

**DESIGN DATA**

Specifications	A.A.S.H.O. (M44)
Assumed Live Load	14-15-44
Impact Allowance	See Specs.
Stress in Extreme Fibers of Structural Steel	18000 lbs. per sq. in.
Tension in Web Reinforcement	16000
Reinforcing Steel in Tension	18000
Concrete in Compression	1000
Concrete in Shear	90
Equivalent Fluid Pressure of Earth	30

Note: This portion of Rip Rap shall be depressed 6" to form a gutter and seat on ground with 1/3 cement mortar. All work and material incidental to this shall be included in the unit price bid for "Plain Rip Rap". Depressed gutters are to be extended to face of End Bents.

**TOTAL BILL OF MATERIAL**

Class of Work	Qty.	Unit	Approx. Lbs.	No.	Approx. Lbs.	Method of Material		Plain Rip Rap Class 2	Concrete Rip Rap	
						Dry	Wet			
Superstructure	438.71	105,616	3,560,000							
End Bent #1	14.3	2,127		6	228	9.0	70	28	590	640
Bent #2	41.0	6,278					75	28		
Bent #3	41.0	6,278					75	28		
Bent #4	41.0	6,278					75	28		
Bent #5	39.5	6,148					75	28		
Bent #6	39.5	6,148					75	28		
Bent #7	39.5	6,148					75	28		
Bent #8	39.5	6,148					75	28		
End Bent #2	14.3	2,127		6	228	9.0	55	20	490	535
<b>TOTAL</b>	<b>828.8</b>	<b>16,5724</b>	<b>3,560,000</b>	<b>12</b>	<b>458</b>	<b>18.0</b>	<b>200</b>	<b>130</b>	<b>1080</b>	<b>1175</b>

**GENERAL NOTE**

**CONCRETE:** Class "A" concrete using 3/4" size No. 3 coarse aggregate shall be used throughout. Slabs and curbs shall be poured in one continuous operation, allowing no time for the initial set to take place between them. No construction joints other than those shown on the plans, will be permitted. All concrete except that in handrails, shall be compacted by mechanical vibration. See Specifications.

**CHAMFER:** All exposed corners of concrete below top of curbs shall be chamfered 1" except expansion joint corners which shall be chamfered 3/4". Corners of handrails and posts shall be chamfered 3/4".

**SURFACE FINISH:** Concrete surfaces shall be finished in accordance with the Specifications, except that the substructure shall be given a Class 2 surface finish.

**REINFORCING STEEL:** All reinforcing steel shall be deformed bar. All dimensions relative to reinforcement are to centers of bars. No splices of bars other than those shown on plans, will be permitted. Where splicing of reinforcement is necessary, bars are to be lapped 45 diameters. Reinforcing steel shall be securely held in correct position.

**STRUCTURAL STEEL:** Structural steel shall be given one shop coat and one field coat of red lead, and lastly, two field coats of aluminum paint. See Specifications. Detail drawings for structural steel shall be submitted to the Bridge Engineer for approval. No unchecked drawings will be accepted.

**EXPANSION JOINT MATERIAL:** Expansion joint material may be rubber composed or cork conforming to the requirements of A.A.S.H.O. Specification MSB.

**NAME PLATES:** Two name plates will be required, one shall be placed on each right hand and post approaching the bridge.

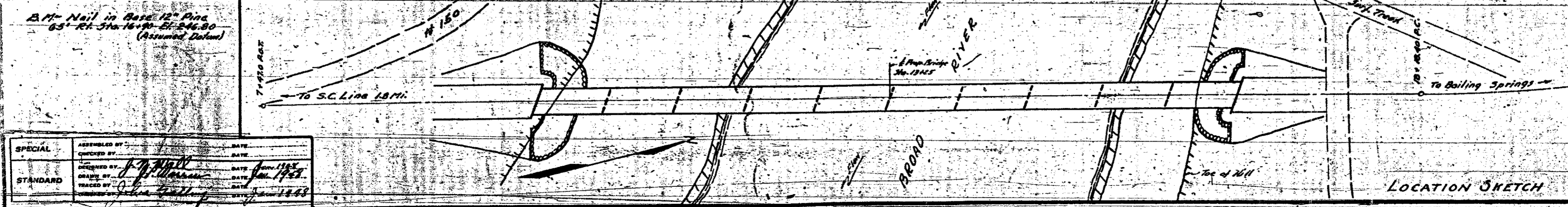
**EXCAVATION & FOUNDATION DATA:** The excavation and foundation data, and all elevations of ground line and water surface given, are believed to be correct and are furnished for the convenience of bidders. The State Highway & Public Works Comm. assumes no responsibility for not guaranteeing or correct any of the information given. See Specs.

**MATERIAL & WORKMANSHIP:** All material and workmanship shall be in accordance with the Specifications of the North Carolina State Highway & Public Works Commission.

**TEST PILES:** Test piles will not be required. Order list for piles to be based on piles 30' long.

**MAINTENANCE & REMOVAL OF EXISTING STRUCTURE:** Sta. 13+25: After serving as a temporary crossing the existing structure, located 200' upstream, consisting of 1 @ 35' I-Beam, 7 @ 40' I-Beam, 2 @ 150' thru trusses and 1 @ 50' low truss, with 11 Ribs and timber floor on concrete and bent, 7 steel bents-3 Concrete bents and Concrete Abutment shall be removed as follows: Superstructure completely. Steel bents and concrete piers to an elevation of least 10' below natural ground line or water surface. End bent and Abutment to be left in place. See Specs.

**OPTIONAL RIVETED CONNECTIONS FOR COVER PLATES, STIFFENERS AND DIAPHRAGMS:** The Contractor may at his option substitute riveted connections for the welded connections shown on the plans for cover plates, stiffeners and diaphragms or for any one of these items. See Special Provisions.



**SPECIAL**

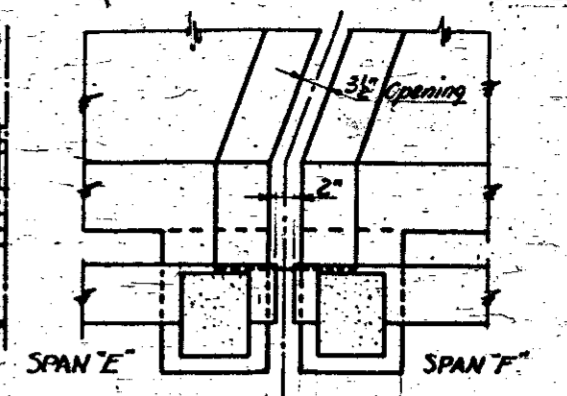
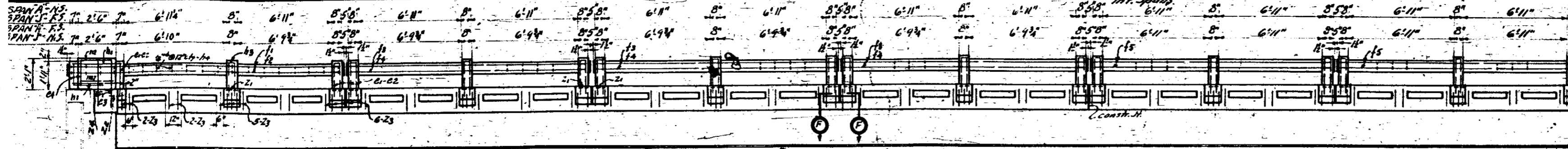
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CHECKED BY	DATE
DESIGNED BY	DATE
DRAWN BY	DATE
TRACED BY	DATE

STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND  
 PUBLIC WORKS COMMISSION  
 GENERAL DRAWING  
 FOR  
 5 @ 65'-0" CONTINUOUS SPANS  
 BRIDGE OVER BROAD RIVER  
 JAN. 1948

PROJECT NO. 8214  
 CLEVELAND COUNTY  
 STATION: 13+25

APPROVED BY: W. H. ...

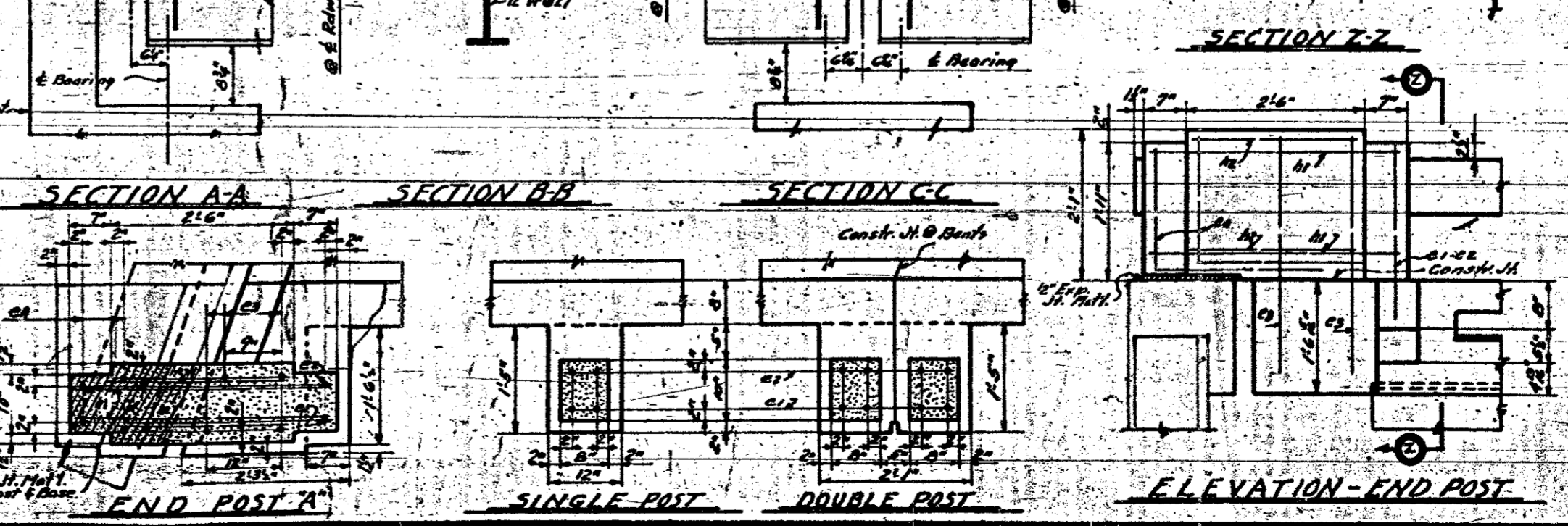
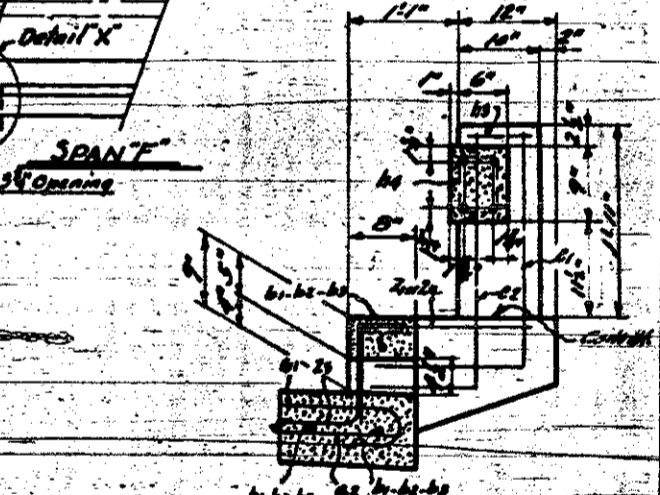
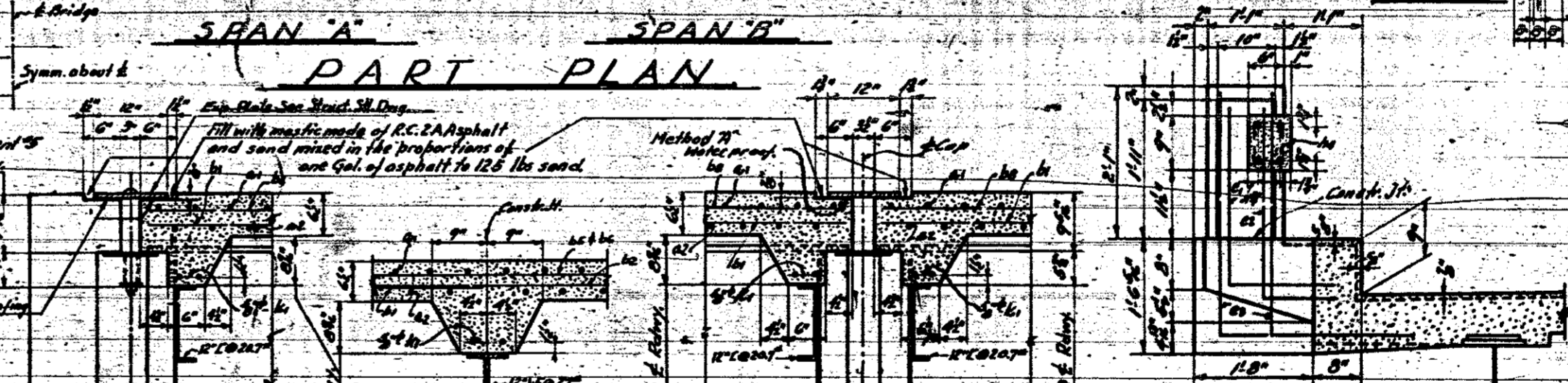
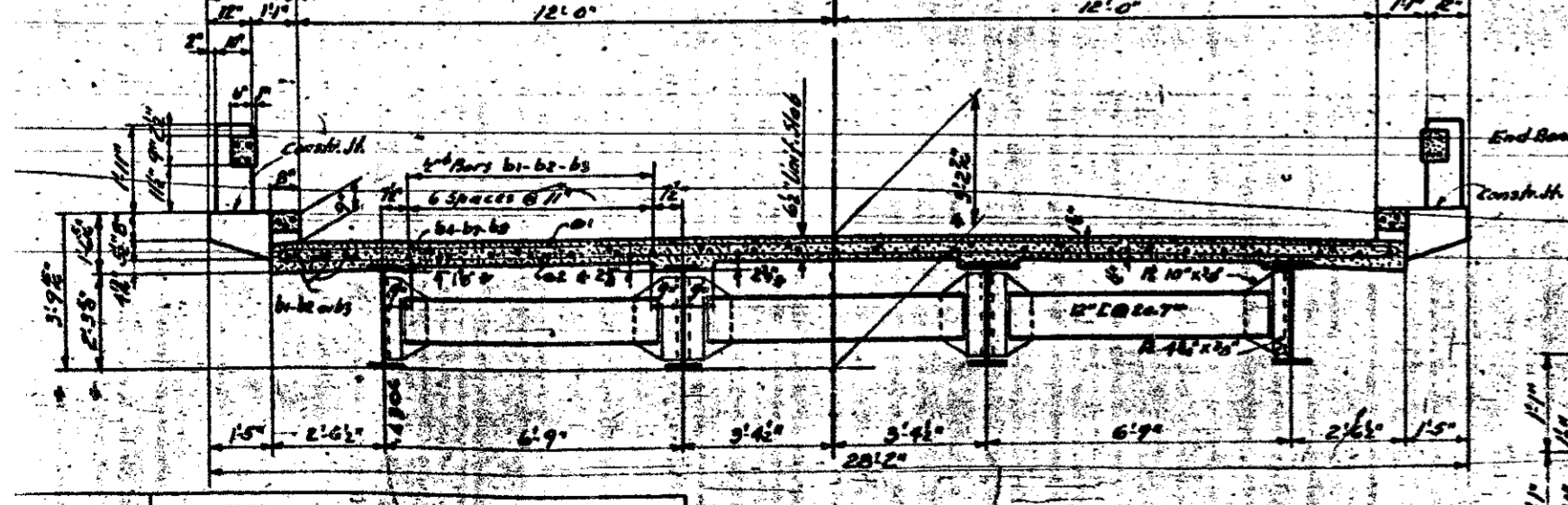
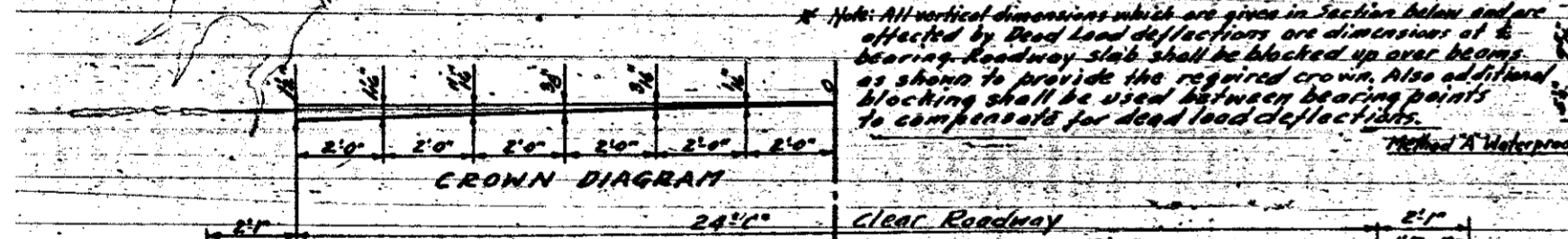
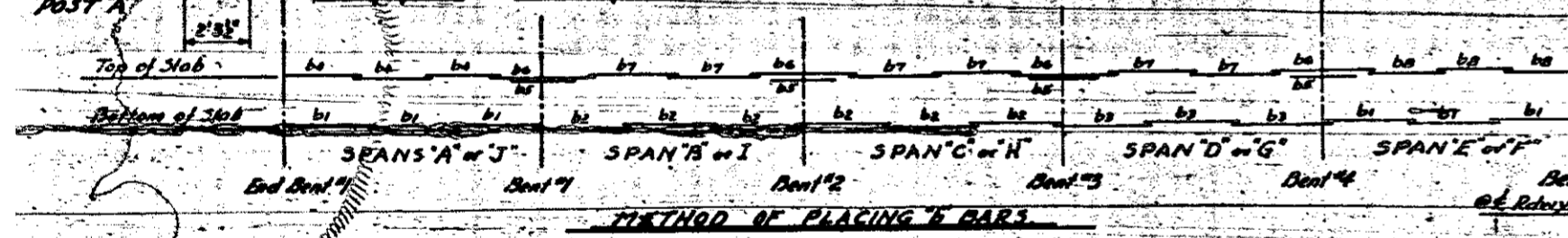
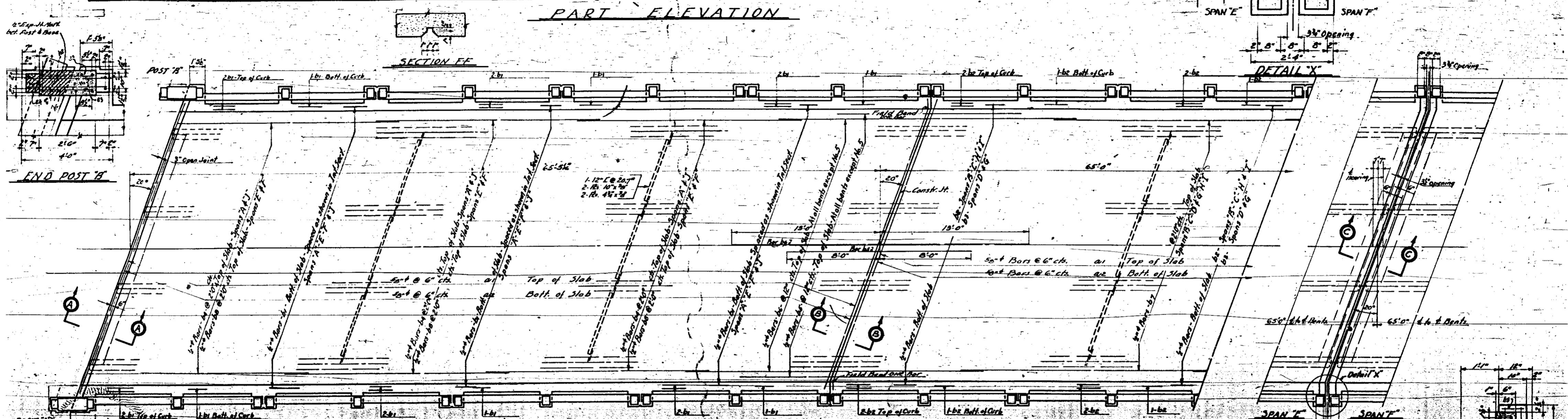




FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
3	N. C.	8214	10	10

FAP 10 5-249(1)

Note: For Design Data and General Notes see Sheet No. 5-1



PROJECT NO. 8214  
CLEVELAND COUNTY  
STATION: 13+25

STATE OF NORTH CAROLINA  
STATE HIGHWAY AND  
PUBLIC WORKS COMMISSION  
SUPERSTRUCTURE DETAILS  
FOR  
5'6 1/2" CONTINUOUS SPANS  
BRIDGE OVER BROAD RIVER  
JAN. 1948

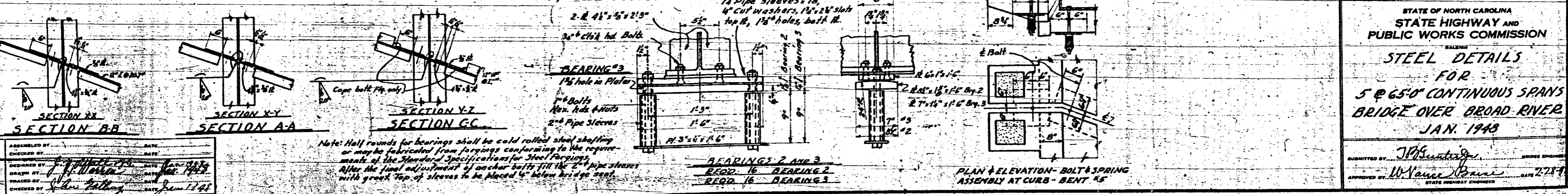
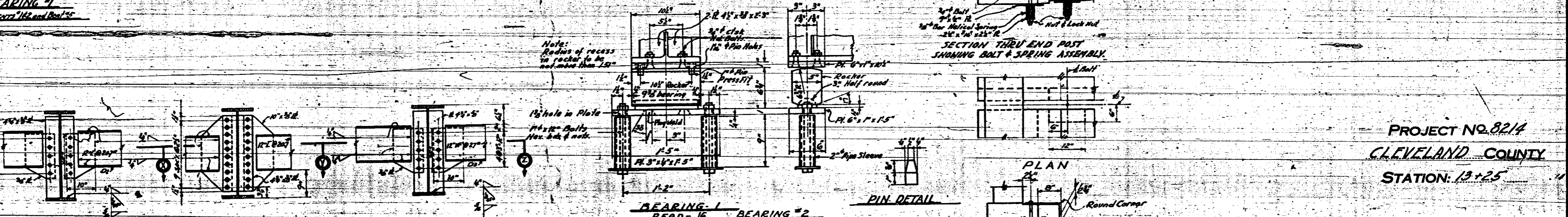
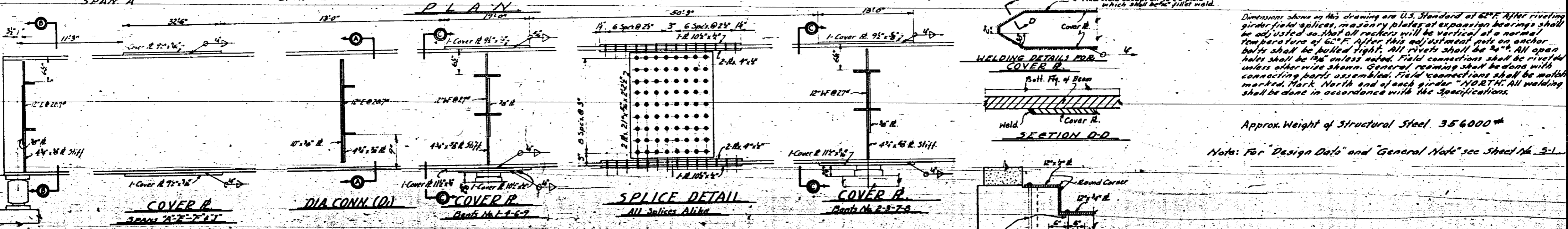
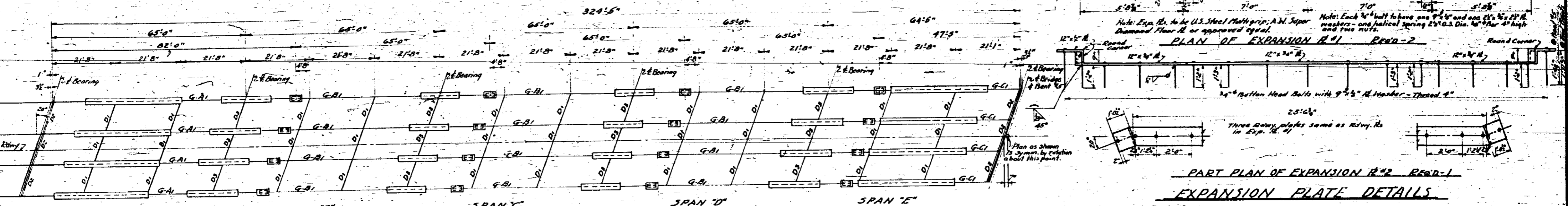
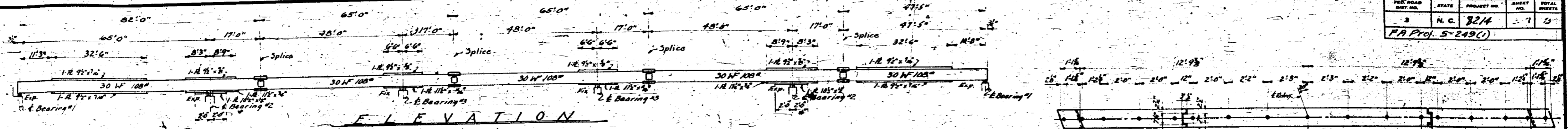
DESIGNED BY: J.P. Walling  
DRAWN BY: J.P. Walling  
CHECKED BY: J.P. Walling

SPECIAL	APPROVED BY	DATE
STANDARD	DESIGNED BY: J.P. Walling	DATE: Jan. 1948
	DRAWN BY: J.P. Walling	DATE: Jan. 1948
	CHECKED BY: J.P. Walling	DATE: Jan. 1948



FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
3	N.C.	8214	7	10

PA Proj. 5-249(C)



Dimensions shown on this drawing are U.S. Standard at 60°F. After riveting girder field splices, masonry plates at expansion bearings shall be adjusted so that all rockers will be vertical at a normal temperature of 60°F. After this adjustment, nuts on anchor bolts shall be pulled tight. All rivets shall be 3/4". All open holes shall be 1/8" unless noted. Field connections shall be riveted unless otherwise shown. General reaming shall be done with connecting parts assembled. Field connections shall be marked. Mark North end of each girder "NORTH". All welding shall be done in accordance with the Specifications.

Approx. Weight of Structural Steel 356000#

Note: For "Design Data" and "General Note" see Sheet No. 5-1

PROJECT NO. 8214  
CLEVELAND COUNTY  
STATION: 13+25

STATE OF NORTH CAROLINA  
STATE HIGHWAY AND  
PUBLIC WORKS COMMISSION  
STEEL DETAILS  
FOR  
5 @ 65' CONTINUOUS SPANS  
BRIDGE OVER BROAD RIVER  
JAN. 1948

SPECIAL	ASSEMBLED BY	DATE
STANDARD	CHECKED BY	DATE
	DRAWN BY	DATE
	TRACED BY	DATE
	CHECKED BY	DATE

Note: Half rounds for bearings shall be cold rolled steel shafting or may be fabricated from forgings conforming to the requirements of the Standard Specifications for Steel Forgings. After the final adjustment of anchor bolts fill the 2" pipe sleeves with grout. Top of sleeves to be placed 4" below bridge seat.

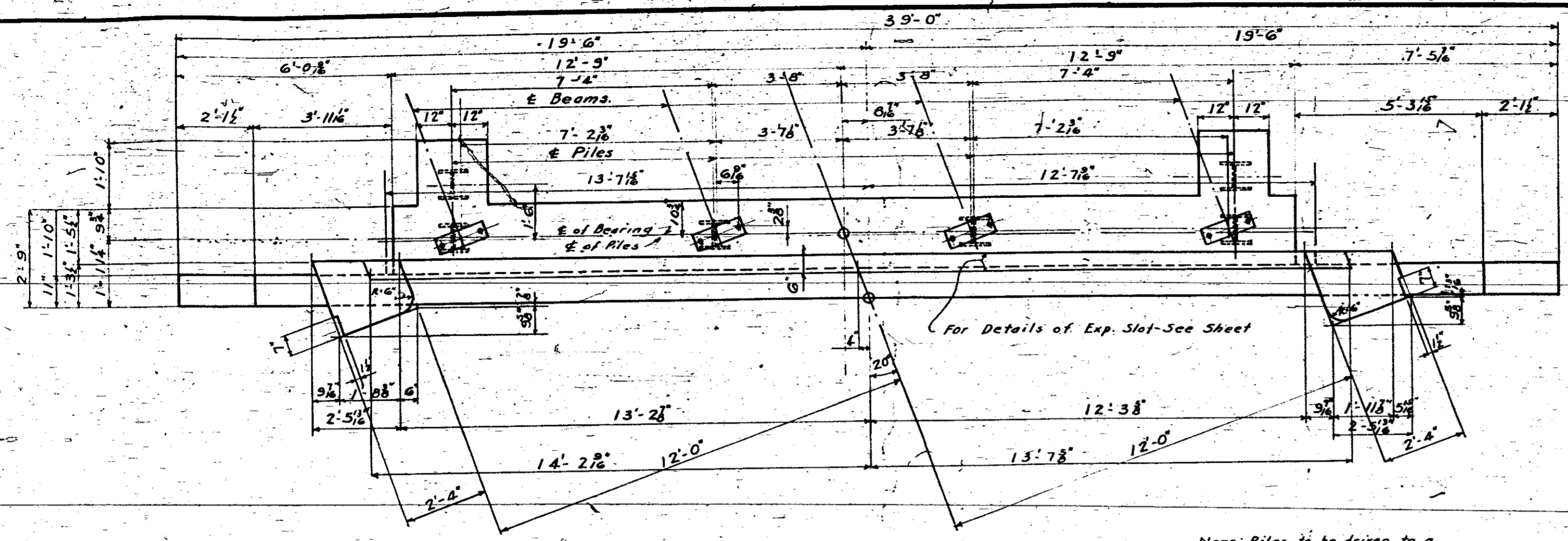
BEARINGS 2 AND 3  
REQD. 16 BEARING 2  
REQD. 16 BEARING 3

PLAN & ELEVATION - BOLT & SPRING ASSEMBLY AT CURB - BENT #5



FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
3	N. C.	8214	5	8

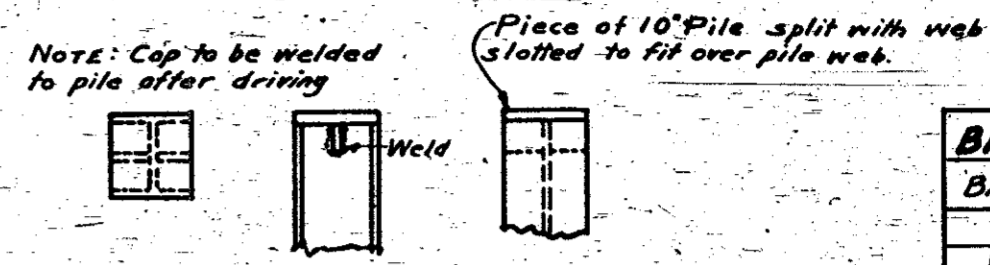
FA Proj. 5-249(1)



**PLAN OF END BENT - 1**  
**END BENT-2-SIMILIAR**

Note: All construction joints above top of footing to be waterproofed on the fill side as specified for Method "A" Waterproofing. See Specs. The strips of waterproofing material to be 2'-0" wide and placed symmetrical about the joint.

Note: Piles to be driven to a minimum bearing capacity of 28 tons.



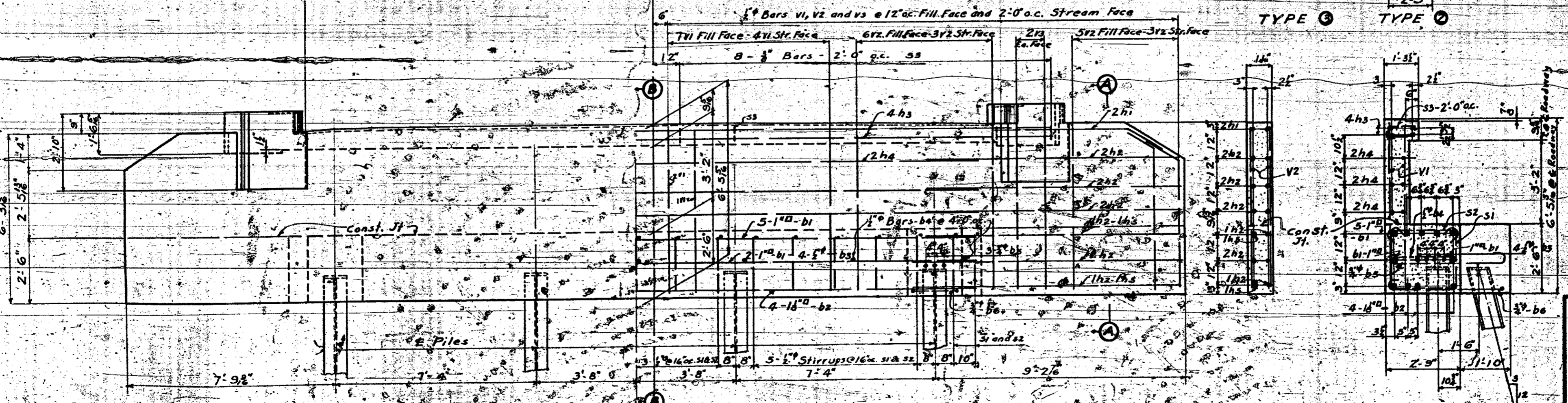
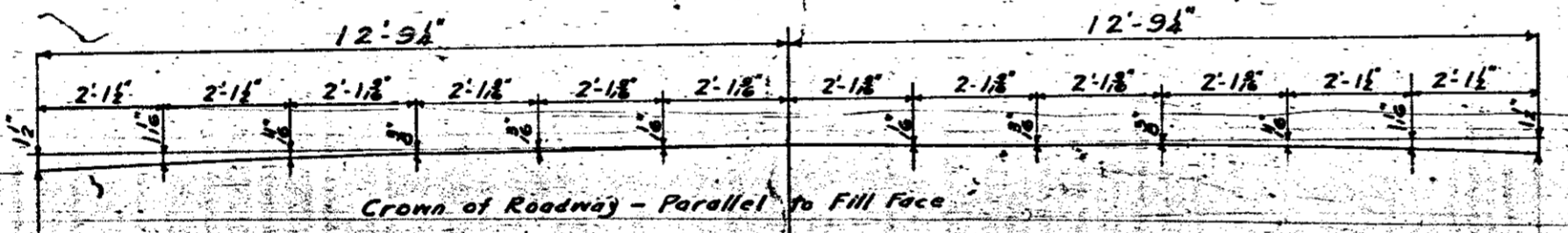
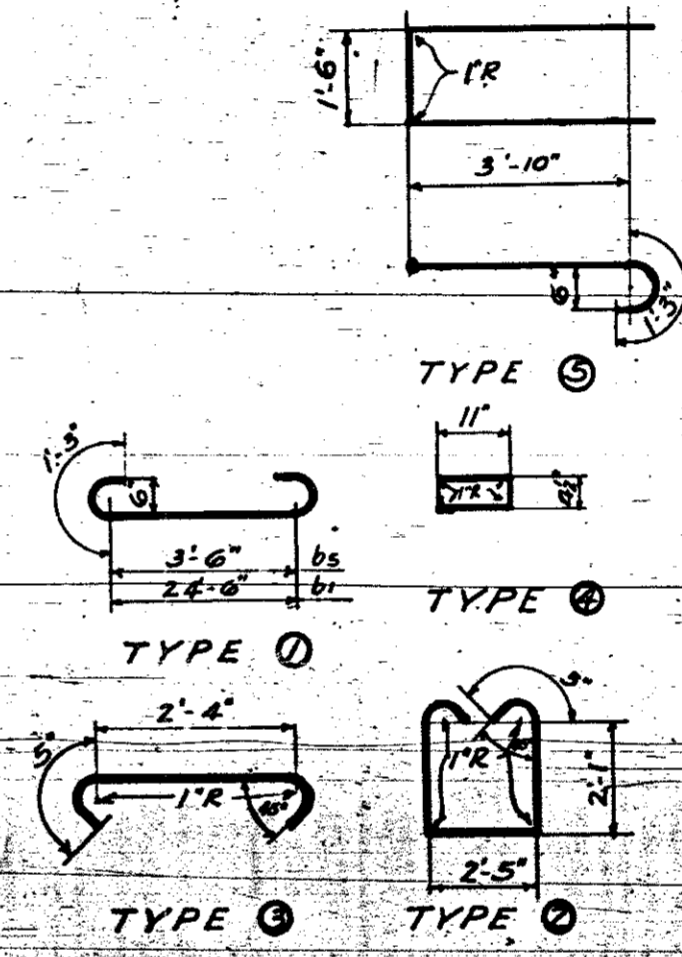
**PILE CAPS**

Note: Cost of pile caps complete in place to be included in the Unit Price bid for 10"x10" @ 42" H-Pile. Pile caps may be obtained from pile cutoffs, and each linear foot of pile cut off not used will be paid for as described in "Special Provisions."

**BILL OF MATERIAL-ONE END BENT**

BAR	No.	SIZE	TYPE	LENGTH	WEIGHT
b1	7	1" dia	Str.	27'-0"	644
b2	4	1 1/2"	Str.	25'-0"	430
b3	4	1 1/2"	Str.	25'-0"	430
b4	7	1 1/2"	Str.	2'-6"	22
b5	6	3/4"	Str.	6'-0"	84
b6	2	3/4"	Str.	11'-8"	35
h1	4	1 1/2"	Str.	7'-0"	89
h2	20	1 1/2"	Str.	9'-6"	127
h3	8	1 1/2"	Str.	18'-0"	86
h4	6	1 1/2"	Str.	25'-0"	100
v1	22	1 1/2"	Str.	6'-1"	190
v2	34	1 1/2"	Str.	6'-0"	186
v3	4	1 1/2"	Str.	6'-9"	88
s1	19	1 1/2"	Str.	7'-5"	94
s2	19	1 1/2"	Str.	3'-2"	40
s3	16	1 1/2"	Str.	3'-1"	38
h5	4	1 1/2"	Str.	11'-6"	186

Reinforcing Steel Lbs. 2127  
 Concrete - Class "A" Cu. Yds. 143  
 Steel Piles - 10H42 - No. 6 Linft. 280  
 Method "A" Waterproofing - Sq. Yds. 330



**ELEVATION**

**SECTION A-A SECTION B-B**

**PROJECT NO. 8214**  
**CLEVELAND COUNTY**  
**STATION: 13+25**

STATE OF NORTH CAROLINA  
 STATE HIGHWAY AND  
 PUBLIC WORKS COMMISSION

**SUBSTRUCTURE DETAILS  
 FOR BRIDGE OVER  
 BROAD RIVER  
 ON R. 150 BETWEEN  
 S.C. STATE LINE & BOILING SPRINGS  
 JANUARY-1948**

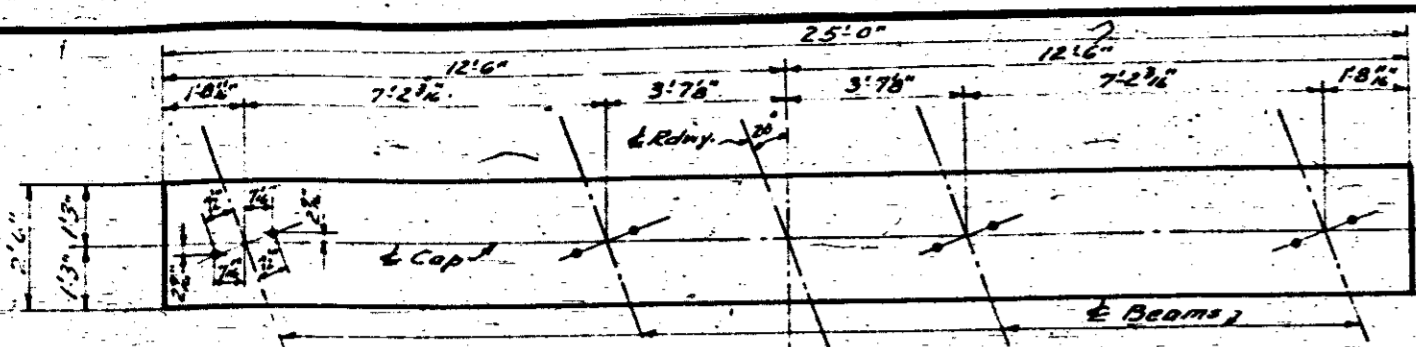
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 CHECKED BY: W. Vance ...

**SPECIAL**

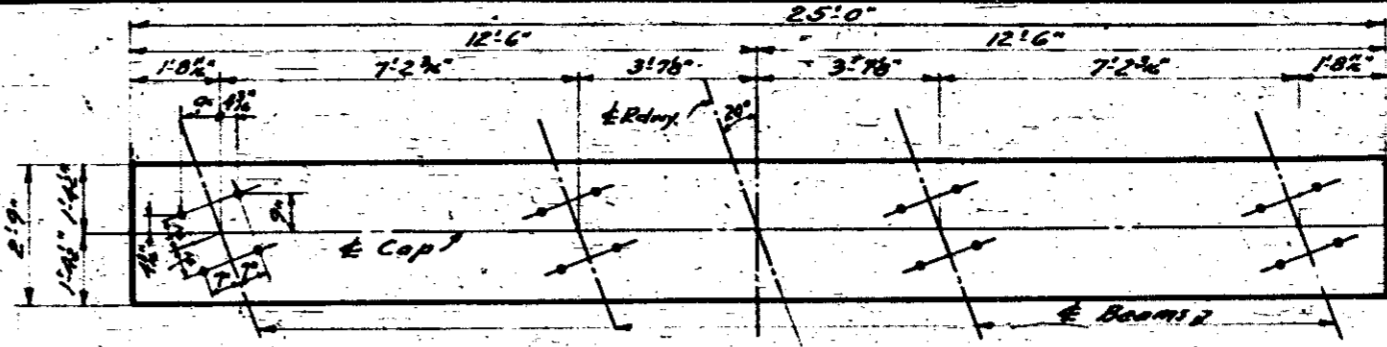
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TRACED BY	DATE
CHECKED BY	DATE

DESIGNED BY: J.P. ... DATE: Jan 1948  
 CHECKED BY: W. Vance ... DATE: Jan 1948



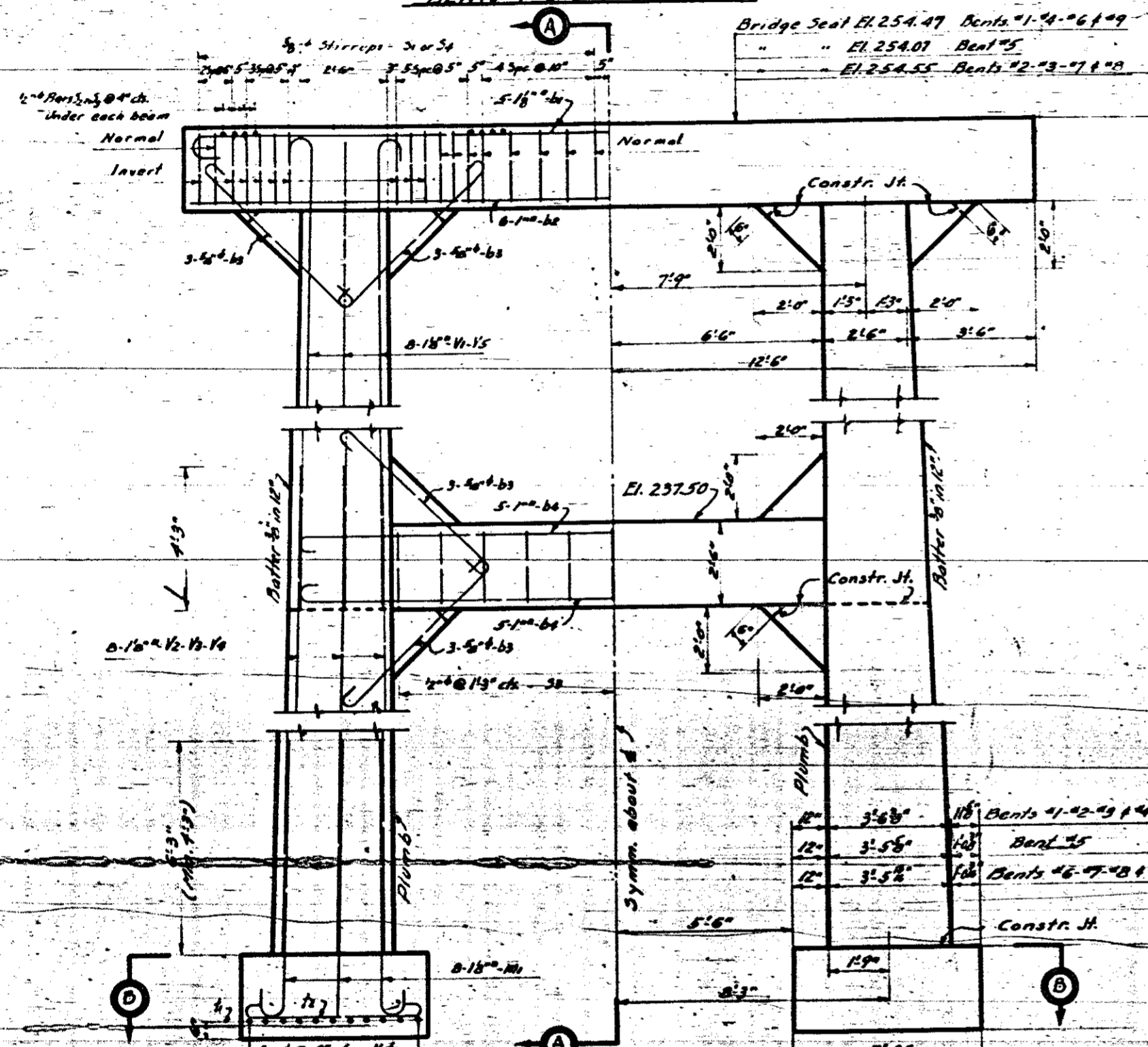


PLAN OF CAP  
BEATS 41-42-43-44-45-46-47-48-49

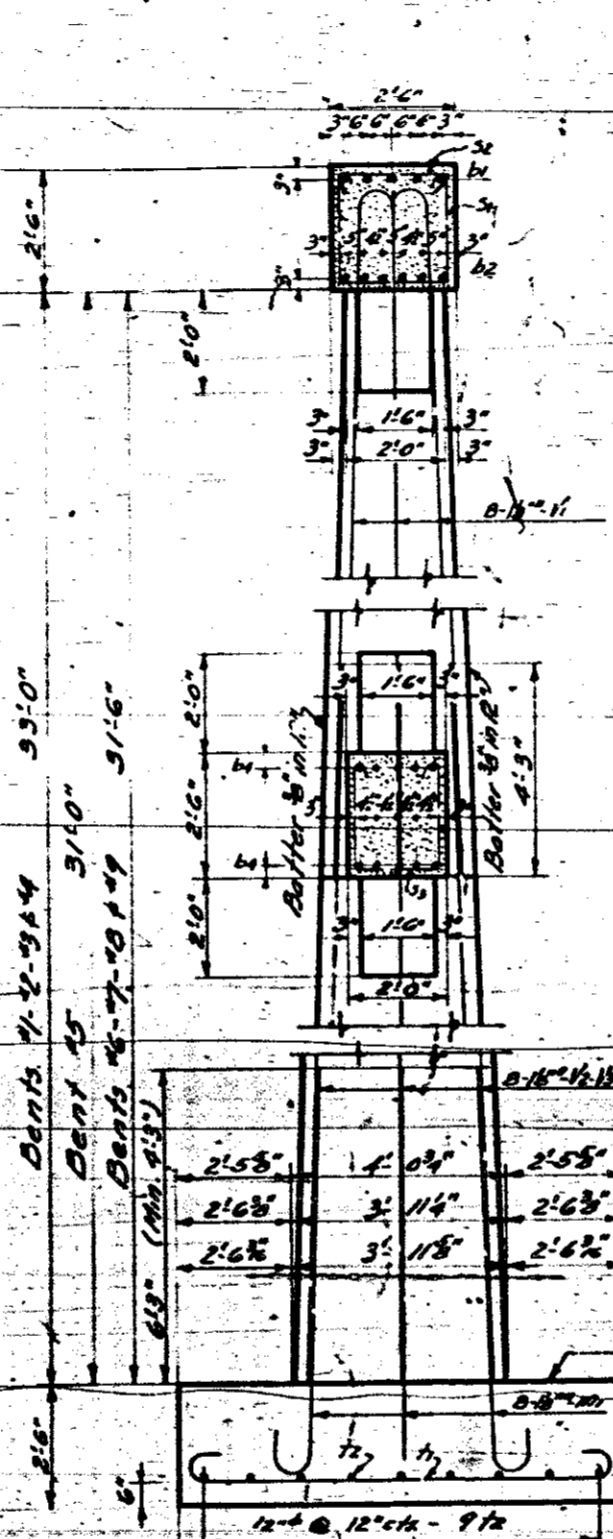


PLAN OF CAP  
BEAT 45

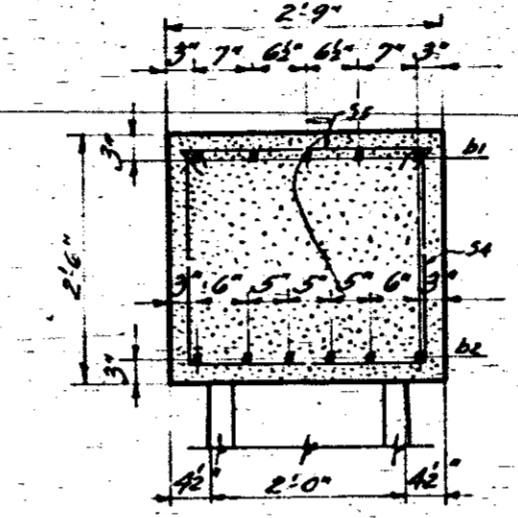
Note: For Design Data and General Note see Sheet No. 5-1



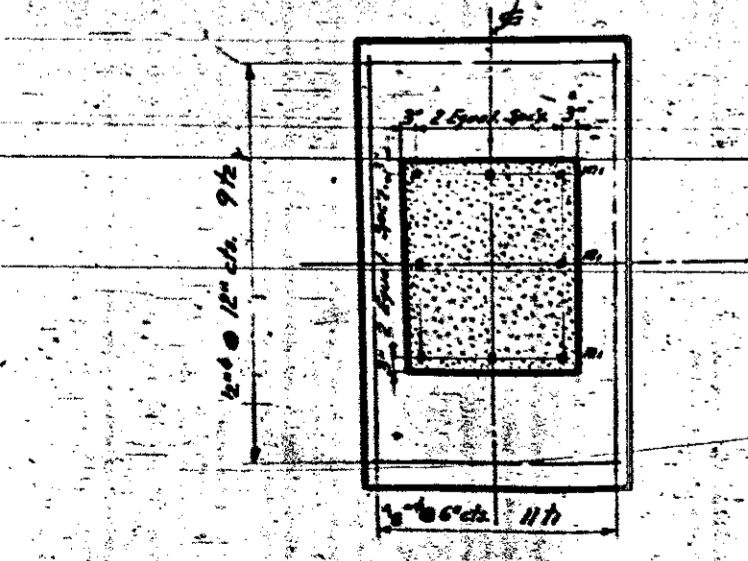
ELEVATION



SECTION A-A

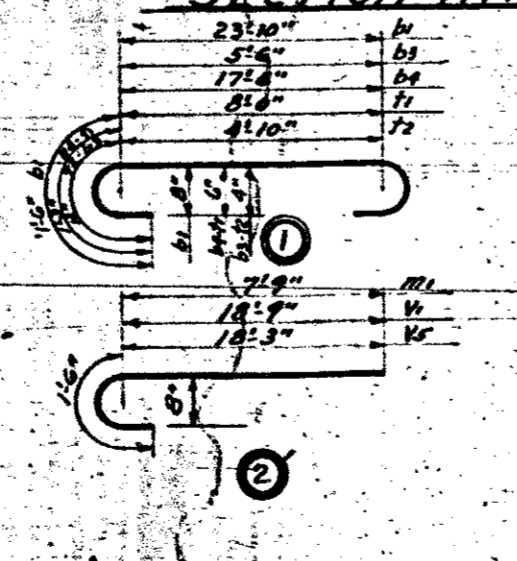


SECTION THRU CAP  
BEAT 45



SECTION B-B

Beats 41-42-43-44	12"	14'	1.95'	16'
Beat 45	12"	14'	1.85'	18'
Beats 46-47-48-49	12"	14'	1.85'	16'
Beat 47	12"	14'	1.85'	18'
Beats 48-49	12"	14'	1.85'	16'



BAR TYPES

2'-5 1/2"	1" @ 4"	2'-5 1/2"	Beats 41-42-43-44
2'-6 1/2"	3" @ 14"	2'-6 1/2"	Beat 45
2'-6 1/2"	3" @ 18"	2'-6 1/2"	Beats 46-47-48-49

Top of Footing: El. 210.97, Beats 1-4  
 El. 219.05 " 5-3  
 El. 220.57 " 4-2  
 El. 220.47 " 6-4-9  
 El. 220.55 " 7-6-5

Note: Bottom of footings to be carried down at least 12" into rock with a minimum thickness of 2'-6"

ONE BENT  
BILL OF MATERIAL

Bar No.	Size	Type	Length	Weight
b1	5"	1/2"	26'0"	577
b2	6"	5/8"	24'6"	500
b3	24"	1/2"	7'6"	188
b4	10"	1"	20'0"	680
m1	16"	1/2"	9'3"	637
Beats 1-2-3-4-6-7-8-9				
v1	3/8"	3	7'2"	269
v2	1/2"	4	2'11"	31
v3	1/2"	3	6'8"	49
v4	3/8"	3	7'5"	278
v5	1/2"	4	3'2"	34
Beat 5				
v1	22"	1	10'6"	472
v2	18"	1	6'10"	82
Beats 1-2-3-4-6-7-8-9				
v1	16"	2	20'3"	1394
v2	16"	5/8"	20'3"	1394
Beats 6-7-8-9				
v1	16"	5/8"	18'9"	1291
v4	16"	5/8"	18'9"	1291
v5	16"	2	19'9"	1360
Beat 45				
Beats 1-2-3-4				
Reinforcing Steel Lbs.				6273
Class 70 Concrete Cu.Yds.				410
Reinforcing Steel Lbs.				6170
Class 70 Concrete Cu.Yds.				395
Reinforcing Steel Lbs.				6149
Class 70 Concrete Cu.Yds.				395

PROJECT NO. 8214  
CLEVELAND COUNTY  
STATION: 13+25  
BEATS 1-2-3-4-5-6-7-8-9

STATE OF NORTH CAROLINA  
STATE HIGHWAY AND  
PUBLIC WORKS COMMISSION  
SUBSTRUCTURE DETAILS  
FOR

5065.0' CONTINUOUS SPANS  
BRIDGE OVER BROAD RIVER  
JAN. 1949.

SUBMITTED BY: J.P. [Signature]  
APPROVED BY: W. Vance [Signature]  
DATE: 1-1-49

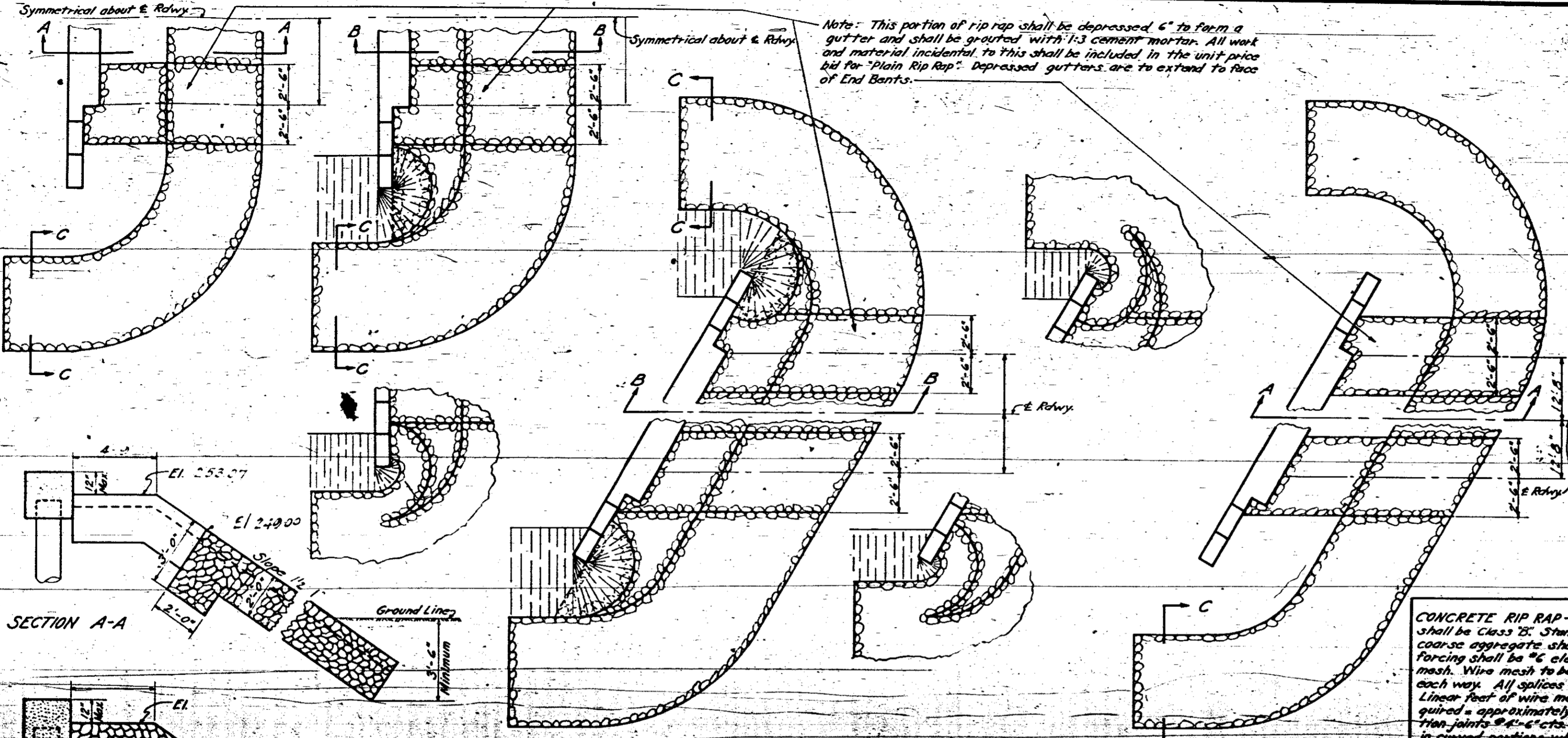
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STANDARD	DESIGNED BY	DATE
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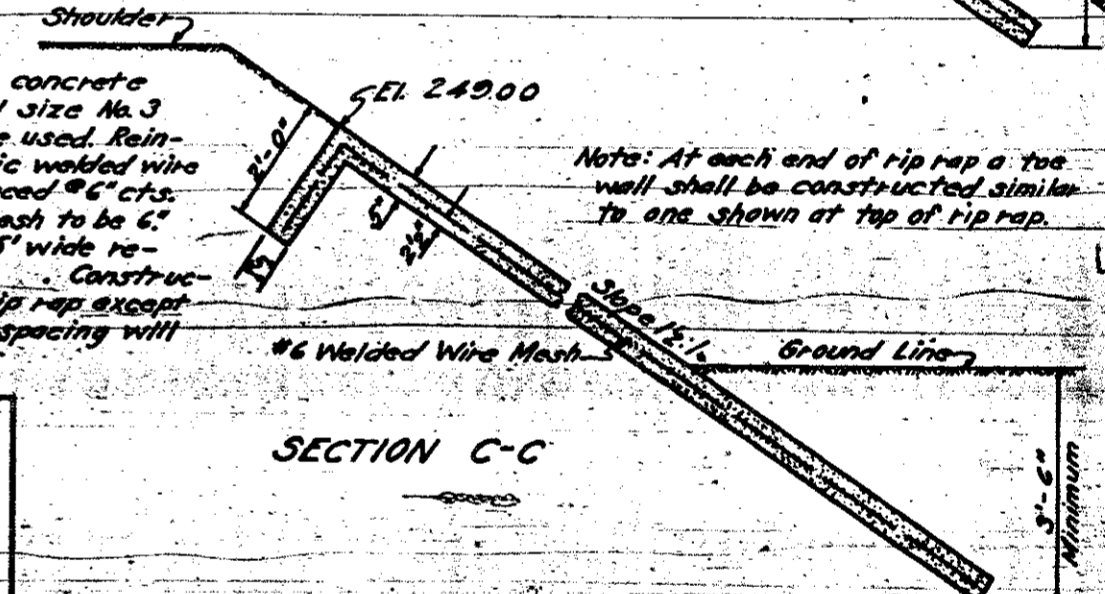
FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
3	N.C.	8214	7	7
FA Proj 5-249(1)				

Note: This portion of rip rap shall be depressed 6" to form a gutter and shall be grouted with 1:3 cement mortar. All work and material incidental to this shall be included in the unit price bid for "Plain Rip Rap". Depressed gutters are to extend to face of End Bents.

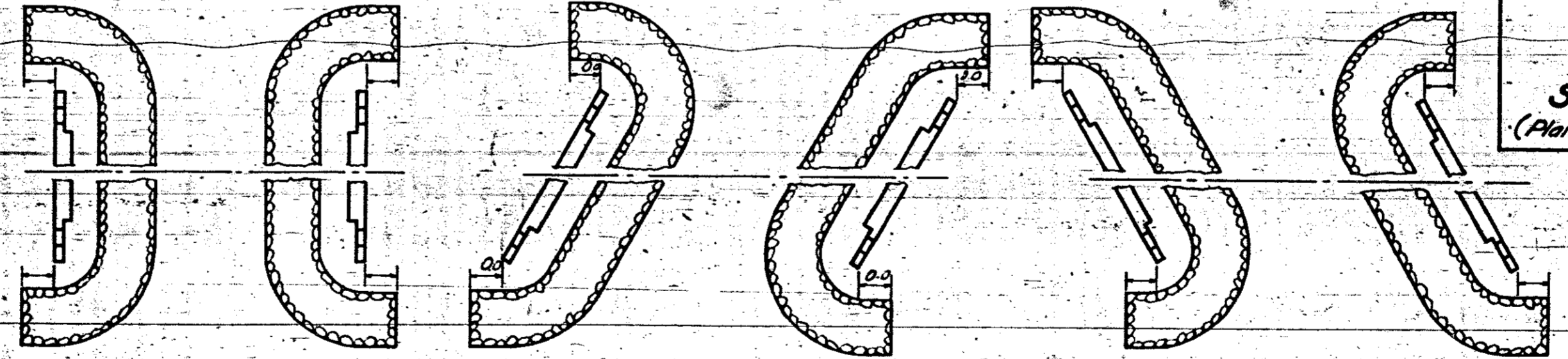


TYPICAL PLANS

CONCRETE RIP RAP - All concrete shall be Class B. Standard size No. 3 coarse aggregate shall be used. Reinforcing shall be #6 electric welded wire mesh. Wire mesh to be spaced #6 cts. each way. All splices of mesh to be 6" linear feet of wire mesh 5' wide required - approximately. Construction joints #4-6 cts. in rip rap except in curved portions where spacing will vary.



SECTIONS FOR CONCRETE RIP RAP  
(Plan of concrete rip rap similar to that shown for plain rip rap)



TYPICAL PLANS

PLAIN RIP RAP DETAILS

Note: At each end of rip rap a toe wall shall be constructed similar to one shown at top of rip rap.

PROJECT NO. 8214  
CLEVELAND COUNTY  
STATION: 13+25

STATE OF NORTH CAROLINA  
STATE HIGHWAY AND  
PUBLIC WORKS COMMISSION  
BALDWIN  
**STANDARD  
RIP RAP  
DETAILS**

OCT. 1947

SPECIAL	DESIGNED BY A. R. Sugg	DATE Oct. 1947
CHECKED BY A. R. Sugg	TRACED BY A. R. Sugg	CHECKED BY A. R. Sugg
APPROVED BY A. R. Sugg	DATE Oct. 1947	

47

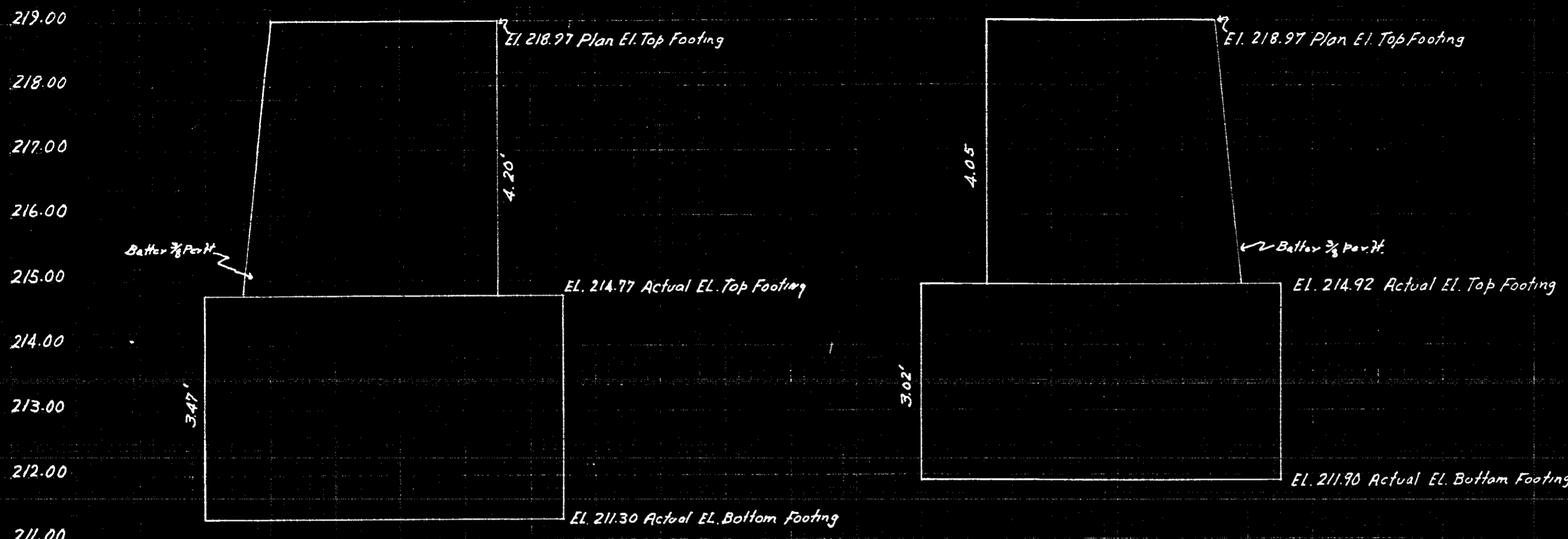
M-RR-1

STANDARD No. 1



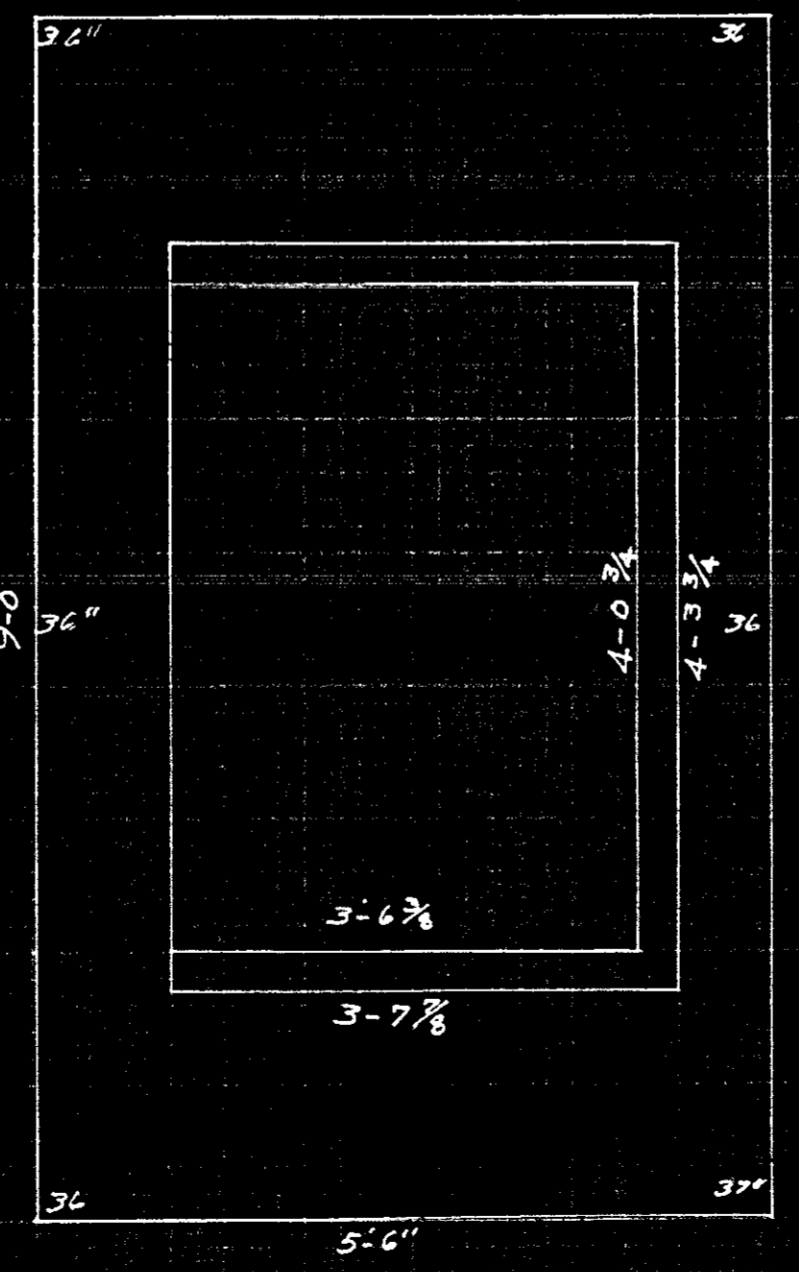
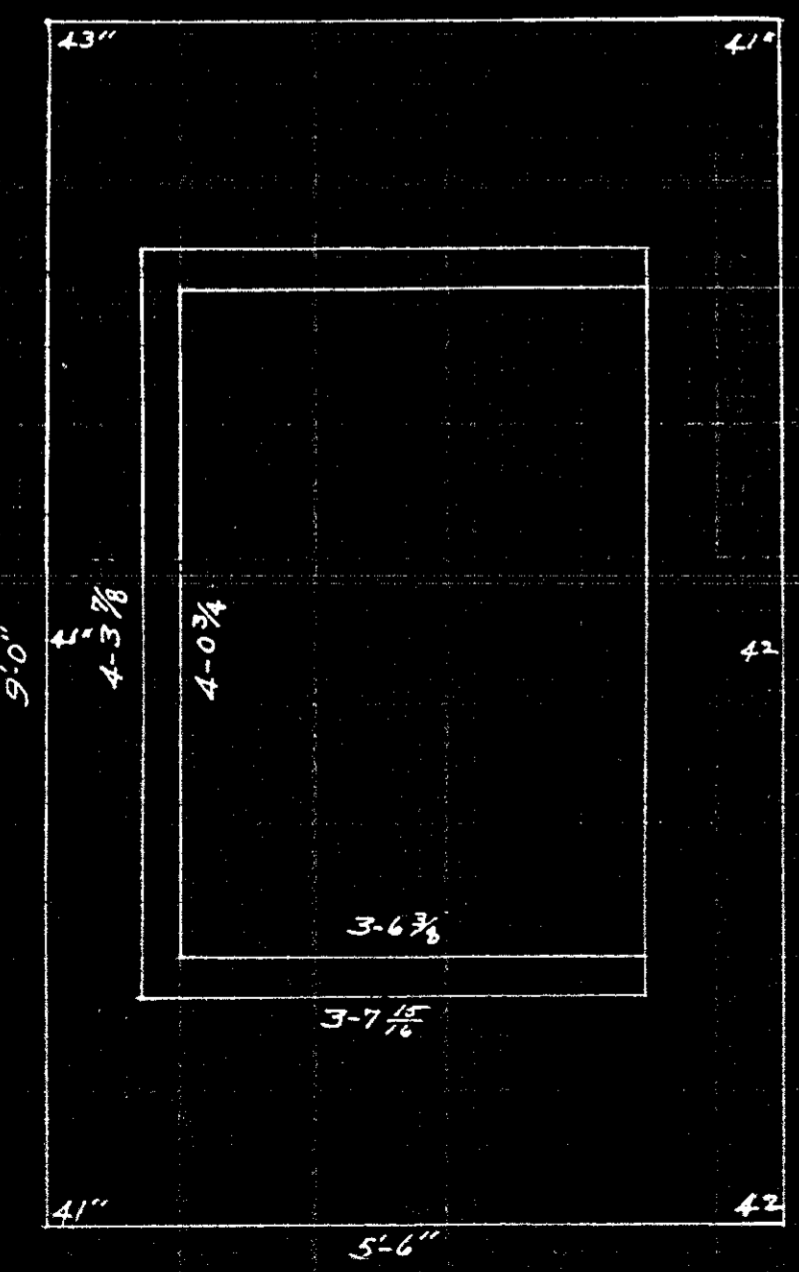
# ADDITIONAL MASONRY BENT NO 1

NC 821A 1919 57 70  
 P.A. 5-249 (L)



Extra Steel  
 8 pcs - 1 1/8" - 7'-1" Long =  
 8X 708X 4.303 = 244 #

Extra Steel  
 8 pcs - 1 1/8" - 6'-4" Long =  
 8X 633X 4.303 = 218 #



ADDITIONAL MASONRY	
Left Foundation	
90X55 X 3.47	6.362
27	
Left Stem	
3.59635 X 4.1927 X 4.05	2.262
27	
Right Foundation	
90X55 X 3.02	5.537
27	
Right Stem	
3.59375 X 4.1875 X 4.20	2.341
27	
Total Masonry	16.502
Less Plan Quantities in Footings	9.167
Total Additional Masonry	7.335
Plan Quantities Bent No 1	41.000
Total Class A. Conc. Bent No 1	48.335

ADDITIONAL STEEL	
8X 633X 4.303 =	218
8X 708X 4.303 =	244
Total Additional Steel	462
Plan Quantities	62.73
Total Steel Bent No 1	67.35

Computed by W.A. McNeill  
 Checked by T.M. Austell

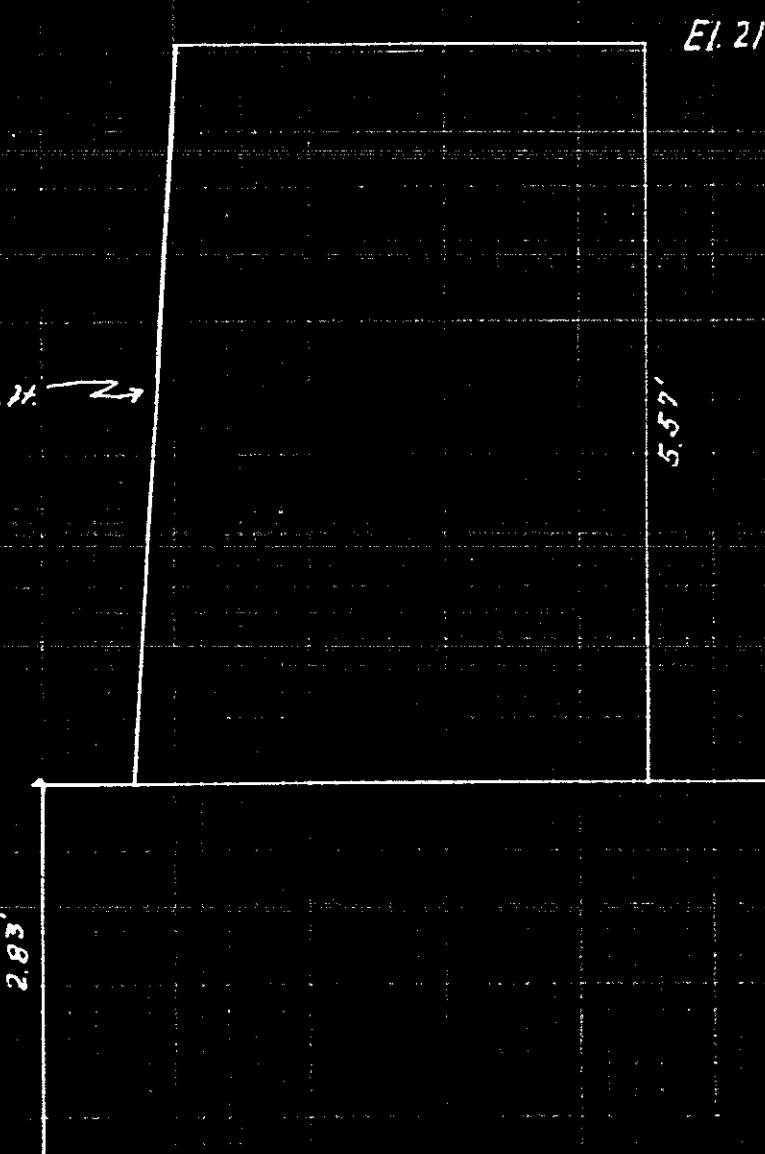
See Masonry Book Page No. 47



CLASS A CONCRETE BENT NO 2

N.C. 8214 1949 58 70  
F.A. 5-219 U)

219.00  
218.00  
217.00  
216.00  
215.00  
214.00  
213.00  
212.00  
211.00  
210.00

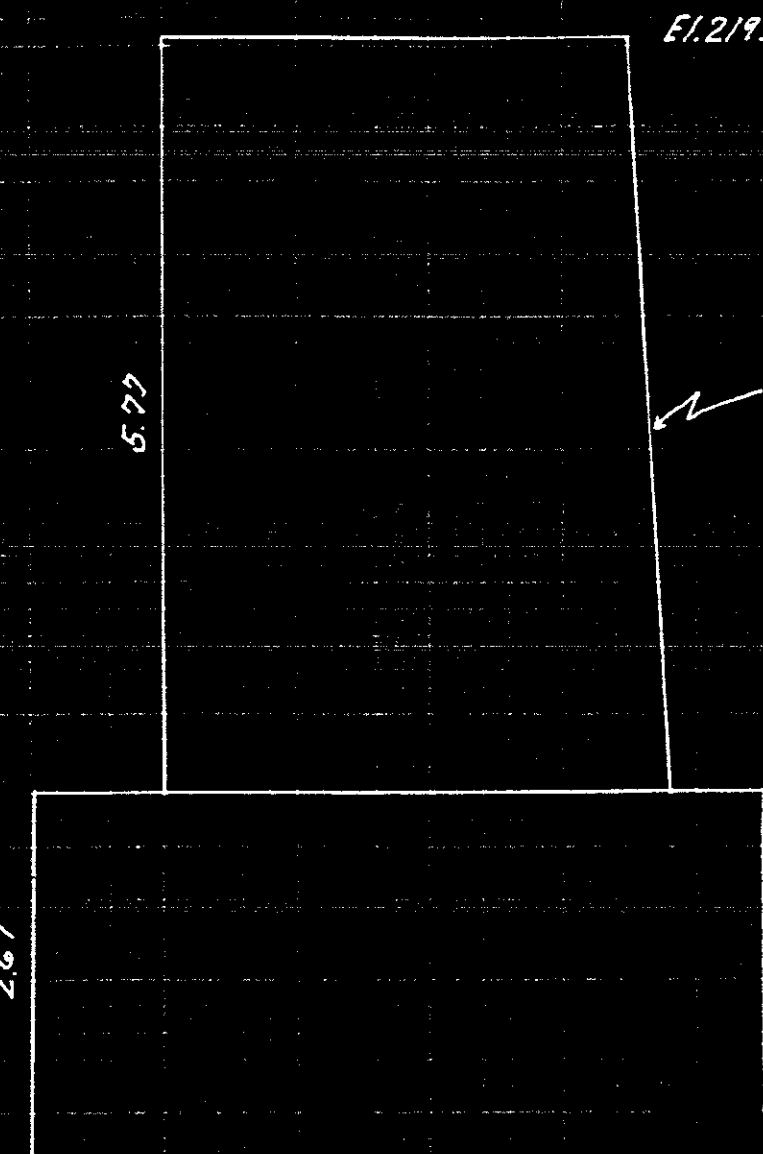
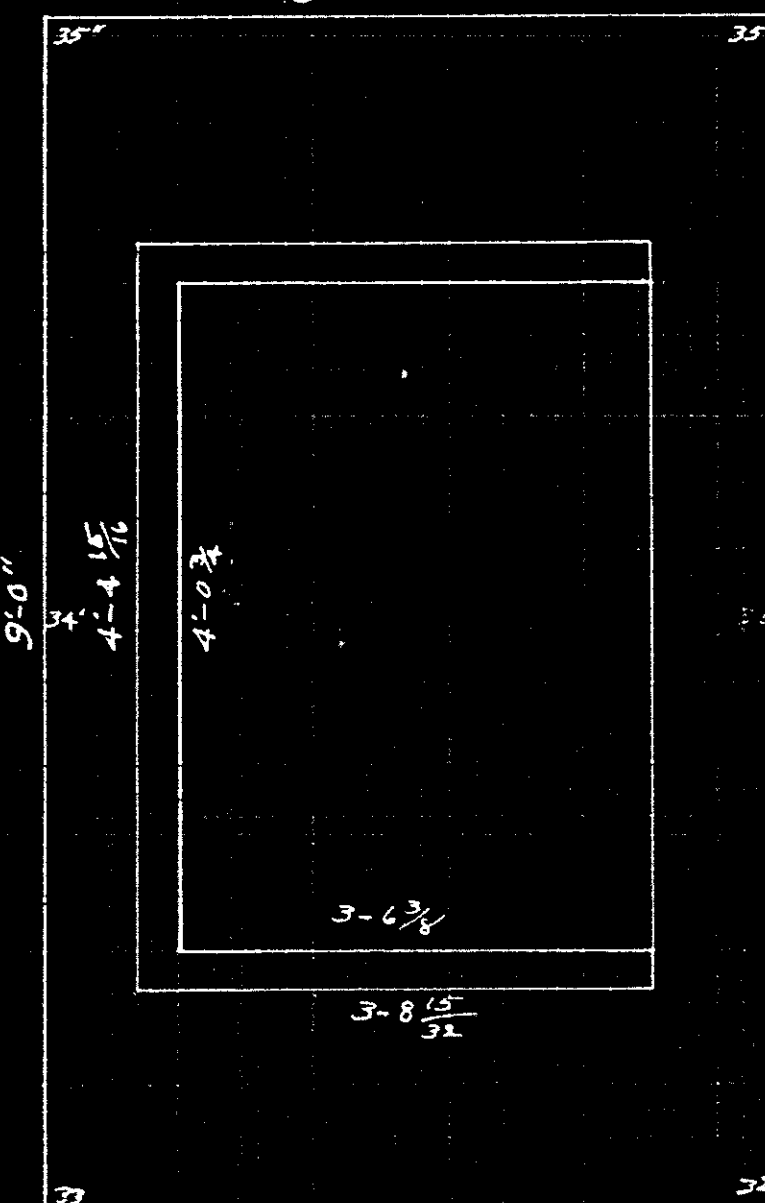


El. 219.05 Plan El. Top Footing

El. 213.48 Actual El. Top Footing

El. 210.65 Actual El. Bottom Footing

Extra Steel  
8 pcs - 1 1/8" - 8'-3" Long  
8 x 8.25 x 4.303 = 284 #  
5'-6"

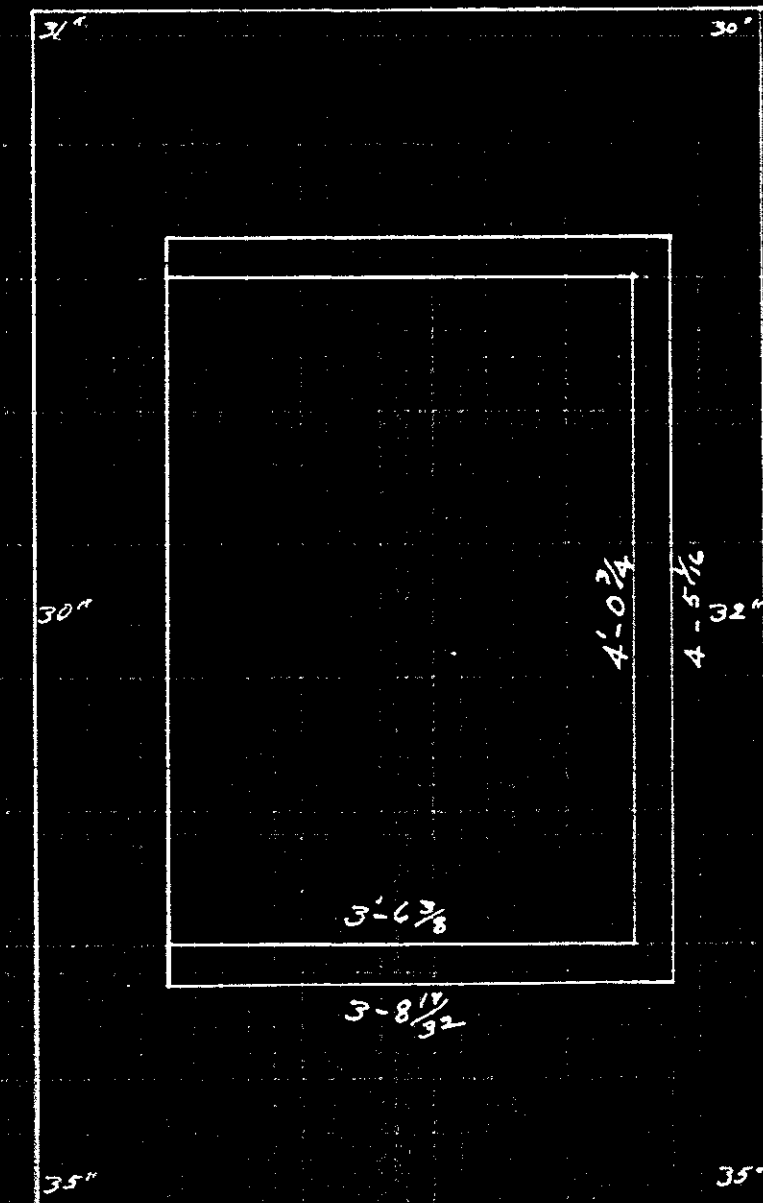


El. 219.05 Plan El. Top Footing

El. 213.28 Actual El. Top Footing

El. 210.61 Actual El. Bottom Footing

Extra Steel  
8 pcs - 1 1/8" - 8'-3" Long  
8 x 8.25 x 4.303 = 284 #



ADDITIONAL MASONRY

Left Foundation	
$\frac{90 \times 5.5 \times 2.83}{27}$	5.188
Left Stem	
$\frac{4.2396 \times 3.6185 \times 5.57}{27}$	3.165
Right Foundation	
$\frac{90 \times 5.5 \times 2.67}{27}$	4.895
Right Stem	
$\frac{4.2422 \times 3.6211 \times 5.77}{27}$	3.283
Total Masonry	16.531
Less Plan Quantities Footing	9.167
Total Additional Masonry	7.364
Plan Quantities Bent No 2	41.000
Total Class A Conc. Bent No 2	48.364

ADDITIONAL STEEL

16 x 8.25 x 4.303	568
Plan Quantities	6273
Total Steel Bent No 2	6841

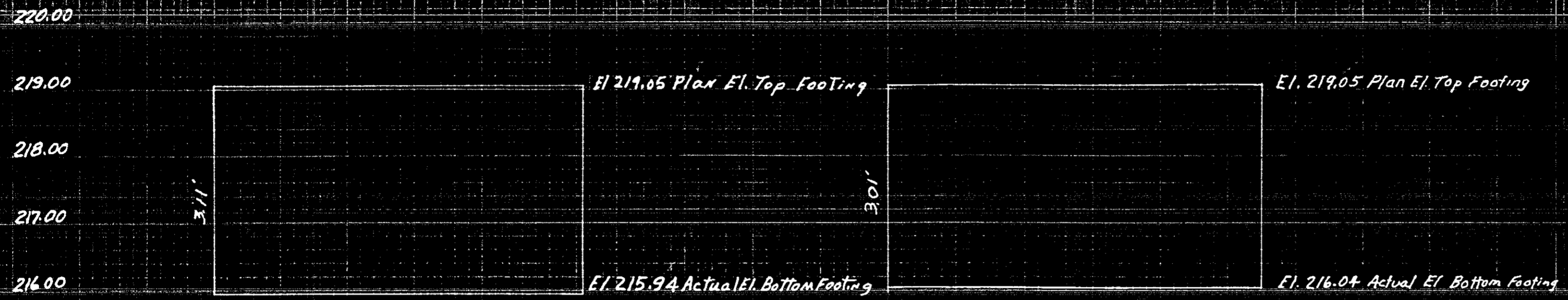
See Masonary Book Page No 48

Computed by W.A. McNeill  
Checked by T.M. Austell



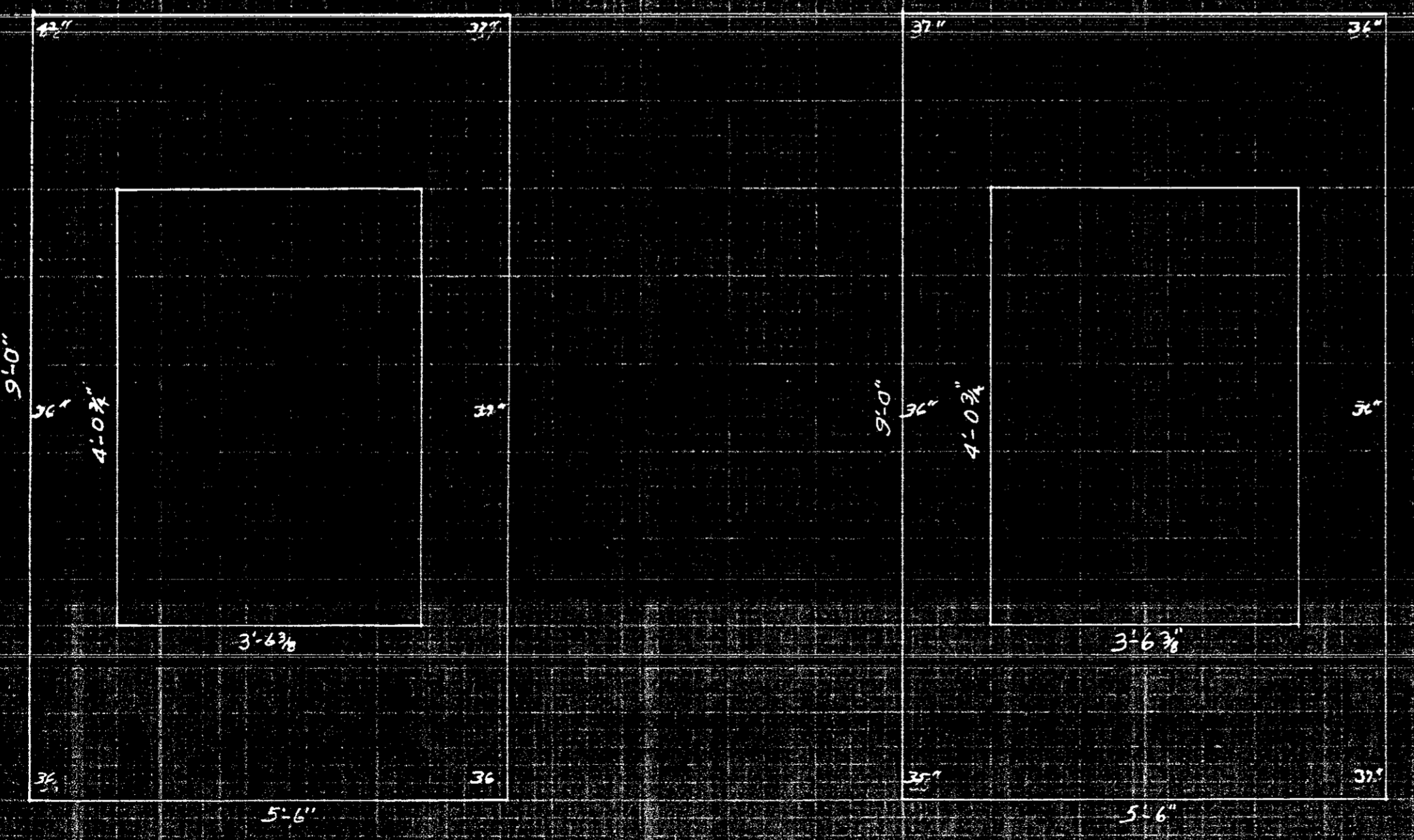
ADDITIONAL MASONRY BENT #3

FED. ROAD DIST. NO. STATE PROJ. NO. FISCAL YEAR SHEET NO. TOTAL SHEETS  
 N.C. 6214 1949 59  
 P.A. 5-249(1)



ADDITIONAL MASONRY

Left Foundation	
20 x 5.5 x 3.11	5.702
27	
Left Stem	
Built as per Plans	
Right Foundation	
20 x 5.5 x 3.01	5.518
27	
Right Stem	
Built as per Plans	
Total Masonry	11.220
Less Plan Quantities in Footing	9.167
Total Additional Masonry	2.053
Plan Quantities Bent #3	41.000
Total Class A Conc. Bent #3	43.053



See Masonary Book Page No. 49

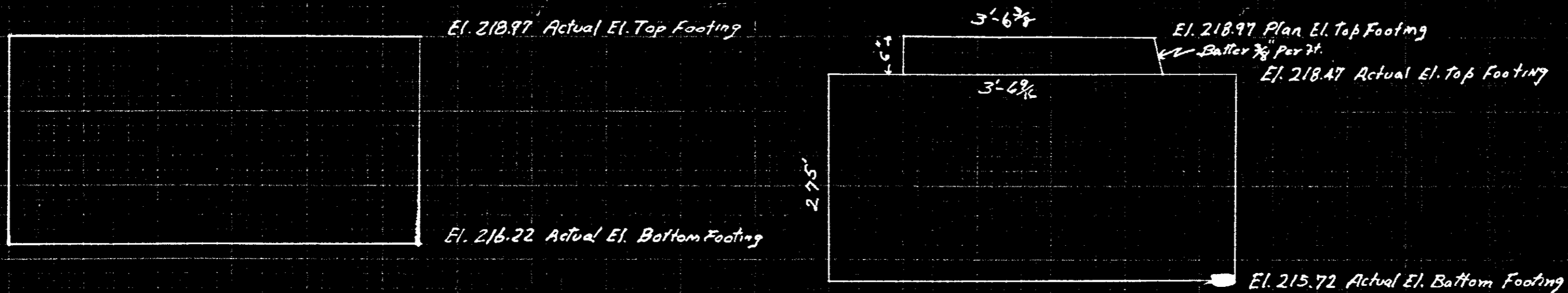
Computed by W.A. McNeill  
 Checked by W.B. Wallmon



ADDITIONAL MASONRY BENT No. 4

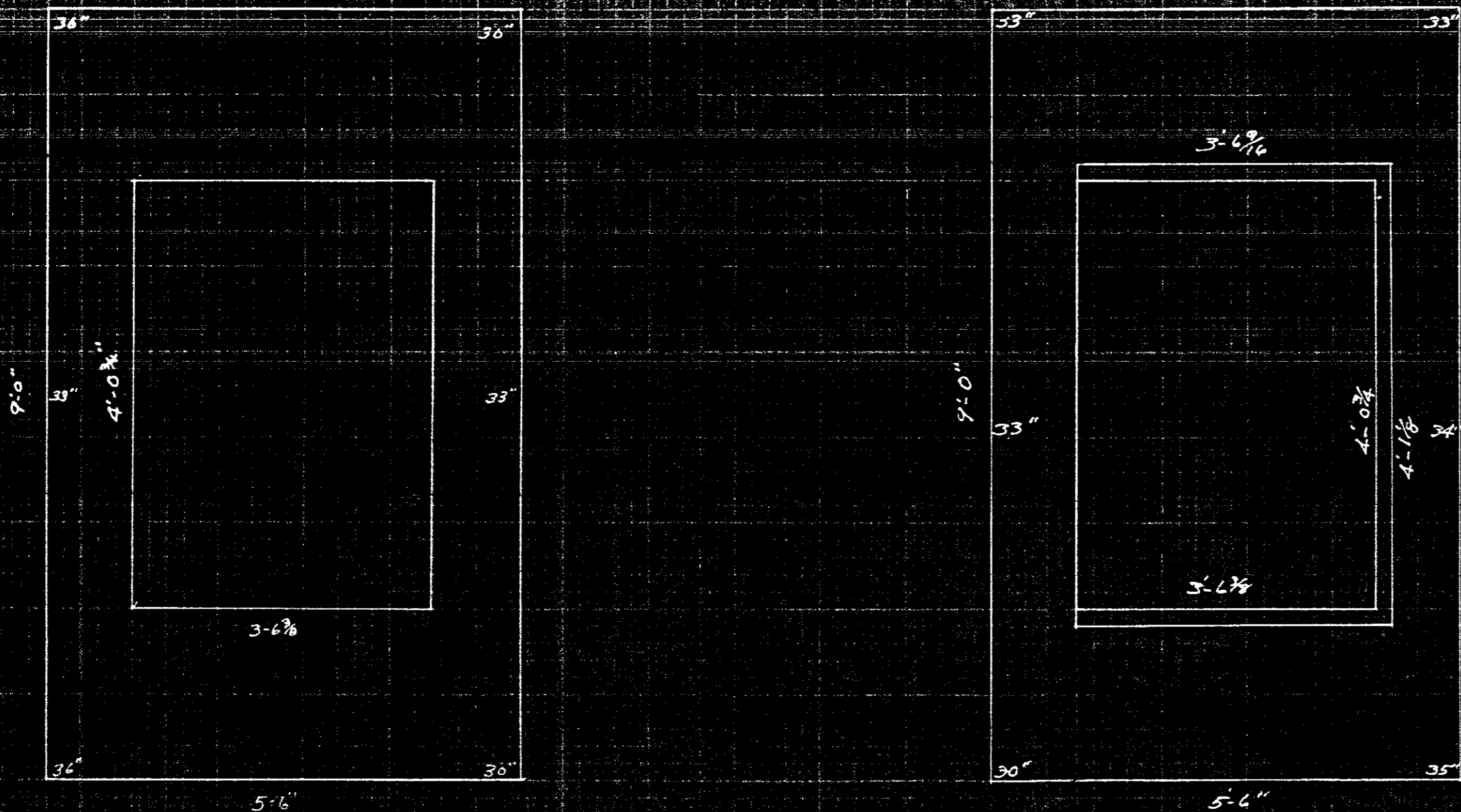
STATE OF N.C. 8214 191150  
F.A. 3-239

220.00  
219.00  
218.00  
217.00  
216.00  
215.00



ADDITIONAL MASONRY

Left Foundation		
90X550X 2.75		
27		5.042
Left Stem		
Built as per Plans		
Right Foundation		
90X550X 2.75		
27		5.042
Right Stem		
3.5391 X 4.07813 X 0.50		
27		0.267
Total Masonry		10.351
Less Plan Quantities in footing		9.167
Total Additional Masonry		1.184
Plan Quantities Bent No. 4		41.000
Total Class Conc. Bent No. 4		42.184



See Masonry Book Page No. 50

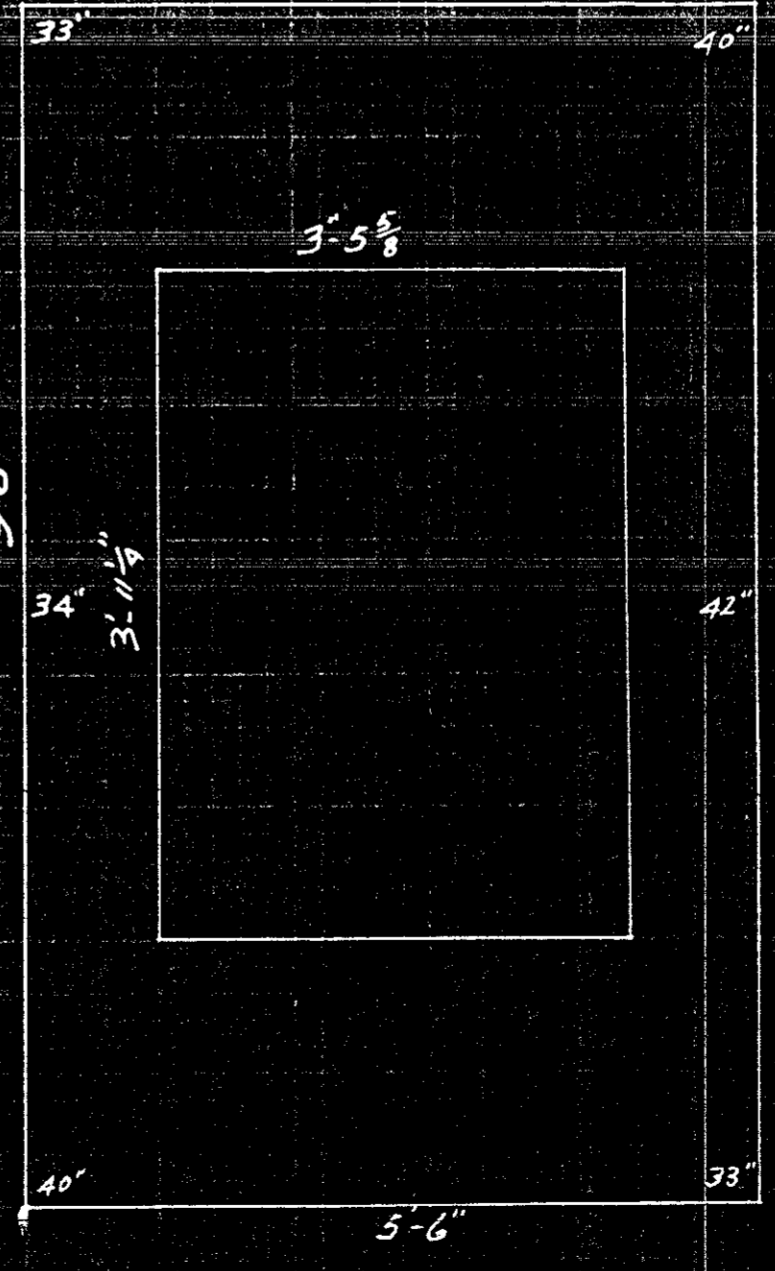
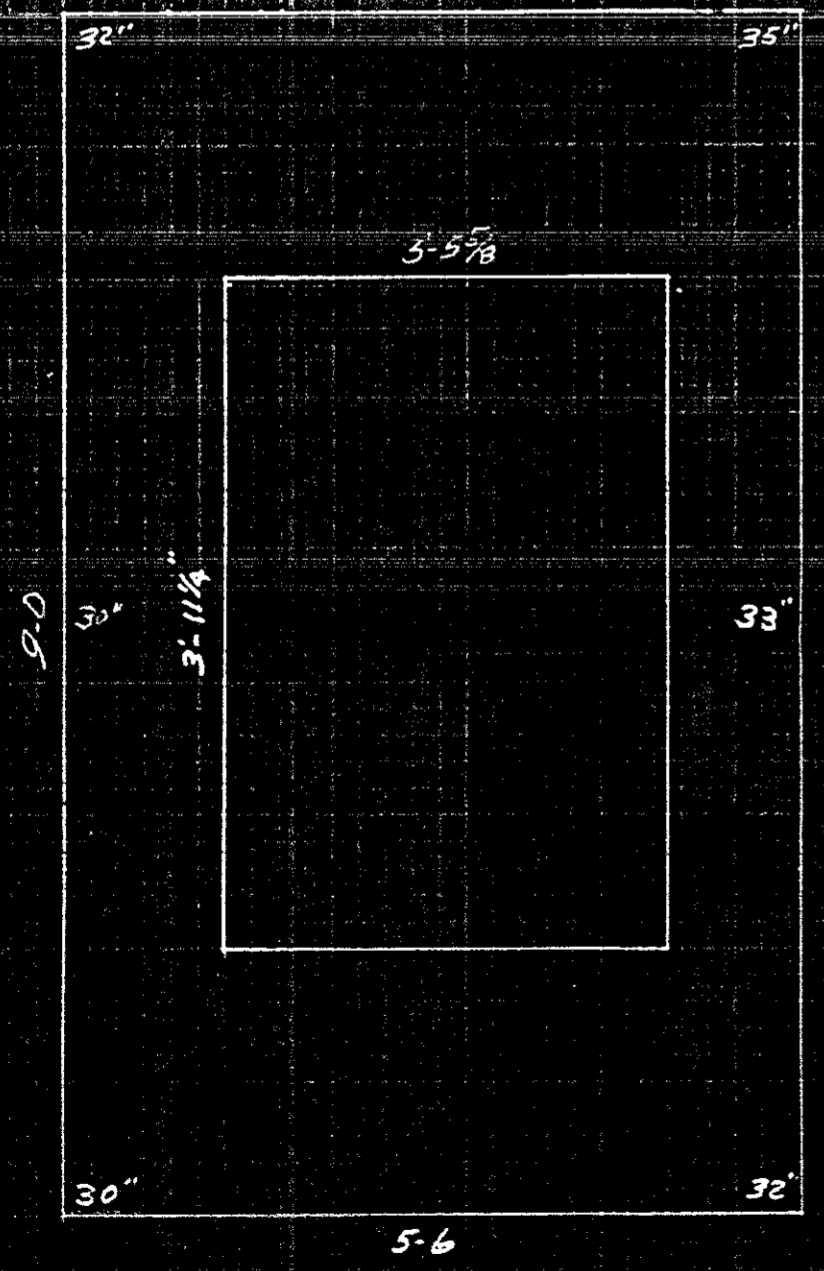
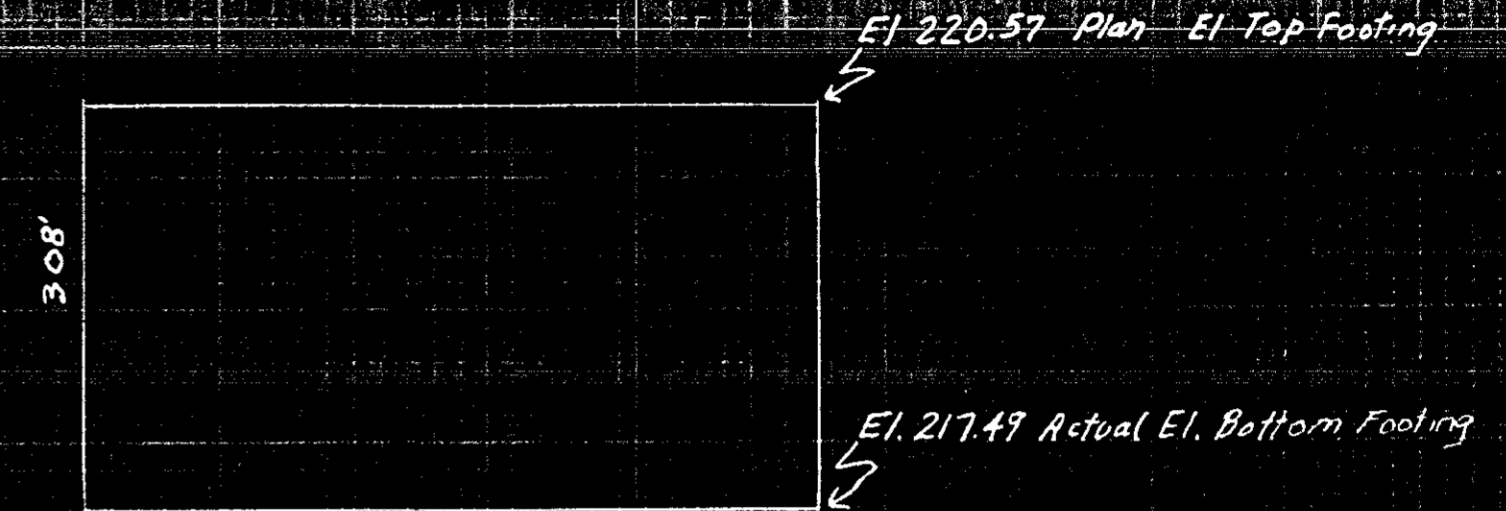
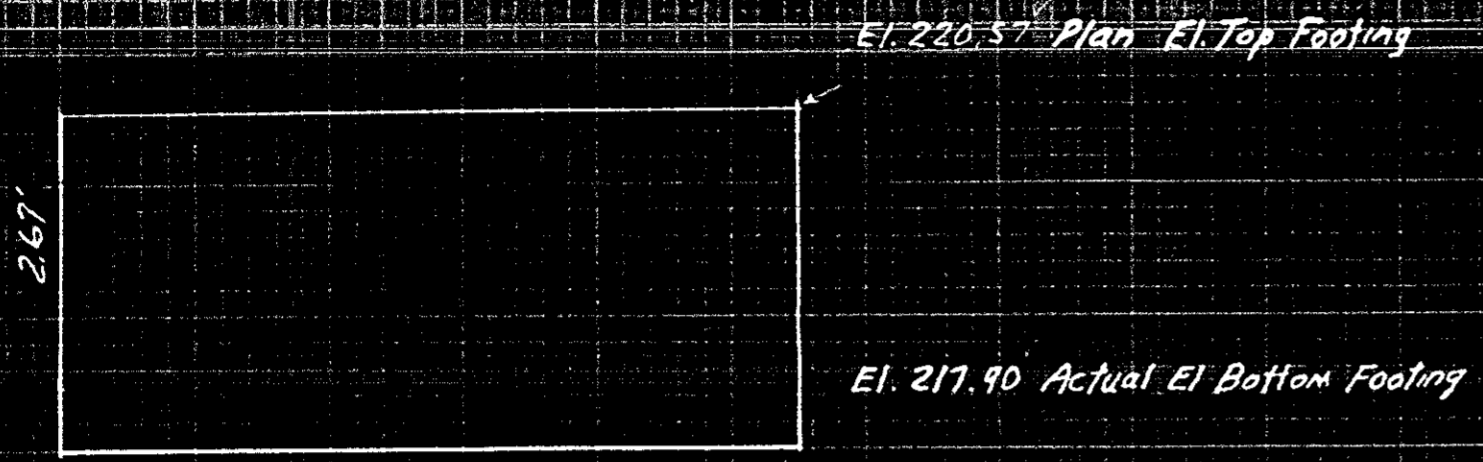
Computed by W.A. McNeill  
Checked by T.M. Austell



ADDITIONAL MASONRY BENT NO 5

FIG. 8050  
 N.C. B214 1949 61 70  
 F.A. 5-219(1)

221.00  
 220.00  
 219.00  
 218.00  
 217.00  
 216.00



ADDITIONAL MASONRY

Left Foundation	
90 X 5.5 X 2.67	
<u>27</u>	1.895
Left Stem	
Built as per Plans	
Right Foundation	
90 X 5.5 X 3.08	
<u>27</u>	5.647
Right Stem	
Built as per Plans	
Total Masonry in Foundations	10.542
Less Plan Quantities in Footing	9.167
Total Additional Masonry	1.375
Plan Quantities Bent No 5	39.500
Total Class A Conc Bent No 5	40.875

See Masonry Book Page No 51

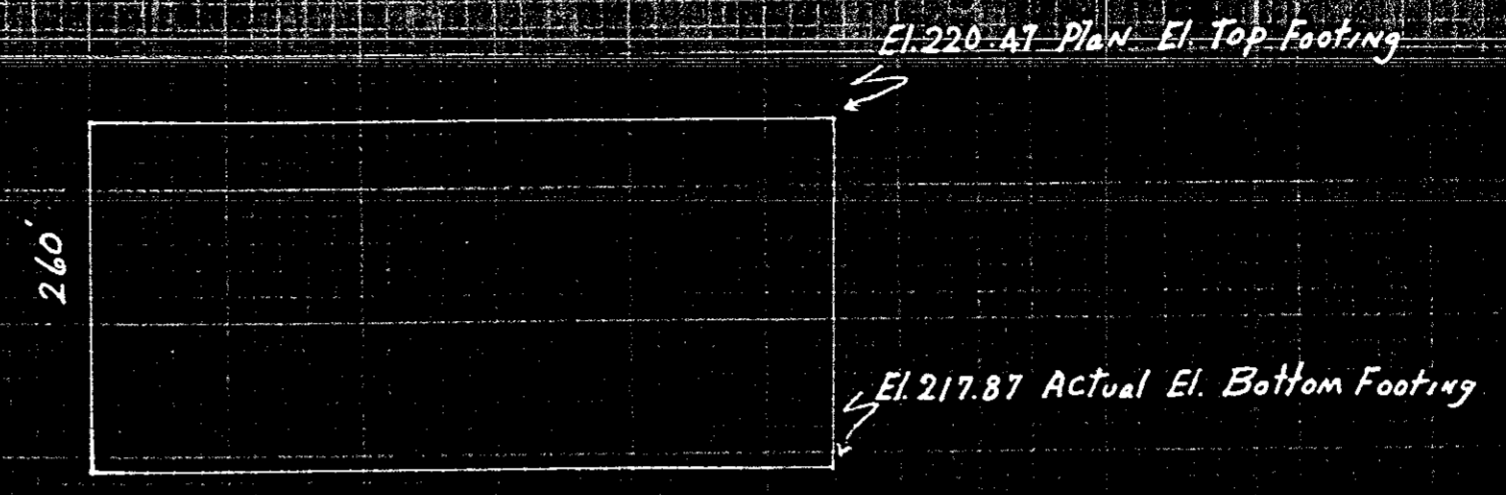
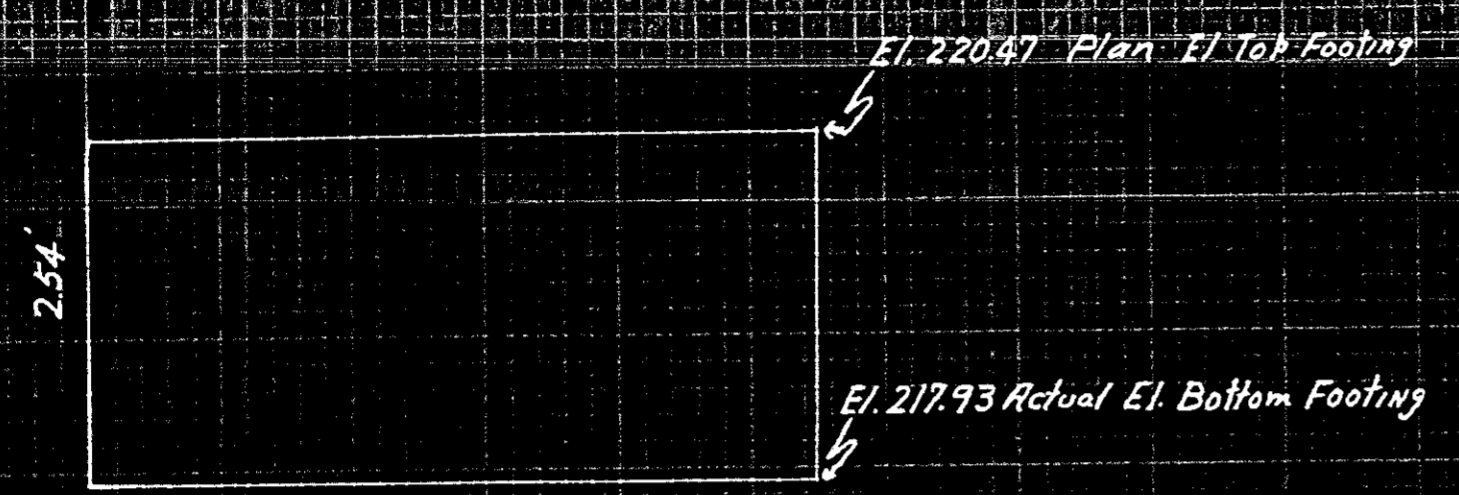
Computed by W.A. McNeill  
 Checked by T.M. Austell



ADDITIONAL MASONRY BENT #6

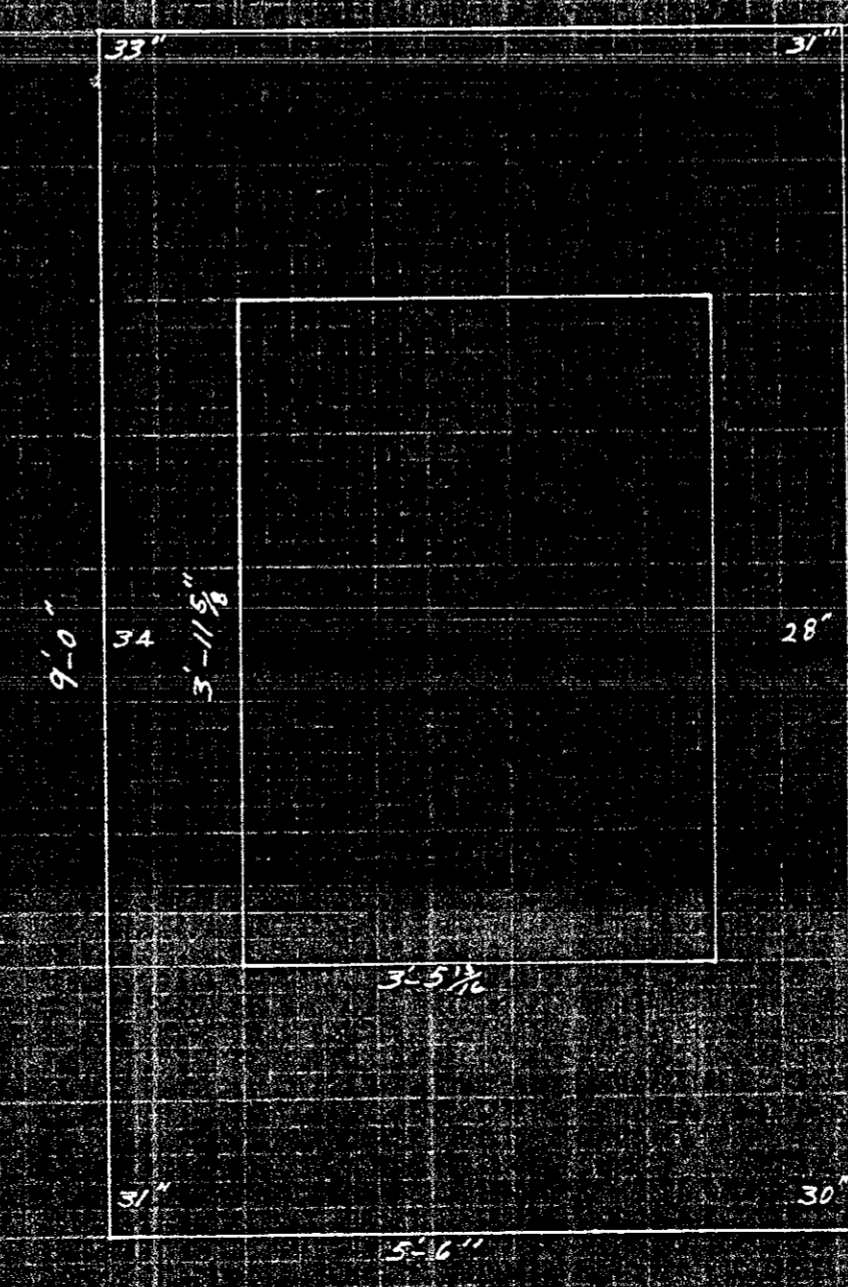
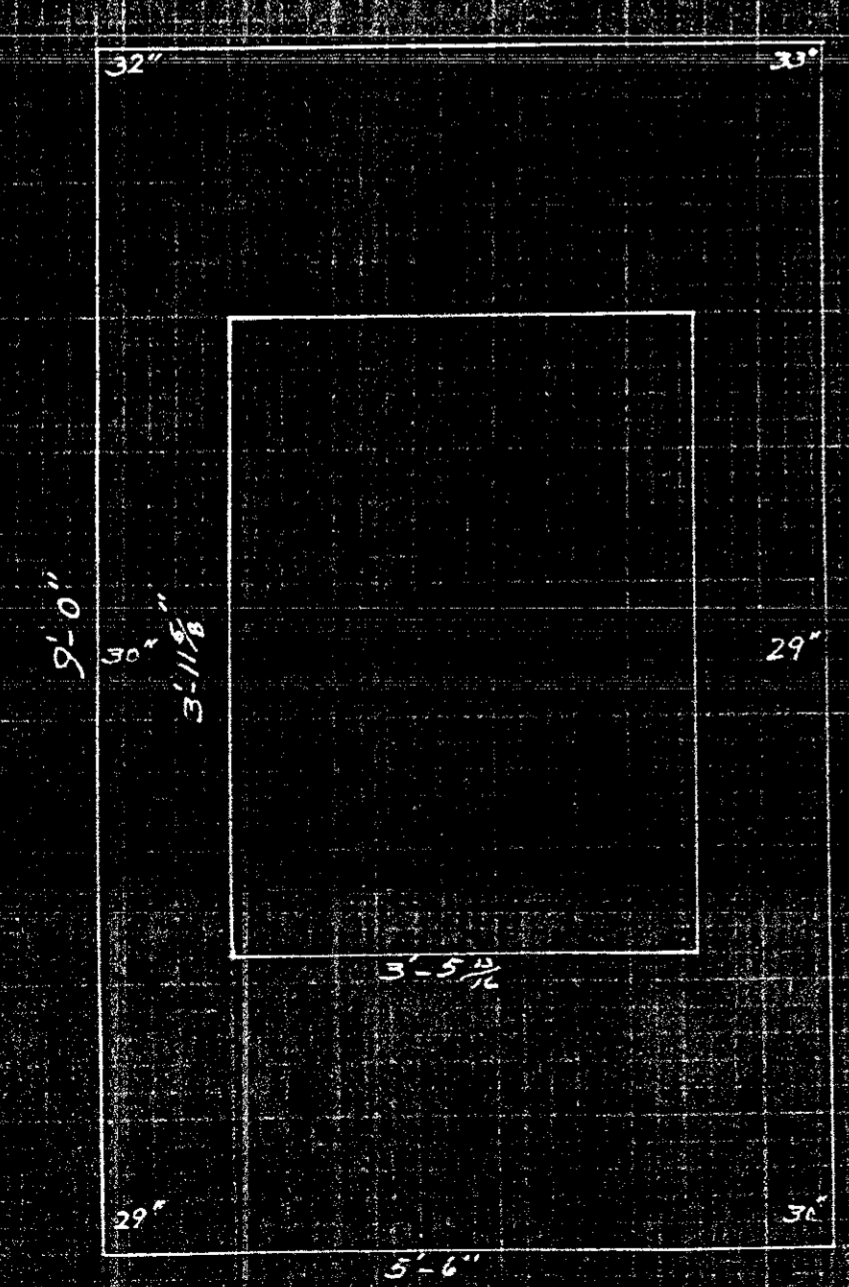
N.C. 8212-1749-62  
FA-5-249(D)

221.00  
220.00  
219.00  
218.00  
217.00  
216.00



ADDITIONAL MASONRY

Left Foundation	
$\frac{90 \times 55 \times 2.54}{27}$	4.657
Left Stem	
Built as Per Plans	
Right Foundation	
$\frac{90 \times 55 \times 2.60}{27}$	4.767
Right Stem	
Built as per Plans	
Total Masonry in Foundations	9.424
Less Plan Quantities in Footing	9.167
Total Additional Masonry	0.257
Plan Quantities Bent #6	39.500
Total Class A Conc Bent #6	39.757



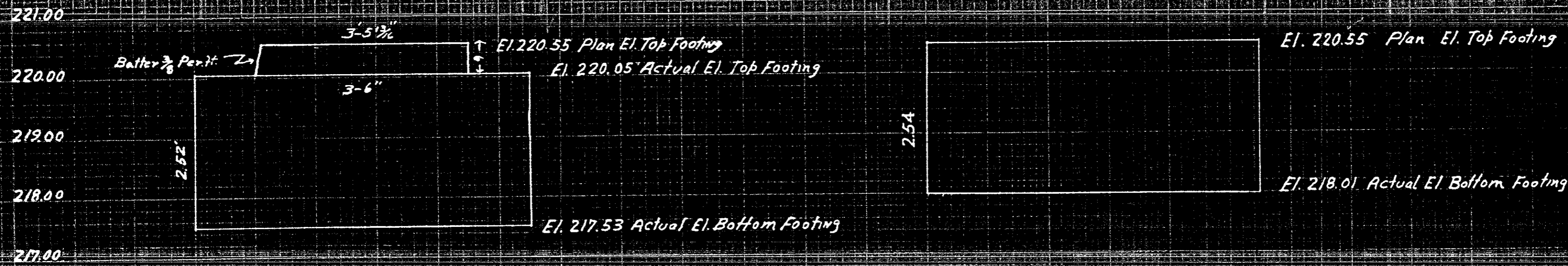
See Masonry Book Page No 52

Computed by W.A. McNeill  
Checked by T.M. Austell



ADDITIONAL MASONRY BENT NO 7

FED. ROAD DIST. NO. STATE FED. AID PERCENT DATE  
 N.C. 0214-1396 FA 5-1960



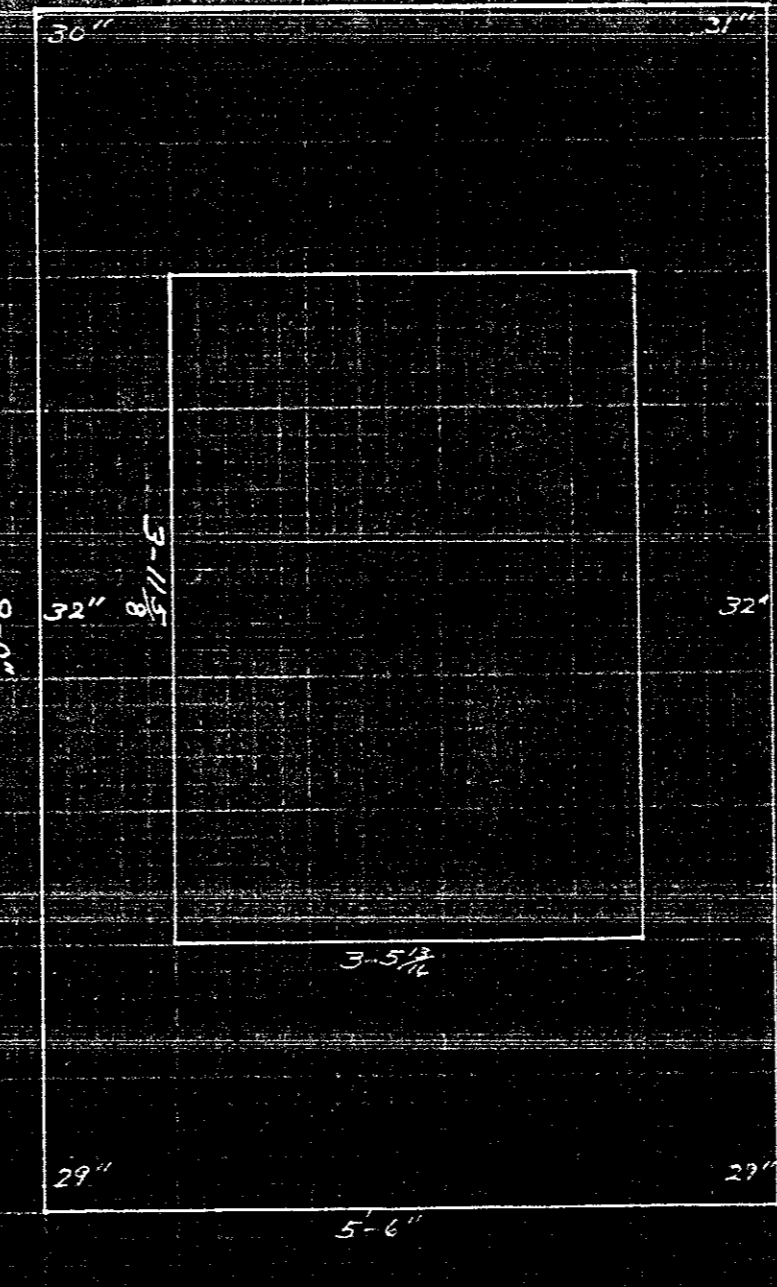
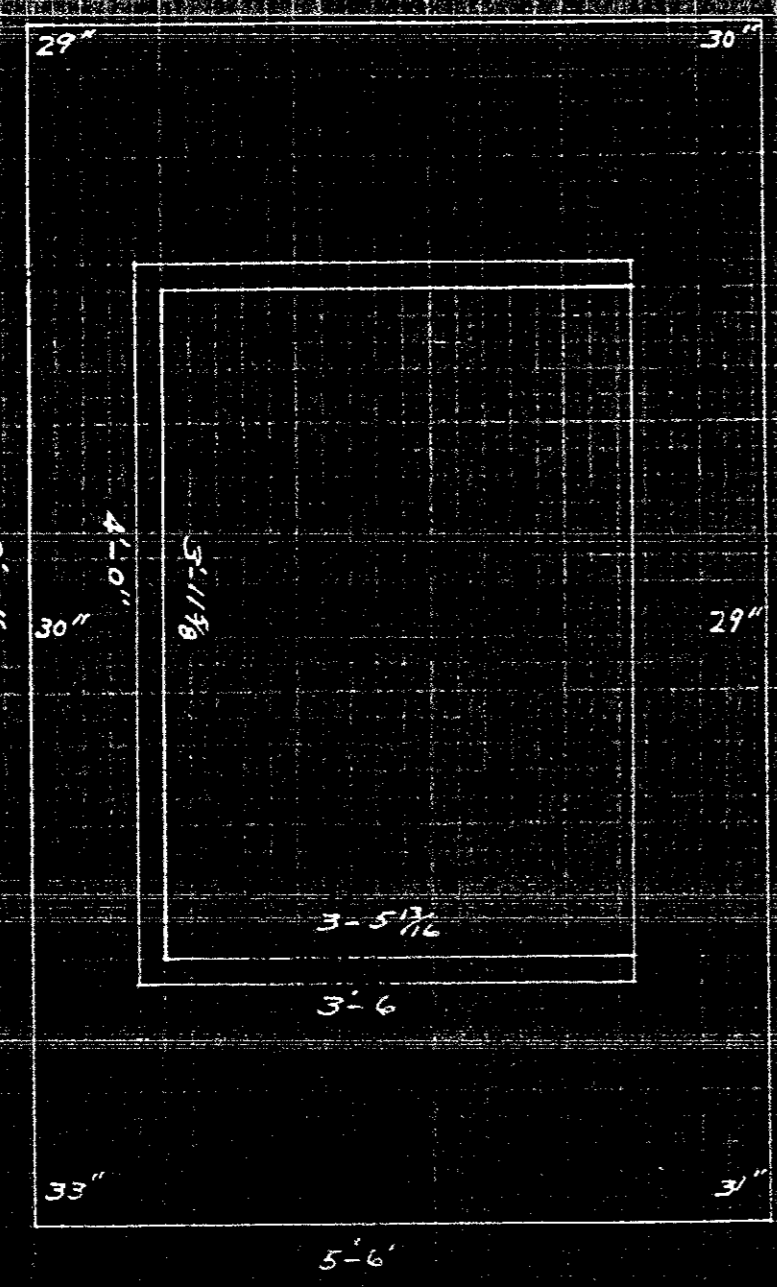
ADDITIONAL MASONRY

Left Foundation	
90 X 55 X 252	4.620
27	
Left Stem	
3.4922 X 3.9844 X 0.50	0.258
27	
Right Foundation	
90 X 55 X 254	4.657
27	
Right Stem	
Built as per Plans =	0.000

Total Masonry Foundations & Increased Stem	9.535
Less Plan Quantities in Footing	9.167
Total Additional Masonry	0.368
Plan Quantities Bent No 7	39.500
Total Class A Conc. Bent No 7	39.868

See Masonry Book Page No. 53

Computed by W.A. McNeil  
 Checked by W.B. Wellmo



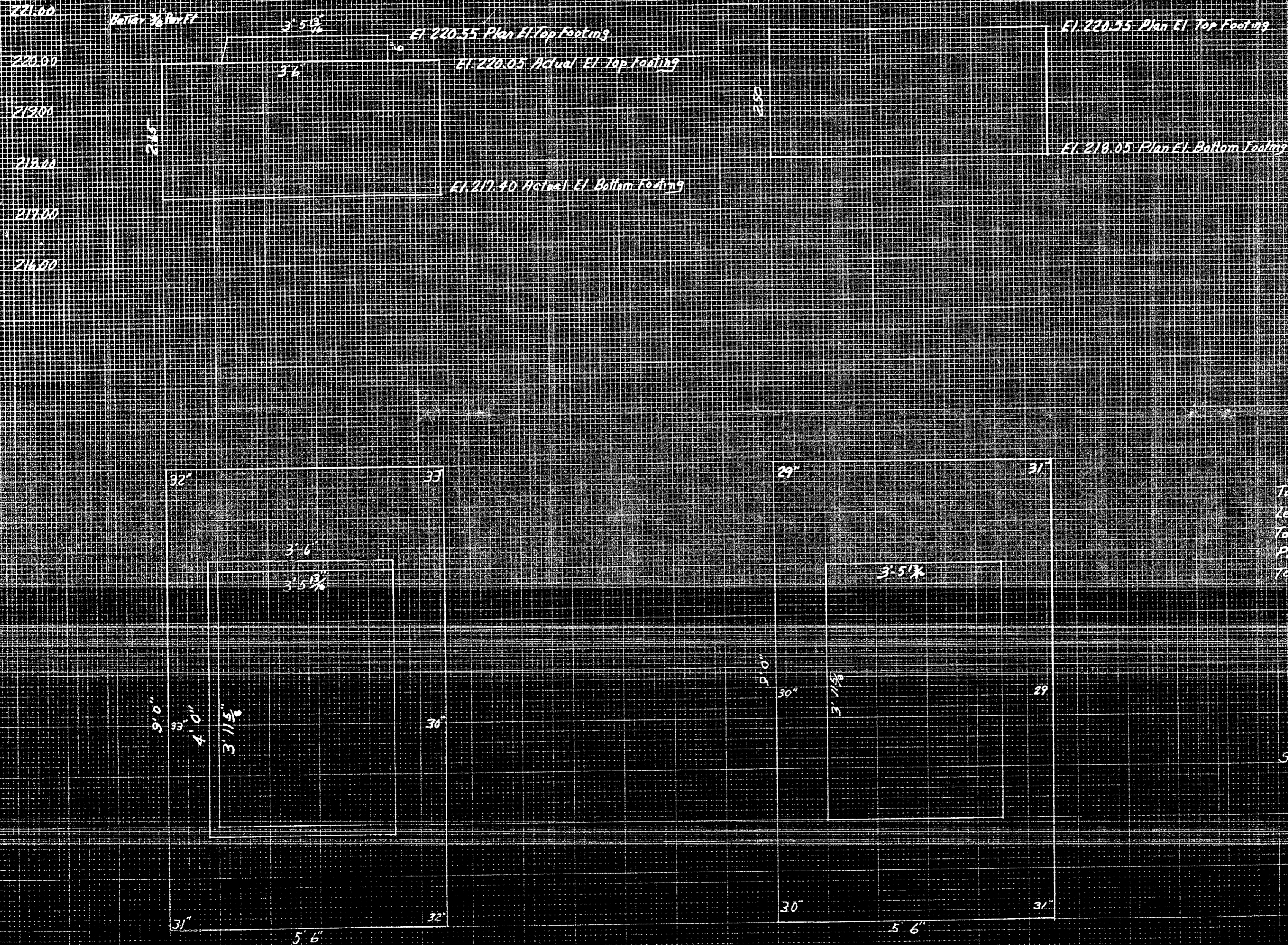
FINAL SURVEY PLANS TO BE USED

ORIGINAL SURVEY PLANS TO BE USED



ADDITIONAL MASONRY BEAM NO 8

N.C. 3214-1949-64-70  
F.A. 5-229(D)



ADDITIONAL MASONRY	
Left Foundation	
90 X 5.50 X 2.65	4.858
27	
Left Stem	
3.4922 X 3.9834 X 0.50	0.258
27	
Right Foundation	
90 X 5.50 X 2.50	4.593
27	
Right Stem	
Built as Per Plans	0.000
Total Masonry Foundation & Increased Stem	9.699
Less Plan Quantities in Footing	9.167
Total Additional Masonry	0.532
Plan Quantities Bent No 8	39.500
Total Class A Conc. Bent No 8	40.032

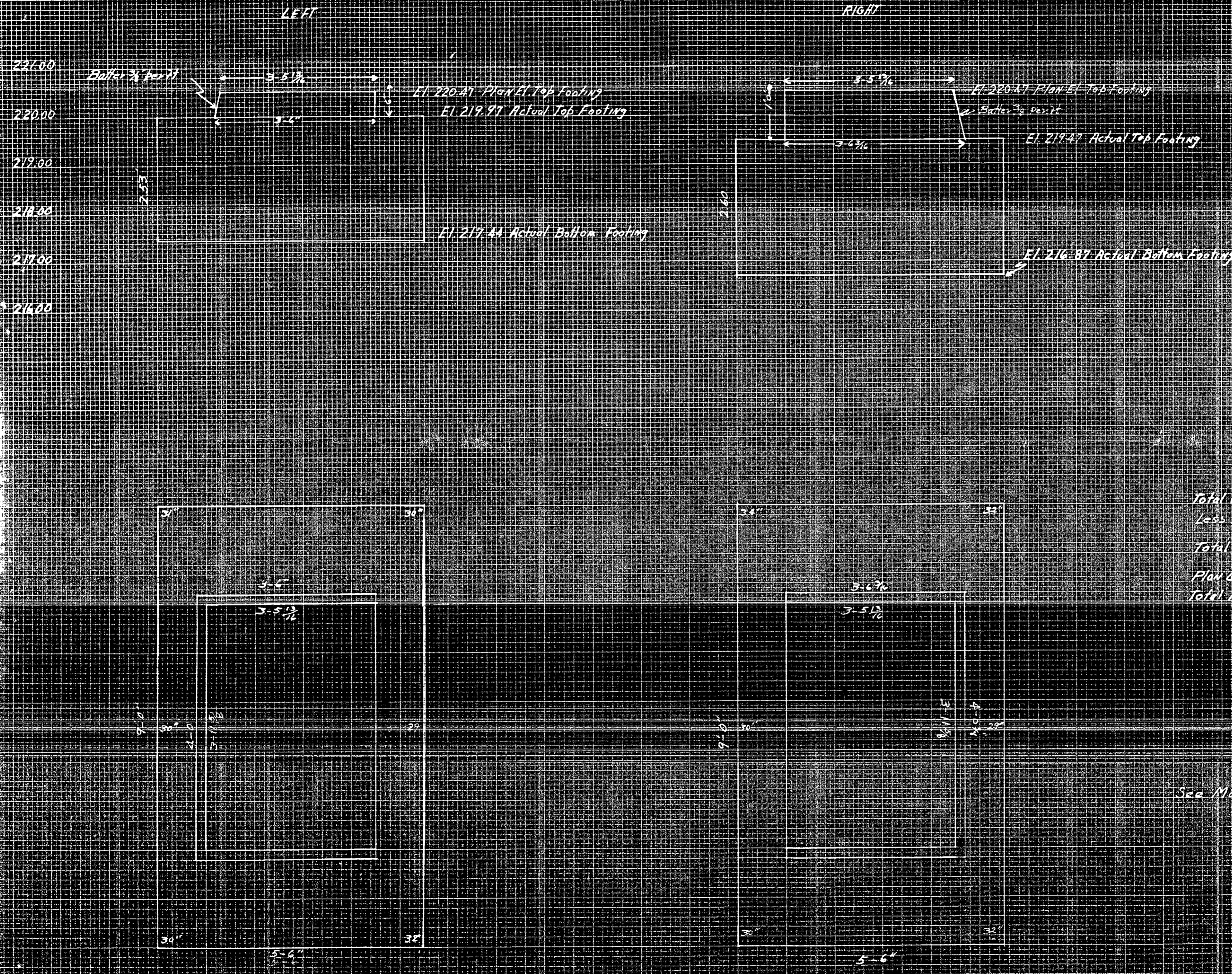
See Masonry Book Page No. 54

Computed by W.A. MS Nail  
Checked by T.M. Rustall



# ADDITIONAL MASONRY BENT No 9

NC-8214-1947-65-70  
FA 5-249(1)



## ADDITIONAL MASONRY

Left Foundation	
90 X 55 X 2.53	1.638 Cuyds
27	
Left Stem	
3.4922 X 3.9844 X 0.5	0.258
27	
Right Foundation	
90 X 55 X 2.60	1.767
27	
Right Stem	
3.50 X 4.00 X 1.00	0.519
27	
Total Masonry Foundation & Incurment Stem	10.182
Less Plan Quantities in Footing	9.167
Total Additional Masonry	1.015 Cuyds
Plan Quantities Bent No 9	39.500
Total Masonry Bent No 9	40.515 Cuyds

See Masonry Book Page No 55

Computed by W.M. McNeill  
Checked by T.M. Austell

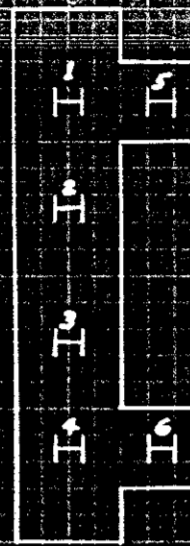


# STEEL PILES

PROJECT 8214

FED. ROAD DIST. NO.	STATE	FED. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	NC	8214	1949-66	78	
FA. 5-249(1)					

END BENT NO. 1



END BENT NO. 2



END BENT NO. 1

NO.	DATE	LENGTH	NET		DROP	WEIGHT HAMMER	AVG. PEN		LAST BEARING
			CUT OFF	LENGTH			5 BLOWS	IN TONS	
1	11-30-48	38'	3'-0"	35'-0"	15'	2750	1 1/2"	34	
2	11-30-48	38'	5'-9"	32'-3"	15'		1 1/2"	34	
3	11-30-48	38'	1'-6"	36'-6"	10'		0"	28	
4	11-30-48	38'	1'-1"	36'-11"	15'		1 1/2"	34	
5	11-30-48	38'	3'-9"	34'-3"	12'		3/4"	29	
6	11-30-48	38'	3'-10"	34'-2"	12'		3/4"	29	
		228	18' 11"	209' 1"					

END BENT NO. 2

NO.	DATE	LENGTH	NET		DROP	WEIGHT HAMMER	AVG. PEN		LAST BEARING
			CUT OFF	LENGTH			5 BLOWS	IN TONS	
1	10-18-48	38'	7'-0"	31'-0"	15'	2750	1"	34	
2	10-18-48	38'	6'-2"	31'-10"	15'		1"	34	
3	10-18-48	38'	4'-6"	33'-6"	15'		1"	34	
4	10-18-48	38'	6'-0"	32'-0"	15'		1"	34	
5	10-18-48	38'	8'-0"	30'-0"	15'		1"	34	
6	10-18-48	38'	9'-2"	28'-10"	15'		1"	34	
		TOTAL	228	40' 10"	187' 2"				

### SUMMARY

	NET LENGTH	
BENT NO. 1	209'-1"	19'-11"
BENT NO. 2	187'-2"	40'-10"
TOTAL	396'-3"	59'-9"
LESS LENGTH FOR CAPS		5'-0"
NET CUT OFF PILE LENGTH		54'-9"

Computed by W.A. McNeill  
Checked by W.B. Wellman