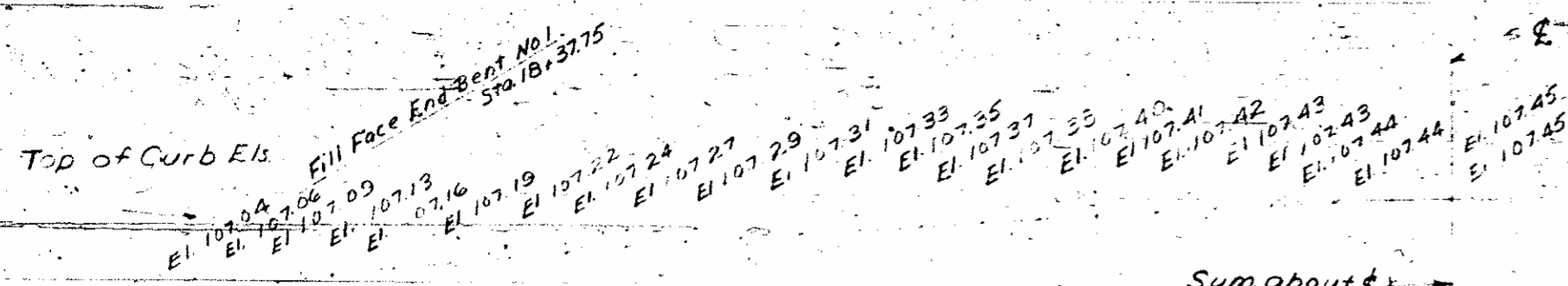


FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
3	N.C.		5-6	12
BS 2-7-20-28				

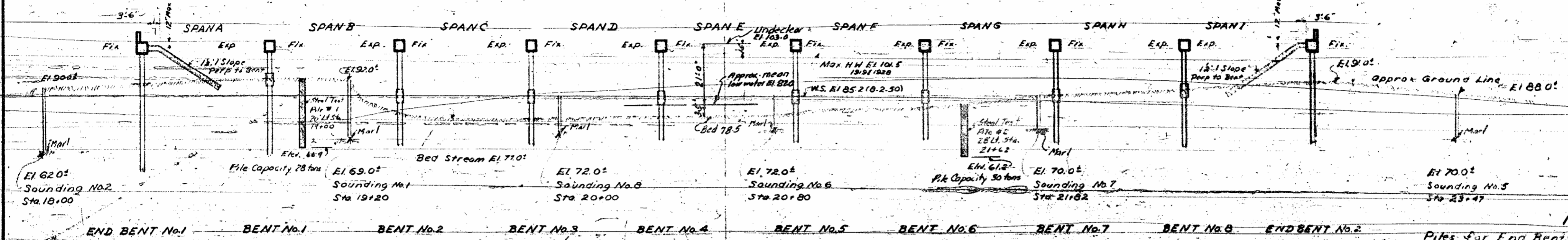


Proposed Structure Sta. 20+63
 PI 20+63
 El. 107.30 (Crown @ of Roadway)
 +0.4%
 500K.C.
 -0.4%
 VERTICAL CURVE DATA

Sym about \bar{x}

Note All elevations given on Camber Diagram are at top of curb 11'-0" from the \bar{x} of roadway.

CAMBER DIAGRAM



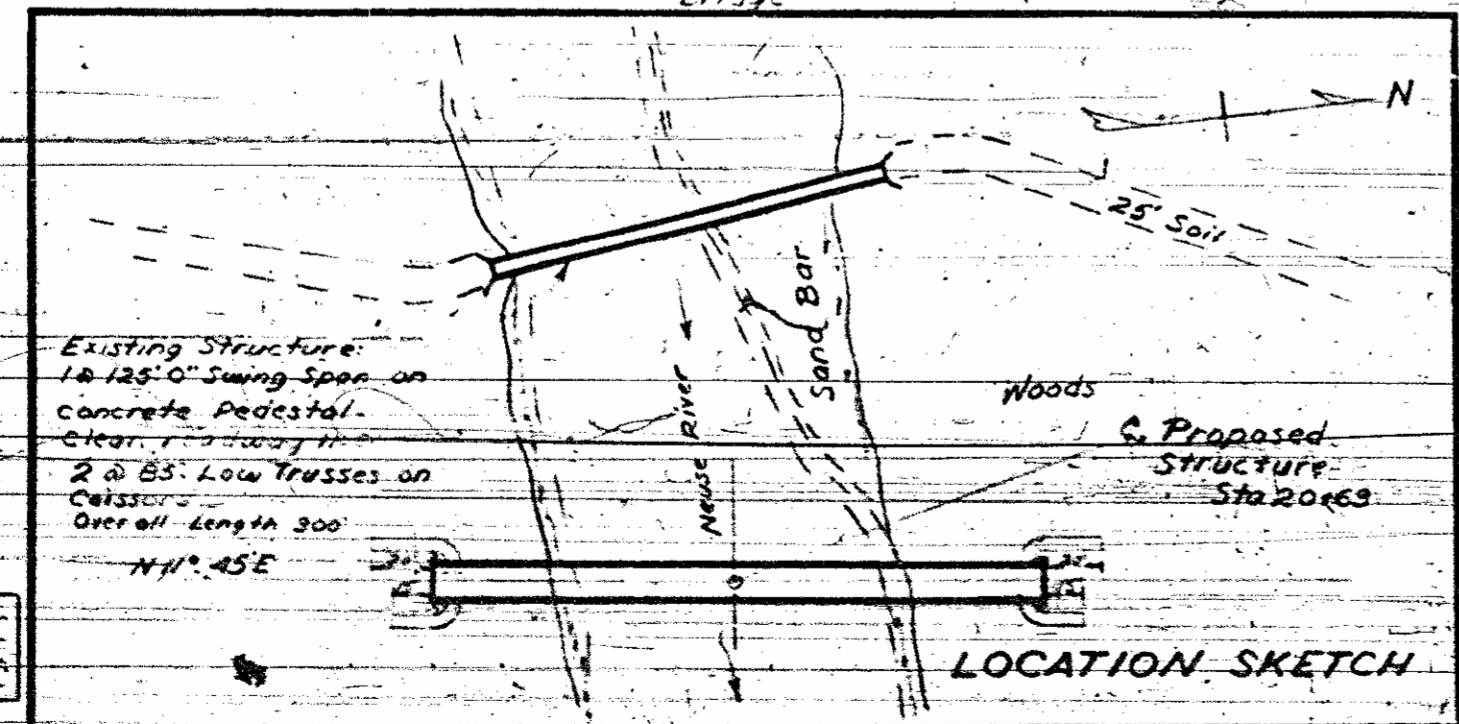
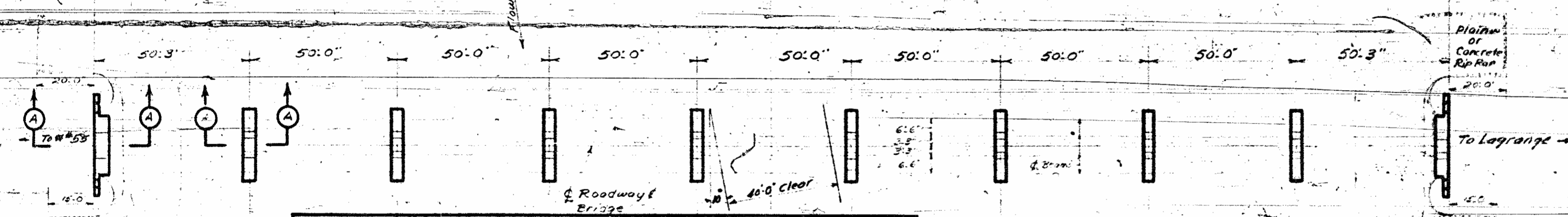
NOTES

Piles for End Bents No. 1 & 2 and Bents No. 1, 2, 3, 4, 5, 6, 7 & 8 shall be driven to a minimum bearing capacity of 30 tons each. End Bent piles shall be driven through the roadway fill.
 Assumed Live Load H15-44 (One Lane)
 For surface finish requirements see "Special Provisions".
 NOTE: Test piles will not be required unless 1 1/2' based on piles 45' long for all test results.

MAINTENANCE AND REMOVAL OF EXISTING STRUCTURE OPPOSITE STA. 20+63
 After serving as a temporary crossing the existing structure shall be removed as follows:
 Superstructure completely removed.
 Substructure to an elevation of at least 1.0' below bed of stream or natural ground line. The floor, stringers, and floor beams of the trusses are to be removed for re-use in accordance with the Specifications. The remainder of the steel parts of the trusses are to be salvaged for scrap only. See Special Provisions.

SECTION ALONG & BRIDGE SECTION A-A OF BENTS

450'-6" (Length of Bridge Floor)



B.M. Nail in Trunk 15" Cypress 70' ft. Sta 23+65. El. 88.88

BILL OF MATERIAL

	Reinf. Steel Lbs.	Class 'A' Concrete Cu Yds.	Struct Steel Lbs.	12" x 25" Steel H. Piles Lin Ft.	Rip Rap Cu Yds.	Height of Existing Str. at Existing Sta.	Height of Existing Str. at Proposed Sta.
Superstructure	62850	280.8		216800			
End Bent No. 1	1099	7.9		5	225	390	270
Bent No. 1	730	7.5		400.4		180	
Bent No. 2	730	7.5		440.4		180	
Bent No. 3	730	7.5		440.4		180	
Bent No. 4	730	7.5		440.4		180	
Bent No. 5	730	7.5		440.4		180	
Bent No. 6	730	7.5		440.4		180	
Bent No. 7	730	7.5		440.4		180	
Bent No. 8	730	7.5		420.4		180	
End Bent No. 2	1099	7.9		5	225	420	270
Totals	70888	356.6		220,260.42		1,550	1,150

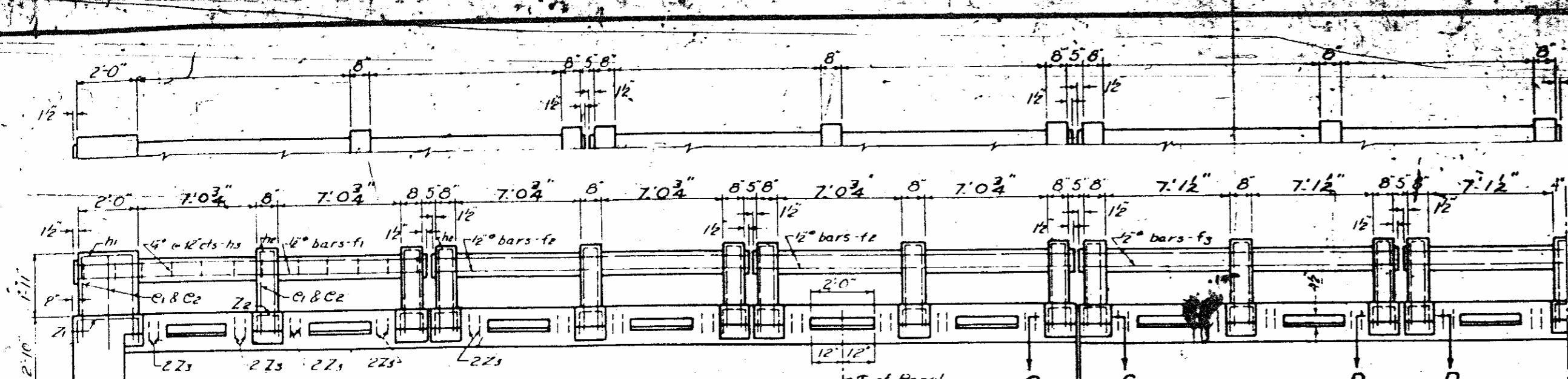
Lump Sum

LENOIR COUNTY
 STATION: 20+63

STATE OF NORTH CAROLINA
 STATE HIGHWAY AND
 PUBLIC WORKS COMMISSION
 GENERAL DRAWING
 FOR BRIDGE OVER
 NEUSE RIVER
 JUNE 1952

SPECIAL
 DESIGNED BY
 DRAWN BY
 CHECKED BY
 DATE

DATE	BY	PROJECT
8-9-27-20-28	N.C.	

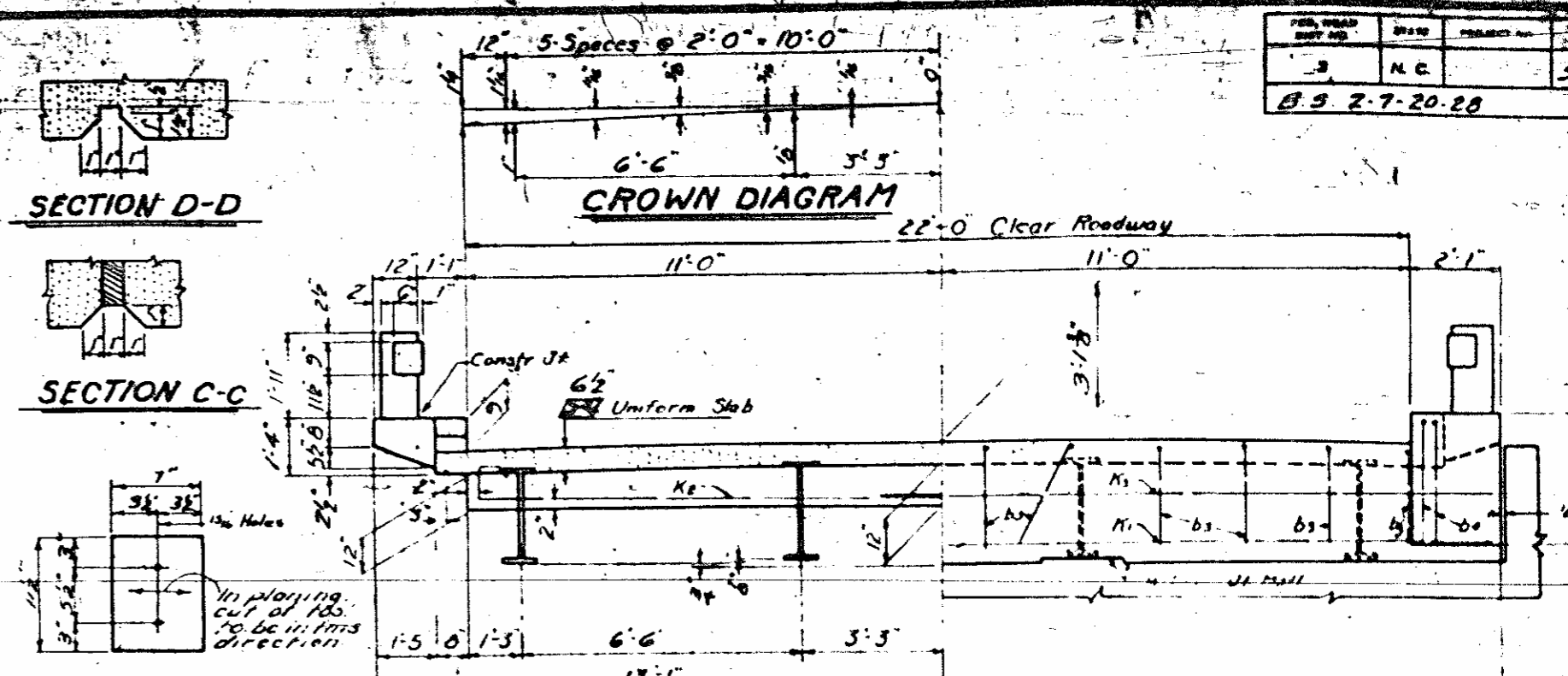


ELEVATION

NOTE: Method 'A' waterproofing shall be placed on the fill side of the joint between the substructure and superstructure. The strips of waterproofing shall be 2'-0" wide and placed symmetrically about the joint. See Specs. Asphalt for top coat shall conform to the requirements for Type 'A' Asphalt of AASHO Specification M-413.

NOTE: For fixed and expansion end of beams see General Drawing.

NOTE: Two-ply roofing felt shall be placed over joints in expansion joint material. See Specs.



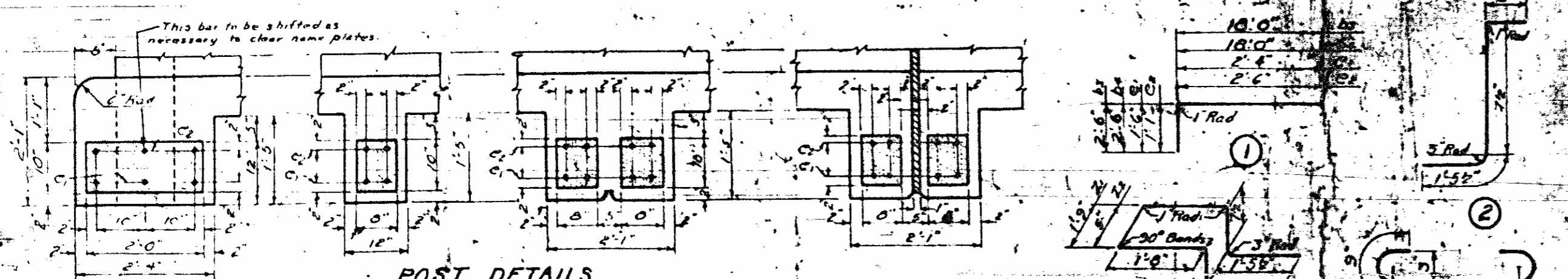
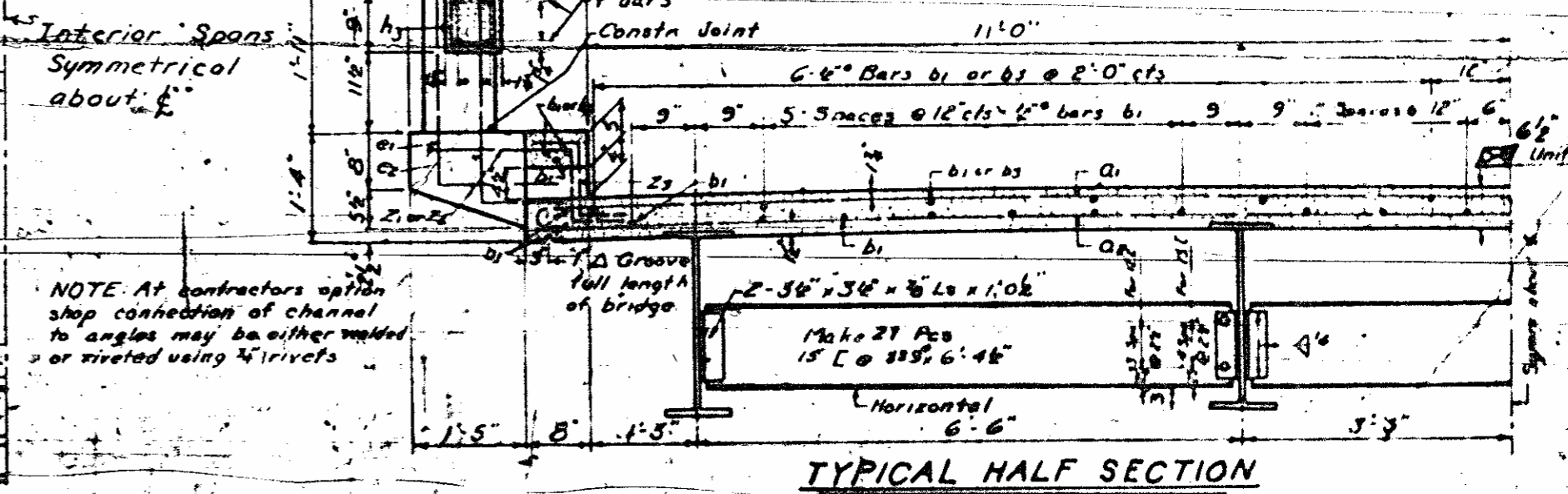
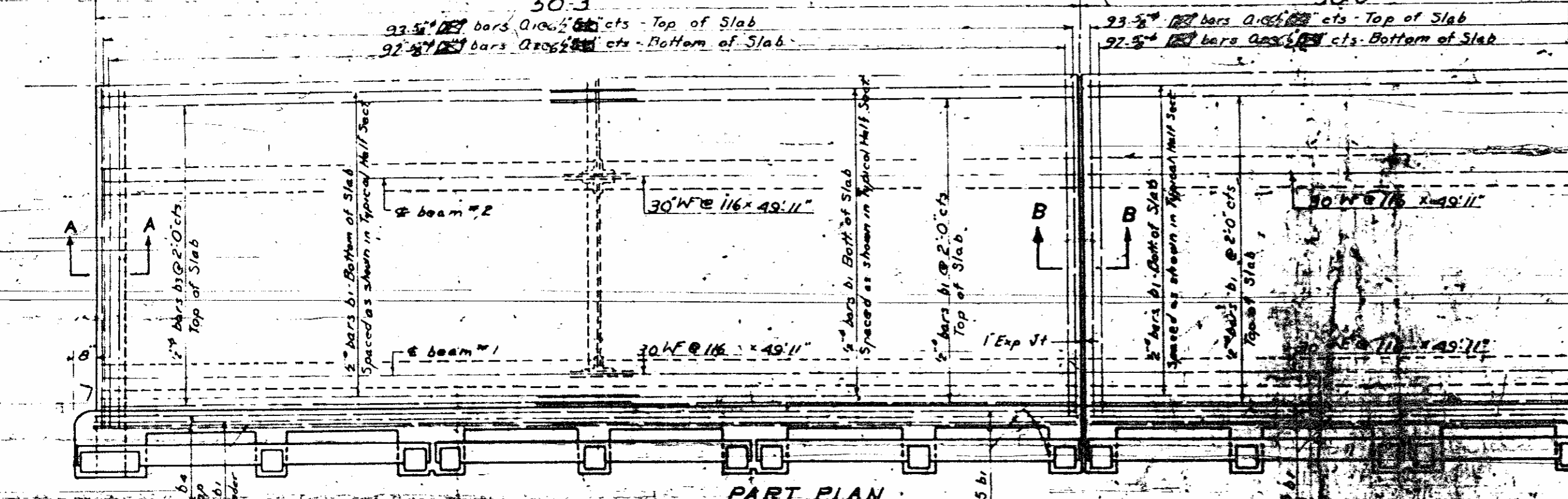
BEARING R DETAIL
Make 72 lbs RT x 3/4 x 0.112

NOTE: Not straighten or plane as necessary to insure flat surfaces for plates.

Interior Spans Symmetrical about C-C

NOTE: All dimensions which are given in the section and are affected by dead load deflections are dimensions of bearings. Depth of slab between bearings shall be increased to compensate for dead load deflection. Maximum Dead Load Deflection Int Bm.

NOTE: Diaphragms shall be field connected with 1/2" turned bolts. Data for bolts or approved angles.



GENERAL NOTE

CONCRETE: All concrete shall be class 'A' standard size No. 3 coarse aggregate to be used throughout. No construction joint will be permitted except at top of curb. All exposed corners of concrete unless otherwise noted shall be chamfered as follows: superstructure, expansion joints, substructure. All concrete except in handrails shall be compacted by mechanical vibration.

REINFORCING STEEL: All reinforcing steel shall be deformed bars. All dimensions relative to reinforcing steel are to centers of bars. No spacing other than those shown on plans will be permitted. All reinforcing steel shall be securely held in correct position.

EXPANSION JOINT MATERIAL: Expansion joint material may be either rubber compound or cork conforming to the requirements of A.A.S.H.O. Specification M-58.

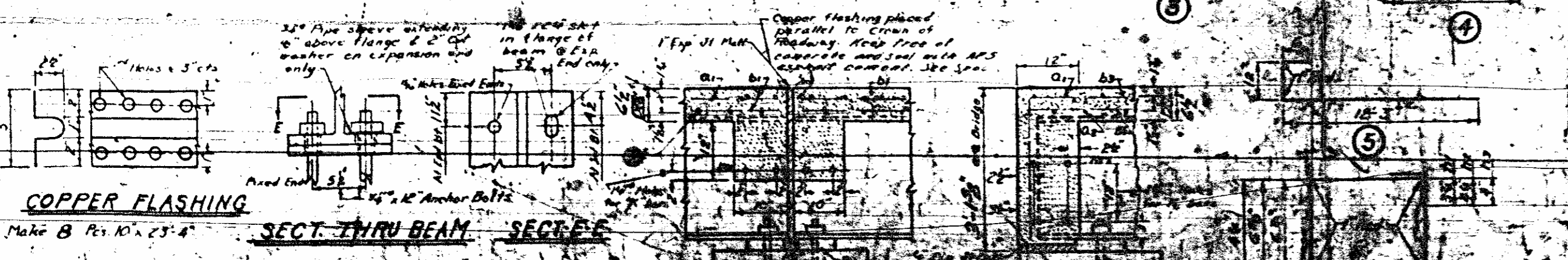
STRUCTURAL STEEL: Structural steel shall meet all the requirements of the specifications and shall be given pre-shop coat and one field coat of red lead, and lastly two field coats of aluminum paint. See Specifications. Detail drawings shall be submitted to the Bridge Engineer for approval. No unapproved drawing will be accepted.

COPPER FLASHING: Copper flashing is to be placed in expansion joints between spans as shown on plans. Flashing may be installed in place to obtain length required. See Specifications.

WORKMANSHIP: All material and workmanship shall be in accordance with the specifications of the State Highway and Public Works Commission.

DESIGN DATA

Specifications: Assumed Live Load: H-15, 0.16, See Details; Impact Allowance: Stress in Extreme Fibre of Structural Steel: 20,000 lbs; Reinforcing Steel in Tension: 20,000 lbs; Concrete in Compression: 2,500 lbs; Equivalent Fluid Pressure of Earth: 30 lbs; BETT SECT: PROJECT NO. 27



BILL OF MATERIALS

Bar	No	Size	Type	Length	Weight
9 @ 60' 0" SPANS					
Q1	827	4"	Str	2179'	12190
Q2	828	4"	Str	330'	12669
B1	1102	4"	Str	180'	12650
B2	6	4"	Str	20.6'	329
B3	6	4"	Str	20.6'	1129
E1	322	4"	Str	3.10'	820
E2	322	4"	Str	3.7'	785
F1	16	4"	Str	17.5'	136
F2	32	4"	Str	18.1'	966
F3	162	4"	Str	18.3'	1826
H1	4	6"	Str	5.3'	8
H2	152	6"	Str	5.3'	152
H3	22	6"	Str	5.3'	222
K1	4	5"	Str	25.9'	186
K2	62	5"	Str	25.9'	186
K3	4	5"	Str	25.9'	169
L1	4	4"	Str	3.3'	20
L2	152	4"	Str	3.3'	152
L3	22	4"	Str	3.3'	222
M1	4	4"	Str	2.6'	785
Reinforcing Steel L.L. 6220					
Class 'A' Concrete Co. 16, 1 200.8					
Structural Steel L.L. 1220					

STATE OF NORTH CAROLINA
STATE HIGHWAY
PUBLIC WORKS COMMISSION

STANDARD
I-BEAM SUPERSTRUCTURE
WITH R.C. FLOOR & WALL
SINGLE SPANS
22' ROADWAY
ADJUS. 1943

SPECIAL

APPROVED BY: [Signature]

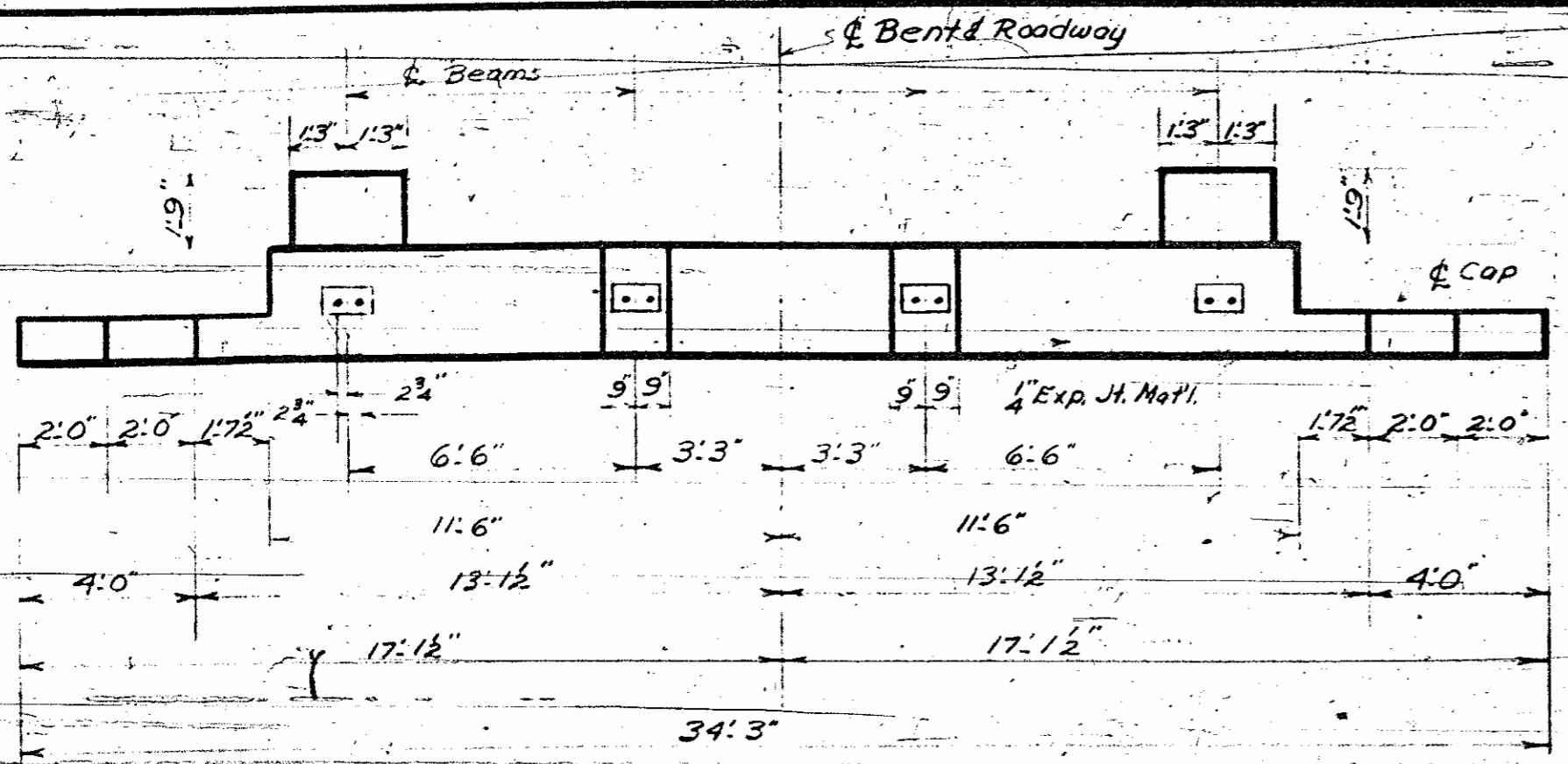
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STANDARD

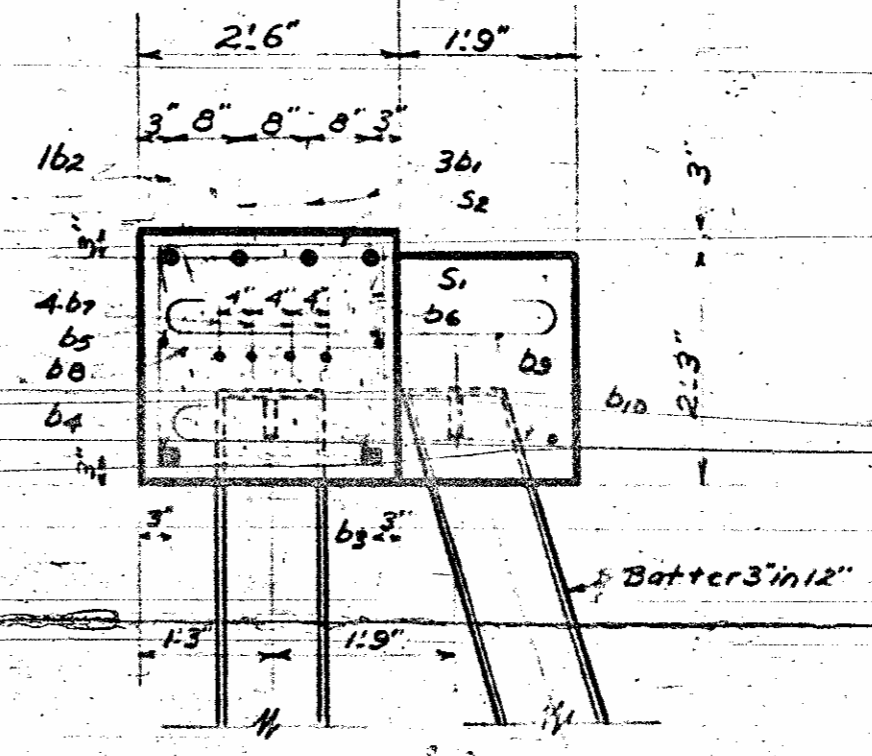
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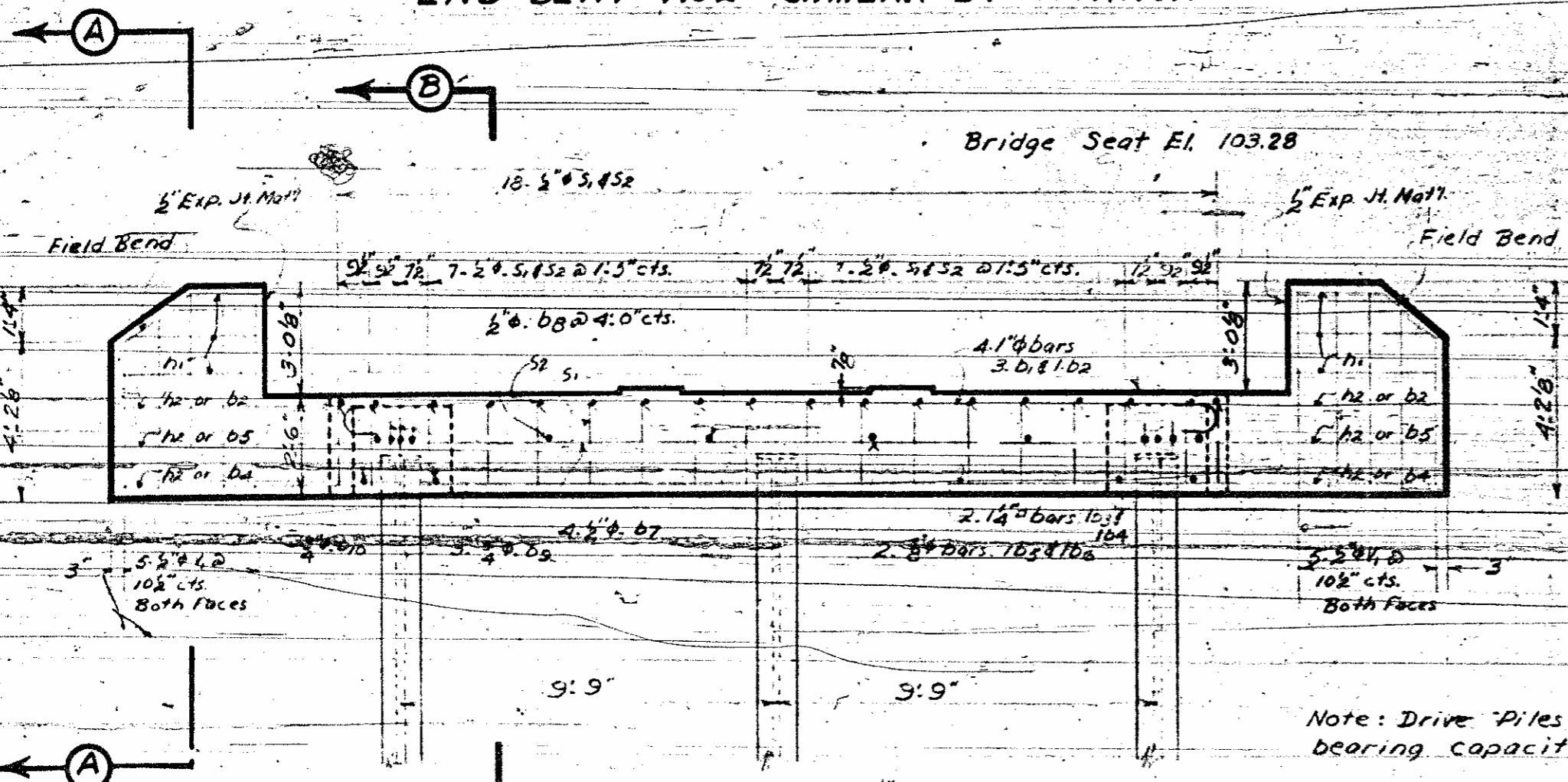


PLAN OF CAP END BENT No. 1
END BENT No. 2 SIMILAR BY ROTATION



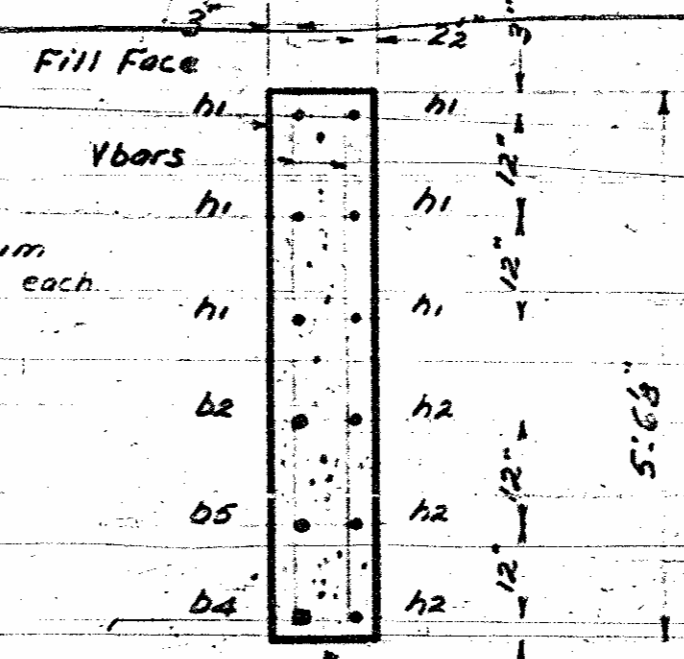
SECTION-B-B

BILL OF MATERIAL FOR ONE END BENT				
Bar No.	Size	Detail	Length	Weight
b1	3	1"Ø	24.9"	198
b2	1	1"Ø Str.	33.9"	30
b3	1	1 1/4"Ø Str.	22.6"	120
b4	1	1 1/4"Ø Str.	33.9"	179
b5	1	2"Ø Str.	33.9"	69
b6	1	2"Ø Str.	22.6"	46
b7	4	2"Ø Str.	22.6"	60
b8	6	2"Ø Str.	2.2"	9
b9	6	2 1/4"Ø	5.1"	46
b10	2	2 1/4"Ø	10.10"	32
h1	12	2"Ø Str.	3.8"	29
h2	6	2"Ø Str.	7.8"	31
S1	18	5/8"Ø	7.3"	87
S2	18	2"Ø	2.11"	35
V	20	2"Ø Str.	5.1"	68
Reinforcing Steel Lbs.				1099
Class A Concrete Cu. Yds.				79
12"Ø 53# Steel Pile No.				Lin Ft
End Bent No. 1				5
End Bent No. 2				5

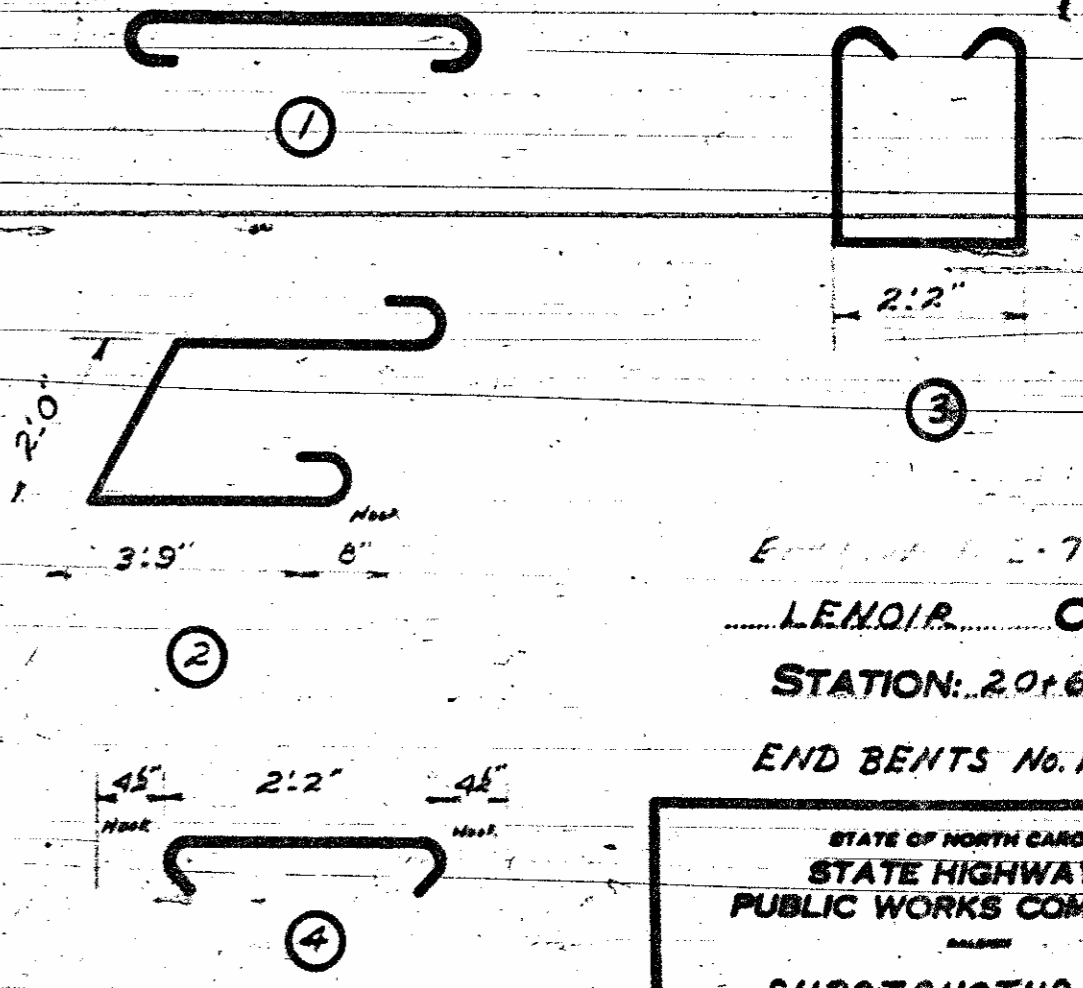


ELEVATION

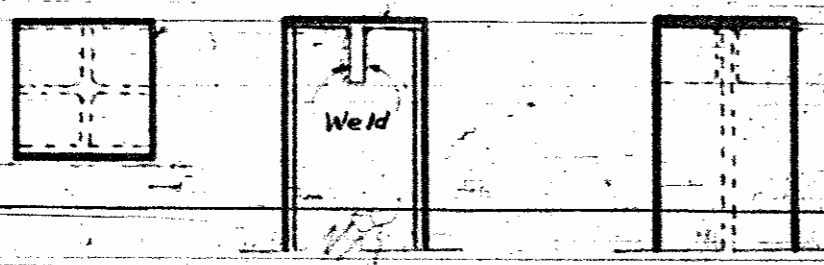
Note: Drive Piles to a minimum bearing capacity of 30 tons each.



SECTION A-A



Cap shall be welded to pile after driving
Piece of 12" pile split and with web slotted to fit over pile web



PILE CAP

Note: The Cost of Pile Caps complete in place shall be included in the unit price bid for 12"Ø 53# Steel piles. Pile caps may be obtained from pile cut-offs and each linear foot of pile cut-off not used for caps will be paid for as prescribed in the Special Provisions

STANDARD SPLICE FOR STEEL PILE

DESIGNED BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE

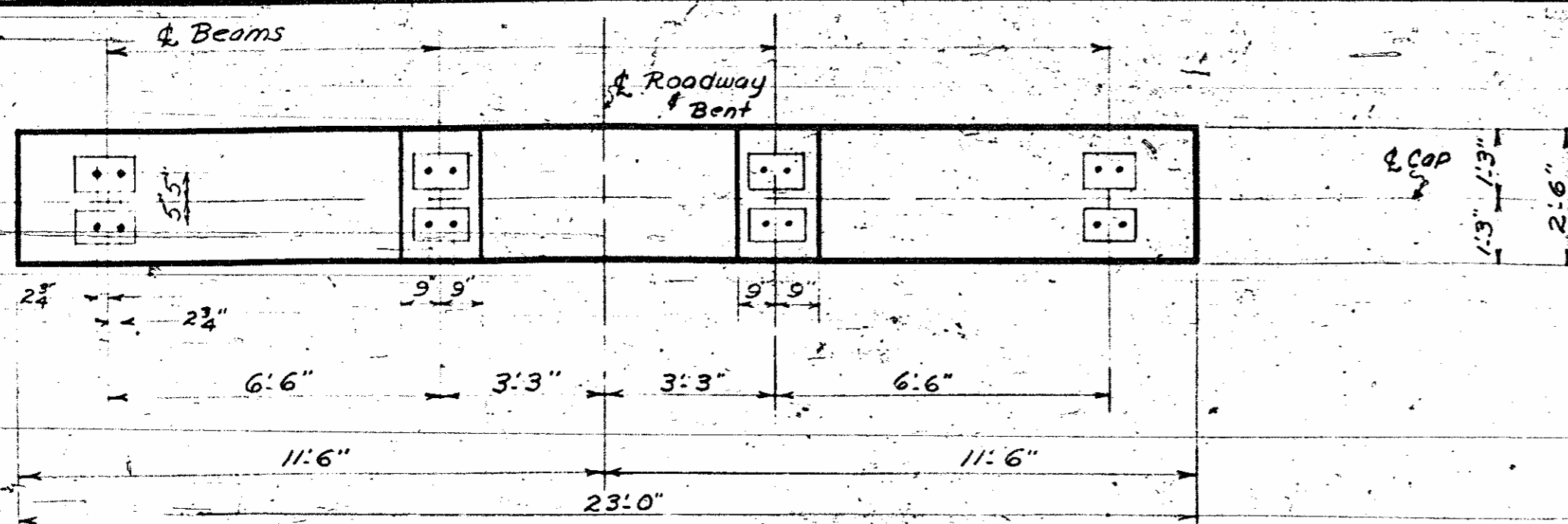
7-20-28
LENOIR COUNTY
STATION: 20+63
END BENTS No. 1&2

STATE OF NORTH CAROLINA
STATE HIGHWAY AND
PUBLIC WORKS COMMISSION
SUBSTRUCTURE

MAY 1952

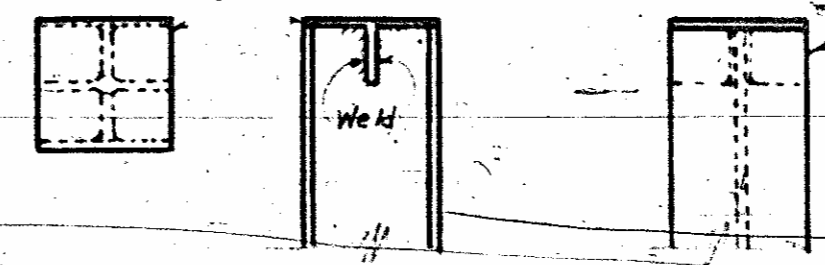
APPROVED BY: [Signature]
DATE: [Date]

PROJECT NO.	DATE	BY	SCALE
B.S. 2-7-20-28			



PLAN OF CAP. BENT No. 1-2-3-4-5-6-7-8

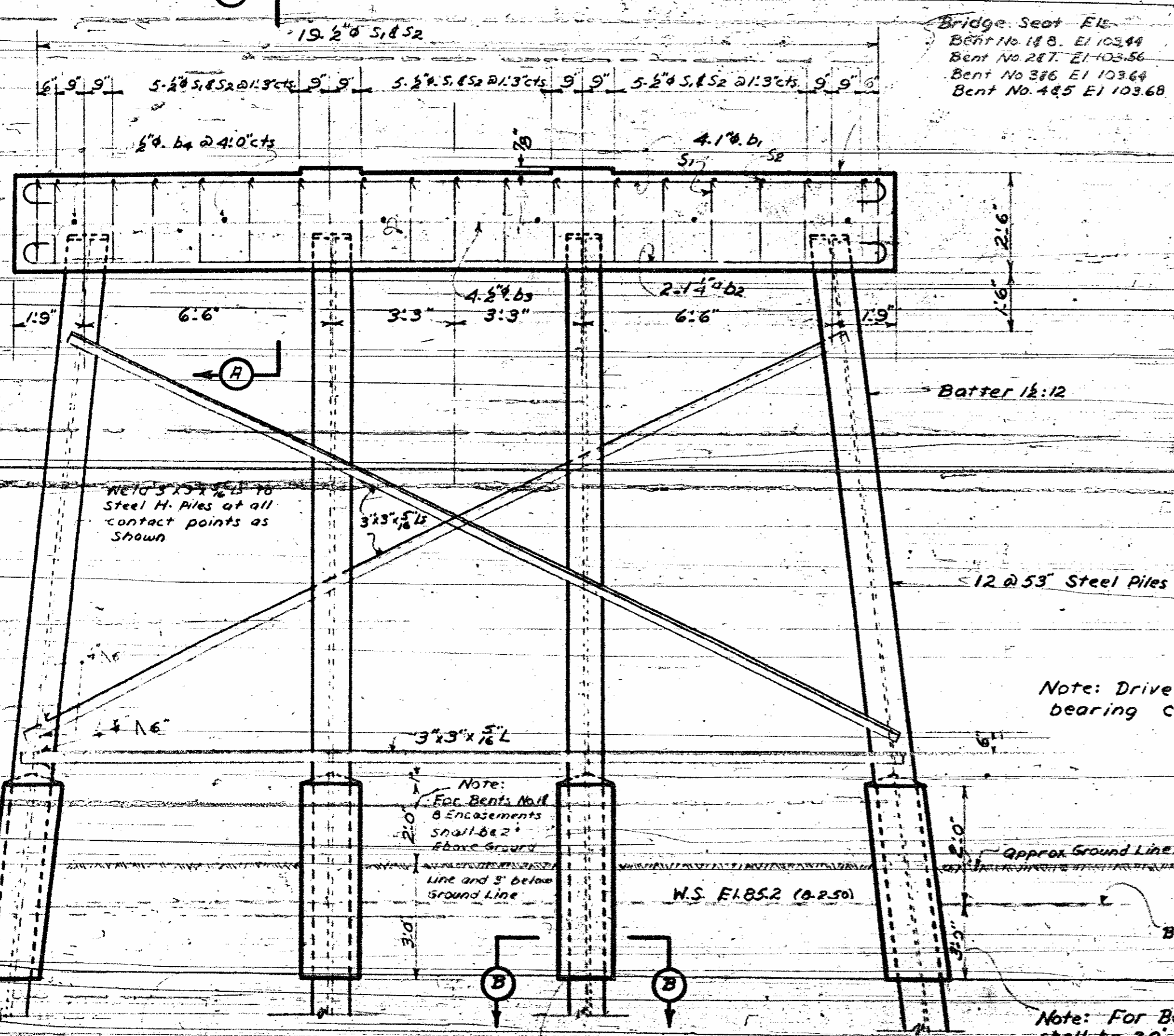
Cap shall be welded to pile, after driving.
 Piece of 12" pile split and with web slotted to fit over pile web



PILE CAPS

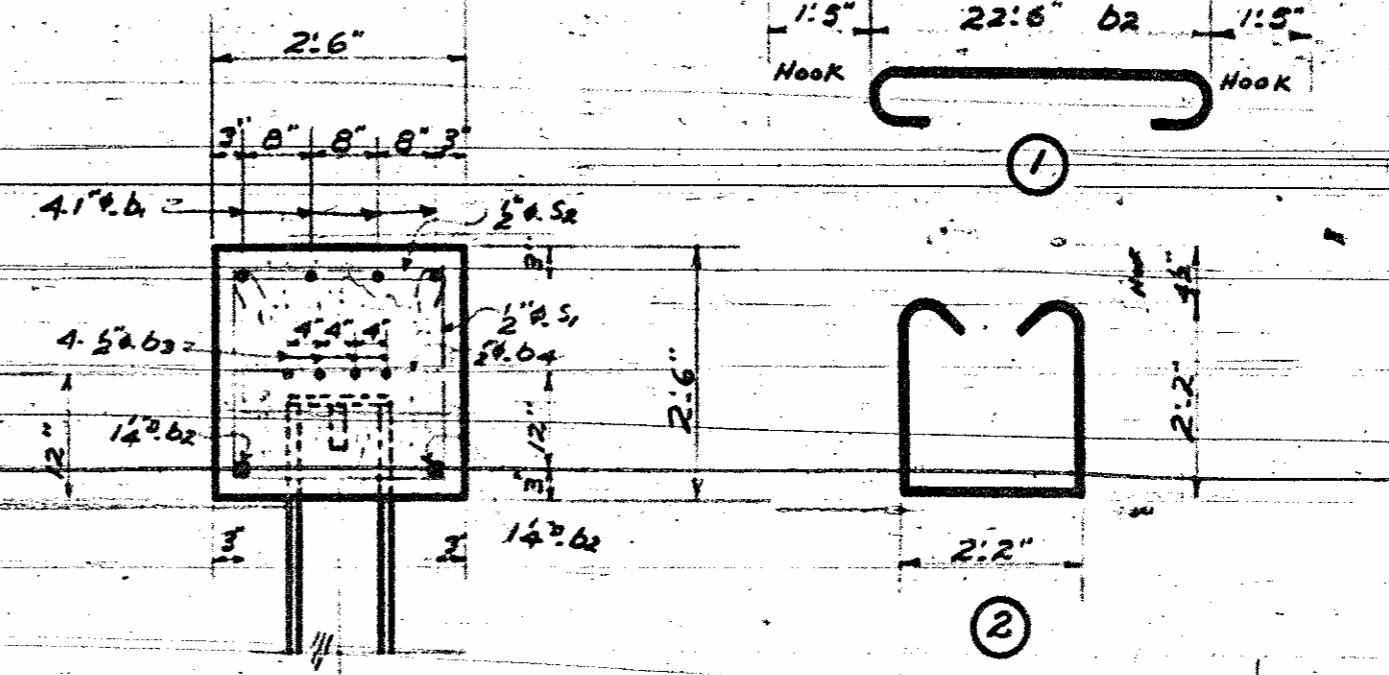
Note: The cost of pile caps complete in place shall be included in the unit price bid for 12" @ 53" steel piles. Pile caps may be obtained from pile cut-offs and each linear foot of pile cut-off not used for caps will be paid for as prescribed in the Special Provisions.
 Note: For detail of pile splice see steel No 5-B

BILL OF MATERIAL FOR BENT No. 1-2-3-4-5-6-7-8					
Bar	No	Size	Detail Length	Weight	
b1	4	1"ø	24.8"	263	
b2	2	1 1/4"	25.4"	203	
b3	4	2"ø	5ft	60	
b4	6	2"ø	5ft	9	
s1	19	2"ø	2	7.3	92
s2	19	2"ø	3	2.11	37
Reinforcing Steel, Lbs 730					
Class A Concrete, Cu Yds 7.5					
Bent No. 1					
12 @ 53" Steel Piles, No 4 Linfit 18					
Sway Bracing Required:					
1 L 21' 6" Long					
2 L 21' 9" Long					
Total Weight of Sway Bracing: 4640					
Reinforcing Steel, Lbs 730					
Class A Concrete, Cu Yds 7.5					
Bent No. 8					
12 @ 53" Steel Piles, No 4 Linfit 18					
Sway Bracing Required:					
1 L 22' 3" Long					
2 L 23' 3" Long					
Total Weight of Sway Bracing: 4640					
Reinforcing Steel, Lbs 730					
Class A Concrete, Cu Yds 7.5					
Bent No. 3					
12 @ 53" Steel Piles, No 4 Linfit 18					
Sway Bracing Required:					
1 L 23' 3" Long					
2 L 24' 0" Long					
Total Weight of Sway Bracing: 4640					



ELEVATION

SECTION - A-A



SECTION - B-B

Note: Drive Piles to a minimum bearing capacity of 30 tons each.

Note: For Bents No. 2, 3, 4, 5, 6, 7, Encasement shall be 2'-0" above water surface and 3'-0" below water surface.

Note: wire mesh of Approved Type: 12ga with 4"x8" opening or 13ga with 4"x4" opening No allowance will be made for wire mesh the entire cost of same shall be included in the Unit Price Bid for several pay items

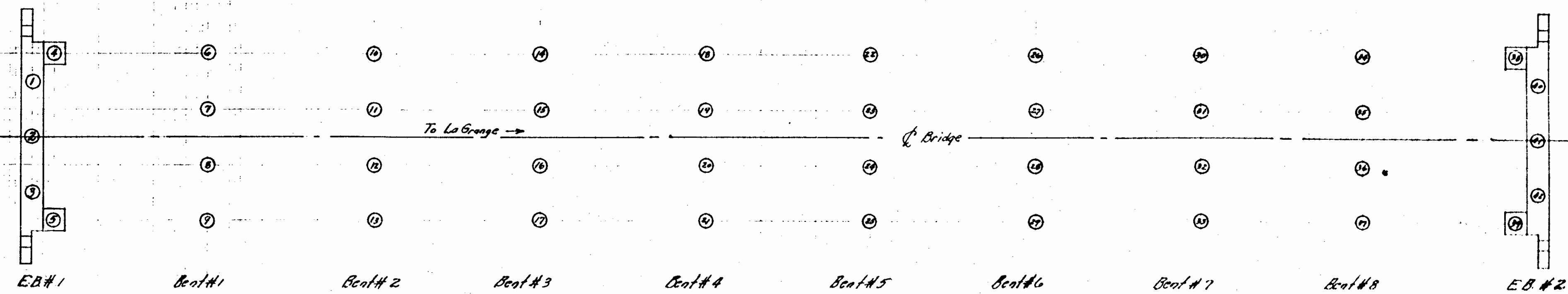
LENOIR COUNTY
 STATION: 20+69
 BENTS No. 1-2-3-4-5-6-7-8

STATE OF NORTH CAROLINA
 STATE HIGHWAY AND PUBLIC WORKS COMMISSION
 SUBSTRUCTURE
 MAY 1952

DESIGNED BY	DATE
CHECKED BY	DATE
DRAWN BY	DATE

FILE RECORD BRIDGE @ STATION 20+63

(See Masonry BL # 1 page # 27-29)



Date Driven	Ordered Length 45'	Pile No	Ave. Pen. last 5 Blows Inches	Bearing	Penetration	Actual Length of Cutoff	Pay Length of Piles	Bed of Stream Elevation	Cut off Elevation
3-29-54		1	0.75	48.56	38.42	5.58	39.42	100.78	101.78
3-29-54		2	1.25	43.45	38.29	5.71	34.24	100.78	101.78
3-29-54		3	1.25	43.45	37.92	6.08	38.42	100.78	101.78
3-30-54		4	1.25	43.45	37.92	6.08	38.42	100.78	101.78
3-30-54		5	2.00	37.53	37.63	6.37	38.42	100.78	101.78
4-28-54		6	1.50	41.24	37.63	6.37	38.63	100.78	101.78
4-27-54		7	1.00	45.97	25.71	9.75	35.17	102.40	101.94
4-27-54		8	1.25	42.45	27.13	8.33	35.25	102.40	101.94
4-28-54		9	2.75	33.02	31.13	4.33	40.67	102.40	101.94
5-7-54		10	4.50	25.80	21.42	0.42	44.58	102.06	102.06
5-7-54		11	2.00	37.53	17.34	4.50	40.50	102.06	102.06
5-7-54		12	4.00	27.52	21.84	0.00	45.00	102.06	102.06
5-10-54		13	3.25	30.58	17.05	4.79	40.21	102.06	102.06
5-11-54		14	3.25	30.58	18.71	0.45	44.05	102.14	102.14
5-11-54		15	3.00	31.75	18.87	0.74	44.21	102.14	102.14
5-11-54		16	3.25	30.58	16.95	2.71	42.24	102.14	102.14
5-11-54		17	3.00	31.75	17.72	1.92	43.08	102.14	102.14
5-18-54		18	3.25	30.58	20.32	0.00	45.00	102.18	102.18
5-18-54		19	3.25	30.58	17.32	3.00	42.00	102.18	102.18
5-18-54		20	3.00	31.75	17.65	2.67	42.33	102.18	102.18
5-18-54		21	3.00	31.75	17.99	2.33	42.67	102.18	102.18
5-18-54		22	3.00	31.75	18.65	2.42	42.58	102.18	102.18
5-18-54		23	2.75	33.02	18.61	2.45	42.54	102.18	102.18
5-18-54		24	3.25	30.58	18.57	2.50	42.50	102.18	102.18
5-18-54		25	2.50	34.40	18.07	3.00	42.00	102.18	102.18
5-18-54		26	3.25	30.58	22.23	0.83	40.17	102.18	102.18
5-18-54		27	3.25	30.58	22.06	1.00	41.00	102.18	102.18
5-18-54		28	3.25	31.75	22.39	0.67	44.33	102.18	102.18
5-18-54		29	3.00	30.58	22.64	0.42	44.58	102.18	102.18
5-18-54		30	3.25	30.58	23.91	0.33	40.58	102.18	102.18
5-18-54		31	1.50	41.24	27.82	0.42	40.67	102.06	102.06
5-18-54		32	3.25	30.58	26.90	0.42	44.58	102.06	102.06
5-18-54		33	3.25	30.58	26.90	1.25	43.75	102.06	102.06
5-18-54		34	3.25	30.58	27.74	0.50	44.50	102.06	102.06
5-18-54		35	3.00	31.75	27.41	2.25	42.75	101.94	101.94
5-18-54		36	3.00	31.75	27.41	4.25	40.75	101.94	101.94
5-18-54		37	3.25	30.58	28.04	3.62	41.38	101.94	101.94
5-18-54		38	1.75	30.58	28.99	2.67	42.32	101.94	101.94
5-18-54		39	1.75	39.37	37.25	6.75	38.25	100.78	101.78
5-18-54		40	2.00	37.53	36.50	7.50	37.50	100.78	101.78
5-18-54		41	2.50	34.40	35.50	8.50	36.50	100.78	101.78
5-18-54		42	2.75	33.02	37.50	6.50	38.50	100.78	101.78
5-18-54			1.75	59.31	35.50	8.50	36.50	100.78	101.78

1 of Pile makes 2 Steel Caps. All Steel Caps for Piles made from Cut offs $\frac{42.0}{2} = 156.44$
 -21.00

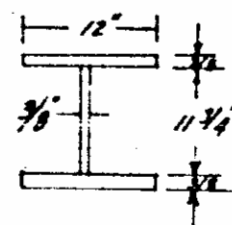
Total Pay Quantity for Pile Cut off = 135.44

Note: Weight of Hammer Used for H Piles = 3440 Lbs.
 Height of Fall = 12 FT.
 Formula: $\frac{2MH}{310.7}$ (By Authority of Bridge Dept.)

ADDITIONAL CLASS 'A' CONCRETE "H" BEAM PILE ENCASEMENTS OVER 5 FT IN LENGTH

(See Masonry Bk #1 page # 35)

BENT NO	NO PILES	PLAN LENGTH	ACTUAL LENGTH	TOTAL LENGTH	EXTRA LENGTH	X0.102884 CU.YDS.	X0.0040097 X0.0034537 LESS STEEL	AMOUNT CU.YDS.	
1	4	50	50	20.00 ✓	0.00 ✓	0.00	0.00	0.00	
2	4	50	9.25	37.00 ✓	17.00 ✓	174903	-0.05871	169032	
3	4	50	11.83	47.32 ✓	27.32 ✓	281079	0.09436	271643	
4	4	50	11.17	44.68 ✓	24.68 ✓	253918	0.08524	245394	
5	4	50	9.5	38.00 ✓	18.00 ✓	185191	0.06217	178974	
6	4	50	9.25	37.00 ✓	17.00 ✓	174903	0.05871	169032	
7	4	50	50	20.00 ✓	0.00 ✓	0.00	0.00	0.00	
8	4	50	50	20.00 ✓	0.00 ✓	0.00	0.00	0.00	
<hr/>						10400 ✓	1069994 ✓	-0.35919	-1034095
<hr/>							0.41700		1028274 ✓



Computation of Constant for 1 Lin Ft of Concrete Pile Encasement

$$\frac{10 \times 1.6667 \times 1.6667}{27} = 0.102884 \text{ Cu Yds.}$$

Pile Encasements Are 20" Square (Outside dimensions)

Computations of Constant for Area of 1 Lin Ft. of "H" Beam (To Be deducted)

$$\begin{aligned} 2(1.0 \times 0.0313 \times 1.0) &= 0.06260 \text{ Cu Ft} \\ 1(1.0 \times 0.9792 \times 0.0313) &= 0.03065 \text{ Cu Ft} \\ \hline &0.09325 \text{ Cu Ft} \\ &= 0.0034537 \end{aligned}$$

Area of 12" @ 53# "H" Beam = $\frac{15.59 \text{ cu ft}}{194} \div 27 = 0.0040097$ (According to Bk Def 1)

Note: Plans Call for pile encasements to be placed 2'-0" Above natural Ground or Water Surface and 3'-0" below natural Ground or Water Surface. Bridge Dept Authorized placing Encasements To bed of Stream Elevation and that Contractor should be paid for additional Concrete @ Contract price for Class 'A' Concrete. (See Mr. Gutter letter of 3/29/54)