

**The State Aid Bridge Unit's  
Submittal and Acceptance Process  
For  
Pre-fabricated Pedestrian/Bicycle Bridge Projects**  
(Those utilizing State or Federal Transportation Funds)

**- Design Plans**

**- Preliminary Design Plan Submittal**

- The owner/owner's consultant, shall submit 3 sets of Preliminary Design Plans, and a copy of the Hydraulic Analysis and Soils Report.
- Plans shall typically contain (at a minimum):
  - Title sheet
  - General plan and elevation sheet showing span lengths, profile grade information and construction notes
  - Design Data Box containing design & material specifications, painting requirements, and loading requirements
  - Indicate lead-in railing requirements and width of approach path
  - Pier and abutment locations and types, scour and frost protection, and backfill requirements
  - Bridge cross section showing deck material and railing requirements
  - Minimum low member elevation and an assumed maximum structure depth (top of deck to bottom of low member)
  - Channel width, or grade separation clearance envelopes as applicable
  - Summary of Quantities chart, and List of Sheets
  - Survey sheets including hydraulic information and boring logs.

**- State Aid Bridge Unit reviews and marks up comments in red and returns 2 sets to the owner – 1 set for owner's files and 1 set for the owner's consultant.**

**- Final Design Plan Submittal**

- The owner/owner's consultant, shall submit:
  - 2 sets of Final Plans and the SB portion of the Special Provisions for the bridge
  - Engineer's estimate of project.
- Plans shall contain (at a minimum):
  - Title sheet
  - General plan and elevation sheet showing span lengths, profile grade information and construction notes
  - Design Data Box containing design & material specifications, painting requirements, and loading requirements
  - Indicate lead-in railing requirements and width of approach path
  - Pier and abutment locations and types, scour and frost protection, and backfill requirements
  - Bridge cross section showing deck material and railing requirements
  - Minimum low member elevation and an assumed maximum structure depth (top of deck to bottom of low member)
  - Channel width, or grade separation clearance envelopes as applicable
  - Summary of Quantities chart, and List of Sheets

- Substructure design details and quantities. Provide all vertical and horizontal assumed superstructure service load reactions. Provide the LRFD factored pile or spread footing load tables for each substructure as per the MnDOT LRFD Design Manual.
- Survey sheets including hydraulic information and boring logs
- All sheets shall contain the state project number and MnDOT bridge number
- All sheets (except survey sheets) shall contain the initials of the individuals responsible for the design, drafting, design check, and drafting check of each sheet.

**- State Aid Bridge Unit reviews and marks up comments in red and returns 1 set to the owner/owner's consultant.**

**- Final Reproducible Plan Submittal**

- The owner, or their consultant, shall submit a Final Reproducible Plan set to the District State Aid office for acceptance. All sheets (except survey sheets) must be certified by a Professional Engineer licensed in the State of Minnesota. The Title Sheet, as well as the bridge General Plan and Elevation sheet, shall include the signature of the owner. The General Plan and Elevation sheet shall also contain the appropriate signature block for the State Bridge Engineer's signature of acceptance.

**- State Aid Bridge Unit receives the Reproducibles from the office of State Aid for Local Transportation (S.A.L.T.) or District State Aid, back-checks the Plans and gets the signature of the State Bridge Engineer. Plans are then returned to S.A.L.T. for all federally funded (SP) projects or District State Aid for all non-federally funded projects in preparation for letting. Plans will be retained by the owner of the bridge after letting.**

**- Pre-fabricated Superstructure Plans**

**- Pre-fabricated Superstructure Plan Submittal**

- The contractor shall submit:
  - 2 sets of the Pre-fabricated Superstructure Plans and 1 set of design computations to the owner/owner's consultant for review and acceptance.
  - 1 set of the Pre-fabricated Superstructure Plans and 1 set of design computations to the State Aid Bridge Unit for their files and an oversight review of the project.
- The Pre-fabricated Superstructure Plans shall contain (at a minimum):
  - General plan and elevation showing span lengths between bearing points, skews, profile grade information, and critical clearance dimensions
  - Design & material specifications, painting requirements, loading requirements and construction notes
  - Bridge camber and deflection information, and details of all member field splices.
  - Details of all timber and/or steel structural connections, the required welds, sizes of members, concrete mix numbers and concrete deck reinforcement.
  - Dimensioning of truss vertical spacing, truss height, stringer spacing, walkway clear width, height and spacing of handrails, safety rails, toe rails, et cetera.

- Details of the fixed and expansion bearings showing the connection of the superstructure to the substructure, including anchor bolt spacing and dimensioning necessary for proper placement on the substructures. The anchor bolts shall be detailed to avoid rebar and maintain minimum edge distances.
- Dimensions from top of deck to bearing seat, the dimension (horizontally and along slope) from front face of abutment backwall to front face of abutment backwall, expansion joint details, cover plate details including any notches required in the backwalls, and all applied service load information from the bridge superstructure.
- Complete details and dimensions of lead-in railings, as applicable
- Notes summarizing the weld inspection and testing requirements
- All sheets shall contain the state project number and MnDOT bridge number.
- All sheets shall contain the initials of the individuals responsible for the design, drafting, independent design check, and drafting check of each sheet.

**- State Aid Bridge Unit will review Pre-fabricated Superstructure Plans on an oversight basis. Any comments or concerns will be communicated/coordinated with the owner/owner's consultant who shall forward all comments to the contractor.**

**- Final Pre-fabricated Superstructure Plan Submittal**

- After all comments have been addressed and plan corrections are made, the contractor shall submit a revised set of Pre-fabricated Superstructure Plans and design calculations to the owner/owner's consultant for review and acceptance. A Professional Engineer licensed in the State of Minnesota and experienced in bridge design shall certify the calculations and all superstructure plan sheets.

- Upon acceptance, the owner/owner's consultant, who is a Professional Engineer licensed in the State of Minnesota, shall sign, date and stamp the design calculations and each sheet of the reviewed and accepted plan for general compliance with the project plans and specifications.

- The owner/owner's consultant shall send a copy of the final reviewed and accepted Pre-fabricated Superstructure Plans and design calculations to the State Aid Bridge Unit for filing.

**- Submittal of minor modifications**

- If minor modifications of the substructures are required to accommodate the pedestrian/bicycle bridge superstructure, the owner/owner's consultant, working in conjunction with the contractor, is responsible for providing updated substructure detail sheets clearly showing all modifications. The revised detail sheets shall be submitted to the State Aid Bridge Unit for their files prior to commencement of substructure construction.

**- Submittal of major modifications and/or redesign of substructures**

- If major modification and/or redesign of the substructures is required to accommodate the Pre-fabricated Superstructure, the owner/owner's consultant, working in conjunction with the contractor, is responsible for updating, regenerating, and recertifying all applicable substructure sheets from the original Design Plan and submitting the revised plan sheets and supporting calculations to the State Aid Bridge Unit for review and acceptance prior to commencement of substructure construction.

See Technical Memorandum No. **16-xx-B-xx** at <http://techmemos.dot.state.mn.us/> for further information on the design and submittal process for pre-fabricated pedestrian/bicycle bridge projects utilizing performance specifications.