

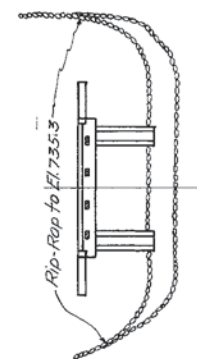
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| 8 | TENN. | 2.47 F | 19 | | |

SECTION ALONG E OF BRIDGE AND ROADWAY
SCALE 1"=20'

NOTE: Piers shall be carried 1'-0" into rock.

DESIGN DATA
 Drainage Area = 393600 Acres. = 615^{DM}
 A factor C = .4 in Talbot's Formula requires:
 Water Area = 6300 Sq. Ft.
 Area provided = 6570 Sq. Ft.

SKETCH OF GRADES
Elevations shown refer to Fin. Grade



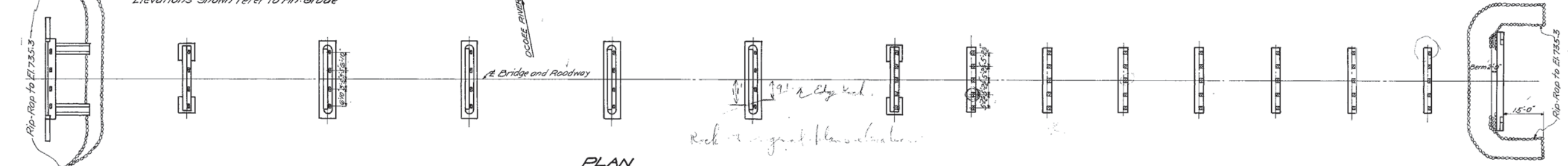
Special Note
 All steel work in the present bridge shall be dismantled in such a manner as to avoid damage to the members.
 Where riveted joints may be encountered, the rivets shall be cut out in a workmanlike manner, so as not to damage the adjacent metal.
 All members and parts shall be match-marked so as to facilitate re-erection. The Contractor shall prepare drawings showing the marks for all parts of the work which shall be submitted to the Engineer in charge.
 All small and loose parts such as pins, bolts, etc. shall be boxed and the boxes properly marked for the unit to which they belong.
 All the material shall be piled and stored in an orderly manner. It shall be placed on blocking.

PILE SCHEDULE

| LOCATION | NO. | LENGTH |
|-------------|-----|--------|
| BENT NO. 3 | 5 | 28'-0" |
| BENT NO. 4 | 5 | 28'-0" |
| BENT NO. 5 | 5 | 27'-0" |
| BENT NO. 6 | 5 | 25'-0" |
| BENT NO. 7 | 5 | 25'-0" |
| BENT NO. 8 | 5 | 24'-0" |
| BENT NO. 9 | 5 | 21'-0" |
| ABUT. NO. 2 | 7 | 19'-0" |

Special Note
 The use of high early strength concrete will be permitted in all piles.

PLAN



General Notes
 Specifications: Standard Road and Bridge Specifications of the Tennessee Department of Highways and Public Works.
 Concrete shall be Class A.
 Reinforcing Steel: See Specifications.
 Rock Foundation: See Specifications.

LIST OF DRAWINGS

| | DWG. NO. |
|---|--------------|
| * For details of Handrail | See B-2-16 |
| * For details of 50' Deck Girders | See A-14-66 |
| For details of 26' Deck Girders | See A-8-144 |
| * For details of Abutment No. 1 | See B-6-65 |
| * For details of Bents No. 1 & 2 - Footing Type B | See A-14-104 |
| For details of Piers No. 1-4 | See B-9-8 |
| For details of Bents No. 3-9 | See A-8-113 |
| For details of Abutment No. 2 | See A-8-132 |
| * For additional details | See B-9-8 |

ESTIMATED QUANTITIES

| ITEM | EXCAVATION | | | CONCRETE | | STEEL | | STEEL | COPPER | CONCRETE | RIP | ROCK |
|---------------------------------|------------|-----|-----|----------|---------|-----------|---------|----------|--------|----------|----------|----------|
| | CU. YDS. | DRY | WET | CLASS B | CLASS A | REINFORC. | STRUCT. | FORGINGS | PLATES | PILES | RAP | BORINGS |
| | | | | | | LBS. | | LBS. | LBS. | LIN. FT. | CU. YDS. | LIN. FT. |
| SUPERSTRUCTURE | | | | 74.0 | | 8164 | | | | | | |
| DECK GIRDERS: 6-50' CLEAR SPANS | | | | | 521.5 | 123424 | 5163 | 6180 | | | | |
| DECK GIRDERS: 8-26' CLEAR SPANS | | | | | 283.6 | 63391 | 2952 | | 176 | | | |
| SUBSTRUCTURE | | | | | | | | | | | | |
| ABUTMENT NO. 1 | 14.0 | | 5 | | 66.9 | 6226 | | | | | 25 | 12 |
| BENT NO. 1 | 7.9 | 1.4 | 3 | | 32.0 | 4188 | | | | | | 12 |
| PIER NO. 1 | 12 | 3.1 | 13 | | 71.9 | 2846 | | | | | | 18 |
| NO. 2 | | 9 | 17 | | 73.1 | 2863 | | | | | | 18 |
| NO. 3 | | 5 | 9 | | 67.0 | 2699 | | | | | | 18 |
| PIER NO. 4 | | 10 | 16 | | 64.6 | 2625 | | | | | | 18 |
| BENT NO. 2 | 7.4 | 1.0 | 3 | | 30.9 | 4224 | | | | | | 12 |
| NO. 3 | | | | | 5.7 | 319 | | | | | | |
| NO. 4 | | | | | 5.7 | 319 | | | | | | |
| NO. 5 | | | | | 5.7 | 319 | | | | | | |
| NO. 6 | | | | | 5.7 | 319 | | | | | | |
| NO. 7 | | | | | 5.7 | 319 | | | | | | |
| NO. 8 | | | | | 5.7 | 319 | | | | | | |
| BENT NO. 9 | | | | | 5.7 | 319 | | | | | | |
| ABUTMENT NO. 2 | | | | | 9.0 | 486 | | | | | 30 | |
| TOTAL | 30.5 | 7.9 | 66 | 74.0 | 1260.4 | 223369 | 841.5 | 6180 | 176 | 1023 | 55 | 108 |

Lump sum for removal of present bridge, approximately 540' long 16' roadway.
 The river piers shall be removed down to the river bed and the remainder of the substructure to the natural ground line.
 All salvable material shall be carefully removed and placed on the Right of Way as directed by the Engineer in charge and shall remain the property of the State.
 See additional note for handling of steel.

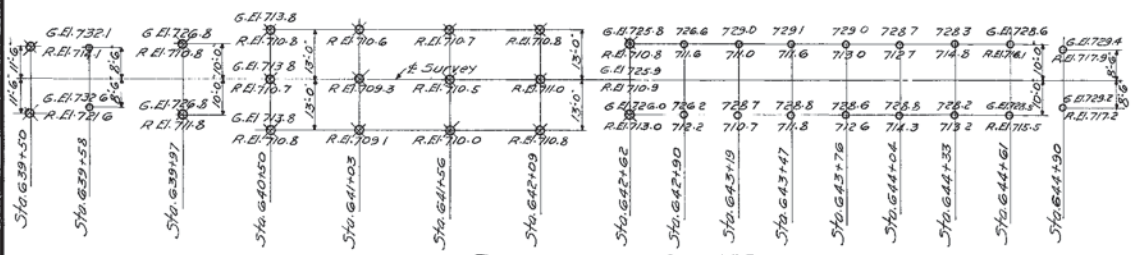
STATE OF TENNESSEE
 DEPARTMENT OF HIGHWAYS
 AND PUBLIC WORKS
 NASHVILLE
LAYOUT OF BRIDGE
 COOKE RIVER
 POLK CO
 1936

CORRECTED BY: *L. H. Knispson*
 BRIDGE ENGINEER
 APPROVED: *O. J. Goetz*
 STATE HIGHWAY ENGINEER

MICROFILMED
 Revised 7-17-37 - Note for high early strength in concrete piles.
 POST 1172-352-9-36

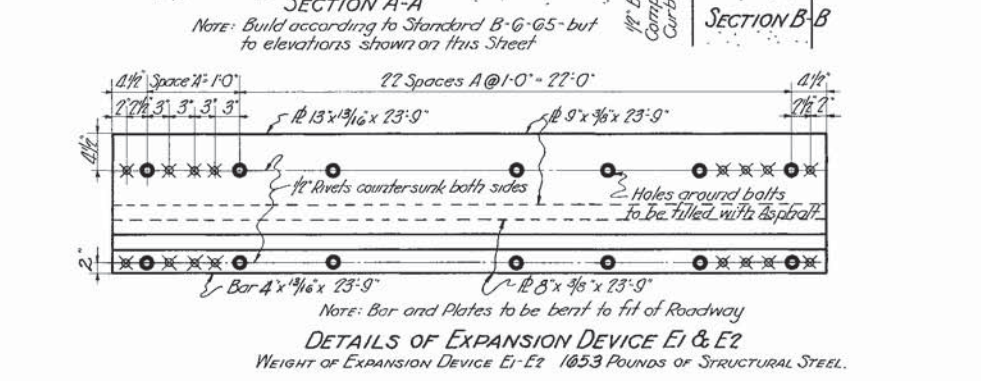
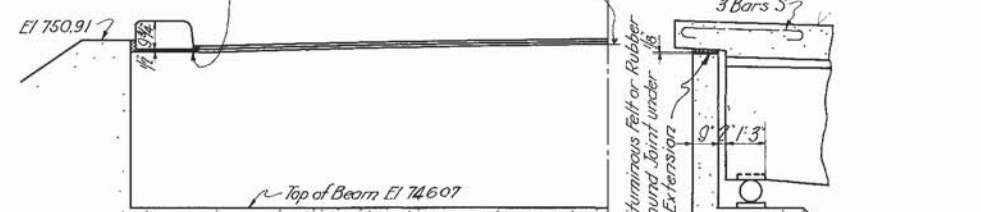
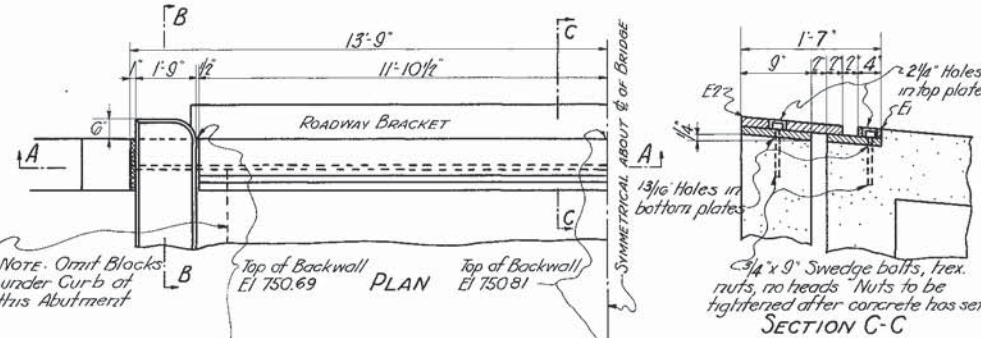
DESIGNED BY: *H. L. Fayer* DATE: Dec. 17, 26
 DRAWN BY: *H. L. Fayer* DATE: 1-23-37
 TRACED BY: *H. L. Fayer* DATE: 1-23-37
 CHECKED BY: *H. L. Fayer* DATE: 1-23-37

SOUNDING SKETCH
 Note: After the rock is uncovered a hole 6 ft deep shall be drilled at points marked thus *



Bents 25 feet apart 18 feet

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| 8 | TENN. | | 19 | | |



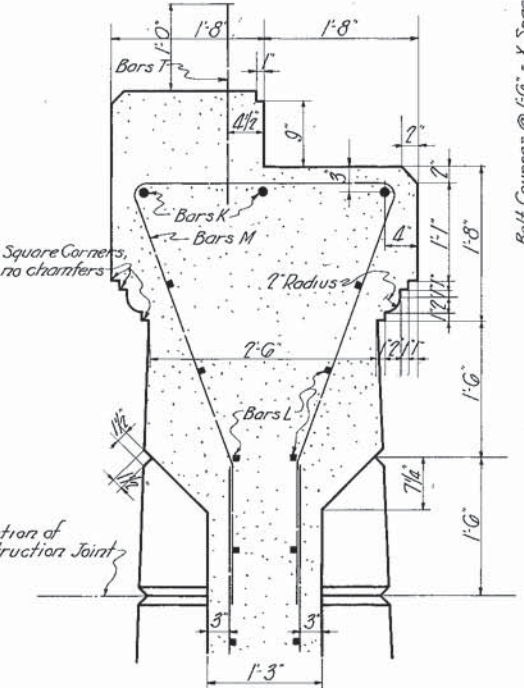
ABUTMENT No. 1
NOTE: FOR DETAILS NOT SHOWN SEE DRAWING B-6-G5.

3/4" Bituminous Felt or Rubber Compound Joint

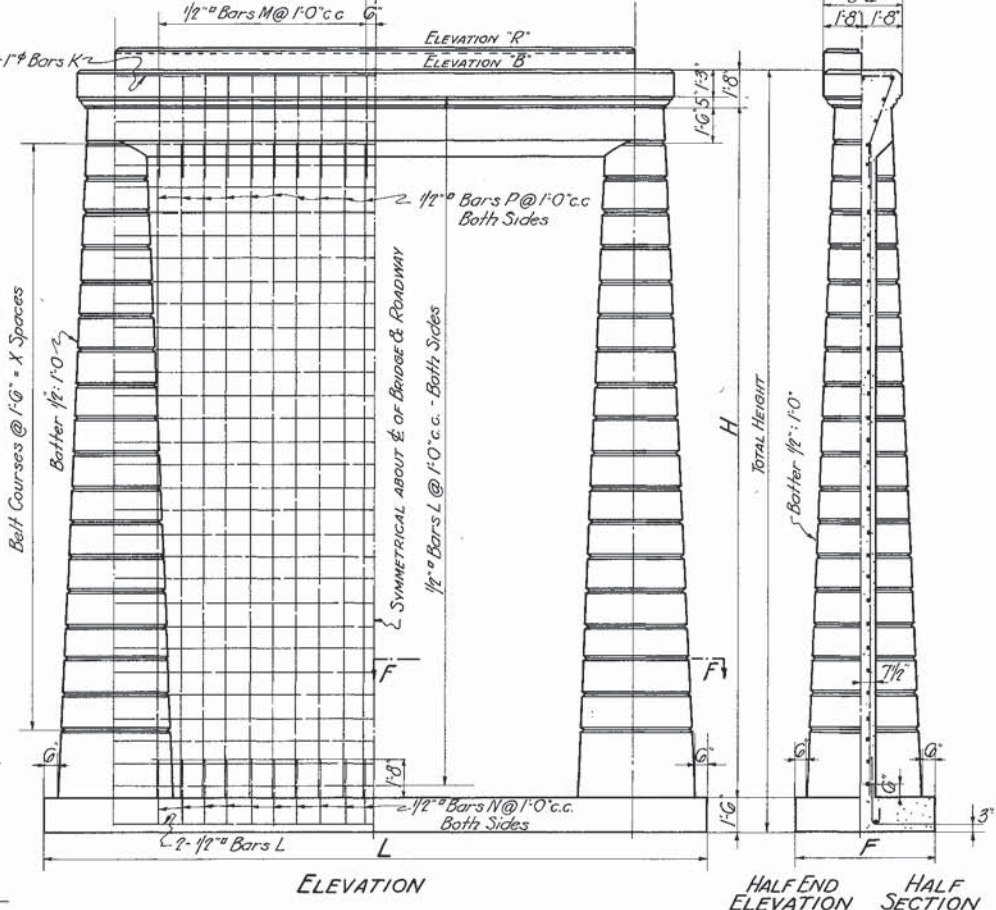
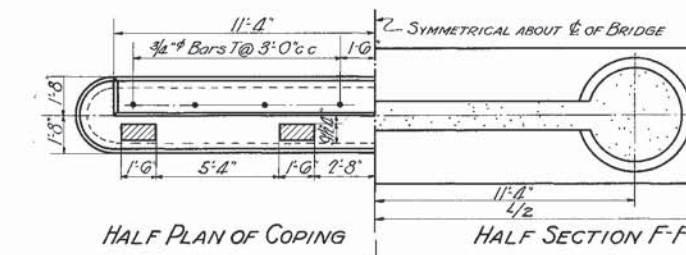
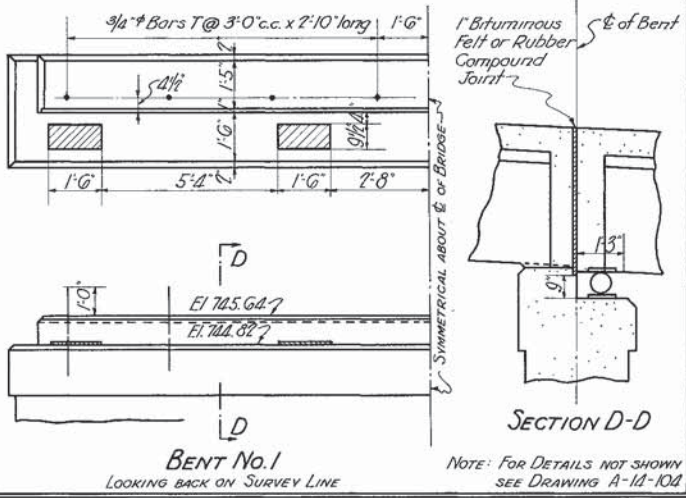
BRIDGE SEAT ELEVATIONS

| BENT | ELEV. 'A' |
|------|-----------|
| No 3 | 741.25 |
| No 4 | 740.68 |
| No 5 | 740.11 |
| No 6 | 739.54 |
| No 7 | 738.97 |
| No 8 | 738.40 |
| No 9 | 737.83 |

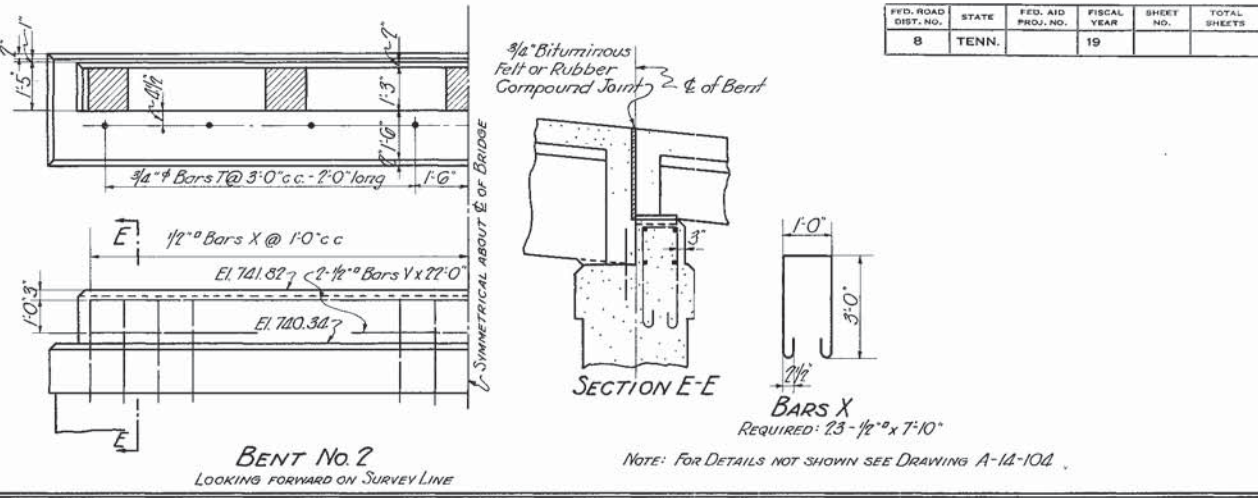
BENTS No. 3-9
NOTE: FOR DETAILS NOT SHOWN SEE DRAWING A-8-113.



Note: Belt courses shall be spaced as shown. They shall be formed by nailing triangular strips inside the forms. The pouring of the concrete shall be so arranged that the construction joints between successive lifts will be made at the apex of the bead as shown.



PIERS No. 1-4
NOTE: JOINTS BETWEEN DECK GIRDERS SAME AS ON BENT No. 1

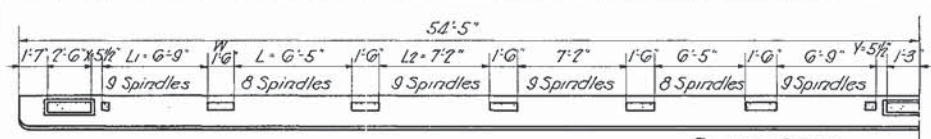


DIMENSIONS AND ESTIMATED QUANTITIES

| PIER | ELEVATIONS | | DIMENSIONS | | | | | | QUANTITIES | |
|------|-----------------|-----------------|--------------|--------|-----------|-----------|------------|----|-------------------|------------------------------------|
| | RISER BLOCK 'R' | BRIDGE SEAT 'S' | TOTAL HEIGHT | H | A | F | L | X | CONCRETE CU. YDS. | REINFORCING CLASS 'A' STEEL POUNDS |
| No 1 | 744.58 | 743.76 | 34'-2" | 31'-0" | 5'-1" | 6'-1" | 28'-9" | 18 | 71.9 | 2846 |
| No 2 | 743.52 | 742.70 | 34'-8" | 31'-6" | 5'-1 1/2" | 6'-1 1/2" | 28'-9 1/2" | 17 | 73.1 | 2863 |
| No 3 | 742.46 | 741.64 | 32'-2" | 29'-0" | 4'-11" | 5'-11" | 28'-7" | 16 | 67.0 | 2699 |
| No 4 | 741.40 | 740.58 | 31'-2" | 28'-0" | 4'-10" | 5'-10" | 28'-6" | 16 | 64.6 | 2625 |

BILL OF STEEL

| PIER | BARS K 1" | | BARS L 1/2" | | BARS M 1/2" | | BARS N 1/2" | | BARS P 1/2" | | BARS T 3/4" | |
|------|-----------|--------|-------------|--------|-------------|--------|-------------|--------|-------------|--------|-------------|--------|
| | No | LENGTH | No | LENGTH | No | LENGTH | No | LENGTH | No | LENGTH | No | LENGTH |
| No 1 | 3 | 22'-9" | 66 | 22'-9" | 20 | 12'-0" | 40 | 3'-4" | 40 | 29'-6" | 8 | 2'-10" |
| No 2 | 3 | 22'-9" | 66 | 22'-9" | 20 | 12'-0" | 40 | 3'-4" | 40 | 30'-0" | 8 | 2'-10" |
| No 3 | 3 | 22'-9" | 62 | 22'-9" | 20 | 12'-0" | 40 | 3'-4" | 40 | 27'-6" | 8 | 2'-10" |
| No 4 | 3 | 22'-9" | 60 | 22'-9" | 20 | 12'-0" | 40 | 3'-4" | 40 | 26'-6" | 8 | 2'-10" |



BILL OF STEEL

| BAR No. | SIZE | LENGTH |
|---------|--------|--------------|
| A | 1 1/2" | 2'-7" |
| B | 5/8" | 2'-0" |
| C | 1 1/2" | 25'-9" |
| D | 20 | 1/2" x 4'-0" |
| E | 20 | 1/2" x 1'-3" |

DETAIL OF HANDRAIL - SPAN No. 1
NOTE: FOR REINFORCEMENT IN POSTS SEE B-2-16

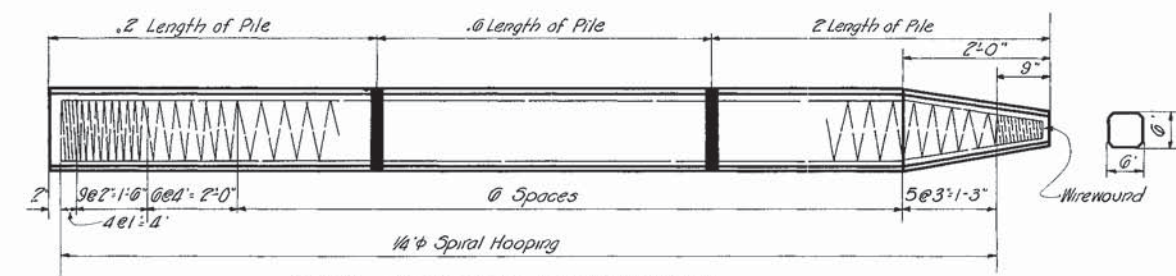
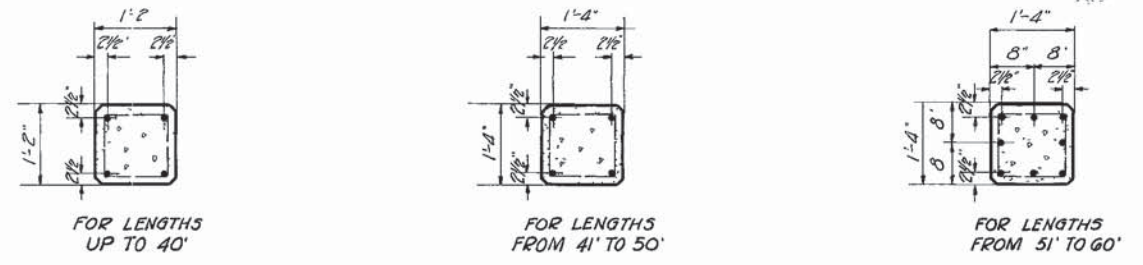
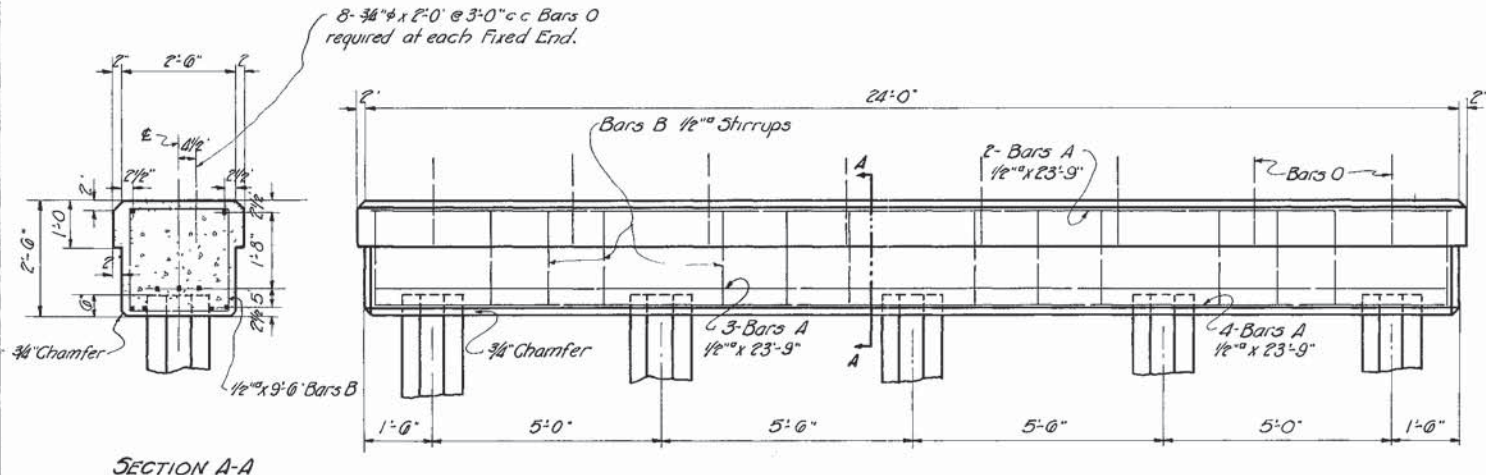
STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
AND PUBLIC WORKS
NASHVILLE

MISCELLANEOUS DETAILS

OCCOEE RIVER
POLK CO.
1936

CORRECT *L. H. Kirkman*
BRIDGE ENGINEER
APPROVED *O. J. Goetz*
STAT. HIGHWAY ENGINEER

DESIGNED BY *J. H. Long* DATE 12-16-36
DRAWN BY *W. J. Smith* DATE 1-25-37
TRACED BY *W. J. Smith* DATE
CHECKED BY *W. J. Smith* DATE



ESTIMATED QUANTITIES FOR PILE CAPS

| ITEM | REINFORCING STEEL ALL BARS 1/2" | | | CONCRETE CLASS A TOTAL CU YDS |
|------|---------------------------------|--------|--------|-------------------------------|
| | NO | LENGTH | WEIGHT | |
| CAP | 9 | 23'-9" | 298 | 5.74 |

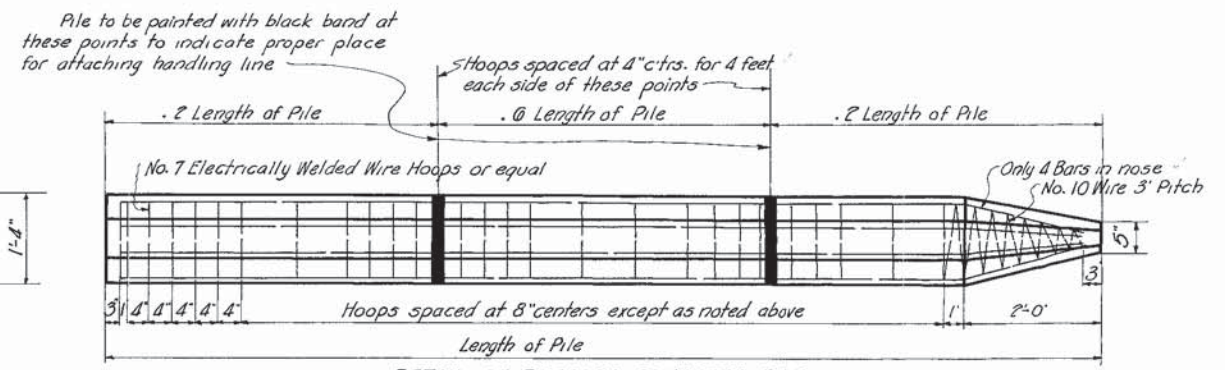
For each Fixed End add for Bars O 24 Lb of Steel to above

DETAIL OF PRECAST CONCRETE PILE TYPE "A"

| LENGTH OF PILE | LONG. REINFORCEMENT | WT. OF STEEL PER FT. | WT. OF PILE PER FT. |
|----------------|---------------------|----------------------|---------------------|
| Up to 35' | 4 - 7/8" φ | 9.6 Lb | 205.3 Lb |
| 36' to 40' | 4 - 1" φ | 12.2 | 205.3 |
| 41' to 45' | 4 - 1" φ | 15.1 | 265.3 |
| 46' to 50' | 4 - 1 1/8" φ | 18.8 | 265.3 |
| 51' to 55' | 8 - 1" φ | 28.9 | 265.3 |
| 56' to 60' | 8 - 1 1/8" φ | 36.2 Lb | 265.3 Lb |

SPECIAL NOTES:
 For location of Plates required at Expansion Ends see "Layout Sheet" of the Bridge in question. These Bolts and Plates are to be set at the time the Cap Beam is poured, and the top of the Bottom Plates shall be flush with the top of the Beam. Plates to be set with back edges in line on the E of the Cap.

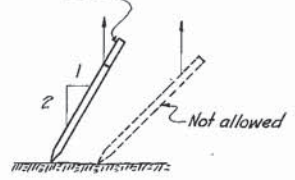
GENERAL NOTES:
 Specifications Standard Road and Bridge Specifications of the Tennessee Department of Highways and Public Works.
 Piling to be Class S Concrete with Class A Aggregate.
 Cap Beam to be Class A Concrete.
 Reinforcing Steel See Specifications.
 Forms and Finish See Specifications.
 The distance from bottom of Cap to surface of ground shall not exceed 15'-0".
 Piles cracked during curing, handling or driving will not be accepted.



TYPE "B"

| LENGTH OF PILE | LONG REINFORCEMENT | WT OF STEEL PER FT. | WT OF PILE PER FT. |
|----------------|--------------------|---------------------|--------------------|
| 20' to 25' | 8 - 1/2" φ | 6.9 Lb | 219.7 Lb |
| 26' to 30' | 8 - 3/8" φ | 8.5 | 219.7 |
| 31' to 35' | 8 - 3/4" φ | 12.2 | 219.7 |
| 36' to 40' | 8 - 7/8" φ | 16.0 | 219.7 |
| 41' to 45' | 8 - 7/8" φ | 16.0 | 219.7 |
| 46' to 50' | 8 - 1" φ | 21.6 | 219.7 |
| 51' to 55' | 8 - 1" φ | 27.5 | 219.7 |
| 56' to 60' | 8 - 1 1/8" φ | 34.8 Lb | 219.7 Lb |

NOTE:
 In handling Piles, they shall be supported at the points indicated. Piles to be picked up by pulling on both lines uniformly. End of Pile not to touch ground unless Pile is inclined 1° or steeper.



STATE OF TENNESSEE
 DEPARTMENT OF HIGHWAYS
 AND PUBLIC WORKS
 NASHVILLE
STANDARD
CONCRETE PILE BENTS
 PRECAST PILES ROADWAY 20' & 24'
 SKEW 90°
 1931

CORRECTED *L. H. Erickson*
 BRIDGE ENGINEER
 APPROVED *E. M. Turner*
 STATE HIGHWAY ENGINEER

MICROFILMED

DESIGNED BY _____ DATE _____
 DRAWN BY _____ DATE _____
 RECHECKED BY *Compton, E. W.* DATE *Mar. '39*
 CHECKED BY _____ DATE _____

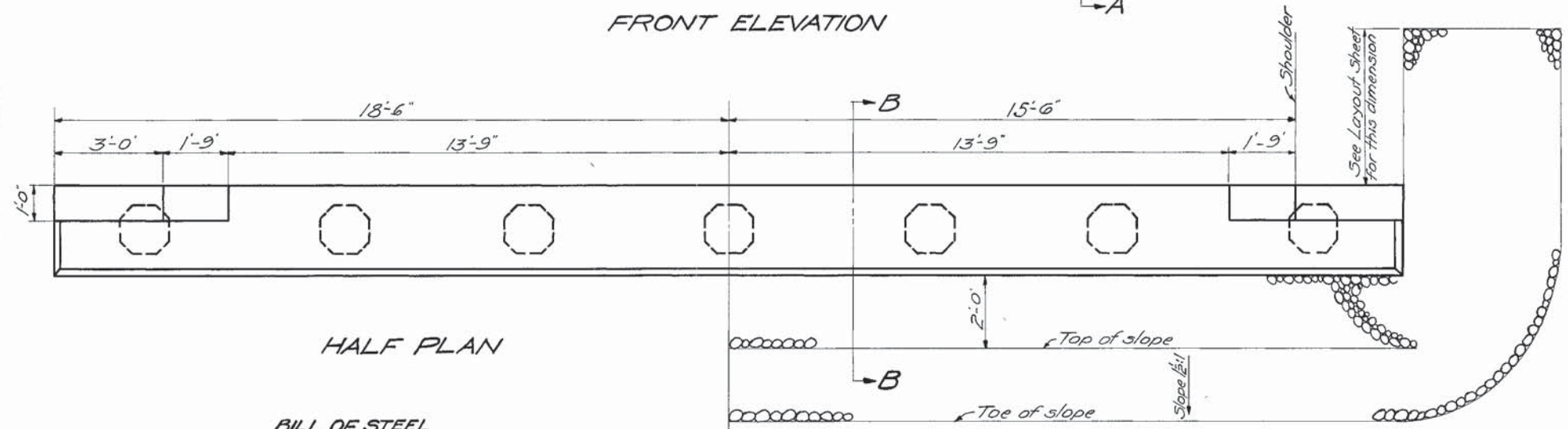
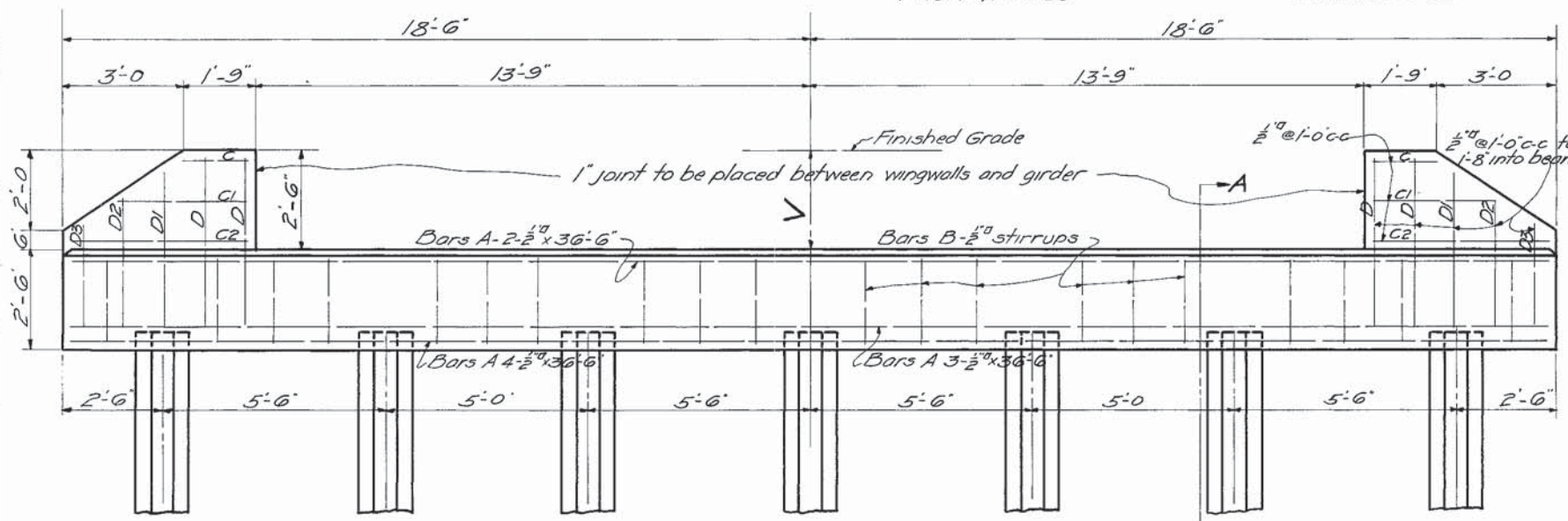
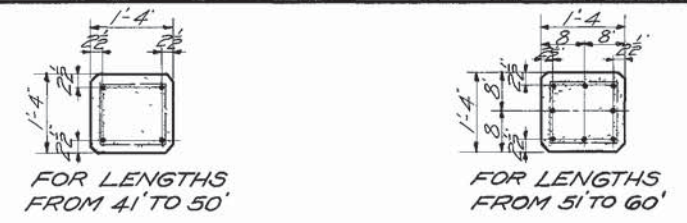
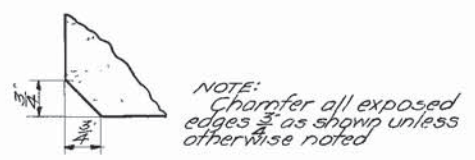
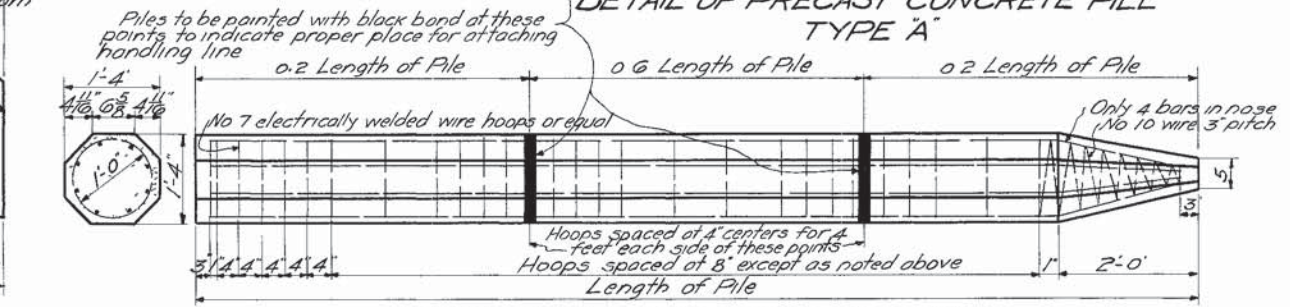
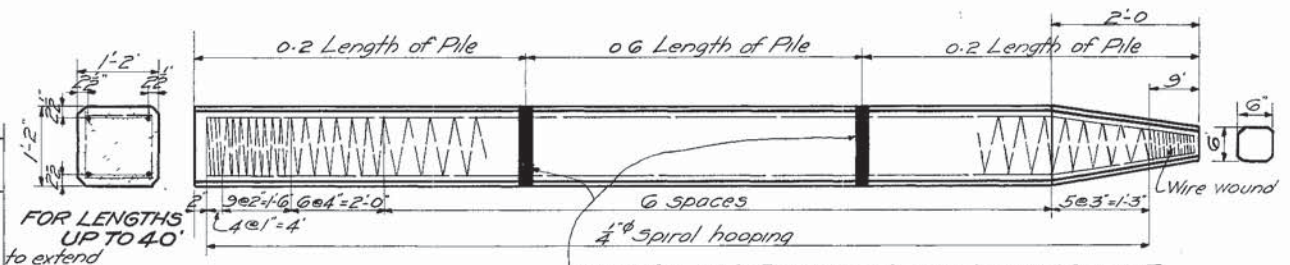
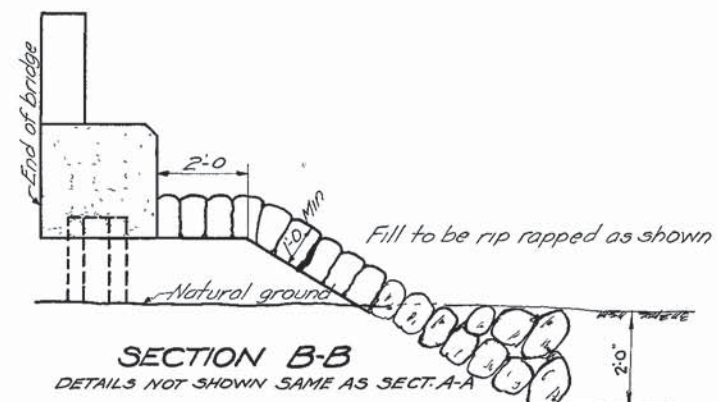
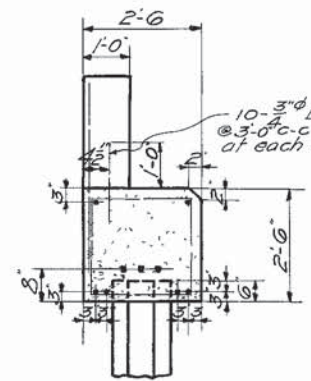


TABLE FOR V

| SPAN | V |
|--------|-------|
| 16'-0" | 2'-0" |
| 18'-0" | 2'-2" |
| 20'-0" | 2'-3" |
| 22'-0" | 2'-4" |
| 24'-0" | 2'-5" |
| 26'-0" | 2'-6" |

BILL OF STEEL
CAP AND WINGWALLS
ALL BARS $\frac{1}{2}$ " EXCEPT BARS T WHICH ARE $\frac{3}{4}$ "

| BAR NO. | LENGTH |
|---------|----------|
| A | 9 36'-6" |
| B | 20 9'-3" |
| C | 2 1'-6" |
| C1 | 2 3'-0" |
| C2 | 2 4'-3" |
| D | 4 4'-0" |
| D1 | 2 3'-9" |
| D2 | 2 3'-0" |
| D3 | 2 2'-3" |
| T | 10 2'-0" |



TYPE A PILES

| LENGTH OF PILE | LONG REINFORCEMENT | WT. OF STEEL PER FT. | WT. OF PILE PER FT. |
|----------------|-------------------------|----------------------|---------------------|
| UP TO 35' | 4- $\frac{1}{2}$ " BARS | 9.6 LBS | 205.3 LBS |
| 36 TO 40' | 4-1" " | 12.2 | 205.3 |
| 41 TO 45' | 4-1" " | 15.1 | 265.3 |
| 46 TO 50' | 4- $\frac{1}{2}$ " " | 18.8 | 265.3 |
| 51 TO 55' | 8-1" " | 28.9 | 265.3 |
| 56 TO 60' | 8- $\frac{1}{2}$ " BARS | 36.2 LBS | 265.3 LBS |

TYPE B PILES

| LENGTH OF PILE | LONG REINFORCEMENT | WT. OF STEEL PER FT. | WT. OF PILE PER FT. |
|----------------|-------------------------|----------------------|---------------------|
| 20 TO 25' | 8- $\frac{1}{2}$ " BARS | 6.9 LBS | 219.7 LBS |
| 26 TO 30' | 8- $\frac{3}{4}$ " " | 8.5 | 219.7 |
| 31 TO 35' | 8- $\frac{3}{4}$ " " | 12.2 | 219.7 |
| 36 TO 40' | 8- $\frac{1}{2}$ " " | 16.6 | 219.7 |
| 41 TO 45' | 8- $\frac{1}{2}$ " " | 10.6 | 219.7 |
| 46 TO 50' | 8-1" " | 21.6 | 219.7 |
| 51 TO 55' | 8-1" " | 27.5 | 219.7 |
| 56 TO 60' | 8- $\frac{1}{2}$ " BARS | 34.8 LBS | 219.7 LBS |

NOTE: In handling the piles they shall be supported at the points indicated. Piles to be picked up by pulling on both lines uniformly. End of piles not to touch ground unless pile is inclined 1:2 or steeper.

GENERAL NOTES: Specifications Standard Road and Bridge Specifications of the Tennessee Department of Highways and Public Works. Piling to be Class S concrete with Class A aggregate. Beams and Wingwalls to be Class A concrete with Class A aggregate Reinforcing Steel. See Specifications. Distance from bottom of cap to natural ground shall not exceed 15'-0". Rip Rap: See Specifications. Forms and Finish: See Specifications. Piles cracked during curing, handling or driving will not be accepted. Type of joint to be specified on Layout Sheet for each bridge.

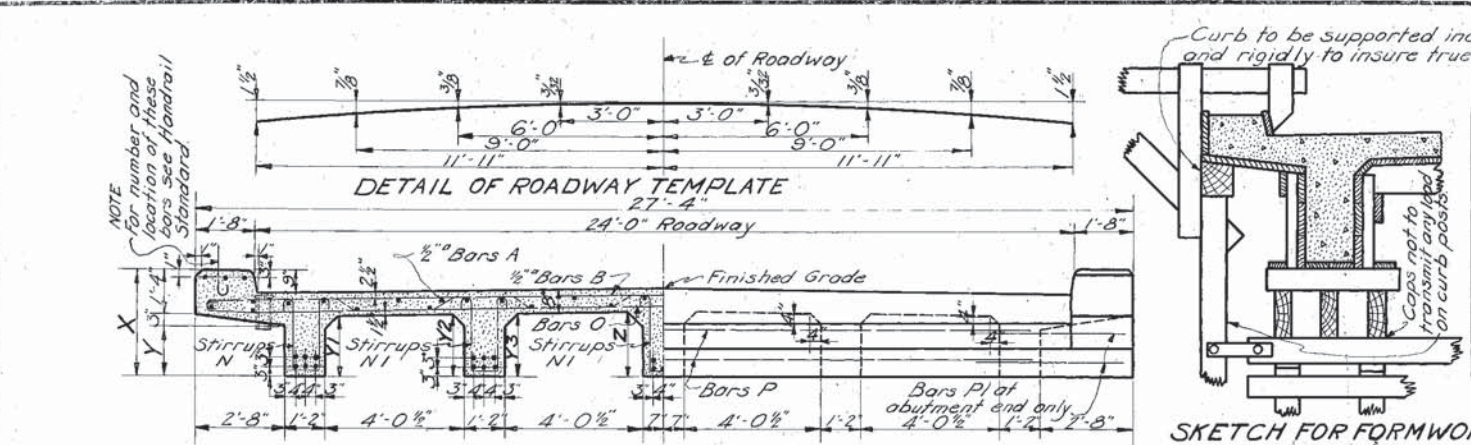
ESTIMATED QUANTITIES
CAP AND WINGWALLS
Concrete Class A 9.0 Cu. Yds
Reinforcing Steel 516 Lbs

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
AND PUBLIC WORKS
NASHVILLE
STANDARD
**CONCRETE ABUTMENT
PILE BENT TYPE**
ROADWAY 24'-0" SPANS 26'-0" OR LESS
31'-0" SHOULDER
1931

DESIGNED BY PELEIDERER DATE JUNE 31
DRAWN BY WARNER DATE 10-17-39
RETRACED BY DATE
CHECKED BY JNO. W. FLEMING DATE JUNE 31

CORRECT *L. N. Harrison*
APPROVED *J. W. Gentry*
STATE HIGHWAY ENGINEER

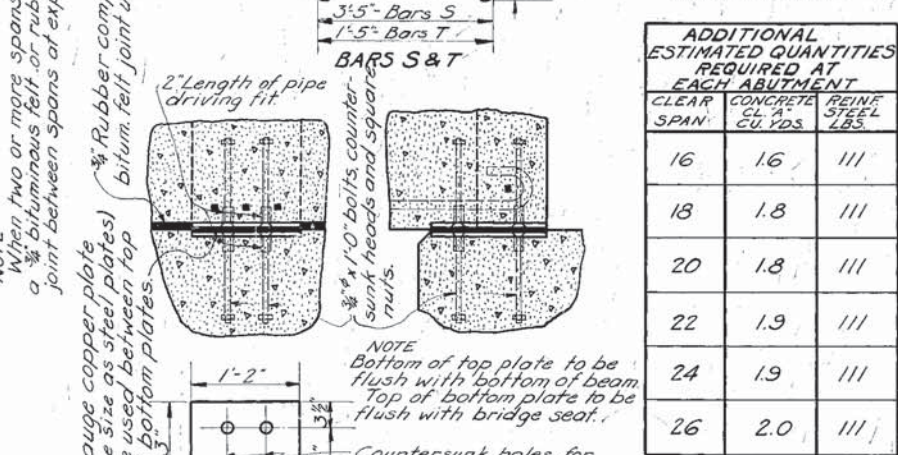
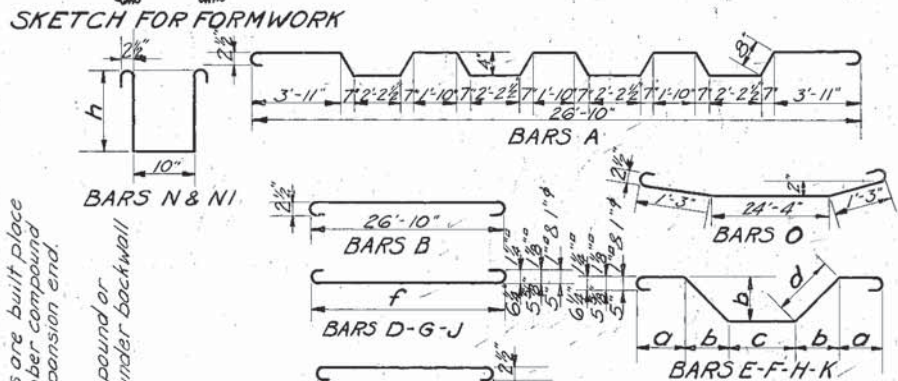
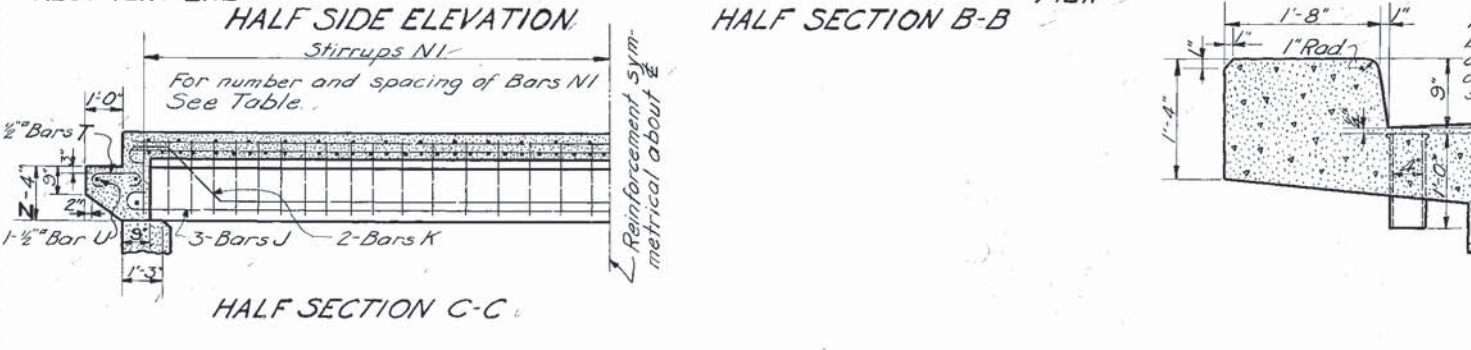
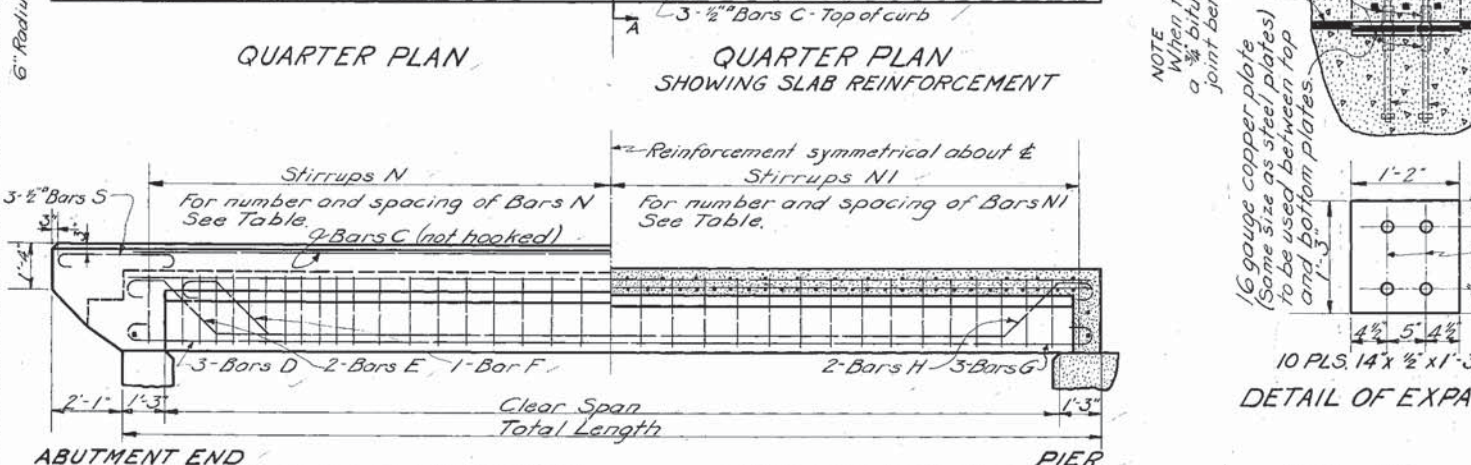
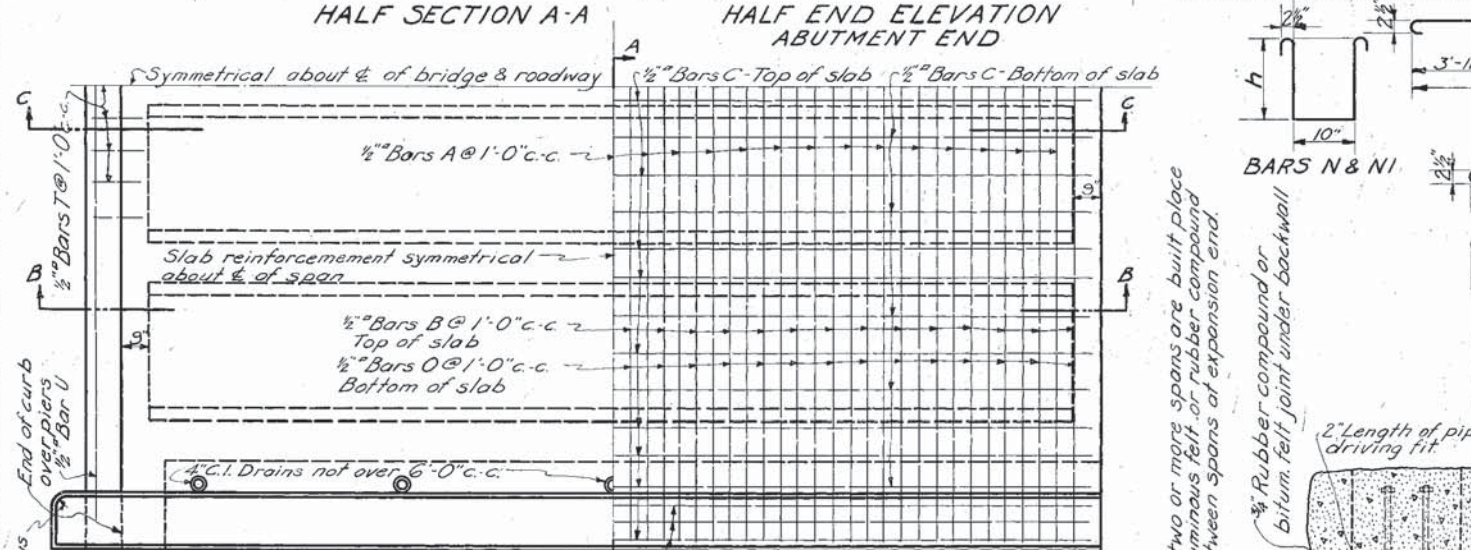
| | | | | | |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 8 | TENN. | 21 | 10 | 33 | 33 |



BILL OF STEEL FOR ONE INTERMEDIATE SPAN

| CLEAR SPAN FEET | BARS A | | BARS B | | BARS O | | BARS C | | BARS D | | BARS E | | BARS F | | BARS G | | BARS H | | BARS J | | BARS K | | BARS N | | BARS NI | | BARS P | | | | | |
|-----------------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|---------|------|--------|------|----|------|----|------|
| | NO. | SIZE | NO. | SIZE | NO. | SIZE | NO. | SIZE | NO. | SIZE | NO. | SIZE | NO. | SIZE | NO. | SIZE | NO. | SIZE | NO. | SIZE | NO. | SIZE | NO. | SIZE | NO. | SIZE | NO. | SIZE | | | | |
| 16 | 17 | 1/2" | 28 | 3/8" | 18 | 1/2" | 27 | 5/8" | 18 | 1/2" | 27 | 5/8" | 18 | 1/2" | 27 | 5/8" | 18 | 1/2" | 27 | 5/8" | 18 | 1/2" | 27 | 5/8" | 18 | 1/2" | 27 | 5/8" | 18 | 1/2" | 27 | 5/8" |

NOTE: For each abutment end add 6-1/2" Bars S x 4'-3", 27-1/2" Bars T x 2'-3", 1-1/2" Bar U x 26'-3" and 4-1/2" Bars P1 x 4'-3".



STEEL BENDING TABLE

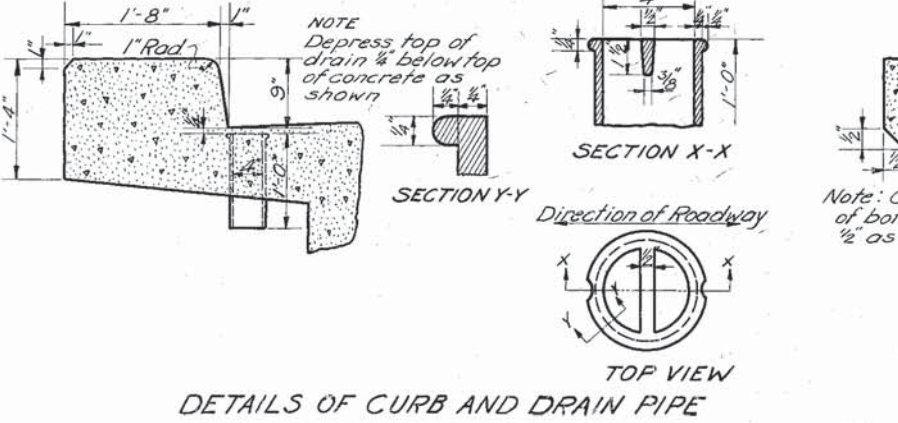
| CLEAR SPAN FEET | BARS B&J | BARS E | | | | BARS H | | | | BARS K | | | | BARS N | BARS NI | | |
|-----------------|----------|--------|-------|-------|---|--------|---|---|-------|--------|-------|-------|-------|--------|---------|-------|-------|
| | | a | b | c | d | a | b | c | d | a | b | c | d | | | | |
| 16 | 18'-0" | 1'-0" | 1'-0" | 1'-5" | - | - | - | - | 1'-0" | 1'-1" | 1'-3" | 1'-6" | 1'-0" | 1'-2" | 1'-3" | 1'-6" | 1'-7" |

DIMENSIONS AND ESTIMATED QUANTITIES FOR ONE INTERMEDIATE SPAN

| CLEAR SPAN FEET | TOTAL LENGTH | DIMENSIONS | | | | | | STIRRUP SPACING | | | QUANTITIES | | |
|-----------------|--------------|------------|-----------|-----------|-----------|-------|------------|--------------------|----------------------|---------------------|-------------------------|------------------|--------------------|
| | | X | Y | Y1 | Y2 | Y3 | Z | EXTER. BEAM BARS N | INTERM. BEAM BARS NI | CENTER BEAM BARS NI | CONCRETE CL. A CU. YDS. | REIN. STEEL LBS. | STRUCT. STEEL LBS. |
| 16 | 18'-6" | 2'-7 1/2" | 1'-0 1/2" | 1'-3 1/2" | 1'-3 1/2" | 1'-4" | 6 SPA @ 7" | 5 SPA @ 7" | 7 SPA @ 7" | 21.0 | 4306 | 369 | |

Cost of C.I. Drains and Expansion Joints shall be included in the price per cu. yd. of Class A concrete. Weight of copper plates 22 Lb.

General Notes
Specifications: Standard Road and Bridge Specifications of the Tennessee Department of Highways and Public Works.
Concrete shall be Class A.
Reinforcing Steel: See Specifications.
Forms and Finish: See Specifications.
All dimensions relating to reinforcement are to center of bars.
Copper Plates - A.S.T.M. Specifications B11-33



Revised: 10-23-36 Struct. Steel, not included in price of concrete. Copper plates separated from Struct. Steel.
 Revised: Struct. Steel included in price of concrete. 9-21-36.
 Revised: Alternate Pipe Joints. 11-6-35.
 Revision: Weight of Struct. Steel changed. Oct. 13-32.
 Revised: Size of Bars K in 20 and 22 spans changed. Oct. 13-32.
 Revised: Bit felt joints to rubber compound. 7-20-32.

| | |
|----------------------------|--------------|
| DESIGNED BY | DATE |
| DRAWN BY | DATE |
| RETRACED BY Edward Hensard | DATE 7-22-37 |
| CHECKED BY | DATE |

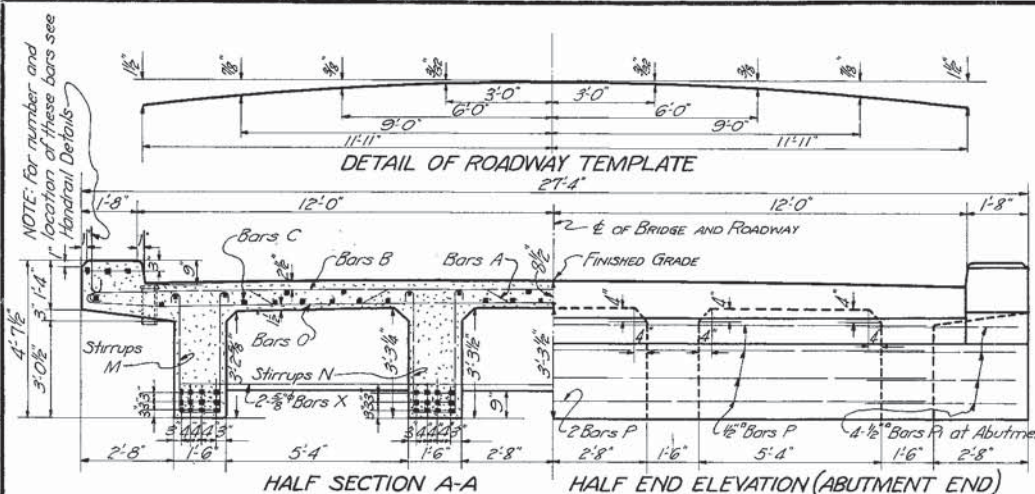
STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
AND PUBLIC WORKS
NASHVILLE

STANDARD
**CONCRETE BRIDGES
DECK GIRDER TYPE**
SPANS 16'-26' ROADWAY 24'-0"
1931

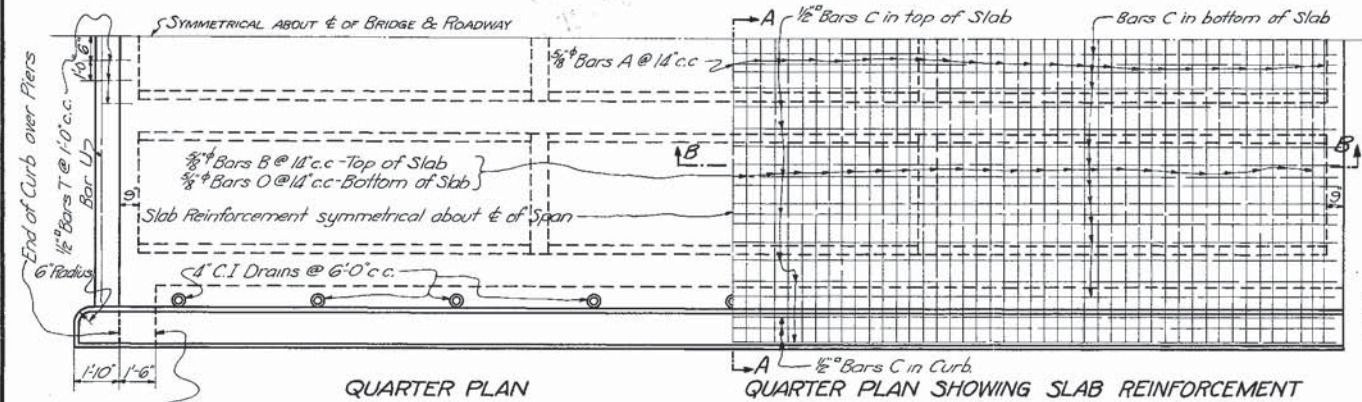
CORRECT *L. H. Kristman*
APPROVED *O. J. Goetz*

A-8-144

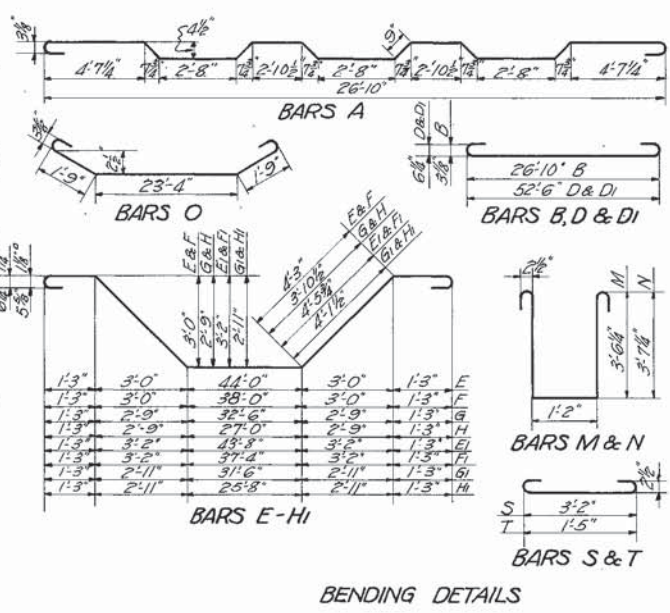
| PL. NO. DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|-------------------|-------|--------------------|-------------|-----------|--------------|
| 8 | TENN. | 468-D | 19 | 27 | 120 |



DESIGN DATA:
 Live load: 2-15 Ton Trucks with 80% of the load on the rear axle. Axles 14' c.c. Wheels 6' c.c. Trucks abreast 9' c.c.
 Impact Allowance 30%
 Steel Stresses:
 Steel in Tension
 Concrete in Compression
 Concrete in Shear
 Without web reinforcing
 With stirrups and bent up bars
 The top inch of Slab is for wearing surface only.



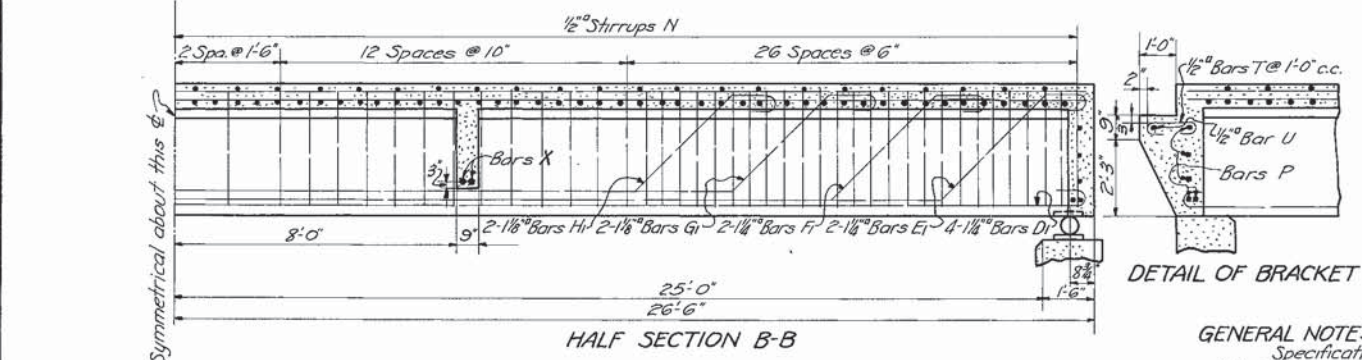
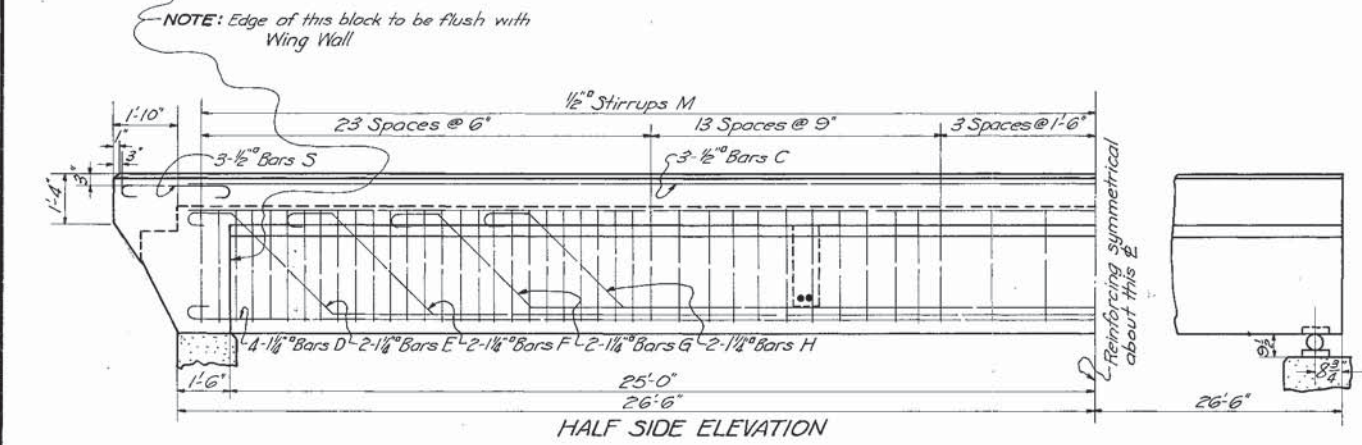
NOTE: When two or more spans are built place a 1" Rubber Compound or Bituminous Felt Joint between spans of expansion ends, except when there are two expansion ends on one pier or bent. See Details on this Sheet.



BILL OF STEEL FOR ONE INTERMEDIATE SPAN

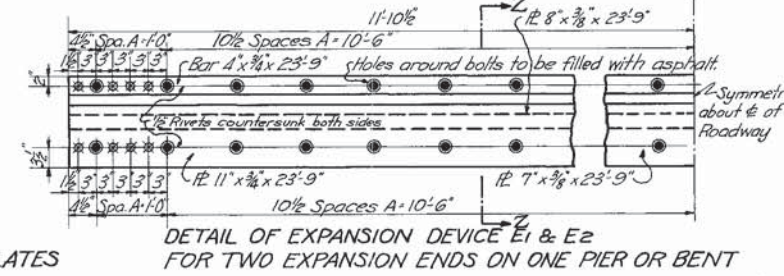
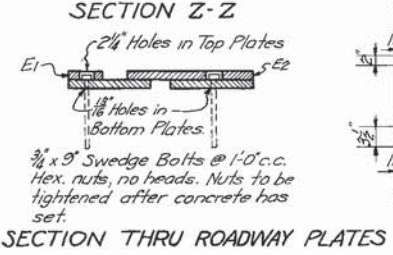
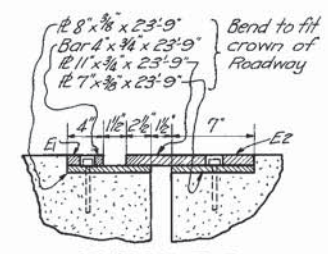
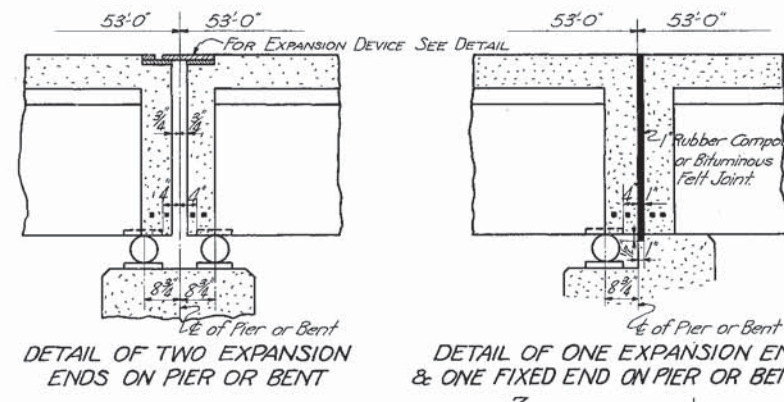
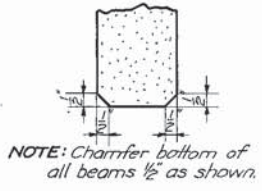
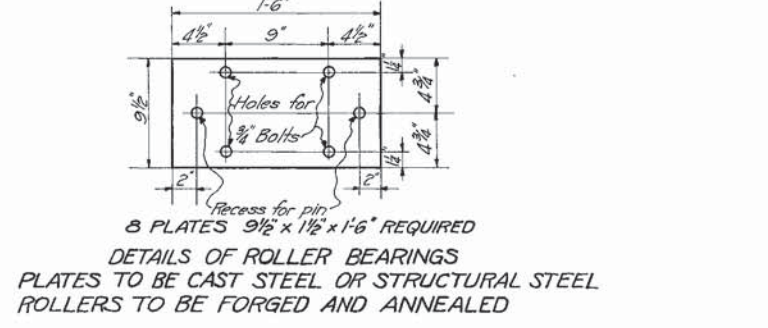
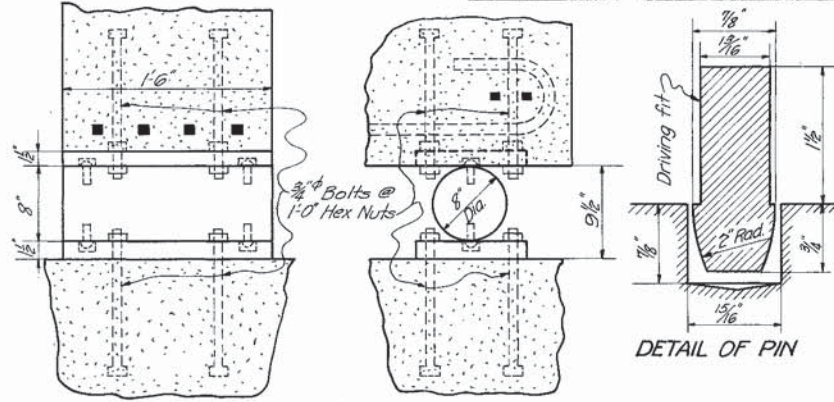
| BAR NO. | SIZE | LENGTH | BAR NO. | SIZE | LENGTH |
|---------|---------|---------|---------|----------|---------|
| A | 45 #8 | 28'-6" | D | 8 #10 | 54'-6" |
| B | 44 #5/8 | 27'-10" | E | 4 #10 | 57'-2" |
| C | 84 #1/2 | 27'-0" | F | 4 #10 | 50'-10" |
| D | 8 #10 | 54'-6" | G | 4 #10 | 44'-1" |
| E | 4 #10 | 57'-0" | H | 4 #10 | 38'-3" |
| F | 4 #10 | 51'-0" | I | 158 #1/2 | 9'-1" |
| G | 4 #10 | 44'-9" | M | 162 #1/2 | 9'-3" |
| H | 4 #10 | 39'-3" | N | 10 #1/2 | 21'-6" |
| | | | P | 4 #5/8 | 21'-6" |
| | | | X | 4 #5/8 | 21'-6" |

NOTE: For each Abutment End add:
 6-#10 Bars S x 4'-0", 24-#10 Bars T x 2'-3"
 1-#10 Bar U x 24'-0" & 8-#10 Bars P x 4'-0"



DESIGNED BY _____ DATE _____
 DRAWN BY _____ DATE _____
 CHECKED BY _____ DATE _____

GENERAL NOTES:
 Specifications: Standard Road and Bridge Specifications of the Tennessee Department of Highways and Public Works.
 Concrete shall be Class 'A'
 Reinforcing Steel: See Specifications.
 Forms & Finish: See Specifications.
 All dimensions relating to reinforcing are to centers of bars.



ESTIMATED QUANTITIES FOR ONE INTERMEDIATE SPAN

| | |
|--------------------|---------------|
| Steel Forgings | 1030 Lbs. |
| Concrete Class 'A' | 86.9 Cu. Yds. |
| Reinforcing Steel | 21264 Lbs. |
| * Structural Steel | 635 Lbs. |

* Weight of Expansion Devices E1 & E2 is not included in above Structural Steel Quantities.

FOR EACH ABUTMENT END ADD:

| | |
|--------------------|--------------|
| Concrete Class 'A' | 3.3 Cu. Yds. |
| Reinforcing Steel | 115 Lbs. |

NOTE: Cost of Cast Iron Drains, and all expansion joints shall be included in price per Cu. Yd. of Class 'A' Concrete.

WEIGHT OF EXPANSION DEVICE E1 & E2
 1390 Lbs. of Structural Steel

STATE OF TENNESSEE
 DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
 NASHVILLE
 STANDARD
CONCRETE BRIDGE
 DECK GIRDER TYPE
 SPAN 50'-0" ROADWAY 24'-0"
 1932

CORRECTED BY *L. H. Knicker*
 APPROVED BY *J. W. ...*

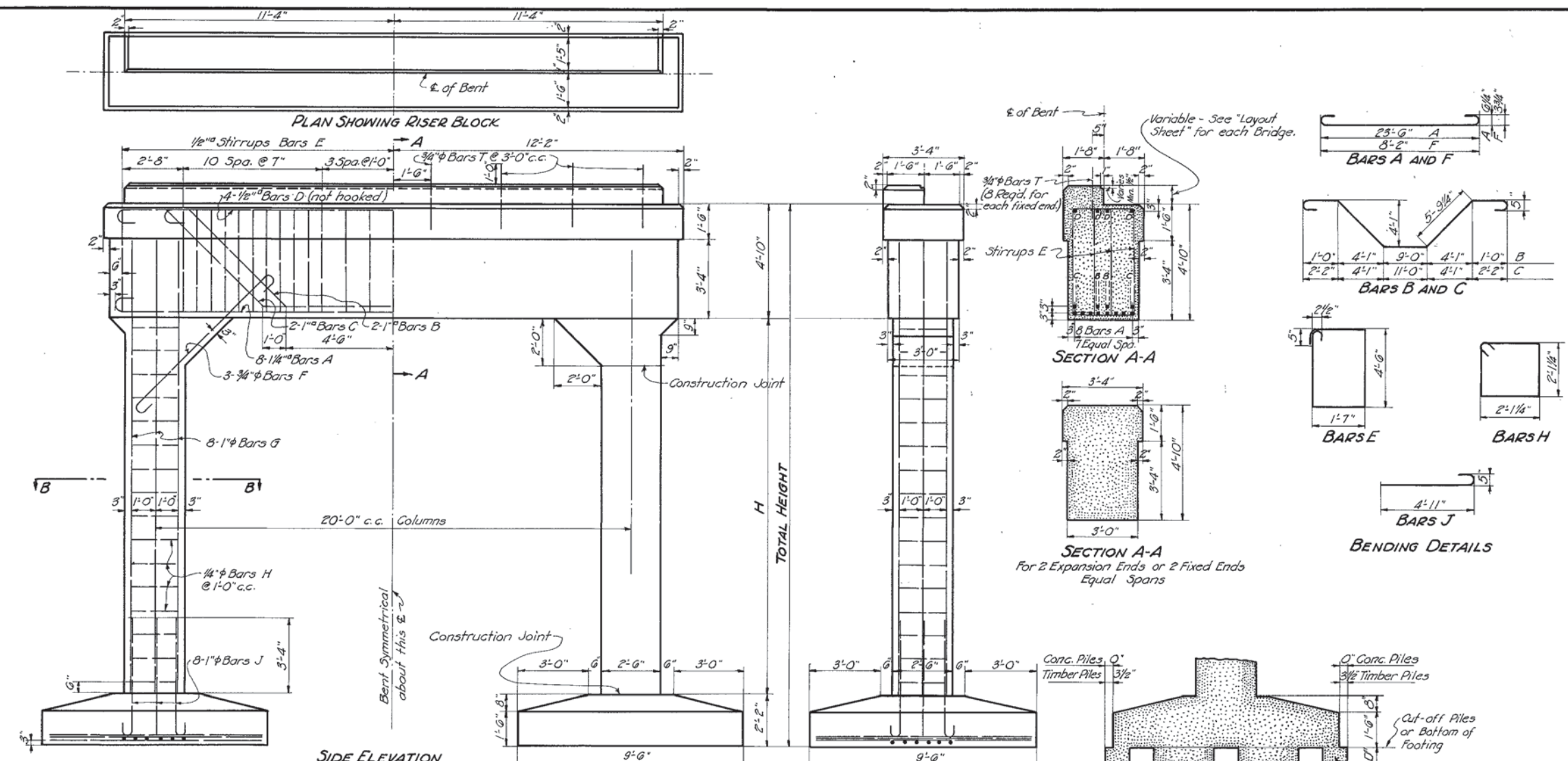


TABLE OF DIMENSIONS & ESTIMATED QUANTITIES

| TOTAL HEIGHT FEET | H FEET | STEEL REINFORCEMENT | | TYPE "A" | | TYPE "B" | |
|-------------------|--------|-------------------------------|---------------------------------|-------------------|--------------|-------------------|--------------|
| | | Bars 3/8" 1" φ No Size Length | Bars 1/2" 3/4" φ No Size Length | CLASS "A" Cu Yds. | STEEL POUNDS | CLASS "A" Cu Yds. | STEEL POUNDS |
| 17'-0" | 10 | 13'-4" | 20 | 30.7 | 4135 | 23.1 | 3367 |
| 18'-0" | 11 | 14'-4" | 22 | 31.1 | 4182 | 23.5 | 3413 |
| 19'-0" | 12 | 15'-4" | 24 | 31.6 | 4228 | 24.0 | 3460 |
| 20'-0" | 13 | 16'-4" | 26 | 32.0 | 4274 | 24.4 | 3506 |
| 21'-0" | 14 | 17'-4" | 28 | 32.5 | 4320 | 24.9 | 3552 |
| 22'-0" | 15 | 18'-4" | 30 | 33.0 | 4367 | 25.4 | 3598 |
| 23'-0" | 16 | 19'-4" | 32 | 33.4 | 4413 | 25.8 | 3645 |
| 24'-0" | 17 | 20'-4" | 34 | 33.9 | 4459 | 26.3 | 3691 |
| 25'-0" | 18 | 21'-4" | 36 | 34.4 | 4505 | 26.8 | 3737 |
| 26'-0" | 19 | 22'-4" | 38 | 34.8 | 4552 | 27.2 | 3785 |
| 27'-0" | 20 | 23'-4" | 40 | 35.3 | 4598 | 27.7 | 3831 |
| 28'-0" | 21 | 24'-4" | 42 | 35.7 | 4644 | 28.1 | 3876 |
| 29'-0" | 22 | 25'-4" | 44 | 36.2 | 4690 | 28.6 | 3922 |
| 30'-0" | 23 | 26'-4" | 46 | 36.7 | 4737 | 29.1 | 3969 |
| 31'-0" | 24 | 27'-4" | 48 | 37.1 | 4783 | 29.5 | 4015 |
| 32'-0" | 25 | 28'-4" | 50 | 37.6 | 4829 | 30.0 | 4061 |
| 33'-0" | 26 | 29'-4" | 52 | 38.1 | 4875 | 30.5 | 4107 |
| 34'-0" | 27 | 30'-4" | 54 | 38.5 | 4922 | 30.9 | 4154 |
| 35'-0" | 28 | 31'-4" | 56 | 39.0 | 4968 | 31.4 | 4200 |
| 36'-0" | 29 | 32'-4" | 58 | 39.5 | 5014 | 31.8 | 4246 |
| 37'-0" | 30 | 33'-4" | 60 | 39.9 | 5061 | 32.3 | 4292 |
| 38'-0" | 31 | 34'-4" | 62 | 40.4 | 5107 | 32.8 | 4339 |
| 39'-0" | 32 | 35'-4" | 64 | 40.8 | 5153 | 33.2 | 4385 |
| 40'-0" | 33 | 36'-4" | 66 | 41.3 | 5199 | 33.7 | 4431 |
| 41'-0" | 34 | 37'-4" | 68 | 41.8 | 5246 | 34.2 | 4477 |
| 42'-0" | 35 | 38'-4" | 70 | 42.2 | 5292 | 34.6 | 4524 |
| 43'-0" | 36 | 39'-4" | 72 | 42.7 | 5338 | 35.1 | 4570 |
| 44'-0" | 37 | 40'-4" | 74 | 43.2 | 5384 | 35.6 | 4616 |
| 45'-0" | 38 | 41'-4" | 76 | 43.6 | 5431 | 36.0 | 4662 |

For two Fixed Ends add 16-3/8" φ Bars Tx 2'-0" and 49# of Reinforcing Steel.

For one Fixed End and one Expansion End add 8-3/8" φ Bars Tx 3'-0" and 36# of Reinforcing Steel.

NOTE: QUANTITIES FOR RISERBLOCKS TO BE ADDED TO ABOVE QUANTITIES.

When Timber Piles are used add 6.8 Cu Yds. of Class "A" Concrete.
When Concrete Piles are used add 5.8 Cu Yds. of Class "A" Concrete.

BILL OF STEEL CONSTANT FOR ALL HEIGHTS

| TYPE "A" | | | TYPE "B" | | |
|----------|----|-------------|----------|----|-------------|
| BAR | NO | SIZE LENGTH | BAR | NO | SIZE LENGTH |
| A | 8 | 1/8" 25'-6" | A | 8 | 1/8" 25'-6" |
| B | 2 | 1" 24'-3" | B | 2 | 1" 24'-3" |
| C | 2 | 1" 28'-6" | C | 2 | 1" 28'-6" |
| D | 4 | 1/2" 23'-6" | D | 4 | 1/2" 23'-6" |
| E | 58 | 1/8" 13'-0" | E | 58 | 1/8" 13'-0" |
| F | 6 | 3/8" 9'-6" | F | 6 | 3/8" 9'-6" |
| J | 16 | 1" 5'-9" | J | 16 | 1" 5'-9" |
| K | 24 | 1/8" 9'-0" | K | 48 | 1/8" 5'-6" |
| L | 8 | - 10'-3" | - | - | - |
| M | 8 | - 11'-3" | - | - | - |
| N | 8 | 1/8" 12'-3" | - | - | - |

Weight of above bars is included in Table of Dimensions and Estimated Quantities.

GENERAL NOTES:
Specifications: Standard Road and Bridge Specifications of the Tennessee Department of Highways and Public Works.
Concrete shall be Class "A".
Reinforcing Steel: See Specifications.
Forms and Finish: See Specifications.
Rock Foundation: See Specifications.

SPECIAL NOTE:
For Type and Length of Piles see "Layout Sheet" for each Bridge.

NOTE:
When pouring beam, provision shall be made for setting bolts for Bearing Plates.
Location of these plates is shown on "Layout Sheet" for each bridge.

NOTE:
Footing Steel to be 7/8" φ Bars spaced in each band @ 6" c.c.

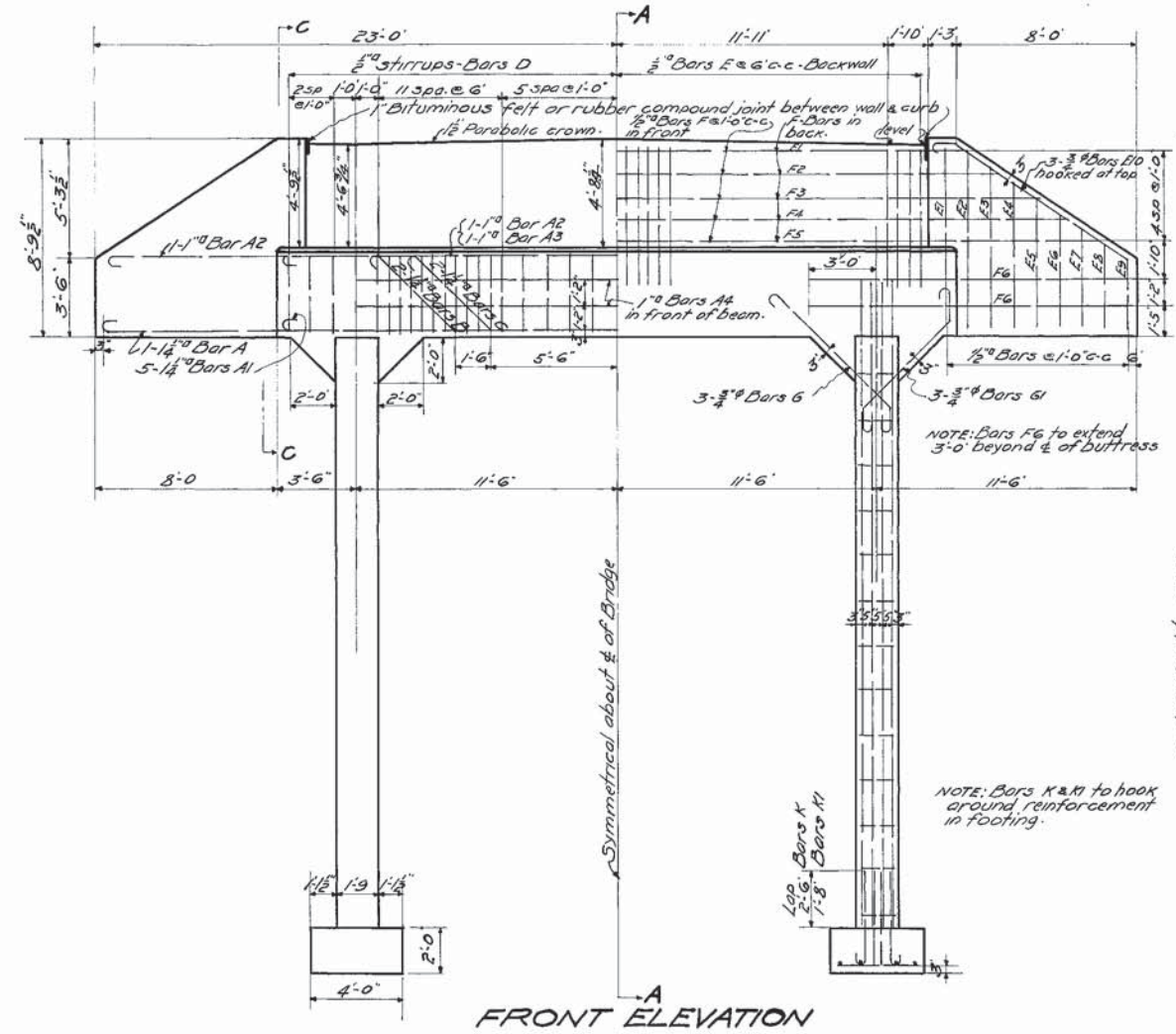
TYPE "A"
NOTE: Footing 9'-6" x 9'-6" is designed for a maximum Foundation Pressure of 4000 #/ft².

NOTE: Footing 6'-0" x 6'-0" is designed for a maximum Foundation Pressure of 10000 #/ft².

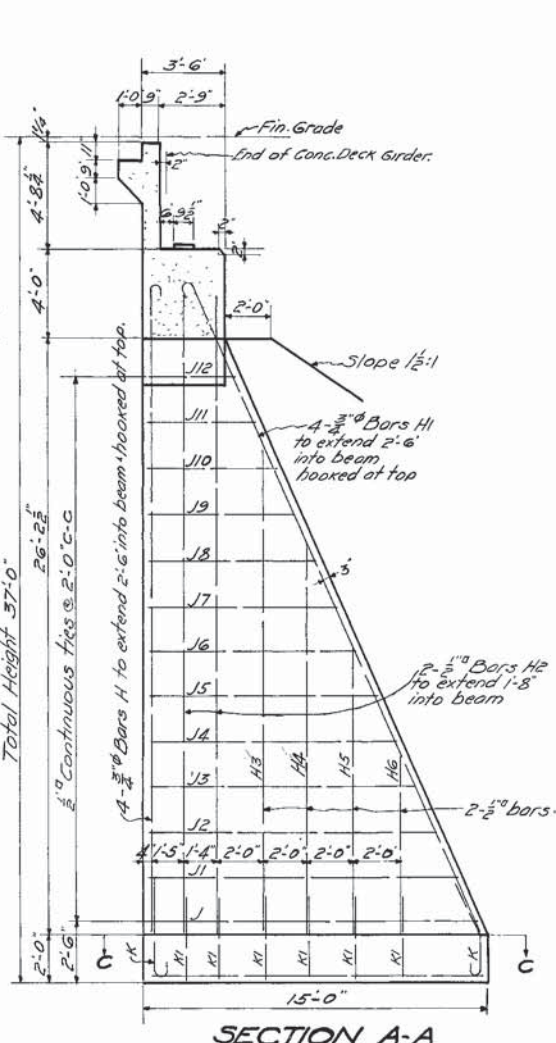
DESIGNED BY W.S. DATE 2-3-32
DRAWN BY W.S. DATE 2-3-32
RETRACED BY E.W. Compton DATE Jan. 24 '31
CHECKED BY H.S. DATE 1-20-32

STATE OF TENNESSEE
DEPARTMENT OF HIGHWAYS
AND PUBLIC WORKS
NASHVILLE
STANDARD
CONCRETE BENTS
TOTAL HEIGHTS 17'-0"-45'-0" ROADWAY 24'-0"
SPAN 50'-0"
1932

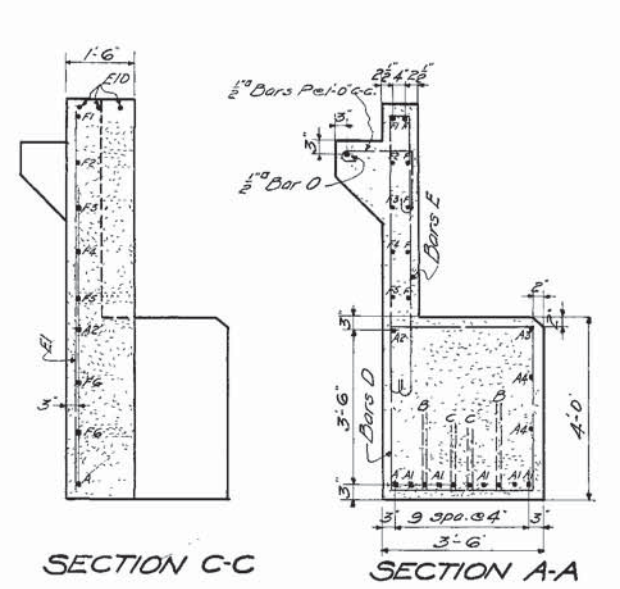
CORRECTED L.H. Kinsman
APPROVED J.W. Searcy
STATE HIGHWAY ENGINEER



FRONT ELEVATION

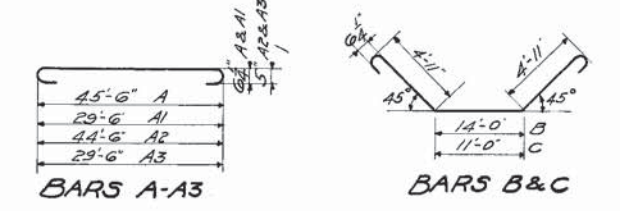


SECTION A-A



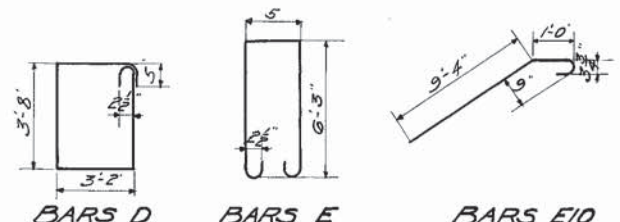
SECTION C-C

SECTION A-A



BARS A-A3

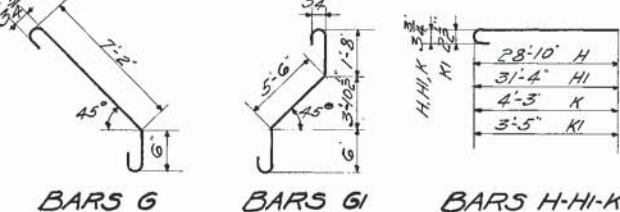
BARS B&C



BARS D

BARS E

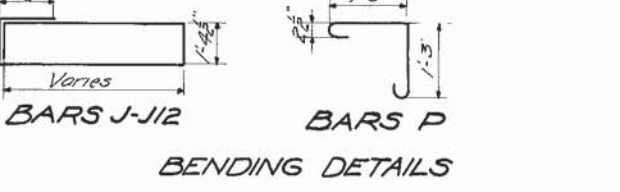
BARS E10



BARS G

BARS G1

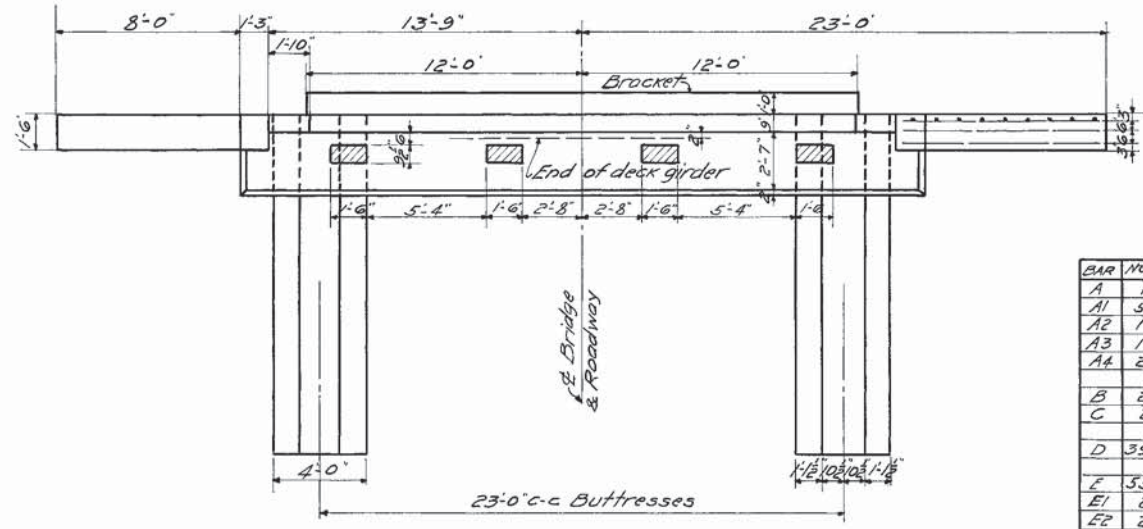
BARS H-HI-K-KI



BARS J-J12

BARS P

BENDING DETAILS



PLAN

BILL OF STEEL

| BAR NO | SIZE | LENGTH | BAR NO | SIZE | LENGTH | BAR NO | SIZE | LENGTH |
|--------|--------|---------|--------|--------|---------|--------|---------|--------|
| A | 1 1/2" | 47'-6" | F | 5 1/2" | 27'-6" | J3 | 2 1/2" | 27'-9" |
| A1 | 5 1/4" | 31'-6" | F1 | 1 | 30'-9" | J4 | 2 | 26'-0" |
| A2 | 1 1/2" | 46'-2" | F2 | 1 | 33'-9" | J5 | 2 | 24'-3" |
| A3 | 1 1/2" | 31'-2" | F3 | 1 | 36'-9" | J6 | 2 | 22'-6" |
| AA | 2 1/2" | 23'-0" | FA | 1 | 39'-9" | J7 | 2 | 20'-9" |
| B | 2 1/2" | 25'-10" | FS | 1 1/2" | 42'-9" | J8 | 2 | 19'-0" |
| C | 2 1/2" | 22'-10" | FG | 4 1/2" | 14'-3" | J9 | 2 | 17'-3" |
| D | 3/4" | 14'-6" | GI | 6 3/4" | 9'-0" | J10 | 2 | 15'-6" |
| E | 5/8" | 13'-9" | G1 | 6 3/4" | 9'-0" | J11 | 2 | 13'-9" |
| E1 | 2 | 8'-3" | H | 8 3/4" | 29'-6" | K | 16 3/4" | 4'-11" |
| E2 | 2 | 7'-9" | H1 | 8 3/4" | 32'-0" | K1 | 24 1/2" | 3'-10" |
| E3 | 2 | 7'-0" | H2 | 8 1/2" | 27'-10" | L | 60 1/2" | 3'-6" |
| E4 | 2 | 6'-3" | H3 | 4 | 21'-6" | M | 8 1/2" | 14'-6" |
| E5 | 2 | 5'-9" | H4 | 4 | 17'-0" | O | 1 1/2" | 23'-6" |
| E6 | 2 | 5'-0" | H5 | 4 | 12'-6" | P | 24 1/2" | 3'-6" |
| E7 | 2 | 4'-5" | H6 | 4 1/2" | 8'-0" | | | |
| E8 | 2 | 3'-9" | J | 2 1/2" | 33'-0" | | | |
| E9 | 2 1/2" | 3'-0" | J1 | 2 | 31'-3" | | | |
| E10 | 6 3/4" | 11'-0" | J2 | 2 1/2" | 29'-6" | | | |

ESTIMATED QUANTITIES
 Concrete Class A 66.9 Cu Yds.
 Reinforcing steel 6226 Lbs.

General Notes
 Specifications Standard Road and Bridge
 Specifications of the Tennessee Department
 of Highways and Public Works
 Concrete to be Class A
 Reinforcing Steel: See Specifications
 Forms and Finish: See Specifications
 Rock Foundation: See Specifications
 All dimensions relating to reinforcement
 are to centers of bars.

STATE OF TENNESSEE
 DEPARTMENT OF HIGHWAYS
 AND PUBLIC WORKS
 NASHVILLE

CONCRETE ABUTMENT

OPEN TYPE
 ROADWAY 24'-0" TOTAL HEIGHT 37'-0"
 GIRDER 50'-0" SKEW 90°
 MAXIMUM FOUNDATION PRESSURE 10000 lb/ft²
 1936

CORRECT *L. H. Christian*
 BRIDGE ENGINEER
 APPROVED *O. J. Goff*
 STATE HIGHWAY ENGINEER

DESIGNED BY *Will Gault* DATE 12-15-36
 DRAWN BY *G. Palmer* DATE 12-30-36
 CHECKED BY *Holman* DATE 2-21-36