

December 4, 1963

Sverdrup and Parcel and Associates, Inc.  
915 Olive Street  
St. Louis 1, Missouri      Attn: A. E. Mannes

Re: Minn. Proj. I 35W-3 (47) 112  
S.P. No. 2783-  
Bridge No. 9340  
T.H. 35W over Mississippi River  
In Minneapolis

Dear Sir:

After our conference of December 3, Mr. Ranta of the St. Paul Division of the Bureau of Public Roads informed us that a letter had been received from the Washington office in connection with certain details for the truss portion of the above noted bridge.

The St. Paul Division of the Bureau of Public Roads furnished us with the attached letter dated December 4, 1963 in which they listed five items that should be given further consideration.

We discussed these details with you on December 4 and we believe we will answer directly the Items 1, 2, 4 and 5.

Regarding Item 3, we believe it would be desirable for you to furnish us with a typical joint layout with a center cord web showing perforations at the joint only as necessary to provide access for riveting the various members at such joint. The remaining portion of box girder members between joints would be planned without perforations. This detail, in our opinion, would be sufficient to cover the details at other joints where a center cord web is not used. The portion of a member between joints would be completely sealed. A seal near each joint would be accomplished by bulkheading inside of each member.

It would be desirable if you would furnish us with a copy of items discussed at our meeting on December 3 and 4. We will also prepare a report on the meeting and furnish you with a copy of such report.

Sincerely,

AEL:tt

cc: P. D. Swensen  
A. L. W. Anderson  
R. K. Redin-  
R. Tomczak

DEPARTMENT OF HIGHWAYS

A. E. LaBonte  
Bridge Engineer

625 North Robert Street  
St. Paul, Minnesota

December 4, 1963

Mr. James C. Marshall  
Commissioner of Highways  
Department of Highways  
St. Paul, Minnesota

Minn. I 035-3(47)112, Bridge 9340  
I-35W over Mississippi River  
In Minneapolis

Dear Sir:

Upon further review of the data recently submitted on subject bridge, which included "Design Criteria Deck Truss Spans, the design criteria are considered generally satisfactory except as covered by the following comments:

- 1) Design of tension members with holes out to eliminate butt welds at connections is recommended when the stress in the member fluctuates to the extent that fatigue stress in the butt weld would control the design.
- 2) For members not governed by fatigue stress it is considered satisfactory to weld in higher strength material or, preferably, increased thickness, when this results in worthwhile economy. The savings will vary and increase with the length of the member, and should be investigated for each case. Several other consulting engineers make extensive use of this method to save materials and we presume that in general it is economical.
- 3) It will be interesting to learn what the consultant will come up with to solve the maintenance problem caused by the access holes in the double box chord members. The suggested snap-on sheet metal covers for the individual openings would probably soon be lost.
- 4) With reference to the use of steels under your Specification No. 3309-63, we note that this specification makes no differentiation between types as to weldability or to acceptability of the "as welded" properties, particularly low temperature impact. It is known that poor notch toughness, at least in the thicker sections, is characteristic of some of these steels.
- 5) When steel of this specification is to be welded, it is recommended that an investigation of weldability be made in

accordance with paragraph 105(d) of the Specifications for Welded Highway and Railway Bridges of the American Welding Society, AWS D.2-63. The investigation should include a determination that the "as welded" impact properties are suitable for the service conditions expected.

Very truly yours

For W. W. Fryhofer  
Division Engineer



AFR-dd  
cc-State