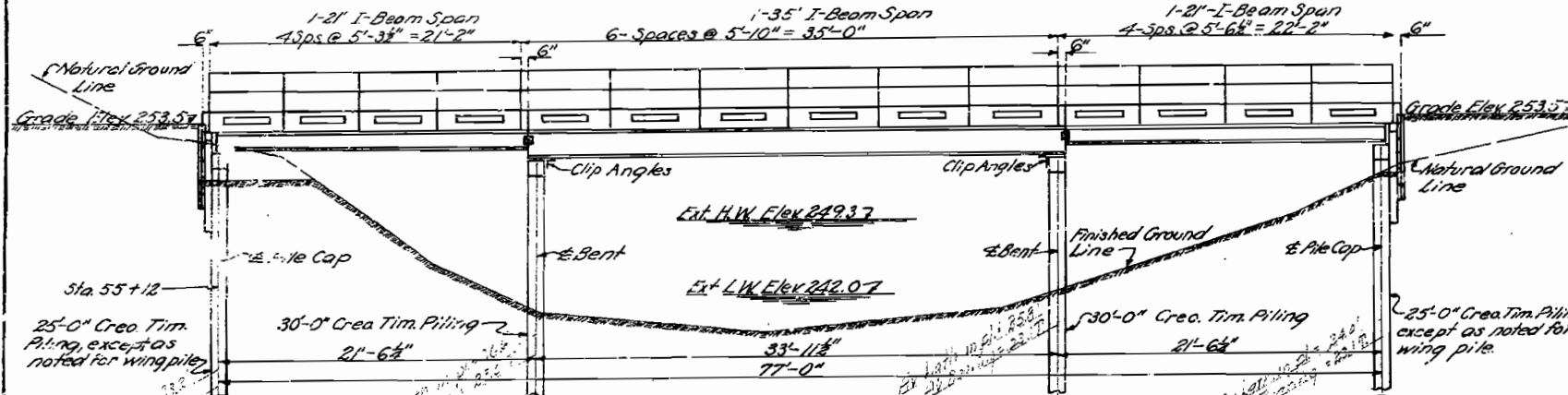
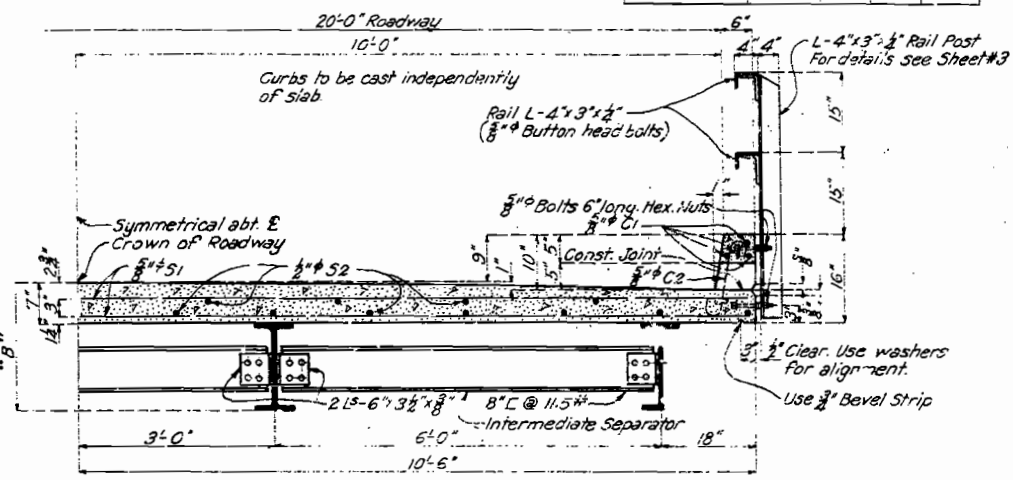


# MISSOURI STATE HIGHWAY DEPARTMENT

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| 5                   | MO.   | 52-51              | 13          |           |              |



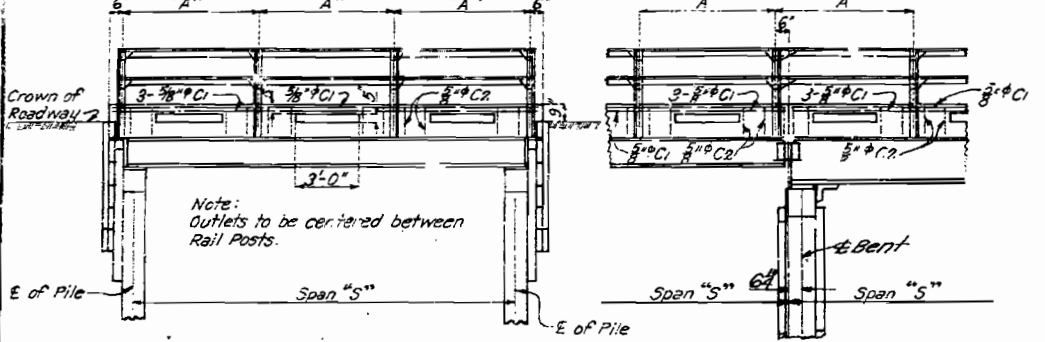
| SPAN "S" | "B"     |
|----------|---------|
| 15'-0"   | 20'     |
| 17'-0"   | 21'     |
| 19'-0"   | 22'     |
| 21'-0"   | 23'     |
| 23'-0"   | 23 1/2' |
| 25'-0"   | 24'     |
| 27'-0"   | 24 1/2' |
| 29'-0"   | 25'     |
| 31'-0"   | 25 1/2' |
| 33'-0"   | 26'     |
| 35'-0"   | 26 1/2' |
| 37'-0"   | 27'     |
| 39'-0"   | 27 1/2' |
| 41'-0"   | 28'     |
| 43'-0"   | 28 1/2' |
| 47'-0"   | 29 1/2' |
| 49'-0"   | 30'     |



Note: Top of channel separators at ends of each I-Beam Span to be Flush with bottom of Floor Slab as shown in section thru end bent at E.

Note: Depth of outside stringers will in some cases be a fraction of an inch less than that of inside stringers and in order to keep bottom of slab horizontal it will be necessary to haunch slab down to top of outside stringers.

Note: See Special Provisions in regard to ordering piling. All piling to be crosscut timber and ordered in the following lengths: 30'-0", 25'-0" and 40'-0". These lengths include 12" cut-offs. Piles for intermediate bents to be driven to full penetration unless a bearing of 16 ton is obtained at a lesser depth, in which case tips shall be driven to elevation 2250. All other piling to be driven to full penetration.



| SPAN "S" | NO. PANELS | "A" DIMENSIONS |                 |                 |                |
|----------|------------|----------------|-----------------|-----------------|----------------|
|          |            | SINGLE SPAN    | 1ST END SPAN    | ALL INT. SPANS  | LAST END SPAN  |
| 15'-0"   | 3          | 5'-5 1/2" abt. | 5'-0" abt.      | 5'-0"           | 5'-4 1/2" abt. |
| 17'-0"   | 3          | 6'-1 1/2" abt. | 5'-8" abt.      | 5'-8"           | 6'-0 1/2" abt. |
| 19'-0"   | 3          | 6'-9" abt.     | 6'-4 1/2" abt.  | 6'-4"           | 6'-8 1/2" abt. |
| 21'-0"   | 4          | 5'-9 1/2"      | 5'-9 1/2"       | 5'-9 1/2"       | 5'-6 1/2"      |
| 23'-0"   | 4          | 6'-7"          | 6'-3 1/2"       | 6'-3"           | 6'-6 1/2"      |
| 25'-0"   | 4          | 6'-7"          | 6'-3 1/2"       | 6'-3"           | 6'-6 1/2"      |
| 27'-0"   | 5          | 5'-8"          | 5'-5 1/2" abt.  | 5'-4 1/2" abt.  | 5'-7 1/2" abt. |
| 29'-0"   | 5          | 6'-0 1/2" abt. | 5'-10" abt.     | 5'-9 1/2" abt.  | 6'-0 1/2" abt. |
| 31'-0"   | 5          | 6'-5 1/2" abt. | 6'-2 1/2" abt.  | 5'-2 1/2" abt.  | 6'-5 1/2" abt. |
| 33'-0"   | 6          | 5'-8 1/2" abt. | 5'-6 1/2" abt.  | 5'-6"           | 5'-4 1/2" abt. |
| 35'-0"   | 6          | 5'-8 1/2" abt. | 5'-6 1/2" abt.  | 5'-6"           | 5'-4 1/2" abt. |
| 37'-0"   | 7          | 5'-9 1/2" abt. | 5'-7 1/2" abt.  | 5'-6 1/2" abt.  | 5'-8 1/2" abt. |
| 39'-0"   | 7          | 6'-0 1/2" abt. | 5'-10 1/2" abt. | 5'-10 1/2" abt. | 6'-0 1/2" abt. |
| 41'-0"   | 7          | 6'-4"          | 6'-2"           | 6'-1 1/2" abt.  | 6'-3 1/2" abt. |
| 43'-0"   | 8          | 5'-9 1/2"      | 5'-7 1/2"       | 5'-7 1/2"       | 5'-9 1/2"      |
| 47'-0"   | 8          | 6'-0 1/2"      | 5'-10 1/2"      | 5'-10 1/2"      | 6'-0 1/2"      |
| 49'-0"   | 8          | 6'-3 1/2"      | 6'-1 1/2"       | 6'-1 1/2"       | 6'-3 1/2"      |

| SPAN "S" | PER PLANS      |                  | PERMISSIBLE SUBSTITUTIONS |              |           |
|----------|----------------|------------------|---------------------------|--------------|-----------|
|          | CARNEGIE BEAMS | STANDARD I-BEAMS | BETHLEHEM BEAMS           | INSIDE       | OUTSIDE   |
| 15'-0"   | 14" @ 30#      | 14" @ 30#        | 12" @ 40.8#               | 12" @ 35#    | 14" @ 30# |
| 17'-0"   | 14" @ 33#      | 14" @ 33#        | 15" @ 42.9#               | 15" @ 33#    | 14" @ 33# |
| 19'-0"   | 15" @ 37#      | 16" @ 37#        | 15" @ 42.9#               | 16" @ 37#    | 16" @ 37# |
| 21'-0"   | 16" @ 40#      | 16" @ 37#        | 15" @ 50#                 | 15" @ 40#    | 16" @ 37# |
| 23'-0"   | 16" @ 45#      | 16" @ 40#        | 18" @ 54.7#               | 18" @ 45#    | 16" @ 40# |
| 25'-0"   | 18" @ 47#      | 18" @ 47#        | 18" @ 54.7#               | 18" @ 47#    | 18" @ 47# |
| 27'-0"   | 18" @ 52#      | 18" @ 47#        | 18" @ 60#                 | 18" @ 54.7#  | 18" @ 47# |
| 29'-0"   | 20" @ 55#      | 20" @ 55#        | 20" @ 65.4#               | 20" @ 55#    | 20" @ 55# |
| 31'-0"   | 21" @ 58#      | 21" @ 58#        | 20" @ 65.4#               | 22" @ 58#    | 22" @ 58# |
| 33'-0"   | 21" @ 62#      | 21" @ 58#        | 20" @ 75#                 | 22" @ 62#    | 22" @ 58# |
| 35'-0"   | 21" @ 67#      | 21" @ 62#        | 20" @ 81.4#               | 22" @ 67#    | 22" @ 62# |
| 37'-0"   | 24" @ 70#      | 24" @ 70#        | 24" @ 79.9#               | 24" @ 70#    | 24" @ 70# |
| 39'-0"   | 24" @ 74#      | 24" @ 70#        | 24" @ 79.9#               | 24" @ 74#    | 24" @ 70# |
| 41'-0"   | 24" @ 81#      | 24" @ 74#        | 24" @ 85#                 | 24" @ 81#    | 24" @ 74# |
| 43'-0"   | 24" @ 85#      | 24" @ 81#        | 24" @ 100#                | 26" @ 85#    | 26" @ 81# |
| 45'-0"   | 27" @ 85#      | 27" @ 85#        | 24" @ 105.9#              | 26" @ 85#    | 26" @ 85# |
| 47'-0"   | 27" @ 91#      | 27" @ 85#        | 24" @ 105.9#              | 28" @ 91#    | 28" @ 85# |
| 49'-0"   | 27" @ 91#      | 27" @ 91#        | 24" @ 115#                | 24" @ 105.9# | 28" @ 91# |

**GENERAL NOTES:**

Loading: One 10 Ton Truck, 80% of weight on rear axle, 30% impact, 14'-0" wheel base, 6'-0" gage, 10' tire.

All concrete to be 1:2:3 1/2 mix "X".

Exposed edges to be beveled 3/8" where no other bevel is noted.

All timber to be crosscut Douglas Fir of the West Coast Region, Close-grained Structural Grade, crosscut Southern Yellow Pine, Dense Structural Square Edge and Sound Grade, or untreated California Redwood, Prime Structural Grade. Timber rough full-sawn except as noted in timber bill for pile caps. Slight variations in sawing to be in accordance with grading rules. All treated timber to be cut to lengths, shaped and bored as shown before treating. Backing plank are all billed 6' long and are to be fitted and cut in the field. Flaymats based on material in finished structure.

Field holes for drift pins shall be field bored 3/4". Unless otherwise noted all other field holes in timber shall be field bored 3/4".

When bolts with countersunk heads are indicated on plans cut washers shall be used under heads. O.G. washers shall be used under heads of all other bolts and under nuts of all bolts.

Number of bolts, drift pins, nails and washers given exact; no allowance made for excess. Cost of substructure hardware to be included in price bid for timber in place.

I-Beams with fastenings, spacers, handrail, handrail posts with fastenings, clip angles and cap plate on end bent with fastenings, will be paid for as structural steel. Cost of metallic edge moulding will be included in unit bid price for concrete.

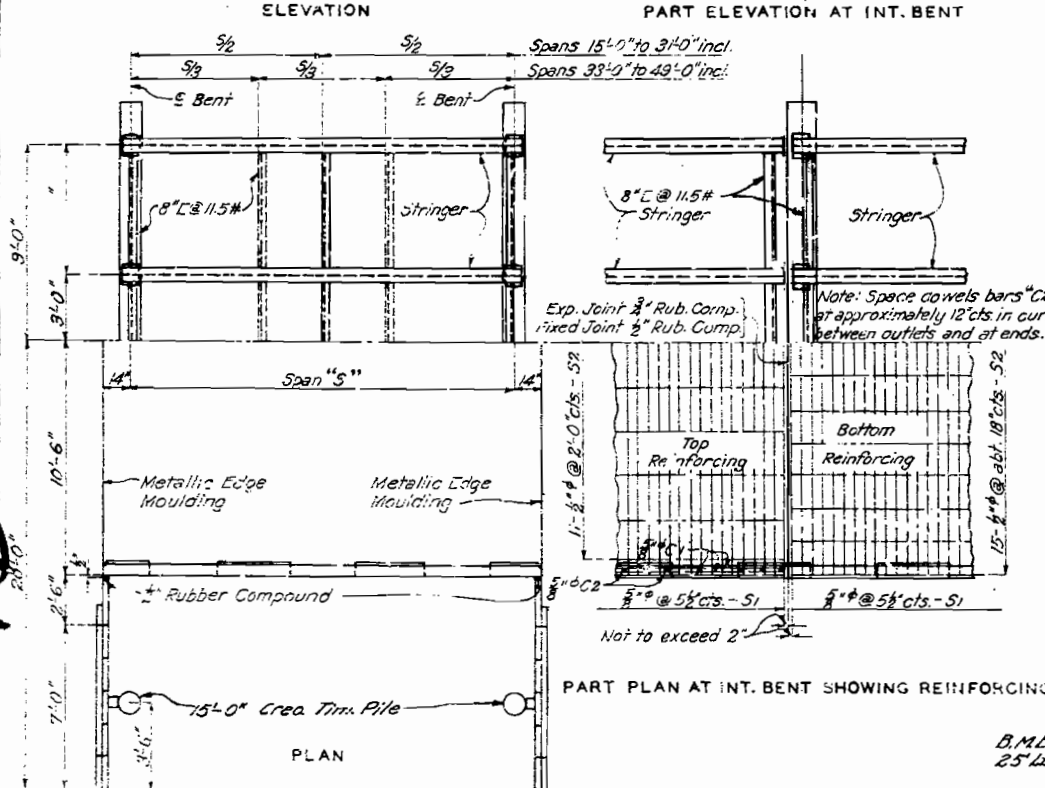
Rivets 3/4" holes 1/2", except in handrail where rivets shall be 5/8" holes 1/2". Field connections for handrail shall be 3/4" button head bolts, 1/2" holes. All other field connections shall be 3/4" machine bolts, 1/2" holes, except where 3/4" turned bolts are called for in beam connections. Holes for 3/4" turned bolts to be subpunched and reamed to driving fit.

Detail shop drawings shall be submitted to the State Highway Department in duplicate and shall be approved before steel is fabricated.

Where rubber compound is specified on plans for use in partition and expansion joints, the pre-moulded joint shall be securely stitched to one face of concrete with copper wire.

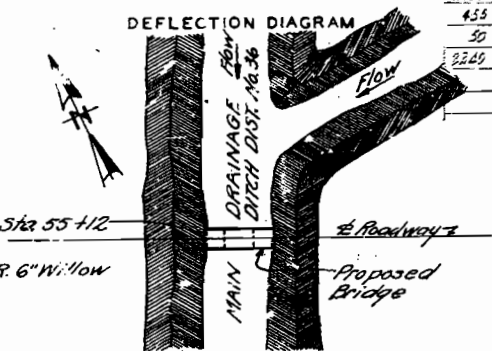
Paint: Shop, name: Field, contact surfaces of bolted field connections one coat red lead and surfaces inaccessible after erection three coats of red lead. No other paint to be applied by contractor. All paint required will be furnished by the Missouri State Highway Department.

See Special Provisions in regard to permissive beam substitutions.



| SPAN "S" | "C"  | "D"  |
|----------|------|------|
| 15'-0"   | 1/4" | 1/4" |
| 17'-0"   | 1/4" | 1/4" |
| 19'-0"   | 1/4" | 1/4" |
| 21'-0"   | 1/4" | 1/4" |
| 23'-0"   | 1/4" | 1/4" |
| 25'-0"   | 1/4" | 1/4" |
| 27'-0"   | 1/4" | 1/4" |
| 29'-0"   | 1/4" | 1/4" |
| 31'-0"   | 1/4" | 1/4" |
| 33'-0"   | 1/4" | 1/4" |
| 35'-0"   | 1/4" | 1/4" |
| 37'-0"   | 1/4" | 1/4" |
| 39'-0"   | 1/4" | 1/4" |
| 41'-0"   | 1/4" | 1/4" |
| 43'-0"   | 1/4" | 1/4" |
| 45'-0"   | 1/4" | 1/4" |
| 47'-0"   | 1/4" | 1/4" |
| 49'-0"   | 1/4" | 1/4" |

Note: Floor slab to be brought to grade and dead load deflection taken care of by increasing slab thickness. Depth of slab at outside face of curb to be kept uniform and bottom surface of slab warped between curb and outside beam to obtain required thickness of beam. Psy. joint will be allowed for additional concrete required for thickening slab. This additional concrete is included in "Estimated Quantities".



| ITEM                                   | SUPERSTR. |          | SUBSTR. | TOTAL  |
|--|-----------|----------|---------|--------|
|  | Cu. Yds.  | Cu. Yds. |         |        |
| Bridge Excavation Class 1              |           |          | 80      | 80     |
| Bridge Excavation Class 2              |           |          |         |        |
| Concrete 1:2:4 mix "B"                 |           |          |         |        |
| Concrete 1:2:3 1/2 mix "X"             |           |          | 37.2    | 37.2   |
| Fabricated Structural Steel            |           |          | 22,580  | 22,580 |
| Reinforcing Steel                      |           |          | 9,780   | 9,780  |
| Crosscut Timber Piles                  |           |          | 480     | 480    |
| Crosscut Timber Pile Cut-offs          |           |          | 20      | 20     |
| Timber (See Special Provisions) F.B.M. |           |          | 2,240   | 2,240  |

Note: Bridge excavation will be allowed for all bents within horizontal limits shown and noted on these detail plans, sheet # 2. This excavation will be computed from existing ground line to bottom end of 6"x6" backing supports for end bents and to bottom of sway bracing for interior bents.

All bridge excavation will be paid for as Class 1 Bridge Excavation. Stream banks under ends of bridge shall be excavated to a depth of 2'-0" below bottom of beams within the maximum horizontal limits of 4'-0" outside of curb lines and will be paid for at unit price bid for roadway excavation.

Protection caps to be placed on heads of all piles of pile bents in accordance with Section 23-6 of Standard Specifications issued April 1, 1930.

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 3.

Designed Nov. 1929 By F.W.H.  
 Drawn Mar. 1930 By R.J.G.  
 Traced Dec. 1931 By R.J.G.  
 Checked Dec. 1931 By J.L.M.

Assembled Apr. 1933 By J.L.C.  
 Checked Apr. 1933 By P.H.S.

**BRIDGE OVER MAIN D. D. DIST. NO. 36**

STATE ROAD FROM ROUTE 84 SOUTH  
 ABOUT 3 MILES S.E. OF KENNETT

PROJECT NO. 52-51      STA. 53+12

**DUNKLIN COUNTY**

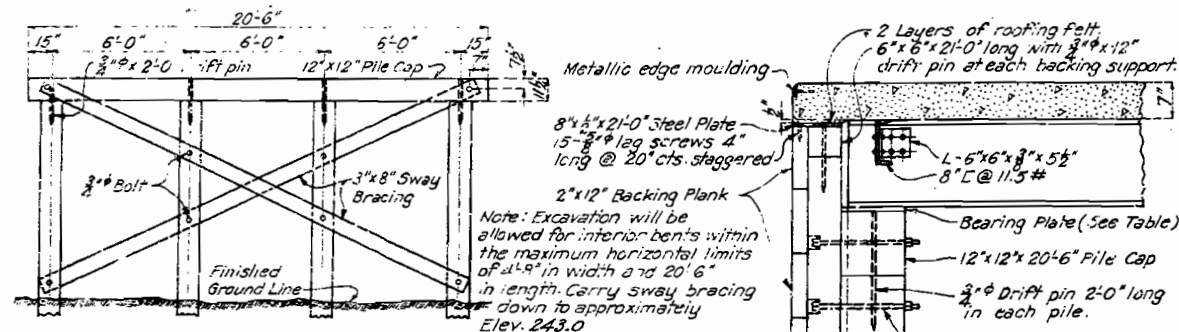
APPROVED BY: *M.R. Saylor* DATE: 4/29/33  
*T.H. Cutler* DATE: 4/29/33

FINISHED      **S-924**

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# MISSOURI STATE HIGHWAY DEPARTMENT

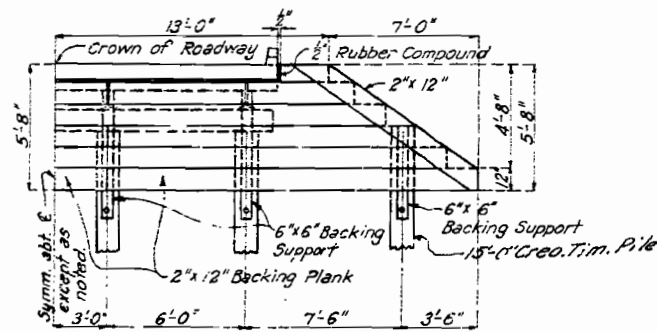
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| 5                   | MO.   | 52-51              | 3           |           |              |



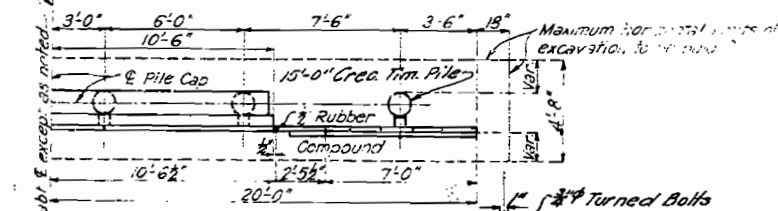
Note: Excavation will be allowed for interior bents within the maximum horizontal limits of 4'8" in width and 20'6" in length. Carry sway bracing down to approximately Elev. 243.0

**DETAIL OF INTERIOR BENTS**

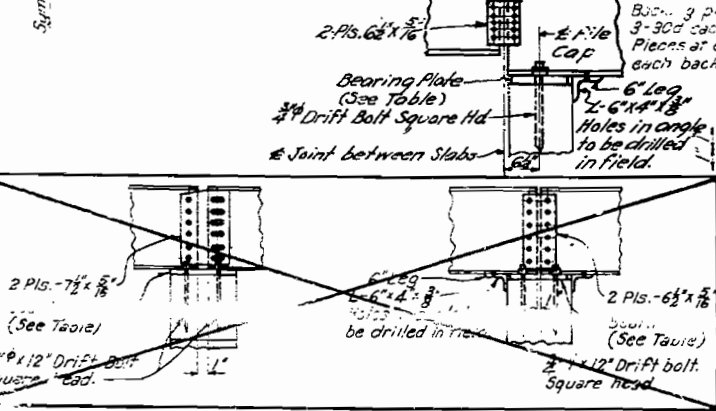
Note: Any irregularity in alignment of piling in end bents to be corrected by facing one surface of the 6x6 backing support so as to place the surface of the backing in a true plane and eliminate any strain on the backing plank. Splice in backing plank to be made at center of 6x6 backing support and to be alternated on the two intermediate supports.



**HALF ELEVATION OF END BENT**



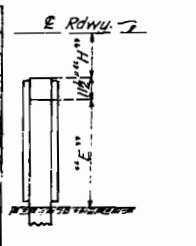
**HALF PLAN OF END BENT**



**TYPICAL JOINTS OVER INT. BENT**

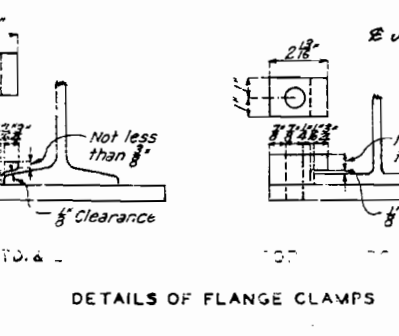
**SECTION THRU END BENT AT E**

| DIMENSIONS |        |        |        |
|------------|--------|--------|--------|
| SPAN       | "A"    | "B"    | "C"    |
| 15'-0"     | 21'8"  | 21'8"  | 21'8"  |
| 17'-0"     | 21'8"  | 22'    | 22'    |
| 19'-0"     | 23'8"  | 23'8"  | 23'8"  |
| 21'-0"     | 23'8"  | 24'    | 24'    |
| 23'-0"     | 23'8"  | 24'8"  | 24'8"  |
| 25'-0"     | 24'11" | 24'11" | 24'11" |
| 27'-0"     | 24'11" | 25'2"  | 25'2"  |
| 29'-0"     | 24'11" | 25'4"  | 25'4"  |
| 31'-0"     | 24'11" | 25'6"  | 25'6"  |
| 33'-0"     | 24'11" | 25'8"  | 25'8"  |
| 35'-0"     | 24'11" | 25'10" | 25'10" |
| 37'-0"     | 24'11" | 25'12" | 25'12" |
| 39'-0"     | 24'11" | 26'    | 26'    |
| 41'-0"     | 24'11" | 26'2"  | 26'2"  |
| 43'-0"     | 24'11" | 26'4"  | 26'4"  |
| 45'-0"     | 24'11" | 26'6"  | 26'6"  |
| 47'-0"     | 24'11" | 26'8"  | 26'8"  |
| 49'-0"     | 24'11" | 26'10" | 26'10" |



**DETAILS OF FLANGE CLAMPS**

**RULE:**  
 supports: 3-30d at each support. At splices, 3-30d each side.  
 backwall to backing planks: 4-30d to each backing plank.



**DETAILS OF BEARING ON PILE CAP**

| BILL OF REINFORCING STEEL |      |        |      |          |                |  |  |  |  |
|---------------------------|------|--------|------|----------|----------------|--|--|--|--|
| NO.                       | SIZE | LENGTH | MARK | LOCATION | BENDING SKETCH |  |  |  |  |
|                           |      |        |      |          | C 2            |  |  |  |  |
| "A"                       | 3/4" | 2'-0"  | C1   | Curb     |                |  |  |  |  |
| "C"                       | 3/4" | 2'-0"  | C2   | "        |                |  |  |  |  |
| "D"                       | 3/4" | 20'-9" | S1   | Slab     |                |  |  |  |  |
| "E"                       | 3/4" | 20'-9" | S2   | "        |                |  |  |  |  |

Note: Reinforcing bars in each span to be billed and tagged separately.

| SUBSTRUCTURE HARDWARE BILL |                       |          |       |                |
|----------------------------|-----------------------|----------|-------|----------------|
| PIECE                      | LOCATION              | NO. PCS. | SIZE  | REMARKS        |
| Backlog Plank              | Spans 15 to 31' Incl. | 4        | 6x6   | Cut to length. |
| Backlog Support            | Spans 33 to 49' Incl. | 4        | 6x6   | " " " " "      |
| Backlog Support            | Spans 15 to 31' Incl. | 4        | 6x6   | " " " " "      |
| Backlog Support            | Spans 33 to 49' Incl. | 4        | 6x6   | " " " " "      |
| Pile Cap                   | Spans 15 to 31'       | 2        | 12x12 | Cut to length. |
| Bracing                    | Spans 15 to 31'       | 4        | 3x8   | " " " " "      |

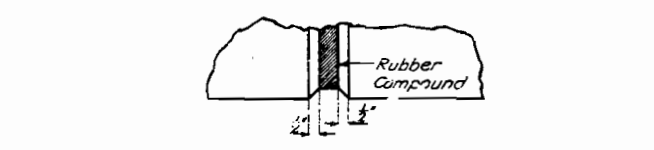
Note: Pile caps to be classified as beams and stringers. All other timber to be classified as joist and plank. \*\* S2s to exact depth of 1 1/2"

| SUBSTRUCTURE TIMBER BILLS |          |       |           |                       |  |  |
|---------------------------|----------|-------|-----------|-----------------------|--|--|
| PIECE                     | NO. PCS. | SIZE  | LENGTH    | REMARKS               |  |  |
| Backlog Plank             | 1        | 2x12  | 23'-6"    | Cut to length.        |  |  |
| " "                       | 1        | 2x12  | 17'-6"    | " " " " "             |  |  |
| " "                       | 1        | 2x12  | 23'-0"    | Cut to length.        |  |  |
| " "                       | 1        | 2x12  | 16'-0"    | " " " " "             |  |  |
| " "                       | 1        | 2x12  | 20'-6"    | " " " " "             |  |  |
| " "                       | 1        | 2x12  | 17'-6"    | " " " " "             |  |  |
| " "                       | 1        | 2x12  | 19'-0"    | " " " " "             |  |  |
| " "                       | 1        | 2x12  | 13'-0"    | " " " " "             |  |  |
| Shoulder Plank            | 2        | 2x8   | 2'-5 1/2" | " " " " "             |  |  |
| Edge Support              | 2        | 2x12  | 10'-6"    | Cut to length & shape |  |  |
| Backlog Support           | 4        | 6x6   | 6'-0"     | " " " " "             |  |  |
| Backlog Support           | 4        | 6x6   | 6'-6"     | " " " " "             |  |  |
| Backlog Support           | 2        | 6x6   | 4'-0"     | " " " " "             |  |  |
| Backlog Support           | 1        | 6x6   | 21'-0"    | Cut to length.        |  |  |
| Pile Cap                  | 1        | 12x12 | 20'-6"    | " " " " "             |  |  |
| Pile Cap                  | 2        | 12x12 | 20'-6"    | Cut to length.        |  |  |
| Bracing                   | 4        | 3x8   | 2'-0"     | " " " " "             |  |  |

Note: Omit when "E" is less than 5'-0". Note: Bolts to be threaded 8" and sawed off 1/2" outside of nut after nut has been tightened.

| SUPERSTRUCTURE HARDWARE BILL |                        |          |            |        |                               |
|------------------------------|------------------------|----------|------------|--------|-------------------------------|
| PIECE                        | LOCATION               | NO. PCS. | SIZE       | LENGTH | REMARKS                       |
| Cap Plate                    | Under Slab             | 2        | 8x8        | 21'-0" | See detail.                   |
| Lag Screws                   | Cap Pl.                | 30       | 3/4"       | 4"     | Flat csk. heads.              |
| Spacer Bolts                 | Spans 15 to 31' Incl.  | 48       | 3/4"       | Varies | Turn bolts, washer for nut.   |
| Spacer Bolts                 | Spans 33 to 49' Incl.  | 64       | 3/4"       | Varies | Turn bolts, washer for nut.   |
| Handrail Bolts               | Spans 15'              | 16       | 3/4"       | 6"     | Sq. hds., washers, hex. nuts. |
| " "                          | to 19' Incl.           | 32       | 3/4"       | 14"    | Button heads.                 |
| " "                          | Spans 21'              | 20       | 3/4"       | 6"     | Sq. hds., washers, hex. nuts. |
| " "                          | to 25' Incl.           | 40       | 3/4"       | 14"    | Button heads.                 |
| " "                          | Spans 27'              | 24       | 3/4"       | 6"     | Sq. hds., washers, hex. nuts. |
| " "                          | to 31' Incl.           | 48       | 3/4"       | 14"    | Button heads.                 |
| " "                          | Spans 33'              | 28       | 3/4"       | 6"     | Sq. hds., washers, hex. nuts. |
| " "                          | to 37' Incl.           | 56       | 3/4"       | 14"    | Button heads.                 |
| " "                          | Spans 39'              | 32       | 3/4"       | 6"     | Sq. hds., washers, hex. nuts. |
| " "                          | to 43' Incl.           | 64       | 3/4"       | 14"    | Button heads.                 |
| " "                          | Spans 45'              | 36       | 3/4"       | 6"     | Sq. hds., washers, hex. nuts. |
| " "                          | to 49' Incl.           | 72       | 3/4"       | 14"    | Button heads.                 |
| Bolts                        | Bearing Pts.           | 16       | 3/4"       | 12"    | Sq. heads, no threads.        |
| Spacer Bolts                 | Spans 33' to 49' Incl. | 64       | 3/4"       | Varies | Turn bolts, washer for nut.   |
| Handrail Bolts               | Spans 15'              | 12       | 3/4"       | 6"     | Sq. hds., washers, hex. nuts. |
| " "                          | to 19' Incl.           | 32       | 3/4"       | 14"    | Button heads.                 |
| " "                          | Spans 21'              | 16       | 3/4"       | 6"     | Sq. hds., washers, hex. nuts. |
| " "                          | to 25' Incl.           | 40       | 3/4"       | 14"    | Button heads.                 |
| " "                          | Spans 27'              | 20       | 3/4"       | 6"     | Sq. hds., washers, hex. nuts. |
| " "                          | to 31' Incl.           | 48       | 3/4"       | 14"    | Button heads.                 |
| " "                          | Spans 33'              | 24       | 3/4"       | 6"     | Sq. hds., washers, hex. nuts. |
| " "                          | to 37' Incl.           | 56       | 3/4"       | 14"    | Button heads.                 |
| " "                          | Spans 39'              | 28       | 3/4"       | 6"     | Sq. hds., washers, hex. nuts. |
| " "                          | to 43' Incl.           | 64       | 3/4"       | 14"    | Button heads.                 |
| " "                          | Spans 45'              | 32       | 3/4"       | 6"     | Sq. hds., washers, hex. nuts. |
| " "                          | to 49' Incl.           | 72       | 3/4"       | 14"    | Button heads.                 |
| Bolts                        | Bearing Pts.           | 16       | 3/4"       | 12"    | Sq. heads, no threads.        |
| Spacer Bolts                 | Spans 15 to 31'        | 40       | 3/4"       | 2"     | Turn bolts, washer for nut.   |
| Flange Clamp                 | Bearings               | 32       | See Detail |        | Detailed on this sheet.       |
| Clip 15                      | At Bent                | 8        | " " "      | " "    | " " Sheet # 3 of 3.           |
| Bolts                        | Clip 15                | 16       | 3/4"       | 2"     | Plain Bolts                   |

\* 2 Washers plus washers for fill required for alignment of railposts.  
 □ Total number required for entire bridge.



Note: Use bevel as shown for exposed faces of all joints consisting of rubber compound except at top surface of roadway slab. Use edging tool with 3" radius at top surface of roadway slab each side of rubber compound joint.

**BRIDGE OVER MAIN D. D. DIST. NO. 36**  
 STATE ROAD FROM ROUTE 84 SOUTH  
 ABOUT 3 MILES S.E. OF KENNETT  
 PROJECT NO. 52-S1 STA. 55+12  
**DUNKLIN COUNTY**

FINISHED

Designed Nov. 1929 By F.W.H.  
 Drawn Dec. 1930 By R.J.G.  
 Traced Dec. 1931 By R.J.G.  
 Checked Apr. 1933 By R.H.S.  
 Checked Dec. 1931 By J.H.M.

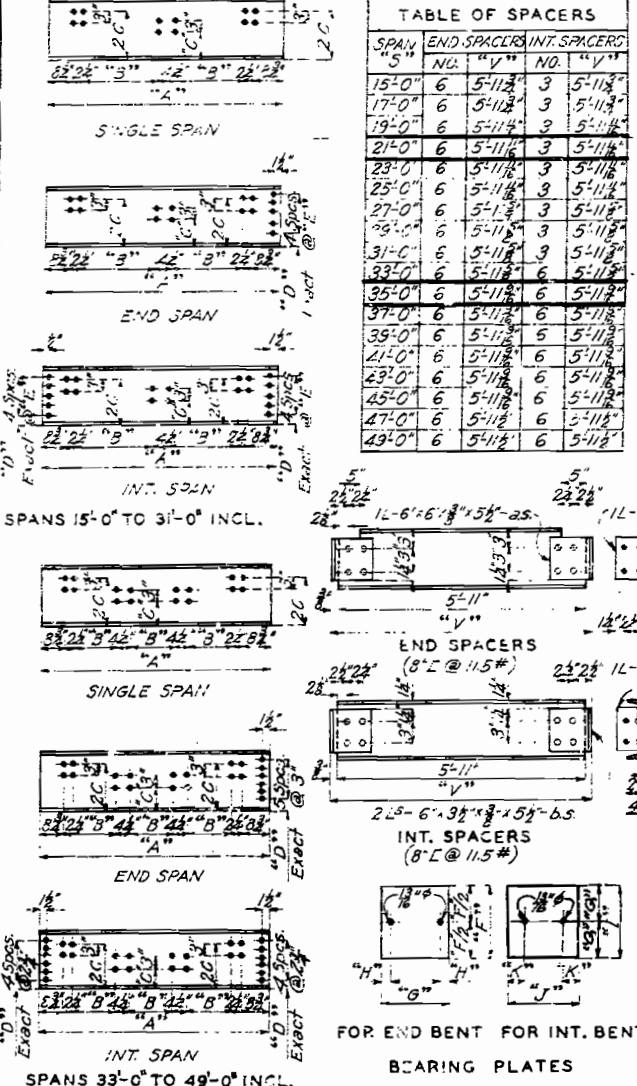
DETAILS OF BEARING ON PILE CAP

# MISSOURI STATE HIGHWAY DEPARTMENT

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| 5                   | MO    |                    | 19          |           |              |

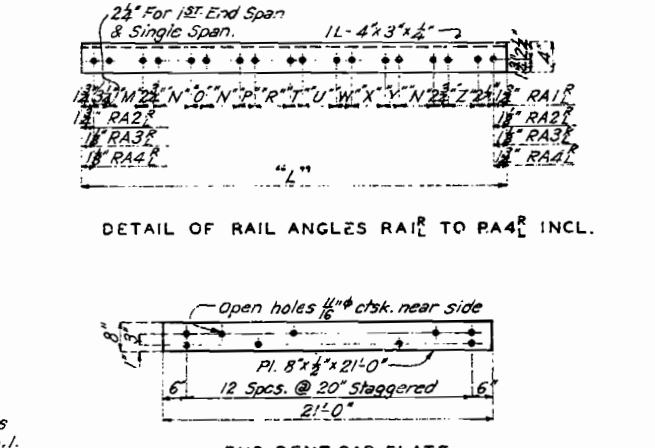
### TABLE OF SPACERS

| SPAN   | END SPACERS |           | INT. SPACERS |           |
|--------|-------------|-----------|--------------|-----------|
|        | NO.         | "V"       | NO.          | "Y"       |
| 15'-0" | 6           | 5-11 1/8" | 3            | 5-11 1/8" |
| 17'-0" | 6           | 5-11 1/8" | 3            | 5-11 1/8" |
| 19'-0" | 6           | 5-11 1/8" | 3            | 5-11 1/8" |
| 21'-0" | 6           | 5-11 1/8" | 3            | 5-11 1/8" |
| 23'-0" | 6           | 5-11 1/8" | 3            | 5-11 1/8" |
| 25'-0" | 6           | 5-11 1/8" | 3            | 5-11 1/8" |
| 27'-0" | 6           | 5-11 1/8" | 3            | 5-11 1/8" |
| 29'-0" | 6           | 5-11 1/8" | 3            | 5-11 1/8" |
| 31'-0" | 6           | 5-11 1/8" | 3            | 5-11 1/8" |
| 33'-0" | 6           | 5-11 1/8" | 3            | 5-11 1/8" |
| 35'-0" | 6           | 5-11 1/8" | 6            | 5-11 1/8" |
| 37'-0" | 6           | 5-11 1/8" | 6            | 5-11 1/8" |
| 39'-0" | 6           | 5-11 1/8" | 6            | 5-11 1/8" |
| 41'-0" | 6           | 5-11 1/8" | 6            | 5-11 1/8" |
| 43'-0" | 6           | 5-11 1/8" | 6            | 5-11 1/8" |
| 45'-0" | 6           | 5-11 1/8" | 6            | 5-11 1/8" |
| 47'-0" | 6           | 5-11 1/8" | 6            | 5-11 1/8" |
| 49'-0" | 6           | 5-11 1/8" | 6            | 5-11 1/8" |



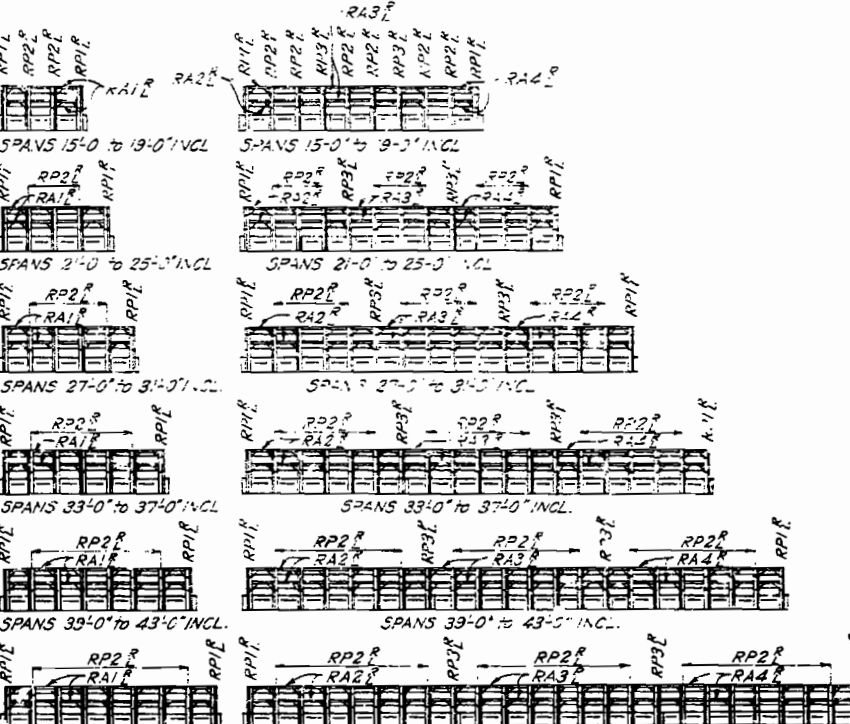
### TABLE OF STRINGERS

| SPAN   | NO. | SIZE           | SINGLE SPAN |        | END SPAN |        | INT. SPAN |        | "C"     | "D"    | "E"    |
|--------|-----|----------------|-------------|--------|----------|--------|-----------|--------|---------|--------|--------|
|        |     |                | "A"         | "B"    | "A"      | "B"    | "A"       | "B"    |         |        |        |
| 5'-0"  | 4   | 14" C.B. @ 30" | 15'-8"      | 6'-8"  | 15'-3"   | 6'-8"  | 14'-11"   | 6'-4"  | 5 1/2"  | 2"     | 2 1/2" |
| 17'-0" | 4   | 14" C.B. @ 33" | 17'-8"      | 7'-8"  | 17'-3"   | 7'-8"  | 16'-11"   | 7'-4"  | 5 1/2"  | 2"     | 2 1/2" |
| 19'-0" | 4   | 14" C.B. @ 37" | 19'-8"      | 8'-8"  | 19'-3"   | 8'-8"  | 18'-11"   | 8'-4"  | 6 1/2"  | 2 1/2" | 2 1/2" |
| 21'-0" | 2   | 16" C.B. @ 37" |             |        | 21'-3"   | 9'-6"  |           |        | 6 1/2"  | 2 1/2" | 2 1/2" |
| 23'-0" | 2   | 16" C.B. @ 40" | 23'-8"      | 10'-8" | 23'-3"   | 10'-8" | 22'-11"   | 10'-4" | 6 1/2"  | 2 1/2" | 2 1/2" |
| 25'-0" | 2   | 16" C.B. @ 45" |             |        |          |        |           |        |         |        |        |
| 27'-0" | 2   | 18" C.B. @ 47" | 27'-8"      | 11'-8" | 27'-3"   | 11'-8" | 26'-11"   | 11'-4" | 7 1/2"  | 3 1/2" | 2 1/2" |
| 29'-0" | 2   | 18" C.B. @ 52" | 29'-8"      | 12'-8" | 29'-3"   | 12'-8" | 28'-11"   | 12'-4" | 7 1/2"  | 3 1/2" | 2 1/2" |
| 31'-0" | 4   | 20" C.B. @ 55" | 31'-8"      | 13'-8" | 31'-3"   | 13'-8" | 30'-11"   | 13'-4" | 8 1/2"  | 4 1/2" | 2 1/2" |
| 33'-0" | 4   | 21" C.B. @ 58" | 33'-8"      | 14'-8" | 33'-3"   | 14'-8" | 32'-11"   | 14'-4" | 9 1/2"  | 5 1/2" | 2 1/2" |
| 35'-0" | 2   | 21" C.B. @ 62" |             |        |          |        |           |        |         |        |        |
| 37'-0" | 2   | 21" C.B. @ 67" |             |        |          |        |           |        |         |        |        |
| 39'-0" | 2   | 24" C.B. @ 70" | 39'-8"      | 15'-8" | 39'-3"   | 15'-8" | 38'-11"   | 15'-4" | 10 1/2" | 4 1/2" | 4 1/2" |
| 41'-0" | 2   | 24" C.B. @ 74" | 41'-8"      | 16'-8" | 41'-3"   | 16'-8" | 40'-11"   | 16'-4" | 10 1/2" | 4 1/2" | 4 1/2" |
| 43'-0" | 2   | 24" C.B. @ 81" | 43'-8"      | 17'-8" | 43'-3"   | 17'-8" | 42'-11"   | 17'-4" | 10 1/2" | 4 1/2" | 4 1/2" |
| 45'-0" | 4   | 27" C.B. @ 85" | 45'-8"      | 18'-8" | 45'-3"   | 18'-8" | 44'-11"   | 18'-4" | 12"     | 6"     | 6"     |
| 47'-0" | 4   | 27" C.B. @ 91" | 47'-8"      | 19'-8" | 47'-3"   | 19'-8" | 46'-11"   | 19'-4" | 12 1/2" | 6"     | 6"     |
| 49'-0" | 4   | 27" C.B. @ 97" | 49'-8"      | 20'-8" | 49'-3"   | 20'-8" | 48'-11"   | 20'-4" | 12 1/2" | 6"     | 6"     |



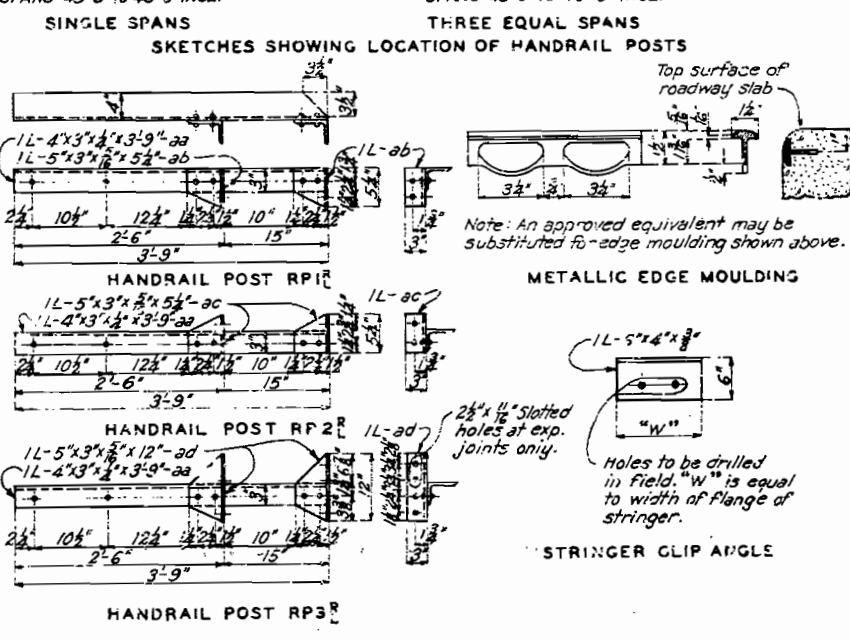
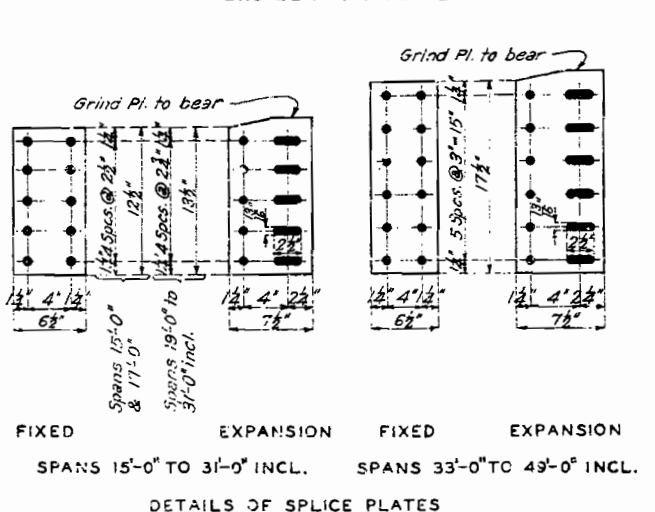
### TABLE OF RAIL ANGLE DIMENSIONS

| SPAN   | MARK | RAIL ANGLES |       |     |     |     |     |     |            |           |            |            |        |
|--------|------|-------------|-------|-----|-----|-----|-----|-----|------------|-----------|------------|------------|--------|
|        |      | "L"         | "M"   | "N" | "O" | "P" | "Q" | "R" | "S"        | "T"       | "U"        | "V"        | "W"    |
| 15'-0" | RA1  | 16'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 0          | 5'-5 1/2" | 0          | 0          | 0      |
| 17'-0" | "    | 18'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 0          | 6'-1 1/2" | 0          | 0          | 0      |
| 19'-0" | "    | 20'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 0          | 6'-9 1/2" | 0          | 0          | 0      |
| 21'-0" | "    | 22'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 5'-4 1/2"  | 2 1/2"    | 5'-7"      | 0          | 0      |
| 23'-0" | "    | 24'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 5'-10 1/2" | 2 1/2"    | 6'-1"      | 0          | 0      |
| 25'-0" | "    | 26'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 6'-4 1/2"  | 2 1/2"    | 6'-7"      | 0          | 0      |
| 27'-0" | "    | 28'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 5'-5 1/2"  | 2 1/2"    | 6'-5 1/2"  | 0          | 0      |
| 29'-0" | "    | 30'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 5'-10 1/2" | 2 1/2"    | 6'-10 1/2" | 0          | 0      |
| 31'-0" | "    | 32'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 6'-2 1/2"  | 2 1/2"    | 6'-8 1/2"  | 0          | 0      |
| 33'-0" | "    | 34'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 0          | 0         | 0          | 0          | 0      |
| 35'-0" | "    | 36'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 0          | 0         | 0          | 0          | 0      |
| 37'-0" | "    | 38'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 0          | 0         | 0          | 0          | 0      |
| 39'-0" | "    | 40'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 2 1/2"     | 5'-9 1/2" | 2 1/2"     | 5'-6 1/2"  | 2 1/2" |
| 41'-0" | "    | 42'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 2 1/2"     | 6'-0 1/2" | 2 1/2"     | 5'-9 1/2"  | 2 1/2" |
| 43'-0" | "    | 44'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 2 1/2"     | 6'-4"     | 2 1/2"     | 5'-11 1/2" | 2 1/2" |
| 45'-0" | "    | 46'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 2 1/2"     | 5'-6 1/2" | 2 1/2"     | 5'-6 1/2"  | 2 1/2" |
| 47'-0" | "    | 48'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 2 1/2"     | 5'-9 1/2" | 2 1/2"     | 5'-9 1/2"  | 2 1/2" |
| 49'-0" | "    | 50'-7 1/2"  | 5'-0" | 0   | 0   | 0   | 0   | 0   | 2 1/2"     | 6'-3 1/2" | 2 1/2"     | 6'-3 1/2"  | 2 1/2" |



### TABLE OF BEARING PLATES

| SPAN   | NO. PLATES | STRINGER | AT END BENTS |         |     |     | AT INT. BENTS |         |     |     |        |
|--------|------------|----------|--------------|---------|-----|-----|---------------|---------|-----|-----|--------|
|        |            |          | THICK.       | "F"     | "G" | "H" | THICK.        | "I"     | "J" | "K" | "Q"    |
| 15'-0" | 4          | All      | 3"           | 10"     | 11" | 13" | 3"            | 10"     | 11" | 13" | 2"     |
| 17'-0" | 4          | "        | 3"           | 10"     | 11" | 13" | 3"            | 10"     | 11" | 13" | 2"     |
| 19'-0" | 4          | "        | 3"           | 10"     | 12" | 13" | 3"            | 10"     | 12" | 13" | 2"     |
| 21'-0" | 2          | Inside   | 3"           | 10"     | 12" | 13" |               |         |     |     |        |
| 21'-0" | 2          | Outside  | 3"           | 10"     | 12" | 13" |               |         |     |     |        |
| 23'-0" | 4          | All      | 3"           | 10"     | 12" | 13" | 3"            | 11 1/2" | 12" | 13" | 2 1/2" |
| 25'-0" | 4          | "        | 3"           | 10"     | 12" | 13" | 3"            | 11 1/2" | 12" | 13" | 2 1/2" |
| 27'-0" | 4          | "        | 3"           | 10"     | 12" | 13" | 3"            | 11 1/2" | 12" | 13" | 2 1/2" |
| 29'-0" | 4          | "        | 3"           | 10"     | 12" | 13" | 3"            | 11 1/2" | 12" | 13" | 2 1/2" |
| 31'-0" | 4          | "        | 3"           | 10"     | 13" | 14" | 3"            | 11 1/2" | 13" | 14" | 2 1/2" |
| 33'-0" | 4          | "        | 3"           | 10"     | 13" | 14" | 3"            | 11 1/2" | 13" | 14" | 2 1/2" |
| 35'-0" | 4          | "        | 3"           | 11"     | 13" | 14" | 3"            | 11 1/2" | 13" | 14" | 2 1/2" |
| 37'-0" | 4          | "        | 3"           | 11 1/2" | 13" | 14" | 3"            | 11 1/2" | 13" | 14" | 2 1/2" |
| 39'-0" | 4          | "        | 3"           | 11 1/2" | 13" | 14" | 3"            | 11 1/2" | 13" | 14" | 2 1/2" |
| 41'-0" | 4          | "        | 3"           | 11 1/2" | 13" | 14" | 3"            | 11 1/2" | 13" | 14" | 2 1/2" |
| 43'-0" | 2          | Outside  | 3"           | 11 1/2" | 14" | 13" | 3"            | 11 1/2" | 13" | 14" | 2 1/2" |
| 45'-0" | 4          | Inside   | 3"           | 11 1/2" | 14" | 13" | 3"            | 11 1/2" | 13" | 14" | 2 1/2" |
| 47'-0" | 4          | "        | 3"           | 11 1/2" | 14" | 13" | 3"            | 11 1/2" | 13" | 14" | 2 1/2" |
| 49'-0" | 4          | "        | 3"           | 11 1/2" | 14" | 13" | 3"            | 11 1/2" | 13" | 14" | 2 1/2" |



**BRIDGE OVER MAIN D. D. DIST. NO. 36**  
 STATE ROAD FROM ROUTE 84 SOUTH  
 ABOUT 3 MILES S.E. OF KENNETT  
 PROJEC. NO. SZ-51 STA. 55+12  
**DUNKLIN COUNTY**

Designed Nov. 1929 By F.V.H.  
 Drawn Dec. 1930 By R.J.G.  
 Traced Dec. 1931 By R.J.G.  
 Checked Dec. 1931 By J.H.H.

Assembled Apr. 1933 By J.E.B.  
 Checked Apr. 1933 By R.H.S.

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 3 of 3.

**S-924**

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