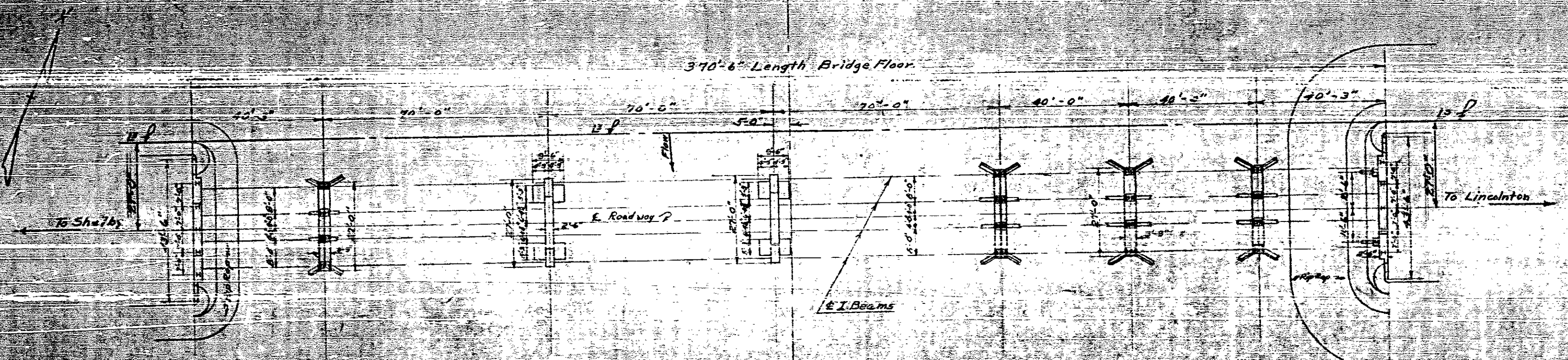


ELEVATION - SECTION ON & ROADWAY

NOTES -
 Assumed L.L. - H20-516
 For other design data and general notes see sheet SN.
 For surface finish requirements, see Special Provisions.
 Computed foundation loads for Bent 2 and Bent 3 = 4 tons per sq. ft. Footings to be carried 6' into rock with minimum thickness as shown.
 Piles to be driven to the following minimum bearing capacity: E. Bt. No. 1 and E. Bt. No. 2 26 tons per pile, Bt. No. 1 and Bt. No. 4 29 tons per pile, Bt. No. 5 and Bt. No. 6 23 tons per pile. Test piles will not be required. Order list to be based on 35' piles for E. Bt. and Bt. 1 and 40' piles for Bt. 4, 5, 6, 5 and E. Bt. 2. End Bent piles to be driven through roadway fill.
 The Contractor's attention is called to the requirement that where welded cover plates are used, the cover plates and beams shall be of weldable steel conforming to A.S.T.M. designation A-373, 54T. Workmanship to be in accordance with the revised A.S.T.M. Specifications for steel for welded bridges. 3/4" shear connectors shall also conform to the above requirements.

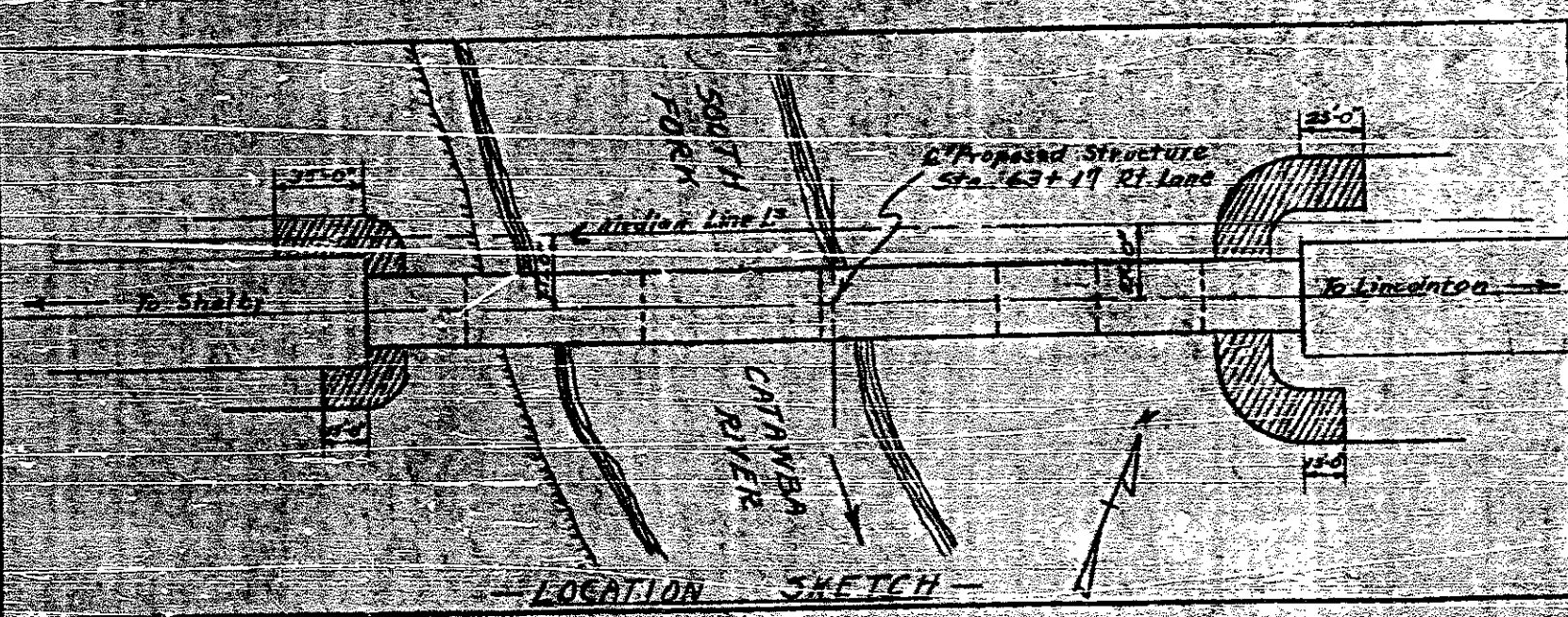


PLAN

Reel # 717
 Pos # 2

I hereby certify that this structure was built according to revised plans as shown:
 L. E. Mandy

B.M. 1111 at base of pile - 87' RL
 Station 63+19.50, E.L. 756.85 U.S.G.S.



TOTAL BILL OF MATERIAL

	CLASS A CONCRETE	REINFORCING STEEL	STRUCTURAL STEEL	PLAIN PIPE	PIPE	CONCRETE CURB	PLAIN PIPE CLASS 2	EXCAVATION	Extra Depth Well Escap.	Pile caps
	CU YDS.	LB.	APPX. LB.	NO.	IN. DIA.	CU YDS.	CU YDS.	CU YDS.	(3'-6")	LINEAL
Superstructure	3322	68912	287000	5	18"	2469	300			26.65
End Bent 1	8.9	1638		5	18"	235	300			10.93
Bent 1	12.7	1521		6	27.50"					
Bent 2	43.85	6718						140.4'	7.7'	
Bent 3	43.85	6718						110.0'	2.6'	
Bent 4	44.9	1571	1260	8	30.00"					13.67
Bent 5	44.4	1582	1164	8	30.00"					7.58
Bent 6	44.4	1582	1164	8	30.00"					35.25
End Bent 2	10.5	1982		7	20.00"	1028	415			67.90
Approach Curb	3.2	76				445				76.13
TOTAL	5022	81667	287000	44	16.50"	445	100	100	10.31	259.51

OR 1
 Pile caps - 3

PROJECT NO. 640
 LINCOLN COUNTY
 STATION: 63+17.21 Lane

STATE OF NORTH CAROLINA
 STATE HIGHWAY AND PUBLIC WORKS COMMISSION
 GENERAL DRAWING
 BRIDGE OVER SOUTH FORK CATAWBA RIVER BETWEEN SHELBY AND LINCOLN COUNTY
 JULY 1954

Revised to raise Top of Foot. Elev. Bent No. 2 by .05' F.A.L.B.
 Revised 7/23/54 to move structure to E.I. Lane by W.M.A. & by Row

DESIGN DATA

Span Length	180' 5 1/2'
Span Spacing	60' 0"
Deck Thickness	8" 0"
Deck Reinforcement	1/2" dia. bars @ 12" o.c.
Concrete in Compression	1500 psi
Concrete in Shear	300 psi

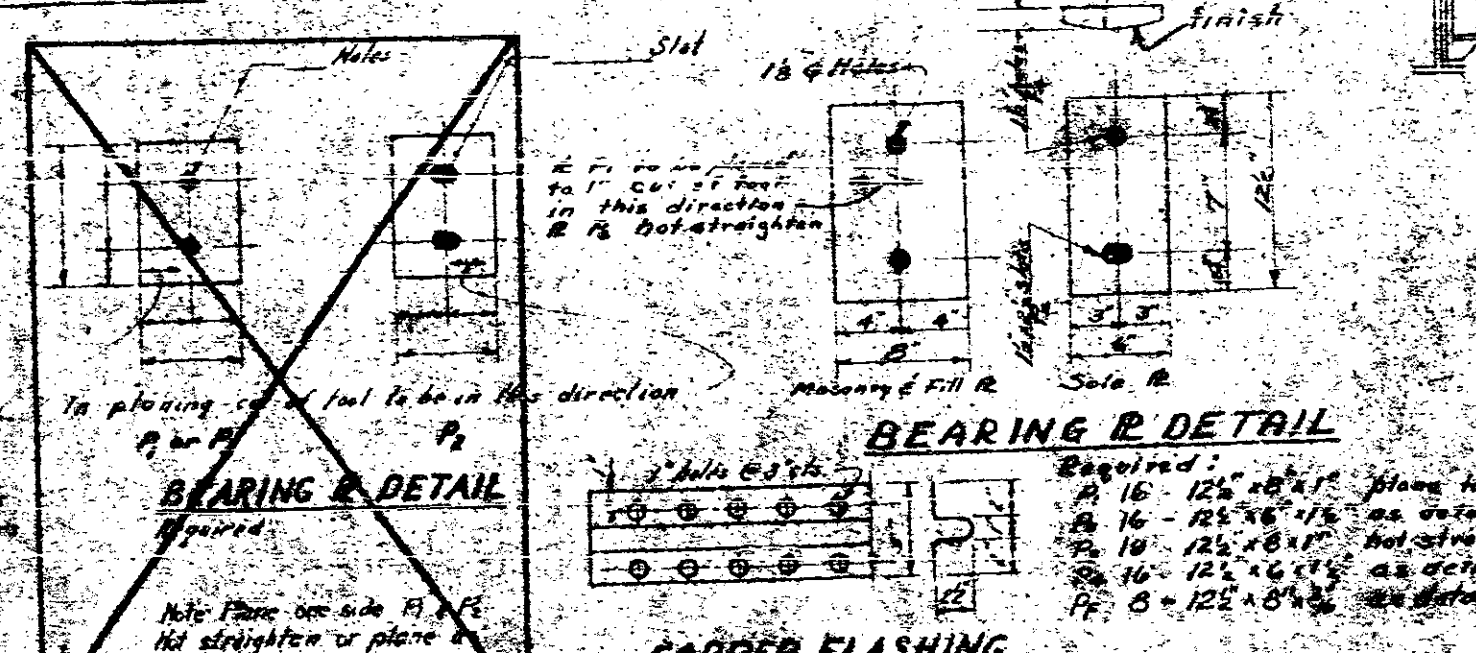
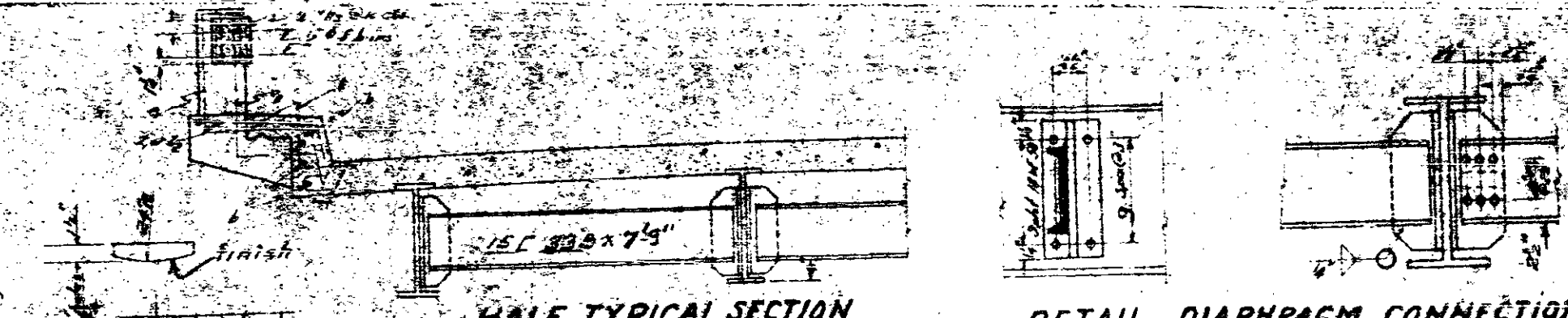
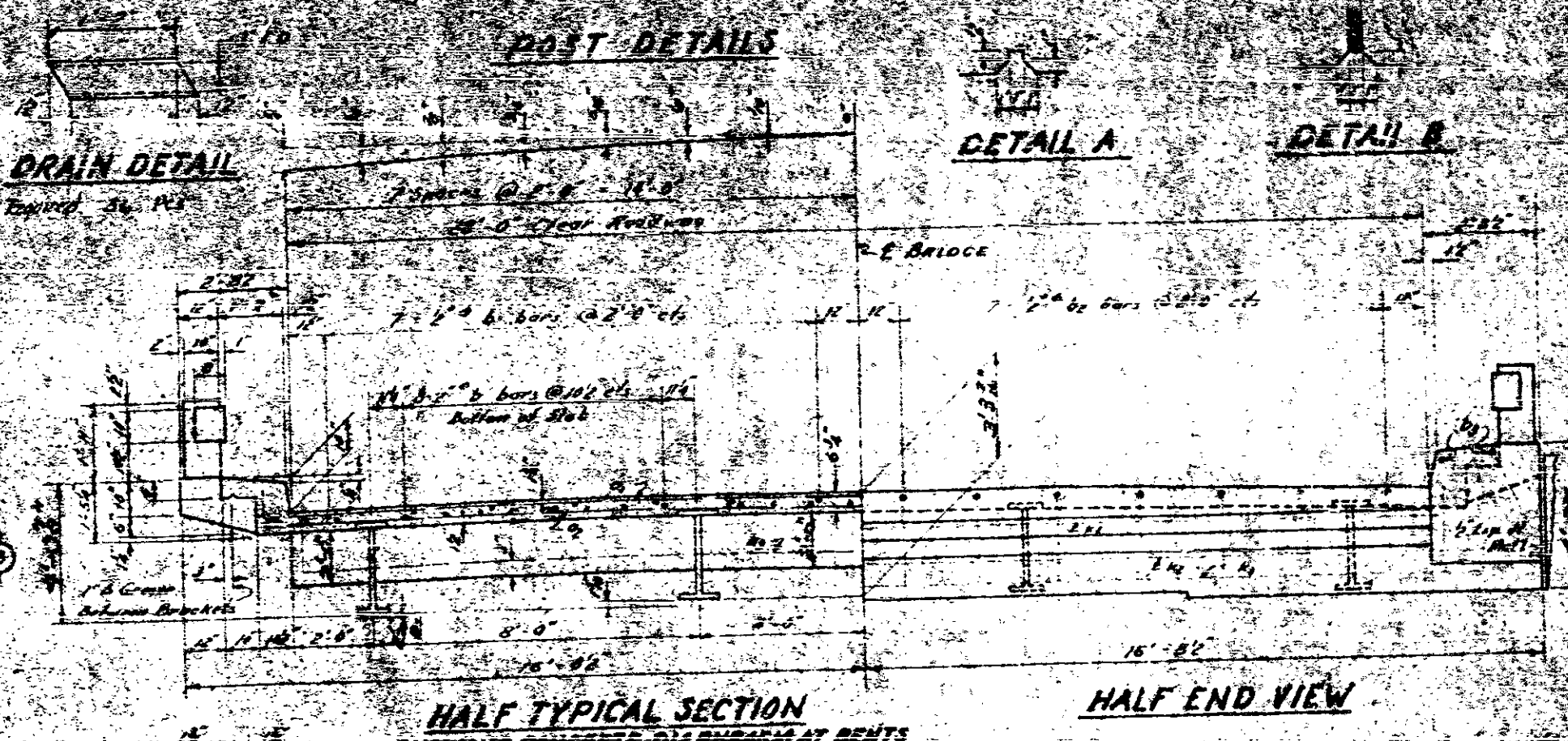
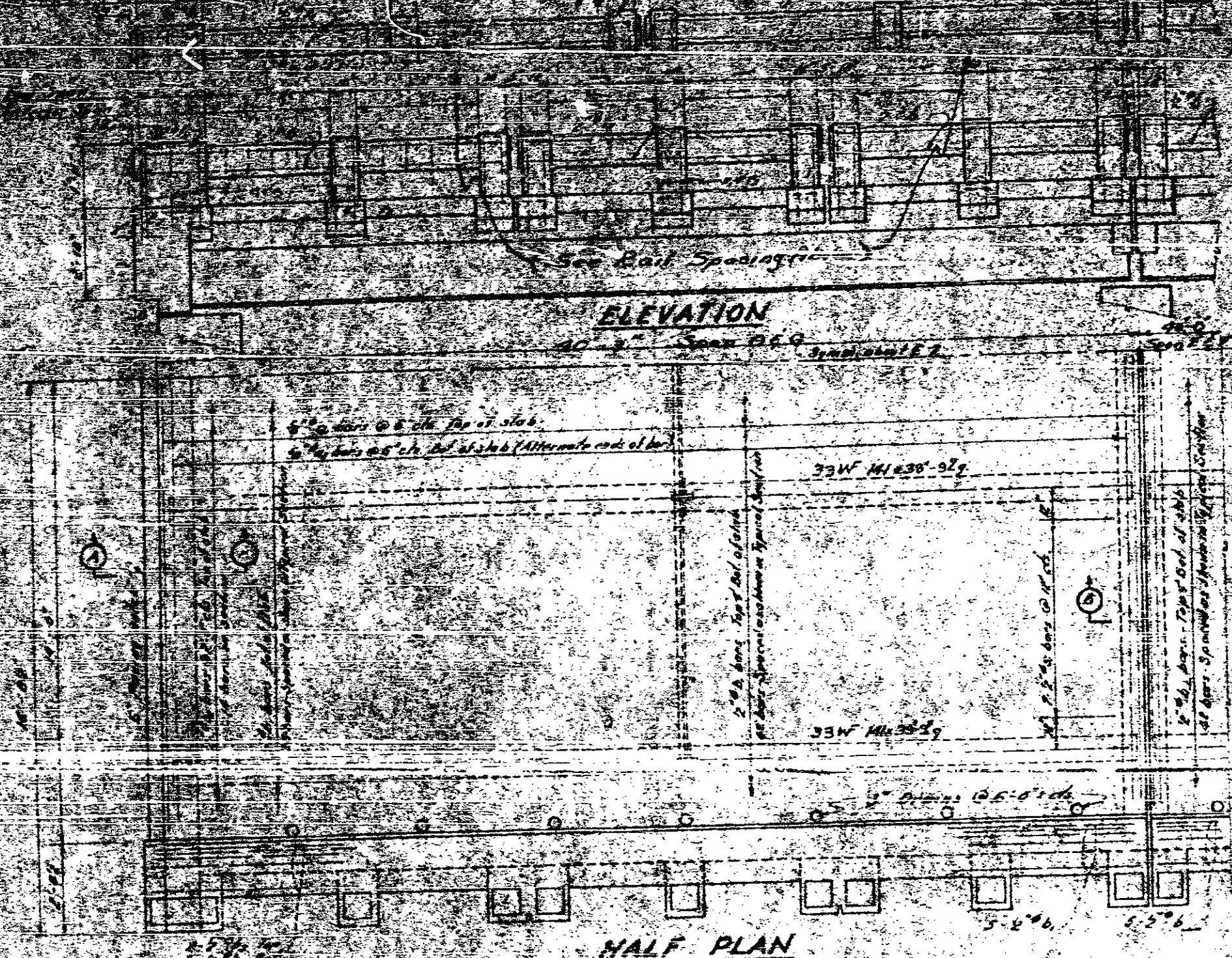
NOTES

At the Contractor's option, shop connections of split 18" x 30" channels may be either welded or riveted, being in either case, field connections of diaphragms to beams shall be bolted using high tensile bolts.

Welding to be done in accordance with the Specifications.

Drains may be either cast iron, galvanized weight galvanized steel or FRP pipe.

Maximum Dead Load Deflection, interior beams 7/16" Exterior beams 1/4"



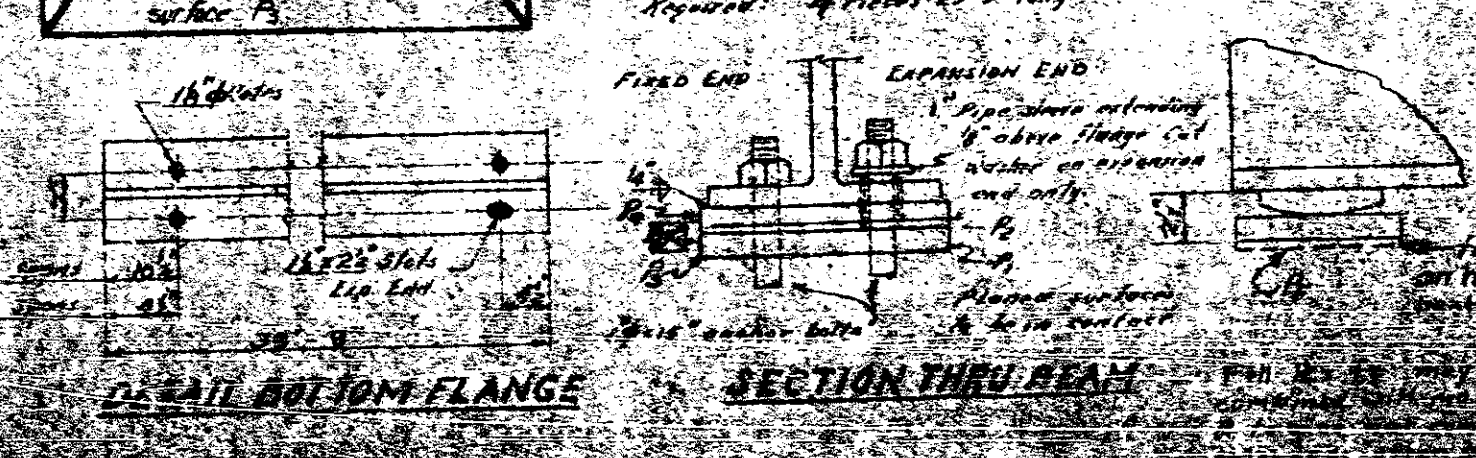
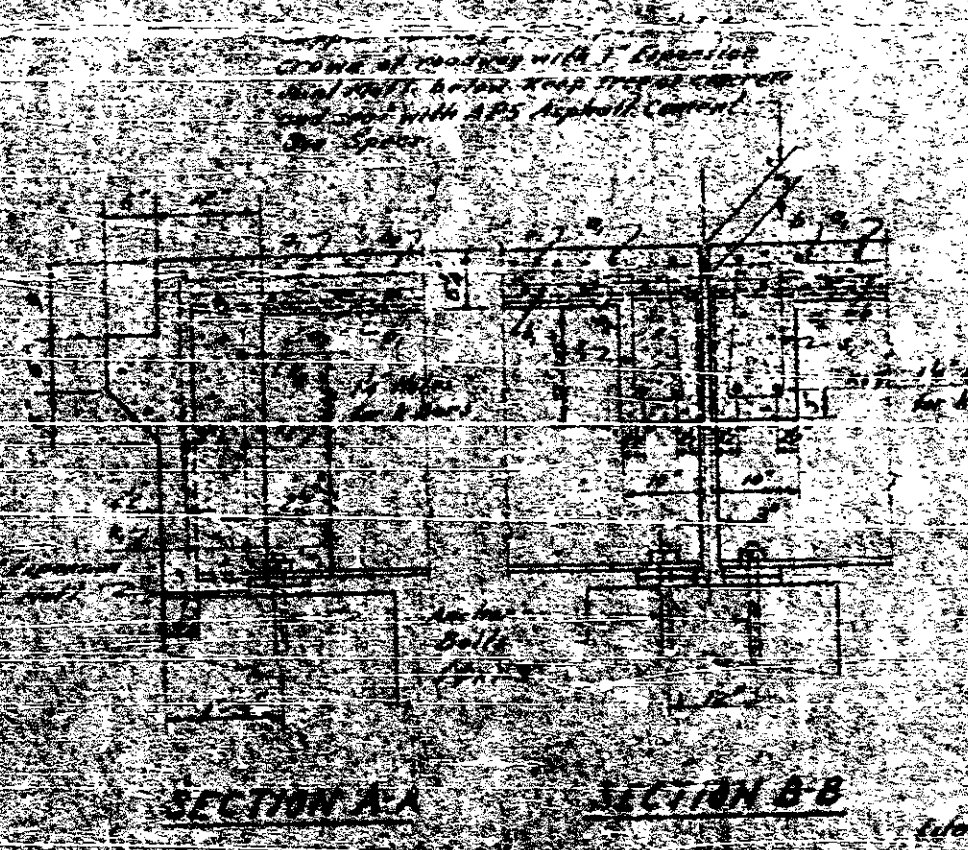
BAR DETAILS
Bar dimensions are cut to out.

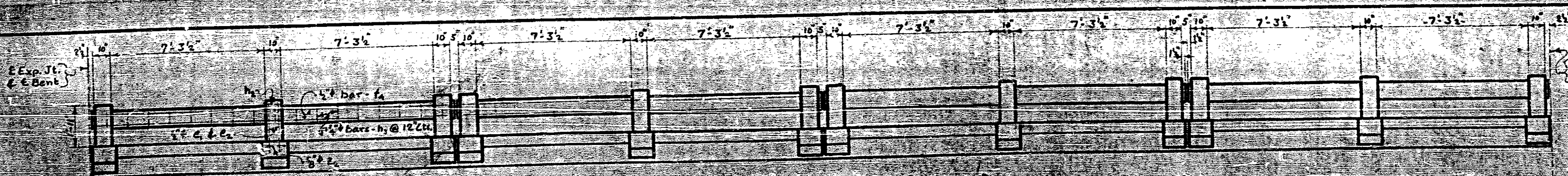
Bar No.	Size	Type	Length	Weight
1	3/8"	1	30'-0"	10.013
2	3/8"	2	31'-9"	10.861
3	3/8"	5/8"	20'-6"	5.204
4	2"	3	23'-2"	4.93
5	3/8"	3	28'-8"	1.86
6	1/2"	3	3'-8"	3.25
7	1/2"	3	4'-3"	2.84
8	1/2"	3	20'-9"	2.80
9	1/2"	3	19'-6"	2.08
10	1/2"	3	18'-7"	1.91
11	3/8"	4	5'-6"	2
12	3/8"	4	2'-10"	4.7
13	3/8"	4	2'-7"	1.98
14	3/8"	5/8"	17'-6"	3.75
15	3/8"	5/8"	17'-0"	3.5
16	3/8"	5/8"	18'-8"	6.31
17	3/8"	3	4'-2"	2.78
18	3/8"	3	6'-2"	3.5
19	3/8"	3	7'-2"	3.75

PROJECT NO. 6784
LINCOLN COUNTY
STATION: 63+17.2

SPANS A, E, F, G
STATE OF NORTH CAROLINA
STATE HIGHWAY AND
PUBLIC WORKS COMMISSION

STANDARD
STEEL SUPERSTRUCTURE
WITH AS FLOOR & RAIL
OR BRADWAY

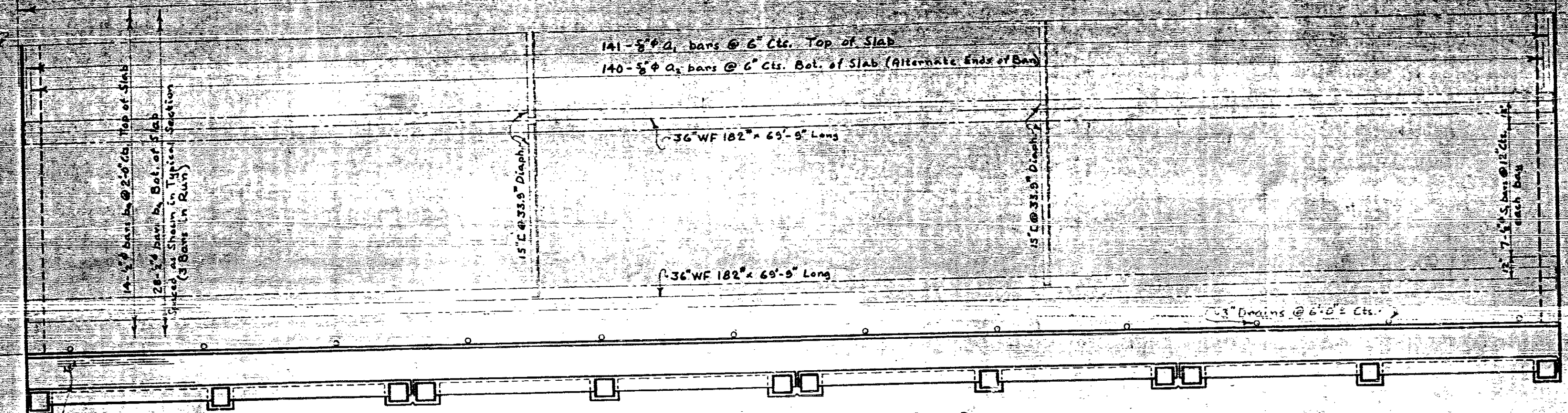




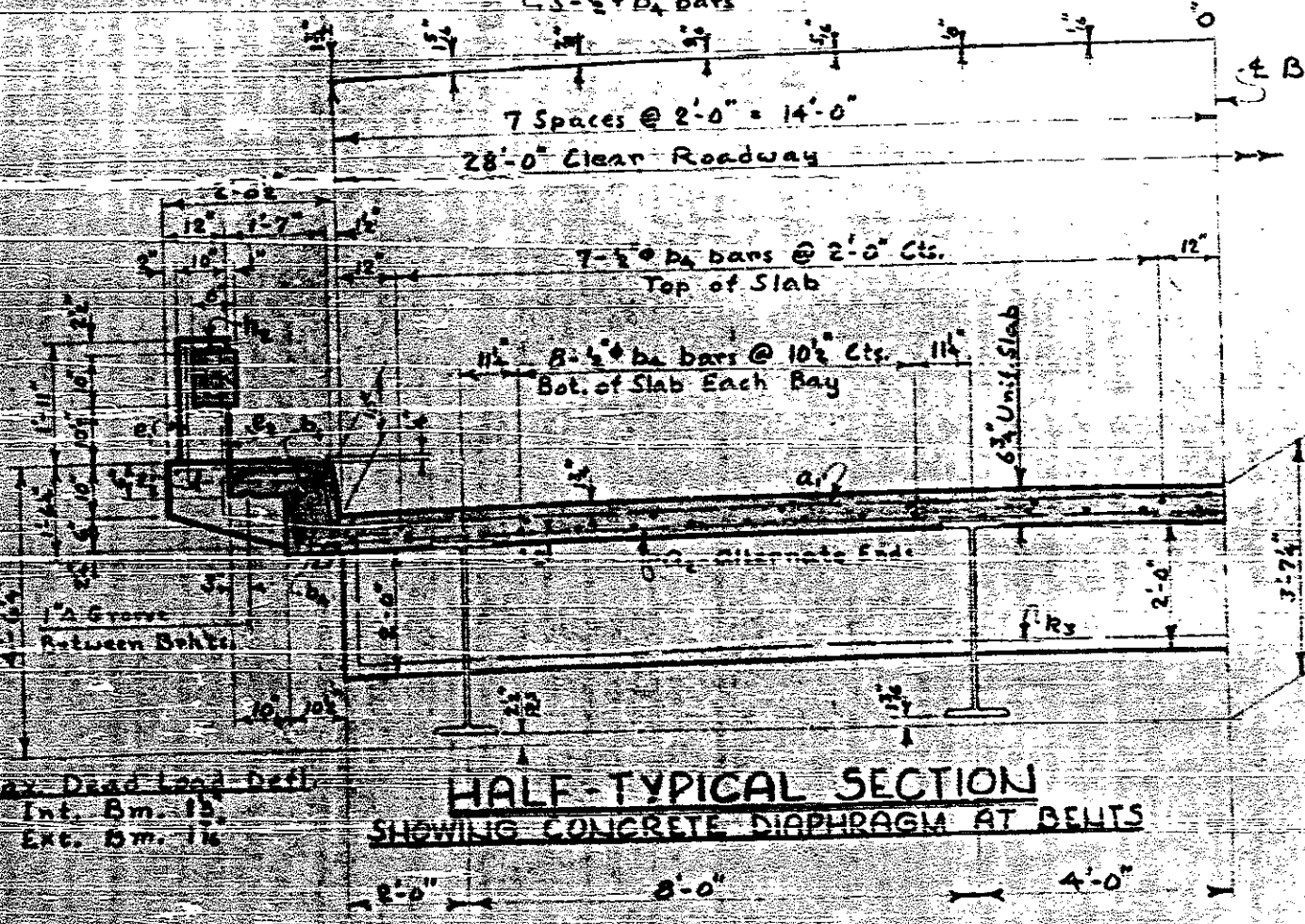
NOTE: For Post & Bracket Details see Sheet No. S-11

RAIL ELEVATION - SPANS B-C OR D

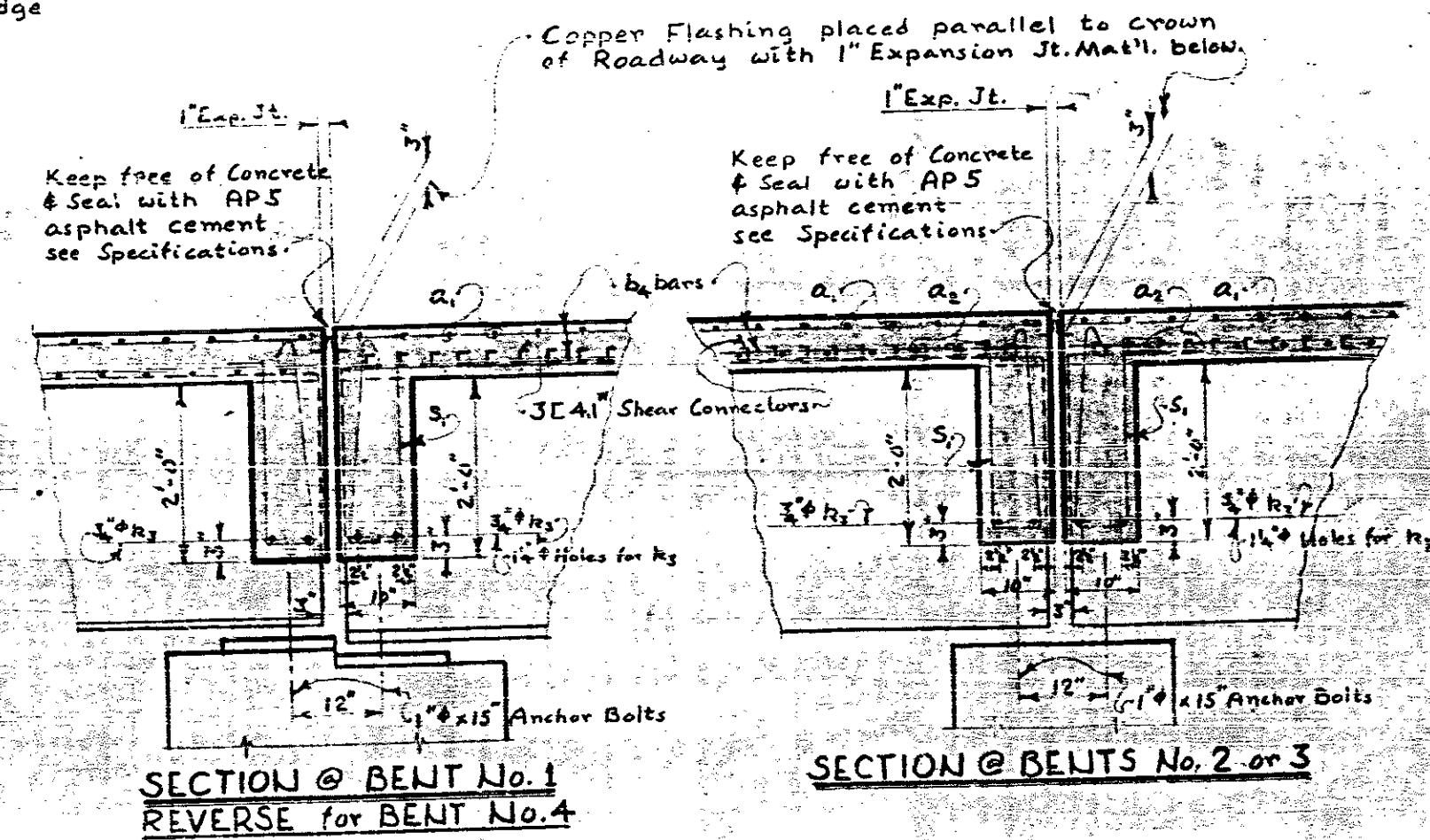
70'-0" Span Length



HALF-PLAN SPANS B-C OR D



HALF-TYPICAL SECTION
 SHOWING CONCRETE DIAPHRAGM AT BENTS



SECTION @ BENT No. 1
 REVERSE for BENT No. 4

SECTION @ BENTS No. 2 OR 3

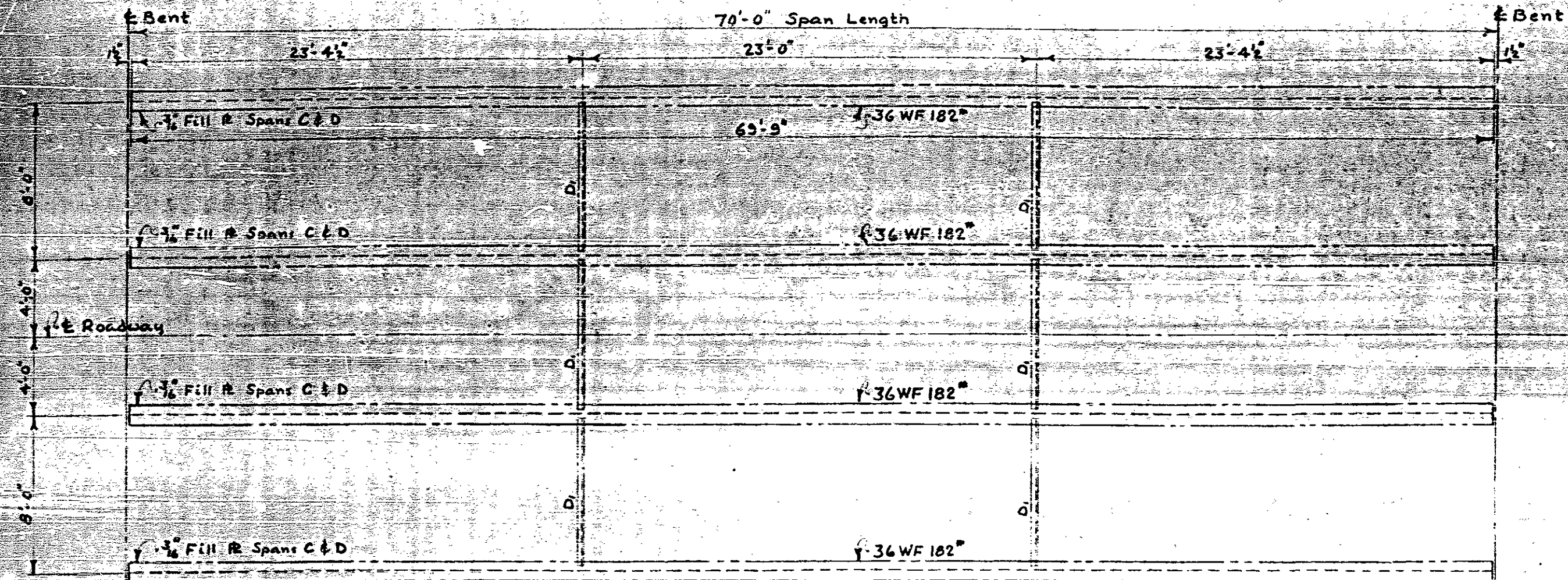
PROJECT NO. 6484
 LINCOLN COUNTY
 STATION: 63+17 1/2 Pt. Lane

STATE OF NORTH CAROLINA
 STATE HIGHWAY AND
 PUBLIC WORKS COMMISSION
 SUPERSTRUCTURE
 CONCRETE PLAN
 SPANS B-C & D
 July 1954

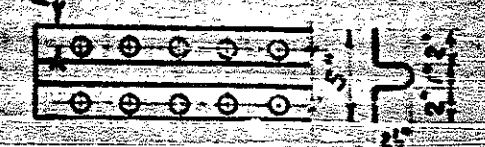
NO.	DATE	REVISIONS
1	7-22-54	
2	7-23-54	

Revised 7/23/54 to move structure to Pt. Lane by W.M.A. by J.F.W.

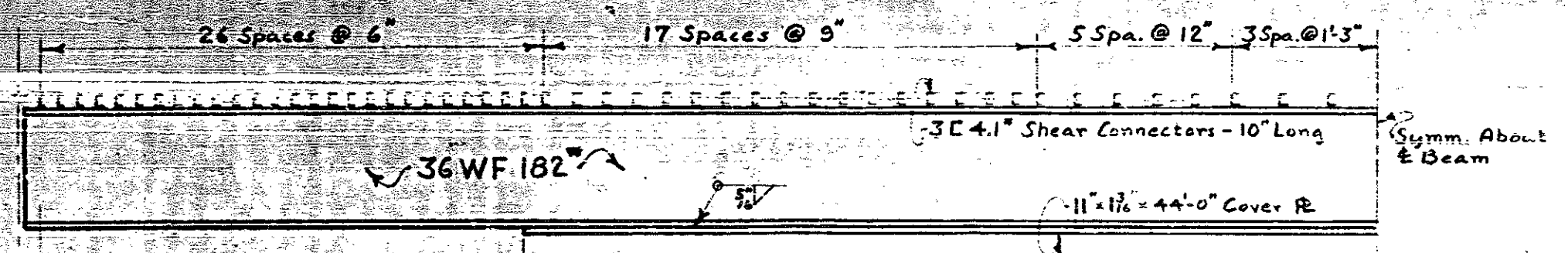
DESIGNED BY	DATE
DRAWN BY	DATE July 1954
CHECKED BY	DATE Aug. 1954



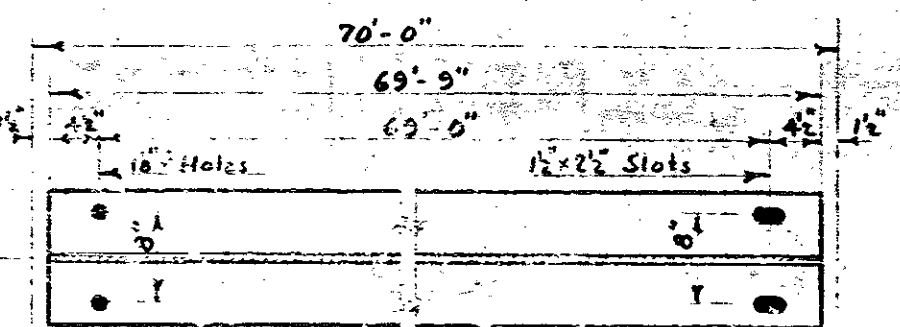
STRUCTURAL STEEL PLAN
 SPANS B-C OR D



COPPER FLASHING
 Required: 2 Pieces 29'-9" Long



DETAIL - SHEAR CONNECTOR PLACEMENT
 EXT. & INT. BEAMS - SPANS B-C OR D

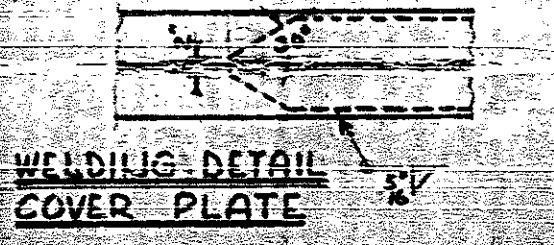


DETAIL BOTTOM FLANGE
 SPANS - B-C OR D

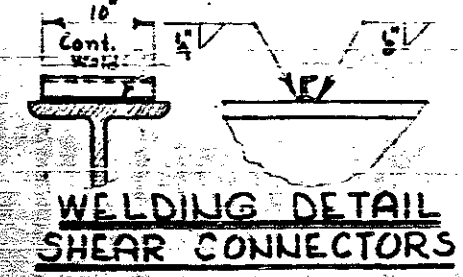
BAR DETAILS
 Bar dimensions are out to out.

Bar No.	Size	Type	Length	Weight
A ₁	423 5/8"	1	30'-6"	13,450
A ₂	420 5/8"	2	31'-9"	13,900
B ₁	468 5/8"	Str.	24'-1"	7,520
C ₁	144 5/8"	3	3'-8"	330
C ₂	144 5/8"	3	4'-3"	400
F ₁	96 5/8"	Str.	17'-1"	1,050
H ₁	72 5/8"	4	2'-10"	700
H ₂	408 5/8"	1	2'-7"	1,700
H ₃	24 5/8"	5	17'-6"	630
S ₁	126 5/8"	6	5'-7"	470
Z ₁	72 5/8"	7	7'-1"	520

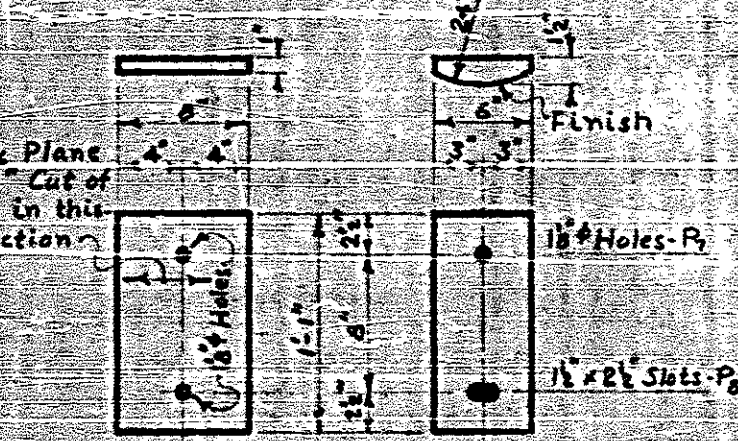
Reinf. Steel Lbs. 38,637
 Class "A" Concrete Cu. Yds. 187
 Structural Steel (Approx) Lbs. 189,900



WELDING DETAIL
 COVER PLATE

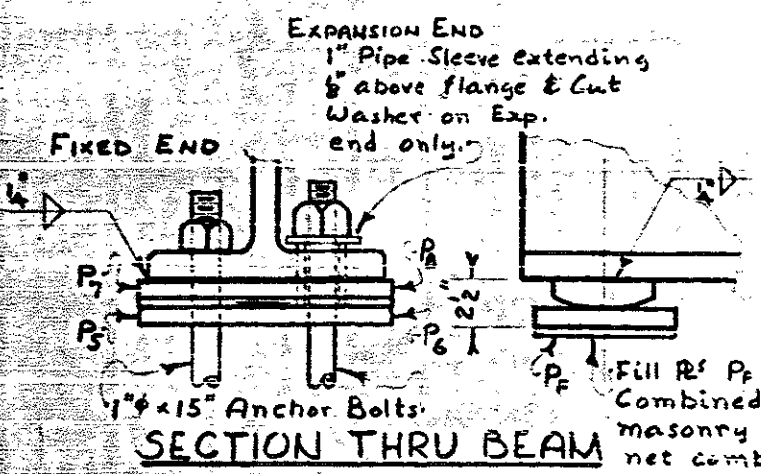


WELDING DETAIL
 SHEAR CONNECTORS



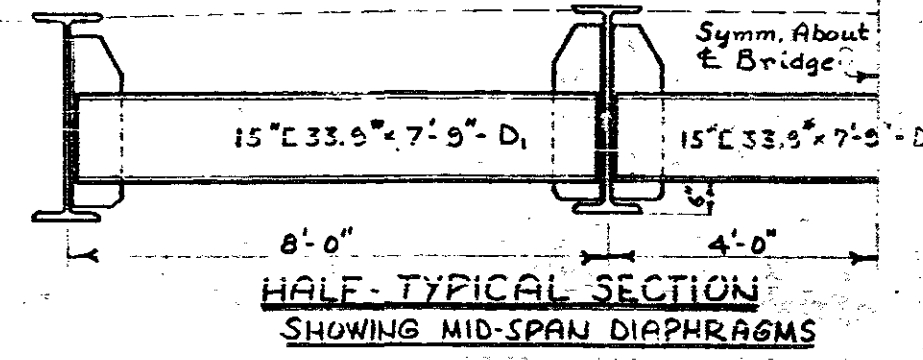
DETAIL BEARING PLATES
 MASONRY R
 SOLE R

Required: P₁ - 12 - 8" x 11" x 13" hot straighten
 P₂ - 12 - 8" x 11" x 13" plane to 1"
 P₃ - 12 - 6" x 11" x 13" as detailed
 P₄ - 12 - 6" x 11" x 13" as detailed
 P₅ - 8 - 8" x 3" x 13" Fill Plates

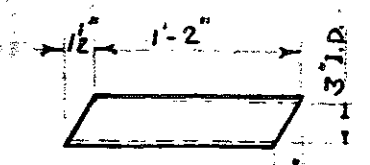


SECTION THRU BEAM

Fill R₁ & P₁ may be combined with masonry R to give net combined thickness after planing.

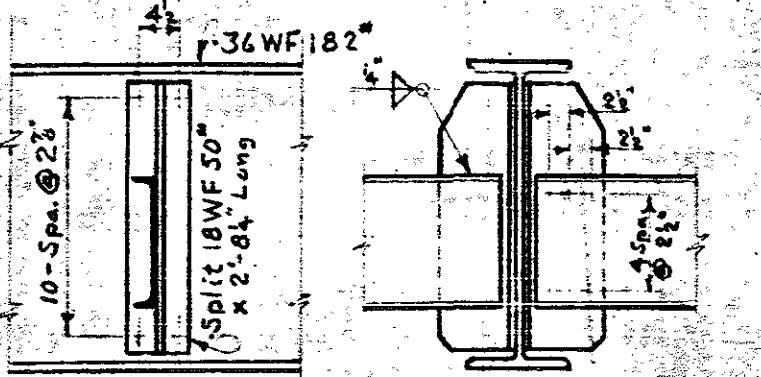


HALF-TYPICAL SECTION
 SHOWING MID-SPAN DIAPHRAGMS



DRAIN DETAIL

Required: 72 Pcs.
 Drains may be either cast iron, standard weight galvanized steel or Transite pipe.



DETAIL DIAPHRAGM CONNECTION

NOTE: At the contractors option shop connection of channel to split 18 WF 50 may be either welded or riveted using 3/4" rivets. Field connection of diaphragms to Beams shall be bolted using 3/4" high tensile bolts.

Revised 7/23/54 to move structure to Rt. Lane by W.M.A. by Row

PROJECT NO. 6484
LINCOLN COUNTY
STATION: 63 + 17 E. Rt. Lane
SPANS B-C & D

STATE OF NORTH CAROLINA
 STATE HIGHWAY AND
 PUBLIC WORKS COMMISSION
 SUPERSTRUCTURE
 STRUCTURAL STEEL
 PLAN & DETAILS
 July 1954

APPROVED BY: [Signature]
 DATE: 8/23/54

BILL OF MATERIAL FOR END BENT NO. 1

Bar	No.	Size	Type	Length	Weight
a	3	18"	1	34'-0"	439
b ₁	2	18"	str.	43'-2"	371
b ₂	8	5"	str.	16'-3"	87
b ₃	3	18"	str.	31'-2"	115
b ₄	8	5"	str.	2'-2"	12
h ₁	8	5"	str.	8'-3"	44
h ₂	16	5"	str.	9'-8"	50
s ₁	22	5"	2	7'-3"	107
s ₂	22	5"	3	2'-11"	43
v ₁	20	5"	str.	6'-0"	80

Reinforcing Steel, Lbs. 1635
 Class "A" Concrete, Cu. Yds. 9.9
 12 @ 53 Steel H Pile, No. 3
 12 @ 53 Steel H Pile 156.50 L.F.

BILL OF MATERIAL FOR END BENT NO. 2

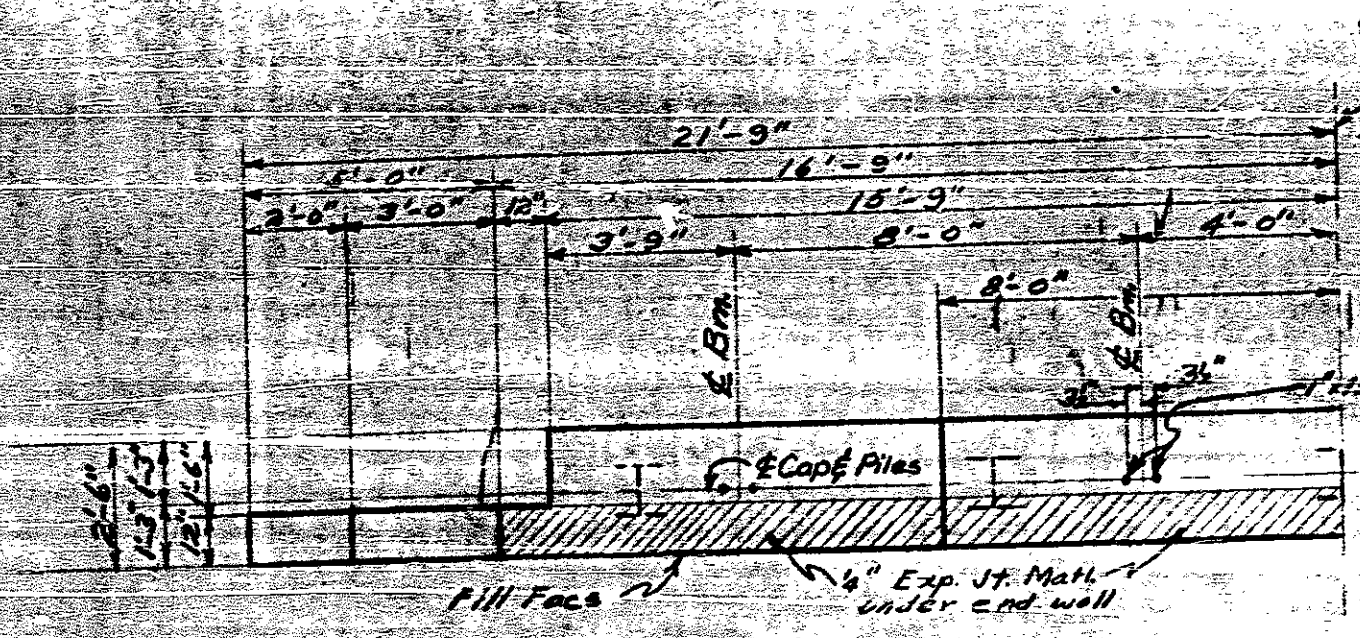
Bar	No.	Size	Type	Length	Weight
b ₁	3	18"	1	34'-0"	439
b ₂	2	18"	str.	43'-2"	371
b ₃	8	5"	str.	16'-3"	87
b ₄	1	1"	str.	31'-2"	83
b ₅	3	18"	str.	31'-2"	402
b ₆	8	5"	str.	2'-2"	12
b ₇	6	5"	1	5'-"	47
h ₁	6	5"	str.	8'-3"	33
h ₂	16	5"	str.	9'-8"	50
s ₁	22	5"	2	7'-3"	107
s ₂	22	5"	3	2'-11"	43
s ₃	2	5"	4	10'-11"	38
v ₁	20	5"	str.	6'-0"	80

Reinforcing Steel, Lbs. 1902
 Class "A" Concrete, Cu. Yds. 10.5
 12 @ 53 Steel H Pile, No. 7
 12 @ 53 Steel H Pile 208.59 L.F.

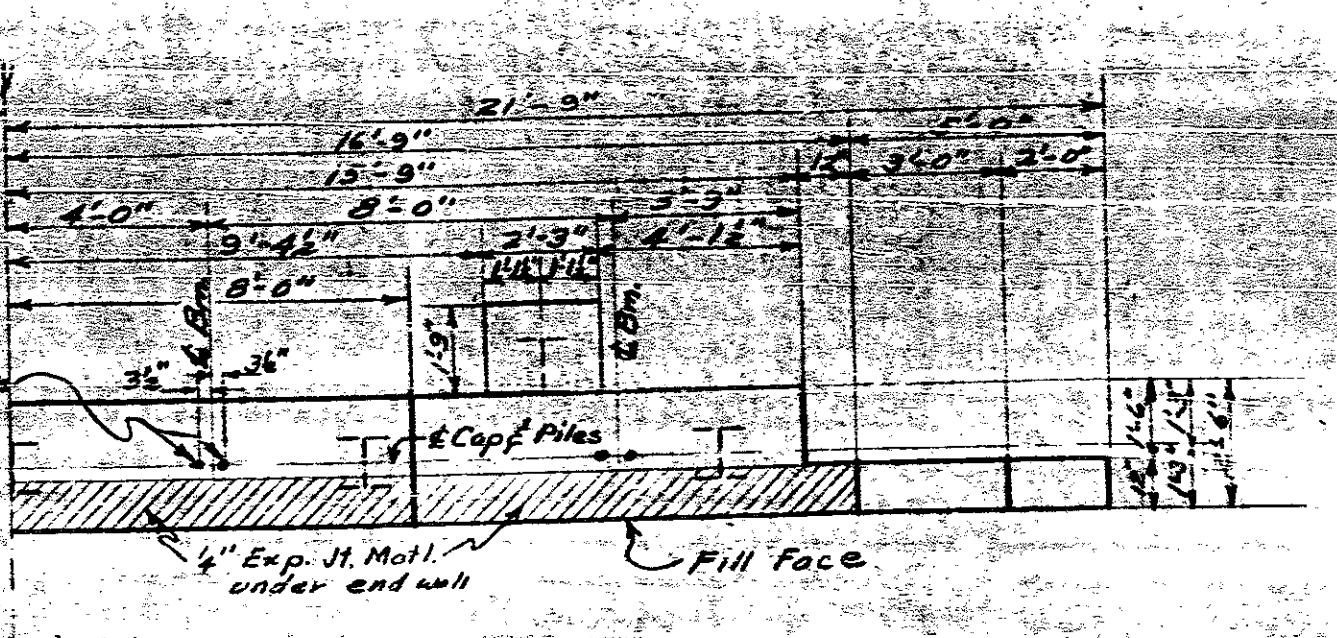
PROJECT NO. 6484
 LINCOLN COUNTY
 STATION: 63+17.2 R.Lam.
 END BENTS NO. 1 & NO. 2

STATE OF NORTH CAROLINA
 STATE HIGHWAY AND
 PUBLIC WORKS COMMISSION
 SUBSTRUCTURE

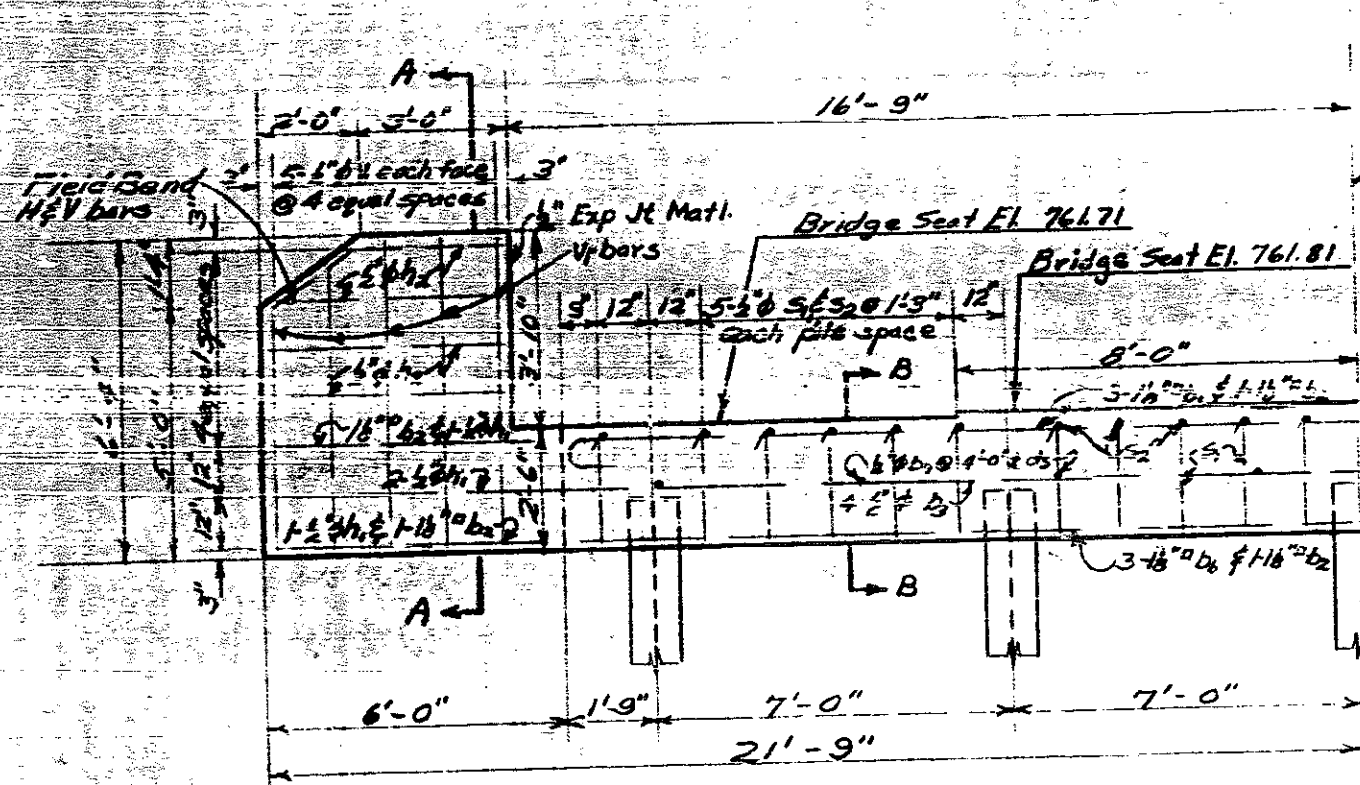
APPROVED BY: *[Signature]*
 STATE ENGINEER



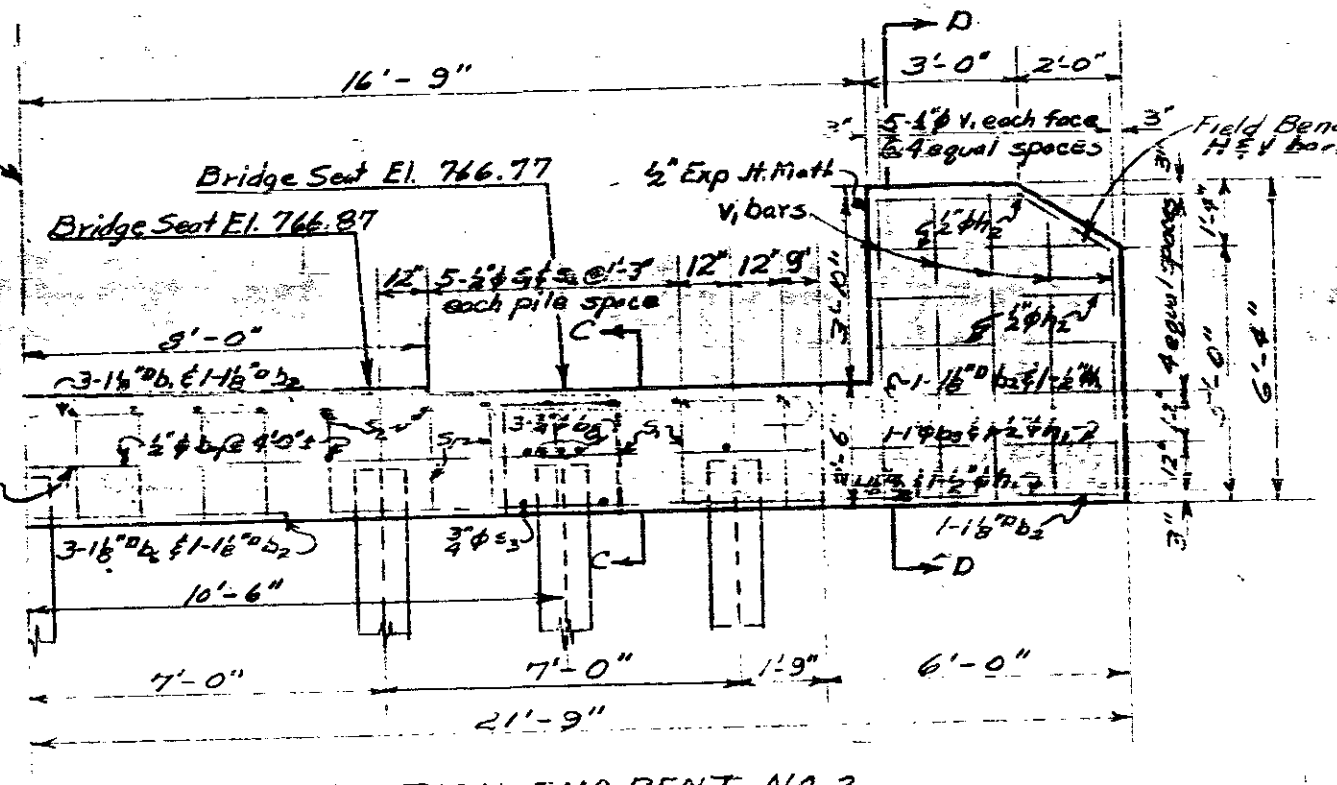
HALF PLAN END BENT NO. 1



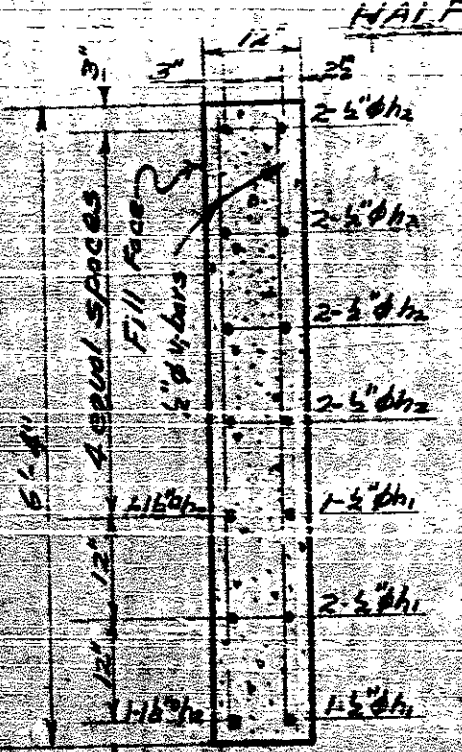
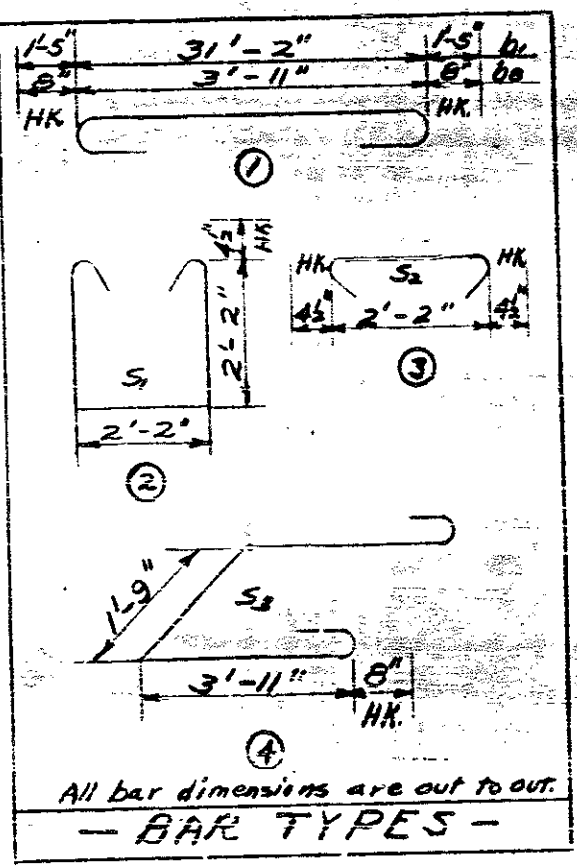
HALF PLAN END BENT NO. 2



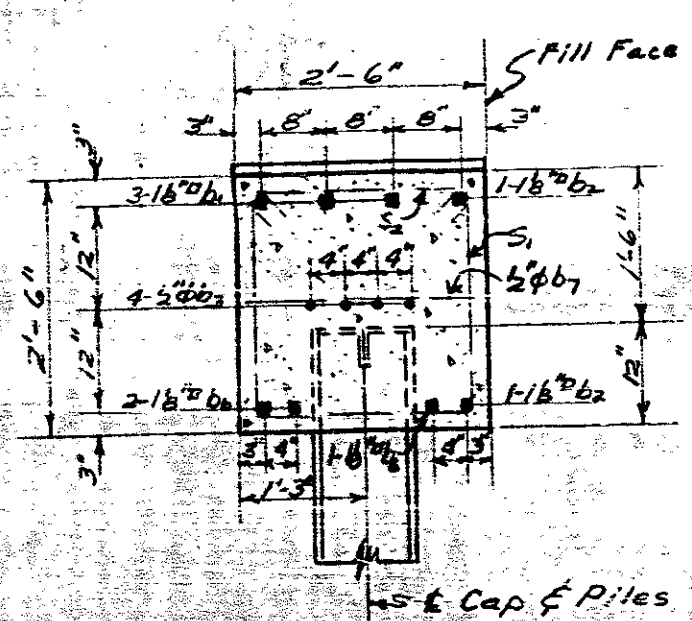
HALF ELEVATION END BENT NO. 1



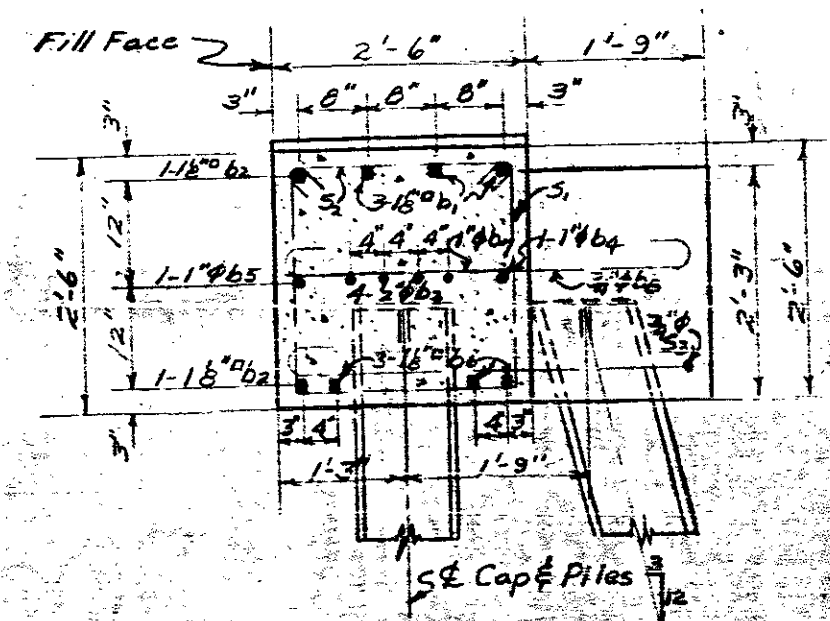
HALF ELEVATION END BENT NO. 2



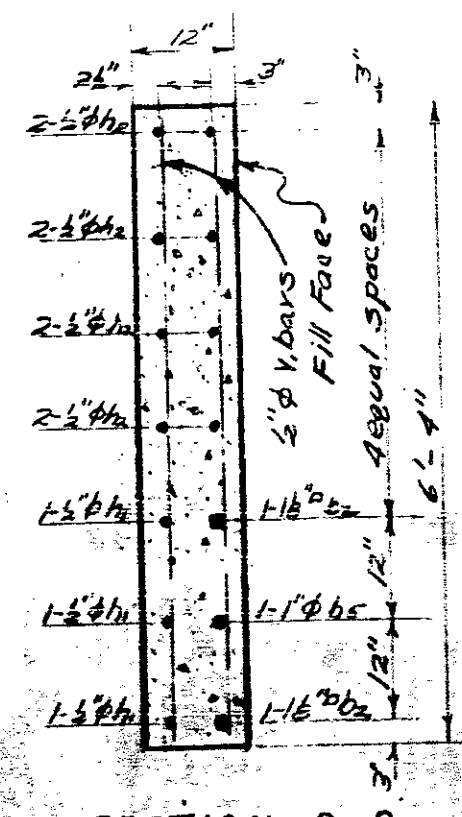
SECTION A-A



SECTION B-B



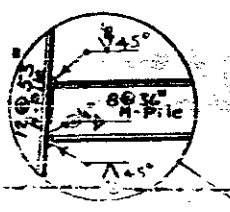
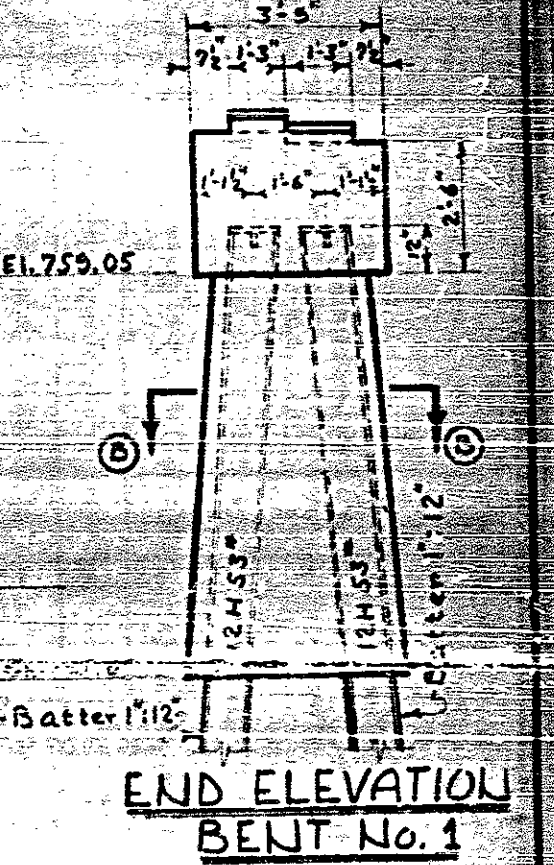
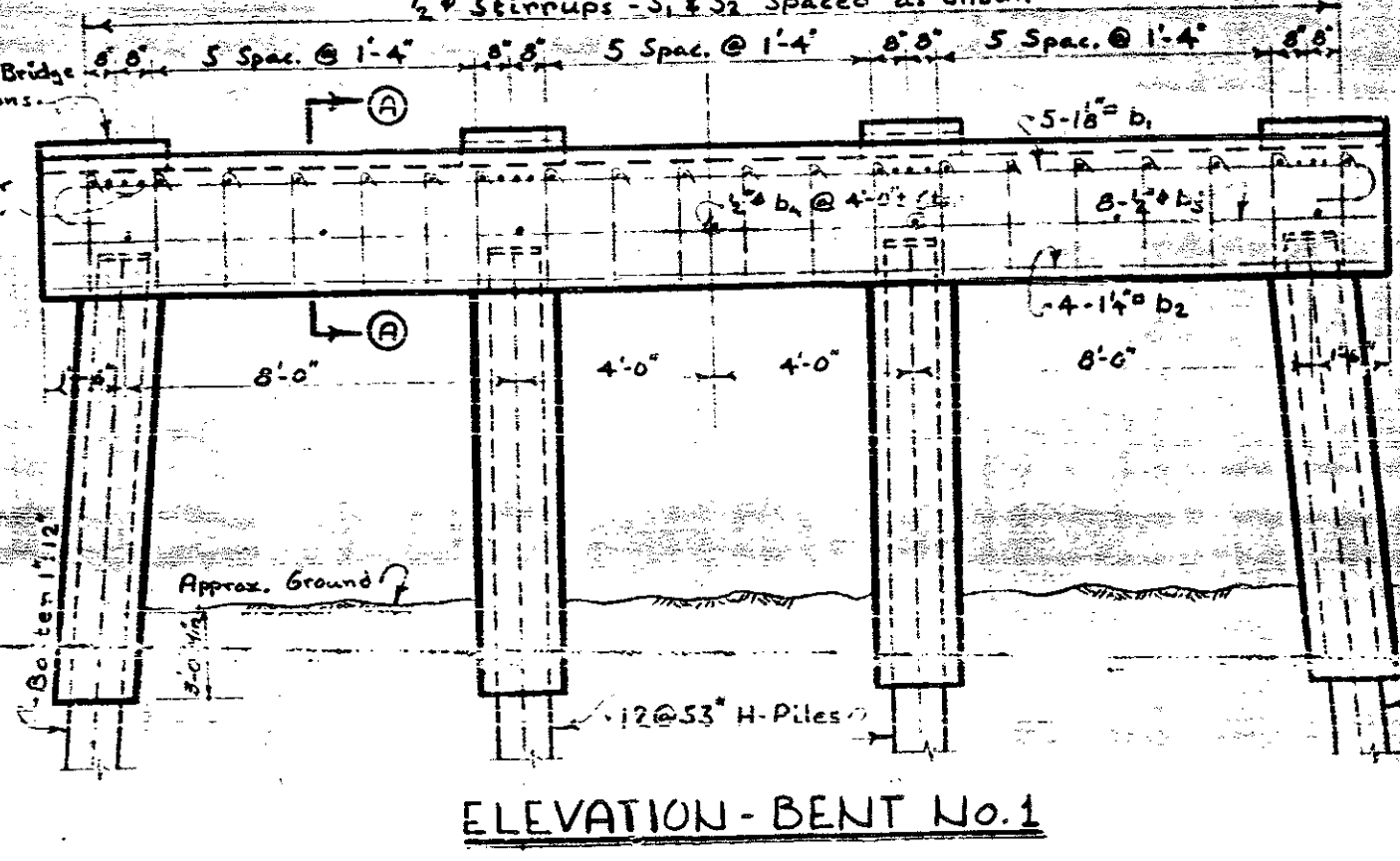
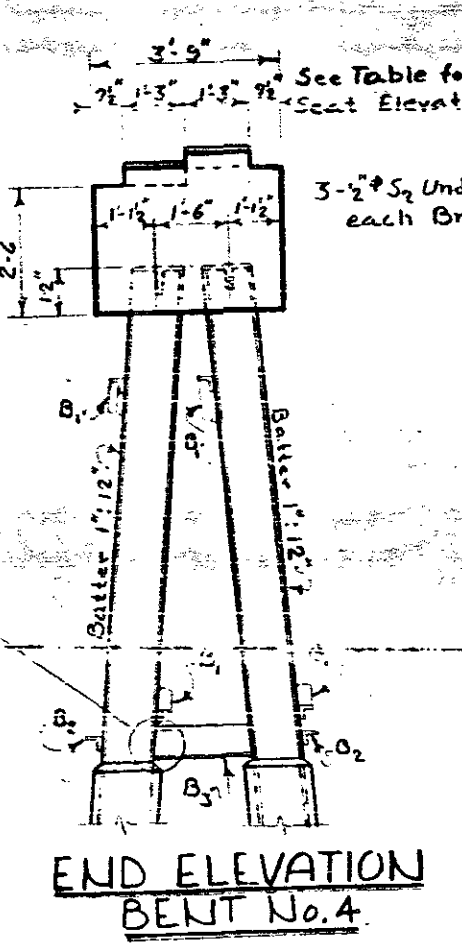
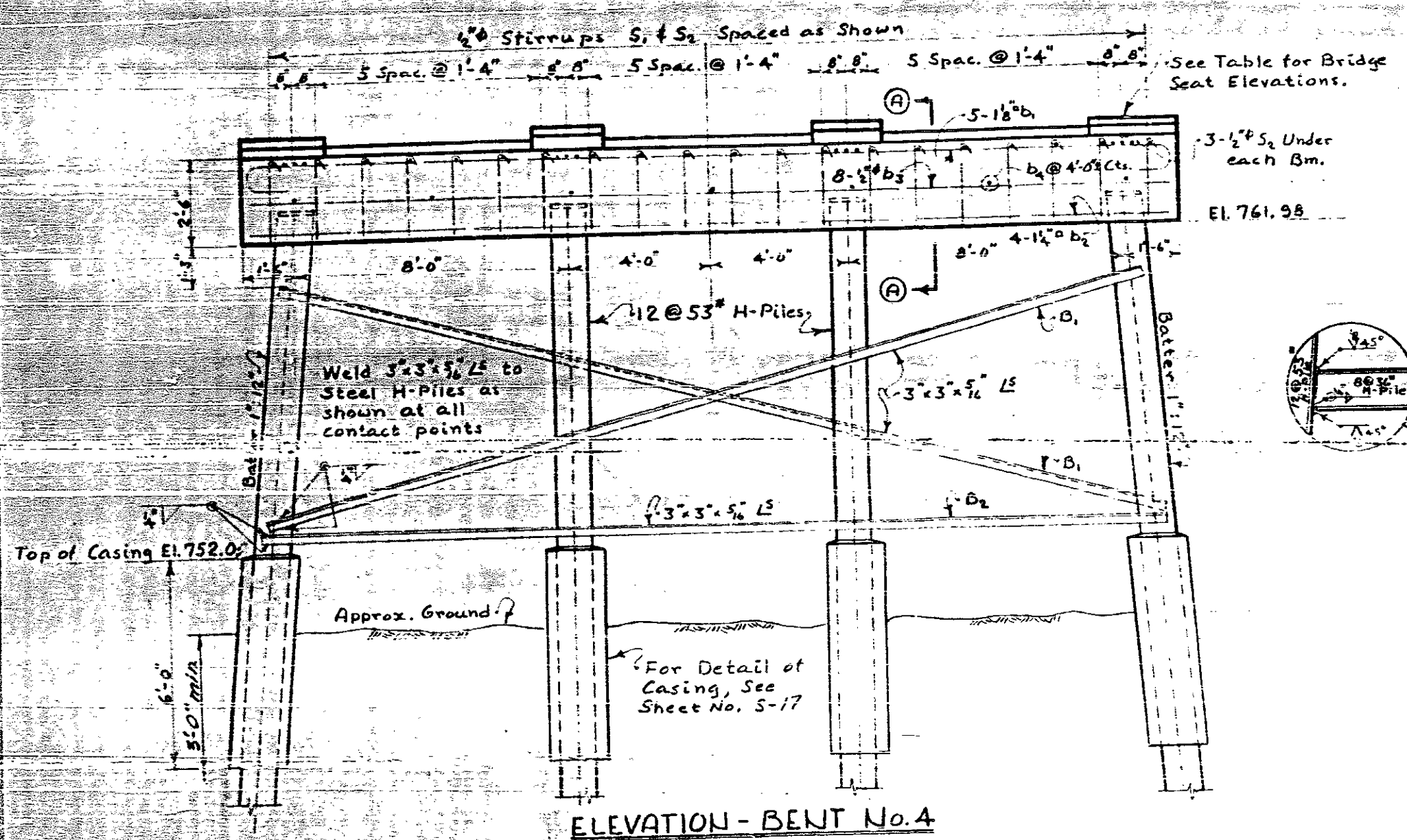
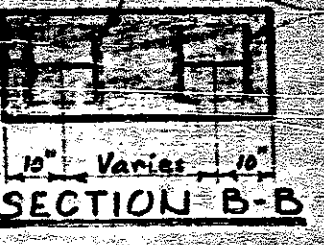
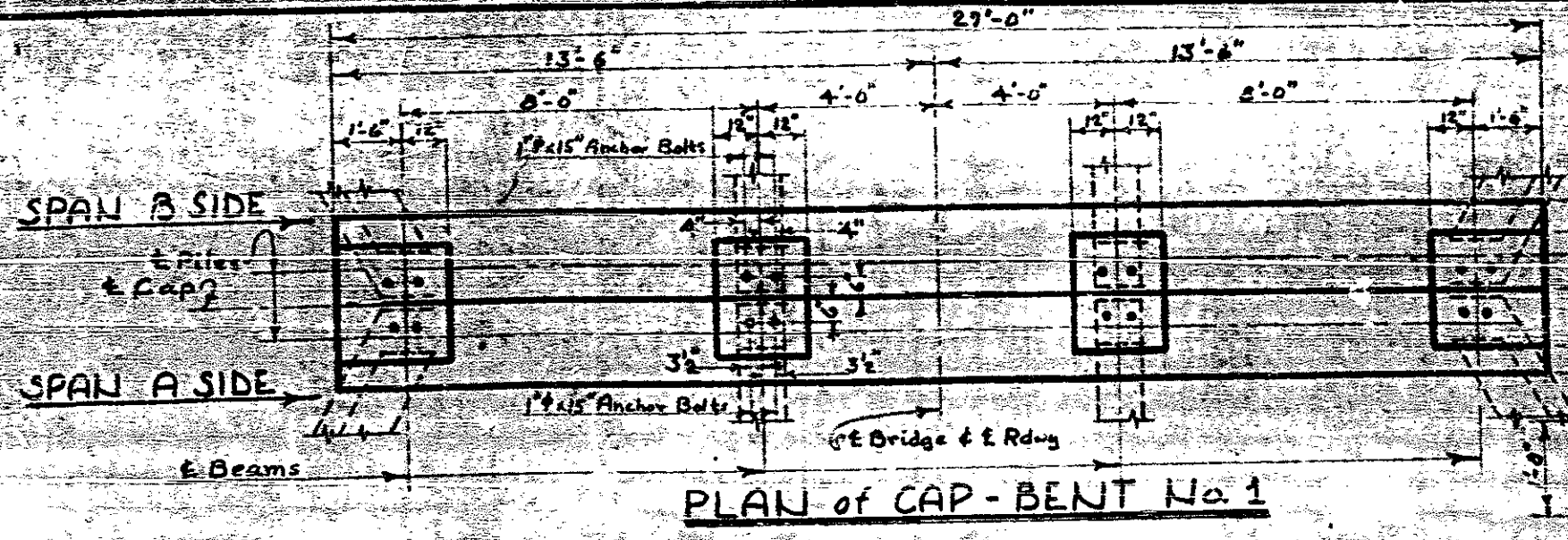
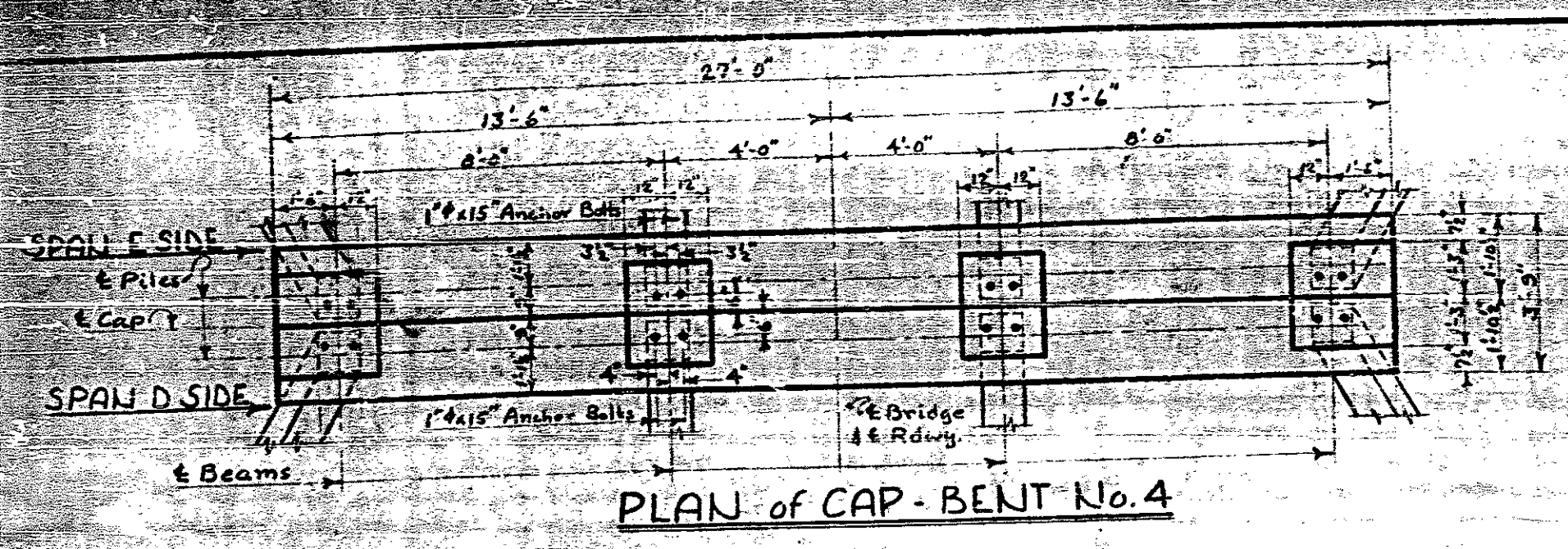
SECTION C-C



SECTION D-D

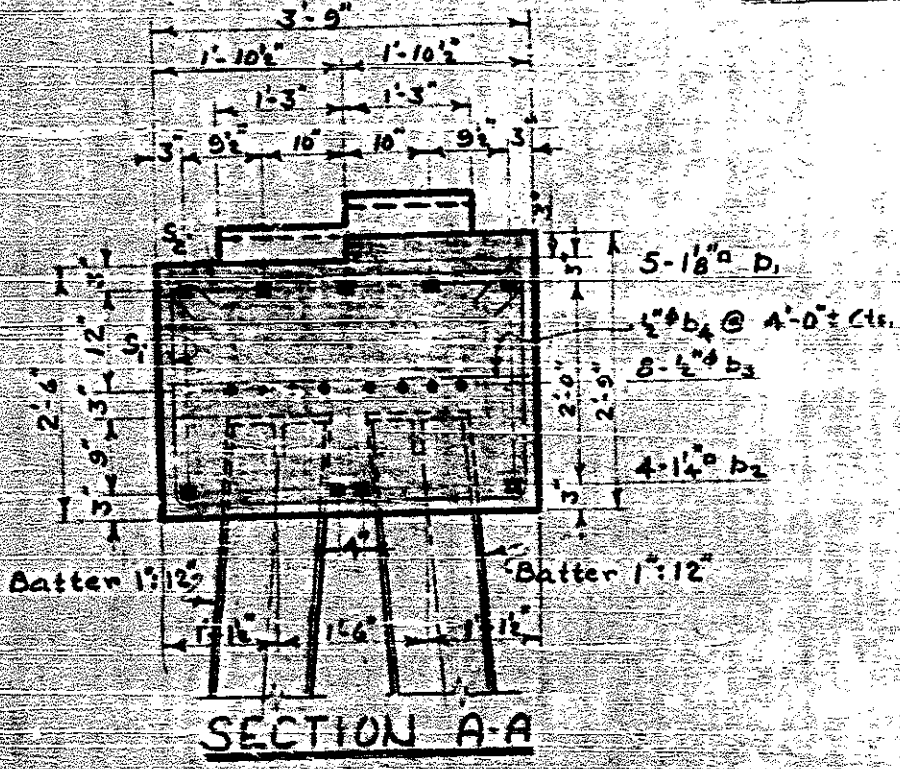
Revised to raise on Seat Elev. of E.B. No. 1 by 0.2' - ICE (6-20-55) C.A.L.B.
 Revised 9/23/54 to move bridge to Rt. Lane by WMA
 by R. W.

PROJECT NO. 6484
 F.A. Proj. F-693 (2)
 NOTE: Wire Mesh of approved type 12 ga. with 4"x8" openings or 13ga with 4"x4" openings. No other wire mesh, the only cost of same shall be included in the Unit Price Bid for covering Pav. Items.

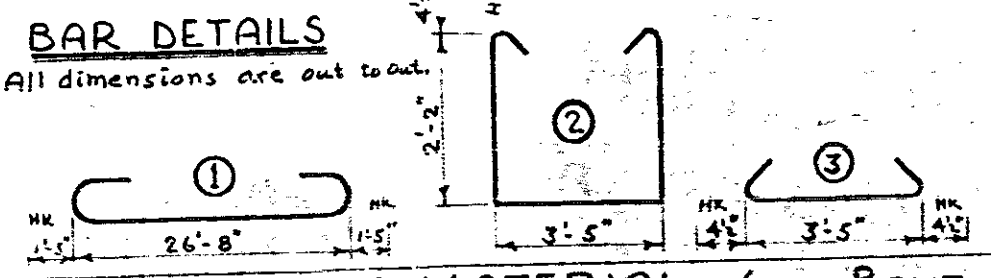


BRIDGE SEAT ELEVATIONS		
	EXT. BM.	INT. BM.
BENT No. 1		
SPAN A SIDE	762.25	762.35
SPAN B SIDE	762.02	762.12
BENT No. 4		
SPAN D SIDE	764.26	764.96
SPAN E SIDE	765.11	765.21

PROJECT NO. 6484
 LINCOLN COUNTY
 STATION: 63 + 17.87 Lane



NOTE: Longitudinal bracing to be @ 36" H-piling cut in field to fit batter of piles and welded to piles as shown.
 NOTE: Piles shall be driven to a minimum bearing capacity of 25 tons each for Bents 1 & 4.



Revised 9/23/54 to move structure to Rt. Lane by WMA by R/W
 Revised to raise Bn Seat Elev. Bent #1 by 8" 1/2 by R/W

BILL of MATERIAL for BENT No. 1 & BENT No. 4											
REINF. STEEL Bt. 1 or Bt. 4					STRUCT. STEEL BRACING (Bt. 4 Only)					TOTALS	
Bar No.	Size	Type	Length	Weight	Item No.	Size	Length	Weight	Reinf. Steel (Bt. 1 or 4) Lbs.	1571	
b ₁	5	1 1/2"	29'-6"	635					Class "A" Conc. (Bt. 1) Cu. Yds.	17.7	
b ₂	4	1 1/2"	26'-8"	567	Brace B ₁	4	3'-3 3/4" L ₅	26'-9"	Class "A" Conc. (Bt. 4) Cu. Yds.	14.9	
b ₃	16	1/2"	14'-0"	150	Brace B ₂	2	3'-3 3/4" L ₅	26'-2"	12 @ 53" Steel H-Piles (Bt. 1 or 4) No.	8	
b ₄	7	1/2"	3'-5"	16	Brace B ₃	4	8" @ 36" H-piles	2'-1"	12 @ 53" Steel H-Piles (Bt. 1) Lin. Ft.	280	
S ₁	20	1/2"	2	8'-6"					12 @ 53" Steel H-Piles (Bt. 4) Lin. Ft.	320	
S ₂	32	1/2"	3	4'-2"					Structural Steel (Bt. 4 Only) Lbs.	1260	
									Total	1271	

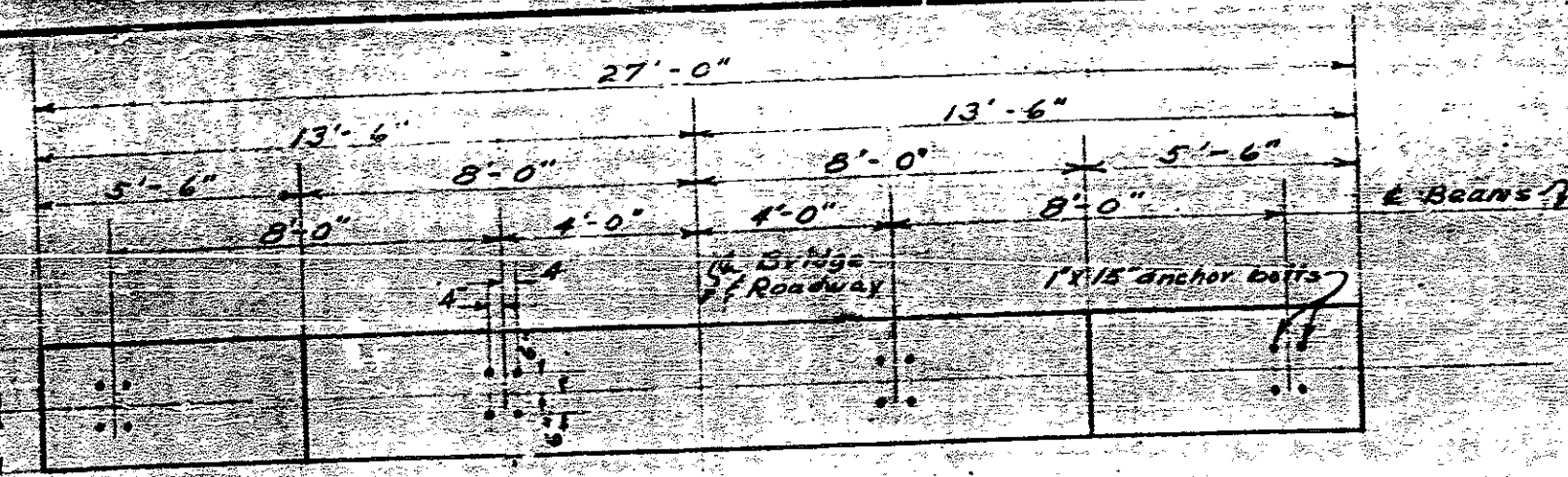
STATE OF NORTH CAROLINA
 STATE HIGHWAY AND
 PUBLIC WORKS COMMISSION
 BALDWIN

BENTS No. 1 & No. 4

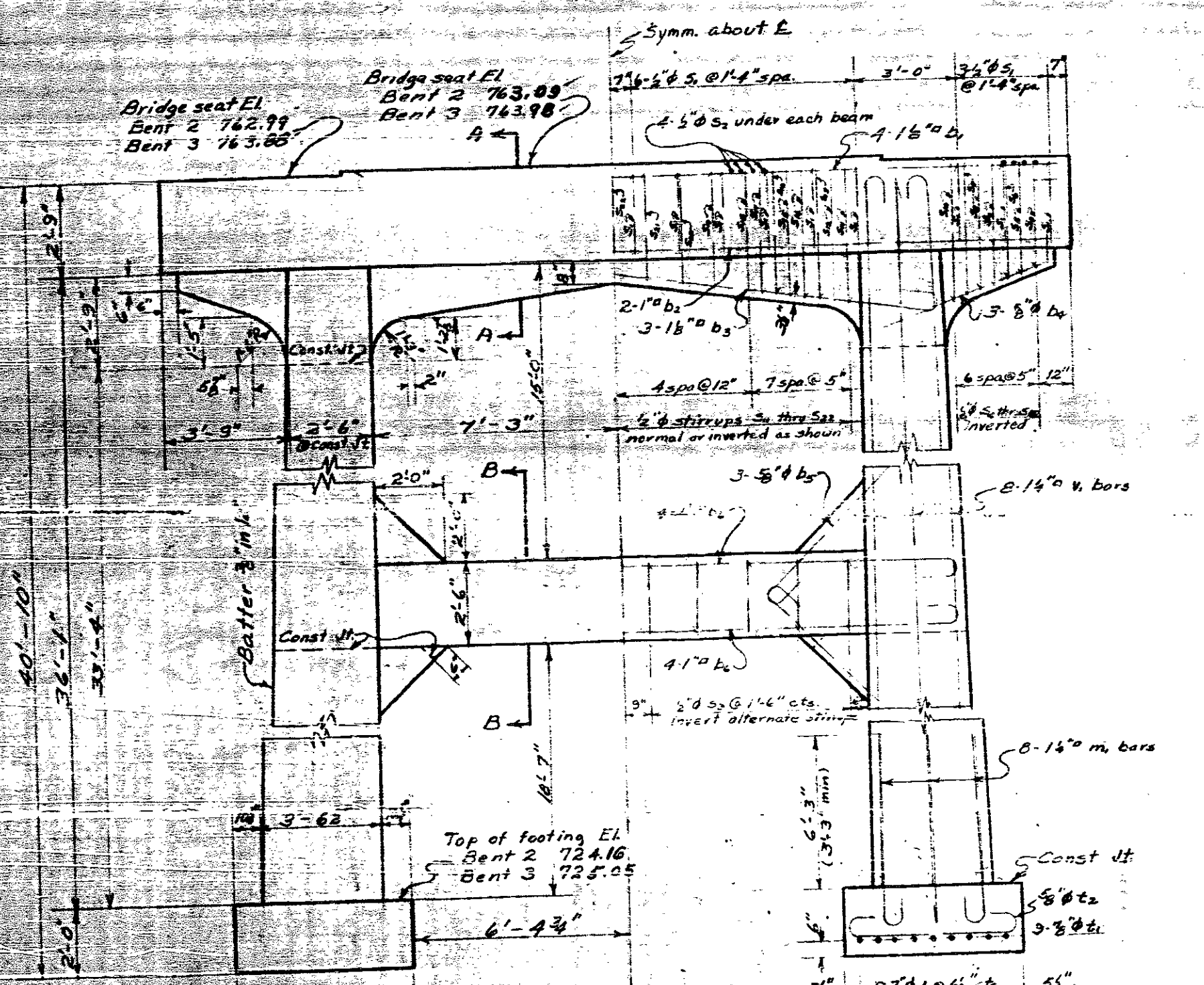
JULY 1954

APPROVED BY: [Signature]
 DATE: 7-22-54

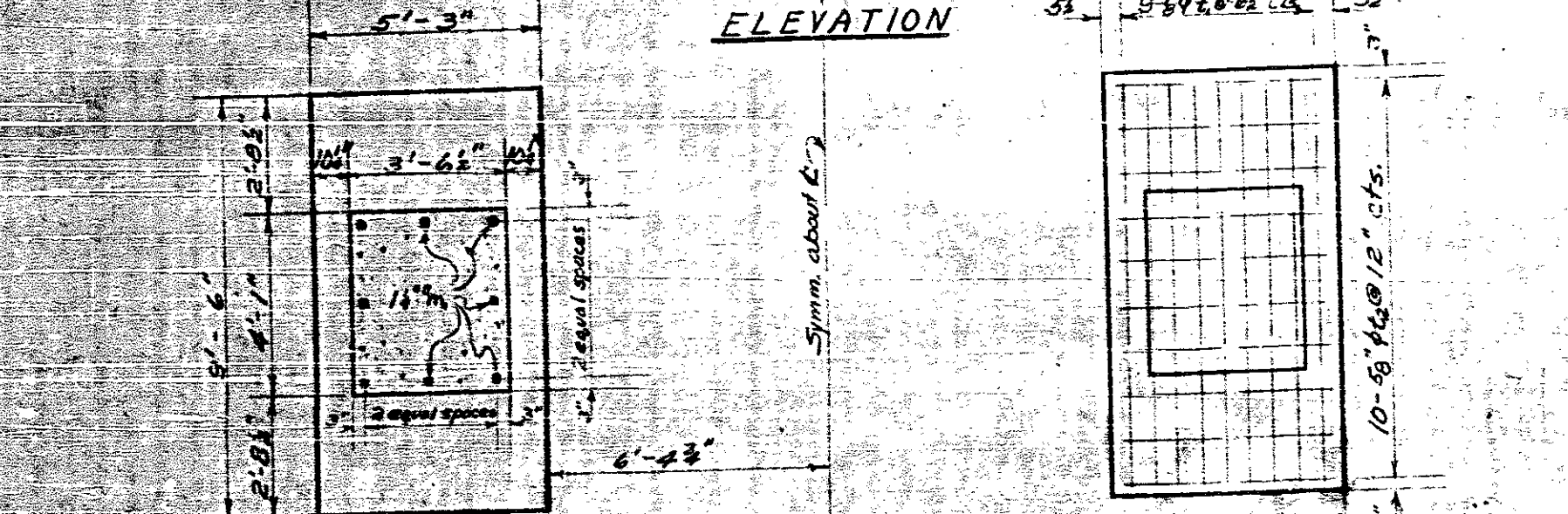
SPECIAL PERMITS
 DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 DATE: July 1954



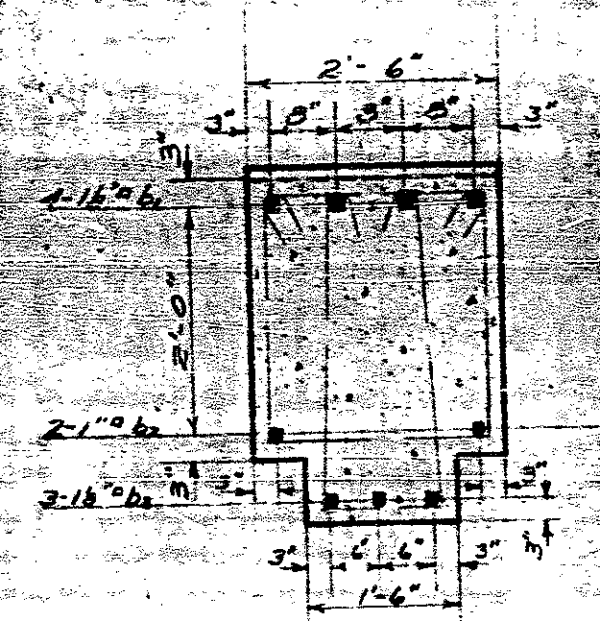
PLAN BENT NO. 2 & BENT NO. 3



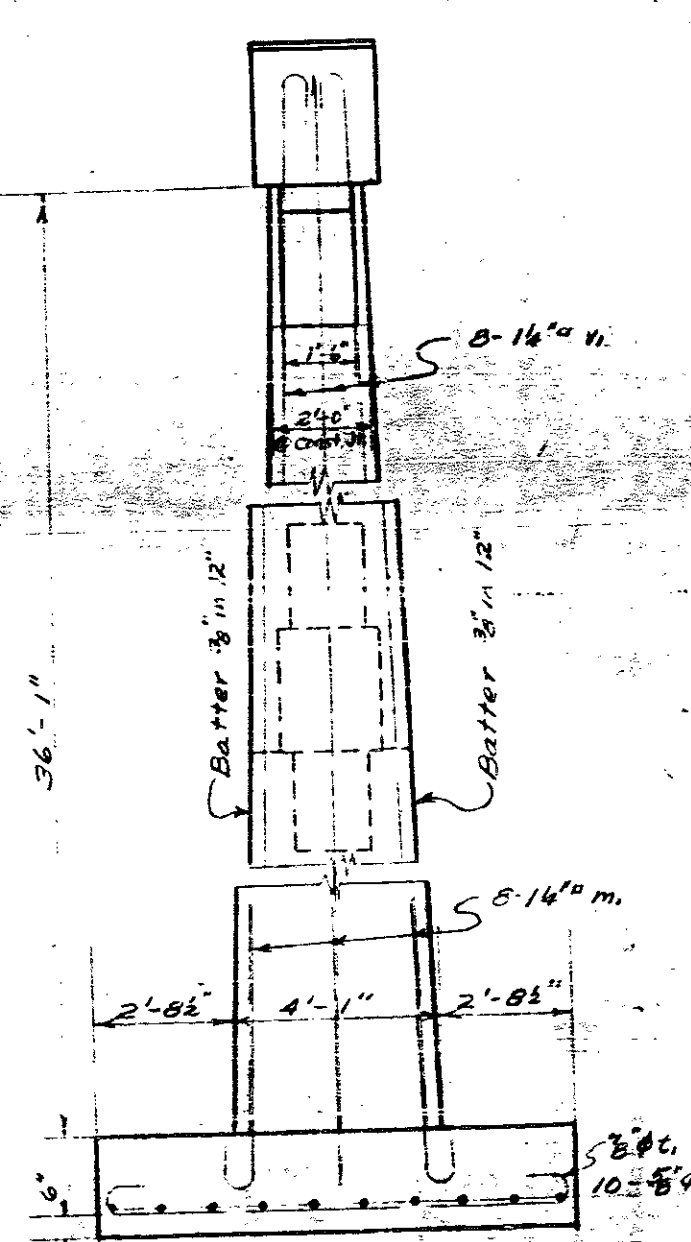
ELEVATION



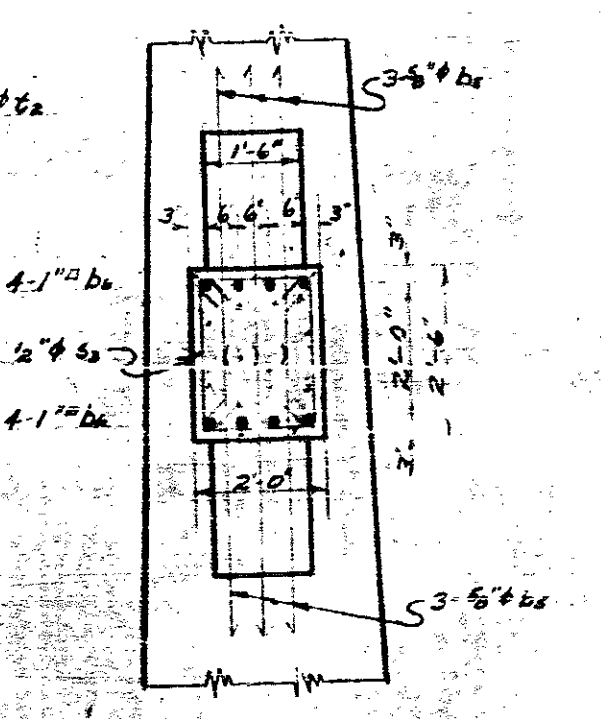
PLAN OF FOOTINGS



SECTION A-A



END ELEVATION



SECTION B-B

BILL OF MATERIAL ONE BENT
TWO BENTS REQUIRED

BAR TYPES	Bar No.	Size	Type	Length	Weight
b ₁	4	1 1/2"	1	29'-6"	500
b ₂	2	1 1/2"	5	26'-9"	181
b ₃	3	1 1/2"	5	26'-10"	259
b ₄	6	5/8"	4	7'-6"	47
b ₅	12	5/8"	1	7'-0"	88
b ₆	8	1"	1	19'-6"	530
z	18	3/8"	1	10'-9"	396
z	20	3/8"	1	6'-0"	125
s	18	5/8"	6	7'-5"	93
s	16	5/8"	5	2'-11"	51
s	10	5/8"	4	6'-9"	45
s	2	5/8"	6	5'-0"	11
s	2	5/8"	6	8'-5"	11
s	2	5/8"	6	8'-9"	12
s	2	5/8"	6	9'-0"	12
s	2	5/8"	6	3'-4"	12
s	2	5/8"	6	9'-7"	13
s	2	5/8"	6	9'-11"	13
s	2	5/8"	6	10'-0"	13
s	2	5/8"	6	9'-0"	13
s	2	5/8"	6	8'-8"	13
s	2	5/8"	6	9'-7"	13
s	2	5/8"	6	9'-8"	13
s	2	5/8"	6	8'-5"	13
s	2	5/8"	6	8'-4"	12
s	2	5/8"	6	9'-2"	12
s	2	5/8"	6	8'-8"	12
s	2	5/8"	6	8'-8"	12
s	2	5/8"	6	8'-5"	11
s	1	5/8"	6	8'-1"	5
v	16	1 1/2"	2	40'-0"	3400
m	16	1 1/2"	2	9'-2"	779

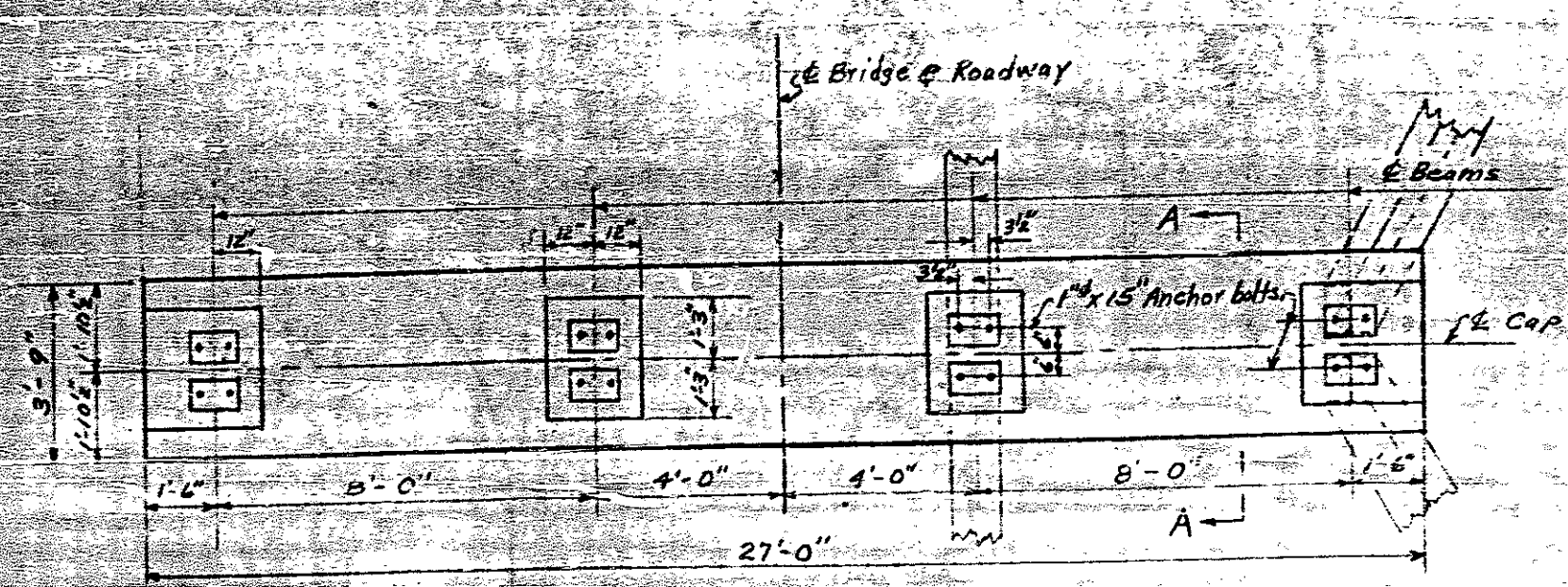
Reinforcing steel, Lbs 6718
 Class 'A' Concrete, Cu. Yds. 48.0
 Total Concrete Bent 2 55.02 5147
 Total Concrete Bent 3 47.87 4687

PROJECT NO. 6489
 LINCOLN COUNTY
 STATION: 63+17.5 R.L. Lane
 BENTS NO. 2 & NO. 3

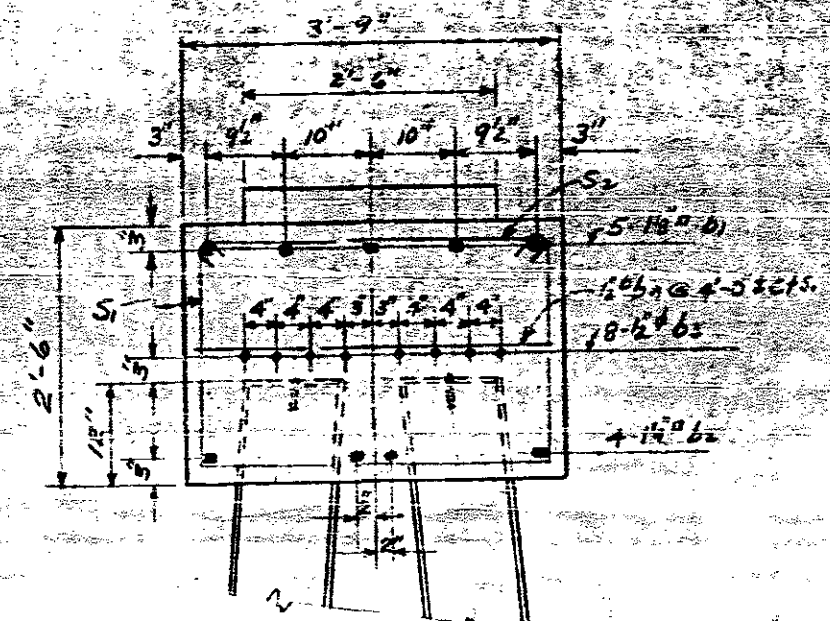
STATE OF NORTH CAROLINA
 STATE HIGHWAY AND
 PUBLIC WORKS COMMISSION
 SUBSTRUCTURE
 JULY, 1954

Revised to raise Elevations of Bent No. 2 by 10" / A.L.B.
 Revised 7/23/54 to move structure to R.L. Lane by W.M.A. & P.W.

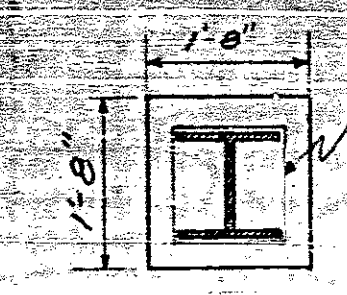
APPROVED BY: [Signature]
 DATE: July, 1954
 TRACED BY: [Signature]
 DATE: Aug. 1954



PLAN OF CAP
 BENT #5 OR #6



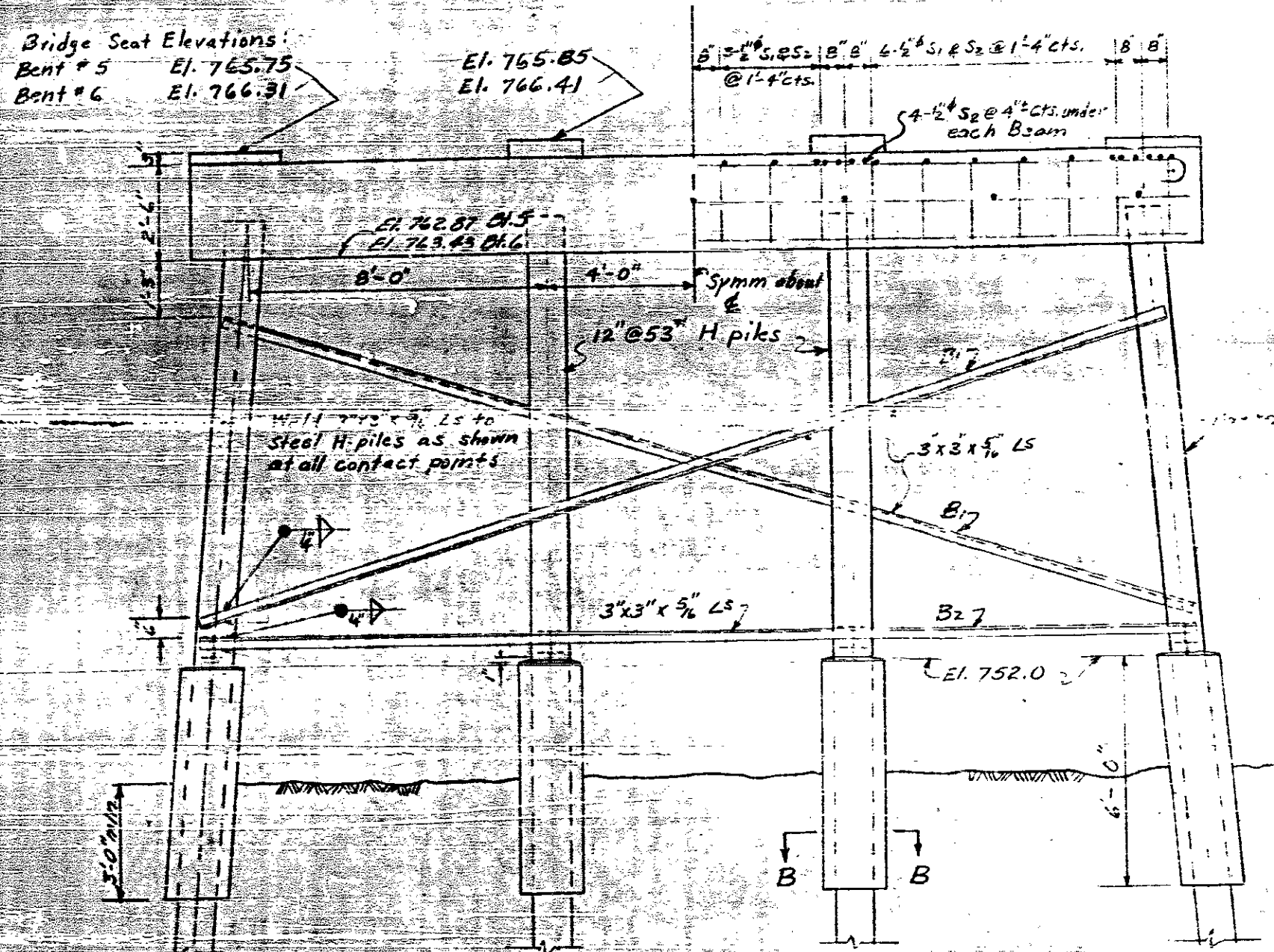
SECTION A-A



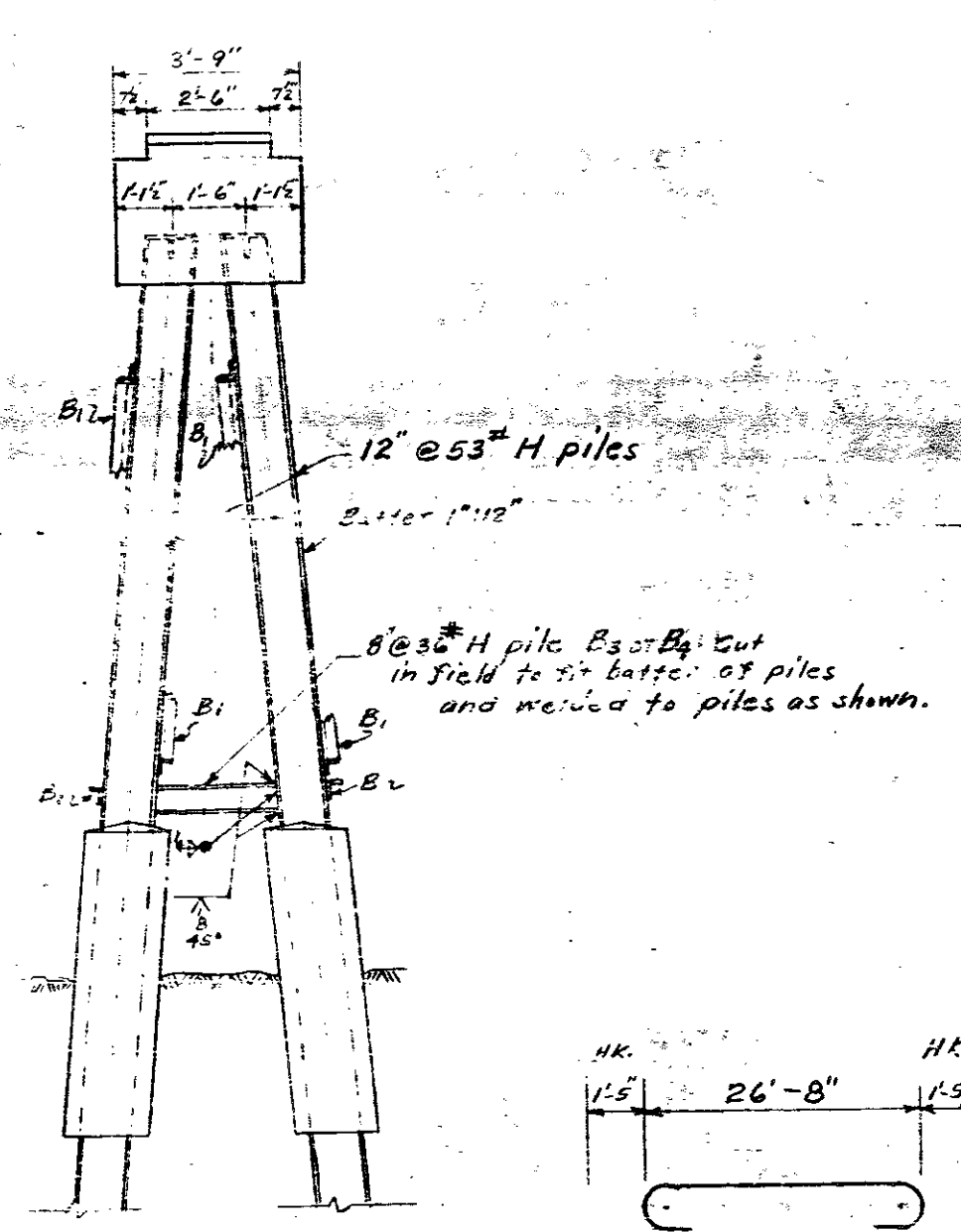
SECTION B-B

NOTE: Wire Mesh of Approved Type.

Note: Concrete displaced by piles has been deducted.

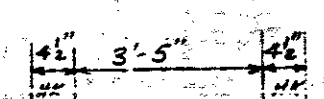
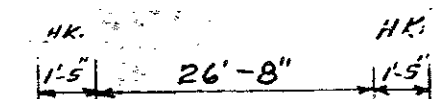


ELEVATION



END ELEVATION

BILL OF MATERIAL FOR ONE BENT-2 REQ'D.				
Bar No.	Size	Type	Length	Weight
41	5	180	29'-6"	635
42	4	140	26'-8"	567
43	16	4"	14'-0"	150
44	7	28	3'-5"	76
S1	20	12"	2	114
S2	20	24"	3	155
Reinforcing Steel				Lbs. 1582
Class "A" Concrete				Cu. Yds. * 14.4
12" #53 Steel H-pile				No. 8
12" #53 Steel H-pile Bent 5				308.83
" " " " Bent 6				280.75
STRUCTURAL STEEL BRACES				
Item	No.	Size	Length	Weight
Brace B1	4	3"x3"x5/8" L	27'-6"	672
Brace B2	2	3"x3"x5/8" L	26'-9"	326
Brace B3	2	8"x8" H-pile	2'-5"	174
Brace B4	2	8"x8" H-pile	2'-6"	183
Bent # 5 total weight				Lbs. 1165
Bent # 6 total weight				Lbs. 1125



BAR DETAIL

All dimensions are out to out.

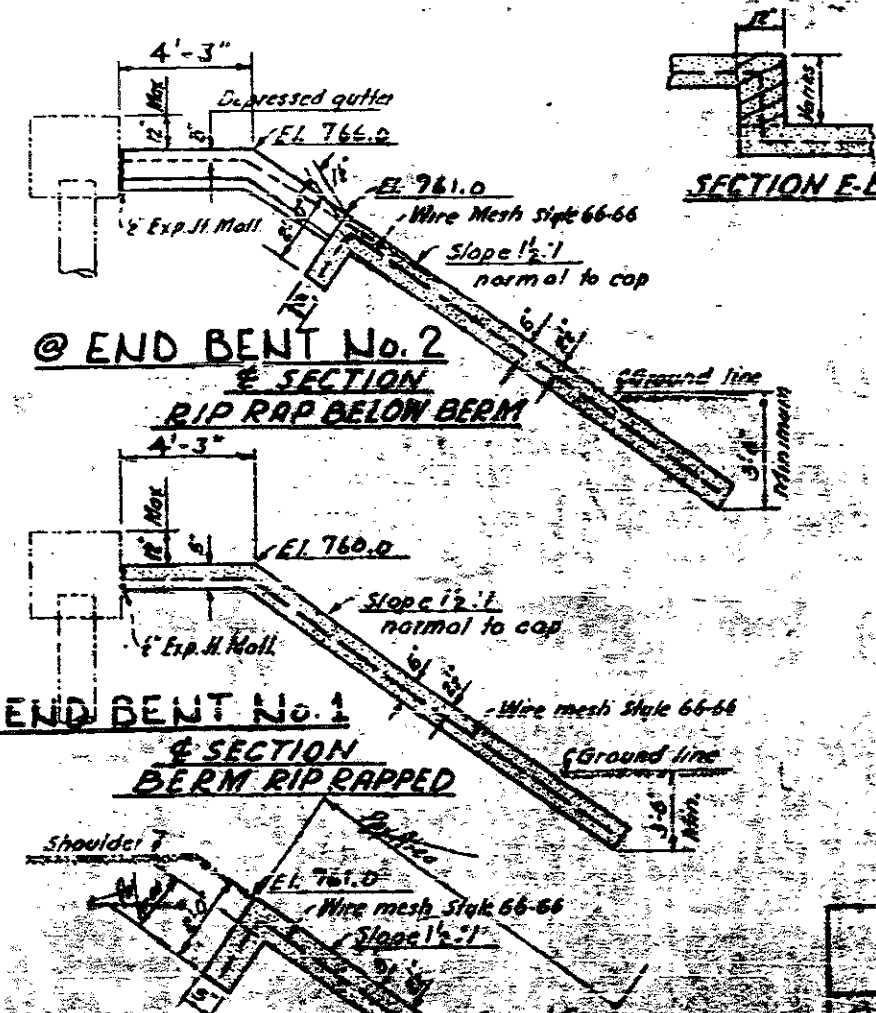
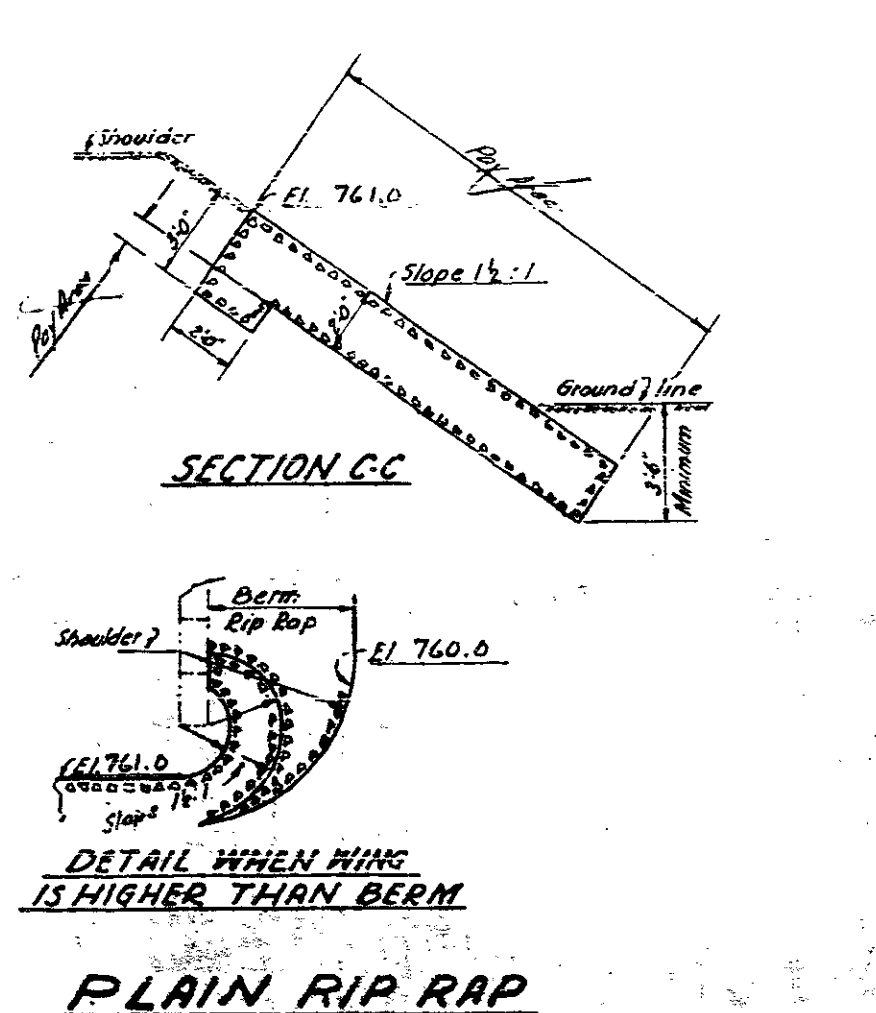
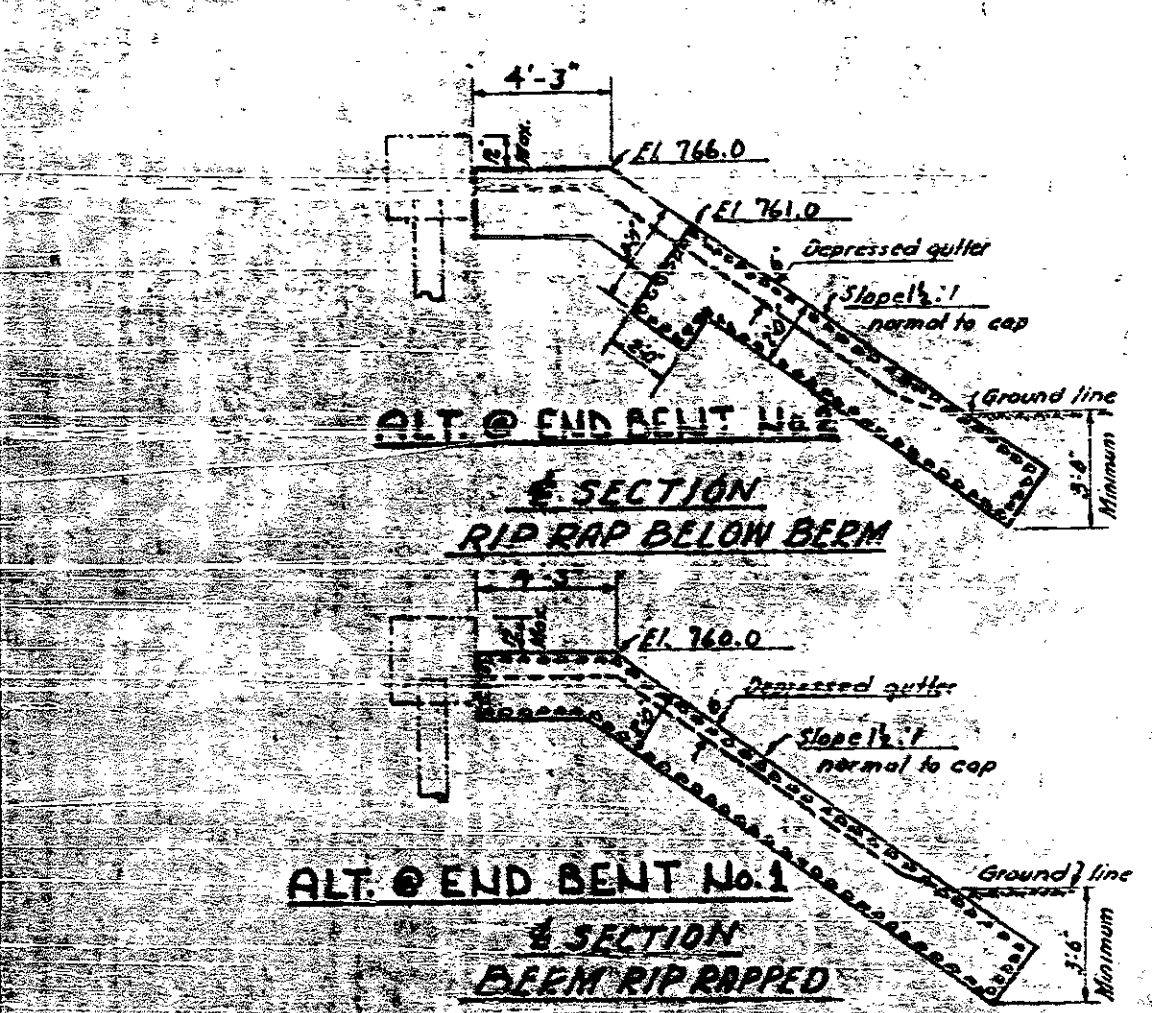
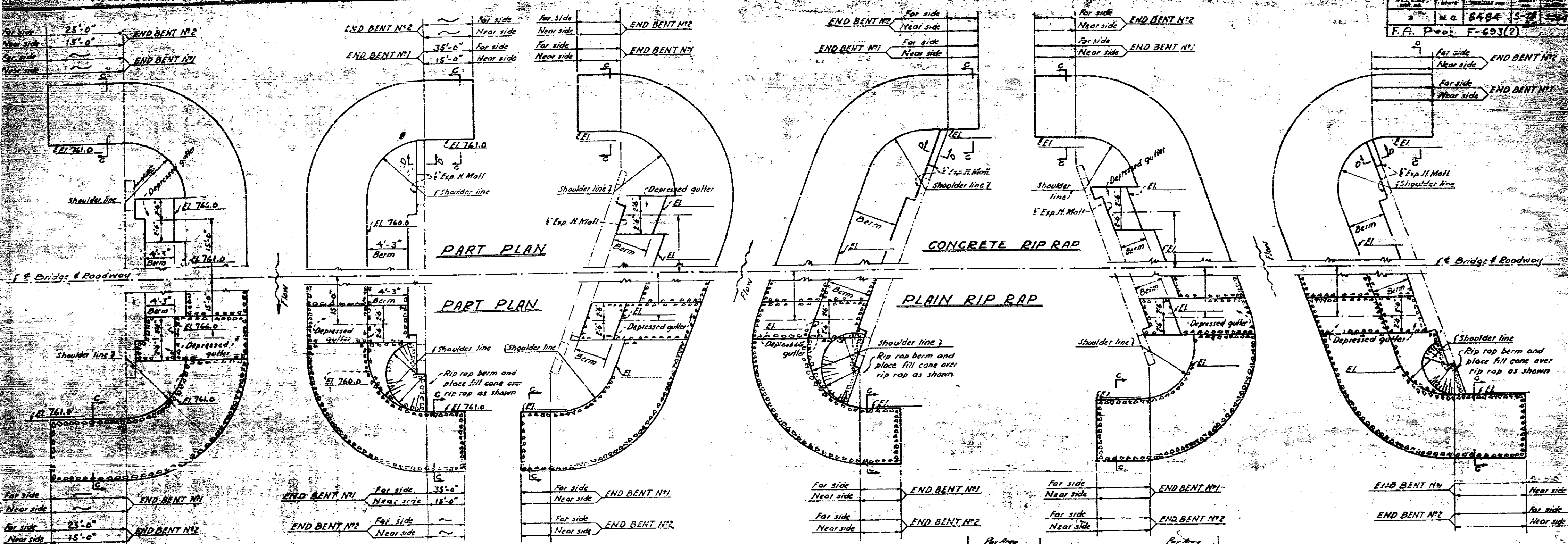
Note: Piles shall be driven to a minimum bearing capacity of 23 tons each.

PROJECT NO. 6484
 LINCOLN COUNTY
 STATION: 63+17.8 Rhone

STATE OF NORTH CAROLINA STATE HIGHWAY AND PUBLIC WORKS COMMISSION	
SUBSTRUCTURE BENTS # 5 & 6 JULY 1954	
DESIGNED BY W. M. A.	DATE July 1954
APPROVED BY W. M. A.	DATE 7/23/54

Revised 7/23/54 to move structure to Rt Lane by W. M. A. by ROW

DESIGNED BY W. M. A.	DATE July 1954
APPROVED BY W. M. A.	DATE 7/23/54



NOTE
 CONCRETE RIP RAP shall be Class B Concrete using Std. size No. 3 coarse aggregate. Wire mesh reinforcing to be Style 66-66-60 wide. Adjacent runs of wire mesh to lap at least 6". Concrete rip rap to be poured in alternate 4' x 5' strips as shown in Pouring Detail.
 TOE WALLS shall be constructed at ends of rip rap similar to that shown for the top of the rip rap.
 DEPRESSED GUTTERS to be formed as indicated for type of rip rap specified. Gutter area in Plain Rip Rap to be grouted with 1:2 cement mortar. All work and material incidental to forming and grading shall be included in the unit price bid for Rip Rap.
 Note: Concrete in walls at end bents wings as indicated by arrows and labels in sections D-D and E-E will not be measured or paid for as a separate item on the entire cost of work shall be included in the price bid per Sq. Yd. for Conc. rip rap.

PROJECT NO. 6484
LINCOLN COUNTY
STATION: 63+17.41

POURING DETAIL
 Pour a 4' strip first. Strip widths may vary in curved portion.

ESTIMATED QUANTITIES

Bridge #	Plain Rip Rap Class 2	Concrete Rip Rap	Wire Mesh 60" Wide Repeating Unit
Sta. 63+17	1205	445	1500

STANDARD RIP RAP DETAILS
 AUGUST 1955

SPECIAL
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]