

## CHAPTER 6

### SHOP DRAWINGS, CONSTRUCTION PROCEDURES, AND OTHER SUBMISSIONS

#### 6.1 APPROVAL PROCESS

##### 6.1.1 General Shop Drawing Submission Procedure

The procedure for submitting, reviewing, approving, and distributing the approved shop drawings is described in Subsection 5.02 of the MassDOT Standard Specifications for Highways and Bridges, 2020 Edition. This Subsection also specifies the information that needs to be provided on the shop drawing title block.

Bridge element shop drawings and other detail drawings that are prepared in compliance with the design detailed on the Construction Drawings for the purpose of fabricating those elements, and which do not include original design by the Contractor, are not required to be stamped by a Professional Engineer registered in Massachusetts.

Drawings or plans whose original design is the responsibility of the Contractor, such as for, but not limited to: support of excavation; cofferdams; sign, signal and lighting supports; temporary structures; erection drawings; demolition drawings; assembly plans, and computations supporting those designs that are submitted by the Contractor for approval shall bear the seal of a Professional Engineer of the appropriate discipline registered in Massachusetts.

##### 6.1.2 Structural Steel Shop Drawing Requirements

Structural steel shop drawings shall be prepared and presented in accordance with the AASHTO/NSBA *Steel Bridge Collaboration G1.3 Shop Detail Drawings Presentation Guidelines Documentation with Sample Drawings*. Structural steel shop drawings shall be reviewed and approved in accordance with the AASHTO/NSBA *Steel Bridge Collaboration G1.1 Shop Detail Drawing Review/Approval Guidelines*. If there are any conflicts between these guides and the Standard Specifications, the Standard Specifications shall govern.

##### 6.1.3 Approval of Shop Drawings

6.1.3.1 General. A shop drawing submittal shall be reviewed and approved as a complete set. The entire set shall be approved or approved as noted before any sheets are returned to allow fabrication to begin.

6.1.3.2 Shop drawings shall be reviewed as expeditiously as possible and returned to the Fabricator. For all projects designed by private consultant firms, the Designer shall be the consultant firm as indicated on the Construction Drawings, and the stamp shall include the consultant firm's name, the reviewer's signature or initials, and the date of the stamping. For projects designed by MassDOT, the Designer may be the District, the Bridge Section, Highway, or Traffic Engineer depending on the origin of the design. For Design Build projects, the Designer referred to in this Bridge Manual is the Designer of Record for the Design-Build team.

The AASHTO/NSBA Steel Bridge Collaboration document G1.1 – Shop Detail Drawing Review/Approval Guidelines gives general review instructions and an approval checklist that **should be followed, when practical.**

Drawings shall be stamped “Approved as Noted” if the Reviewer is satisfied that the drawings fundamentally meet the contract requirements and only require limited corrections. Examples of limited corrections include sporadic, minor dimensional errors and shop notes not fully consistent with the Standard Specifications or Special Provisions. Prior to stamping the drawings, the **Designer shall contact the shop drawing detailer via e-mail or telephone to discuss the notes.** Drawings stamped “Approved as Noted” shall be considered approved and final.

**Shop drawings stamped “Approved” or “Approved as Noted” shall be distributed as promptly as possible to all parties specified in Table 6.1 below. The entire set shall be approved or approved as noted before any sheets are returned to allow fabrication to begin. Any exception to the above would require the approval of the Engineer. As part of this approval, the Fabricator shall be responsible for providing and updating a spreadsheet listing each shop drawing; the revision status of each sheet; and the approval status of each sheet. This Spreadsheet shall be included in all shop drawing submittals and returns and shall be checked by the Designer to assure its accuracy.**

Drawings shall be stamped “Rejected” if the Reviewer finds a nonconformance with the contract requirements, poor quality (legibility, lack of details, lack of notes, contradictory information) or other problems that may lead to shop errors. Only individual sheets with such errors or required modifications shall be stamped “Rejected”. **If any of the sheets are rejected, then the entire set must be returned for corrections and resubmitted. Only those sheets that need revisions shall be stamped “Rejected”. All other sheets shall be unstamped. The Designer needs to clearly identify the sheets that require a revision in the transmittal letter.**

6.1.3.3 The Contractor, Fabricator and the Designer are responsible for approaching the Shop Drawing submittal, review, approval, and distribution process as a team effort in order to ensure accurate and timely construction of the structure. Toward this end the following shall be followed:

- All parties must cooperate and maintain open lines of communication, so problems can be quickly addressed and resolved.
- Verbal discussions and agreements are encouraged and should be quickly followed by written confirmation.
- Efforts should be made to expedite information and drawing transmission, including use of e-mail, faxes and electronic file transfer, when applicable.
- Requests for Information (RFI’s) should indicate the urgency of a reply. The Designer should provide a timely response or acknowledgement (explanation, decision, request for additional information, or estimate of time needed for evaluation), usually within two business days.

6.1.3.4 On shop drawings for structural steel, precast and/or prestressed concrete structural members, steel or iron castings, bronze or wrought iron plates, metals railing and machinery, and structural timber the Designer shall make sure that the following notation is on the shop drawings before approval is given:

INSPECTION TO BE PERFORMED BY THE MASSACHUSETTS DEPARTMENT OF  
TRANSPORTATION OR DESIGNATED REPRESENTATIVE

**6.1.3.5** If catalog cuts or manufacturer's specifications are submitted in lieu of or in addition to shop drawings, the number of copies required for distribution shall be in accordance with Table 6.1.

**6.1.3.6** In case a Railroad is involved, the following procedures shall be followed:

Highway Over Railroad: Railroad will not approve shop drawings.

Railroad Over Highway: Railroad will approve all drawings of the structure.

#### **6.1.4 Designer's Responsibility in Reviewing and Approving Shop Drawings**

**6.1.4.1 Designer's Shop Drawings Review Process.** The Designer shall review the submitted shop drawings for general conformance with the design concept of the project as detailed on the Construction Drawings. Shop drawings are not to be used as a vehicle for Contractors or fabricators/precasters to submit alternate designs from the ones shown on the Construction Drawings, which should be done as a request by the Contractor for a change to the Contract Documents. If an alternate design is encountered on the shop drawings, the Designer is obligated to reject the shop drawings due to their nonconformance with the Construction Drawings.

Designers are reminded that the MassDOT Standard Specifications for Highways and Bridges, 2020 Edition require that the title block of shop drawings include, at a minimum, the following information: fabricator's name and address; city(ies) or town(s) where the project is located; location(s) where the material is to be used; MassDOT contract number; Federal aid project number, when applicable; MassDOT Projis Number; name of the general contractor; date of drawing and date of all revisions. The title block for shop drawings of bridge projects shall also include: the bridge number and BIN; facility on the bridge; the feature under the bridge. If this information is not provided, the Designer is obligated to reject the shop drawings due to their nonconformance with the Contract Documents.

**6.1.4.2 Verifying the Fabricator or Precaster.** Before starting the review of shop drawings for the production of major bridge components, the Designer must first verify that MassDOT has approved the Fabricator or Precaster for the category of work to be performed. If the Fabricator or Precaster listed on the shop drawings is not approved by MassDOT, the Designer is obligated to reject the shop drawings and inform both the Contractor and MassDOT of this fact. An up to date list of approved fabricators or precasters may be obtained from the MassDOT website as follows:

- For fabricators of bridge metals, such as structural steel, railings, aluminum protective screen, strip seals, sign structures, signals and other metal products, the Approved Metal Fabricators List can be obtained from the following link:

<https://www.mass.gov/massdot-approved-fabricators>

- For producers of prestressed concrete and precast products, such as prestressed concrete beams, precast concrete bridge elements, and other bridge related precast concrete components, an up to date list can be obtained from the following link:

<https://www.mass.gov/service-details/qualified-construction-materials-list>

6.1.4.3 Verifying Material Specifications. As part of the shop drawings review process, the Designer shall verify that all AASHTO or ASTM specifications for the materials to be supplied as part of the work detailed on the shop drawings comply with the required material specifications as stipulated in the MassDOT Standard Specifications, Supplemental Specifications, or Special Provisions.

6.1.4.4 Approvals the Designer is Not Authorized to Make. Sometimes shop drawings include materials that are found on the MassDOT Qualified Construction Materials List, whose use requires pre-approval, concrete mix designs, and contain or include submittals for fabrication methodology such as welding procedures. These must be approved by other disciplines within MassDOT and not by the Designer. In such cases, the Designer can approve the shop drawings “Approved as Noted” by first crossing out this information on the shop drawings with a note that the Designer is not authorized to approve this and that it should be submitted to the appropriate MassDOT engineer for approval.

Examples of products and materials to be approved by MassDOT Research and Materials include, but are not limited to: concrete mix designs for both ready-mix concrete and precast concrete products; concrete patch materials; grouts; epoxies; concrete sealers; membranes; joint sealers and fillers; geotextiles; mechanical reinforcing bar splicers; and coatings.

Examples of metals related procedures and certifications to be approved by the MassDOT Metals Control Engineer include, but are not limited to: all welding procedures, cambering procedures, coating procedures, and any metal repair procedures for any fabrication related errors.

6.1.4.5 For Design/Build projects, the Design/Build team’s QC manager shall approve those procedures listed in Paragraph 6.1.4.4 and shall forward to the appropriate MassDOT Unit for acceptance.

## 6.1.5 Communication from Contractors, Fabricators, and Suppliers

Contractors, Fabricators, and Suppliers often contact the Designer directly with inquiries. In order to avoid confusion and potential claims, all answers to the Contractor shall be made through the appropriate MassDOT District Construction personnel, except in cases where the inquiry is related to resolving review comments on shop drawings. Direct communication between the Contractor, Fabricator, or Supplier and the Designer is encouraged for the timely and effective resolution of review comments on shop drawings.

## 6.2 SHOP DRAWINGS

### 6.2.1 Structural

6.2.1.1 General. The procedure outlined below shall be followed for reviewing and approving the shop drawings that are listed in Table 6.1.

6.2.1.2 Approval Procedure – Consultant Design. The approval procedure shall be as follows:

- The Fabricator/Supplier shall send three (3) sets of prints of the shop drawings to the Contractor who shall then submit two (2) sets of these prints directly to the Designer for comments or approval. At the same time, the Contractor shall send a copy of this transmittal to the appropriate District Office, to the attention of the District Construction Engineer.
- Within two (2) weeks (unless size of the project dictates longer period of time which would be agreed upon during negotiation of schedule and hours), the Designer, after checking the shop drawings and making any necessary comments, shall return one set of marked-up prints through the Contractor to the Fabricator/Supplier for correction, retaining one set for back-checking to see that the comments have been reconciled. At the same time, the Designer shall send a copy of this transmittal to the appropriate District Office, to the attention of the District Construction Engineer. In case there is a design issue the Designer shall confer with the Bridge Section. Please note, that the subsequent reviews, if needed, shall take no longer than one (1) week.
- After the Fabricator/Supplier has reconciled all of the comments on the shop drawings, the Contractor shall send the revised drawings directly to the Designer for approval. At the same time, the Contractor shall send a copy of this transmittal to the appropriate District Office, to the attention of the District Construction Engineer.
- Once the Designer has approved the shop drawings in accordance with Subsection 6.1.3 above, he/she will make all copies needed for distribution and will distribute the approved copies per Table 6.1 below.
- At the completion of the project, a CD containing the TIFF files (Black and White, with a minimum of 200 dpi resolution) of all approved shop drawings shall be submitted to the appropriate District Office by the Contractor. Subsequently, the District shall send these files to the Bridge Section.

6.2.1.3 Approval Procedure – In-House Design. The approval procedure shall be as follows:

- The Fabricator/Supplier shall send three (3) sets of prints of the shop drawings to the Contractor who shall then submit two (2) sets of these prints directly to the District Construction Office.

If the Designer is the Boston Bridge Section In-House Unit, the Area Engineer shall forward the submitted shop drawings through the District Construction Engineer and District Highway Director to the State Bridge Engineer for comments. If the Designer is the District Bridge Section, the Area

Engineer shall forward the submitted shop drawings through the District channels to the District Bridge Engineer for comments.

- Within two (2) weeks (unless size of the project dictates longer period of time which would be agreed upon during negotiation of schedule and hours), the Boston Bridge Section or District Bridge Engineer, after checking the shop drawings and making any necessary comments, shall forward their comments to the District Construction Office and the Area Engineer shall send the comments through the District Construction Engineer and District Highway Director to the Contractor.
- After the Fabricator/Supplier has reconciled all of the comments on the shop drawings, the Contractor shall send the revised drawings directly to the Bridge Section or the District Bridge Section for approval.
- Once the Bridge Section or the District Bridge Engineer has approved the shop drawings in accordance with Subsection 6.1.3 above, the Bridge Section or the District Bridge Section will make all copies needed for distribution and will distribute the approved copies per Table 6.1 below.
- At the completion of the project, a CD containing the TIFF files (Black and White, with a minimum of 200 dpi resolution) of all approved shop drawings shall be submitted to the appropriate District Office by the Contractor. Subsequently, the District shall send these files to the Bridge Section.

6.2.1.4 **Required Project Information on Shop Drawings.** All shop drawings submitted for the approval of the Designer shall feature a title block that contains all of the project information presented in Figure 6.1.

## **6.2.2 Traffic**

6.2.2.1 **General.** Overhead, cantilever, and ground mounted signs, light standards, and traffic signal assemblies shall be designed by the Contractor. The design calculations and shop drawings shall be reviewed by the Engineer or delegated to the Designer.

Signs supported on bridges or walls shall be designed by the Designer of Record for those supporting structures.

6.2.2.2 **Sign Supports.** Unless the structures have been pre-approved by MassDOT, complete design calculations must be prepared for all structures and must accompany the shop drawing submittals. The design calculations must include analysis of the sign structure, foundations, and all connections.

6.2.2.3 **Light Standards, Traffic Signal Assemblies, and High Mast Lighting Assemblies.** The requirements of Paragraph 6.2.2.2 shall apply, except that for High Mast Lighting Assemblies the following criteria shall also be met:

1. The lowering device motor must have a sufficient rating to withstand the torque imposed on it by the ring assembly as it is lowered or raised.

2. The lowering device housing must be made of a material able to withstand the shear and tensile stresses imposed on it by the lowering and raising of the ring assembly.
3. Two (2) copies of the Manufacturer's test results must be submitted with the shop drawings as documentary proof that the aforementioned requirements are met.

If designed by the Contractor, two (2) copies of shop drawings and two (2) copies of design calculations shall be submitted to the Designer for review and comment. After the comments have been reconciled, the required number of shop drawings and two (2) copies of design calculations shall be returned to the Engineer for approval and distribution.

For bridge-mounted sign supports designed by the Designer, the same procedure as outlined in Subsection 6.2.1 shall be followed.

### **6.2.3 Distribution**

Only after the Designer has approved the shop drawings as specified in paragraph 6.1.3.1, the shop drawings shall be distributed as shown in Table 6.1.

The Designer shall make all distributions. Copies of transmittal letters will be sent to respective MassDOT Engineers concerned. MassDOT will not distribute any shop drawings on projects handled by Design Consultants.

### 6.3 EFFECT OF CONTRACT DRAWING REVISIONS ON SHOP DRAWINGS

When Contract Drawings are revised after the contract has been awarded for construction and the revision affects the work of a supplier or fabricator, the following procedures shall apply:

1. Where shop drawings have not been prepared, the drawings shall be processed in accordance with the standard procedure incorporating the revisions.
2. Where part of a series of related shop drawings is in the process of approval and a revision relative to this series is made to the **Construction** Drawings, those shop drawings of this series not yet submitted for approval shall include and make note of such **Construction** Drawing revisions. Those drawings, already approved shall be revised as outlined below (3).
3. Where the shop detail drawings have been approved prior to a revision to the **Construction** Drawings, revised shop drawings shall be made and processed in accordance with the standard procedure. A note shall be shown on the shop drawings to include the date and nature of revision.

When it becomes necessary to issue revised shop drawings after the approved prints have been distributed, the Designer shall notify the Construction Engineer as to the extent of the revisions and the probable time of issuance of the revised drawings. The Construction Engineer will then notify the District Highway Director that revisions are being made. The District Highway Director will, in turn, inform the Resident Engineer.

### 6.4 CONSTRUCTION PROCEDURES

#### 6.4.1 Reviewing Construction Procedures

6.4.1.1 General. Construction Procedures are designs including calculations, drawings and procedures prepared by the Contractor and/or the Contractor's Engineer as required by the Standard Specifications or Special Provisions. They typically detail the equipment and methods the Contractor shall employ to complete the construction. The drawings shall be stamped by a licensed Professional Engineer working for the Contractor and submitted to MassDOT. The Designer of Record for the project shall review the submittal for structural adequacy and conformance with the Contract specifications and shall stamp the procedures "No Exceptions Taken", "Reviewed with Comments", or "Rejected".

Submittals shall be stamped "Rejected" if the reviewer finds a nonconformance with the contract requirements, poor quality (legibility, lack of supporting calculations, lack of details, lack of notes, contradictory information) or other problems that may lead to issues in the field.

The Designer shall forward the reviewed submittal to the District Construction Office for final disposition.

6.4.1.2 Design/Build projects. The Design/Build team's Designer of Record shall review the Construction Procedures, however MassDOT reserves the right to perform an independent review of them as well. In either case, the submittal shall be forwarded to the District Construction Office for final disposition.



6.4.1.3 Review where a Railroad is Not Involved. See Table 6.3 for a description of each construction procedure category and the required distribution. All Construction Procedure submittals shall be initially forwarded by the Contractor through the District.

For Category 1 procedures, the Designer will review these submittals for structural adequacy and conformance with the project specifications and will inform the District accordingly. When all comments have been resolved, the Designer shall notify the District that the submission is acceptable.

For Category 2 and 3 procedures, the Designer will review these submittals and return them to the Contractor for resolution of comments. When all comments have been resolved and the submittal is found acceptable, the Designer will stamp the submittal and distribute the submittals.

For Category 4 procedures, the District will perform all reviews and distributions.

6.4.1.4 Review where a Railroad is Involved. See Table 6.3 below for a description of each construction procedure category and required distribution. All submittals shall be initially forwarded by the Contractor through the District.

The railroad will review demolition procedures, erection procedures, sheeting procedures, and anything concerning the safety of railroad traffic and personnel. The District shall forward the Contractor's submittals under Categories 1 and 2 to the railroad for their review. The District shall also coordinate the railroad comments with those made by the Designer in order to ensure that all comments are resolved.

#### **6.4.2 Distribution**

6.4.2.1 Distribution Procedure – Consultant Design. The reviewed construction procedures shall be sent to the District by the Designer and distributed by the District Construction Office as per Table 6.3 below.

6.4.2.2 Distribution Procedure – In-House Design. The reviewed construction procedures shall be sent to the District Construction Office by the Boston Bridge Section or District Bridge Engineer and distributed by the District Construction Office as per Table 6.3 below.

**TABLE 6.1 SHOP DRAWING DISTRIBUTION**

**(NUMBER OF APPROVED COPIES REQUIRED FOR DISTRIBUTION BY THE DESIGNER)**

SHOP DRAWING CATEGORY	CONTRACTOR	RESEARCH & MATERIALS (Paper Only)	METALS CONTROL (Paper Only)	BRIDGE SECTION (PDF Only)	DESIGNER	TRAFFIC (PDF Only)	DISTRICT HIGHWAY DIRECTOR
REINFORCING STEEL AND S.I.P. FORMS	2			1	1		2
STRUCTURAL STEEL (INCLUDING STEEL FRAMING FOR PBU'S), METAL BRIDGE AND HAND RAILINGS, PROTECTIVE SCREENS, METAL CASTING AND MACHINERY	2		2	1	1		2
STRUCTURAL TIMBER BRIDGE COMPONENTS	2		2	1	1		2
STRIP SEAL BRIDGE JOINT SYSTEMS, MODULAR JOINTS, AND FINGER JOINT SYSTEMS	2		2	1	1		2
STEEL AND ALUMINUM HIGHWAY STRUCTURES	2		2		1	2	2

**TABLE 6.1 SHOP DRAWING DISTRIBUTION (CONTINUED)**

SHOP DRAWING CATEGORY	CONTRACTOR	RESEARCH & MATERIALS (Paper Only)	METALS CONTROL (Paper Only)	BRIDGE SECTION (PDF Only)	DESIGNER	TRAFFIC (PDF Only)	DISTRICT HIGHWAY DIRECTOR
SPECIAL METAL PIPES, PIPE ARCHES, PLATE PIPES AND PLATE ARCHES	2			1	1		2
BEARINGS (DISC AND SLIDING)	2		2	1	1		2
ELASTOMERIC BEARINGS	2	2		1	1		2
PRECAST CONCRETE BRIDGE ELEMENTS (INCLUDING PRECAST CONCRETE PBU DECKS), PRECAST CONCRETE DECK PANELS	2	2		1	1		2
PRESTRESSED CONCRETE BEAMS	2	2		1	1		2

**TABLE 6.1 SHOP DRAWING DISTRIBUTION (CONTINUED)**

SHOP DRAWING CATEGORY	CONTRACTOR	RESEARCH & MATERIALS (Paper Only)	METALS CONTROL (Paper Only)	BRIDGE SECTION (PDF Only)	DESIGNER	TRAFFIC (PDF Only)	DISTRICT HIGHWAY DIRECTOR
HIGHWAY AND TRAFFIC PRECAST PRODUCTS	2	2			1	2	2
STANDARD PRECAST CONCRETE HIGHWAY PRODUCTS – TRAFFIC	2				1	2	2
STANDARD PRECAST CONCRETE HIGHWAY PRODUCTS - NON-TRAFFIC	2				1		2

**TABLE 6.2     DEFINITION OF SHOP DRAWING CATEGORIES OF TABLE 6.1****Special Metal Pipe**

Corrugated metal pipe culverts and three-sided frames and arches with spans greater than 10 feet.

**Steel and Aluminum Highway Structures**

Structures including signal poles, strain poles, highway and high-mast lighting poles, toll gantry structures, and cantilever, bridge mounted and overhead sign structures.

**Precast Concrete Bridge Elements**

Mild-steel-reinforced precast concrete bridge elements, including: pile caps, precast substructure elements (abutments, piers, footings, wingwalls, & approach slabs), box culverts with spans greater than 10 feet, and three-sided frames and arches with spans greater than 10 feet.

**Prestressed Concrete Beams**

All precast, prestressed concrete bridge beams using straight or draped pretensioning or post-tensioning strands, such as NEXT F beams, NEXT-D beams, NEBT beams, NEDBT beams, adjacent or spread deck or box beams.

**Prefabricated Bridge Units (PBUs)**

Prefabricated bridge units (consisting of mild-steel-reinforced precast concrete bridge deck supported by steel girders and diaphragms).

**Highway and Traffic Precast Products**

All contract specific products not listed under “Construction Standard Details” and/or “Standard Drawings for Traffic Signals and Highway Lighting”. Both construction details are located on MassDOT’s website.

**Standard Precast Concrete Highway Products (Traffic and Non-Traffic)**

Mild-steel-reinforced precast concrete highway elements, including: all precast concrete elements listed in the MassDOT Construction Standard Details, including temporary and permanent barriers, box culverts with spans less than or equal to 10 feet, catch basins, drainage pipes, manholes, handholes, proprietary retaining wall systems, traffic light pole bases and luminaire bases.

**TABLE 6.3     DISTRIBUTION OF CONSTRUCTION PROCEDURES**  
**(NUMBER OF REVIEWED COPIES REQUIRED FOR DISTRIBUTION)**

CATEGORY	DESCRIPTION	DISTRICT	DESIGNER	RESEARCH & MATERIALS
1	STEEL BEAM ERECTION PRESTRESSED CONCRETE BEAM ERECTION BRIDGE DEMOLITION DECK REMOVAL & SHIELDING DESIGN	6 * (9)		
2	ALL QUALITY CONTROL PLANS FOR ASSEMBLY SHEETING / COFFERDAM DESIGNS TEMPORARY BRIDGES BEAM OR PIPE JACKING PROCEDURE		6 ** (9)	
3	PILE DRIVING (WAVE EQUATION METHOD) PILE LOAD TESTS DRILLED SHAFT CONSTRUCTION PROCEDURES DRILLED SHAFT LOAD TESTS DRILLED SHAFT CROSS-HOLE SONIC LOGGING (CSL) RECORDS EMBANKMENT SETTLEMENT SIGN SUPPORTS / STRAIN POLES		6 ** (See Note)	
4	PILE CAPACITY (UNDER 100 KIPS) SCHEDULES & CONSTRUCTION EQUIPMENT	3 (See Note)		
5	DUNNAGE PLAN			2 ***
6	ERRORS AND CHANGES	See Section 4.4 of this Bridge Manual		

See notes below


**TABLE 6.3     DISTRIBUTION OF CONSTRUCTION PROCEDURES (CONTINUED)**

() - Number of copies when a Railroad is involved.

\* - District shall distribute as follows: 1 to Designer, 1 to Resident Engineer, 1 to District Construction Office, 3 to Contractor, 3 to Railroad (if involved).

\*\* - Designer shall distribute. Distribution shall be the same as for \*.

\*\*\* - Designer shall distribute to R&M. Calculations shall not to be included in this distribution to R&M.

Note: Additionally, electronic copies ( PDF format) of Category 3 items, except non-ground mounted sign supports/strain poles, and Category 4 items shall be distributed to the Geotechnical Engineer.

(FABRICATOR) (STREET ADDRESS) (CITY, STATE ZIP)	
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION  (CITY/TOWN) (FACILITY) OVER (FEATURE UNDER)	
BRIDGE NO.: (XX-XX-XXX) CONTRACT NO.: (XXXXX) FED. AID PROJ. NO.: (XXX-XXXX(XXX)) CUSTOMER: (GENERAL CONTRACTOR)	BIN: (XXX)
JOB NO.: (FAB. JOB #)	SHEET XX OF XX

**FIGURE 6.1: PROJECT INFORMATION REQUIRED ON SHOP DRAWING TITLE BLOCKS FOR BRIDGE PROJECTS**