

FINAL DESIGN - BRIDGE SUBMITTALS CHECKLIST

The following listing of design items is intended to serve as a general pre-submittal tool for the consultant's convenience in identifying typical MoDOT review items at the PS&E stage. When this checklist is used, it is requested that a copy of the "checked" list be included with the submittals to MoDOT to assist in the reduction of review time required. Note that the format for provision of this information is left entirely to the consultant's discretion. The following format is shown as an example, for grouping of related types of information.

General

- All outstanding preliminary design issues from MoDOT's submittal review are addressed in the PS&E submittals.
- Each drawing is signed and sealed by professional engineer
- Title sheet is approved by the LPA (indicated by signature and date)

The Title Sheet

- The federal project number (BRO, STP, etc.)
- County
- Route
- Structure number
- Name of Local Public Agency (if different from the County)
- Name of stream (or roadway) being crossed
- Brief description of work to be performed (i.e.; bridge replacement or rehabilitation)
- Functional classification of the route
- Project location map (preferably shown on a county map) and North arrow
- The section, township and range of the project site
- The name, address and phone number of utility companies
- Current and design year ADT
- Percentage of truck traffic (design year)
- Design speed limits
- Directional distribution
- A legend to identify abbreviations and symbols used in the drawings
- The name, address and phone number of the consultant
- The date of the drawings

General Notes, Estimated Quantities, Soil Boring Data and Index Sheet(s)

- General notes regarding:
 - Design specifications
 - AASHTO – 1996 and Interim Revisions through 1999
 - Design loading
 - Design vehicle loading
 - Seismic Performance Category and Acceleration Coefficient
 - Earth pressure
 - Equivalent fluid pressure
 - Future wearing surface
 - Superstructure design for dead/live loads (simple support, non-comp/continuous composite, etc.)
 - Design unit stresses (and Class of concrete, as appropriate)
 - Substructure

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- Safety barrier curb
- Superstructure (except prestressed girders and safety barrier curb)
- Prestressed girders
- Reinforcing steel
- Steel piles
- Structural carbon steel
- Bearing pads
- Joint filler
- Reinforcing steel clearances
- Construction and Materials specifications
 - Missouri Standard Specifications for Highway Construction, 1999 and Supplemental Specification Revisions (see next item)
 - (If the MoDOT Std. Specs are superceded by project-specific modifications, the drawing note should reference to the Specifications/Contract Documents package)
 - Acceptance of precast or prefabricated members (as specified in [Section IX](#) of the LPA Manual under "Specifications and Job Special Provisions")
- Miscellaneous notes
- Summary of estimated quantities
- Reinforcing steel bar list and bending diagrams
- Pile data table (with provision for addition of as-built pile driving data)
- Design bearing table for footings
- Soil boring log data and elevations of hard rock as obtained from the geotechnical investigation
- Index of drawings

Plans and Profiles Sheets

- Existing and proposed roadway alignments
- Location of existing bridge and other structures
- Right-of-way requirements
- Property ownership
- Significant topographic features
- Existing utilities
- Stream alignment and direction of flow
- Proposed channel realignment (if needed)
- Roadway typical sections and pavement type (and driveways, if applicable)
- Identify construction sign and traffic control requirements and turning movements
- Benchmark information
- Indication of the vertical datum
- Guardrail layout (and identification of end terminals, as appropriate)
- Roadway width transitions
- Superelevation transition requirements, if applicable
- Proposed roadway and bridge grades
- The fill face stations of the proposed bridge ends
- Identification of bridge "skew" to roadway alignment
- Superstructure type and spans

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- ___ Bridge cross-section showing:
 - ___ C/L of roadway
 - ___ Location of profile grade
 - ___ Crown location and cross slopes on bridge deck
 - ___ Girder spacing
 - ___ Type of barrier curb
 - ___ Is the barrier railing system listed in the LPA Manual as “approved”?
 - ___ If not in the LPA Manual, is documentation of FHWA determination of the “TL” crash test level criteria for the barrier railing system included with the submittals?
 - ___ Clear width on bridge roadway
 - ___ (Pedestrian railing and fencing details, when applicable)
- ___ Existing ground line profile elevations parallel to and approximately 30' offset from the centerline of roadway
- ___ Horizontal and vertical clearances (for RR or roadway crossings)
- ___ Plan view location of soil borings
- ___ Foundation types and locations of bottom of footings and piles
- ___ Pile cut-off elevations
- ___ Extents of rock blanket embankment protection
- ___ Floodplain cross-sections used in the hydraulic analysis
- ___ Plan view locations of the floodplain cross-sections used in the hydraulic analysis
- ___ 2000-foot streambed profile (not required if identification of the streambed slope used in the hydraulic analysis and method obtained is provided in the hydraulic report)
- ___ Hydraulic Summary Data Table (See [Fig. VIII – 6](#)) shown on drawing
- ___ Design high water elevation shown on bridge profile drawing
- ___ Approximate low water elevation shown on bridge profile drawing (2-Year WSEL recommended)
- ___ End Bent layout and reinforcing drawings
- ___ Intermediate Bent layout and reinforcing drawings
- ___ Bearing pad details
- ___ Wing details
- ___ Girder drawings
- ___ Girder camber diagram
- ___ Diaphragm details
- ___ Slab layout and reinforcing
- ___ Slab haunching diagram
- ___ Slab pouring sequence
- ___ Precast/prestressed panels details
- ___ Slab drains
- ___ Barrier curb attachment details
- ___ Barrier curb reinforcing details, as appropriate
- ___ Approach guardrail details
- ___ Roadway cross-sections identifying roadway improvement grade elevations, typical section and cut and fill quantities
- ___ Construction staging drawings, as appropriate
- ___ Traffic signal drawings, as appropriate
- ___ Pavement marking and signage, as appropriate

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Specifications

- Cover sheet of specifications package is signed and sealed by the engineer
- Missouri Standard Specifications for Highway Construction, 1999, and Supplemental Specification Revisions
- Engineer-modified standard specifications
- Engineer-prepared job special provisions
- Acceptance plan(s) for precast, structural steel and prefabricated members, as applicable (see [Section IX](#), “Specifications and Job Special Provisions”)
- Section IX “Inspection by MoDOT and FHWA” note included on drawings or in Job Special Provisions

Itemized Cost Estimate

- Quantities indicated in the itemized cost estimate are in agreement with tabulated quantities indicated on the drawings.
- Estimated costs that may be perceived by MoDOT review to be unusually high are addressed
 - Comparative cost estimates provided for alternate structural types considered
 - Written justification for high cost to account for unusual site conditions or special design requirements

Structural Inventory and Appraisal Sheet

- All items have been completed
- Engineer’s name and PE License Number shown
- Inventory and Operating ratings are in agreement with the Load Rating Summary and calculations

Load Rating Computations and Summary

- All load ratings are determined using the Load Factor Method
- Inventory and Operating ratings are determined for the HS20 vehicle
- Posting load ratings determined for all Missouri standard posting vehicles as follows:
 - H20
 - 3S2
 - MO5 (in commercial zones only)
- All controlling load ratings are shown on the Load Rating Summary Sheet
- The Load Rating Summary Sheet is signed and sealed by the engineer
- All load ratings shown on the Summary Sheet are in agreement with the load rating computations