

Working Drawing Manual



2012

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Section 1 Working Drawing Types

1.1 General

There are two primary types of working drawings, those requiring "APPROVAL" and those requiring "CERTIFICATION".

Certified WDs

Working drawings that require CERTIFICATION typically are for those items of work that require fabrication. Examples of working drawings which require Certification are erection plans, temporary cofferdams, and other items that would commonly be considered the Contractor's means and methods for constructing the project, such as stay-in-place forms and rebar coupling devices.

The process for CERTIFICATION of working drawings allows for certification or conditional certification of the working drawings. Conditional certification of working drawings is given when corrections are limited and the drawings fundamentally satisfy the contract. Examples of limited corrections include sporadic, minor dimensional errors and shop notes not fully consistent with the specifications that can be easily corrected on the drawings by the Design Unit, as well as format inconsistencies. This conditional approval allows the Contractor to order materials and perform the work, but the Contractor must submit revised working drawings incorporating the noted comments within thirty calendar days to receive a "CERTIFIED" stamp

Approved WDs

The working drawings that require APPROVAL are for those items of work which are not fabrication related and for items that were presented in the contract documents as "conceptual plans" for which the contractor is required to complete the final design. Examples of working drawings which require Approval are Modular Expansion Joint Assembly and Composite Piles. An example of a "conceptual plan" is a proprietary wall.

The responsibility of the Contractor shall be according to the Standard Specifications, Section 105.05, including the Submission Category Table 105.05.

The working drawings requiring APPROVAL must be approved in their entirety with no exceptions.

The review and processing of working drawings will be the responsibility of the designated Design Unit. The Design Unit shall be the designer that prepared the contract documents, either a Consultant firm or in-house design unit, with one exception. The exception is that on Consultant designed projects, Traffic Signal & Safety Engineering (TSSE) will be the designated review unit on all working drawings related to electrical work. Therefore, the Contractor shall submit electrical working drawings directly to TSSE on consultant designed projects and to the Engineering Documents (ED) on in-house designed projects. The Project Manager, Resident Engineer and ED shall be copied on all working drawing correspondence.

Section 2 Processing Steps

2.1 Project Manager

Within five working days of receiving notice of Award of Contract for a Project, complete and submit [Attachment 1](#) entitled "Working Drawing Input Data" and a copy of the award letter to the Engineering Documents Unit (EDU).

2.2 Engineering Document Unit

Upon receipt of the "Working Drawing Input Data" form, establish a project file and complete the appropriate Contractor Procedure form letter, either [Attachment 2](#) for consultant designed projects or [Attachment 3](#) for in-house designed projects and mail the letter "return receipt requested" to the Contractor. The letter shall be completed by inserting the following:

- Date of the letter
- The contractor's address and contact person
- Route and Contract Number
- Federal Project Number
- D.P. Number
- UPC Number
- Design Consultant's address and contact person (Attachment 2) or EDU's address and contact person (Attachment 3)
- The name, address and contact person for involved railroad(s) and other agencies
- Signature of EDU's representative

Send copies of the Contractor Procedure form letter to the following:

- On Consultant designed projects, the Consultant, Traffic Signal & Safety Engineering, Movable Bridge Engineering Group (if a movable bridge is included) ITS Engineering and/or other project specific ITS related unit (if ITS work is included) and Landscape and Urban Design (if street/park furniture or architectural finishes are included)
- On in-house design projects, the in-house designated review units
- Project Manager
- Resident Engineer
- Regional Construction Engineer

The Design Unit, consultant or in-house, and the Resident Engineer, shall upon receipt of the copy of the Contractor Procedure form letter, establish a file for the working drawings.

2.3 Contractor

Submit final working drawings that require approval directly to the unit named in the Contractor Procedure Form letter. The submission shall include working drawings using the appropriate plan sheet format, either [Sample A or B](#), and calculations on the appropriate calculation sheet, either [Sample C or D](#). The number of prints/copies required for most working drawings is seven; however additional copies may be required.

The general rule for additional copies to be furnished is as follows:

- One copy when Movable Bridges are involved
- One copy for ITS items
- Four copies for railroad-carrying structures
- One copy for each outside testing agency/authority

Any changes to the number of prints/copies will be addressed at the preconstruction meeting.

2.4 Designer Review

If received by the Consultant Designer, they are to review according to the Approved and Certified procedures below.

If received by EDU, they shall distribute the working drawings as follows:

In-House Distribution Chart

In-house Design Units	Type of Working Drawing
Structural Design	Bridge and Structural Items
Geometrics Design	Roadway Items Guide Rail and Safety Features
Traffic Signal & Safety Engineering	Electrical, Sign Face Layout
ITS Engineering	Electrical/ITS items
Other ITS related units as specified for project	Electrical/ITS items
Movable Bridge Engineering Group	Electrical/Mechanical (Movable Bridges)
Landscape and Urban Design	Street and Park Furniture Architectural Finishes

A copy of the transmittal letter for each submission shall be sent to the Resident Engineer and the Project Manager. On movable bridge projects, and projects with ITS facilities, a copy of all transmittal letters between the consultant and contractor for each subcontractor shall also be sent to the Department’s Movable Bridge Engineering Group and ITS Engineering and/or other project specific ITS related unit, respectively.

2.4.1 APPROVED Working Drawings

The Design Unit will review and coordinate the satisfactory resolution of all comments, and make a recommendation to approve the working drawings to the State Transportation Engineer by signing and affixing a stamp indicating “RECOMMENDED FOR APPROVAL” (Attachment 4, [Stamp A](#)). For submittals containing multiple plan sheets, the Design Unit shall develop a cover letter or memorandum as appropriate to the State Transportation Engineer. The correspondence shall itemize and briefly describe the individual sheets which are submitted for approval. The Design Unit shall state that they have reviewed these drawings, which the contractor has developed as the final design of the conceptual plans presented in the contract documents, for general conformance with NJDOT design standards and recommends approval to the State Transportation Engineer.

ITS and Landscape drawings which are reviewed by a consultant should be send to that unit for concurrence before submitting to the State Transportation Engineer.

Please note a separate submittal procedure for working drawings shall be used for Movable Bridge Projects. The submittal procedure listed in Section 4 shall be used for mechanical and electrical items on movable bridges.

The State Transportation Engineer will review the recommendation, and where warranted, approve the entire submittal by a signature and affixing a stamp indicating “APPROVED” signature/date, State Transportation Engineer (Attachment 4, [Stamp B](#)) only on a cover letter or memorandum. The individual plans sheets will then be stamped with [Stamp B1](#) for the record (Attachment 4, Stamp B-1). The approved working drawings including any submittals containing multiple plans sheets, the cover letter, or memorandum with the noted approval, shall be returned to the Design Unit for final processing and distribution according to Section 2.6.

If the State Transportation Engineer does not agree with the “Recommendation For Approval,” the working drawings will be returned to the EDU with a transmittal letter detailing the reason(s) for not approving. EDU will transmit unapproved working drawings to the Design Unit and copies of the transmittal letter shall be sent to the Resident Engineer, Project Manager. The Design Unit will coordinate the resolution of the comments and resubmit the working drawings for approval as described above.

2.4.2 CERTIFIED Working Drawings

The Design Unit(s) shall review the working drawings for conformance with design concepts as well as resolve comments from railroads and agencies. The working drawings will be designated either for certification by indicating "CERTIFIED" or "CERTIFIED AS NOTED" or rejection by indicating "REVISE AND RESUBMIT" by affixing a stamp (Attachment 4, [Stamp C](#)).

Please note a separate submittal procedure for certified drawings shall be used for Movable Bridge Projects. The submittal procedure listed in Section 4 shall be used for mechanical and electrical items on movable bridges.

Working drawings that are stamped "CERTIFIED" or "CERTIFIED AS NOTED" shall continue to be processed according to Section 2.6.

The certification, "CERTIFIED AS NOTED" is to be used only when corrections are limited and the drawings fundamentally satisfy the contract. Examples of limited corrections include sporadic, minor dimensional errors, shop notes that are not fully consistent with the specifications but can be easily corrected on the drawings by the Design Unit and format inconsistencies. Working drawings certified as "CERTIFIED AS NOTED" permit the Contractor to order materials and perform the work, but the Contractor must submit the required number of revised working drawings to the Design Unit incorporating the noted comments within thirty calendar days to receive a stamp designated "CERTIFIED". The Contractor's transmittal letter must clearly identify the working drawings that previously received a conditional "CERTIFIED AS NOTED". Revisions that have been incorporated should be noted and that the submission is for certification. If certification is warranted, the Design Unit shall stamp the working drawings "CERTIFIED" and follow Step 6 for distribution.

Working drawings shall not be rejected unless the drawings cannot be certified due to nonconformance or poor quality, such as legibility, lack of adequate dimensions, details and or notes, contradictory information or other problems that may lead to significant shop errors. The Design Unit shall return working drawings that are rejected by stamping, "REVISE AND RESUBMIT", directly to the Contractor. A transmittal letter detailing the reason(s) for rejection shall be included with the returned working drawings. A copy of the transmittal letter shall be sent to the Resident Engineer, Project Manager and EDU. These drawings shall be revised, approved and resubmitted by the Contractor, until certification is given.

2.5 Contractor Response

Any working drawing that receives a conditional "**CERTIFIED AS NOTED**", shall be revised accordingly and resubmitted to the Design Unit according to the Standard Specifications, [Section 105.05](#).

Correct and approve all working drawings that were stamped "**REVISE AND RESUBMIT**" due to non-conformity and resubmit them according to the Standard Specifications, [Section 105.05](#).

2.6 Distribution Design Unit

2.6.1 In-House

If an In-House Design, the Unit(s) shall retain one copy for file and send all other copies of the approved/certified (including certified as noted) working drawings to EDU for distribution as per the list in Section 2.6.3.

2.6.2 Consultant

If a Consultant Design, the Consultant, after approval or certification of the working drawings for sign legends and locations, movable bridges, ITS facilities, and street/park furniture and architectural finishes, shall submit the drawings to Traffic Signal & Safety Engineering, ITS Engineering, or Landscape and Urban Design, respectively for their concurrence. These units will have one week to review and submit a letter of concurrence to the Consultant Design Unit.

Please note a separate distribution procedure for working drawings shall be used for Movable Bridge Projects. The submittal procedure listed in Section 4 shall be used for mechanical and electrical items on movable bridges.

The Consultant Design Unit shall distribute the working drawings after approval/certification (including certified as noted) and when required, the letter of concurrence (for signage, movable bridges, ITS facilities or furniture/finishes) is received as per the list in Section 2.6.3.

2.6.3 Distribution

The accepted working drawings shall be distributed as follows:

- One copy to the Resident Engineer
- Two copies to the Bureau of Materials
- One copy to the Design unit's file (consultant design only)
- One copy to the Engineering Documents Unit
- Remaining copies to the Contractor

2.7 Contractor

Prior to completion of the project, submit the final drawings according to the Standard Specifications, [Section 105.05](#). An additional set of the mylars are required for each railroad and agency, as well as the Department's Movable Bridge Engineering Group when applicable.

Before submittal, indicate the pay item number to which the drawing applies on the working drawing.

The Contractor shall notify the subcontractors of the working drawing content requirements and approval/certification procedure so the processing of working drawings can proceed with reasonable promptness.

2.8 Resident Engineer

The Resident Engineer shall forward (1) complete set of the approved original mylars and required copies to the Engineering Documents Unit for archival purposes, and forward the remaining copies to railroads and agencies, if required.

Section 3 Addresses

Use the following addresses only when directed by this procedure:

Engineering Documents Unit
Attn: Working Drawing Unit,
NJDOT
PO Box 600
1035 Parkway Avenue
Trenton, NJ 08625-0600

Traffic Signal & Safety Engineering
NJDOT
PO Box 600
1035 Parkway Avenue
Trenton, NJ 08625-0613

Movable Bridge Engineering Group
NJDOT
PO Box 600
1035 Parkway Avenue
Trenton, NJ 08625-0600

Geotechnical Engineering Unit
NJDOT
PO Box 600
1035 Parkway Avenue
Trenton, NJ 08625-0615

Bureau of Materials
NJDOT
PO Box 600
1035 Parkway Avenue
Trenton, NJ 08625-0600

For FedEx/ Express Mail use the following address:
Bureau of Materials
NJDOT
Thiokal BLDG # 2
930 Lower Ferry Road
Trenton, NJ 08628-3501

Landscape and Urban Design
NJDOT
PO Box 600
1035 Parkway Avenue
Trenton, NJ 08625-0600

Structural Design
NJDOT
PO Box 600
1035 Parkway Avenue
Trenton, NJ 08625-0600

Roadway Design Group
NJDOT
PO Box 600
1035 Parkway Avenue
Trenton, NJ 08625-0600

TS Engineering and/or other project specific ITS related unit
NJDOT
PO Box 600
Trenton, NJ 08625-0600

Section 4 Processing Steps for Movable Bridge Projects

This procedure shall only apply to electrical and mechanical submittals on a movable bridge project.

All copies of electrical and mechanical working drawings, procedures, tests, reports, fabrications and catalog cuts will be submitted by the Contractor to the Designer for their review and stamp. The number of copies to be submitted will be determined at the preconstruction meeting. Except for those stamped "Revise and Resubmit", the Designer will stamp the submittals using the appropriate stamp, as outlined in Subsections 4.1 and 4.2 below, and forward to the NJDOT Movable Bridge Engineering Group (MBEG) for the appropriate official Department stamp. All submittals shall be stamped on the front of the document. Only if there is insufficient room on the front of the document will it be permissible to apply review stamps on the back of the submitted document. A separate page for review stamps will not be accepted. All submittals shall be reviewed for general conformance with the design concept of the project and accepted submittals do not relieve the Contractor from compliance with the requirements of the contract documents. Submittals are not officially accepted until stamped by the NJDOT.

An Approved (or Shop) Drawing is any submission that is drawn or created by the Contractor. This shall apply to any drawing, procedure, testing, installation, or report. A Certified Drawing (or Catalog Cut) is an original or copy of a cut or page from a supplier's catalog. Catalog Cuts primarily correspond to purchased or "off the shelf" items. The exact item and all attributes, options and/or peripherals associated with that item must be clearly indicated.

4.1 APPROVED Movable Bridge Drawings

For approved movable bridge drawings, the review process and approval stamps shall follow the approved working drawing procedure outlined in Section 2.4.1 MBEG shall receive the reviewed drawing from the Designer. After their review, MBEG will forward the approved working drawings and review comments to the State Transportation Engineer for approval.

4.2 CERTIFIED Movable Bridge Drawings

For certified movable bridge drawings, the process shall follow Subsection 2.4.2 except that the drawings shall be forwarded to MBEG for final review, stamping, and distribution. For all electrical and mechanical certified drawings, except those stamped "Revise and Resubmit", the MBEG will review and apply the appropriate NJDOT certified stamp.

The following stamp definitions will be used:

"Revise And Resubmit"

If the Designer rejects the submittal, it is stamped "Revise and Resubmit" and returned directly to the Contractor with explicit notation and/or instruction. A copy of the Designer's transmittal shall be sent to the MBEG and the Resident Engineer for tracking purposes.

"Certified"

Submittals involving electrical and/or mechanical catalog cuts of "off the shelf" items that are reviewed by the Designer and determined to comply with the contract documents, shall be stamped "Certified" and forwarded to the MBEG for their review and stamp. The MBEG will distribute as noted below.

"Certified As Noted"

Submittals involving electrical and/or mechanical catalog cuts of “off the shelf” components that are specified in the contract documents shall be reviewed by the Designer for conformance with the contract documents. If the Designer feels that further clarification is needed on the submittal for its use in the project, they shall be stamped “Certified As Noted”. The Designer’s comments shall be clearly noted on the submission and forwarded to the MBEG for their review and stamp. The MBEG will distribute as noted below. The Contractor, upon receipt of the submittal marked “Certified As Noted” is free to place the order for the specified material. The submitted catalog cut copies shall be clean and legible. Details of size, dimension, options, etc. shall be clearly indicated on all copies so that the specific version of the component is indicated.

4.3 Movable Bridge Submittal Distribution

All Electrical/Mechanical submittals shall be considered not accepted until the official NJDOT stamp is applied by the Movable Bridge Engineering Group or the State Transportation Engineer. Should the MBEG or the State Transportation Engineer have additional or differing comments from the Designer’s review, the MBEG will notify the Designer for discussion and agreement before the submission receives the NJDOT stamp.

After the working drawing review has been completed, MBEG will then forward the reviewed drawings in the following manner:

- Approved Drawings will be forwarded to the State Transportation Engineer for review.
- Certified Drawings will be stamped and forwarded to the Engineering Document Control Unit for distribution as outlined in Section 2.6.3.

It is the responsibility of the General Contractor to distribute to any Sub-contractors. Work performed by the Contractor or their Sub-contractors without a DOT stamped drawing is at risk of rejection and non-payment in accordance with the contract documents.

4.4 MBEG Address & Contact Information:

Movable Bridge Engineering Group
NJDOT
1035 Parkway Avenue – 5th Floor E&O Building
P.O. Box 600
Trenton, NJ 08625-0600

Phone: 609-530-2163
Fax: 609-530-4444

Attachment 1

Working Drawing Input Data

To: Engineering Documents Unit
From: _____, Project Manager
Date: _____ Phone: _____

General Project Information

Route: _____ Contract Number: _____
Date of Award: _____ Section Number: _____
Municipality: _____ County: _____
Construction Job Number: _____ DP Number: _____
Federal Project Number: _____ UPC Number _____
Specifications Used (Date): _____ English: _____ Metric _____

Structure Name (s)/Number (s): _____

Movable Bridge Review: Yes ___ No ___

Contact Person: _____

Telephone (s): _____

Its Facilities Review: Yes ___ No ___

Contact Person: _____

Telephone (s): _____

Design Unit: In-House _____

Landscape Review: Yes ___ No ___

Contact Person: _____

Telephone (s): _____

Structures Review: Yes ___ No ___

Contact Person: _____

Telephone (s): _____

Consultant _____

Design Unit Information

Company: _____

Address: _____

Contact Person _____ Telephone (s): _____ Fax: _____

Type of Mail Service: Us Mail _____ Other (Indicate Name) _____

Account Number: _____

Contractor Information

Contractor: _____

Address: _____

Contact Person _____ Telephone (s): _____ Fax: _____

Type of Mail Service: Us Mail _____ Other (Indicate Name) _____

Account Number: _____

Notify Contractor by Phone for Pick-Up: _____

Resident Engineer Information

Resident Engineer: _____

Address: _____

Telephone (s): _____ Fax: _____

Railroads and Agencies Information

Railroad Agency/Agencies

Contact Persons

Telephone

Attachment 2

Contractor Procedure Form Letter for Consultant Designed Projects

Special Instructions or Comments: _____

Date: _____

Contractor: _____

Address: _____

Attention: _____

Re: Working Drawings

Route: _____

Contract Number: _____, Federal Project No.: _____

D.P. No: _____, UPC Number: _____

Dear Mr./Mrs./Ms.: _____

For this project, as it was designed by a Consultant Designer, you are required to submit, approved, working drawings (other than Movable Bridges) to:

Consultant Designer: _____

Address: _____

Please submit any Working Drawings as per the current NJDOT *Standard Specifications*, the *Capital Project Delivery* at our web site at <http://www.state.nj.us/transportation/capital/pd/>, and the *Working Drawing Procedures* at <http://www.state.nj.us/transportation/eng>.

In order to expedite this process you shall indicate in the transmittal letter of each submission your preferred method of receiving returned working drawings. Indicate either US mail or an express mail service or pick up by your staff.

Should there be any questions regarding the information and/or procedures contained herein, call (609) 530-5587.

Sincerely,

Working Drawing Unit
Engineering Documents Unit

Attachments

c: Project Manager
Resident Engineer
Design Unit

Attachment 3

Contractor Procedure Form Letter for In-House Designed Projects

Date: _____

Contractor: _____

Address: _____

Attention:

Re: Working Drawings

Route: _____

Contract Number: _____, Federal Project No.: _____

D.P. No.: _____, UPC Number: _____

Dear Mr./Mrs./Ms.: _____

For this project, as it was designed by our NJDOT Design Unit, you are required to submit, approved, working drawings to the Department's Engineering Documents Unit (EDU) for in-house distribution at the following address:

Engineering Documents Unit
Attention: Working Drawing Unit
NJDOT, P.O. Box 600
1035 Parkway Avenue
Trenton, New Jersey 08625
Phone No. (609) 530-5587
Fax No. (609) 530-6626

Please submit any Working Drawings as per the current NJDOT *Standard Specifications*, the *Capital Project Delivery* at our web site at <http://www.state.nj.us/transportation/capital/pd/>, and the *Working Drawing Procedures* at <http://www.state.nj.us/transportation/eng>.

In order to expedite this process you shall indicate in the transmittal letter of each submission your preferred method of receiving returned working drawings. Indicate either US mail or an express mail service or pick up by your staff.

Should there be any questions regarding the information and/or procedures contained herein, call (609) 530-5587.

Sincerely,

Working Drawing Unit
Engineering Documents Unit

Attachments

c: Project Manager
Resident Engineer
Design Units

Attachment 4

Working Drawing Stamps

Stamp A

(Design Organization)

The designer, according to NJDOT standard specifications, has reviewed this drawing, which the contractor developed as the final design of conceptual plans presented in the contract documents, for general conformance with NJDOT design standards and hereby recommends approval to the engineer.

Recommended for approval

Date: _____
Signature: _____

This does not relieve the contractor from compliance with requirements of the contract documents.

Stamps B and B1 For N.J.D.O.T. Use Only

Stamp B

Approved

Signature _____

Date: _____

State Transportation Engineer

Stamp B1

Approved

State Transportation Engineer

Date: _____

For All Designers

Stamp C

(Design Organization)

This drawing has been reviewed by the designer for general conformance with the design concept of the project according to NJDOT standard specifications.

- Certified**
- Certified as noted**
- Revise and resubmit**

Date: _____

Signature: _____

This does not relieve the contractor from compliance with requirements of the contract documents.