

| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIST. NO.   | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | F-645(3)    | 1951        | 1         | 66           |

| INDEX       |               |   |  |                       |          |              |
|-------------|---------------|---|--|-----------------------|----------|--------------|
| PROJECT NO. | STRUCTURE NO. | TYPE                                      | SPAN   | OVER                  | STATION  | CONTRACT NO. |
| F-645(3)    | 39-A-3108     | CONT. ST. & GIRDER ST. BEAM & R.C. GIRDER | 40', 2@45', 100', 4@ 130', 100', 2@ 65', 40' | WEST FORK WHITE RIVER | 11+23.00 | 3259         |

| SHEET NO. | SHEET DESIGNATION          | SUBJECT   |
|-----------|----------------------------|---|
| 1         |                            | INDEX & TITLE SHEET   |
| 2         | ROAD STD. D-11-GR          | STANDARD PAVEMENT SECTIONS (Rev. 5-13-49)                                   |
| 3-4       | ROAD PLAN SHEETS NO. 3 & 4 | ROAD PLAN & PROFILE - RD. PROJ. NO. F-645(4)                                |
| 5         | ONE SHEET                  | WATERWAY CLEARING   |
| 6         | ONE SHEET                  | TEST BORINGS  |
| 7         | S1 (STR. 39-A-3108)        | LAYOUT  |
| 8         | S2                         | GENERAL PLAN  |
| 9         | S3                         | BENT N°1 & BENT N°13 DETAILS & BILL OF MATERIALS                            |
| 10        | S4                         | PIER N°2 & PIER N°12 DETAILS  |
| 11        | S5                         | PIER N°3 & PIER N°11 DETAILS  |
| 12        | S6                         | PIER N°4 & PIER N°10 DETAILS  |
| 13        | S7                         | PIER N°5 & PIER N°9 DETAILS   |
| 14        | S8                         | PIER N°6 & PIER N°8 DETAILS   |
| 15        | S9                         | PIER N°7 DETAILS  |
| 16        | S10                        | BILL OF MATERIALS PIERS N°2, 4, 5, 9, 10 & 12                               |
| 17        | S11                        | BILL OF MATERIALS PIERS N°6, 7 & 8  |
| 18        | S12                        | SUPERSTRUCTURE DETAILS SPANS A & M  |
| 19        | S13                        | SUPERSTRUCTURE DETAILS SPANS A & M  |
| 20        | S14                        | CONCRETE HANDRAIL DETAILS; SPANS A & M. BILL OF MATERIALS                   |
| 21        | S15                        | DESIGN DATA   |
| 22        | S16                        | ERECTION PLAN SPANS B, C, D, E & F  |
| 23        | S17                        | ERECTION PLAN SPANS B, C, D, E & F  |
| 24        | S18                        | STEEL DETAILS SPANS B, C, K & L   |
| 25        | S19                        | GIRDER DETAILS G1 & G22   |
| 26        | S20                        | GIRDER DETAILS G1 & G22   |
| 27        | S21                        | GIRDER DETAILS G2 & G21   |
| 28        | S22                        | GIRDER DETAILS G2 & G21   |
| 29        | S23                        | GIRDER DETAILS G3 & G20   |
| 30        | S24                        | GIRDER DETAILS G3 & G20   |
| 31        | S25                        | GIRDER DETAILS G4 & G19   |
| 32        | S26                        | GIRDER DETAILS G4 & G19   |
| 33        | S27                        | GIRDER DETAILS G5, G6, G7, G10, G13, G14, G17 & G18                         |
| 34        | S28                        | GIRDER DETAILS G5, G6, G7, G10, G13, G14, G17 & G18                         |
| 35        | S29                        | GIRDER DETAILS G7, G8, G11, G12, G15 & G16                                  |
| 36        | S30                        | GIRDER DETAILS G7, G8, G11, G12, G15 & G16                                  |
| 37        | S31                        | SPlice DETAILS, BILLS OF MATERIALS & REQUIRED LISTS                         |
| 38        | S32                        | FLOOR BEAM DETAILS  |
| 39        | S33                        | FLOOR BEAM & STRINGER DETAILS   |
| 40        | S34                        | FLOOR BEAM, BRACKET & DRAIN SUPPORT DETAILS                                 |
| 41        | S35                        | BOTTOM LATERAL & SWAY FRAME DETAILS   |
| 42        | S36                        | SHOE DETAILS  |
| 43        | S37                        | HANDRAIL DETAILS & BILL OF MATERIALS  |
| 44        | S38                        | EXPANSION JOINT DETAILS   |
| 45        | S39                        | STRUCT. STEEL BILL OF MAT'L'S, BY SHIPPING PIECES - SPANS D, E, F, G, H & J |
| 46        | S40                        | FLOOR DETAILS SPANS B, C, K & L   |
| 47        | S41                        | FLOOR DETAILS SPANS D, E, F, G, H & J                                       |
| 48        | S42                        | FLOOR DETAILS & BILL OF MATERIALS   |
| 49        | S43                        | FLOOR DETAILS   |
| 50        | S44                        | SCREEDS   |
| 51        | S45                        | SCREEDS   |
| 52        | S46                        | SCREEDS   |
| 53        | S47                        | SHOE SETTING AND ERECTION DATA  |
| 54        | ONE SHEET                  | SUMMARY   |
| 55        | BRIDGE STD. C              | STANDARD MISCELLANEOUS DETAILS (Rev. 5-14-49)                               |
| 56        | BRIDGE STD. D              | CASTING DETAILS ROADWAY DRAINS (Jan. 3, 1950)                               |
| 57        | ROAD STD. SHEET A          | STANDARD PAVEMENT JOINTS (Rev. 4-17-50)                                     |
| 58        | ROAD STD. SHEET M5         | MISCELLANEOUS STANDARDS (Rev. 3-23-50)                                      |
| 59        | ROAD STD. SHEET M6         | MISCELLANEOUS STANDARDS (Rev. 1-2-50)                                       |
| 60        | BRIDGE STD. G              | STANDARD THICKENED PAVEMENT DETAILS (Rev. 7-15-47)                          |
| 61        | BRIDGE STD. H5             | TYR DETAILS OF THICK PAVEMENT & LOC. TOE SLOPE (Rev. 10-11-44)              |
| 62        | BRIDGE STD. M1             | MISCELLANEOUS APPROACH DETAILS (Rev. 8-31-48)                               |
| 63        | BRIDGE STD. M2             | MISCELLANEOUS APPROACH DETAILS (Aug. 1, 1949)                               |
| 64        | BRIDGE STD. S1             | TYPICAL DETAILS FOR PLACING SPECIAL FILLING MATERIAL (June 15, 1939)        |
| 65        | BRIDGE STD. Z SHEET A      | STANDARD DETOUR SIGNS (Rev. 12-10-40)                                       |
| 66        | BRIDGE STD. Z SHEET B      | STANDARD DETOUR SIGNS (Rev. 3-26-43)  |

STATE OF INDIANA  
STATE HIGHWAY COMMISSION

# BRIDGE PLANS

## FOR SPANS OVER 20 FEET

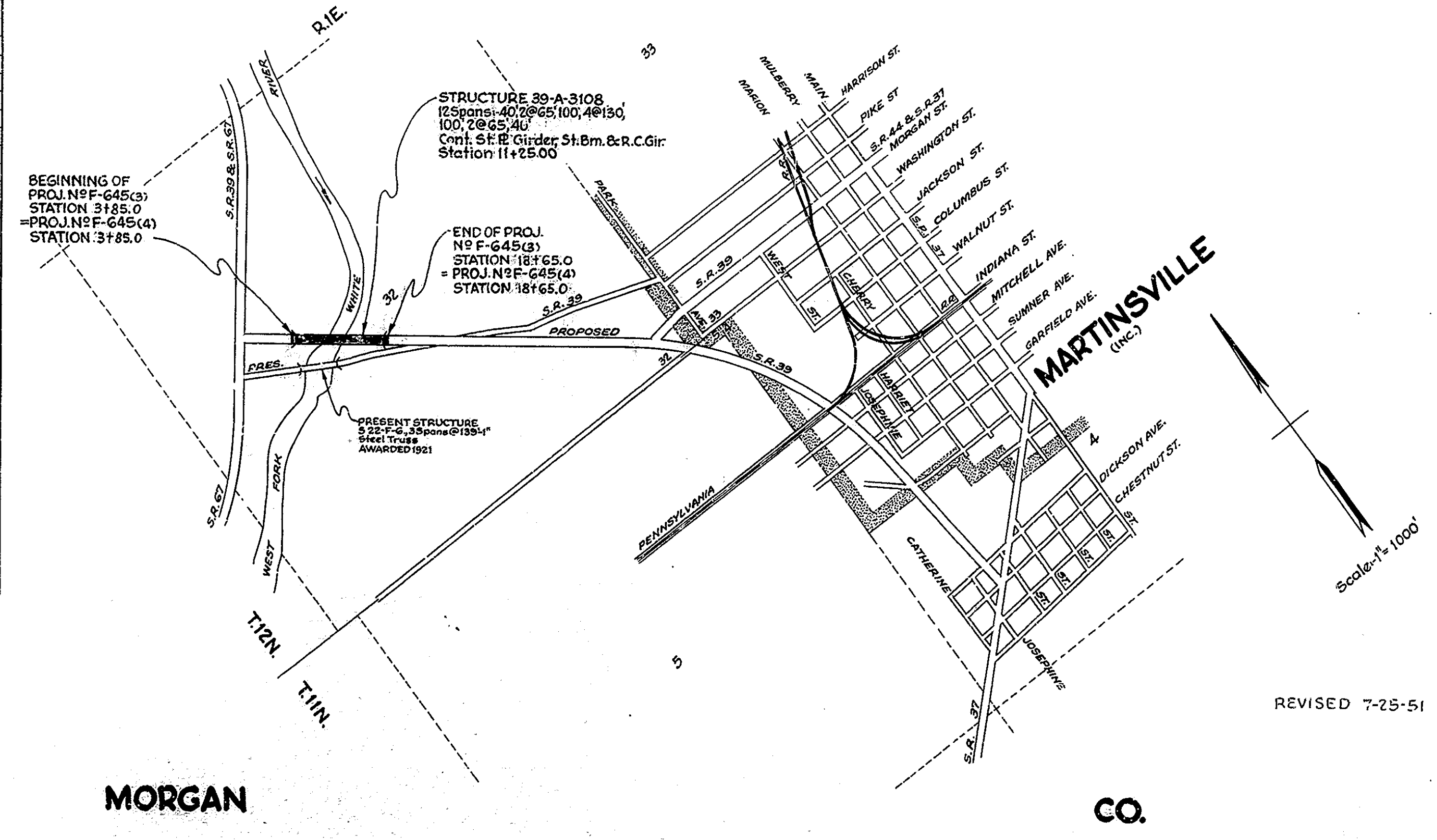
### ON

## STATE ROAD NO. 39 SECTION A

## F.A. PROJECT NO. F-645(3)

S.R. 39 WEST OF MARTINSVILLE  
BEGINNING AT A POINT ON PROPOSED S.R. 39 APPROX. 385.0' SOUTHEAST OF THE CENTERLINE OF S.R. 67 AND EXTENDING SOUTHEAST A DISTANCE OF APPROX. 1480.0' TO A POINT ON PROPOSED S.R. 39 APPROX. 1865.0' SOUTHEAST OF THE CENTERLINE OF S.R. 67, ALL IN SECTION 32-T.12N.-R.1E., IN MORGAN COUNTY.

ROADWAY LENGTH = 0.077 MI.  
BRIDGE LENGTH = 0.203 MI.  
TOTAL LENGTH = 0.280 MI.  
MAX. GRADE = 1.600%



APPROVED AND ADOPTED DATE 9/7/50  
BY STATE HIGHWAY COMMISSION OF INDIANA  
*Samuel C. Hadden*  
CHAIRMAN, STATE HIGHWAY COMMISSION OF INDIANA

APPROVED DATE Sept. 7, 1950  
*Frank B. ...*  
CHIEF ENGINEER, STATE HIGHWAY COMMISSION OF INDIANA

RECOMMENDED FOR APPROVAL DATE \_\_\_\_\_

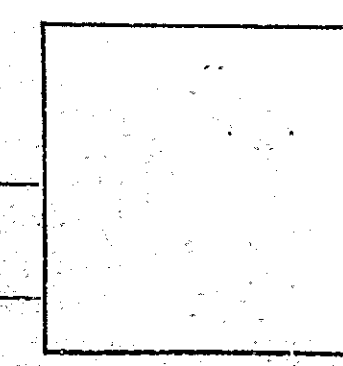
DISTRICT ENGINEER  
BUREAU OF PUBLIC ROADS  
DEPARTMENT OF COMMERCE

APPROVED DATE \_\_\_\_\_

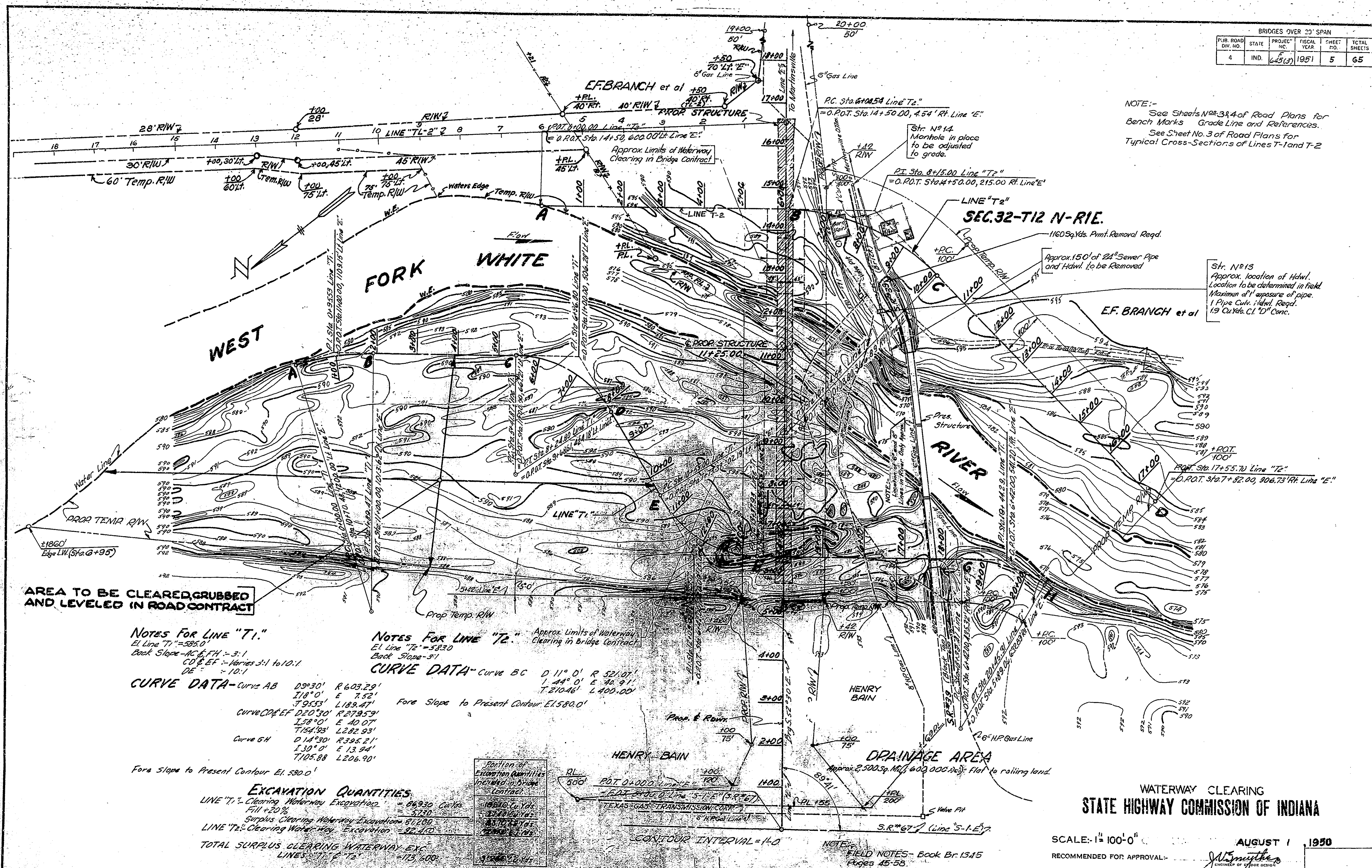
DIVISION ENGINEER  
BUREAU OF PUBLIC ROADS  
DEPARTMENT OF COMMERCE

BRIDGE FILE: 39-A-3108

RECOMMENDED FOR APPROVAL DATE 8-24-50  
*J. W. ...*  
ENGINEER OF BRIDGE DESIGN, STATE HIGHWAY COMMISSION OF INDIANA



| BRIDGES OVER 20' SPAN |       |             |          |           |              |
|-----------------------|-------|-------------|----------|-----------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FIG. NO. | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | 645(3)      | 1951     | 5         | 65           |



NOTE:-  
See Sheets Nos. 3, 4 of Road Plans for Bench Marks, Grade Line and References.  
See Sheet No. 3 of Road Plans for Typical Cross-Sections of Lines T-1 and T-2

Str. No. 13  
Approx. location of Hdw. Location to be determined in field. Maximum 1' exposure of pipe. 1 Pipe Culv. Hdw. Req'd. 1.9 Cu Yds. C1, 10' Conc.

AREA TO BE CLEARED, GRUBBED AND LEVELED IN ROAD CONTRACT

NOTES FOR LINE "T1."  
El. Line "T1" = 585.0'  
Back Slope - AC 6' FH - 3:1  
CD & EF - Varies 3:1 to 10:1  
DE - 10:1

CURVE DATA - Curve AB  
D 9° 30' R 603.29'  
I 18° 0' E 7.52'  
T 9.533' L 189.47'  
Curve CD & EF D 20° 30' R 279.59'  
I 58° 0' E 40.07'  
T 154.93' L 222.93'  
Curve GH D 14° 30' R 395.21'  
I 30° 0' E 13.94'  
T 105.88' L 206.90'

NOTES FOR LINE "T2" - Approx. Limits of Waterway Clearing in Bridge Contract.  
El. Line "T2" = 583.0'  
Back Slope - 5:1

CURVE DATA - Curve BC  
D 11° 0' R 521.07'  
I 44° 0' E 40.91'  
T 210.46' L 400.00'

EXCAVATION QUANTITIES  
LINE "T1" - Clearing Waterway Excavation = 86,930 Cu Yds.  
Fill + 20% = 3,730  
Surplus Clearing Waterway Excavation = 81,200  
LINE "T2" - Clearing Waterway Excavation = 22,450  
TOTAL SURPLUS CLEARING WATERWAY EXCAVATION = 103,650

| Excavation Quantities                             | Volume         |
|---|----------------|
| Excavation  | 86,930 Cu Yds. |
| Fill + 20%  | 3,730          |
| Surplus Clearing Waterway Excavation              | 81,200         |
| Clearing Waterway Excavation                      | 22,450         |
| <b>TOTAL SURPLUS CLEARING WATERWAY EXCAVATION</b> | <b>103,650</b> |

WATERWAY CLEARING  
STATE HIGHWAY COMMISSION OF INDIANA

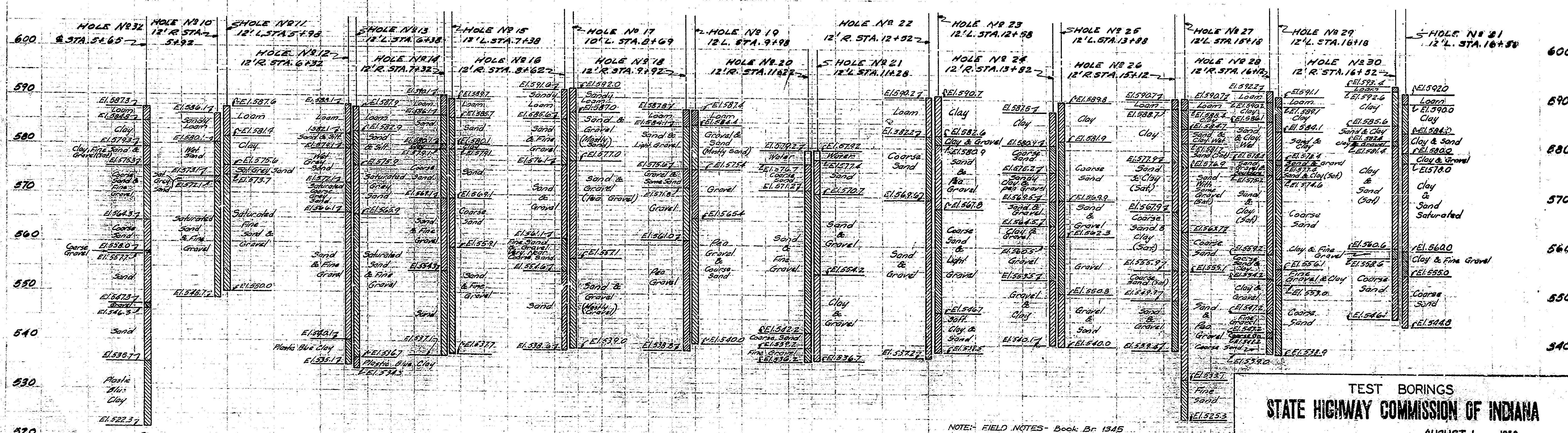
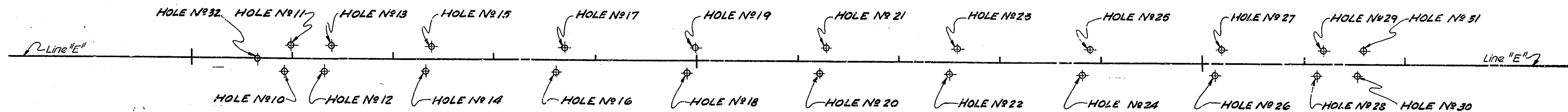
SCALE: 1" = 100'-0"  
AUGUST 1, 1950  
RECOMMENDED FOR APPROVAL: *J. W. Smyth*  
PROJECT: F-645 (3) STATION: 11+25.00

BRIDGE CONTRACT NO. 3289  
BRIDGE FILE NO. 30-A-3100

DESIGNED: C.W.D.  
DRAWN: U-2-13, C.W.D., U-2-29  
TRACED: U-10-19, C.W.D., U-10-29

NOTE: R/W REVISED AS PER ROAD DEPT. AUG. 7, 1950

| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | F-645(3)    | 1951        | 6         | 65           |

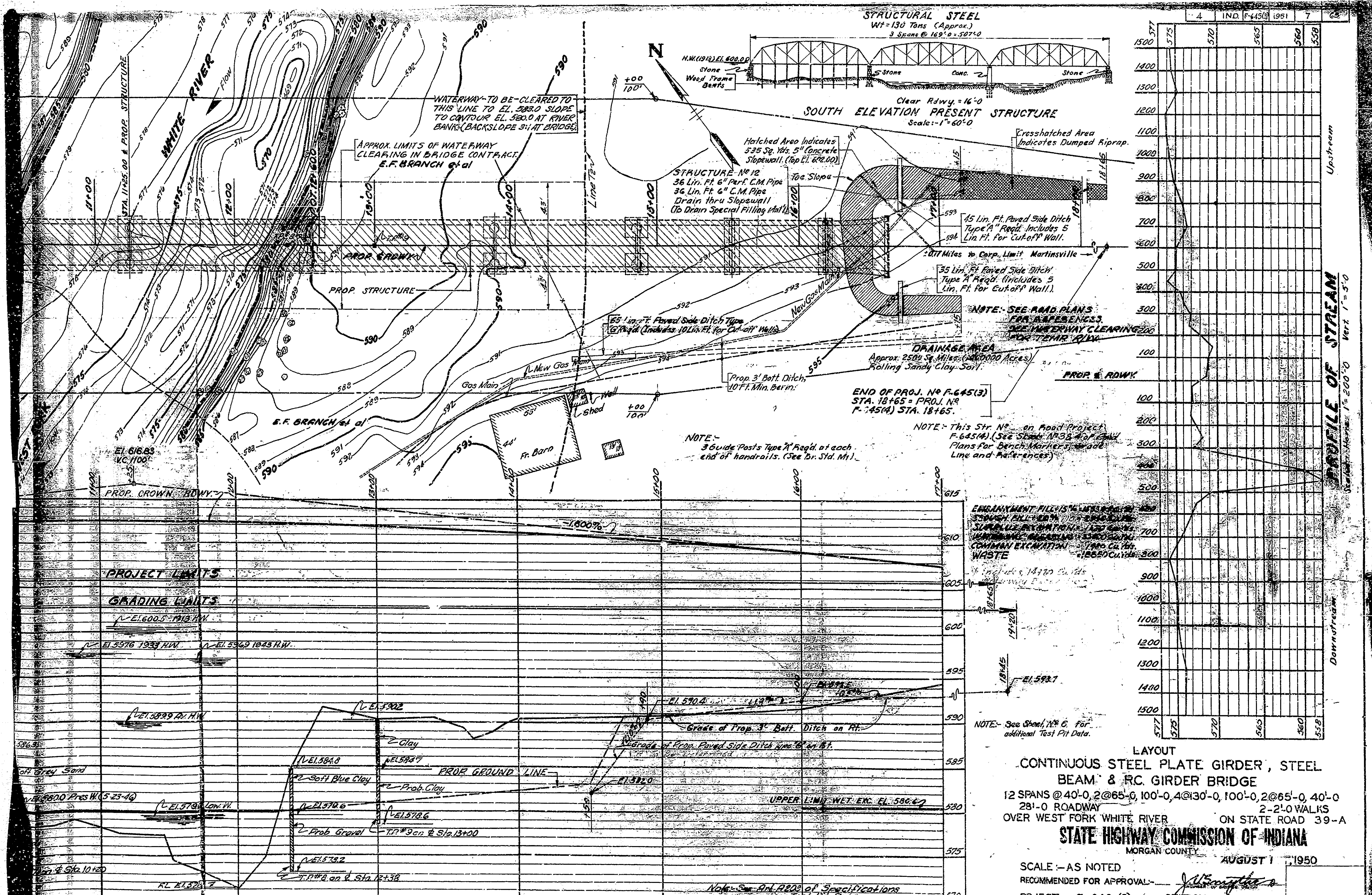


**TEST BORINGS**  
**STATE HIGHWAY COMMISSION OF INDIANA**

RECOMMENDED FOR APPROVAL: *[Signature]* AUGUST 1, 1951

PROJECT-F-645 (3)  
 STATION-11+25.00  
 BRIDGE CONTRACT NO. 3209  
 BRIDGE FILE-39-A-310A

NOTE: FIELD NOTES - Book Br. 1345  
 Pages 59-68



**STRUCTURAL STEEL**  
 Wt = 130 Tons (Approx.)  
 3 Spans @ 169'-0" = 507'-0"

**SOUTH ELEVATION PRESENT STRUCTURE**  
 Clear Rdy. = 16'-0"  
 Scale: 1" = 60'-0"

APPROX. LIMITS OF WATERWAY CLEARING IN BRIDGE CONTRACT  
 E.F. BRANCH et al

**STRUCTURE NO. 12**  
 36 Lin. Ft. 6" Perf. C.M. Pipe  
 36 Lin. Ft. 6" C.M. Pipe  
 Drain thru Slope Wall  
 (To Drain Special Filling Mat)

15 Lin. Ft. Paved Side Ditch  
 Type "A" Regd. Includes 5  
 Lin. Ft. for Cut-off Wall.

35 Lin. Ft. Paved Side Ditch  
 Type "A" Regd. Includes 5  
 Lin. Ft. for Cut-off Wall.

**NOTE: SEE ROAD PLANS FOR REFERENCES. SEE WATERWAY CLEARING 200' FOR TIE-IN R/W.**

**DRAINAGE AREA**  
 Approx. 2500 Sq. Miles (160000 Acres)  
 Rolling Sandy Clay Soil.

**END OF PROJ. NO. F-645(3)**  
 STA. 18165 = PROJ. NO. F-4514 STA. 18165.

**NOTE:**  
 3 Guide Posts Type "A" Regd. at each end of handrails. (See Br. Std. Mt.)

**NOTE:** This Str. No. on Road Project F-645(4). (See Sheet No. 38 for Road Plans for Bench Markers, Grade Line and References)

**EMBANKMENT FILL IS 15% LIME STABILIZED THROUGH FULL DEPTH TO 10' BELOW SURFACE EXCEPT FOR 10' BELOW COMMON EXCAVATION 10' TO 15' COMMON EXCAVATION 10' TO 15' WASTE**

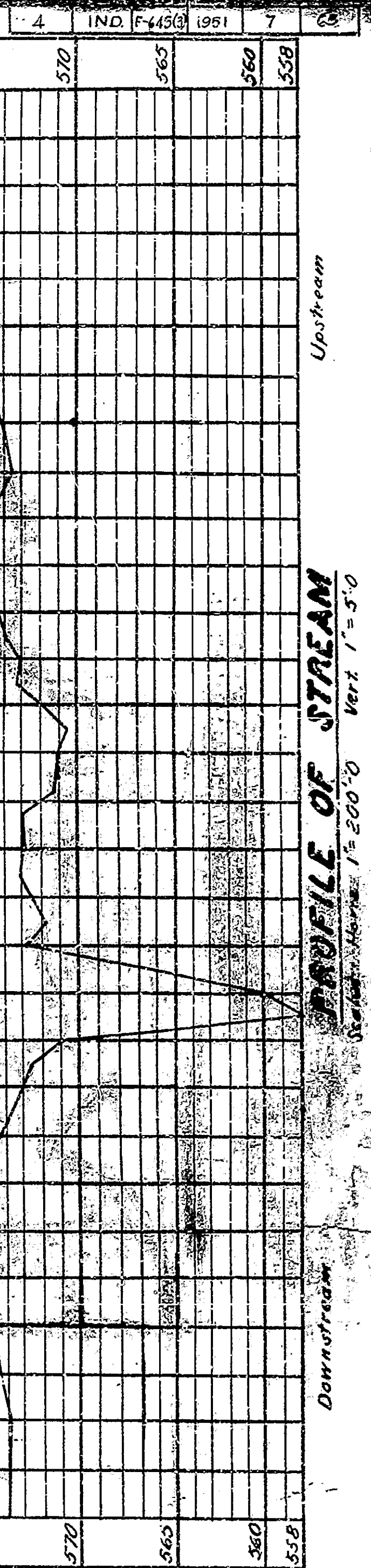
**NOTE:** See Sheet No. 6 for additional Test Pit Data.

**LAYOUT**  
**CONTINUOUS STEEL PLATE GIRDER, STEEL BEAM & RC. GIRDER BRIDGE**  
 12 SPANS @ 40'-0", 2 @ 65'-0", 100'-0", 4 @ 130'-0", 100'-0", 2 @ 65'-0", 40'-0"  
 28'-0" ROADWAY 2'-2'-0" WALKS  
 OVER WEST FORK WHITE RIVER ON STATE ROAD 39-A  
**STATE HIGHWAY COMMISSION OF INDIANA**  
 MORGAN COUNTY AUGUST 1, 1950

SCALE - AS NOTED

RECOMMENDED FOR APPROVAL -

PROJECT - F-645(3) STATION - 18165.00



**PROJECT LIMITS**  
 STA. 1125.00 & PROP. STRUCTURE

**GRADING LIMITS**  
 V.C. EL. 616.83  
 V.C. 1100'

EL. 5976 1933 H.W. EL. 5969 1843 H.W.

EL. 5989 1913 H.W.

EL. 5902

EL. 5868

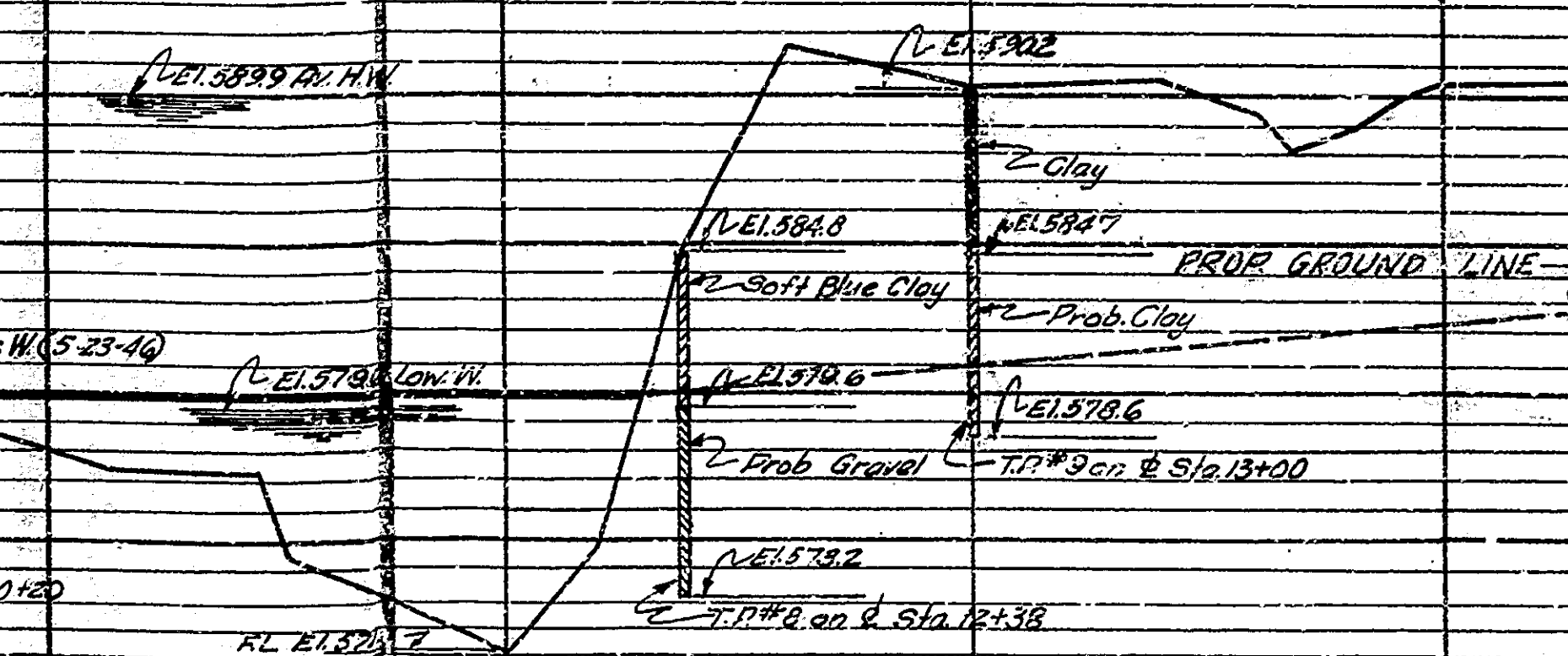
EL. 5847

EL. 5820

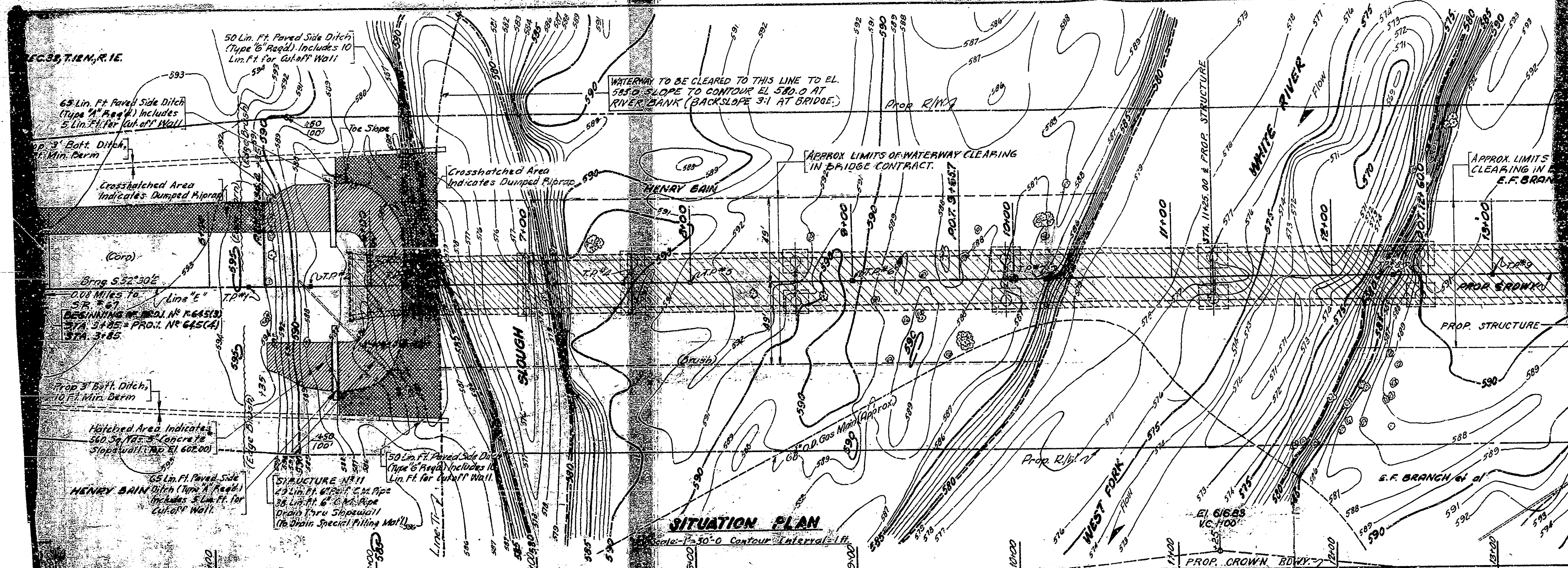
EL. 5786

EL. 5782

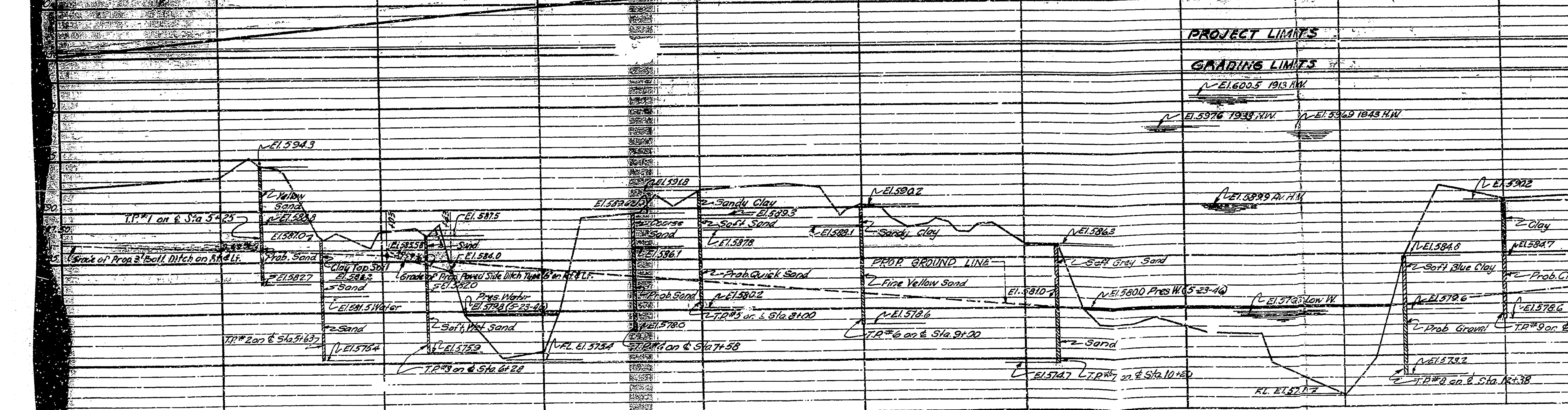
EL. 5720



**NOTE:** See Art. 1202 of Specifications regarding Test Pit Data.



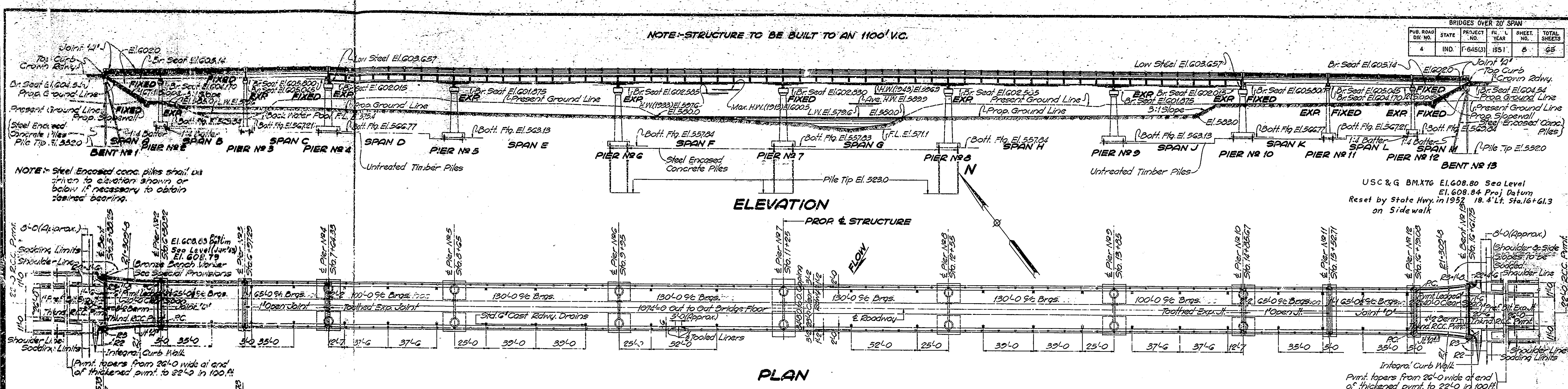
1. Middle 59149, 2. CVL Link, 3. E. Woodwell 18018, Sta 0+29  
 4. 14478, 5. 14478, 6. 14478, 7. 14478, 8. 14478, 9. 14478, 10. 14478  
 11. 14478, 12. 14478, 13. 14478, 14. 14478, 15. 14478, 16. 14478, 17. 14478, 18. 14478, 19. 14478, 20. 14478  
 For Sea Level Datum subtract 0.04 From Proj. Datum See Gen. Plan For 2 New B.M.



**PROJECT LIMITS**  
**GRADING LIMITS**  
 EL 600.5 1913 H.W.  
 EL 597.6 1938 H.W.  
 EL 586.9 1845 H.W.

NOTE - STRUCTURE TO BE BUILT TO AN 1100' V.C.

| BRIDGES OVER 20' SPAN |       |          |          |       |        |
|-----------------------|-------|----------|----------|-------|--------|
| PUB. ROAD             | STATE | PROJECT  | FL. YEAR | SHEET | TOTAL  |
| NO.                   |       | NO.      |          | NO.   | SHEETS |
| 4                     | IND.  | F-645(3) | 1951     | 5     | 65     |



ELEVATION

PLAN

GENERAL NOTES

Present structure approximately 300 ft. downstream to be removed. Depth of footings to be extended if found necessary. See Art. B.403.2 of Specifications.

Untreated timber piles shall have minimum bearing value shown on Detail Drawings. Determine pile lengths by Art. F.103 of Specifications.

Steel Encased concrete piles shall have minimum bearing value shown on Detail Drawing. Determine pile lengths by Art. F.203 of Specifications.

Reinforcing steel covering shall be 1 inch in floor slabs, 3 inches in footings, except bottom steel which shall be 4 inches, and 2 inches in all other parts unless noted. All dimensions on Details and Bending Diagrams for Reinforcing Bars are measured on centerlines of bars.

Concrete in footings and piers to be Class 'E'!  
Concrete in bent caps to be Class 'D'!  
Concrete in Superstructure including handrail to be Class 'F'!

Continuous concrete pours shall be required between construction joints as shown on detail plans.

Bevel forms 3 inch under copings; and chamfer exposed edges 1 inch unless noted.

48 Std. 6" Cast Rdwy. Drains, Type 1, to be placed as shown on this drawing.

Construct 5' concrete sloped wall on embankment slopes. See Drwg. S1 for location.

Streambanks and slopes to be riprapped. See Drwg. S1 for location.

Tolerance in position of steel encased concrete pile heads: minimum 2 inches for trestle piles.

3' Preformed Bituminous Expansion Joint to be placed in approach pavement approximately 60' from each end of bridge floor.

See Special Provisions for items included in this contract.

Handrail and Posts to be built to grade.

STANDARD DRAWINGS

| STANDARD | DATE          | PURPOSE   |
|----------|---------------|---|
| C        | Rev. 5-14-49  | Test Bar Samples, Notch in Slab of End of Beams and Splicing Pile Shells in Field |
| D        | 1-3-50        | 6" Roadway Drains   |
| G        | Rev. 7-15-47  | Thickened Pavement  |
| Hb       | Rev. 10-1-44  | Thickened Pavement and Locating Toe Slope   |
| M        | Rev. 8-31-48  | Prim. Offsets, Soddled Shoulder and Guide Posts                                   |
| Mb       | 8-1-49        | Concrete Sloped Wall and 3" Pref. Bit. Exp. Jt.                                   |
| S1       | 6-15-39       | Special Filling Material  |
| Z(A)     | Rev. 12-10-40 | Delour Signs  |
| Z(B)     | Rev. 3-23-43  | Delour Signs  |
| D-11-GR  | Rev. 5-13-49  | Pavement Section  |
| A        | Rev. 4-17-50  | Pavement Exp. Jts. (Type D, D1 & D2), Longit. Jt. and Keyway Jt.                  |
| M.B      | Rev. 3-23-50  | R/W Markers   |
| M.E      | 2-15-49       | Pipe Cul. Hdwl.   |

HALF SECTION - SPANS D TO J INCL.

Scale: 1/2" = 1'-0"

PLAN OF THICKENED PAVEMENT NORTH END OF BENT NO. 1 (TYPICAL EXCEPT FOR BRONZE BENCH MARKER)

Scale: 3/8" = 1'-0"

HALF SECTION SPANS B, C, K, & L

Scale: 1/2" = 1'-0"

HALF SECTION SPANS A & M

Scale: 1/2" = 1'-0"

TYPICAL CROSS SECTION

Standard D-11-GR with Subgrade Treatment. See Summary Sheet for Typical Detail Subgrade Treatment.

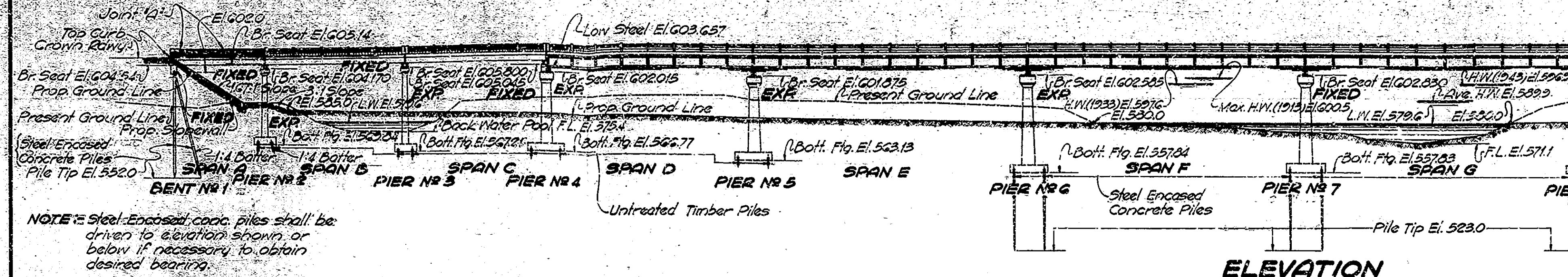
GENERAL PLAN  
CONTINUOUS STEEL PLATE GIRDER,  
STEEL BEAM & R.C. GIRDER BRIDGE  
12 SPANS:- 40'-0, 2@65'-0, 100'-0, 4@130'-0, 100'-0, 2@65'-0, 40'-0  
28'-0 ROADWAY 2, 2'-0 WALKS  
OVER WEST FORK OF WHITE RIVER ON STATE ROAD 39-A  
STATE HIGHWAY COMMISSION OF INDIANA  
MORGAN COUNTY

SCALE: 1/32" = 1'-0" UNLESS NOTED AUGUST 1, 1950

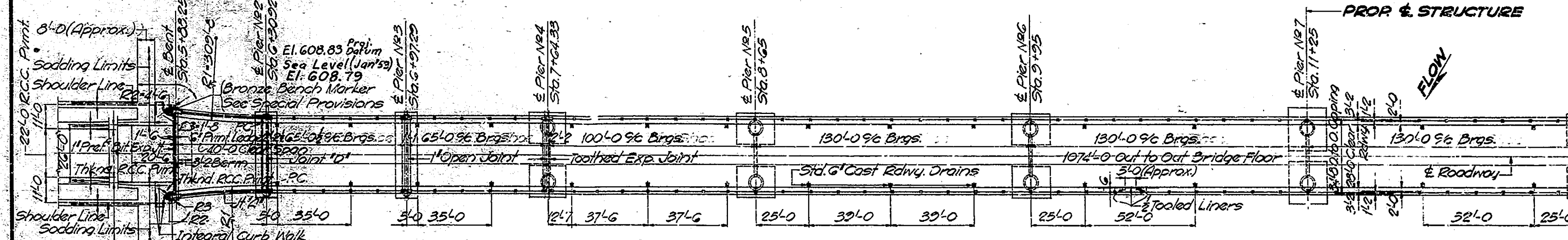
RECOMMENDED FOR APPROVAL: *J.S. Myrka*

PROJECT: F-645(3) STATION: 11+25.00  
DRAWING: S2 OF 47  
BRIDGE CONTRACT NO: 3289

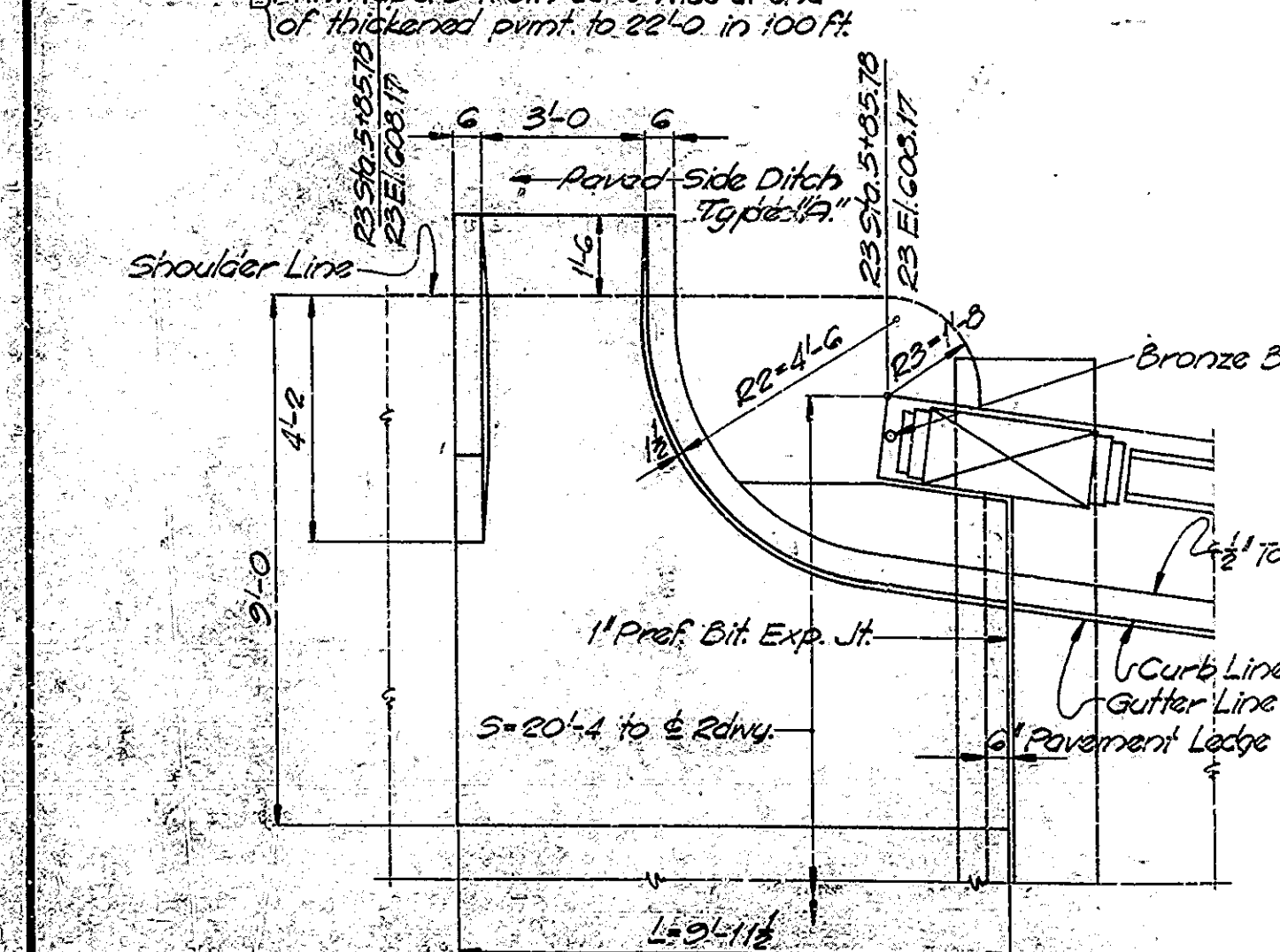
NOTE: STRUCTURE TO BE BUILT TO AN 1100' V.C.



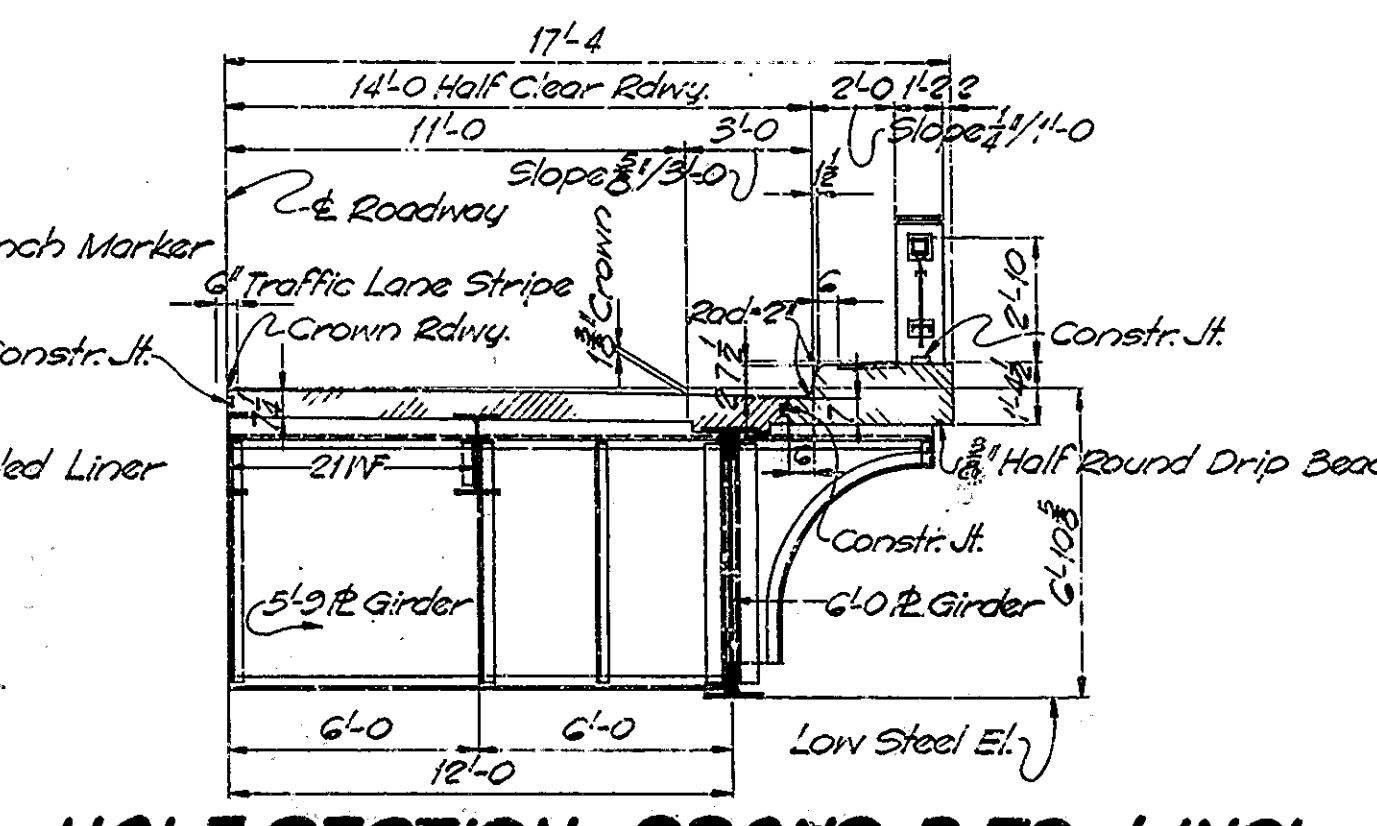
ELEVATION  
PROP & STRUCTURE



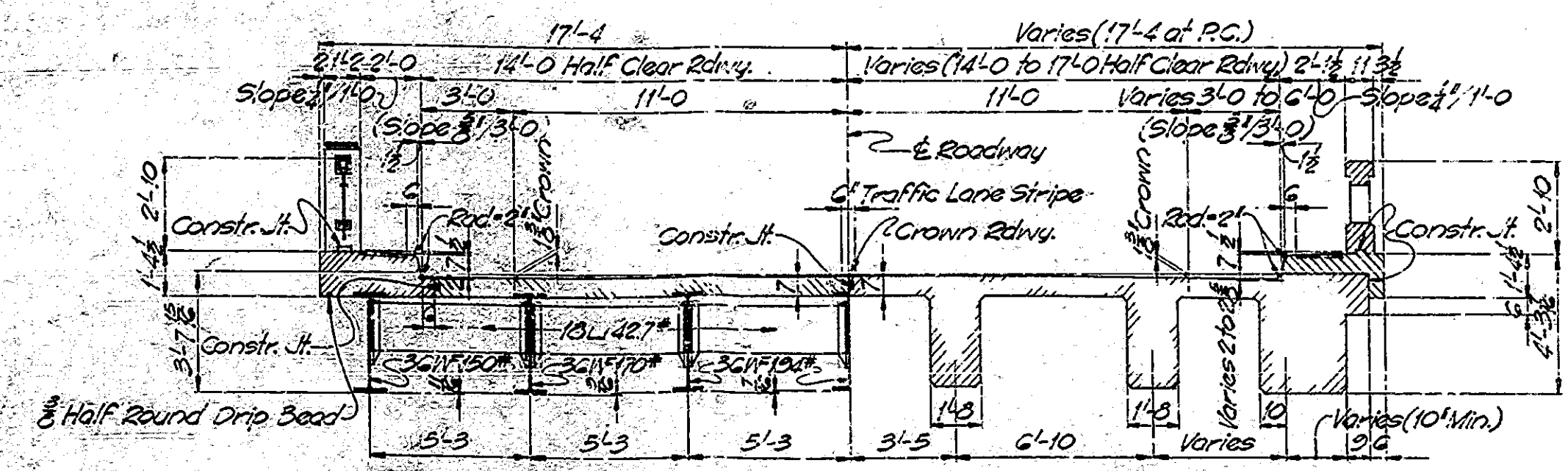
PLAN



PLAN OF THICKENED PAVEMENT  
NORTH END OF BENT NO. 1  
(TYPICAL EXCEPT FOR BRONZE BENCH MARKER)  
Scale - 3/8" = 1'-0"



HALF SECTION - SPANS D TO J INCL.  
Scale - 1/4" = 1'-0"



HALF SECTION SPANS B, C, K, & L  
Scale - 1/4" = 1'-0"

HALF SECTION SPANS A & M  
Scale - 1/4" = 1'-0"

**GENERAL**

Present structure approximately 30' depth of footings to be extended...  
 Untreated timber piles shall have...  
 Steel-encased concrete piles shall have...  
 Determine pile lengths by Art. F203 of Sp...  
 Reinforcing steel covering shall be...  
 All dimensions on Details and Bena...  
 on center-lines of bars.  
 Concrete in footings and piers to be...  
 Concrete in bent caps to be Class 1...  
 Concrete in Superstructure includin...  
 Continuous concrete pours shall b...  
 shown on detail plans.  
 Bevel Forms 1/2 inch under copings ;  
 48 Sid. Cast Rdwy. Drains, Type 1, to...  
 Construct 5' concrete sleepwall on...  
 for location.  
 Streambanks and slopes to be rip...  
 tolerance in position of steel-encased...  
 3" Preformed Bituminous Expansion...  
 approximately 60' from each end of brid...  
 See Special Provisions for items in...  
 Handrail and Posts to be built 1 to gra...  
**DESIGN**  
 Designed for H20-S16 loading in acc...

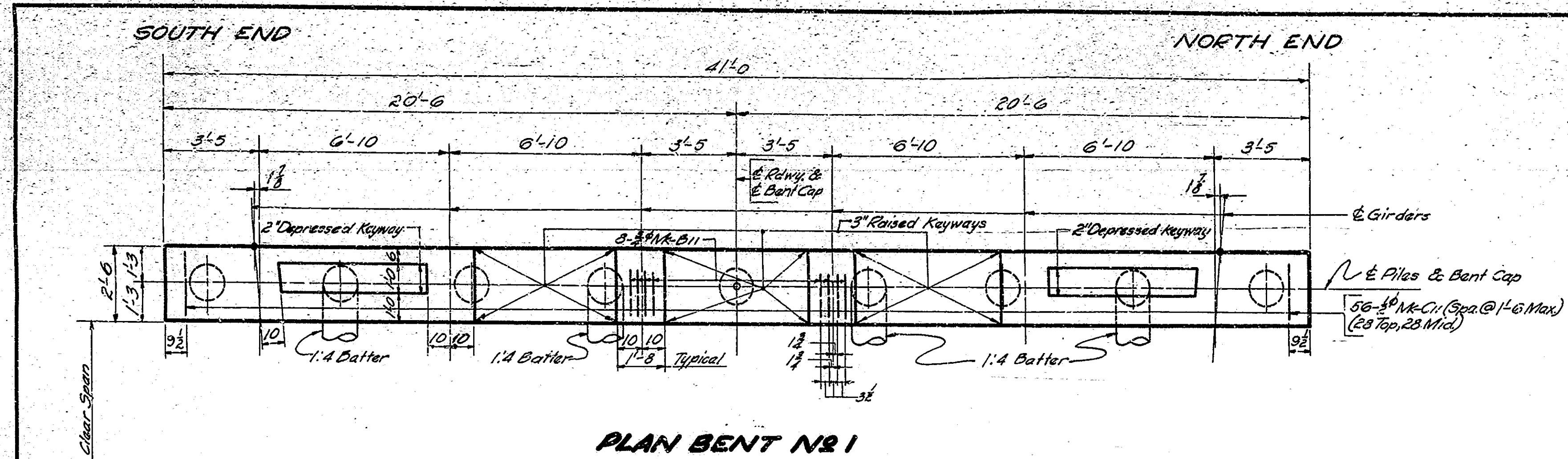
**DESIGN**

Joint L  
 Jt. 14' indicates a vertical 1/2" Open Jt.  
 Jt. 13' indicates a pref. bit. exp. irrat...  
 and No. 13.  
 Jt. 12' indicates 1" pref. bit. exp. mater...  
 one layer of roofing felt, medium weight, u...  
 (including vert. faces of keyway) outside of G...  
 Jt. 10' indicates one layer of roofing...  
 Superstr. bearing area, and 1" pref. bit. exp...  
 Superstr. extending from Rdwy. and sidew...  
 1" open joint between R.C. Girder and St. B...

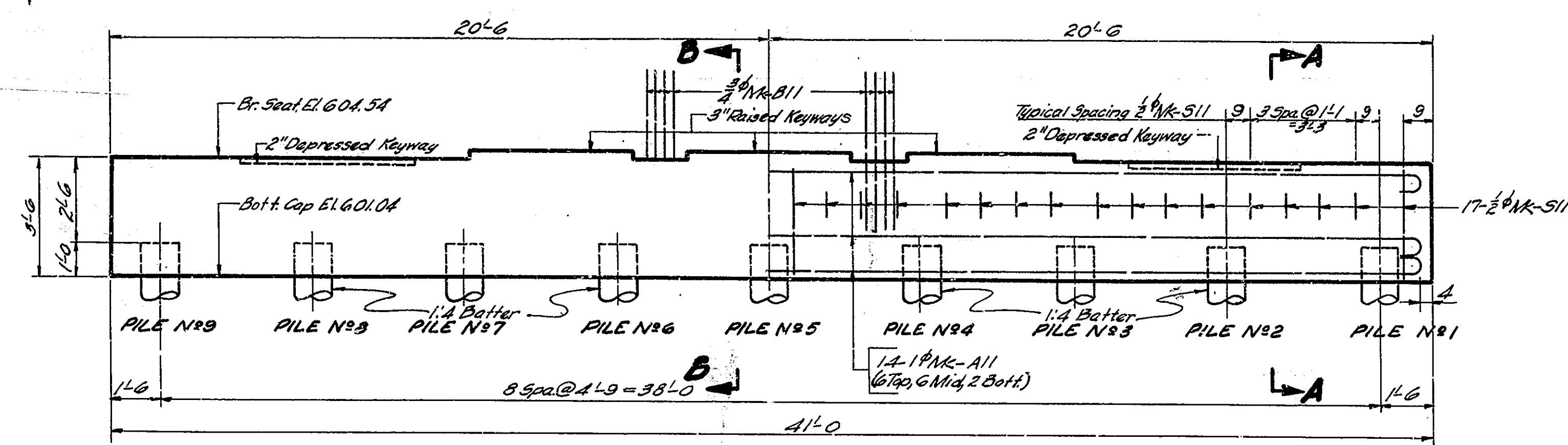
**TYPICAL CROSS**

-Standard D-11-GP with Subgrade Tr...  
 Detail Subgrade Treatment.

| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | F-645(3)    | 1951        | 9         | 65           |

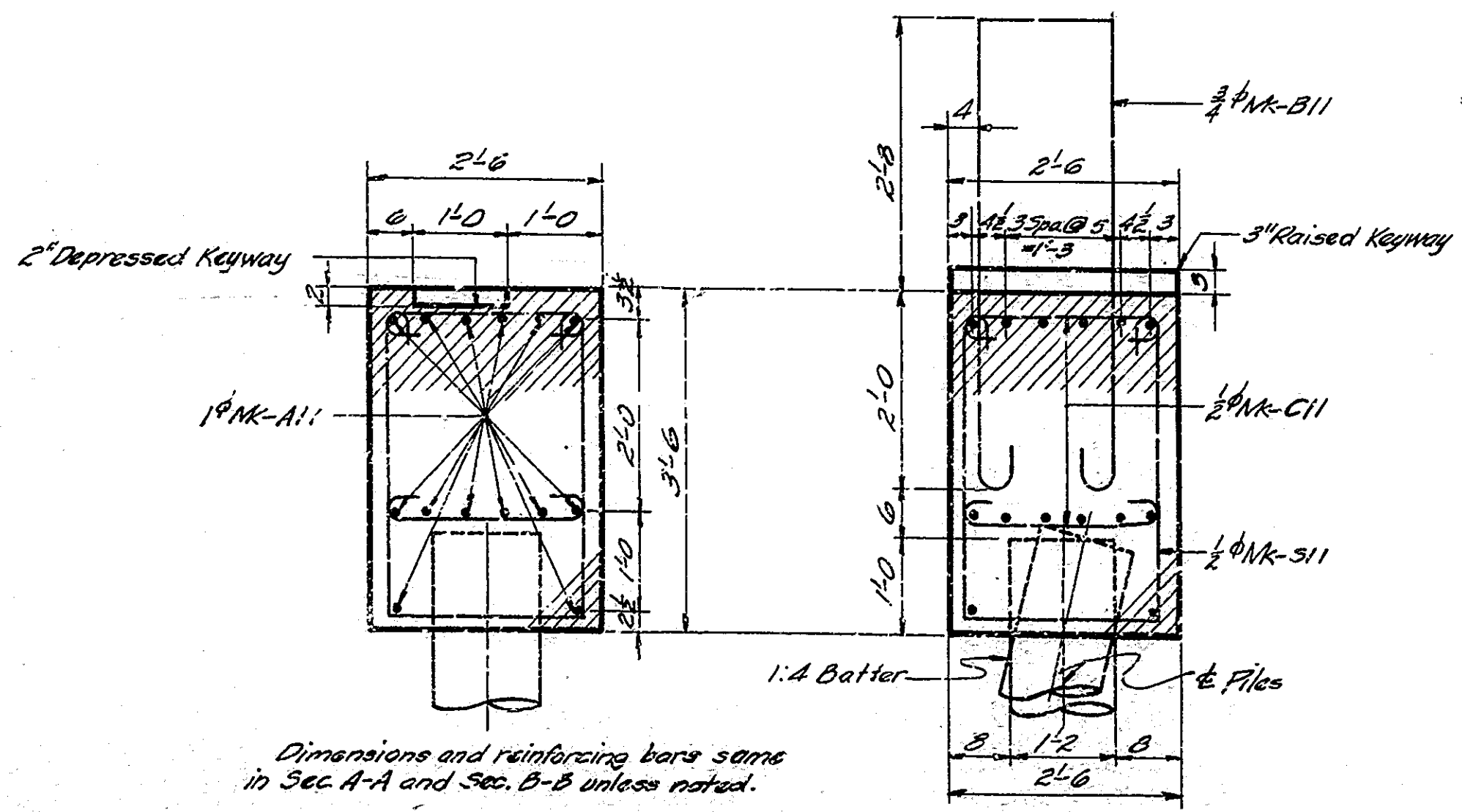


PLAN BENT NO. 1



EAST ELEVATION BENT NO. 1  
BENT NO. 13 SAME BY 180° ROTATION

STEEL ENCASED CONCRETE PILES  
BENT NO. 1 & 9  
BENT NO. 13 & 9  
All piles to be driven to 30 Ton minimum bearing.



SECTION A-A  
Scale: 3/8" = 1'-0"

SECTION B-B  
Scale: 3/8" = 1'-0"

Dimensions and reinforcing bars same in Sec. A-A and Sec. B-B unless noted.

BILL OF MATERIALS BENT NO. 1 (BENT NO. 13 SAME)

| REINFORCING STEEL |            |       |        |   |              |              |
|-------------------|------------|-------|--------|---|--------------|--------------|
| MARK              | NO. PIECES | SIZE  | LENGTH | LOCATION  | TOTAL LENGTH | WEIGHT       |
| A11               | 14         | 1"φ   | 42'-0" | Longit. Cap   | 588'-0"      | 1570#        |
| B11               | 8          | 3/4"φ | 12'-3" | Girder Ties   | 98'-0"       | 147#         |
| C11               | 56         | 1/2"φ | 3'-0"  | Transv. Cap   | 168'-0"      |              |
| S11               | 34         | 1/2"φ | 9'-3"  | Stirrups  | 314'-6"      |              |
|                   |            |       |        | Total 1/2"φ   | 482'-0"      | 322#         |
|                   |            |       |        | TOTAL STEEL   |              | 2039#        |
| CONCRETE          |            |       |        |   |              |              |
|                   |            |       |        | Class "D" Cap   |              | 13,660 cu ft |
| MISCELLANEOUS     |            |       |        |   |              |              |
|                   |            |       |        | 3 Steel Encased Concrete Piles (14" x 50'-0" - N#7 gauge) |              | 450 Lin. Ft. |

NOTES:-

End wall caps not to be poured until after fill has been completed up to approx. elevation of the bottom of the cap.  
All dimensions on details and bending diagrams for reinforcing bars are measured on the centerlines of bars.  
See Summary Sheet for Bill of Splice Bars.  
Piles N# 3, 4, 6 & 8 to be battered 1:4 toward structure.  
See Bridge Standard "C" for sketch showing method of splicing pile shells in field.

| Mark | Size  | o         | a  | Length |
|------|-------|-----------|----|--------|
| A11  | 1"φ   | 40'-4"    | 6" | 42'-0" |
| C11  | 1/2"φ | 2'-2 1/2" | 3" | 3'-0"  |

| Mark | Size  | o          | a      | h         | Length |
|------|-------|------------|--------|-----------|--------|
| B11  | 3/4"φ | 11'-5 1/2" | 4 1/2" | 4'-2 1/2" | 12'-3" |
| S11  | 1/2"φ | 2'-2 1/2"  | 3"     | 3'-1 1/2" | 9'-3"  |

BENT NO. 1 & BENT NO. 13 DETAILS AND BILL OF MATERIALS  
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: 3/8" = 1'-0" UNLESS NOTED AUGUST 1 1950

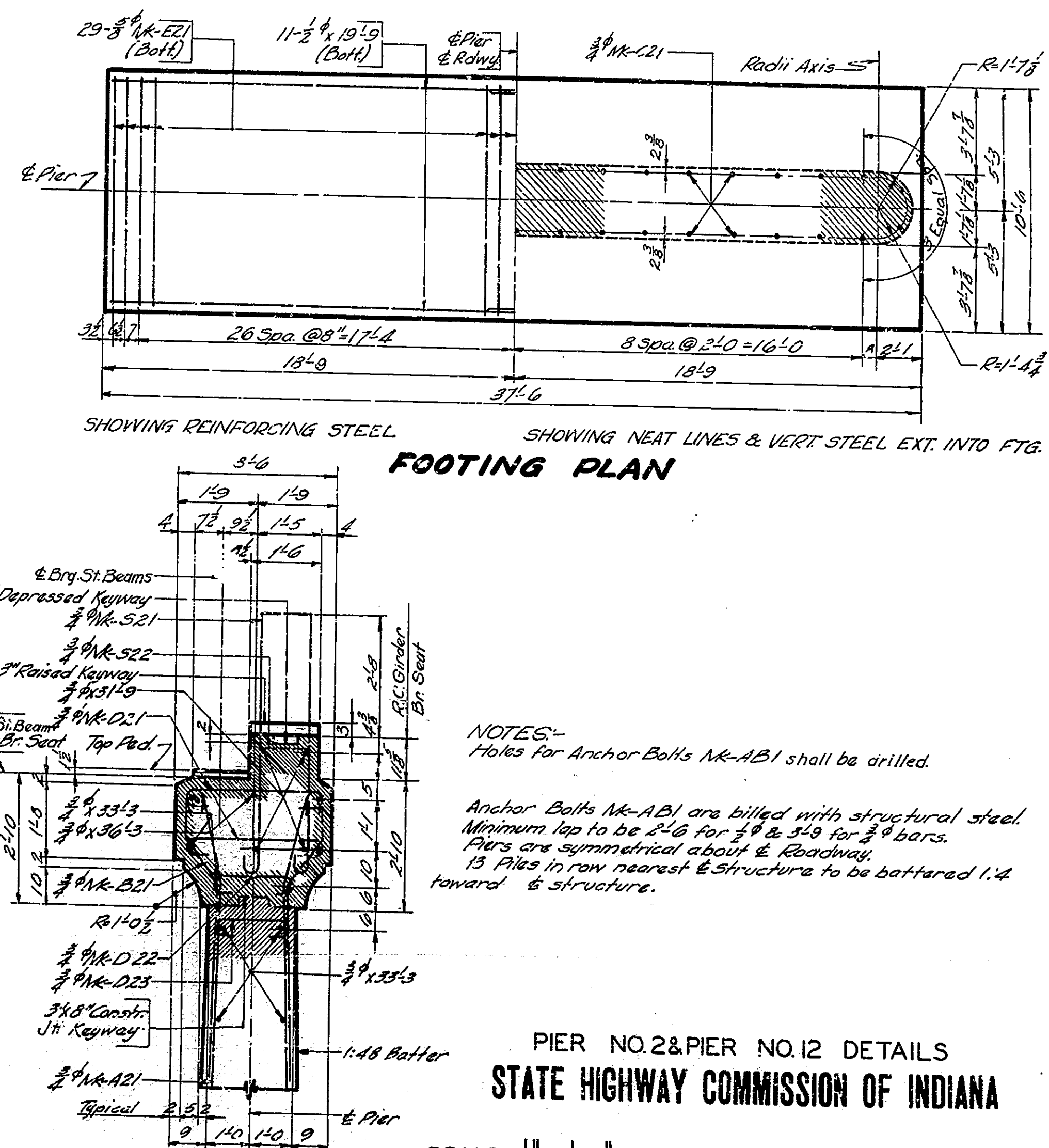
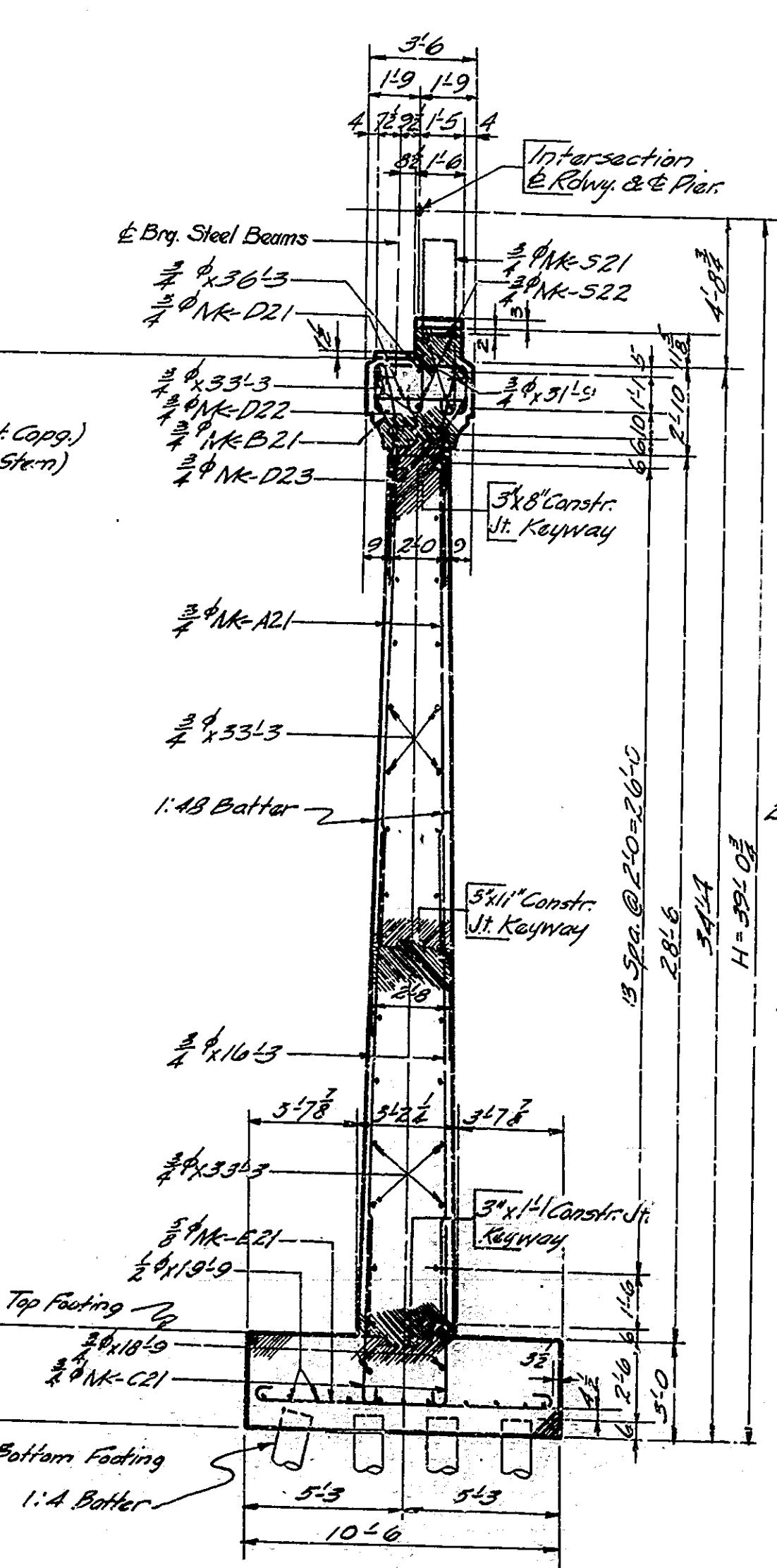
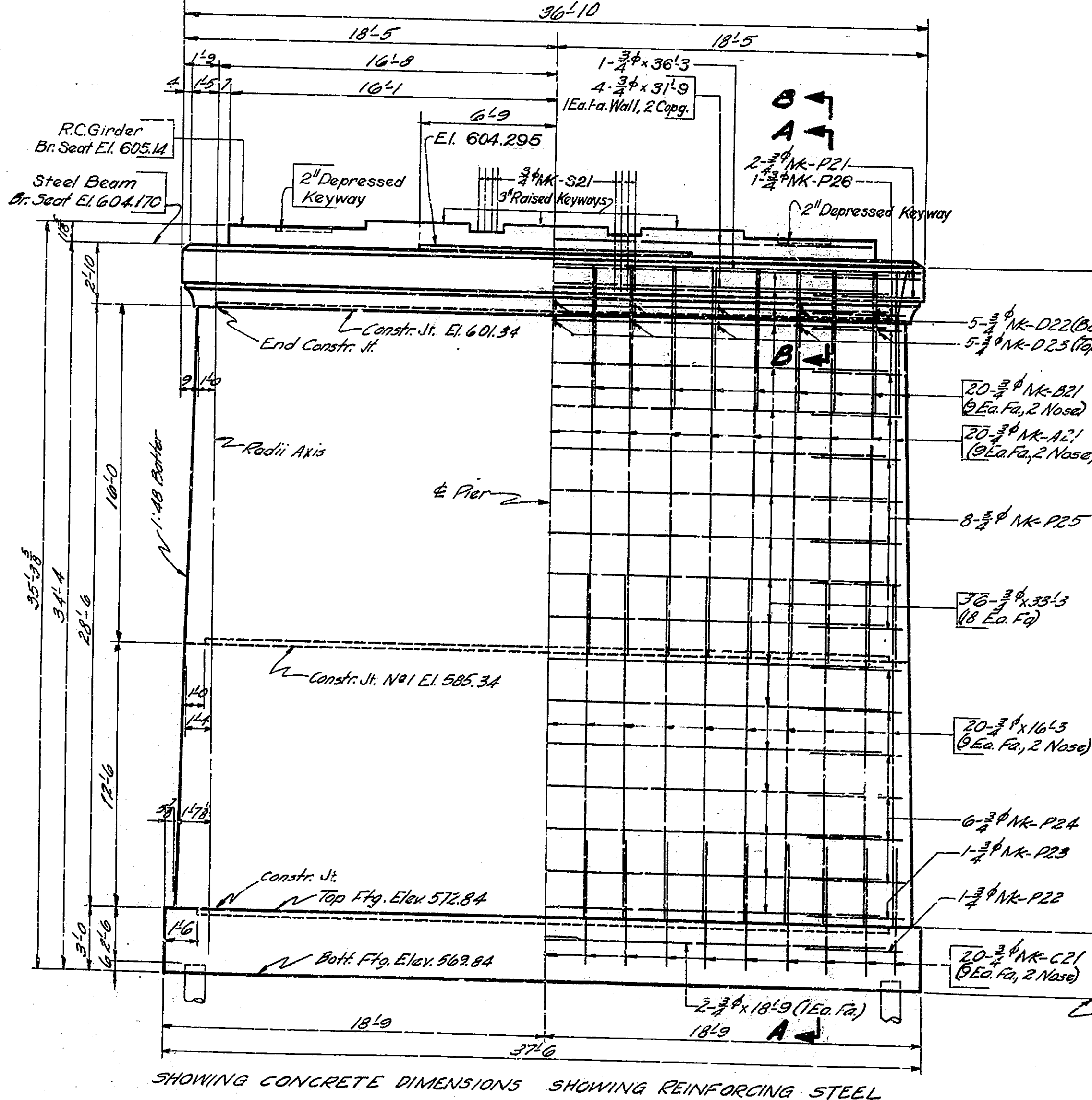
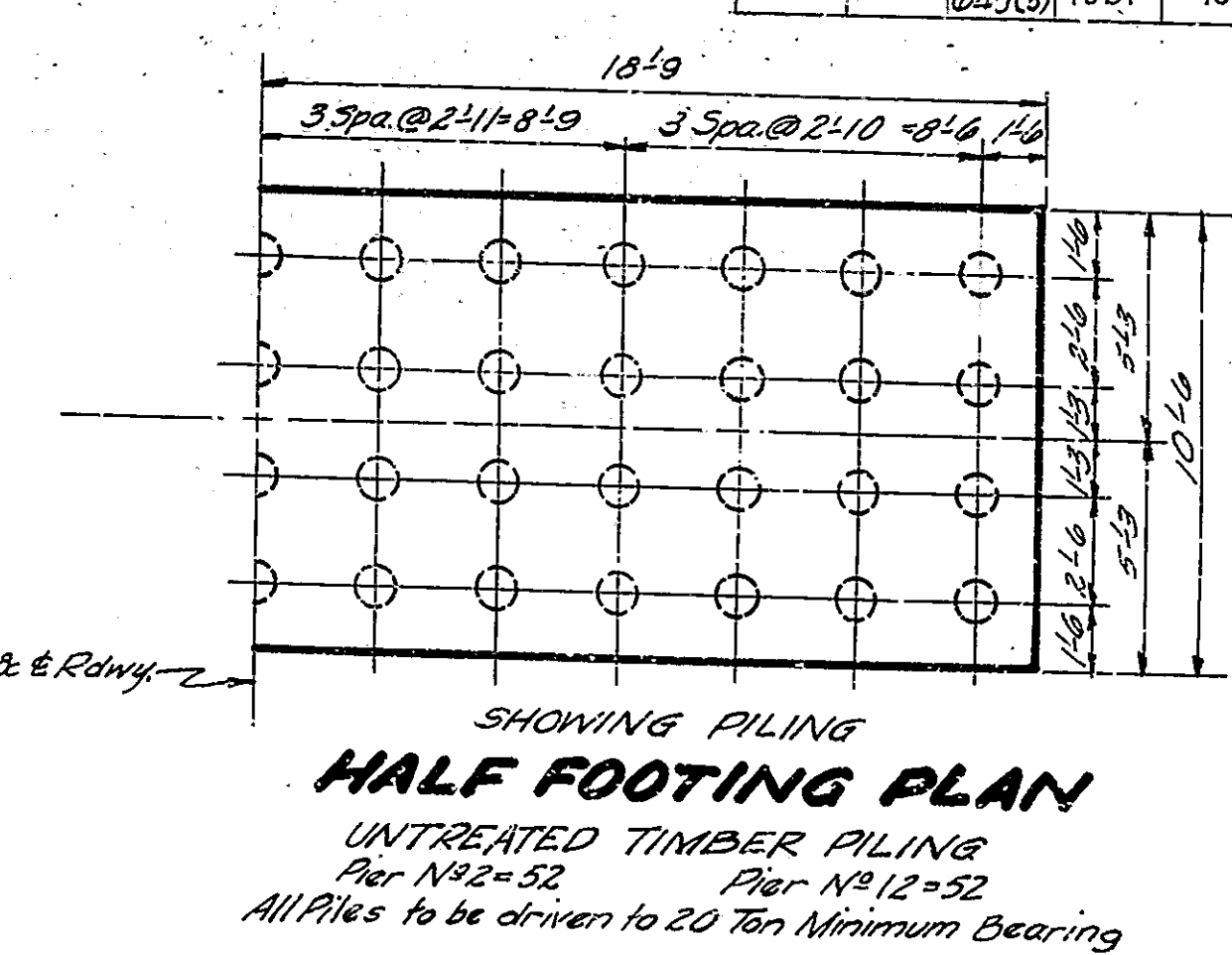
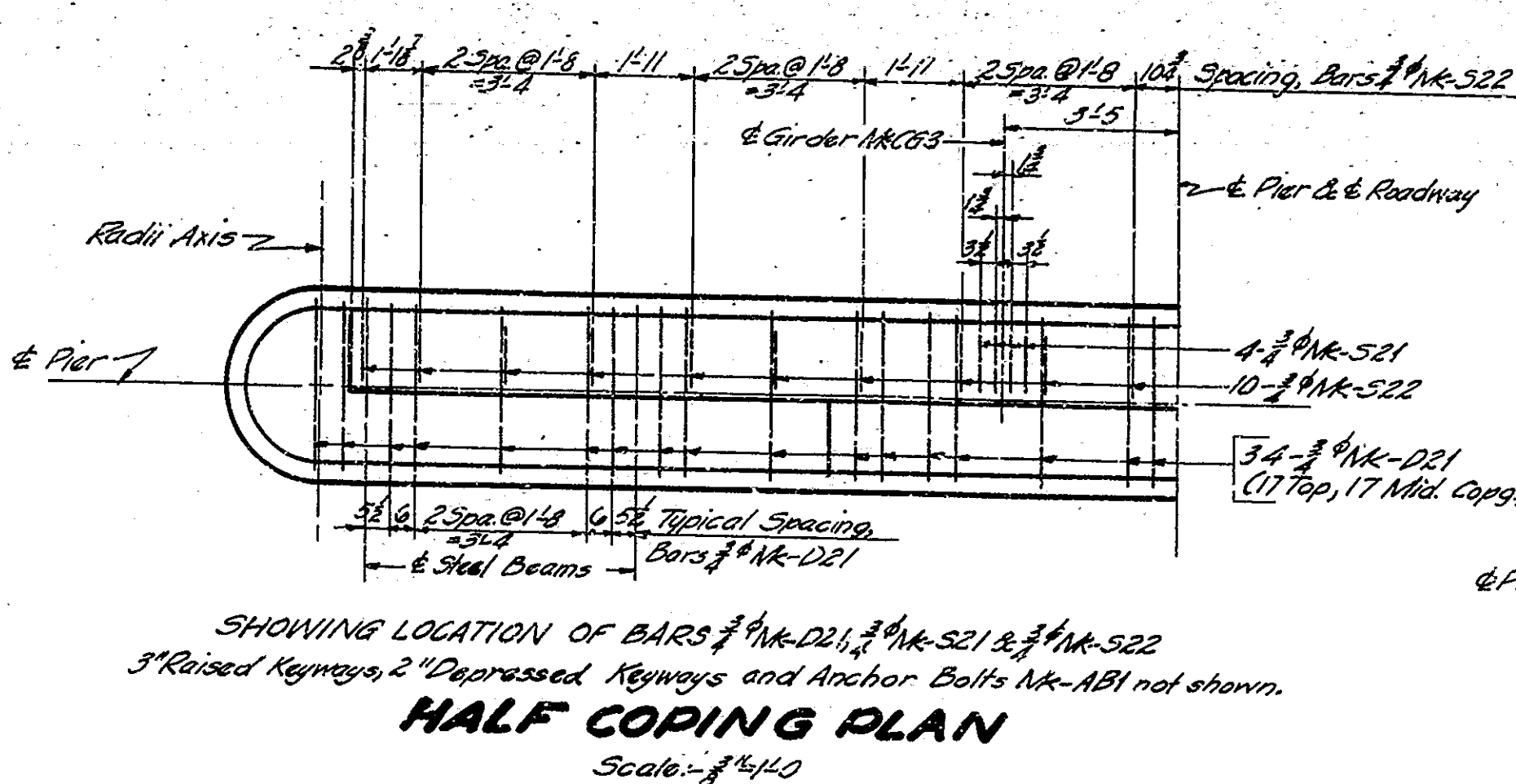
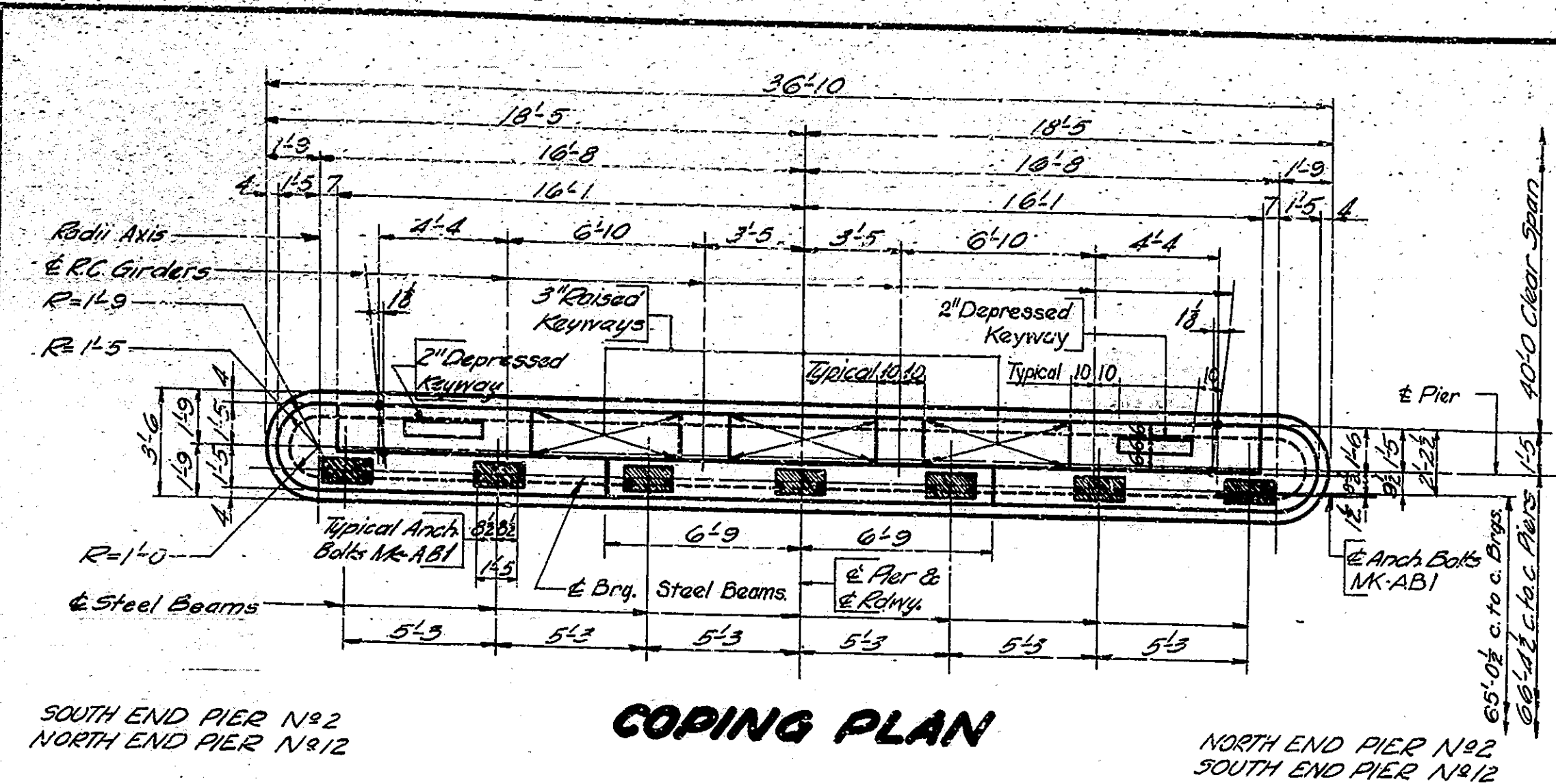
RECOMMENDED FOR APPROVAL: *J. M. Smith*  
PROJECT: F-645 (3) STATION: 11+25.00

DRAWING: S3 OF 47  
BRIDGE CONTRACT NO. 3289  
BRIDGE FILE: 30-A-2168

DESIGNED: E.M.S. 1-10-50 C.K.C. 1-22-50  
DRAWN: E.G. 1-25-50 C.K.C. 1-28-50  
TRACED: E.A. 1-28-50 C.K.C. 1-28-50



| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 1                     | IND.  | 645(3)      | 1951        | 10        | 65           |



**NOTES:**  
Holes for Anchor Bolts Mk-AB1 shall be drilled.  
Anchor Bolts Mk-AB1 are billed with structural steel. Minimum lap to be 2'-0" for #3 & #4 and 3'-0" for #5 bars.  
Piers are symmetrical about & Roadway.  
15 Piles in row nearest & structure to be battered 1:4 toward & structure.

PIER NO. 2 & PIER NO. 12 DETAILS  
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: 1/4" = 1'-0" UNLESS NOTED AUGUST 1, 1950

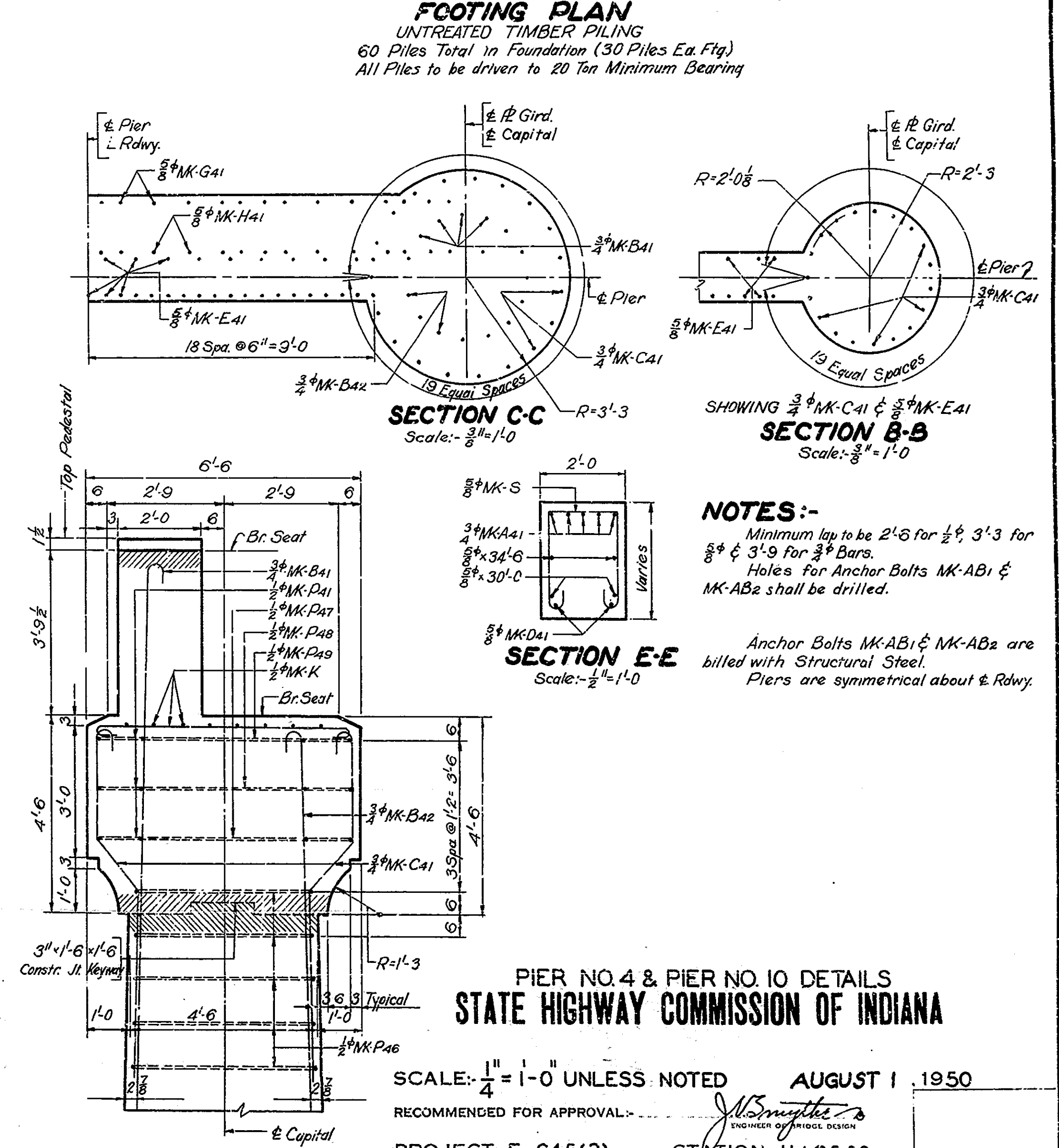
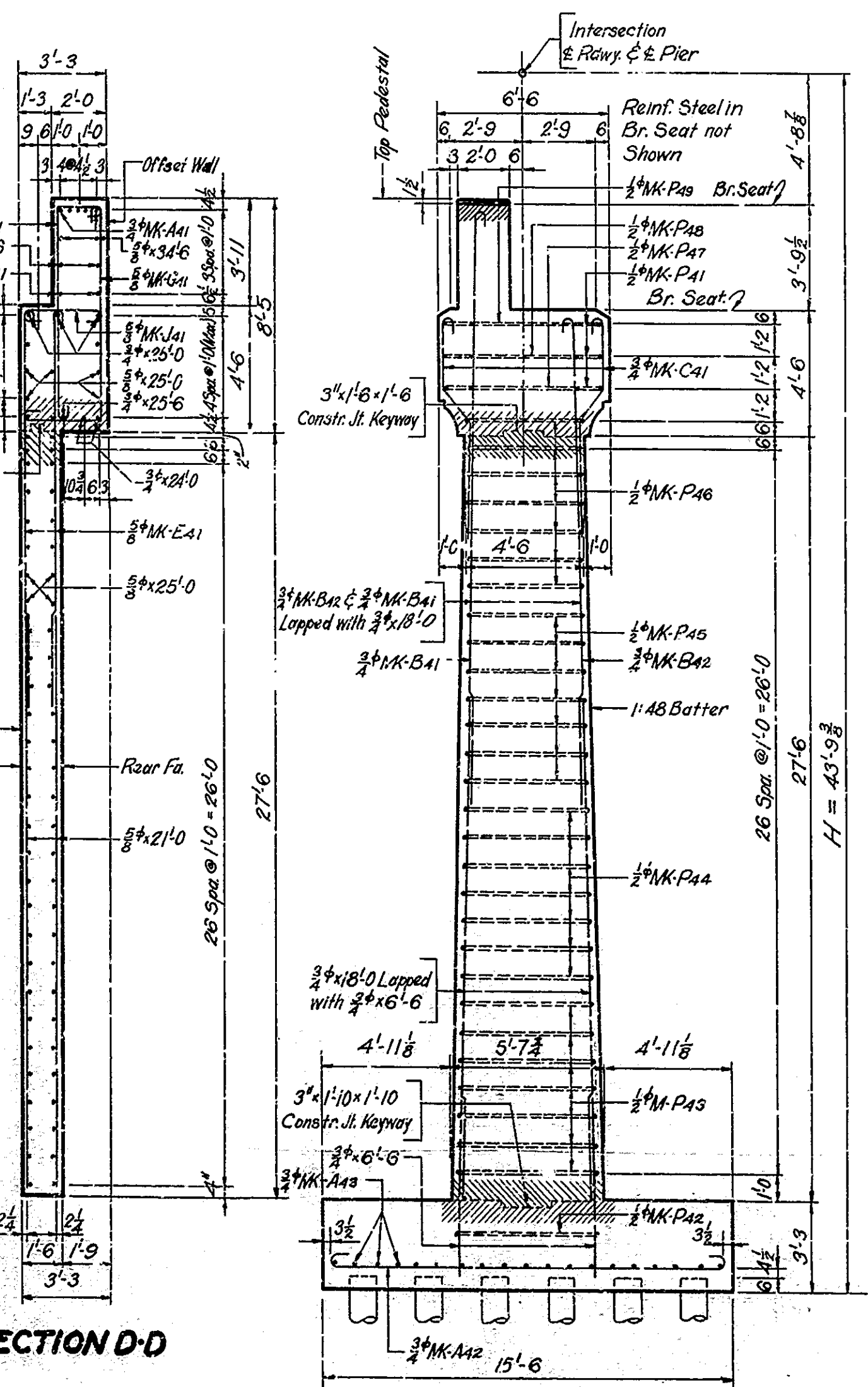
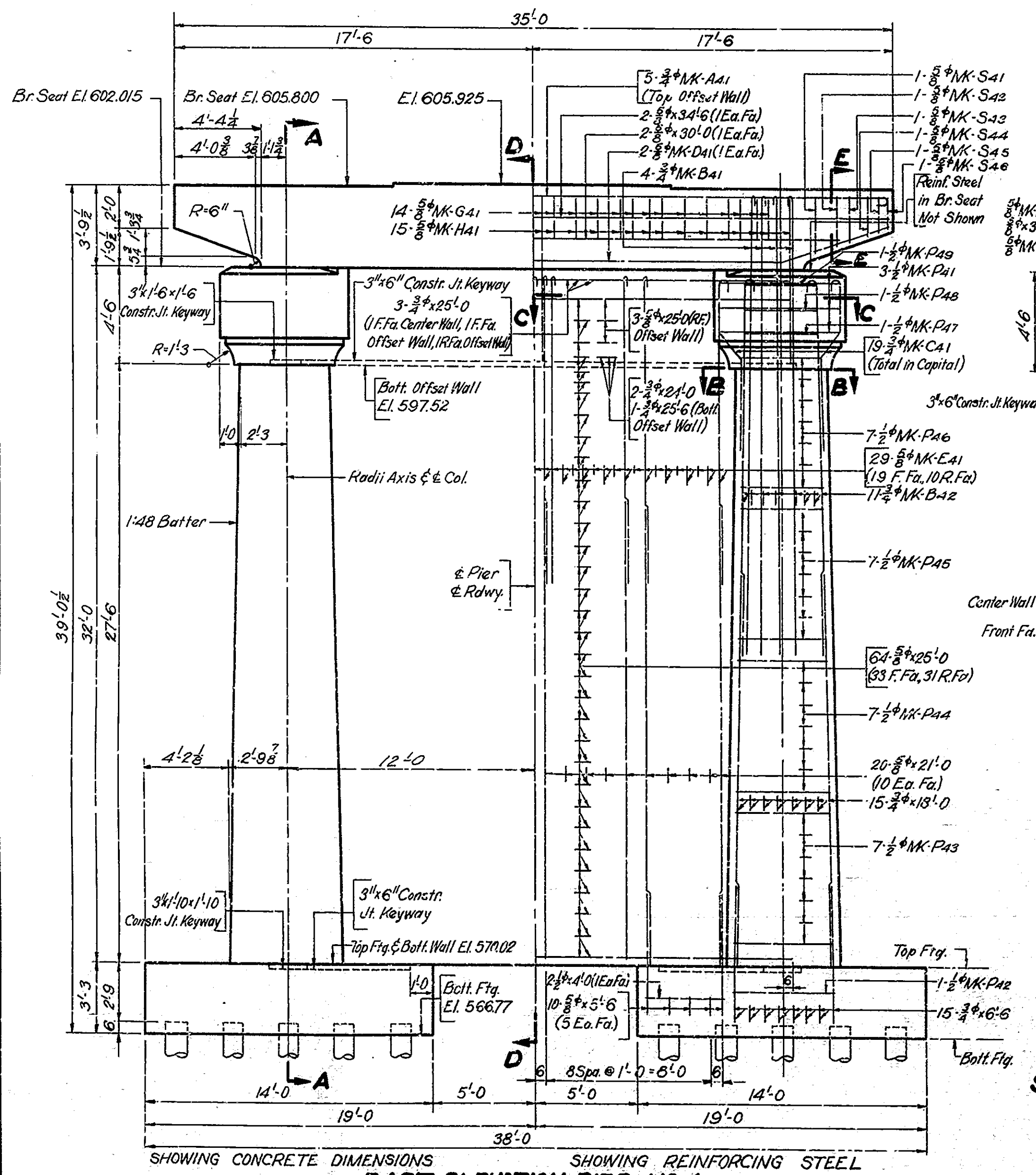
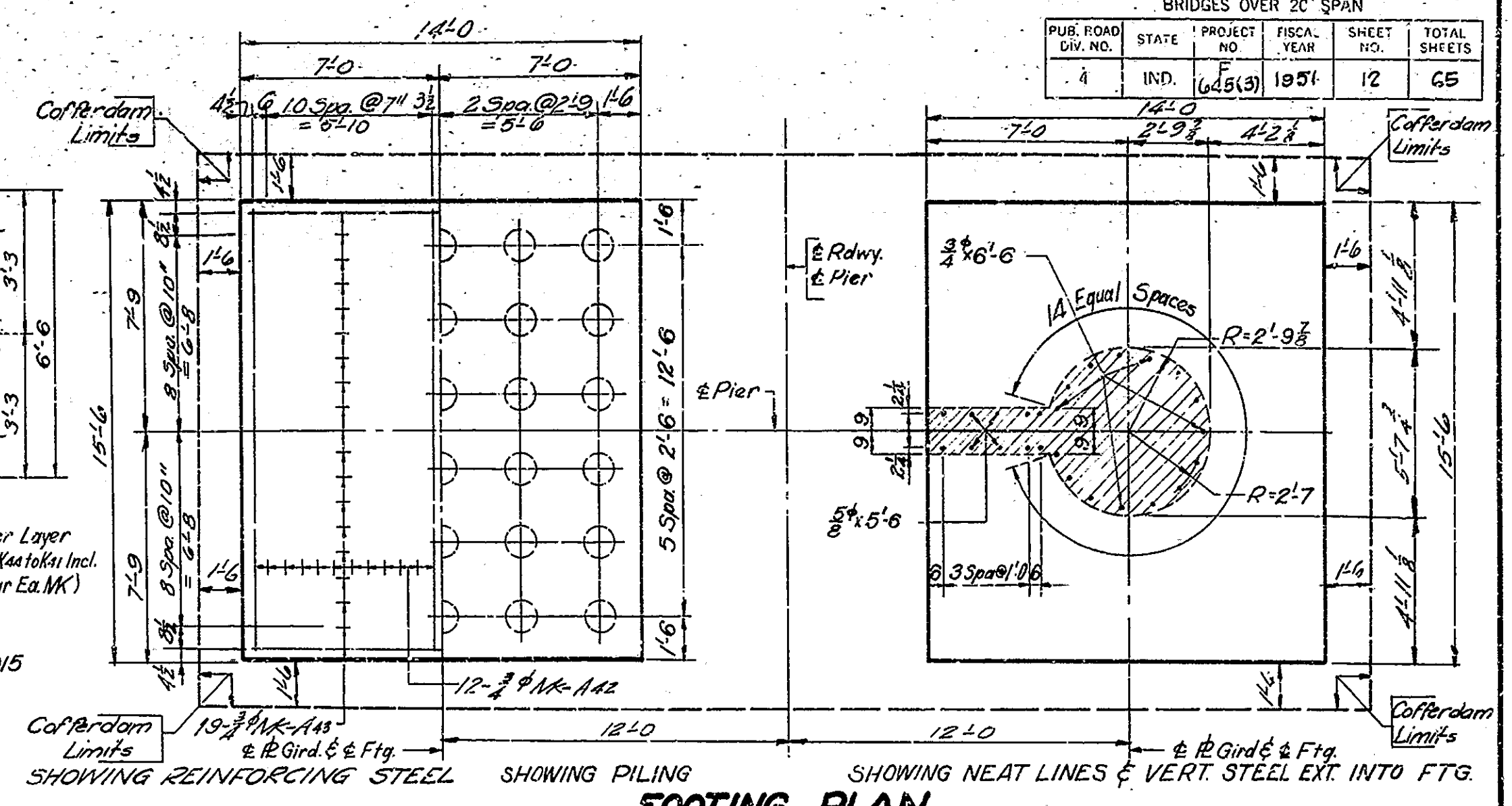
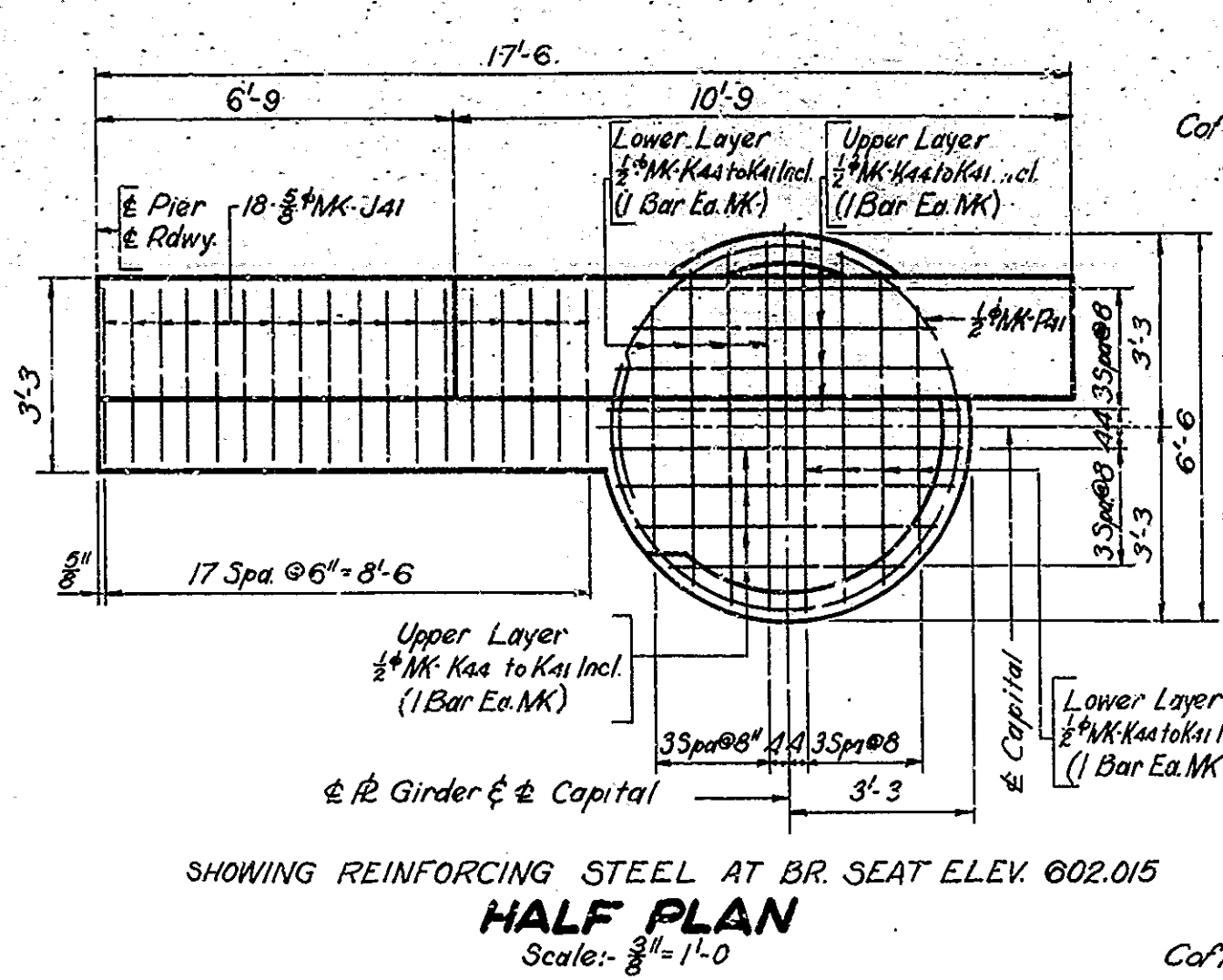
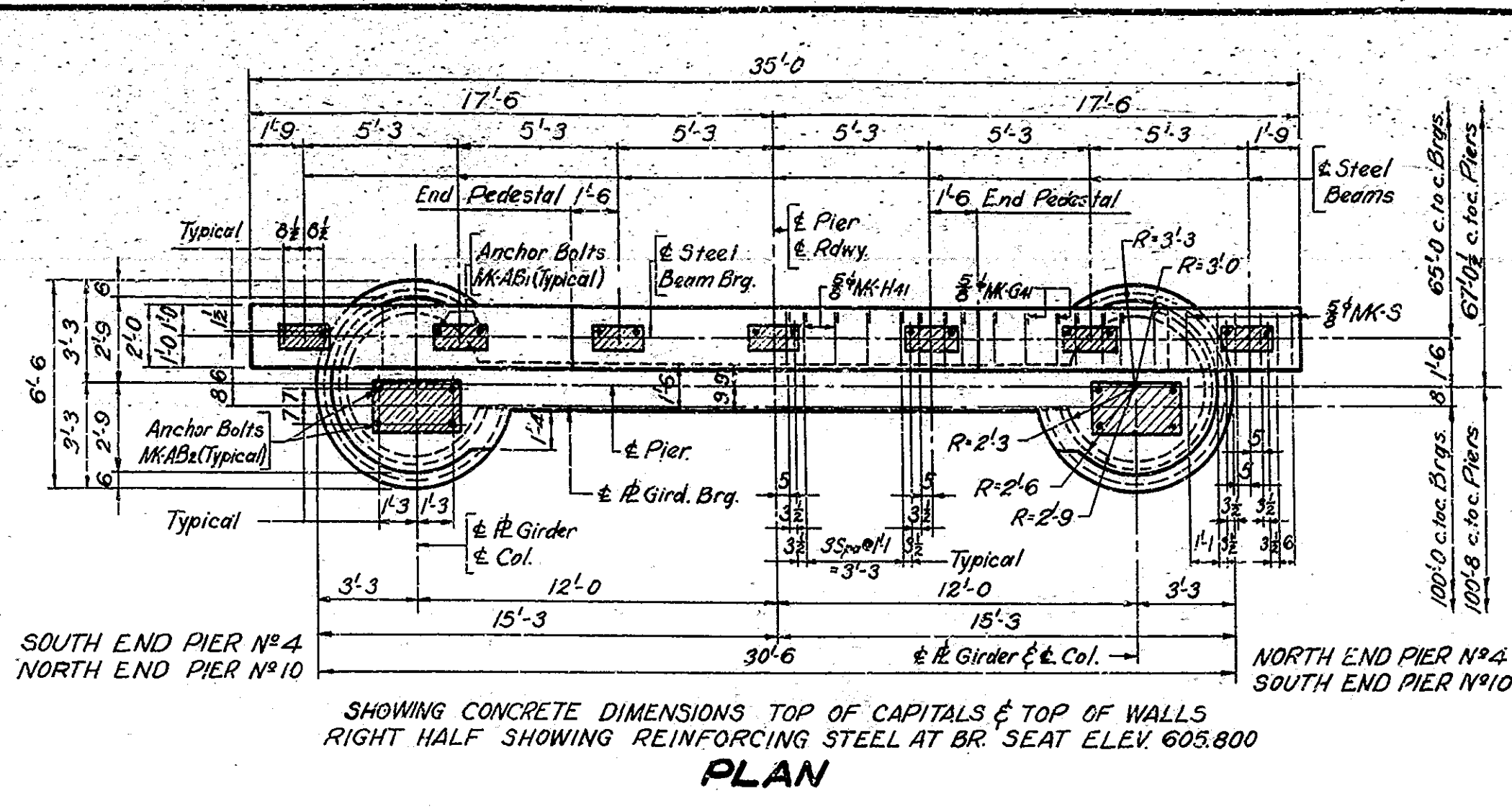
RECOMMENDED FOR APPROVAL: J. W. Smythe, INC. ENGINEER OF BRIDGE DESIGN

PROJECT: F-645(3) STATION: II+25.00  
DRAWING: S-4 OF 47  
BRIDGE CONTRACT NO. 2280

DESIGNED BY: J. W. Smythe, Inc.  
DRAWN BY: J. W. Smythe, Inc.  
TRACED BY: J. W. Smythe, Inc.



| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUR. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | 645(3)      | 1954        | 12        | 65           |



**NOTES:-**  
Minimum lap to be 2'-6" for 1/2", 3'-3" for 3/4" & 3'-9" for 3/8" Bars.  
Holes for Anchor Bolts MK-AB1 & MK-AB2 shall be drilled.  
Anchor Bolts MK-AB1 & MK-AB2 are billed with Structural Steel.  
Piers are symmetrical about & Rdwy.

PIER NO. 4 & PIER NO. 10 DETAILS  
STATE HIGHWAY COMMISSION OF INDIA

SCALE: 1/4" = 1'-0" UNLESS NOTED  
AUGUST 1, 1950

RECOMMENDED FOR APPROVAL: [Signature]  
PROJECT: F-645(3) STATION: 11+25.00

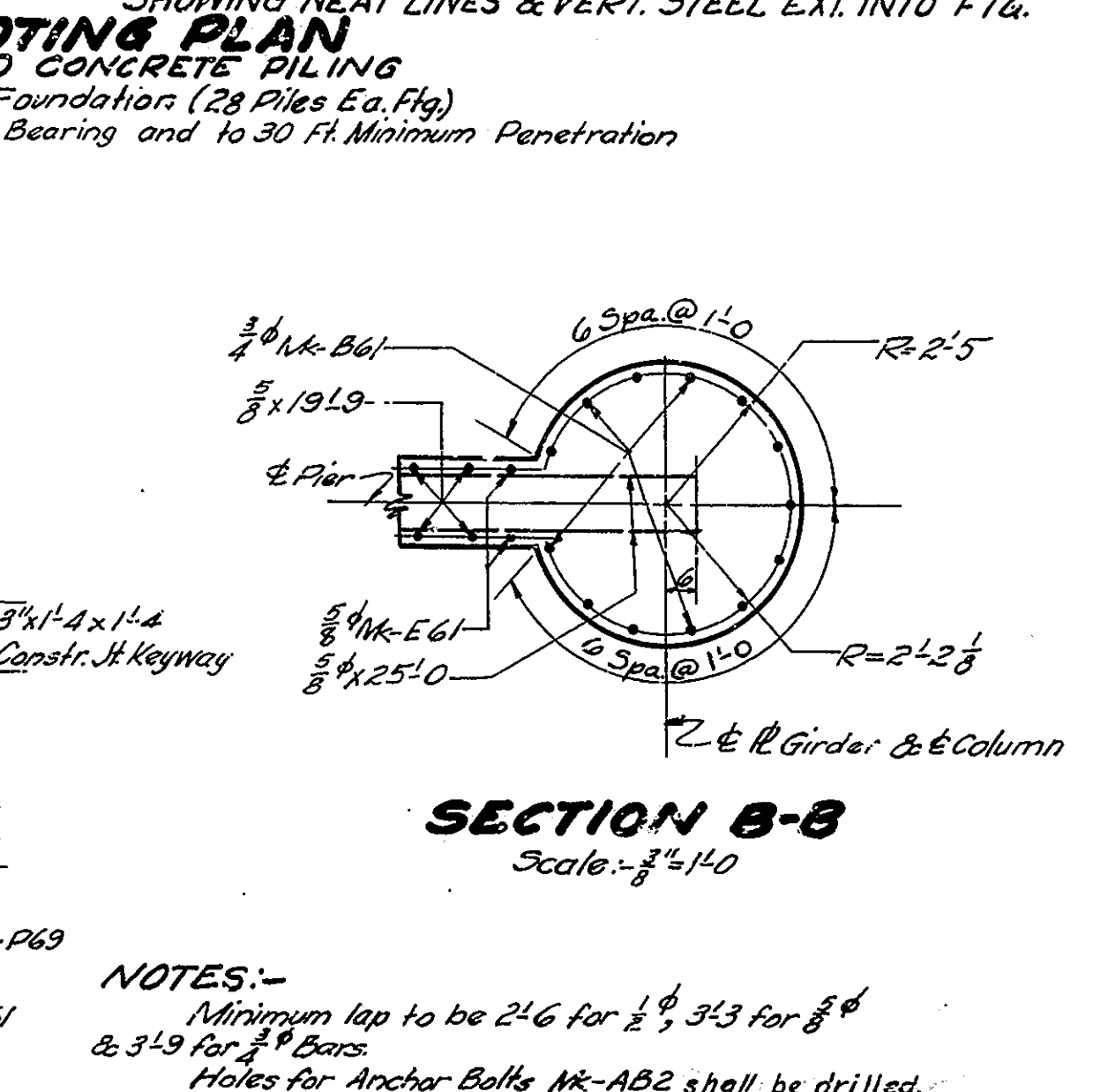
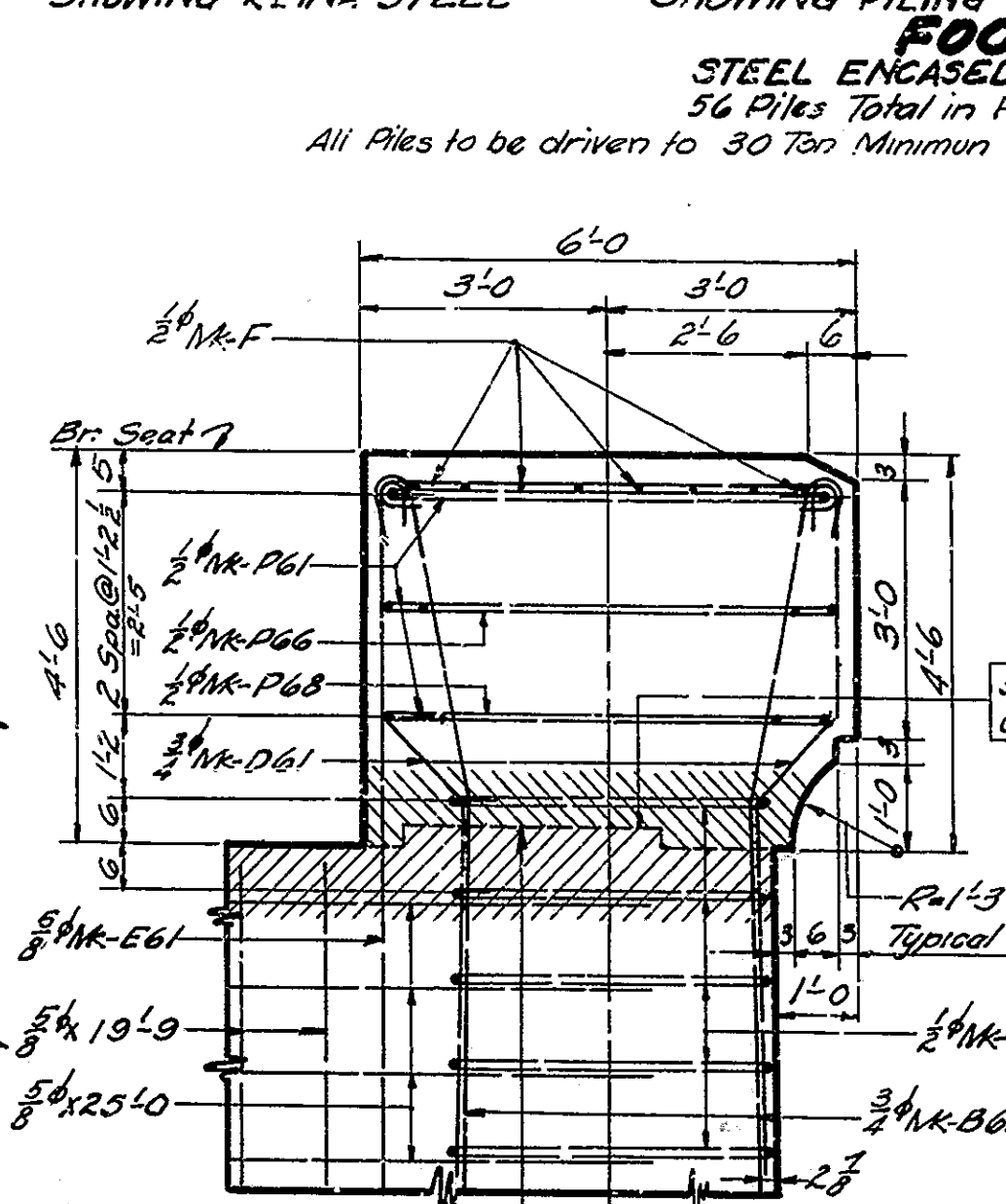
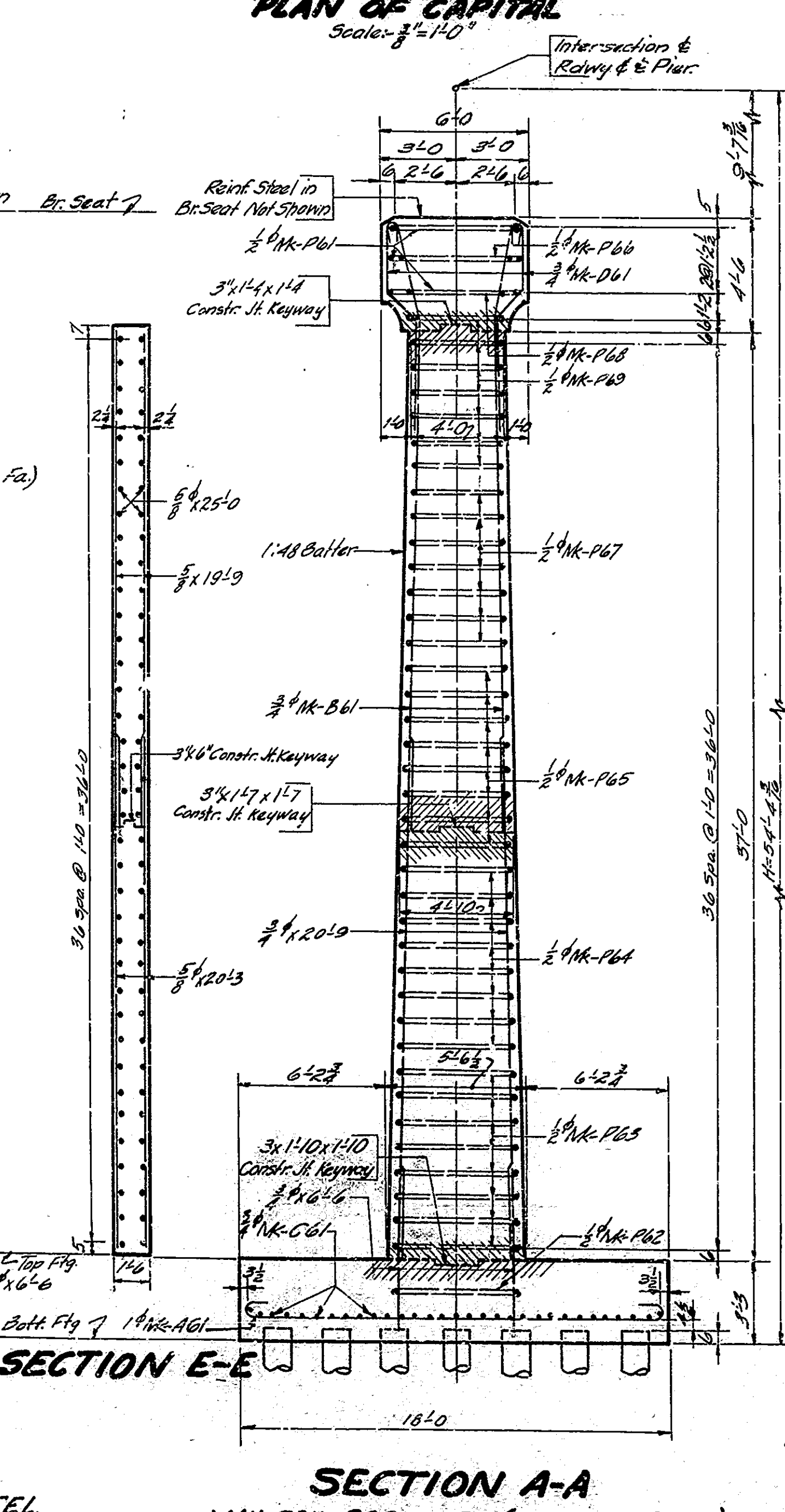
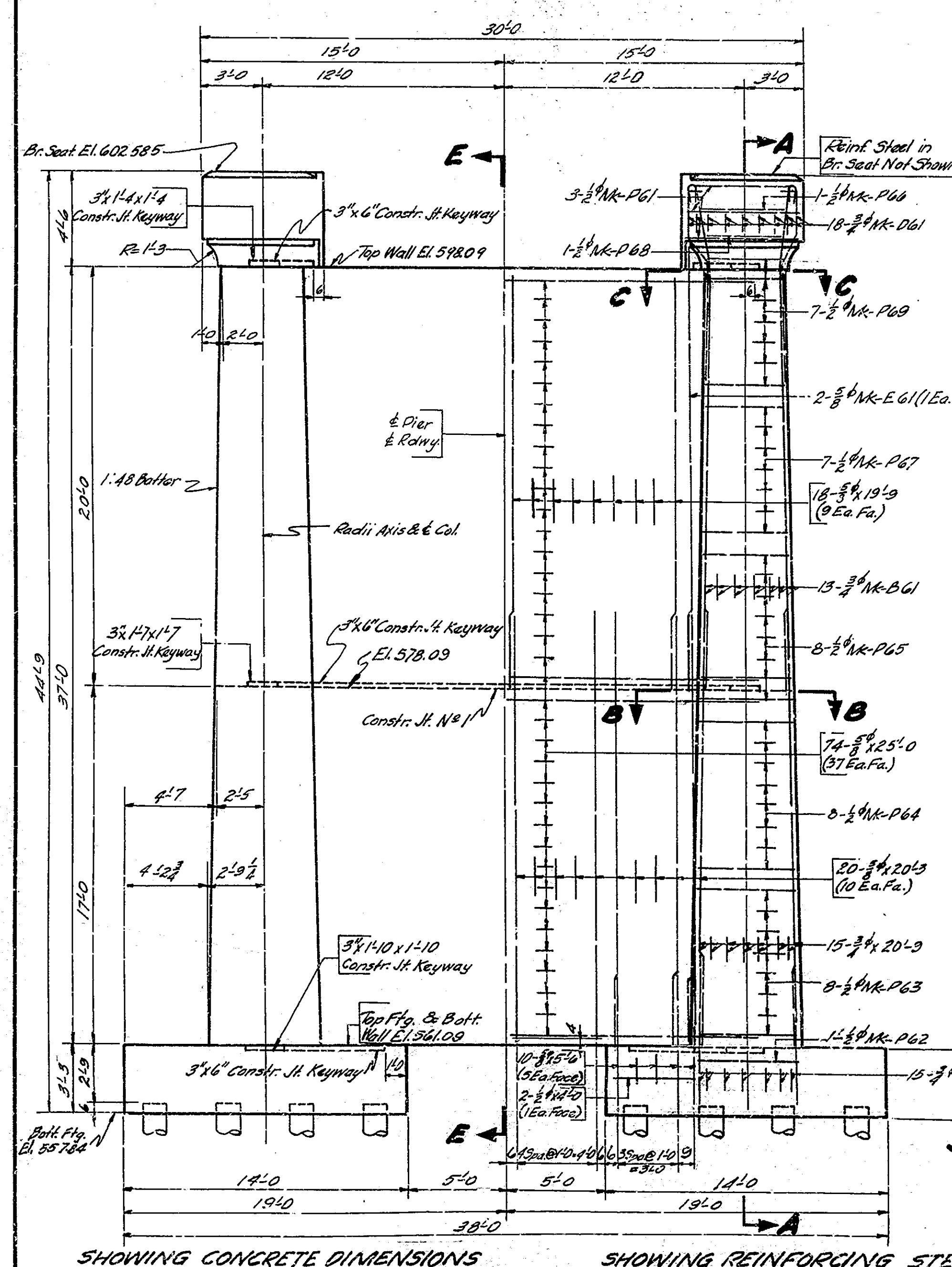
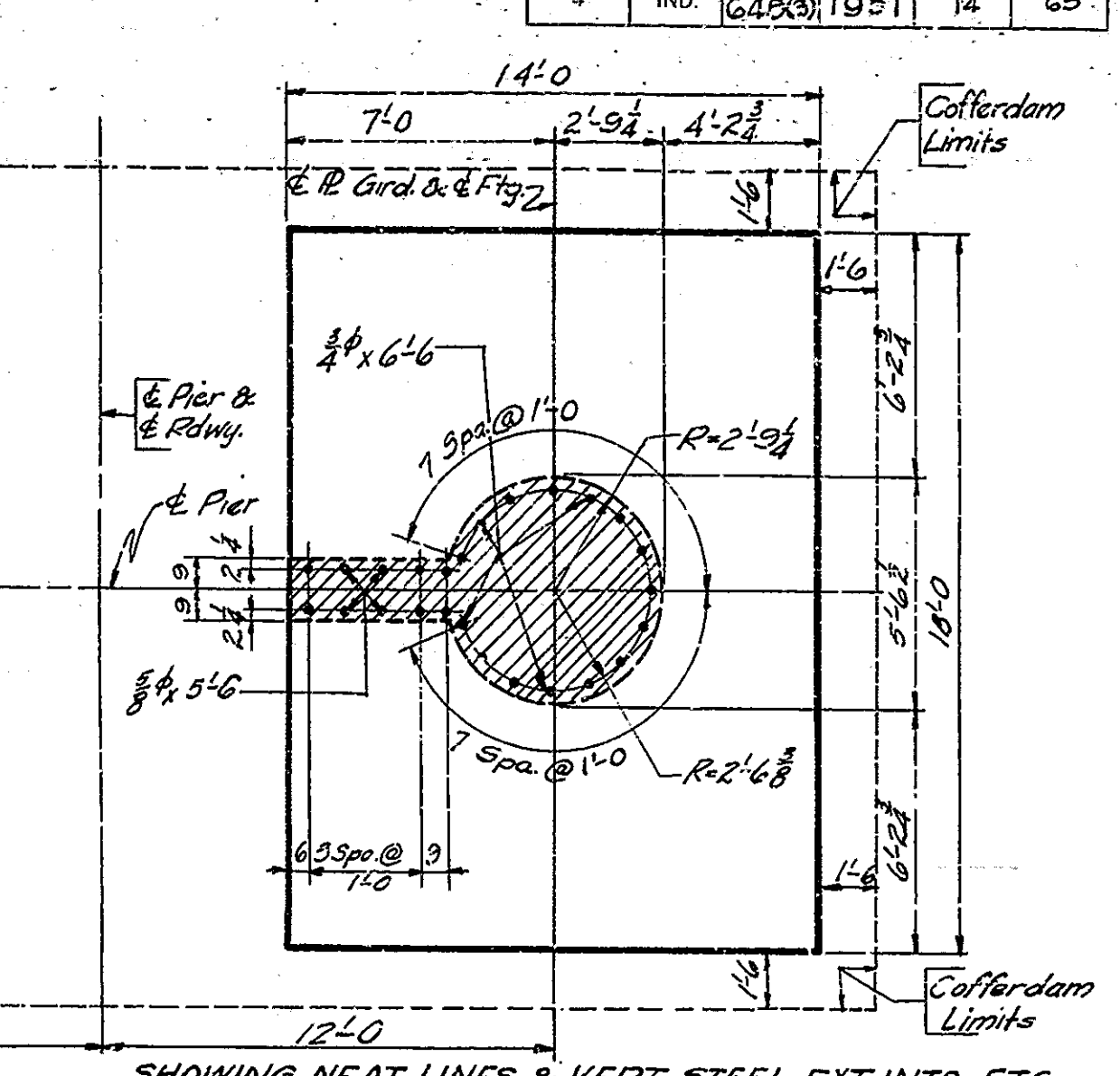
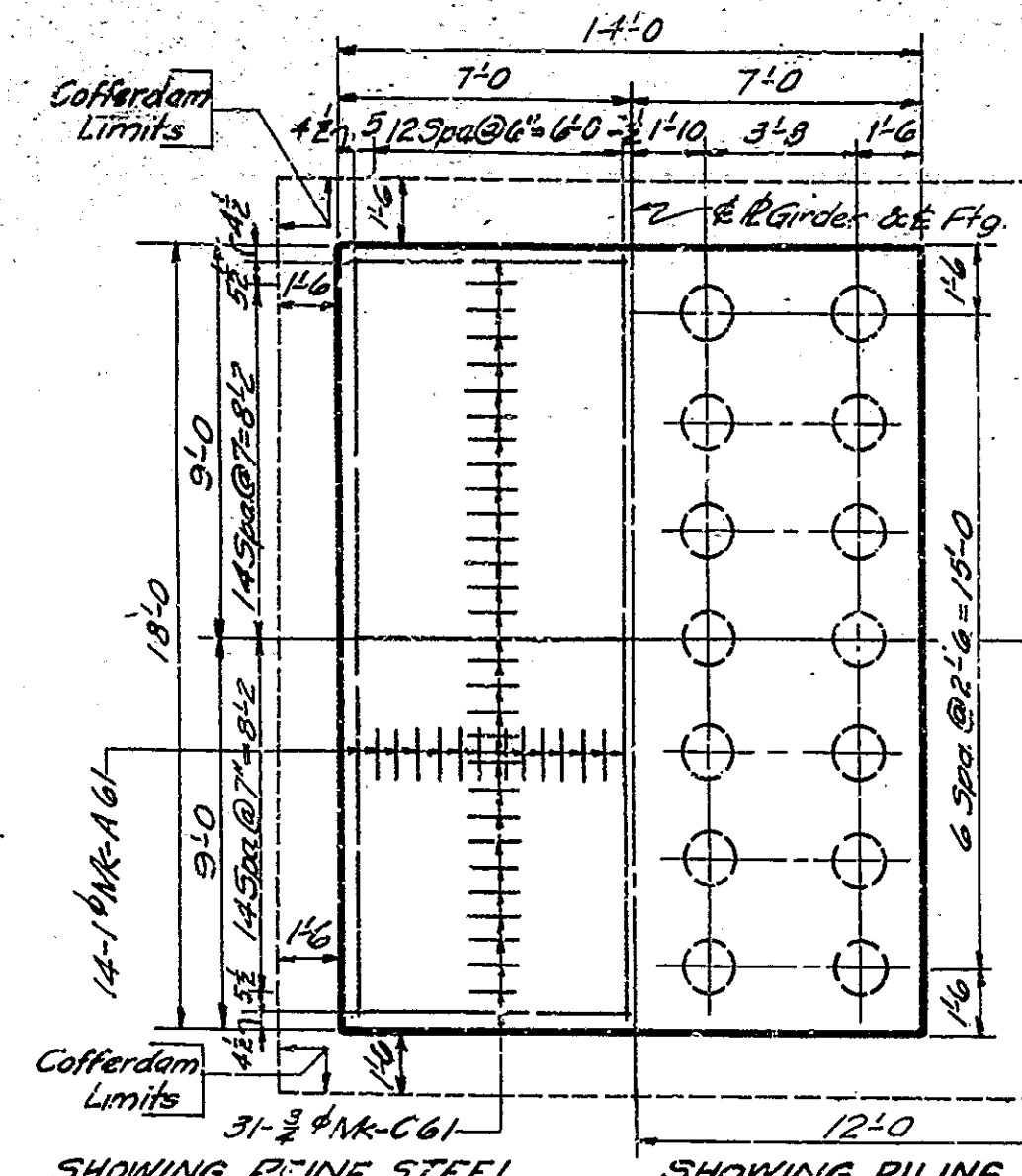
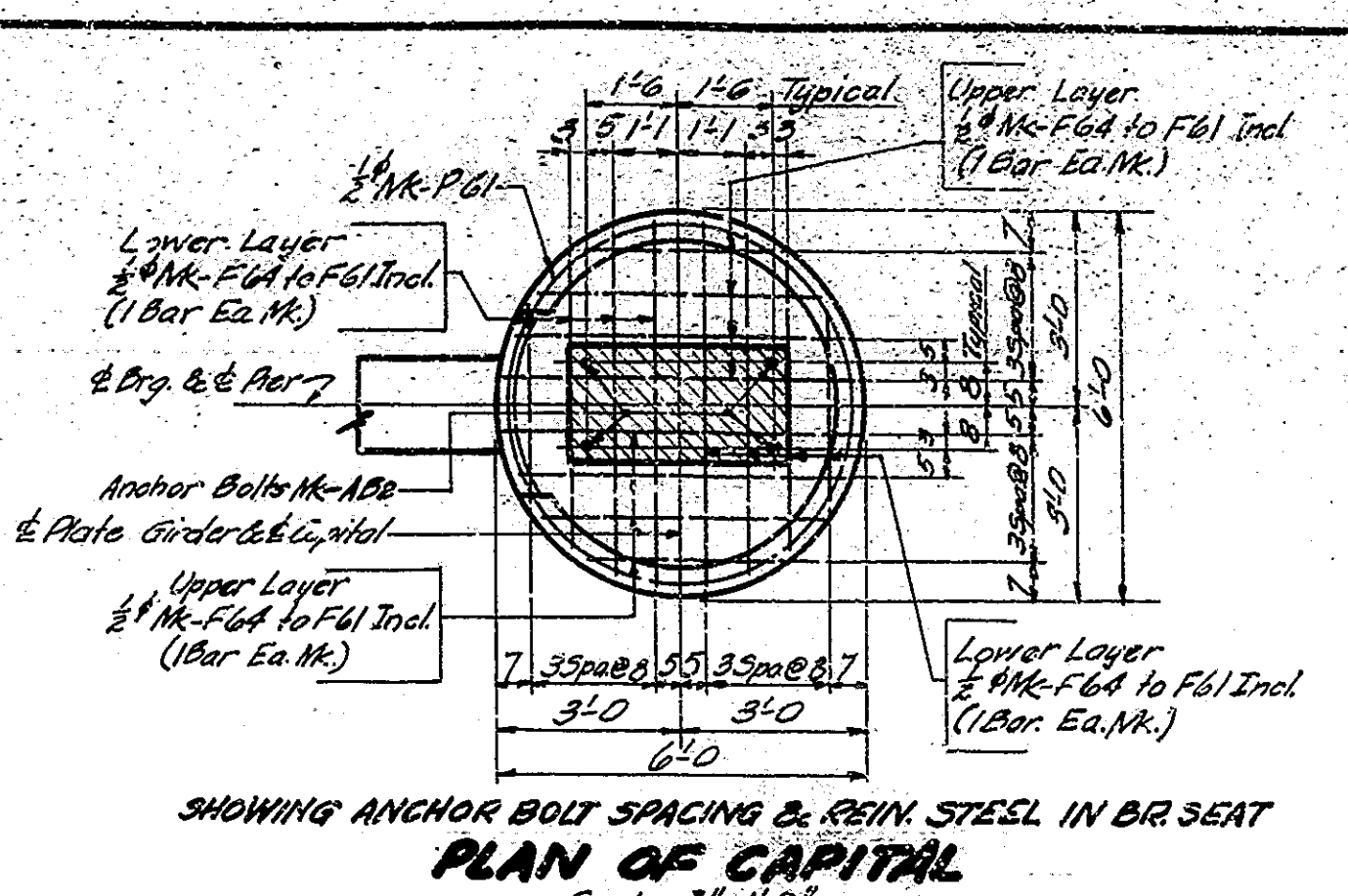
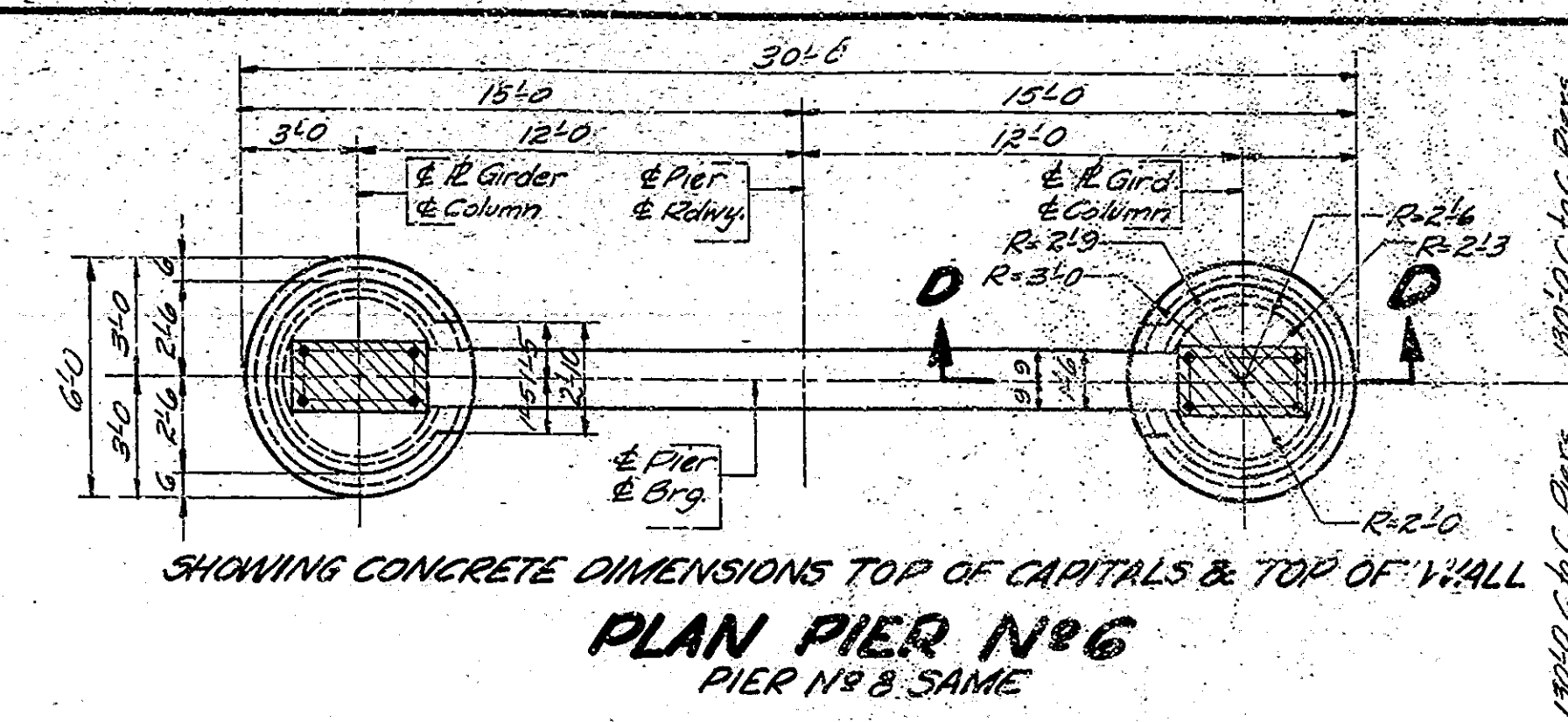
DRAWING: S6 of 47

BRIDGE CONTRACT NO. 3289  
BRIDGE FILE NO. 30-A-310A

DESIGNED: JDM:1250 C.K.O. HLL:130:50  
DRAWN: MSE:227:50 C.K.O. JDM:37:50  
TRACED: PCG:3:20:50 C.K.O. JDM:32:50



| BRIDGES OVER 20' SPAN |       |             |             |                          |
|-----------------------|-------|-------------|-------------|--------------------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. / TOTAL SHEETS |
| 4                     | IND.  | 645(3)      | 1951        | 14 / 65                  |



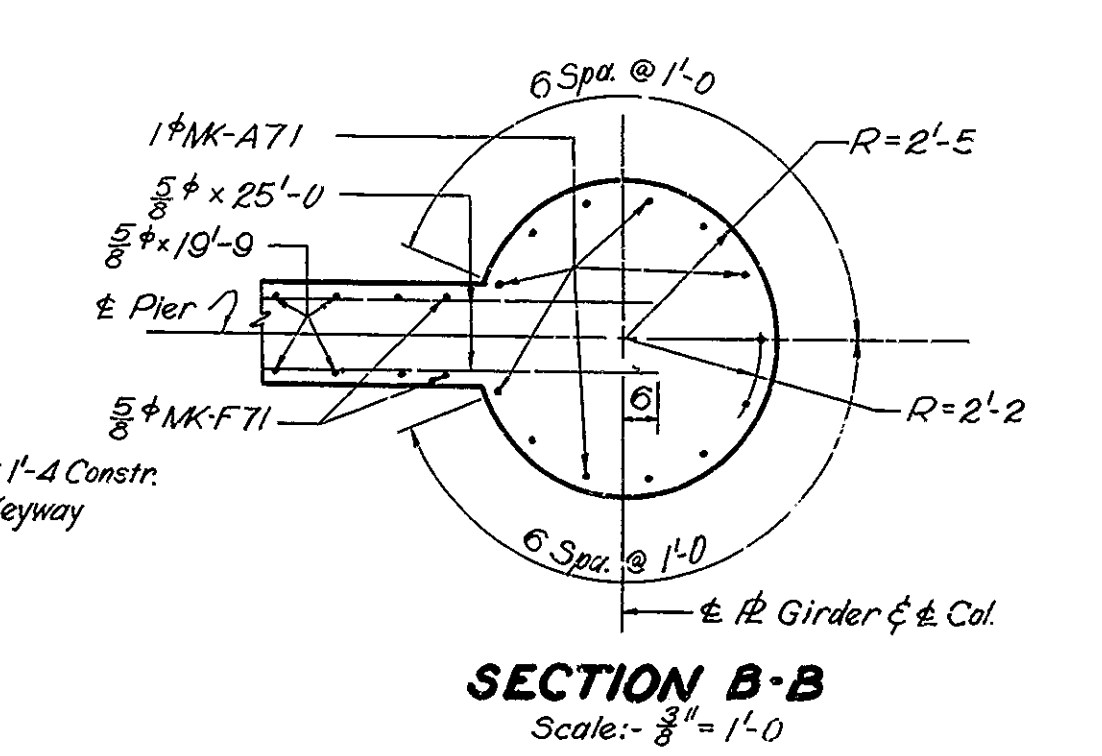
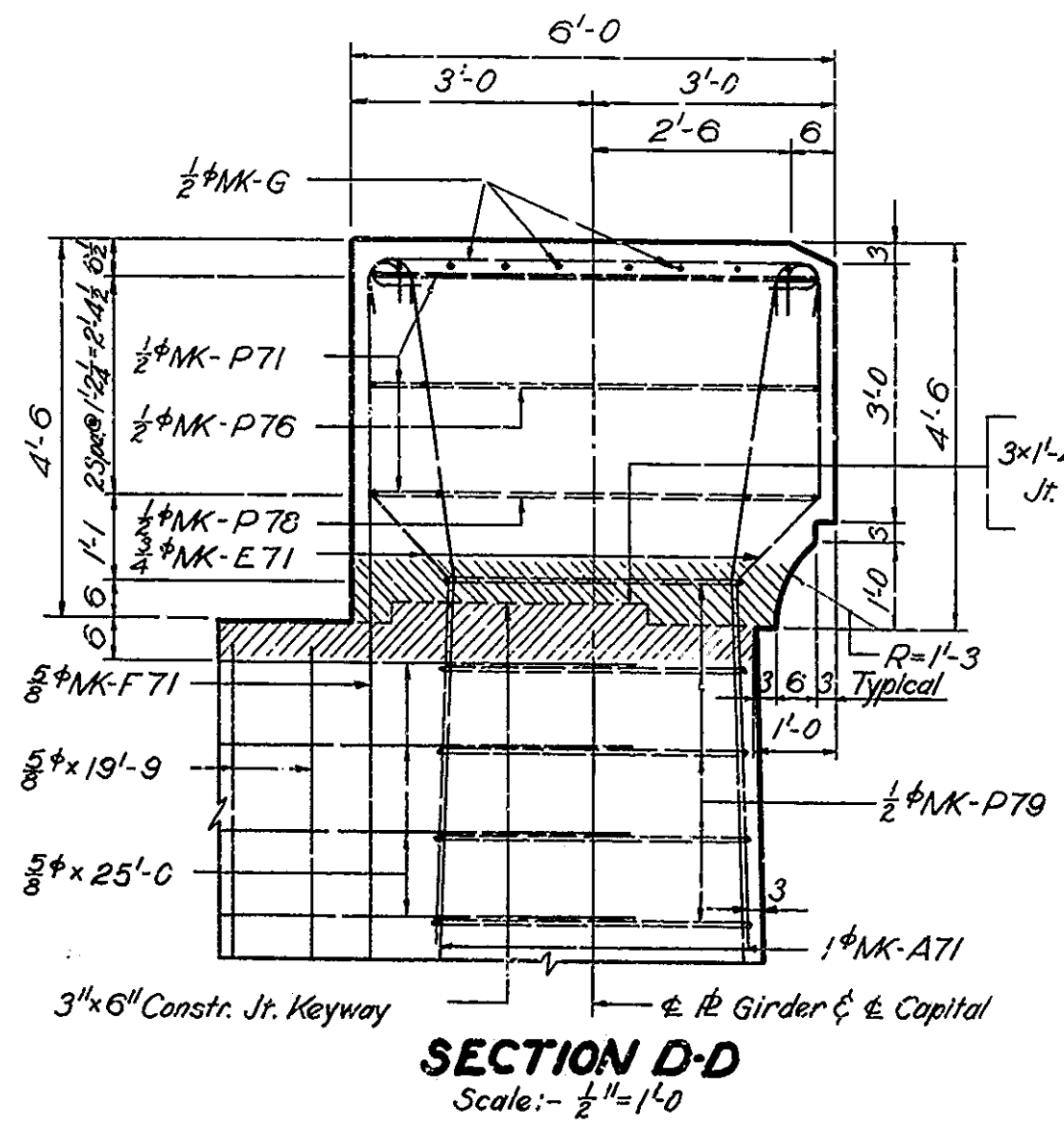
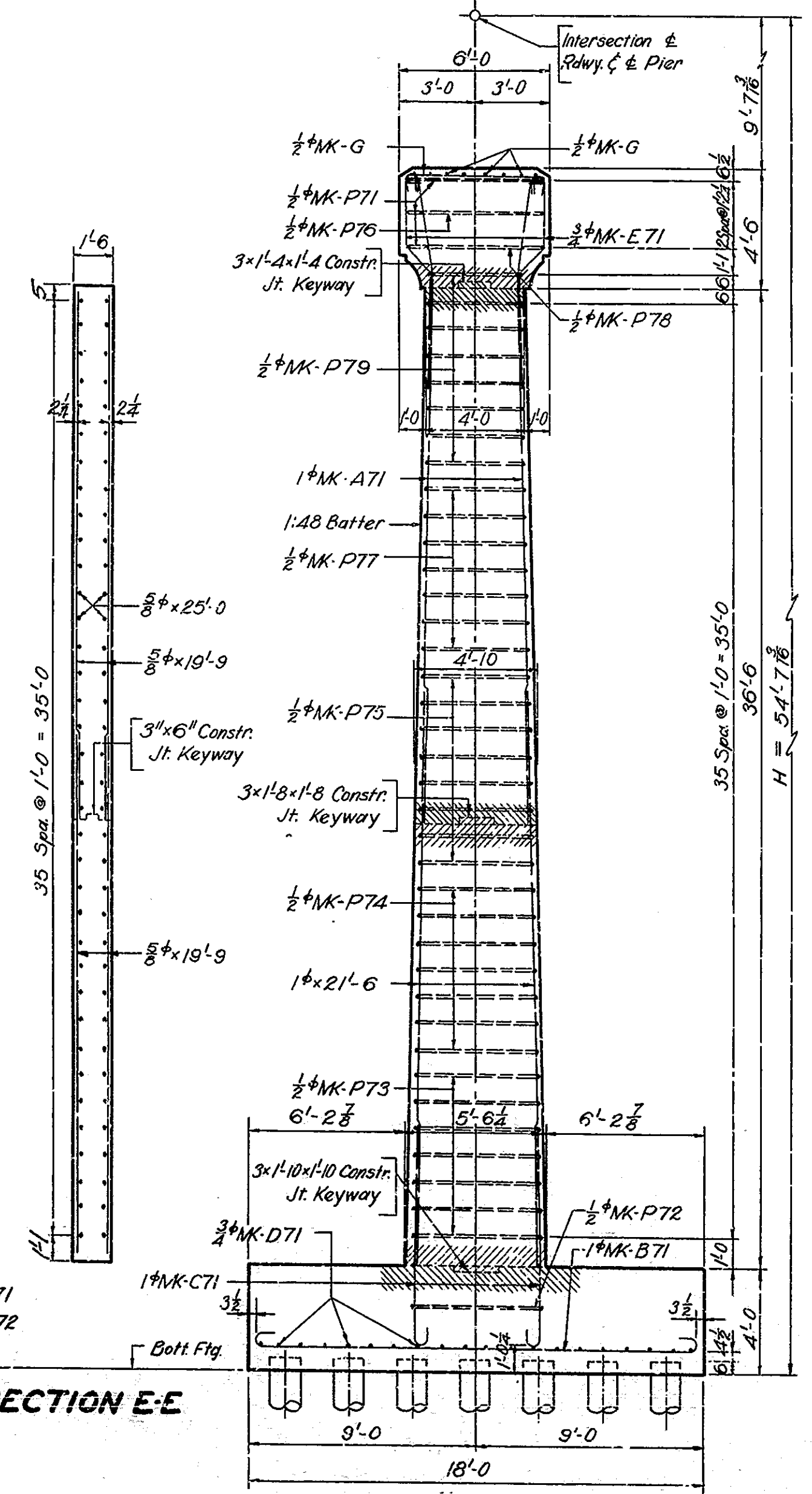
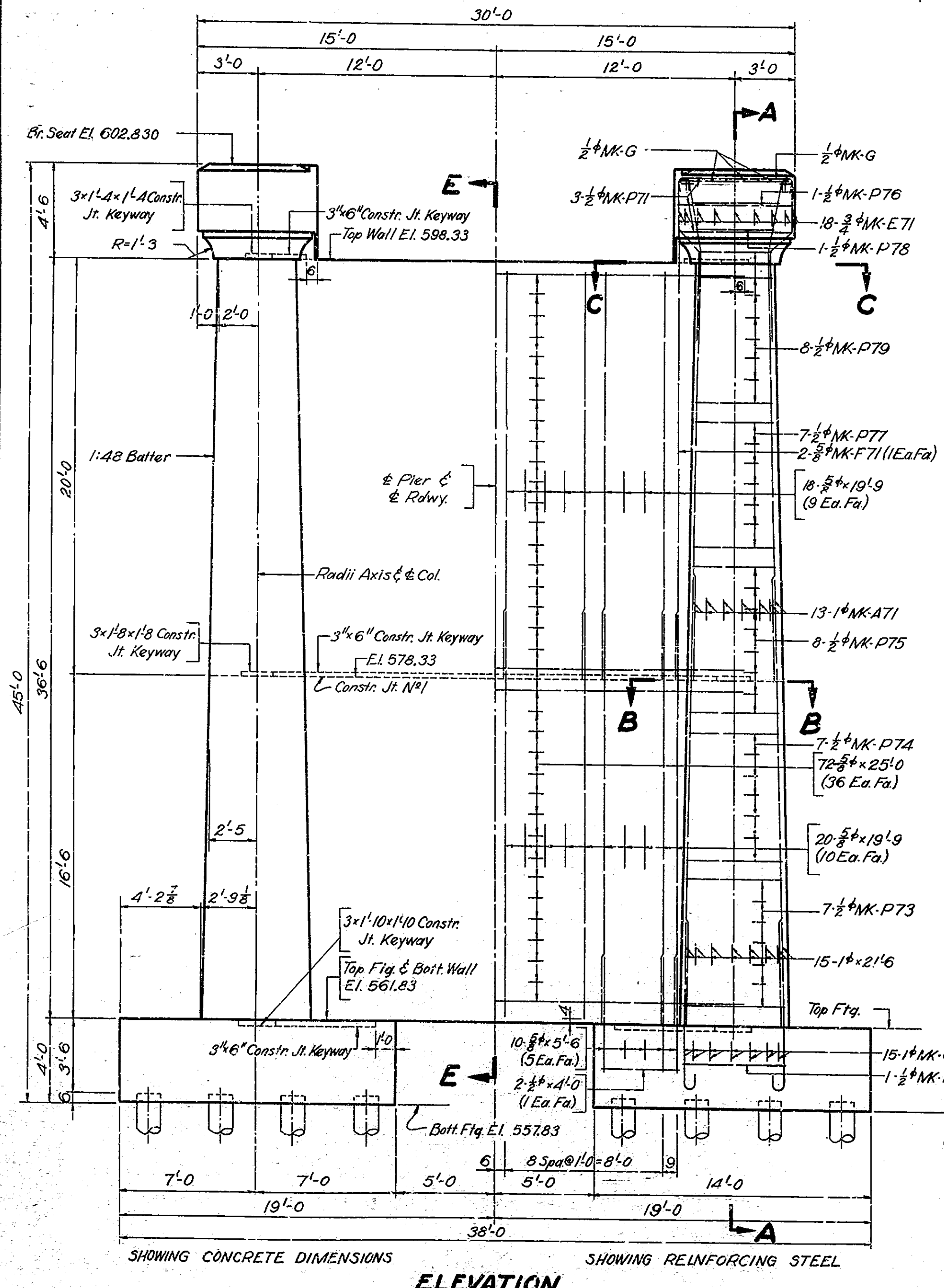
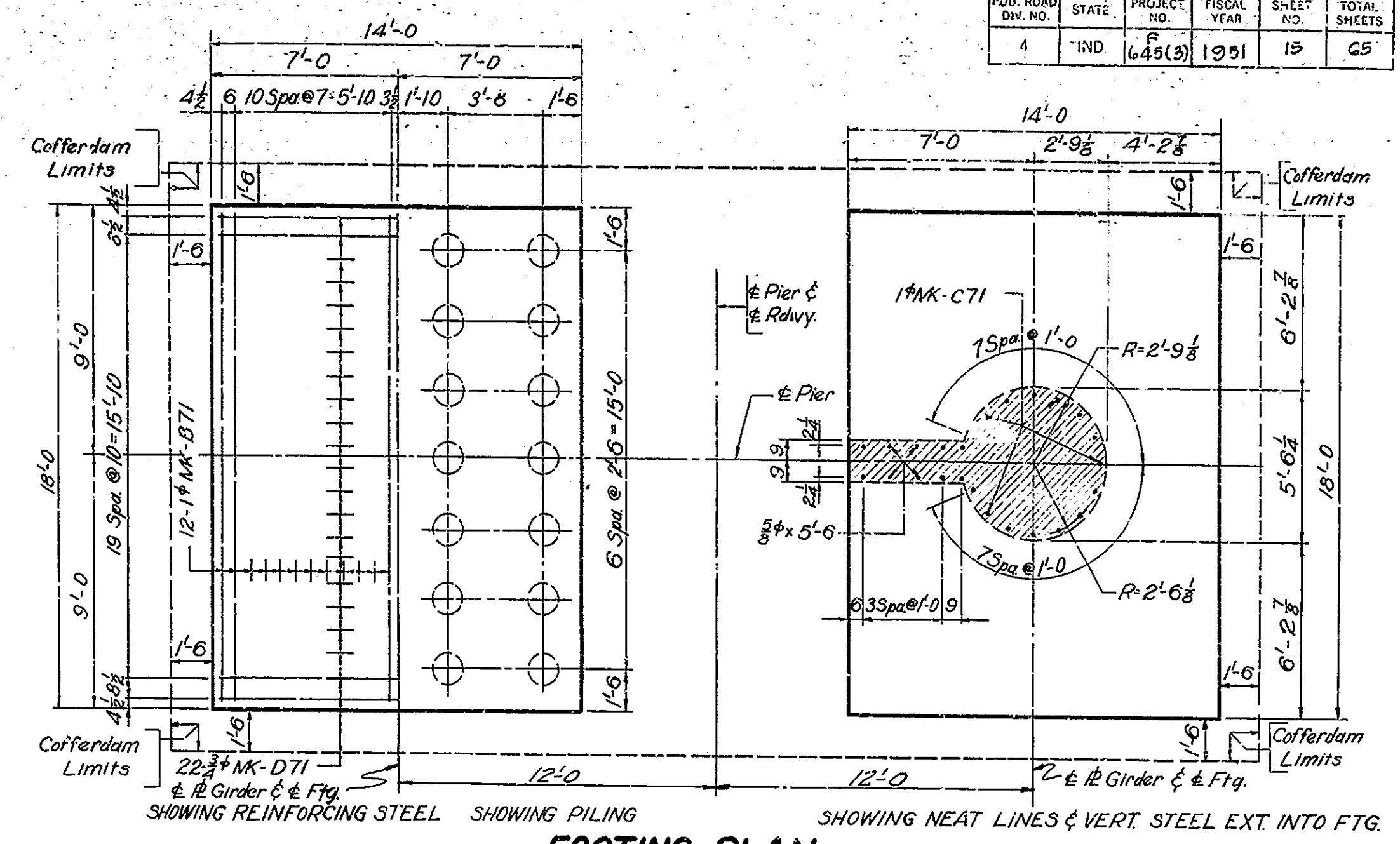
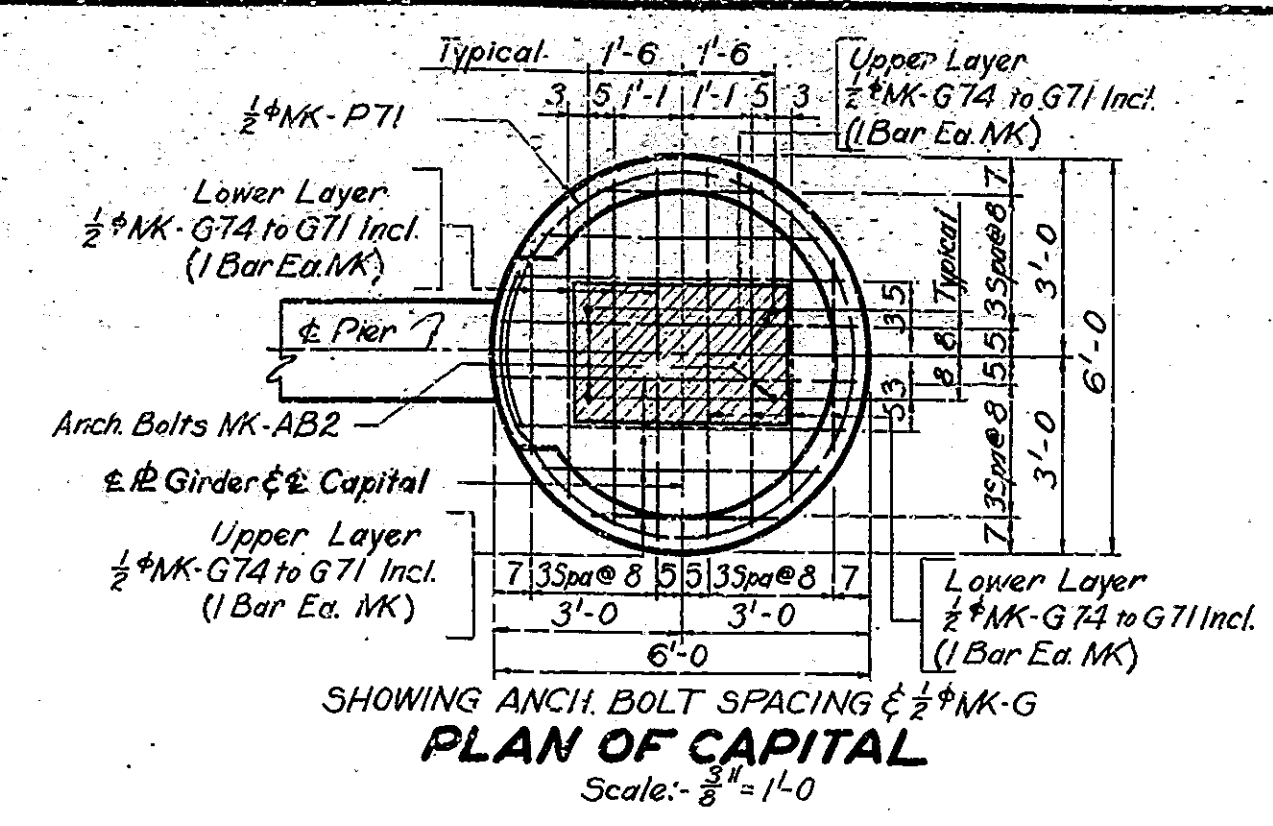
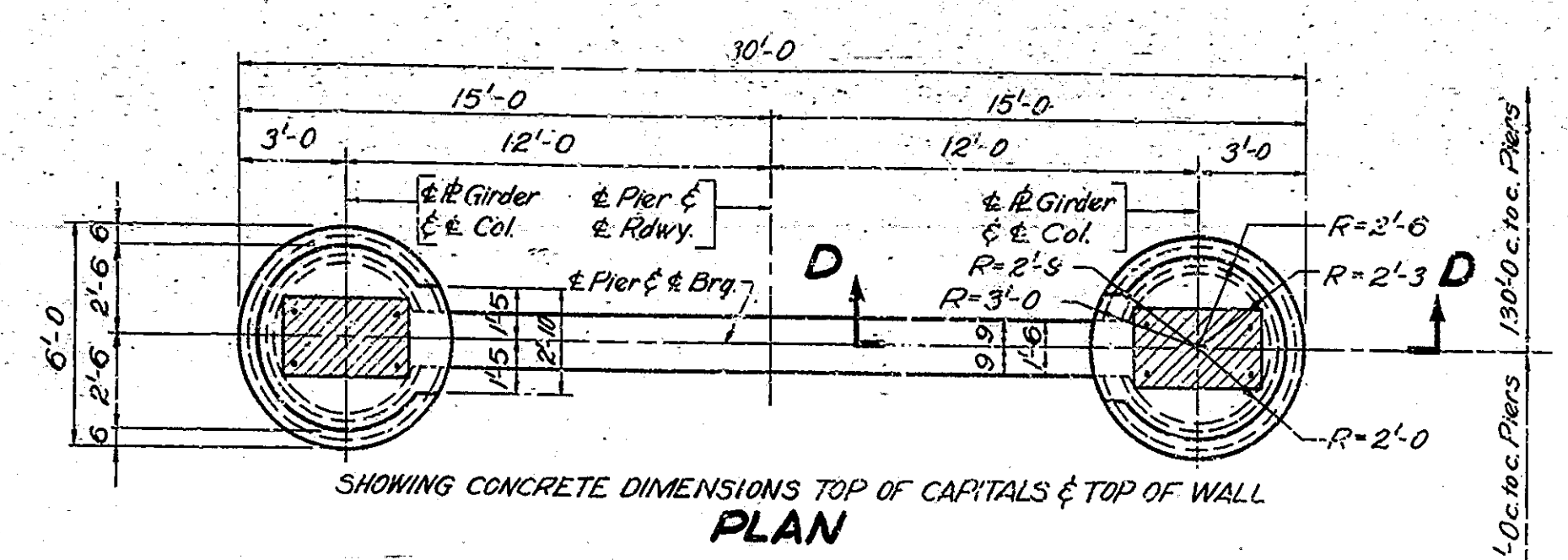
NOTES:-  
Minimum lap to be 2'6" for 1/2"  $\phi$ , 3'3" for 3/8"  $\phi$  & 3'9" for 1/2"  $\phi$  Bars.  
Holes for Anchor Bolts NK-AB2 shall be drilled.  
Anchor Bolts NK-AB2 are Billed with Structural Steel Bars are symmetrical about & Roadway.  
In Sec. B-B bars projecting above Constr. Sta. N#1 from below, not shown.

PIER NO. 6 & PIER NO. 8 DETAILS  
STATE HIGHWAY COMMISSION OF INDIANA

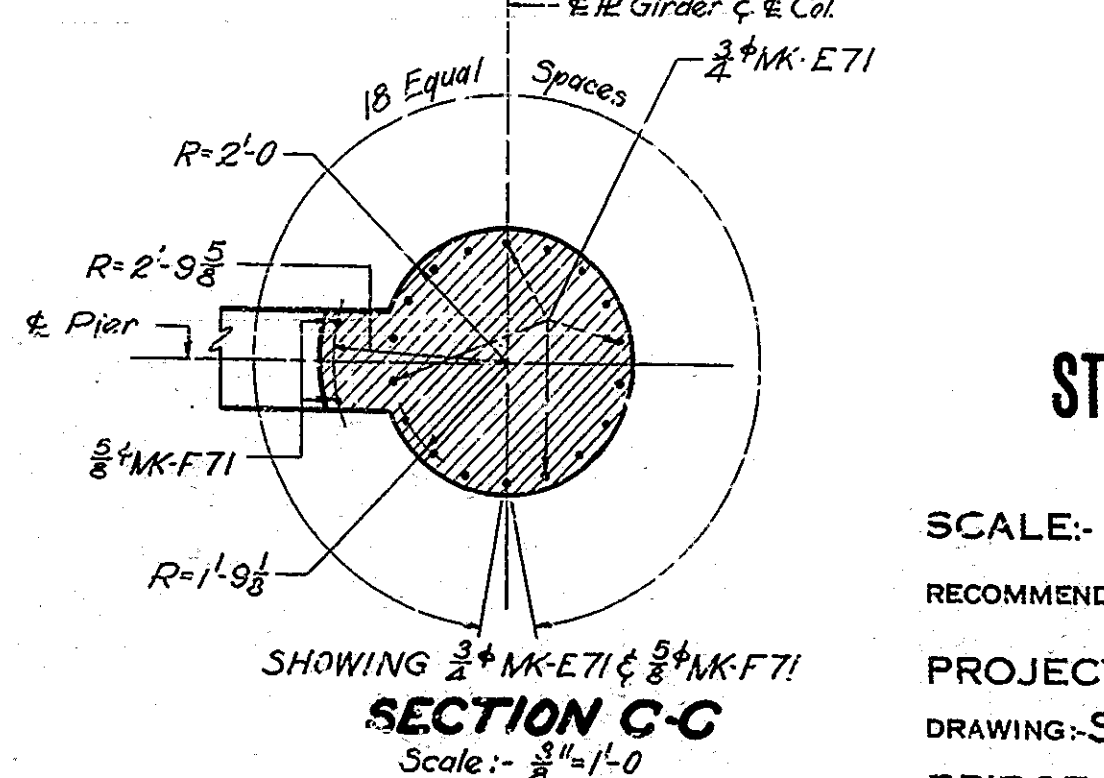
SCALE: 1/4" = 1'-0" UNLESS NOTED  
AUGUST 1, 1950  
RECOMMENDED FOR APPROVAL: [Signature]  
PROJECT: F-645(3) STATION: 11+25.00  
DRAWING: S8 OF 47  
BRIDGE CONTRACT NO. 3289

DESIGNED: [Name]  
DRAWN: [Name]  
CHECKED: [Name]

| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND   | 645(3)      | 1951        | 15        | 65           |



NOTES:-  
 Minimum lap to be 2'-6" for #7, 3'-3" for #8, 3'-9" for #9 & 5'-0" for #10 bars.  
 Holes for Anchor Bolts MK-AB2 shall be drilled.  
 Anchor Bolts MK-AB2 are billed with Structural Steel.  
 Pier is symmetrical about & Rdwy.  
 In Section B-B, bars projecting above Constr. Jt. N°1 from below, not shown.



PIER NO. 7 DETAILS  
 STATE HIGHWAY COMMISSION OF INDIA

SCALE: 1/4" = 1'-0" UNLESS NOTED AUGUST 1, 1950  
 RECOMMENDED FOR APPROVAL: [Signature]

PROJECT: F-645(3) STATION: 11+25.00  
 DRAWING: S9 OF 47  
 BRIDGE CONTRACT NO. 2220

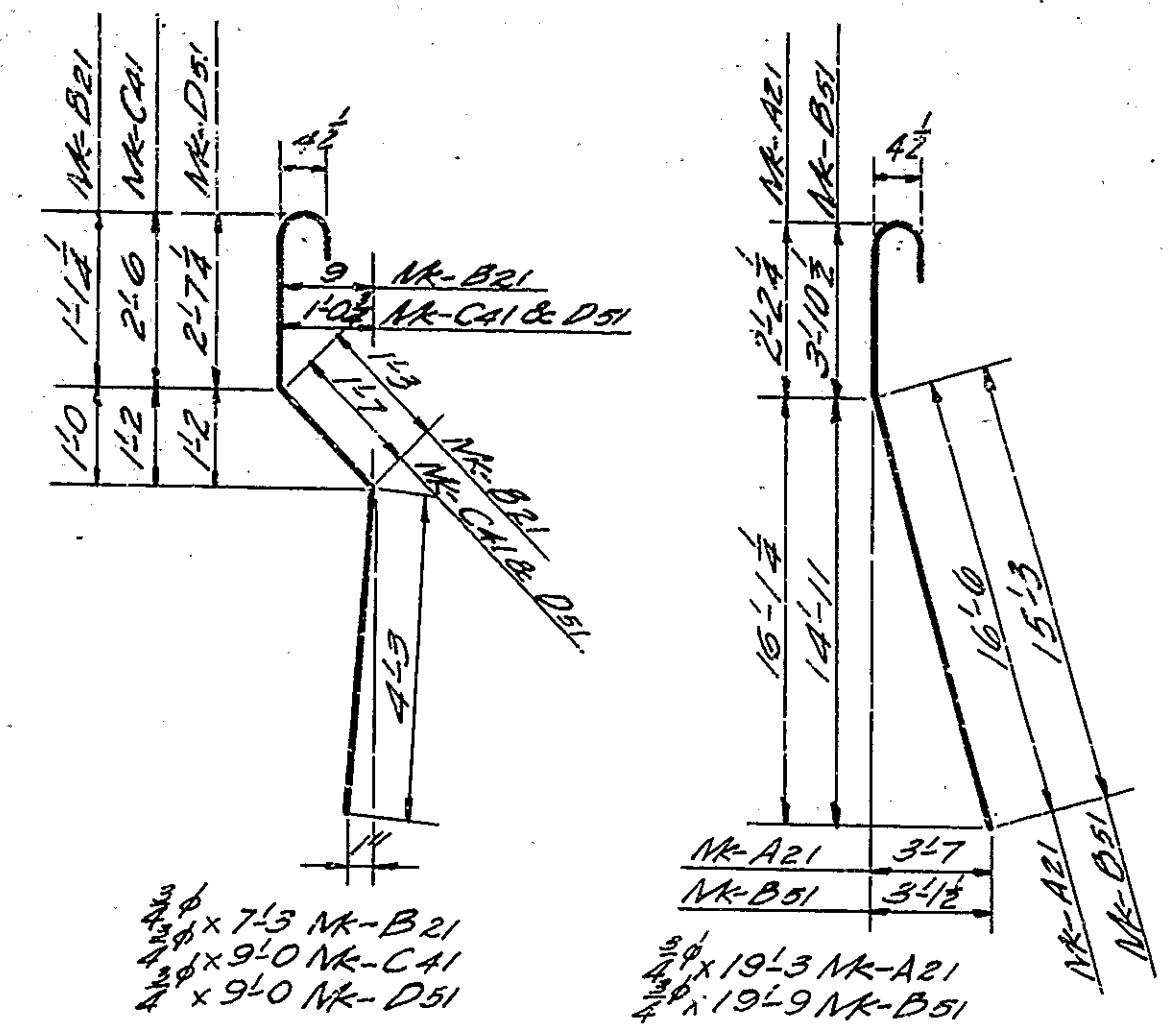
DESIGNED: C.K.D.  
 DRAWN: P.C.G. 1-26-50  
 TRACED: P.C.G. 2-17-50

# BILL OF MATERIALS

## PIER NO. 2 (PIER NO. 12 SAME)

## PIER NO. 4 (PIER NO. 10 SAME)

## PIER NO. 5 (PIER NO. 9 SAME)



| REINFORCING STEEL |            |      |        |                    |              |        |
|-------------------|------------|------|--------|--------------------|--------------|--------|
| MARK              | NO. PIECES | SIZE | LENGTH | LOCATION           | TOTAL LENGTH | WEIGHT |
| A21               | 34         | 3/4" | 19'-3" | Vert. Stem & Capg. | 791'-6"      |        |
| B21               | 38         | "    | 7'-3"  | " Capg.            | 275'-6"      |        |
| C21               | 38         | "    | 6'-6"  | Footg. Stubs       | 247'-0"      |        |
| D21               | 68         | "    | 4'-6"  | Transv. Capg.      | 306'-0"      |        |
| E21               | 9          | "    | 3'-3"  | "                  | 29'-3"       |        |
| F21               | 9          | "    | 3'-0"  | " Top Stem         | 27'-0"       |        |
| G21               | 2          | "    | 12'-3" | Horiz. Capg. Nose  | 49'-0"       |        |
| H21               | 2          | "    | 11'-9" | " Footing          | 23'-6"       |        |
| I21               | 12         | "    | 11'-9" | " Stem Nose        | 23'-6"       |        |
| J21               | 14         | "    | 10'-9" | "                  | 141'-0"      |        |
| K21               | 2          | "    | 10'-3" | " Capg. Nose       | 20'-6"       |        |
| L21               | 8          | "    | 14'-0" | Circle Arch Stairs | 112'-0"      |        |
| M21               | 20         | "    | 7'-0"  | Wall Stairs        | 140'-0"      |        |
| N21               | 1          | "    | 36'-3" | Longit. Capg.      | 36'-3"       |        |
| O21               | 36         | "    | 33'-3" | " & Stem           | 1197'-0"     |        |
| P21               | 4          | "    | 31'-9" | " & Wall           | 127'-0"      |        |
| Q21               | 4          | "    | 18'-9" | " Footing          | 75'-0"       |        |
| R21               | 38         | "    | 16'-3" | Vert. Stem         | 617'-6"      |        |
| Total 3/4"        |            |      |        |                    | 4350'-0"     | 6534#  |
| E21               | 57         | 5/8" | 11'-0" | Transv. Footing    | 627'-0"      | 658#   |
| P21               | 22         | 1/2" | 18'-9" | Longit. Footing    | 434'-6"      | 290#   |
| TOTAL STEEL       |            |      |        |                    | 7478#        |        |

| CONCRETE                                    |              |             |
|---|--------------|-------------|
| Class "E" Above Efg. to Top Efg. to Capital | 48.3 Cu Yds  |             |
| Capit. to NB to Path Capg.                  | 43.6 "       |             |
| Capg. & Wall                                | 14.1 "       |             |
| Total Class "E" Above Efg.                  | 106.0 Cu Yds |             |
| Class "E" In Footing                        | 45.2 Cu Yds  |             |
| MISCELLANEOUS                               |              |             |
| 52 Untreated Timber Piles (20'-0" Approx)   |              | wood in ft. |

| REINFORCING STEEL |            |      |        |                              |              |        |
|-------------------|------------|------|--------|------------------------------|--------------|--------|
| MARK              | NO. PIECES | SIZE | LENGTH | LOCATION                     | TOTAL LENGTH | WEIGHT |
| A41               | 5          | 3/4" | 35'-0" | Horiz. Offset Wall           | 175'-0"      |        |
| B41               | 48         | "    | 12'-3" | Longit. Efg.                 | 780'-0"      |        |
| C41               | 38         | "    | 18'-9" | Footg.                       | 710'-0"      |        |
| D41               | 8          | "    | 22'-0" | Transv. & Offset Wall        | 176'-0"      |        |
| E41               | 22         | "    | 18'-0" | "                            | 396'-0"      |        |
| F41               | 38         | "    | 9'-0"  | " Capital                    | 342'-0"      |        |
| G41               | 1          | "    | 25'-6" | Horiz. Offset Wall           | 25'-6"       |        |
| H41               | 3          | "    | 25'-0" | " " & Stem                   | 75'-0"       |        |
| I41               | 2          | "    | 18'-0" | " " "                        | 36'-0"       |        |
| J41               | 30         | "    | 18'-0" | Vert. Column                 | 540'-0"      |        |
| K41               | 30         | "    | 6'-6"  | " Stubs                      | 198'-0"      |        |
| Total 3/4"        |            |      |        |                              | 3310'-0"     | 4982#  |
| D41               | 2          | 3/8" | 35'-0" | Horiz. Offset Wall           | 70'-0"       |        |
| E41               | 57         | "    | 12'-3" | Longit. Efg.                 | 707'-0"      |        |
| F41               | 28         | "    | 11'-9" | Transv. Offset Wall          | 328'-0"      |        |
| G41               | 30         | "    | 10'-6" | "                            | 318'-0"      |        |
| H41               | 35         | "    | 4'-0"  | Transv. Capg. Wall & Wall    | 140'-0"      |        |
| I41               | 2          | "    | 8'-6"  | Offset Wall Stairs           | 17'-0"       |        |
| J41               | 2          | "    | 7'-9"  | " " "                        | 15'-6"       |        |
| K41               | 2          | "    | 7'-0"  | " " "                        | 14'-0"       |        |
| L41               | 2          | "    | 6'-6"  | " " "                        | 13'-0"       |        |
| M41               | 2          | "    | 6'-3"  | " " "                        | 12'-6"       |        |
| N41               | 2          | "    | 4'-0"  | Horiz. Offset Wall           | 8'-0"        |        |
| O41               | 67         | "    | 30'-0" | " Horiz. Center Wall & Wall  | 2010'-0"     |        |
| P41               | 40         | "    | 21'-0" | Vert. Center Wall            | 840'-0"      |        |
| Q41               | 20         | "    | 5'-6"  | " " Stubs                    | 110'-0"      |        |
| Total 3/8"        |            |      |        |                              | 4350'-0"     | 4740#  |
| K41               | 8          | 1/2" | 7'-0"  | Transv. & Longit. in Br. St. | 56'-0"       |        |
| L41               | 8          | "    | 6'-6"  | " " " " "                    | 52'-0"       |        |
| M41               | 8          | "    | 6'-0"  | " " " " "                    | 48'-0"       |        |
| N41               | 8          | "    | 4'-9"  | " " " " "                    | 36'-0"       |        |
| O41               | 6          | "    | 21'-6" | Capital Ties                 | 129'-0"      |        |
| P41               | 2          | "    | 19'-3" | Col. Stub Ties in Efg.       | 38'-6"       |        |
| Q41               | 14         | "    | 19'-0" | Col. Ties                    | 266'-0"      |        |
| R41               | 14         | "    | 18'-9" | " " "                        | 264'-6"      |        |
| S41               | 14         | "    | 17'-9" | " " "                        | 247'-6"      |        |
| T41               | 14         | "    | 16'-3" | " " "                        | 228'-6"      |        |
| U41               | 2          | "    | 15'-3" | Capital Ties                 | 30'-6"       |        |
| V41               | 2          | "    | 15'-0" | " " "                        | 30'-0"       |        |
| W41               | 2          | "    | 15'-0" | " " "                        | 30'-0"       |        |
| X41               | 4          | "    | 4'-0"  | Wall Stub Ties in Efg.       | 16'-0"       |        |
| TOTAL STEEL       |            |      |        |                              | 1422'-0"     | 975#   |

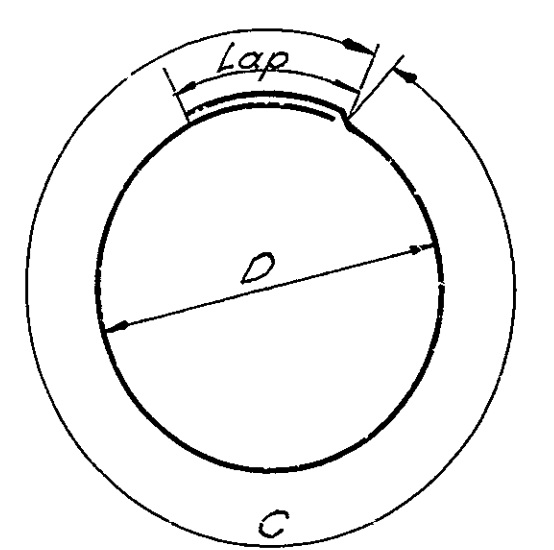
| CONCRETE  |             |             |
|---|-------------|-------------|
| Class "E" Above Efg. to Top Efg. to Butt. Col. Capitals | 70.4 Cu Yds |             |
| Butt. Col. Capitals to Top. Bridge Seats                | 23.3 "      |             |
| Total Class "E" Above Efg.                              | 93.7 Cu Yds |             |
| Class "E" In Footing= 2 @ 2 @ 1 Cu Yds.                 | 52.2 Cu Yds |             |
| MISCELLANEOUS   |             |             |
| 60 Untreated Timber Piles (20'-0" Approx)               |             | wood in ft. |

| REINFORCING STEEL |            |      |        |                              |              |        |
|-------------------|------------|------|--------|------------------------------|--------------|--------|
| MARK              | NO. PIECES | SIZE | LENGTH | LOCATION                     | TOTAL LENGTH | WEIGHT |
| A51               | 56         | 7/8" | 16'-6" | Longit. Footing              | 924'-0"      | 1889#  |
| B51               | 30         | 3/8" | 19'-9" | Vert. Column                 | 597'-6"      |        |
| C51               | 54         | "    | 14'-9" | Transv. Footing              | 796'-6"      |        |
| D51               | 36         | "    | 9'-0"  | Vert. Capital                | 324'-0"      |        |
| E51               | 30         | "    | 20'-0" | " Column                     | 600'-0"      |        |
| F51               | 30         | "    | 6'-6"  | " Stubs                      | 198'-0"      |        |
| Total 3/4"        |            |      |        |                              | 2508'-0"     | 3767#  |
| E51               | 4          | 5/8" | 19'-0" | Vert. Wall & Capital         | 76'-0"       |        |
| F51               | 62         | "    | 25'-0" | Horiz. Wall                  | 1550'-0"     |        |
| G51               | 40         | "    | 20'-0" | Vert. Wall                   | 800'-0"      |        |
| H51               | 20         | "    | 15'-0" | " " "                        | 300'-0"      |        |
| I51               | 20         | "    | 5'-6"  | " " Stubs                    | 110'-0"      |        |
| Total 3/4"        |            |      |        |                              | 3040'-0"     | 3171#  |
| E51               | 8          | 1/2" | 6'-3"  | Transv. & Longit. in Br. St. | 50'-6"       |        |
| F51               | 8          | "    | 6'-0"  | " " " " "                    | 48'-0"       |        |
| G51               | 8          | "    | 5'-3"  | " " " " "                    | 42'-0"       |        |
| H51               | 8          | "    | 3'-6"  | " " " " "                    | 28'-0"       |        |
| I51               | 6          | "    | 20'-0" | Capital Ties                 | 120'-0"      |        |
| J51               | 2          | "    | 18'-0" | Column Stubs in Efg.         | 36'-0"       |        |
| K51               | 14         | "    | 18'-0" | Column Ties                  | 252'-0"      |        |
| L51               | 12         | "    | 17'-0" | " " "                        | 204'-0"      |        |
| M51               | 2          | "    | 18'-3" | Capital Ties                 | 36'-6"       |        |
| N51               | 12         | "    | 18'-3" | Column " "                   | 219'-6"      |        |
| O51               | 12         | "    | 15'-0" | " " "                        | 180'-0"      |        |
| P51               | 2          | "    | 15'-3" | Capital " "                  | 30'-6"       |        |
| Q51               | 14         | "    | 14'-9" | Column " "                   | 206'-6"      |        |
| R51               | 4          | "    | 4'-0"  | Wall Stub Ties in Efg.       | 16'-0"       |        |
| TOTAL STEEL       |            |      |        |                              | 1447'-6"     | 967#   |

| CONCRETE  |             |             |
|---|-------------|-------------|
| Class "E" Above Efg. to Top Efg. to Butt. Col. Capitals | 72.4 Cu Yds |             |
| Column Capitals (2 @ 2.3 Cu Yds)                        | 4.6 Cu Yds  |             |
| Total Class "E" Above Efg.                              | 77.0 Cu Yds |             |
| Class "E" In Footings= 2 @ 2 @ 1 Cu Yds.                | 52.2 Cu Yds |             |
| MISCELLANEOUS   |             |             |
| 60 Untreated Timber Piles (20'-0" Approx)               |             | wood in ft. |

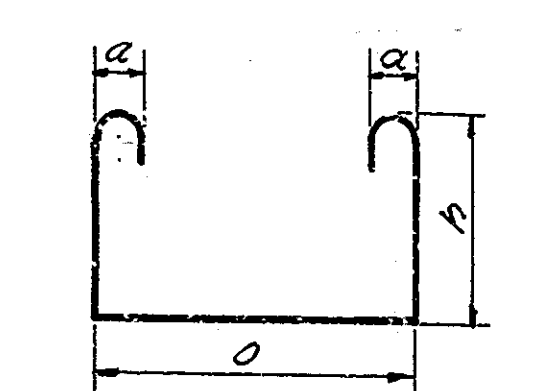
NOTES:-  
All Dimensions on Details and Bending Diagrams for Reinforcing Bars are measured on centerlines of Bars.  
See Summary Sheet for Bill of Splice Bars.

| Mark | Size | O      | C  | Length |
|------|------|--------|----|--------|
| D21  | 3/4" | 21'-4" | 4" | 22'-0" |
| B21  | 3/8" | 17'-5" | "  | 18'-0" |
| C21  | 1/2" | 5'-0"  | "  | 6'-6"  |
| E41  | 5/8" | 14'-4" | A  | 15'-0" |
| E51  | 5/8" | 18'-6" | A  | 19'-0" |

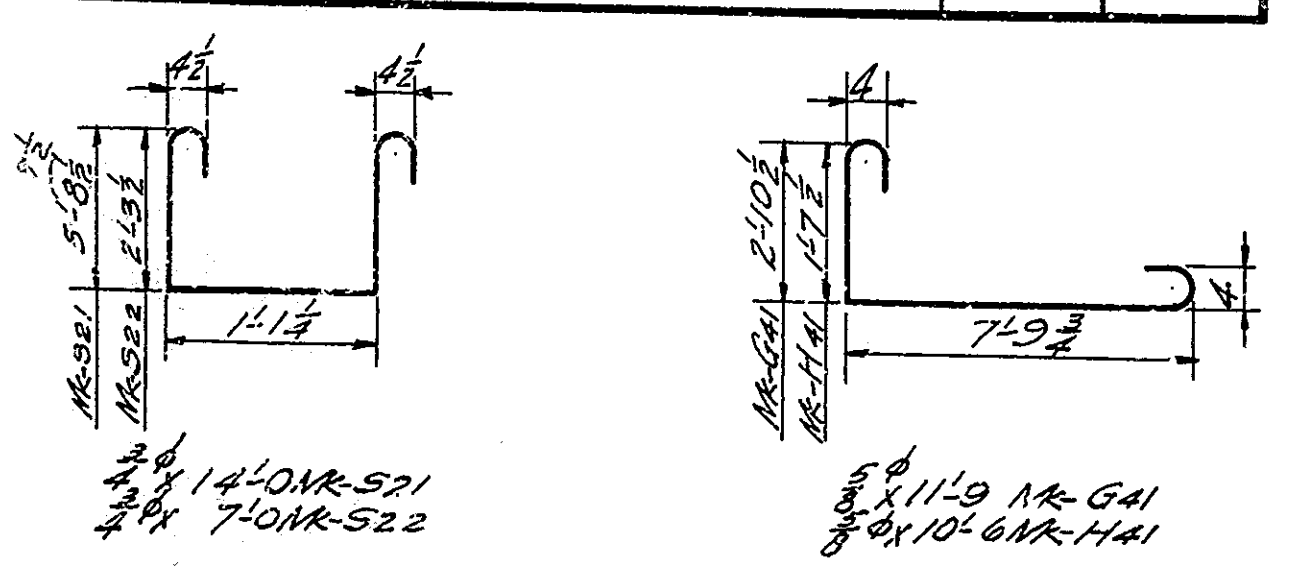


As "D" Varies by Successive Increments of 1/2"  
"C" Varies by Successive Increments of 1 1/2"  
"L" Varies by Successive Decrements of 2/3"

| Mark | Size | R         | C          | L         | Length |
|------|------|-----------|------------|-----------|--------|
| D21  | 3/4" | 1'-5 1/4" | 4'-3 1/4"  | 3'-9 3/4" | 12'-3" |
| D22  | "    | 1'-4"     | 4'-2 1/4"  | 3'-8 3/4" | 11'-9" |
| D23  | "    | 1'-3 1/4" | 4'-1 1/4"  | 3'-7 3/4" | 11'-9" |
| D24  | "    | 1'-2 1/4" | 3'-11 1/4" | 3'-6 3/4" | 11'-9" |
| D25  | "    | 1'-1 1/4" | 3'-10 1/4" | 3'-5 3/4" | 11'-9" |
| D26  | "    | 1'-0 1/4" | 3'-9 1/4"  | 3'-4 3/4" | 11'-9" |
| D27  | "    | 10 1/4"   | 2'-8 1/4"  | 3'-3 3/4" | 10'-3" |



| Mark | Size | O          | a  | b          | Length |
|------|------|------------|----|------------|--------|
| S21  | 3/8" | 12'-7 1/2" | 2" | 24'-0 1/2" | 3'-0"  |
| S22  | "    | "          | "  | 24'-0"     | 2'-9"  |
| S23  | "    | "          | "  | 24'-0"     | 2'-9"  |
| S24  | "    | "          | "  | 24'-0 1/2" | 2'-9"  |
| S25  | "    | "          | "  | 24'-0 1/2" | 2'-9"  |
| S26  | "    | "          | "  | 24'-0 1/2" | 2'-9"  |

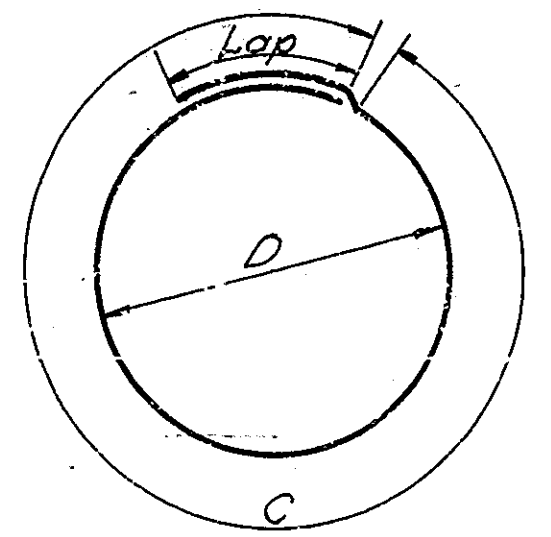
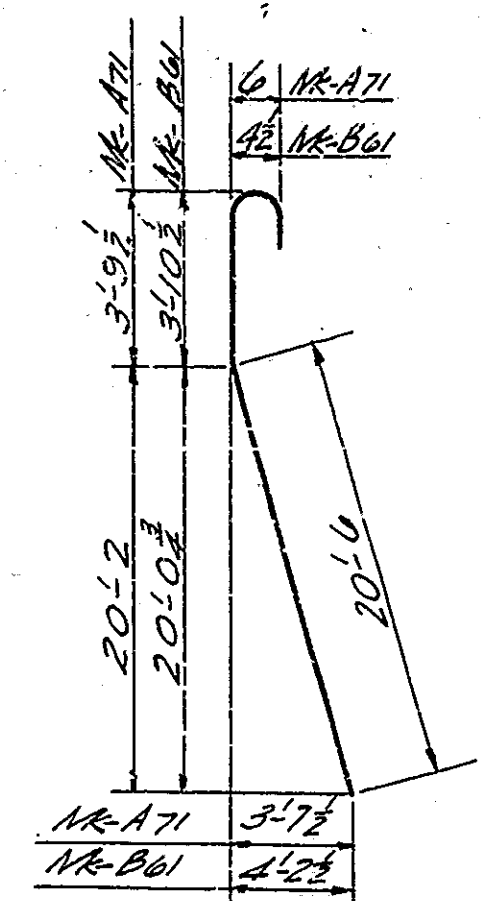
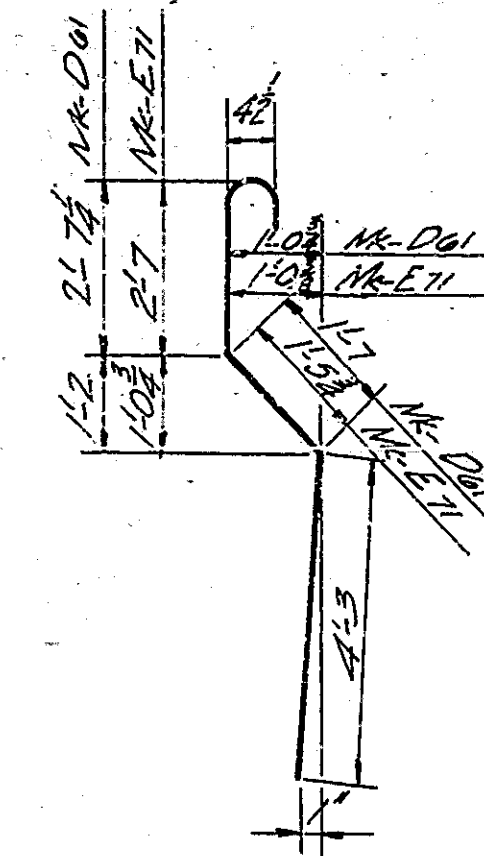


| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | 645(3)      | 1951        | 17        | 65           |

# BILL OF MATERIALS

PIER NO. 6 (PIER NO. 8 SAME)

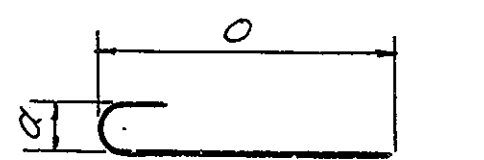
PIER NO. 7



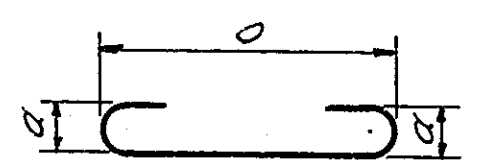
As "D" Varies by Successive Increments of  $\frac{1}{8}$ "  
 "C" Varies by Successive Increments of  $\frac{1}{16}$ "  
 Lap Varies by Successive Increments of  $\frac{1}{16}$ "

3# 5/8" MR-D61  
 3# 5/8" MR-E71

1# 25/32" MR-A71  
 3# 25/32" MR-B61



| Mark | Size | O      | α | Length |
|------|------|--------|---|--------|
| C71  | 1#   | 7 1/8" | 6 | 8'-9"  |
| E61  | 3/8" | 2 1/2" | 4 | 2'-10" |
| F71  | 3/8" | 2 1/2" | 4 | 2'-10" |



| Mark | Size | O       | α     | Length |
|------|------|---------|-------|--------|
| A61  | 1#   | 17 1/2" | 6     | 19'-3" |
| B71  | 1#   | 17 1/2" | 6     | 19'-3" |
| C61  | 3/8" | 13 1/2" | 4 1/2 | 1'-10" |
| D71  | 3/8" | 13 1/2" | 4 1/2 | 1'-10" |
| F61  | 1/2" | 5'-6"   | 3     | 6'-3"  |
| G62  | "    | 5'-2"   | 3     | 6'-0"  |
| H63  | "    | 4'-4"   | 3     | 5'-3"  |
| I64  | "    | 2'-9"   | 3     | 3'-6"  |
| J71  | "    | 5'-6"   | 3     | 6'-3"  |
| K72  | "    | 5'-2"   | 3     | 6'-0"  |
| L73  | "    | 4'-4"   | 3     | 5'-3"  |
| M74  | "    | 2'-9"   | 3     | 3'-6"  |

| Mark | Size   | D          | Length |
|------|--------|------------|--------|
| P61  | 2 1/2" | 5'-6"      | 20'-0" |
| P62  | "      | 5'-2"      | 18'-9" |
| P63  | "      | 4'-4"      | 17'-9" |
| P64  | "      | 4'-2 1/4"  | 17'-9" |
| P65  | "      | 4'-5 3/4"  | 16'-9" |
| P66  | "      | 4'-2 1/4"  | 16'-9" |
| P67  | "      | 4'-1 1/4"  | 15'-9" |
| P68  | "      | 4'-0 1/4"  | 15'-9" |
| P69  | "      | 3'-10 1/4" | 14'-9" |
| P71  | "      | 5'-5 1/4"  | 19'-9" |
| P72  | "      | 5'-1 1/4"  | 18'-9" |
| P73  | "      | 4'-10 1/4" | 18'-9" |
| P74  | "      | 4'-6 1/4"  | 17'-9" |
| P75  | "      | 4'-5 3/4"  | 16'-9" |
| P76  | "      | 4'-2 1/4"  | 16'-9" |
| P77  | "      | 3'-11 1/4" | 15'-9" |
| P78  | "      | 3'-11 1/4" | 15'-9" |
| P79  | "      | 3'-7 1/4"  | 14'-9" |

| REINFORCING STEEL |           |      |           |                              |              |        |
|-------------------|-----------|------|-----------|------------------------------|--------------|--------|
| MARK              | NO. PICES | SIZE | LENGTH    | LOCATION                     | TOTAL LENGTH | WEIGHT |
| A61               | 56        | 1#   | 19'-3"    | Longit. Footing              | 1078'-0"     | 2878#  |
| B61               | 26        | 3/8" | 25'-0"    | Vert. Column                 | 650'-0"      |        |
| C61               | 62        | "    | 14'-9"    | Transv. Ftg.                 | 914'-6"      |        |
| D61               | 36        | "    | 5'-6"     | Vert. Capital                | 324'-0"      |        |
|                   | 30        | "    | 20'-8"    | Vert. Column stubs           | 624'-0"      |        |
|                   | 30        | "    | 6'-8"     | Vert. Column stubs           | 206'-0"      |        |
| Total %           |           |      |           |                              | 2708'-0"     | 4064#  |
| E61               | 4         | 3/8" | 2'-9"     | Vert. Wall & Capital         | 93'-0"       |        |
| F61               | 72        | "    | 2'-5 1/2" | Vert. Wall                   | 1850'-0"     |        |
| G61               | 40        | "    | 2'-0 1/2" | Vert. Wall                   | 810'-0"      |        |
| H61               | 30        | "    | 1'-9 1/2" | "                            | 270'-0"      |        |
| I61               | 20        | "    | 5'-6"     | "                            | 110'-0"      |        |
| Total %           |           |      |           |                              | 3580'-0"     | 3754#  |
| J61               | 8         | 1/2" | 6'-3"     | Transv. & Longit. in Br. St. | 50'-0"       |        |
| K62               | 8         | "    | 6'-0"     | "                            | 48'-0"       |        |
| L63               | 8         | "    | 5'-3"     | "                            | 42'-0"       |        |
| M64               | 8         | "    | 3'-6"     | "                            | 28'-0"       |        |
| N61               | 6         | "    | 20'-0"    | Capital Ties                 | 120'-0"      |        |
| O62               | 2         | "    | 12'-9"    | Col. Stub Ties in Ftg.       | 37'-6"       |        |
| P63               | 16        | "    | 18'-9"    | Column Ties                  | 300'-0"      |        |
| Q64               | 16        | "    | 17'-9"    | "                            | 288'-0"      |        |
| R65               | 16        | "    | 16'-9"    | "                            | 268'-0"      |        |
| S66               | 2         | "    | 16'-9"    | Capital Ties                 | 33'-0"       |        |
| T67               | 14        | "    | 15'-9"    | Column Ties                  | 220'-0"      |        |
| U68               | 2         | "    | 15'-9"    | Capital Ties                 | 30'-0"       |        |
| V69               | 14        | "    | 14'-9"    | Column Ties                  | 206'-0"      |        |
| W                 | 4         | "    | 4'-0"     | Wall stub Ties in Ftg.       | 16'-0"       |        |
| Total %           |           |      |           |                              | 1684'-0"     | 1125#  |
| TOTAL STEEL       |           |      |           |                              | 11807'       | 11807# |

| CONCRETE   |               |
|--|---------------|
| Class "E" Above Ftg.                                 |               |
| Top of Footing to Const. II No. 1                    | 44.50 Cu Yds  |
| Const. II No. 1 to Batt. Capitals                    | 44.60 Cu Yds  |
| Column Capitals (2 @ 4.3 Cu Yds)                     | 8.60 Cu Yds   |
| Class "E" Above Ftg.                                 | 97.70 Cu Yds  |
| Class "F" in Footing (2 @ 30.3 Cu Yds)               | 60.60 Cu Yds  |
| TOTAL CLASS "E" ABOVE FTG.                           |               |
| 158.30 Cu Yds  |               |
| MISCELLANEOUS  |               |
| 5/8" Steel Encased Conc. Piles (14 x 35 x 20 No. 76) | 1960 Lin. Ft. |

| REINFORCING STEEL |           |      |           |                           |              |        |
|-------------------|-----------|------|-----------|---------------------------|--------------|--------|
| MARK              | NO. PICES | SIZE | LENGTH    | LOCATION                  | TOTAL LENGTH | WEIGHT |
| A71               | 26        | 1#   | 25'-3"    | Vert. Col. & Capital      | 656'-6"      |        |
| B71               | 26        | "    | 19'-3"    | Longit. Footing           | 501'-6"      |        |
| C71               | 30        | "    | 8'-9"     | Column stubs              | 267'-0"      |        |
| D71               | 30        | "    | 2'-6"     | Vert. Column              | 162'-0"      |        |
| Total %           |           |      |           |                           | 1587'-0"     | 4643#  |
| E71               | 44        | 3/8" | 14'-9"    | Transv. Footing           | 649'-0"      |        |
| F71               | 36        | "    | 9'-0"     | Vert. Capital             | 324'-0"      |        |
| Total %           |           |      |           |                           | 973'-0"      | 1461#  |
| G71               | 4         | 3/8" | 2'-9"     | Vert. Wall & Capital      | 93'-0"       |        |
| H72               | "         | "    | 2'-5 1/2" | Vert. Wall                | 1800'-0"     |        |
| I73               | "         | "    | 1'-9 1/2" | Vert. Wall                | 1301'-0"     |        |
| J74               | "         | "    | 5'-6"     | "                         | 110'-0"      |        |
| Total %           |           |      |           |                           | 3510'-0"     | 3661#  |
| K71               | 8         | 1/2" | 6'-3"     | Transv. & Longit. Capital | 50'-0"       |        |
| L72               | 8         | "    | 6'-0"     | "                         | 48'-0"       |        |
| M73               | 8         | "    | 5'-3"     | "                         | 42'-0"       |        |
| N74               | 8         | "    | 3'-6"     | "                         | 28'-0"       |        |
| O71               | 6         | "    | 19'-9"    | Capital Ties              | 119'-0"      |        |
| P72               | 2         | "    | 18'-9"    | Col. Stub Ties in Ftg.    | 37'-6"       |        |
| Q73               | 14        | "    | 18'-9"    | Column Ties               | 264'-0"      |        |
| R74               | 14        | "    | 17'-9"    | "                         | 248'-0"      |        |
| S75               | 16        | "    | 16'-9"    | "                         | 268'-0"      |        |
| T76               | 2         | "    | 16'-9"    | Capital Ties              | 33'-0"       |        |
| U77               | 14        | "    | 15'-9"    | Column Ties               | 220'-0"      |        |
| V78               | 2         | "    | 15'-9"    | Capital Ties              | 30'-0"       |        |
| W79               | 14        | "    | 14'-9"    | Column Ties               | 206'-0"      |        |
| X                 | 4         | "    | 4'-0"     | Wall stub Ties in Ftg.    | 16'-0"       |        |
| Total %           |           |      |           |                           | 11658'-0"    | 1094#  |
| TOTAL STEEL       |           |      |           |                           | 12829'       | 12829# |

| CONCRETE   |               |
|--|---------------|
| Class "E" Above Ftg.                                 |               |
| Top of Ftg. to Const. II No. 1                       | 44.50 Cu Yds  |
| Const. II No. 1 to Batt. Capitals                    | 44.60 Cu Yds  |
| Column Capitals (2 @ 4.3 Cu Yds)                     | 8.60 Cu Yds   |
| Total Class "E" Above Ftg.                           | 97.70 Cu Yds  |
| Class "F" in Footing (2 @ 30.3 Cu Yds)               | 60.60 Cu Yds  |
| TOTAL CLASS "E" ABOVE FTG.                           |               |
| 158.30 Cu Yds  |               |
| MISCELLANEOUS  |               |
| 5/8" Steel Encased Conc. Piles (14 x 35 x 20 No. 76) | 1960 Lin. Ft. |

NOTES:-  
 All Dimensions on Details and Bending Diagrams for Reinforcing Bars are measured on centerlines of Bars.  
 See Summary Sheet for Bill of Splice Bars.

## BILL OF MATERIALS PIERS NO. 6, 7 & 8 STATE HIGHWAY COMMISSION OF INDIANA

AUGUST 1 1950

RECOMMENDED FOR APPROVAL: *[Signature]*  
 PROJECT: F-645 (3) STATION: 11+25.00  
 DRAWING: S11 OF 47

DESIGNED: C.K.D.  
 DRAWN: C.K.D.







| PUB. ROAD DIV. NO. | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|--------------------|-------|-------------|-------------|-----------|--------------|
| 4                  | IND.  | F-645(3)    | 1951        | 20        | 65           |

**BILL OF MATERIALS SPAN "A"**  
(SPAN "M" SAME)

| REINFORCING STEEL |                      |        |        |  |              |                |
|-------------------|----------------------|--------|--------|--|--------------|----------------|
| MARK              | N <sup>o</sup> PICES | SIZE   | LENGTH | LOCATION   | TOTAL LENGTH | WEIGHT         |
| A101              | 8                    | 1 1/2" | 45'-0" | Longit Girder Mk-CG2&CG3                         | 360'-0"      | 1913#          |
| B101              | 12                   | 1 1/2" | 46'-0" | Longit Girder Mk-CG2&CG3                         | 552'-0"      |                |
| B102              | 8                    | "      | 46'-0" | " " " "  | 368'-0"      |                |
| C101              | 18                   | "      | 44'-9" | All Girders                                      | 805'-6"      |                |
|                   |                      |        |        | Total 1 1/2"                                     | 1725'-6"     | 7425#          |
| D101              | 6                    | 1"     | 46'-0" | Longit Girder Mk-CG1                             | 276'-0"      |                |
| D102              | 4                    | "      | 46'-0" | " " " "  | 184'-0"      |                |
| E101              | 4                    | "      | 44'-6" | " " " "  | 178'-0"      |                |
|                   |                      |        |        | Total 1"   | 638'-0"      | 2169#          |
| F101              | 5                    | 3/8"   | 28'-3" | Transv Slab                                      | 141'-6"      |                |
| F102              | 9                    | "      | 27'-9" | "  | 250'-9"      |                |
| F103              | 23                   | "      | 26'-9" | "  | 615'-3"      |                |
| F104              | 5                    | "      | 25'-0" | "  | 125'-0"      |                |
| F105              | 9                    | "      | 24'-3" | "  | 218'-3"      |                |
| F106              | 23                   | "      | 23'-3" | "  | 534'-9"      |                |
| F107              | 3                    | "      | 18'-0" | "  | 90'-0"       |                |
| F108              | 9                    | "      | 17'-6" | "  | 157'-6"      |                |
| F109              | 23                   | "      | 16'-6" | "  | 379'-6"      |                |
| F110              | 3                    | "      | 14'-9" | "  | 73'-9"       |                |
| F111              | 9                    | "      | 14'-0" | "  | 126'-0"      |                |
| F112              | 23                   | "      | 13'-0" | "  | 299'-0"      |                |
| G101              | 20                   | "      | 12'-0" | "  | 240'-0"      |                |
| G102              | 32                   | "      | 11'-3" | "  | 361'-6"      |                |
| G103              | 88                   | "      | 10'-3" | "  | 907'-0"      |                |
| H101              | 36                   | "      | 24'-3" | "  | 871'-0"      |                |
|                   | 8                    | "      | 13'-9" | Longit Girder Mk-CG1                             | 110'-0"      |                |
|                   |                      |        |        | Total 3/8"                                       | 5558'-0"     | 5797#          |
| J101              | 12                   | 1/2"   | 24'-0" | Longit Coping                                    | 288'-0"      |                |
| J102              | 20                   | "      | 4'-6"  | " " " " " " " "                                  | 90'-0"       |                |
| K101              | 6                    | "      | 5'-9"  | Horiz. Plaster                                   | 34'-6"       |                |
| L101              | 60                   | "      | 5'-6"  | Vert. Handrail                                   | 324'-0"      |                |
| M101              | 8                    | "      | 3'-9"  | Transv. Sidewalk                                 | 330'-0"      |                |
| N101              | 9                    | "      | 2'-0"  | Vert. Curb & Transv. Coping                      | 180'-0"      |                |
| O101              | 88                   | "      | 3'-9"  | Vert. Coping                                     | 330'-0"      |                |
| P101              | 4                    | "      | 3'-0"  | Coping   | 12'-0"       |                |
| Q101              | 216                  | "      | 8'-6"  | 5'-0" Copings                                    | 1872'-0"     |                |
| R101              | 40                   | "      | 5'-3"  | Girders Mk-CG1                                   | 2100'-0"     |                |
| U101              | 4                    | "      | 4'-0"  | Coping   | 160'-0"      |                |
|                   | 6                    | "      | 23'-0" | Horiz. Mudwall                                   | 138'-0"      |                |
|                   | 120                  | "      | 22'-6" | Longit Slab & Sotek                              | 2700'-0"     |                |
|                   | 4                    | "      | 21'-6" | Longit Girder Mk-CG1                             | 84'-0"       |                |
|                   | 12                   | "      | 18'-9" | Horiz. Mudwall & Curtain Wall                    | 225'-0"      |                |
|                   | 6                    | "      | 15'-9" | Horiz. Curtain Wall                              | 94'-6"       |                |
|                   | 12                   | "      | 4'-0"  | Vertical Plaster                                 | 48'-0"       |                |
|                   | 16                   | "      | 2'-9"  | Vertical Mudwall                                 | 44'-0"       |                |
|                   | 60                   | "      | 2'-6"  | Vert. Mudwall & Curtain Wall                     | 150'-0"      |                |
|                   |                      |        |        | Total 1/2"                                       | 7720'-0"     | 4805#          |
|                   | 12                   | 3/8"   | 20'-0" | Horizontal Handrail                              | 800'-0"      |                |
|                   | 88                   | "      | 2'-9"  | Vert. Handrail, Vert. Handrail & Handrail Coping | 2424'-0"     |                |
|                   |                      |        |        | Total 3/8"                                       | 3924'-0"     | 392#           |
|                   |                      |        |        | <b>TOTAL STEEL</b>                               |              | <b>22,499#</b> |

| CONCRETE   |  |                 |
|--|--|-----------------|
| Class "F" - Center Constr. Jt. to Subk. Constr. Jt. (2 @ 45.3 Cu Yds.) |  | 90.6 Cu Yds.    |
| Subk. Constr. Jt. to Top Coping (2 @ 3.9 Cu Yds.)                      |  | 7.8 Cu Yds.     |
|  |  | Total Class "F" |
| Class "F" - Handrail (2 @ 3.3 Cu Yds.)                                 |  | 6.6 Cu Yds.     |

Note - All Dimensions on Details & Bending Diagrams for Reinforcing Bars are measured on Centerlines of Bars.

NOTES -  
Curvature of Handrail not shown. Lengths are measured on C of Handrail.  
See Summary Sheet for Bill of Splice Bars.

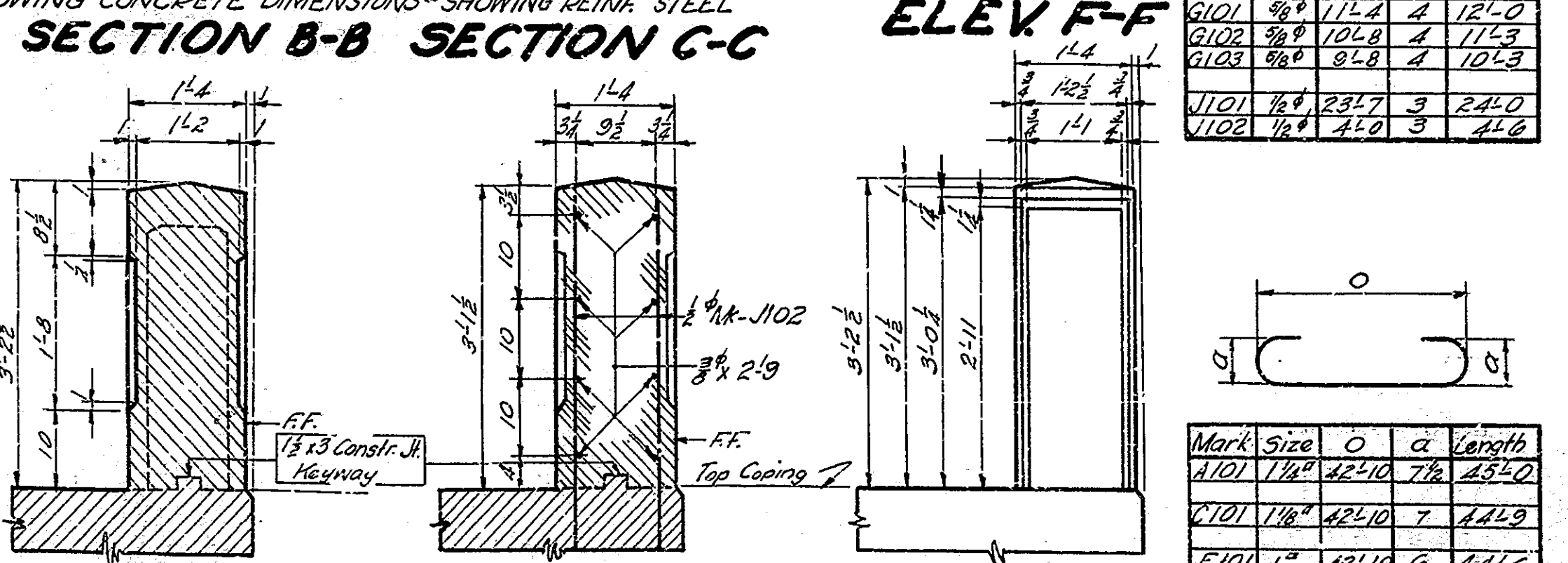
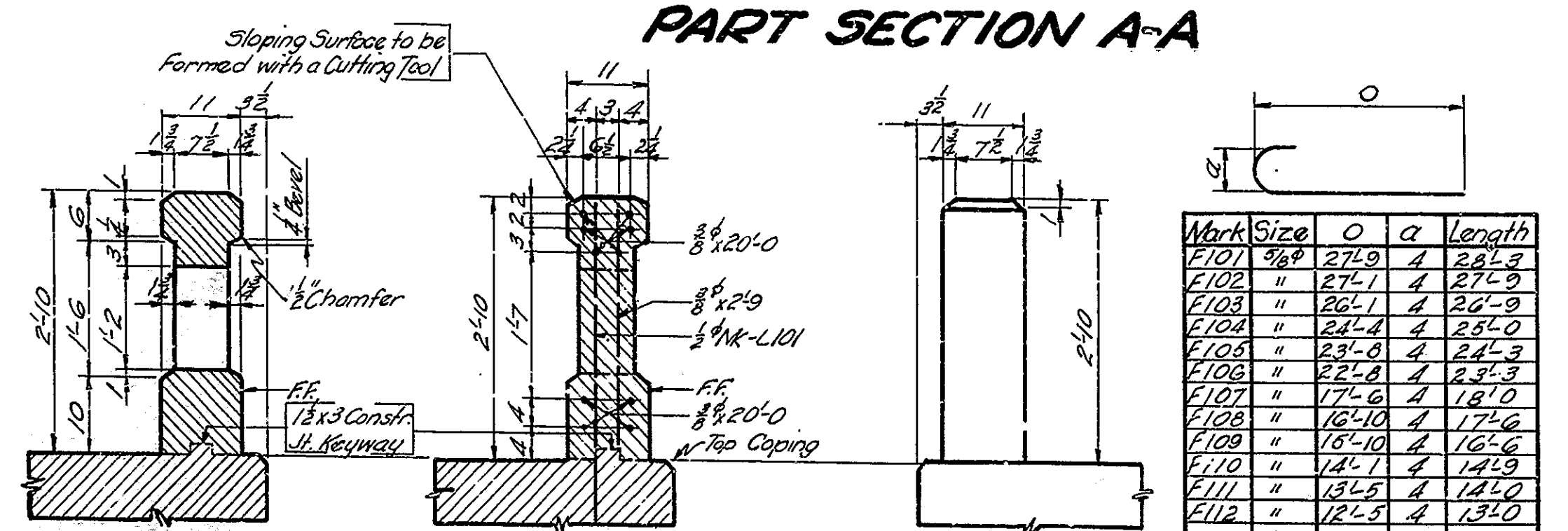
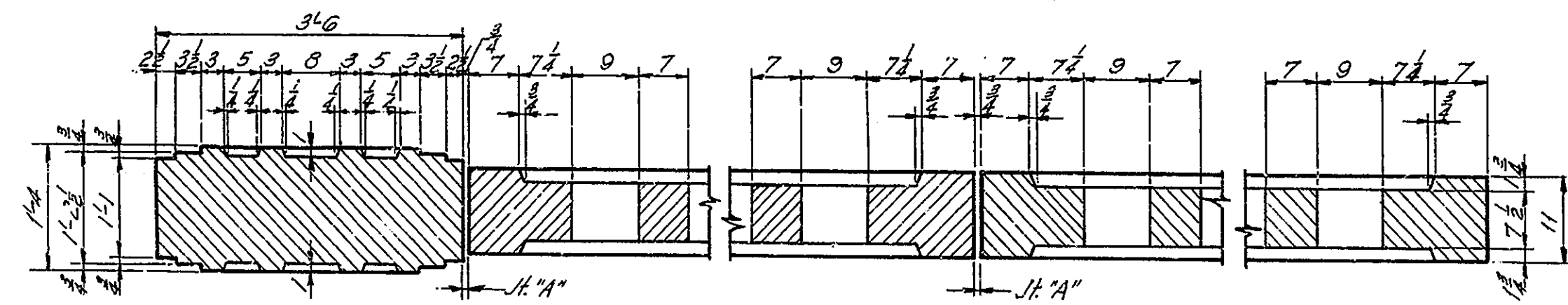
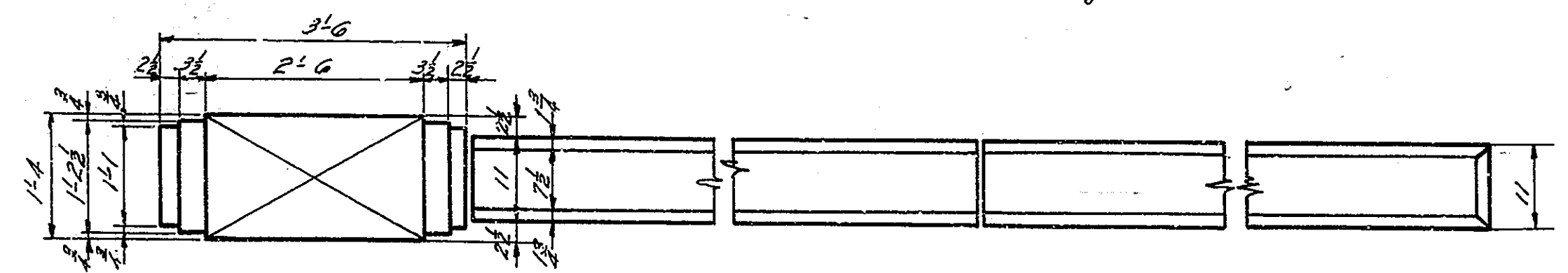
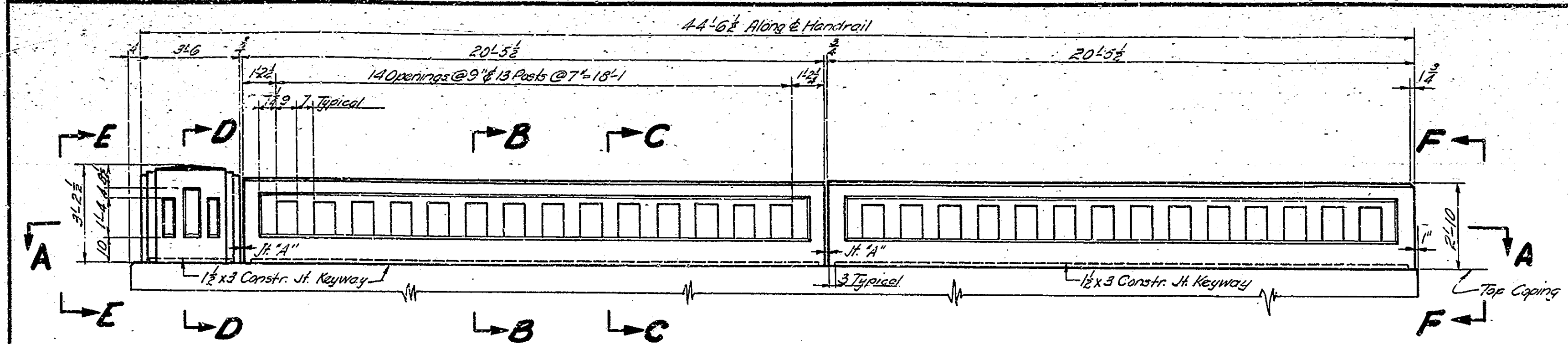
CONCRETE HANDRAIL DETAILS  
SPANS A & M BILL OF MATERIALS  
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: 3/4" = 1'-0" UNLESS NOTED AUGUST 1, 1950

RECOMMENDED FOR APPROVAL - *[Signature]*  
PROJECT: F-645 (3) STATION: 11+25.00

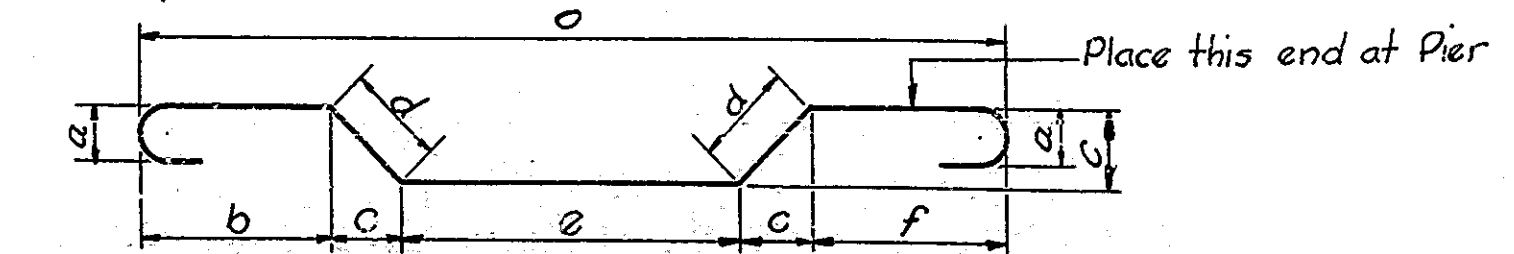
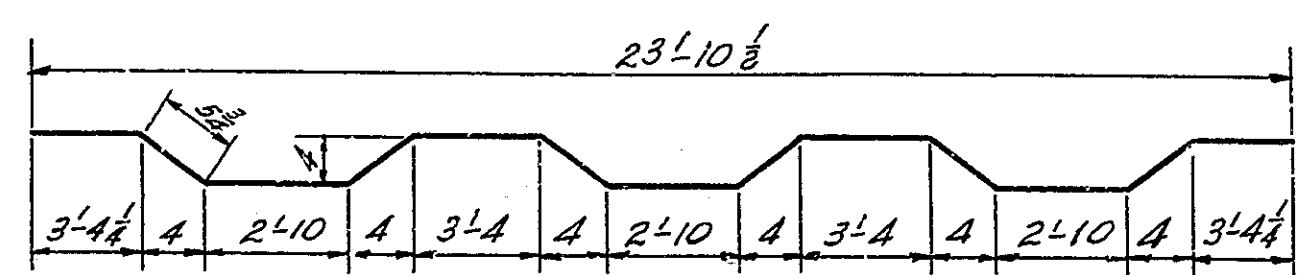
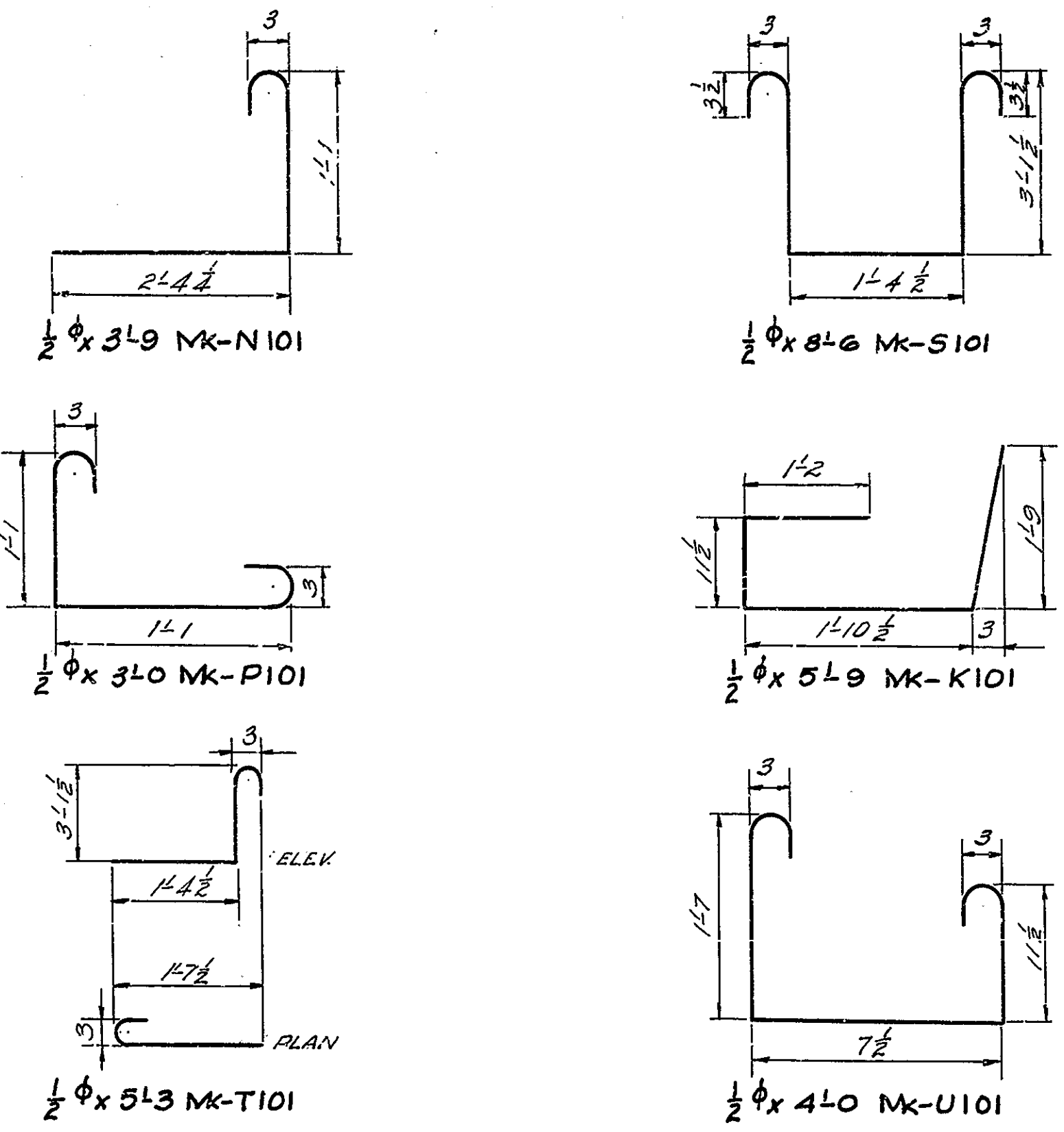
DRAWING: S14 OF 47

BRIDGE CONTRACT NO. 3289  
BRIDGE FILE F-30-A-3108



| Mark | Size | O     | a | Length |
|------|------|-------|---|--------|
| F101 | 3/8" | 27.9  | 4 | 28.3   |
| F102 | "    | 27.1  | 4 | 27.9   |
| F103 | "    | 26.1  | 4 | 26.9   |
| F104 | "    | 24.4  | 4 | 25.0   |
| F105 | "    | 23.8  | 4 | 24.3   |
| F106 | "    | 22.8  | 4 | 23.3   |
| F107 | "    | 17.6  | 4 | 18.0   |
| F108 | "    | 16.10 | 4 | 17.6   |
| F109 | "    | 15.10 | 4 | 16.6   |
| F110 | "    | 14.1  | 4 | 14.9   |
| F111 | "    | 13.5  | 4 | 14.0   |
| F112 | "    | 12.5  | 4 | 13.0   |
| G101 | 3/8" | 11.4  | 4 | 12.0   |
| G102 | 3/8" | 10.8  | 4 | 11.3   |
| G103 | 3/8" | 9.8   | 4 | 10.3   |
| J101 | 1/2" | 23.7  | 3 | 24.0   |
| J102 | 1/2" | 4.0   | 3 | 4.6    |

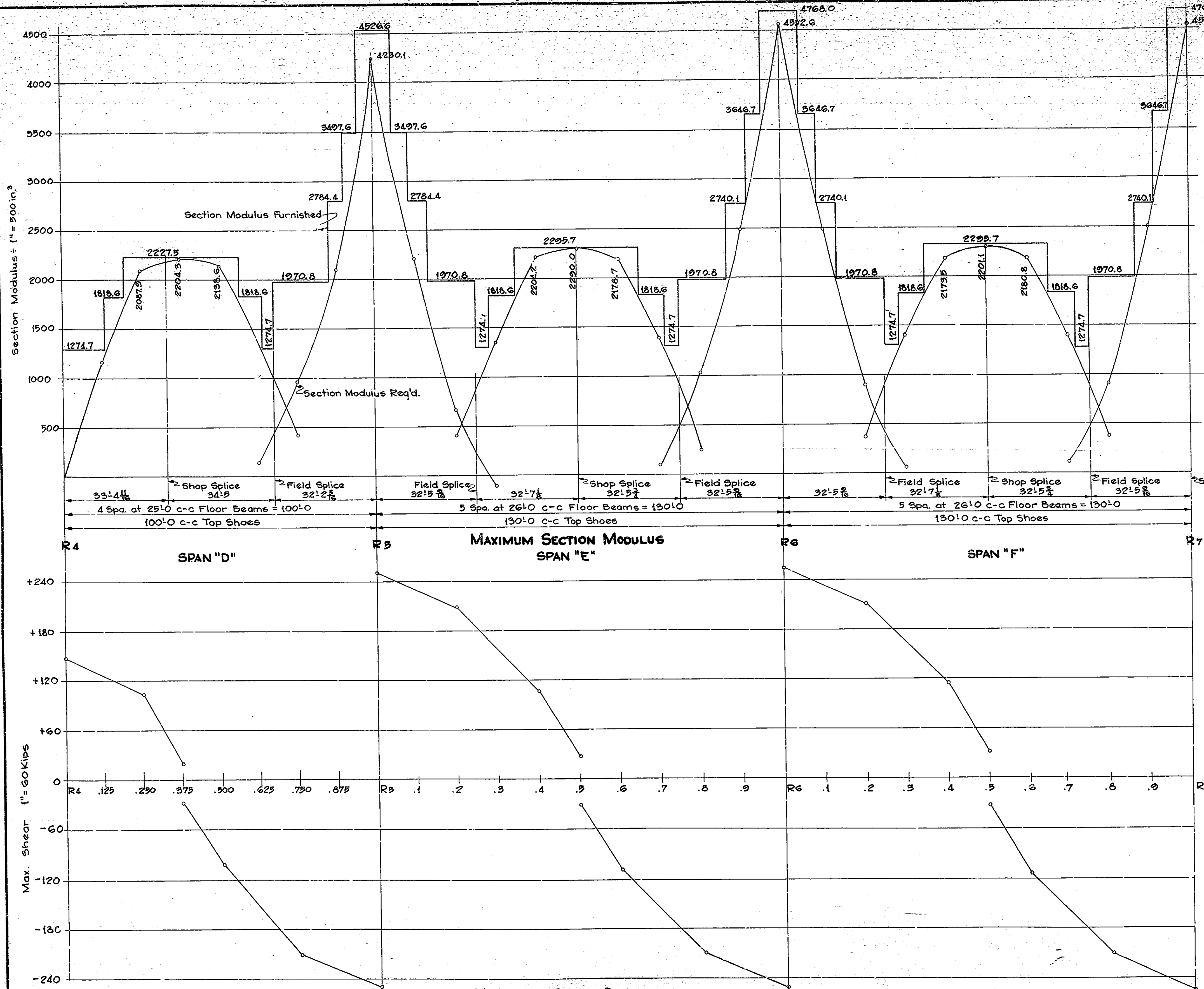
| Mark | Size   | O     | a     | Length |
|------|--------|-------|-------|--------|
| A101 | 1 1/2" | 42.10 | 7 1/2 | 45.0   |
| C101 | 1 1/2" | 42.10 | 7     | 44.9   |
| E101 | 1"     | 42.10 | 6     | 44.6   |
| H101 | 1/2"   | 22.1  | 3     | 22.9   |
| H102 | 1/2"   | 1.1   | 3     | 2.0    |



| Mark | Size   | O     | a | b   | c   | d    | e    | f   | Length |
|------|--------|-------|---|-----|-----|------|------|-----|--------|
| B101 | 1 1/2" | 41.10 | 7 | 1.2 | 2.8 | 3.4  | 3.7  | 0.8 | 46.0   |
| B102 | 1 1/2" | 41.10 | 7 | 3.2 | 2.8 | 3.4  | 3.7  | 0.8 | 46.0   |
| D101 | 1"     | 41.11 | 6 | 1.2 | 2.9 | 3.10 | 3.47 | 0.6 | 44.0   |
| D102 | 1"     | 41.11 | 6 | 3.6 | 2.9 | 3.10 | 3.47 | 0.6 | 44.0   |

DESIGNED: CKT  
DRAWN: J.M. B...  
TRACED: E.A. L...

| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | F-645(a)    | 1951        | 21        | 65           |



**SIMPLE BEAM SPANS B, C, K & L**

|              | MOMENT (K-IPS) |                |               | REACTIONS (K-IPS) |              |              |
|--------------|----------------|----------------|---------------|-------------------|--------------|--------------|
|              | Int. Bm.       | N.O.S Bm.      | O.S. Bm.      | Int. Bm.          | N.O.S Bm.    | O.S. Bm.     |
| Dead Load    | 393.45         | 380.78         | 555.06        | 24.21             | 23.43        | 34.16        |
| Live Load    | 470.23         | 594.90         | 127.97        | 33.57             | 28.98        | 8.81         |
| Impact       | 123.68         | 103.07         | 33.66         | 2.29              | 7.61         | 2.92         |
| <b>Total</b> | <b>987.41</b>  | <b>1077.75</b> | <b>716.69</b> | <b>60.07</b>      | <b>60.02</b> | <b>45.89</b> |

1/2 36WF14 = 663.6 in.<sup>3</sup> 1/2 36WF170 = 579.1 in.<sup>3</sup> 1/2 36WF150 = 502.9 in.<sup>3</sup>

**GIRDER SPANS**

| Stringers    | MOMENT (K-IPS) 25' SPANS |               | MOMENT (K-IPS) 26' SPANS |               | REACTIONS (K-IPS) |
|--------------|--------------------------|---------------|--------------------------|---------------|-------------------|
|              | Int. Stringer            | O.S. Stringer | Int. Stringer            | O.S. Stringer |                   |
| Dead Load    | 54.36                    | 33.98         | 59.24                    | 58.81         | 9.113             |
| Live Load    | 124.300                  | 103.60        | 133.00                   | 111.00        | 30.203            |
| Impact       | 37.30                    | 31.08         | 39.90                    | 33.30         | 9.060             |
| <b>Total</b> | <b>216.96</b>            | <b>168.66</b> | <b>232.140</b>           | <b>203.10</b> | <b>48.376</b>     |

1/2 21WF73 = 150.7 in.<sup>3</sup> 1/2 21WF68 = 139.9 in.<sup>3</sup> 1/2 21WF62 = 126.4 in.<sup>3</sup>

**Fl. Beams**

|              | 26'-0" Panel   |                   | End Floor Beam |                   |
|--------------|----------------|-------------------|----------------|-------------------|
|              | MOMENT (K-IPS) | REACTIONS (K-IPS) | MOMENT (K-IPS) | REACTIONS (K-IPS) |
| Dead Load    | 158.42         | 38.13             | 83.19          |                   |
| Live Load    | 357.43         | 58.87             | 326.40         |                   |
| Impact       | 107.23         | 17.66             | 97.92          |                   |
| <b>Total</b> | <b>623.08</b>  | <b>114.66</b>     | <b>507.51</b>  |                   |

1/2 Floor Beam = 495.0 in.<sup>3</sup>

**DATA USED FOR DESIGN & DETAILS**

- LIVE LOADS: - H20-S16 loading with impact and distribution of loads in accordance with 1949 AASHTO Specifications.
- DEAD LOAD: - Actual weight plus 15 pounds per sq. ft. of roadway to provide for future wearing surface.
- SLAB: - Designed with impact, and with 3/4 inch monolithic wearing surface.
- UNIT STRESSES: -
  - Structural Steel Bending (Tension) 18,000#/sq. in.
  - Shear on Rivets 13,500#/sq. in.
  - Structural Steel Bearing (Including Rivets) 27,000#/sq. in.
  - Bearing Steel on Concrete (Including Overturning and Eccentric Loading) 1,000#/sq. in.
  - Reinforcing Steel (Tension) 20,000#/sq. in.
  - Concrete (Compression) 1,000#/sq. in.

**DESIGN DATA**  
**STATE HIGHWAY COMMISSION OF INDIANA**

SCALE: HORIZ. 1"=5'-0" AUGUST 1, 1950

RECOMMENDED FOR APPROVAL:

*J. S. Smythe*  
ENGINEER OF BRIDGE DESIGN

PROJECT: F-645(a)

STATION: 11+25

DRAWING: 915 OF 47

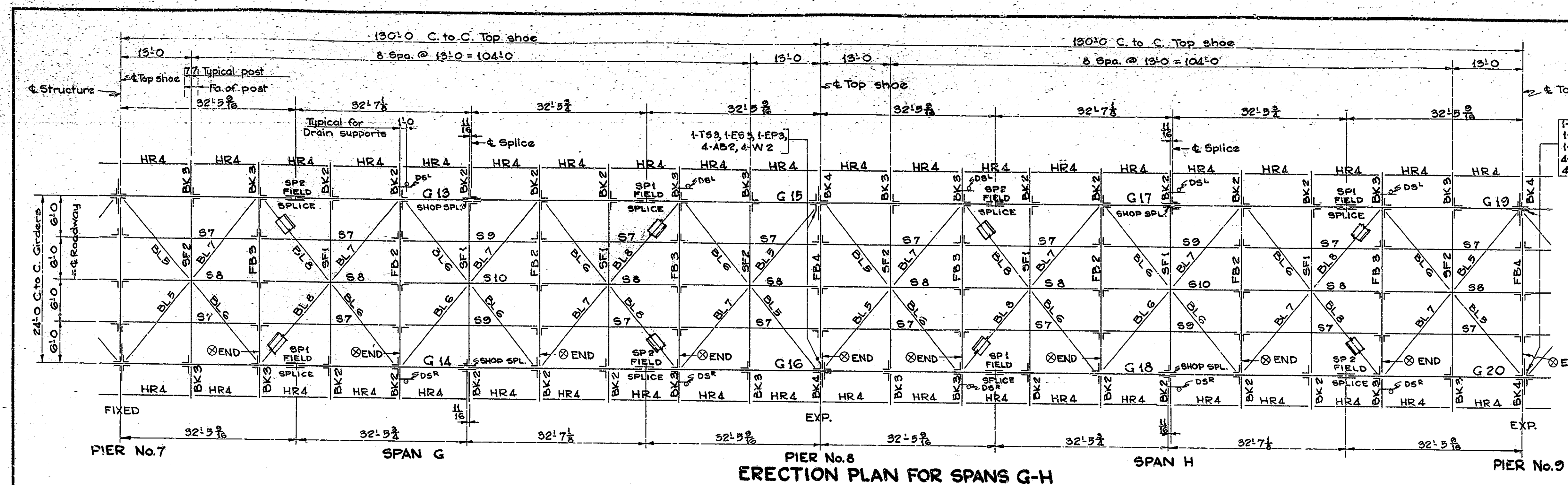
BRIDGE CONTRACT NO. 3289

BRIDGE FILE: 39-A-3108

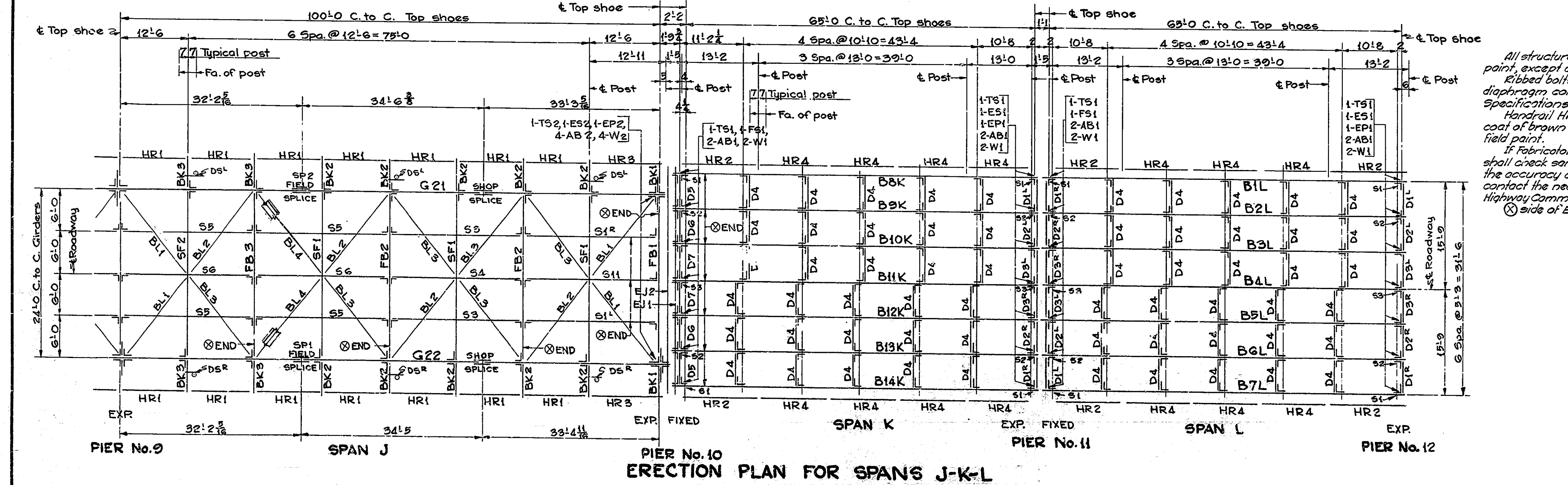
DESIGNED BY: W.B.S.-C-42 C.K.D. C.R.S. 8-5-49  
DRAWN BY: W.B.S. 10-5-42 C.K.D. W.E.G. 1-4-50  
TRACED BY: W.B.S. 1-16-50 R.W.B. 1-16-50



| BRIDGES OVER 20' SPAN |       |             |             |              |
|-----------------------|-------|-------------|-------------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | TOTAL SHEETS |
| 4                     | IND.  | F-645(5)    | 1951        | 23           |
|                       |       |             |             | G5           |



ERECTION PLAN FOR SPANS G-H



ERECTION PLAN FOR SPANS J-K-L

**GENERAL NOTES**

All structural steel to be painted one coat of shop paint, except anchor bolts.

Ribbed bolts may be substituted for field rivets in diaphragm connections in spans B, C, K and L. See Specifications.

Handrail HR1 to HR4 inclusive, to be painted one coat of brown field paint and two coats of black field paint.

If Fabricator uses these drawings for shop plans he shall check same and assume full responsibility for the accuracy of the details. The Fabricator shall contact the nearest District Engineer of the State Highway Commission of Indiana in regard to inspection.

⊗ side of EPI and FS1 to be turned toward ⑆ of span.

**FIELD REAMING & RIVETING (GIRDER SPANS)**

The following procedure shall be used in field reaming and riveting of the continuous girder spans.

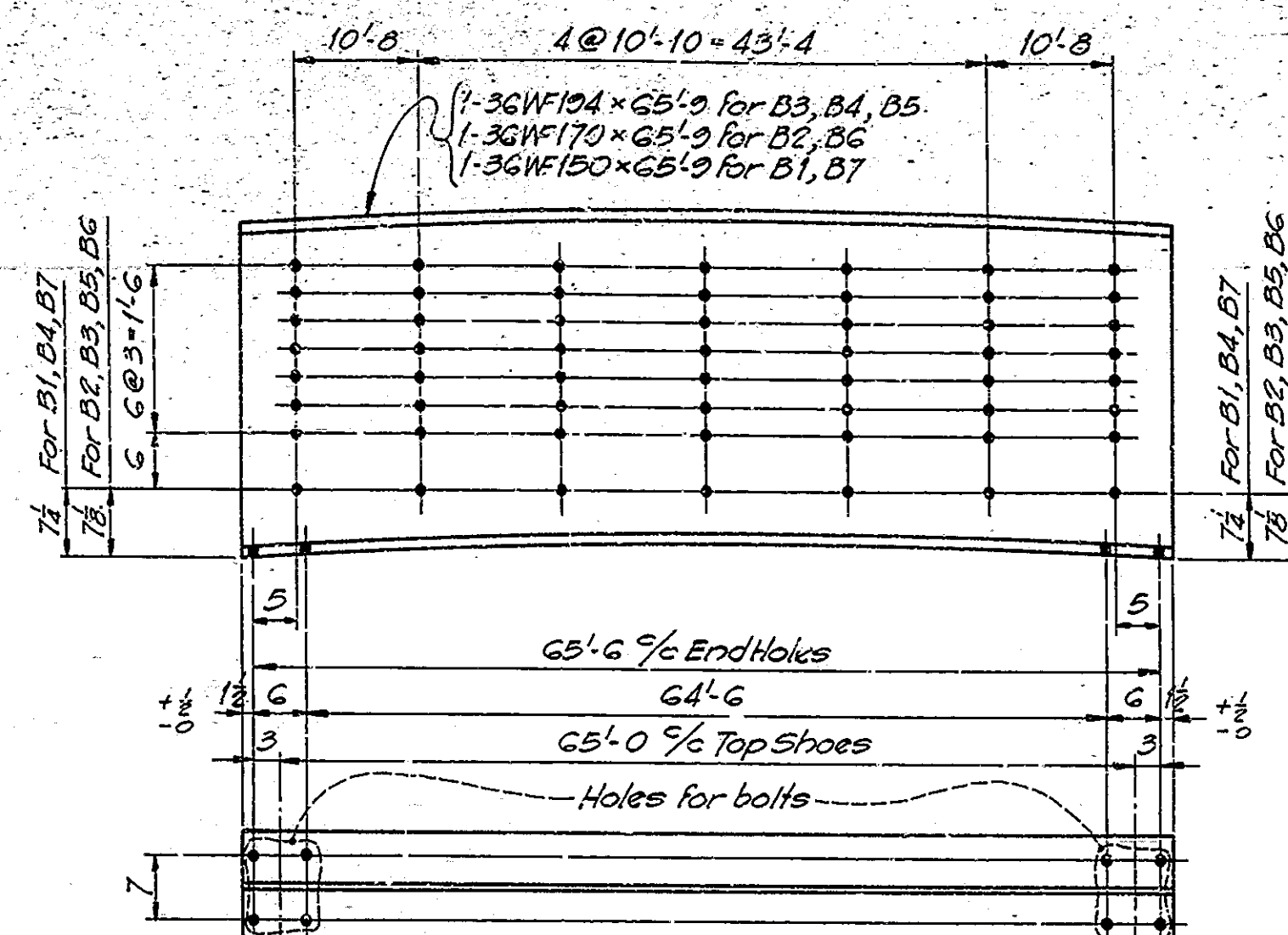
1- No reaming or riveting shall be done until all structural steel in spans D, E, F, G, H and J has been erected and adjusted to elevation. (For elevations, see Drawing 54)

2- No reaming or riveting shall be done until Girders are supported on their respective shoes at piers and carrying structural steel weight only.

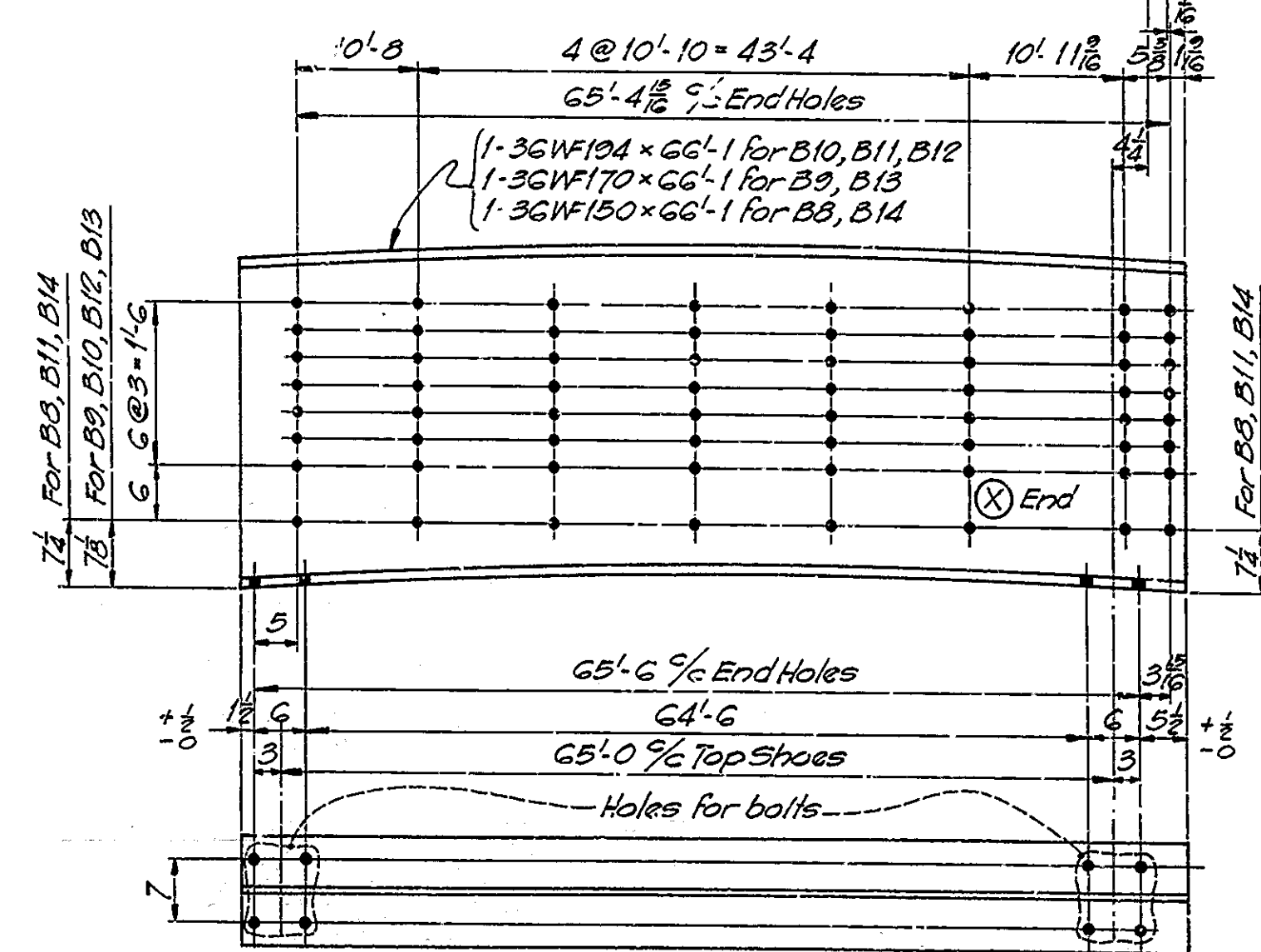
ERECTION PLAN - SPANS G, H, J, K & L  
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: NONE  
RECOMMENDED FOR APPROVAL: *J. W. Smith*  
PROJECT: F-645(5) STATION: 11+25  
DRAWING: -517 OF 47  
BRIDGE CONTRACT NO. 3289  
AUGUST 1 1950

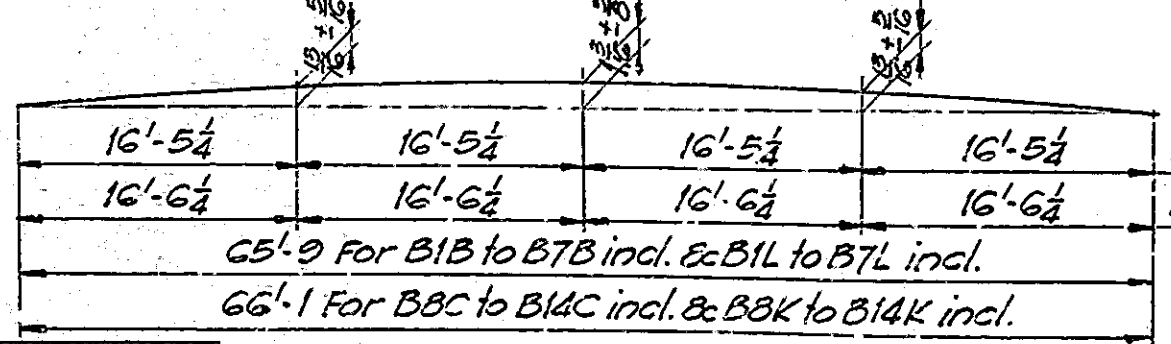
DESIGNED: WLB-28-49, RWB-7-25-49  
DRAWN: LWS-12-7-49, COK-LET-12-15-49  
TRACED: MWS-1-12-50, COK-1-12-50



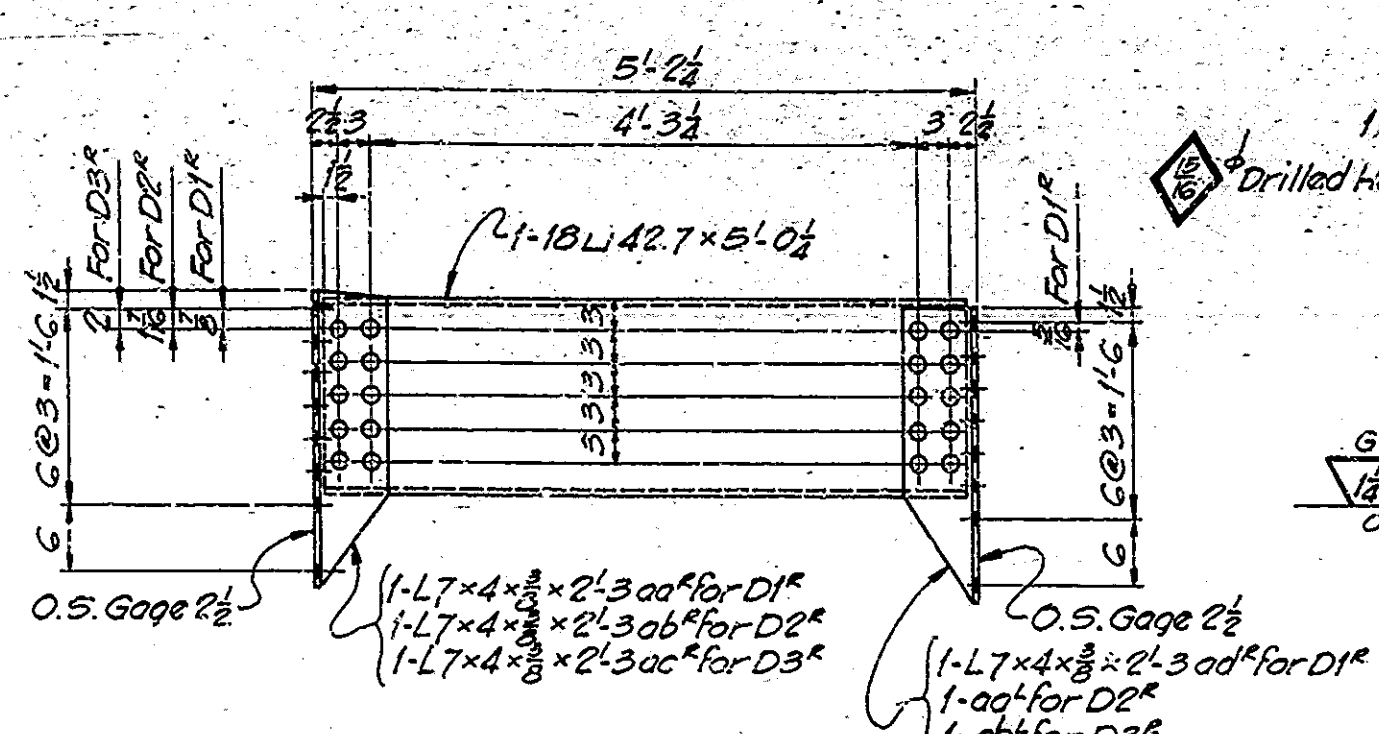
BEAMS B1B, B1L, B7B, B7L ALIKE  
BEAMS B2B, B6B, B2L, B6L ALIKE  
BEAMS B3B, B5B, B3L, B5L ALIKE  
BEAMS B4B, B4L ALIKE



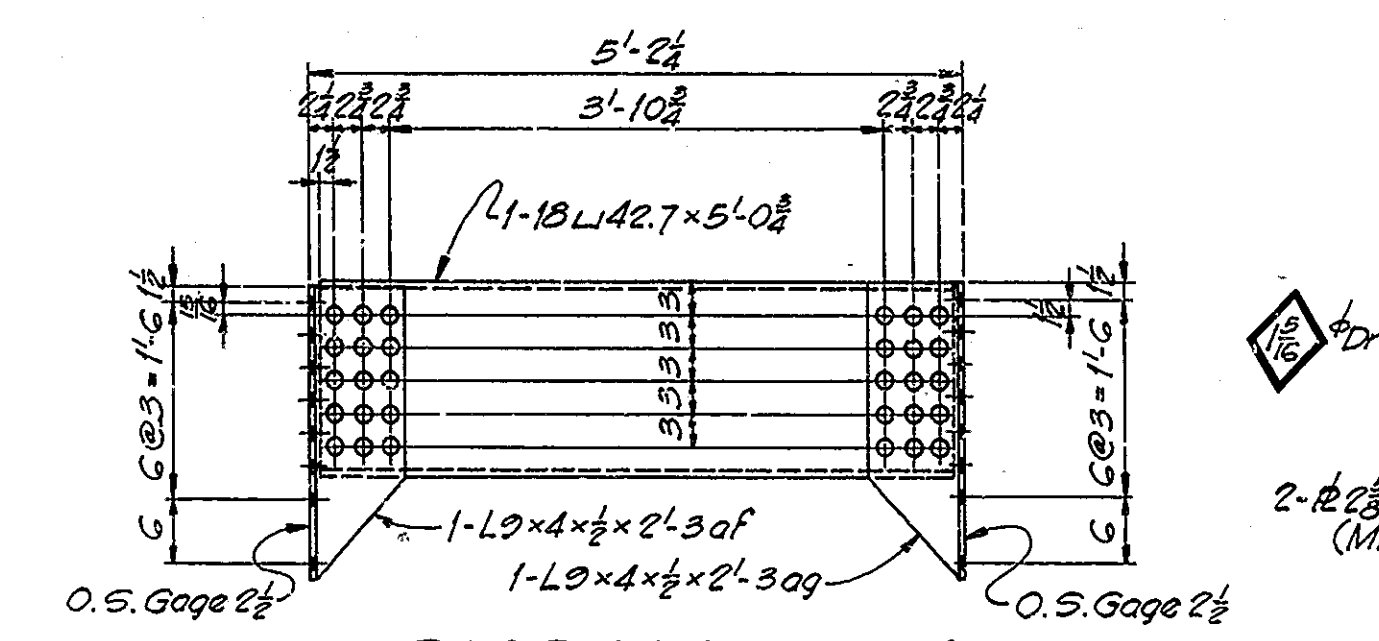
BEAMS B8C, B14C, B8K, B14K ALIKE  
BEAMS B9C, B13C, B9K, B13K ALIKE  
BEAMS B11C, B11K ALIKE



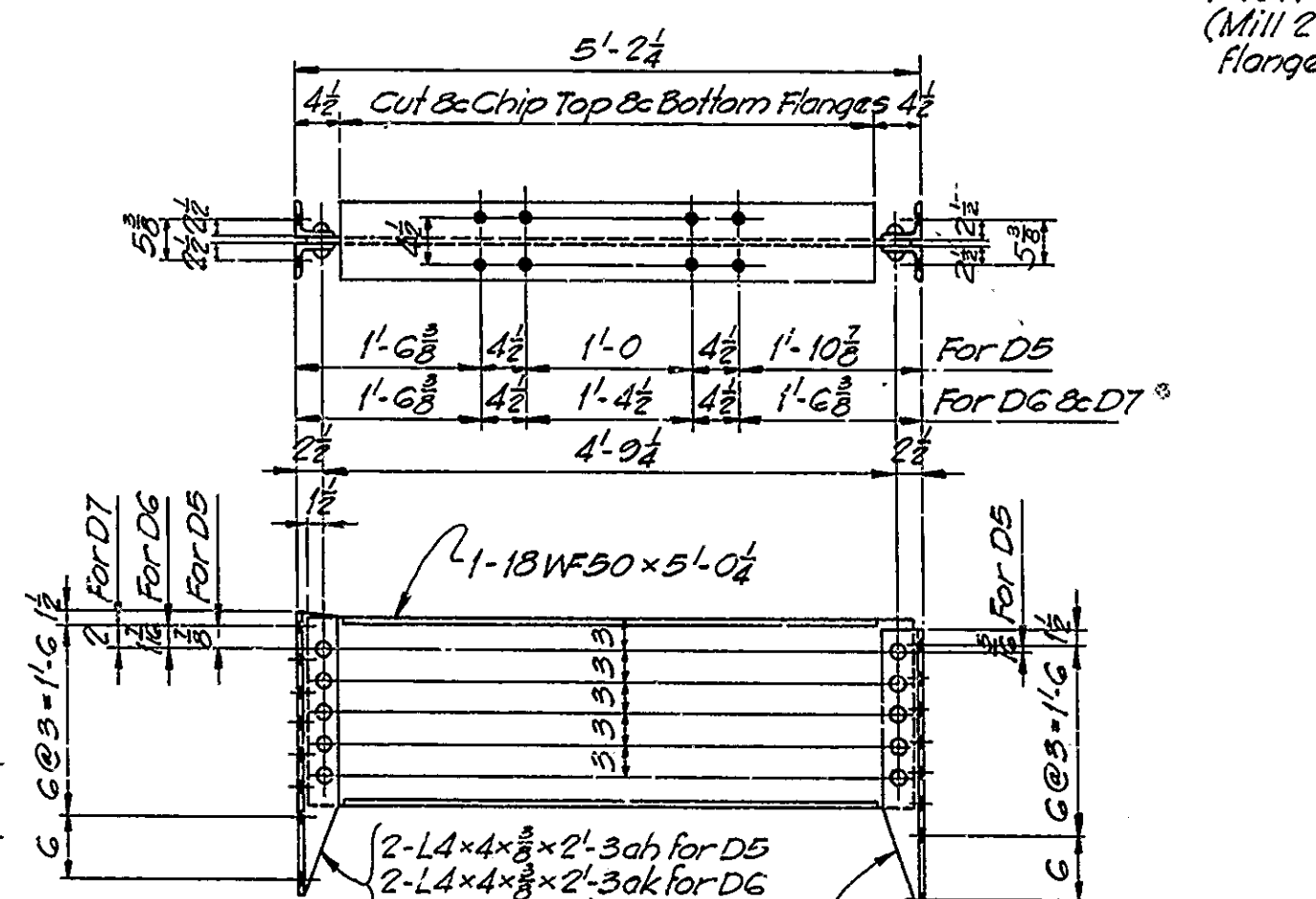
CAMBER DIAGRAM



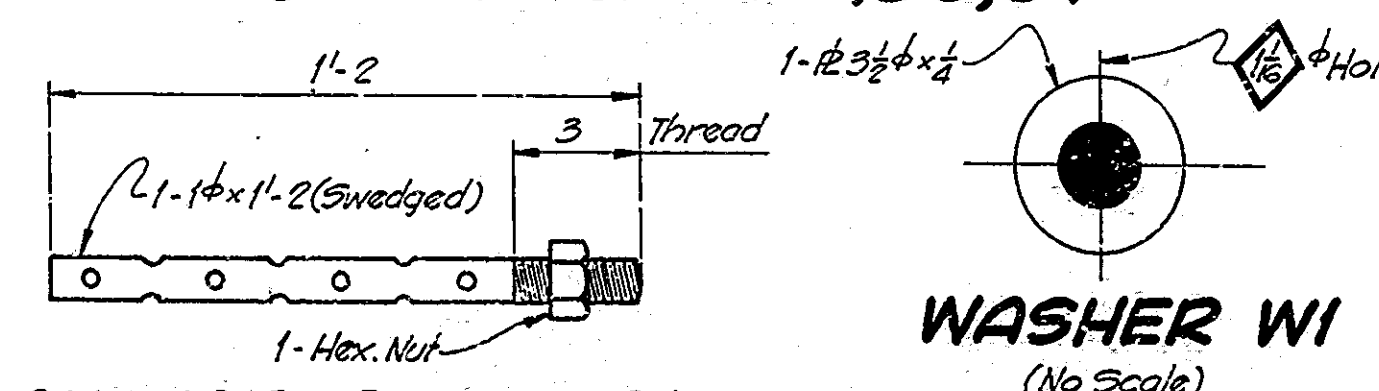
DIAPHRAGMS D1, D2, D3



DIAPHRAGM D4

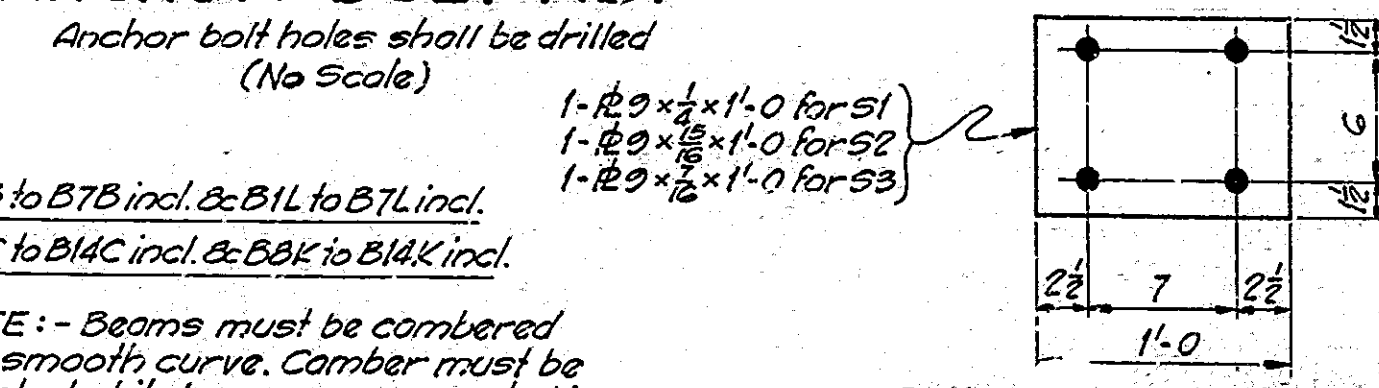


DIAPHRAGMS D5, D6, D7

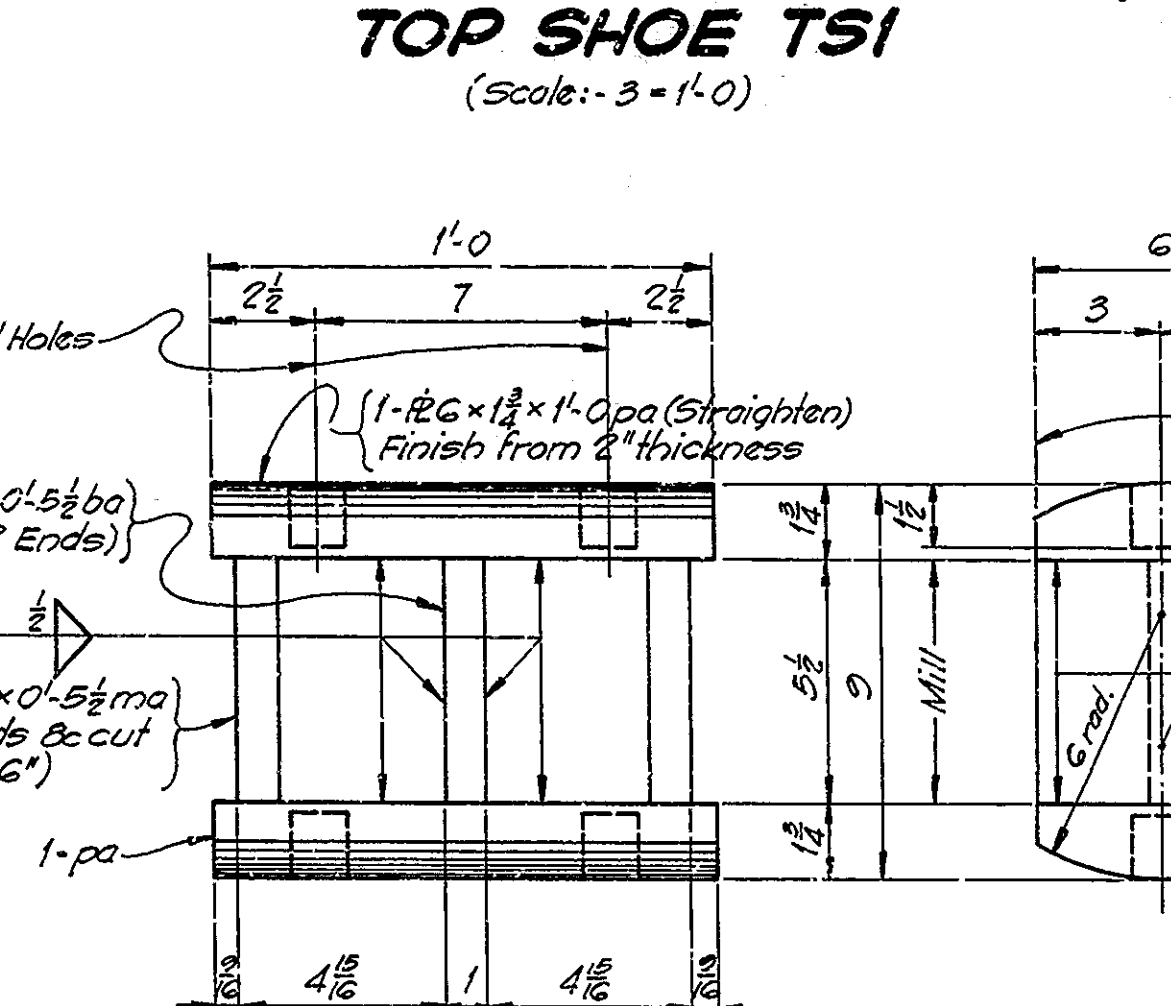
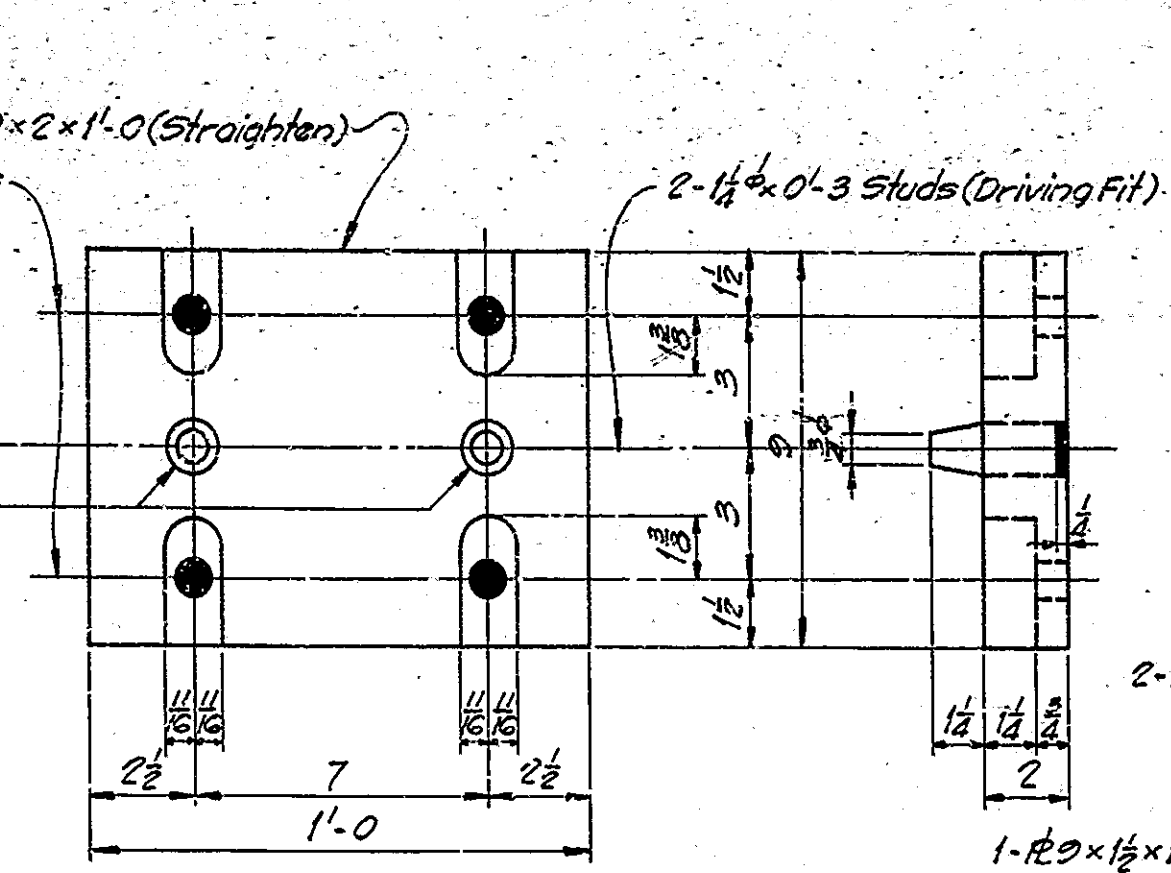


ANCHOR BOLT ABI

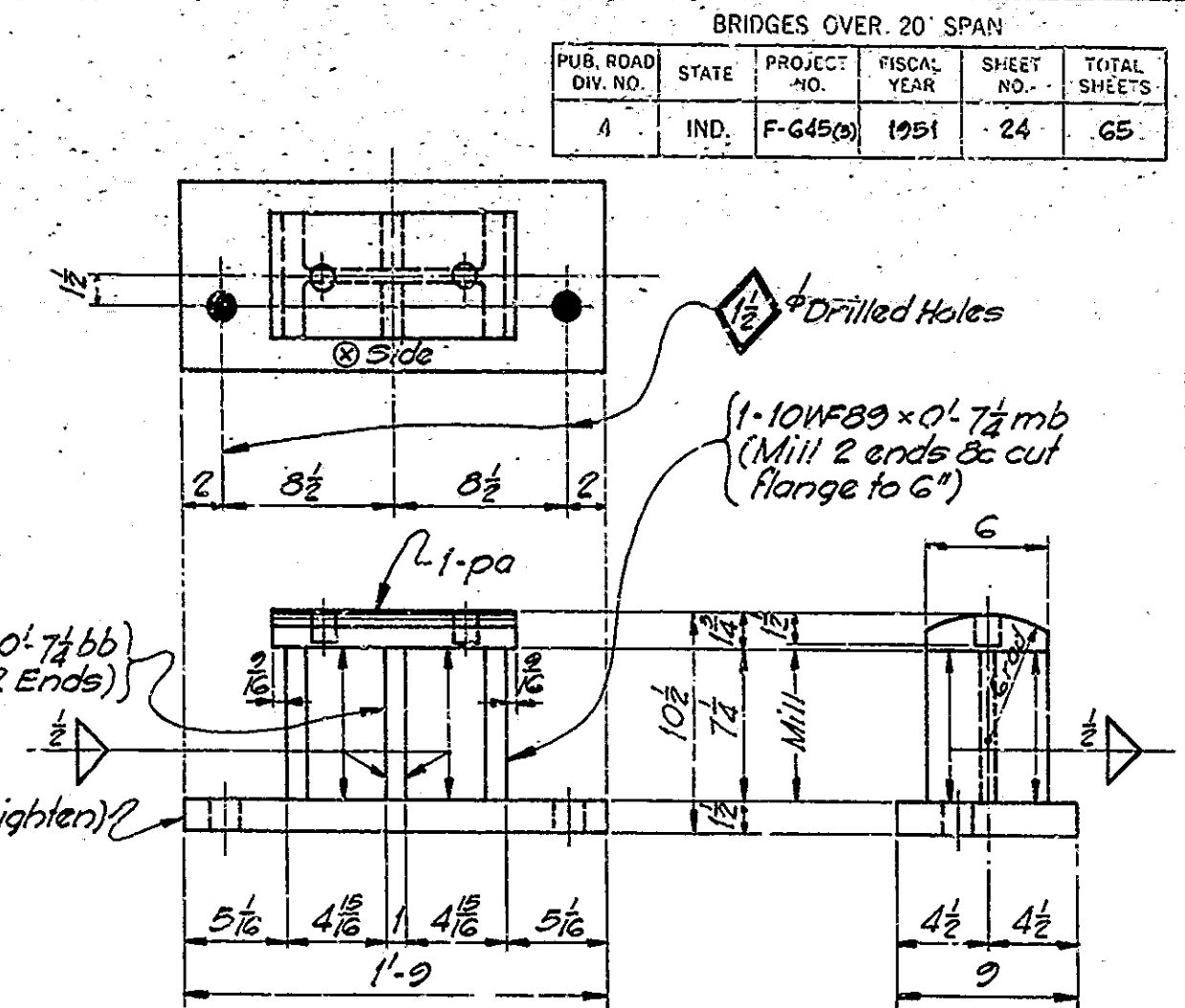
WASHER WI (No Scale)



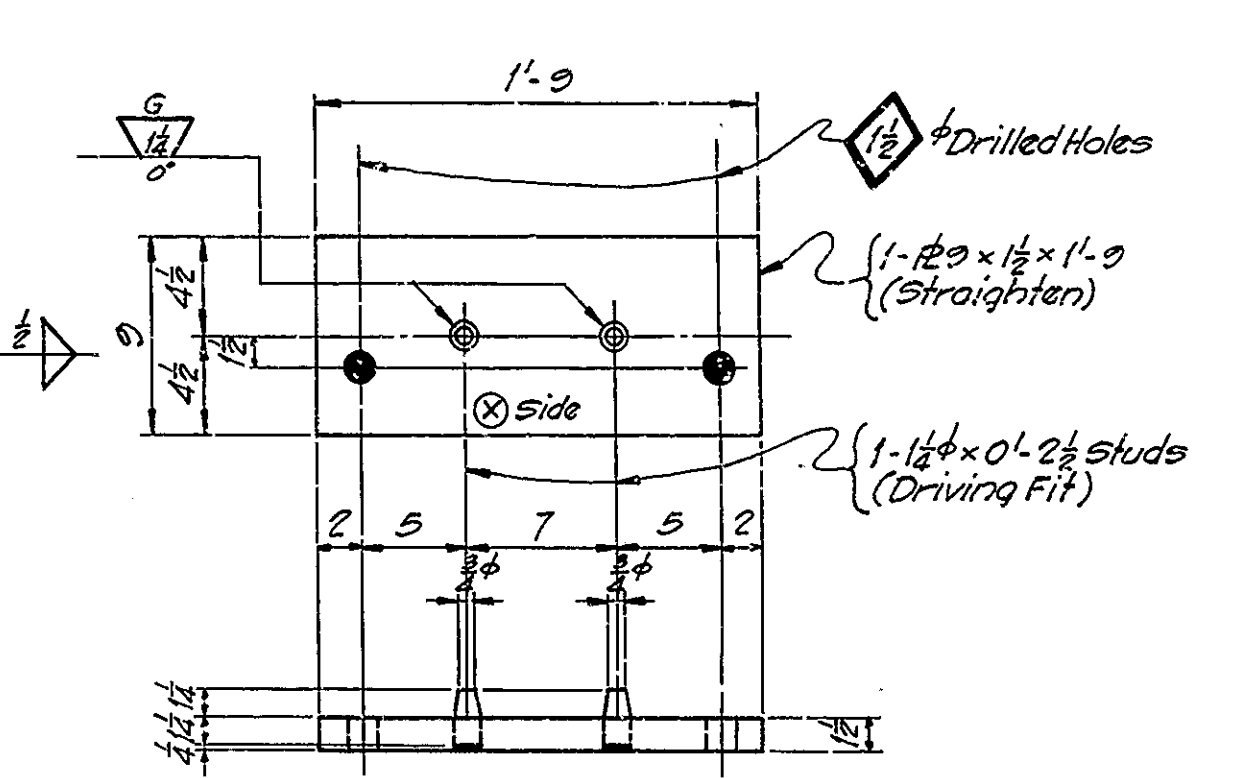
NOTE: - Beams must be cambered to a smooth curve. Camber must be checked while beams are supported in such a way as to have no bending moment in direction of camber.



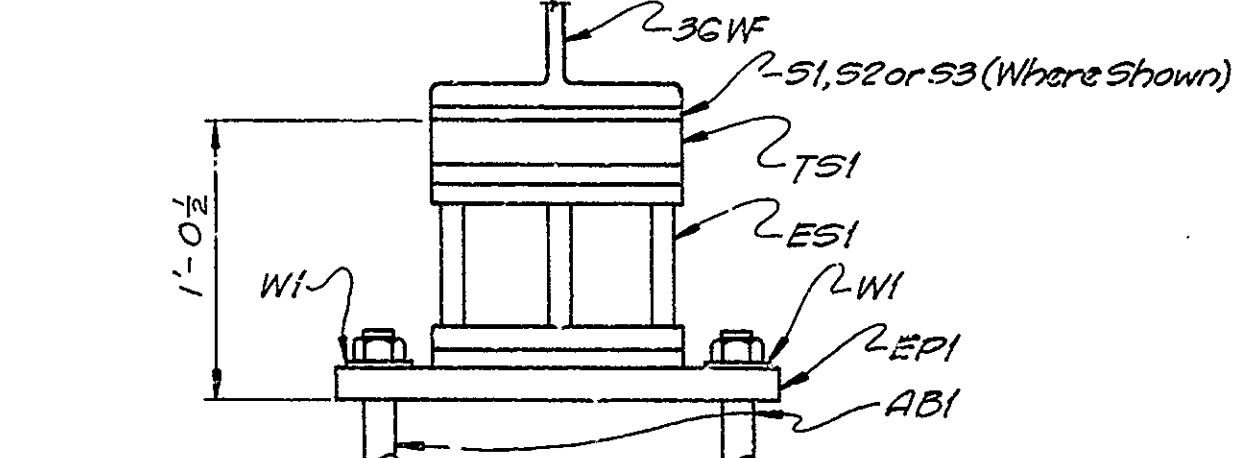
EXPANSION SHOE ESI (Scale: 3 = 1'-0)



FIXED SHOE FSI (Scale: 1/2" = 1'-0)



EXPANSION PLATE EPI (Scale: 1/2" = 1'-0)



NOTES: -  
Rivets 3/8"  
Open Holes 1/2" unless noted  
See Drwg. S11 for notes regarding use of these drawings for shop plans and regarding inspection.  
Gage lines on beam webs to be straight.

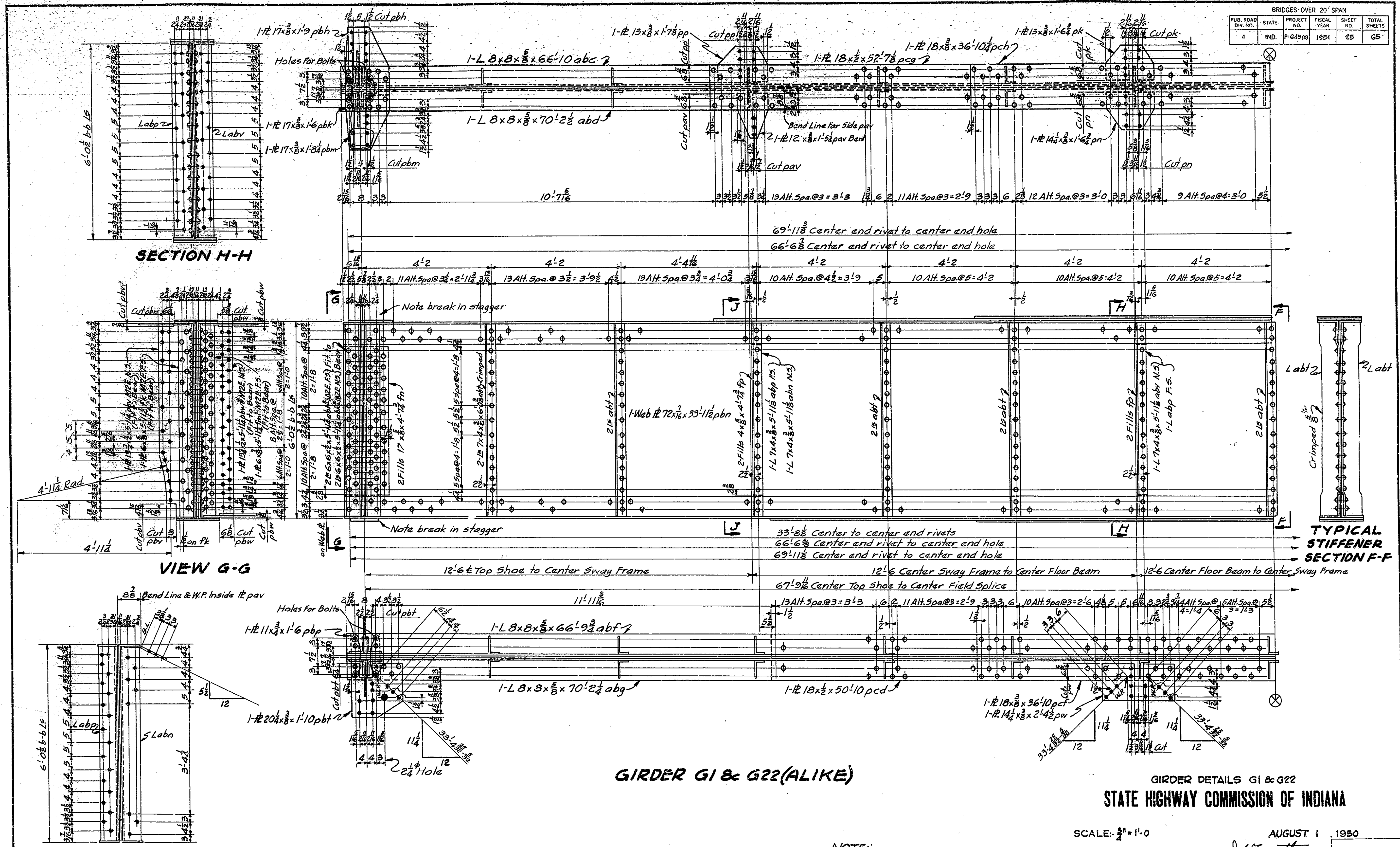
| REQUIRED |             |      |
|----------|-------------|------|
| No.      | Description | Mark |
| One      | Beam        | B1B  |
| One      | "           | B2B  |
| One      | "           | B3B  |
| One      | "           | B4B  |
| One      | "           | B5B  |
| One      | "           | B6B  |
| One      | "           | B7B  |
| One      | "           | B8C  |
| One      | "           | B9C  |
| One      | "           | B10C |
| One      | "           | B11C |
| One      | "           | B12C |
| One      | "           | B13C |
| One      | "           | B14C |
| One      | "           | B8K  |
| One      | "           | B9K  |
| One      | "           | B10K |
| One      | "           | B11K |
| One      | "           | B12K |
| One      | "           | B13K |
| One      | "           | B14K |
| One      | "           | B1L  |
| One      | "           | B2L  |
| One      | "           | B3L  |

| REQUIRED |             |      |
|----------|-------------|------|
| No.      | Description | Mark |
| One      | Beam        | B4L  |
| One      | "           | B5L  |
| One      | "           | B6L  |
| One      | "           | B7L  |
| 6        | Diaphragm   | D1*  |
| 6        | "           | D1*  |
| 6        | "           | D2*  |
| 6        | "           | D2*  |
| 6        | "           | D3*  |
| 6        | "           | D3*  |
| 120      | "           | D4   |
| 4        | "           | D5   |
| 4        | "           | D6   |
| 4        | "           | D7   |
| 56       | Top Shoe    | TSI  |
| 28       | Exp. Shoe   | ESI  |
| 28       | Exp. Plate  | EPI  |
| 28       | Fixed Shoe  | FSI  |
| 16       | Shim        | S1   |
| 16       | "           | S2   |
| 8        | "           | S3   |
| 112      | Anchor Bolt | ABI  |
| 112      | Washer      | WI   |

STEEL DETAILS - SPANS B, C, K & L  
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: 3/4" = 1'-0 UNLESS NOTED  
AUGUST: 1950  
RECOMMENDED FOR APPROVAL: [Signature]  
PROJECT: F-645(3) STATION: 11+25  
DRAWING: 918 OF 47  
BRIDGE CONTRACT NO. 3289

| BRIDGES OVER 20' SPAN |       |             |             |              |
|-----------------------|-------|-------------|-------------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | TOTAL SHEETS |
| 4                     | IND.  | F-645(b)    | 1951        | 25           |
|                       |       |             |             | 65           |



**GIRDER G1 & G22 (ALIKE)**

GIRDER DETAILS G1 & G22  
**STATE HIGHWAY COMMISSION OF INDIANA**

SCALE: 3/4" = 1'-0"      AUGUST 1, 1950

RECOMMENDED FOR APPROVAL: *J. M. Smythe*  
CHIEF ENGINEER

PROJECT: F-645(b)      STATION: 11+25

DRAWING: 519 OF 47

BRIDGE CONTRACT NO. 3289

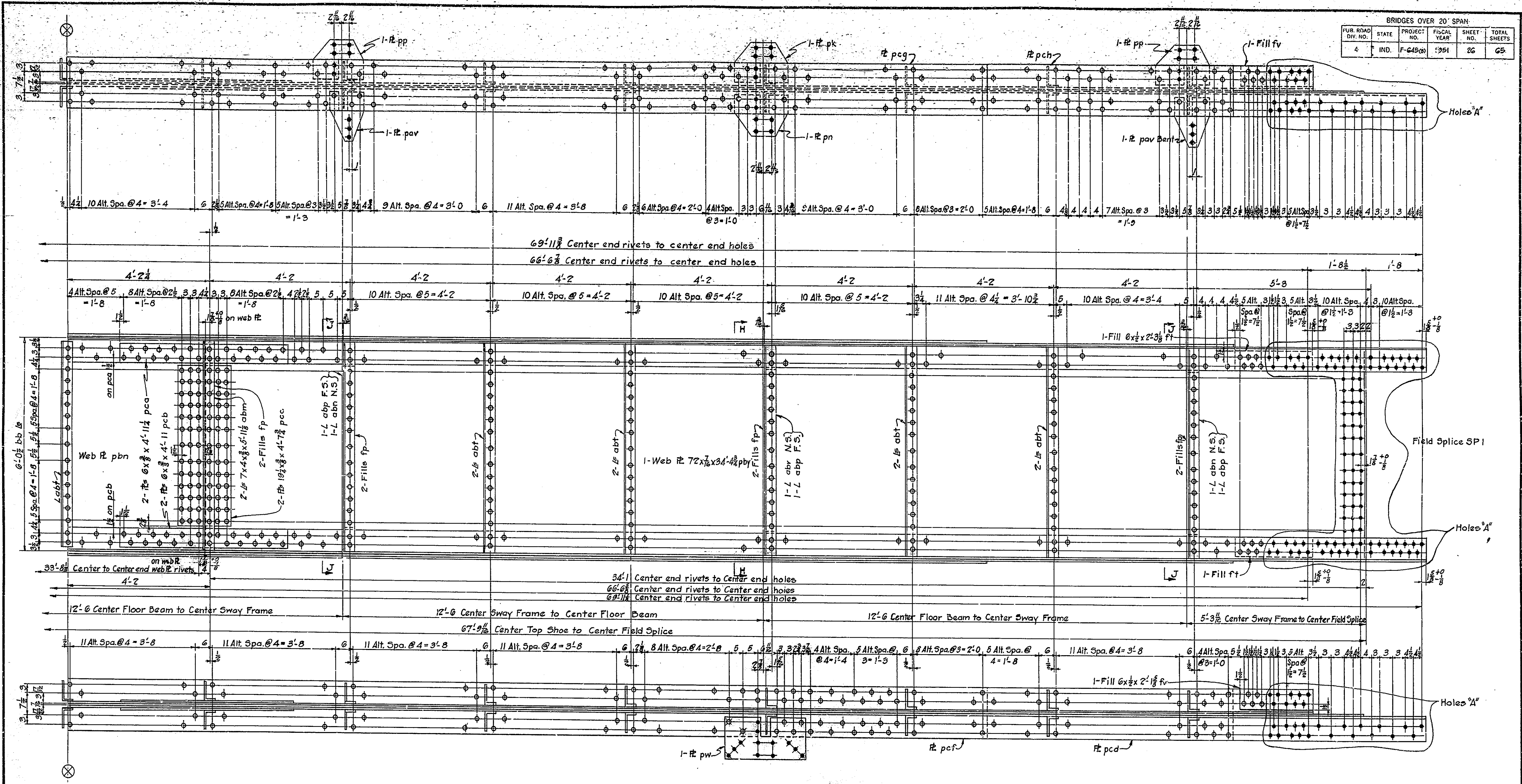
BRIDGE FILE: 36-A-5108

NOTE: Work this Drwg. with Drwg. 520

DESIGNED: W.L.P. 7-25-49, R.M.B. 7-25-49  
 DRAWN: A.T. 11-16-49, C.K.O. W.L.P. 1-16-50  
 TRACED: J.T.B. 2-2-50, C.K.O. R.M.B. 2-10-50

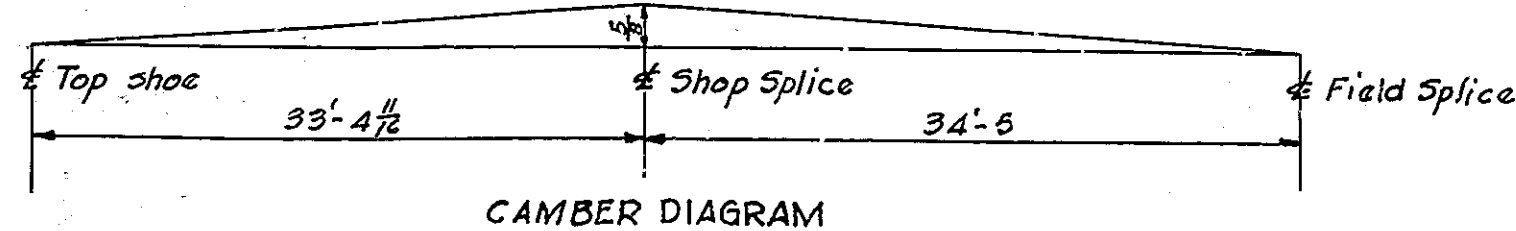


| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| IND. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | F-645(9)    | 1951        | 26        | 65           |



**GIRDER G1 & G22 (Alike)**

**NOTES:-**  
 Rivets 3/4"  
 Open Holes 1/2" unless noted  
 Holes 1/2" for girder field splice to be subpunched or subdrilled in the shop and reamed to 1/2" in the field.  
 See Drawing S11 for note regarding field reaming and riveting for girder splice detail, see Drawing S11.  
 Girders shall be checked for camber while supported in such a way as to have no bending moment in the direction of camber.  
 See Drawing S11 for Section F-F, H-H and J-J.  
 See Drawing S11 for "General Notes".  
 Work this Drawing with Drawing S11.



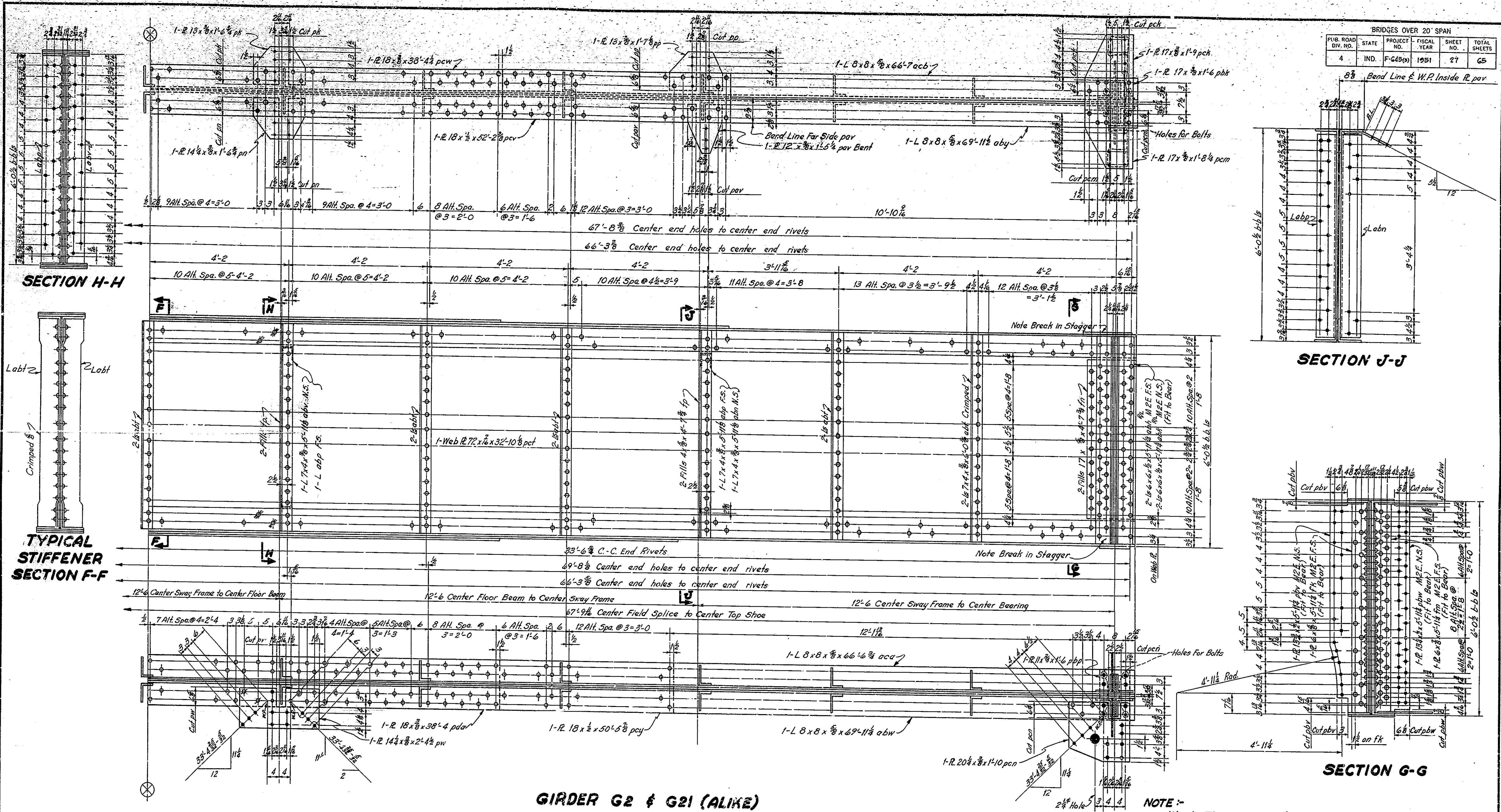
| REQUIRED   |     |
|------------|-----|
| ONE Girder | G1  |
| ONE Girder | G22 |

**GIRDER DETAILS G1 & G22  
 STATE HIGHWAY COMMISSION OF INDIANA**

SCALE: 3/4" = 1'-0"  
 AUGUST 1, 1950  
 RECOMMENDED FOR APPROVAL: *J. S. Smythe*  
 PROJECT: F-645(9) STATION: 11+25  
 DRAWING: 520 OF 47  
 BRIDGE CONTRACT NO. 3239  
 BRIDGE FILE: 30-A-3108

DESIGNED: W.L.P. 7-25-49 C.W.D. R.W.B. 7-25-49  
 DRAWN: J.A.L. 11-14-49 C.W.D. W.L.P. 1-16-50  
 TRACED: R.D.B. 2-14-50 C.W.D. R.W.B. 2-14-50

| BRIDGES OVER 20' SPAN |       |             |             |              |
|-----------------------|-------|-------------|-------------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | TOTAL SHEETS |
| 4                     | IND.  | F-645(1)    | 1951        | 27           |
|                       |       |             |             | 65           |



GIRDER G2 & G21 (ALIKE)

NOTE:-  
Work This Drwg. With Drwg. S22

GIRDER DETAILS G2 & G21  
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: 3/4" = 1'-0"      AUGUST 1, 1950

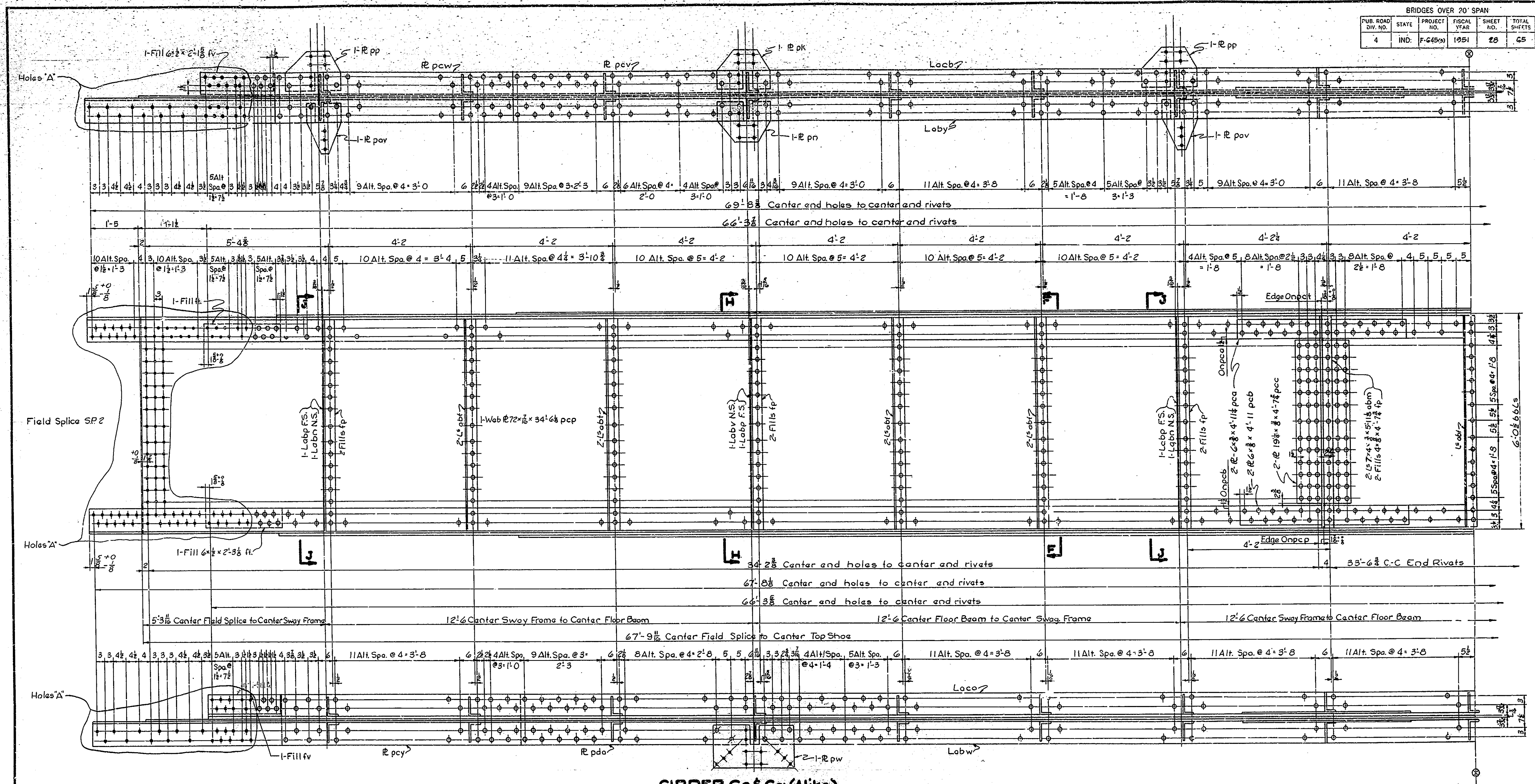
RECOMMENDED FOR APPROVAL: *[Signature]*  
ENGINEER OF BRIDGE DESIGN

PROJECT: F-645(1)      STATION: 11+25

DRAWING: S21 OF 47  
BRIDGE CONTRACT NO. 3289

DESIGNED W.L.P. 7-22-49 C.K.D. R.M.R. 7-22-49  
DRAWN W.L.P. 11-22-49 C.K.D. W.L.P. 1-20-50  
TRACED R.M.R. 2-12-50 C.K.D. R.M.R. 2-17-50

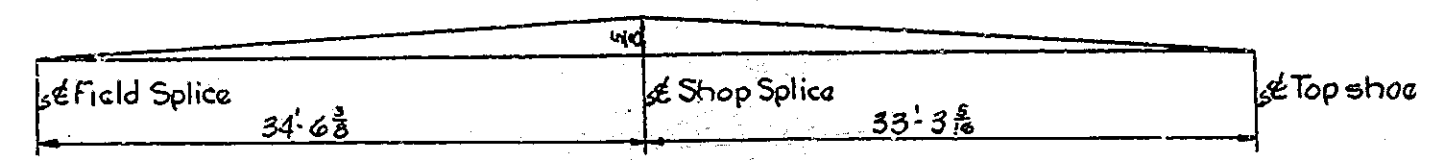
| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | F-645(a)    | 1951        | 28        | 65           |



**GIRDER G2 & G21 (Alike)**

| REQUIRED   |     |
|------------|-----|
| ONE GIRDER | G2  |
| ONE GIRDER | G21 |

**NOTES:-**  
 Rivets 3/4"  
 Open Holes 1/4" unless noted  
 Holes 1/4" for girder field splices to be subpunched or subdrilled 1/8" in the shop and reamed to 1/4" in the field.  
 See Drawing S11 for note regarding field reaming and riveting. For girder splice detail, see Drawing S21.  
 Girder shall be checked for camber while supported in such a way as to have no bending moment in the direction of camber.  
 See Drawing S11 for General Notes.  
 See Drawing S21 for Sections F-F, G-G, H-H and J-J.  
 Work this Drawing with Drawing S21.

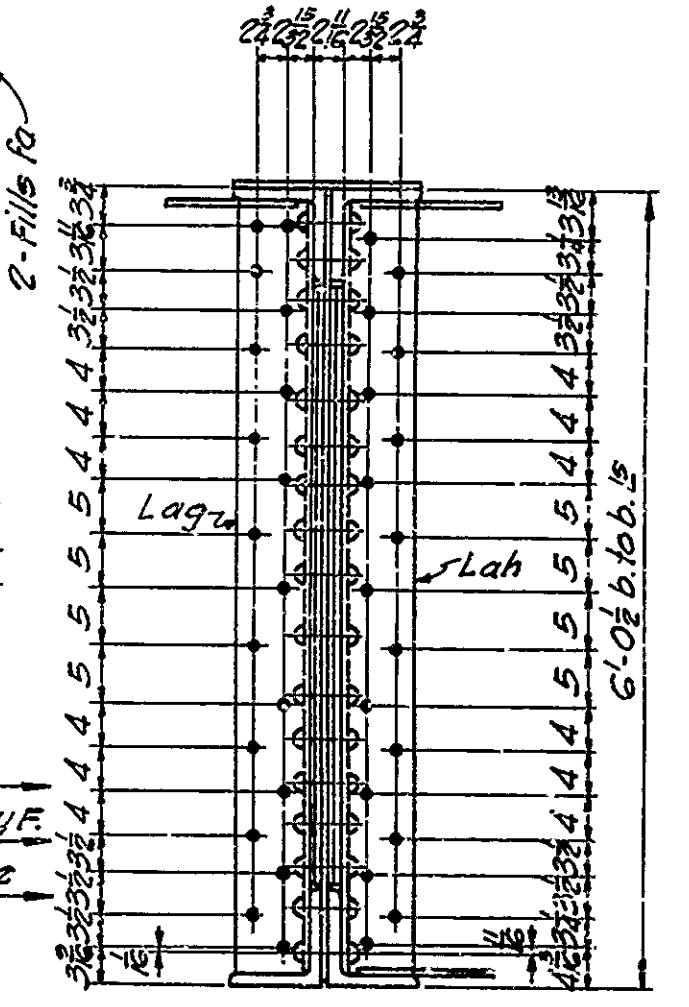
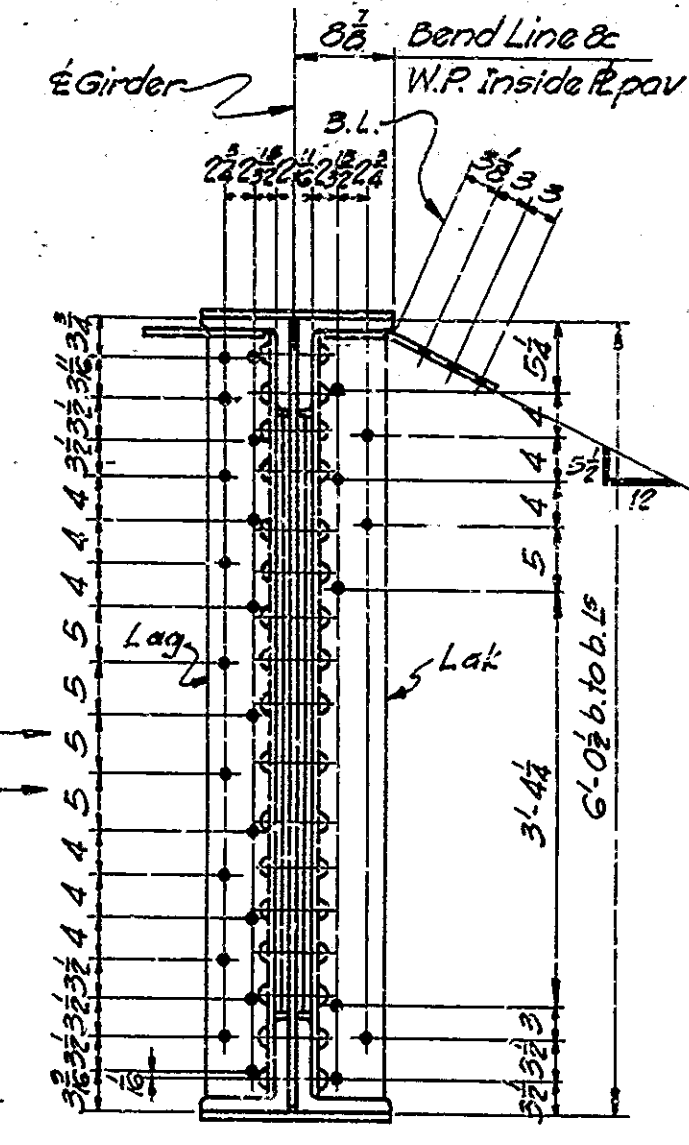
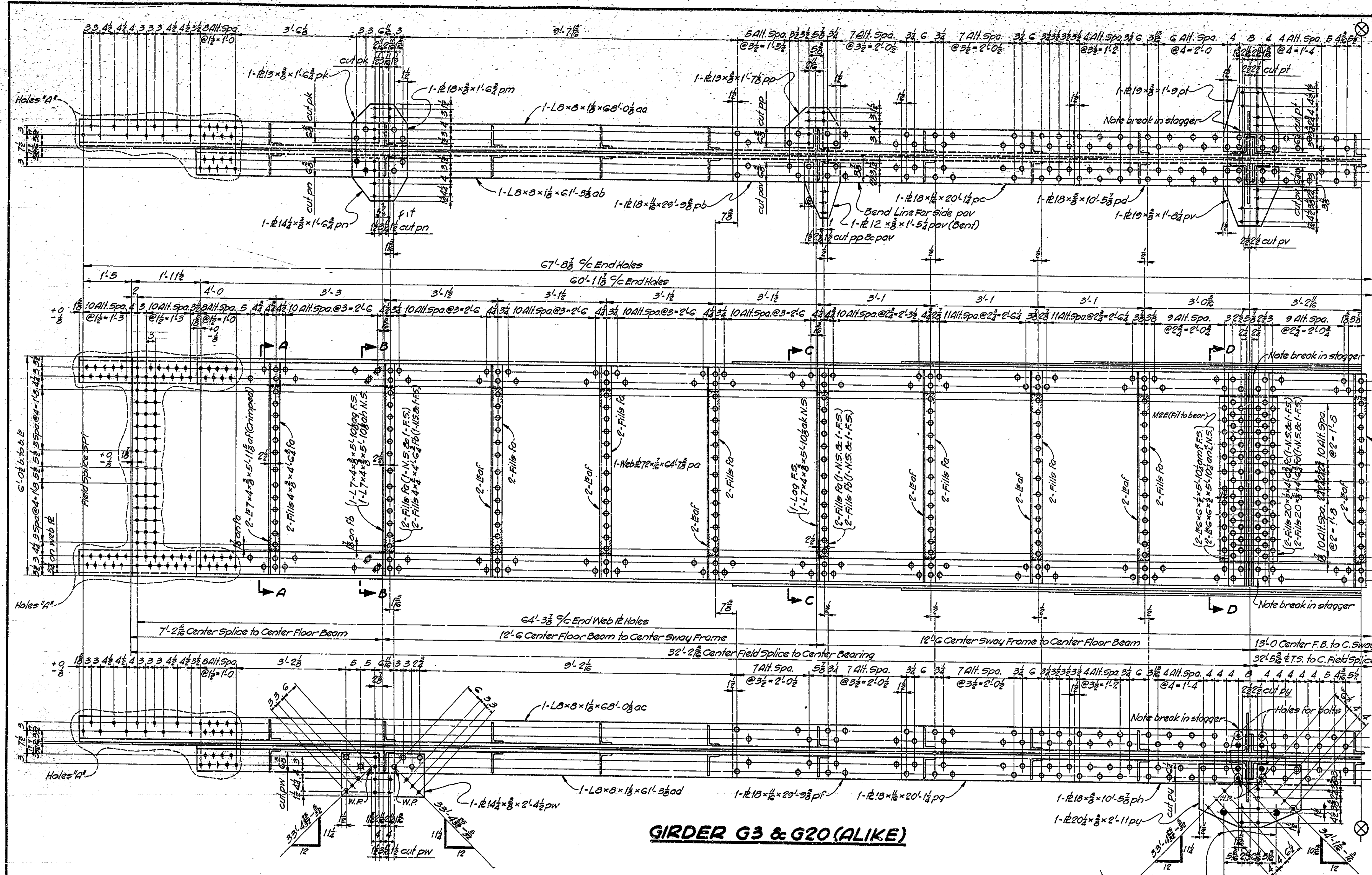


**CAMBER DIAGRAM**

**GIRDER DETAILS G2 & G21  
 STATE HIGHWAY COMMISSION OF INDIANA**

SCALE: 3/4" = 1'-0"  
 RECOMMENDED FOR APPROVAL: *J. M. Smythe*  
 PROJECT: F-645(a) STATION: 11+25  
 DRAWING: 522 OF 47  
 BRIDGE CONTRACT NO. 3289  
 BRIDGE FILE: 39-A-3108  
 AUGUST 1, 1950

| BRIDGES OVER 20' SPAN |       |             |             |              |
|-----------------------|-------|-------------|-------------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO.    |
| 4                     | IND.  | F-645(3)    | 1951        | 29           |
|                       |       |             |             | TOTAL SHEETS |
|                       |       |             |             | 65           |



**GIRDER G3 & G20 (ALIKE)**

**GIRDER DETAILS G3 & G20  
STATE HIGHWAY COMMISSION OF INDIA**

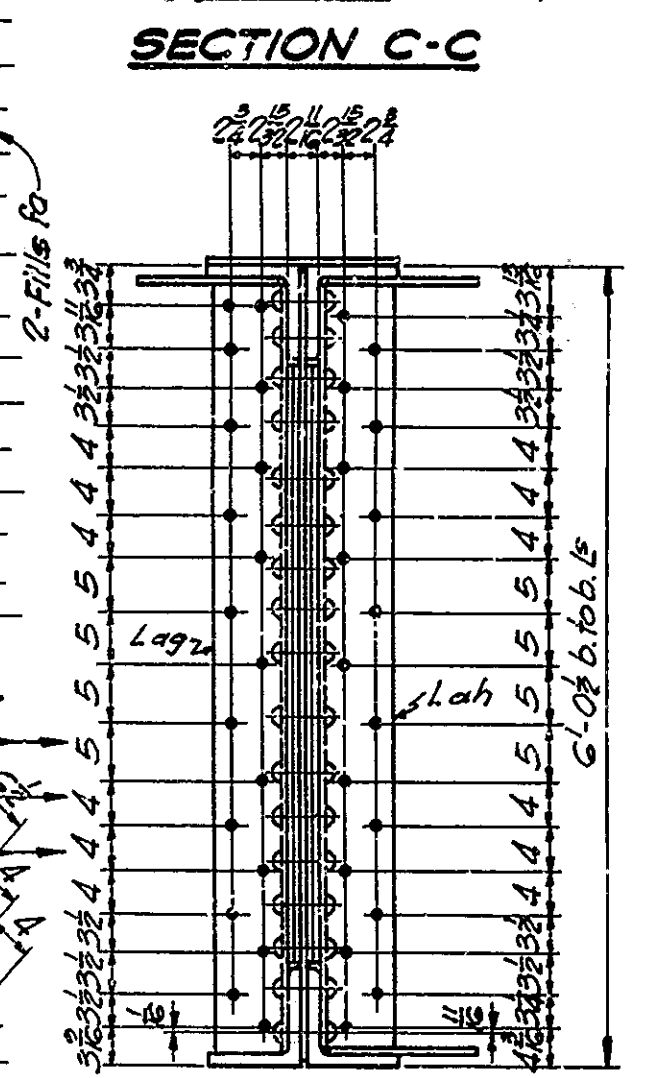
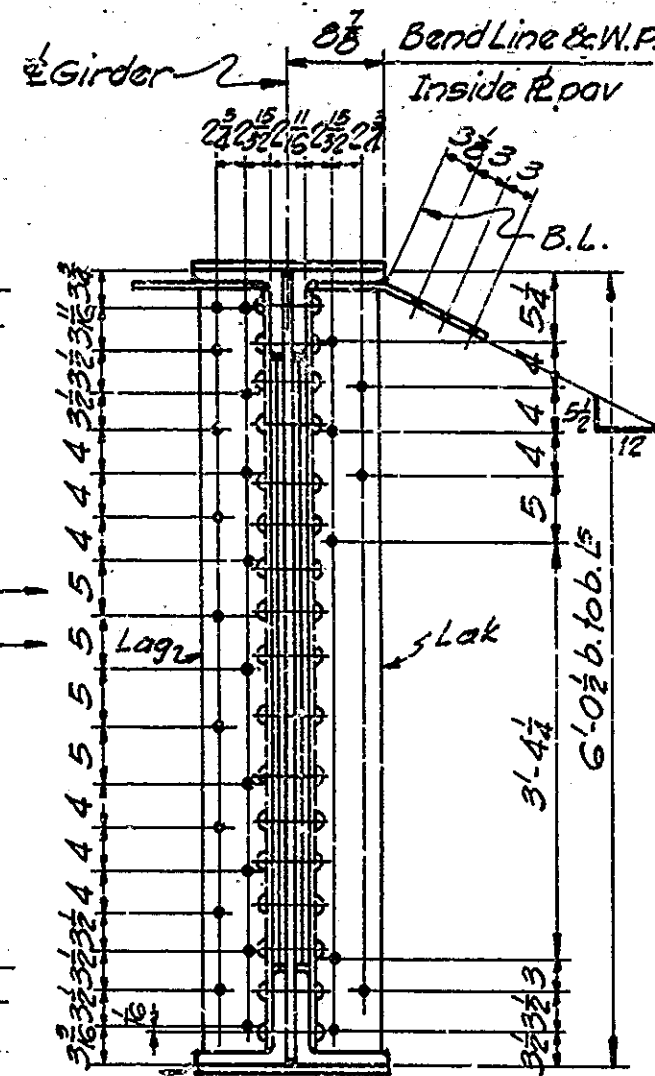
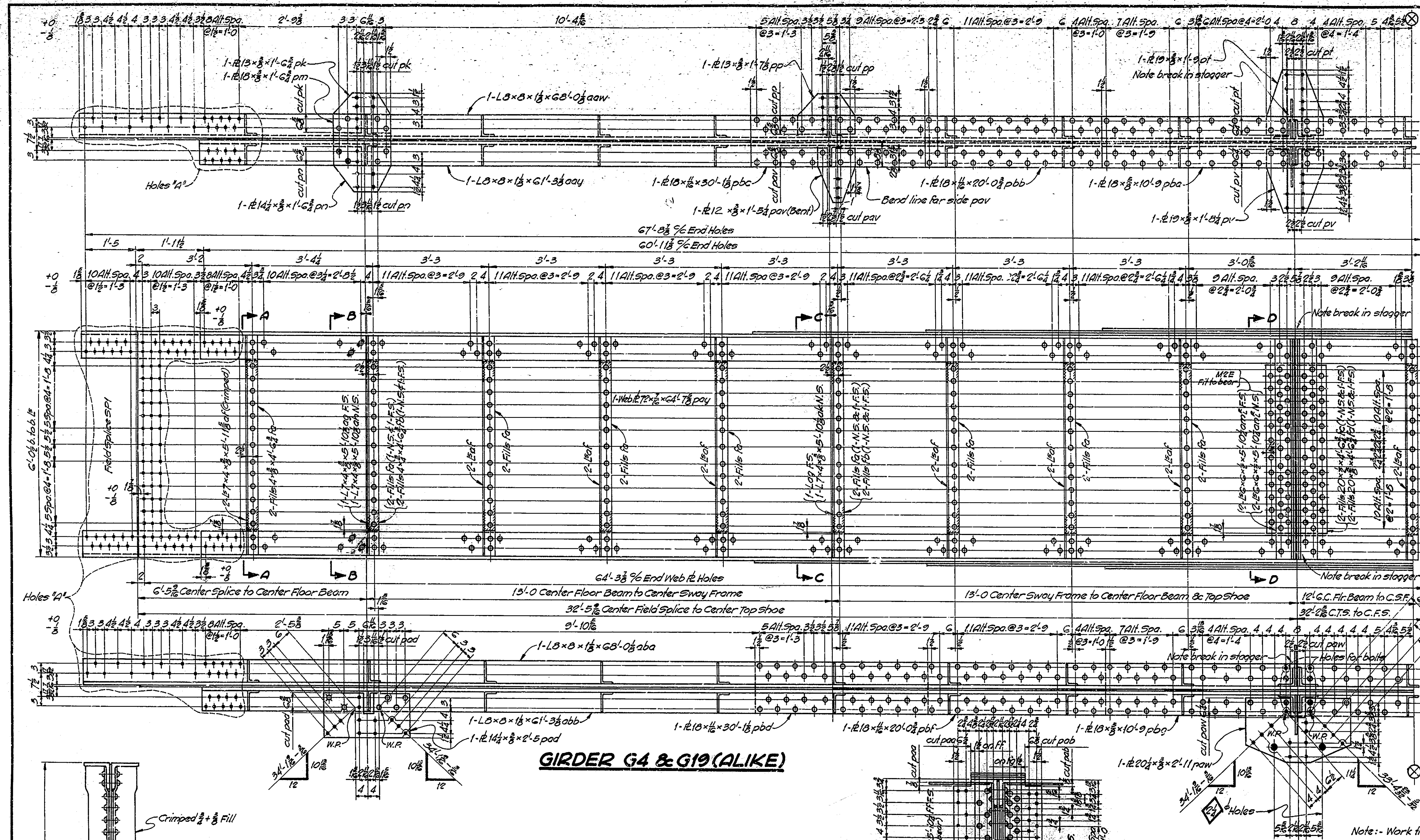
Note: - See Drwg. S24 for Section A-A & D-D  
Work this Drawing with Drawing S24

SCALE: 3/4" = 1'-0"  
 AUGUST 1, 1950  
 RECOMMENDED FOR APPROVAL: *J. S. Smith*  
 PROJECT: F-645(3) STATION: 11+25  
 DRAWING: S29 OF 47  
 BRIDGE CONTRACT NO. 3289  
 BRIDGE FILE: 39-A-3108

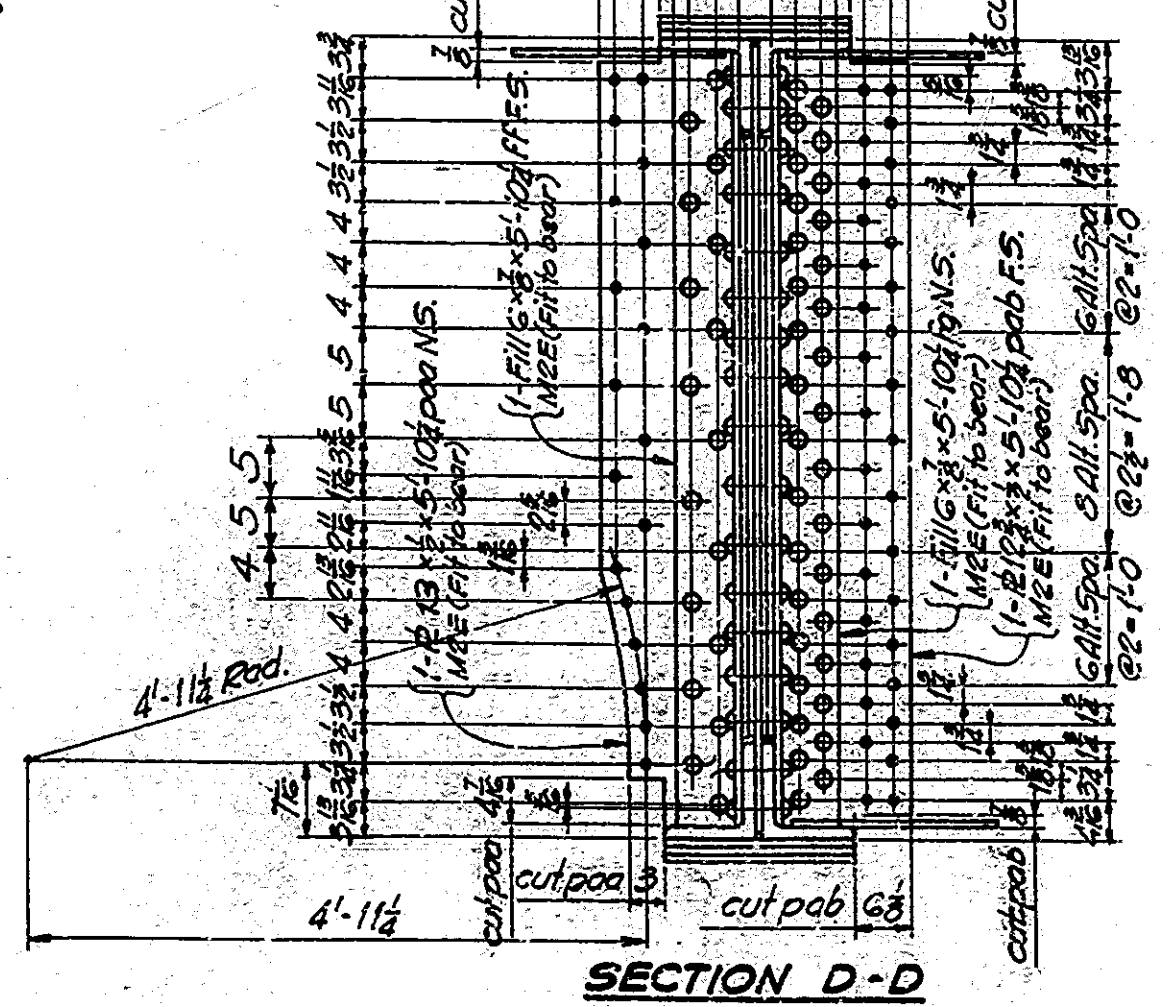
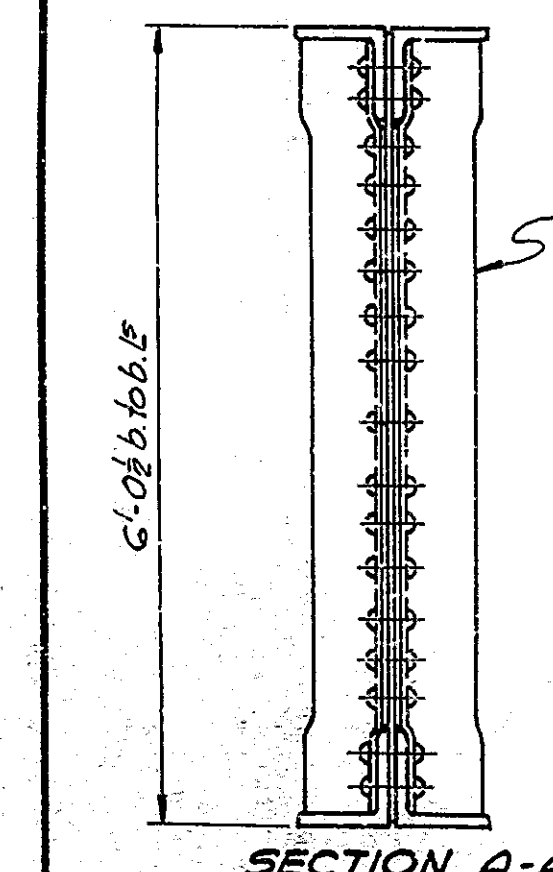
DESIGNED: MLD 7-25-49 C.V.D. 2113 7-25-49  
 DRAWING: MLD 10-19-49 C.V.D. 2113 10-19-49  
 TRACED: MLD 1-25-50 C.V.D. 2113 1-25-50



| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4.                    | IND.  | F-645(3)    | 1951        | 31        | 65           |



**GIRDER G4 & G19 (ALIKE)**



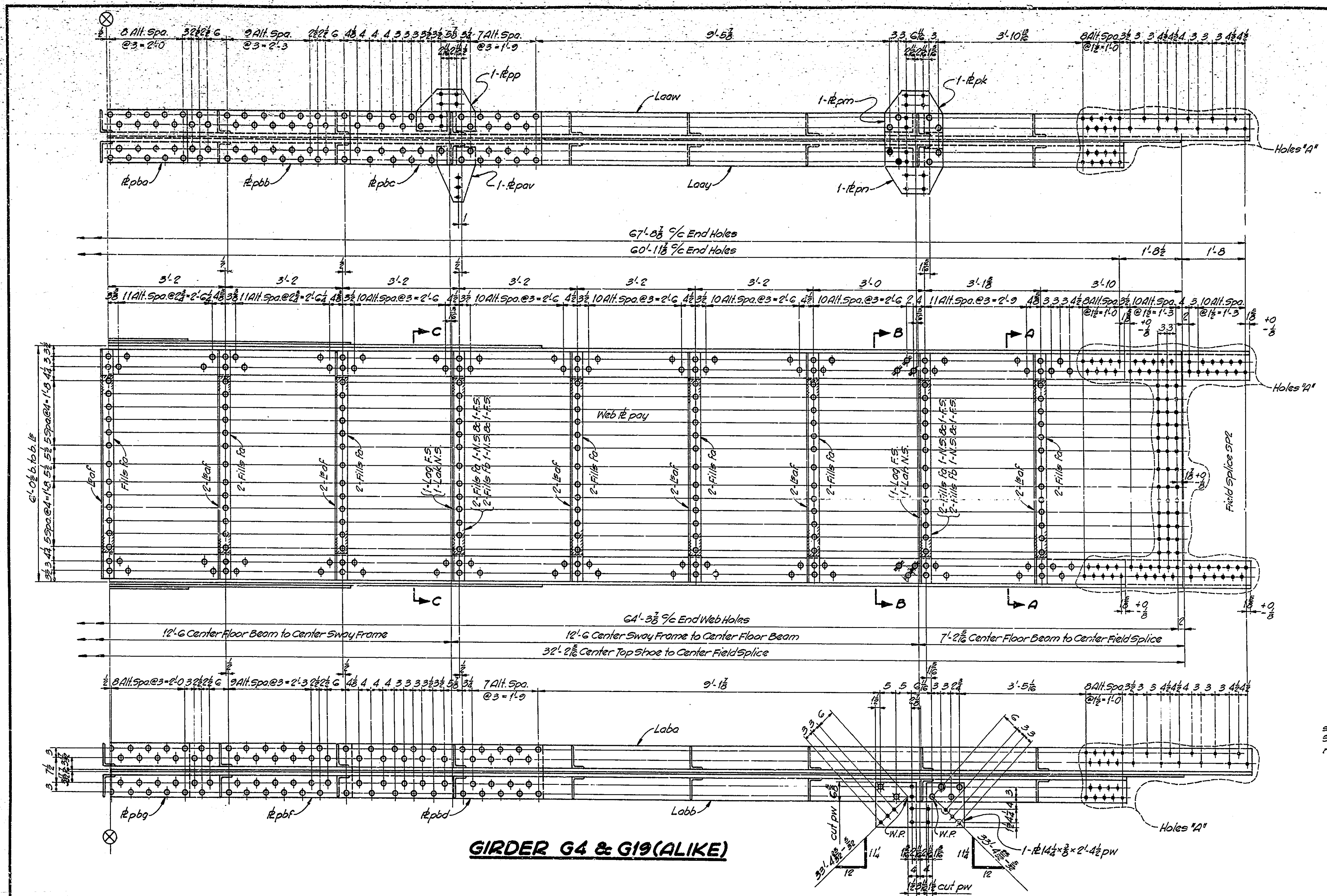
DESIGNED WLP 7-25-49 C.K.D. RMB 7-25-49  
 DRAWN JAT 11-8-49 C.K.D. WLP 12-9-49  
 TRACED MUL 1-16-50 C.K.D. RMB 1-23-50

**GIRDER DETAILS G4 & G19  
 STATE HIGHWAY COMMISSION OF INDIANA**

SCALE: 3/4" = 1'-0"  
 AUGUST 1, 1950  
 RECOMMENDED FOR APPROVAL: *J.B. Smythe*  
 PROJECT: F-645(3) STATION: 11+25  
 DRAWING: 925 OF 7  
 BRIDGE CONTRACT NO. 3289  
 BRIDGE FILE: 59-A-3108

Note: - Work this Drawing with Drawing 526.

| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | F-645(a)    | 1951        | 32        | 65           |



**GIRDER G4 & G19 (ALIKE)**

**NOTES:-**  
 Rivets  $\frac{3}{8}$ "  
 Open Holes  $\frac{1}{8}$ " unless noted  
 Holes "A" for girder field splices to be subpunched or subdrilled  $\frac{1}{8}$ " in the shop and reamed to  $\frac{1}{4}$ " in the field.  
 See Drawing S11 for note regarding field reaming and riveting. For girder splice detail, see Drawing S31.  
 See Drawing S25 for sections A-A, B-B and C-C  
 See Drawing S11 for "General Notes"  
 Work this Drawing with Drawing S25.

| REQUIRED |        |     |
|----------|--------|-----|
| One      | Girder | G4  |
| One      | "      | G19 |

**GIRDER DETAILS G4 & G19**  
**STATE HIGHWAY COMMISSION OF INDIANA**

SCALE:  $\frac{3}{4}$ " = 1'-0"  
 AUGUST 1, 1950

RECOMMENDED FOR APPROVAL: *J. S. Smythe*  
 ENGINEER OF WORK DESIGN

PROJECT: F-645(a) STATION: 11+25

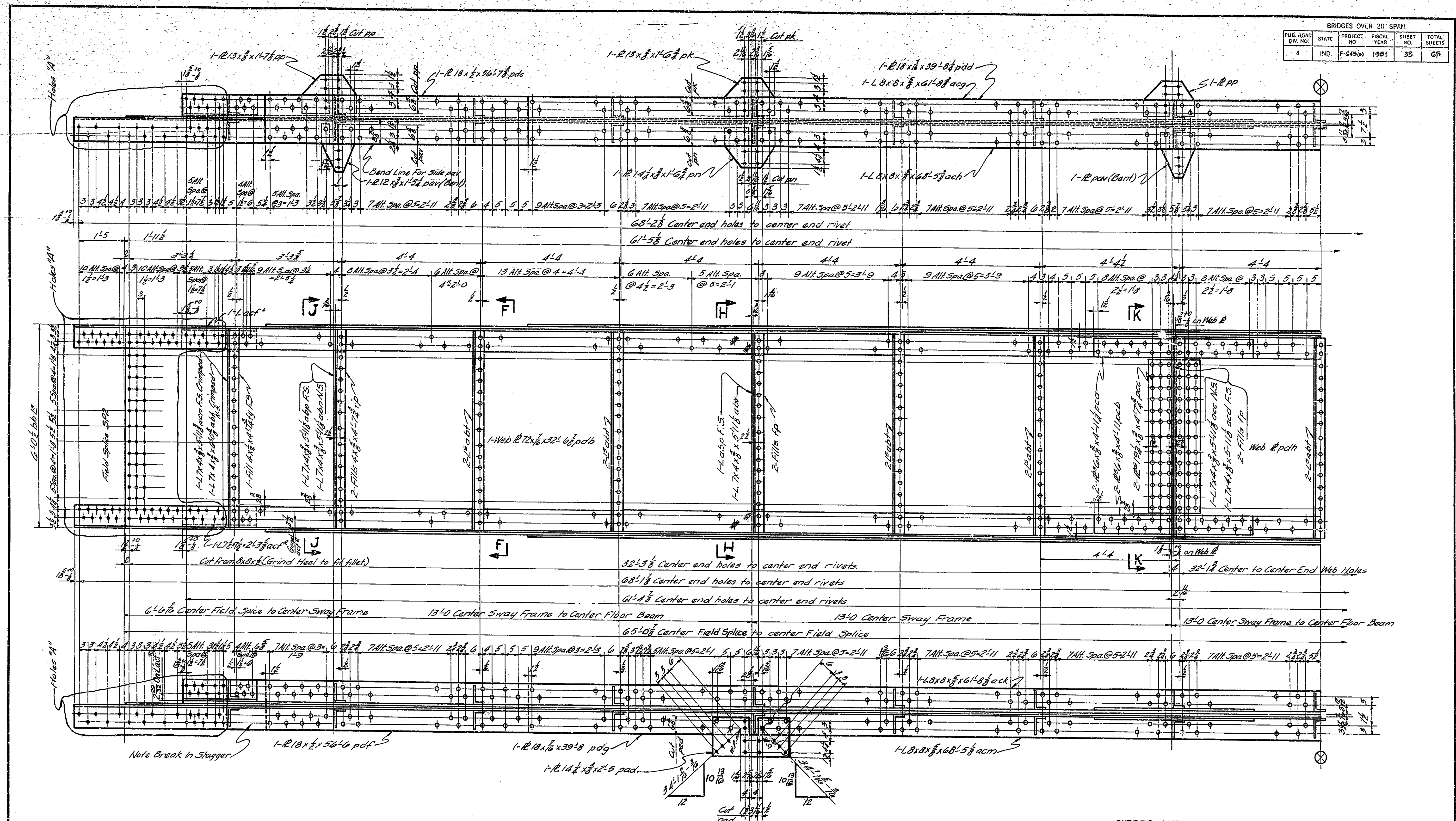
DRAWING: 926 OF 47

BRIDGE CONTRACT NO. 3289

BRIDGE FILE: 39-A-3108

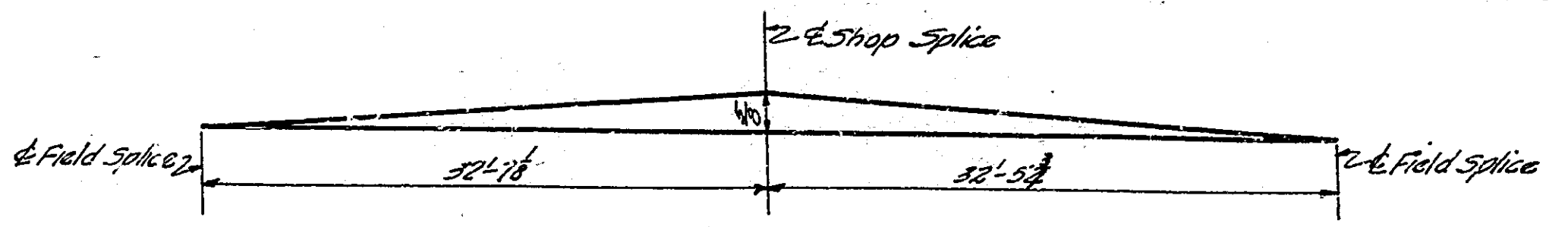
DESIGNED: WLP 7-25-49 CKD RMB 7-25-49  
 DRAWN: MLI 9-22 CKD WLP 9-22  
 TRACED: MLI 1-20-50 CKD RMB 1-23-50

| BRIDGES OVER 20' SPAN |       |             |             |              |
|-----------------------|-------|-------------|-------------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | TOTAL SHEETS |
| 4                     | IND.  | F-645(b)    | 1951        | 33           |



**GIRDER G5-G6-G9-G10-G13-G14-G17 & G18 (ALike)**

GIRDER DETAILS G5, G6, G9, G10, G13, G14, G17 & G18  
STATE HIGHWAY COMMISSION OF INDIANA



**CAMBER DIAGRAM**

NOTES:-  
For Sections F-F, H-H, J-J, & K-K  
See Drawing 528  
Work This Drawing with Drawing 528

SCALE: 3/8" = 1'-0"  
AUGUST 1 1950

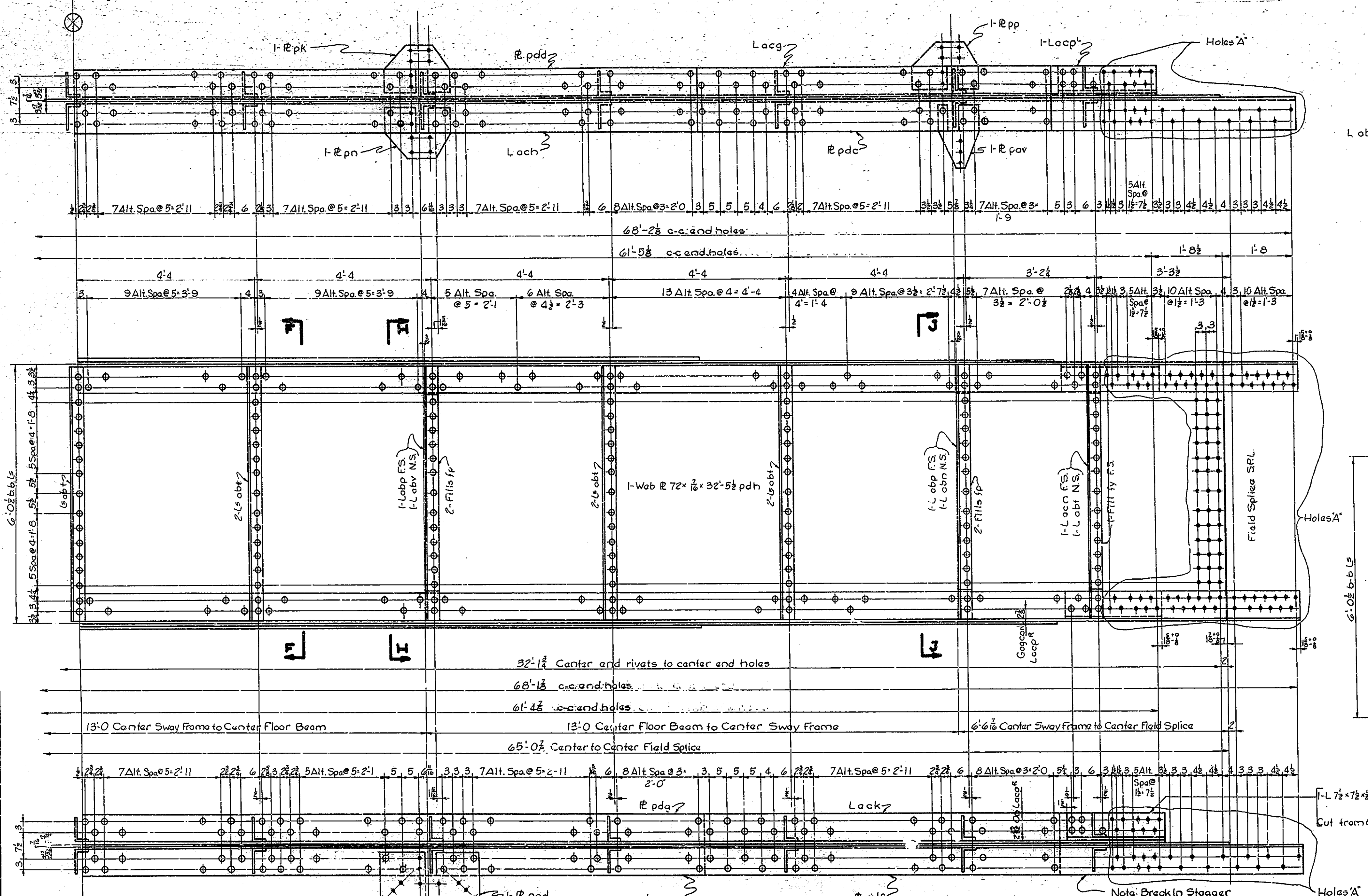
RECOMMENDED FOR APPROVAL: *[Signature]*  
ENGINEER OF BRIDGE DESIGN

PROJECT: F-645(b) STATION: 11+25

DRAWING: 627 OF 47  
BRIDGE CONTRACT NO. 3289

DESIGNED: W.L.P. & B.C. BY: W.L.P. & B.C.  
DRAWN: J.A.Z. & B.C. BY: W.L.P. & B.C.  
TRACED: B.C. & B.C. BY: B.C. & B.C.

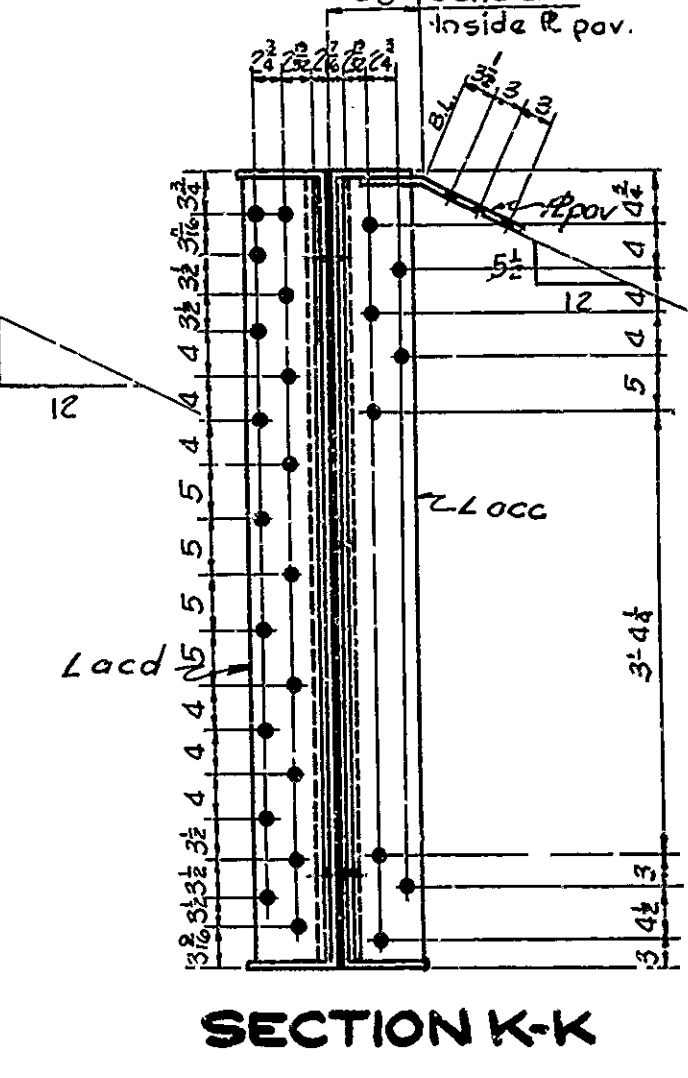
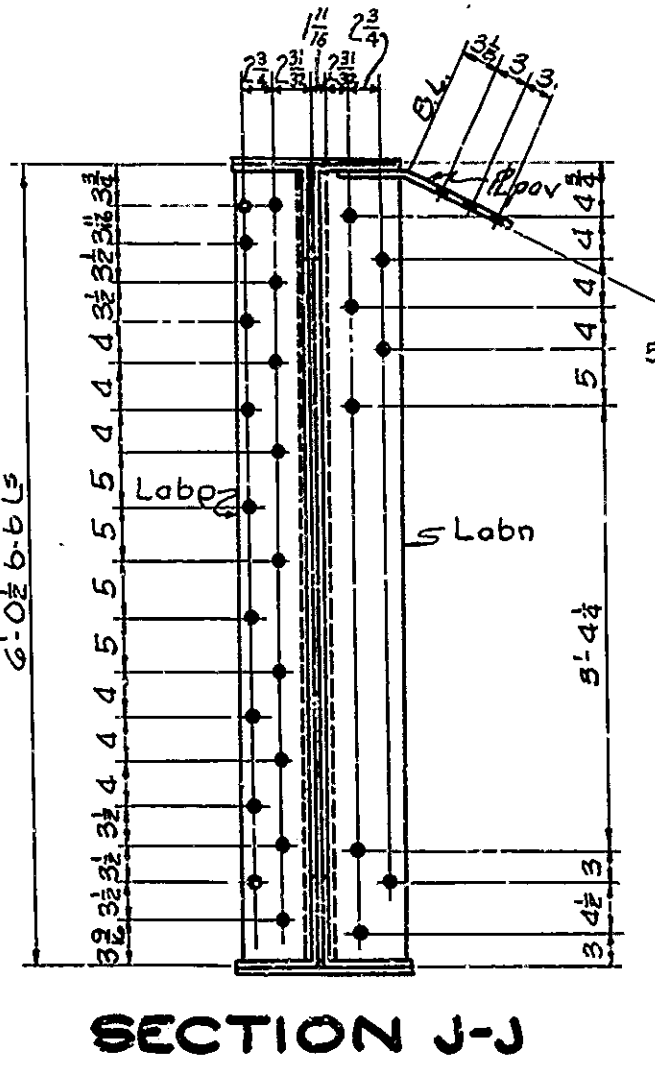
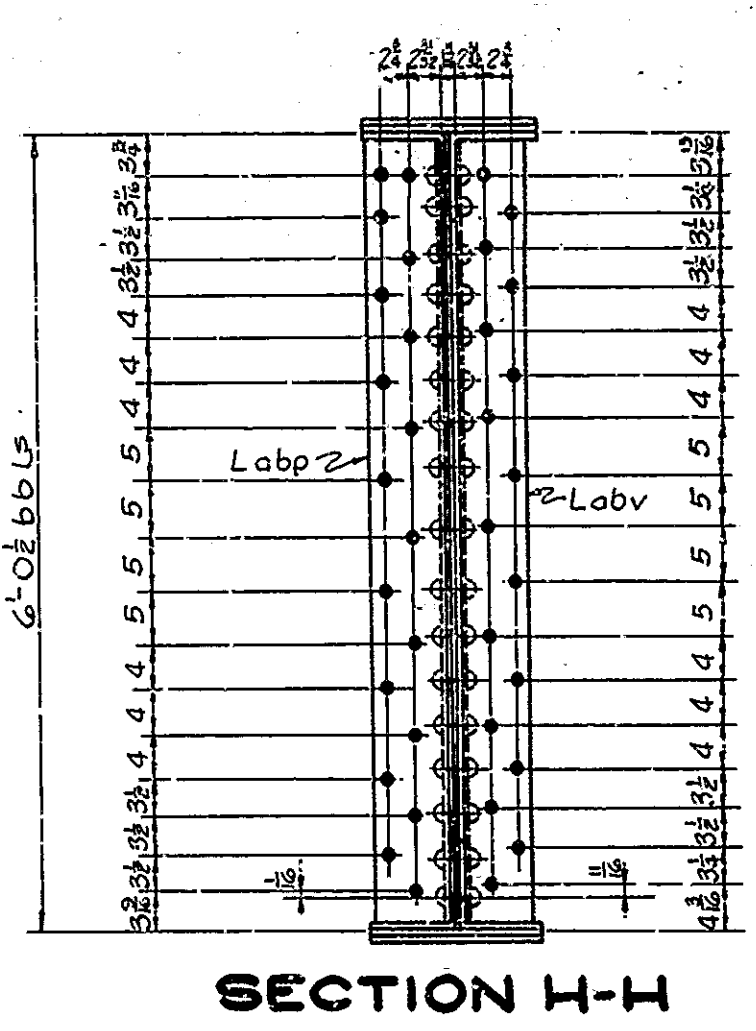
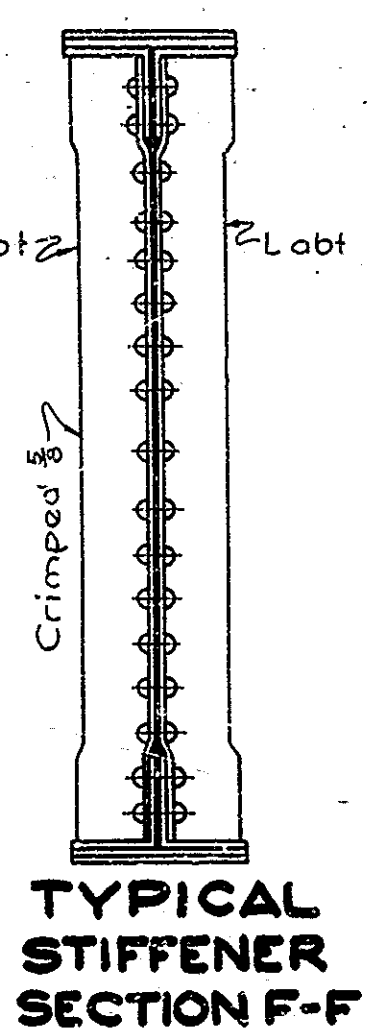




**GIRDER G5-G6-G9-G10-G13-G14-G17-G18 (Alike)**

| REQUIRED |        |     |
|----------|--------|-----|
| One      | Girder | G5  |
| One      | "      | G6  |
| One      | "      | G9  |
| One      | "      | G10 |
| One      | "      | G13 |
| One      | "      | G14 |
| One      | "      | G17 |
| One      | "      | G18 |

**NOTES:-**  
 Rivets  $\frac{3}{8}$ "  
 Open Holes  $\frac{1}{8}$ " unless noted  
 Holes 1" for girder field splices to be subpunched or subdrilled  $\frac{1}{8}$ " in the shop and reamed to 1" in the field. See Drawing 517 for note regarding field reaming and riveting. For girder splice detail, see Drawing 531.  
 Girder shall be checked for camber while supported in such a way as to have no bending moment in the direction of camber.  
 See Drawing 517 for "General Notes"  
 Work this drawing with Drawing 527.



GIRDER DETAILS G5, G6, G9, G10, G13, G14, G17 & G18  
**STATE HIGHWAY COMMISSION OF INDIA**

SCALE:  $\frac{3}{4}$ " = 1'-0"

RECOMMENDED FOR APPROVAL:

AUGUST 1 1950

PROJECT: F-645(3)

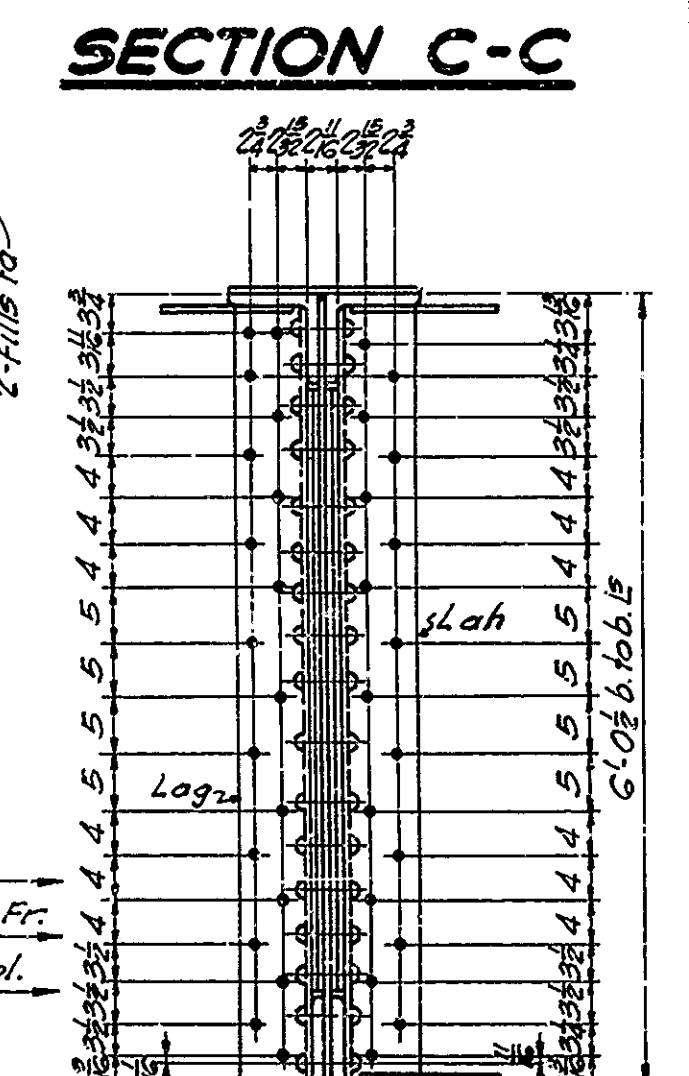
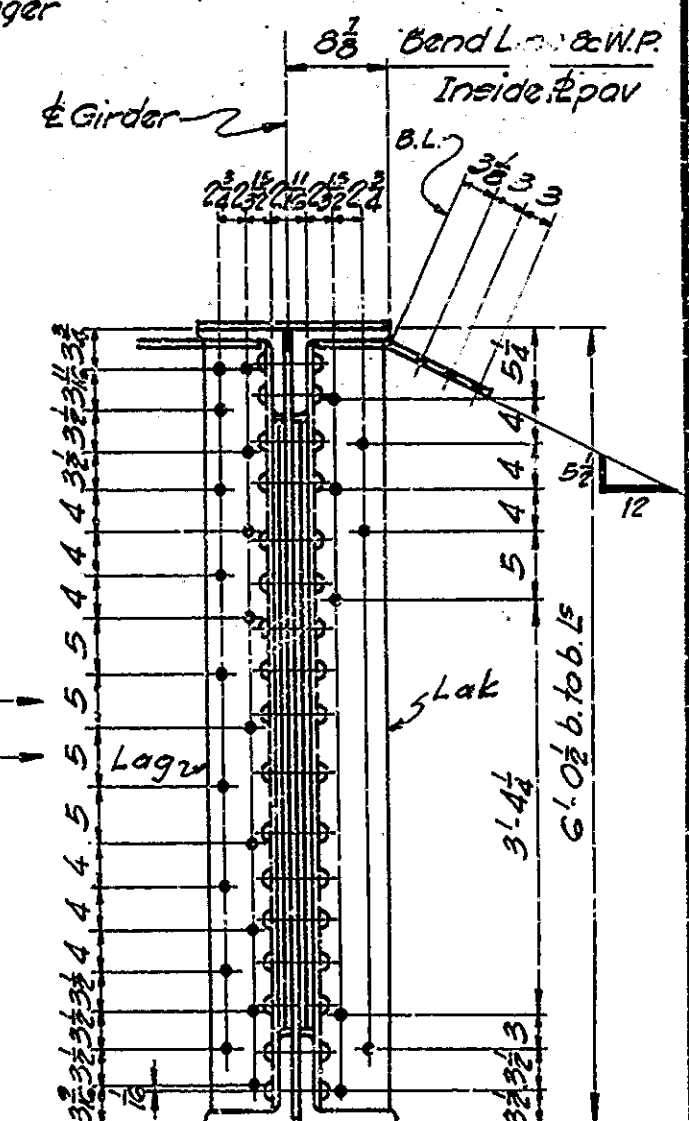
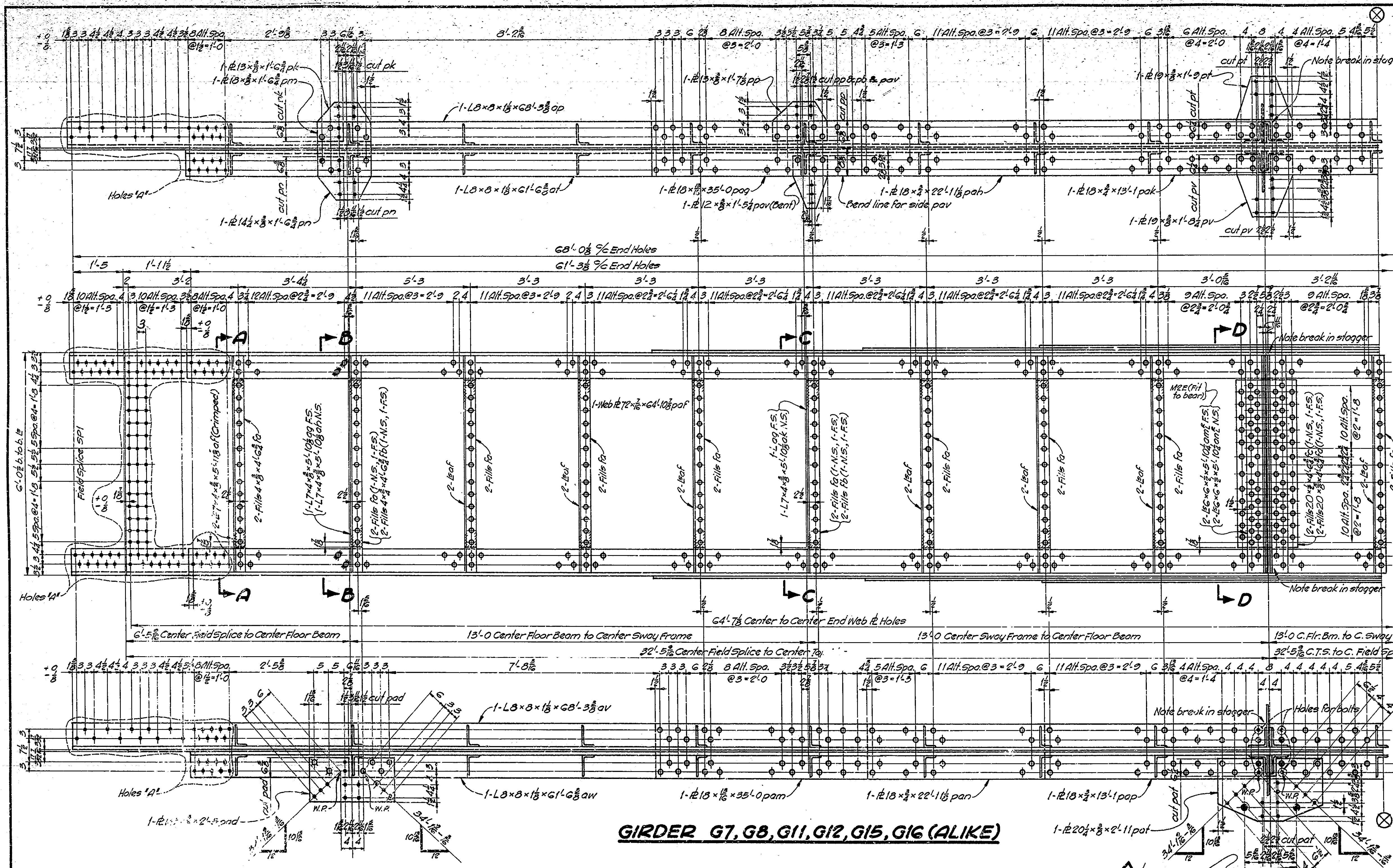
STATION: 11+25

DRAWING: 528 OF 47

BRIDGE CONTRACT NO. 3289

BRIDGE FILE: 39-A-3108

| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| DIV. NO.              | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | F-645(9)    | 1951        | 35        | 65           |



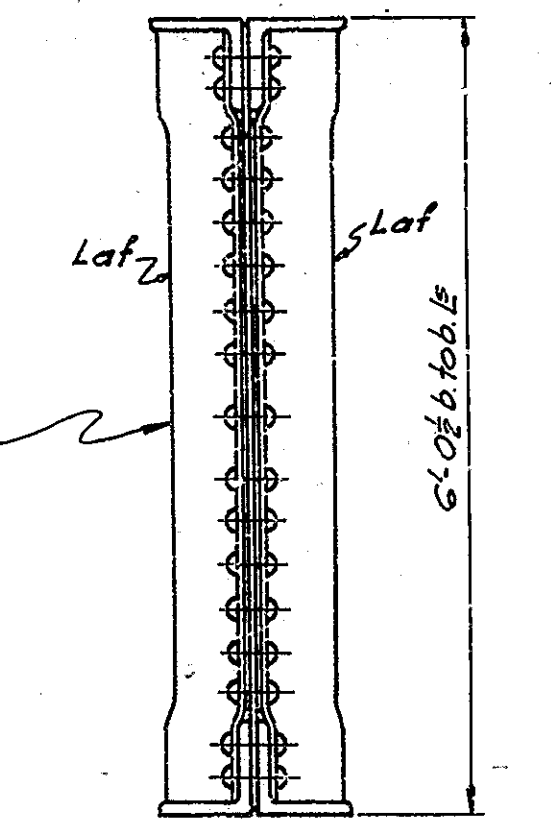
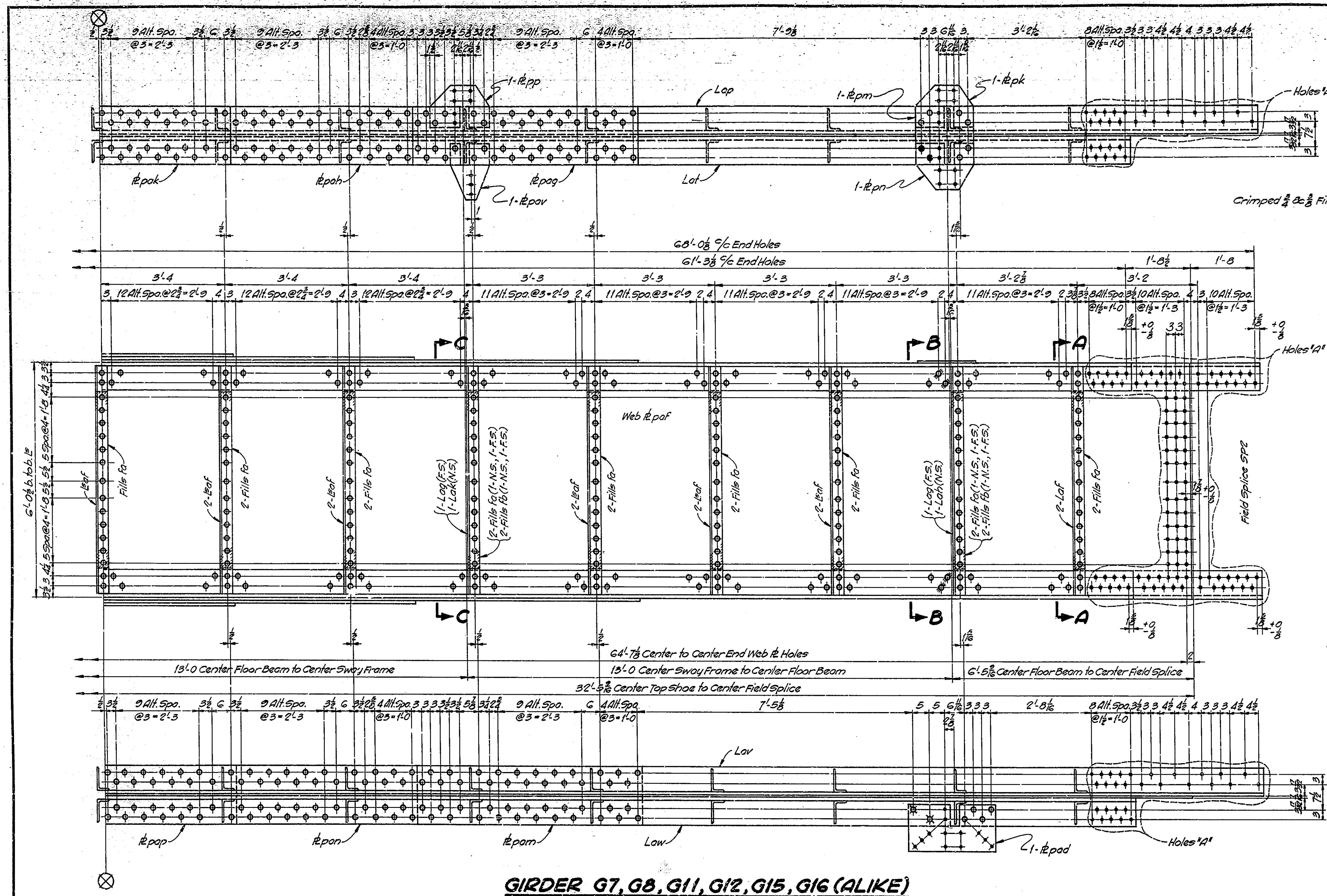
**GIRDER G7, G8, G11, G12, G15, G16 (ALIKE)**

**SECTION B-B**  
 Note: - See Drawing S30 For Sections A-A & D-D  
 Work this Drawing with Drawing S30.

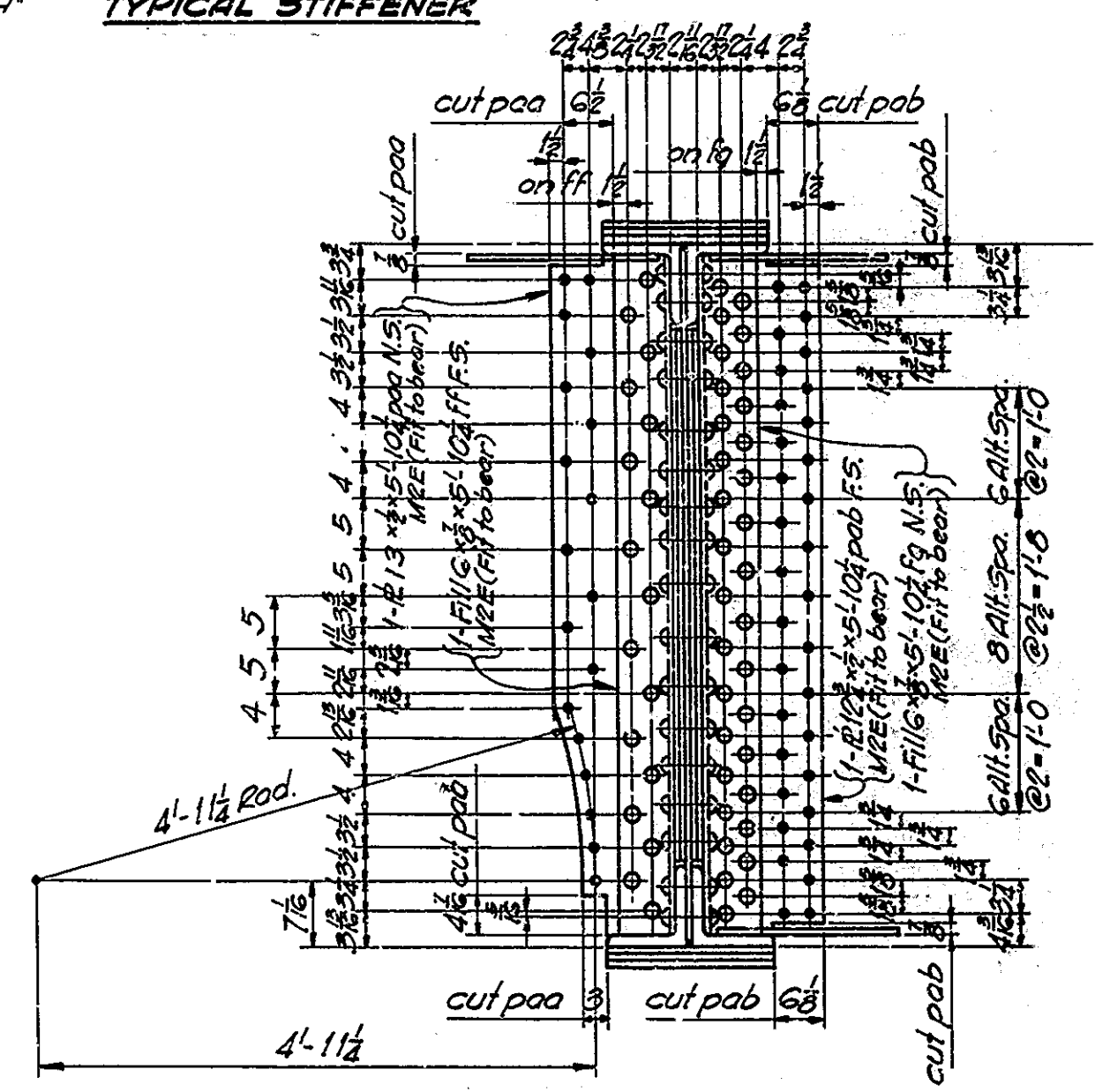
GIRDER DETAILS G7, G8, G11, G12, G15 & G16  
**STATE HIGHWAY COMMISSION OF INDIANA**

SCALE: 3/8" = 1'-0"  
 RECOMMENDED FOR APPROVAL: *M. Smythe*  
 PROJECT: F-645(9) STATION: 11+25  
 AUGUST 1 1950  
 DRAWING: S30 OF 47

| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD INV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | F-645(5)    | 1951        | 36        | 65           |



**SECTION A-A**  
TYPICAL STIFFENER



**SECTION D-D**

**NOTES:-**  
 Rivets 3/4"  
 Open Holes 1/2" unless noted  
 Holes 1/2" for girder field splices to be subpunched or subdrilled 1/2" in the shop and reamed to 1/2" in the field.  
 See Drawing S17 for notes regarding field reaming and riveting. For girder splice detail, see Drawing S31.  
 See Drawing S25 for sections B-B and C-C  
 See Drawing S17 for "General Notes"  
 Work this Drawing with Drawing S25.

**GIRDER G7, G8, G11, G12, G15, G16 (ALIKE)**

| REQUIRED |        |     |
|----------|--------|-----|
| One      | Girder | G7  |
| One      | "      | G8  |
| One      | "      | G11 |
| One      | "      | G12 |
| One      | "      | G15 |
| One      | "      | G16 |

GIRDER DETAILS G7, G8, G11, G12, G15 & G16  
**STATE HIGHWAY COMMISSION OF INDIANA**

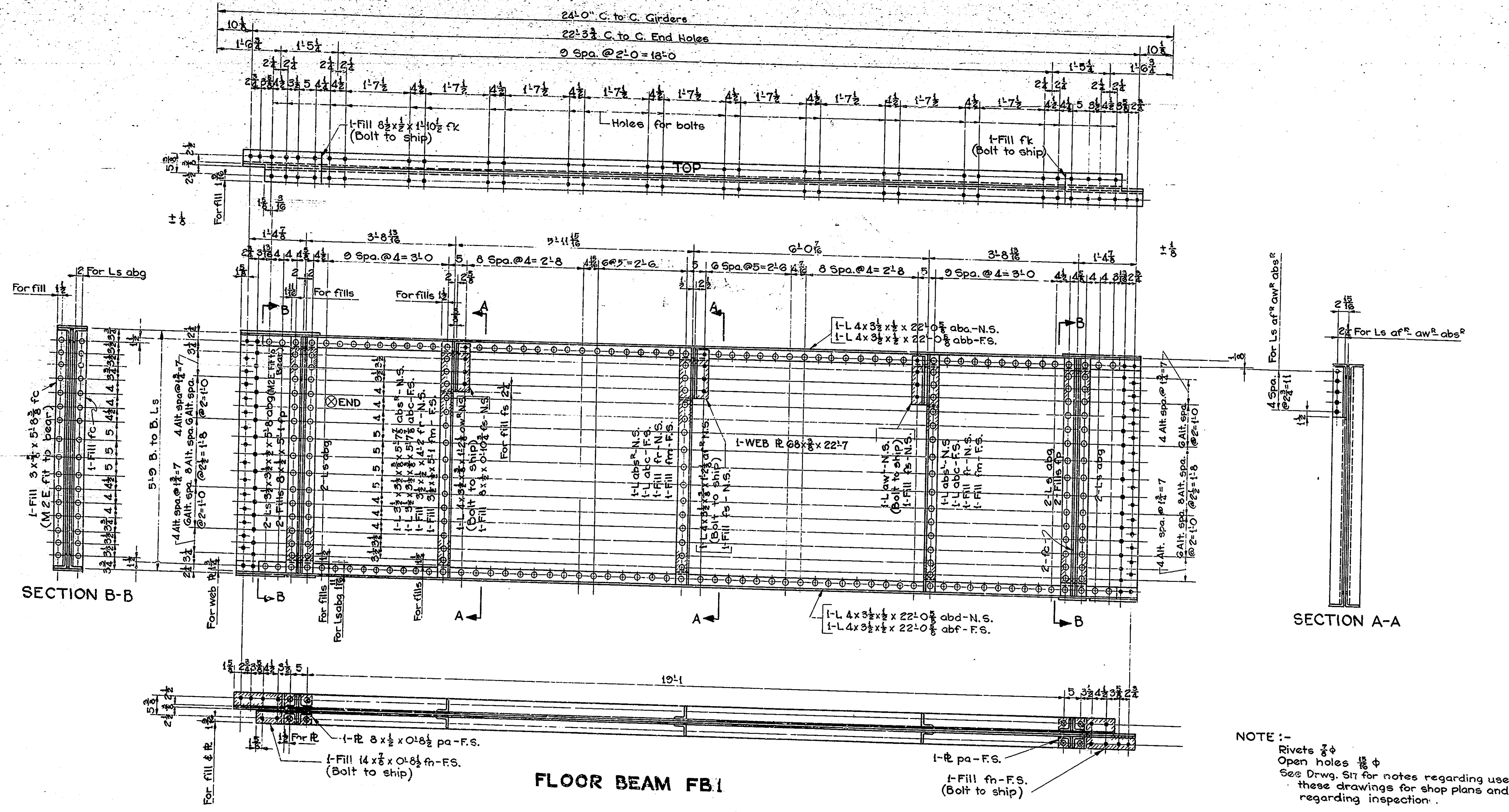
SCALE: 3/4" = 1'-0"      AUGUST 1, 1950

RECOMMENDED FOR APPROVAL: *J. S. Smythe*  
 ENGINEER OF WORK DESIGN

PROJECT: F-645(5)      STATION: 11+25  
 DRAWING: S90 OF 47



| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | F-645(6)    | 1951        | 38        | 65           |



NOTE :-  
 Rivets 3/4"  
 Open holes 1/8"  
 See Drwg. S17 for notes regarding use of these drawings for shop plans and regarding inspection.

| REQUIRED |             |      |
|----------|-------------|------|
| No.      | DESCRIPTION | MARK |
| 2        | Floor beams | FB1  |

FLOOR BEAM DETAILS  
 STATE HIGHWAY COMMISSION OF INDIANA

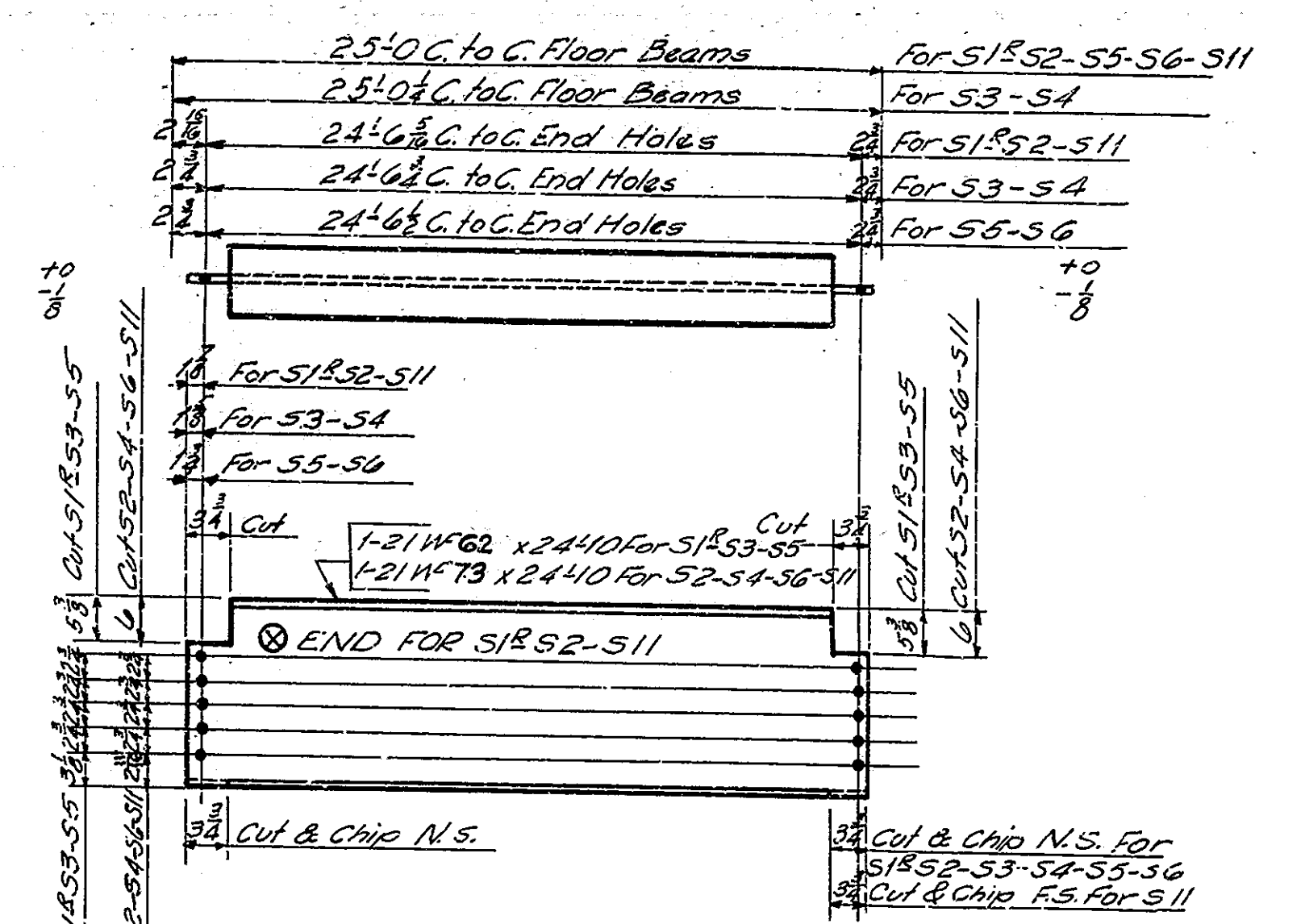
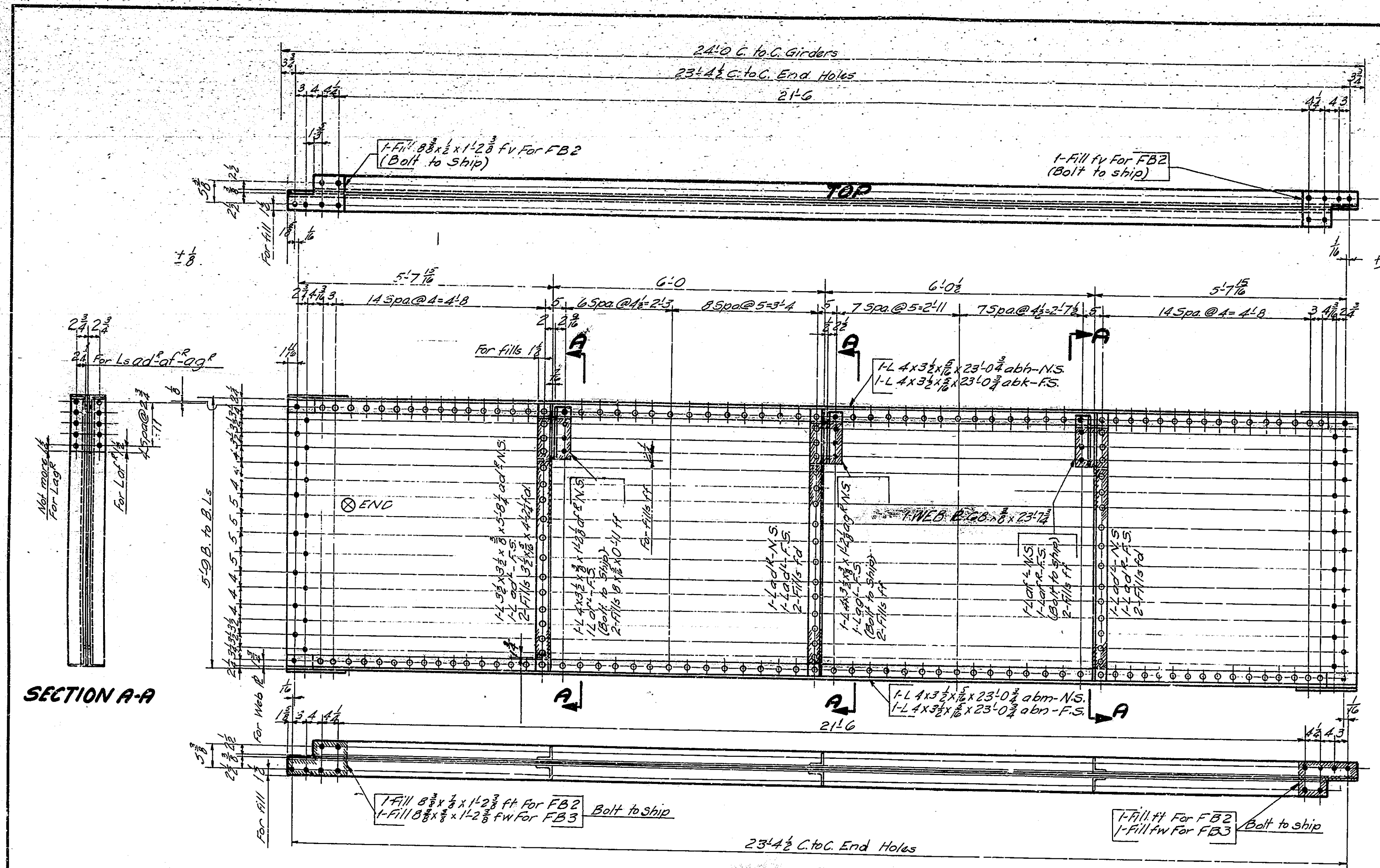
SCALE: 3/4" = 1'-0"  
 RECOMMENDED FOR APPROVAL: AUGUST 1, 1950

PROJECT: F-645(6) STATION: 11+25

DRAWING: 532 OF 47  
 BRIDGE CONTRACT NO. 3289

DESIGNED: W.L.R. 7-25-49  
 DRAWN: L.W.S. 11-2-49  
 TRACED: M.W.S. 1-5-50

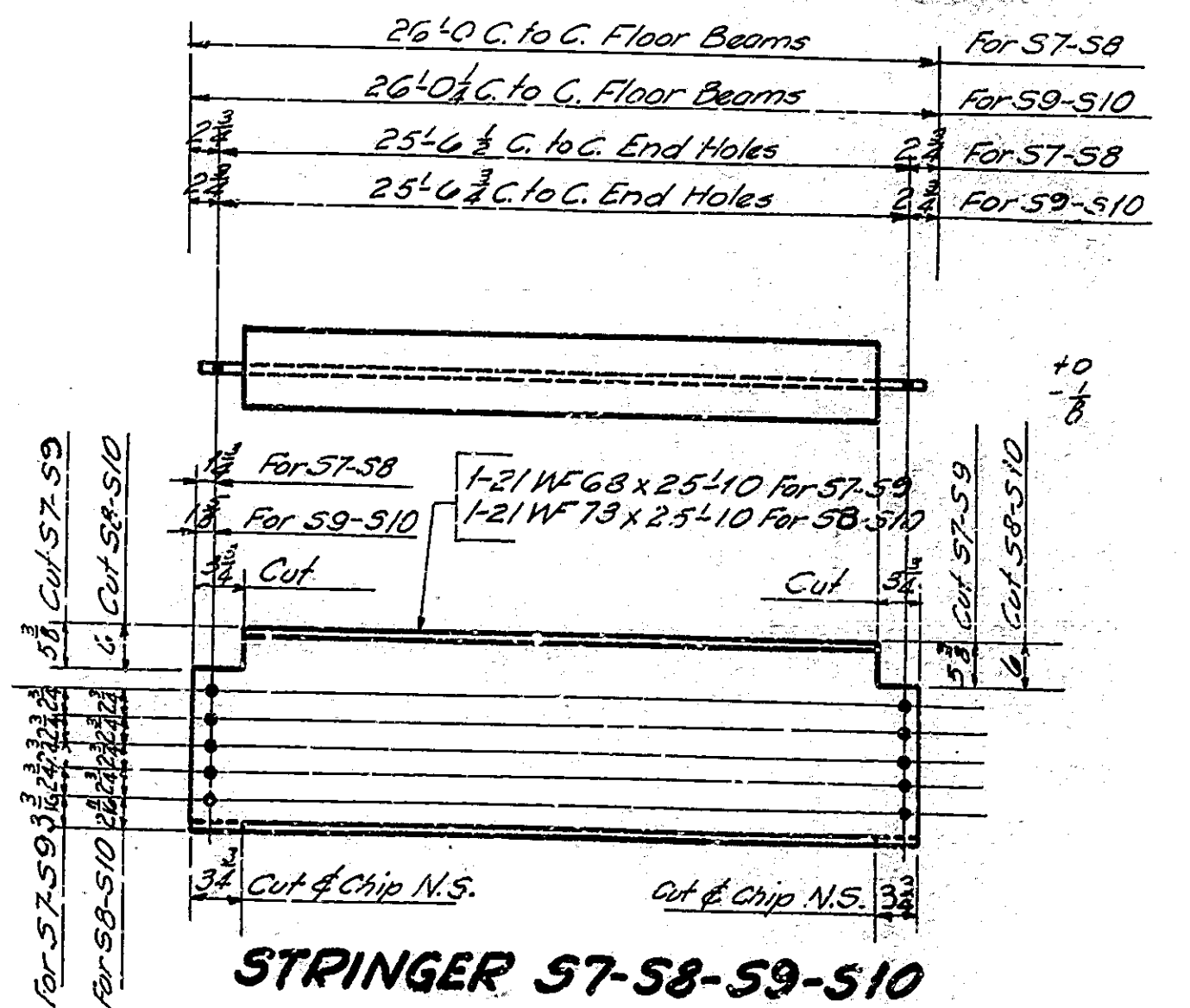
| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | F-645(9)    | 1951        | 39        | 65           |



**STRINGERS S1-S2-S3-S4-S5-S6-S11**

**SECTION A-A**

**FLOOR BEAM FB2-FB3**



**STRINGER S7-S8-S9-S10**

| REQUIRED |             |      |
|----------|-------------|------|
| NO.      | DESCRIPTION | MARK |
| 12       | Floor Beams | FB2  |
| 10       | "           | FB3  |
| 2        | Stringers   | S7   |
| 2        | "           | S8   |
| 1        | "           | S9   |
| 2        | "           | S4   |
| 8        | "           | S5   |
| 4        | "           | S6   |
| 32       | "           | S7   |
| 16       | "           | S8   |
| 8        | "           | S9   |
| 4        | "           | S10  |
| One      | "           | S11  |

NOTE:-  
 Rivets 7/8"  
 Open holes 1 1/2"  
 See Drawg. S11 for notes regarding use of these drawings for shop plans and regarding inspection.

**FLOOR BEAM & STRINGER DETAILS  
 STATE HIGHWAY COMMISSION OF INDIANA**

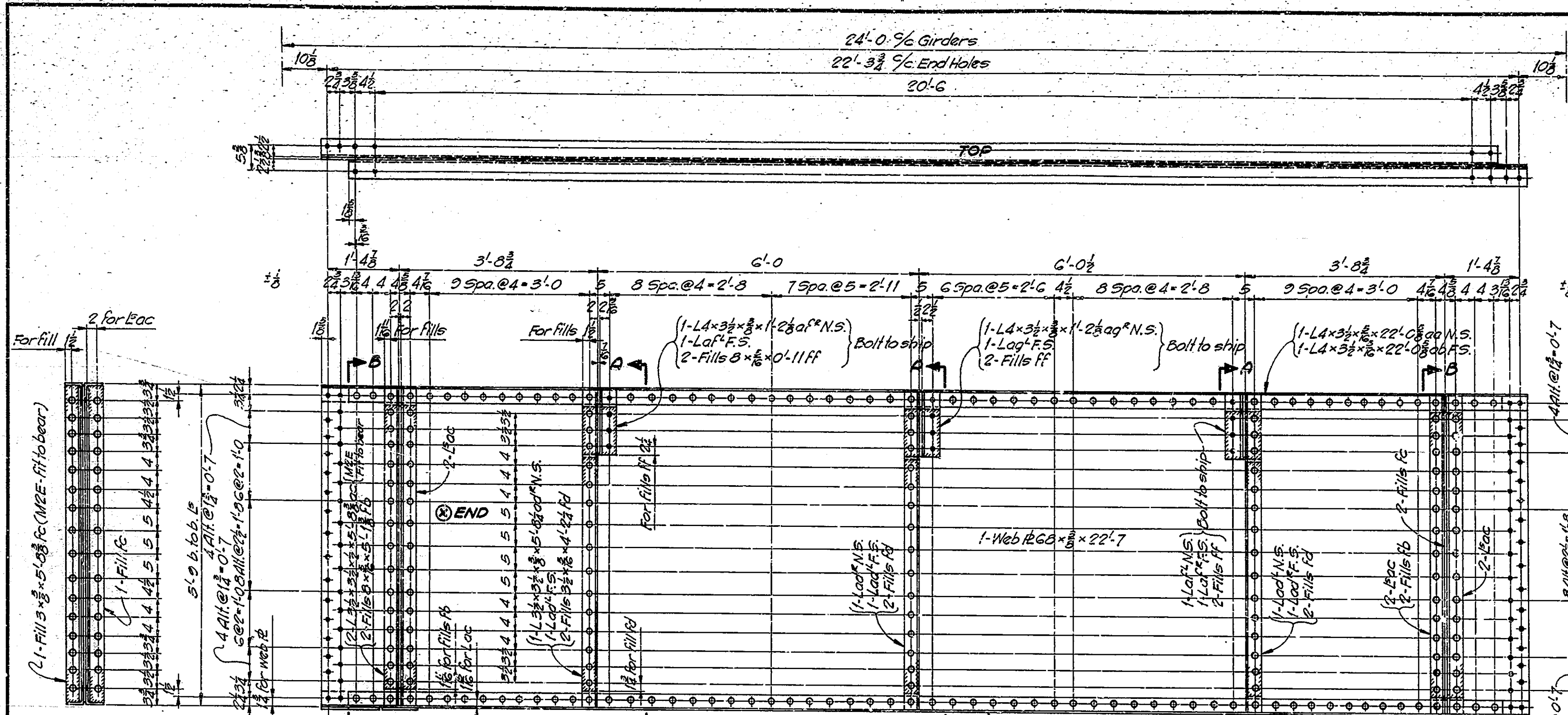
SCALE: 3/4" = 1'-0"  
 AUGUST 1, 1950

PROJECT: F-645(9) STATION: 11+25

DRAWING: 555 OF 47  
 BRIDGE CONTRACT NO. 3289

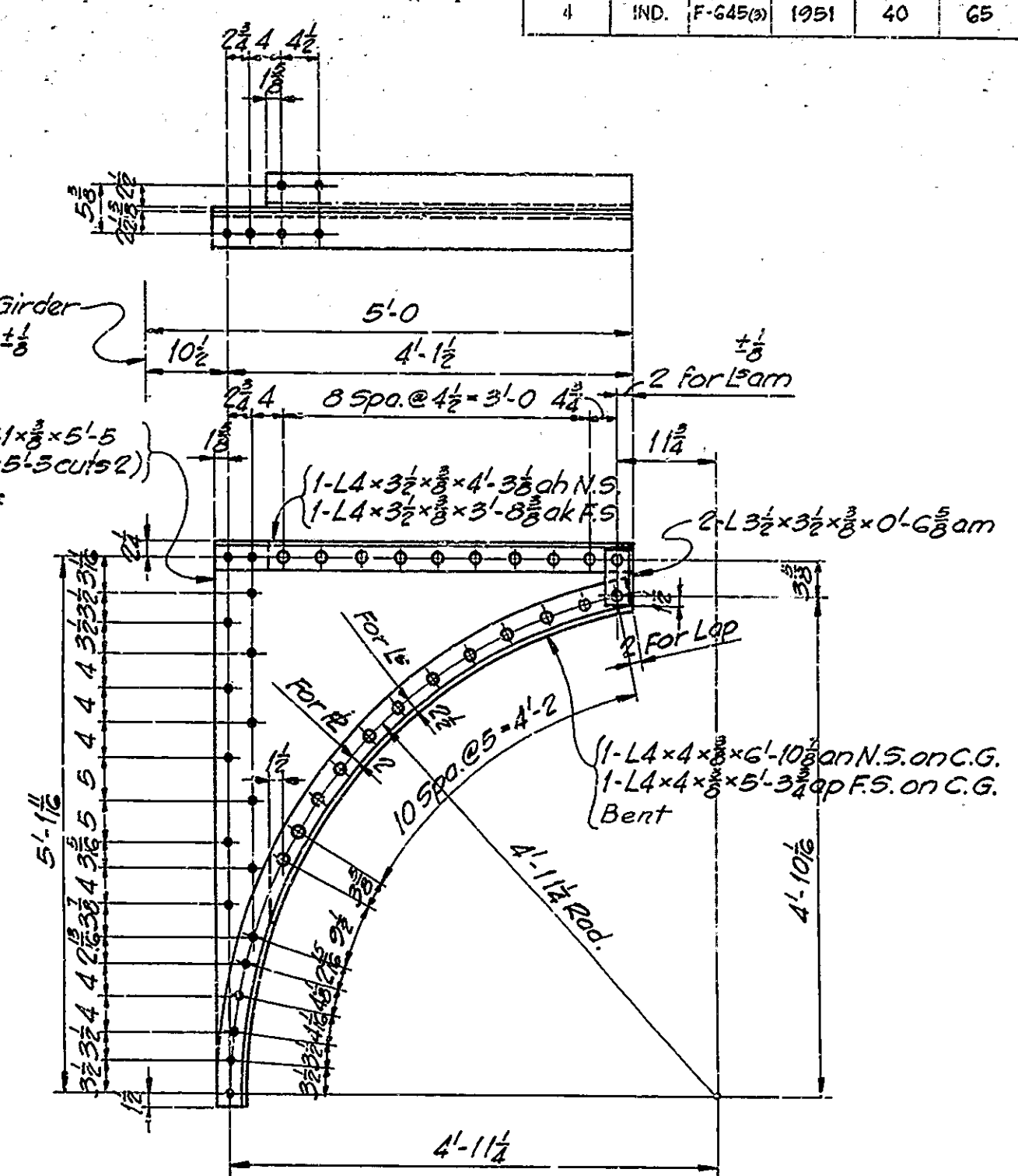
DESIGNED BY: L. E. ZIEGLER  
 DRAWN BY: L. E. ZIEGLER  
 TRACED BY: L. E. ZIEGLER

| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | F-645(e)    | 1951        | 40        | 65           |

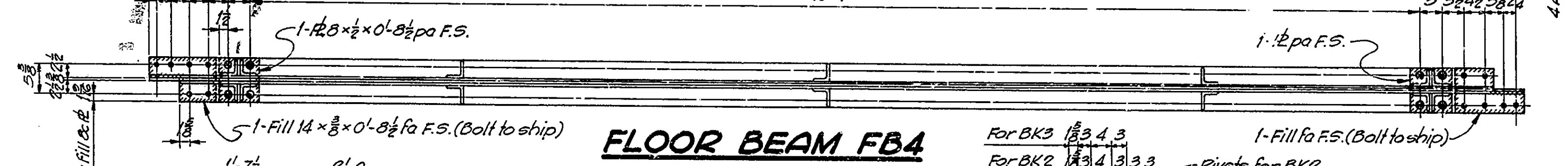


SECTION B-B

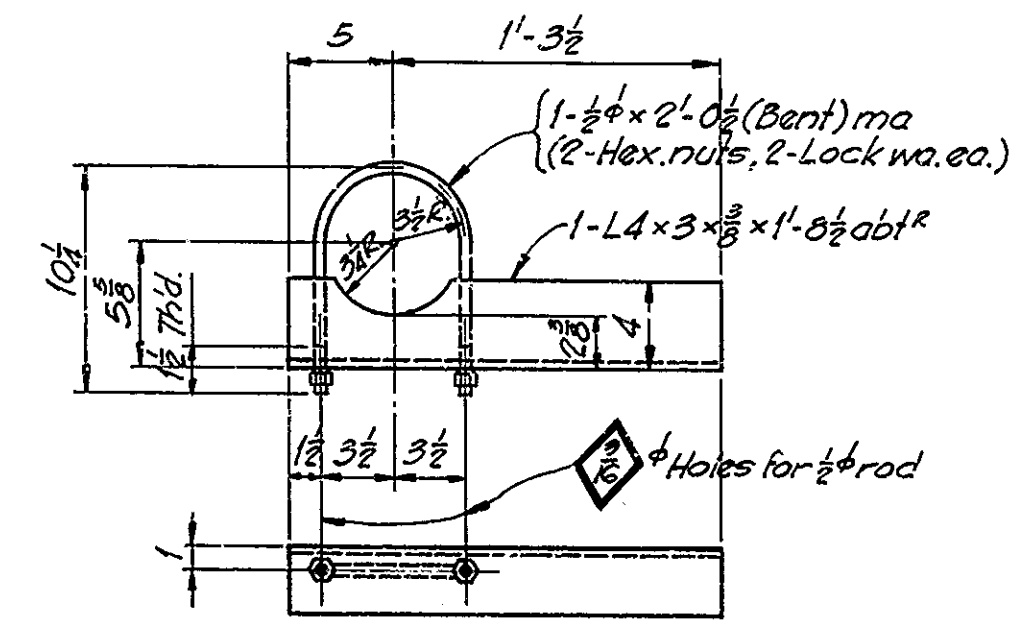
SECTION A-A



BRACKET BK4

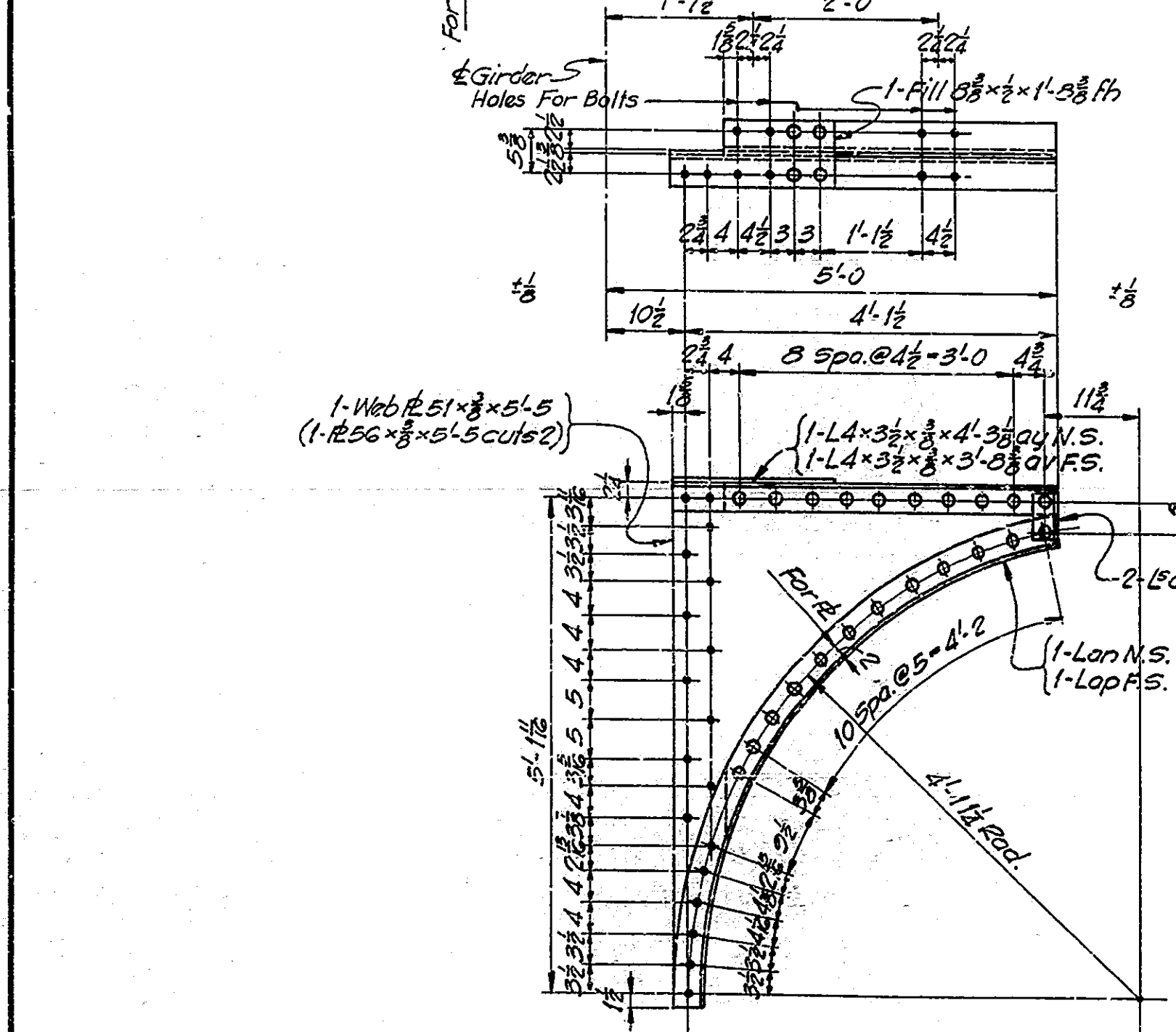


FLOOR BEAM FB4

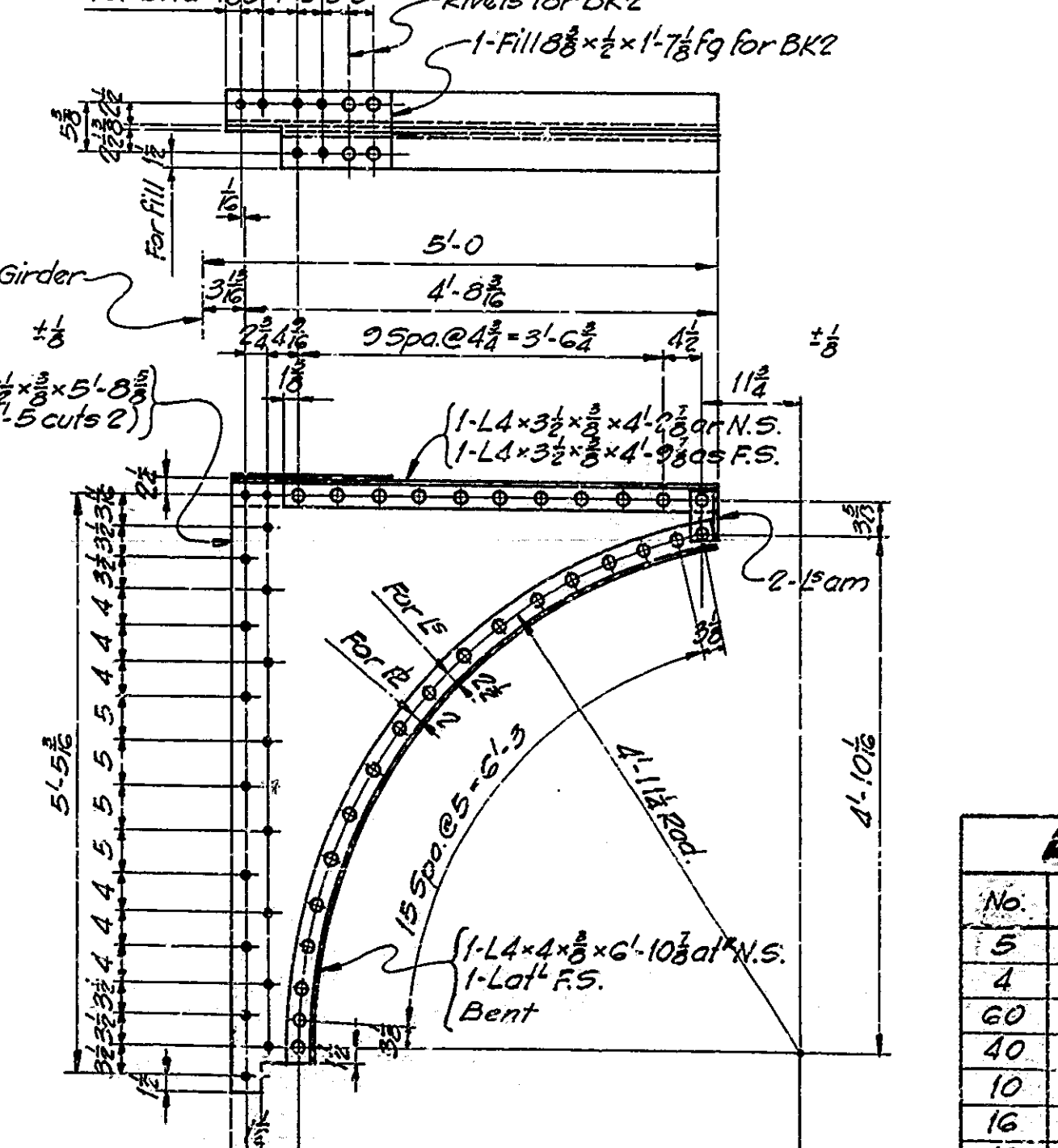


DRAIN SUPPORT DS

**NOTES**  
 Rivets 3/4"  
 Open Holes 1/2" unless noted  
 See Drawing S11 for notes regarding use of these drawings for shop plans and regarding inspection.  
 If curves in plates and angles are flame cut they shall be ground smooth.



BRACKET BK1



BRACKET BK2, BK3

| REQUIRED |               |      |
|----------|---------------|------|
| No.      | Description   | Mark |
| 5        | Floor Beam    | FB4  |
| 4        | Bracket       | BK1  |
| 60       | "             | BK2  |
| 40       | "             | BK3  |
| 10       | "             | BK4  |
| 16       | Drain Support | DS   |
| 16       | "             | DS   |

FLOOR BEAM, BRACKET & DRAIN SUPPORT DETAILS  
 STATE HIGHWAY COMMISSION OF INDIANA

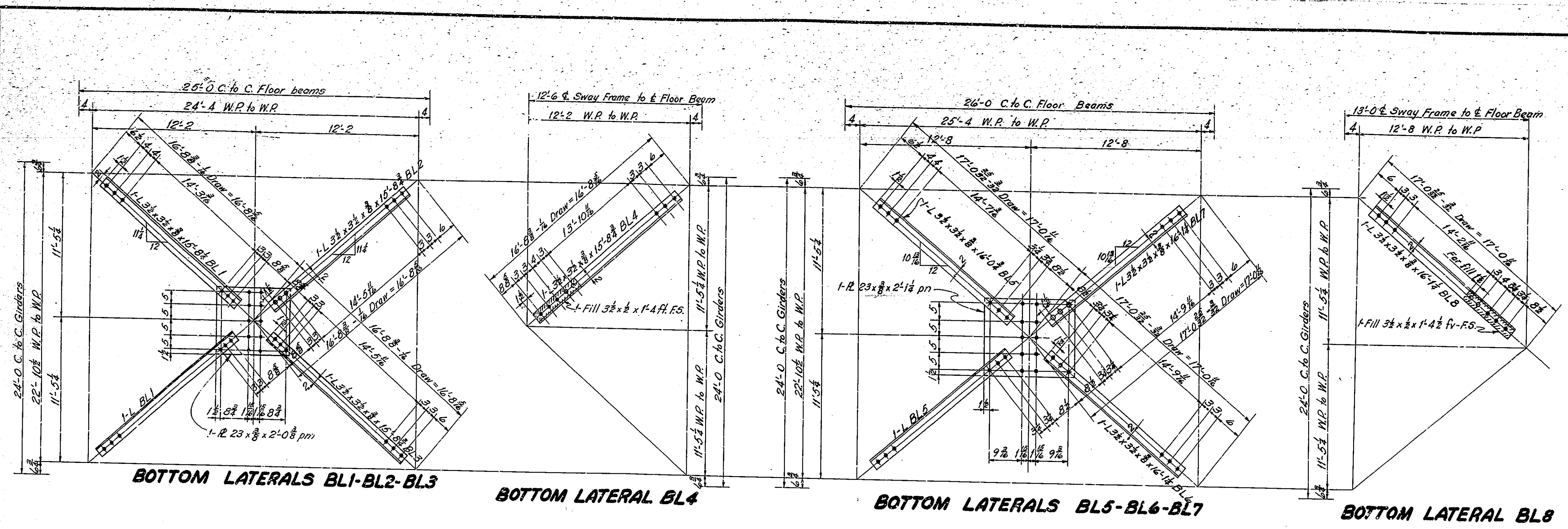
SCALE: 3/4" = 1'-0"  
 AUGUST 1, 1950

RECOMMENDED FOR APPROVAL: *J. B. Smythe*  
 PROJECT: F-645(e) STATION: 11+25

DRAWING: 534 OF 47  
 BRIDGE CONTRACT NO. 3289

DESIGNED: W.P. 1-25-49 C.W.D. 7-25-49  
 DRAWN: L.V.S. 10-25-49 C.W.D. 12-2-49  
 TRACED: M.L. 1-7-50 C.W.D. 1-9-50

| BRIDGES OVER 20' SPAN |       |             |             |              |
|-----------------------|-------|-------------|-------------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | TOTAL SHEETS |
| 4                     | IND.  | F-645(9)    | 1951        | 41           |

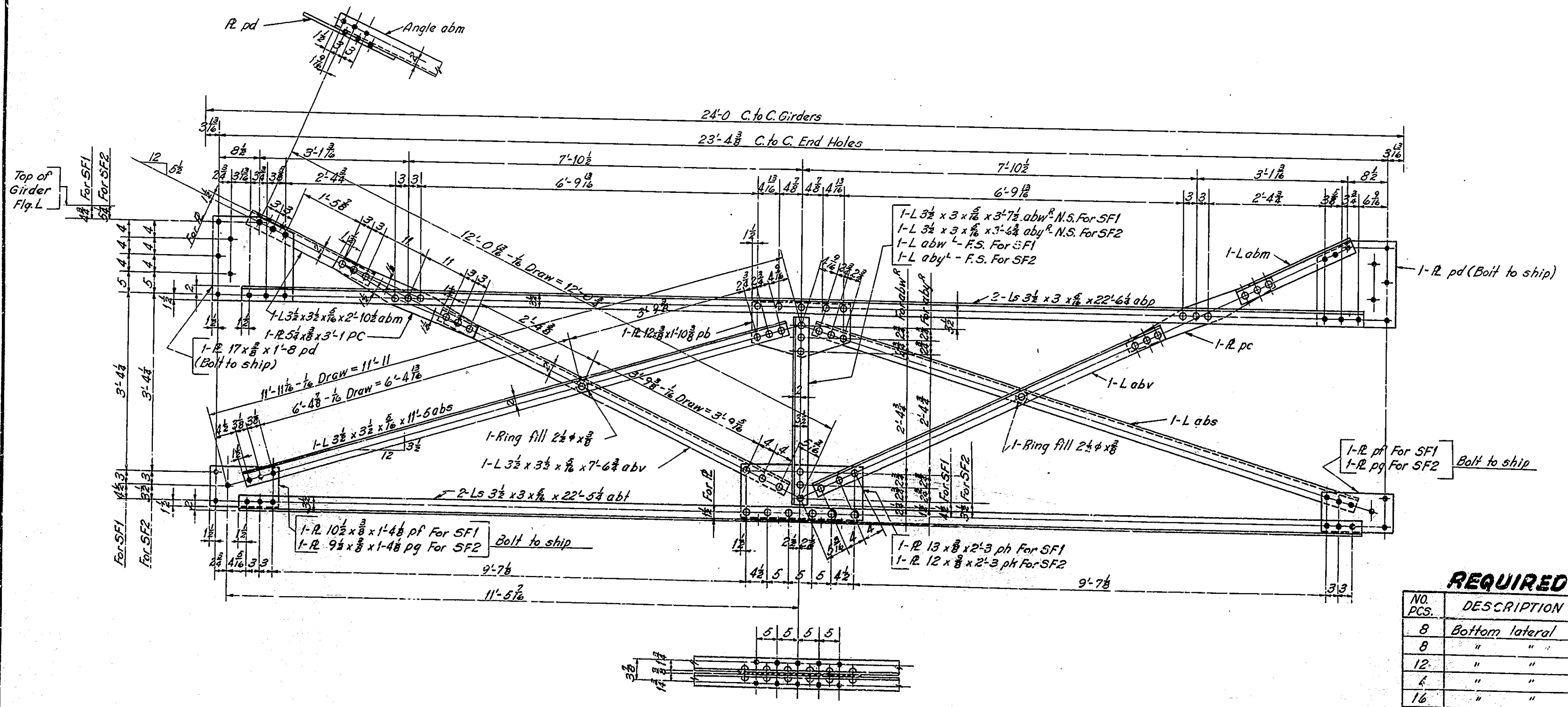


**BOTTOM LATERALS BL1-BL2-BL3**

**BOTTOM LATERAL BL4**

**BOTTOM LATERALS BL5-BL6-BL7**

**BOTTOM LATERAL BL8**



**SWAY FRAME SF1-SF2**  
Scale: 1/4" = 1'-0"

**NOTE:-**  
Rivets 3/8"  
Open holes 1/8"  
See Drwg. S17 for notes regarding use of these drawing for shop plans and regarding inspections.

**REQUIRED**

| NO. PCS. | DESCRIPTION    | MARK |
|----------|----------------|------|
| 8        | Bottom lateral | BL1  |
| 8        | " "            | BL2  |
| 12       | " "            | BL3  |
| 4        | " "            | BL4  |
| 16       | " "            | BL5  |
| 28       | " "            | BL6  |
| 20       | " "            | BL7  |
| 16       | " "            | BL8  |
| 18       | Sway Frame     | SF1  |
| 10       | " "            | SF2  |

**BOTTOM LATERAL & SWAY FRAME DETAILS**  
**STATE HIGHWAY COMMISSION OF INDIANA**

SCALE: 1/4" = 1'-0" UNLESS NOTED

AUGUST 1, 1950

RECOMMENDED FOR APPROVAL: *J. S. Smythe*  
ENGINEER OF ROAD DESIGN

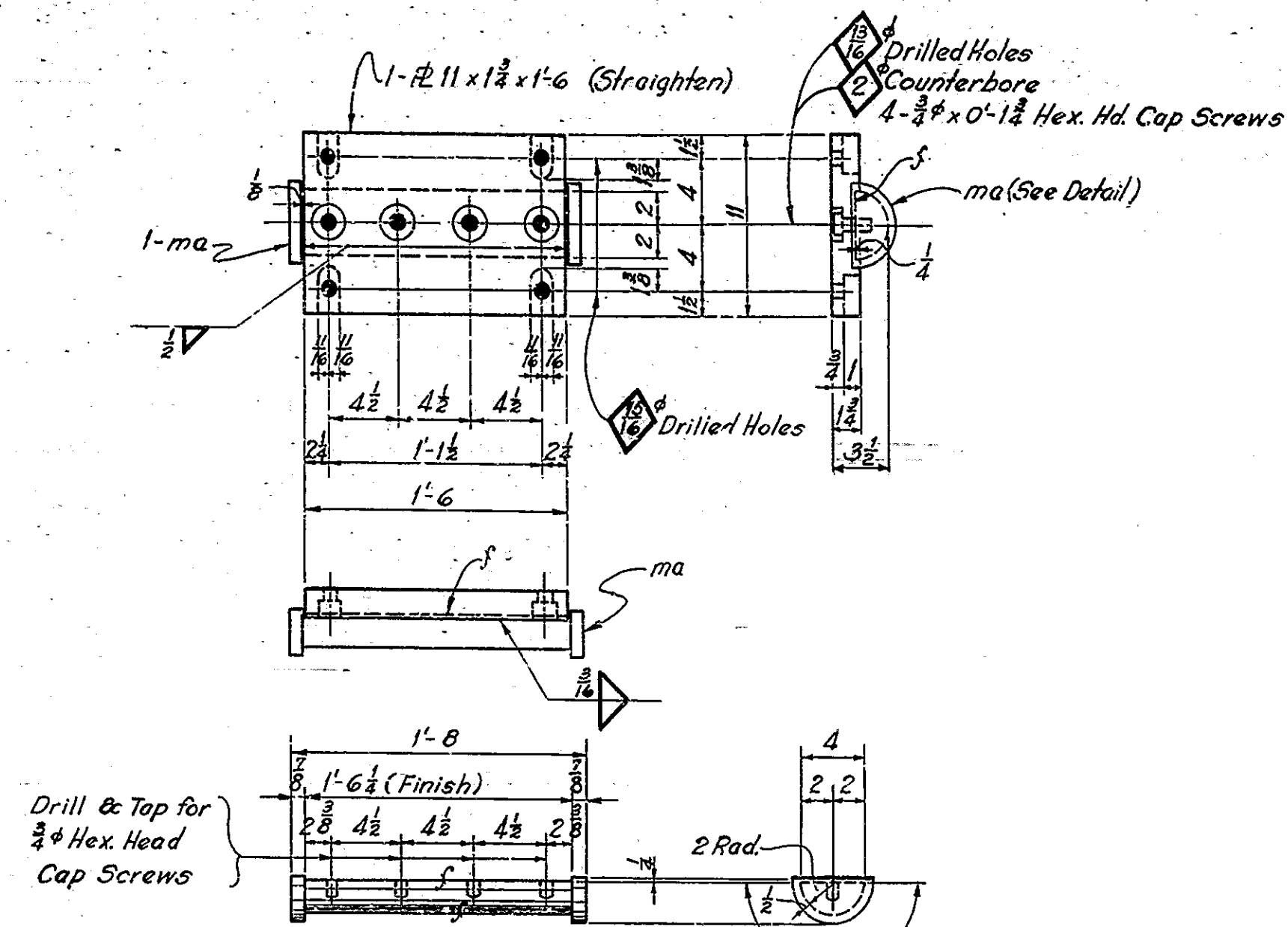
PROJECT: F-645(9) STATION: 11+25

DRAWING: 595 OF 47  
BRIDGE CONTRACT NO. 3289

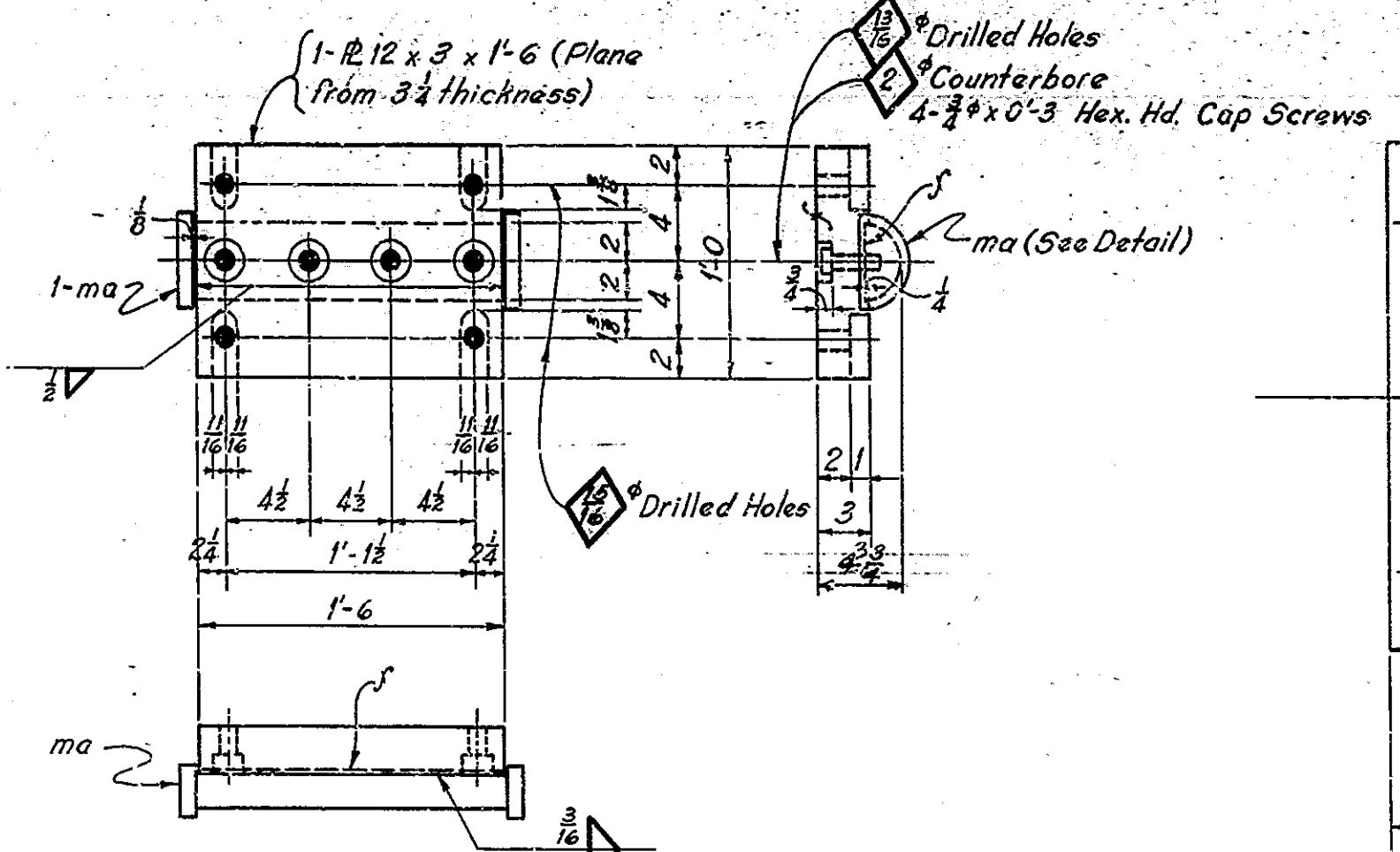
DESIGNED W.P. 2-26-49 C.K.O. E.W.B. 2-25-49  
DRAWN L.W.S. 11-16-49 C.K.O. W.P. 2-9-50  
TRACED R.A.R. 2-11-50 C.K.O. E.W.B. 2-1-50



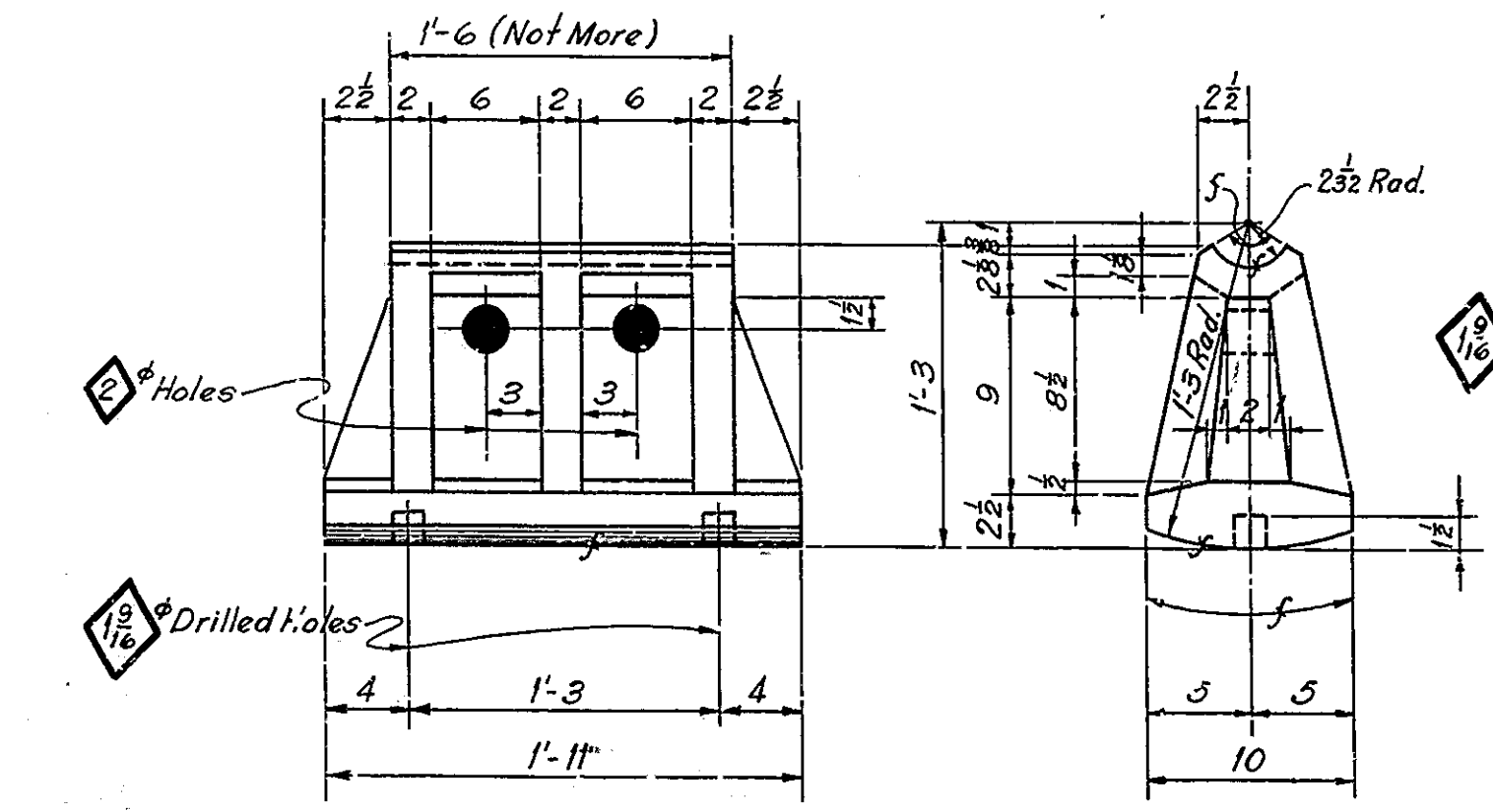
| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | F-645(3)    | 1951        | 42        | 65           |



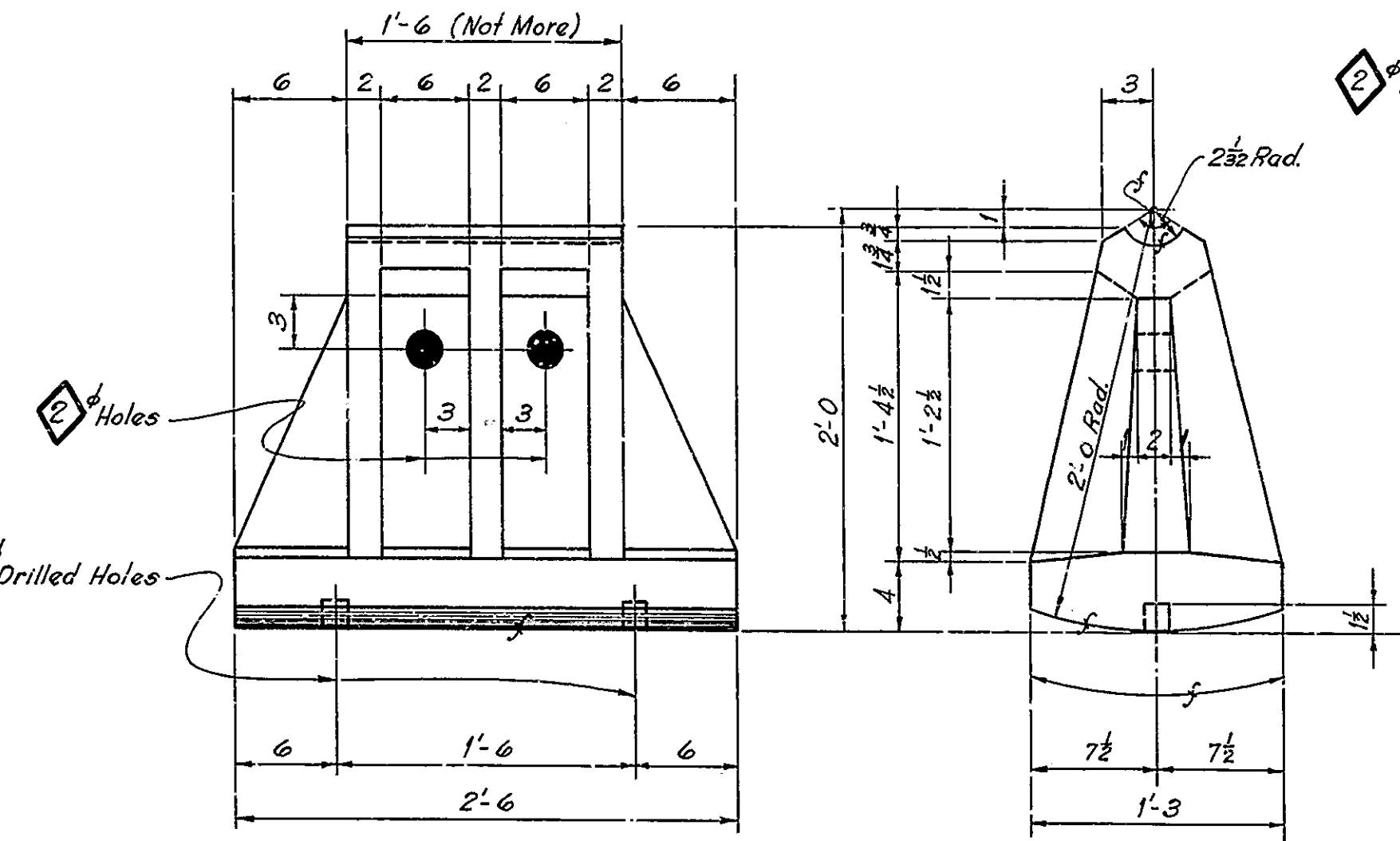
**TOP SHOE TS2**



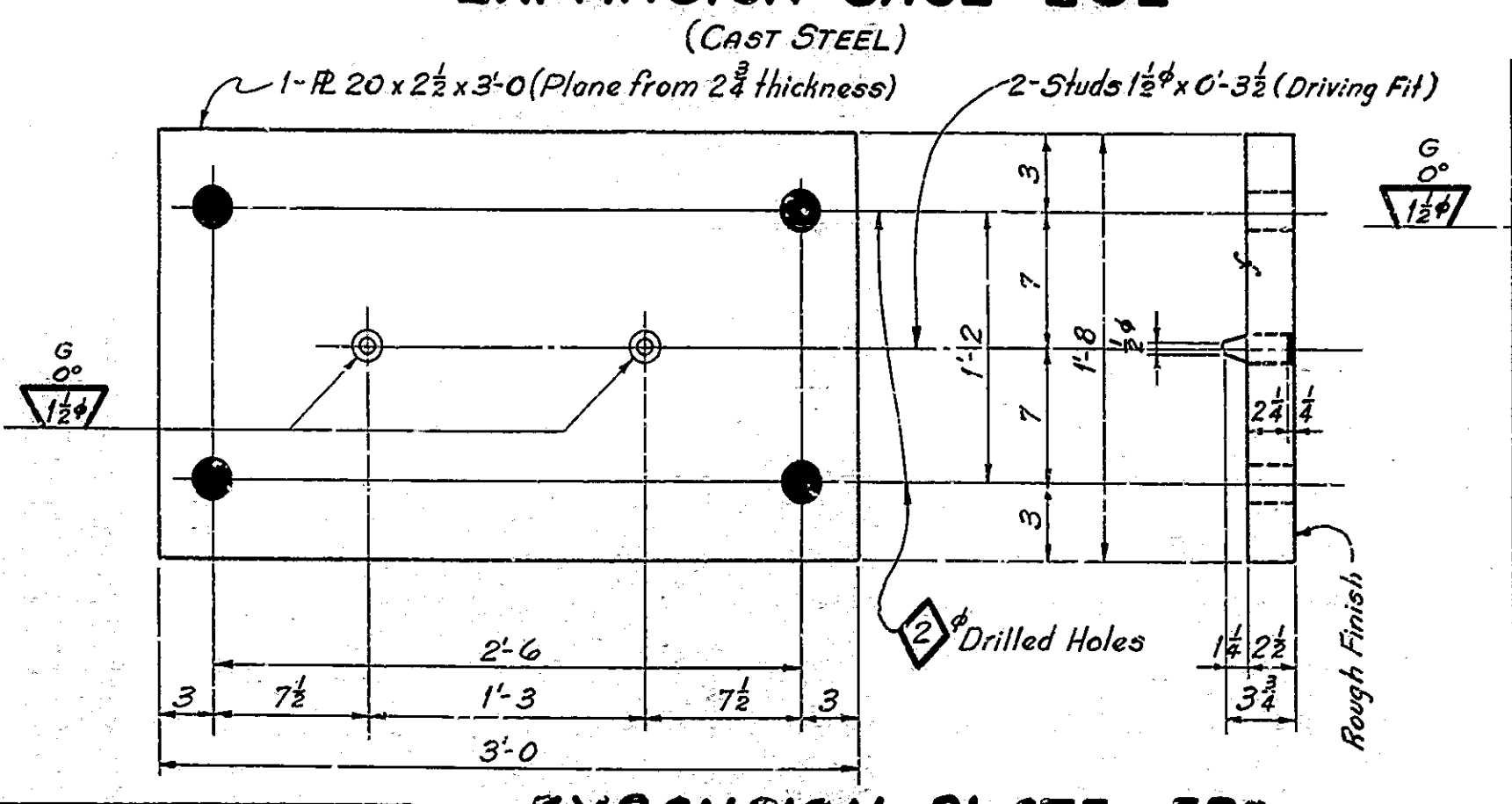
**TOP SHOE TS3**



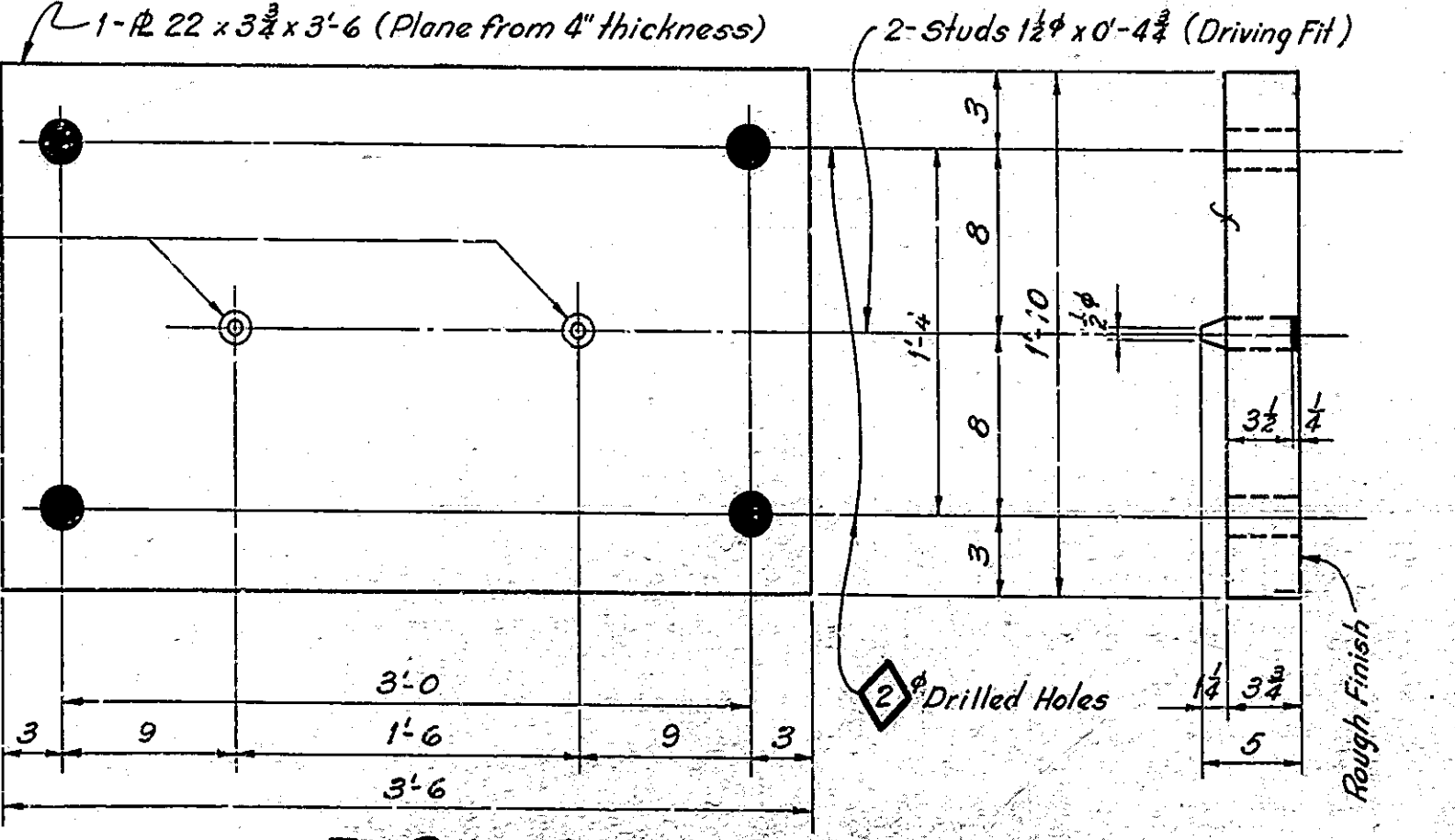
**EXPANSION SHOE ES2**



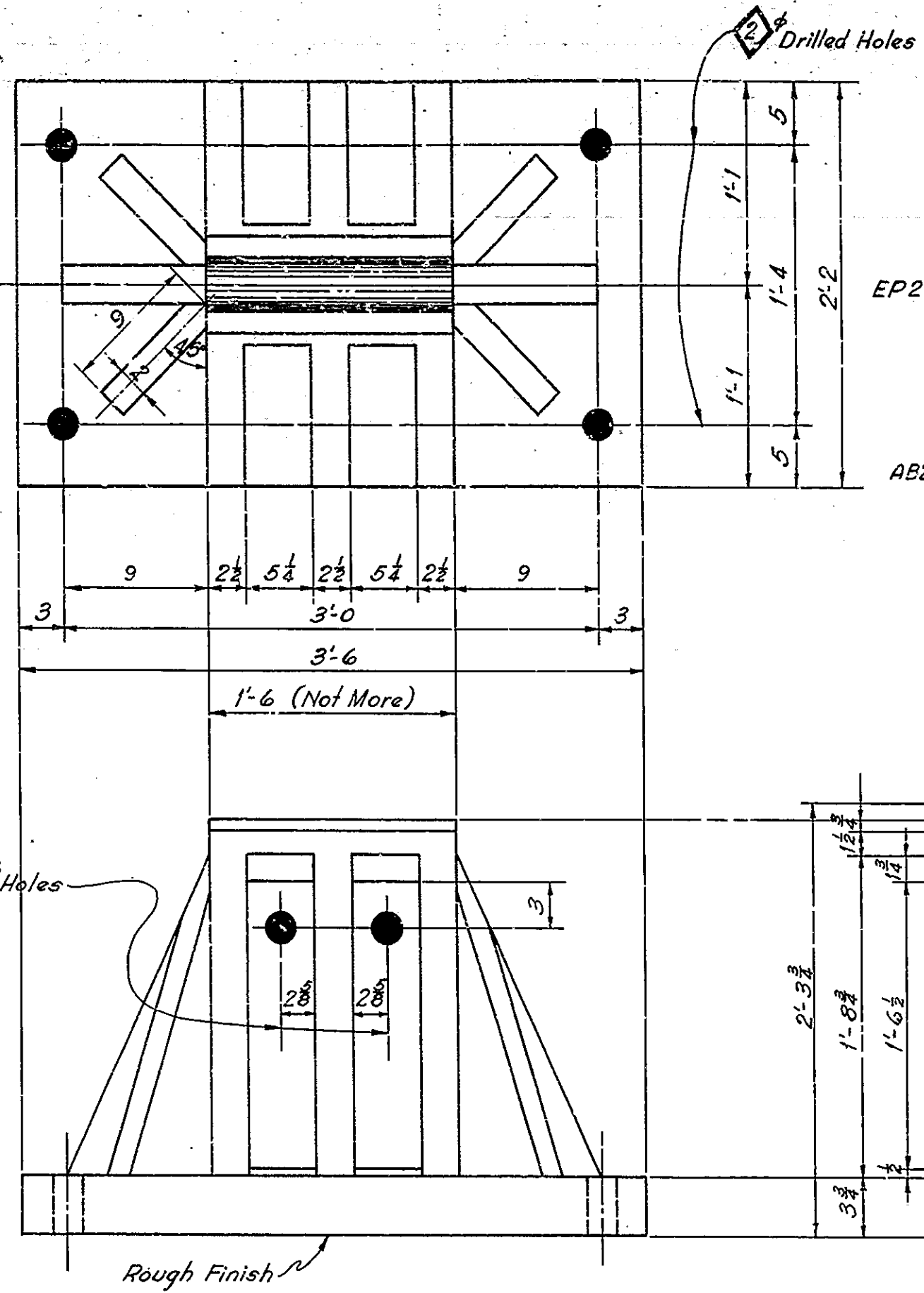
**EXPANSION SHOE ES3**



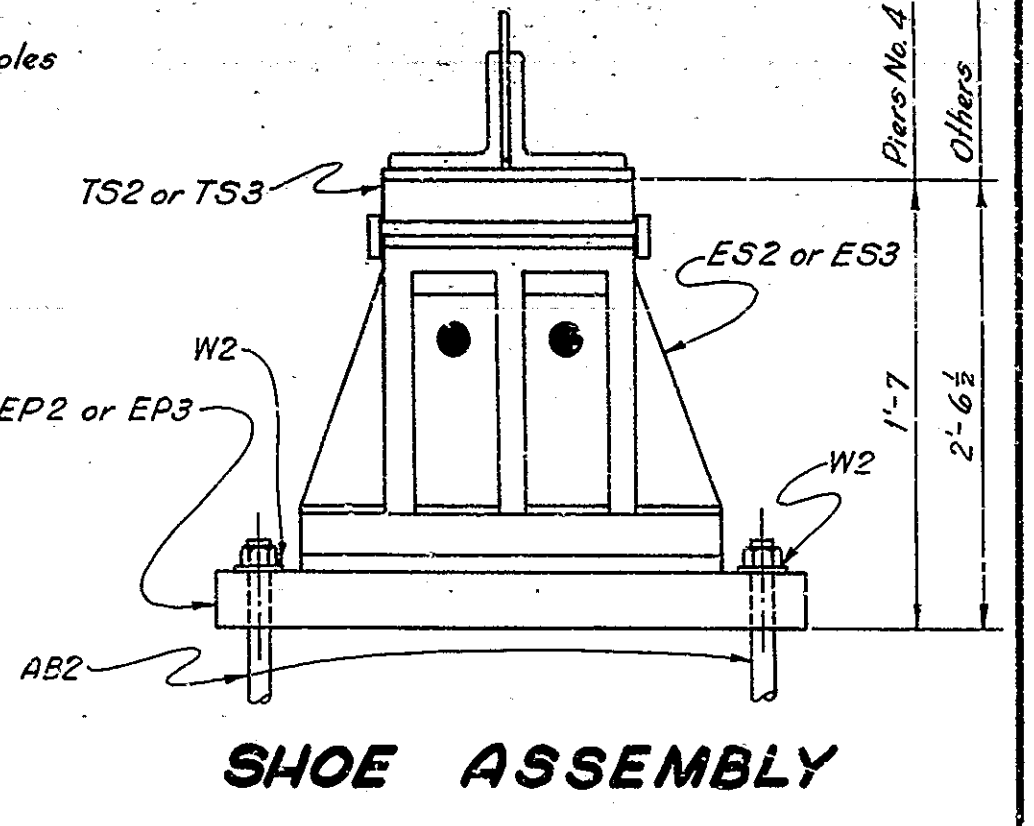
**EXPANSION PLATE EP2**



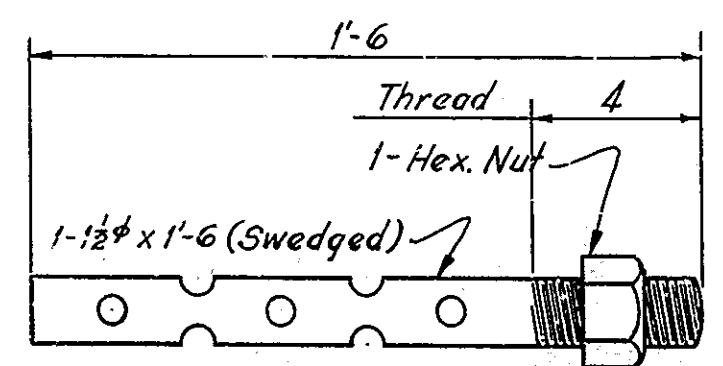
**EXPANSION PLATE EP3**



**FIXED SHOE FS2**  
(CAST STEEL)



**SHOE ASSEMBLY**



**WASHER W2**  
Scale: - 3 = 1'-0

**ANCHOR BOLT AB2**  
Scale: - 3 = 1'-0

| REQUIRED |                 |      |
|----------|-----------------|------|
| No.      | Description     | Mark |
| 4        | Top Shoe        | TS2  |
| 10       | "               | TS3  |
| 4        | Expansion Shoe  | ES2  |
| 8        | "               | ES3  |
| 2        | Fixed Shoe      | FS2  |
| 4        | Expansion Plate | EP2  |
| 8        | "               | EP3  |
| 56       | Anchor Bolt     | AB2  |
| 56       | Washer          | W2   |

NOTES  
Open Holes as noted.  
Edges of casting to be rounded to 1/4 radius and corners to have fillets of 1/2 radius except as noted.  
See Drwg. S17 for notes regarding use of these drawings for shop plans and regarding inspection.

SHOE DETAILS  
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: - 1 1/2" = 1'-0  
AUGUST 1, 1950

RECOMMENDED FOR APPROVAL:

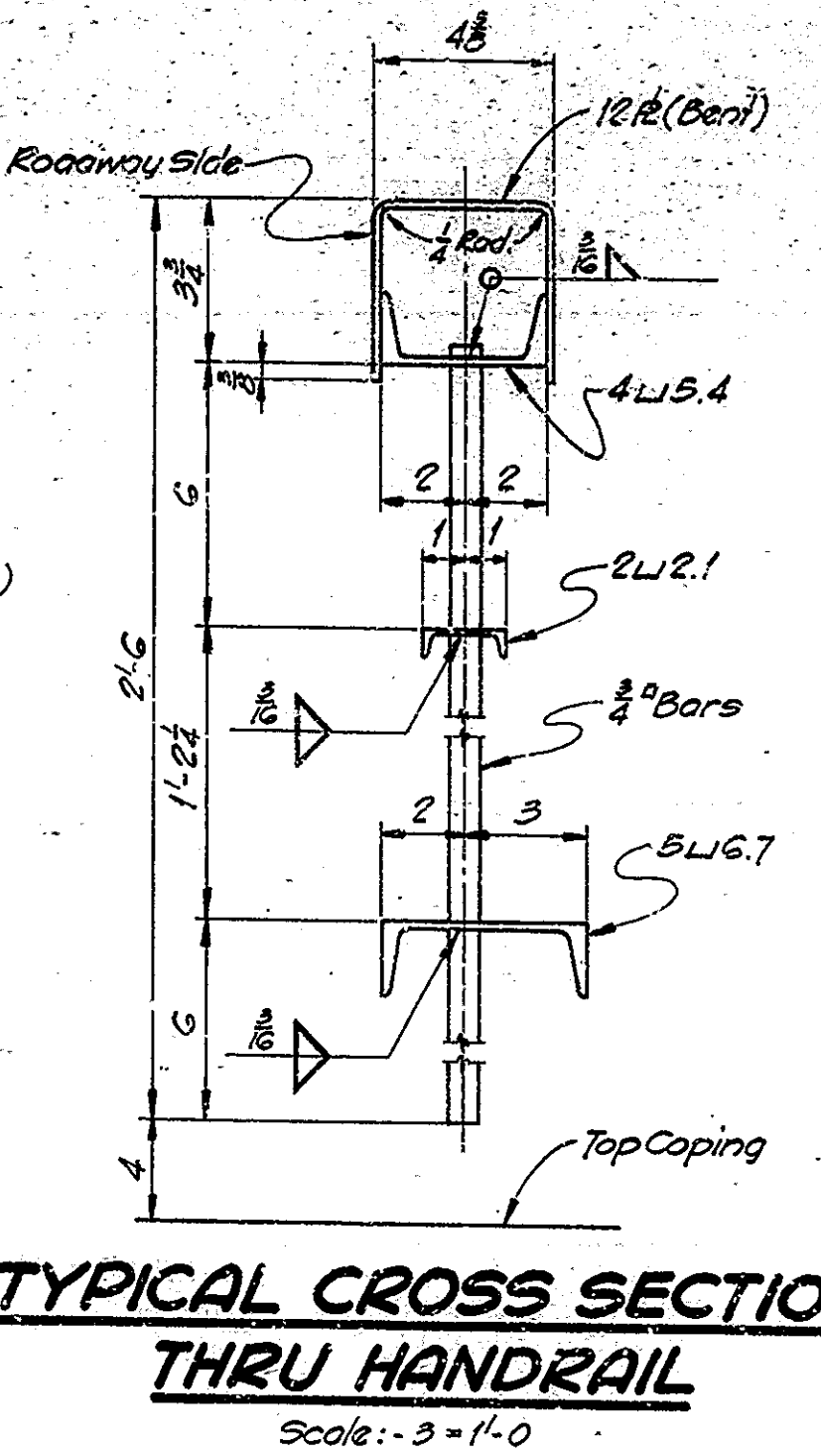
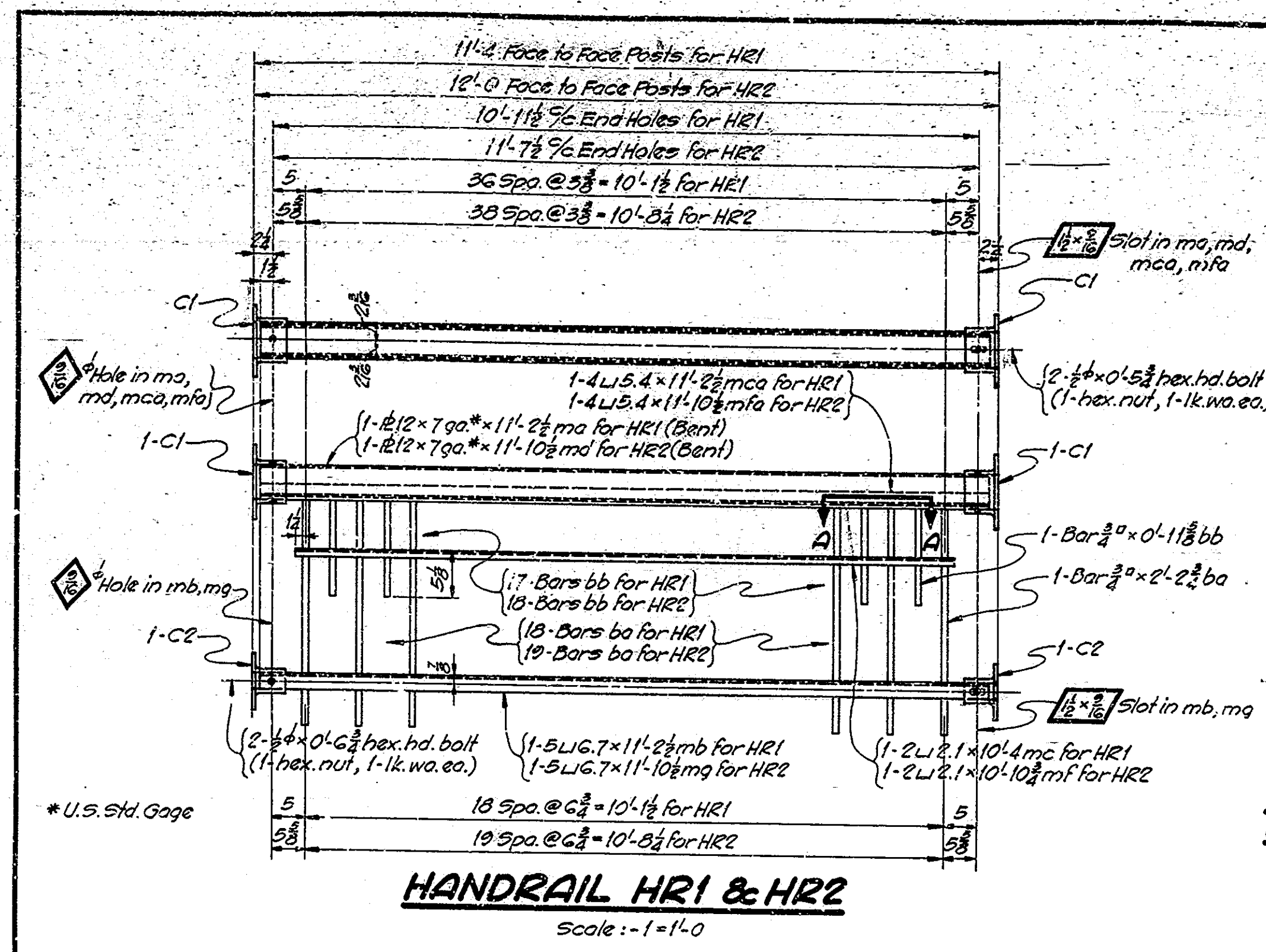
*J. W. Smythe*  
ENGINEER OF BRIDGE DESIGN

PROJECT: - F-645(3) STATION: - 11+25

DRAWING: - 596 OF 47  
BRIDGE CONTRACT NO. 3289

DESIGNED: R.W.B. 2-22-49 C.K.D. W.L.P. 7-28-49  
DRAWN: M.L. 10-15-49 C.K.D. W.L.P. 11-22-49  
TRACED: R.O.R. 1-6-50 C.K.D. W.B. 1-5-50

| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | F-645(9)    | 1951        | 43        | 65           |



**REQUIRED LIST**

| STRUCTURAL STEEL - HANDRAIL |             |      |            |                 |              |
|-----------------------------|-------------|------|------------|-----------------|--------------|
| No. Pcs                     | Description | Work | Drawg. No. | Weight One Pcs. | Total Weight |
| 28                          | Handrail    | HR1  |            | 407             | 11396        |
| 12                          | "           | HR2  |            | 427             | 5124         |
| 4                           | "           | HR3  |            | 415             | 1660         |
| 108                         | "           | HR4  |            | 416             | 44928        |
| 1136                        | Anchor Bolt | AB3  |            | 1.7             | 1931         |
| 160                         | "           | AB4  |            | 1.5             | 240          |
| TOTAL WEIGHT - HANDRAIL     |             |      |            |                 | 65279        |

**STRUCTURAL STEEL - HANDRAIL BY SHIPPING PIECES**

| No. Pcs                  | Section   | Length     | Location                                  | Total Wt. |
|--------------------------|-----------|------------|---|-----------|
| <b>HANDRAIL HR1</b>      |           |            |   |           |
| 1                        | 5 L6.7    | 11'-2 1/2" | mb  | 75        |
| 1                        | 4 L5.4    | 11'-2 1/2" | mca                                       | 61        |
| 1                        | 2 L2.1    | 10'-4"     | mc  | 22        |
| 1                        | 12 x 7ga. | 11'-2 1/2" | ma (Bent) U.S. Std. Gage                  | 84        |
| 10                       | Bars 3/8" | 2'-2 1/2"  | ba  | 81        |
| 18                       | Bars 3/8" | 0'-11 1/8" | bb  | 33        |
| 2                        | -         | -          | Castings C1 (Malleable Iron)              | 26        |
| 2                        | -         | -          | " C2 ( " " )                              | 23        |
| 2                        | 1/2"      | 0'-6 1/2"  | Hex. Hd. Bolt (1-hex. nut; 1-lk. wa. ea.) | 1         |
| 2                        | 1/2"      | 0'-5 1/2"  | " " " (1- " " ; 1- " " )                  | 1         |
| TOTAL WEIGHT - ONE PIECE |           |            |   | 407       |

**HANDRAIL HR2**

|                          |           |             |   |     |
|--------------------------|-----------|-------------|---|-----|
| 1                        | 5 L6.7    | 11'-10 1/2" | mf  | 80  |
| 1                        | 4 L5.4    | 11'-10 1/2" | mfa                                       | 64  |
| 1                        | 2 L2.1    | 10'-10 1/2" | mf  | 23  |
| 1                        | 12 x 7ga. | 11'-10 1/2" | md (Bent) U.S. Std. Gage                  | 89  |
| 20                       | Bars 3/8" | 2'-2 1/2"   | ba  | 85  |
| 18                       | Bars 3/8" | 0'-11 1/8"  | bb  | 35  |
| 2                        | -         | -           | Castings C1 (Malleable Iron)              | 26  |
| 2                        | -         | -           | " C2 ( " " )                              | 23  |
| 2                        | 1/2"      | 0'-6 1/2"   | Hex. Hd. Bolt (1-hex. nut; 1-lk. wa. ea.) | 1   |
| 2                        | 1/2"      | 0'-5 1/2"   | " " " (1- " " ; 1- " " )                  | 1   |
| TOTAL WEIGHT - ONE PIECE |           |             |   | 427 |

**HANDRAIL HR3**

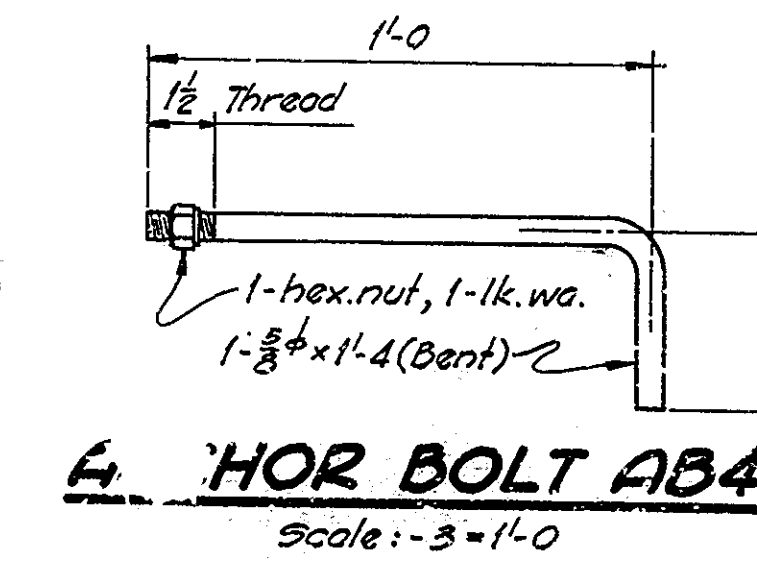
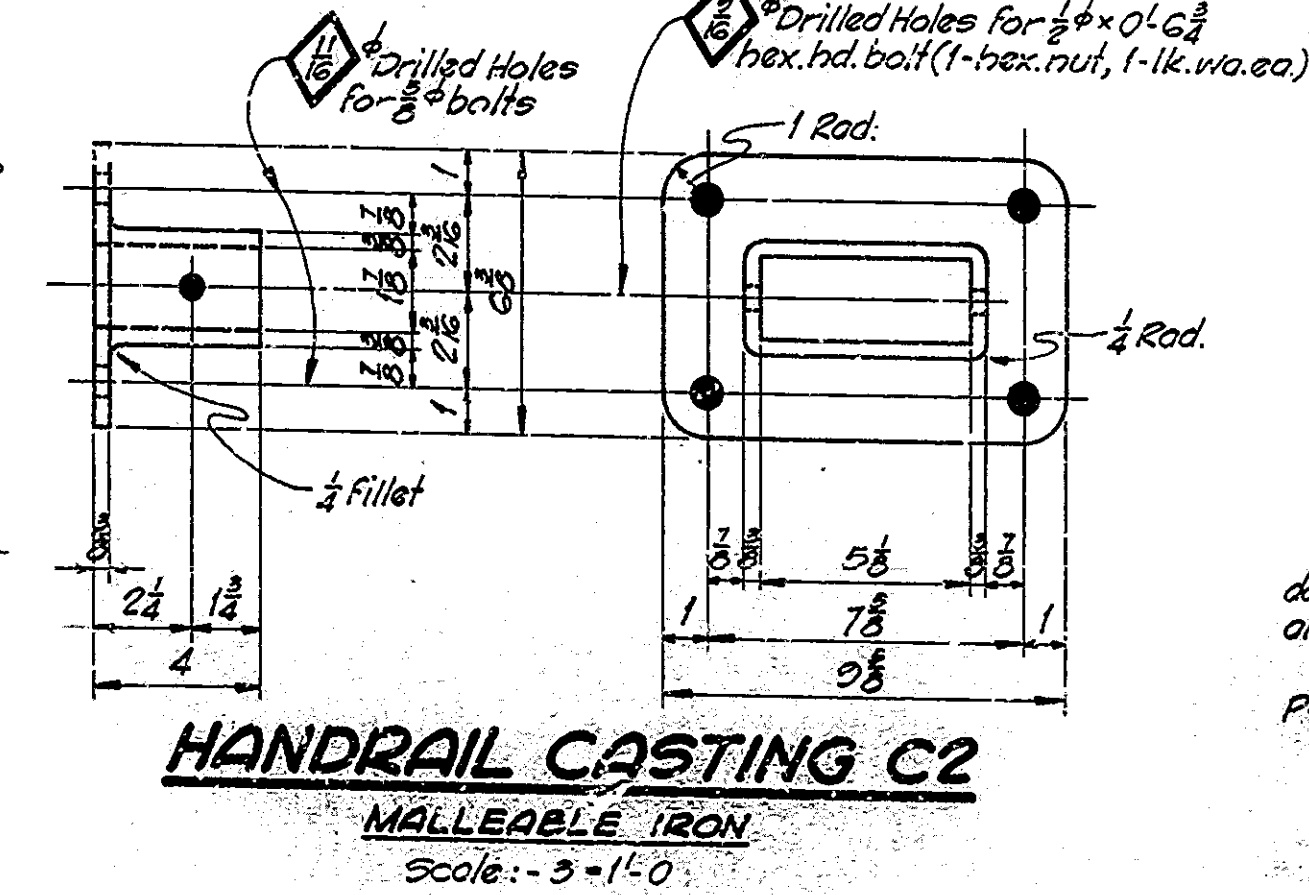
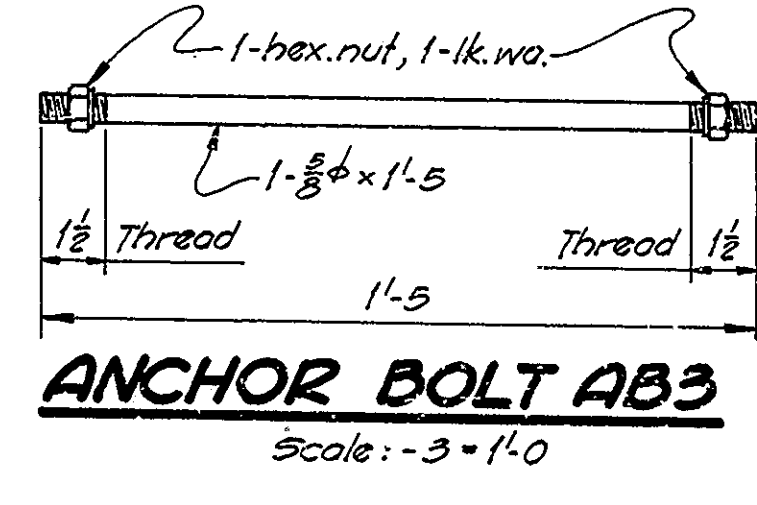
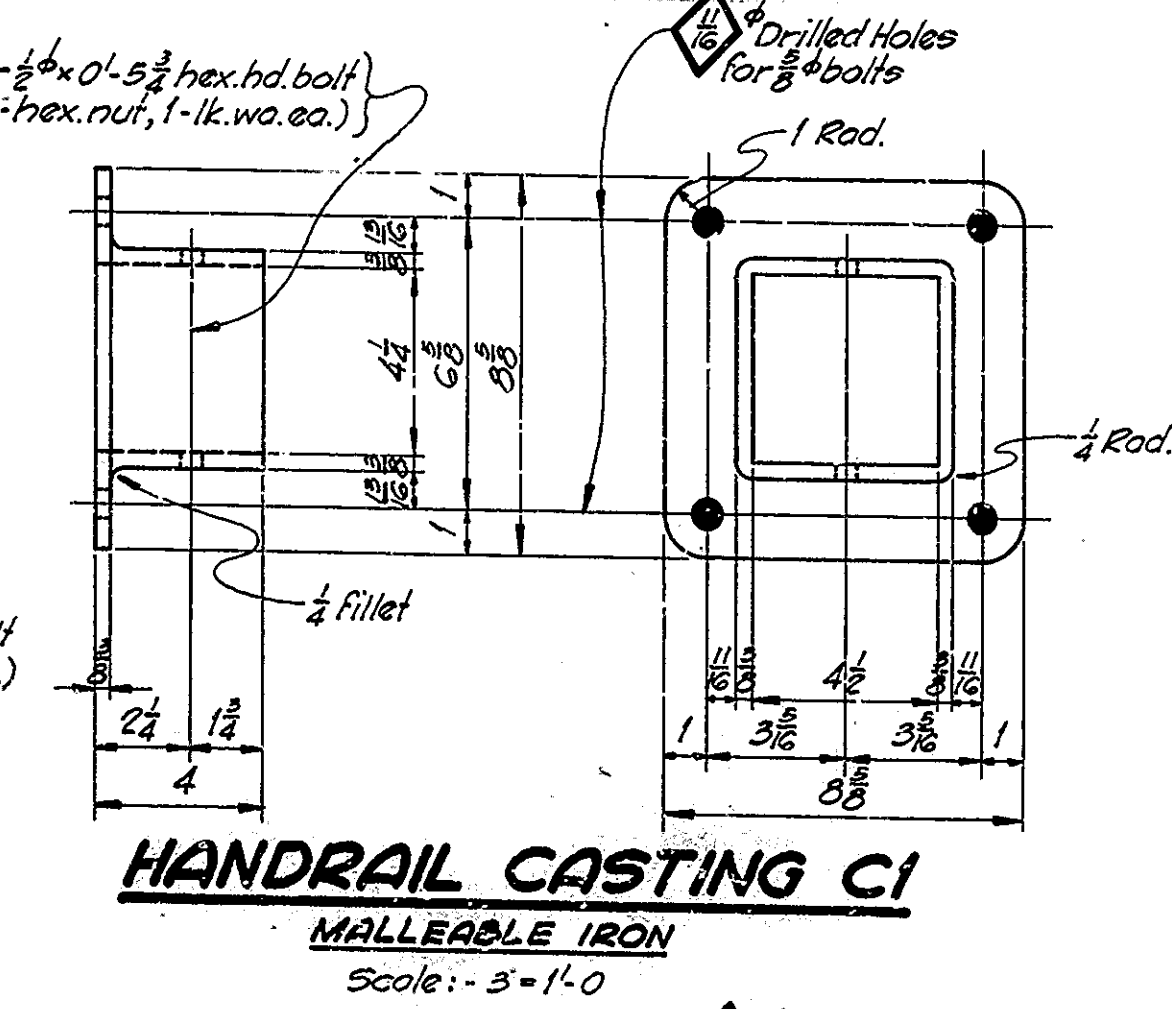
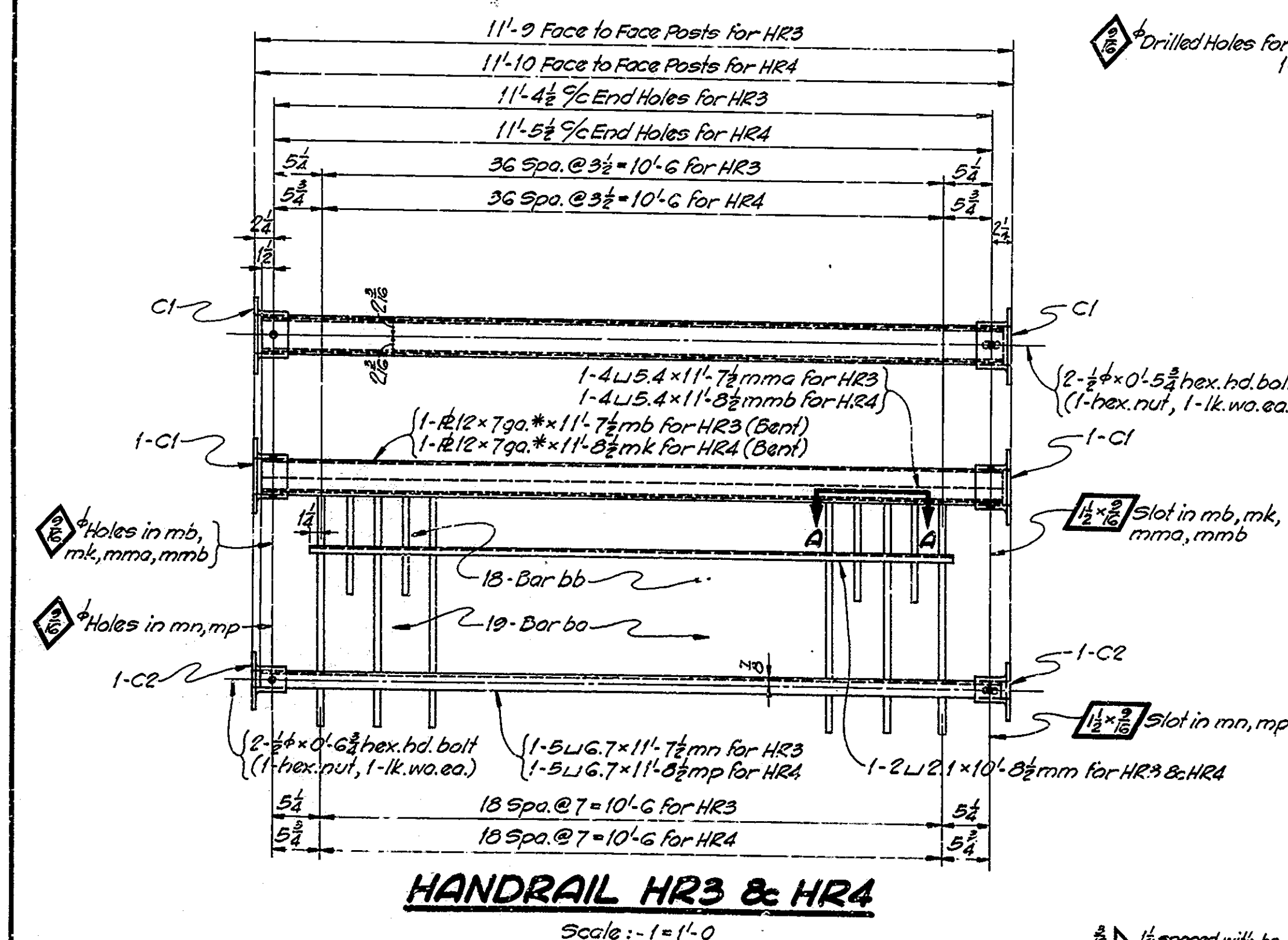
|                          |           |            |   |     |
|--------------------------|-----------|------------|---|-----|
| 1                        | 5 L6.7    | 11'-7 1/2" | mn  | 78  |
| 1                        | 4 L5.4    | 11'-7 1/2" | mna                                       | 63  |
| 1                        | 2 L2.1    | 10'-8 1/2" | mn  | 22  |
| 1                        | 12 x 7ga. | 11'-7 1/2" | mb (Bent) U.S. Std. Gage                  | 87  |
| 19                       | Bars 3/8" | 2'-2 1/2"  | ba  | 81  |
| 18                       | Bars 3/8" | 0'-11 1/8" | bb  | 33  |
| 2                        | -         | -          | Castings C1 (Malleable Iron)              | 26  |
| 2                        | -         | -          | " C2 ( " " )                              | 23  |
| 2                        | 1/2"      | 0'-6 1/2"  | Hex. Hd. Bolt (1-hex. nut; 1-lk. wa. ea.) | 1   |
| 2                        | 1/2"      | 0'-5 1/2"  | " " " (1- " " ; 1- " " )                  | 1   |
| TOTAL WEIGHT - ONE PIECE |           |            |   | 415 |

**HANDRAIL HR4**

|                          |           |            |   |     |
|--------------------------|-----------|------------|---|-----|
| 1                        | 5 L6.7    | 11'-8 1/2" | mp  | 78  |
| 1                        | 4 L5.4    | 11'-8 1/2" | mmb                                       | 63  |
| 1                        | 2 L2.1    | 10'-8 1/2" | mm  | 22  |
| 1                        | 12 x 7ga. | 11'-8 1/2" | mk (Bent) U.S. Std. Gage                  | 88  |
| 19                       | Bars 3/8" | 2'-2 1/2"  | ba  | 81  |
| 18                       | Bars 3/8" | 0'-11 1/8" | bb  | 33  |
| 2                        | -         | -          | Castings C1 (Malleable Iron)              | 26  |
| 2                        | -         | -          | " C2 ( " " )                              | 23  |
| 2                        | 1/2"      | 0'-6 1/2"  | Hex. Hd. Bolt (1-hex. nut; 1-lk. wa. ea.) | 1   |
| 2                        | 1/2"      | 0'-5 1/2"  | " " " (1- " " ; 1- " " )                  | 1   |
| TOTAL WEIGHT - ONE PIECE |           |            |   | 416 |

**MISCELLANEOUS**

|   |      |       |                                      |     |
|---|------|-------|--------------------------------------|-----|
| 1 | 1/2" | 1'-5" | AB3 (2-hex. nuts; 2-lk. wa. ea.)     | 1.7 |
| 1 | 1/2" | 1'-2" | AB4 (Bent) 1-hex. nut; 1-lk. wa. ea. | 1.5 |



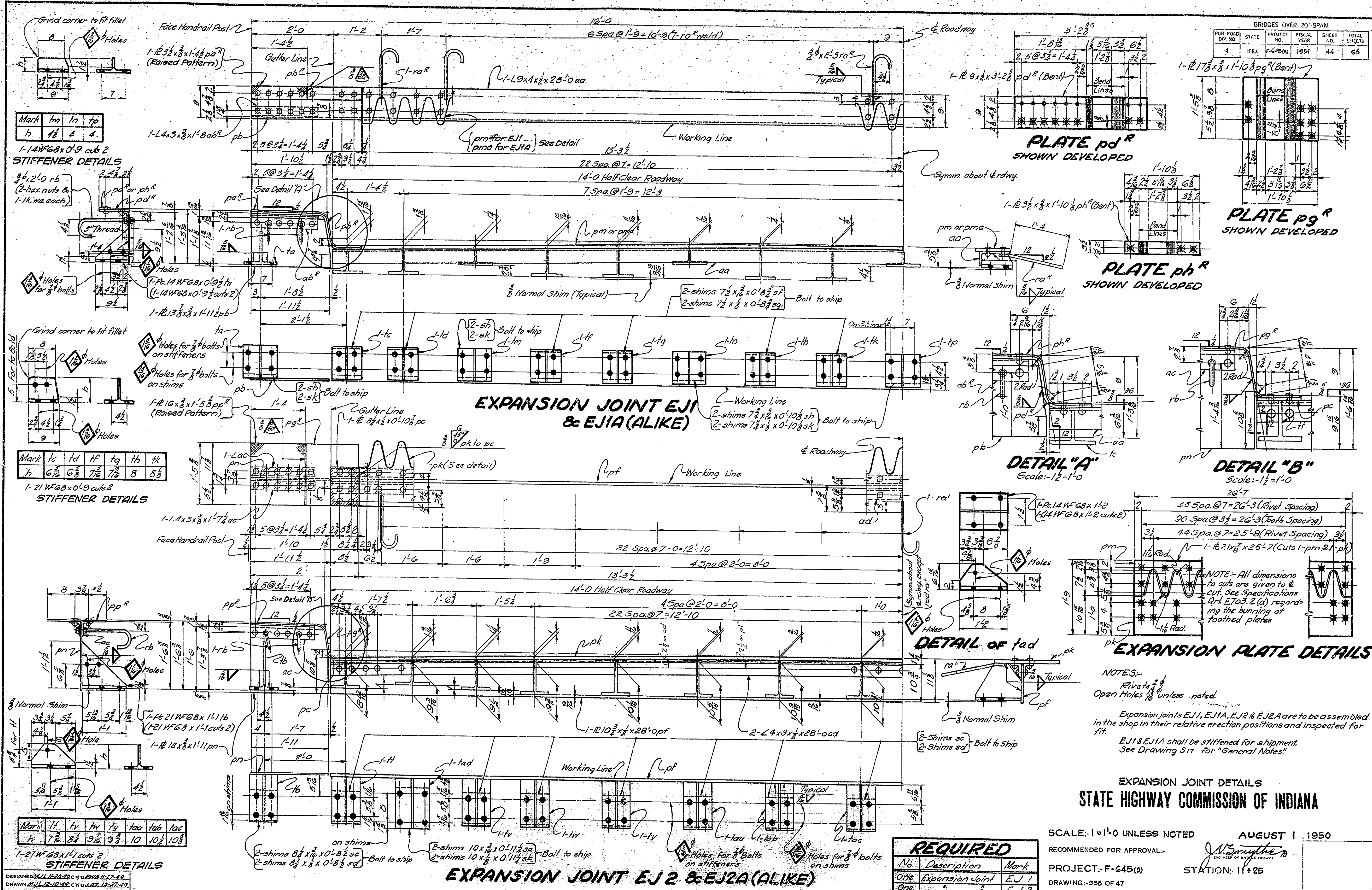
NOTES:-  
Open Holes as noted  
All welding on guardrail to be neatly done and ground smooth. Rough edges and sharp corners to be ground smooth.  
Bars marked "b" to have rolled or planed edges.  
See Drawing 911 for General Notes!

HANDRAIL DETAILS & BILL OF MATERIALS  
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: AS NOTED  
RECOMMENDED FOR APPROVAL: *J. W. Smyth*  
PROJECT: F-645(9) STATION: 11+25  
DRAWING: 637 CF 47  
BRIDGE CONTRACT NO. 3289  
BRIDGE FILE NO. 22-1-112

DESIGNED: H.L. 11-21-49  
DRAWN: H.L. 11-25-49  
CHECKED: H.L. 12-15-49  
TRACED: H.L. 2-19-50

| BRIDGES OVER 20' SPAN |       |             |             |              |
|-----------------------|-------|-------------|-------------|--------------|
| PUR. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | TOTAL SHEETS |
| 4                     | IND.  | F-645(9)    | 1951        | 65           |



| Mark | tm | tn | tp |
|------|----|----|----|
| h    | 4  | 4  | 4  |

1-14W68x0.9 cuts 2  
STIFFENER DETAILS

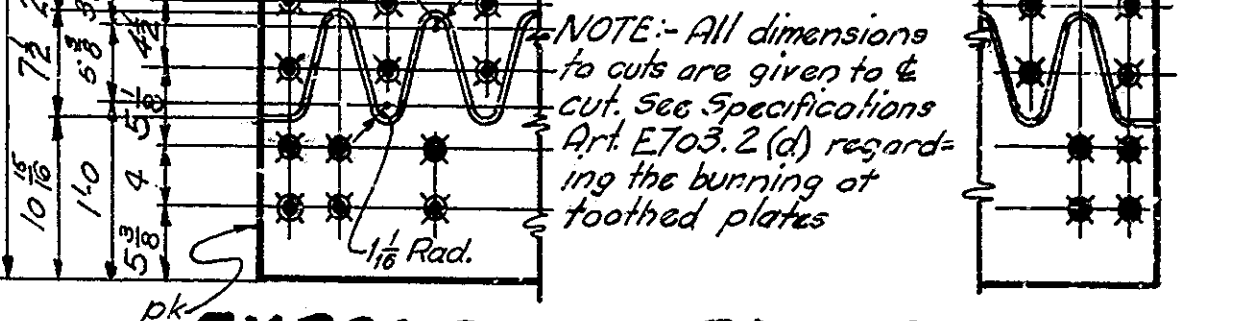
| Mark | tc | td | tf | tg | th | tk |
|------|----|----|----|----|----|----|
| h    | 6  | 6  | 7  | 7  | 8  | 8  |

1-21W68x0.9 cuts 2  
STIFFENER DETAILS

| Mark | tl | tl | tl | tl | tl | tl |
|------|----|----|----|----|----|----|
| h    | 7  | 8  | 9  | 9  | 10 | 10 |

1-21W68x0.9 cuts 2  
STIFFENER DETAILS

| REQUIRED |                 |      |
|----------|-----------------|------|
| No.      | Description     | Mark |
| One      | Expansion Joint | EJ 1 |
| One      | "               | EJ 2 |
| One      | "               | EJIA |



EXPANSION JOINT DETAILS  
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: 1" = 1'-0" UNLESS NOTED  
AUGUST 1, 1950  
RECOMMENDED FOR APPROVAL: [Signature]  
PROJECT: F-645(9) STATION: 11+25  
DRAWING: 598 OF 47  
BRIDGE CONTRACT NO. 3289

Table with columns: PUB. ROAD DIV. NO., STATE, PROJECT NO., FISCAL YEAR, SHEET NO., TOTAL SHEETS. Values: 4, IND., P-64E(3), 1951, 45, 65.

Table for GIRDER G1 & G2 (DRWG. S10 & S20). Columns: No. Section, Length, Location, Total Wt. Rows include sections like L3x8x1/2, L3x8x3/8, etc.

Table for GIRDER G2 & G21 (DRWG. S21 & S22). Columns: No. Section, Length, Location, Total Wt. Rows include sections like L3x8x3/8, L3x8x1/2, etc.

Table for GIRDER G3 & G20 (DRWG. S23 & S24). Columns: No. Section, Length, Location, Total Wt. Rows include sections like L3x8x1/2, L3x8x3/8, etc.

Table for GIRDER G3 & G20 (CONTINUED). Columns: No. Section, Length, Location, Total Wt. Rows include sections like L3x8x1/2, L3x8x3/8, etc.

Table for GIRDER G5, G6, G9, G10, G13, G14, G17, G18 (DRWG. S27 & S28). Columns: No. Section, Length, Location, Total Wt. Rows include sections like L3x8x1/2, L3x8x3/8, etc.

Table for GIRDER G7, G8, G11, G12, G15, G16 (DRWG. S29 & S30). Columns: No. Section, Length, Location, Total Wt. Rows include sections like L3x8x1/2, L3x8x3/8, etc.

Table for FIELD SPlice SP1 (DRWG. S31). Columns: No. Section, Length, Location, Total Wt. Rows include sections like L7x7x1/2, L7x7x3/8, etc.

Table for FIELD SPlice SP2 (DRWG. S31). Columns: No. Section, Length, Location, Total Wt. Rows include sections like L7x7x1/2, L7x7x3/8, etc.

Table for FLOOR BEAM FB1 (DRWG. S32). Columns: No. Section, Length, Location, Total Wt. Rows include sections like L3x3x3/8, L3x3x1/2, etc.

Table for BRACKET BK2 (DRWG. S34). Columns: No. Section, Length, Location, Total Wt. Rows include sections like L4x4x1/2, L3x3x3/8, etc.

Table for BRACKET BK3 (DRWG. S34). Columns: No. Section, Length, Location, Total Wt. Rows include sections like L4x4x1/2, L3x3x3/8, etc.

Table for BRACKET BK4 (DRWG. S34). Columns: No. Section, Length, Location, Total Wt. Rows include sections like L4x4x1/2, L3x3x3/8, etc.

Table for SWAY FRAME SF2 (DRWG. S35). Columns: No. Section, Length, Location, Total Wt. Rows include sections like L3x3x3/8, L3x3x1/2, etc.

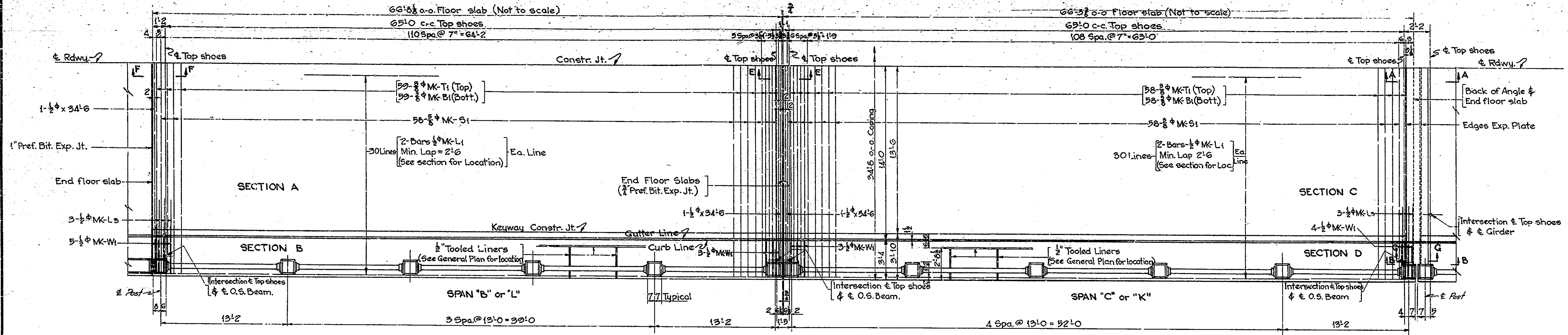
Table for SWAY FRAME SF1 (DRWG. S35). Columns: No. Section, Length, Location, Total Wt. Rows include sections like L3x3x3/8, L3x3x1/2, etc.

Table for BRACKET BK1 (DRWG. S34). Columns: No. Section, Length, Location, Total Wt. Rows include sections like L4x4x1/2, L3x3x3/8, etc.

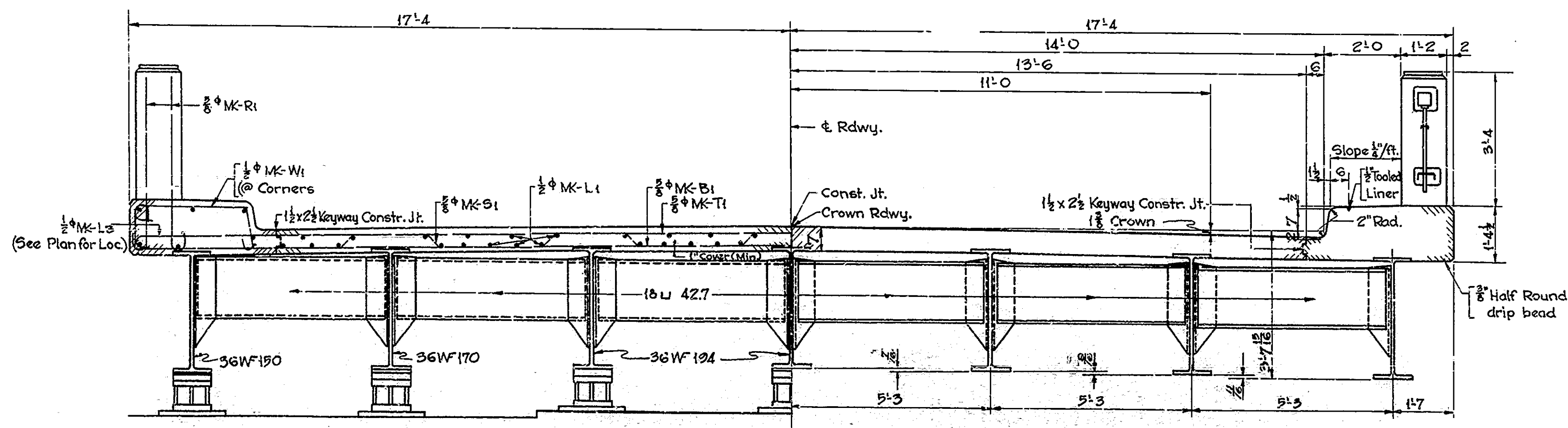
STRUCTURAL STEEL BILL OF MATERIALS BY SHIPPING PIECES - SPANS D, E, F, G, H, J STATE HIGHWAY COMMISSION OF INDIANA

SCALE: NONE AUGUST 4, 1950. PROJECT: F-64E(3) STATION: 11+25. DRAWING: S-29 OF 47. BRIDGE CONTRACT NO. 3269.

| BRIDGES OVER 20' SPAN |       |             |             |              |
|-----------------------|-------|-------------|-------------|--------------|
| PUB. ROAD DW. NO.     | STATE | PROJECT NO. | FISCAL YEAR | TOTAL SHEETS |
| 4                     | IND.  | F-645(a)    | 1951        | 46           |
|                       |       |             |             | 65           |



**HALF PLAN**  
Scale: 1/2" = 1'-0"



SHOWING REINFORCING STEEL & END STEEL DIAPHRAGMS SHOWING DIMENSIONS & INTERIOR STEEL DIAPHRAGMS  
**SECTION I TO & ROADWAY**  
Scale: 1/2" = 1'-0"

NOTE: Work this Drwg. with Drwgs. 541, 542 & 545

FLOOR DETAILS - SPANS B, C, K & L  
**STATE HIGHWAY COMMISSION OF INDIANA**

SCALE: AS SHOWN AUGUST 1, 1950

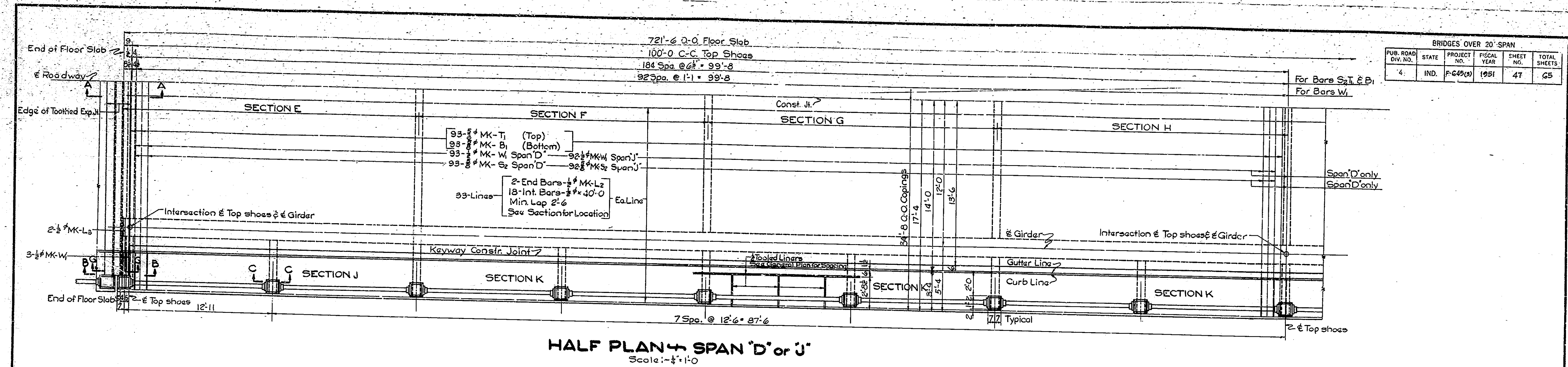
RECOMMENDED FOR APPROVAL: *[Signature]*  
ENGINEER OF BRIDGE SECTION

PROJECT: F-645(a) STATION: 11+25

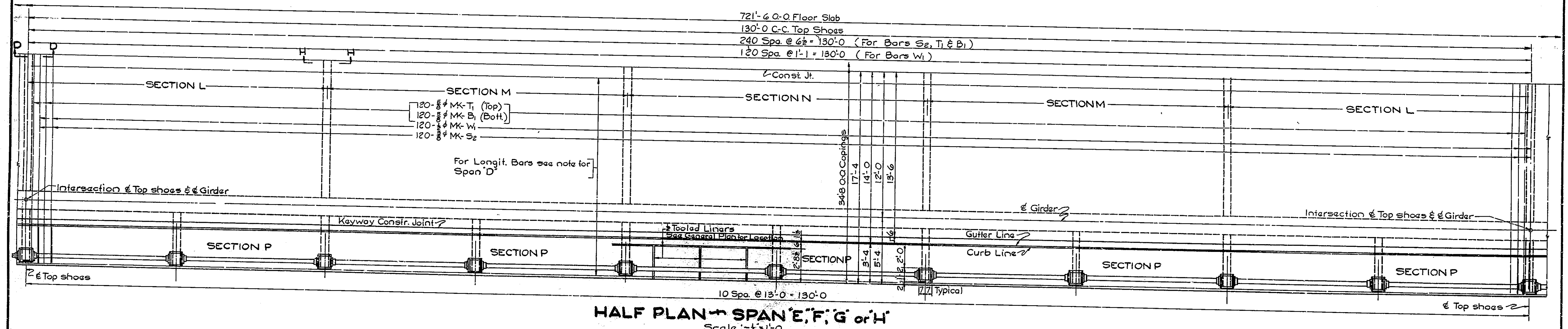
DRAWING: 540 OF 47  
BRIDGE CONTRACT NO. 3289

DESIGNED R.W.B. & R.C. W.D. 11/15/49  
DRAWN R.E. 12-10-49 C.K. D.T.B. 1-3-50  
TRACED M.V.S. 1-27-50 C.K. D.T.B. 1-30-50

| BRIDGES OVER 20' SPAN |       |             |             |              |
|-----------------------|-------|-------------|-------------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | TOTAL SHEETS |
| 4                     | IND.  | F-645(3)    | 1951        | 47           |

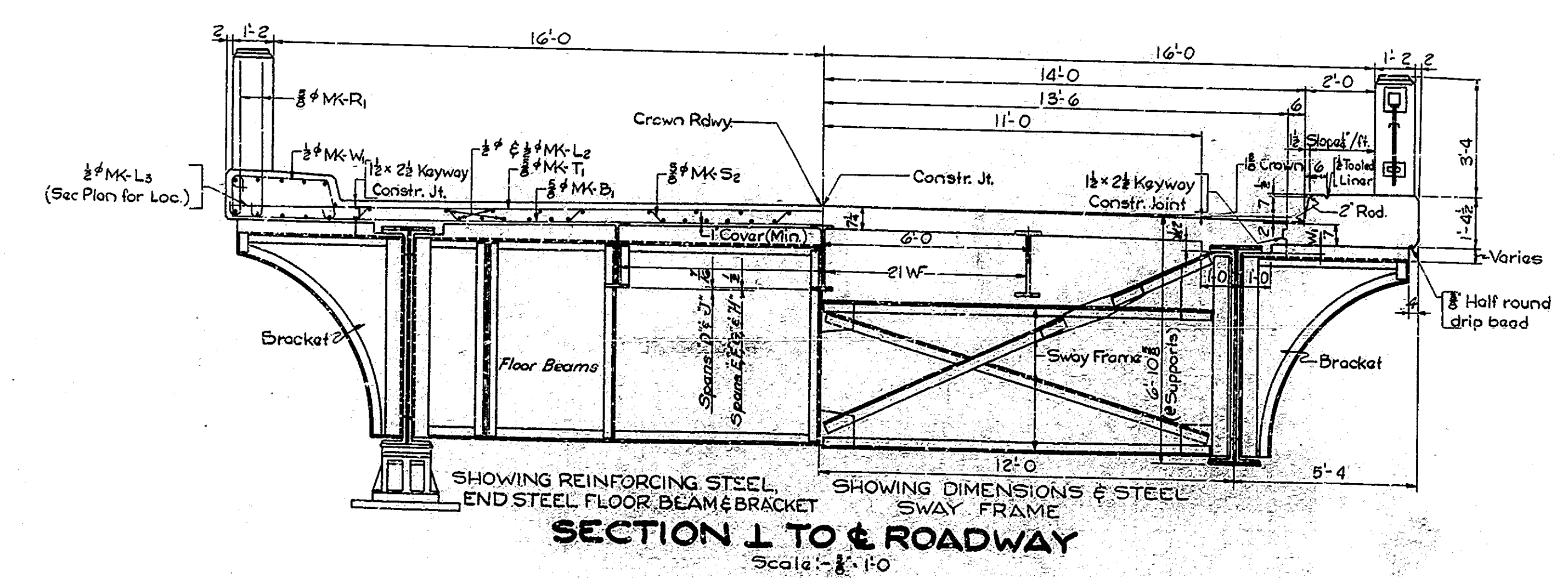


**HALF PLAN - SPAN 'D' or 'J'**  
Scale: 1/4" = 1'-0"



**HALF PLAN - SPAN 'E', 'F', 'G' or 'H'**  
Scale: 1/4" = 1'-0"

NOTE:-  
Work this Drwg. with Drwgs. 540, 542 & 543



**SECTION 1 TO ROADWAY**  
Scale: 1/4" = 1'-0"

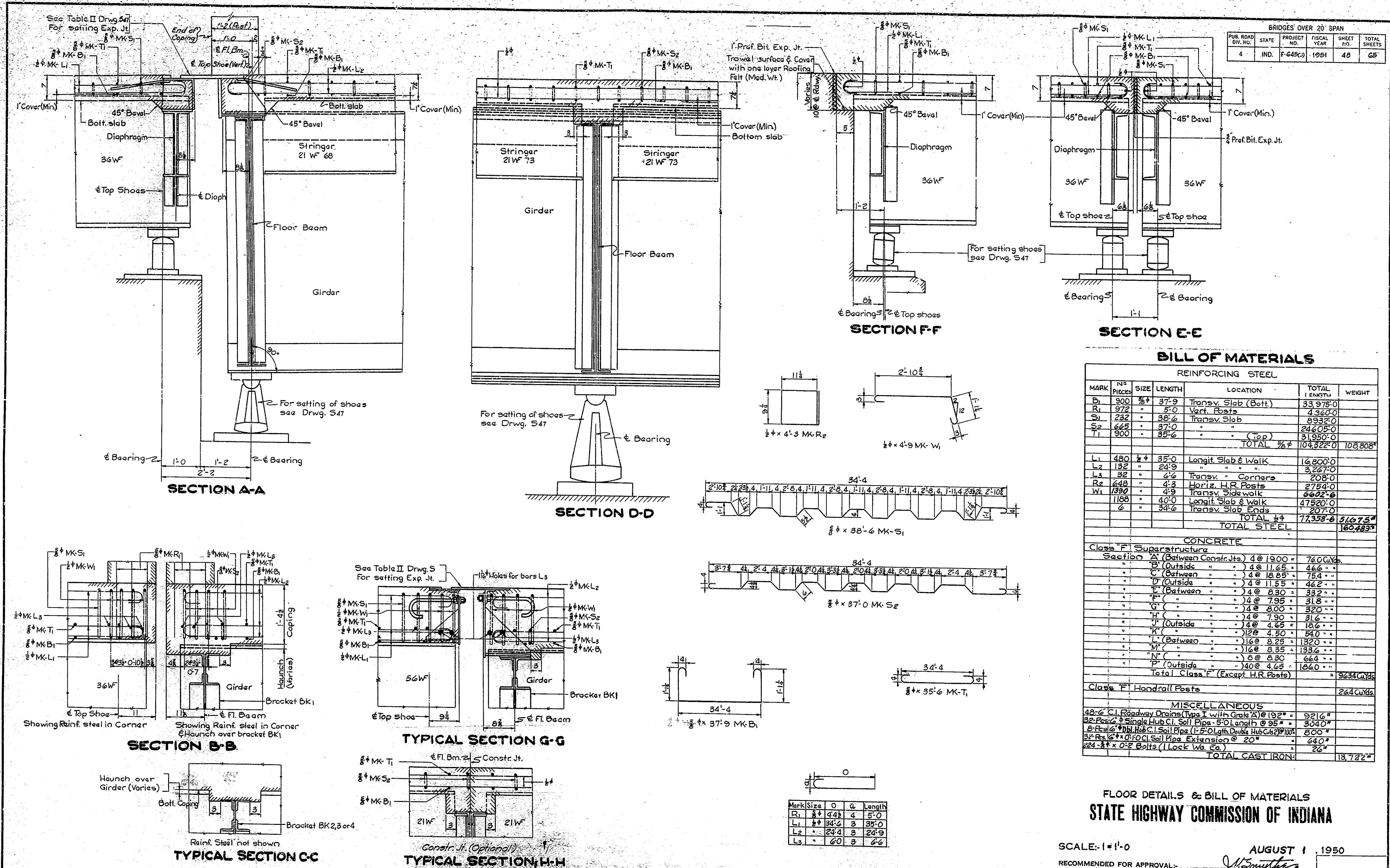
FLOOR DETAILS - SPANS D, E, F, G, H & J  
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: AS SHOWN  
AUGUST 1, 1950

RECOMMENDED FOR APPROVAL: *[Signature]*  
PROJECT: F-645(3) STATION: 11+25

DRAWING: 341 OF 47  
BRIDGE CONTRACT NO. 3289

DESIGNED BY: B.C.S. & J.R.C. & W.L.P. 5-10-49  
DRAWN BY: R.D.P. 12-1-49 C.W.D. J.T.B. 1-5-50  
TRACED BY: R.C.G. 1-26-50 C.W.D. J.T.B. 1-31-50



FLOOR DETAILS & BILL OF MATERIALS  
 STATE HIGHWAY COMMISSION OF INDIANA

SCALE: 1"=1'-0" AUGUST 1, 1950

RECOMMENDED FOR APPROVAL:

PROJECT: F-645(c) STATION: 11+25

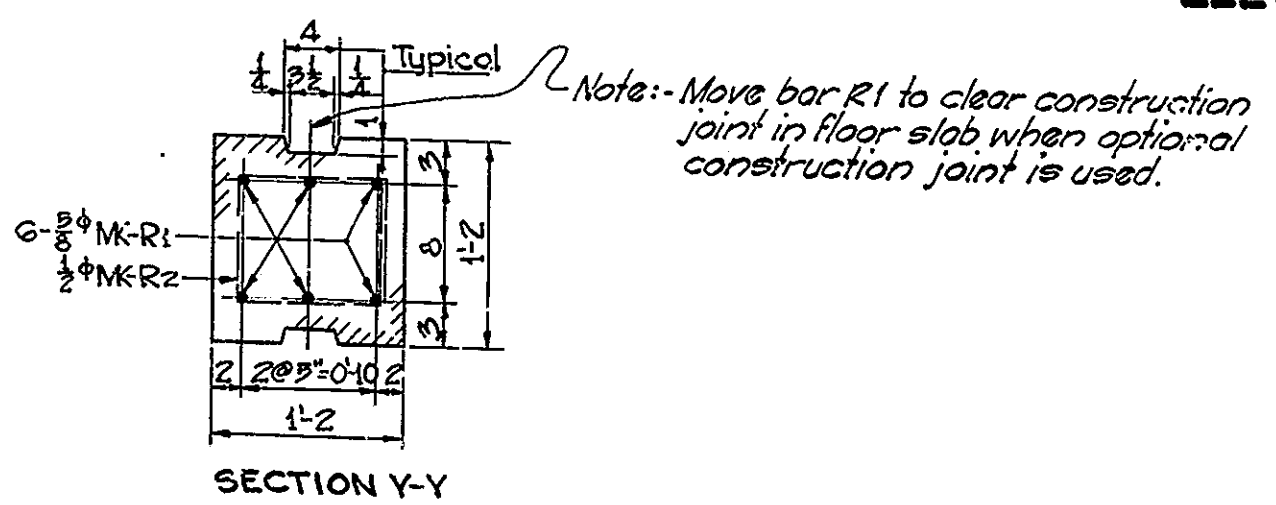
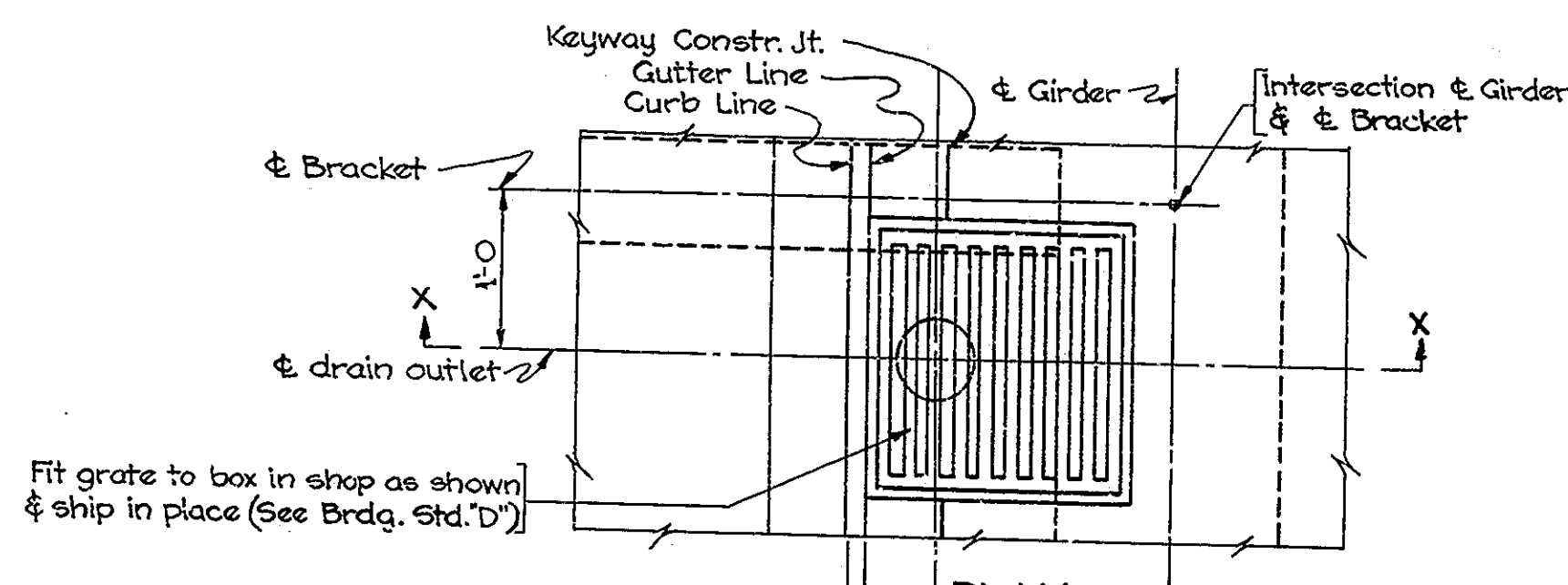
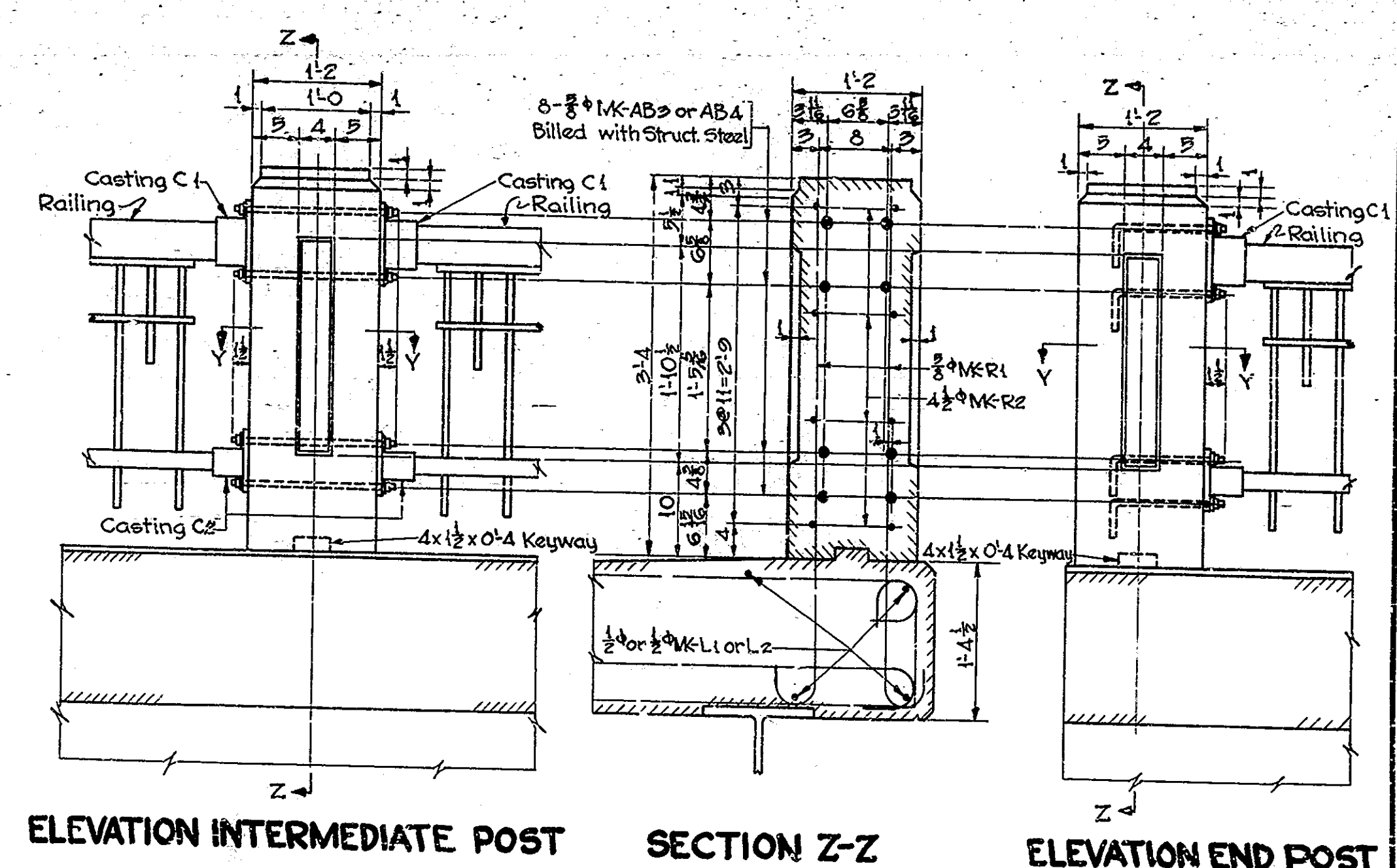
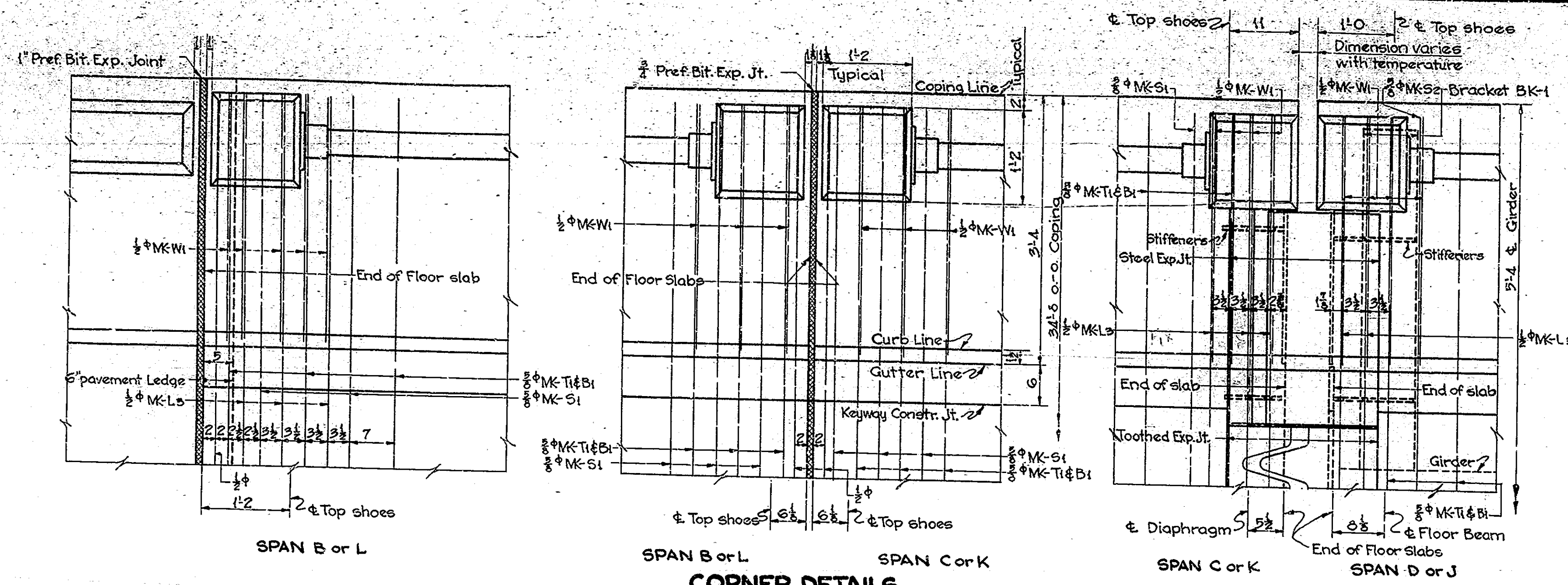
DRAWING: 542 OF 47 BRIDGE CONTRACT NO. 3289

DESIGNED BY: W.B. D. & C. K. D. W.L. P. E. 10-21  
 DRAWN BY: D. D. 12-20-52 C.K.D. J.T.B. L.S. 50  
 TRACED BY: R.C.G. 2-1-50 C.K.D. J.T.B. 2-3-50

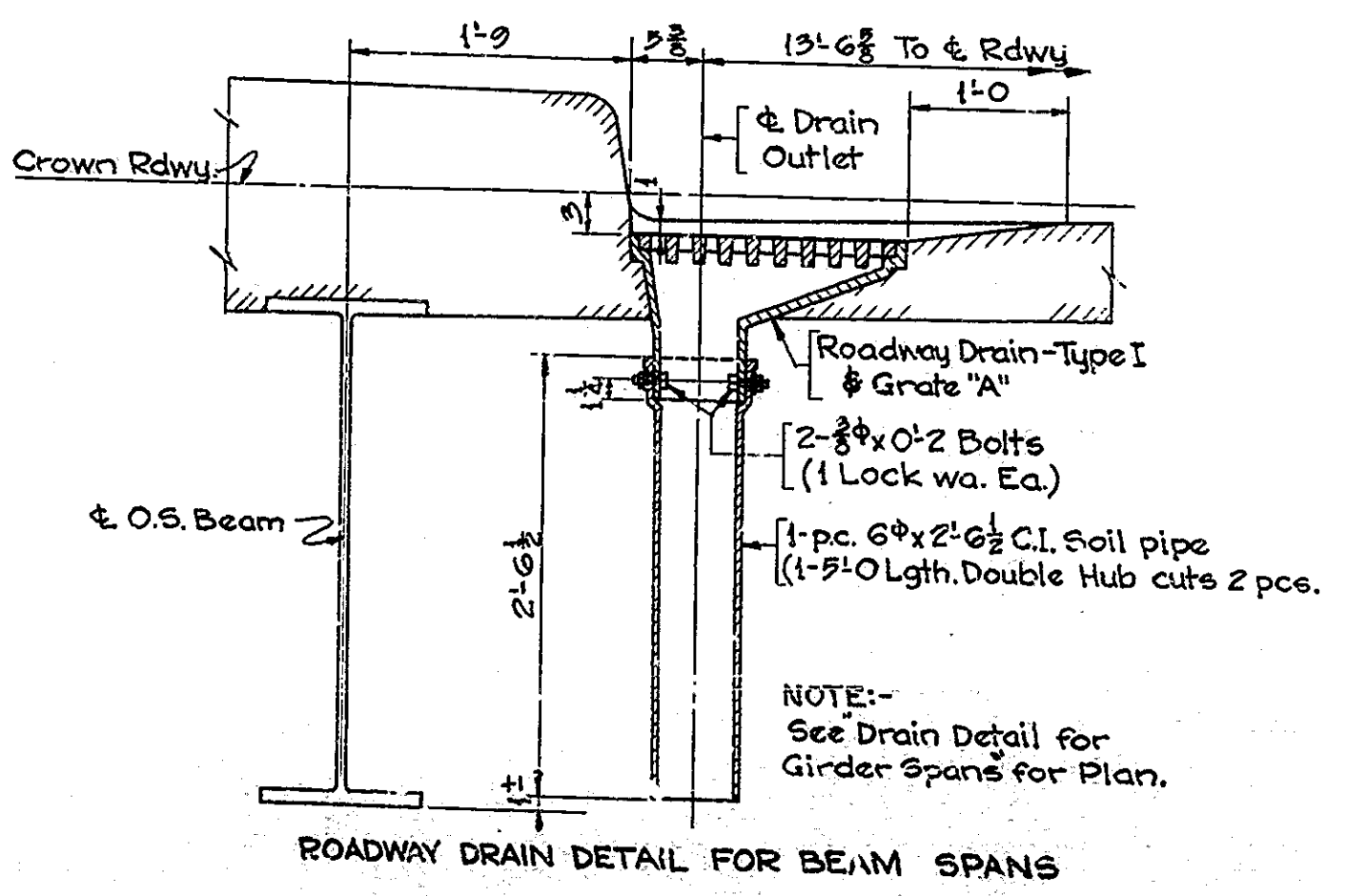
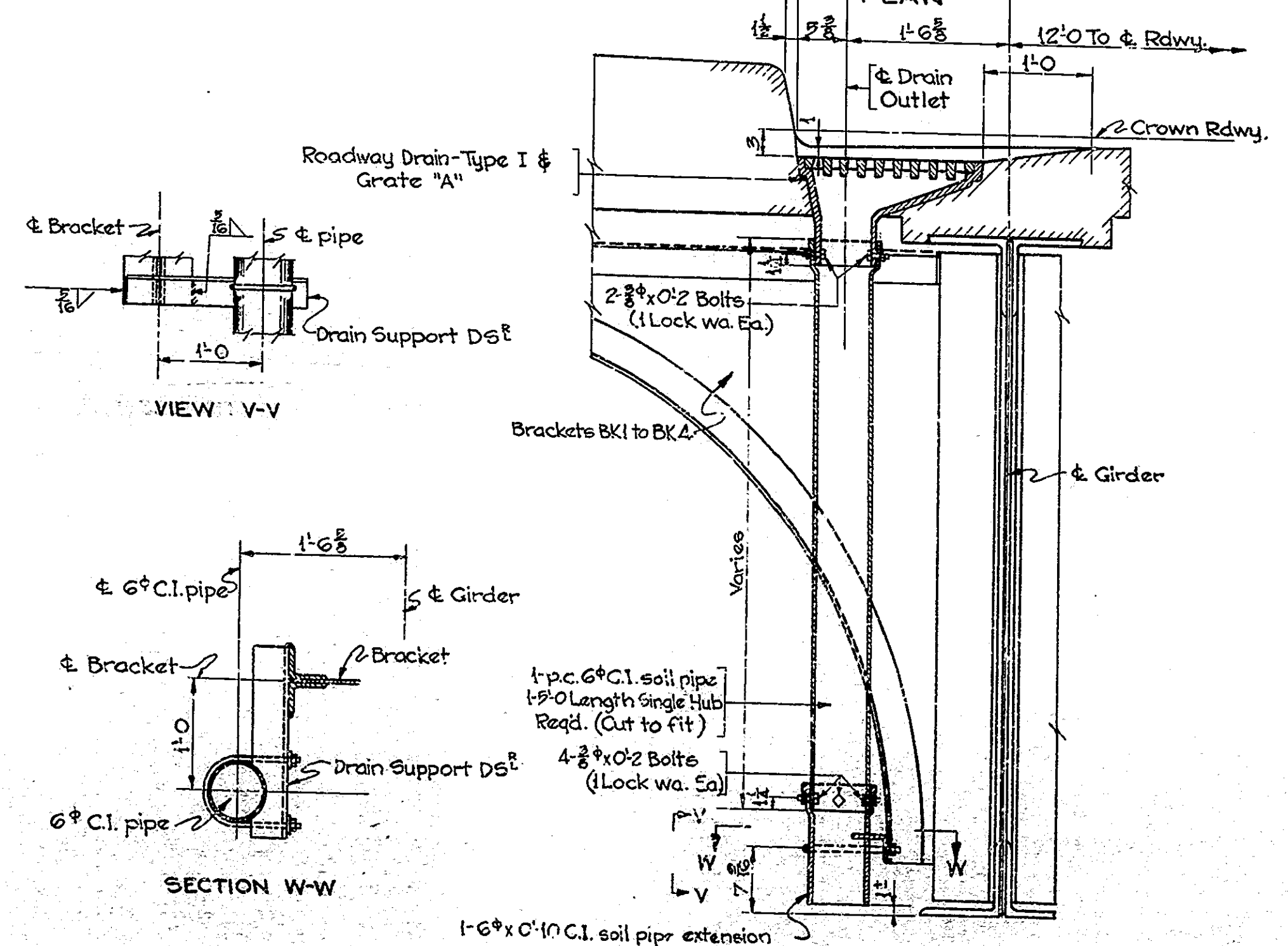
NOTE: Work this Drwg. with Drwgs. S40, S41 & S42  
 See Summary Sheet for Bill of Splice Bars.  
 All dimensions on details and banding diagrams  
 for reinforcing bars are measured on centerline  
 of bars.

| Mark | Size | Q | Length |
|------|------|---|--------|
| R1   | #4   | 4 | 5'-0"  |
| L1   | #3   | 3 | 35'-0" |
| L2   | #3   | 3 | 24'-9" |
| L3   | #3   | 3 | 6'-6"  |

| BRIDGES OVER 20' SPAN. |       |             |             |           |              |
|------------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIV. NO.     | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                      | IND.  | F-645(a)    | 1951        | 49        | 65           |



**NOTE:-**  
 All exposed corners on posts to be chamfered 1/2".  
 Anchor Bolts AB 3 & AB 4 to be present in handrail posts.  
 All dimensions on details and Bending Diagrams for reinforcing bars are measured on centerline of bars.  
 After structural steel has been erected concrete forms shall not be blocked against the expansion end of the steel in making any pours adjacent to steel spans.  
 Work this Drwg. with Drwgs. S40, S41 & S42.



**FLOOR DETAILS  
 STATE HIGHWAY COMMISSION OF INDIA**

SCALE: 1"=1'-0"      AUGUST 4 1950

RECOMMENDED FOR APPROVAL: *[Signature]*

PROJECT: F-645(a)      STATION: 11+25

DRAWING: S43 OF 47

BRIDGE CONTRACT NO. 11+25

DESIGNED: R. W. ...  
 DRAWN: ...  
 TRACED: ...







| BRIDGES OVER 20' SPAN |       |             |             |           |              |
|-----------------------|-------|-------------|-------------|-----------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| 4                     | IND.  | F-645(3)    | 1951        | 52        | 65           |

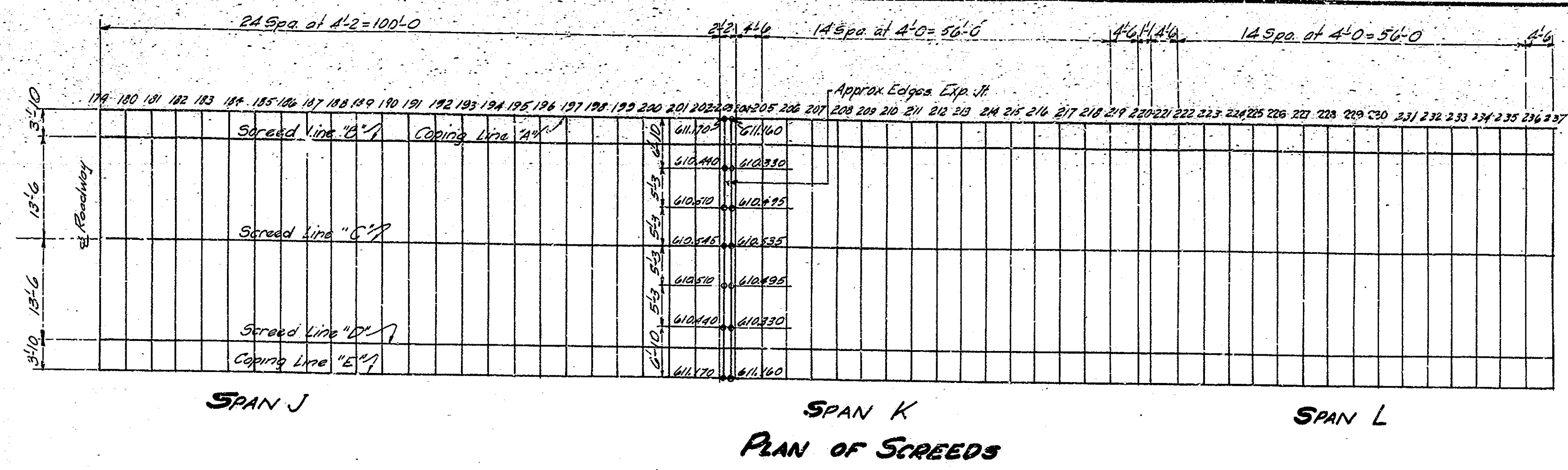


TABLE OF ELEVATIONS

| Point | 180                                      | 181     | 182     | 183     | 184     | 185     | 186     | 187     | 188     | 189     | 190     | 191     | 192     | 193     | 194     | 195     | 196     | 197     | 198     | 199     | 200     | 201     | 202     | 203     |         |
|-------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| A     | Elev. Top of Coping Form                 | 612.040 | 612.010 | 611.980 | 611.950 | 611.920 | 611.890 | 611.865 | 611.835 | 611.800 | 611.770 | 611.740 | 611.705 | 611.670 | 611.630 | 611.590 | 611.550 | 611.510 | 611.470 | 611.425 | 611.375 | 611.325 | 611.275 | 611.225 | 611.170 |
| B     | Elev. Top of Girder                      |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| C     | Elev. Top of Screed                      | 611.260 | 611.225 | 611.195 | 611.170 | 611.140 | 611.110 | 611.080 | 611.050 | 611.020 | 610.985 | 610.955 | 610.920 | 610.885 | 610.845 | 610.810 | 610.770 | 610.730 | 610.685 | 610.640 | 610.590 | 610.540 | 610.490 | 610.440 | 610.390 |
| D     | Elev. Top of Girder                      |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| E     | Elev. Top of Coping Form                 | 612.040 | 612.010 | 611.980 | 611.950 | 611.920 | 611.890 | 611.865 | 611.835 | 611.800 | 611.770 | 611.740 | 611.705 | 611.670 | 611.630 | 611.590 | 611.550 | 611.510 | 611.470 | 611.425 | 611.375 | 611.325 | 611.275 | 611.225 | 611.170 |
|       | Dimension W <sub>1</sub> For Slab Haunch | 2       | 2       | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 1 1/2   | 1 1/2   | 1 1/2   | 1 1/2   | 1 1/2   | 1 1/2   | 1 1/2   | 1 1/2   | 1 1/2   | 1 1/2   | 1 1/2   | 1 1/2   | 1 1/2   | 1 1/2   | 1 1/2   |         |
|       | Dimension W <sub>2</sub> For Slab Haunch | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   | 2 1/2   |         |

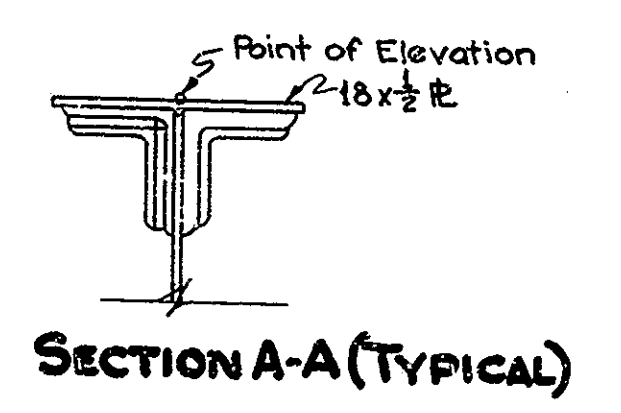
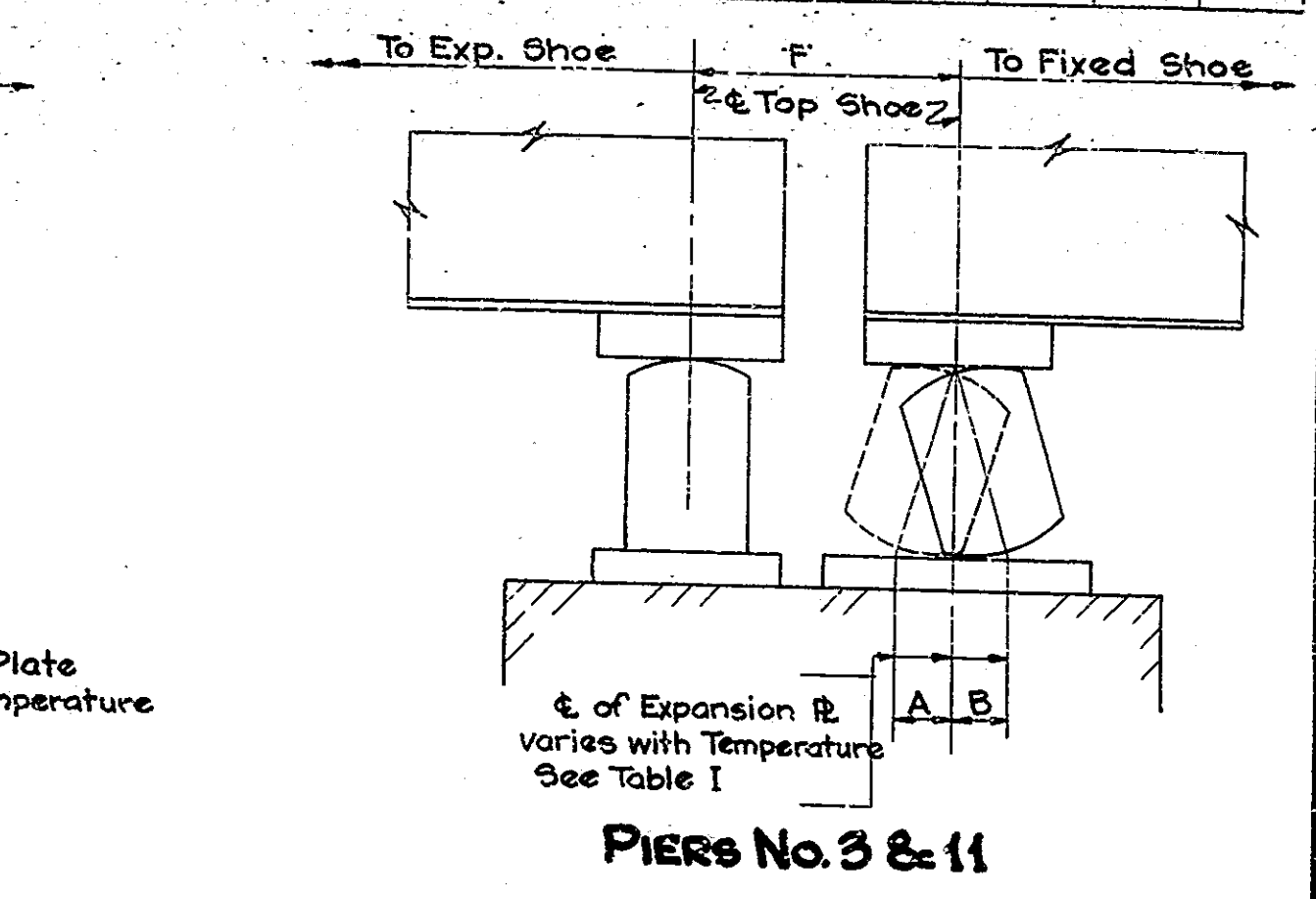
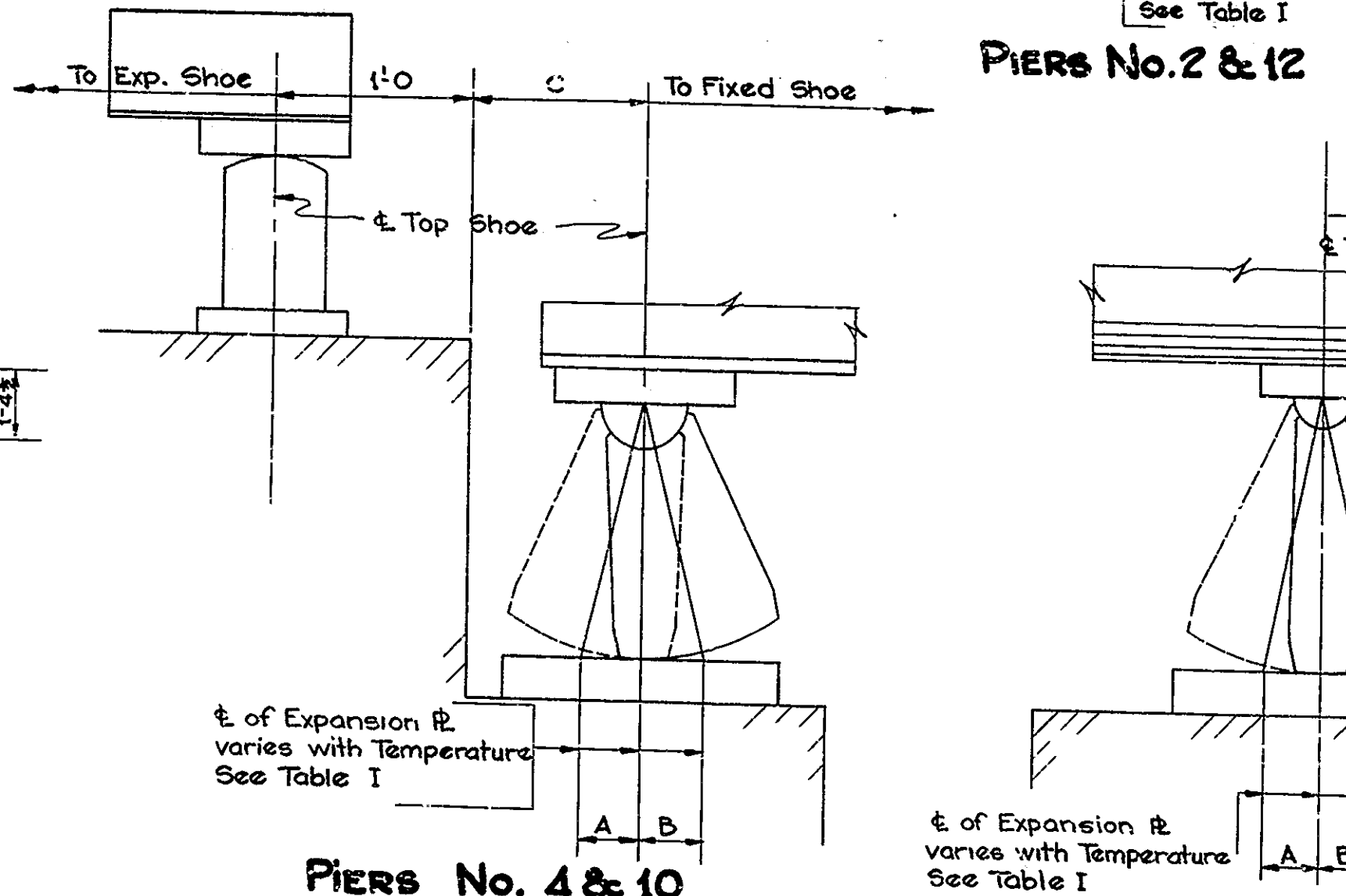
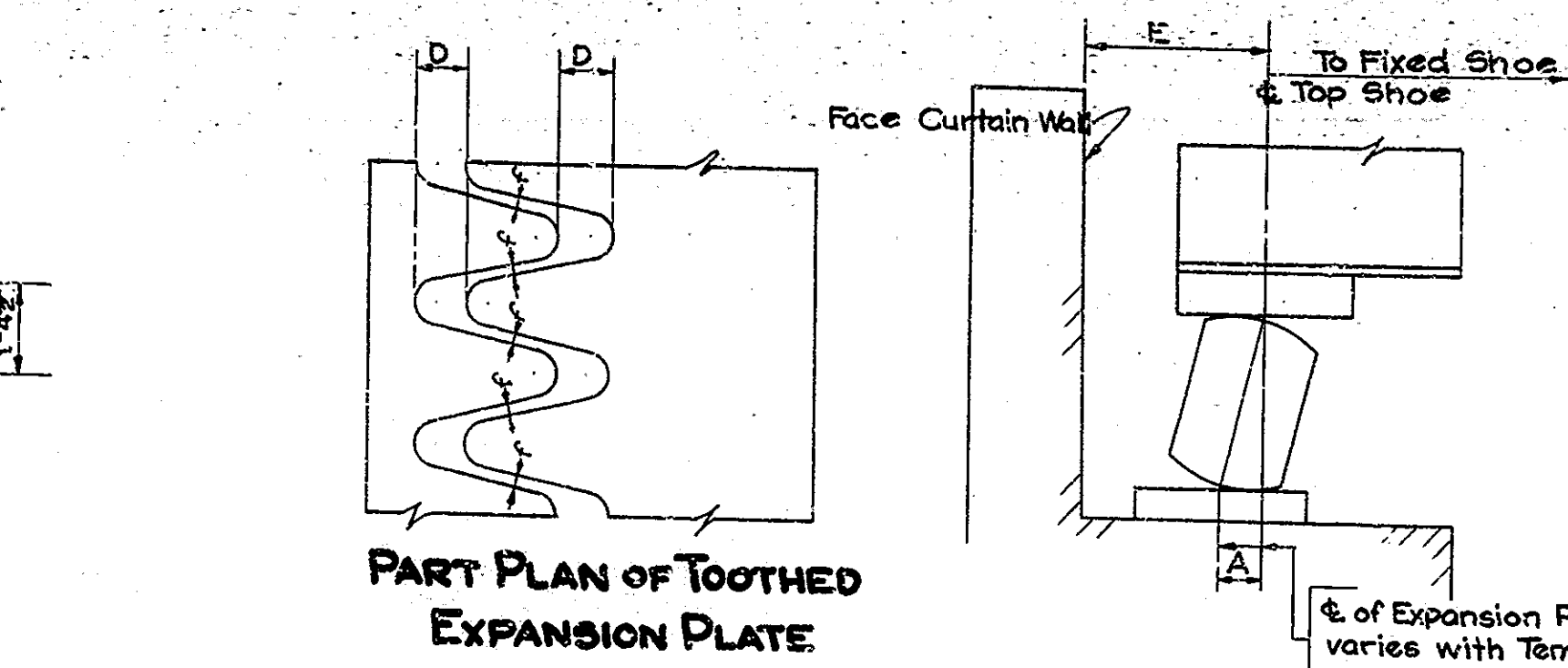
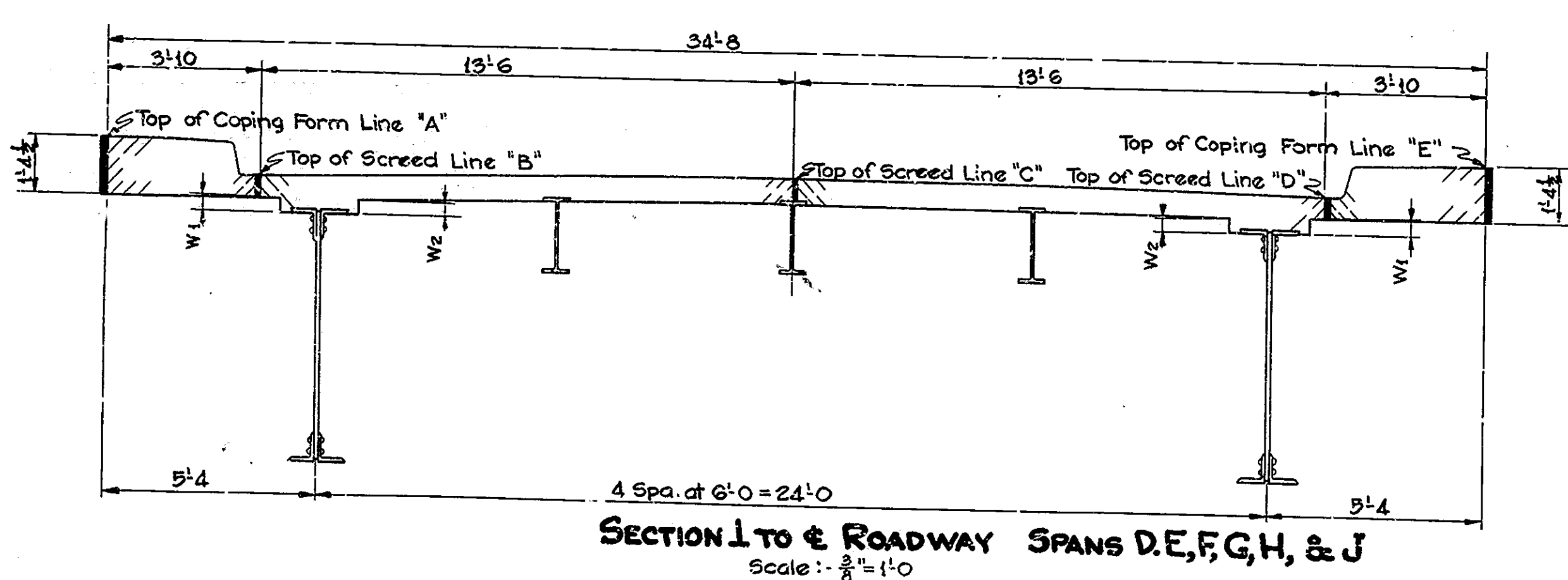
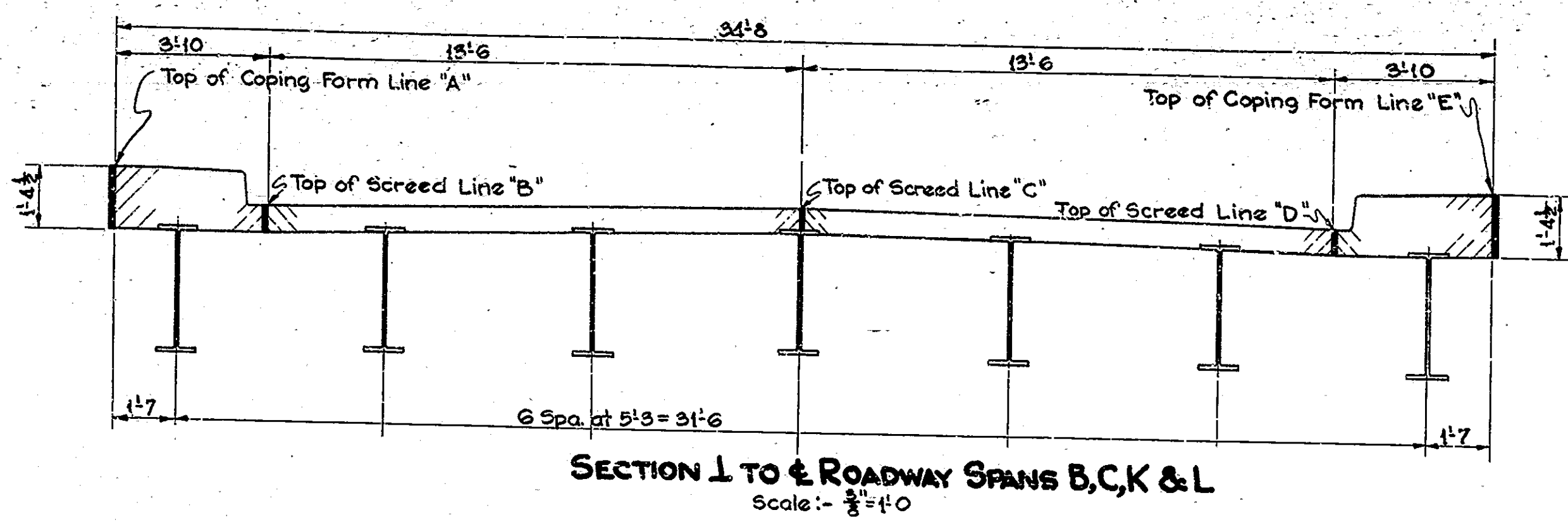
| Point | 204                      | 205     | 206     | 207     | 208     | 209     | 210     | 211     | 212     | 213     | 214     | 215     | 216     | 217     | 218     | 219     | 220     | 221     | 222     | 223     | 224     | 225     | 226     | 227     | 228     | 229     | 230     | 231     | 232     | 233     | 234     | 235     | 236     | 237     |
|-------|--------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| A     | Elev. Top of Coping Form | 611.150 | 611.115 | 611.080 | 611.045 | 611.015 | 610.975 | 610.940 | 610.895 | 610.850 | 610.805 | 610.755 | 610.700 | 610.645 | 610.590 | 610.530 | 610.470 | 610.410 | 610.350 | 610.295 | 610.240 | 610.180 | 610.125 | 610.070 | 610.010 | 609.955 | 609.895 | 609.835 | 609.775 | 609.710 | 609.640 | 609.575 | 609.510 |         |
| B     | Elev. Top of Girder      |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| C     | Elev. Top of Screed      | 610.365 | 610.330 | 610.300 | 610.265 | 610.230 | 610.195 | 610.155 | 610.115 | 610.070 | 610.020 | 609.970 | 609.920 | 609.865 | 609.805 | 609.745 | 609.680 | 609.620 | 609.560 | 609.500 | 609.440 | 609.380 | 609.320 | 609.260 | 609.200 | 609.140 | 609.080 | 609.020 | 608.960 | 608.900 | 608.840 | 608.780 | 608.720 | 608.660 |
| D     | Elev. Top of Girder      |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| E     | Elev. Top of Coping Form | 611.150 | 611.115 | 611.080 | 611.045 | 611.015 | 610.975 | 610.940 | 610.895 | 610.850 | 610.805 | 610.755 | 610.700 | 610.645 | 610.590 | 610.530 | 610.470 | 610.410 | 610.350 | 610.295 | 610.240 | 610.180 | 610.125 | 610.070 | 610.010 | 609.955 | 609.895 | 609.835 | 609.775 | 609.710 | 609.640 | 609.575 | 609.510 |         |

SCREEDS  
STATE HIGHWAY COMMISSION OF INDIANA

SCALE: NONE  
 AUGUST 1 1950  
 RECOMMENDED FOR APPROVAL: *J. W. Smythe*  
 PROJECT: F-645(3) STATION: 11+25  
 DRAWING: 546 OF 47  
 BRIDGE CONTRACT NO. 3289  
 BRIDGE FILE NO. 3289

DESIGNED P.A. 1128-10 C.V.D. 11/21/50  
 DRAWN E.A. 1216-10 C.V.D. 11/16/50  
 TRACED P.A. 1128-10 C.V.D. 11/10/50

| BRIDGES OVER 20' SPAN |       |             |             |              |
|-----------------------|-------|-------------|-------------|--------------|
| PUB. ROAD DIV. NO.    | STATE | PROJECT NO. | FISCAL YEAR | TOTAL SHEETS |
| 4                     | IND.  | F-645(2)    | 1951        | 59           |



**TABLE I**

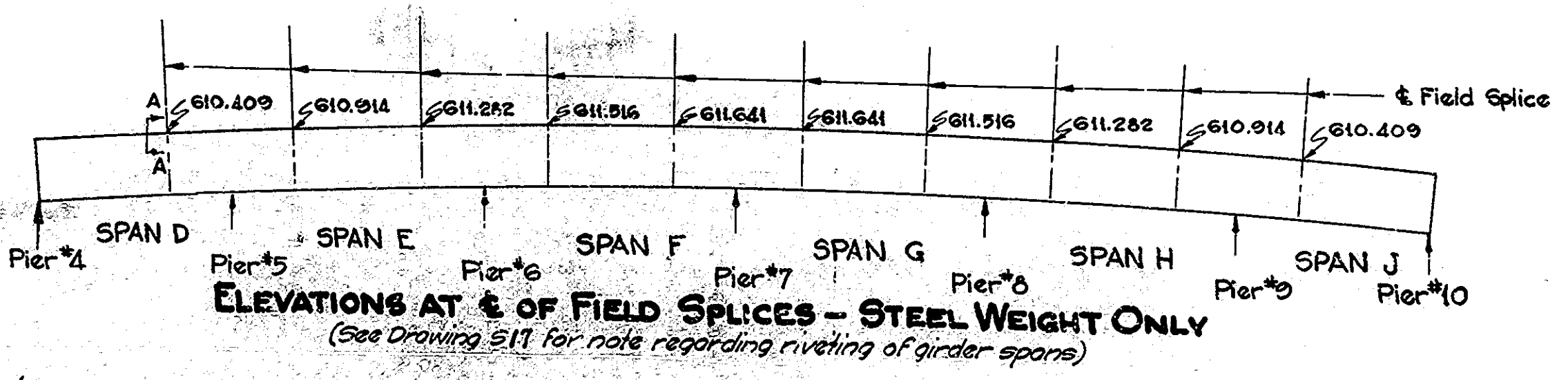
| Temperature                           | Dimension A |       |       |       |       |       | Dimension B |       |       |       |
|---------------------------------------|-------------|-------|-------|-------|-------|-------|-------------|-------|-------|-------|
|                                       | 0°          | 20°   | 40°   | 60°   | 80°   | 100°  | 120°        | 80°   | 100°  | 120°  |
| t Top Shoe to t Exp. Pl. Piers 2 & 12 | 1 1/8       | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8       | 1 1/8 | 1 1/8 | 1 1/8 |
| t Top Shoe to t Exp. Pl. Piers 3 & 11 | 1 1/8       | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8       | 1 1/8 | 1 1/8 | 1 1/8 |
| t Top Shoe to t Exp. Pl. Piers 4 & 10 | 1 1/8       | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8       | 1 1/8 | 1 1/8 | 1 1/8 |
| t Top Shoe to t Exp. Pl. Piers 5 & 9  | 1 1/8       | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8       | 1 1/8 | 1 1/8 | 1 1/8 |
| t Top Shoe to t Exp. Pl. Piers 6 & 8  | 1 1/8       | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8       | 1 1/8 | 1 1/8 | 1 1/8 |

**TABLE II**

| Temperature | 0°    | 20°   | 40°   | 60°   | 80°   | 100°  | 120°  |
|-------------|-------|-------|-------|-------|-------|-------|-------|
| Dimension C | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 |
| Dimension E | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 |
| Dimension F | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 |
| Dimension D | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 |

\* For weight of Structural Steel only

**NOTES:-**  
 Plan of screeds shows location of screeds. TABLE OF ELEVATIONS shows data for setting bottom slab forms, screeds and coping forms so that the slab and coping will be at the final grade elevations after all concrete has been poured.  
 TABLE I shows data for setting expansion joints and data for locating spans.  
 TABLE II shows data for setting toothed expansion joints and data for locating spans.  
**GENERAL PROCEDURE:-**  
 1- After all rivets have been driven and superstructure has been located in accordance with dimensions shown in TABLE II, set anchor bolts for fixed shoes.  
 2- Adjust expansion plates under each expansion shoe in accordance with dimensions A or B in TABLE I for the prevailing temperature. Note that dimension A is always the



distance from a vertical line through the t of top shoe in a direction away from the fixed shoe. Set anchor bolts.  
 3- Set steel expansion joints and adjust them to elevations shown on 'PLAN OF SCREEDS', using shims on diaphragms and floor beams.  
 4- Adjust the expansion joints horizontally to make the opening 'P' between the teeth equal and openings 'D' to the dimension shown in TABLE II for the prevailing temperature.  
 5- Set forms for bottom of slab in spans D, E, F, G, H and J, in accordance with W1 and W2 dimensions as shown in TABLE OF ELEVATIONS and as indicated on cross sections.  
 6- After the shoes are set, take elevations at all screeds points on top of adjacent beams, stringers or girder. Enter these elevations in TABLE OF ELEVATIONS. Subtract the elevations from the tabulated elevations and use the resulting dimension as the height for setting the screed or coping form above that point. This dimension remains constant regardless of how much or in what order the concrete is poured. Do not set screeds or coping forms by leveling.  
 7- No concrete in the floor to be poured until the above operations are complete.

SHOE SETTING AND ERECTION DATA  
 STATE HIGHWAY COMMISSION OF INDIANA

SCALE:- NONE  
 AUGUST 1, 1950

RECOMMENDED FOR APPROVAL: [Signature]  
 PROJECT:- F-645(2) STATION:- 11+25

DRAWING:- 547 OF 47  
 BRIDGE CONTRACT NO. 3289

DESIGNED R.W.B. 12-15-49 c.k.d. WEG. 12-27-49  
 DRAWN R.W.B. 12-22-49 c.k.d. WEG. 12-27-49  
 TRACED M.W.S. 1-2-50 c.k.d. R.W.B. 1-2-50  
 WEDGEL ENGINEERING CO. INC.

