STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
CONSTRUCTION PLAN FOR BRIDGE NO. 9340 - BALANCE OF BRIDGE A-D. APPROACHES (CONTRACT B)

TRUNK HIGHWAY NO. 35W = 394
BETWEEN WASHINGTON AVE. ON THE WEST AND UNIVERSITY AVE. ON THE EAST
FROM POINT ENLOE EAST 1/2 MILE NO. 2 TO A POINT 2 MILES S & 100 FT. WEST OF
MINNESOTA PROJECT NO. 11-35W, .358112
STATE PROJECT NO. 2783-08 (T = 35W - 394)

MINNESOTA PROJECT NO. 11-35W, .358112
STATE PROJECT NO. 2783-08 (T = 35W - 394)

BRIDGE NO. 9340
LENGTH = 180 FT.

DESIGNATION
ADT (1962) 66,200 Design Speed - 50 MPH
ADT (1975) 73,750 Based on Stopping Sight Distance
DHW 8,700 Height of Eye - 3.75' Height of Object = 0.50'
5% 6'

LIST OF SHEETS
CONSTRUCTION PLANS - BRIDGE NO. 9340

APPENDIX A
DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED
GENERAL NOTES


DESIGN: In accordance with Division 1 of the R.A.S.H.O. 'Standard Specifications for Highway Bridges' (NCH 180) and NCH and PCI Interim Specifications, R.A.S.H.O.1964 are valid for and shall be designated in plans, Section 4G, No. 1. No impact on subcontract units.

ROADWAY AND SURFACE: The roadway shall be designed to include a 8’ lane, surface placed monolithically with the slab.

FOUNDATIONS: Steel jobs shall be driven to rock to and to sustain a minimum bearing as indicated on the plans, on final requirements.

REINFORCEMENT STEEL: Development bars shall comply with M.H.O. Specifications, 300 and bar wire with 6/16” (1.563) (inch) diameters. Dimensions for reinforcing steel on the plans are in the form of 100’ feet measurements where the clear distance is not shown. The face of the concrete shall be reinforced as indicated on the plans. Dimensions on bar size, etc., are surface measurements as noted in the plans. Reinforcing bars heavier than No. 1 shall comply with 6/32” 400 or 6/32” 40B.

BOLTED SLEEVE: All exposed edges of concrete shall be covered 6” unless otherwise noted.

ANCHOR BOLT HOLES: Holes shall be drilled in substructure units and anchor bolts shall be placed after girders and spurs have been erected.

STRUCTURAL STEEL: See Sheet 40 for Structural Steel Notes for Approach Span and Sheet D for Bridge Span Notes.

SAVINGS: Payment for saving shall be considered as fully covered under contract prices for all items.

EJECTION: Before ordering material the Contractor shall submit the Engineer for approval, complete details of his proposed erection scheme showing erection loads and stresses at critical sections. Erection stresses shall be on consent of the Director of Highways. The stresses and strains of the structure and equipment shall be in accordance with the 1964 Standard Specifications and the equipment under the applicable American Standards. Approval of the erection scheme shall not be considered as relieving the Contractor of full responsibility for the practicability and safety of the erection scheme used.

PANT: A paint of approved color except asphalt or metalized materials as follows: Stoop coat - Stoop coat primer, orange M.H.O. 3529. Second field coat - Greenish brown intermediate two coats, M.H.O. 3516. Second field coat - Bridge paint, brown intermediate two coats, M.H.O. 3517. First field coat - Brownish green lower coat, M.H.O. 3574. Exposed metallic surfaces shall be painted the three coats of field coat. See Special Specifications for painting.

EXISTING UNDERGROUND FACILITIES: Sketches and sketches, structure, and utilities have been identified in survey available for your inspection. Therefore, their location must be considered approximate only. It is possible there may be others, the existence of which is presently not known or shown. It is the Contractor’s responsibility to determine their existence and extent and to avoid damage thereof.

WHERE THE WORDS "SHALL" APPEAR, IT SHALL MEAN "MUST".

THE FOLLOWING LINES SHALL BE CURVED IN ACCORDANCE WITH LAYOUT DATA: GIRDERS ON APPROACH SPANS, SPANS IN TRAVEL ROUTE.

EQUATIONS OF CURVES AND OUTSIDE OF CURVES AND MEDIAN.

SUMMARY OF QUANTITIES FOR ENTIRE BRIDGE

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<th>Item No.</th>
<th>Description</th>
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<tr>
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<td>Steel Plate Girders in Place, No. of Type</td>
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DESIGN DATA

R.A.S.H.O. Design Specifications and PCI and NCH Interim Specifications.

R.A.S.H.O.1964 Loading and alternate loading designated in F.P.M. 204, Section 4G.

Allowable Design Stresses:
F = 5000 psi (Based on 5000 psi) for 5000 psi Intermediate Strength
F = 4000 psi Structural Steel M.H.O. 3506
F = 4000 psi Structural Steel M.H.O. 3517
F = 4000 psi Structural Steel M.H.O. 3529
Concrete M.H.O. 3529 at 2700 psi for 2700 psi 1” thickness and under
Concrete M.H.O. 3529 over 1” thickness increments

BRIDGE NO. 9340

EVICTIONS OF ITEM NUMBER PAGE SIZE DIFFERENT SPECIFICS

APPRISED 6-18-65

9340
NOTES
Concrete in fillings to be No. 146, Concrete in columns and pier caps to be No. 116.
The superstructure beams shall be erected in final position prior to drilling holes for end plates and placement of anchor bolts.
Reinforcing in pier caps shall be carefully placed to avoid interferences with drilling holes for anchor bolts.
For detailed plans see Sheet 12.

SOUTHBOUND ROADWAY

ELEVATION

NORTHBOUND ROADWAY

Pile Notes:
A. Steel Box Columns 32 feet long.
B. Steel Slabs, 8 ft. long.
C. Steel Slabs cast in place of piles.
D. All piles shall be 48 in. in diameter.
E. Maximum penetration 6 feet less than length of piles
F. Piles shall be shown this much buried of 32 feet per pile.
G. Plan marked thus - one to be centered 2 ft. 8" at the bottom of foundation.
H. All piles cast with a minimum of 18 in. of footing.
I. For pile sizes see PILE detail "B22."
### Summary of Quantities for Piers 1, 2, 3, 4

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<td><strong>Column</strong></td>
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<td><strong>Beam</strong></td>
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<td><strong>Joint</strong></td>
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<td><strong>Foot</strong></td>
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*Excluding of bent Piles.

**To be included in price bid for other items.*

### Bill of Reinforcement for Pier 1

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<th>Type</th>
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### Bill of Reinforcement for Piers 2, 3, 4

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</table>

Note: Splices marked 6-030 thru 041 shall be 30' pitch cold drawn bars.

*Splices marked P#5 thru P#72 and P#320

**For material and workmanship see Special Provisions**

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**Bridge No. 9340**

**Bar List and Quantities**

Piers 1 Thru 4

**Drawn By**

**Sheet 4 of 34**

**9340**
NOTE: THE ENGINEER WILL CHECK THE dimensions and steel quantities prior to delivery. Any variations will be noted on the drawings.

Camber Diagrams:

- Line A indicates the location of the web splices and the location of the plate girder web splices before dead load is applied.
- Line B indicates the location of the web splices and the location of the plate girder web splices after full dead load and live load is applied.
- Line C is a line connecting the centerline of the web splice and the location of the plate girder web splices at the gusset plate and is continued in a horizontal line at the location of the plate girder web splices.
- Line D is a line connecting the centerline of the web splice and the location of the plate girder web splices at the gusset plate and is continued in a horizontal line at the location of the plate girder web splices.

HINGE DETAILS:

- Hinge A is a bearing support at the pier, and hinge B is a bearing support at the pier. The hinge is detailed as shown in Exhibit B-1. For details, see Exhibit B-1.

SECTION A-A:

- The section detail is shown in Exhibit B-1. For details, see Exhibit B-1.

SECTION B-B:

- The section detail is shown in Exhibit B-1. For details, see Exhibit B-1.

For structural steel details, see Exhibit B-1.

Approved: 6-18-65

Sheet 1 of 2

STATE OF IOWA
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 9340
SOUTH APPROACH SPANS
STRUCTURAL STEEL DETAILS
SECTION A-A
Note: Slab and Expansion Device not shown.

SECTION B-B
Note: Slab and Expansion Device not shown.

SECTION C-C
Note: Shoe not shown.

DETAILED OF BEVELED PLATE

NOTES
See Sheet 4 for structural steel notes.
Intermediate stiffeners to be 4th - 8th Space from each girder and equally between girders as shown.
Longitudinal stiffeners are 4th - 8th Space and are to be at locations shown.
Top of Top Range of Cross Girder to be on constant slope of 0.75% per ft. for entire length.
All items given are the theoretical load elevations after all Truck Load Deflection has occurred.
For Expansion Device (orly), see Sheet 4.
Coping on all stiffeners to clear flange to web weld.

CAMBER DIAGRAM
Note: Line A represents top of Top Range before dead load deflection occurs.
Line B represents top of Top Range in its final position.
Allowance shall be made in Grade connections for Camber Deflections shown above.
Note: Longitudinal Stringers to be PL 14'-8" and to be at locations shown. Intermediate Stringers to be 37'-4".8".
Space of each Stringer and equally between stringers.

End Floorbeams

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Top of Flange</td>
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</table>

**CAMBER DIAGRAM**

Line A represents top of top flange before dead load deflection occurs. Line B represents top of top flange in final position.

**SECTION**

**THRU END FLOORBEAM**

**TABLE OF VARIABLE HOLLOWCORE**

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<td>12&quot; x 39&quot;</td>
<td>22'-0&quot;</td>
<td>22'-0&quot;</td>
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**END FLOORBEAM NOTES**

See Sheet 67 for Structural Steel Notes.
For typical details of Truss Chord, see "Endplate Details of Truss Chord" Sheet 56.
For Expansion Device and Flume Details, see Sheet 52.

**DECK TRUSS SPANS**

**END FLOORBEAM NORTH END**

**APPROVED: 6-18-65**

**BRIDGE NO. 9340**

**STATE OF NEW YORK DEPARTMENT OF HIGHWAYS**

**SHEET 17 OF 24**
Note A: Weld Intermediate Shrinkers to Top Flange Girders G1 through G4.
Note B: Weld Intermediate Shrinkers to Bottom Flange Girders G1 through G4.

Framing Plan
Note: Intermediate Shrinkers for all girders to be 96 x 8. Space Intermediate Shrinkers for Girders G3 and G4 same as G2 except as shown.

End Diaphragm Type D
Note: Diaphragms for All but shown. Diaphragms for spans D0 through D3 to be at upper station bide as shown in Framing Plan.
CAMBER DIAGRAMS

Line A indicates top of member plate before dead load deflection occurs.
Line B indicates top of member plate after calculated dead load deflection has occurred under full dead load.
Line C indicates top of member plate visual checks with the top of web plate of a beam.
Line D indicates top of member plate.
Line E indicates top of dead load.
Line F indicates top of dead load.

Total Camber
Dead Load Deflection
Residual Camber
Roadway Camber

NOTE: THE ENGINEER WILL CHECK THE ELEVATIONS AT FIELD.
BEAM PLATES AFTER ERECTION. IF VERTICAL DEVIATION IS EVIDENT, SHEET IS TO BE SEATED OR REPOWERED SO THAT MEMBERS ARE SEATED OR BOLTED INTO FINAL POSITION.

SHEET 12 OF 19

BRIDGE NO. 9340
NORTH APPROACH GIRDERS SPANS
STRUCTURAL STEEL DETAILS

APPEND - 6-18-65
Note: For details of flumes or fan toes see Sheet 40.

PART PLAN

SECTION A-A

SECTION B-B

NOTES

STATE OF CONNECTICUT COMMISSIONER OF HIGHWAYS

H.J. MURPHY & ASSOCIATES, INC.

BRIDGE NO. 9340

ROADWAY EXPANSION DEVICE NEAR PIER 8 AT 90" APPROVED: 1-19-65
Note: Transverse reinforcing is placed radial except as otherwise shown and may be field set. See dashed line construction joints at gutter lines in Span 2 and 3. Spacing of transverse slab reinforcing is measured along adjacent exterior edge of slab.

Step every other longitudinal bar over piers (bars L635, L636, L637) as shown.

Note: For section thru ends of slab near the 2 end of U0 see Sheets S5 and S6.
Concretes shown are measured horizontally.
For section thru end of slab see Sheet S7.
For grading see Sheet S8.
Finish top with small radial edge. Gutter joint with asphalt or sprayed seal.
For vertical reinforcing, see Sheet S9.
For location of control joints, see Sheet S10.
Cut off panel and tool to clear transversely.
Concrete panels to be cast in the field to conform to roadway cross slope.
All "+" between lines indicates line of agreement. Do not see structural details. See Sheet S9 for details of road and curb. See Sheet S8 for location of points. See Sheet S10 for location of control joints. See Sheet S6 for location of piers.
<table>
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<th>Description</th>
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<th>6 Approach</th>
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<tbody>
<tr>
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<tr>
<td>Cost</td>
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<tr>
<td>Supplies</td>
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### Summary of Superstructure Quantities - Spans Through

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<tr>
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### Summary of Compression Joint Sealer

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### Summary of Cork Joint Filler Sizes

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<td>Supplies</td>
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### Summary of Bit Felt Joint Filler Block

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<tr>
<td>Supplies</td>
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**Notes:**
- All dimensions are in inches.
- All materials must comply with applicable specifications.
- The contract is subject to the terms and conditions outlined in the contract documents.
- Any discrepancies or questions should be addressed with the project engineer.

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**Appendix 6-18-65**

**Page 9340**
### NOTES

- Work this sheet with Sheet 67.
- Horizontal curve of T.H. 85W not shown.
- Longitudinal dimensions shown are measured horizontally.
- Northbound and Southbound top of side elevations are on lines projected normal or radial from the East Gutter Line.
- Values are for northbound and southbound.
- Ramp 2. Top of side elevations are on line projected normal from T.H. 85W to the ramp; thence radial to the ramp gutter line, except where ramp grade controls.
- For vertical and horizontal curve data see Sheet 1.

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### PROFILE DATA

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**STATE OF MINNESOTA**

**DEPARTMENT OF HIGHWAYS**

**BRIDGE NO 9340**

**PROFILE DATA**

**Approves - 6/18/65**

**9340**
**ANALYSIS OF BEARING ASSEMBLY**

**NOTES:**
- Position of anchor bolts shown is for square bridge.
- Anchor bolts are for skew to permit drilling holes in bridge seat with end diaphragms in place. See details for location.
- Pintle D shall comply with M.2.32A, Type II.
- All other structural steel as per M.2.302.
- Machine top of plate C to radius shown and to 250 micro.

plates shall be flat after welding and fabrication galvanize after fabrication and before bronze is fitted in place for M.3.3.9. Exercise care in all material shown on this detail.

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<th>C</th>
<th>D</th>
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Thickness of plate C may be 1/8 less than thickness shown.

**EXPANSION BEARING ASSEMBLY FOR BEAMS WITH 15° TO 20° FLANGE**

<table>
<thead>
<tr>
<th><strong>LOAD</strong></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>MIN</th>
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Material: preformed flexible filler. See special provisions.

**EXPANSION BEARING ASSEMBLY WITH 15° TO 16° FLANGE WITH GUIDE BARS**

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<th><strong>LOAD</strong></th>
<th>A</th>
<th>B</th>
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Material: preformed flexible filler. See special provisions.
MALLEABLE IRON RAIL POST
TYPE ERF-58-5
FOR 1-LINE FLAT TUBE RAIL

SECTION A-A
NOTE:
PARS ON FRONT AND REAR EDGES TURN AND BLEND FROM 1/4" AT THE TOP TO 1/8" AT THE BASE.

SECTION C-C
BLEND FOR UNIFORM 1/8" METAL THICKNESS

SECTION B-B
W" BREADTH ON MOUNTING SURFACE.

MATERIAL FOR CASTING:
MALLEABLE IRON MIL-H-532A GRADE NO 532A-9, AS MODIFIED.
MACHINERY PER MIL-H-2896.

ALL FILLETS TO BE 1/8" UNLESS OTHERWISE NOTED.

REVISIONS
4/30/90 - A
7/31/90 - B
6/30/92

Sheet No. 77 of 87 Sheets
Bridge No. 9340
MINNESOTA
BRIDGE 56007
FAP 504-3-250
1960

NOTES:
- NUMBERS AND LETTERS SHALL CONFORM TO THOSE SHOWN ON DETAIL NO. 220, DRAFT ON LETTER.
- LETTERS SHALL NOT BE MORE THAN 2" H. OR 2" H.
- HORIZONTAL SPACING OF LETTERS SHALL PRODUCE A BALANCED LAYOUT IN PROPORTION TO SPACING SHOWN.
- TOP SURFACE OF LETTERS AND FRAME SHALL BE BRUSHED.
- BACKGROUND OF PLATE SHALL HAVE A DEEP BROWN DIRED FINISH.
- FURNISH 2 STEEL BOLTS 4" O.C. LONG WITH EACH PLATE.
- PLATES ORDERED IN PACKS SHALL BE CAST FROM THE SAME MELT.
- NUMBERS AND LETTERS SHOWN DOTTED ARE TO BE OBTAINED FROM BRIDGE PLANS.

SPECIFICATION REFERENCE 24713 H-3327 BRONZE CASTINGS TYPE 21

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NAME PLATE
FOR TRUNK HIGHWAY BRIDGES

2100
PROFILE & MEDIAN
(T.H. 35 W)