

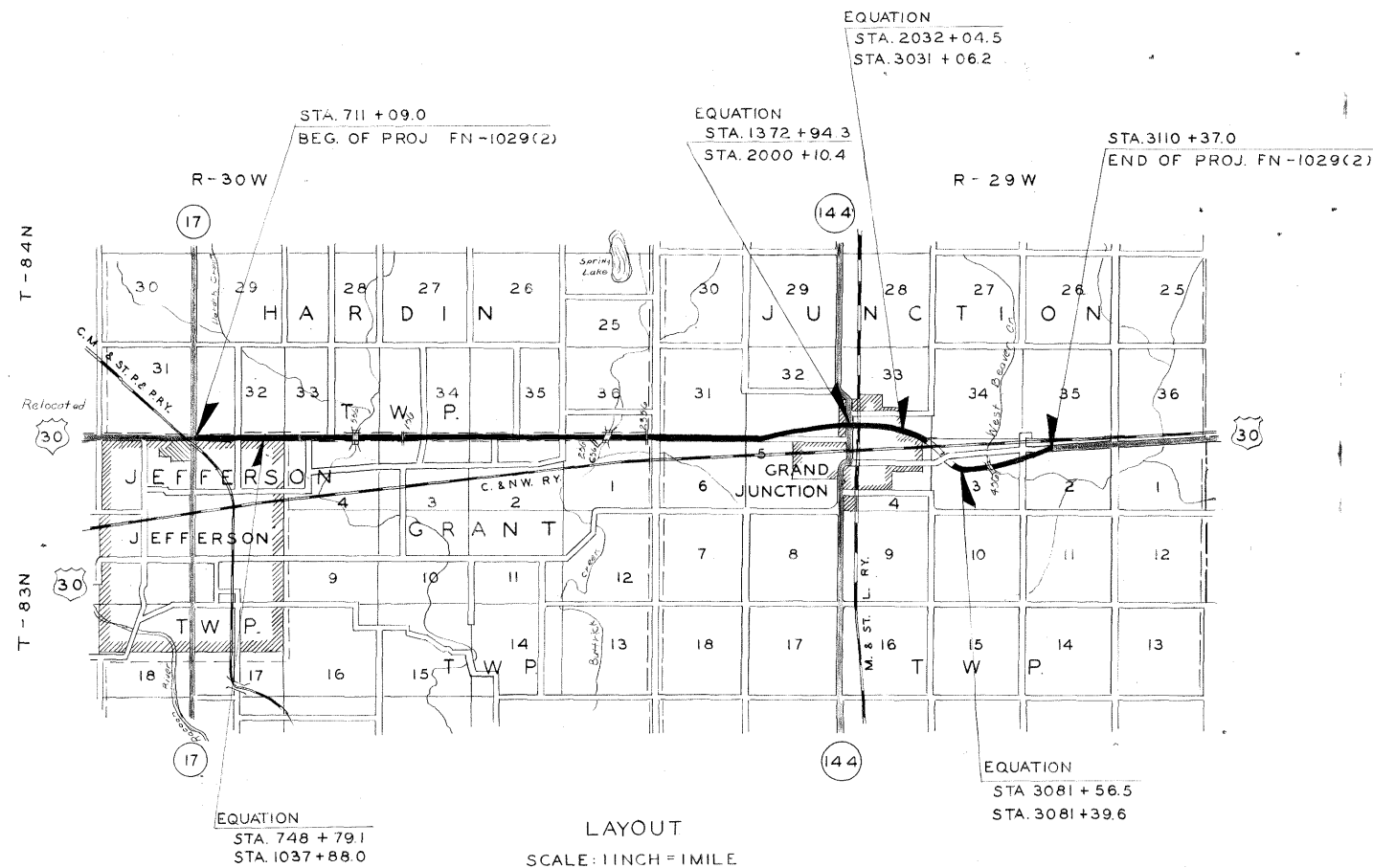
STATE OF IOWA  
STATE HIGHWAY COMMISSION  
DESIGNS FOR  
**BRIDGES AND CULVERTS**  
PRIMARY ROAD SYSTEM PROJECT NO. F.N. 1029(2)  
**GREENE COUNTY**  
JUNE 1956

In Letting on June 21, 1936

| DESIGN | LOCATION |               |         | DESCRIPTION                           | ESTIMATE OF QUANTITIES |          |         |           |                 |        |        |        |           |          |                |               |       |
|--------|----------|---------------|---------|---------------------------------------|------------------------|----------|---------|-----------|-----------------|--------|--------|--------|-----------|----------|----------------|---------------|-------|
|        | SECTION  | TOWNSHIP      | STATION |                                       | SIZE AND TYPE          | CONCRETE | REINF.  | STRUCT.   | EXCAVATION C.Y. |        |        | PILING |           | LIN. FT. | PILES LIN. FT. | F-I PIPE L.   |       |
|        |          |               |         |                                       |                        | CU       | YD.     | STEEL LB. | STEEL LB.       | CL. 10 | CL. 20 | CL. 21 | CREOSOTED | TREATED  | UNTREATED      | P-10A         | 30" Ø |
| 456    | 3        | Junction      | 3083+23 | 51'3" x 41' Simple Span I-Beam Bridge | 387.1                  | 42,084   | 55,725  | 350       | 500             |        |        |        |           | 1020     | 4350           |               |       |
| 556    | 4        | Grant         | 1094+90 | 174' x 28' Cont. Concrete Slab Bridge | 597.9                  | 84,127   | 282     | 420       | 94              |        |        |        |           | 1020     | 4350           | 41032' 12.50' |       |
| 656    | 36       | Hardin        | 1245+15 | 180' x 28' Cont. I-Beam Bridge        | 284.3                  | 48,163   | 152,140 | 475       | 156             | 125    | 1019   | 1170   | 40435     | 1020     | 1040           |               |       |
|        |          |               |         | BRIDGE TOTALS                         | 1179.3                 | 179,374  | 208,147 | 895       | 600             | 625    | 1019   | 1170   | 1020      | 1040     | 5705           | 6060          | 1200' |
| 156    | 34, 3    | Hardin, Grant | 1116+20 | 5' x 4' x 58" R.C.B.                  | 38.9                   | 3799     |         |           | 78              |        |        |        |           |          |                |               |       |
| 256    | 36, 1    | Hardin, Grant | 1232+00 | 30" Ø x 34' F-I Flume                 | 13.6                   | 931      |         |           | 275             |        |        |        |           |          |                | 34            |       |
| 2356   | 36, 1    | Hardin, Grant | 1262+55 | 4' x 5' x 50" C.S.P.                  | 33.6                   | 2993     |         |           | 84              |        |        |        |           |          |                |               |       |
|        |          |               |         | CULVERT TOTALS                        | 86.1                   | 7723     |         |           | 437             |        |        |        |           |          |                | 34            |       |

EXTRA WORK ORDER No. 1 - Class 24 Excavation on Design # 456

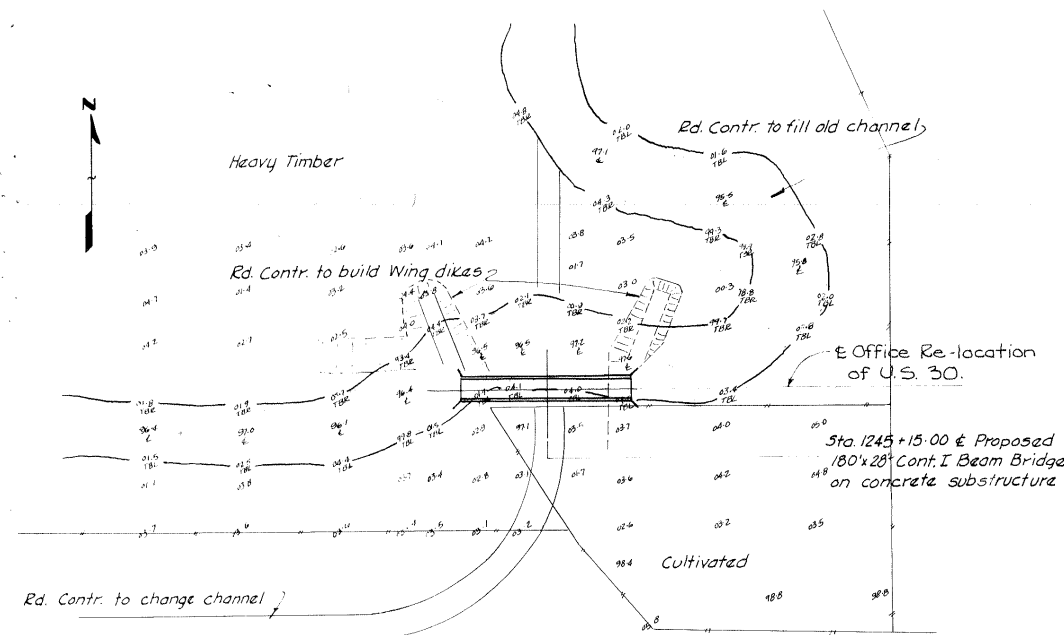
Specifications:  
All materials and construction to be  
in accordance with Iowa State Highway  
Commission Standard Specifications,  
Series 1956



APPROVED: \_\_\_\_\_  
CHIEF ENGINEER DATE \_\_\_\_\_  
IOWA HIGHWAY COMMISSION

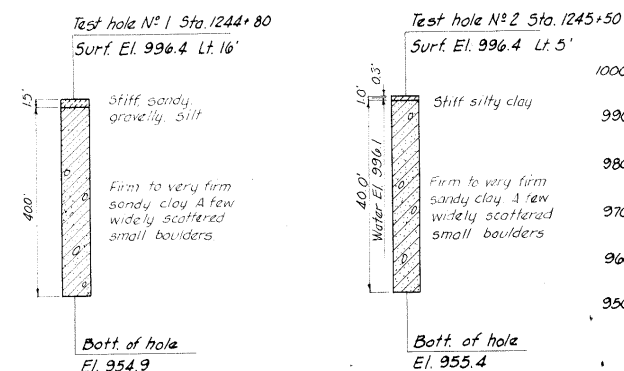
DEPARTMENT OF COMMERCE  
BUREAU OF PUBLIC ROADS

APPROVED: \_\_\_\_\_  
DISTRICT ENGINEER DATE \_\_\_\_\_



**GENERAL PLAN**  
D.A. 201 5q. Mi. Flat  
Scale 1" = 100'

Note: Downstream 1/2 miles on U.S. 30, present 2-55'x18' concrete arches - Design No. 1-1914.



**SOUNDING DATA**  
Scale 1" = 20'  
Dated Oct. 26, 1955

#### GENERAL NOTES:

This bridge is designed for H20-44 loading plus an allowance of 19 lbs. per sq. ft. of roadway for future wearing surface in accordance with the A.A.S.H.O. Specifications, Series of 1953, except that this bridge is designed so that an increase in the live load of 100% will not increase the total stress to more than 150% of the specification.

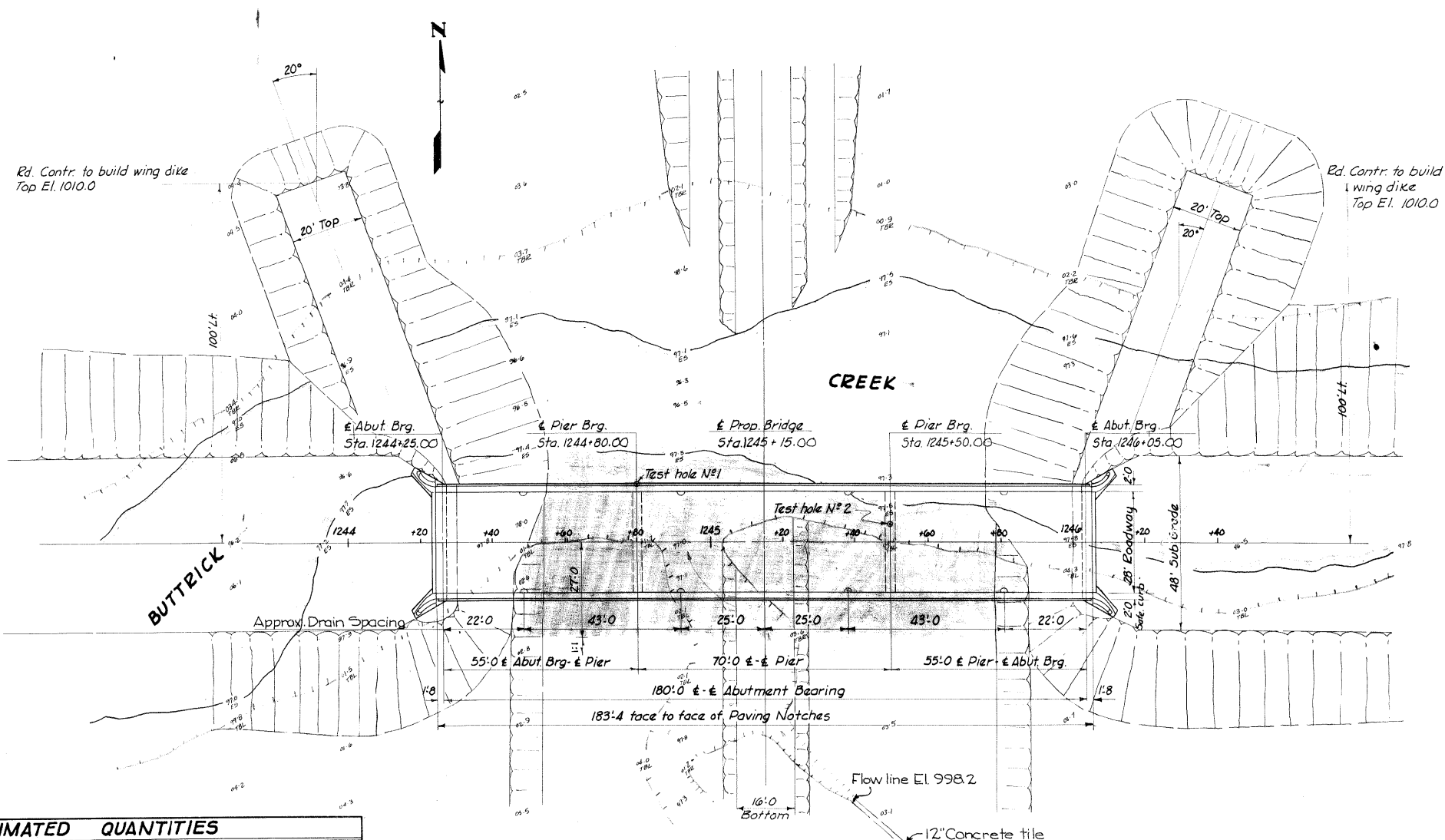
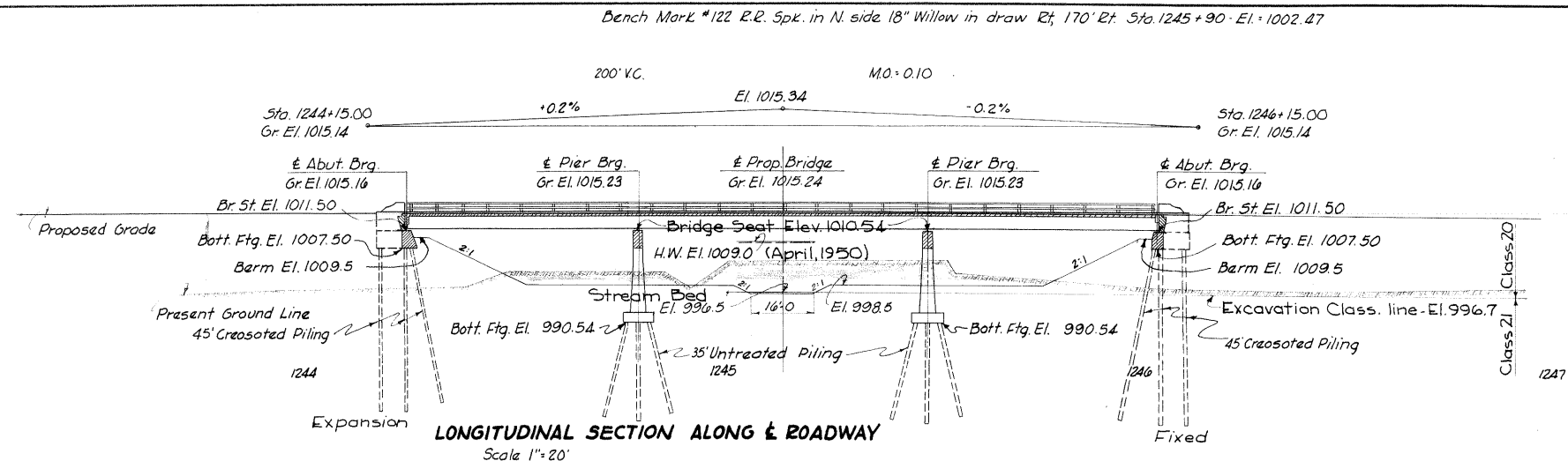
Approach fills, & dike as shown, are not a part of this estimate but are to be placed & compacted before abutment piles are driven. The Bridge Contr. is to level off and shape berms to the elevations shown.

The Bridge Contractor is to clear the channel as indicated by the shaded areas on the Situation Plan & Section. (27' each side of E Roadway.)

#### SPECIFICATIONS:

Design: A.A.S.H.O., Series of 1953, modified as noted above.  
Construction: Iowa State Highway Commission Standard Specifications, Series of 1952 plus current special provisions.

1020  
1010  
1000  
990  
980  
1243



**SITUATION PLAN**  
Scale 1" = 20'

LOCATION:  
Over Buttrick Creek  
Section 36  
Hardin Twp  
Greene County

| Item                  | TOTAL        | ESTIMATED  | QUANTITIES |               |
|-----------------------|--------------|------------|------------|---------------|
| Concrete              | 153.7 c.y.   | 64.0 c.y.  | 66.6 c.y.  | 284.3 c.y.    |
| Structural Steel      | 152,140 lbs. | —          | —          | 152,140 lbs.  |
| Reinforcing Steel     | 36,855 lbs.  | 7,282 lbs. | 4026 lbs.  | 48,163 lbs.   |
| Cresosoted Piling     | —            | —          | 26 @ 45'   | 1170 lin. ft. |
| Untreated Piling      | —            | 48 @ 35'   | —          | 1680 lin. ft. |
| Excavation - Class 10 | —            | —          | —          | 475 c.y.      |
| Excavation - Class 20 | —            | 36 c.y.    | 120 c.y.   | 156 c.y.      |
| Excavation - Class 21 | —            | 125 c.y.   | —          | 125 c.y.      |

Design for  
**180'x28' CONTINUOUS I-BEAM BRIDGE**  
55'-0" End Spans 70'-0" Center Span  
Concrete Floor & Substructure Steel Rail

**GENERAL & SITUATION PLANS**  
Station 1245+15.00 Project No. FM-1029(2)  
**GREENE COUNTY**

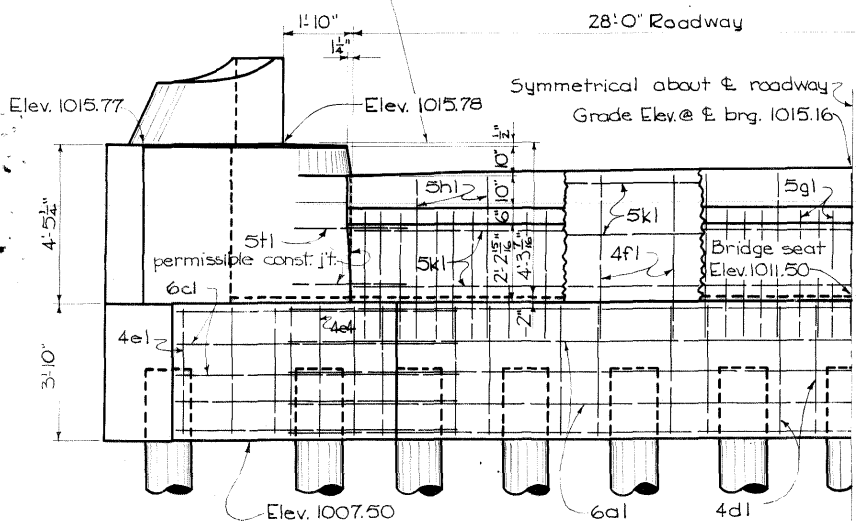
Iowa State Highway Commission  
October 1955 Sheet 1 of 4

Design 656 Greene County File No. 16374

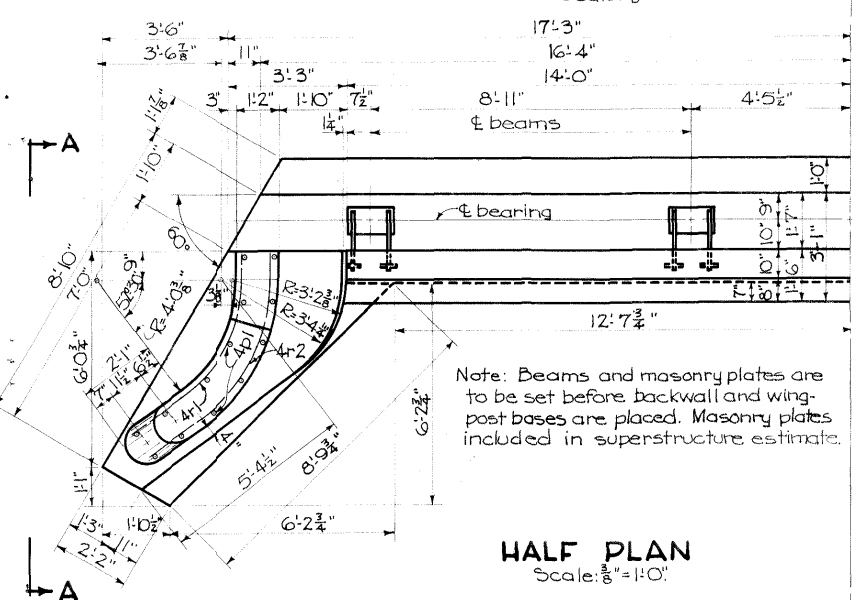


Class "C" concrete above this line  
Class "A" concrete below this line

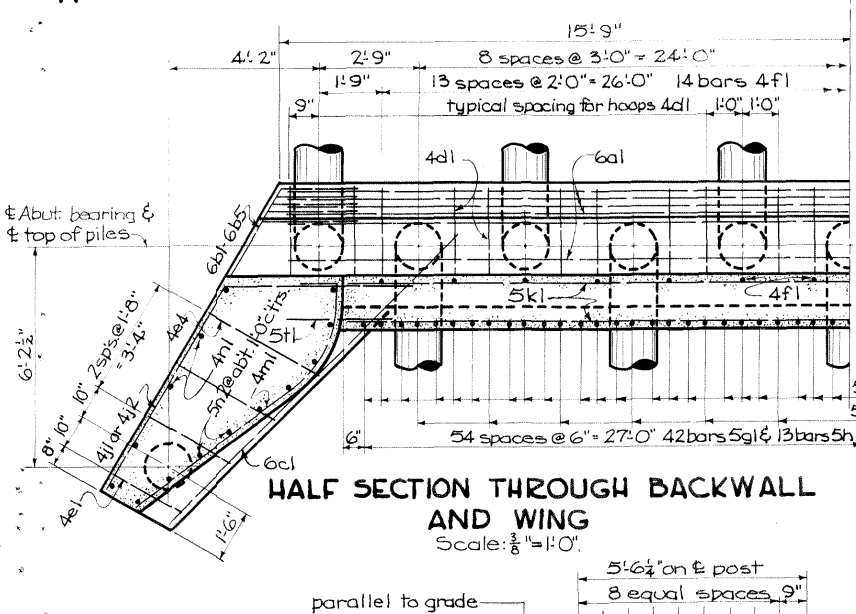
Note: See sheet 4 for crown ordinates.



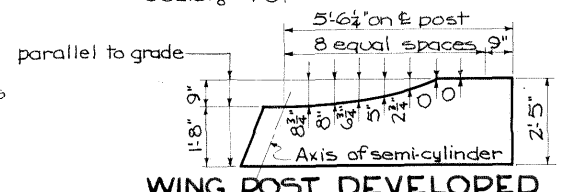
HALF ELEVATION  
Scale:  $\frac{3}{8}$ " = 1'-0"



HALF PLAN  
Scale:  $\frac{3}{8}$ " = 1'-0"

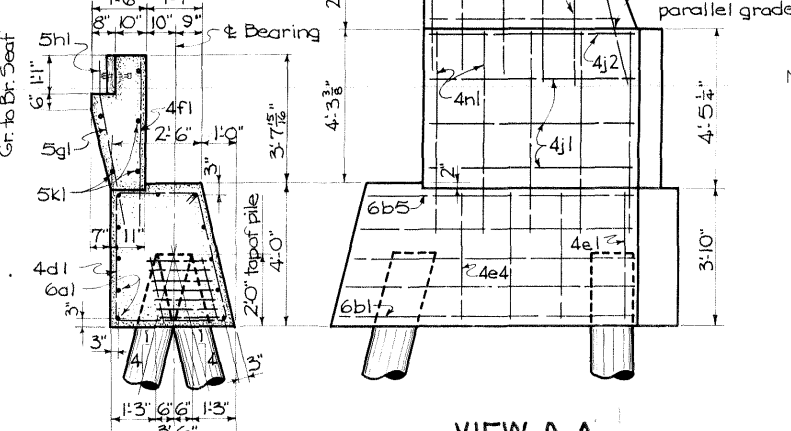


HALF SECTION THROUGH BACKWALL AND WING  
Scale:  $\frac{3}{8}$ " = 1'-0"



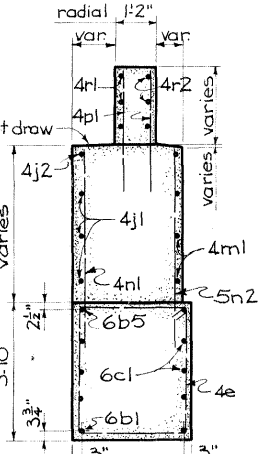
WING POST DEVELOPED

Note: Temporary paving block is made from 3" plank. Cut to fit crown & fasten with 10-3/8" x 0-9" bolts @ 3'-0" centers. Remove plank & cut bolts flush when paving is placed. Include cost in price. bid for 1'-6" 1'-7" concrete.

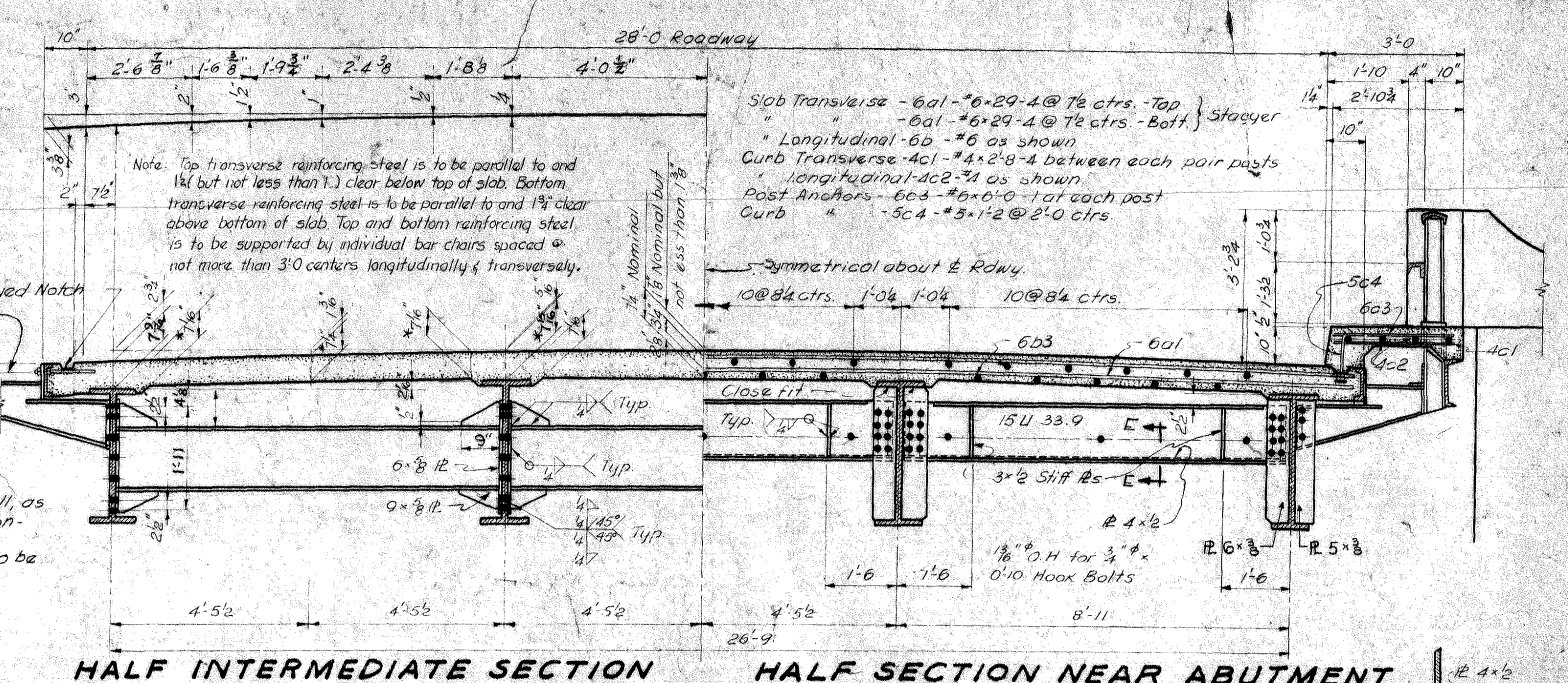


VIEW A-A  
Scale:  $\frac{3}{8}$ " = 1'-0"

SECTION  
Scale:  $\frac{3}{8}$ " = 1'-0"







HALF SECTION NEAR ABUTMENT

SECTION E-E

This bridge is designed for H20-44 loading plus 19% per sq ft. of roadway for future wearing surface, with the following modification:

Except for the floor slab, this bridge is designed so that an increase in the live load and impact by 100% will not increase the total unit stress to more than 150% of the specification stress.

The floor slab, as shown, includes 6" of wearing surface. Field connections may be riveted or bolted, except as noted or shown. Splice connections, if bolted, will require "High Tensile Strength Bolts"

All open holes to be  $\frac{1}{2}$ " unless noted otherwise.

All rivets and bolts to be  $\frac{3}{4}$ " unless noted otherwise.

Bottom flanges of beams to be perpendicular to webs at reaction points.

Beam splices to be bunched and reamed. Before reaming, all beams are to be assembled to proper camber, as shown on sheet 3. Beams as fabricated and erected, for inspection, after which holes are to be reamed and all parts matched.

Masonry plates to be set in paint and canvas.

Bearing surfaces of unfinished masonry plates to be flat and true.

Shop coat of paint to be omitted on tops of top flanges of beams and on other steel surfaces in contact with concrete. Parts inaccessible after erection to be given three coats of paint in the shop.

Forms for slab and curbs to be supported by the beams and brackets.

Design: A.A. S.H.O. (1953 with modification as noted)  
Construction: Iowa State Highway Commission, Series  
of 1952 plus Current Special Provisions.

Over Buttrick Creek  
Section 36  
Hardin Twp.  
Greene County

55'-0" End Spons                      70'-0" Center Span

Concrete Floor and Substructure - Steel Rail

## SUPERSTRUCTURE DETAILS

Station 1245+15.00

Project No. FN1029(2)

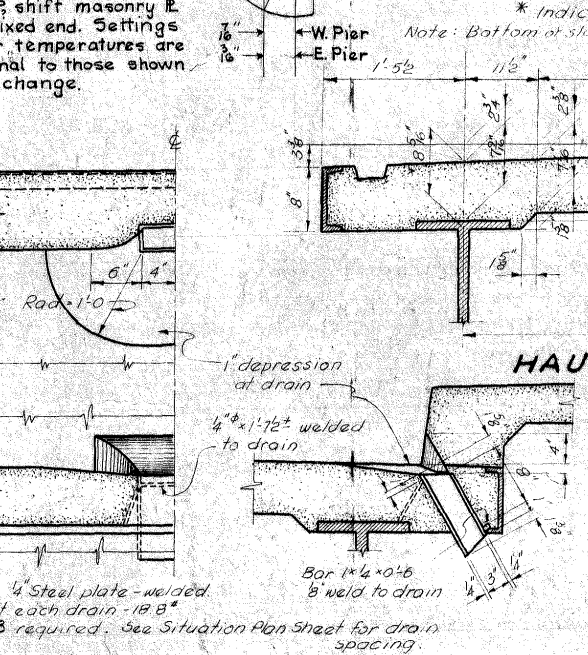
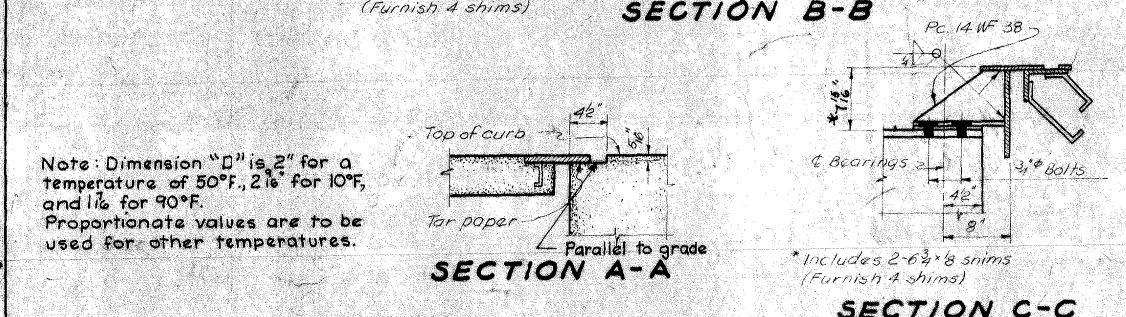
GREENE COUNTY

Iowa State Highway Commission

October 1955

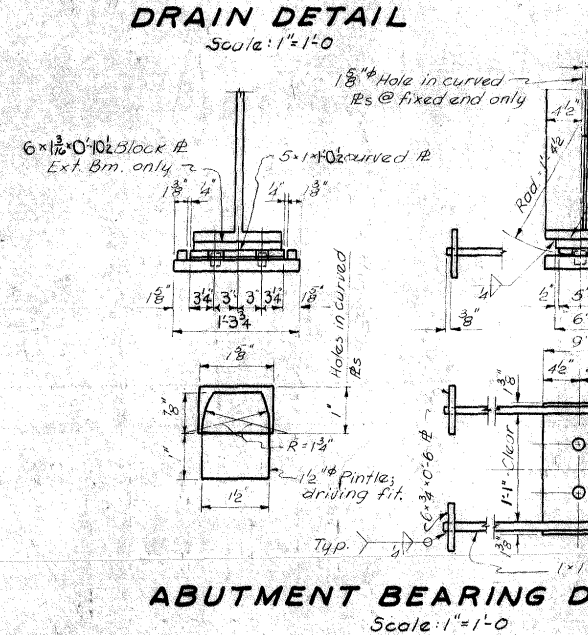
Sheet 4 of 4

| SUPERSTRUCTURE CONC. PLACE QUANTITIES |            |
|---------------------------------------|------------|
| Slab Section ①                        | 28.1 c.y.  |
| ②                                     | 23.5 c.y.  |
| ③                                     | 27.5 c.y.  |
| ④                                     | 24.3 c.y.  |
| ⑤                                     | 24.3 c.y.  |
| Curb                                  | 24.0 c.y.  |
| Total                                 | 153.7 c.y. |



Scale: 1" = 1'-0"

Welding procedures and materials welded shall comply with the 1947 Specifications of the American Welding Society except that where base metal over 1" in thickness is to be welded, stipulation (3) of paragraph 105b shall be changed to read - "The steel shall conform to the latest revision of ASTM Spec. A 373-51T."



Scale: 1" = 1'-0"

Note: Dimension "D" is .2" for a temperature of 50°F., .21" for 10°F, and .17" for 90°F. Proportionate values are to be used for other temperatures.