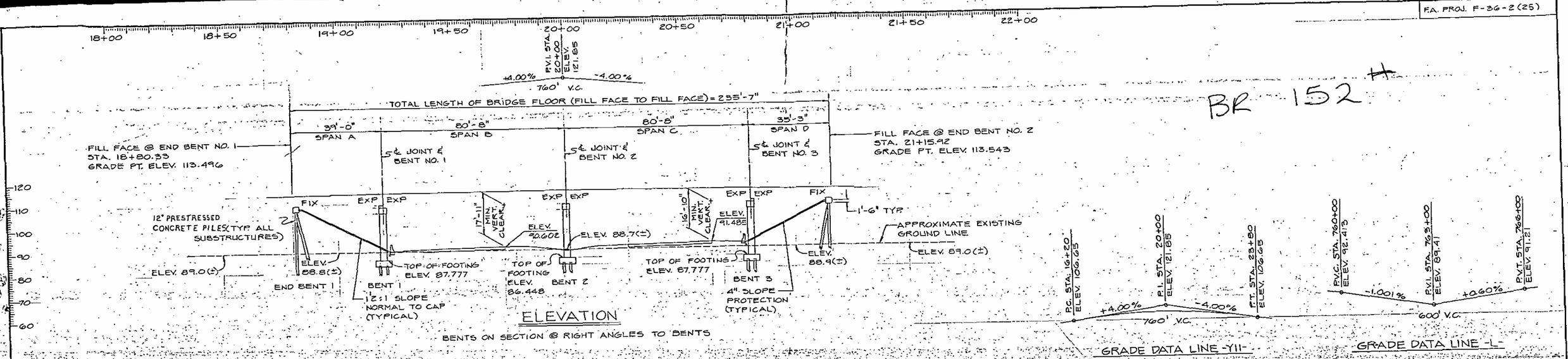
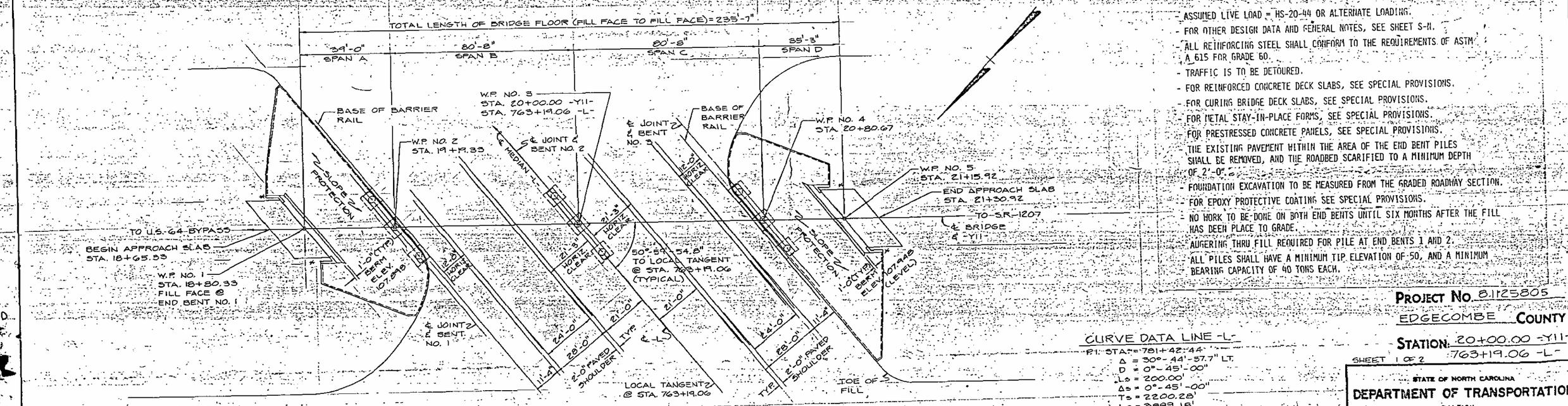
F.A. PROJ. F-36-2(25)

BR 152



ELEVATION

BENTS ON SECTION @ RIGHT ANGLES TO BENTS



PLAN

*DENOTES GUARDRAIL ATTACHMENT

NOTES

- ASSUMED LIVE LOAD = HS-20-44 OR ALTERNATE LOADING.
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET S-N.
- ALL REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 615 FOR GRADE 60.
- TRAFFIC IS TO BE DETOURED.
- FOR REINFORCED CONCRETE DECK SLABS, SEE SPECIAL PROVISIONS.
- FOR CURING BRIDGE DECK SLABS, SEE SPECIAL PROVISIONS.
- FOR METAL STAY-IN-PLACE FORMS, SEE SPECIAL PROVISIONS.
- FOR PRESTRESSED CONCRETE PANELS, SEE SPECIAL PROVISIONS.
- THE EXISTING PAVEMENT WITHIN THE AREA OF THE END BENT PILES SHALL BE REMOVED, AND THE ROADBED SCARIFIED TO A MINIMUM DEPTH OF 2'-0".
- FOUNDATION EXCAVATION TO BE MEASURED FROM THE GRADED ROADWAY SECTION.
- FOR EPOXY PROTECTIVE COATING SEE SPECIAL PROVISIONS.
- NO WORK TO BE DONE ON BOTH END BENTS UNTIL SIX MONTHS AFTER THE FILL HAS BEEN PLACE TO GRADE.
- AUGERING THRU FILL REQUIRED FOR PILE AT END BENTS 1 AND 2.
- ALL PILES SHALL HAVE A MINIMUM TIP ELEVATION OF -50, AND A MINIMUM BEARING CAPACITY OF 40 TONS EACH.

CURVE DATA LINE -L-

P.I. STA. = 781+42.44
Δ = 30°-44'-57.7" LT.
D = 0°-45'-00"
Ls = 200.00'
Δs = 0°-45'-00"
Ts = 2200.28'
Lc = 3899.18'
R = 7639.437'
LT = 133.33'
ST = 66.67'
SE = .031'
70 M.P.H.

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
763+19.06 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE OVER U.S. 64 ON S.R. 1205
BETWEEN U.S. 64 BYPASS & S.R. 1207

FEBRUARY 1984

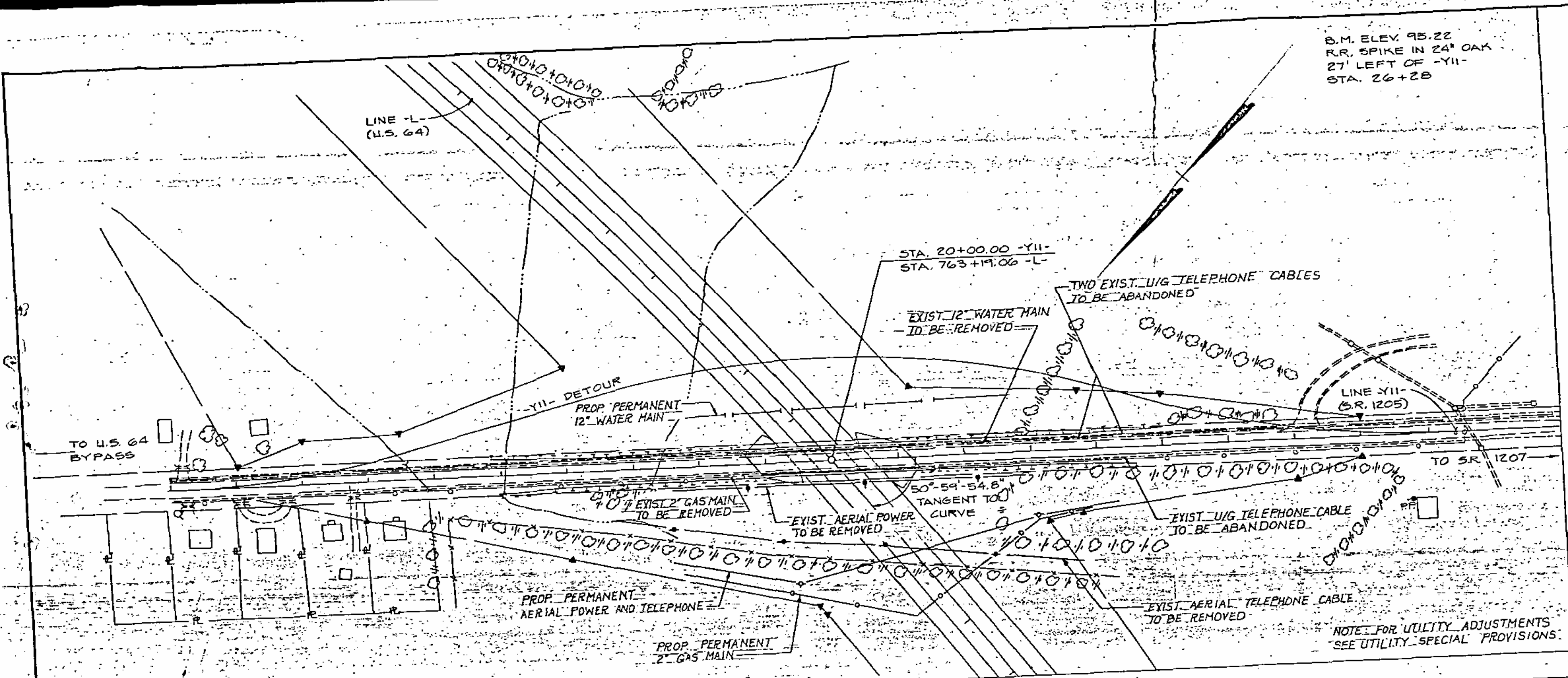
NORTH CAROLINA PROFESSIONAL SEAL 11551 ENGINEER ALAN M. SMITH 5-22-84

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

DWG. S-1

DRAWN BY J.W. ROBINSON DATE FEB. 1984
CHECKED BY A.M. SMITH DATE FEB. 1984

CASE ENGINEERING & SUPPLY CO. NYACK



LOCATION SKETCH

I hereby certify that this structure was built according to Plans except as noted hereon

[signature] Resident Engineer — Jun 26, 1987 Date ✓ BYA

TOTAL BILL OF MATERIAL

	FOUNDATION EXCAVATION	REINFORCED CONCRETE DECK SLAB	CLASS A CONCRETE	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	36" PRESTRESSED CONCRETE GIRDER		54" PRESTRESSED CONCRETE GIRDER		12" PRESTRESSED CONCRETE PILES		CONCRETE BARRIER RAIL	LINSEED OIL CONCRETE PROTECTION	BRIDGE APPROACH SLAB STA. 20+00	ELASTOMERIC BEARINGS	4" SLOPE PROTECTION	PREFORMED COMPRESSION JOINT SEAL
	CU. YDS.	SQ. FT.	CU. YDS.	LBS.	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	NO.	LIN. FT.	LIN. FT.	GALS.	LUMP SUM	LUMP SUM	SQ. YDS.	LUMP SUM
SUPERSTRUCTURE		7,735.0				8	287.50	8	644.00			476.84	19		LUMP SUM		
END BENT 1			17.3	2,860						7	434.0			LUMP SUM		415.39	LUMP SUM
BENT 1	85.2		45.7	6,309	1,439					15	718.0						
BENT 2	67.8		49.6	7,188	1,578					15	672.0						
BENT 3	69.3		45.7	6,309	1,439					15	620.7						
END BENT 2			17.3	2,860						7	434.0			LUMP SUM		344.90	LUMP SUM
CURVED END BLOCKS			2.9	600													
TOTAL	222.3	7,735.0	178.5	26,126	4,456	8	287.50	8	644.00	59	2878.7	476.84	19	LUMP SUM	LUMP SUM	760.29	LUMP SUM

✓ BA ✓ BA ✓ BA ✓ BA ✓ BA ✓ BA ✓ BA ✓ BA ✓ BA ✓ BA ✓ BA ✓ BA ✓ BA ✓ BA

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
763+19.06 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

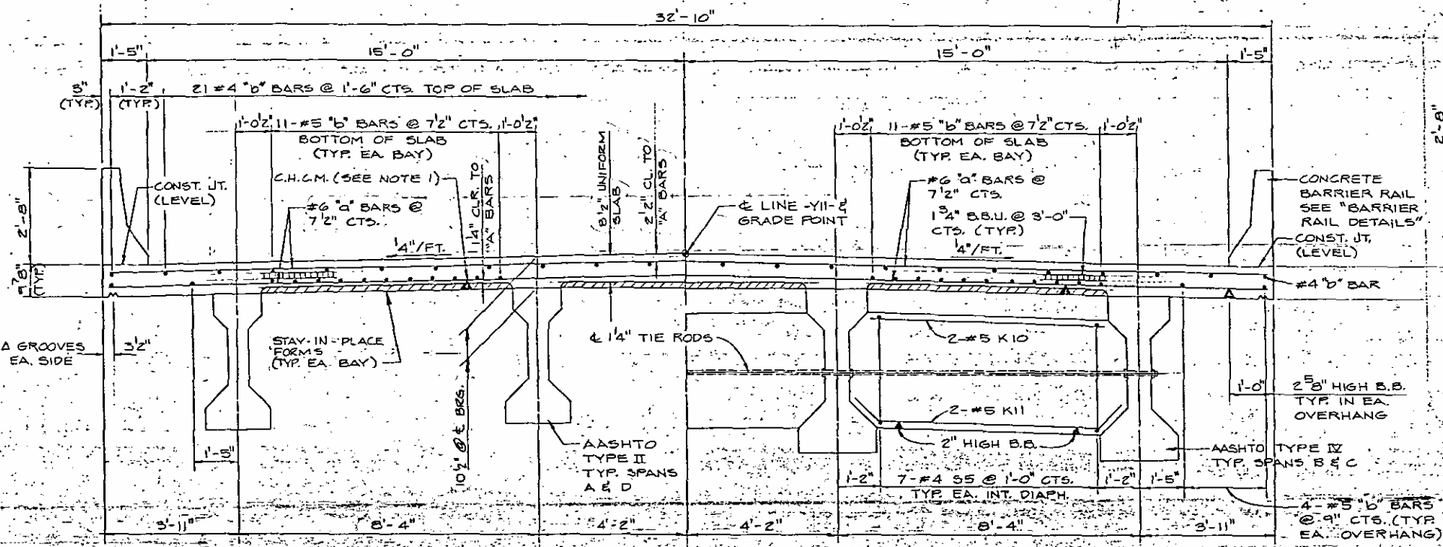
BRIDGE OVER U.S. 64 ON S.R. 1205
BETWEEN U.S. 64 BYPASS & S.R. 1207

FEBRUARY 1984

REVISIONS							
NO.	BY	DATE		NO.	BY	DATE	SHEET NO. 150
1				3			TOTAL SHEETS
2				4			

DWG. S-2

DRAWN BY J.W. ROBINSON DATE FEB. 1984
[illegible] DATE FEB. 1984

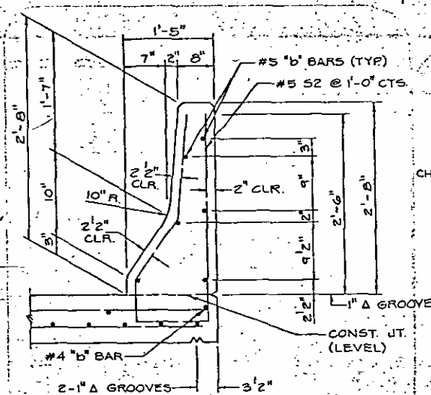


HALF SECTION
SPANS A & D

HALF SECTION
SHOWING INTER. DIAPH. IN SPANS B & C

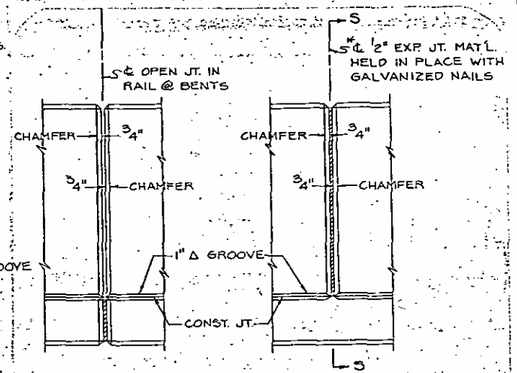
TYPICAL SECTION

NOTE: ALL SPANS ARE SIMPLE, COMPOSITE, PRESTRESSED CONCRETE GIRDERS.



SECTION THRU RAIL

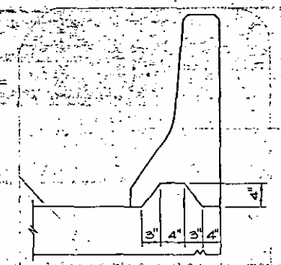
NOTE: 1" Δ GROOVE AT CONSTRUCTION JOINT MAY BE OMITTED



ELEVATION AT EXPANSION JOINTS

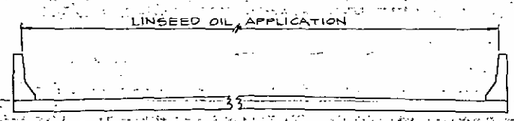
*OMIT EXP. JT. MAT'L WHEN SLIP FORM IS USED.

BARRIER RAIL DETAILS

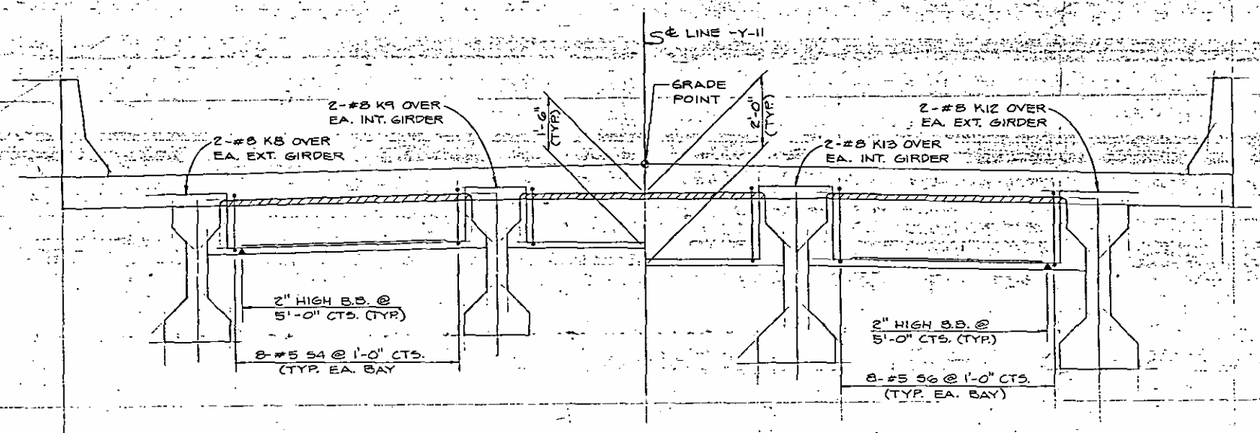


SECTION 5-5
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

NOTE: FOR SECTIONS THRU BENT DIAPHRAGM & INTERMEDIATE DIAPHRAGM SEE DRAWING 5-5.



LINSEED OIL CONCRETE PROTECTION



HALF SECTION
SHOWING BENT DIAPH. @ BENT 1 NEAR SIDE & BENT 3 FAR SIDE

HALF SECTION
SHOWING BENT DIAPH. @ BENT 1 FAR SIDE, BENT 2 NEAR & FAR SIDE AND BENT 3 NEAR SIDE

TYPICAL DIAPHRAGM SECTIONS @ BENTS

SUPERSTRUCTURE NOTES

1- PROVIDE CONTINUOUS HIGH CHAIR FOR METAL DECK (C.H.C.M.) @ 4'-0" CENTERS WITH LEG SPACING TO MATCH THE PITCH OF THE FORM AND WITH A HEIGHT TO SUPPORT THE BOTTOM LAYER OF SLAB REINFORCEMENT A CLEAR DISTANCE OF 1 1/4" ABOVE THE TOP OF THE STAY-IN-PLACE FORM.

2- FOR CONCRETE BARRIER RAILS, SEE SPECIAL PROVISIONS.

3- FOR ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

4- BARRIER RAIL IN EACH SPAN SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

5- A 1 1/2" EXTENSION OF THE CONCRETE SLAB BEYOND THE OUTSIDE FACE OF THE BARRIER RAIL WILL BE PERMITTED IF THE CONTRACTOR ELECTS TO SLIP FORM THE BARRIER RAILS. NO ADDITIONAL REINFORCING STEEL IS REQUIRED AND THE PAYMENT FOR REINFORCED CONCRETE DECK SLAB WILL BE FOR THE QUANTITY SHOWN ON THE PLANS.

6- TEMPORARY STRUTS SHALL BE PLACED BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE DIAPHRAGMS AND THE NUTS ON THE 1 1/4" DIA. TIE RODS SHALL BE FULLY TIGHTENED BEFORE THE DIAPHRAGMS ARE CAST. STRUTS SHALL REMAIN IN PLACE THREE (3) DAYS AFTER CONCRETE IS PLACED. THE TIE RODS SHALL BE RETIGHTENED AFTER THE STRUTS HAVE BEEN REMOVED.

7- CONCRETE IN INTERMEDIATE DIAPHRAGMS MAY BE CLASS A IN LIEU OF CLASS AA. PAYMENT SHALL BE MADE UNDER THE UNIT CONTRACT PRICE BID FOR REINFORCED CONCRETE DECK SLAB.

PROJECT NO. 8.1125605
EDGECOMBE COUNTY
STATION: 20+00.00 -Y11-
763+19.06 -L-
SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
TYPICAL SECTIONS

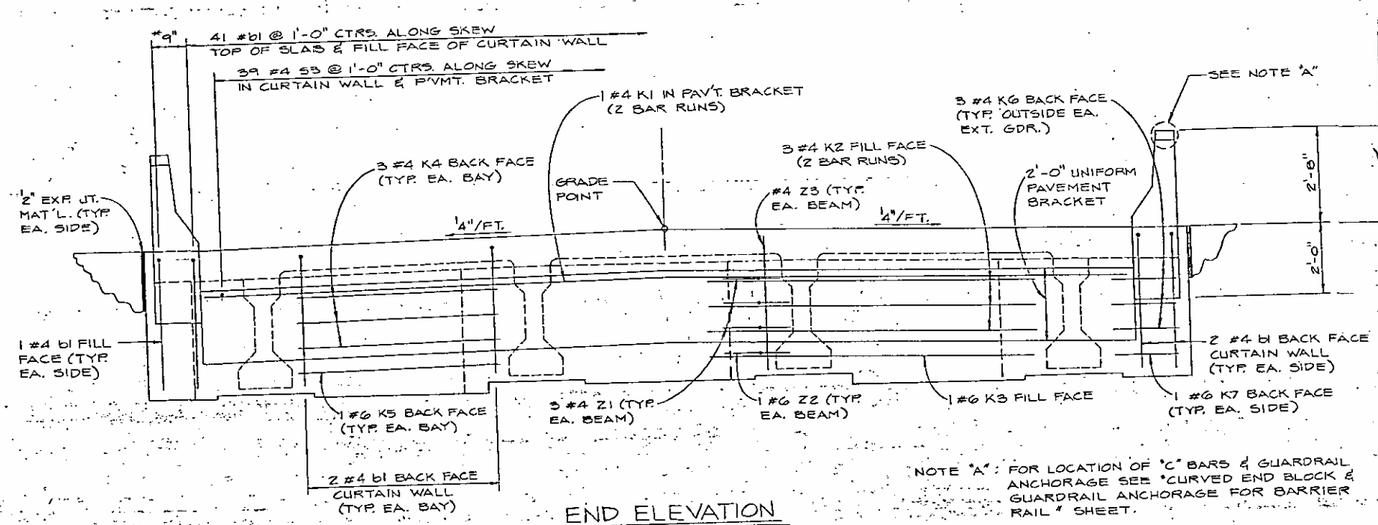
FEBRUARY 1984

REVISIONS							SHEET NO.
NO.	BY	DATE	NO.	BY	DATE		151
1			3			TOTAL SHEETS	
2			4				

DWG. S-3

DRAWN BY J.W. ROBINSON DATE FEB. 1984
CHECKED BY A.M. SMITH DATE FEB. 1984

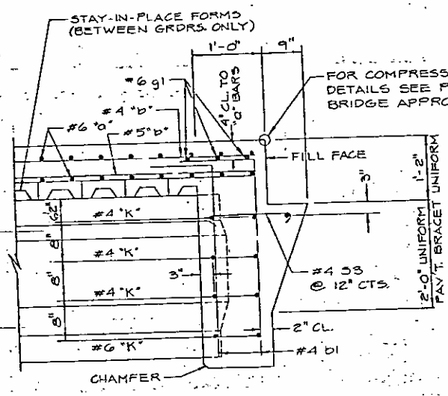
CASE SLIPFORM & SUPPLY CO. NCMB



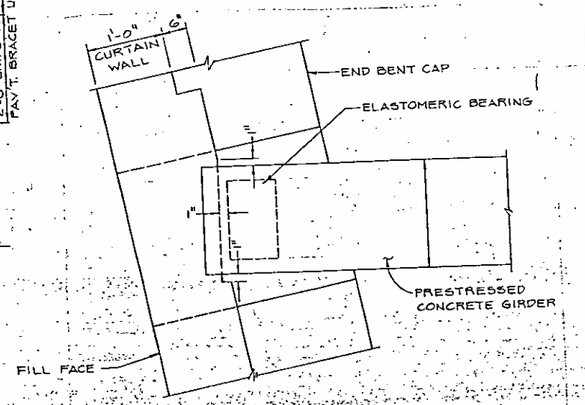
END ELEVATION

LOOKING FORWARD ON SURVEY @ END BENT 1
LOOKING BACK ON SURVEY @ END BENT 2

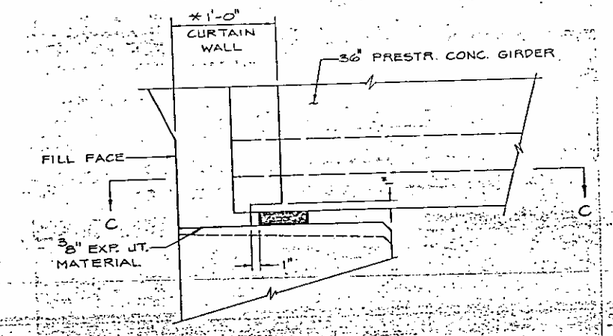
NOTE "A": FOR LOCATION OF "C" BARS & GUARDRAIL ANCHORAGE SEE "CURVED END BLOCK & GUARDRAIL ANCHORAGE FOR BARRIER RAIL" SHEET.



SECTION THRU CURTAIN WALL

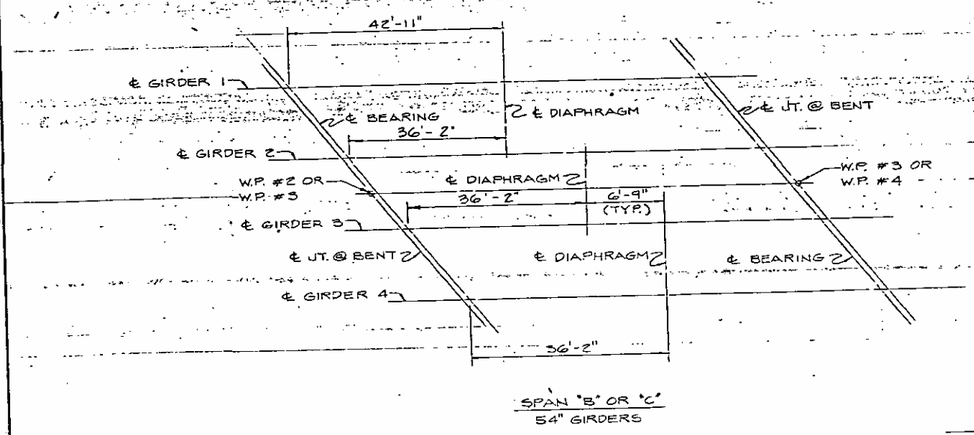


SECTION C-C



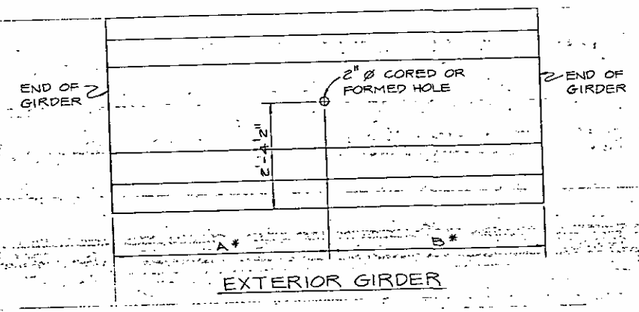
CURTAIN WALL BLOCKOUT @ END BENT

* SEE DETAIL "A" ON S-6

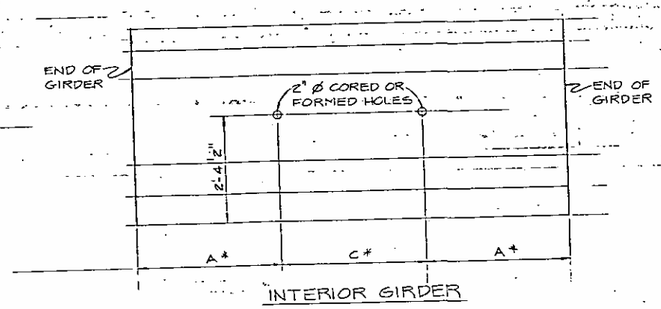


SPAN "B" OR "C"
54" GIRDERS

INTERMEDIATE DIAPHRAGM LAYOUT



EXTERIOR GIRDER



INTERIOR GIRDER

GIRDER ELEVATIONS

* SEE TABLE 1 FOR DIMENSIONS

TABLE 1

LOCATION OF HOLES FOR TIE RODS

SPAN "B" OR "C"

GIRDER	A	B	C
1	43'-7 1/2"	36'-10 1/2"	——
2 & 3	36'-10 1/2"	——	6'-9"
4	36'-10 1/2"	43'-7 1/2"	——

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
763+19.06 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

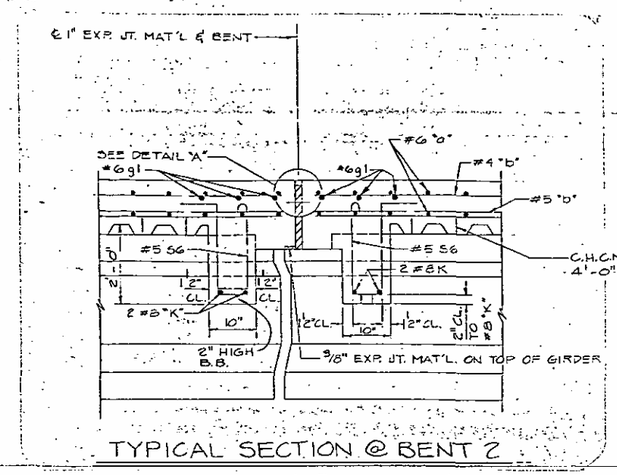
SUPERSTRUCTURE TYPICAL SECTIONS

FEBRUARY 1984

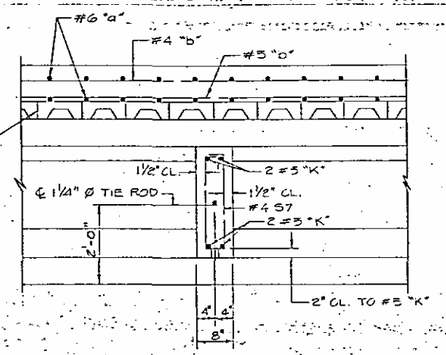
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	152
1			3			TOTAL SHEETS
2			4			

DWG. S-4

DRAWN BY J.W. ROBINSON DATE FEB. 1984
CHECKED BY JOSE DANON DATE FEB. 1984

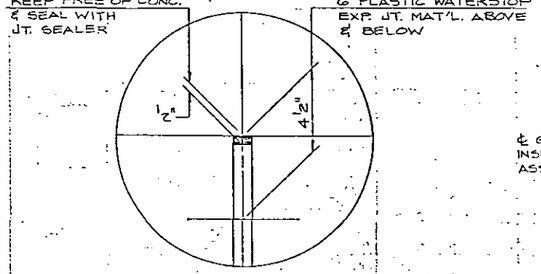


TYPICAL SECTION @ BENT 2



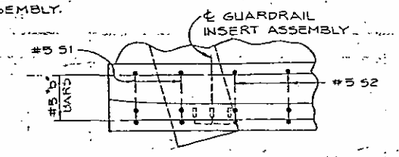
SECTION THRU INTERMEDIATE DIAPHRAGM

/SPANS "B" & "C"

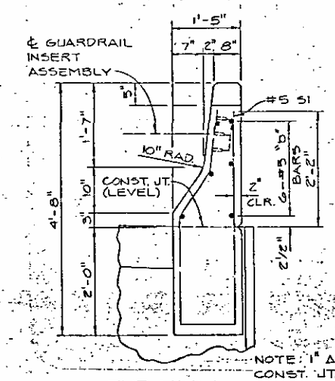


DETAIL "A"

NOTE: SEE "STANDARD CURVED END BLOCK, GUARDRAIL ANCHORAGE AND CURB BLOCK" SHEET FOR LOCATION OF "c" BARS FOR CURVED END BLOCKS AND GUARDRAIL ANCHORAGE ASSEMBLY.

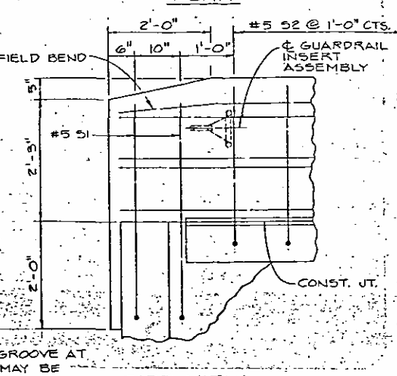


PLAN



END VIEW

NOTE: 1" A GROOVE AT CONST. JT. MAY BE OMITTED.



SIDE VIEW

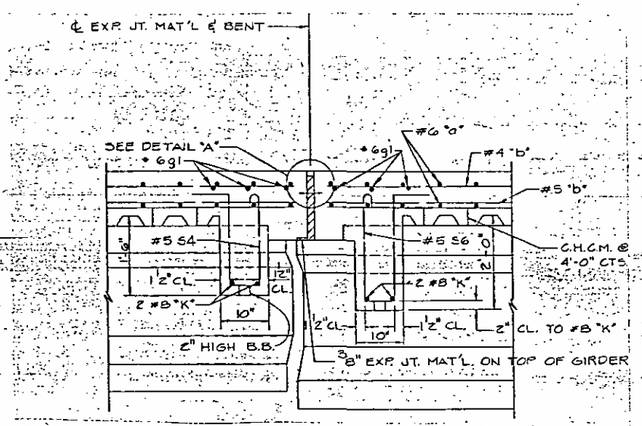
BARRIER RAIL - END OF RAIL DETAILS

END OF GIRDER DETAILS AT JOINT

BENT 2

END OF GIRDER DETAILS AT JOINT

BENT 1 OR 3



TYPICAL SECTION @ BENT 1 OR 3

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
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SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

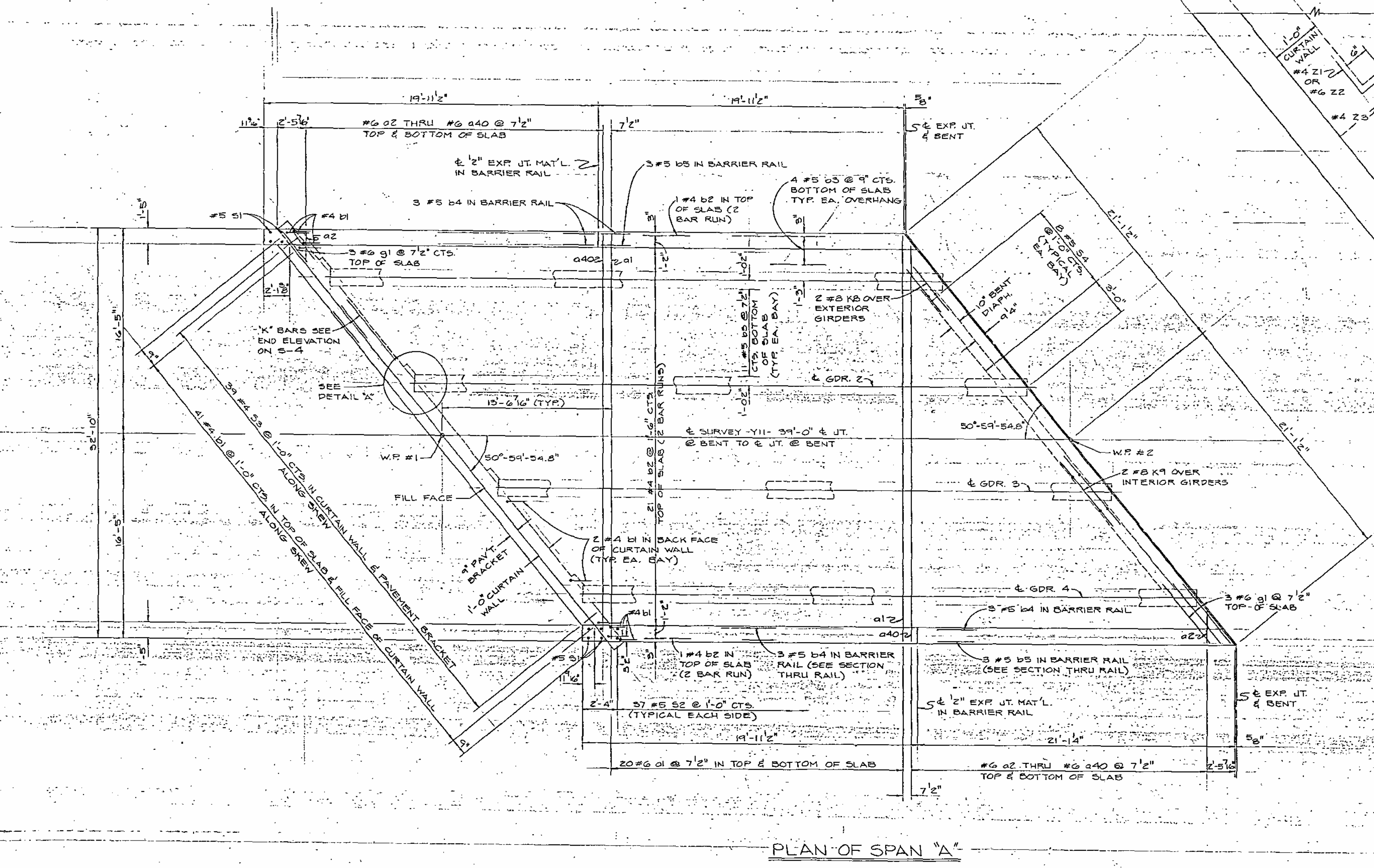
SUPERSTRUCTURE SECTIONS AND DETAILS

FEBRUARY 1984

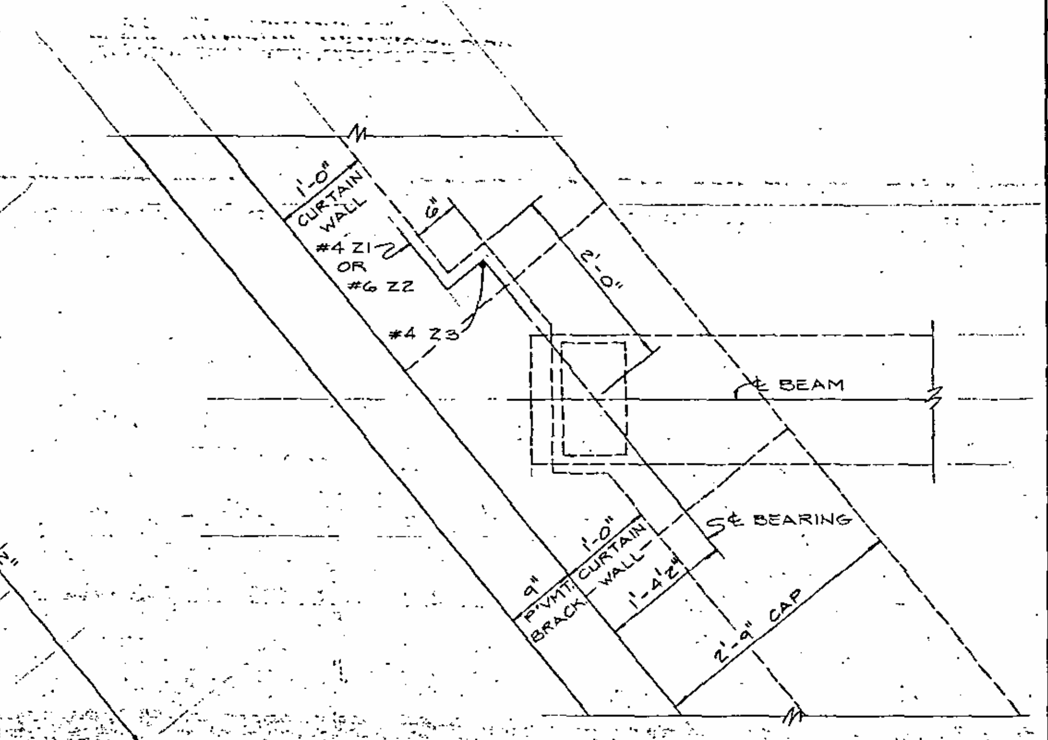
REVISIONS							SHEET NO.
NO.	BY	DATE	NO.	BY	DATE		15.3
1			3			TOTAL SHEETS	
2			4				

DRAWN BY U.W. ROBINSON DATE FEB. 1984
CHECKED BY A.M. SMITH DATE FEB. 1984

DWG. S-5



PLAN OF SPAN "A"



DETAIL "A"

PROJECT NO. 8.1125805
EDGECOMBE COUNTY
STATION: 20+00.00 -Y11-
763+19.06 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

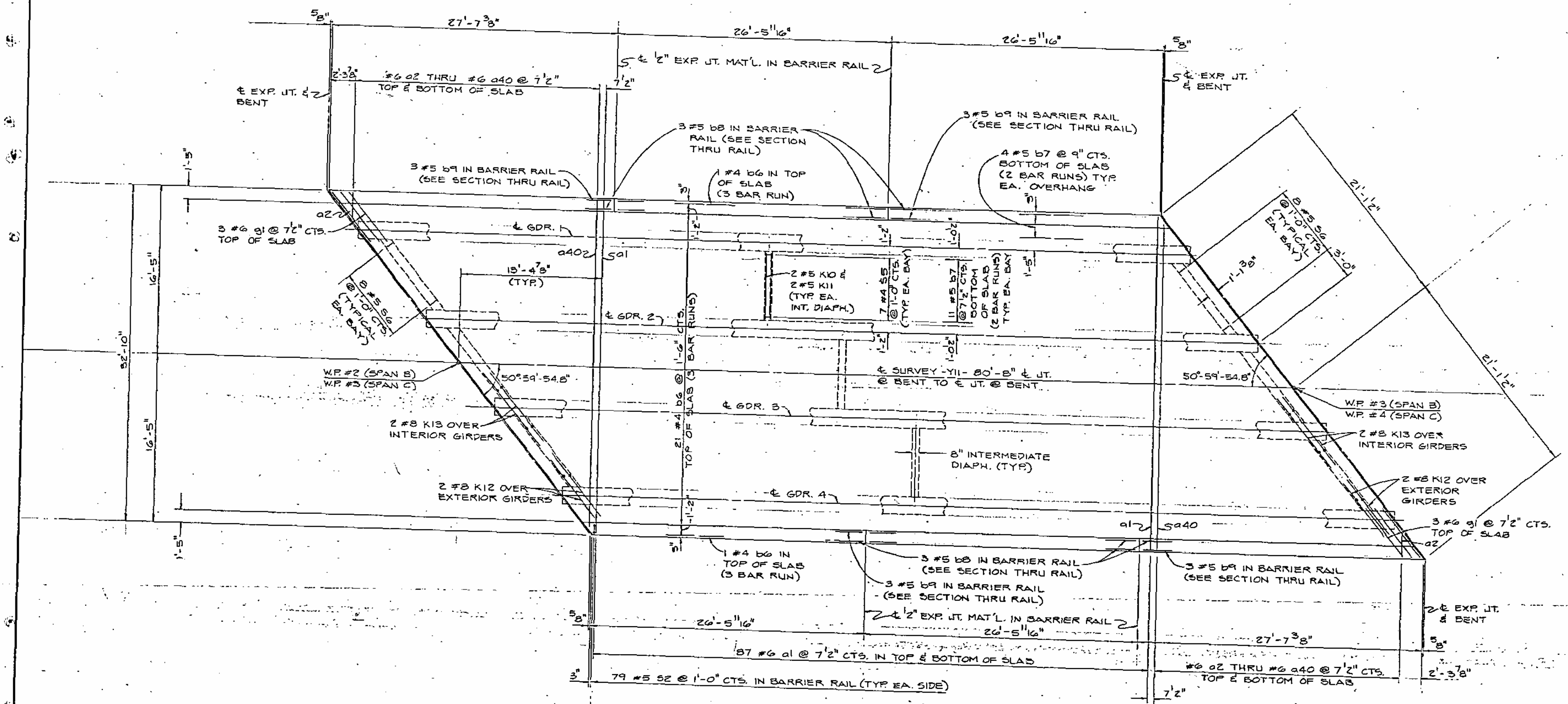
SUPERSTRUCTURE
PLAN-SPAN "A"

FEBRUARY 1984

REVISIONS								SHEET NO.
NO.	BY	DATE		NO.	BY	DATE		154
1				3				TOTAL SHEETS
2				4				

DWG. S-6

DRAWN BY J.W. ROBINSON DATE FEB. 1984
CHECKED BY JOSE DANON DATE FEB. 1984



PLAN OF SPANS "B" OR "C"

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
763+19.06 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

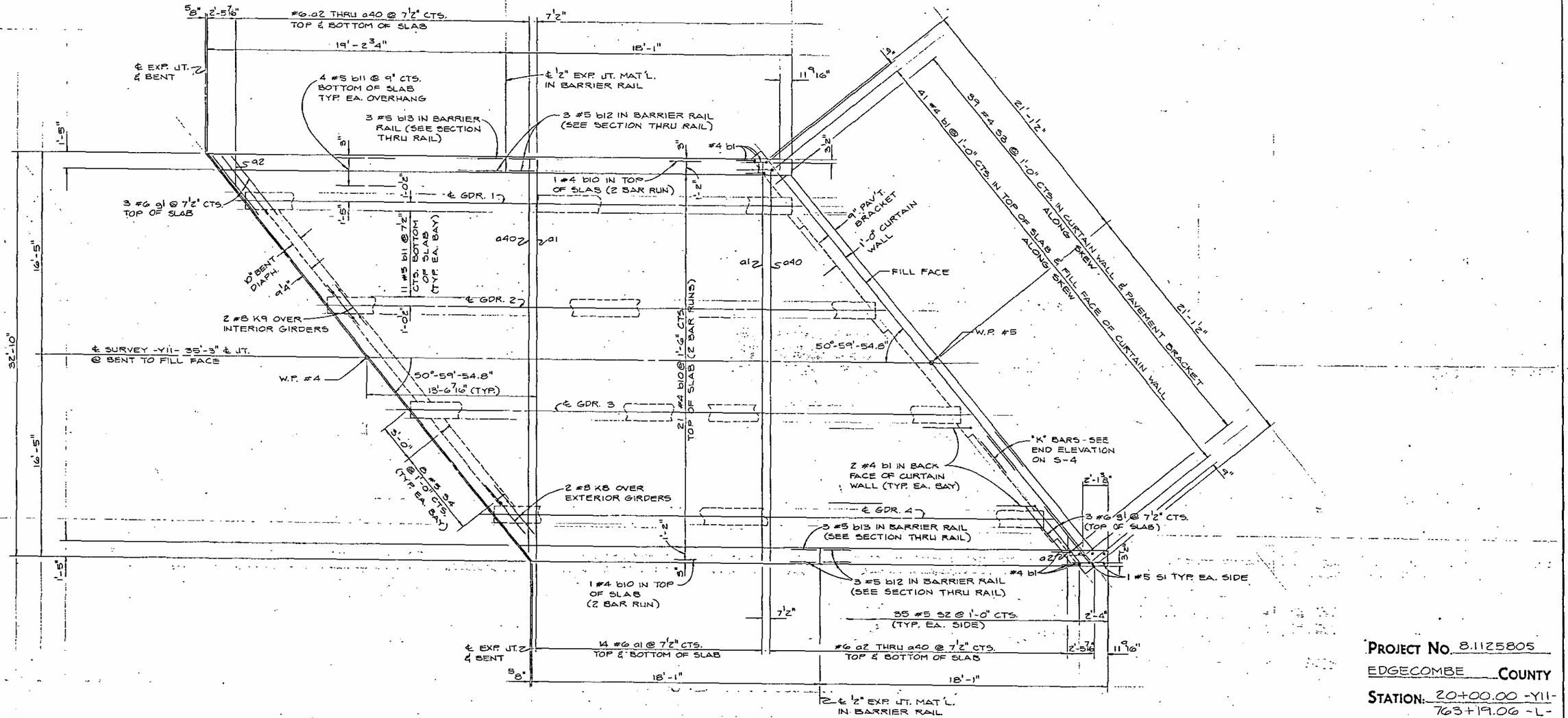
SUPERSTRUCTURE
PLAN - SPAN "B" OR "C"

FEBRUARY 1984

REVISIONS						
NO.	BY	DATE	NO.	BY	DATE	
1			3			SHEET NO. 155
2			4			TOTAL SHEETS

DWG. S-7

DRAWN BY J.W. ROBINSON DATE FEB. 1984
CHECKED BY A.M. SMITH DATE FEB. 1984



PLAN OF SPAN "D"

NOTE: SEE DETAIL "A" ON S-6 FOR CURTAIN WALL DETAILS NEAR BEAM.

DRAWN BY J.W. ROBINSON DATE FEB., 1984
CHECKED BY JOSE DANON DATE FEB., 1984

PROJECT NO. 8.1125805
EDGECOMBE COUNTY
STATION: 20+00.00 -Y11- 763+19.06 -L-

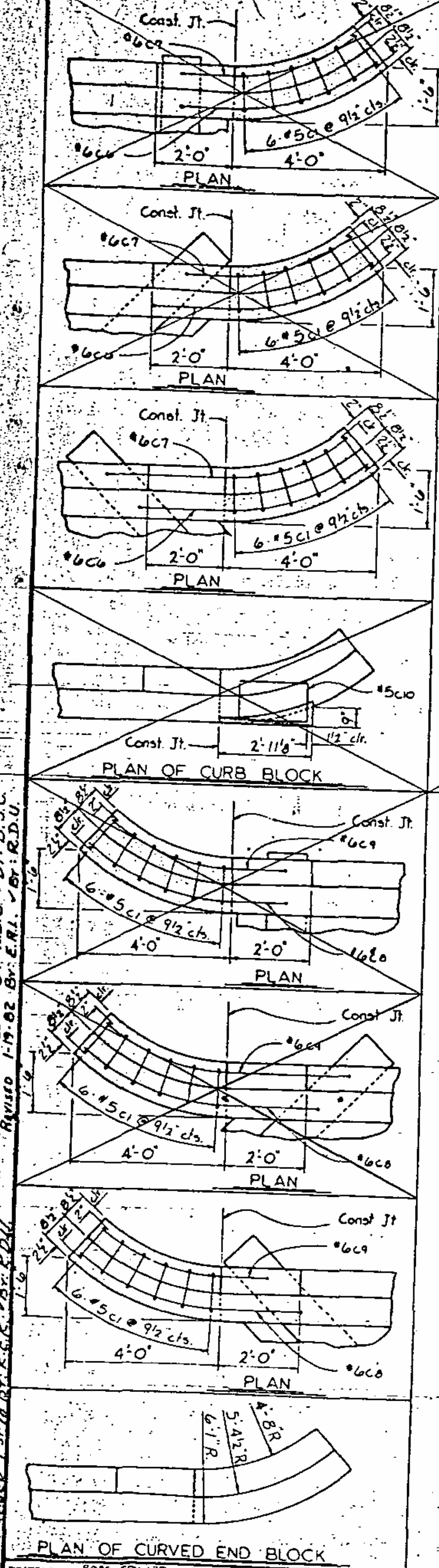
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

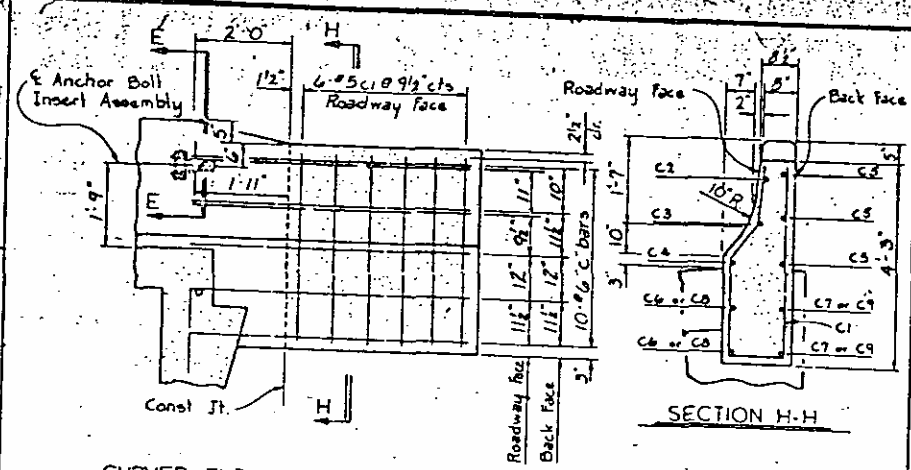
SUPERSTRUCTURE
PLAN-SPAN "D"

FEBRUARY 1984

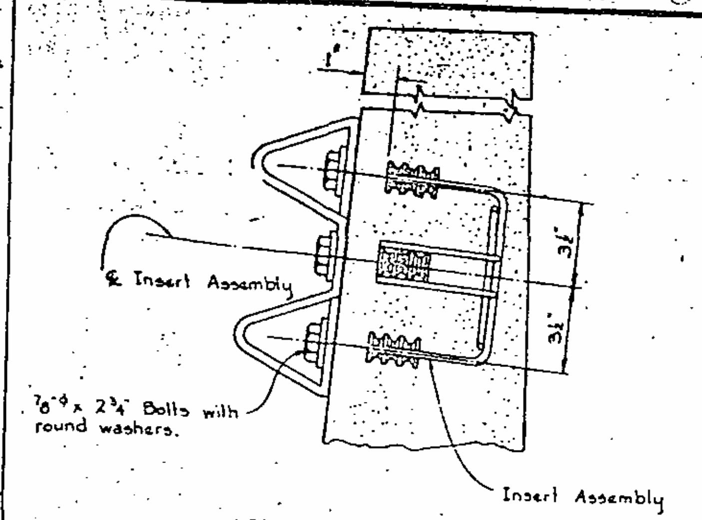
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	156
1			3			TOTAL SHEETS
2			4			

DWG. S-8

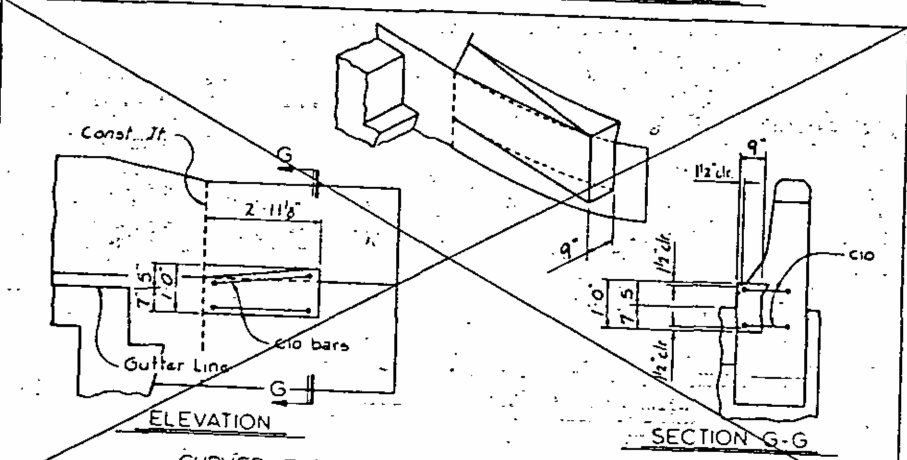




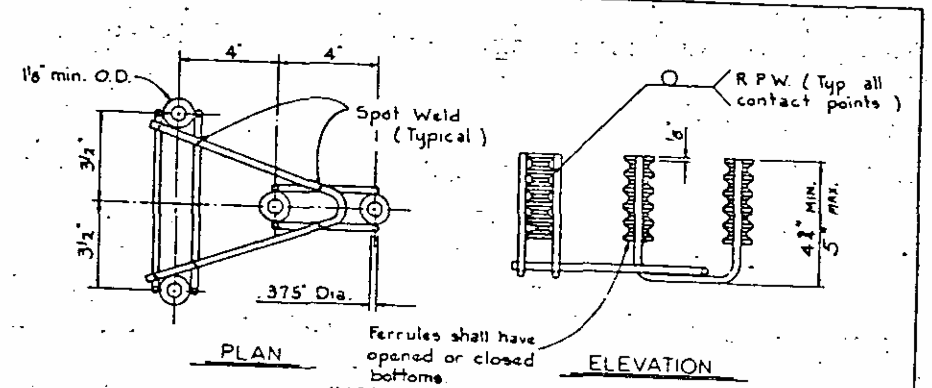
CURVED END BLOCK AND GUARDRAIL ANCHORAGE



SECTION E-E



CURVED END BLOCK WITH CURB BLOCK



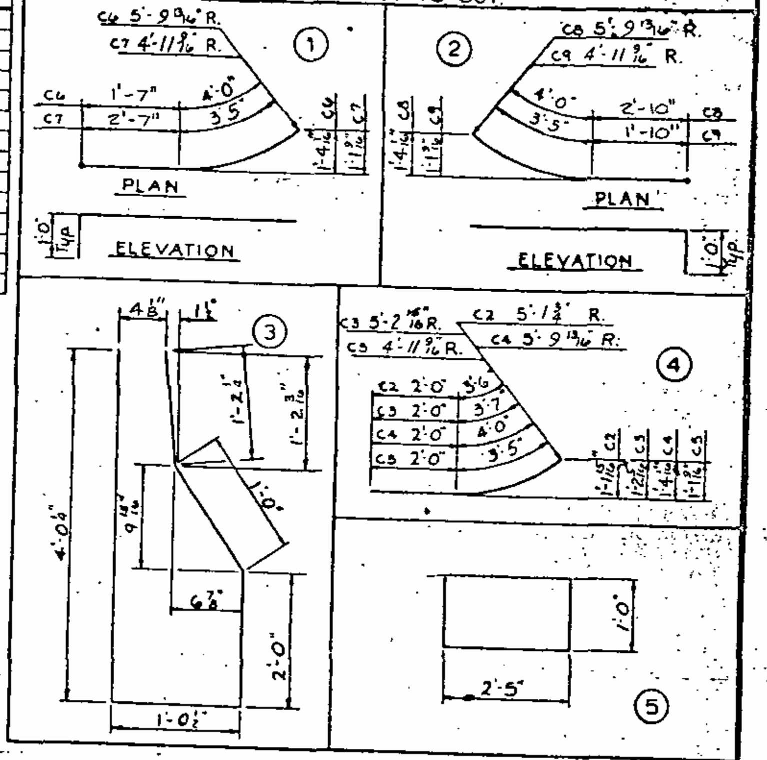
INSERT ASSEMBLY

BILL OF MATERIAL FOR FOUR CURVED END BLOCKS					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
C1	24	#5	3	9'-3"	232
C2	4	#6	4	5'-6"	33
C3	4	#6	4	5'-7"	34
C4	4	#6	4	6'-0"	36
C5	12	#6	4	5'-5"	98
C6	4	#6	1	6'-7"	40
C7	4	#6	1	7'-0"	42
C8	4	#6	2	7'-10"	47
C9	4	#6	2	6'-3"	38

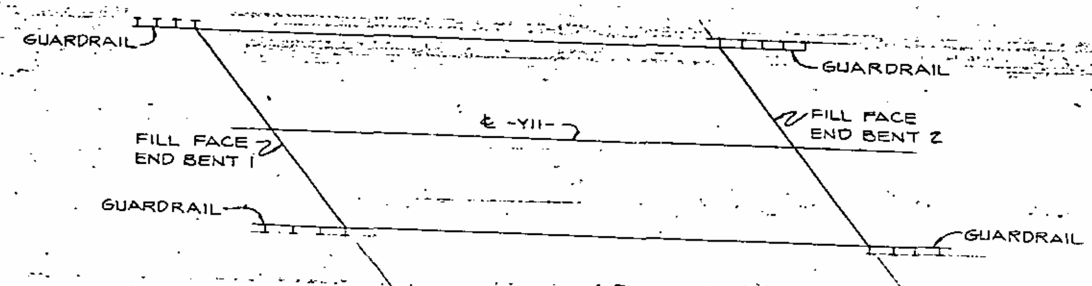
Reinforcing Steel Lbs. 600
Class "A" Concrete Cu. Yds. 2.9

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.



1. THE 4 - BOLT INSERT ASSEMBLY UNIT SHALL CONSIST OF THE FOLLOWING COMPONENTS:
   a. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF ASTM A108, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS of 1 1/2".
   b. 4 - 7/8" φ x 2 3/4" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8"φ x 2 3/4" GALVANIZED BOLTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)
   c. WIRE STRUTS SHOWN IN THE INSERT ASSEMBLY DETAIL ARE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 P.S.I.
2. THE INSERT ASSEMBLY WITH BOLTS SHALL BE ASSEMBLED IN THE SHOP. BOLT THREADS MAY BE RECUT AS NECESSARY TO INSURE FIT.
3. THE COST OF THE 4-BOLT INSERT ASSEMBLY UNIT COMPLETE IN PLACE, SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.
4. THE 4 - BOLT INSERT ASSEMBLY UNIT IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END POSTS. FOR POINTS OF ATTACHMENT, SEE PLANS.
5. CURVED END BLOCKS ARE REQUIRED AT ALL END POSTS.
6. THE COST OF THE EXCAVATION AND BACKFILL FOR THE CURVED END BLOCKS SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CLASS "A" CONCRETE.



SKETCH SHOWING GUARDRAIL LOCATION

BILL OF MATERIAL FOR CURB BLOCK	Reinforcing Steel Lbs.					
	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
1 Block	C10	2	#5	5	6'-10"	14
2 Blocks	C10	4	#5	5	6'-10"	29
3 Blocks	C10	6	#5	5	6'-10"	43
4 Blocks	C10	8	#5	5	6'-10"	57

TOTAL BILL OF MATERIAL	
Reinforcing Steel - Lbs. -	600
Class "A" Concrete - Cu. Yds. -	2.9

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11- = 763+19.06 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
CURVED END BLOCK, GUARDRAIL ANCHORAGE, AND CURB BLOCK FOR BARRIER RAIL
JULY 1978

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	157
1			3			TOTAL SHEETS
2			4			

DWG. S-9

DRAWN BY: ROSS EDWARD KUBENY DATE: 6-16-76
CHECKED BY: R.C. Martin DATE: June-76
ASSEMBLED BY: J.W. ROBINSON DATE: FEB., 1984
CHECKED BY: A.M. SMITH DATE: FEB., 1984

BILL OF MATERIAL

SPAN A

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
a1	40	#6	STR.	32'-6"	1953
a2	4	#6	STR.	2'-7"	16
a3	4	#6	STR.	3'-4"	21
a4	4	#6	STR.	4'-2"	26
a5	4	#6	STR.	4'-11"	30
a6	4	#6	STR.	5'-8"	35
a7	4	#6	STR.	6'-5"	39
a8	4	#6	STR.	7'-3"	44
a9	4	#6	STR.	8'-0"	49
a10	4	#6	STR.	8'-9"	53
a11	4	#6	STR.	9'-6"	58
a12	4	#6	STR.	10'-4"	63
a13	4	#6	STR.	11'-1"	67
a14	4	#6	STR.	11'-10"	72
a15	4	#6	STR.	12'-7"	76
a16	4	#6	STR.	13'-5"	81
a17	4	#6	STR.	14'-2"	86
a18	4	#6	STR.	14'-11"	90
a19	4	#6	STR.	15'-8"	95
a20	4	#6	STR.	16'-5"	99
a21	4	#6	STR.	17'-3"	104
a22	4	#6	STR.	18'-0"	109
a23	4	#6	STR.	18'-10"	114
a24	4	#6	STR.	19'-7"	118
a25	4	#6	STR.	20'-4"	123
a26	4	#6	STR.	21'-1"	127
a27	4	#6	STR.	21'-11"	132
a28	4	#6	STR.	22'-8"	137
a29	4	#6	STR.	23'-5"	141
a30	4	#6	STR.	24'-2"	146
a31	4	#6	STR.	25'-0"	151
a32	4	#6	STR.	25'-9"	155
a33	4	#6	STR.	26'-6"	160
a34	4	#6	STR.	27'-3"	164
a35	4	#6	STR.	28'-1"	169
a36	4	#6	STR.	28'-10"	174
a37	4	#6	STR.	29'-7"	178
a38	4	#6	STR.	30'-4"	183
a39	4	#6	STR.	31'-2"	188
a40	4	#6	STR.	31'-11"	192

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
b1	53	#4	1	4'-9"	169
b2	46	#4	STR.	19'-11"	612
b3	41	#5	STR.	38'-8"	1654
g1	6	#6	STR.	41'-9"	377
K1	2	#4	STR.	20'-0"	27
K2	6	#4	STR.	21'-7"	87
K3	1	#6	STR.	41'-11"	63
K4	9	#4	STR.	9'-3"	56
K5	3	#6	STR.	8'-8"	40
K6	6	#4	STR.	4'-2"	17
K7	2	#6	STR.	4'-1"	13
K8	4	#8	2	10'-7"	114
K9	4	#8	3	17'-10"	191
S3	59	#4	7	2'-0"	53
S4	24	#5	8	5'-0"	126
Z1	12	#4	2	3'-4"	27
Z2	4	#6	2	3'-4"	21
Z3	4	#4	STR.	3'-6"	10

REINFORCING STEEL LBS. = 9,675

CLASS AA CONCRETE CU. YDS.= 44.0

SPAN B OR C (EACH)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
a1	174	#6	STR.	32'-6"	8494
a2	4	#6	STR.	2'-7"	16
a3	4	#6	STR.	3'-4"	21
a4	4	#6	STR.	4'-2"	26
a5	4	#6	STR.	4'-11"	30
a6	4	#6	STR.	5'-8"	35
a7	4	#6	STR.	6'-5"	39
a8	4	#6	STR.	7'-3"	44
a9	4	#6	STR.	8'-0"	49
a10	4	#6	STR.	8'-9"	53
a11	4	#6	STR.	9'-6"	58
a12	4	#6	STR.	10'-4"	63
a13	4	#6	STR.	11'-1"	67
a14	4	#6	STR.	11'-10"	72
a15	4	#6	STR.	12'-7"	76
a16	4	#6	STR.	13'-5"	81
a17	4	#6	STR.	14'-2"	86
a18	4	#6	STR.	14'-11"	90
a19	4	#6	STR.	15'-8"	95
a20	4	#6	STR.	16'-5"	99
a21	4	#6	STR.	17'-3"	104
a22	4	#6	STR.	18'-0"	109
a23	4	#6	STR.	18'-10"	114
a24	4	#6	STR.	19'-7"	118
a25	4	#6	STR.	20'-4"	123
a26	4	#6	STR.	21'-1"	127
a27	4	#6	STR.	21'-11"	132
a28	4	#6	STR.	22'-8"	137
a29	4	#6	STR.	23'-5"	141
a30	4	#6	STR.	24'-2"	146
a31	4	#6	STR.	25'-0"	151
a32	4	#6	STR.	25'-9"	155
a33	4	#6	STR.	26'-6"	160
a34	4	#6	STR.	27'-3"	164
a35	4	#6	STR.	28'-1"	169
a36	4	#6	STR.	28'-10"	174
a37	4	#6	STR.	29'-7"	178
a38	4	#6	STR.	30'-4"	183
a39	4	#6	STR.	31'-2"	188
a40	4	#6	STR.	31'-11"	192

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
b6	69	#4	STR.	27'-7"	1272
b7	82	#5	STR.	40'-11"	3500
g1	6	#6	STR.	41'-9"	377
K10	6	#5	STR.	7'-6"	47
K11	6	#5	4	7'-10"	50
K12	8	#8	2	10'-7"	227
K13	8	#8	3	18'-7"	397
S5	21	#4	9	7'-3"	102
S6	48	#5	8	6'-0"	301

REINFORCING STEEL LBS. = 18,832

CLASS AA CONCRETE CU. YDS. = 78.0

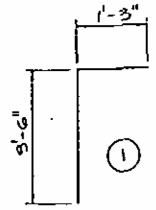
SPAN D

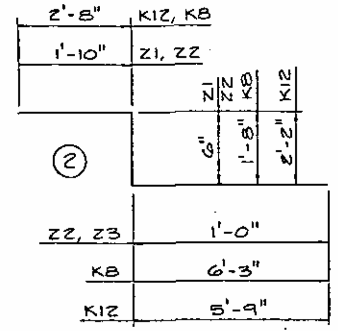
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
a1	28	#6	STR.	32'-6"	1,367
a2	4	#6	STR.	2'-7"	16
a3	4	#6	STR.	3'-4"	21
a4	4	#6	STR.	4'-2"	26
a5	4	#6	STR.	4'-11"	30
a6	4	#6	STR.	5'-8"	35
a7	4	#6	STR.	6'-5"	39
a8	4	#6	STR.	7'-3"	44
a9	4	#6	STR.	8'-0"	49
a10	4	#6	STR.	8'-9"	53
a11	4	#6	STR.	9'-6"	58
a12	4	#6	STR.	10'-4"	63
a13	4	#6	STR.	11'-1"	67
a14	4	#6	STR.	11'-10"	72
a15	4	#6	STR.	12'-7"	76
a16	4	#6	STR.	13'-5"	81
a17	4	#6	STR.	14'-2"	86
a18	4	#6	STR.	14'-11"	90
a19	4	#6	STR.	15'-8"	95
a20	4	#6	STR.	16'-5"	99
a21	4	#6	STR.	17'-3"	104
a22	4	#6	STR.	18'-0"	109
a23	4	#6	STR.	18'-10"	114
a24	4	#6	STR.	19'-7"	118
a25	4	#6	STR.	20'-4"	123
a26	4	#6	STR.	21'-1"	127
a27	4	#6	STR.	21'-11"	132
a28	4	#6	STR.	22'-8"	137
a29	4	#6	STR.	23'-5"	141
a30	4	#6	STR.	24'-2"	146
a31	4	#6	STR.	25'-0"	151
a32	4	#6	STR.	25'-9"	155
a33	4	#6	STR.	26'-6"	160
a34	4	#6	STR.	27'-3"	164
a35	4	#6	STR.	28'-1"	169
a36	4	#6	STR.	28'-10"	174
a37	4	#6	STR.	29'-7"	178
a38	4	#6	STR.	30'-4"	183
a39	4	#6	STR.	31'-2"	188
a40	4	#6	STR.	31'-11"	192

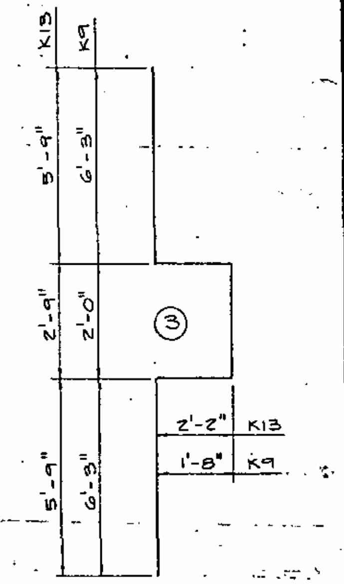
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
b1	53	#4	1	4'-9"	169
b10	46	#4	STR.	18'-1"	556
b11	41	#5	STR.	34'-11"	1494
g1	6	#6	STR.	41'-9"	377
K1	2	#4	STR.	20'-0"	27
K2	6	#4	STR.	21'-7"	87
K3	1	#6	STR.	41'-11"	63
K4	9	#4	STR.	9'-3"	56
K5	3	#6	STR.	8'-8"	40
K6	6	#4	STR.	4'-2"	17
K7	2	#6	STR.	4'-1"	13
K8	4	#8	2	10'-7"	114
K9	4	#8	3	17'-10"	191
S3	59	#4	7	2'-0"	53
S4	24	#5	8	5'-0"	126
Z1	12	#4	2	3'-4"	27
Z2	4	#6	2	3'-4"	21
Z3	4	#4	STR.	3'-6"	10

REINFORCING STEEL LBS. = 8,873

CLASS AA CONCRETE CU. YDS. = 40.7







BILL OF MATERIAL FOR BARRIER RAIL

SPAN A

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B4	18	#5	STR.	19'-7"	368
B5	6	#5	STR.	20'-9"	130
S1	4	#5	5	9'-3"	39
S2	74	#5	6	7'-6"	579

REINFORCING STEEL LBS. = 1,116

CLASS AA CONCRETE CU. YDS. = 7.7

SPAN B

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B8	24	#5	STR.	26'-1"	653
B9	12	#5	STR.	27'-2"	341
S2	158	#5	6	7'-6"	1,236

REINFORCING STEEL LBS. = 2,230

CLASS AA CONCRETE CU. YDS. = 14.8

SPAN C

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B8	24	#5	STR.	26'-1"	653
B9	12	#5	STR.	27'-2"	341
S2	158	#5	6	7'-6"	1236

REINFORCING STEEL LBS. = 2230

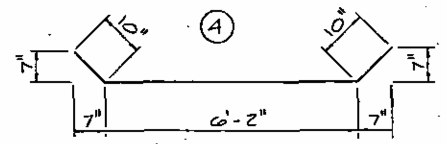
CLASS AA CONCRETE CU. YDS. = 14.8

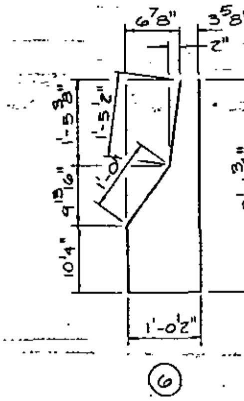
SPAN D

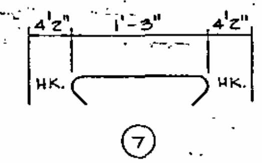
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B12	18	#5	STR.	17'-9"	334
B13	6	#5	STR.	18'-10"	118
S1	4	#5	5	9'-3"	39
S2	70	#5	6	7'-6"	548

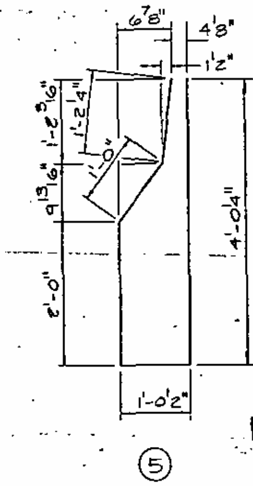
REINFORCING STEEL LBS. = 1,039

CLASS AA CONCRETE CU. YDS. = 7.1









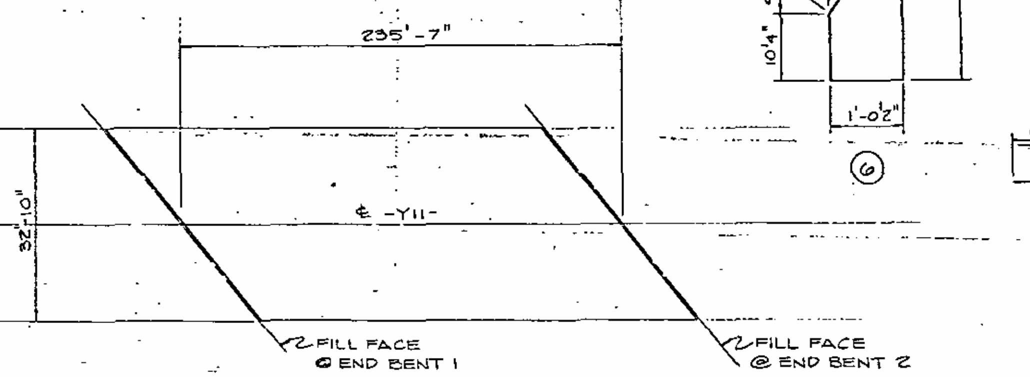
TOTAL BILL OF MATERIAL

SPAN	*CLASS AA CONCRETE	*REINFORCING STEEL	REINFORCED CONCRETE DECK SLAB	LINSEED OIL
	CU. YDS.	LBS.	SQ. FT.	GALS.
A	44.0	9,675	——	——
B	78.0	18,832	——	——
C	78.0	18,832	——	——
D	40.7	8,873	——	——
TOTAL	240.7	56,212	7,735	19

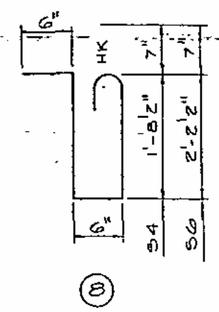
* QUANTITIES FOR BARRIER RAIL NOT INCLUDED

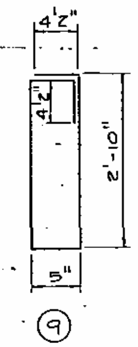
SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

BAR SIZE	SUPERSTRUCTURE AND APPROACH SLABS EXCEPT PARAPET, CURTAIN WALL AND BARRIER RAIL	PARAPET, CURTAIN WALL AND BARRIER RAIL
#4	1'-2"	1'-7"
#5	1'-5"	2'-0"
#8	3'-9"	



LAYOUT FOR COMPUTING SURFACE AREA OF REINFORCED CONCRETE DECK SLAB





PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
763+19.06 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

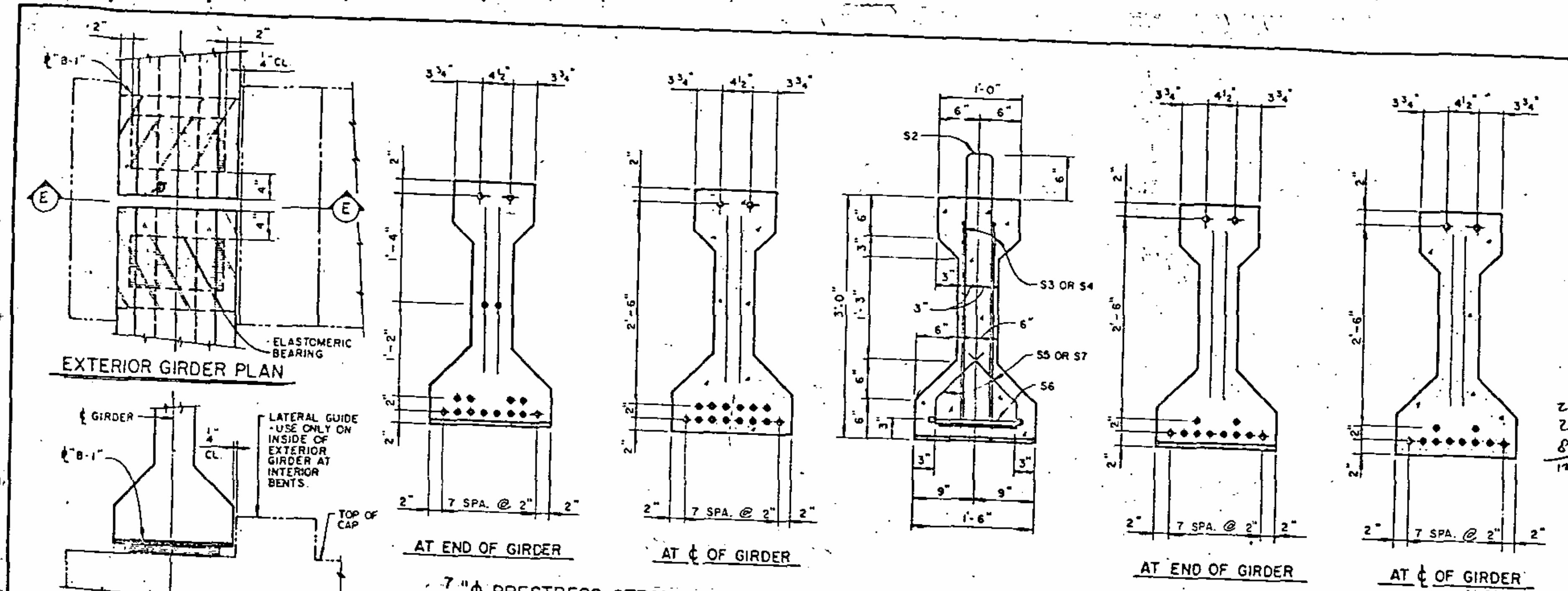
SUPERSTRUCTURE
BILL OF MATERIAL

FEBRUARY 1984

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	158
1			3			TOTAL SHEETS
2			4			

DWG. S-10

DRAWN BY J.W. ROBINSON DATE FEB., 1984
CHECKED BY JOSE DANON DATE FEB., 1984



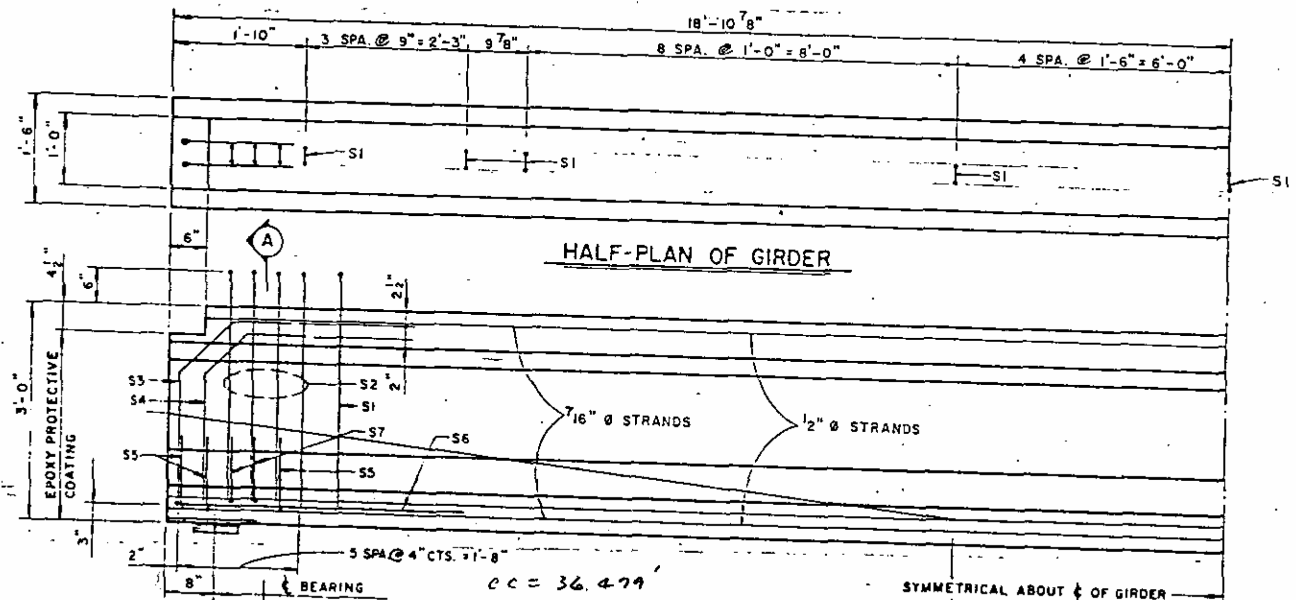
EXTERIOR GIRDER PLAN

ELEVATION "E-E"

7/16"Φ PRESTRESS STRAND LAYOUT

SECTION "A-A"

12 - 1/2"Φ PRESTRESS STRAND LAYOUT



HALF-PLAN OF GIRDER

HALF-ELEVATION OF GIRDER

NOTES

THE CONTRACTOR MAY USE EITHER 7/16" Ø OR 1/2" Ø STRESS RELIEVED STRANDS ACCORDING TO LAYOUTS SHOWN ON THIS SHEET.

THE CONTRACTOR, AT HIS OPTION, MAY USE LOW-RELAXATION STRANDS IN LIEU OF STRESS RELIEVED STRANDS. DESIGN AND STRAND PATTERN MUST PROVIDE AT LEAST THE SAME NET COMPRESSIVE STRESS AFTER THE LOSSES. THE ULTIMATE STRENGTH OF THE GIRDER MUST MEET THE REQUIREMENTS OF THE APPLICABLE AASHTO SPECIFICATIONS. LOW-RELAXATION STRANDS SHALL BE TENSIONED AND ANCHORED AT A LOAD EQUAL TO 75% OF ITS ULTIMATE STRENGTH. THIS APPLIED PRESTRESSED FORCE SHALL BE SHOWN ON THE PLANS. SIZE OF LOW-RELAXATION STRANDS SHALL NOT BE LARGER THAN THOSE SHOWN FOR STRESS RELIEVED STRANDS. DESIGN AND DETAIL PLANS USING LOW-RELAXATION STRANDS MUST BE SUBMITTED TO THE HEAD OF STRUCTURE DESIGN UNIT FOR APPROVAL. ANY ADDITIONAL COST DUE TO THE USE OF LOW-RELAXATION STRANDS WILL BE PAID FOR BY THE CONTRACTOR.

THE SAME TYPE AND SAME SIZE STRANDS SHALL BE USED FOR ALL GIRDERS 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.

WHEN USED ON 90° SKEW, NOTCH IN TOP FLANGE OF GIRDER MAY BE OMITTED.

~~[illegible]~~

ALL REINFORCING STEEL SHALL BE GRADE 60.

APPLY EPOXY PROTECTIVE COATING TO END OF GIRDER SURFACES.

FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

ELASTOMER IN ALL BEARINGS SHALL HAVE A GRADE 50 DUROMETER HARDNESS. SEE SPECIAL PROVISIONS.

STEEL PLATES IN LAMINATED BEARINGS SHALL CONFORM TO ASTM A-36.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED.

THE CONTRACTOR MAY SELECT OPTION "1" OR OPTION "2" FOR EMBEDDED PLATE "B-1".

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

DEFORMED ANCHOR STUDS SHALL CONFORM TO ASTM A-496. WELDING PROCEDURE QUALIFICATION TEST FOR DEFORMED ANCHOR STUDS MAY BE REQUIRED.

ENDS OF ALL PRESTRESSED STRANDS SHALL BE RECESSED AND GROUTED. SEE DETAIL BELOW. GROUT TO BE NON-METALLIC, NON-SHRINK AND SHALL BE APPROVED BY THE ENGINEER. SEE SPECIAL PROVISIONS.

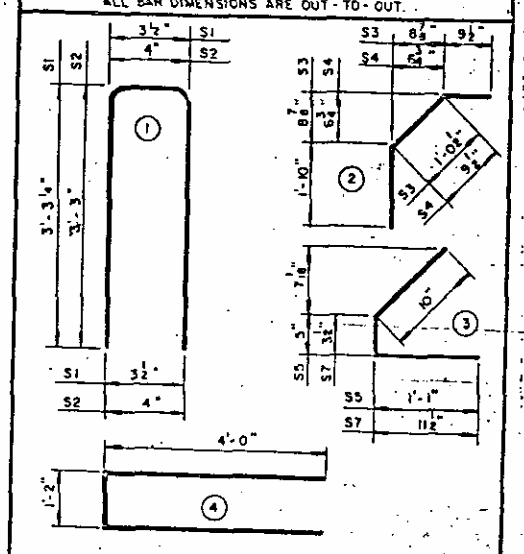
GRADE 270 S. R. STRANDS	7/16" Φ	1/2" Φ
AREA (SQUARE INCHES)	0.115	0.153
ULTIMATE STRENGTH (LBS. PER STRAND)	31,000	41,300
APPLIED PRESTRESS (LBS. PER STRAND)	21,700	28,900

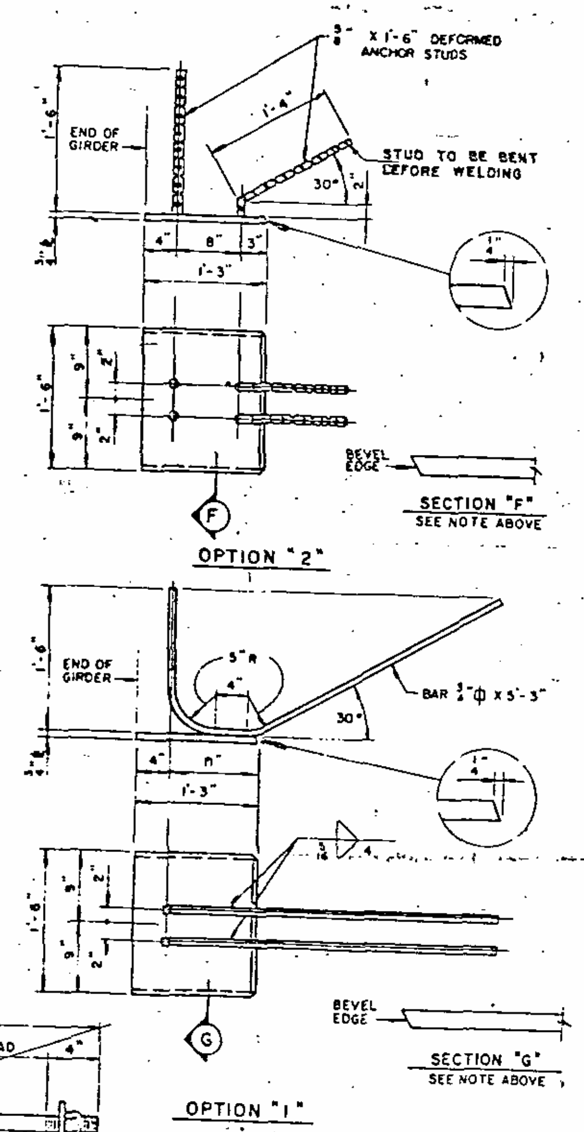
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	31	#4	1	6'-10"	142
S2	8	#5	1	6'-10"	57
S3	4	#6	2	3'-8"	22
S4	4	#6	2	3'-5"	21
S5	12	#4	3	2'-4"	19
S6	2	#6	4	9'-2"	28
S7	8	#4	3	2'-1"	11

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT.





SECTION "F" SEE NOTE ABOVE

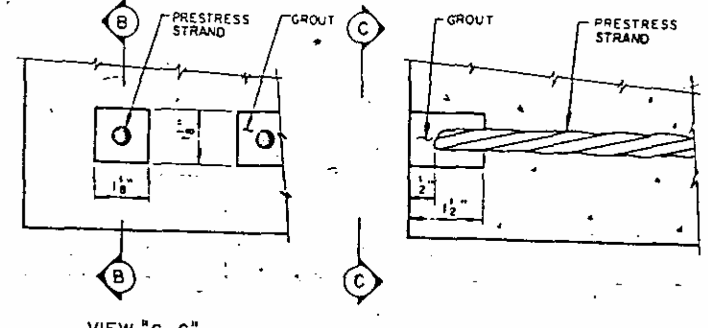
OPTION "2"

SECTION "G" SEE NOTE ABOVE

OPTION "1"

TWO EMBEDDED PLATES "B-1" ARE REQUIRED FOR EACH GIRDER.

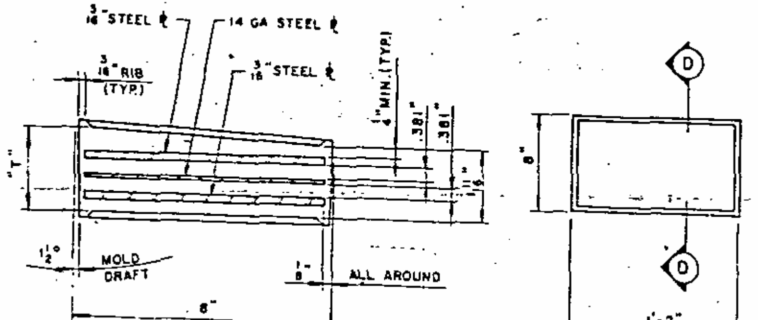
EMBEDDED PLATE "B-1" DETAILS



VIEW "C-C"

SECTION "B-B"

GROUTED RECESS AT END OF PRESTRESS STRAND



SECTION "D-D"

PLAN

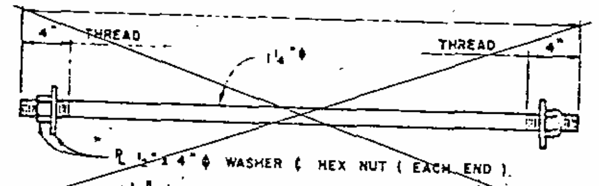
BEARING TYPE	THICKNESS "T"	GIRDER GRADE (%)	NUMBER REQUIRED
P1	1 11/16"	0.00 - 1.00	
P2	1 13/16"	1.00 - 2.25	8
P3	1 15/16"	2.25 - 3.50	
P4	2 1/16"	3.50 - 5.50	

ELASTOMERIC BEARING DETAILS

DEFLECTION TABLE FOR SPAN "A"

GIRDER	CAMBER (GIRDER ALONE IN PLACE)	DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD *	FINAL DEFLECTION
	USING 1/2" Ø STRANDS		
INTERIOR	9/16" ↑	1/4" ↓	5/16" ↑
EXTERIOR	9/16" ↑	1/4" ↓	5/16" ↑
	USING 7/16" Ø STRANDS		
INTERIOR	5/8" ↑	1/4" ↓	3/8" ↑
EXTERIOR	5/8" ↑	1/4" ↓	3/8" ↑

* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD.



1 1/4" Φ TIE ROD ASSEMBLY

(____ COMPLETE ASSEMBLIES REQUIRED.)

QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL	5,000 PSI CONCRETE	7/16" Φ S.R. STRANDS	1/2" Φ S.R. STRANDS
	LB	CY	№	№
	300	3.6	16	12

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
4	37'-9 3/4"	151'-3"

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11- 763+19.06 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
36" PRESTRESSED CONCRETE GIRDER
SPAN "A"

SEPT. 1980

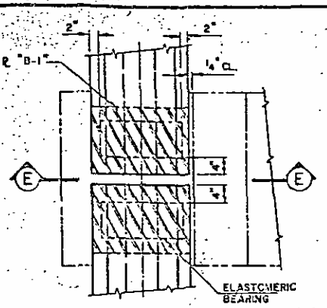
ASSEMBLED BY	J.W. ROBINSON	DATE	FEB. 1984	SPECIAL
CHECKED BY	A.M. SMITH	DATE	FEB. 1984	
DRAWN BY	C.C. MITCHINER	DATE	SEPT 1980	STANDARD
CHECKED BY	R D UNDERWOOD	DATE	SEPT 10 1980	

REVISIONS

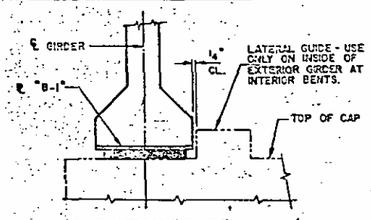
NO.	BY	DATE	NO.	BY	DATE
1	JEC	9-18-85			

SHEET NO. 159

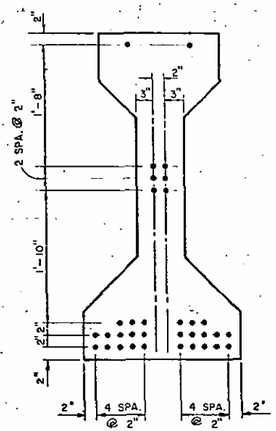
Rev. #1: Revised to change Deflection in Table. By: JEC ✓By: TVK Date: 9/18/85



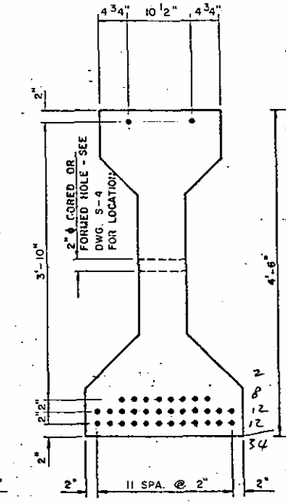
EXTERIOR GIRDER PLAN



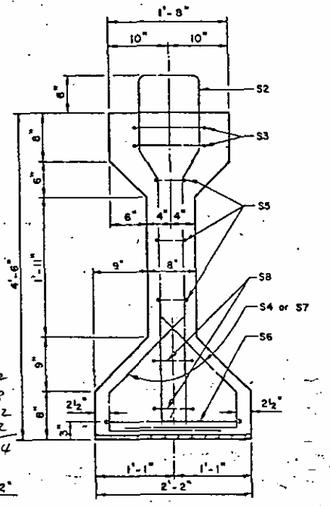
ELEVATION "E-E"



AT END OF GIRDER

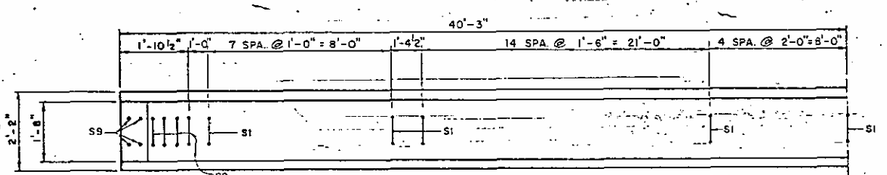


AT ℄ OF GIRDER

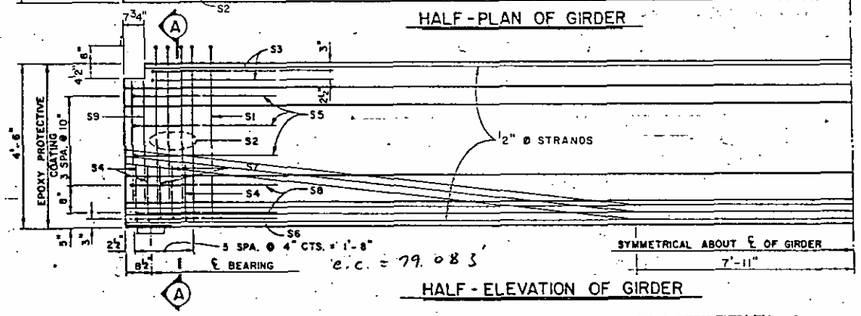


SECTION "A-A"

34 - ½" ϕ PRESTRESS STRAND LAYOUT



HALF-PLAN OF GIRDER



HALF-ELEVATION OF GIRDER

DEFLECTION TABLE FOR SPANS "B" AND "C"

GIRDER	USING ½" Ø STRANDS. CAMBER (GIRDER ALONE IN PLACE)	DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD *	FINAL DEFLECTION
INTERIOR	2 3/8"	1 1/16"	1 5/16"
EXTERIOR	2 3/8"	1 1/16"	1 5/16"

* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD.

5-25-83 BY: R.E.L.
7-13-82 BY: E.R.L.
6-18-82 BY: R.E.K.

REVISED
REVISED
REDRAWN

ASSEMBLED BY J.W. ROBINSON	DATE FEB. 1984	SPECIAL
CHECKED BY JOSE DANON	DATE FEB. 1984	
DRAWN BY ROSS EDWARD KLOSENY	DATE JUNE 1982	STANDARD
CHECKED BY E. RUSSELL LURWICK, JR	DATE JUNE, 1982	

NOTES

THIS STANDARD SHOWS DESIGN, DETAIL AND PROPERTIES OF STRANDS BASED ON STRESS RELIEVED STRANDS. HOWEVER, THE CONTRACTOR, AT HIS OPTION, MAY USE LOW-RELAXATION STRANDS IN LIEU OF STRESS RELIEVED STRANDS. DESIGN AND STRAND PATTERN MUST PROVIDE AT LEAST THE SAME NET COMPRESSIVE STRESS AFTER THE LOSSES. THE ULTIMATE STRENGTH OF THE GIRDER MUST MEET THE REQUIREMENTS OF THE APPLICABLE AASHTO SPECIFICATIONS. LOW RELAXATION STRANDS SHALL BE TENSIONED AND ANCHORED AT A LOAD EQUAL TO 75% OF ITS ULTIMATE STRENGTH. THIS APPLIED PRESTRESSED FORCE SHALL BE SHOWN ON THE PLANS. SIZE OF LOW-RELAXATION STRANDS SHALL NOT BE LARGER THAN THOSE SHOWN FOR STRESS RELIEVED STRANDS. DESIGN AND DETAIL PLANS USING LOW-RELAXATION STRANDS MUST BE SUBMITTED TO THE HEAD OF STRUCTURE DESIGN UNIT FOR APPROVAL. ANY ADDITIONAL COST DUE TO THE USE OF LOW RELAXATION STRANDS WILL BE PAID FOR BY THE CONTRACTOR.

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.

THE SAME TYPE STRANDS SHALL BE USED FOR ALL GIRDERS IN THE STRUCTURE.

TIE ROD ASSEMBLY SHALL BE ASTM A-36 GRADE STRUCTURAL STEEL.

ALL REINFORCING STEEL SHALL BE GRADE 60.

APPLY EPOXY PROTECTIVE COATING TO END OF GIRDER SURFACES.

FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

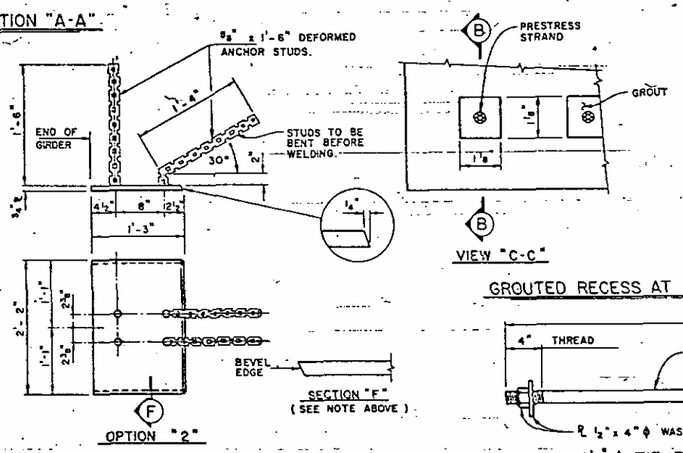
EMBEDDED PLATE "B-1" SHALL BE GALVANIZED.

THE CONTRACTOR MAY SELECT OPTION "1" OR OPTION "2" FOR EMBEDDED PLATE "B-1".

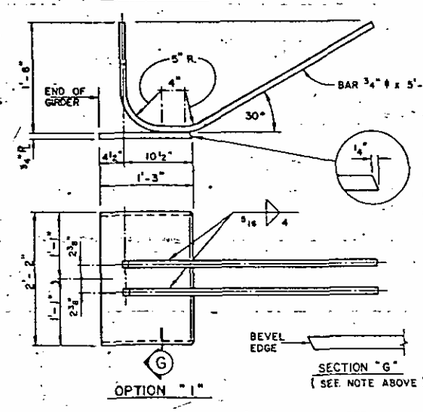
BEVEL EDGES OF PLATE "B-1" TO GIVE CLOSE FIT BUT NOT TIGHT FIT TO STEEL CASTING FORM.

DEFORMED ANCHOR STUDS SHALL CONFORM TO ASTM A-496. WELDING PROCEDURE QUALIFICATION TEST FOR DEFORMED ANCHOR STUDS MAY BE REQUIRED.

ENDS OF ALL PRESTRESSED STRANDS SHALL BE RECESSED AND GROUTED. SEE DETAIL BELOW. GROUT TO BE NON-METALLIC, NON-SHRINK AND SHALL BE APPROVED BY THE ENGINEER. SEE SPECIAL PROVISIONS.



OPTION "2"

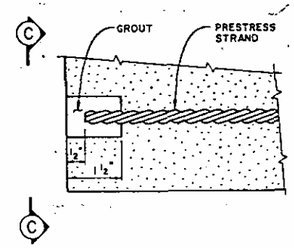


OPTION "1"

TWO EMBEDDED PLATES "B-1" ARE REQUIRED FOR EACH GIRDER

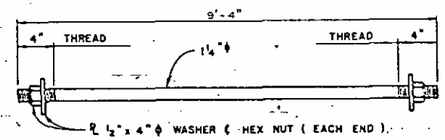
EMBEDDED PLATE "B-1" DETAILS

VIEW "C-C"



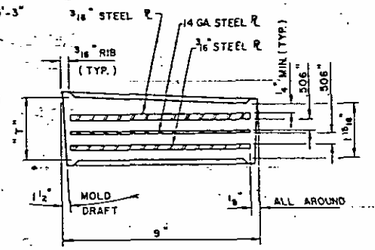
SECTION "B-B"

GROUTED RECESS AT END OF PRESTRESS STRAND

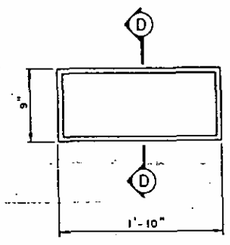


1¼" ϕ TIE ROD ASSEMBLY

(6 COMPLETE ASSEMBLIES REQUIRED.)



SECTION "D-D"



PLAN

BEARING TYPE	THICKNESS "T"	GIRDER GRADE (%)	NUMBER REQUIRED
P1	1 15/16"	0.00 - 1.00	16
P2	2 5/16"	1.00 - 2.25	
P3	2 7/16"	2.25 - 3.50	
P4	2 5/8"	3.50 - 5.00	

ELASTOMERIC BEARING DETAILS

GRADE 270 S. R. STRANDS

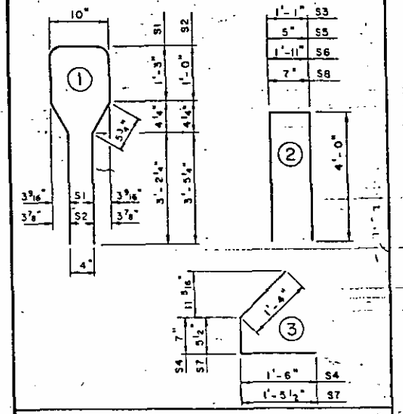
	½" ϕ
AREA (SQUARE INCHES)	0.153
ULTIMATE STRENGTH (LBS. PER STRAND)	41,300
APPLIED PRESTRESS (LBS. PER STRAND)	28,900

REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	53	#4	1	10'-8"	378
S2	8	#6	1	10'-8"	128
S3	4	#4	2	9'-1"	24
S4	12	#4	3	3'-5"	27
S5	6	#4	2	8'-5"	34
S6	2	#6	2	9'-11"	30
S7	8	#4	3	3'-3"	17
S8	4	#4	2	8'-7"	23
S9	8	#6	STR.	3'-11"	47

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LBS.	5,000 PSI. CONCRETE CY.	½" ϕ S.R. STRANDS NO.
	708	16.3	34

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
8	80'-6"	644'-0"

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
763+19.06 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
54" PRESTRESSED
CONCRETE GIRDER
SPANS "B" AND "C"

JUNE 1982

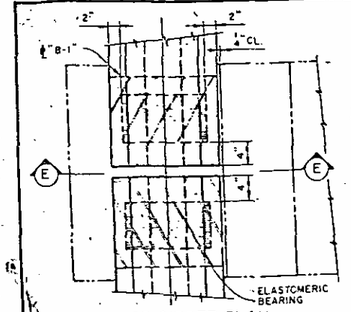
REVISIONS NO.	BY	DATE	NO.	BY	DATE
1	JEC	9-18-85	3		
2			4		

SHEET NO. 16 TOTAL SHEETS

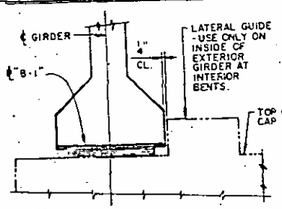
Rev. #1 : Revised to change Deflection in Table. By: JEC /B. TVK Date: 9-18-85

DWG. S-12

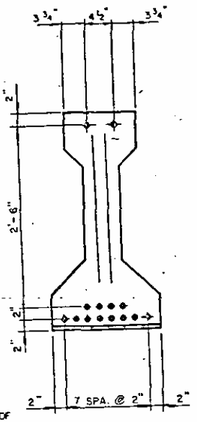
STD. NO. PCG3



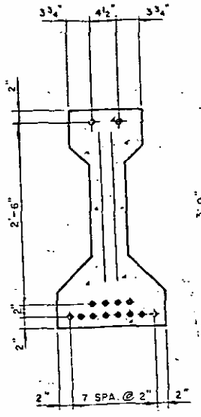
EXTERIOR GIRDER PLAN



ELEVATION "E-E"

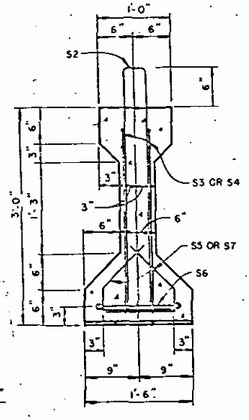


AT END OF GIRDER

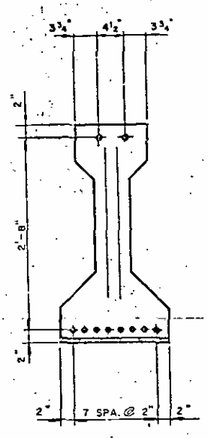


AT ℄ OF GIRDER

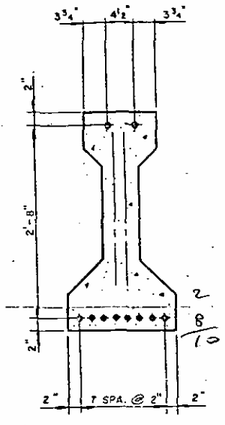
7/16"ϕ PRESTRESS STRAND LAYOUT



SECTION "A-A"

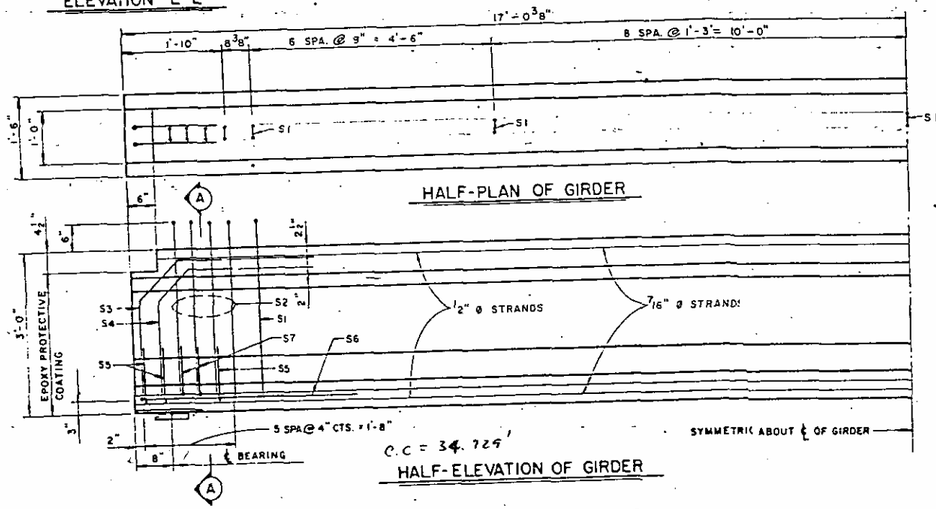


AT END OF GIRDER



AT ℄ OF GIRDER

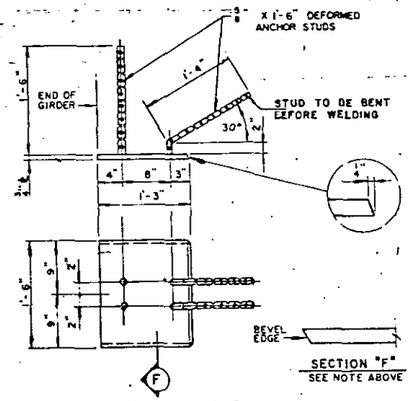
10-½"ϕ PRESTRESS STRAND LAYOUT



HALF-PLAN OF GIRDER

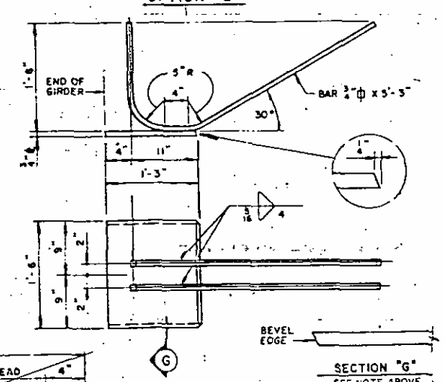
C.C = 34.729'

HALF-ELEVATION OF GIRDER



SECTION "F"
SEE NOTE ABOVE

OPTION "2"

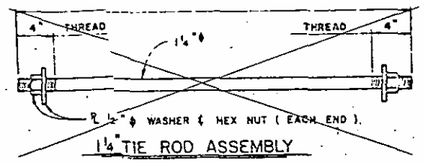


SECTION "G"
SEE NOTE ABOVE

OPTION "1"

TWO EMBEDDED PLATES "B-1" ARE REQUIRED FOR EACH GIRDER.

EMBEDDED PLATE "B-1" DETAILS



1¼" TIE ROD ASSEMBLY

(___ PLETE ASSEMBLIES REQUIRED.)

NOTES

THE CONTRACTOR MAY USE EITHER 7/16" Ø OR 1/2" Ø STRESS RELIEVED STRANDS ACCORDING TO LAYOUTS SHOWN ON THIS SHEET.

THE CONTRACTOR, AT HIS OPTION, MAY USE LOW-RELAXATION STRANDS IN LIEU OF STRESS RELIEVED STRANDS. DESIGN AND STRAND PATTERN MUST PROVIDE AT LEAST THE SAME NET COMPRESSIVE STRESS AFTER THE LOSSES. THE ULTIMATE STRENGTH OF THE GIRDER MUST MEET THE REQUIREMENTS OF THE APPLICABLE AASHTO SPECIFICATIONS. LOW-RELAXATION STRANDS SHALL BE TENSIONED AND ANCHORED AT A LOAD EQUAL TO 75% OF ITS ULTIMATE STRENGTH. THIS APPLIED PRESTRESSED FORCE SHALL BE SHOWN ON THE PLANS. SIZE OF LOW-RELAXATION STRANDS SHALL NOT BE LARGER THAN THOSE SHOWN FOR STRESS RELIEVED STRANDS. DESIGN AND DETAIL PLANS USING LOW-RELAXATION STRANDS MUST BE SUBMITTED TO THE HEAD OF STRUCTURE DESIGN UNIT FOR APPROVAL. ANY ADDITIONAL COST DUE TO THE USE OF LOW-RELAXATION STRANDS WILL BE PAID FOR BY THE CONTRACTOR.

THE SAME TYPE AND SAME SIZE STRANDS SHALL BE USED FOR ALL GIRDERS 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.

WHEN USED ON 90° SKEW, NOTCH IN TOP FLANGE OF GIRDER MAY BE OMITTED.

~~TIE ROD ASSEMBLY SHALL BE 1¼" A-36 GRADE THREADED STEEL~~

ALL REINFORCING STEEL SHALL BE GRADE 60.

APPLY EPOXY PROTECTIVE COATING TO END OF GIRDER SURFACES.

FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

ELASTOMER IN ALL BEARINGS SHALL HAVE A GRADE 50 DUROMETER HARDNESS. SEE SPECIAL PROVISIONS.

STEEL PLATES IN LAMINATED BEARINGS SHALL CONFORM TO ASTM A-36.

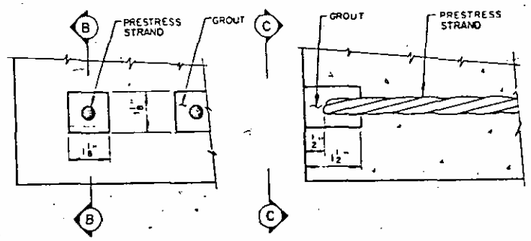
EMBEDDED PLATE "B-1" SHALL BE GALVANIZED.

THE CONTRACTOR MAY SELECT OPTION "1" OR OPTION "2" FOR EMBEDDED PLATE "B-1".

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

DEFORMED ANCHOR STUDS SHALL CONFORM TO ASTM A-496. WELDING PROCEDURE QUALIFICATION TEST FOR DEFORMED ANCHOR STUDS MAY BE REQUIRED.

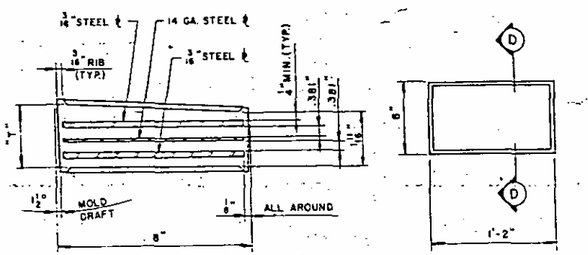
ENDS OF ALL PRESTRESSED STRANDS SHALL BE RECESSED AND GROUTED. SEE DETAIL BELOW. GROUT TO BE NON-METALLIC, NON-SHRINK AND SHALL BE APPROVED BY THE ENGINEER. SEE SPECIAL PROVISIONS.



VIEW "C-C"

SECTION "B-B"

GROUTED RECESS AT END OF PRESTRESS STRAND



SECTION "D-D"

PLAN

BEARING TYPE	THICKNESS "T"	GIRDER GRADE (%)	NUMBER REQUIRED
P1	11/16"	0.00 - 1.00	8
P2	1⅛"	1.00 - 2.25	
P3	1⅜"	2.25 - 3.50	
P4	1⅝"	3.50 - 5.50	

ELASTOMERIC BEARING DETAILS

GRADE 270 S. R. STRANDS

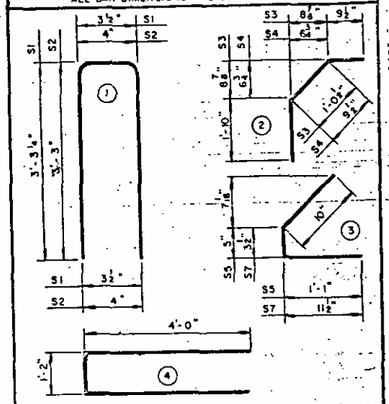
	7/16" ϕ	½" ϕ
AREA (SQUARE INCHES)	0.115	0.153
ULTIMATE STRENGTH (LBS. PER STRAND)	31,000	41,300
APPLIED PRESTRESS (LBS. PER STRAND)	21,700	28,900

REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	29	#4	1	6'-10"	133
S2	8	#5	1	6'-10"	57
S3	4	#6	2	3'-8"	22
S4	4	#6	2	3'-5"	21
S5	12	#4	3	2'-4"	19
S6	2	#6	4	9'-2"	28
S7	8	#4	3	2'-1"	11

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT.



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL	5,000 PSI CONCRETE	7/16" ϕ S.R. STRANDS	½" ϕ S.R. STRANDS
	LB	CY	Nº	Nº
	291	3.2	14	10

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
4	34'-0¾"	136'-3"

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
763+19.06 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
36" PRESTRESSED CONCRETE GIRDER
SPAN "D"

SEPT. 1980

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	16
1	JEC	9-18-85	3			TOTAL SHEETS
2			4			

STD. NO. PCG1

DEFLECTION TABLE FOR SPAN "D"

GIRDER	CAMBER (GIRDER ALONE IN PLACE)	DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD *	FINAL DEFLECTION
	USING ½" Ø STRANDS		
INTERIOR	3/8"	1/8"	¼"
EXTERIOR	3/8"	1/8"	¼"
	USING 7/16" Ø STRANDS		
INTERIOR	7/16"	1/8"	5/16"
EXTERIOR	7/16"	1/8"	5/16"

* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD.

ASSEMBLED BY: J.W. ROBINSON	DATE: FEB., 1984	SPECIAL	
CHECKED BY: A.M. SMITH	DATE: FEB., 1984		
DRAWN BY: C.C. HITCHNER	DATE: SEPT 1980	STANDARD	
CHECKED BY: R.D. UNDERWOOD	DATE: Sept 10, 1980		

REVISED 9-1-81 BY: ERL
REVISED 7-9-81 BY: REK
REVISED 4-16-81 BY: REK
REDRAWN 9-10-80 BY: CCM

REVISED 7-19-82 BY: ERL
REVISED 6-16-82 BY: ERL
REVISED 1-19-82 BY: ERL

BY: R.G.F
BY: R.D.U.
BY: R.D.U
BY: R.D.U

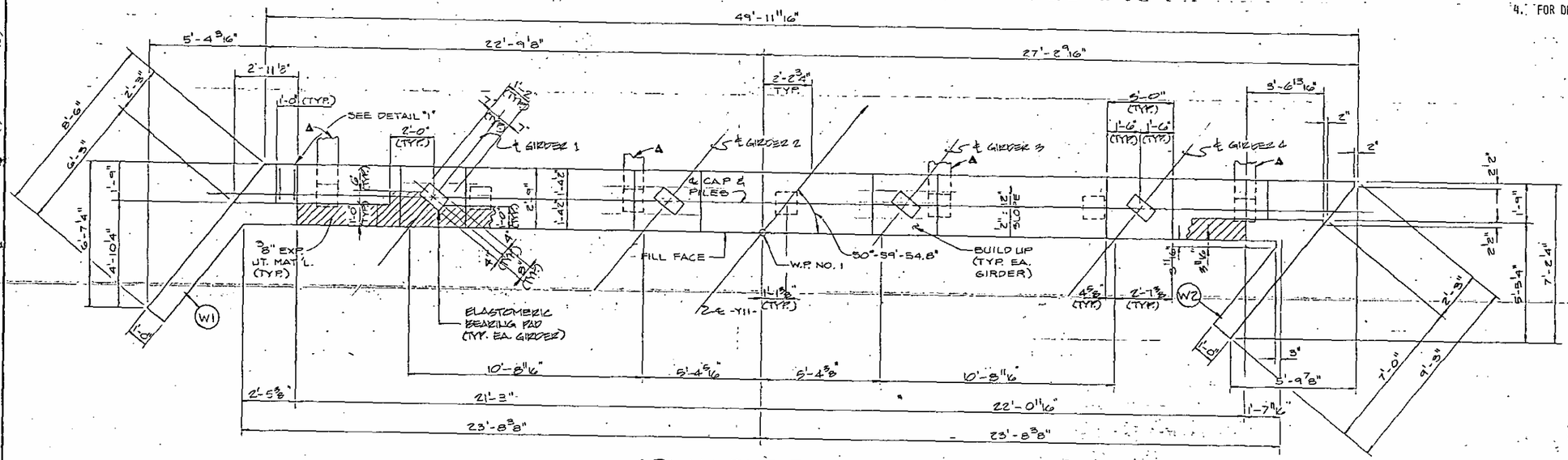
Rev. #1: Revised to change Deflection in table. By: JEC ✓By: TVR Date: 9/18/85

DWG. S-13

REV. No.	DESCRIPTION	DATE
	REVISIONS	
1	REVISED BEAM SEAT DIMENSIONS	2-20-86

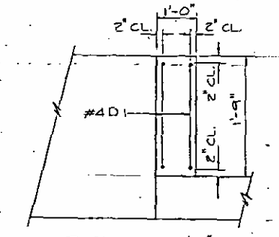
NOTES

1. PIPE DRAINS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR REINFORCING STEEL.
2. THE TOP SURFACE AREA OF THE END BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
3. FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.
4. FOR DETAILS OF P.V.C. PLASTIC PIPE DRAINS, SEE S-15.

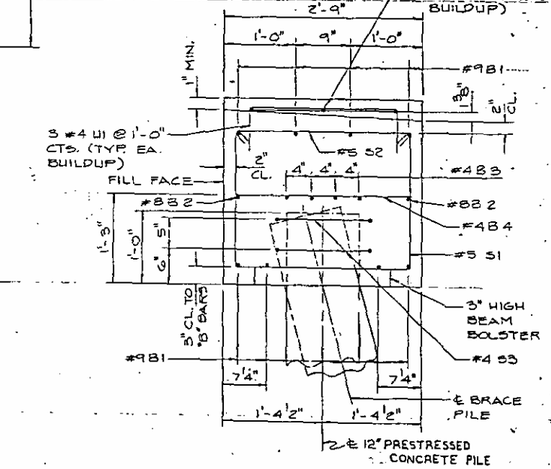


△PLAN END BENT 1

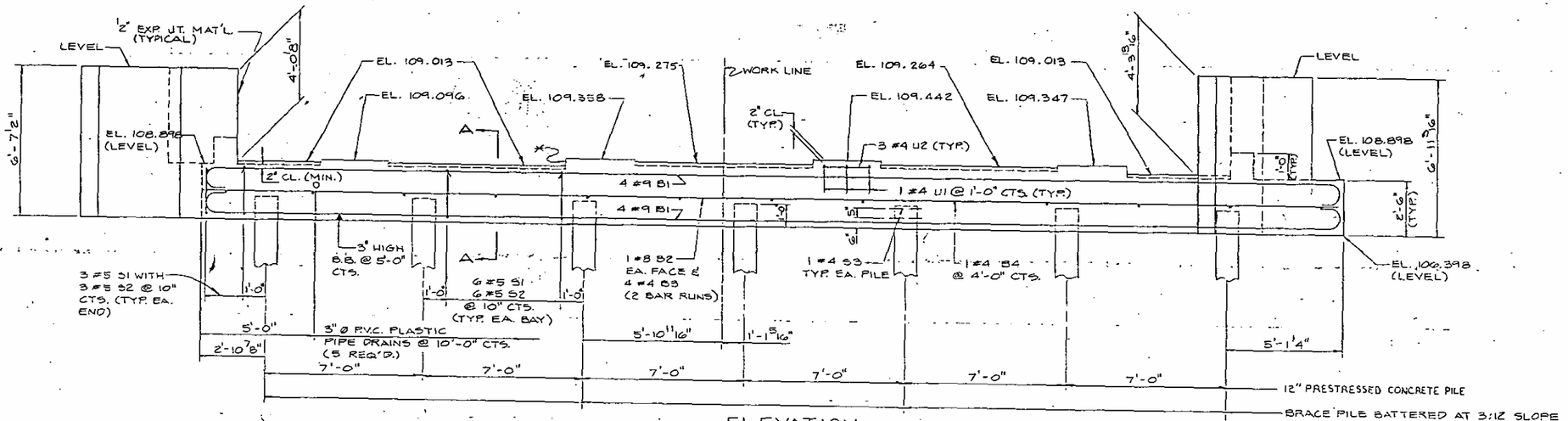
▲ DENOTES BRACE PILE BATTERED AT 3:12 SLOPE



DETAIL "1"
(RETAINING BLOCK-TYPICAL EACH SIDE)



SECTION "A-A"



ELEVATION

* 3/8" EXP. JT. MAT'L. ON VERTICAL FACE OF EACH BUILD-UP

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
763+19.06 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1

FEBRUARY 1984

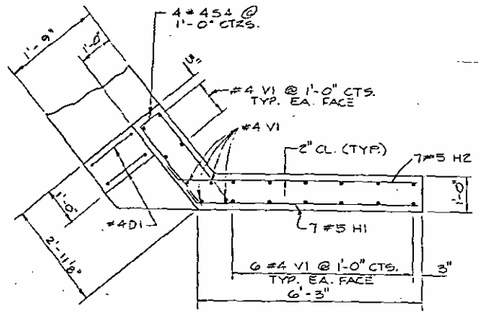
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	162
1	AMS	2-20-86	3			TOTAL SHEETS
2			4			

DWG. S-14

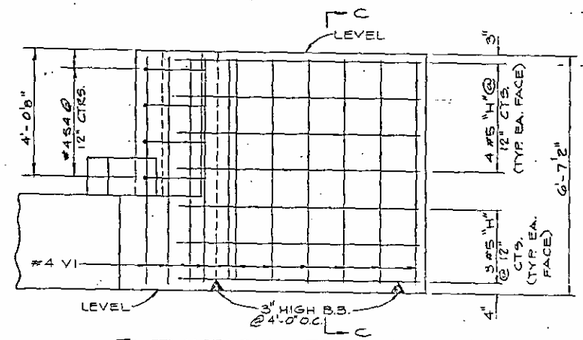
DRAWN BY J.W. ROBINSON DATE FEB. 1984
CHECKED BY KOSE PANON DATE FEB. 1984

Rev 1 REVISED BEAM SEAT DIMENSIONS BY: AMS BY: SKC DATE: 2-26-86

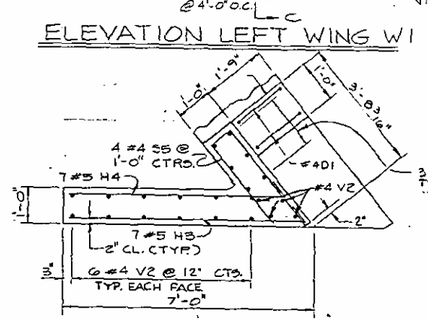
3-8-23



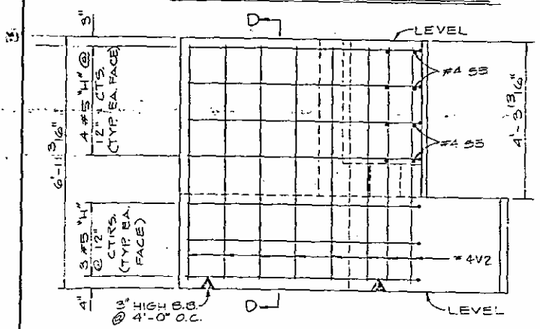
PLAN LEFT WING W1



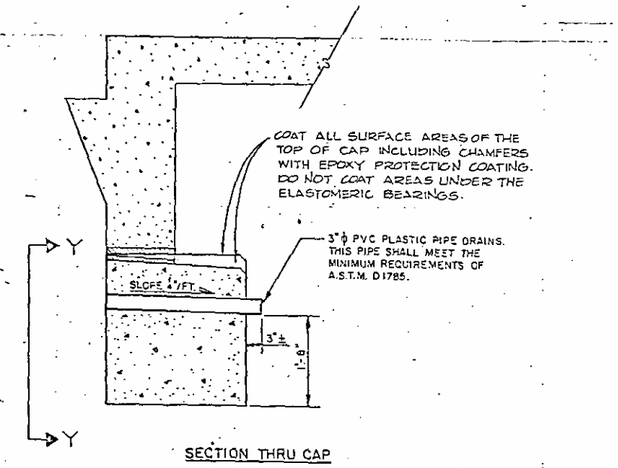
ELEVATION LEFT WING W1



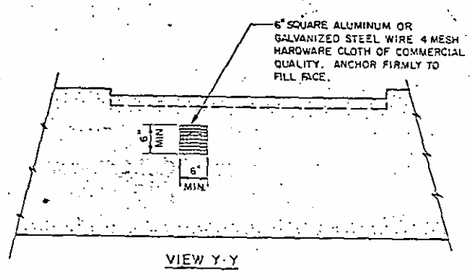
PLAN RIGHT WING W2



ELEVATION RIGHT WING W2



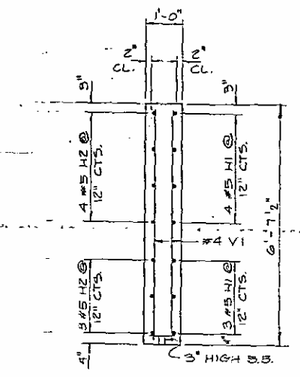
SECTION THRU CAP



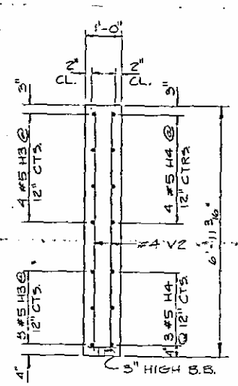
VIEW Y-Y

NOTE: NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE PVC PLASTIC PIPE DRAINS, HARDWARE CLOTH AND FASTENERS. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

PIPE DRAIN DETAILS

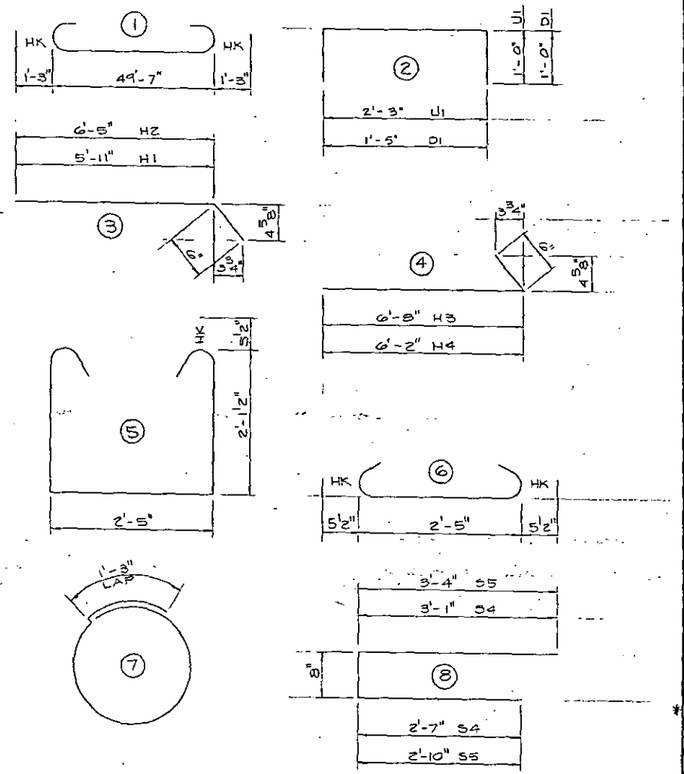


SECTION C-C



SECTION D-D

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	9	1	52'-1"	1,417
B2	2	8	STR.	49'-7"	265
B3	8	4	STR.	25'-5"	136
B4	12	4	STR.	2'-5"	20
D1	4	4	2	5'-1"	14
H1	7	5	3	6'-5"	47
H2	7	5	3	6'-11"	51
H3	7	5	4	7'-2"	53
H4	7	5	4	6'-8"	49
S1	42	5	5	7'-7"	333
S2	42	5	6	3'-4"	147
S3	14	4	7	6'-0"	57
S4	4	4	8	6'-4"	17
S5	4	4	8	6'-10"	19
U1	12	4	2	4'-3"	35
U2	12	4	STR.	2'-8"	22
V1	20	4	STR	6'-2"	83
V2	22	4	STR.	6'-5"	95
TOTAL LBS. =					2,860

REINFORCING STEEL LBS.= 2,860
*CLASS "A" CONCRETE CU. YDS.= 17.3

12" PRESTRESSED CONCRETE PILE
NO. = 7 LIN FT. ~~406'-0"~~ 434.0

*CONCRETE DISPLACED BY PILE HEADS HAS BEEN DEDUCTED

DRAWN BY J.W. ROBINSON DATE FEB., 1964
CHECKED BY A.M. SMITH DATE FEB., 1964

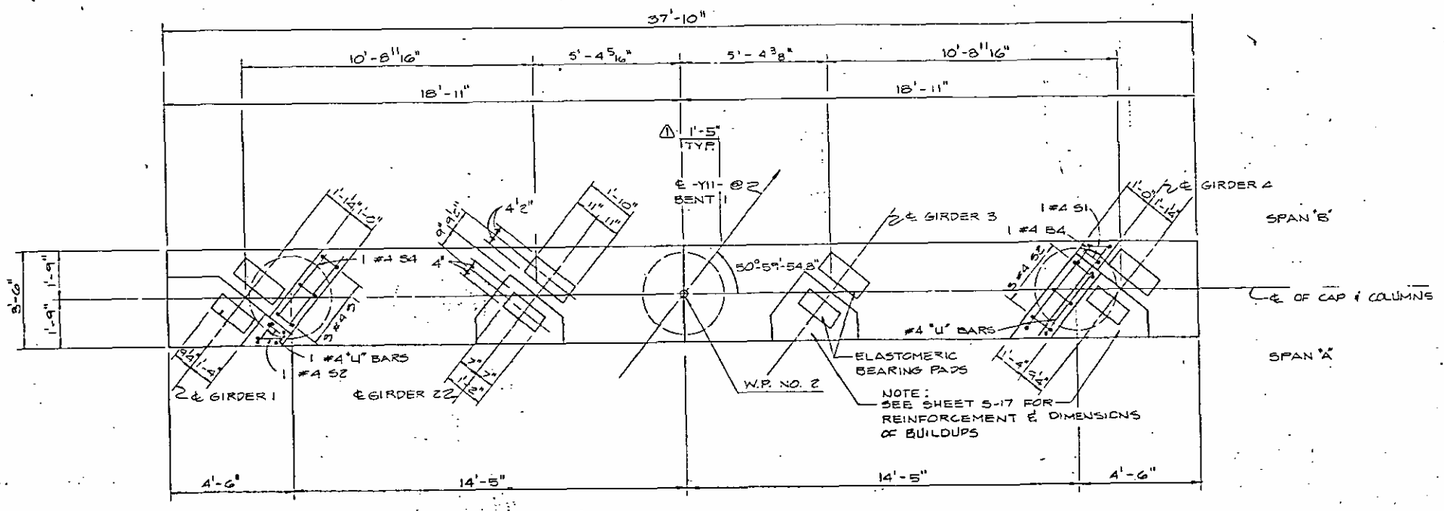
PROJECT NO. 8.1125805
EDGECOMBE COUNTY
STATION: 20+00.00-Y11
763+19.06 -L-
SHEET 2 OF 2

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

FEBRUARY 1964

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	163
1			3			TOTAL SHEETS
2			4			

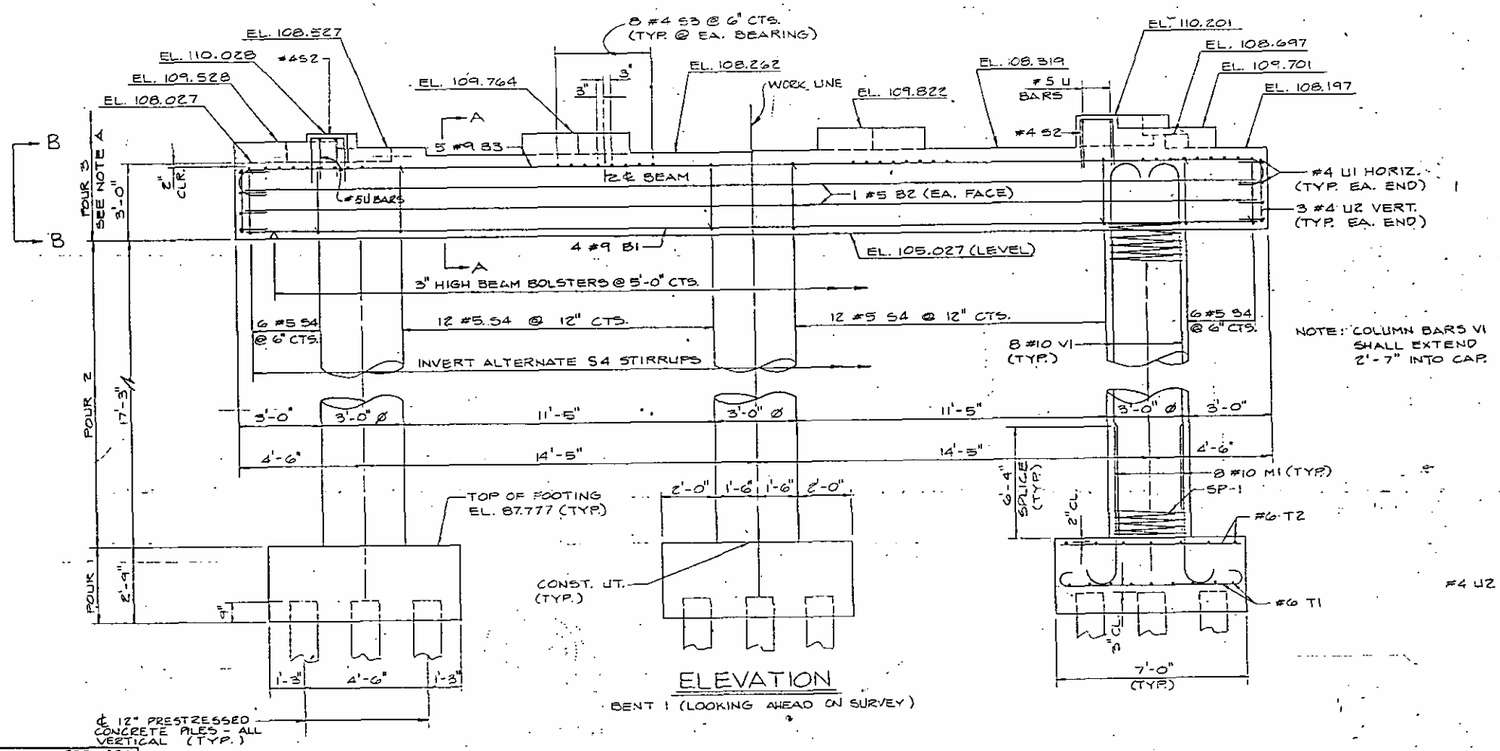
DWG. S-15



PLAN

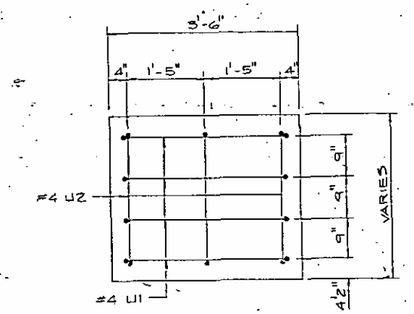
BENT 1 (LOOKING AHEAD ON SURVEY)

NOTE A: CONSTRUCTION JOINT PERMITTED AT TOP OF CAP



ELEVATION

BENT 1 (LOOKING AHEAD ON SURVEY)



VIEW B-B

NOTES

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

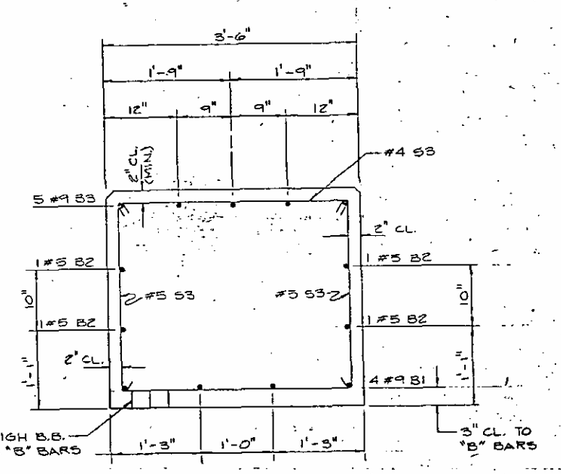
THE TOP SURFACE AREA OF THE BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

FOR EPOXY PROTECTIVE COATING FOR CONCRETE, SEE SPECIAL PROVISIONS.

COAT ALL SURFACE AREAS OF TOP OF CAP INCLUDING LATERAL GUIDES & CHAMBERS WITH EPOXY PROTECTIVE COATING. DO NOT COAT AREA UNDER ELASTOMERIC BEARINGS.

FOR SPIRAL COLUMN REINFORCING, SEE SPECIAL PROVISIONS.

REVISIONS		
DES. NO.	DESCRIPTION	DATE
1	REVISED DIMENSION AS NOTED	2-20-86



SECTION A-A

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
763+19.06 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 1

FEBRUARY 1984

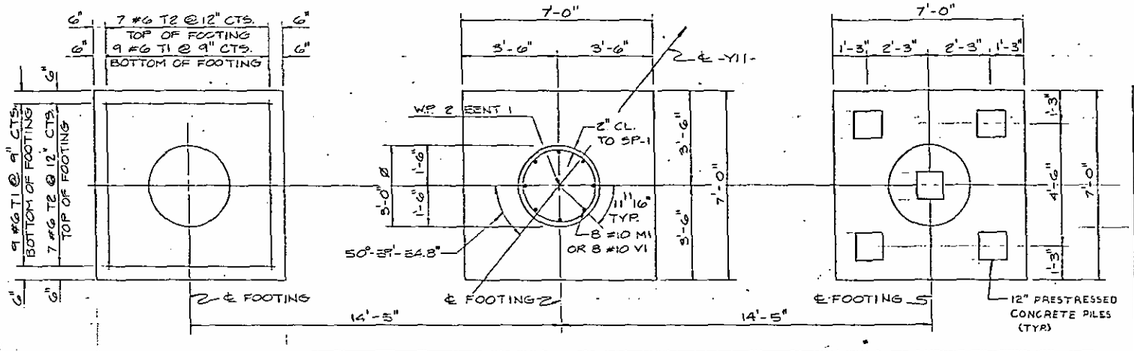
REVISIONS						SHEET NO.
NO.	BY.	DATE	NO.	BY	DATE	164
1	AMS	2-20-86	3			TOTAL SHEETS
2			4			

DWG. 3-16

DRAWN BY J.W. ROBINSON DATE FEB., 1984
CHECKED BY JOSE DANON DATE FEB., 1984

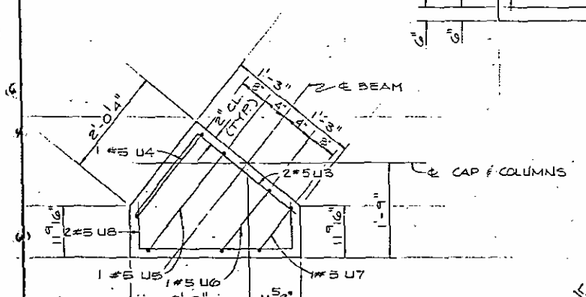
REV A REVISED DIMENSION AS NOTED BY: AMS ✓BY: SKC DATE: 2-26-86

5-B-23

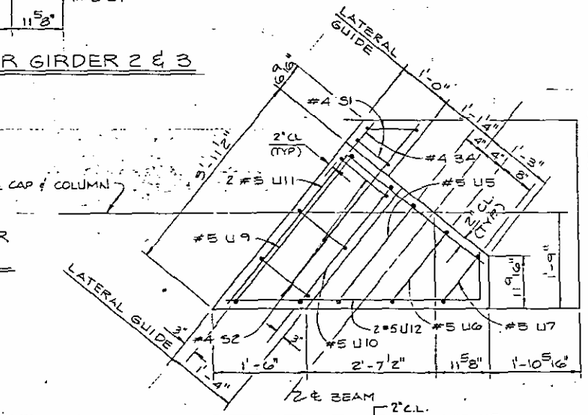


PLAN OF FOOTINGS

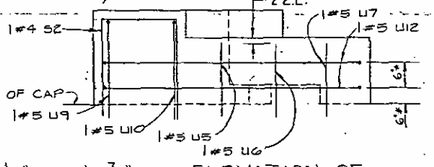
DATA SHOWN TYPICAL FOR EACH FOOTING



BUILDUP FOR GIRDER 2 & 3

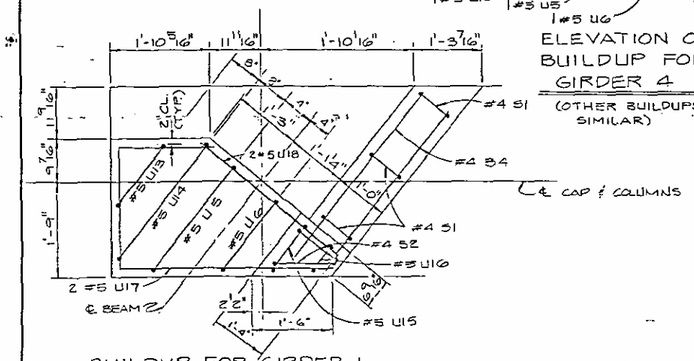


BUILDUP FOR GIRDER 4



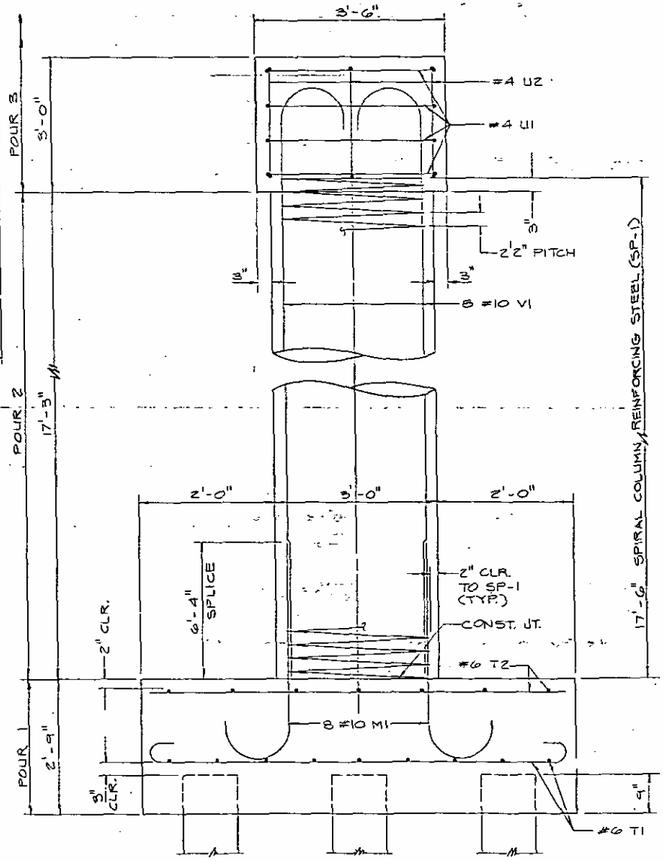
ELEVATION OF BUILDUP FOR GIRDER 4

(OTHER BUILDUPS SIMILAR)



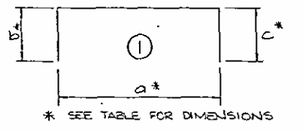
BUILDUP FOR GIRDER 1

NOTE: BUILDUPS NOT SHOWN FOR CLARITY.



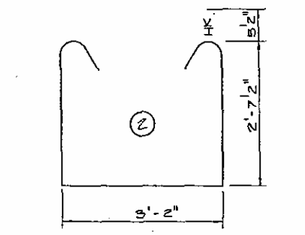
END ELEVATION

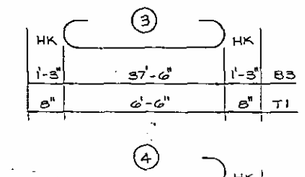
BAR TYPES

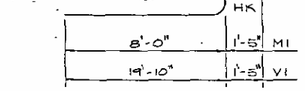


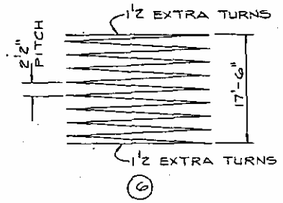
* SEE TABLE FOR DIMENSIONS

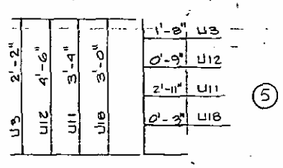
TYPE (1) BAR			
BAR	a	b	c
S1	8"	1'-6"	1'-6"
S2	1'-0"	2'-10"	2'-10"
U1	3'-2"	6"	6"
U2	2'-8"	6"	6"
U4	1'-10"	2'-8"	2'-8"
U5	2'-1"	2'-8"	2'-8"
U6	1'-6"	2'-8"	2'-8"
U7	11"	2'-8"	2'-8"
U9	3'-3"	3'-1"	3'-1"
U10	2'-7"	3'-1"	3'-1"
U13	1'-3"	2'-8"	2'-8"
U14	2'-7"	2'-8"	2'-8"
U15	11"	3'-1"	3'-1"
U16	5"	3'-1"	3'-1"
U17	2'-0"	3'-9"	1'-7"
S3	3'-2"	4 1/2"	4 1/2"
U8	2'-9"	8"	8"











ALL BAR DIMENSIONS ARE OUT TO OUT.

* CONCRETE DISPLACED BY PILE HEADS HAS BEEN DEDUCTED.

BILL OF MATERIAL

BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	9	STR.	37'-6"	510
B2	4	5	STR.	37'-6"	157
B3	5	9	3	40'-0"	680
B4	4	4	STR.	3'-6"	10
M1	24	10	4	9'-3"	973
S1	5	4	1	3'-8"	13
S2	5	4	1	6'-8"	23
S3	32	4	1	3'-11"	84
S4	36	5	2	9'-2"	351
T1	54	6	3	7'-10"	636
T2	42	6	STR.	6'-6"	411
U1	8	4	1	4'-2"	23
U2	6	4	1	3'-8"	15
U3	4	5	5	3'-10"	16
U4	2	5	1	7'-2"	15
U5	4	5	1	7'-5"	31
U6	4	5	1	6'-10"	29
U7	3	5	1	6'-3"	20
U8	4	5	1	4'-1"	18
U9	1	5	1	9'-5"	10
U10	1	5	1	8'-9"	10
U11	2	5	5	6'-3"	14
U12	2	5	5	5'-3"	11
U13	1	5	1	6'-7"	7
U14	1	5	1	7'-11"	9
U15	1	5	1	7'-1"	8
U16	1	5	1	6'-7"	7
U17	2	5	1	7'-4"	16
U18	2	5	5	3'-3"	7
V1	24	10	4	21'-3"	2,195
TOTAL					6,309
SP-1	3		6	717'-8"	1439
REINFORCING STEEL LBS. =					6,309
SPIRAL COLUMN REIN. STEEL LBS. =					1,439
* CLASS "A" CONCRETE CU. YDS =					45.7
EXCAVATION (BENT 1) CU. YDS =					~~67~~ 85.2
12" PRESTRESSED CONCRETE PILE					718.0
BENT 1 NO. 15 UN. FT. =					~~675~~

DIVISION OF CONCRETE

POUR NUMBER	CU. YDS.
1	14.6
2	13.6
3	17.5
TOTAL	45.7

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
763+19.06 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

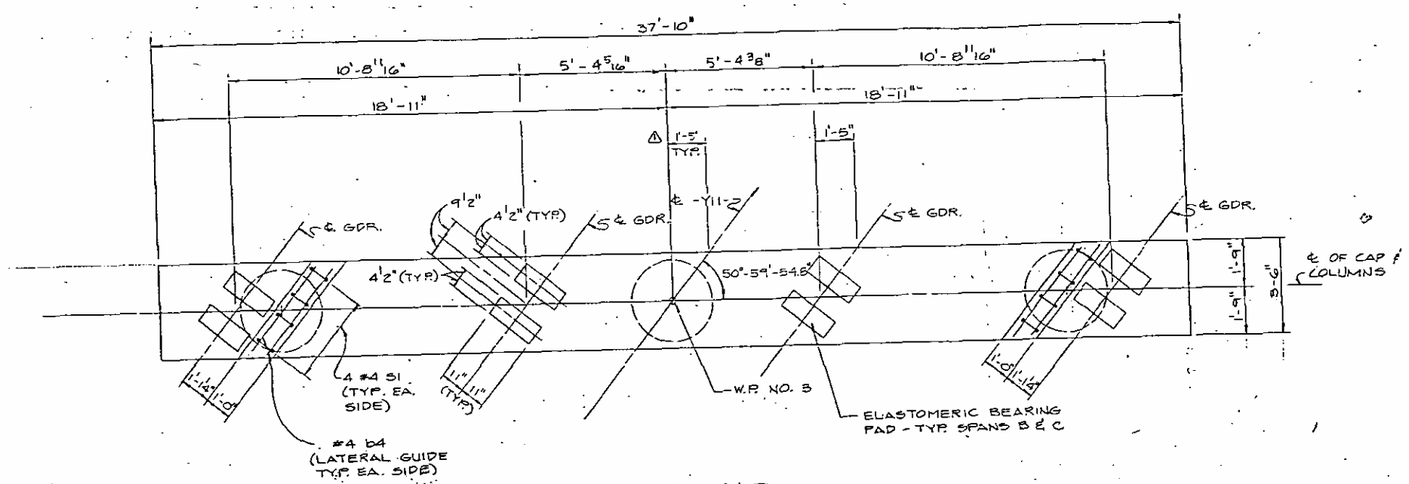
SUBSTRUCTURE
BENT 1

FEBRUARY 1984

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	165
1			3			TOTAL SHEETS
2			4			

DWG. S-17

DRAWN BY J.W. ROBINSON DATE FEB. 1984
CHECKED BY A.M. SMITH DATE FEB. 1984



PLAN OF CAP

NOTES

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

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

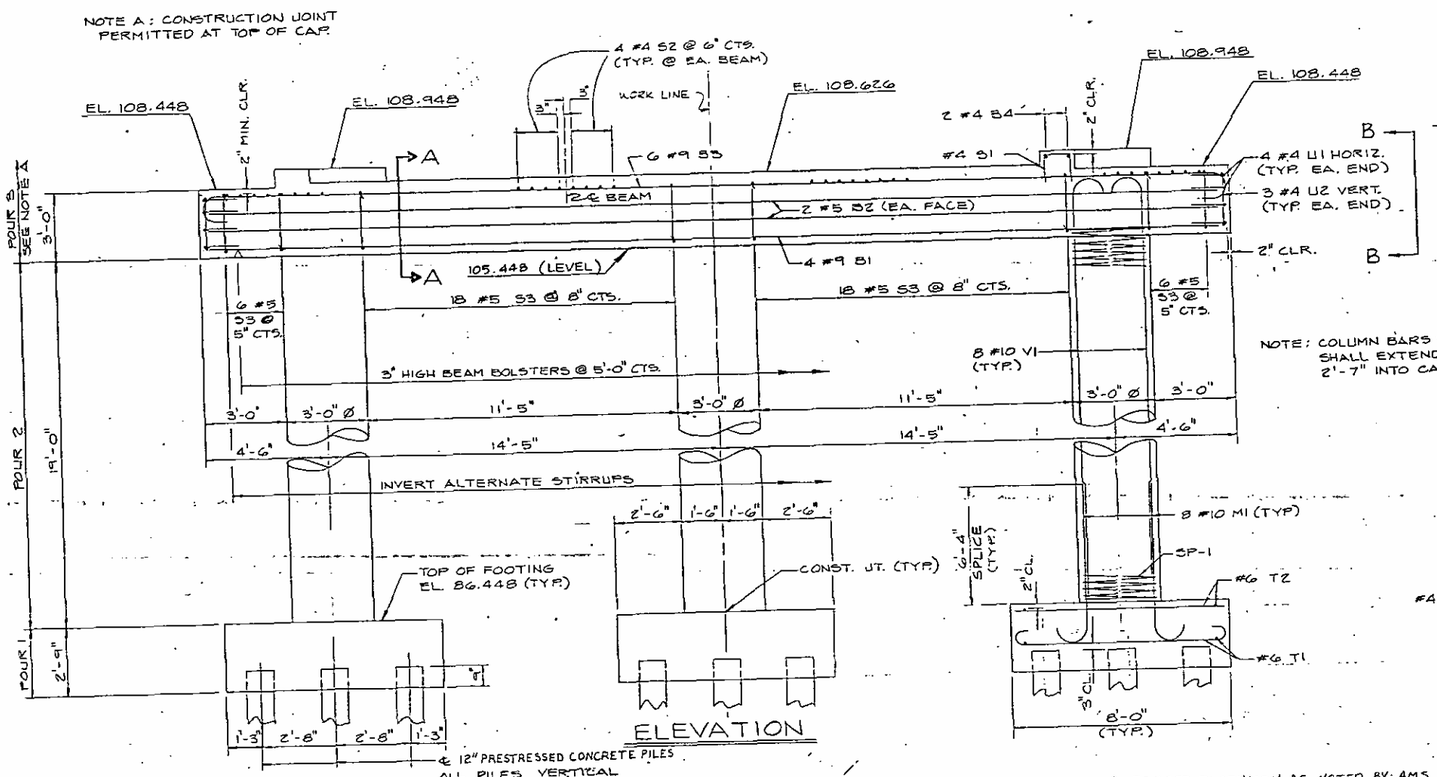
FOR EPOXY PROTECTIVE COATING FOR CONCRETE, SEE SPECIAL PROVISIONS.

COAT ALL SURFACE AREAS OF TOP OF CAP INCLUDING LATERAL GUIDES & CHAMFERS WITH EPOXY PROTECTIVE COATING. DO NOT COAT AREA UNDER ELASTOMERIC BEARINGS.

FOR SPIRAL COLUMN REINFORCING, SEE SPECIAL PROVISIONS.

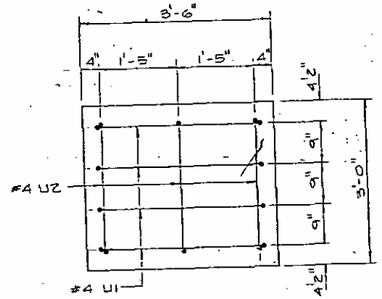
REV. No	DESCRIPTION REVISIONS	DATE
1	REVISED DIMENSION AS NOTED	2-20-86

NOTE A: CONSTRUCTION JOINT PERMITTED AT TOP OF CAP.



ELEVATION

NOTE: COLUMN BARS V1 SHALL EXTEND 2'-7" INTO CAP.



VIEW B-B

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
=763+19.06 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 2

FEBRUARY 1984

REVISIONS NO.	BY	DATE	NO.	BY	DATE
1	AMS	2-20-86	3		
2			4		

SHEET NO. 166
TOTAL SHEETS

DWG S-18

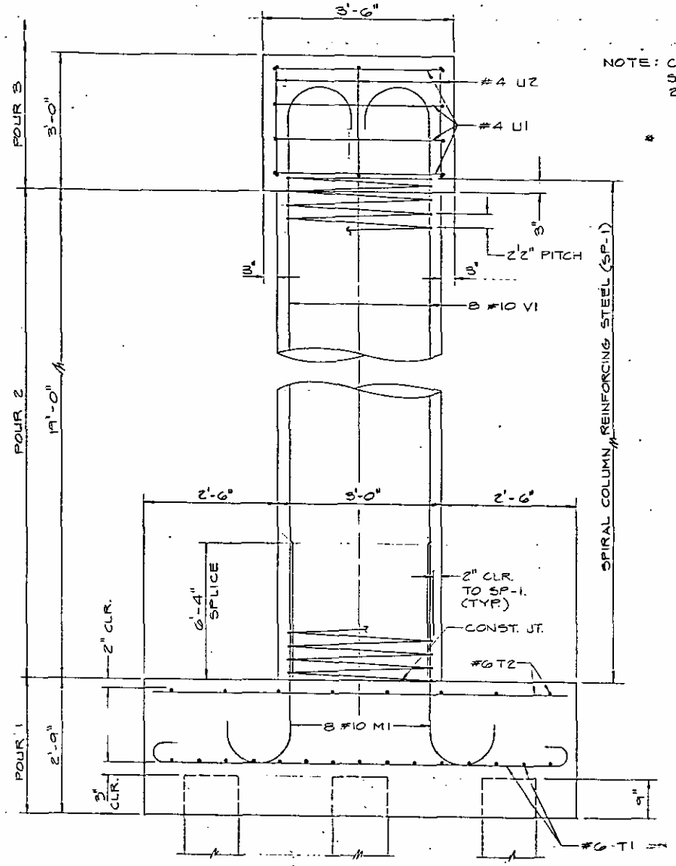
DRAWN BY J.W. ROBINSON DATE FEB. 1984
CHECKED BY JOSS PANON DATE FEB. 1984

REV. 1 REVISED DIMENSION AS NOTED BY: AMS ✓BY: SKC DATE: 2-26-86

3-B-23

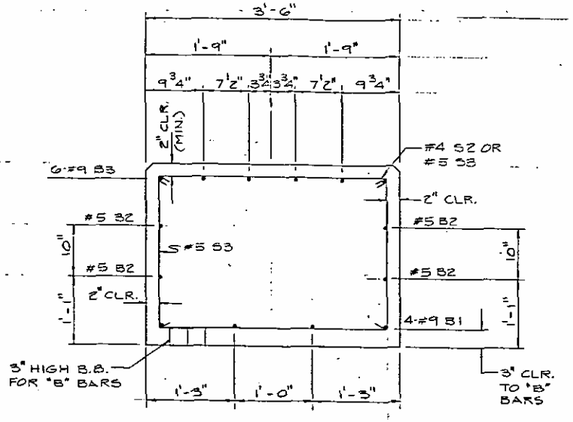
CASE BLUEPRINT & SUPPLY CO. HOUSTON

NOTE: BUILDUP NOT SHOWN FOR CLARITY.



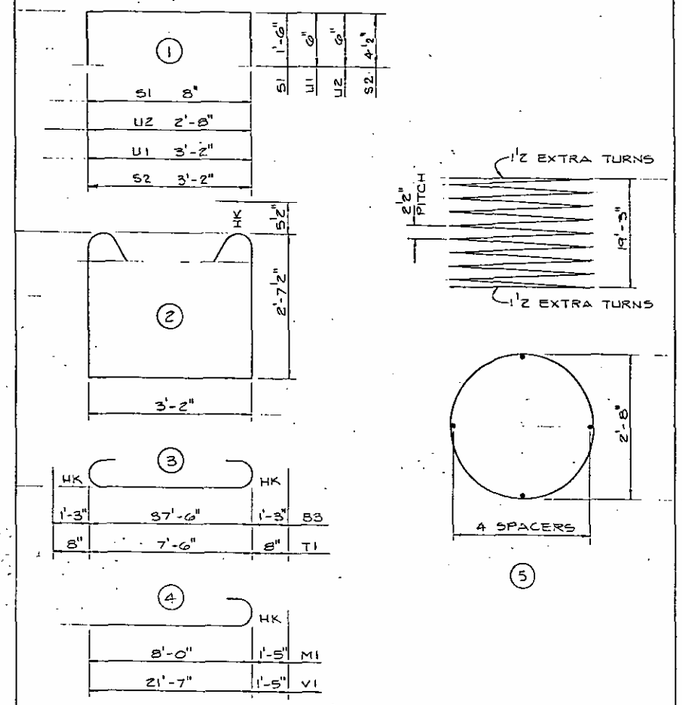
END ELEVATION

NOTE: COLUMN BARS V1 SHALL EXTEND 2'-7" INTO CAP.



SECTION A-A

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

BENT 2

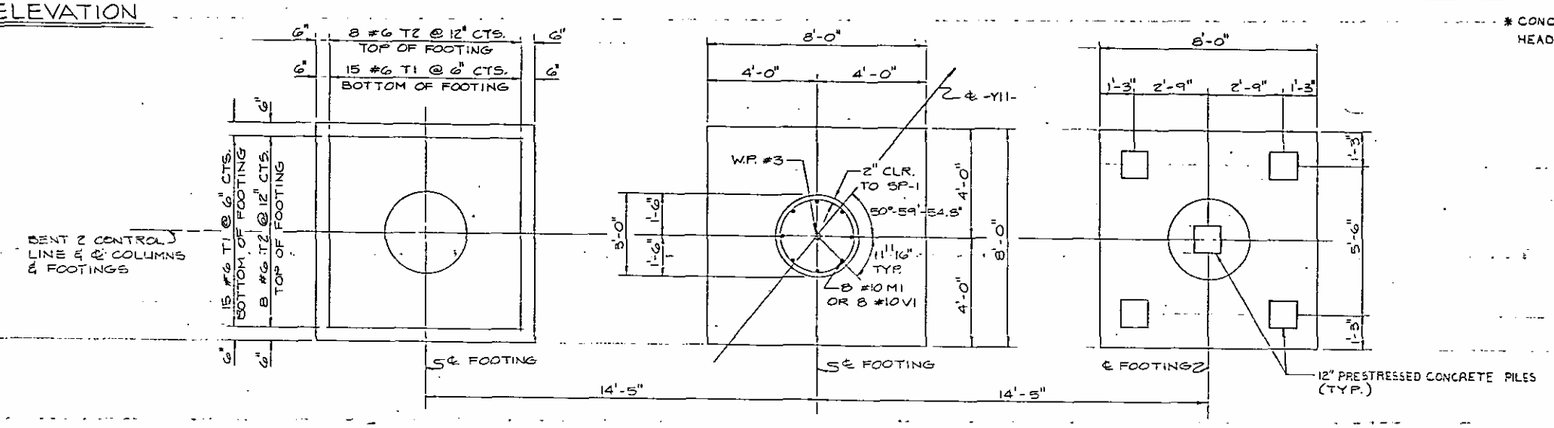
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#9	STR.	37'-6"	510
B2	4	#5	STR.	37'-6"	157
B3	6	#9	3	40'-0"	816
B4	4	#4	STR.	3'-6"	10
M1	24	#10	4	9'-5"	973
S1	8	#4	1	3'-8"	20
S2	32	#4	1	3'-11"	84
S3	48	#5	2	9'-4"	468
T1	90	#6	3	8'-10"	1,195
T2	48	#6	STR.	7'-6"	541
U1	8	#4	1	4'-2"	23
U2	6	#4	1	3'-3"	15
V1	24	#10	4	23'-0"	2,376
TOTAL					7,188
SP-1	3		5	787'-0"	1,578

12" PRESTRESSED CONCRETE PILES
NO. = 15 LIN FT. = 575 472.0
REINFORCING STEEL LBS. = 7,188
SPIRAL COLUMN REIN. STEEL LBS. = 1,578
* CLASS "A" CONCRETE CU. YDS. = 49.6
EXCAVATION CU. YDS. = 79.8

DIVISION OF CONCRETE

POUR NUMBER	CUBIC YARDS
1	19.1
2	14.9
3	15.6
TOTAL	49.6

* CONCRETE DISPLACED BY PILE HEADS HAS BEEN DEDUCTED



PLAN OF FOOTINGS

DATA SHOWN TYPICAL FOR EACH FOOTING

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
763+19.06 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

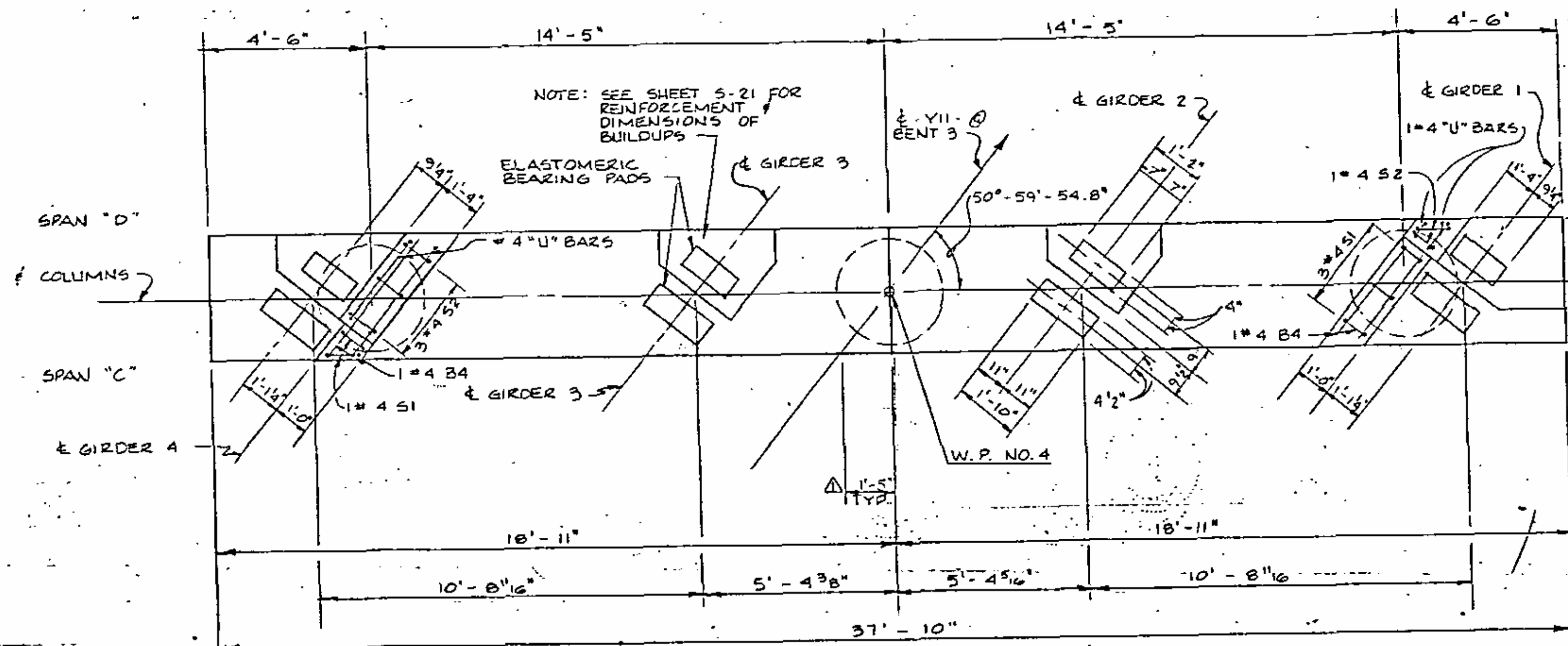
SUBSTRUCTURE
BENT 2

FEBRUARY 1984

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	167
1			3			TOTAL SHEETS
2			4			

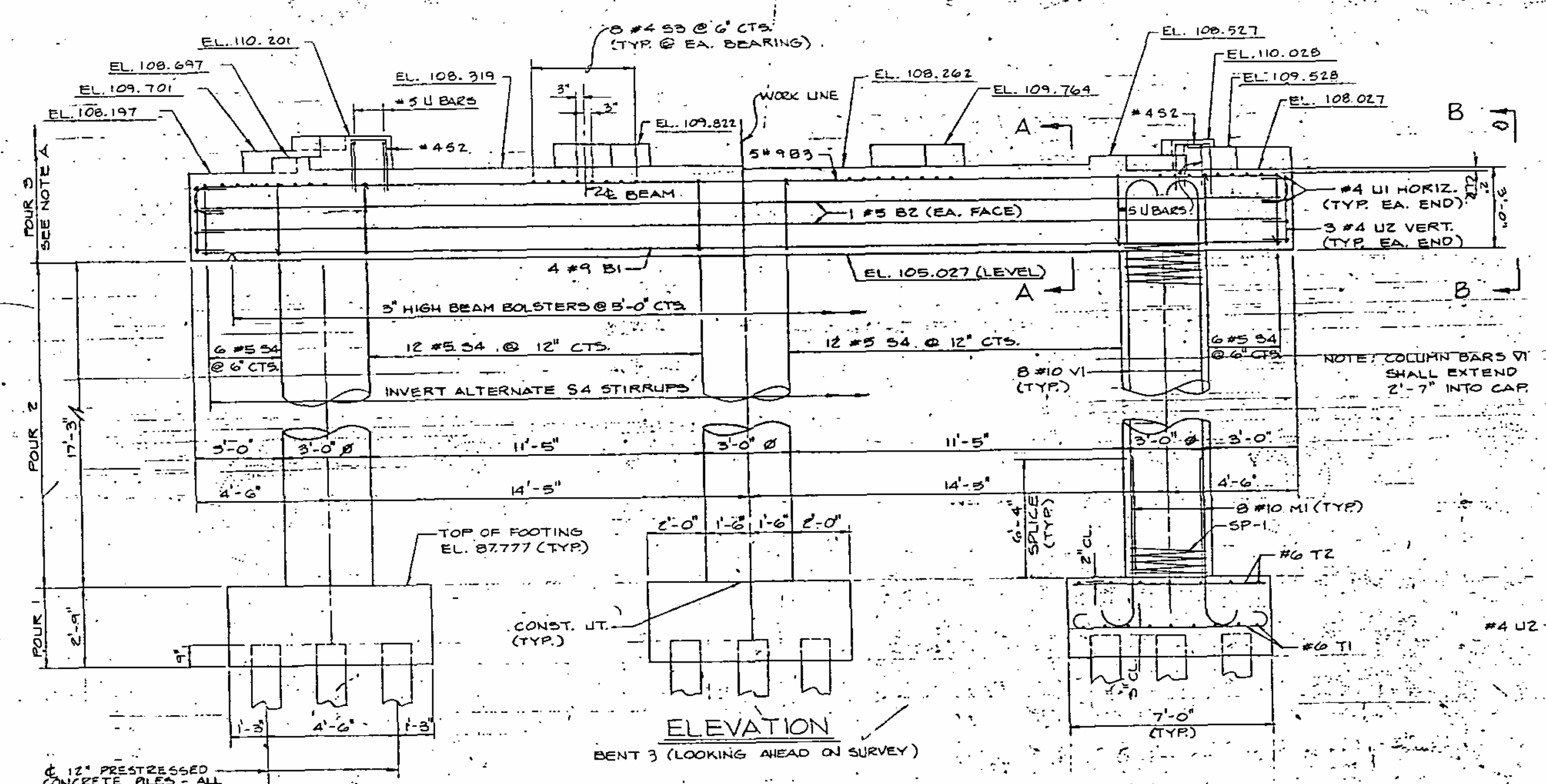
DRAWN BY J.W. ROBINSON DATE FEB., 1984
CHECKED BY A.M. SMITH DATE FEB., 1984

DWG. S-19



PLAN
BENT 3 (LOOKING AHEAD ON SURVEY)

NOTE A: CONSTRUCTION JOINT PERMITTED AT TOP OF CAP



ELEVATION
BENT 3 (LOOKING AHEAD ON SURVEY)

NOTES

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

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

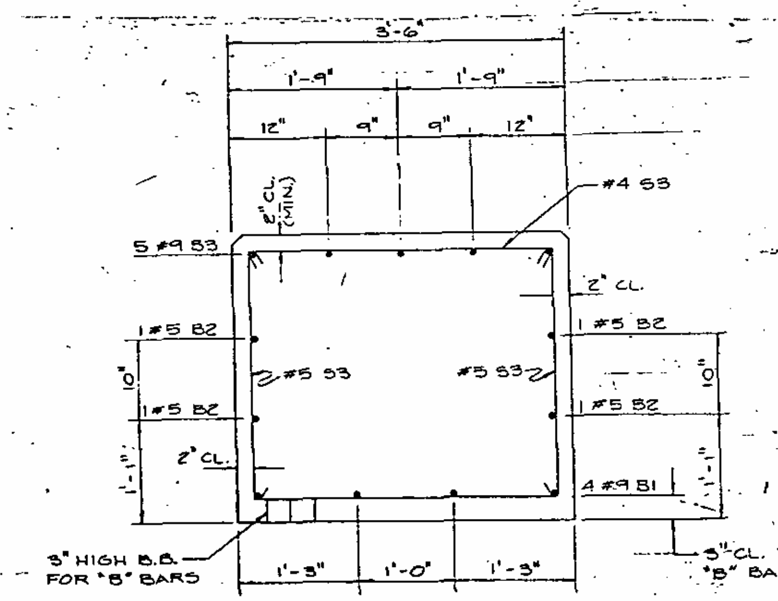
FOR EPOXY PROTECTIVE COATING FOR CONCRETE, SEE SPECIAL PROVISIONS.

COAT ALL SURFACE AREAS OF TOP OF CAP INCLUDING LATERAL GUIDES & CHAMBERS WITH EPOXY PROTECTIVE COATING. DO NOT COAT AREA UNDER ELASTOMERIC BEARINGS.

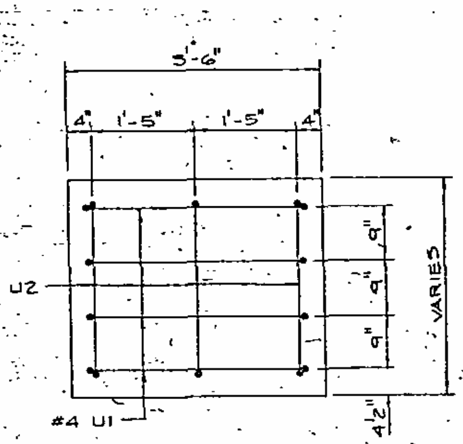
FOR SPIRAL COLUMN REINFORCING, SEE SPECIAL PROVISIONS.

REV. No.	DESCRIPTION	DATE
1	REVISED DIMENSION AS NOTED	12-20-86

REVISIONS



SECTION A-A



VIEW B-B

PROJECT NO. 8.1125805
EDGECOMBE COUNTY
STATION 20+00.00 -Y11-
763+19.06 -L-
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 3

FEBRUARY 1984

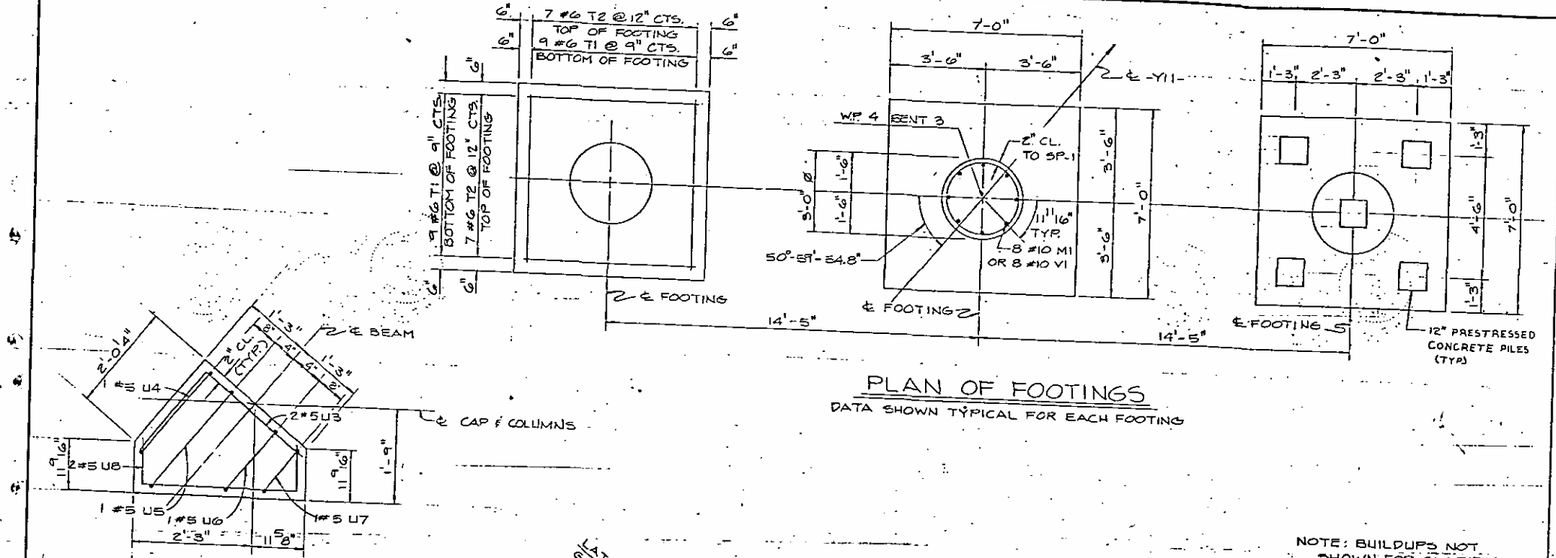
NO.	BY	DATE	NO.	BY	DATE
1	AMS	2-20-86	3		
2			4		

SHEET NO. 168
TOTAL SHEETS

DWG. S-20

REV. ⚠1 REVISED DIMENSION AS NOTED. BY: AMS ✓ BY: SKC DATE: 2-26-86

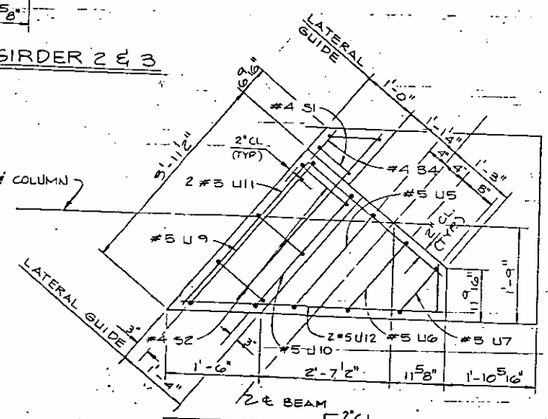
DRAWN BY J.W. ROBINSON DATE FEB. 1984
CHECKED BY JOSE DANON DATE FEB. 1984



PLAN OF FOOTINGS

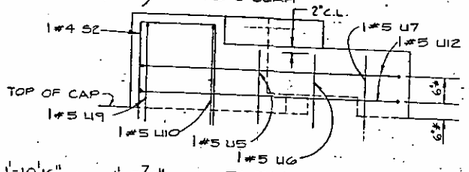
DATA SHOWN TYPICAL FOR EACH FOOTING

BUILDUP FOR GIRDER 2 & 3



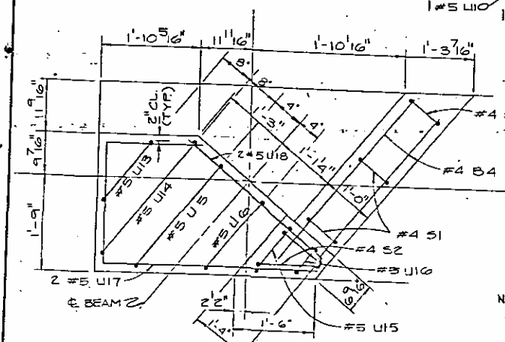
BUILDUP FOR GIRDER 4

* TYP. ALL BUILDUPS



ELEVATION OF BUILDUP FOR GIRDER 4

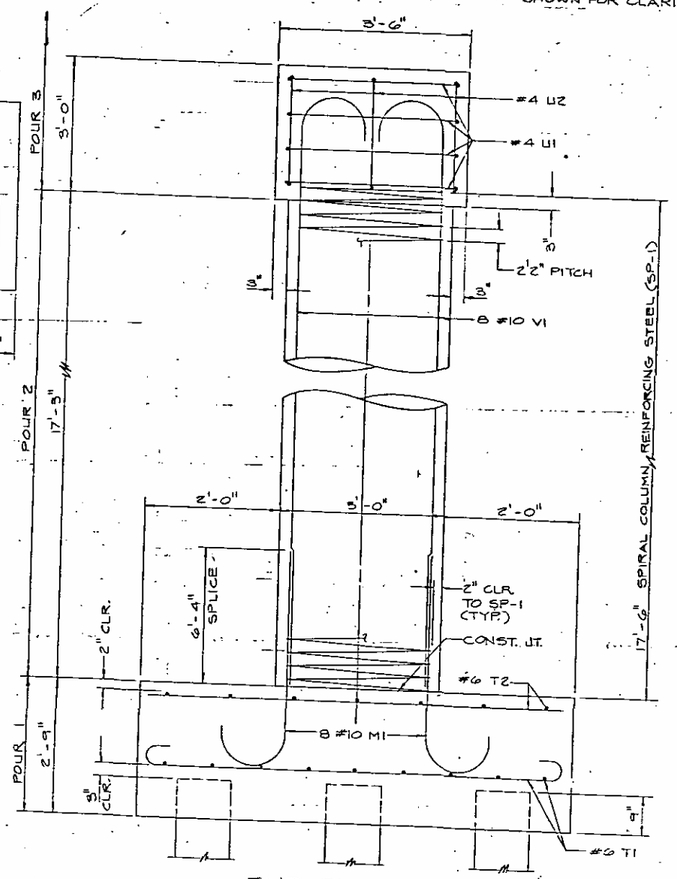
(OTHER BUILDUPS SIMILAR)



BUILDUP FOR GIRDER 1

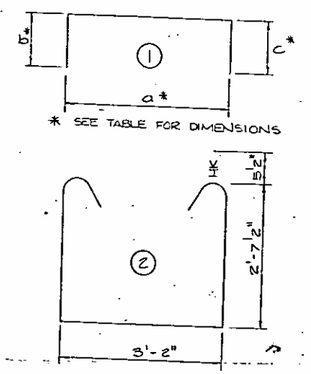
NOTE: BUILDUPS SHOWN LOOKING BACK ON SURVEY.

NOTE: BUILDUPS NOT SHOWN FOR CLARITY.

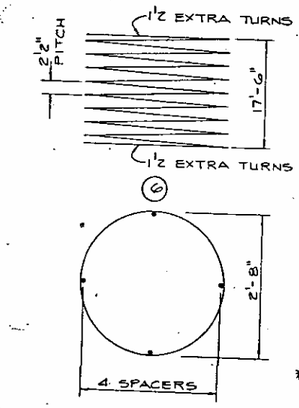


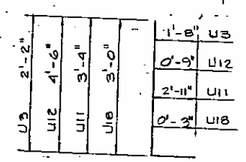
END ELEVATION

BAR TYPES



TYPE (1) BAR			
BAR	a	b	c
S1	8"	1'-6"	1'-6"
S2	1'-0"	2'-10"	2'-10"
U1	3'-2"	6"	6"
U2	2'-8"	6"	6"
U4	1'-10"	2'-8"	2'-8"
U5	2'-1"	2'-8"	2'-8"
U6	1'-6"	2'-8"	2'-8"
U7	11"	2'-8"	2'-8"
U9	3'-9"	3'-1"	3'-1"
U10	2'-7"	3'-1"	3'-1"
U13	1'-3"	2'-8"	2'-8"
U14	2'-7"	2'-8"	2'-8"
U15	11"	3'-1"	3'-1"
U16	5"	3'-1"	3'-1"
U17	2'-0"	3'-9"	1'-7"
S3	3'-2"	4½"	4½"
U8	2'-9"	8"	8"





ALL BAR DIMEMENSIONS ARE OUT TO OUT.

* CONCRETE DISPLACED BY PILE HEADS HAS BEEN DEDUCTED.

BILL OF MATERIAL

BENT 3

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	9	STR.	37'-6"	510
B2	4	5	STR.	37'-6"	157
B3	5	9	3	40'-0"	680
B4	4	4	STR.	3'-6"	10
M1	24	10	4	9'-5"	973
S1	5	4	1	3'-8"	18
S2	5	4	1	6'-8"	23
S3	32	4	1	3'-11"	84
S4	36	5	2	9'-4"	351
T1	54	6	3	7'-10"	636
T2	42	6	STR.	6'-6"	411
U1	8	4	1	4'-2"	23
U2	6	4	1	3'-8"	15
U3	4	5	5	3'-10"	16
U4	2	5	1	7'-2"	15
U5	4	5	1	7'-5"	31
U6	4	5	1	6'-10"	29
U7	3	5	1	6'-3"	20
U8	4	5	1	4'-1"	18
U9	1	5	1	9'-5"	10
U10	1	5	1	8'-9"	10
U11	2	5	5	6'-3"	14
U12	2	5	5	5'-3"	11
U13	1	5	1	6'-7"	7
U14	1	5	1	7'-11"	9
U15	1	5	1	7'-1"	8
U16	1	5	1	6'-7"	7
U17	2	5	1	7'-4"	16
U18	2	5	5	3'-3"	7
V1	24	10	4	21'-3"	2,195
TOTAL					6,309
SP-1	3		6	717'-8"	1439

REINFORCING STEEL LBS. = 6,309

SPIRAL COLUMN REIN. STEEL LBS. = 1,439

* CLASS "A" CONCRETE CU. YDS. = 45.7 + 61.3

EXCAVATION (BENT 3) CU. YDS. = 88

12" PRESTRESSED CONCRETE PILE 420.7'

BENT 3 NO. = 15 LIN. FT. = 600'

DIVISION OF CONCRETE

POUR NUMBER	CU. YDS
1	14.6
2	13.6
3	17.5
TOTAL	45.7

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-

763+19.06 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

SUBSTRUCTURE

BENT 3

FEBRUARY 1984

REVISIONS						
NO.	BY	DATE	NO.	BY	DATE	SHEET NO.
1			3			169
2			4			TOTAL SHEETS

DWG. S-21

DRAWN BY: J.W. ROBINSON DATE FEB., 1984

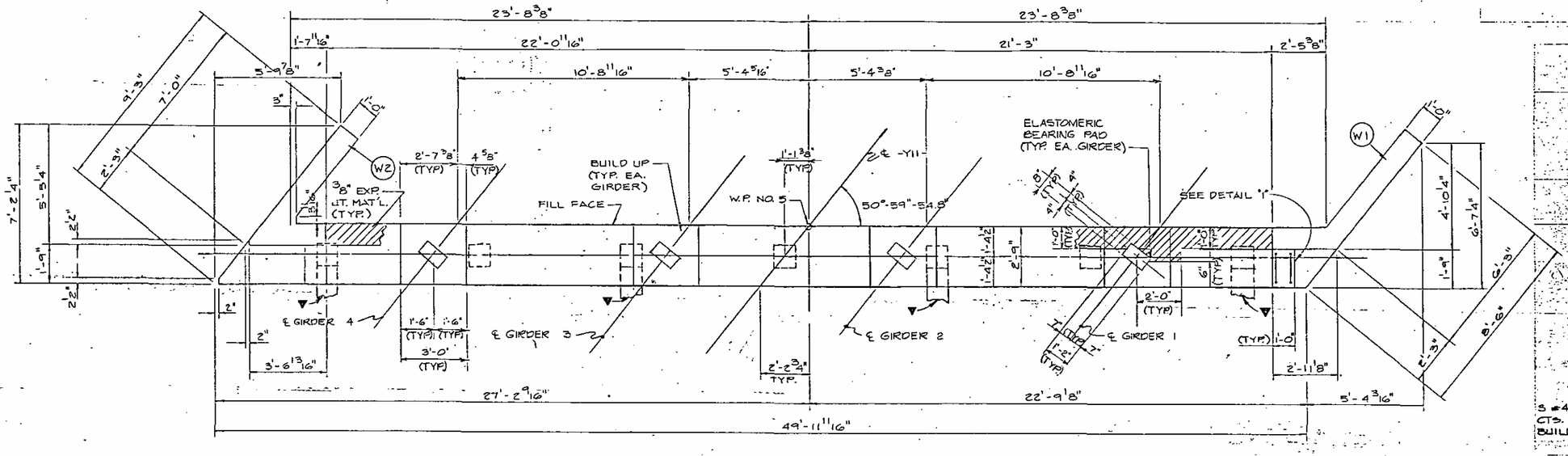
CHECKED BY: A.M. SMITH DATE FEB., 1984

REV. by	DESCRIPTION	DATE
1	REVISED BEAM SEAT DIMENSIONS	2-20-86

REVISIONS

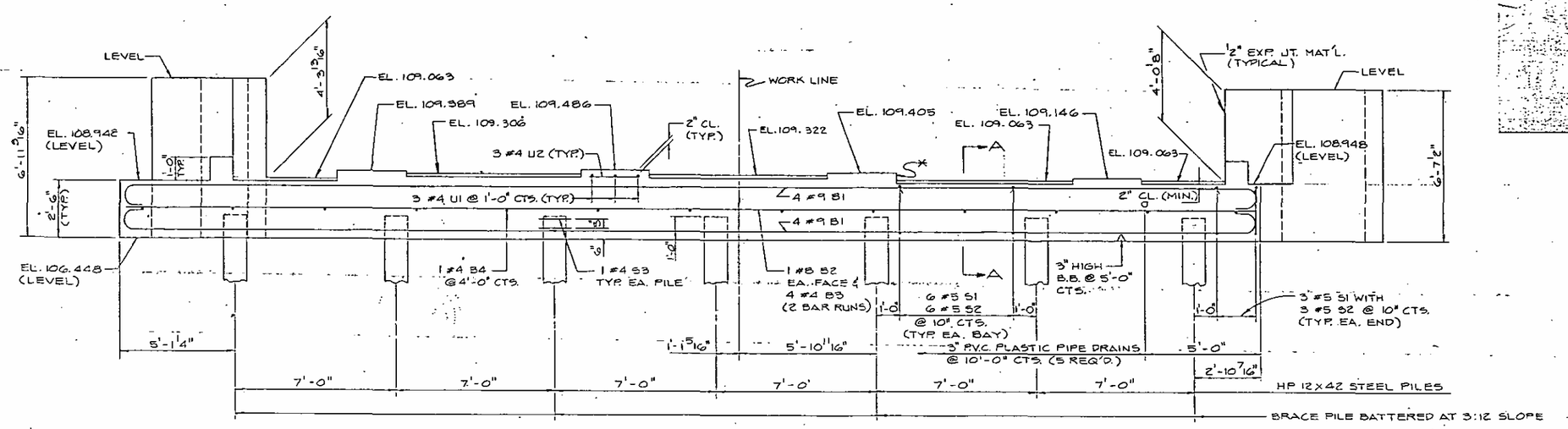
NOTES

1. PIPE DRAINS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR REINFORCING STEEL.
2. THE TOP SURFACE AREA OF THE END BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
3. FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.
4. FOR DETAILS OF P.V.C. PLASTIC PIPE DRAINS, SEE S-15.



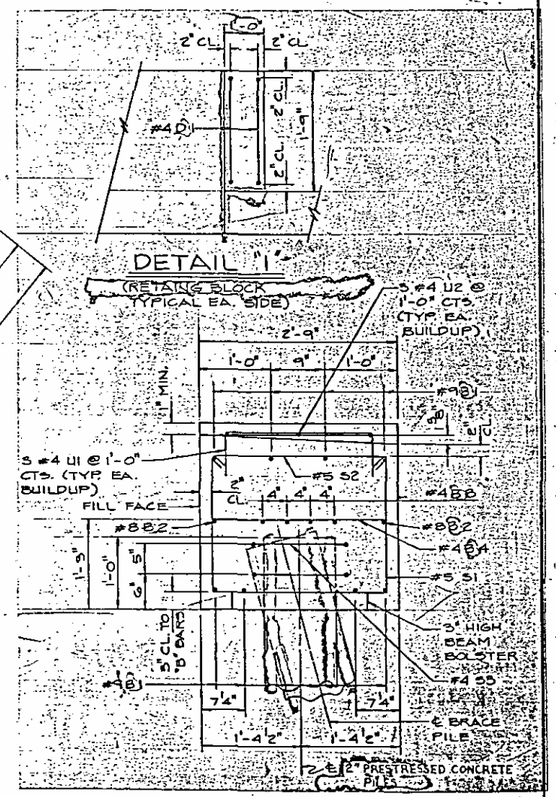
△PLAN END BENT 2

▼ DENOTES BRACE PILE BATTERED AT 3:12 SLOPE



ELEVATION

* 3/8" EXP. JT. MAT'L. ON VERTCAL FACE OF EACH BUILD-UP



SECTION "A-A"

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
763+19.06 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE END BENT 2

FEBRUARY 1984

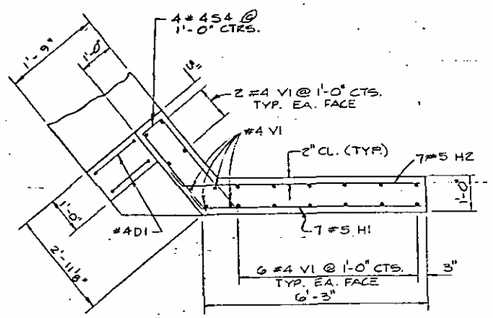
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	170
1	AMS	2-20-86	3			TOTAL SHEETS
2			4			

DRAWN BY J.W. ROBINSON DATE FEB., 1984
CHECKED BY JOSE DANON DATE FEB., 1984

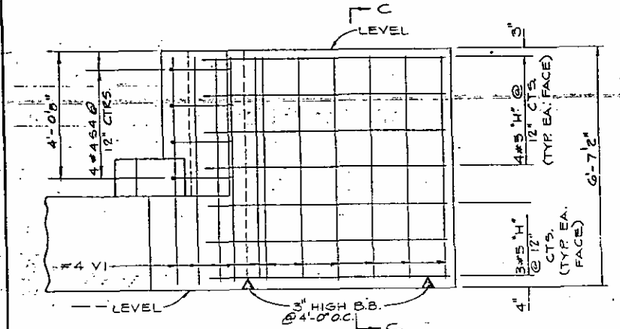
REV △ REVISED BEAM SEAT DIMENSIONS BY: AMS ✓BY: SKC DATE: 2-21-86

DWG. S-22

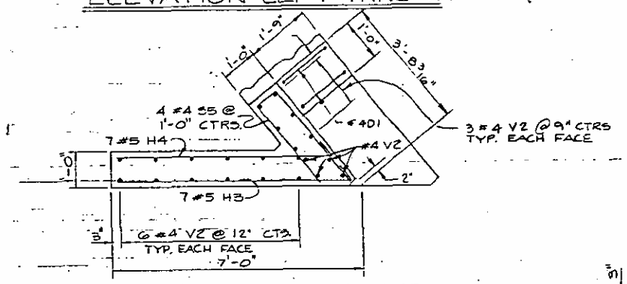
3-8-23



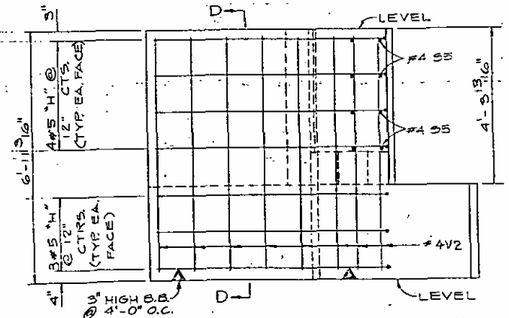
PLAN LEFT WING W1



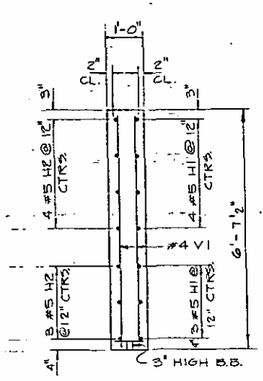
ELEVATION LEFT WING W1



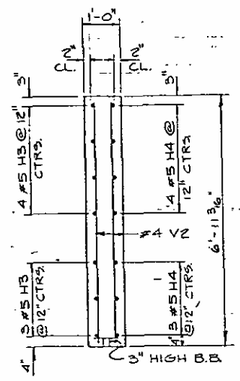
PLAN RIGHT WING W2



ELEVATION RIGHT WING W2

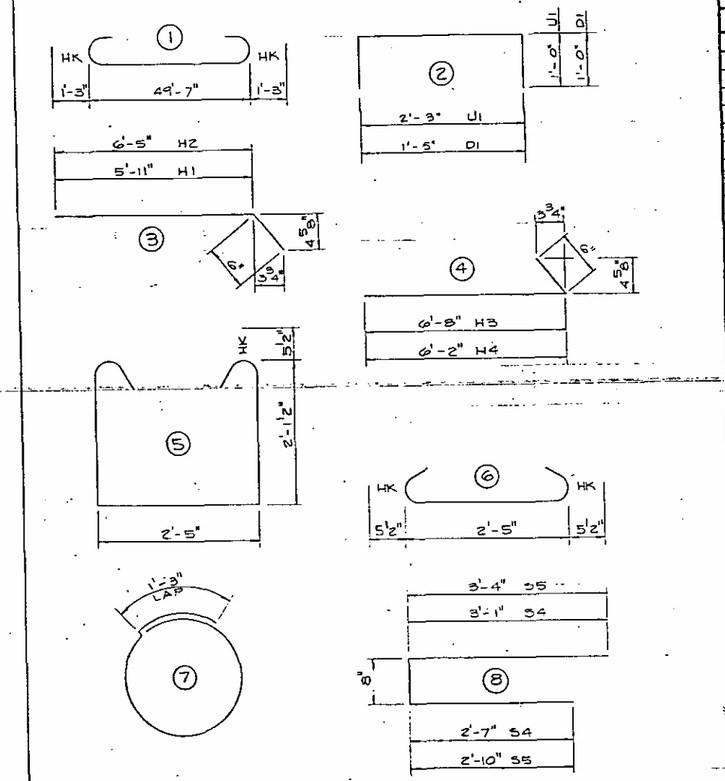


SECTION C-C



SECTION D-D

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	9	1	52'-1"	1,417
B2	2	8	STR.	49'-7"	265
B3	8	4	STR.	25'-5"	136
B4	12	4	STR.	2'-5"	20
D1	4	4	2	5'-1"	14
H1	7	5	3	6'-5"	47
H2	7	5	3	6'-11"	51
H3	7	5	4	7'-2"	53
H4	7	5	4	6'-8"	49
S1	42	5	5	7'-7"	333
S2	42	5	6	3'-4"	147
S3	14	4	7	6'-0"	57
S4	4	4	8	6'-4"	17
S5	4	4	8	6'-10"	19
U1	12	4	2	4'-3"	35
U2	12	4	STR.	2'-8"	22
V1	20	4	STR	6'-2"	83
V2	22	4	STR.	6'-5"	95
TOTAL LBS. =					2,860

REINFORCING STEEL LBS. = 2,860

CLASS "A" CONCRETE CU. YDS. = 17.3

12" PRESTRESSED CONCRETE PILES 434.0

NO. = 7 LIN FT. = ~~420'~~

* CONCRETE DISPLACED BY PILE HEADS BEEN DEDUCTED

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00-Y11
763+19.06 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

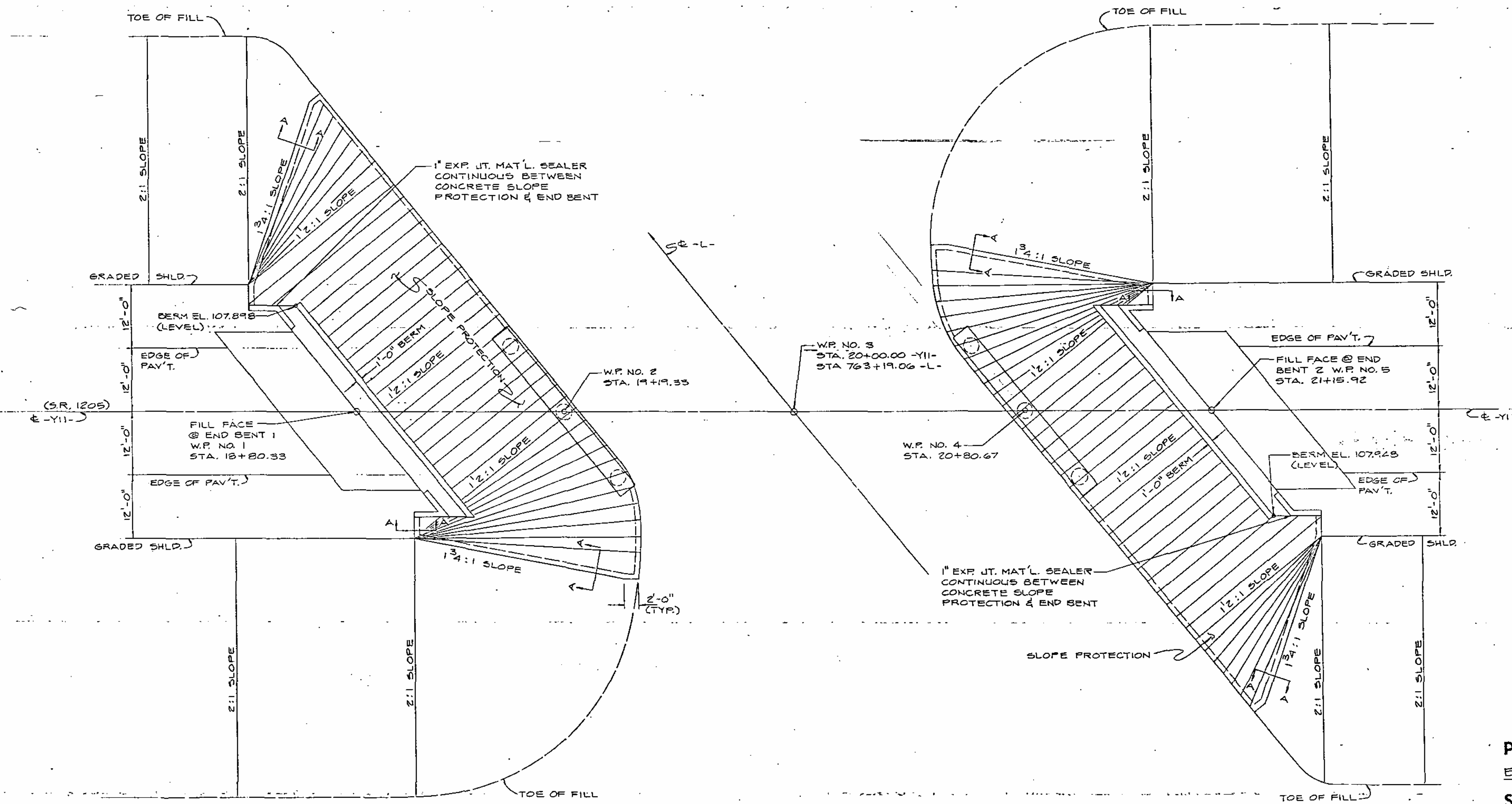
SUBSTRUCTURE
END BENT 2

FEBRUARY 1984

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	171
1			3			TOTAL SHEETS
2			4			

DRAWN BY J.W. ROBINSON DATE FEB. 1984
CHECKED BY A.M. SMITH DATE FEB. 1984

DWG. S-23



PLAN OF SLOPE PROTECTION

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
763+19.06 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

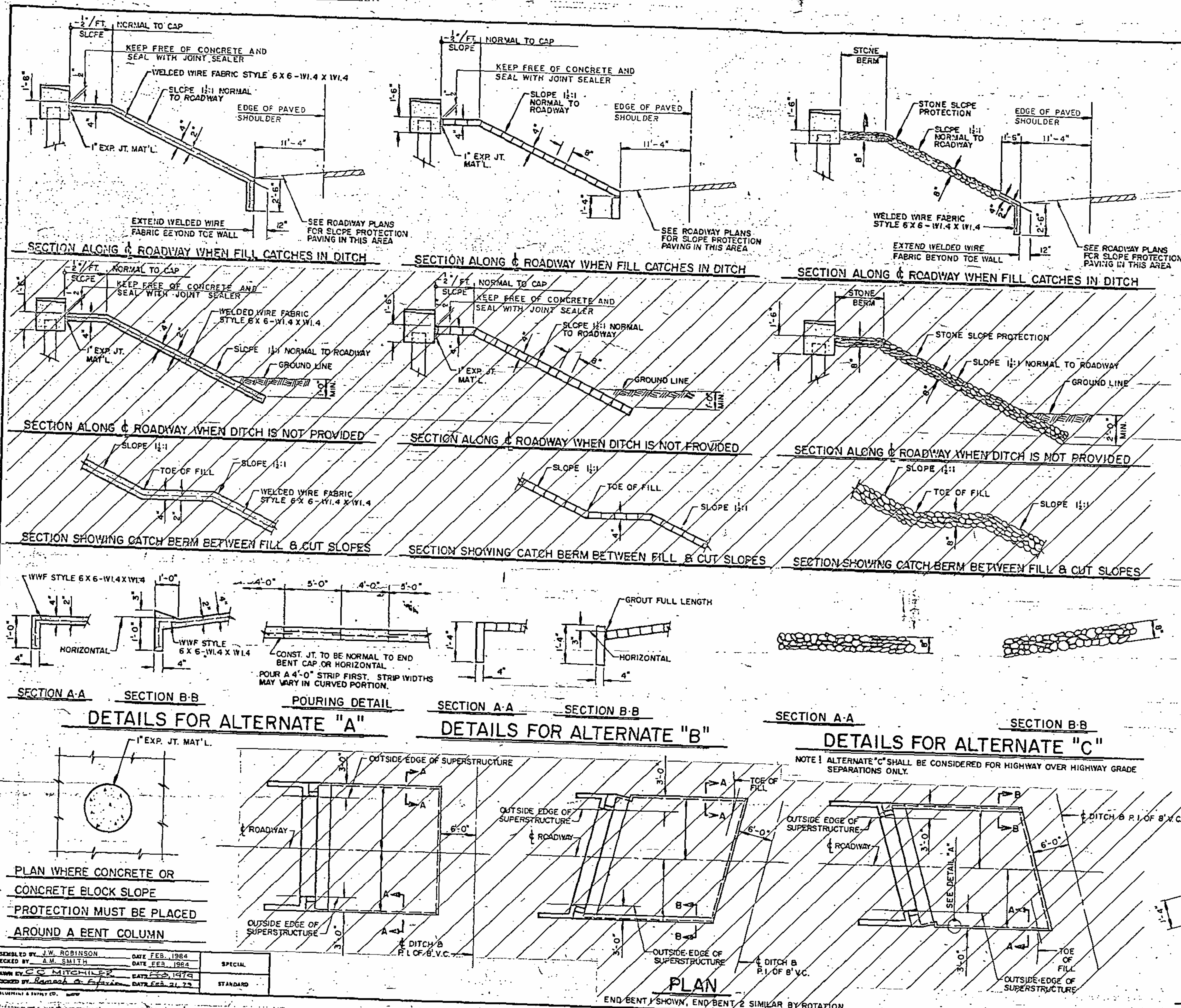
SLOPE PROTECTION DETAILS

FEBRUARY 1984

REVISIONS							SHEET NO.
NO.	BY	DATE	NO.	BY	DATE		172
1			3				TOTAL SHEETS
2			4				

DWG. S-24

DRAWN BY U.W. ROBINSON DATE FEB. 1984
CHECKED BY JOSE DANON DATE FEB. 1984



GENERAL NOTES

4 INCH SLOPE PROTECTION SHALL BE PLACED UNDER THE ENDS OF THE BRIDGE. LIMITS OF THE PROTECTION SHALL BE AS SHOWN IN THE DETAILS. THE CONTRACTOR, AT HIS OPTION, MAY PLACE EITHER TYPE, ALTERNATES "A", "B" OR "C", AS DESCRIBED BELOW. STRAIGHT EDGING WILL NOT BE REQUIRED UNLESS, IN THE OPINION OF THE ENGINEER, VISUAL INSPECTION INDICATES A NEED FOR IT. METHOD OF MEASUREMENT AND BASIS OF PAYMENT SHALL BE AS PRESCRIBED IN SECTION 870 OF THE STANDARD SPECIFICATIONS. THE SAME TYPE OF SLOPE PROTECTION SHALL BE USED UNDER BOTH ENDS OF ANY ONE BRIDGE. FOR BERM WIDTH, SEE GENERAL DRAWING.

ALTERNATE "A"

ALTERNATE "A" SHALL CONSIST OF FOUR INCH POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS B. THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. ALTERNATE "A" WELDED WIRE FABRIC REINFORCING SHALL BE STYLE 6 X 6 - W1.4 X W1.4, 60 INCHES WIDE. ADJACENT RUNS OF WELDED WIRE FABRIC SHALL LAP AT LEAST SIX INCHES. SLOPE PROTECTION SHALL BE POURED IN ALTERNATE FOUR FT. AND FIVE FT. STRIPS AS SHOWN IN POURING DETAIL. THE COST OF THE WELDED WIRE FABRIC SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR 4 INCH SLOPE PROTECTION.

ALTERNATE "B"

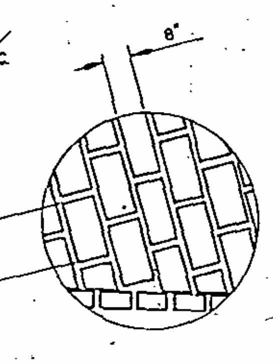
ALTERNATE "B" SHALL CONSIST OF SOLID CONCRETE BLOCKS 4" X 8" X 16" LAID IN HORIZONTAL COURSES SUCH THAT THOSE IN SUCCESSIVE COURSES WILL BREAK JOINTS WITH UNITS IN THE PRECEDING ONE. BLOCKS SHALL BE LAID WITH THEIR LONG AXIS PARALLEL TO THE END BENT CAP WITH GROUTED JOINTS PREFERABLY ¾" BUT NOT LESS THAN ½" NOR MORE THAN 1¼" WIDE BETWEEN SUCCESSIVE COURSES AND ENDS OF BLOCKS. JOINTS SHALL BE GROUTED BY POURING A MIXTURE OF ONE PART PORTLAND CEMENT TO THREE PARTS SAND MIXED WITH SUFFICIENT WATER TO ENABLE THE MIXTURE TO BE POURED THROUGH A SPOUT. THE CONCRETE BLOCKS SHALL BE CAST TO ACCURATE DIMENSIONS, SHALL HAVE UNIFORM SURFACE COLOR AND TEXTURE AND SHALL BE MANUFACTURED OF MATERIALS TO PRODUCE A COMPRESSIVE STRENGTH OF NOT LESS THAN 3,000 PSI AT AGE OF 28 DAYS. NO BROKEN BLOCKS SHALL BE USED EXCEPT IN CONSTRUCTING A STRAIGHT LINE ALONG EACH SIDE OF THE PAVING DOWN THE SLOPE. CARE SHALL BE TAKEN TO BREAK THE BLOCKS SO AS TO GIVE A UNIFORM WORKMANLIKE JOINT AND SURFACE.

ALTERNATE "C"

ALTERNATE "C" SHALL BE CONSIDERED FOR HIGHWAY OVER HIGHWAY GRADE SEPARATIONS ONLY. ALTERNATE "C" SHALL CONSIST OF A COMBINATION CONCRETE SLAB AND STONE SLOPE PROTECTION. THE CONCRETE PORTIONS SHALL CONSIST OF PAVED STRIPS ALONG THE DITCH AS SHOWN IN THE DETAILS. 8 INCHES OF STONE SHALL BE PLACED OVER THE REMAINING AREA SHOWN ON THE PLANS TO BE COVERED WITH SLOPE PROTECTION. CONCRETE SHALL BE CLASS B. THE COST OF THE CONCRETE, STONE AND WELDED WIRE FABRIC STYLE 6 X 6 - W1.4 X W1.4 SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR 4 INCH SLOPE PROTECTION.

FOR REQUIREMENTS ON SUBGRADING, STONE TYPE, STONE SIZING AND HERBICIDE PROTECTION, SEE SPECIAL PROVISIONS FOR SLOPE PROTECTION.

	4 INCH SLOPE PROTECTION SQUARE YARDS		WELDED WIRE FABRIC, 60" WIDE APPROX. L.F.
	END BENT 1	END BENT 2	
BRIDGE @ STA. 20+00.00 -Y11-	~~375~~	~~350~~	1,450
	415.39	344.96	



DETAIL "A" FOR ALTERNATE "B"

PROJECT No. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11- = 763+19.06 -L-

SHEET 2 OF 2

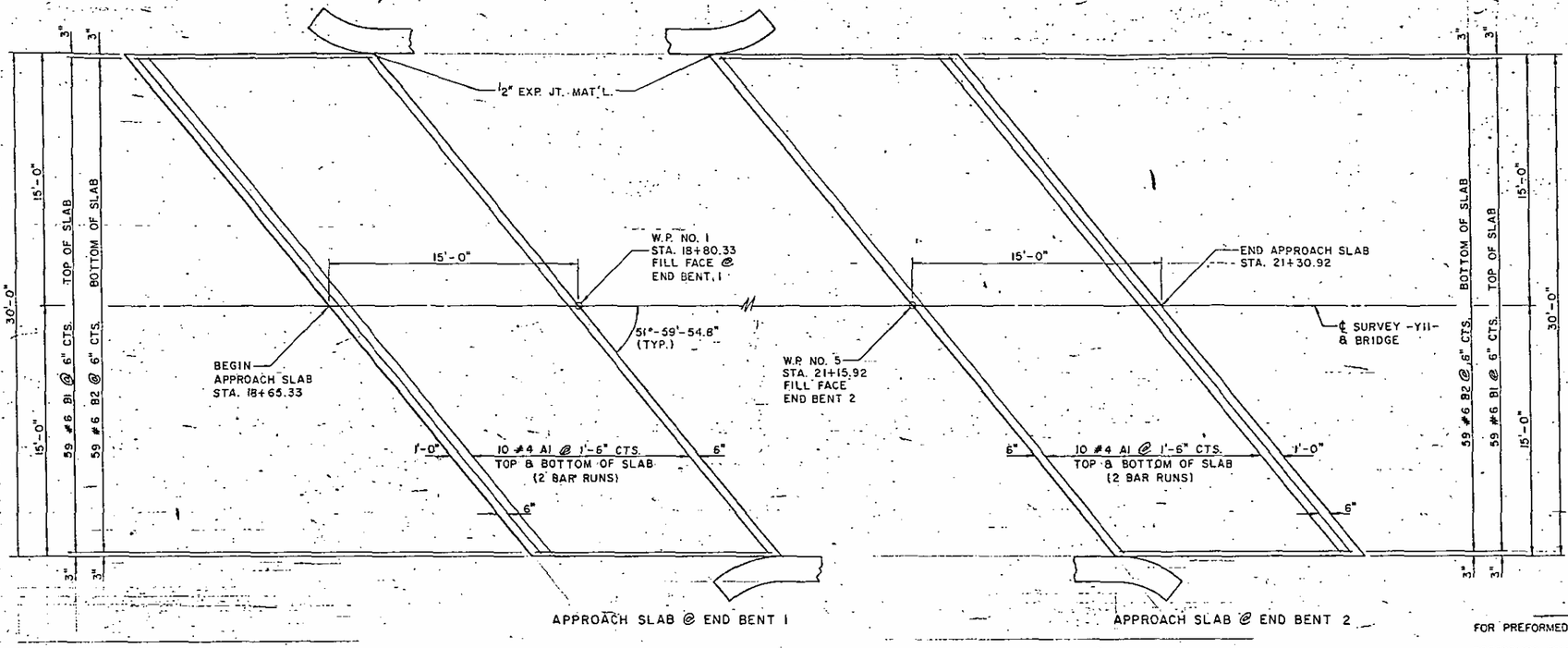
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD SLOPE PROTECTION DETAILS

FEBRUARY 1979

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	173
1			3			TOTAL SHEETS
2			4			

DWG. S-25



BILL OF MATERIAL

APPROACH SLAB @ END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	40	4	STR.	19'-9"	528
B1	59	6	STR.	14'-2"	1,256
B2	59	6	STR.	14'-8"	1,300
REINFORCING STEEL LBS. =					3,084
CLASS AA CONCRETE CU. YDS. =					14.2

APPROACH SLAB @ END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	40	4	STR.	19'-9"	528
B1	59	6	STR.	14'-2"	1,256
B2	59	6	STR.	14'-8"	1,300
REINFORCING STEEL LBS. =					3,084
CLASS AA CONCRETE CU. YDS. =					14.2

* BAR LENGTH BASED ON SPLICE LENGTH OF 1'-2"

NOTES

FOR PREFORMED COMPRESSION JOINT SEAL, SEE SPECIAL PROVISIONS.

PREFORMED COMPRESSION JOINT SEAL SHALL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE SID. SEE GENERAL DRAWING.

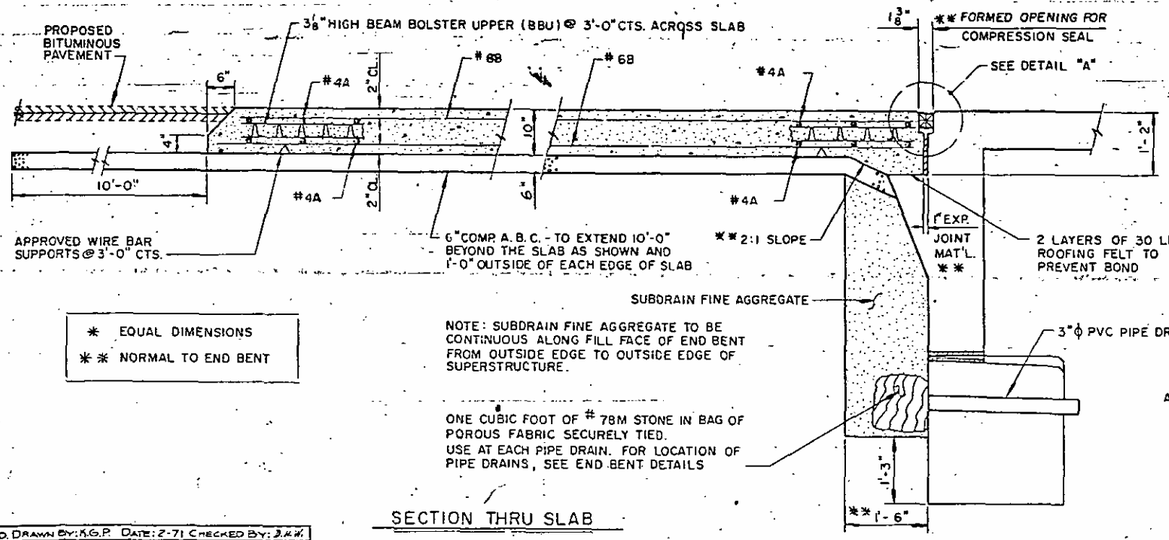
OPENING SHOWN IS BASED ON A NOMINAL UNCOMPRESSED SEAL WIDTH OF 2"

THE INSTALLED COMPRESSION SEAL SHALL BE WATERTIGHT.

PROVIDE WATERTIGHT SEAL AT END OF COMPRESSION SEAL AS RECOMMENDED BY MANUFACTURER.

COMPRESSION SEAL EXTENDS FROM GUTTER TO GUTTER ALONG BRIDGE DECK NOTCH.

THE CONTRACTOR, AT HIS OPTION, MAY USE 4" BITUMINOUS CONCRETE BASE COURSE, TYPE HB IN LIEU OF 6" A.B.C. . ANY ADDITIONAL COST DUE TO USE OF THIS OPTION WILL BE PAID FOR BY THE CONTRACTOR.



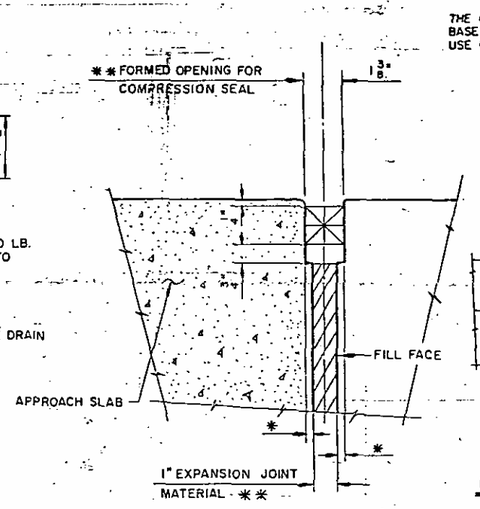
* EQUAL DIMENSIONS

** NORMAL TO END BENT

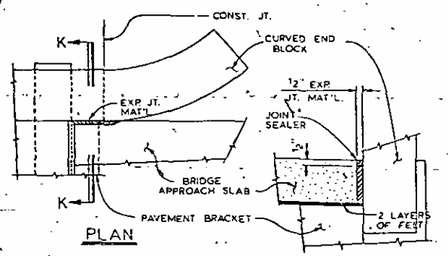
NOTE: SUBDRAIN FINE AGGREGATE TO BE CONTINUOUS ALONG FILL FACE OF END BENT FROM OUTSIDE EDGE TO OUTSIDE EDGE OF SUPERSTRUCTURE.

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

SECTION THRU SLAB



DETAIL "A"



PLAN

SECTION K-K

DETAIL OF EXP JT. MAT'L. BETWEEN APPROACH SLAB AND CURV. END BLK

THE EXPANSION JOINT SHALL BE SEALED WITH JOINT SEALER AS SHOWN.

DWG. S-26

PROJECT NO. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
= 763+19.06 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB
FOR FLEXIBLE PAVEMENT

JULY 1978

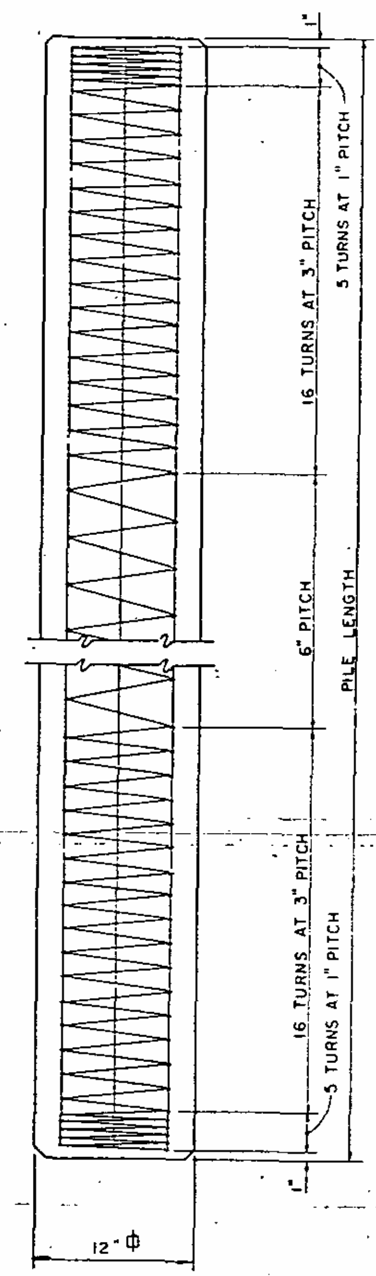
REVISIONS							SHEET NO.
NO.	BY	DATE	NO.	BY	DATE		174
1			3			TOTAL SHEETS	
2			4				

STD. NO. BAS2

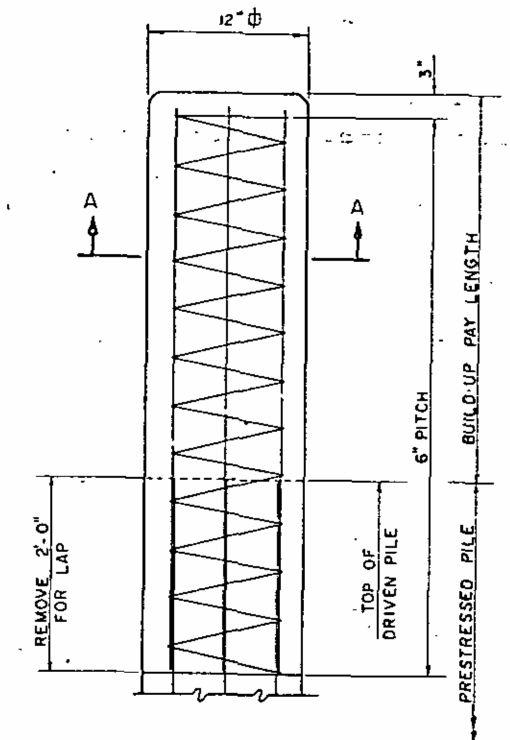
REVISED 9-17-81 BY: E.R.L. CHECKED BY: R.E.K.
REVISED 8-28-79 BY: R.D.U. CHECKED BY: C.C.M.
REVISED 4-1-79 BY: C.C.M. CHECKED BY: R.D.U.
REVISED 7-31-78 BY: R.E.K. CHECKED BY: R.D.U.
REVISED 2-2-82 BY: E.R.L. CHECKED BY:

STD. DRAWN BY: K.G.P. DATE: 2-71 CHECKED BY: J.W.R.
DRAWN BY J.W. ROBINSON DATE FEB., 1984
CHECKED BY JOSE OANON DATE FEB., 1984

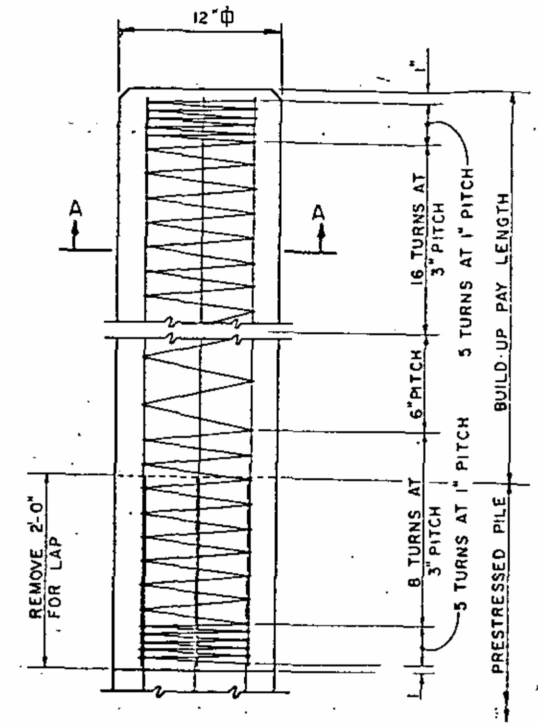
SOUTHEASTERN BLUE PRINT CO., CHARLOTTE, N. C.



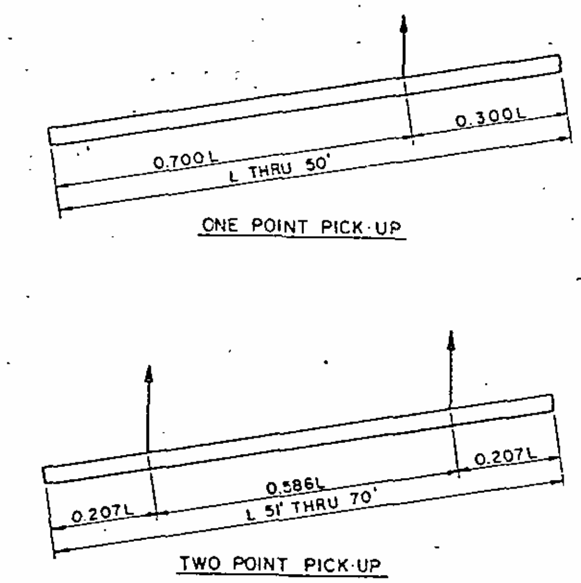
ELEVATION



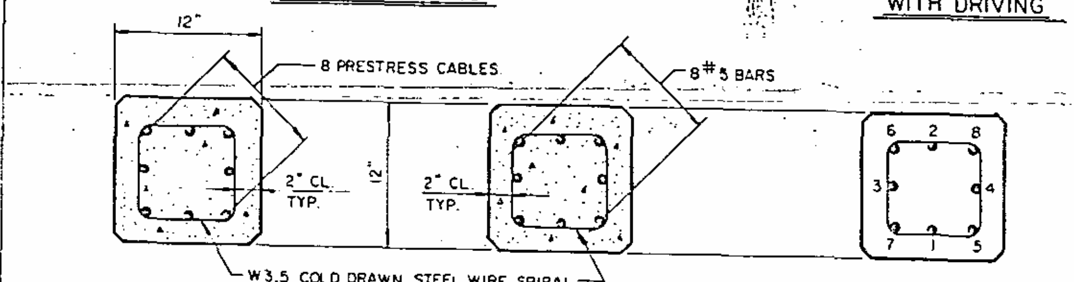
BUILD-UP WITHOUT DRIVING



BUILD-UP WITH DRIVING



PICK-UP POINTS

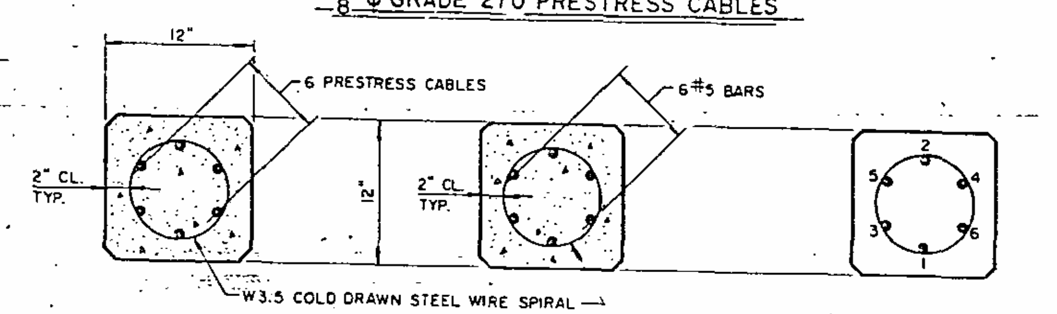


TYPICAL SECTION

SECTION "A-A"

TYPICAL PATTERN FOR BURNING CABLES

3/8" Φ GRADE 270 PRESTRESS CABLES

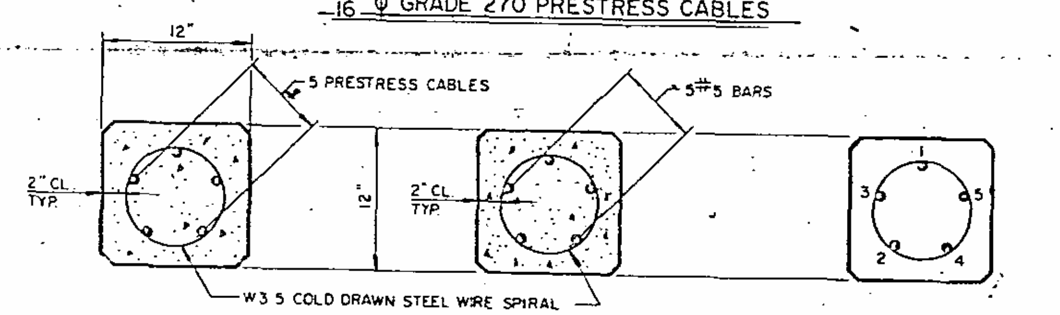


TYPICAL SECTION

SECTION "A-A"

TYPICAL PATTERN FOR BURNING CABLES

7/16" Φ GRADE 270 PRESTRESS CABLES



TYPICAL SECTION

SECTION "A-A"

TYPICAL PATTERN FOR BURNING CABLES

1/2" Φ GRADE 270 PRESTRESS CABLES

QUANTITIES FOR ONE 12" PRESTRESSED PILE						
LENGTH	CONCRETE CU. YDS.	PILE WT. TONS	ONE PICK-UP POINT 0.300L	ONE PICK-UP POINT 0.700L	TWO PICK-UP POINT 0.207L	TWO PICK-UP POINT 0.586L
25'-0"	0.91	1.85	7'-6"	17'-6"		
30'-0"	1.10	2.22	9'-0"	21'-0"		
35'-0"	1.28	2.59	10'-6"	24'-6"		
40'-0"	1.46	2.96	12'-0"	28'-0"		
45'-0"	1.64	3.33	13'-6"	31'-6"		
50'-0"	1.83	3.70	15'-0"	35'-0"		
55'-0"	2.01	4.07			11'-4½"	32'-3"
60'-0"	2.19	4.44			12'-5"	35'-2"
65'-0"	2.37	4.81			13'-5½"	38'-1"
70'-0"	2.56	5.18			14'-6"	41'-0"

NOTES

CONCRETE DESIGN DATA: f'c = 5,000 PSI ; fc = 2,000 PSI

IMPACT IN HANDLING = 50%

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

DEVICES FOR LIFTING THE PILES SHALL BE APPROVED BY THE ENGINEER. LOOPS OF CABLE CAST IN THE PILES WILL NOT BE PERMITTED. INSERTS, CAST IN THE PILES TO RECEIVE THREADED EYE-BOLTS OR SIMILAR APPROVED DEVICES, MAY BE USED; OR WHERE IT IS PRACTICABLE, SATISFACTORY CLAMPS OR SLINGS MAY BE USED. WHERE PILES WILL BE EXPOSED TO VIEW IN THE STRUCTURE AND INSERTS ARE CAST IN THE PILES, THE OPENINGS SHALL BE REPAIRED AFTER THE EYE-BOLTS OR OTHER ATTACHMENTS HAVE BEEN REMOVED. THE OPENINGS SHALL BE REPAIRED IN A SATISFACTORY MANNER IN ORDER TO OBTAIN A UNIFORM APPEARANCE.

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE CABLES AS PRESCRIBED IN THE SPECIFICATIONS. THE CONTRACTOR MAY, AT HIS OPTION, USE EITHER OF THE THREE TYPES OF CABLES LISTED BELOW; HOWEVER, ALL CABLES IN A PILE SHALL BE OF THE SAME TYPE.

SIZE	GRADE	NUMBER OF CABLES	AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS FORCE
3/8" Φ	270	8	0.085 □"	23,000# PER CABLE	16,100# PER CABLE
7/16" Φ	270	6	0.115 □"	31,000# PER CABLE	21,700# PER CABLE
1/2" Φ	270	5	0.153 □"	41,300# PER CABLE	28,900# PER CABLE

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

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

ALL CORNERS TO BE CHAMFERED 3/4".

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

STEEL PILE TIP DETAILS

NOTES

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

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

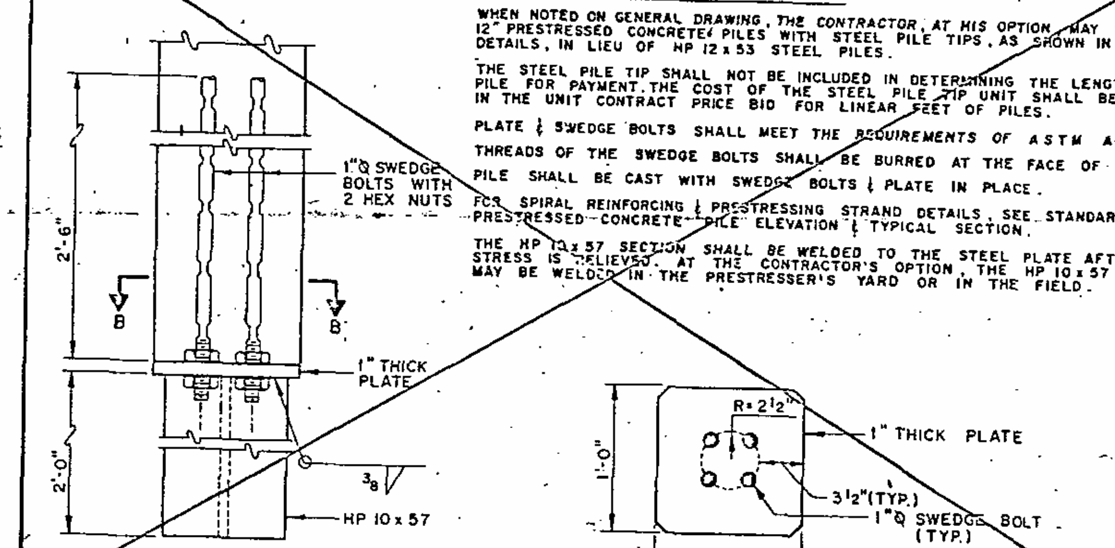
PLATE & SWEDGE BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A-36.

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

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

FOR SPIRAL REINFORCING & PRESTRESSING STRAND DETAILS, SEE STANDARD 12" PRESTRESSED CONCRETE PILE ELEVATION & TYPICAL SECTION.

THE HP 10 x 57 SECTION SHALL BE WELDED TO THE STEEL PLATE AFTER STRAND STRESS IS RELIEVED. AT THE CONTRACTOR'S OPTION, THE HP 10 x 57 SECTION MAY BE WELDED IN THE PRESTRESSER'S YARD OR IN THE FIELD.



ELEVATION

SECTION B-B
(HOLES FOR STRANDS NOT SHOWN)

REVISED 11-12-82 BY JMB / BY RDU
REVISED 12-22-80 BY CCM / BY RDU
REVISED 7-31-78 BY REK / BY RDU
REVISED 2-3-83 BY JMB / BY RDU

ASSEMBLED BY AL SMITH	DATE MAY 1984	SPECIAL	
CHECKED BY J. DANON	DATE MAY 1984		
DRAWN BY R. Creighton	DATE Oct 14, 1977	STANDARD	
CHECKED BY Ramesh G. Fatima	DATE Nov 7, 1977		

PROJECT No. 8.1125805

EDGECOMBE COUNTY

STATION: 20+00.00 -Y11-
763+19.06 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
12" PRESTRESSED
CONCRETE PILE

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

SHEET NO. 175

TOTAL SHEETS

DWG. S-27

STD. NO. PCP1