

Illinois Department of Transportation

Shop Drawing Requirements

A. Reviewed and approved shop drawings are required for the following items and shall be processed as noted:

Plate Girders	Finger Plate Joint Trough
Wide Flange Beams	Modular Expansion Joints
Miscellaneous Structural Steel	Elastomeric Bearings
PPC Bulb-T Beams	HLMR Bearings
PPC I-Beams	Seismic Isolation Bearings
PPC Deck Beams	Fixed Bearings
Precast Concrete Box Culverts	Anchor Bolts
Three Sided Precast Concrete Structures	Pins and/or Link Plates
Overhead Sign Structures	Precast Deck Planks
Cantilever Sign Structures	Precast Fascia Panels
Butterfly (Twin Cantilever) Sign Structures	Metal Deck Forms
Bridge Mounted Sign Structures	Mechanically Stabilized Earth Walls
Monotube Sign Structures	Precast Noise Walls
Traffic Signal Mast Arms	Prefabricated Pedestrian/Bicycle Trusses (see Item 4 below)
High Mast Light Towers	Temporary Shoring/Jacking and Cribbing
Finger Plate Expansion Joints	

Other project-specific items not included in this list may also require approved shop drawings.

Special Requirement Items:

The Prime Contractor (PC) is responsible for the design and detailing of the following nine items. The seal and signature of an Illinois registered Professional Engineer or Structural Engineer shall be affixed if required by the contractor. The initial number and routing of supplier-prepared shop drawings (and computations if applicable) follows the attached review procedure diagrams, except as modified below. Districts should archive drawings, especially those not kept by the Bureau of Bridges & Structures (BBS).

1. Mechanically Stabilized Earth Wall (MSE) shop drawings and wall design computations require submittal to the BBS Bridge Design Section* and review by the BBS Geotechnical Unit, even if the shop drawings have been reviewed by a consultant. The BBS will archive shop drawings only for MSE walls that are part of bridge structures.
2. Precast Concrete Box Culverts, when required (reference BMPR Policy Memorandum 19-08.2), and Three Sided Precast Concrete Structures shop drawings shall be submitted directly to the BBS Bridge Design Section* for review and two additional copies simultaneously submitted to the District Project Implementation Engineer. The District/owner shall archive shop drawings.

3. Seismic Isolation Bearing design details and computations shall be submitted to the BBS Bridge Design Section* or the design consultant, prior to the review of shop drawings. Shop drawings will not be accepted for review before the proposed designs are approved. The BBS will archive shop drawings.
4. Pedestrian/Bicycle Truss shop drawings and design computations for structures crossing over a state or federal route, or placed on an IDOT right-of-way, or having spans 150 ft. or longer, shall be submitted to the BBS Bridge Design Section* for structural review. If these structures are constructed by another governmental agency (county, municipality, park district, IL Dept. of Natural Resources, etc.), that agency is responsible for archiving the approved shop drawings for future reference.
5. Precast Noise Wall shop drawings shall be submitted directly to the BBS Bridge Design Section* for review and two additional copies simultaneously submitted to the District Project Implementation Engineer. The BBS will archive shop drawings only for the portions of noise walls that are installed on bridges.
6. “Stay-In-Place” Metal Deck Forms shop drawings are to be submitted directly to the Fabrication Unit*. The drawings will be reviewed by the BBS Bridge Design Section and BBS will archive the shop drawings.
7. Traffic Signal Mast Arm shop drawings from various manufacturers have been pre-approved by this office for specified loading configurations. The pre-approved shop drawings have been distributed to all District Project Implementation Engineers and may be used by construction personnel to accept shop drawings for loading conditions less than or equal to those that were pre-approved. For lengths or loadings that exceed pre-approved configurations, shop drawings, along with the contract signal plans, shall be submitted to the Fabrication Unit* for review. Monotube Sign Structure shop drawings from manufacturers have not been pre-approved by this office, and must be submitted to the Fabrication Unit* for review. The BBS will not archive final drawing records.
8. High Mast Light Tower shop drawings are to be sent to the central Bureau of Design and Environment for towers in Districts 2 through 9, and to the District 1 Bureau of Electrical Operations for towers in District 1. Luminaires, lowering devices and all electrical and mechanical components will be reviewed by those offices. Tower shop drawings and weld procedures are reviewed by the Fabrication Unit* for structural details and specification conformance. The BBS will not archive final drawing records.
9. Temporary Shoring and/or Jacking and Cribbing drawings are to be submitted for review directly to either the BBS Bridge Design Section or the Bridge Investigations and Repair Plans Unit in the Structural Services Section* (based on the project type), and two additional copies shall be simultaneously submitted to the District Project Implementation Engineer. The BBS will not archive drawings.

B. Shop Drawings for the following items need not be submitted for each project to the BBS or the review consultant, unless specified or special (non-standard) details are proposed for routine items:

Metal Railings for Bridges (Steel and Aluminum), Pedestrian/Bicycle Railing, Pre-Fabricated Inspection Platforms, Miscellaneous Items – Scuppers, Drain Piping, Navigation Lights and Mounting Hardware, Light Poles, Traffic Signal Poles and other small fabricated pieces such as embedded items for precast and pre-stressed concrete:

The fabricator shall furnish installation and detail drawings to the Contractor and Resident Engineer for field verification of locations and dimensions. These drawings shall be included in the project records. Shop fabrication inspection is not required, and the Resident Engineer's final acceptance may be based on proper fit and an overall visual inspection of the finished product.

Standard design base sheet notes require permanent tubular steel bridge traffic rail and rail posts to have Charpy-V Notch (CVN) toughness values certified by test. Test results, along with mill certification documentation, shall be submitted to the district. CVN testing is not normally required for bicycle/pedestrian railing. All steel shall be domestic. Any paint used shall be accepted by the Bureau of Materials and Physical Research (BMPR)*. Current requirements of the BMPR concerning aluminum rail and posts shall be satisfied.

The manufacturer's maintenance instructions (periodic inspection checklists, lubrication schedules, etc.) for moveable, pre-fabricated inspection platforms shall be furnished to the Resident Engineer.

Neoprene Expansion Joints:

Each manufacturer should submit their standards to the Fabrication Unit* for preapproval, thereby eliminating shop drawing review by IDOT on individual projects. The Contractor retains the responsibility for proper fit, installation and geometry, and must supply a copy of a preapproved standard to the Resident Engineer for field verification and inclusion in record drawings for the project. The BBS will not archive final drawing records.

For special, non-standard installations such as island medians, skew changes or partial replacements of dissimilar joints, shop drawings should be submitted to the Fabrication Unit*.

The BMPR** will continue to receive material samples for lot testing.

Bridge Joint Sealing System (Preformed Joint Seal (PJS) or Strip Seal):

These joints' support plates are relatively simple and may be prefabricated in convenient lengths, allowing subsequent shop or field cutting to meet project requirements. Since details will be generic, no project-specific review is required, but fabricators may submit standard drawings for BBS preapproval. An installation scheme should be provided by the fabricator to the Contractor and Resident Engineer on jobs with complex geometry or multiple changes in cross slope.

When fabricators are producing the steel assemblies, the Fabrication Unit * is to be notified and may verify the following: domestic material of proper grade; acceptable welding with approved procedures by qualified welders; adequate blast cleaning before painting; and proper application of an approved primer. Only one coat of primer (or optional hot-dip galvanizing) is needed and studs do not require paint.

Acceptance will be waived to the Resident Engineer at the jobsite, unless one of our fabrication inspectors is in the shop for other work and completes a BBS 59 release which includes the PJS or strip seal plates. The BMPR** will continue to lot test samples of the seal material.

Break-Away Wide Flange and Tubular Sign Posts:

Standard shop drawings from various fabricators have been pre-approved by the BBS and distributed to all District Project Implementation Engineers, and may be used by District personnel to accept shop drawings. The Contractor retains the responsibility for proper fit, installation and geometry, and must supply a copy of a preapproved standard to the Resident Engineer for field verification and inclusion in record drawings for the project. The BBS will not archive final drawing records.

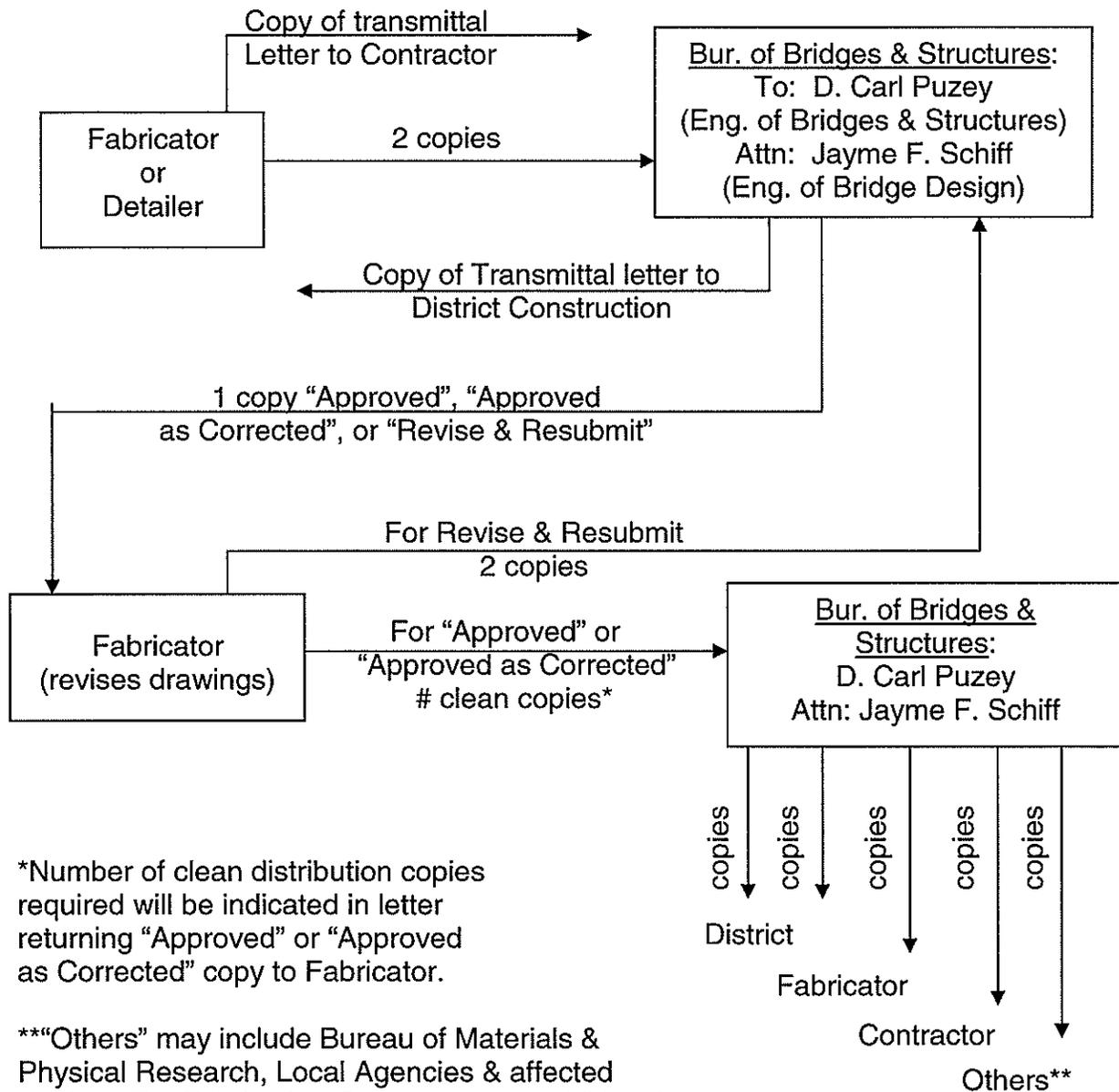
Fabric Reinforced Elastomeric Mats and Terminal Joint Wide Flange Beams:

The fabricator shall furnish installation and detail drawings to the Contractor and Resident Engineer for field verification of locations and dimensions. These drawings shall be included in the project records. Shop fabrication inspection is not required, and the Resident Engineer's final acceptance may be based on proper fit and an overall visual inspection of the finished product. The mat supplier is responsible for submitting samples to the BMPR** for lot testing.

*ILDOT Bureau of Bridges & Structures, Rm. 240,
2300 S. Dirksen Pkwy, Springfield, IL 62764:
Bridge Design Section, Fabrication Unit, or
Bridge Investigations and Repair Plans Unit, as applicable

**ILDOT Bureau of Materials & Physical Research
126 East Ash, Springfield, IL 62704
Materials Testing Section

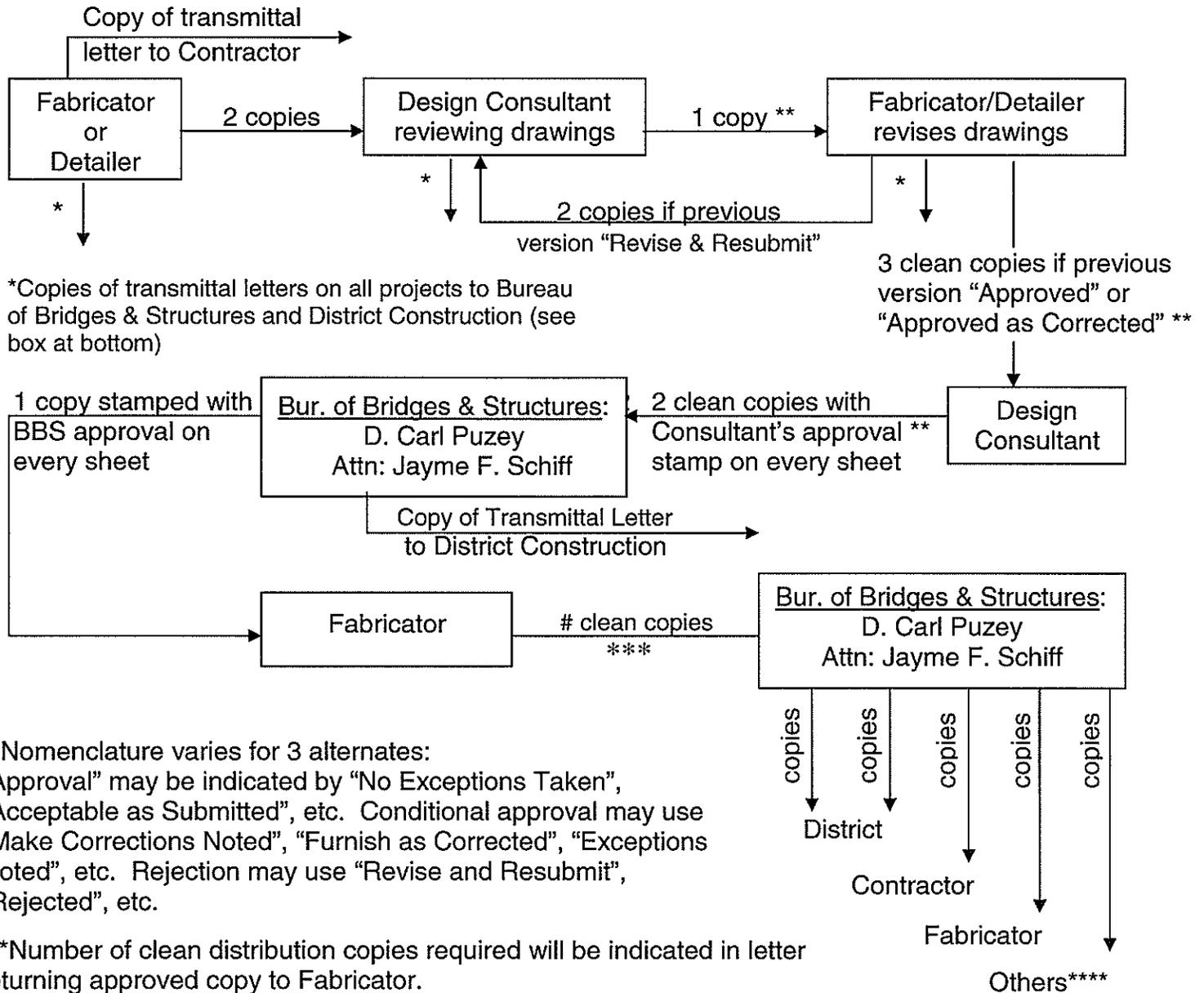
**Shop Drawing Review Procedure
for Bur. of Bridges & Structures as Primary Reviewer
("Special Requirements" not included)**



*Number of clean distribution copies required will be indicated in letter returning "Approved" or "Approved as Corrected" copy to Fabricator.

***"Others" may include Bureau of Materials & Physical Research, Local Agencies & affected parties. For Fabrication-Only contracts, additional copies and reproducibles will be required for the subsequent erection contract. Structures carrying railroads may also require reproducibles for the railroad.

Shop Drawing Review Procedure for Design Consultant as Primary Reviewer (“Special Requirements” not included)



Bureau of Bridges & Structures:
 To: D. Carl Puzey (Acting Engineer of Bridges & Structures)
 Attn: Jayme F. Schiff (Acting Engineer of Bridge Design)

District Construction:
 To: Regional Engineer / Attn: District Project Implementation Engineer