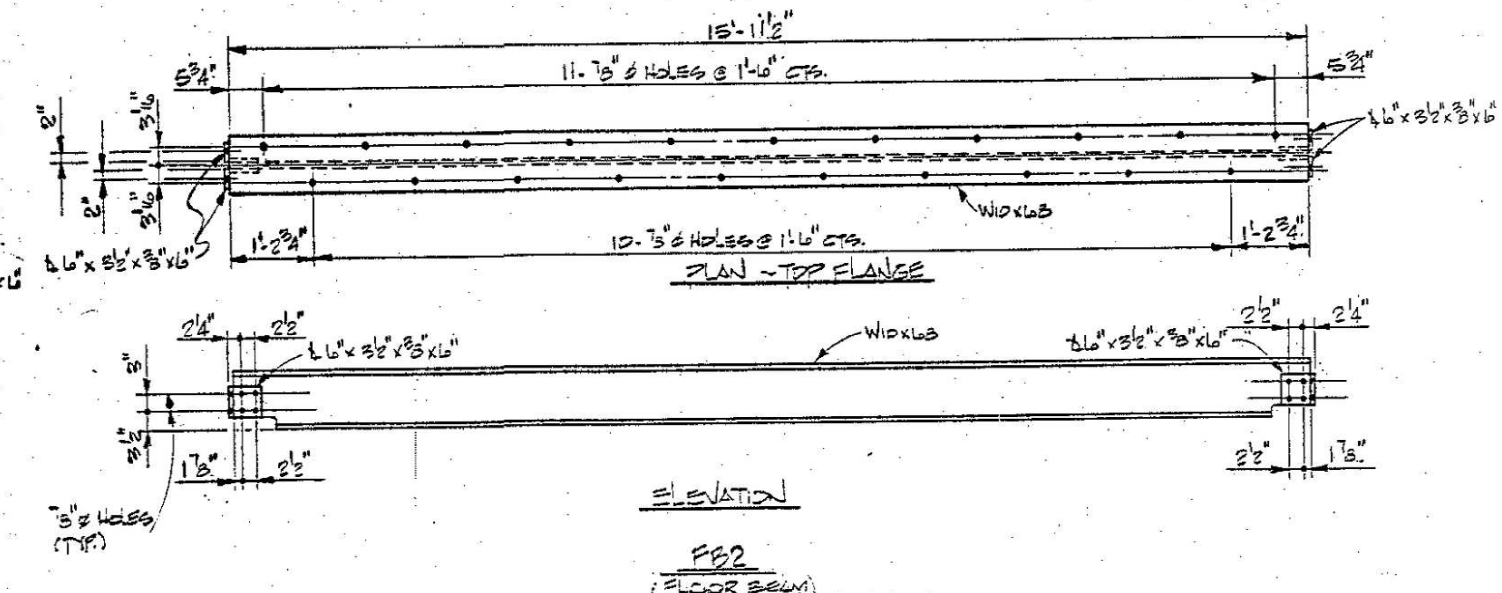
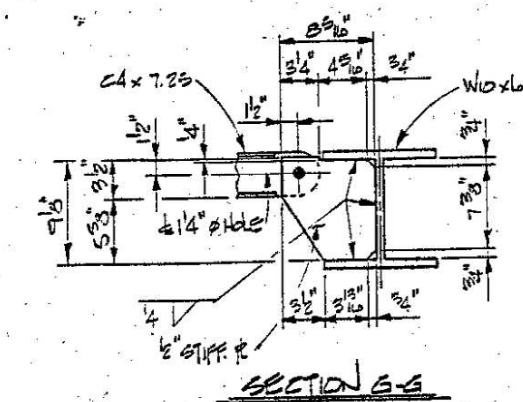
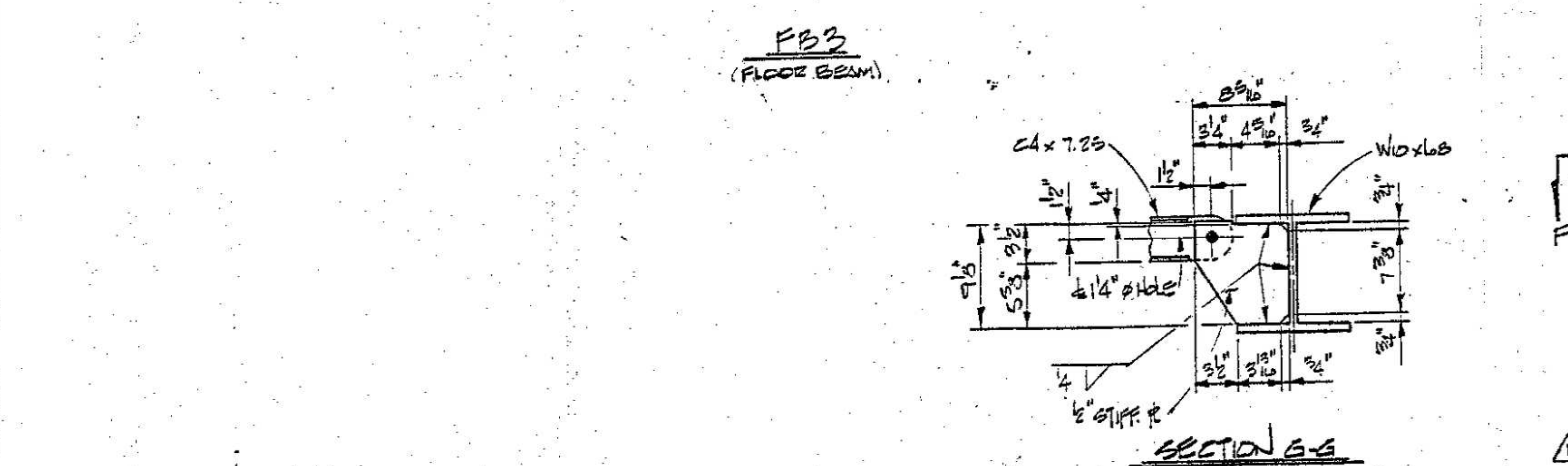
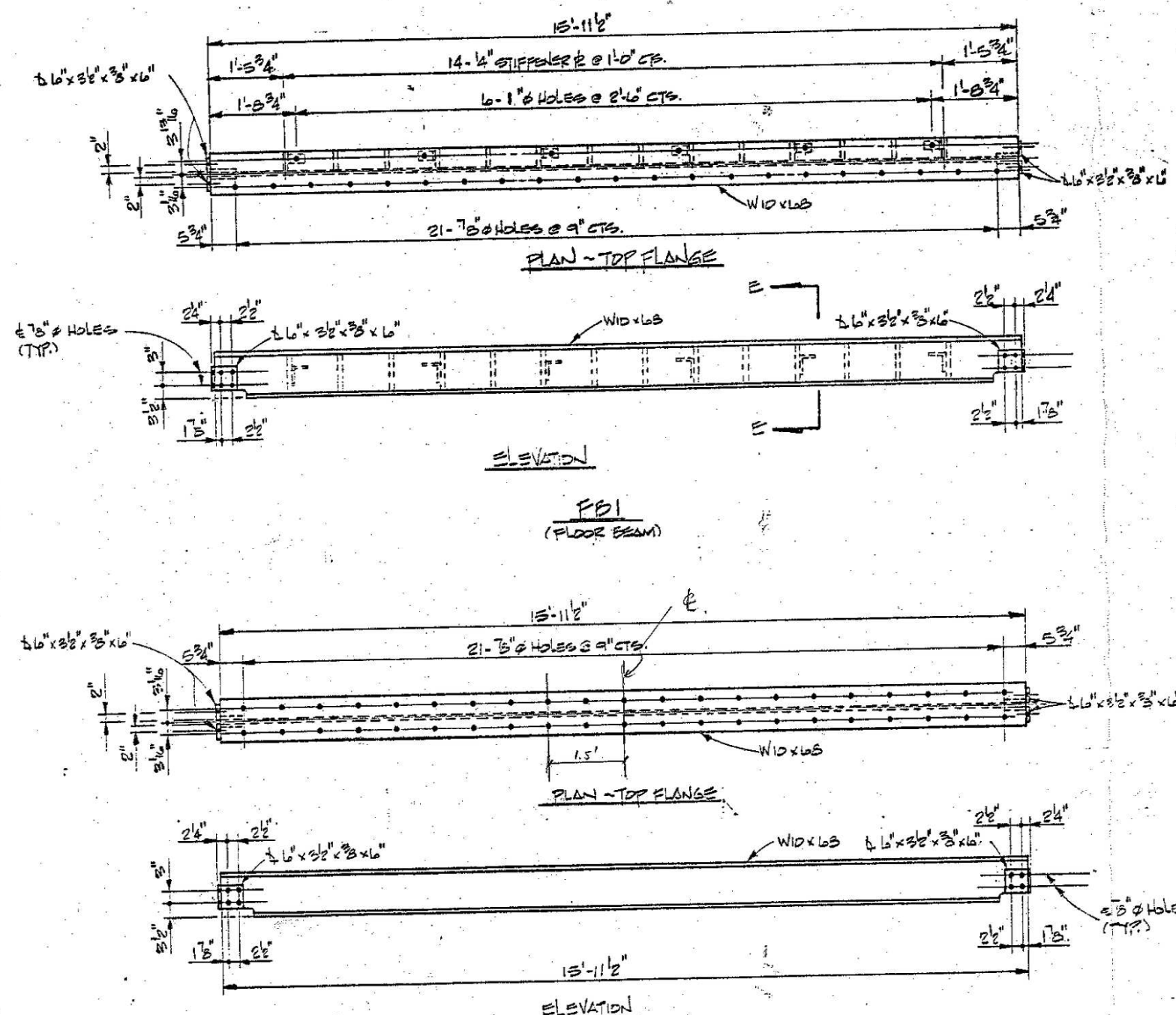
STATION: 10+00.0 - T-SR.
10+00.0 - T-NR.

SHEET 6 OF 8

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. 5-24
					TOTAL SHEETS 28

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

DRAWN BY: F.A. MIMMS DATE: 9-1-92
CHECKED BY: WD CRUTCHER DATE: 9-8-92



Rev. No. 1: Revised right hand side of Plan and Elevation of FB4 To Show Proposed Plate. Drawn By: FAM V By: PEK

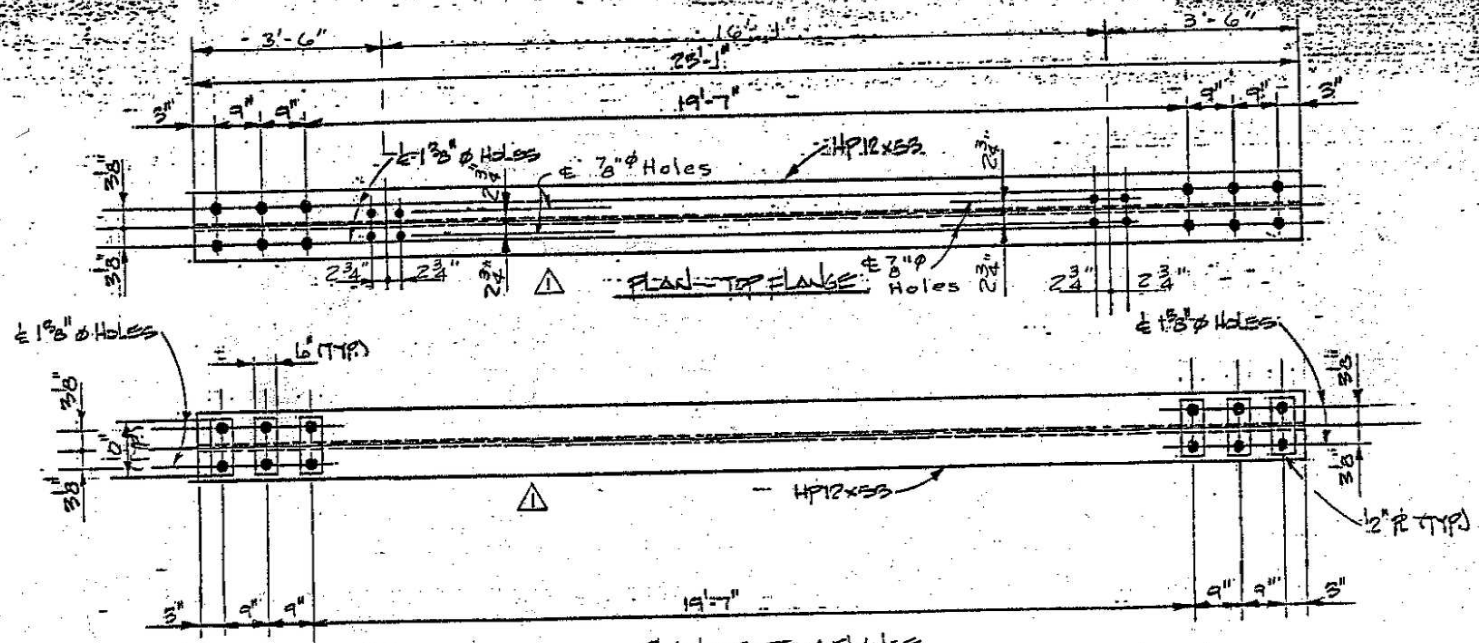
PROJECT NO. 8.115070.1
BEAUFORT COUNTY
STATION 10+00.0 - T - SR
10+00.0 - T - NR
SHEET 7 OF 8

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

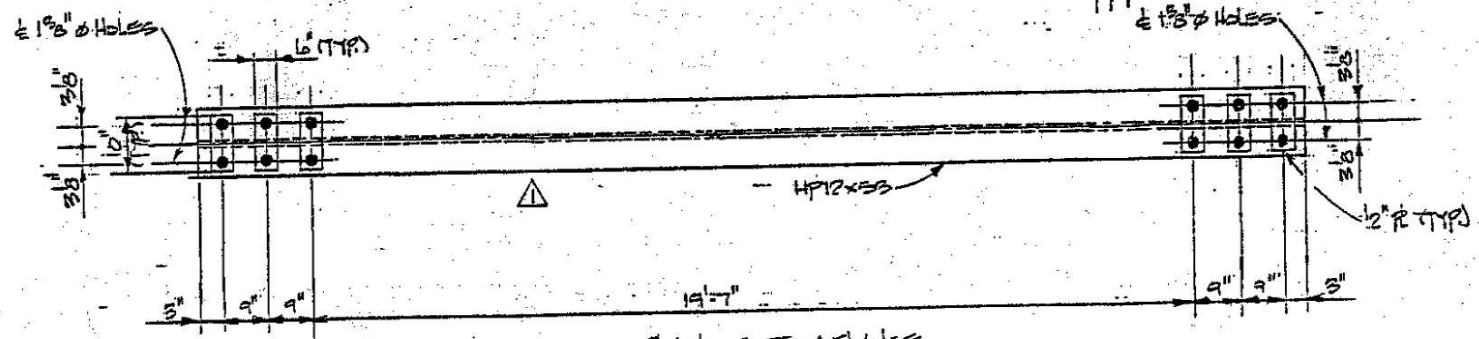
SEPT. 1992

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1	FAM	1-7-94	3		
2			4		

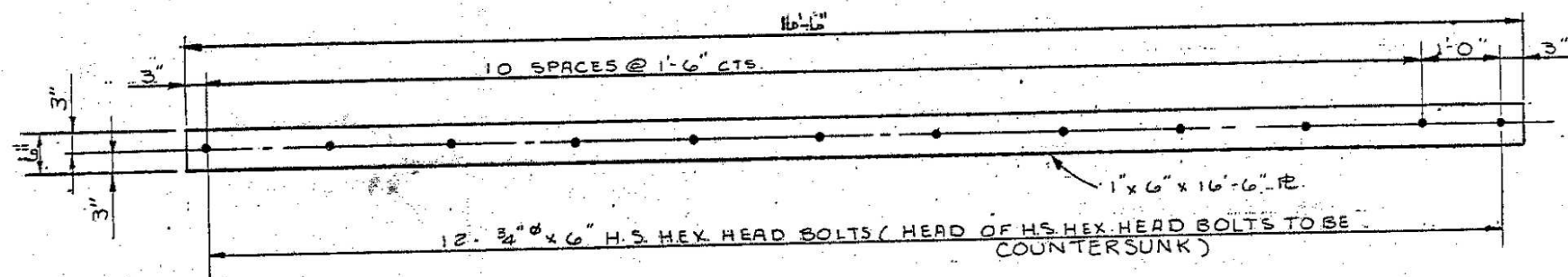
SHEET NO. 5-20
TOTAL SHEETS 29



PLAN - TOP FLANGE



PLAN - BOTTOM FLANGE



DETAIL - "L"

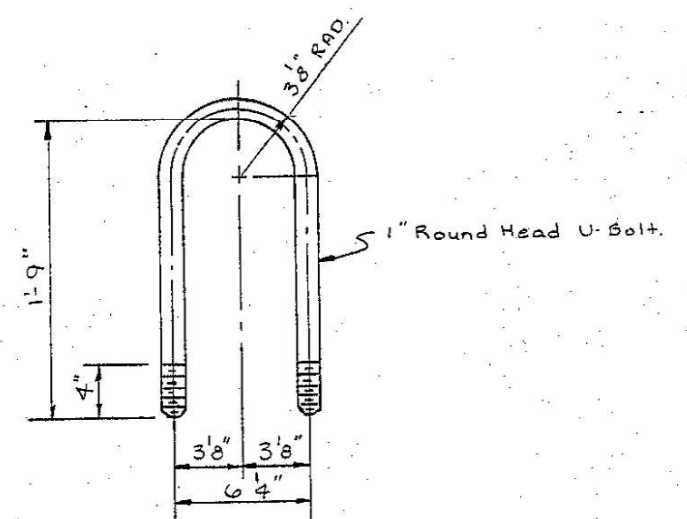
DETAIL - "R"

NOTE

THE CONTRACTOR SHALL USE AN ADHESIVE BONDING SYSTEM FOR ANCHORING THE 1" PLATE TO THE CORED SLABS. SEE SPECIAL PROVISIONS "FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS". THE REQUIRED DESIGN LOAD OF THE 3/4" BOLT IS 12 KIPS. THE BOLTS SHALL BE COATED WITH A DEBONDING 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.

BILL OF MATERIAL	
* STRUCTURAL STEEL (ONE RAMP)	APPROX LBS. 40,600
1/4" GALVANIZED PIPE RAIL	LIN. FT. 140

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



DETAIL OF U-BOLT FOR LIFT AND BEAM

PROJECT NO. 8.1130701

BEAUFORT COUNTY

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

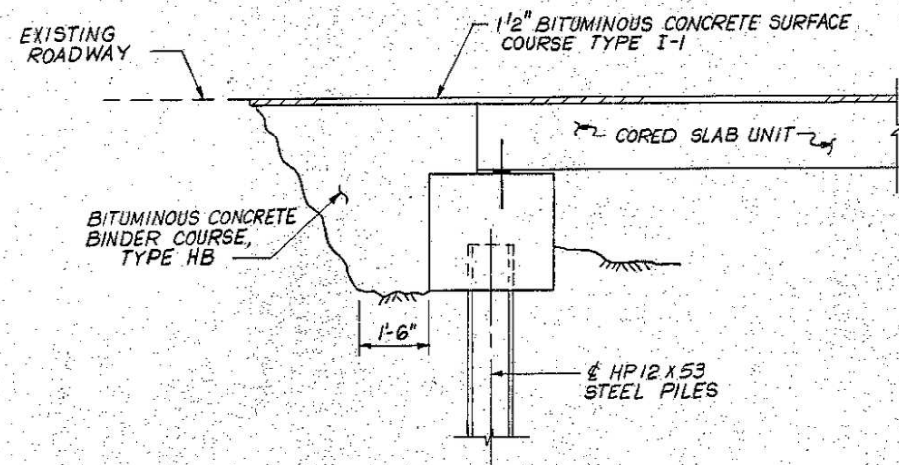
SHEET 3 OF 8

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PAMLICO RIVER FERRY NORTH RAMP AND SOUTH RAMP					
SEPT 1992					
REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1	FAM	10-7-94	23		
2			4		
TOTAL SHEETS					28

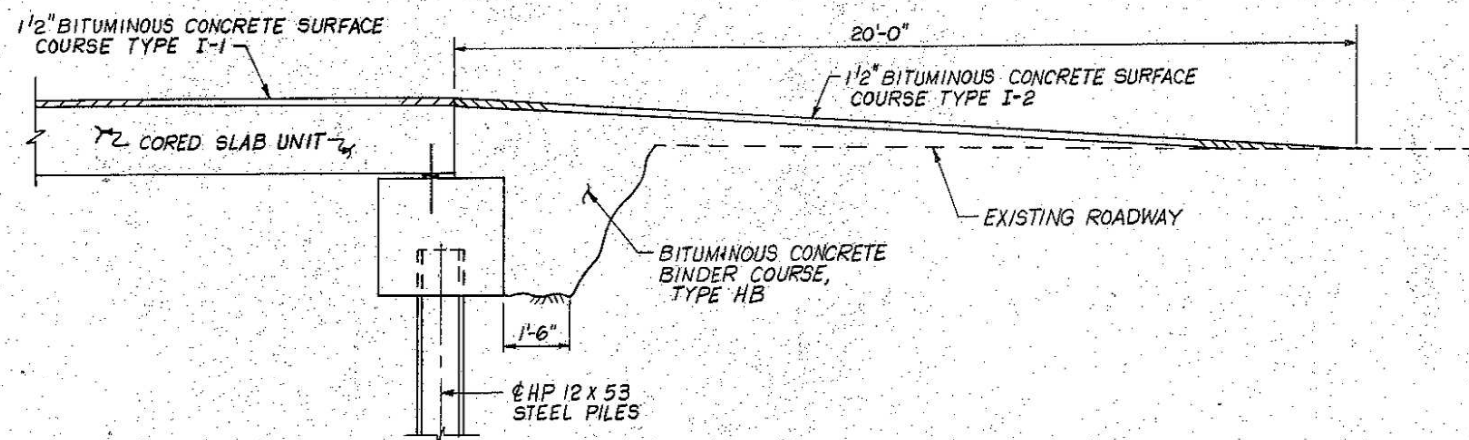
Rev. No. 1: Added 7/8" Holes in Top Flange and Deleted 7/8" Holes in Bottom Flange of HP12x53 in Detail. By: FAM 7.84. PEK

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



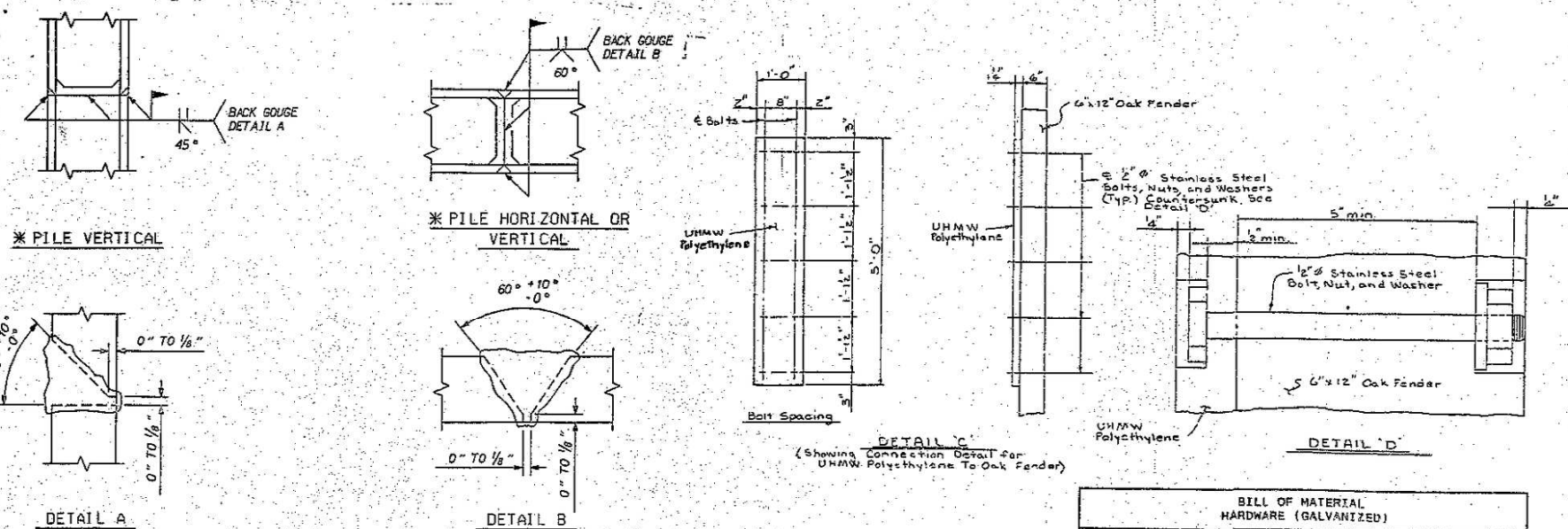
SOUTH RAMP

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

REVISIONS						SHEET NO. 5-27
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 28
2			4			

DRAWN BY G.M. PATTERSON DATE 9/8/92
CHECKED BY S.D. KLAPPENBACH DATE 3/12/93



PILE SPLICE DETAILS

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'	694
	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.

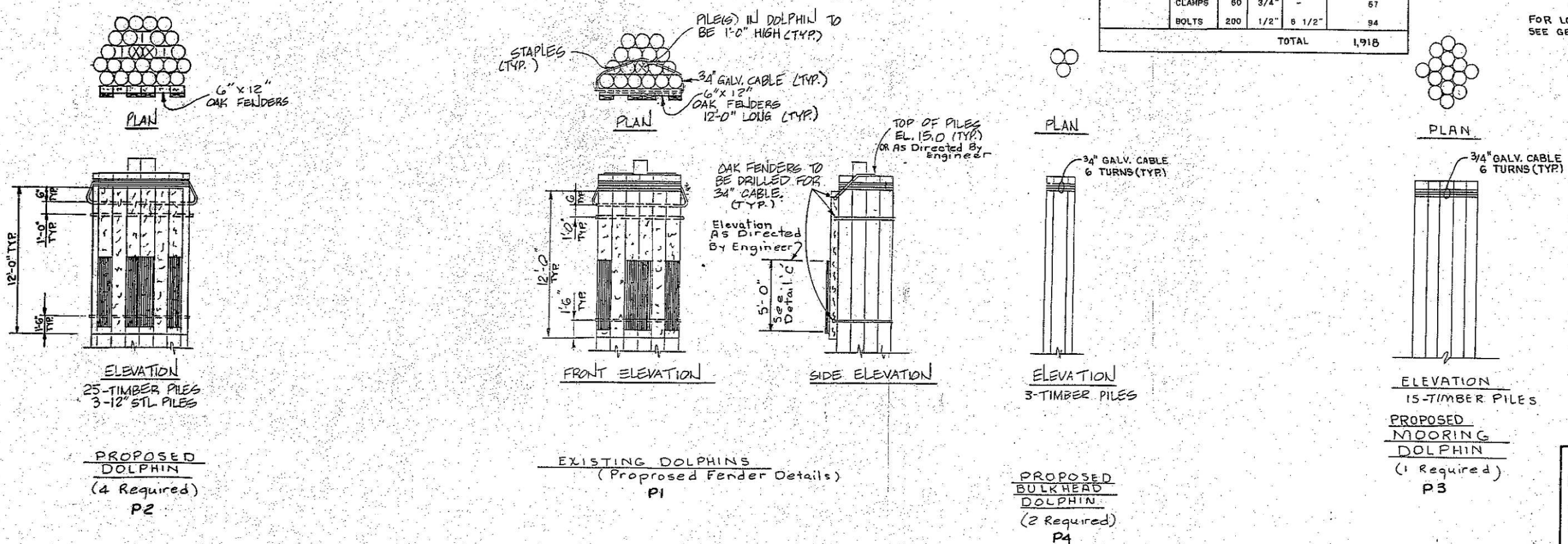
NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE FOR WIRE ROPE USED TO WRAP DOLPHINS AND INSTALLING OAK FENDERS, HARDWARE, TOOLS, EQUIPMENT, OR LABOR. THIS WORK AND MATERIALS SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR UNTREATED WHITE OAK TIMBER.

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		
2			4		
TOTAL SHEETS 28					

DRAWN BY F.A. Williams DATE 9-9-92

CHECKED BY N.N. Bullock 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 - - - - -	1,800 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. FINS 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.

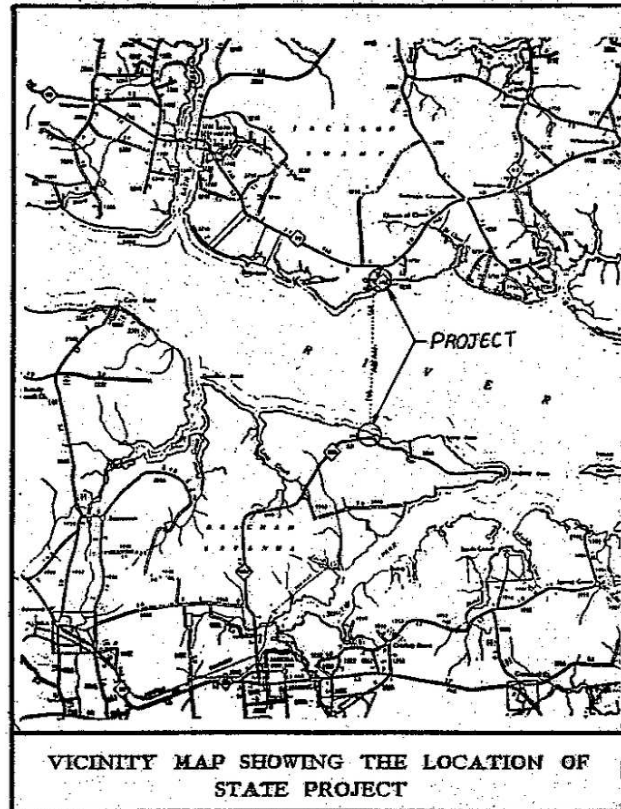
SPECIAL NOTES:

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

STRUCTURE

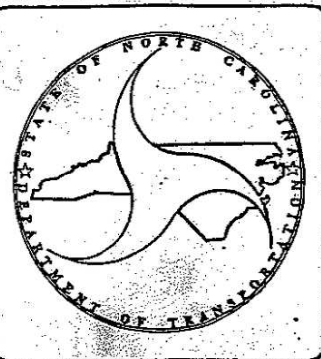
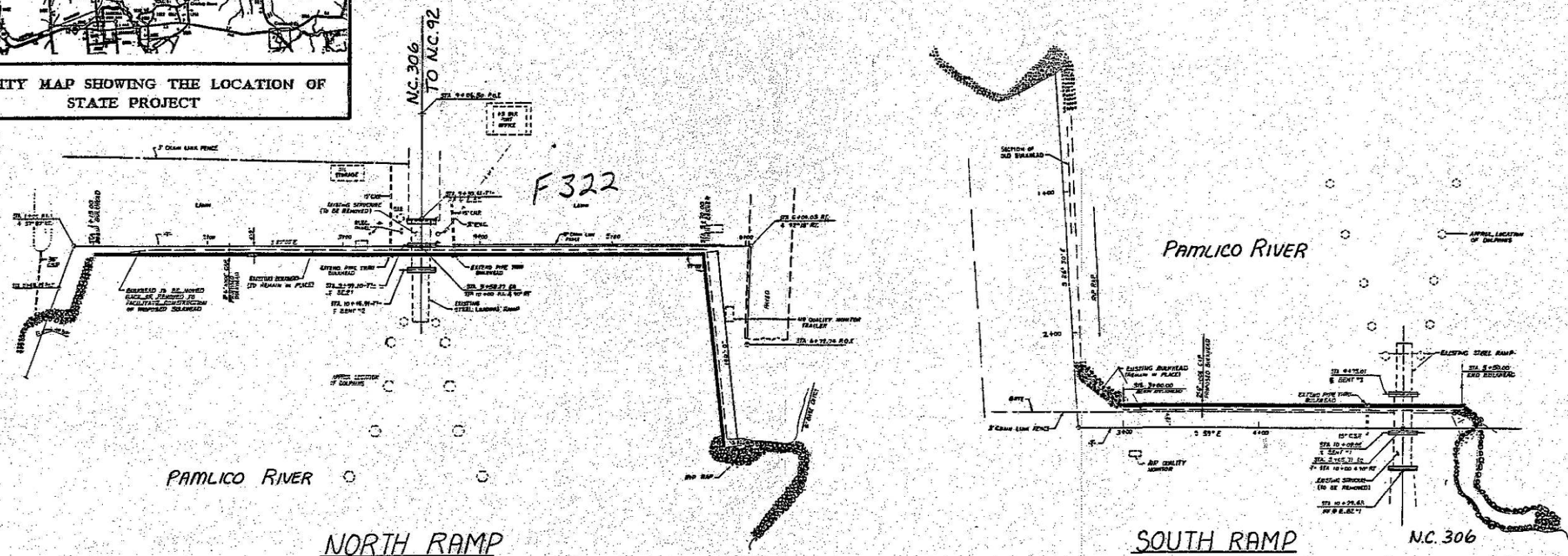


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
BEAUFORT COUNTY

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		73
STATE PROJECT	F.B.D.N.H.S. NO.	DESCRIPTION	
8.1150701	FBDNHS-306(00D)	CONST.	
2.110013		P.E.	

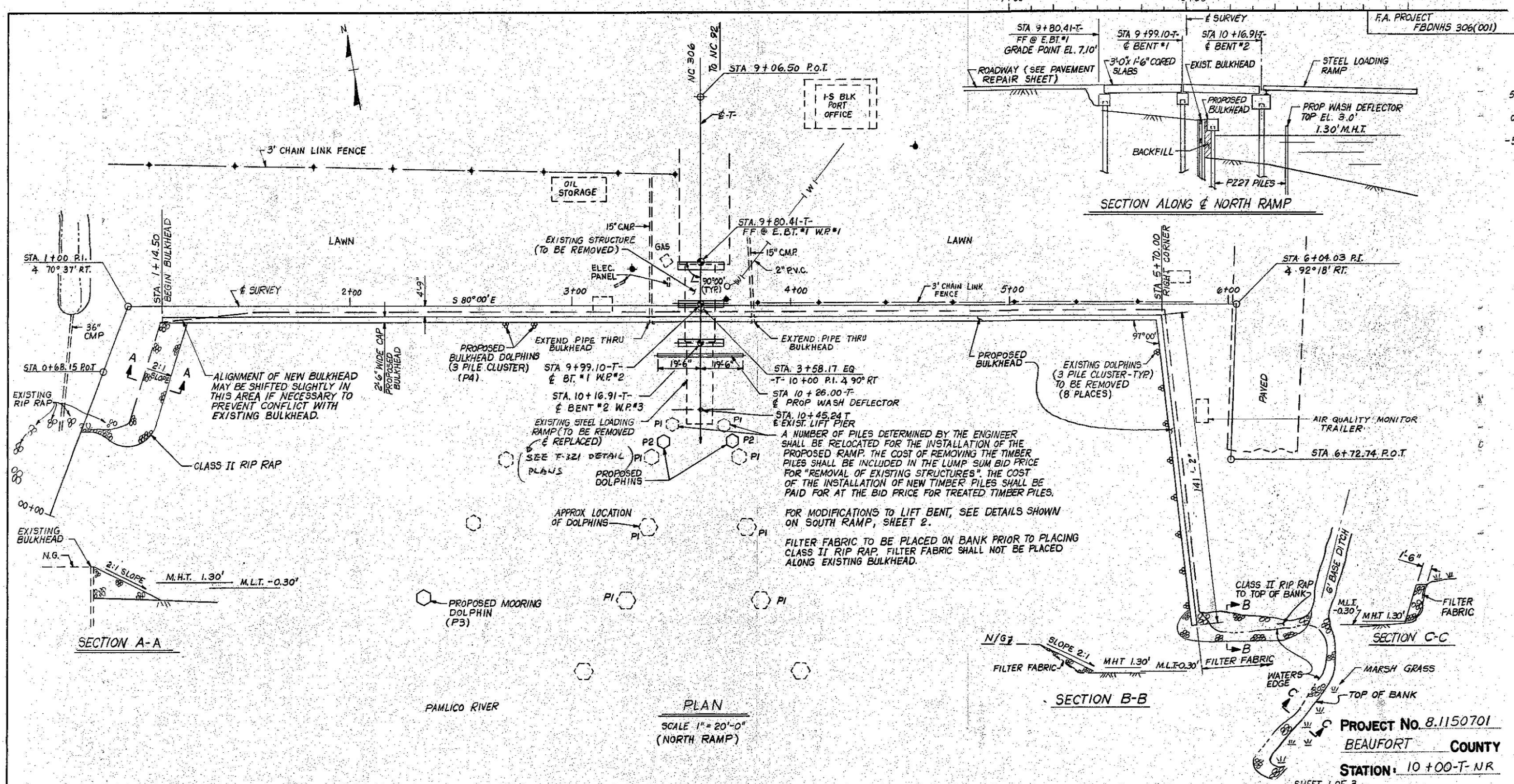


Prepared in the Office of:	
DIVISION OF HIGHWAYS	
EPH STANDARD SPECIFICATIONS	STRUCTURE DESIGN UNIT
LETTING DATE: <u>APRIL 20, 1993</u>	G. M. WHITE, P.E. PROJECT ENGINEER
	N. N. BULLOCK, P.E. PROJECT DESIGN ENGINEER

STRUCTURE DESIGN UNIT

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA
DR. Martin STATE HIGHWAY ENGINEER - DESIGN
DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION





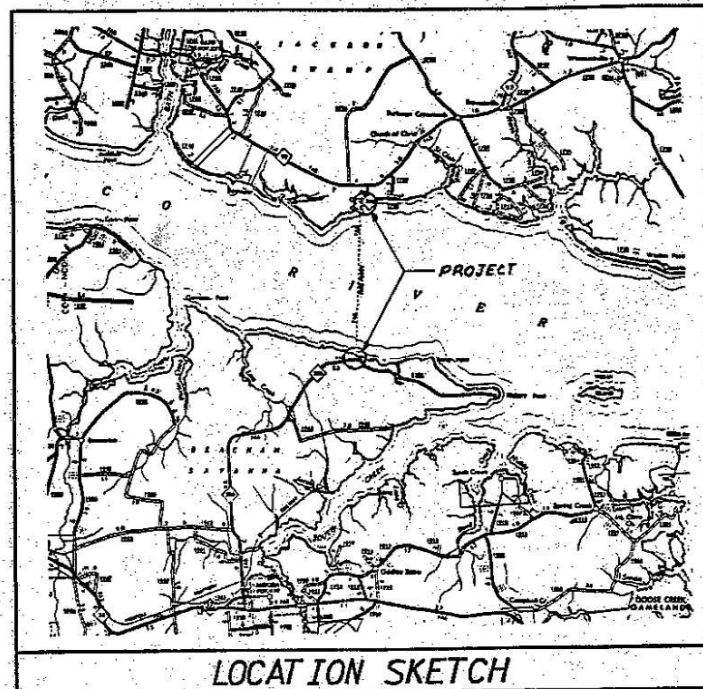
DRAWN BY G.M. Patterson DATE 9/11/92
CHECKED BY R.D. Klappbach DATE 9/14/92



PROJECT No. 8.1150701
BEAUFORT COUNTY
STATION: 10+00-T-NR
SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING FOR
PAMLICO RIVER FERRY
BASIN
(NORTH RAMP)

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



LOCATION SKETCH

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 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 - 1+ 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 - 1+ 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

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

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

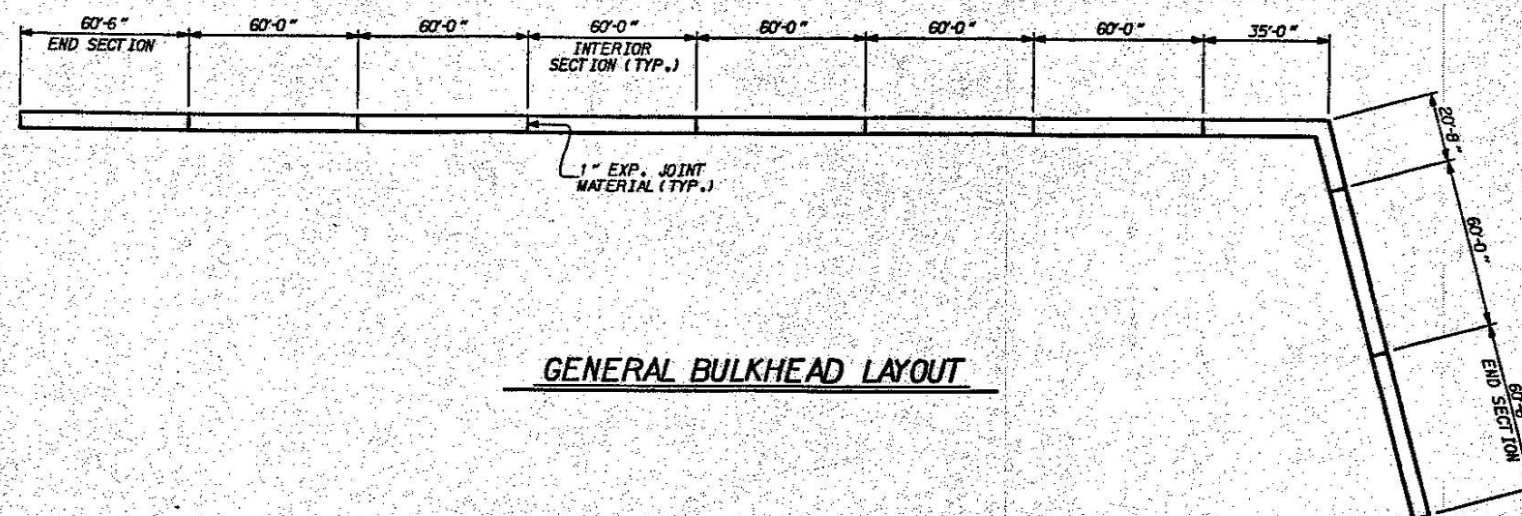
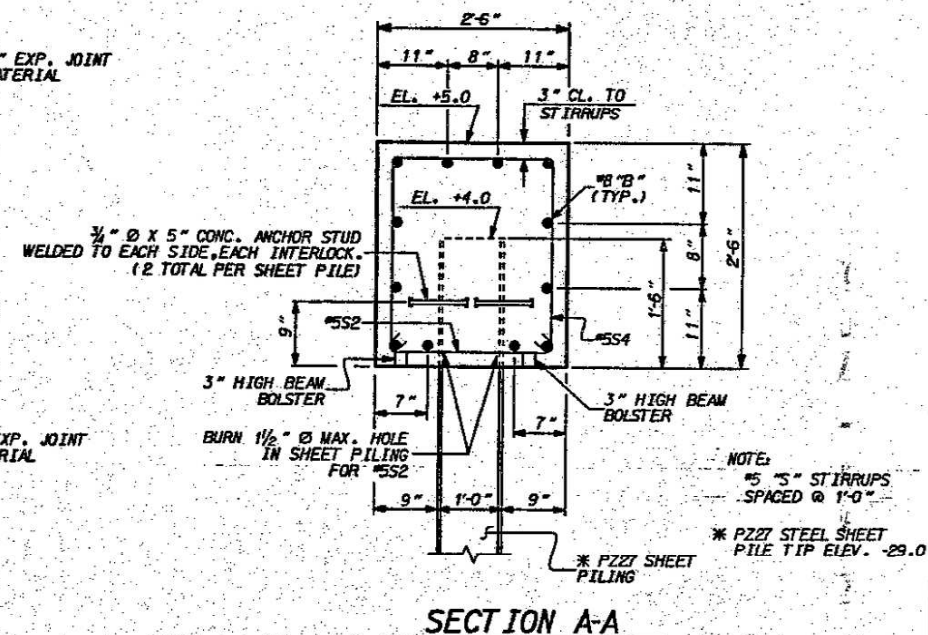
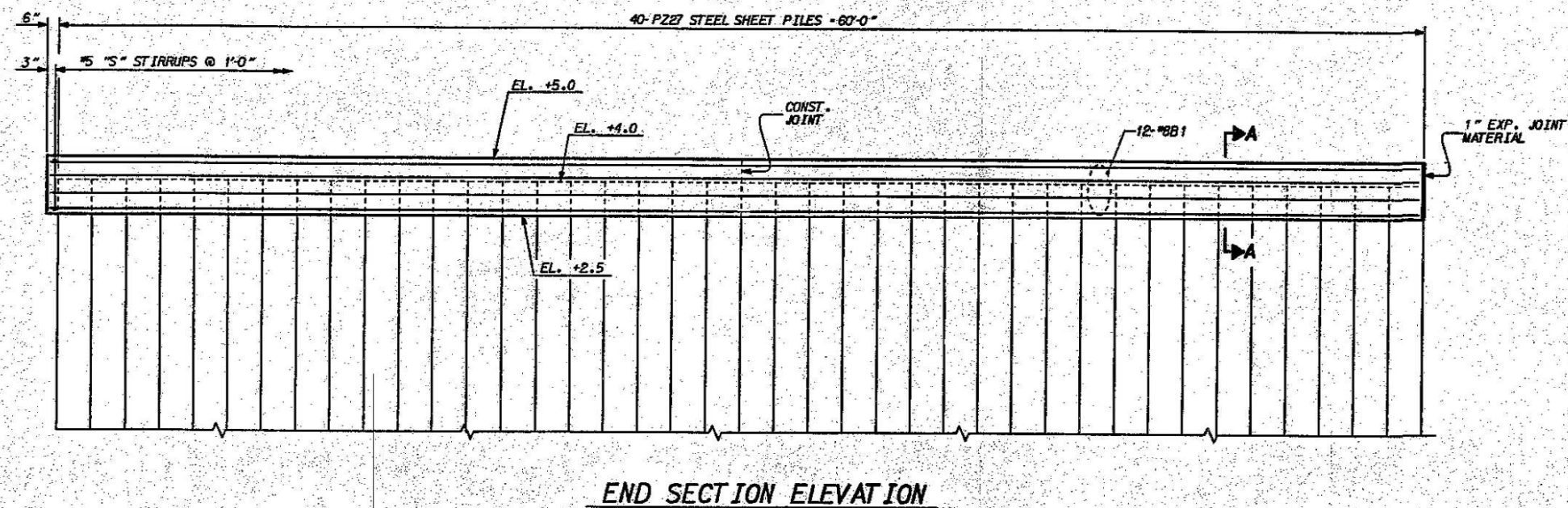
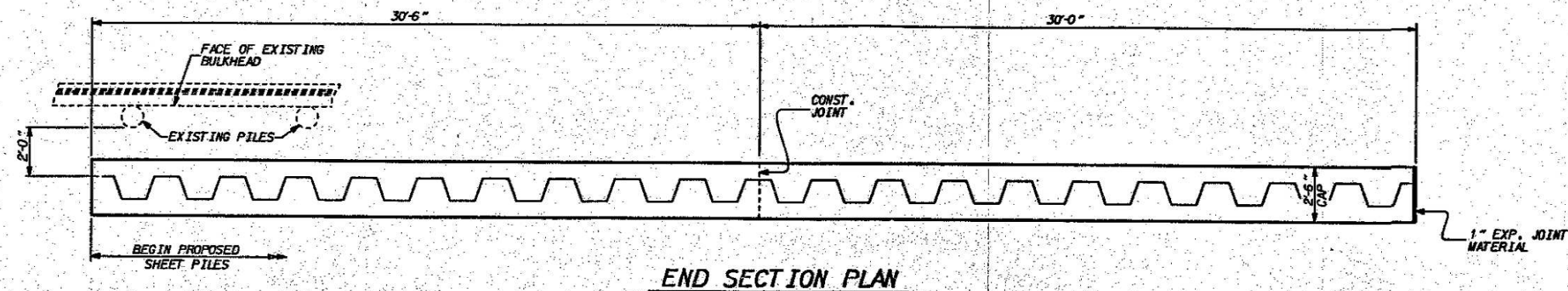
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PAMLICO RIVER FERRY
BILL OF MATERIAL

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

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

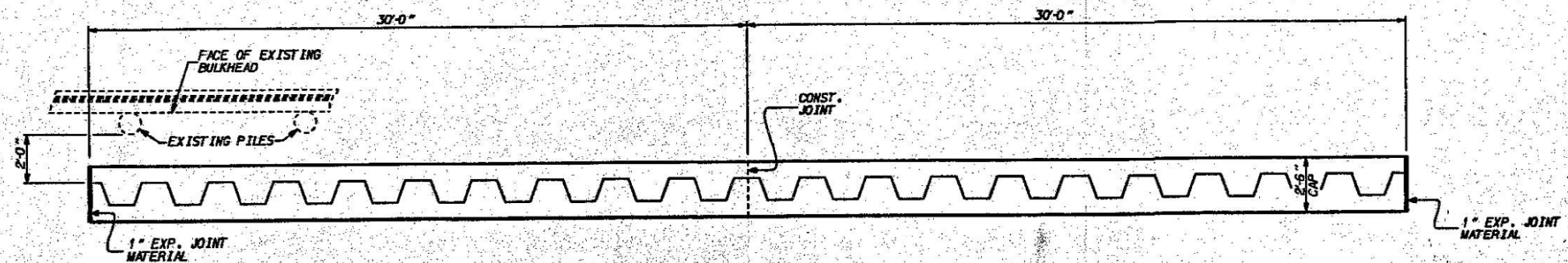
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DSOWEN



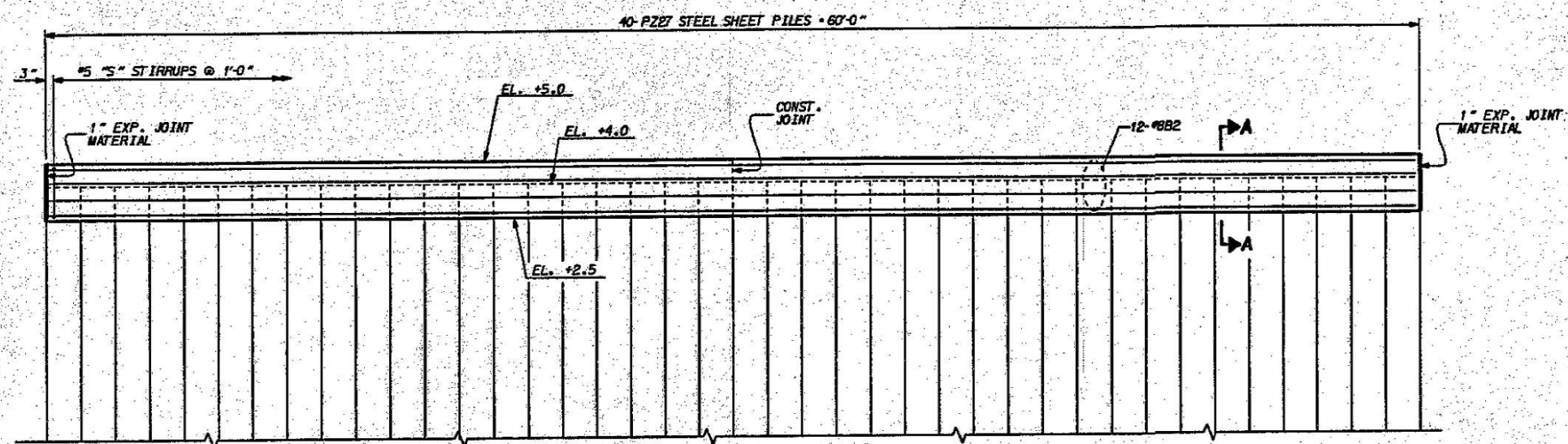
PROJECT NO. 8.1150701
BEAUFORT COUNTY
 STATION: 10+00.00 -T-NR
 SHEET 1 OF 3

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

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



INTERIOR SECTION PLAN

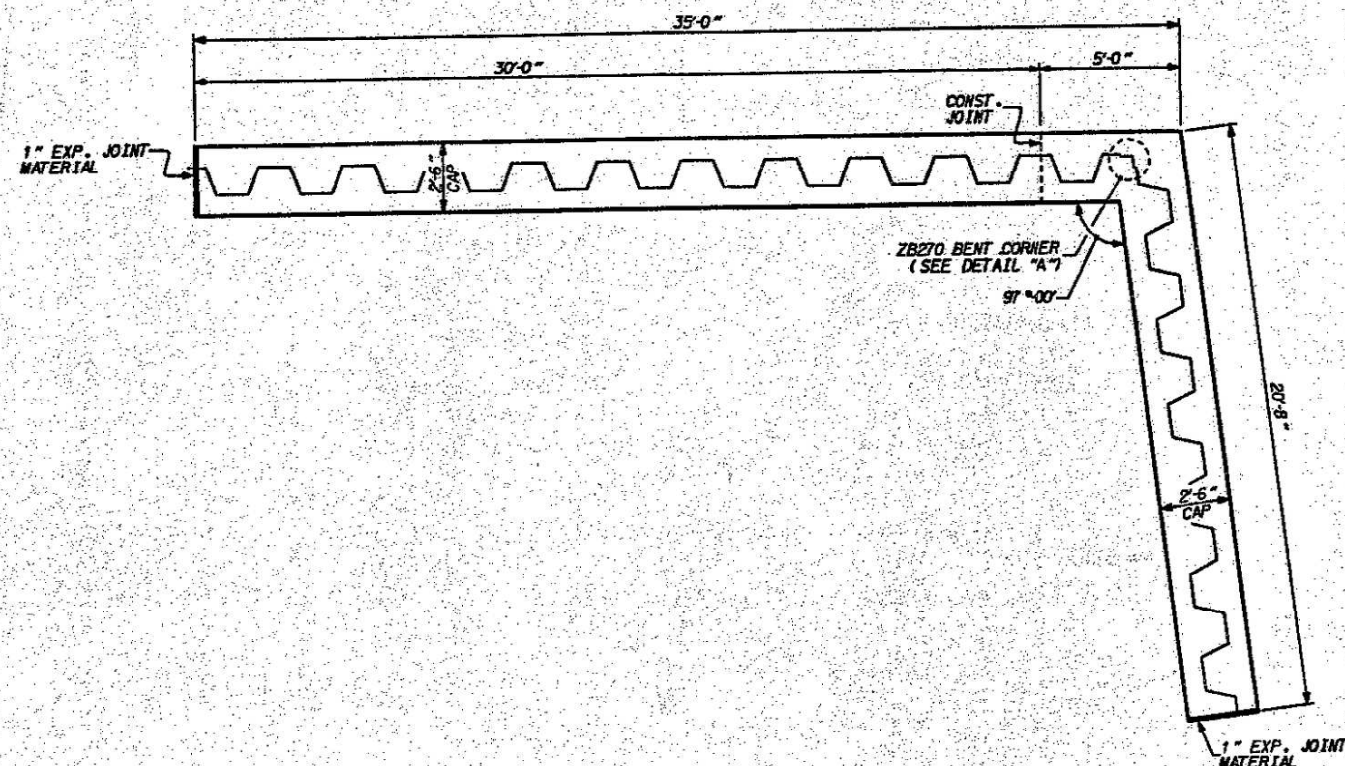


INTERIOR SECTION ELEVATION

DRAWN BY: W.D. CRUTCHER DATE: 08-92
 CHECKED BY: William K... DATE: 7/11/92

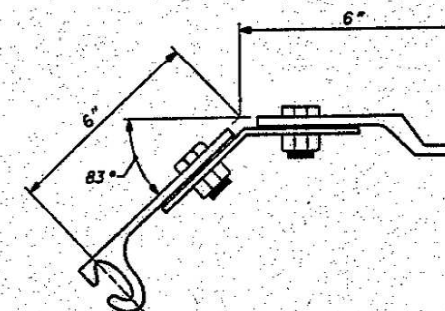
PROJECT NO. 8.1150701
BEAUFORT COUNTY
 STATION: 10+00.00 -T-NR
 SHEET 2 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PAMLICO RIVER FERRY NORTH RAMP BULKHEAD INTERIOR SECTIONS					
AUGUST 1992					(7 REQUIRED)
REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
					S-5
					TOTAL SHEETS
					28

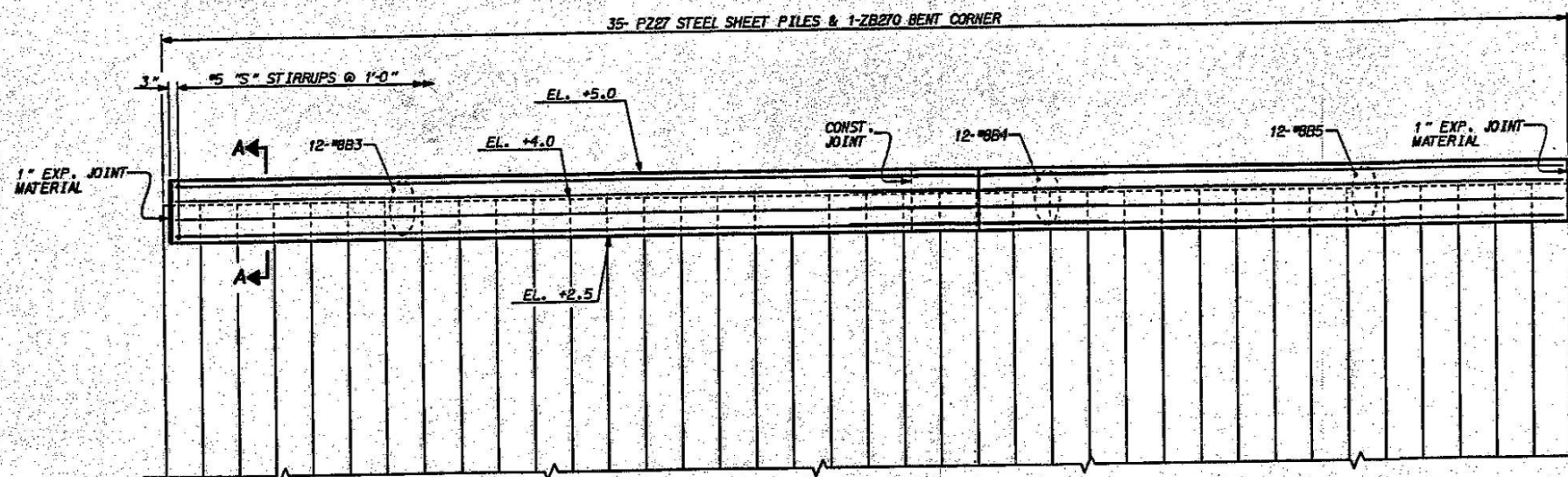


CORNER SECTION PLAN

BAR TYPES				BILL OF MATERIAL			
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT			
B1	24	#8	STR	60'-8"	3845		
B2	84	#8	STR	59'-6"	13345		
B3	12	#8	STR	34'-6"	1105		
B4	12	#8	STR	18'-9"	577		
B5	12	#8	STR	20'-2"	646		
S1	598	#5	1	6'-11"	4314		
S2	598	#5	2	2'-11"	1814		
				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				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	NO.	BY	TOTAL SHEETS	28
1			3						
2			4						

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

1-SEP-1992 08:38
 Z:\4205023\NORTH RAMP.DGN
 WCRUTCHER

DRINK, THE ONS.

1 1/8"

3/16"

1/8"

1/16"

1/16"

PRESTRESS STRAND

SECTION C-C

END OF CORED SLAB

The image contains two technical drawings of a bridge deck cross-section, labeled 'ELEVATION VIEW' and 'SECTION B-B'.

ELEVATION VIEW: This drawing shows the top-down profile of the bridge deck. It features a central rectangular area labeled 'HOLE FOR TRANSVERSE STRAND' with a width of 8 inches. The total width of the deck is 9 inches. The distance from the center of the hole to the left and right edges is 4 inches. The deck is supported by two vertical supports, each labeled 'B'.

SECTION B-B: This drawing shows a cross-section of the bridge deck. It features a central vertical hole labeled 'STRAND VISE' with a diameter of $\frac{1}{2}$ inch. The hole is filled with 'FILL RECESS WITH GROUT'. The total width of the deck is 9 inches. The distance from the center of the hole to the left and right edges is 4 inches. The deck is supported by two vertical supports, each labeled 'B'. The drawing also shows the 'OUTSIDE FACE OF EXTERIOR CORED SLAB' and the 'FILL RECESS WITH GROUT'.

Text Annotations:

- ELEVATION VIEW:** HOLE FOR TRANSVERSE STRAND, 9", 4", 4", 8", B, B.
- SECTION B-B:** $\frac{1}{2}$ " $\varnothing$ H.S. TRANSVERSE POST-TENSIONING STRAND SHEATHED WITH A NON-CORROSIVE PIPE. SEE SPECIAL PROVISIONS. $\frac{5}{16}$ " $\times$ 5" $\times$ 5" P. STRAND VISE, 4 $\frac{1}{4}$ ", 4 $\frac{1}{4}$ ", 5 $\frac{1}{4}$ ", $\frac{1}{4}$ ", OUTSIDE FACE OF EXTERIOR CORED SLAB, FILL RECESS WITH GROUT.

[illegible]

A detailed cross-section diagram of a bridge deck and its support structure. The deck consists of a top layer labeled "BITUMINOUS WEARING SURFACE" and a middle layer labeled "BITUMINOUS CONC. BINDER COURSE, TYPE HB". Below the binder course is a "2 1/2\" Ø DOWEL HOLE" which contains "10\" Ø VOIDS". The deck is supported by a "CAP" which is anchored into a "CONCRETE" pier. The pier is reinforced with "15 DOWELS". The pier is also supported by an "ELASTOMERIC BEARING PAD" which sits on a "BEARING". The diagram includes various dimensions: a "6\" width for the dowel hole, a "9\" height for the voids, a "1'-6\" height for the pier, and a "2 1/2\" width for the bearing pad. A note at the bottom left states: "SEE 'END BENT' SHEETS FOR DETAILS."

Technical drawing showing a cross-section of a bent joint detail. The drawing illustrates the connection between two concrete slabs, including reinforcement bars, sealant, and bearing pads. Key components and dimensions are labeled:

- 12" EXP. JT. MAT'L**: Expanded joint material at the top.
- EXP. JT. MAT'L AT BENT**: Expanded joint material at the bent location.
- BITUMINOUS WEARING SURFACE**: The top surface of the concrete slab.
- SEAL WITH 1/2" JOINT SEALER**: Sealant applied to the joint.
- 2 1/2" Ø DOWEL HOLES**: Holes for dowel bars.
- 10" Ø VOIDS**: Large circular voids in the concrete slabs.
- 6"** and **6 1/4"**: Horizontal dimensions for the joint area.
- ELASTOMERIC BEARING PAD**: Pad supporting the joint.
- BEARING**: The contact surface of the bearing pad.
- 76 DOWELS**: Reinforcement bars.
- SEE "BENT" SHEETS FOR DETAILS.**: Reference to other drawings for more information.

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

Technical drawing of a 90° skewed T-junction. The drawing shows a plan view of the junction with the following dimensions and details:

- Top horizontal dimension: 6"
- Left vertical dimension: 1" CL.
- Bottom horizontal dimension: 1'-3"
- Bottom left vertical dimension: 2 1/2"
- Top right detail: 2 1/2" Ø DOWEL HOLE
- Top center detail: 10" Ø VOIDS
- Center detail: 2-#4 S1
- Bottom right detail: 90° SKEW

Diagram of an exterior slab section showing dimensions and reinforcement details. The slab is 3'-0" wide and 1'-6" deep. It features two 10" diameter voids. Reinforcement includes #4 S2 bars, #4 B1 bars, and 3/4" anchor bolts. Dimensions for void placement and bar spacing are provided.

Technical drawing of a rectangular concrete slab with two circular voids. The drawing includes dimensions for overall size, void placement, and reinforcement. Key dimensions include: overall width 3'-0", overall height 1'-6", void diameter 10", and reinforcement bars #4 B1 and #4 S2. The drawing is divided into two sections: a top plan view and a bottom cross-section view. The plan view shows the voids positioned 1'-6" apart, with 1'-3" from each void center to the nearest edge. The cross-section view shows the voids 9" apart, with 4" from each void center to the nearest edge. The slab is 1'-6" high, with 9" of concrete above the voids and 9" below. Reinforcement bars are shown at the top and bottom of the slab.

Technical drawing of a rectangular plate with two circular holes. The drawing includes dimensions for overall size, hole placement, and material specifications. Key dimensions include: overall width 3'-0", overall height 9'-6", hole diameter 10" Ø, and hole spacing 1'-3" (center-to-center). Material specifications include #4 B1, #4 S2, and 2 SPA @ 2'.

ANCHOR BOLTS.

3'-0"

1'-6"

1'-6"

10 1/2"

7 1/2"

7 1/2"

10 1/2"

1'-2"

4"

4"

1'-2"

3"

3"

2 1/2"

#4 S1

#4 S1

#4 S1

#4 S1

1" CL

1" CL

#4 B1

2'-0"

2 1/2" Ø DOWEL HOLES

END ELEVATION

SHEAR KEY DETAIL

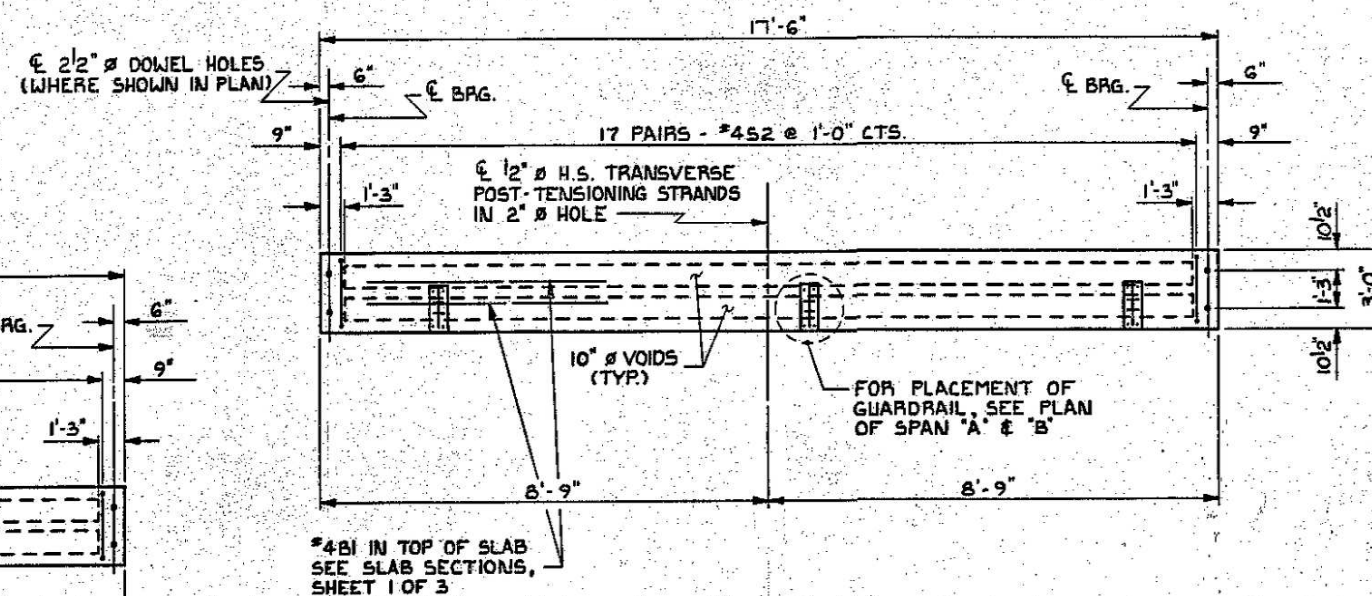
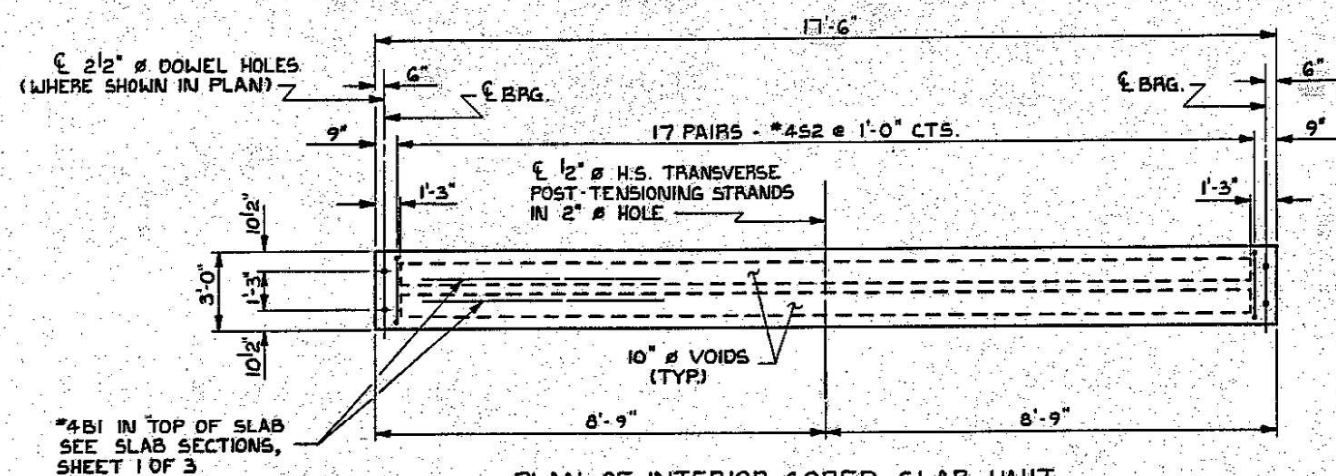
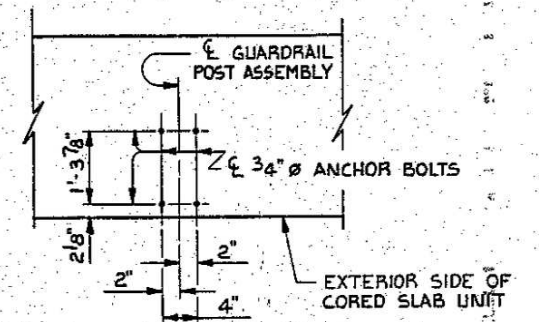
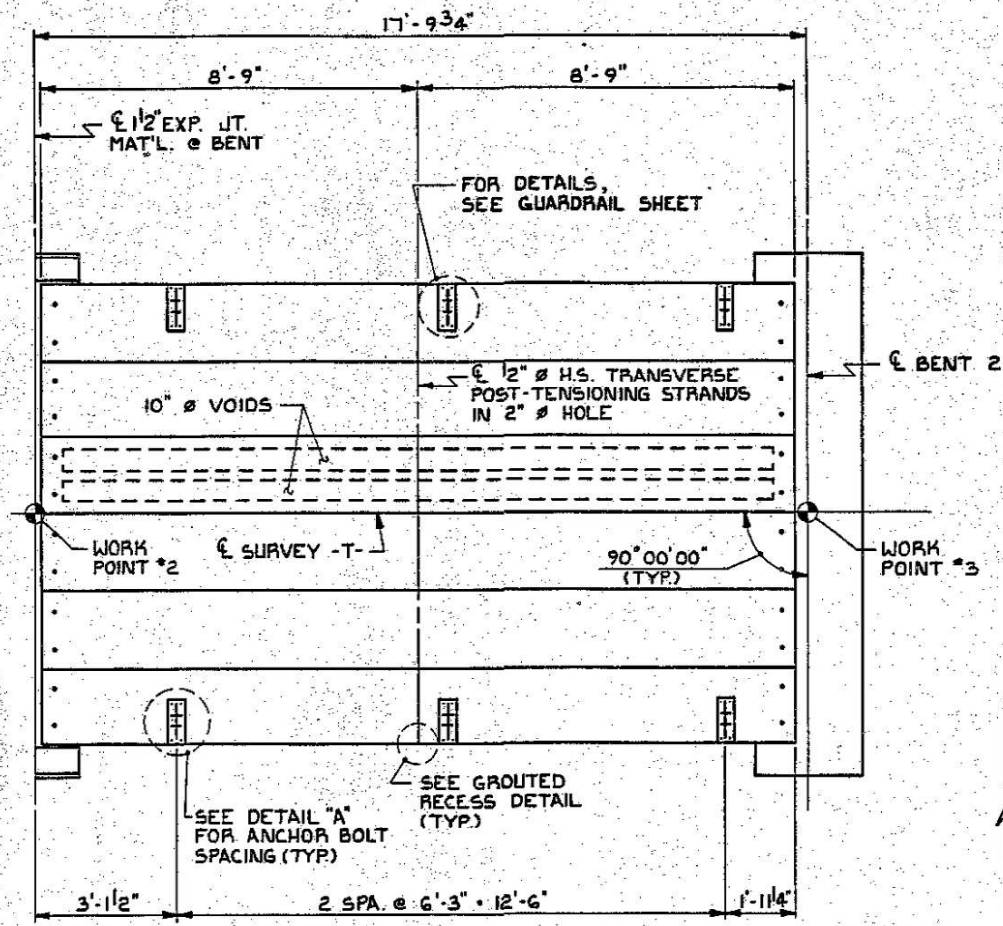
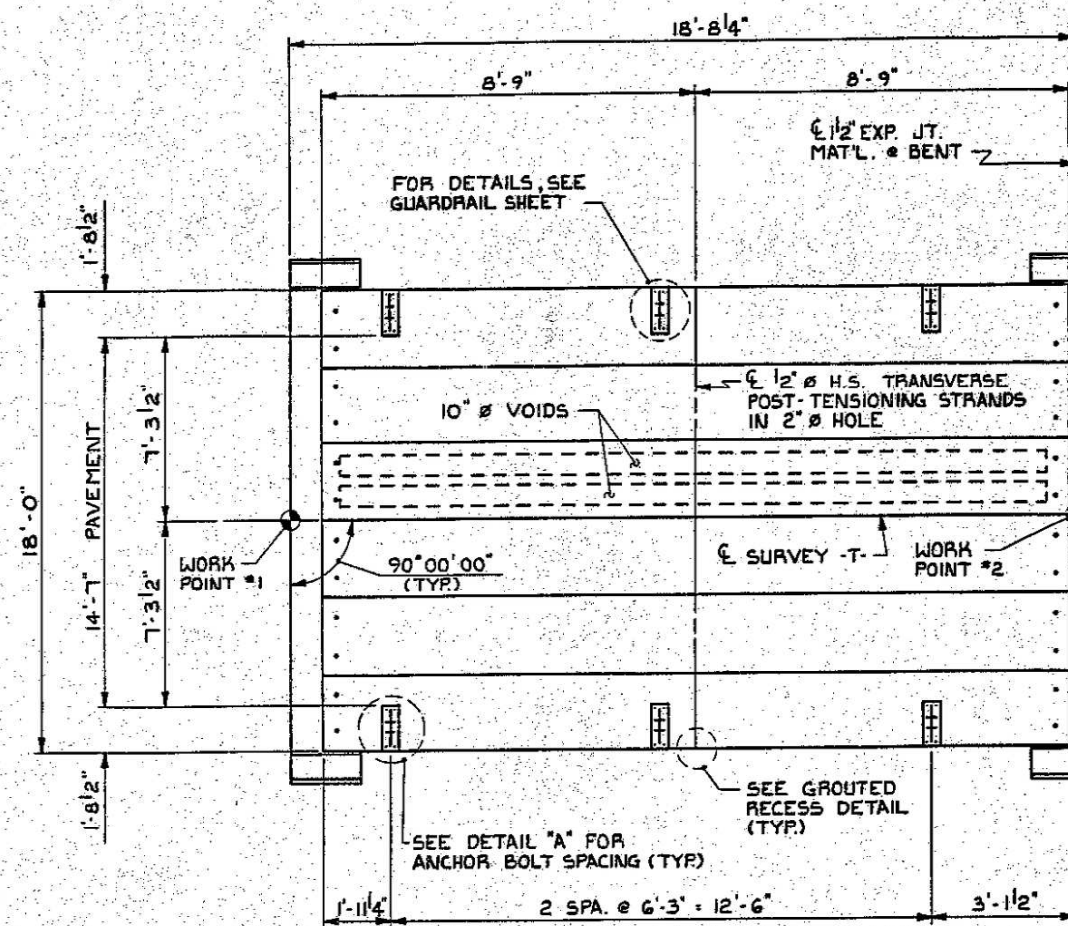
PROJECT NO. 8.1150701
BEAUFORT COUNTY
 STATION: + 10 + 00.00 - T - N.R.
 SHEET 1 OF 3

STANDARD
3'-0" X 1'-6"
PRESTRESSED CONCRETE
CORED SLAB UNIT
NORTH RAMP

REVISIONS						SHEET NO. 5-9
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 38
2			4			

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
REDAWN 8-22-89

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



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

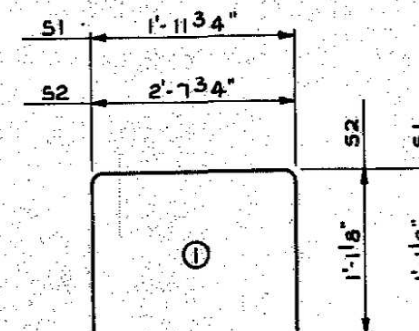
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS
2			4			28

7438
DRAWN BY L. A. HALL DATE 9-8-92
CHECKED BY F. A. Mumms DATE 9-11-92

REVISIED BY W.J.H. CHECKED BY F.C.J. 3-1-90
REVISIED BY W.J.H. CHECKED BY F.C.J. 6-22-89
REFORMAN 8-22-89

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

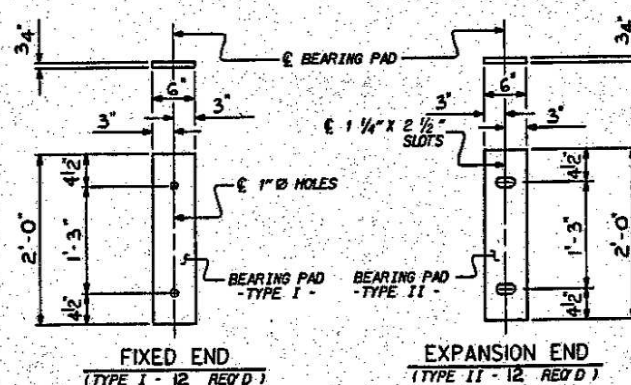
BILL OF MATERIAL FOR ONE CORED SLAB SECTION

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B1	2	# 4	STR	17'-2"	23	17'-2"	23
S1	8	# 4	I	4'-2"	22	4'-2"	22
S2	34	# 4	I	4'-10"	110	4'-10"	110
REINFORCING STEEL				LBS.	155		155
1/2" Ø S.R. STRANDS				No.	12		12
1/2" Ø L.R. STRANDS				No.	12		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" ↑	X	X
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD **	0" ↓	0" ↓		
FINAL CAMBER	3/16" ↑	3/16" ↑		

■ ■ INCLUDES FUTURE WEARING SURFACE



ELASTOMERIC BEARING DETAILS

ASSEMBLED BY : <u>L. A. HALL</u>	DATE : <u>9-8-92</u>	SPECIAL
CHECKED BY : <u>F.A. Mirams</u>	DATE : <u>9-11-92</u>	
DRAWN BY : <u>W.J. HARRIS</u>	DATE : <u>4-31-89</u>	STANDARD
CHECKED BY : <u>F.C. JONES</u>	DATE : <u>5-16-89</u>	

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
112" THICK EXPANSION JOINT MATERIAL IN THE JOINTS BETWEEN
THE ENDS OF THE CORED SLAB

THE ENDS OF THE CORED SLAB SPANS IS 12"
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, DETAILS, DRAWINGS AND DIMENSIONS OF THE 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
RALLEIGH
STANDARD
3' - 0" X 1' - 6"
PRESTRESSED
CONCRETE CORED
SLAB UNIT
NORTH RAMP

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