

INDEX OF SHEETS
 No. 1 of 10 Pages
 STRUCTURE PLANS
 STANDARD NOTES

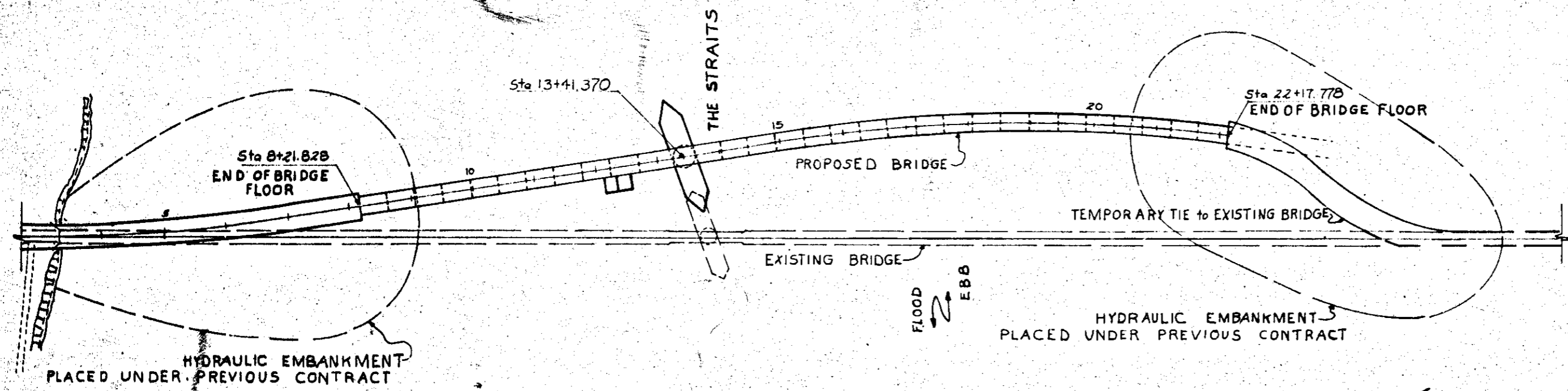
STATE OF NORTH CAROLINA
 STATE HIGHWAY COMMISSION

PLAN AND PROFILE OF PROPOSED
 STATE HIGHWAY

CARTERET COUNTY

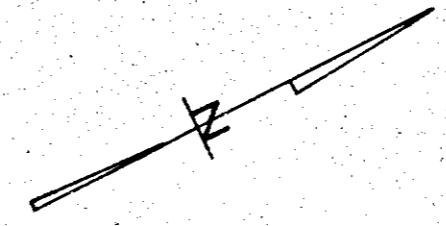
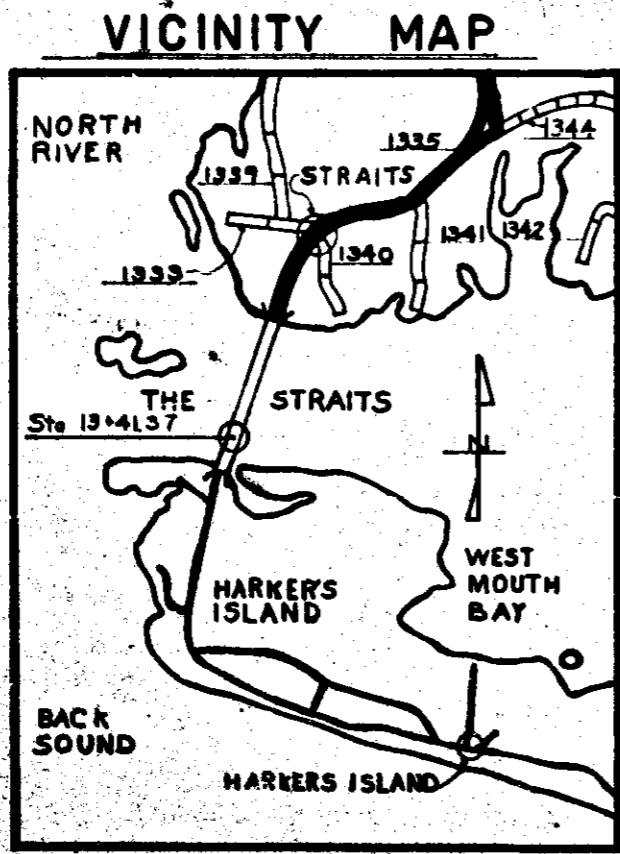
STRUCTURE ONLY

FED. ROAD DIST.	STATE	STATE PROJ. REF. NO.	F.V.
14	N.C.	316301	
STATE PROJ. NO.	P.A. PROJ. NO.	DATE	



CONVENTIONAL SIGNS

County Line	.....
Township Line	.....
City or Town Line	.....
Right of Way Line	.....
Survey Line	.....
Property or Exist. Right of Way Line	.....
Fence	.....
Proposed Road	.....
Existing Road	.....
Railroad	.....
Control of Access Line	.....
Slope Stake Line	.....
Bridge	.....
Calvert	.....
Woods	.....
Telephone or Telegraph Pole	.....
Tower Pole and Line	.....
Power Pole	.....
Proposed Right of Way Marker	.....
Existing Right of Way Marker	.....
Guard Rail	.....



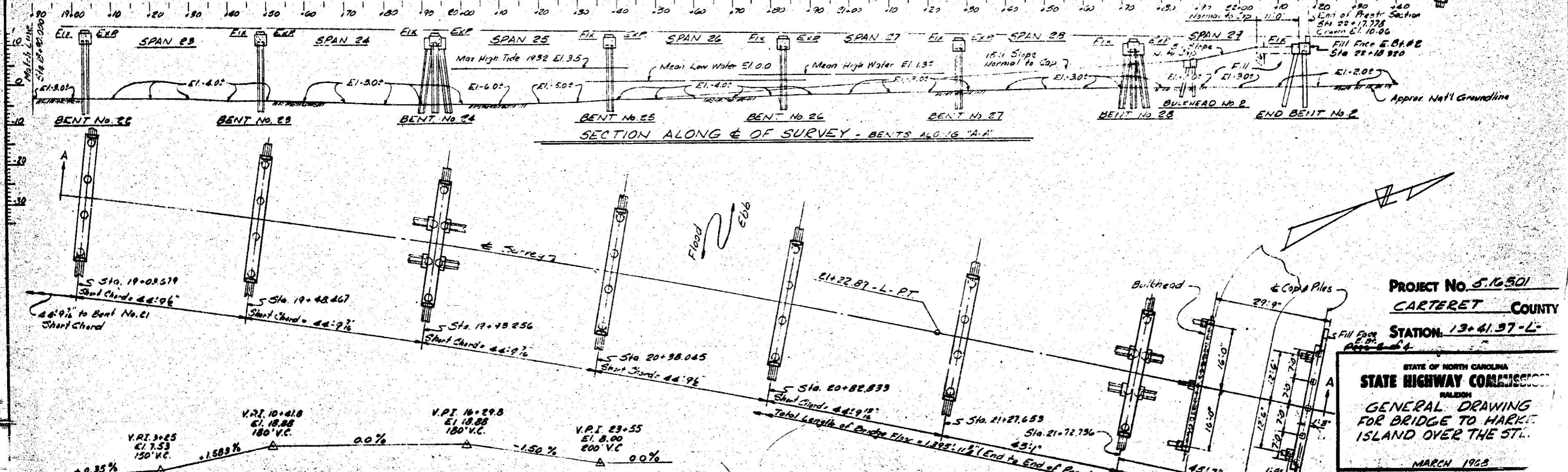
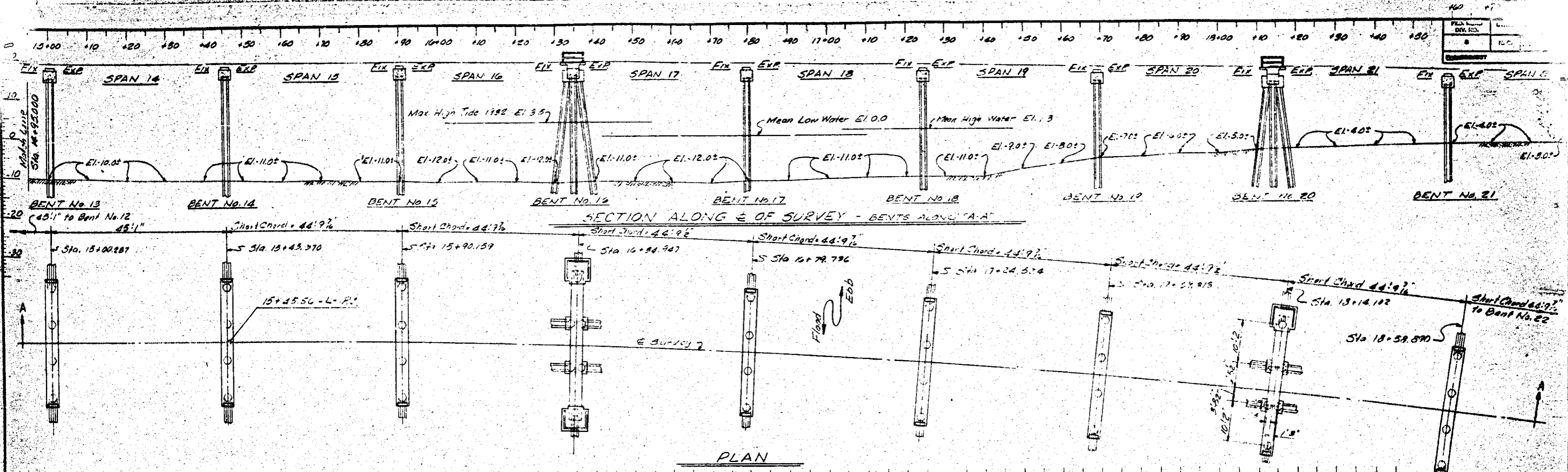
CARTERET
 #73

APPROVED: *[Signature]*

DEPARTMENT OF COMMERCE
 BUREAU OF PUBLIC ROADS
 HARKER'S ISLAND
 APPROVED:
 DIVISION ENGINEER

Prepared in Office of
 STATE HIGHWAY COMMISSION
 RALEIGH, N. C.
 Surveyed by: F. M. COLLINS
 Plans Prepared by: BRIDGE DESIGN DEPARTMENT
 Date: APRIL 1968

State Standard Specifications
 Approved by Bureau Control



PROJECT No. 5.16.501
CARTERET COUNTY
STATION: 13+41.97-L

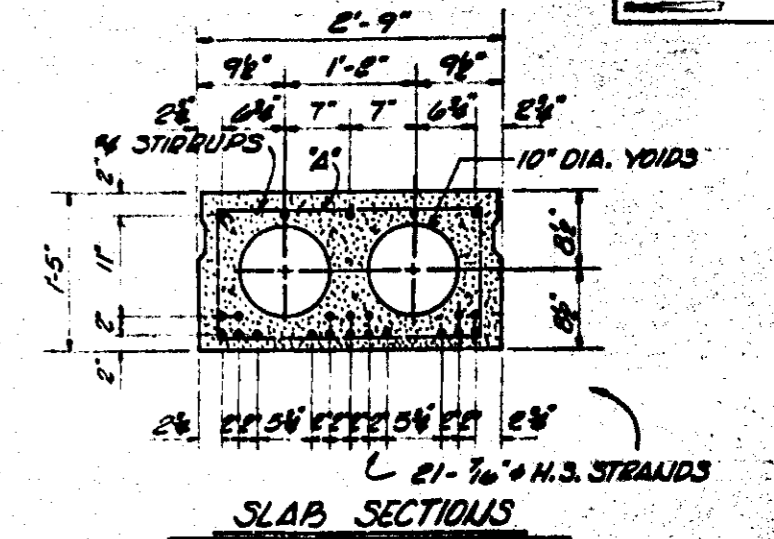
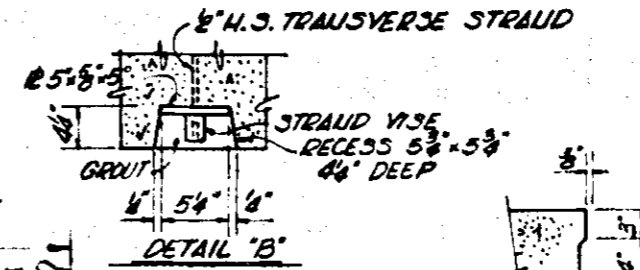
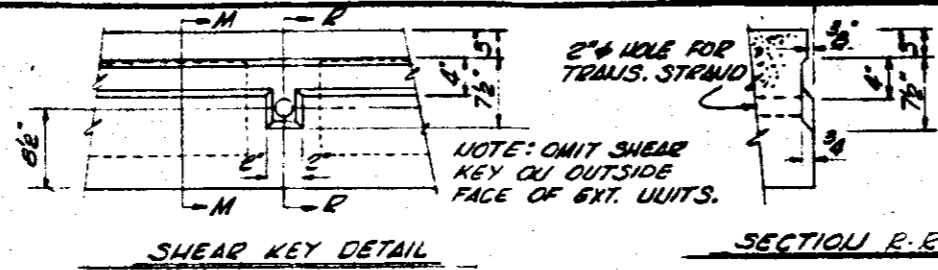
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH
GENERAL DRAWING
FOR BRIDGE TO HARKLE
ISLAND OVER THE ST.

MARCH 1968

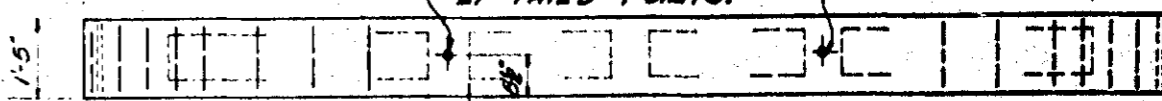
REVISIONS			
NO.	BY	DATE	NO.
1			
2			
3			

DESIGNED BY: G. L. SEXTON, JR.
CHECKED BY: H. G. ALBERT, JR.
DATE: MARCH 1968

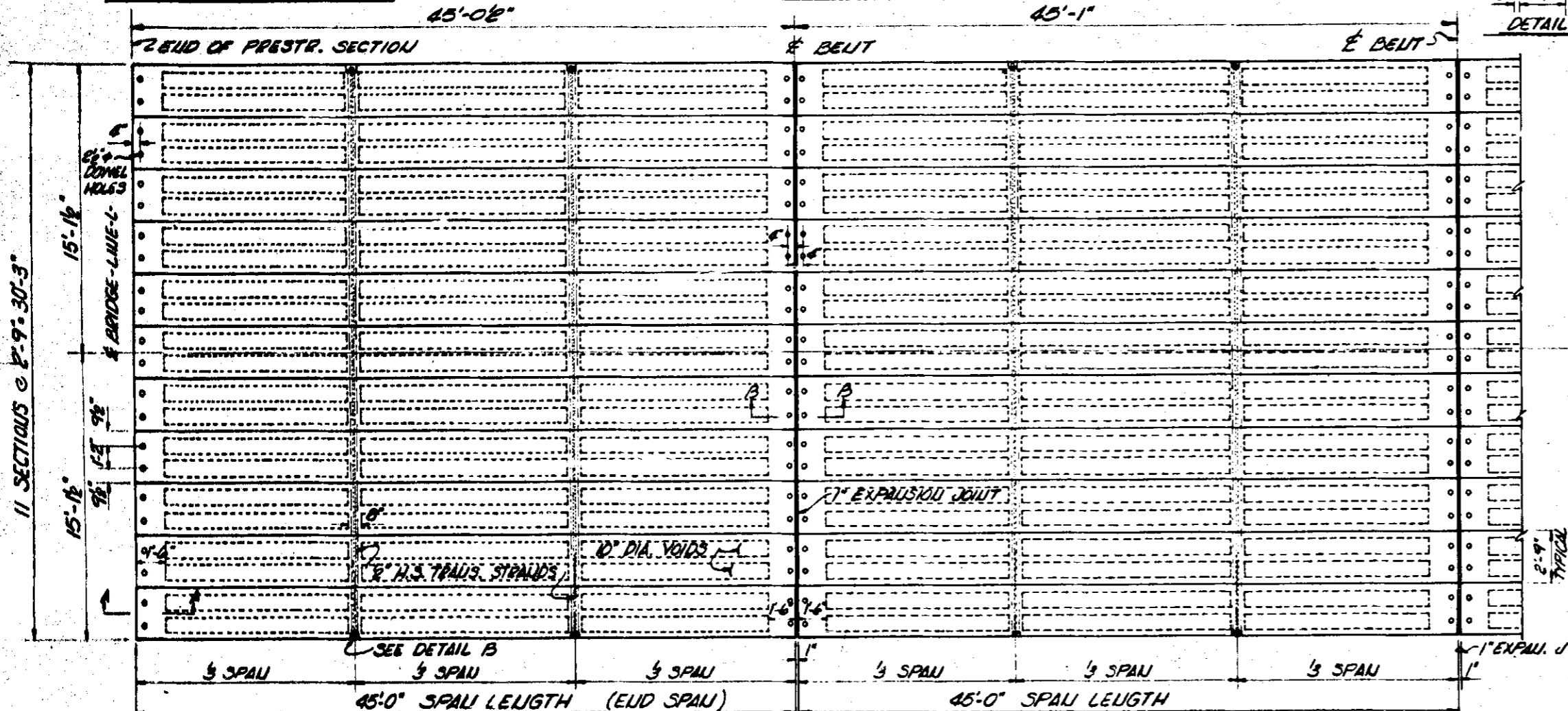
LUMBER OF SPALLS	SECTIONS	LENGTH	TOTAL LIN. FEET
#1 THRU #10	15 11	45'-0"	7425'-0"
#12 THRU #18			
#20 AND #29			
TOTAL NUMBER OF SECT. = 165			



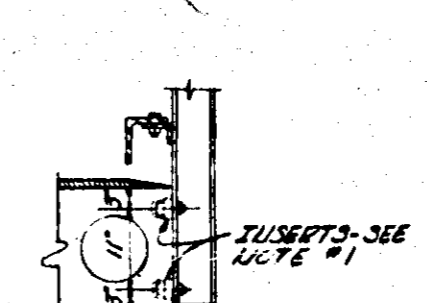
STIRRUP 2 #3 @ 12" MAX. CENTERS (SPACING ALL SPALLS 1'-0")



SLAB ELEVATION

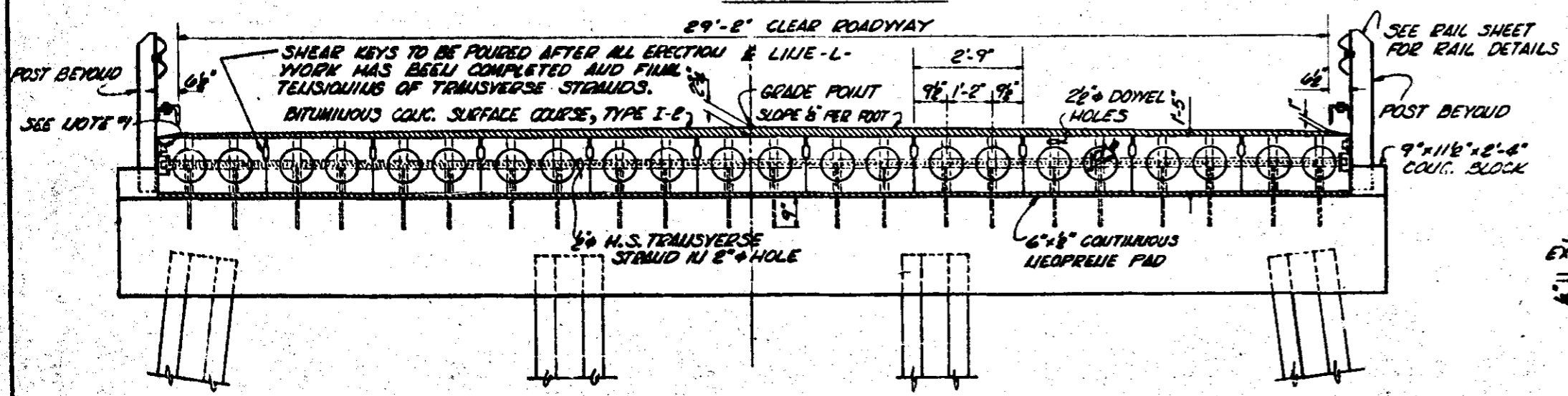


PLAN



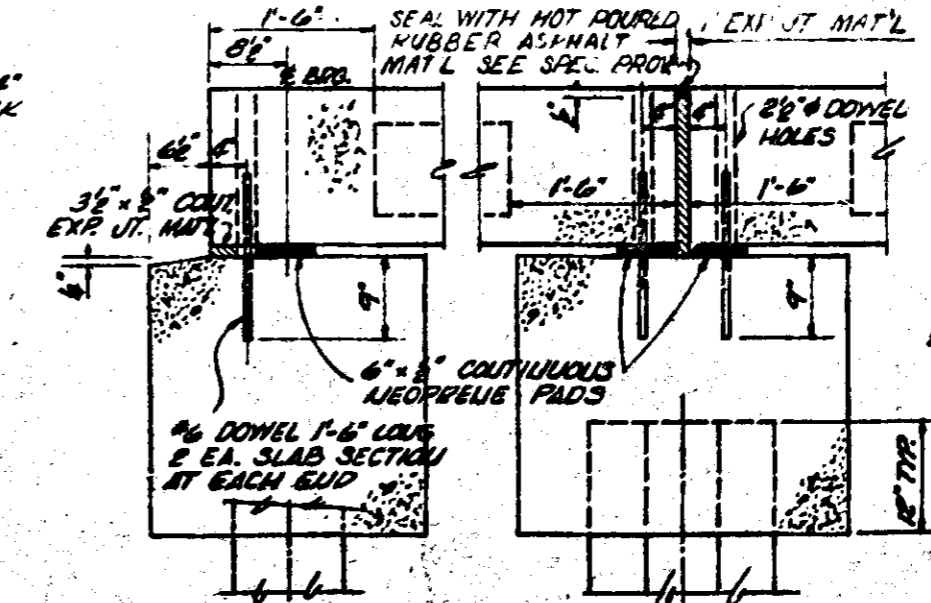
INSERT DETAIL

NOTE #1: INSERTS FOR ATTACHING RAIL POST TO SLABS. (8 INSERTS REQUIRED PER POST) - RICHMOND ADJUSTABLE INSERTS LB13405 OR AN APPROVED EQUAL TO BE FURNISHED AND PLACED AS SHOWN.



TYPICAL SECTION

BITUMINOUS WEARING SURFACE SHOWN IS TYPICAL FOR MOST SPALLS, SEE WEARING SURFACE DIAGRAM ON SLAB #67 SHEET FOR CHANGES IN SLOPE.



SECTION A-A

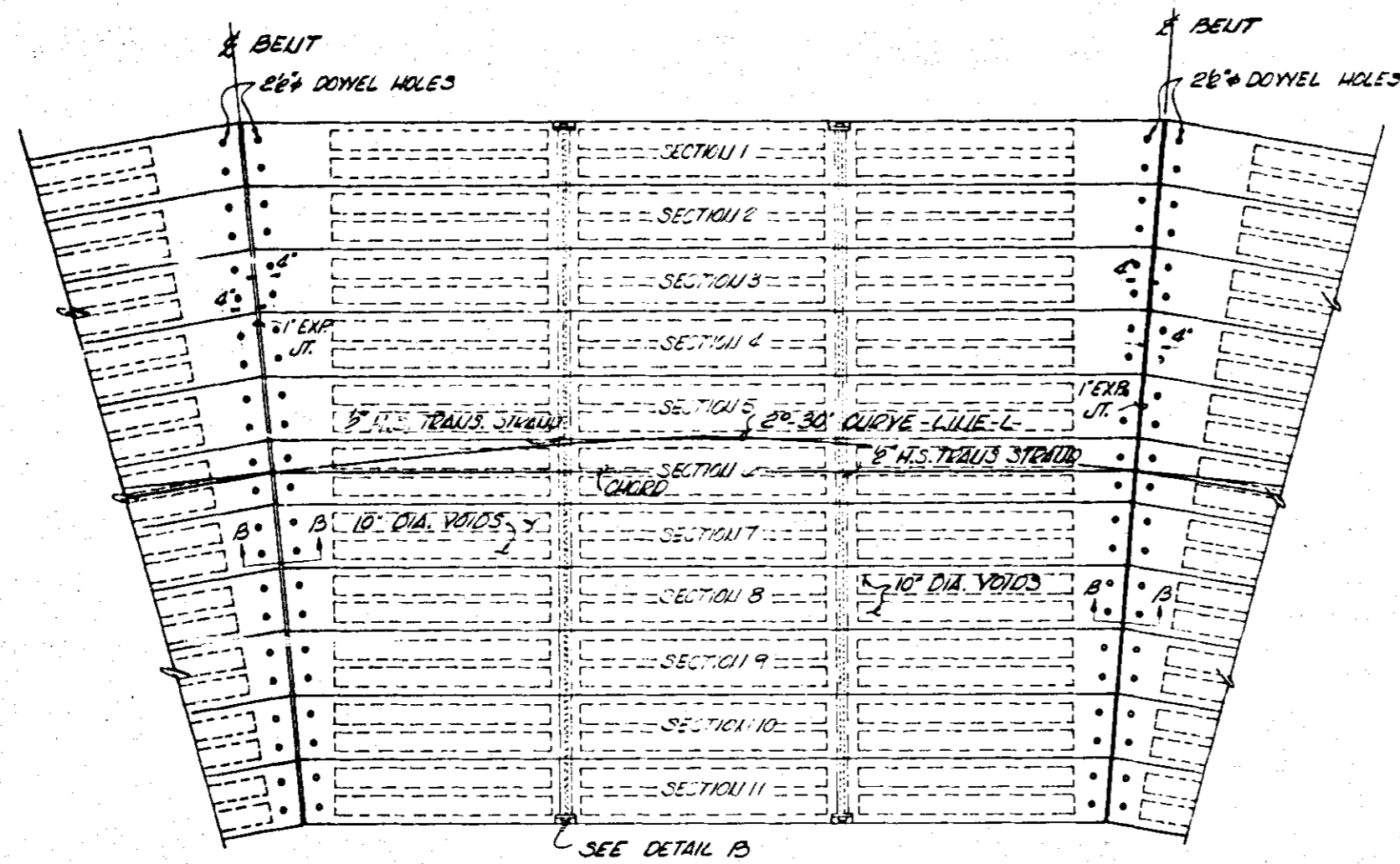
SECTION B-B

GENERAL NOTES

ASSUMED LIVE LOAD: HS15-44
 LIVE LOAD DISTRIBUTION: IN ACCORDANCE WITH SECTION 1.5.2 (c) OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES
 CONCRETE: f'c = 4000 psi (MIN. COMP. STRENGTH AT CURING) f'c = 4000 psi (MIN. COMP. STRENGTH AT TRANSFER OF STRESSING FORCE)
 ALL PRESTRESSING STRANDS SHALL MEET THE REQUIREMENTS OF ASTM-A419.
 ALL PRESTRESSING STRANDS SHALL BE 7-WIRE HIGH STRENGTH STRESS RELIEVED CABLES IN ACCORDANCE WITH THE SPECIFICATIONS.
 SIZE TYPE I OR ULTIMATE STRENGTH 170,000 PSI
 1/2" U.S. 0.183" 3100 PER CABLE 8100 PER CABLE
 1/2" U.S. 0.183" 4100 PER CABLE 8050 PER CABLE
 ALL MATERIAL AND WORKMANSHIP AS PER THE SPECIFICATIONS OF THE NORTH CAROLINA STATE HIGHWAY COMMISSION.
 REINFORCING STEEL SHALL BE OF INTERMEDIATE GRADE.
 EXPANSION JOINT MATERIAL SHALL MEET THE REQUIREMENTS OF AASHTO SPECIFICATIONS TYPE II OR MISS TYPE I OR TYPE II.
 2 1/2" DOWEL HOLES AT ENDS OF SLAB SECTIONS BE GROUTED AT FIXED ENDS AND FILLED WITH ASPHALT MASTIC SIMILAR TO ROOF CEMENT RECESSES FOR TRANSVERSE STRANDS 1/2" AFTER FINAL TENSIONING OF STRANDS.
 PROJECT NO. 51
 CARTERET
 STATION 13+41.57

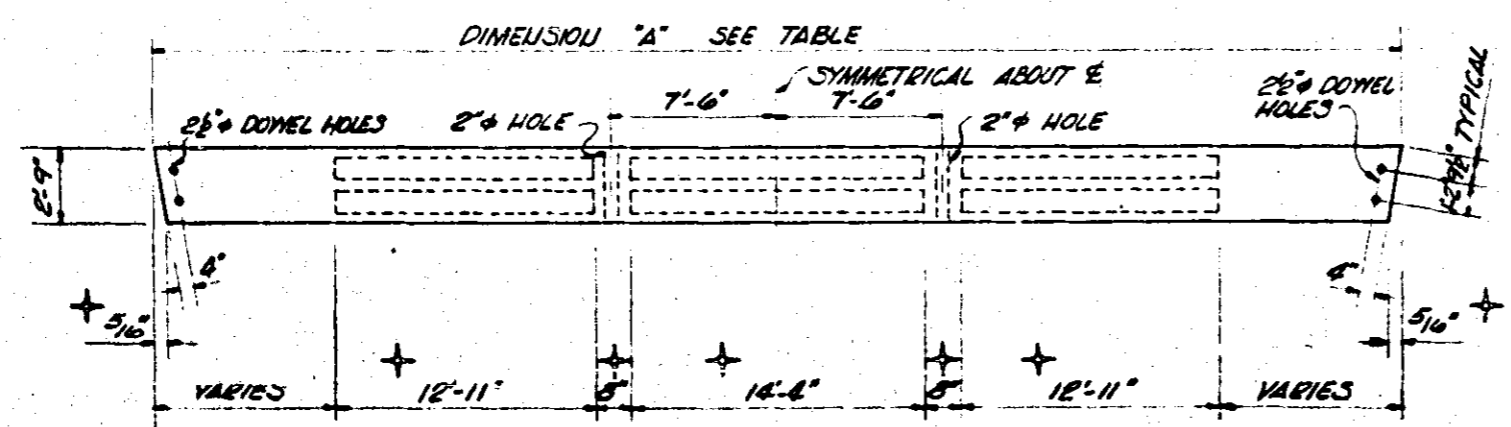
BITUMINOUS CONCRETE SURFACE COURSE, TYPE I-2 - 510 TONS
 ASPHALT CEMENT - 34 TONS

STATE OF NORTH CAROLINA			
STATE HIGHWAY COMMISSION			
SURVEYING			
SLABS ON			
Gen. Structure			
Plan No. 51			
NO.	BY	DATE	REVISION
1			
2			



FOR NOTES AND SECTIONS SEE "SLABS ON TANGENT" ON PREVIOUS SHEET.

PLAN



DIMENSIONS FOR CORED SLAB UNITS

† THESE DIMENSIONS ARE CONSTANT FOR ALL 11 SECTIONS.

SECTION	NUMBER	DIMENSION "A"	TOT. LIN. FT.
1	12	45'-0"	540'-0"
2	12	44'-11 1/2"	539'-4 1/2"
3	12	44'-10 1/2"	538'-8 1/2"
4	12	44'-10 1/2"	538'-0 1/2"
5	12	44'-9 1/2"	537'-5 1/2"
6	12	44'-8 1/2"	536'-9"
7	12	44'-8 1/2"	536'-12"
8	12	44'-7 1/2"	535'-6"
9	12	44'-6 1/2"	534'-10 1/2"
10	12	44'-6 1/2"	534'-2 1/2"
11	12	44'-5 1/2"	533'-6 1/2"
TOTALS	132		5904'-6 1/2"

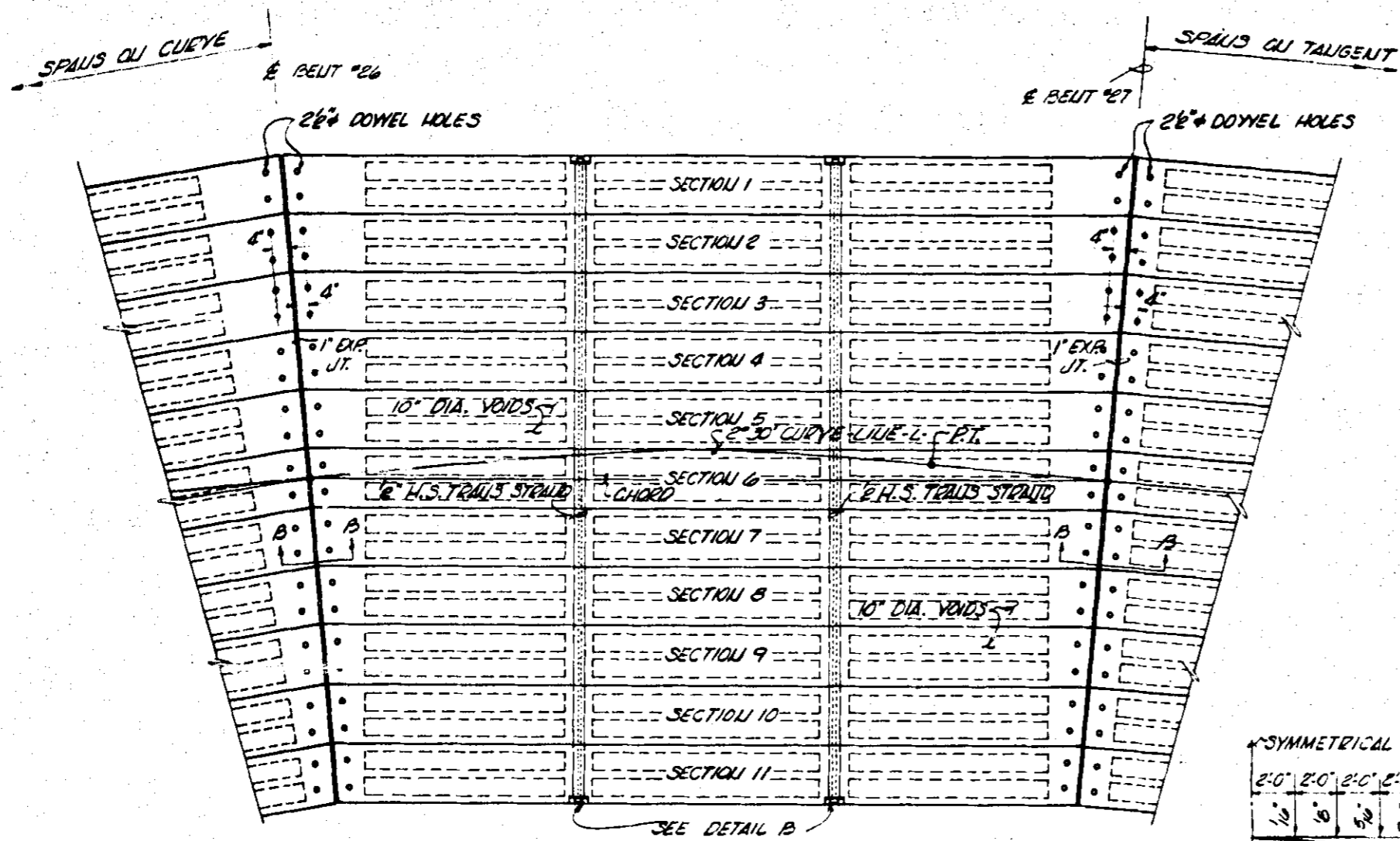
BUILT ACCORDING TO PLANS
DATE 8-28-69

PROJECT No. 516501
CARTERET COUNTY
STATION 13+41.37-L-

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

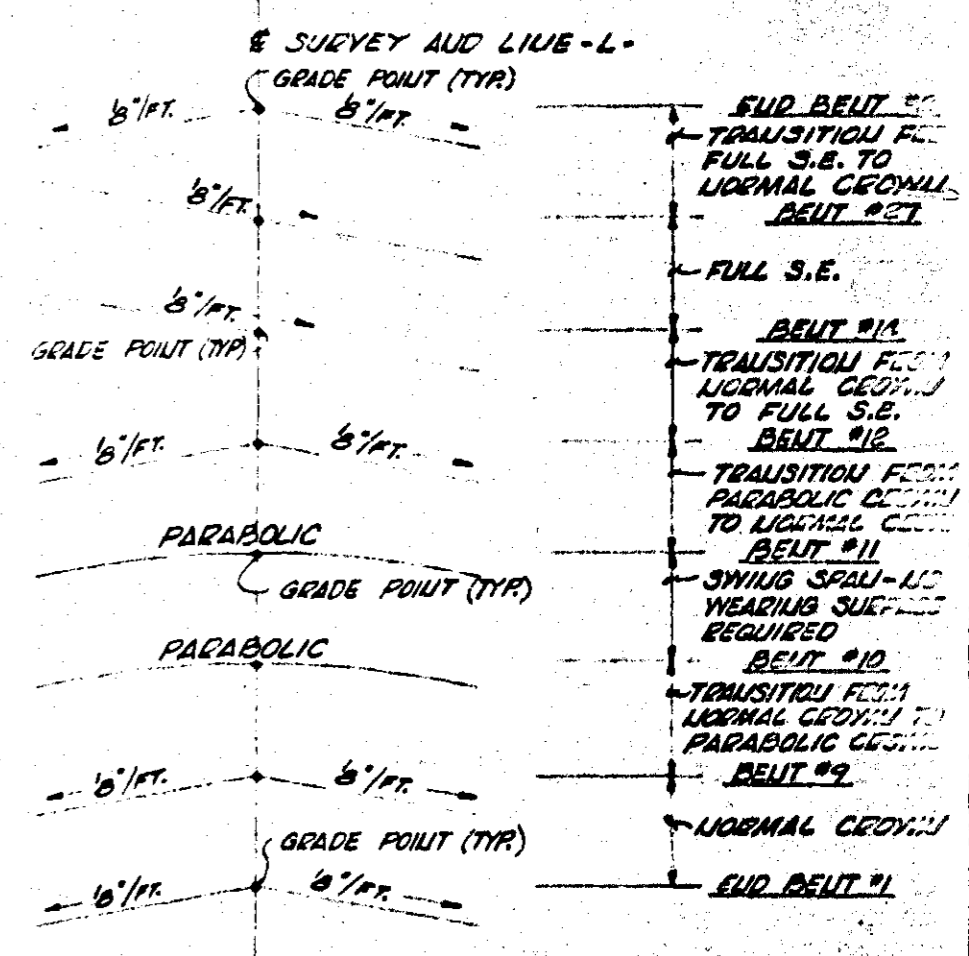
SUPERSTRUCTURE
SLABS ON CURVE
#15 THRU #25

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

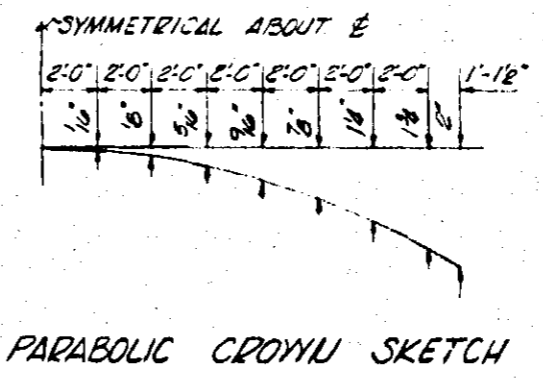


PLANS

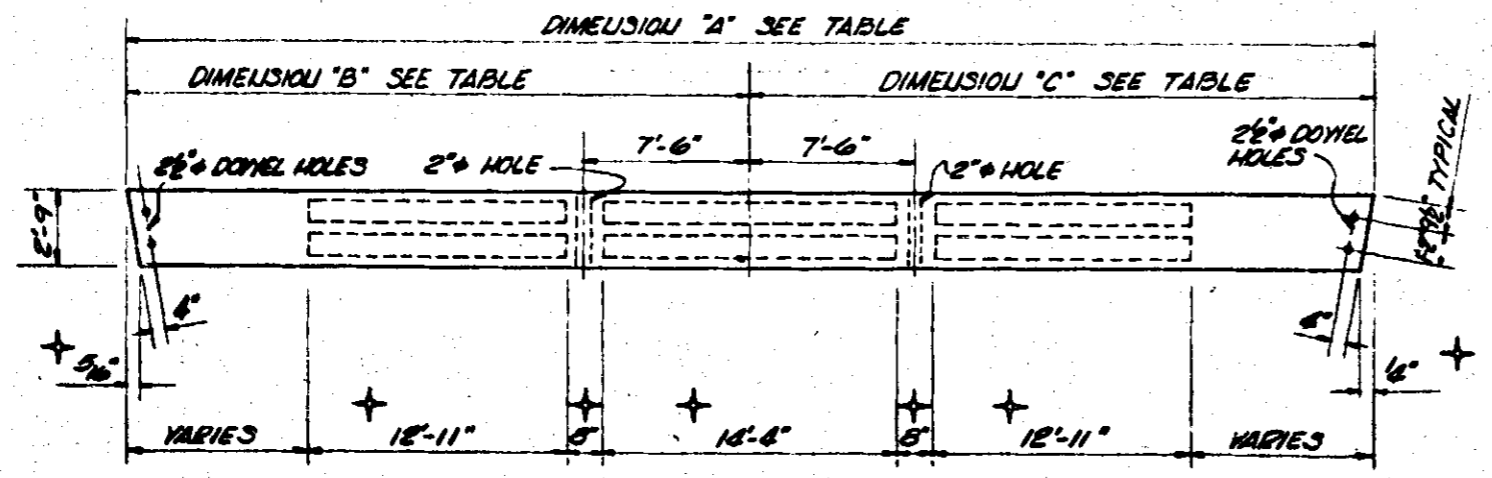
FOR NOTES AND SECTIONS SEE "SLABS ON TANGENT" ON PREVIOUS SHEET.



YEARLING SURFACE DIAGRAM



PARABOLIC CROWN SKETCH



DIMENSIONS FOR CORED SLAB UNITS

† THESE DIMENSIONS ARE CONSTANT FOR ALL 11 SECTIONS.

SECTION	NUMBER	DIM. "A"	DIM. "B"	DIM. "C"	TOTAL LIN. FT.
1	1	45'-0"	22'-5"	22'-6"	45'-0"
2	1	44'-11 1/2"	22'-5 1/2"	22'-5 1/2"	44'-11 1/2"
3	1	44'-10 3/8"	22'-5 3/8"	22'-5 3/8"	44'-10 3/8"
4	1	44'-10 1/8"	22'-5 1/8"	22'-5 1/8"	44'-10 1/8"
5	1	44'-9 1/2"	22'-4 1/2"	22'-4 1/2"	44'-9 1/2"
6	1	44'-9 3/8"	22'-4 3/8"	22'-4 3/8"	44'-9 3/8"
7	1	44'-8 7/8"	22'-4 7/8"	22'-4 7/8"	44'-8 7/8"
8	1	44'-7 7/8"	22'-3 7/8"	22'-3 7/8"	44'-7 7/8"
9	1	44'-7 1/2"	22'-3 1/2"	22'-3 1/2"	44'-7 1/2"
10	1	44'-6 1/2"	22'-3 1/2"	22'-3 1/2"	44'-6 1/2"
11	1	44'-6 1/4"	22'-2 1/4"	22'-3 1/4"	44'-6 1/4"
TOTALS	11				492'-4 1/2"

BUILT ACCORDING TO PLANS SHEET 4-26-43

PROJECT NO. 5.16501

CARTERET COUNTY

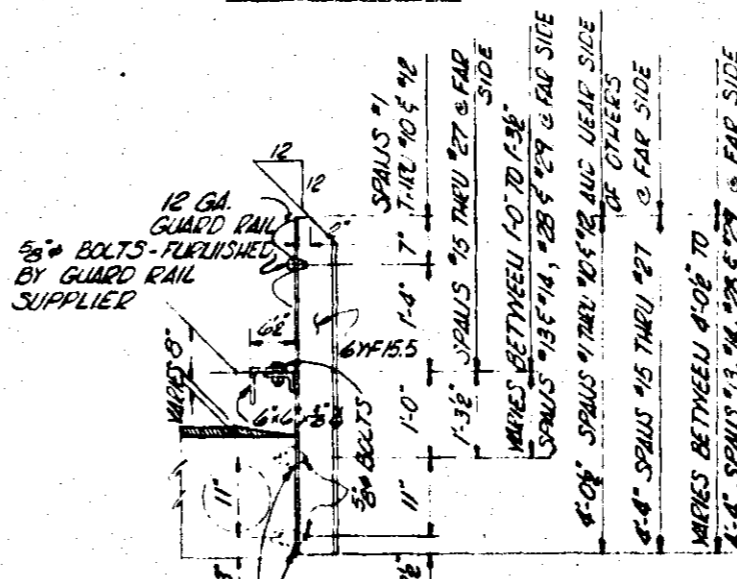
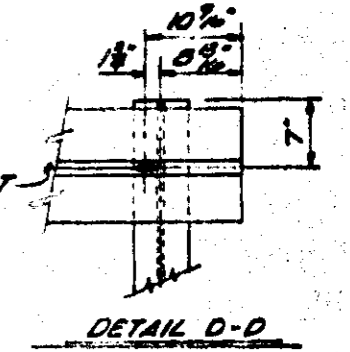
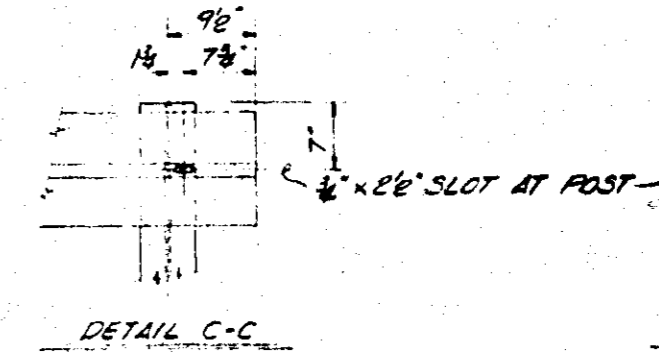
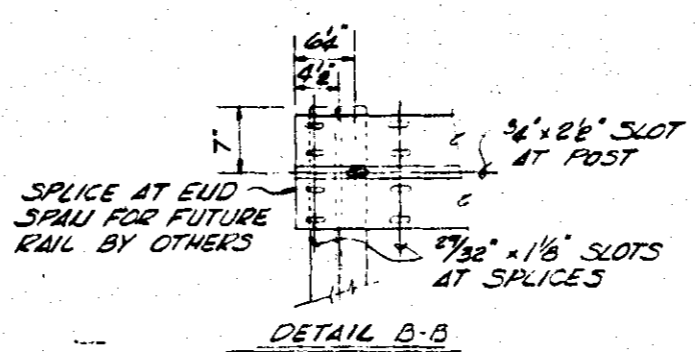
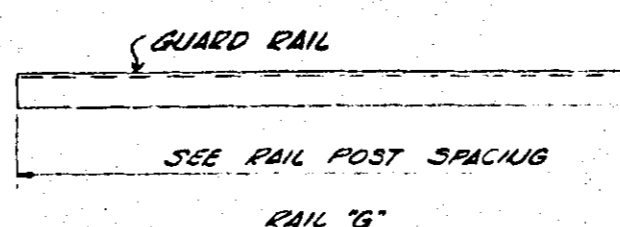
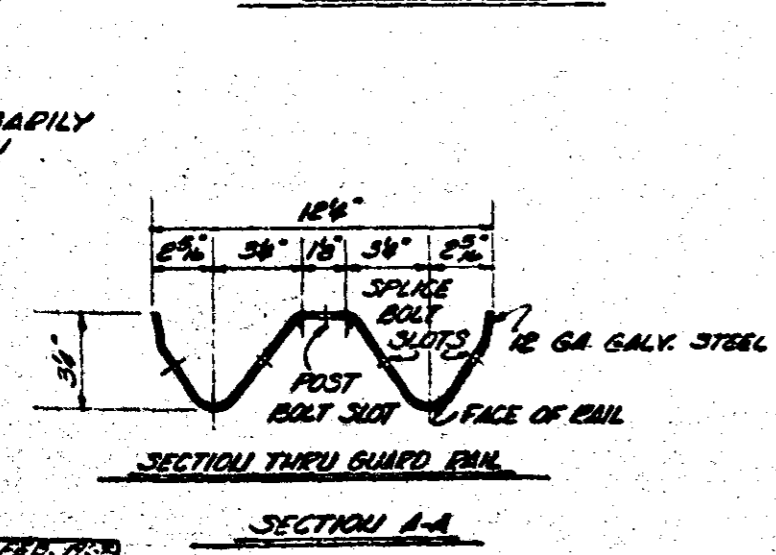
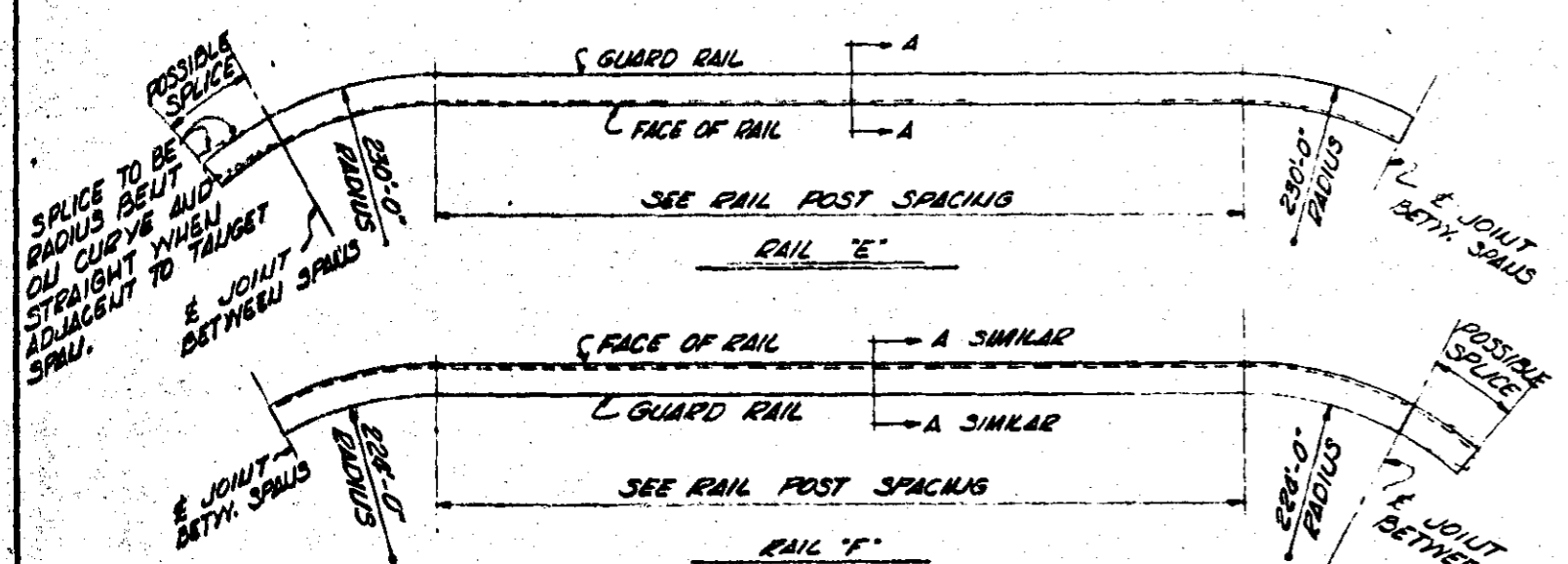
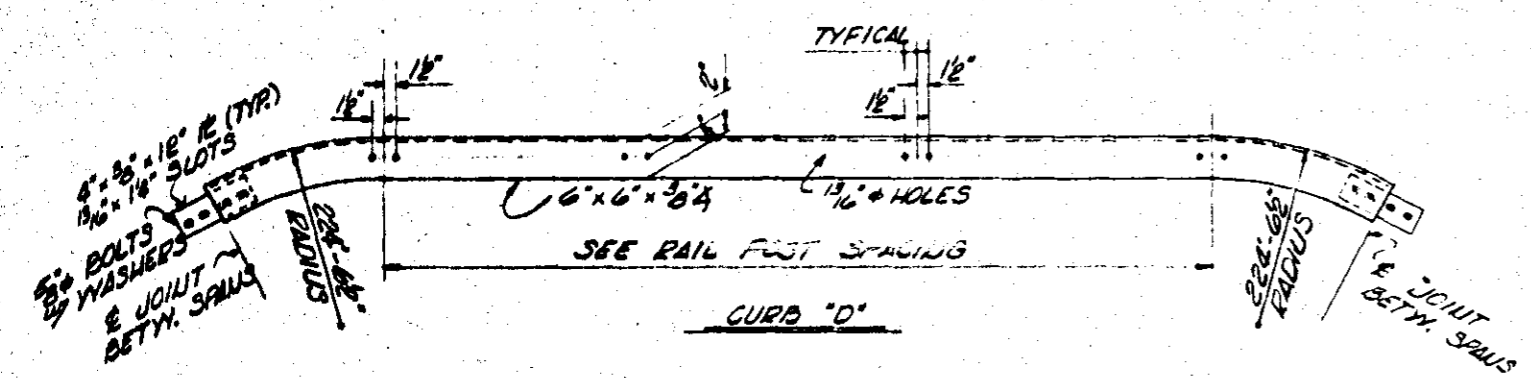
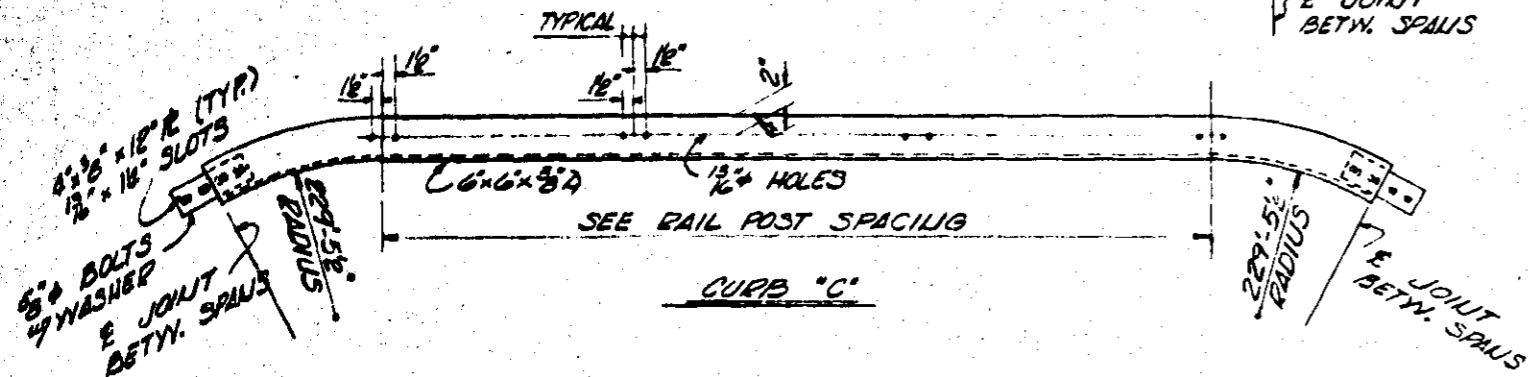
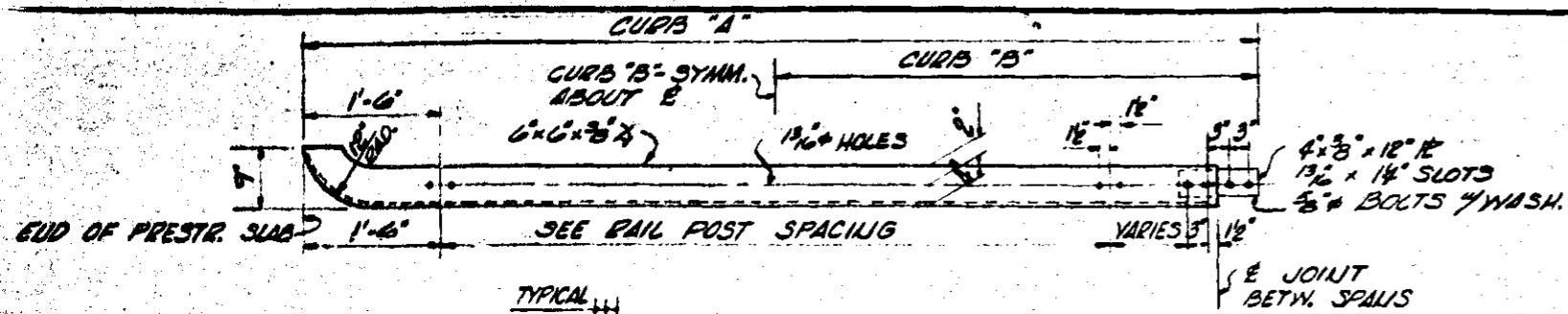
STATION 13+41.37-L

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
 RALEIGH

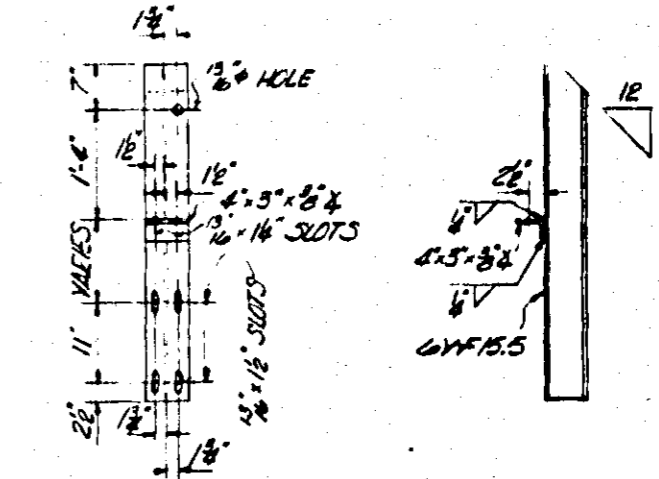
SUPERSTRUCTURE

SLAB # 27

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



WASHERS TO BE FURNISHED AS NECESSARY TO SWIM POST FOR CORRECT ALIGNMENT OF RAIL.



NOTES

MINIMUM LENGTH OF GUARD RAIL AND CURB ANGLE = ONE POST SPACING.

STRUCTURAL STEEL ITEMS SHALL BE OF A GRADE CONFORMING TO EITHER ASTM A7, A53, A375.

STRUCTURAL STEEL SUPPLIED TO FURNISH RAIL POSTS AND CURB ANGLE WITH BOLTS. ALL RAIL PARTS TO BE GALVANIZED TO ASTM SPECIFICATIONS AS FOLLOWS:

POSTS & CURB ANGLE A-1

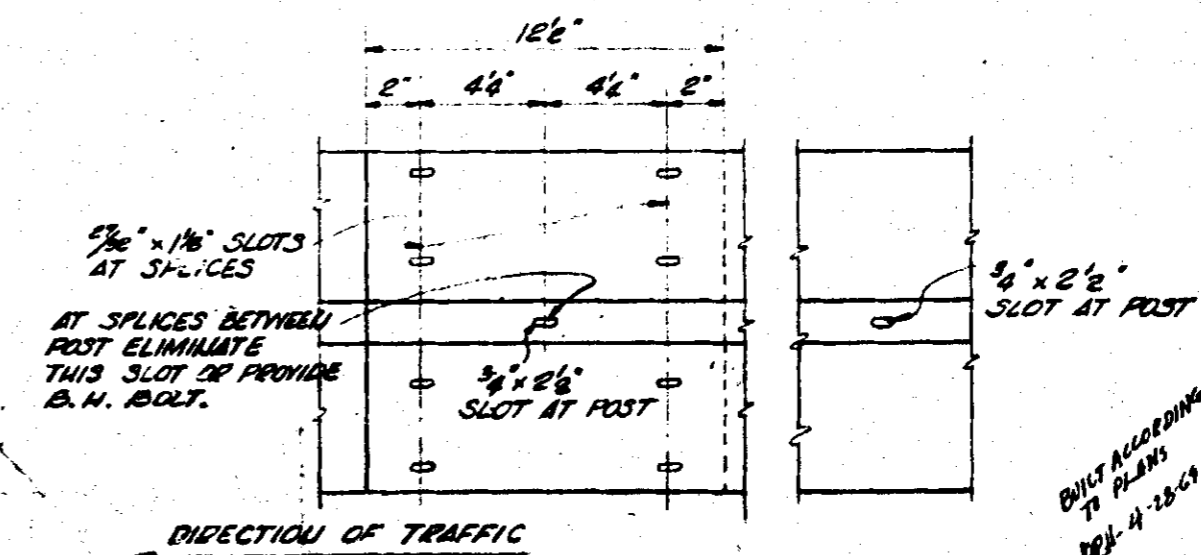
GUARD RAIL A-1

HARDWARE A-1

ALL GALVANIZING TO BE DONE AFTER FABRICATION WHERE FABRICATION IS REQUIRED.

ALL BOLTS, NUTS, WASHERS, PLATES, AND CURB ANGLE ARE CONSIDERED AS PARTS OF THE RAIL FOR PAYMENT. ILBERTS WILL BE SUPPLIED BY CORED SLAB FABRICATOR.

RAIL PAY LENGTH 2492.36 FT.



RAIL SPLICE AND POST CONNECTION

5/8" BOTTOM HD. OVAL SHOULDER BOLTS 7 HEX NUTS AT ALL SLOTS. THICKNESS OF HEX NUTS 3/8"

PROJECT No. 5.16501

CARTERET COUNTY

STATION 13+41.57-L

STATE OF NORTH CAROLINA

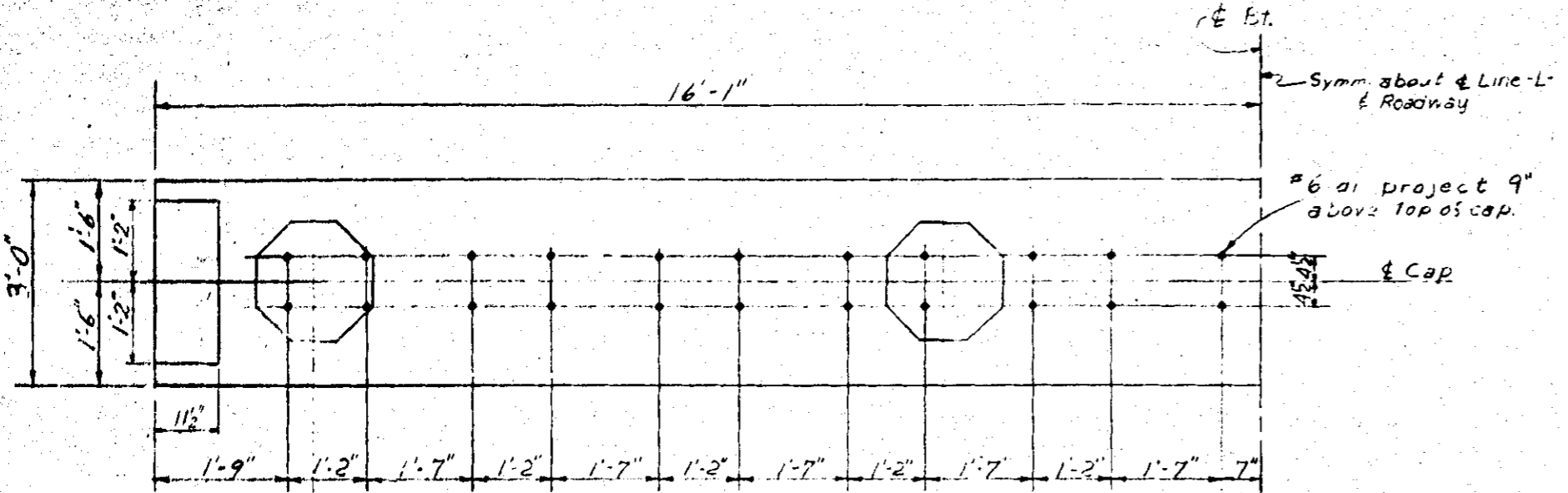
STATE HIGHWAY COMMISSION

RALEIGH

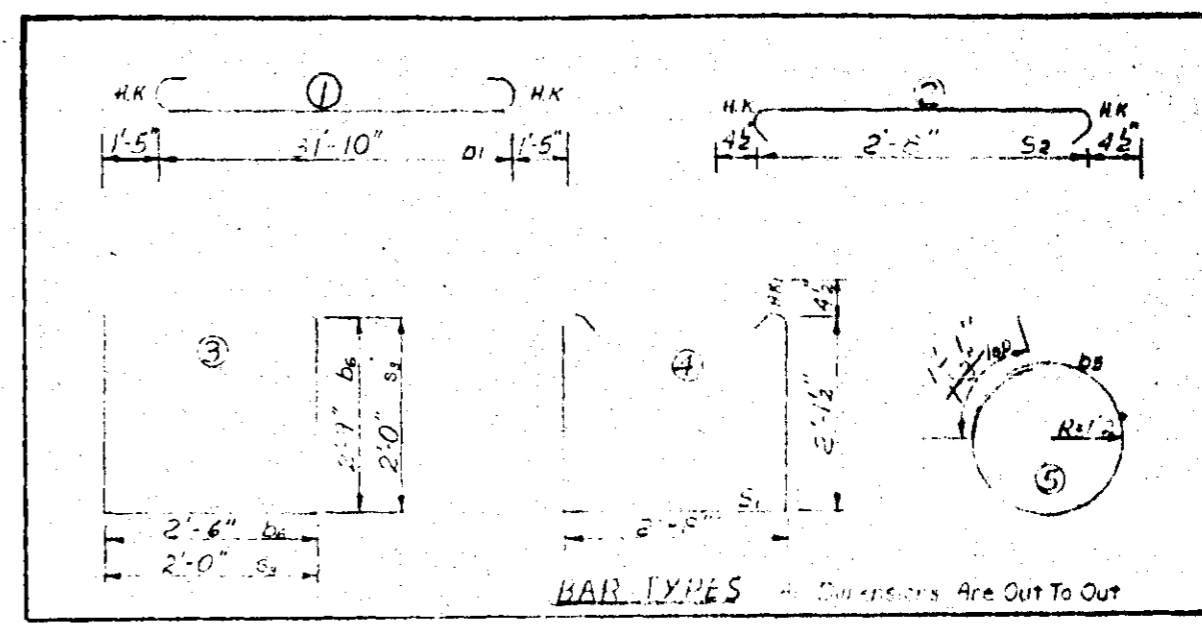
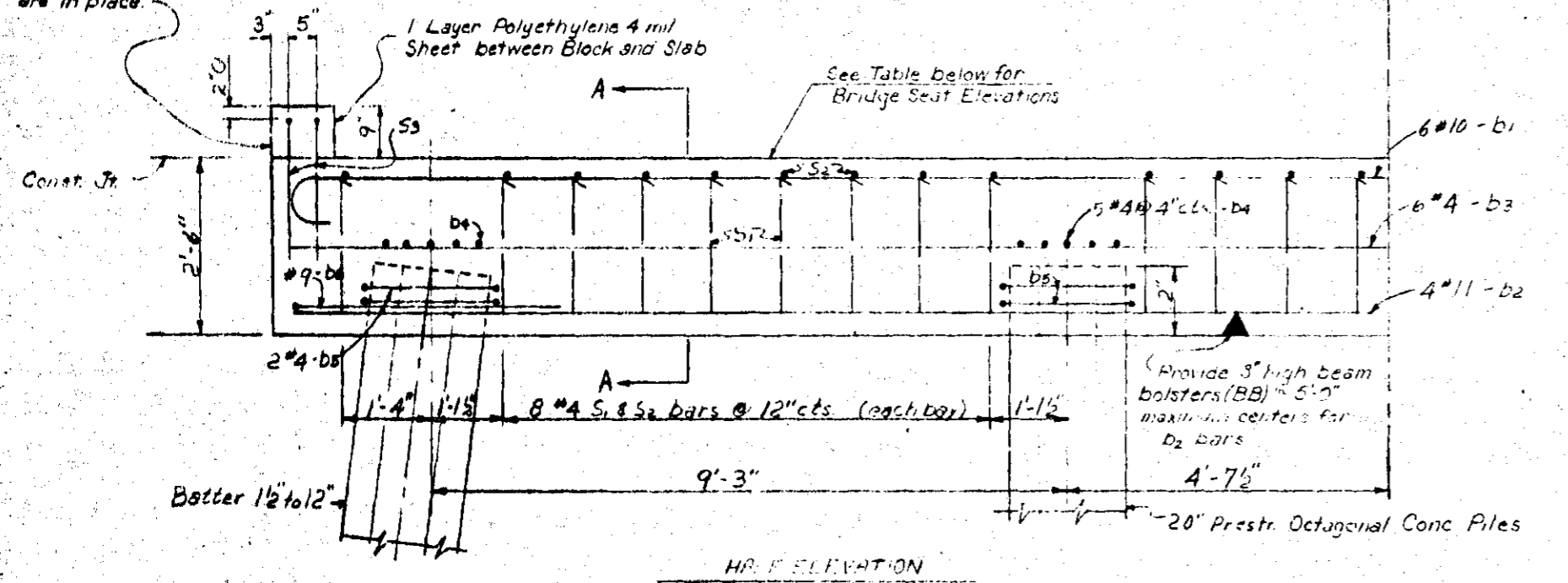
CURB AND RAIL DET.

FEBRUARY 1969

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



NOTE: This Block to be poured after Superstructure Slabs are in place.

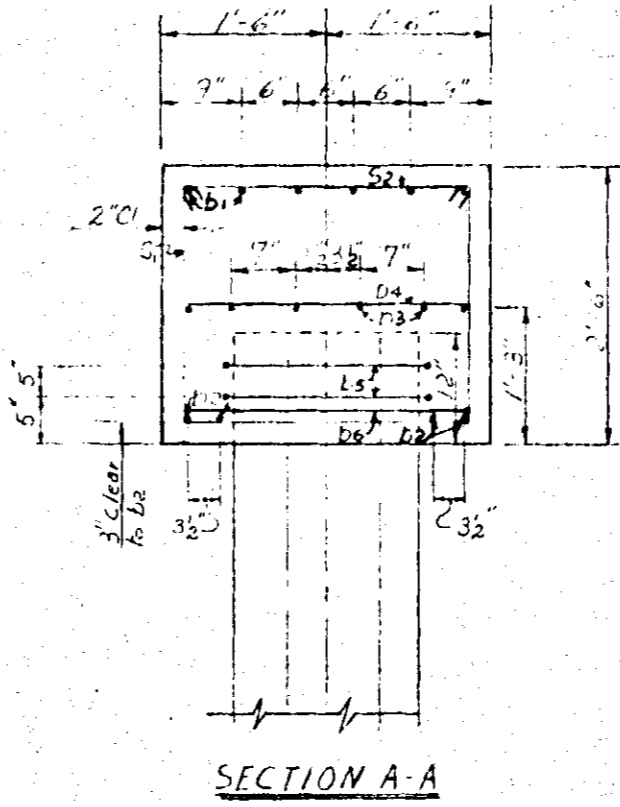


BILL OF MATERIAL

For One Bent - Eighteen Piles

BAR NO.	SIZE	TYPE	LENGTH
D1	6 #10	1	34'-0"
D2	4 #11	Str	31'-0"
D3	12 #4	Str	16'-7"
D4	20 #4	Str	2'-8"
D5	8 #4	5	8'-7"
D6	2 #9	3	8'-0"
S1	26 #4	4	7'-8"
S2	26 #4	2	3'-5"
S3	4 #4	3	6'-0"
D	44 #6	Str	1'-6"

BRIDGE SEAT ELEVATION		20" OCT. PRES. CONC. PILES	
Bent No.	Elevation	No.	Lin Ft.
2	15.137	4	228 240
3	15.849	4	240 240
4	16.453	4	240 240
6	17.124	4	240 260
7	17.192	4	240 260
8	17.192	4	240 288
13	17.192	4	240 288
14	17.191	4	240 260
15	17.087	4	240 260
17	16.977	4	240 240
18	15.772	4	240 240
19	15.100	4	240 240
21	13.756	4	228 260
22	13.084	4	228 260
23	12.413	4	246 260
25	11.069	4	246 260
26	10.397	4	246 240
27	9.725	4	246 240



NOTE:
 For Reconcile pads on bent caps, see Superstructure.
 For Method D, dampproofing on piles, see Standard 20" prestressed Octagonal Concrete Pile Sheet.

PROJECT No. 5.16501
 CARTERET COUNTY
 STATION 13+41.37-L

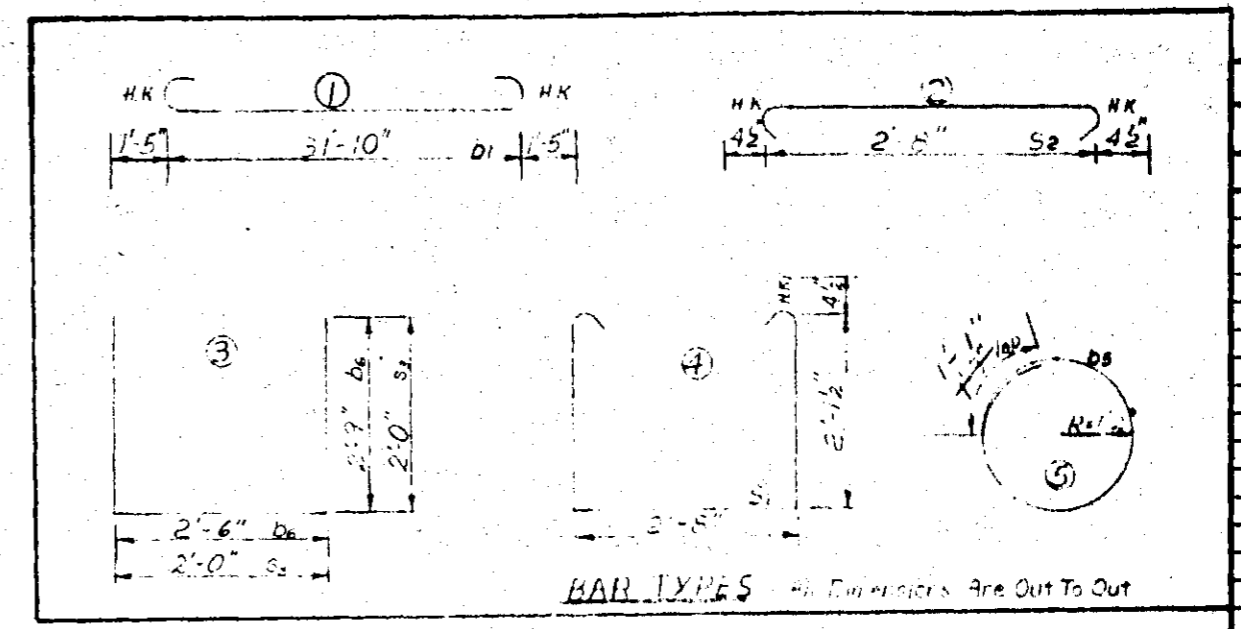
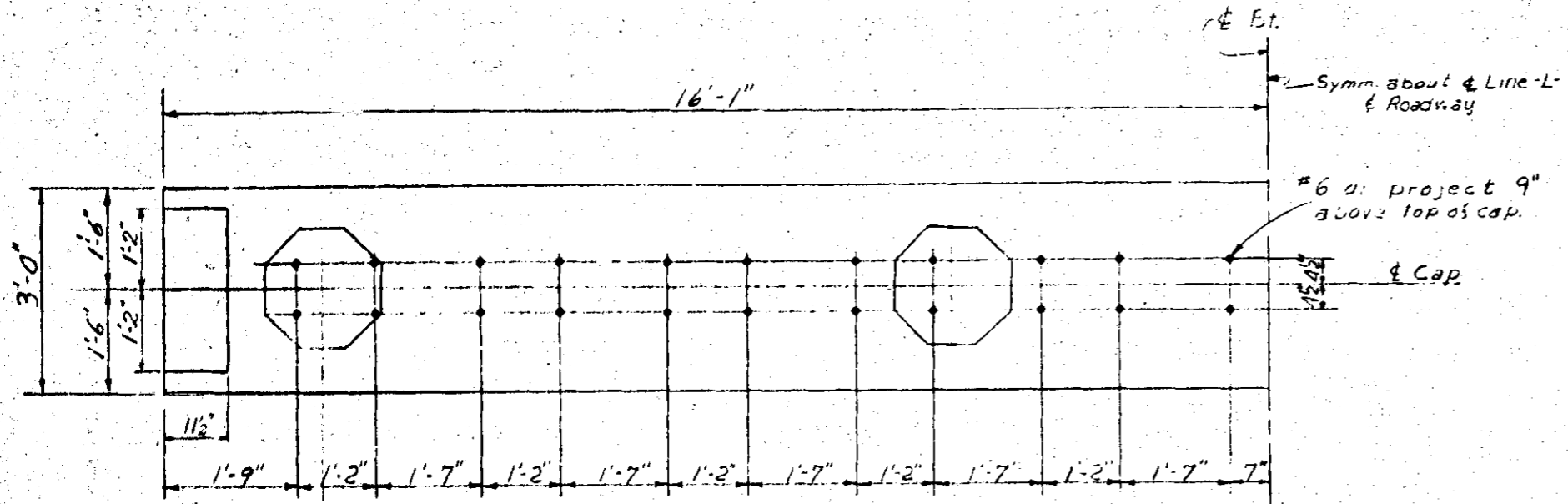
STATE OF NORTH CAROLINA
 STATE HIGHWAY COMMISSION
 BALCON
 SUBSTRUCTURE PILE BENTS
 2, 3, 4, 6, 7, 8, 13, 14, 15, 17, 18, 19, 21, 22, 23, 25, 26, 27

REVISIONS

NO.	BY	DATE	NO.	BY	DATE

DRAWN BY: Howard H. ... DATE: 11-25-67
 CHECKED BY: ... DATE: 12-1-67

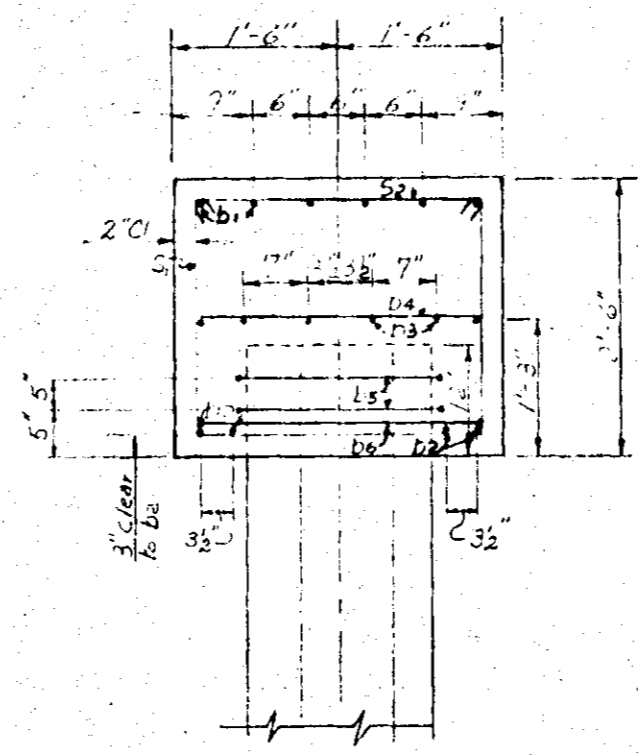
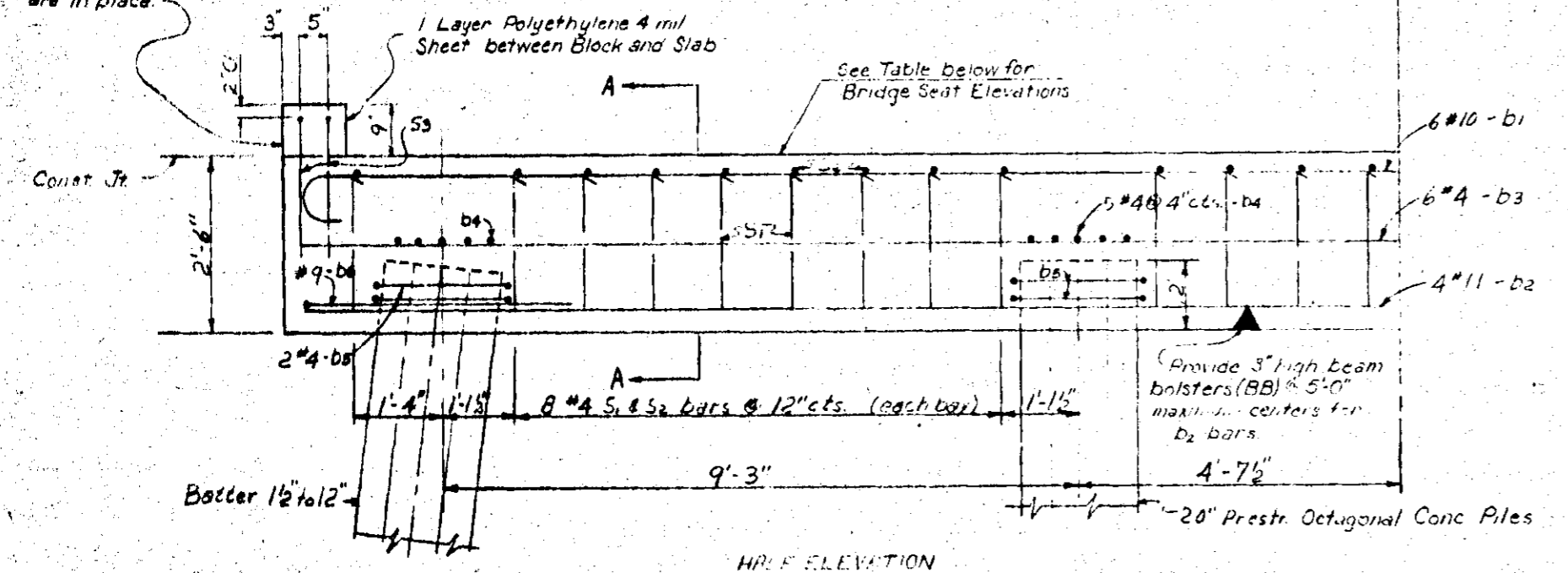
DO NOT ACCORDING TO PLANS
 BRH-4-28-69



BILL OF MATERIAL
For One Bent - Eighteen Piles

BAR NO.	SIZE	TYPE	LENGTH	QTY
b1	#10	1	34'-0"	1
b2	#11	str	31'-0"	6
b3	#4	str	16'-7"	15
b4	#4	str	2'-8"	5
b5	#4	5	8'-4"	1
b6	#9	3	8'-0"	3
S1	#4	4	7'-8"	13
S2	#4	2	3'-5"	5/1
S3	#4	3	6'-0"	10
d	#6	str	1'-6"	99

NOTE: This Block to be poured after Superstructure Slabs are in place.



BRIDGE SEAT ELEVATION		20" OCT. PRES CONC PILES	
Bent No	Elevation	No.	Lin Ft.
2	15.137	4	228 240
3	15.849	4	246 240
4	16.453	4	240 240
6	17.124	4	246 260
7	17.192	4	240 260
8	17.192	4	240 288
13	17.192	4	246 288
14	17.191	4	240 260
15	17.087	4	246 260
17	16.977	4	246 240
18	15.772	4	246 260
19	15.100	4	228 240
21	13.756	4	228 260
22	13.084	4	228 260
23	12.413	4	246 260
25	11.069	4	246 260
26	10.397	4	246 240
27	9.725	4	246 240

NOTES:

For Neoprene pads on bent caps, see Superstructure.
For Method D, dampproofing on piles, see Standard 20" prestressed Octagonal Concrete Pile Sheet.

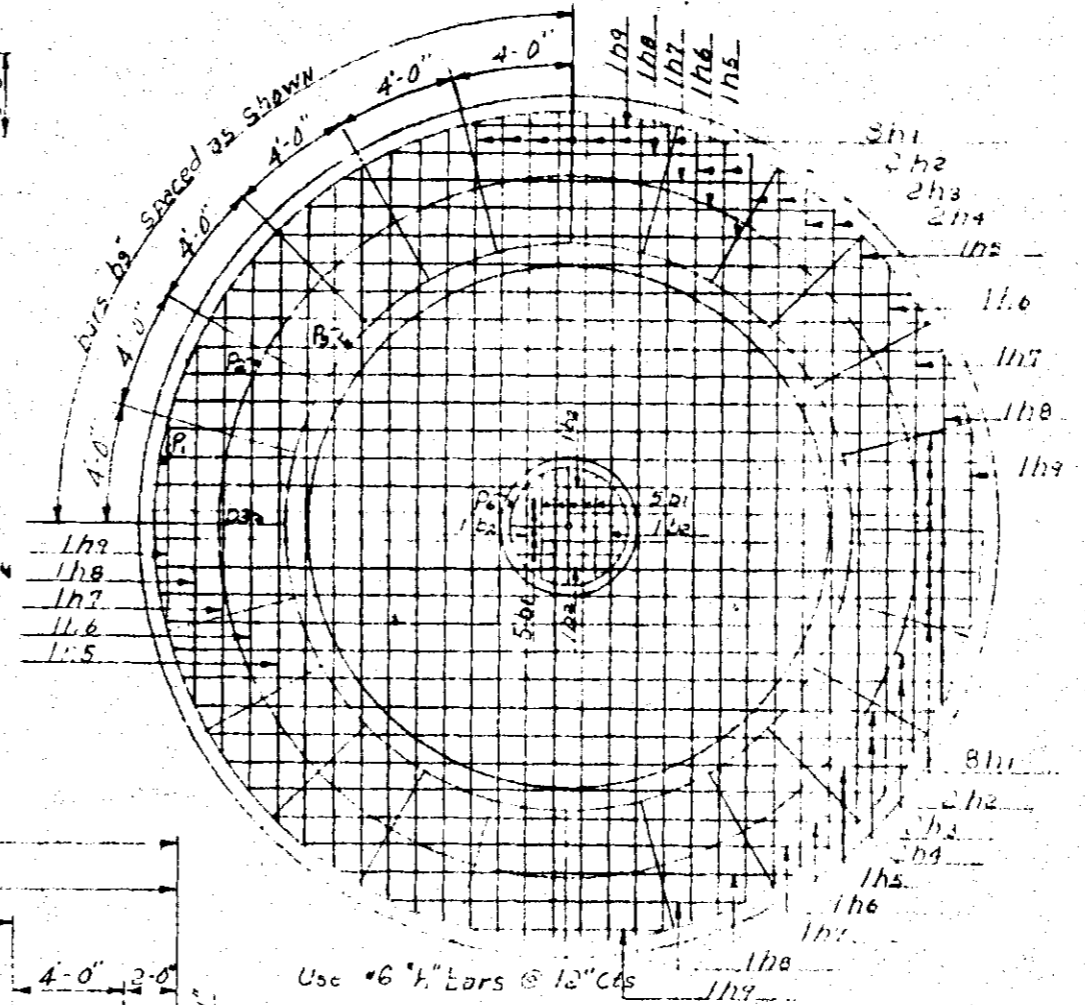
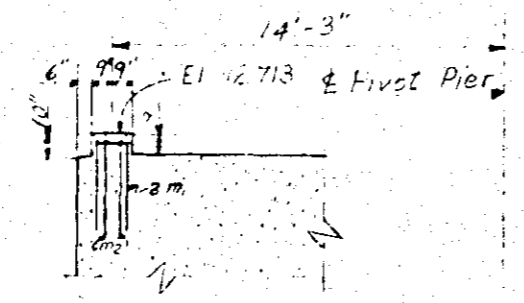
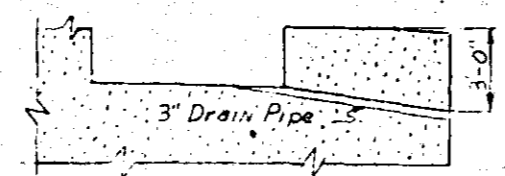
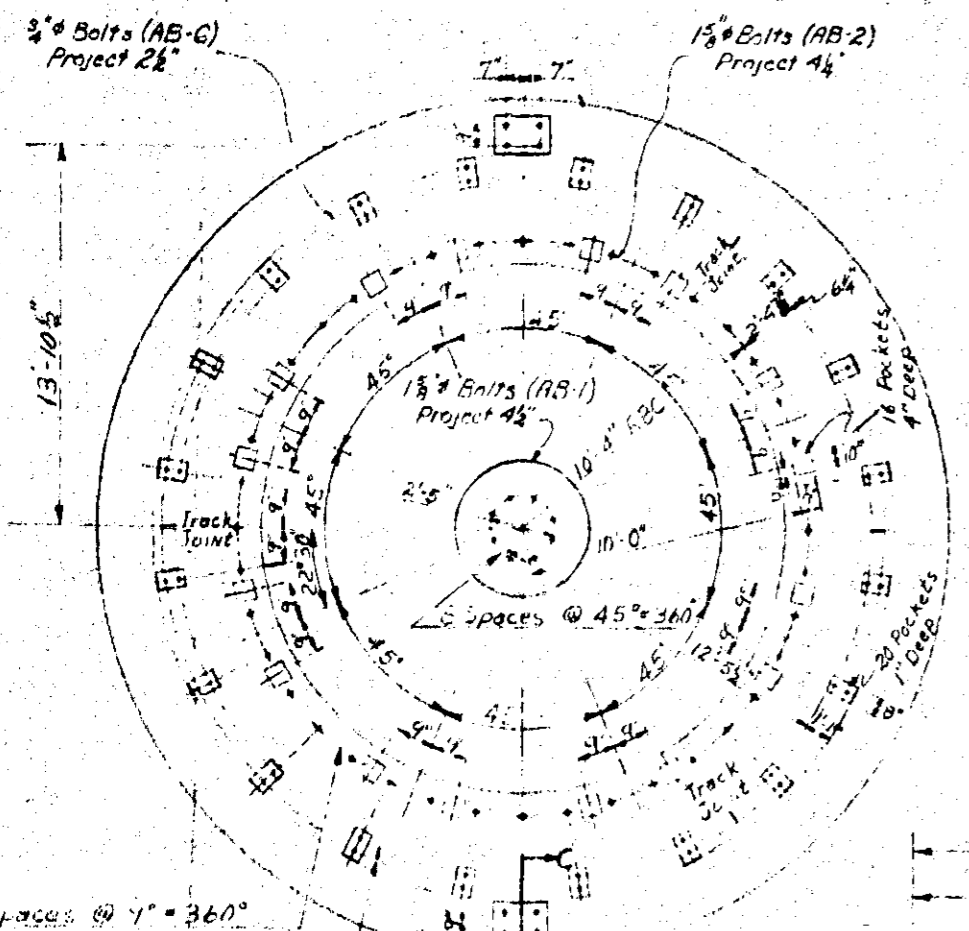
PROJECT No. 5.16501
CARTERET COUNTY
STATION 19+41.37-L

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH
SUBSTRUCTURE PILE BENTS
2, 3, 4, 6, 7, 8, 13, 14, 15, 17, 18, 19, 21, 22, 23, 25, 26, 27

BUILT ACCORDING TO PLANS
APR-4-28-49

REVISIONS

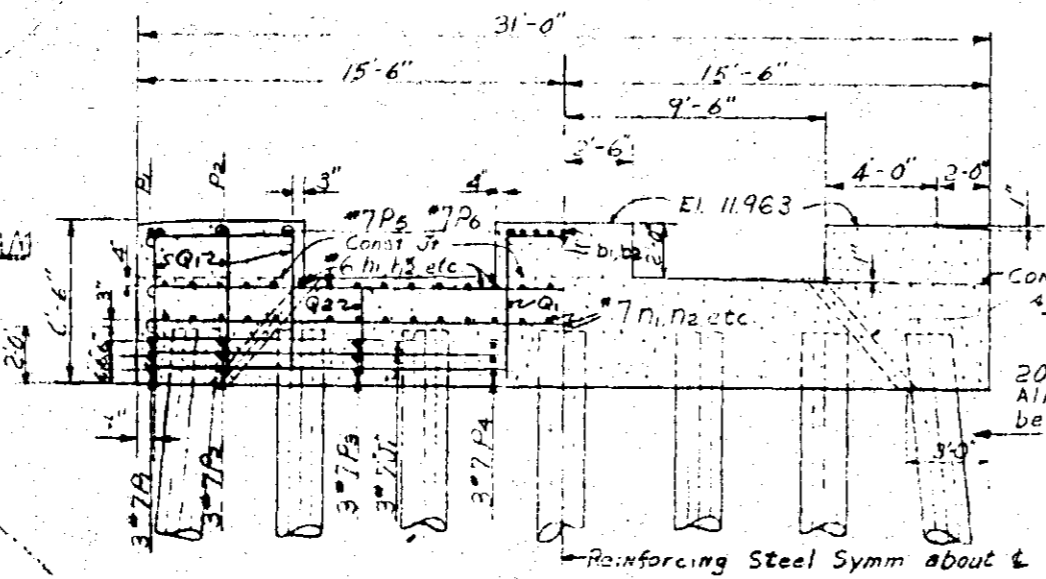
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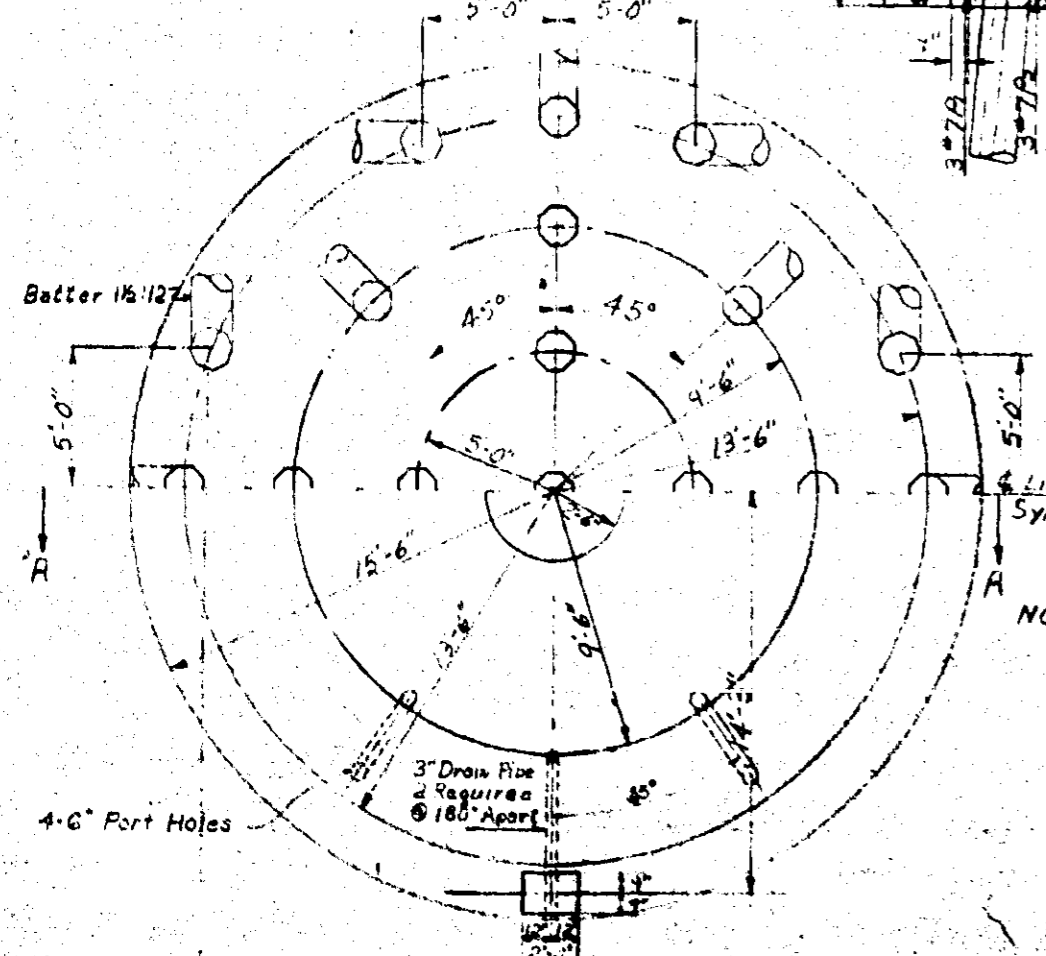
40 Spaces @ 1" = 360°
 20 Spaces @ 1/2" = 360°
 12" Bolts (AB-3)
 Project 3 1/2"

ANCHOR BOLT DIAGRAM

NOTE: Anchor bolt designation (AB-1 etc.) does not necessarily agree with anchor bolt designation shown on original machinery drawings by the Erie Gear and Machine Co.

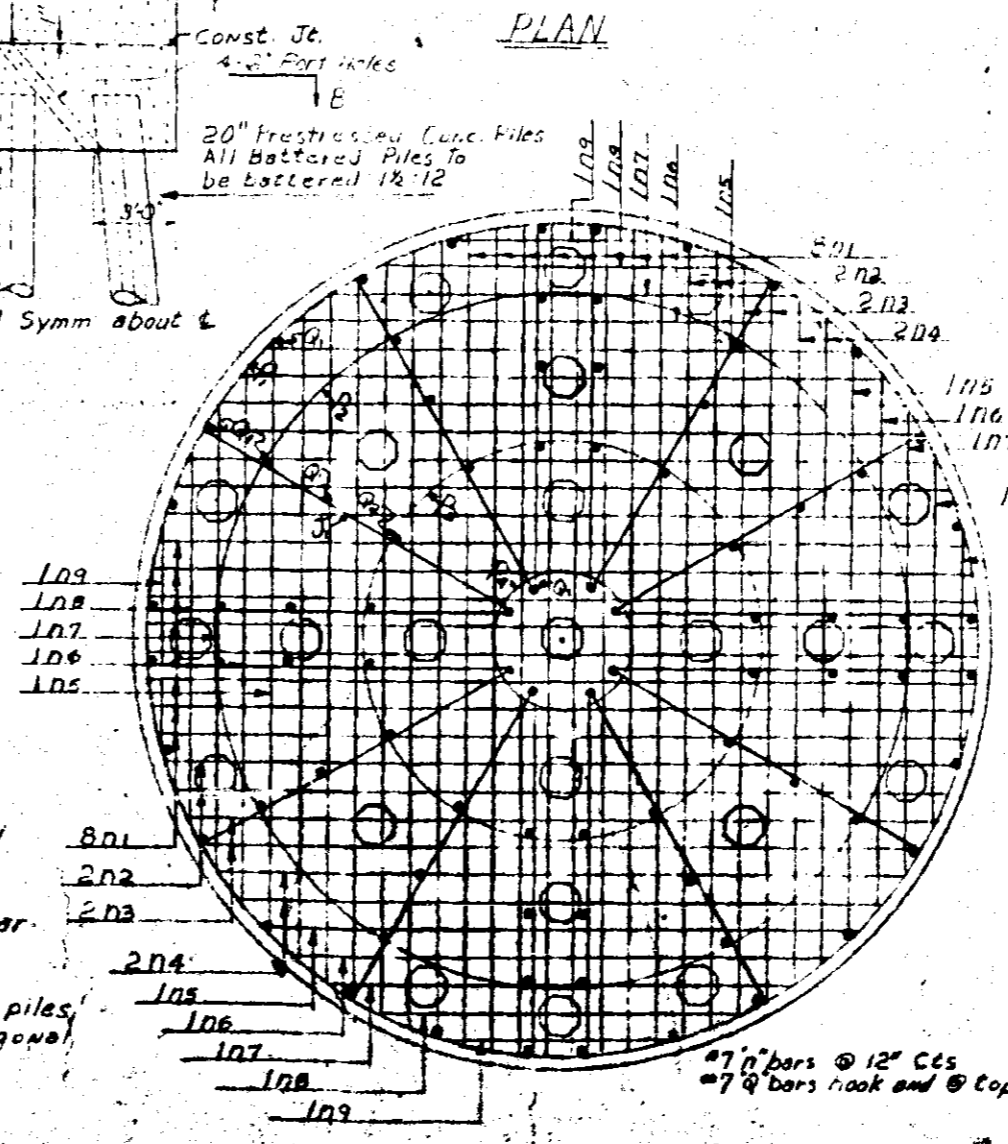


SECTION A-A



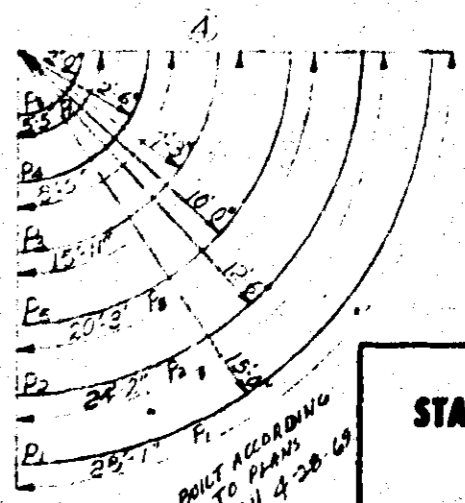
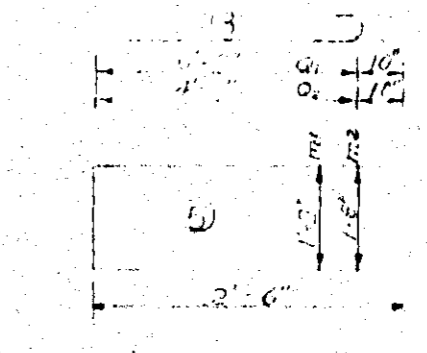
HALF PLAN

NOTE: Pits to be formed in Pier Cap for rock lugs. Anchor Bolts and rock lugs to be set and securely grouted in place with 1:2 cement mortar.
 Piles to be driven to a minimum Bearing Capacity of 47 tons each.
 For method D, Damp proofing on piles, see Standard 20" Prestressed Octagonal Concrete Pile Sheet



SECTION B-B

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
h1	16	#6	1 30'-10"	741
h2	8	"	1 29'-7"	355
h3	8	"	1 27'-8"	332
h4	8	"	1 25'-0"	300
h5	4	"	1 23'-3"	140
h6	4	"	1 21'-1"	127
h7	4	"	1 18'-6"	111
h8	4	"	1 15'-2"	91
h9	4	"	1 10'-3"	62
n1	16	#7	2 31'-2"	1019
n2	8	"	2 29'-11"	487
n3	8	"	2 28'-0"	458
n4	4	"	2 25'-4"	414
n5	4	"	2 23'-7"	193
n6	4	"	2 21'-5"	175
n7	4	"	2 18'-10"	134
n8	4	"	2 15'-6"	127
n9	4	"	2 10'-7"	87
b1	10	#7	2 5'-6"	112
b2	4	"	2 4'-10"	40
b3	24	"	2 7'-0"	343
J	48	#7	2 14'-8"	1639
Q	62	#7	3 6'-10"	898
42	16	#7	3 4'-10"	156
m1	4	#6	5 6'-2"	37
m2	4	#6	5 6'-8"	42
P1	16	#7	4 28'-1"	918
P2	16	"	4 24'-2"	790
P3	12	"	4 15'-11"	490
P4	12	"	4 8'-5"	268
L1	4	"	5 27'-3"	156
L2	4	"	5 5'-5"	44



BAR TYPES

BILL OF MATERIAL

FOR PIVOT PIER

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
h1	16	#6	1 30'-10"	741
h2	8	"	1 29'-7"	355
h3	8	"	1 27'-8"	332
h4	8	"	1 25'-0"	300
h5	4	"	1 23'-3"	140
h6	4	"	1 21'-1"	127
h7	4	"	1 18'-6"	111
h8	4	"	1 15'-2"	91
h9	4	"	1 10'-3"	62
n1	16	#7	2 31'-2"	1019
n2	8	"	2 29'-11"	487
n3	8	"	2 28'-0"	458
n4	4	"	2 25'-4"	414
n5	4	"	2 23'-7"	193
n6	4	"	2 21'-5"	175
n7	4	"	2 18'-10"	134
n8	4	"	2 15'-6"	127
n9	4	"	2 10'-7"	87
b1	10	#7	2 5'-6"	112
b2	4	"	2 4'-10"	40
b3	24	"	2 7'-0"	343
J	48	#7	2 14'-8"	1639
Q	62	#7	3 6'-10"	898
42	16	#7	3 4'-10"	156
m1	4	#6	5 6'-2"	37
m2	4	#6	5 6'-8"	42
P1	16	#7	4 28'-1"	918
P2	16	"	4 24'-2"	790
P3	12	"	4 15'-11"	490
P4	12	"	4 8'-5"	268
L1	4	"	5 27'-3"	156
L2	4	"	5 5'-5"	44

Reinforcing Steel (lb.) 18,622
 Class A Concrete (Cu. Yds.) 157.8
 Concrete Piles No. 25 - 10,477

* Concrete displaced by pile
 heave has been deducted

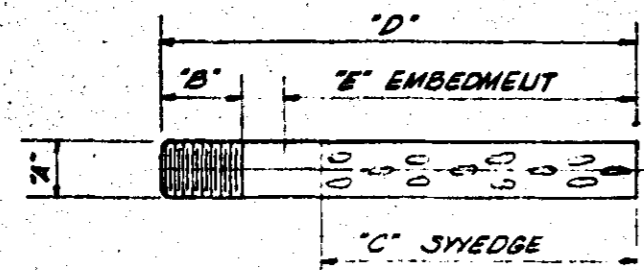
PROJECT No. 5.165.01
 CARTERET COUNTY
 STATION 13+41.37-L

STATE OF NORTH CAROLINA
 STATE HIGHWAY COMMISSION
 RALEIGH

PIVOT PIER

Sept 29 1967

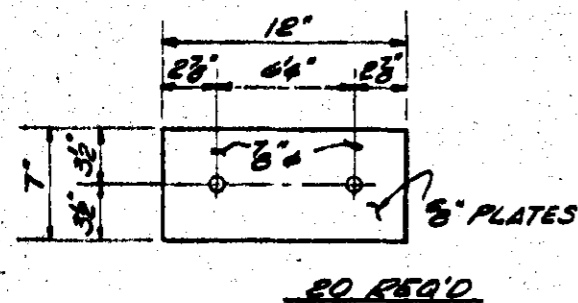
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1	W.P.	6-27-68	2		
2			3		



MARK	NO. REQ'D	"A" DIA.	"B" THD. LENG.	"C" SWEDGE	"D" LENGTH	LOCATION	HEX. NUT AM. STD. H.Y.	L.Y. HEAVY SECT.	"E" DEPTH
AB-1	8	1 1/2"	3 1/2"	23"	28 1/2"	CENTER PIVOT	8	8	24"
AB-2	40	1 1/2"	3 1/2"	11"	16 1/4"	RACK	40	40	12"
AB-3	8	1 1/4"	2 3/4"	11"	15 1/4"	CENTER WEDGE	8	8	12"
AB-4	16	1 1/4"	2 3/4"	11"	15 1/4"	END WEDGE	16	16	12"
AB-5	12	1 1/4"	2 3/4"	11"	15 1/4"	LATCH POCKET	12	12	12"
AB-6	40	3/4"	2 1/4"	9"	12 1/2"	RAIL CLIP & TRACK PLATE	40	40	10"

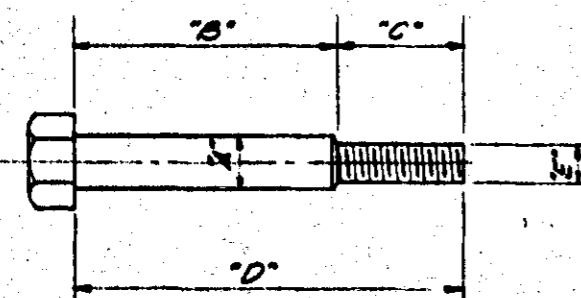
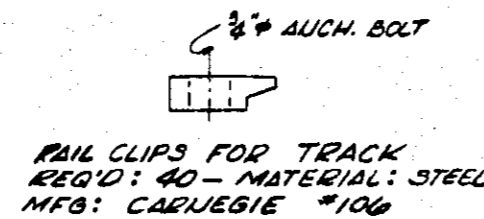
ANCHOR BOLTS

NOTES
 THE COST OF THE ANCHOR BOLTS, TURNED BOLTS, AND TRACK PLATES TO BE INCLUDED IN THE LUMP SUM BID FOR MOVING, ERECTING, AND ADJUSTING SWING SPALL.
 ANCHOR BOLTS, TURNED BOLTS, AND TRACK PLATE SHALL BE OF ASTM A307, GRADE 2; ASTM A7, OR ASTM A36 GR2.



20 REQ'D

TRACK PLATES



MARK	HEAD	NO. REQ'D	"A"	"B"	"C"	"D"	"E"	LOCATION	HEX. NUTS	LOCK WASH.	REMARKS
AB-7	HEX.	8	1 1/2"	2 1/2"	1 3/8"	3 1/2"	3/8"	BALANCE WHEEL	8	8	
AB-8	HEX.	16	1"	2 1/2"	1 3/8"	4"	1/2"	ENDS OF RACK	16	16	HEX. HD. CAPSCREWS

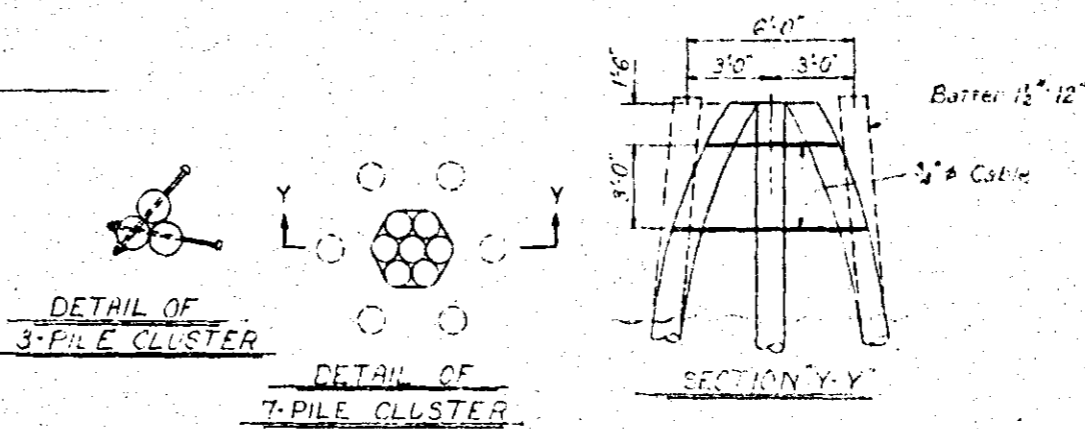
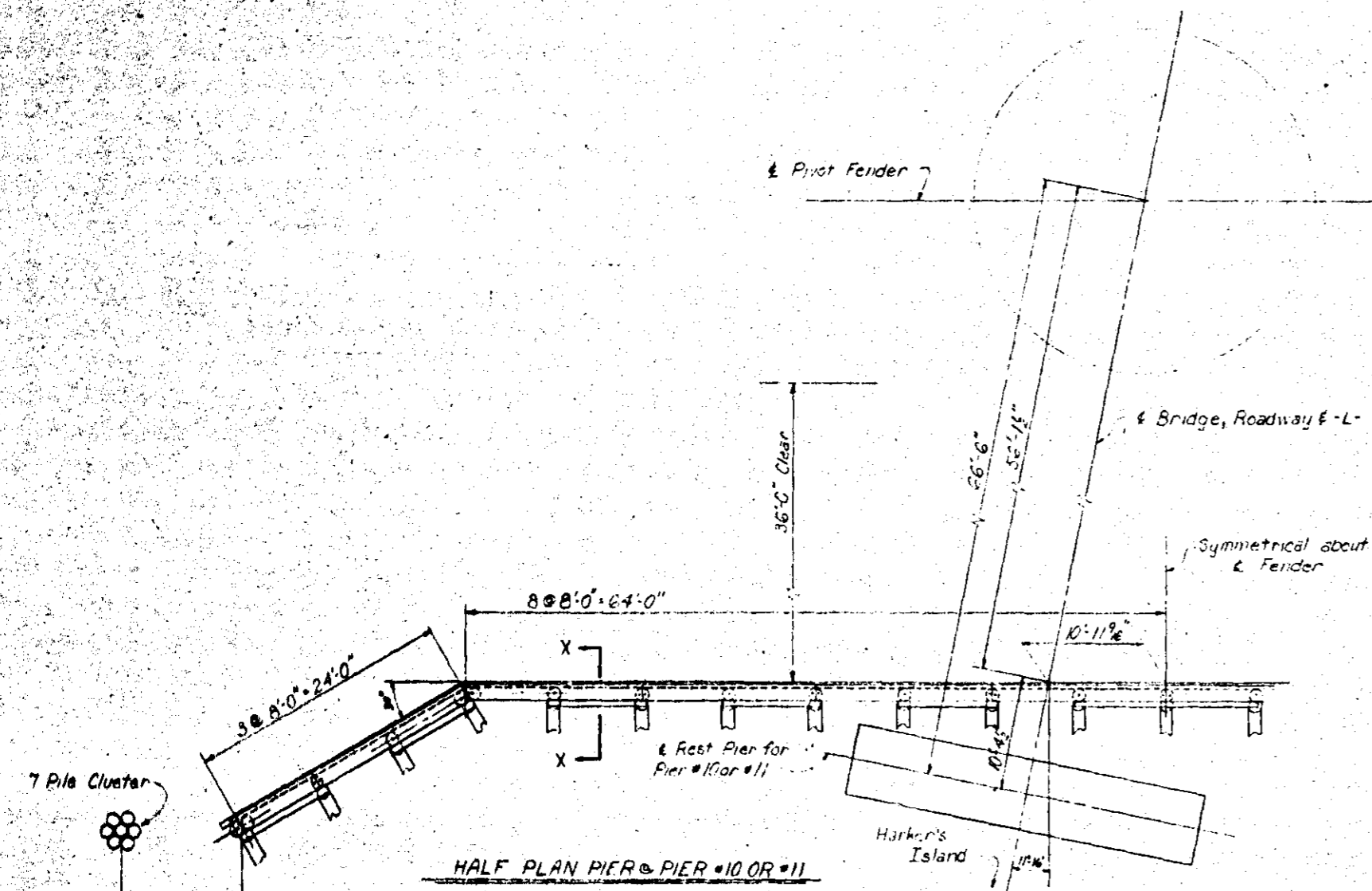
TURNED BOLT

PROJECT No. 5.16B01
CARTERET COUNTY
 STATION 13+41.37-6

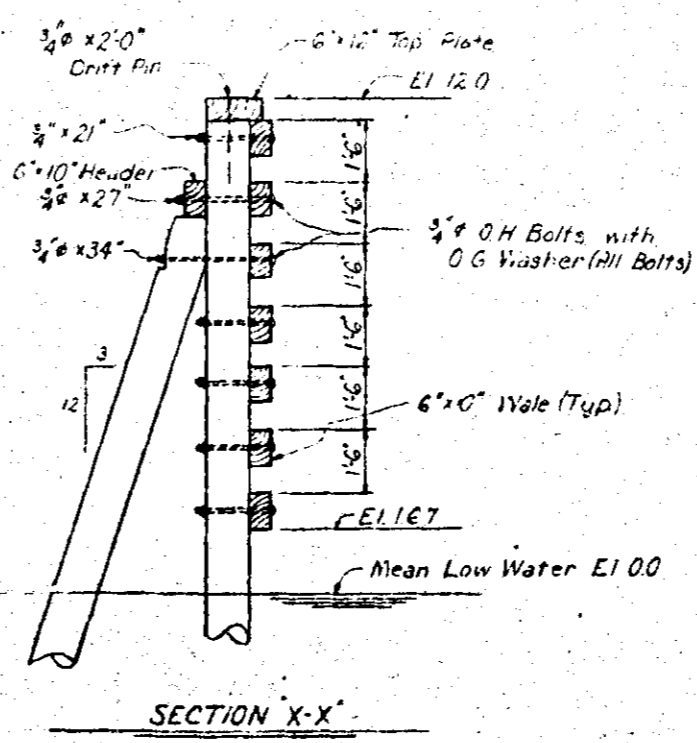
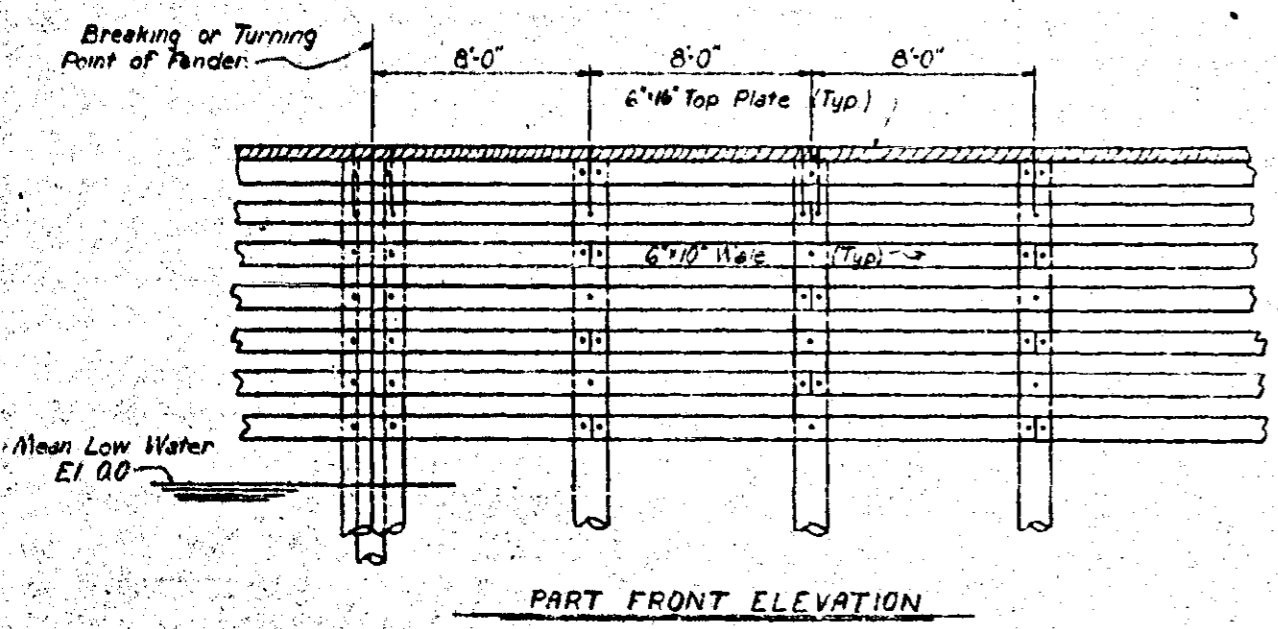
BUILT ACCORDING TO PLANS
 WWH 4-28-69

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
 RALPH
BOLTS AND PLATES FOR SWING SPALL
 See Structure By Record Book
 113 Page 116
 MARCH 15

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



NOTE: Six outside piles to be equally spaced on a 6'-0" diameter circle, drawn together at top and wrapped with three turns of 3/4" cable at two points. Cable shall be secured with 3/4" staples and two cable clamps. Cables and fastenings to be hot dipped galvanized and included as hardware. Batter six exterior piles 1 1/2" x 12". The center pile is to be driven vertically.



BILL OF MATERIAL FOR ONE REST PIER
Two Required

Creosoted Timber				
Item	No.	Size	Surface to	Len.
Wales	15	6" x 10"	S, S 5/4" x 9 1/2"	16'
do	8	do	do	6'
do	6	do	do	16'
do	6	do	do	9'
do	8	do	do	17'
do	8	do	do	17'
Header	10	do	do	9'
do	1	do	do	16'
Top Plate	10	6" x 16"	S, S 5/4" x 15 1/2"	16'
do	2	do	do	8'
Total Creosoted Timber = 8,249 F.B.M.				
Creosoted Timber Piles: No. 64 Lin Ft. F.B.M.				
For Both Piers -> 1287				
Hardware				
Item	No.	Size	Length	
Oval Head Bolts	179	3/4"	21"	1
do	34	do	27"	1
do	33	do	34"	17
O.G. Washers	242	do		242
Drift Pins	34	do	2'0"	10
Staples	43	3/4"		20
Cable		3/4"	230'0"	2'0"
Cable Clamps	8			6
Total Hardware = Lbs = 1,519				

NOTES:

Oval head bolts shall be 3/4" with 3" min diameter head as manufactured by Jersey Bolt & Spike Co., 8 Lister Ave., Newark 3, N.J., or an approved equal.

Length of bolts is based on 1 1/2" diameter pile and are approximate only. Contractor shall determine exact length in field.

All hardware is to be hot dipped galvanized, according to ASTM A-158.

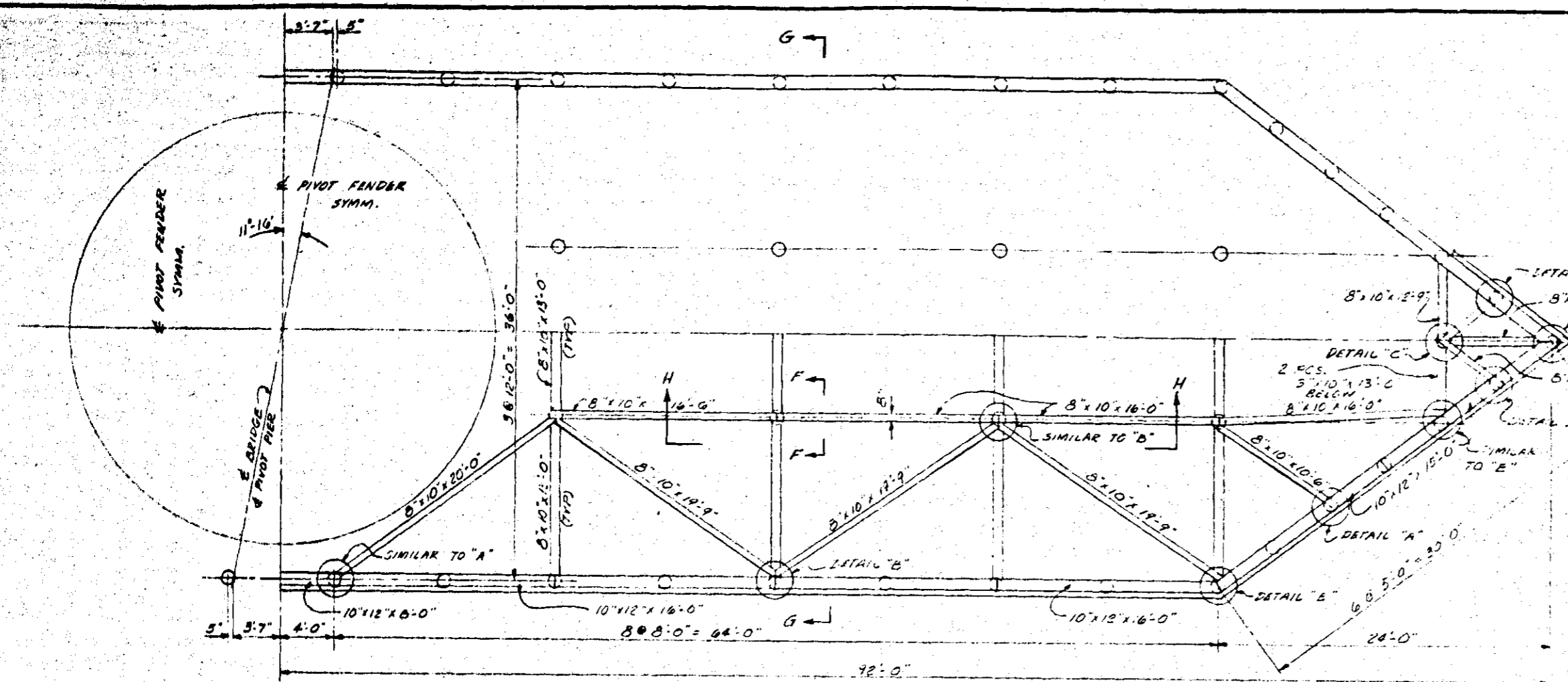
PROJECT No. 516501
CARTERET COUNTY
STATION 13+41.37-L

BUILT ACCORDING TO PLAN
WRM 4-28-69

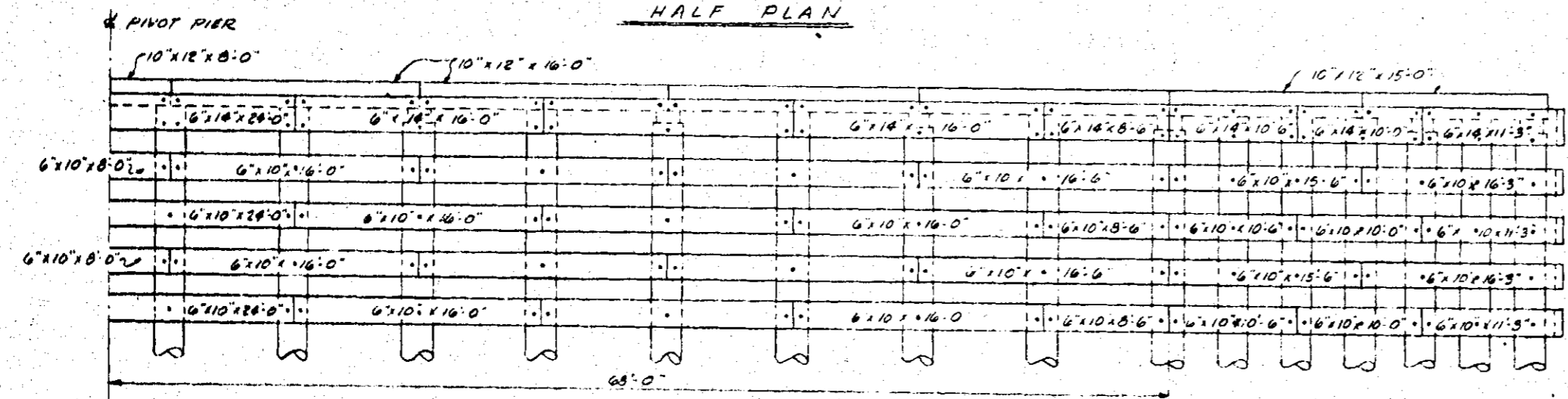
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

FENDER DETAILS FOR
REST PIER
BENTS NO. 10 & 11
See Structure by Record Book
No 3 Page 26 February

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



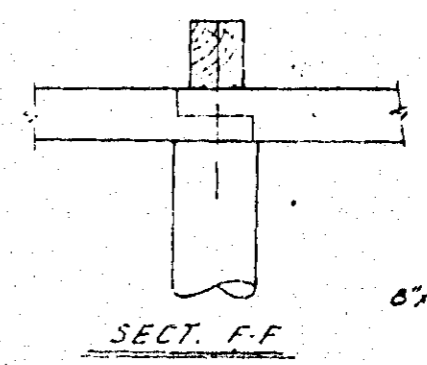
HALF PLAN



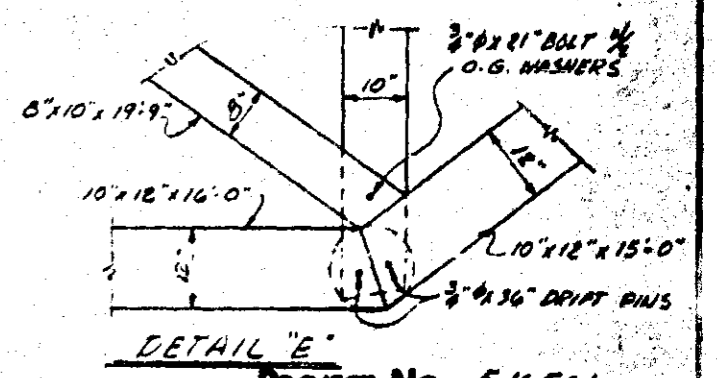
HALF ELEVATION

7 FILE CLUSTER
10" FROM TOP SHALL BE CONSTRUCTED AS SHOWN FOR 7 FILE CLUSTERS ON REST PIER FENDERS.

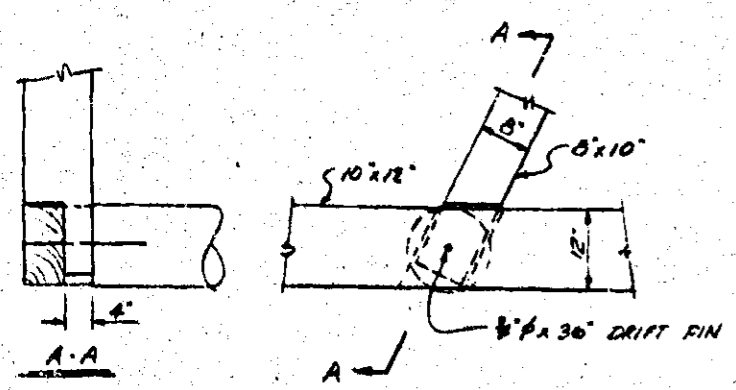
NOTES:
7 FILE CLUSTERS SHALL BE CONSTRUCTED AS SHOWN FOR 7 FILE CLUSTERS ON REST PIER FENDERS.
LENGTHS OF TIMBERS SHOWN ALLOWS FOR CUTS.
LENGTH OF BOLTS ARE BASED ON A PILE 13" IN DIAMETER AND ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LENGTH IN THE FIELD. ALL DUAL-HEAD BOLTS REQUIRE 1 O.G. WASHER EACH, AND OTHER BOLTS REQUIRE 2 O.G. WASHERS EACH. STAPLES TO BE SQUARE IN SECTION AND BENT ON A DIAGONAL. ALL HARDWARE IS TO BE GALVANIZED.
3/4" DUAL-HEAD BOLTS WITH 3" MIN. DIAMETER HEADS AS MANUFACTURED BY JERSEY BOLT & SPIRE CO., 8 LISTER AVE., NEWARK 5, N.J. OR AN APPROVED EQUAL SHALL BE USED.
THE EXISTING FENDER SYSTEM TO BE REMOVED AS NECESSARY TO LEAVE UNFINISHED CONSTRUCTION THE COST FOR THIS WORK IS TO BE INCLUDED IN THE UNIT PRICE BID FOR THE SEVERAL PAY ITEMS. THE REMAINING FENDER SYSTEM TO BE REMOVED BY OTHERS. SEE SPECIAL PROVISIONS.



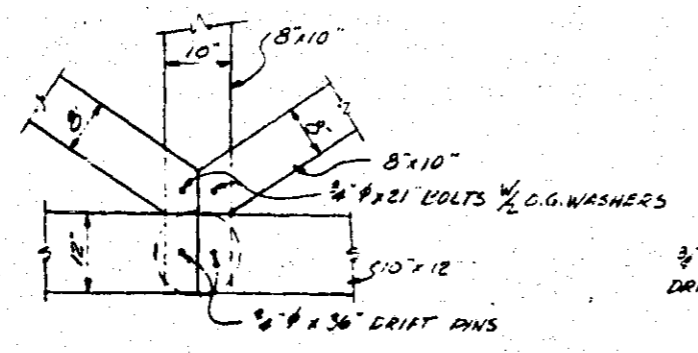
SECT. F-F



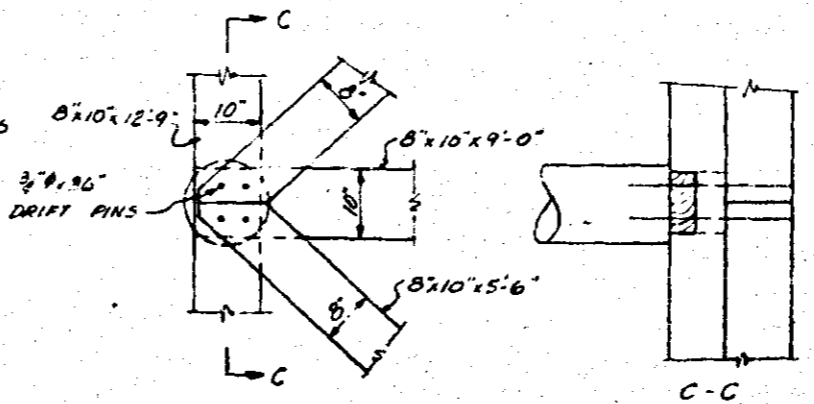
DETAIL "E"



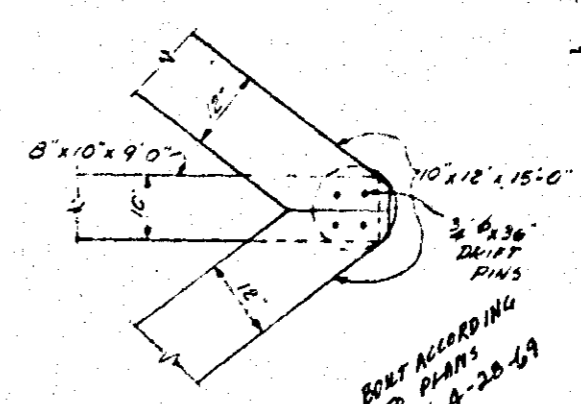
DETAIL "A"



DETAIL "B"



DETAIL "C"



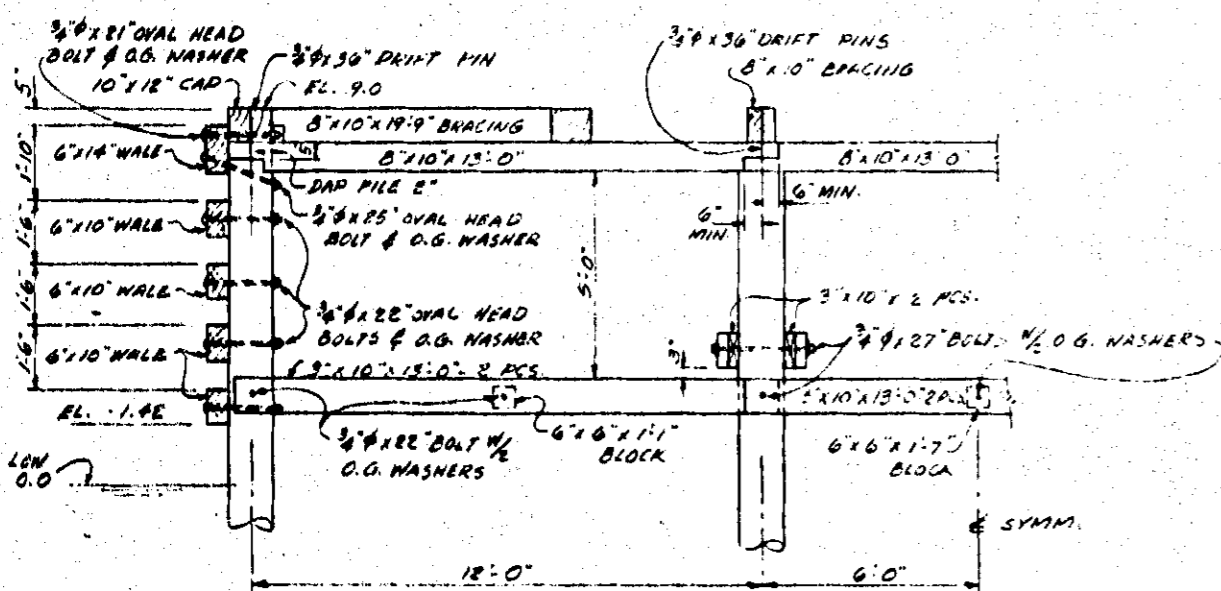
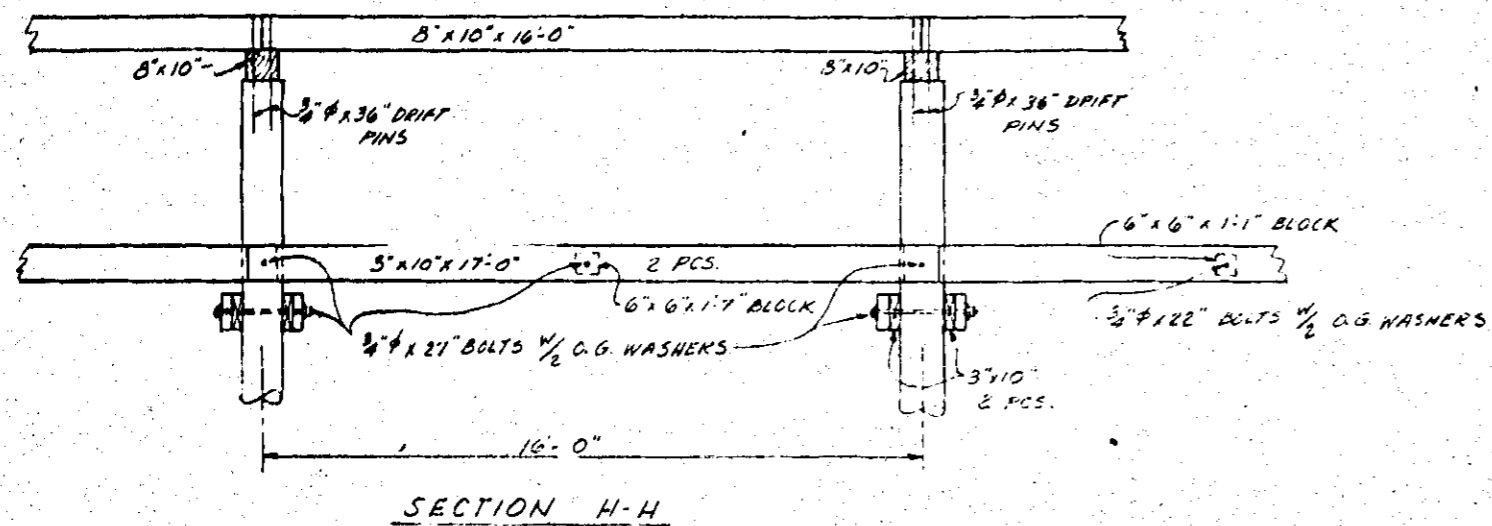
DETAIL "D"

PROJECT No. 514501
CARTERET COUNTY
STATION 13+41.37-L

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH
PIVOT PIER
FENDER

FEBRUARY 1968

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



BILL OF MATERIAL - CREOSOTED TIMBER

ITEM	NO.	SIZE	SURFACE TO	LENGTH	FBM
OK ✓ CAP	16	10" x 18"	545 9 1/2 x 17 1/2"	16'-0"	2560
OK ✓ do	2	18" x 18"	do	8'-0"	160
OK ✓ do	8	do	do	15'-0"	1200
OK ✓ BRACING	4	8" x 10"	545 7 1/2 x 9 1/2"	20'-0"	533
OK ✓ do	12	5" x 10"	do	19'-9"	1380
OK ✓ do	3	do	do	10'-6"	200
OK ✓ do	12	do	do	14'-0"	1280
OK ✓ do	2	do	do	9'-0"	160
OK ✓ do	2	do	do	12'-9"	170
OK ✓ do	4	do	do	5'-9"	158
OK ✓ do	52	3" x 10"	545 2 1/2 x 9 1/2"	13'-0"	1670
OK ✓ do	32	5" x 10"	do	17'-0"	1360
OK ✓ do	4	8" x 10"	545 7 1/2 x 9 1/2"	16'-6"	440
OK ✓ do	24	do	do	19'-0"	2080
OK ✓ WALKS	2	6" x 14"	545 5 1/2 x 13 1/2"	24'-0"	330
OK ✓ do	4	6" x 10"	545 5 1/2 x 9 1/2"	8'-0"	160
OK ✓ do	4	do	do	24'-0"	480
OK ✓ do	12	6" x 18"	545 5 1/2 x 13 1/2"	16'-0"	1344
OK ✓ do	48	6" x 10"	545 5 1/2 x 9 1/2"	10'-0"	3840
OK ✓ do	4	6" x 14"	545 5 1/2 x 13 1/2"	8'-6"	338
OK ✓ do	8	6" x 10"	545 5 1/2 x 9 1/2"	16'-0"	640
OK ✓ do	8	6" x 10"	do	8'-6"	360
OK ✓ do	4	6" x 14"	545 5 1/2 x 13 1/2"	10'-6"	470
OK ✓ do	4	do	do	10'-0"	200
OK ✓ do	4	do	do	11'-9"	315
OK ✓ do	3	6" x 10"	545 5 1/2 x 9 1/2"	15'-0"	620
OK ✓ do	8	do	do	10'-9"	650
OK ✓ do	8	do	do	10'-6"	480
OK ✓ do	8	do	do	10'-0"	400
OK ✓ do	8	do	do	11'-9"	650
OK ✓ PAUL PILING	10	6" x 6"	ROUGH	1'-7"	70
OK ✓ do	24	do	do	1'-1"	80
TOTAL CREOSOTED TIMBER					F.B.M. 24589
CREOSOTED TIMBER PILES NO. 10					LIN. FT. 3283.97

HARDWARE

ITEM	NO.	SIZE	LENGTH	WEIGHT
O.N. BOLTS	32	3/4"	25"	127
do	108	do	21"	371
do	400	do	22"	1441
MACHINE BOLTS	38	do	27"	177
do	50	do	22"	153
do	36	do	21"	105
DRIFT PINS	180	do	36"	541
O.G. WASHERS	A.P.	do		812
STAPLES	48	3/4"		28
CADLK		3/4"	230'-0"	250
CABLE CLAMPS	5			6
TOTAL HARDWARE				465 8987

PROJECT NO. 516501
 CARTERET COUNTY
 STATION 13+41.27-1-

BUILT ACCORDING
 TO PLANS
 APR 4-28-69

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
 RALEIGH

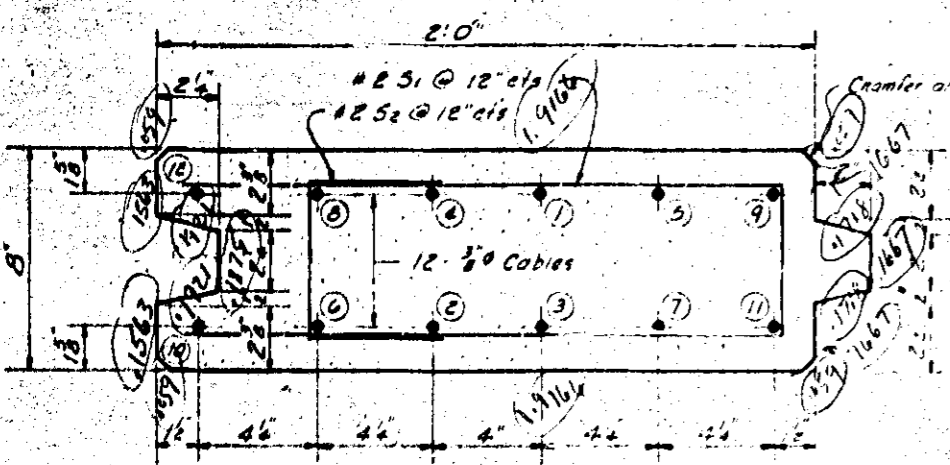
**PIVOT PIER
 FENDER**

FEBRUARY 1968

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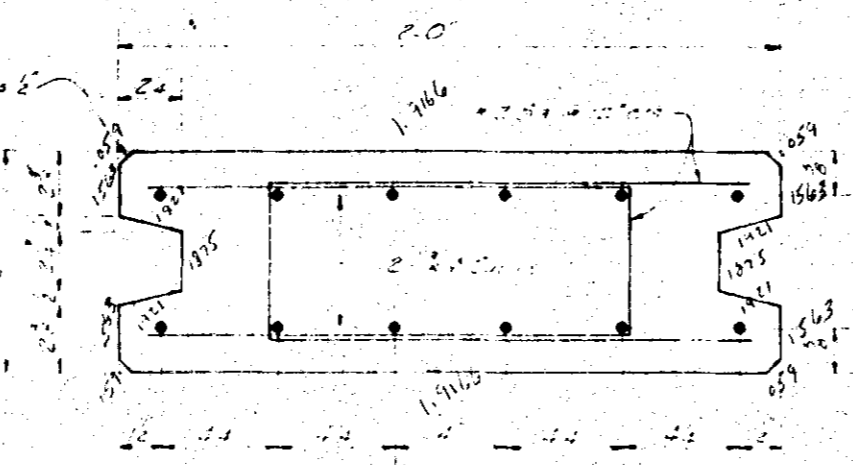
NOTES

All prestress strands to be #6 Stress Relieved Cables
 Each cable to be prestressed at 14,000 lbs.
 Concrete f'c = 5,000 lbs per sq inch
 Prestressed concrete sheet piles shall be manufactured,
 driven and paid for in accordance with the requirements
 for prestressed concrete piles in Section 207-A of the
 Specifications



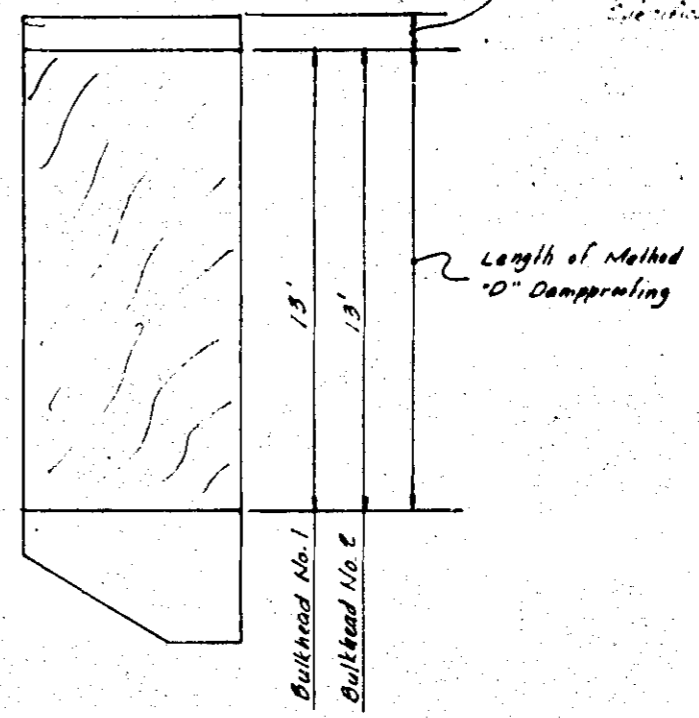
○ Denotes order of burning cables - Cables for all sheet piles P1 & P2 to be released by a similar pattern

TYPE P1



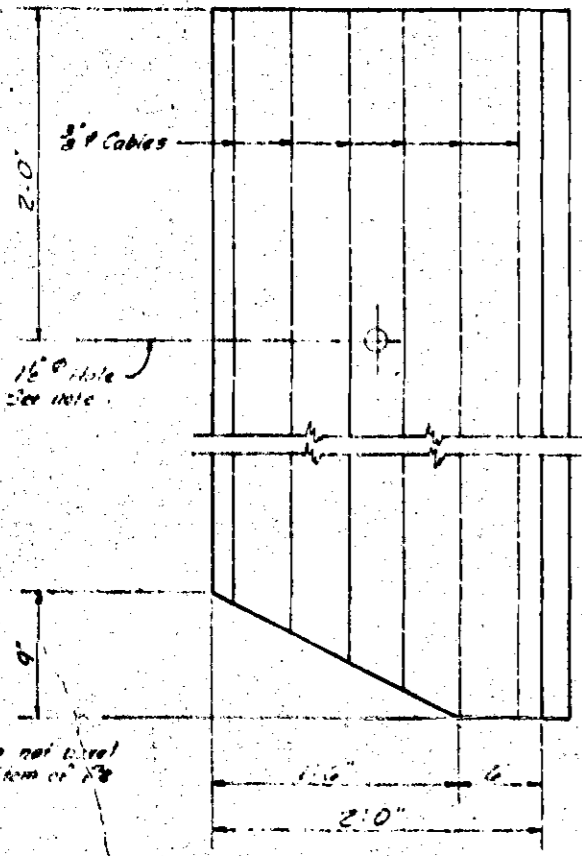
TYPE P2

This dimension is equal to sheet pile embedment in cap



PRESTRESSED CONCRETE SHEET PILE AREA TO BE DAMPROOFED

LOCATION	METHOD 'D' DAMPROOFING
	sq yds sq ft
BULKHEAD No. 1	+5.3 1356.4190
BULKHEAD No. 2	+5.3 1356.4190



ELEVATION

REINFORCING STEEL FOR ONE SHEET PILE

BAR	NO	SIZE	TYPE	LENGTH	WEIGHT
P1	S1	#2		10'	10
P1	S2	#2		4'	4
P2	S3	#2		15'	15

SUMMARY OF PRESTRESSED CONCRETE SHEET PILES

MARK	NO	SIZE	LENGTH LIN. FEET
BULKHEAD No. 1	P1	17 8"x24"	18'-0"
	P2	1 8"x24"	18'-0"
BULKHEAD No. 2	P1	17 8"x24"	15'-0"
	P2	1 8"x24"	15'-0"
			TOTAL LINEAL FEET = 594'-0"

SEE STRUCTURE PAY RECORD BOOK NO 1 PAGE NO 43-44

NOTE:
 For convenience in handling the sheet piles the contractor will be permitted to form a hole not to exceed 1 1/2" two feet down from the top of the sheet pile. The hole shall be formed by wood plugs. Remove plugs before concrete has reached final set or by the use of some non-corrosive material. These holes to serve as drains.

PROJECT No. 516501
 CARTERET COUNTY
 STATION: 13+41.37-L

BUILT ACCORDING TO PLANS GR4-4-28-69

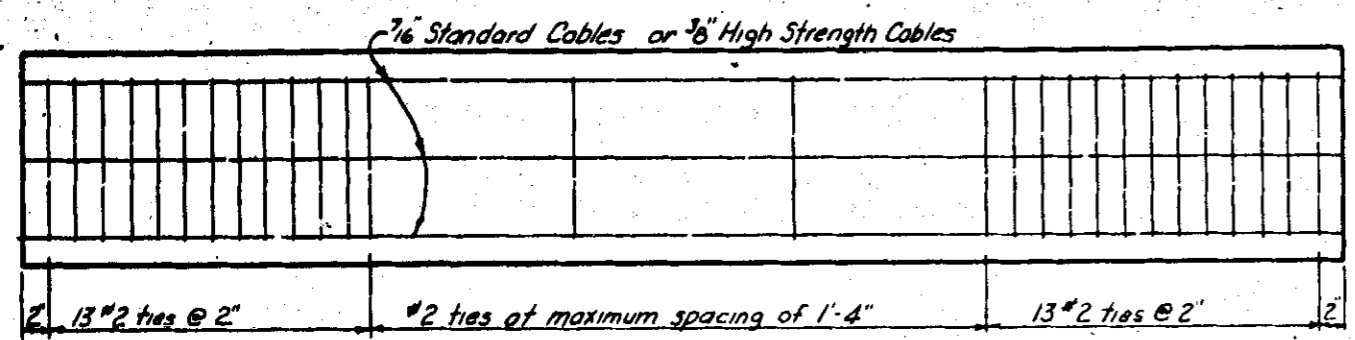
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
 RALEIGH

DETAILS OF 8" x 2'-0"
 PRESTR. CONC. SHEET
 PILES FOR BULKHEADS
 See Structure Pay Record Book No 1 Page 43
 FEBRUARY 1968

REVISIONS

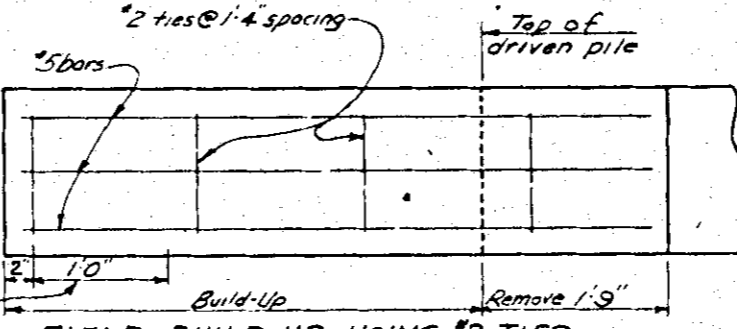
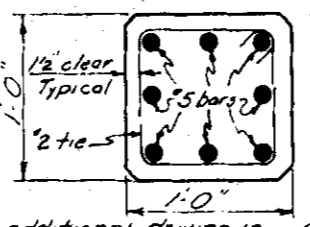
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APPROVED BY S.L. SANTO TOMAS DATE FEB 1968
 CHECKED BY E.G. ALBERT DATE APR 1968
 DRAWN BY S.L. SANTO TOMAS DATE FEB 1968
 REVISIONS BY S.L. SANTO TOMAS DATE FEB 1968

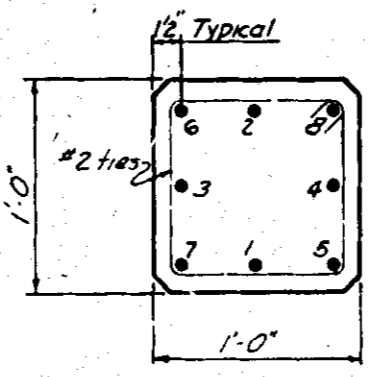


12" PRESTRESSED CONCRETE PILES USING #2 TIES

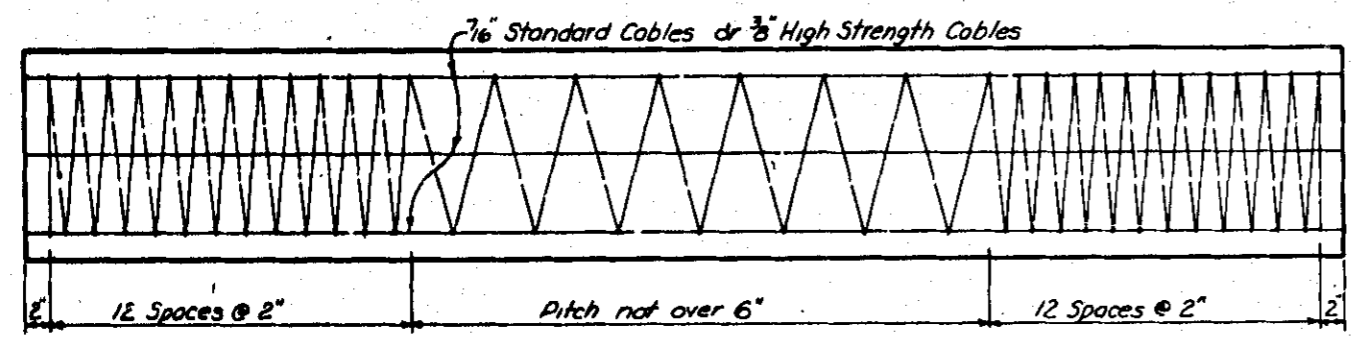
The contractor may use either #2 ties or #7 gage wire spiral as shown



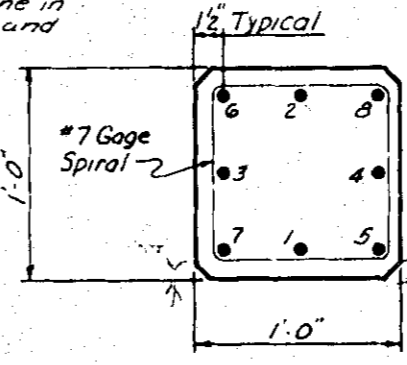
FIELD BUILD-UP USING #2 TIES
Build up where necessary shall be done in accordance with the specifications and Special Provisions



LOCATION	METHOD "D" DAMPROOFING AREA SQ. FT.
End Bent No. 1	65 566.4204
End Bent No. 2	50 431.5584
Buthead No. 1	17 150.2748
Buthead No. 2	17 150.2748



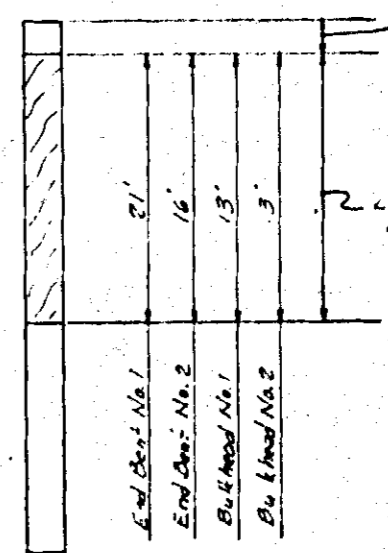
12" PRESTRESSED CONCRETE PILES USING #7 GAGE SPIRAL



If cable stress is to be relieved by burning, the cables shall be burned in pairs in the order shown above. 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.

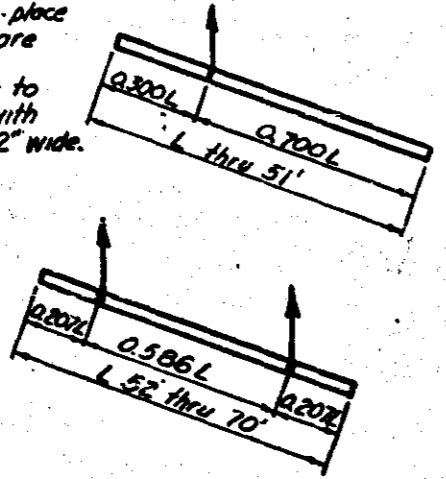
TYPICAL PATTERN FOR BURNING CABLES

This dimension is equal to pile embedment in cap

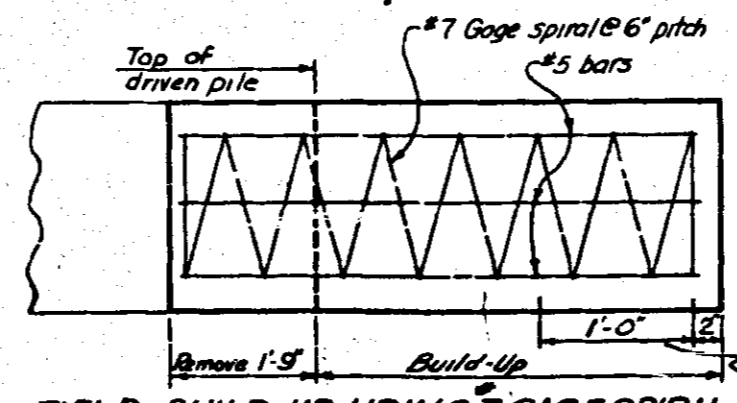


PROJECT No. 516501
 CARTERET COUNTY
 STATION: 19+41.97-L-1

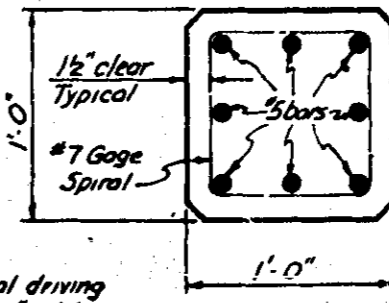
Where cast-in-place lifting devices are not used, pick-up points to be indicated with a black mark 2" wide.



METHOD OF PICKING UP PILES



FIELD BUILD-UP USING #7 GAGE SPIRAL
Build up where necessary shall be done in accordance with the specifications and Special Provisions.



If additional driving is required, 2" pitch shall be used for spiral wire within these limits.

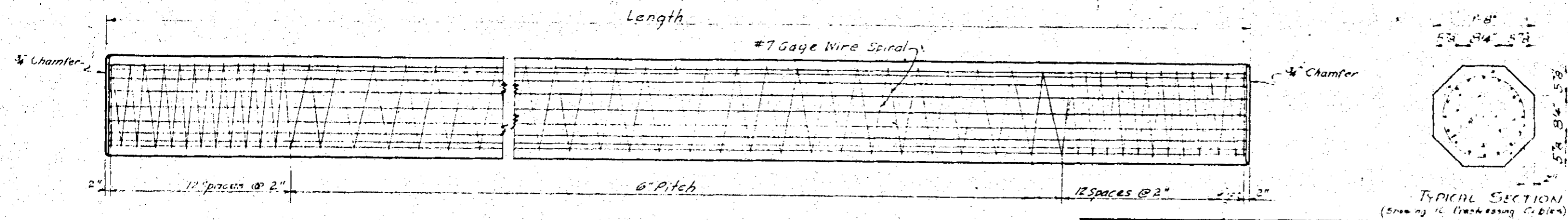
12" PRESTRESSED CONCRETE PILES

BUILT ACCORDING TO PLANS BPA 4-28-69

Revised to add Field Build-Up Using #2 Ties 10-3-66 by C.J.K. ✓ by O.W.R.
 Revised for note concerning Field Build-Up 11/17/66 by C.J.K. ✓ by O.W.R.
 Revised for note concerning loops of cable. 5/13/66 by J.M.T. ✓ O.W.R.

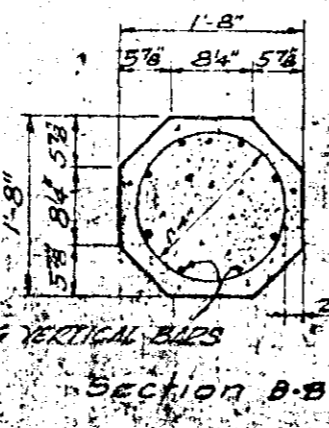
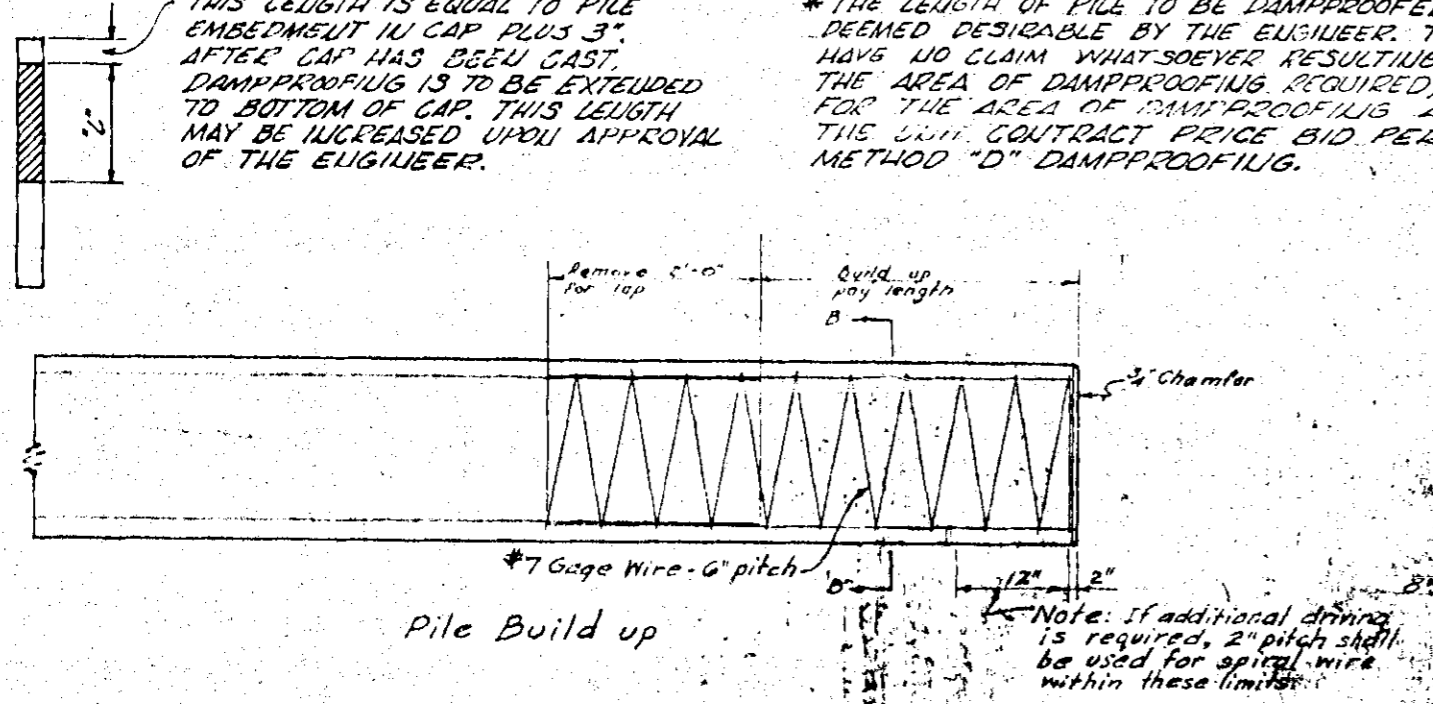
NO.	BY	DATE	NO.	BY	DATE
1			2		
2			3		

STATE OF NORTH CAROLINA
 STATE HIGHWAY COMMISSION
 STANDARD
 12" PRESTRESSED CONCRETE PILES
 See Structure Pay Board Book No. 5 Page No. 51
 MARCH 1966



NOTE:
THIS LENGTH IS EQUAL TO PILE EMBEDMENT IN CAP PLUS 3". AFTER CAP HAS BEEN CAST, DAMPROOFING IS TO BE EXTENDED TO BOTTOM OF CAP. THIS LENGTH MAY BE INCREASED UPON APPROVAL OF THE ENGINEER.

Pile:
* THE LENGTH OF PILE TO BE DAMPROOFED MAY BE CHANGED IF DEEMED DESIRABLE BY THE ENGINEER. THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER RESULTING FROM ANY CHANGE IN THE AREA OF DAMPROOFING REQUIRED, BUT HE WILL BE PAID FOR THE AREA OF DAMPROOFING ACTUALLY APPLIED AT THE UNIT CONTRACT PRICE BID PER SQ. YD. FOR METHOD "D" DAMPROOFING.



LOCATION	L PLUS 3" LENGTH OF PILE TO BE DAMPROOFED	METHOD "D" DAMPROOFING SQ. YDS.
BENT #1	22'-0"	24 172
BENT #2	22'-0"	24 487
BENT #3	25'-0"	27 242
BENT #4	25'-0"	27 410
BENT #5	25'-0"	27 821
BENT #6	25'-0"	27 821
BENT #7	32'-0"	34 769
BENT #8	32'-0"	34 769
BENT #9	34'-0"	36 515
BENT #10 REST PIER	31'-0"	33 242
BENT #11 REST PIER	31'-0"	33 242
BENT #12	34'-0"	36 515
BENT #13	32'-0"	34 769
BENT #14	32'-0"	34 769
BENT #15	32'-0"	34 769
BENT #16	38'-0"	41 756
BENT #17	31'-0"	33 242
BENT #18	31'-0"	33 242
BENT #19	30'-0"	32 157
BENT #20	23'-0"	24 487
BENT #21	23'-0"	24 487
BENT #22	21'-0"	22 396
BENT #23	21'-0"	22 396
BENT #24	20'-0"	21 305
BENT #25	19'-0"	20 214
BENT #26	18'-0"	19 123
BENT #27	18'-0"	19 123
BENT #28	17'-0"	18 032
OR HOUSE PLATFORM	34'-0"	36 515
PIERS AND PLATFORM	34'-0"	36 515
TOTAL		2095 27325

DESIGN DATA
Concrete - 4500 lbs. per sq. yd.
Steel - 70000 lbs. per sq. yd.
Embed in bedding - 50%

GENERAL NOTE:
All prestressing strands shall be 7 wire stress relieved cables in accordance with the specifications. The contractor may, at his option, use any one of the brand sizes and types as listed below, but all cables used in a pile shall be of the same size and type.

No. Cables	Ultimate Tensile	Area	Price	Weight
7	210,000	2.25	0.00775	20,000* per cable
8	230,000	2.50	0.00810	23,000* per cable
9	250,000	2.75	0.00845	25,000* per cable
10	270,000	3.00	0.00880	27,000* per cable
11	290,000	3.25	0.00915	29,000* per cable

Cables shall be equally spaced around a circle of the diameter shown in the typical section.

In driving piles, a method approved by the engineer shall be used, whereby the head of the pile is not damaged.

Build-up, where necessary, shall be done in accordance with the specifications, except that the reinforcing steel required in the build-up shall be included in the contract unit price per foot for the pile and will not be paid for as reinforcing steel.

All material and workmanship as per the specifications of the North Carolina State Highway Commission.

Devices for lifting the piles from the casting beds shall be approved by the Engineer. These devices shall consist of inserts set in the piles to receive threaded eye bolts, or similar approved devices. The use of loops of cables cast in the piles for use as lifting devices will not be permitted. The use of satisfactory clamps or slings will be permitted where this is practical without the use of lifting devices cast in the piles. After eye bolts or other attachments have been removed the openings shall be repaired in a satisfactory manner before delivery to the bridge site in order to obtain a uniform appearance.

Because of the resulting surface finish, slip-form method of casting piles will not be permitted.

All prestressing strand shall meet the requirements of ASTM-A416.

QUANTITIES FOR ONE 1-8" OCTAGONAL PILE

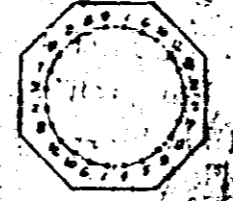
Length	Concrete		One Pickup Point		Two Pickup Points	
	Cu. Yds.	Tons	.30L	.70L	.207L	.566L
25'-0"	2.13	4.81	7'-6"	17'-6"	5'-2"	4'-0"
30'-0"	2.89	6.56	9'-0"	21'-0"	6'-6"	4'-6"
35'-0"	3.65	8.31	10'-6"	24'-6"	8'-0"	5'-2"
40'-0"	4.41	10.06	12'-0"	28'-0"	9'-6"	5'-8"
45'-0"	5.17	11.81	13'-6"	31'-6"	11'-0"	6'-4"
50'-0"	5.93	13.56	15'-0"	35'-0"	12'-6"	7'-0"
55'-0"	6.69	15.31	16'-6"	38'-6"	14'-0"	7'-6"
60'-0"	7.45	17.06	18'-0"	42'-0"	15'-6"	8'-2"
65'-0"	8.21	18.81	19'-6"	45'-6"	17'-0"	8'-8"
70'-0"	8.97	20.56	21'-0"	49'-0"	18'-6"	9'-4"

Method of picking up Piles
59 feet to 85 feet
2 pick up points

Method of picking up piles
up to 58 feet
1 pick up point

PILE PICK-UP METHOD

NOTE:
If cable stress is relieved by burning, the cables shall be burned in opposite pairs as indicated in the typical pattern shown for any number of cables burned in opposite pairs and symmetrical about both vertical and horizontal axes. Cables 1-4 shall be burned before 5-8, etc. Not more than 4 cables, say 5-5 and 6-6, may be burned at any one section before these same pairs of cables are burned at both ends of the bed and between each pair of piles in the bed.



Revised to clarify buildup detail 3/8/60 M.S.B.V.A.P.
Revised to add notes and sketch regarding burning of cables Jan. 6, 1960 J.E.H. v. J.B.M.
Revised for note regarding slip form method of casting piles 12-18-59, J.H.B. v. J.W.
Revised for spacing of wire spiral strands at pile ends Nov. 7, 1959, R.M. v. J.H.B.
Revised to add table of additional quantities for piles up to 70 feet long 1/25/59, J.H.B. v. J.W.

PROJECT NO. S.16501
CARTER COUNTY

STATION 13+41.37-1
500 STR. WIRE PILE RECORD
BOOK No. 3 Page 1-8

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
STANDARD
1-8" PRESTRESSED
OCTAGONAL CONCRETE PILES
AUGUST, 1956

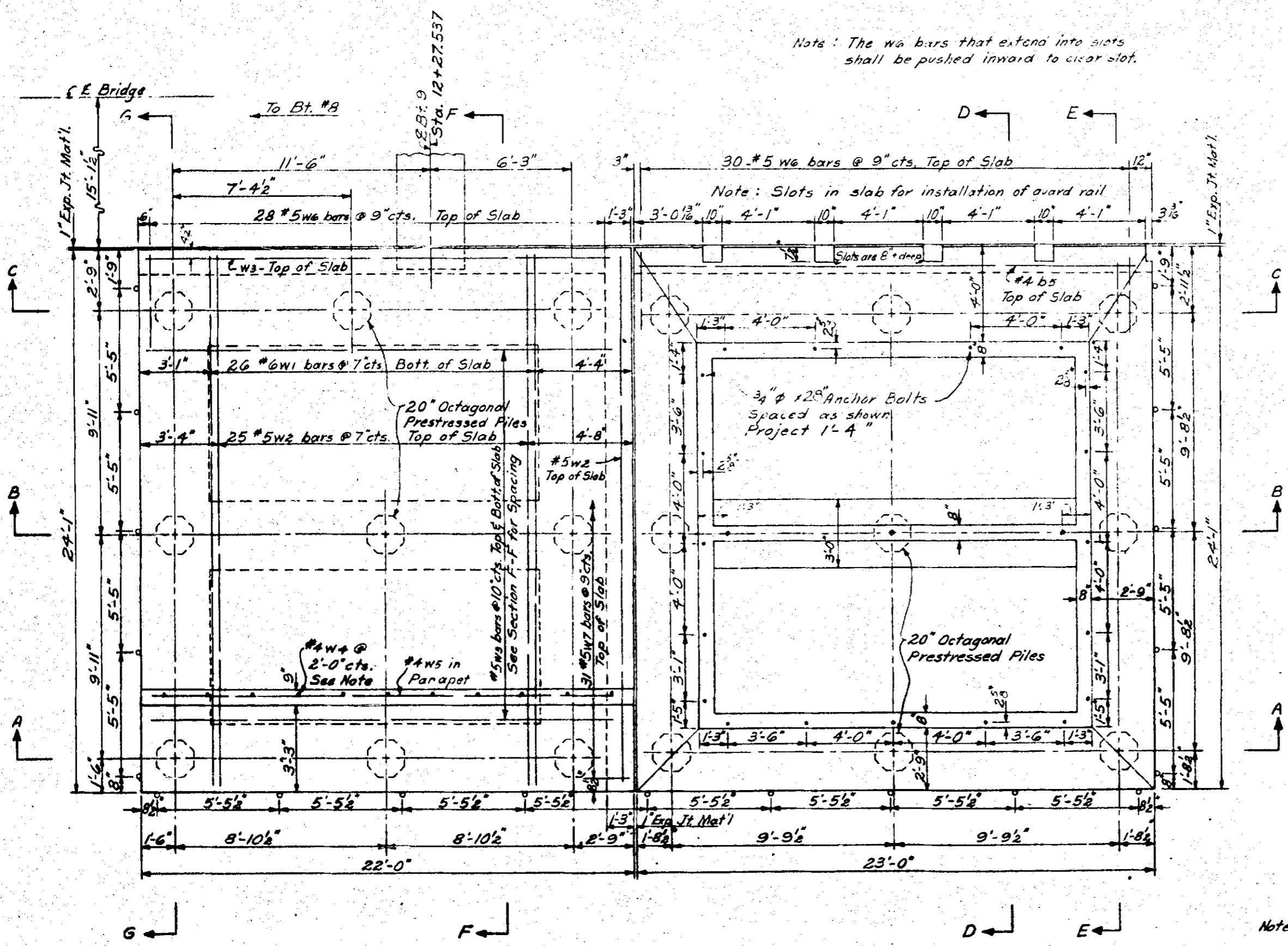
SPECIAL	APPROVED BY: J. McCLELLAN, JR. DATE: APR 28 1960
STANDARD	APPROVED BY: H. D. Standing DATE: APR 28 1960
	APPROVED BY: J. H. Wall DATE: AUG 1960
	APPROVED BY: G. L. Bannett DATE: AUG 1960

Note: If necessary, nuts to be touched-up by the use of paints meeting the requirements of Federal Spec. for Zinc Paint: MIL-P-26915 (USAF) Type 1.

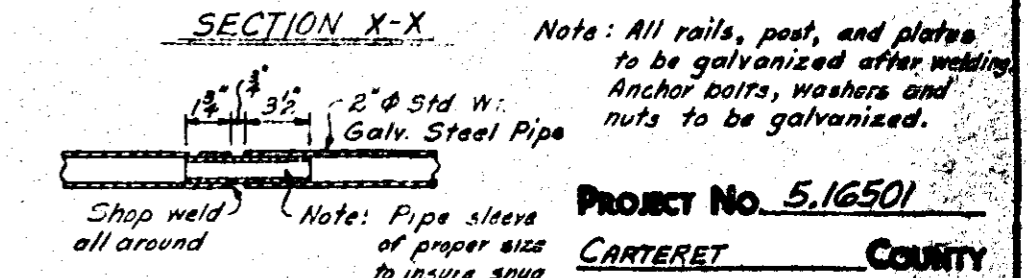
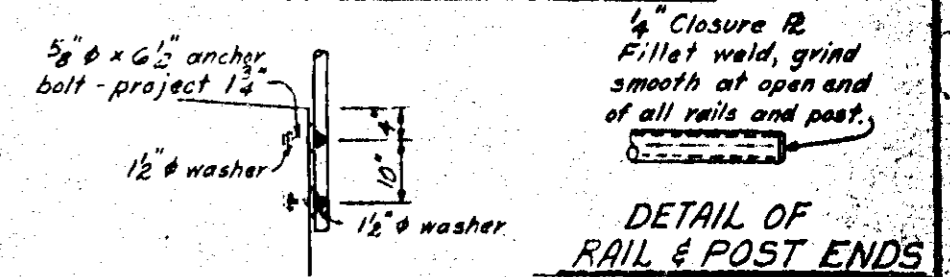
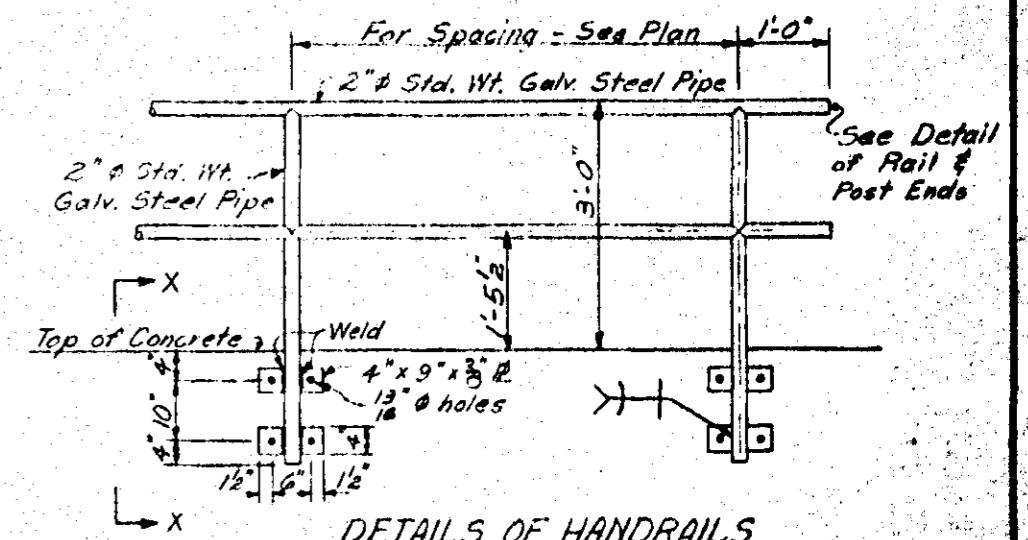
For Method "D" Damp-proofing on piles, see standard 20 prestressed octagonal concrete pile sheet.

Galvanized to ASTM Spec. as follows:
 A-122 for rails, posts, & plates.
 A-152 for bolts, washers, & nuts.

Note: The w4 bars that extend into slots shall be pushed inward to clear slot.

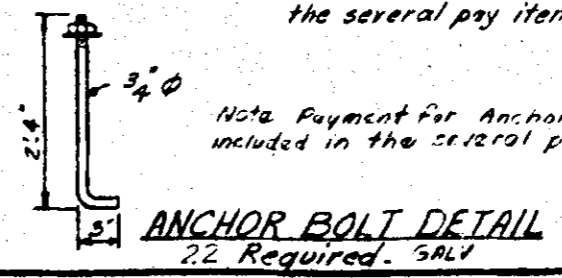


Note: Where rails meet at corners they shall be mitred & welded.



SPLICE DETAIL IN PIPE

Note: No separate payment will be made for rails. The cost for this shall be included in the several pay items.



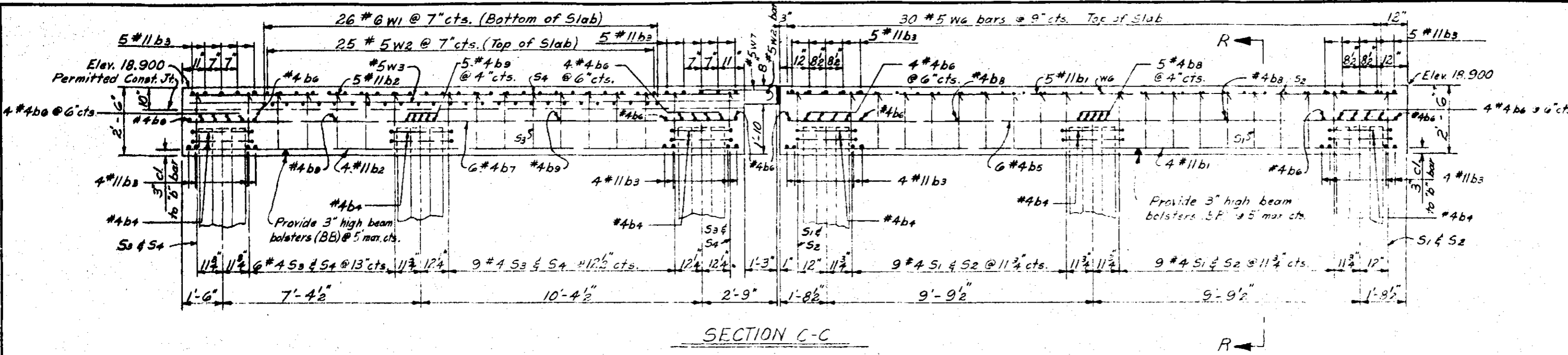
Note: W4 bars are to be pushed 6\"/>

Note: For setting anchor bolts in concrete to receive Handrail - see Details of Handrails. There must be a splice in the long side of the handrail for expansion. Bearing capacity of piles is 20 tons each.

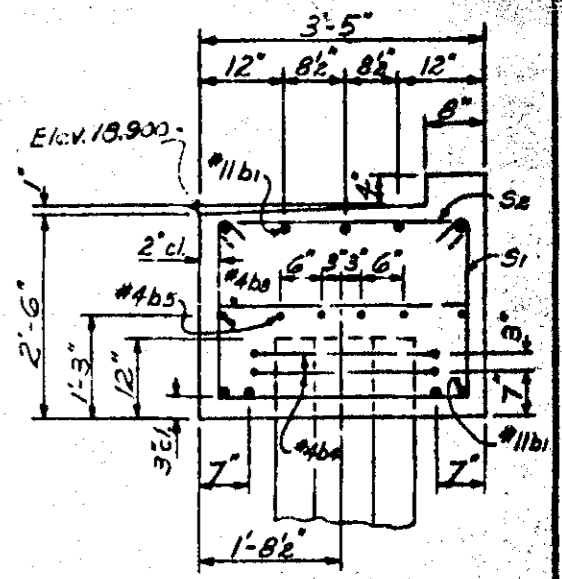
STATE HIGHWAY COMMISSION
 PLAN OF OPERATOR'S HOUSE AND PARKING PLATFORM
 See Structure Pay Board Book No. 3 page 515

NO.	QTY	UNIT	NO.	QTY	UNIT

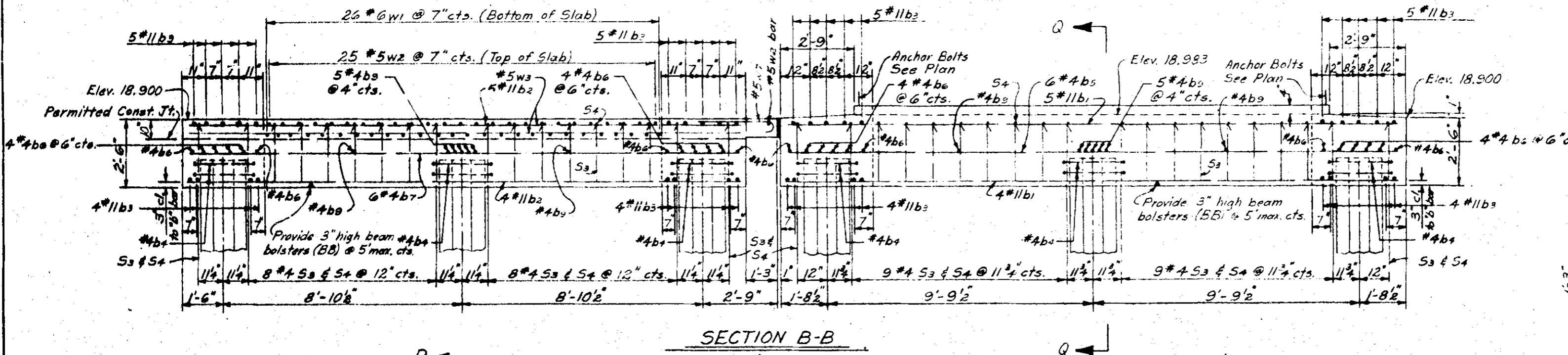
FED. ROAD DIST. NO.	STATE	PROJECT NO.
	N.C.	5.16501



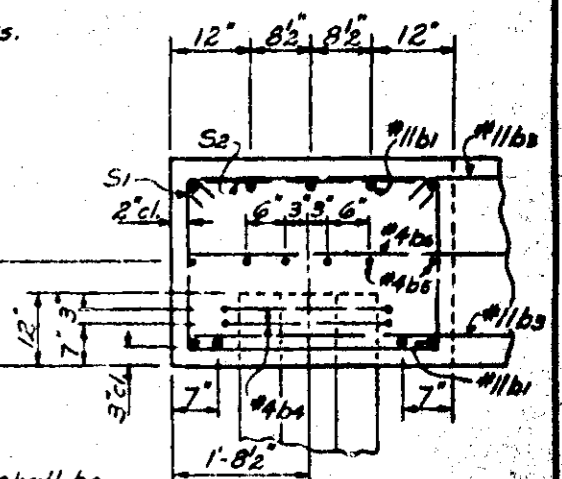
SECTION C-C



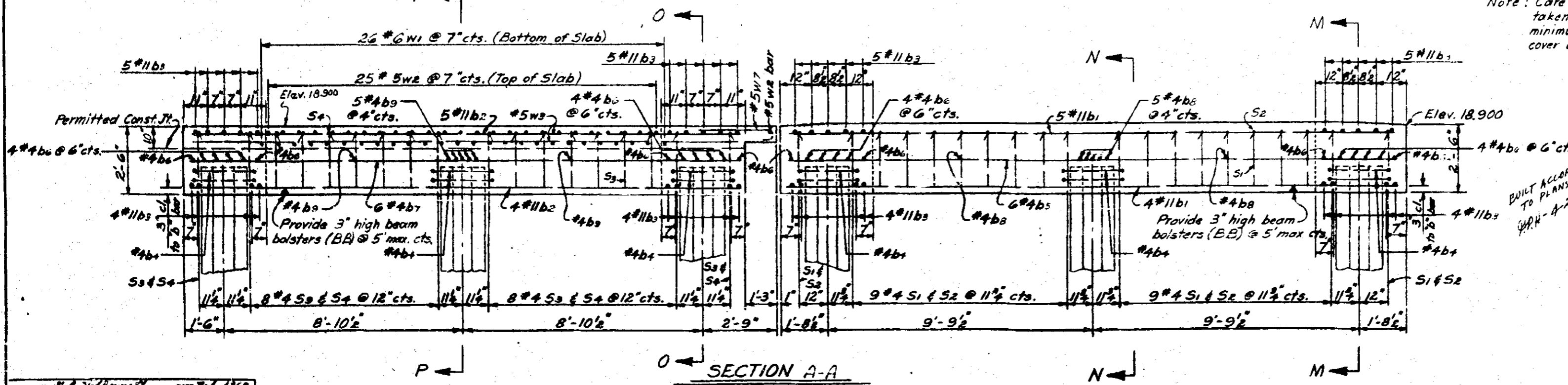
SECTION N-N



SECTION B-B



SECTION M-M



SECTION A-A

Note: Care shall be taken to get a minimum of 2 1/2" cover on bs bars.

PROJECT No. 5.16501
 CARTERET COUNTY
 STATION: 13 + 41.37 - L

STATE OF NORTH CAROLINA
 STATE HIGHWAY COMMISSION
 RALEIGH
 SECTIONS
 THRU OPERATOR'S HOUSE
 AND PARKING PLATFORM

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

DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 DATE: 11/28/69