

# *New Jersey Department of Transportation*

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## *Baseline Document Change Announcement*

**Standard Specifications, related to Working Drawings.**

**BDC01S-5**

**May 18, 2001**

**SUBJECT: Revisions to the 1996 Standard Specifications as amended by the 1998 Supplemental Specifications, Subsections 101.03, 105.04, 501.12, 512.03, 513.03, 519.04, 520.04 and 521.01 for Working Drawings**

The specifications have been revised to eliminate unnecessary construction delays that are caused during the processing of working drawings. The revisions provide for an "Approval" and "Certification" process and under the "Certification" process, a conditional certification of "Certified as Noted". These concepts are detailed in BDC99PR-004 dated May 17, 2001 that revised Section 17.9 of the NJDOT Procedures Manual for the processing of working drawings. Therefore, the following revisions are incorporated in the Standard Input (SI98DOT2):

### **101.03 Terms.**

**THE DEFINITION OF WORKING DRAWINGS IS CHANGED TO:**

**WORKING DRAWINGS.** Stress sheets, shop drawings, diagrams, illustrations, schedules, performance charts, brochures, erection plans, falsework plans, framework plans, cofferdam plans, bending diagrams for reinforcing steel, and any other supplementary plans or similar data which are prepared by the Contractor or any subcontractor, manufacturer, supplier, or distributor, and which the Contractor is required to submit to the Engineer for approval or certification.

### **105.04 Working Drawings.**

**THE ENTIRE TEXT OF THIS SUBSECTION IS CHANGED TO:**

The Contractor shall submit Working Drawings for those particular items of Work or methods of construction (whether permanent or temporary) for which there are no specific detailed drawings contained within the Contract Documents prior to performing such items of work or performing such methods of construction. Working Drawings submitted by the Contractor shall only detail particular work to be performed under the Contract Documents and shall not change the Plans or Specifications. A design change shall only be implemented in compliance with the Department procedure for review and approval of a change of plan. The Engineer will return, without further review, any and all working drawings found by the Engineer to be repetitious or duplicative of items of Work specified or detailed within the Contract Documents or found to constitute an apparent change of plan; under such circumstances the Contractor shall have no claim for any delays incurred by reason of such improper submittal.

The Contractor shall review, approve, sign and submit all Working Drawings in orderly sequence so as not to delay the Work, or the work of any other contractor. The Contractor shall be deemed to represent by its act of submitting a Working Drawings for review and approval for final design of conceptual plans (as more fully stated below) or certification for fabrication of items of Work, that it has in fact verified all field measurements and catalog numbers and other criteria and has determined field construction criteria, materials, and other criteria and that the Contractor has checked and coordinated each submitted Working Drawing with the requirements of the Contract Documents and the Work.

The provisions below, for the certification of Working Drawings, shall only apply to the fabrication of all items of Work. Those provisions shall not apply to the review and approval of the design for proprietary walls, noise barriers, temporary sheeting, sheeting left in place, temporary structures, cofferdams and precast concrete culverts or any other items where conceptual plans were included in the Contract Documents and the Contractor is required to complete the final design

plans. The items of such work are subject to Department approval. The Contractor shall submit final design plans and calculations, signed and sealed by a Professional Engineer licensed in the State, to the Engineer for Department approval. The Engineer will cause review and resolution of all comments. Upon resolution and satisfaction of all comments, the designated Design Unit will make a recommendation as to approval directed to the Engineer by affixing a stamp indicating "**RECOMMENDED FOR APPROVAL**". The Engineer will review said recommendation for approval, and within the Engineer's discretion approve the drawing where warranted by a signature and affixing a stamp indicating "**APPROVAL BY THE ENGINEER**". The work covered by such Working Drawings shall not begin or be fabricated until at least a facsimile signature of the Engineer's approval is received by the Contractor. The carrying out of the Work or the ordering of those materials relating to submitted working drawings before approval by the Engineer is rendered in writing shall constitute a cause for rejection or non-approval by the Engineer of the submitted working drawing and/or a cause for the temporary suspension of the Work so affected, pursuant to Subsection 108.15.

The Engineer, upon receipt of a submitted Working Drawings relating to fabrication only, will cause the working drawing to be reviewed with reasonable promptness but only for conformance with the design concept of the project, and with the details and criteria set forth in the Contract Documents. The designated design unit may either certify compliance, conditionally certify compliance with notation or comment or reject Working Drawings as submitted. It shall be within the sole discretion of the designated design unit whether or not a submitted Working Drawing warrants being "certified", "conditionally certified" or "not certified".

A stamp, signed by the designated design unit, reflecting the determination rendered will be affixed to the submitted drawing. Certification of the submitted Working Drawings, without condition, by the designated design unit will be reflected by a stamp stating "**CERTIFIED**". Conditional certification by the designated design unit will be reflected by a stamp stating "**CERTIFIED AS NOTED**". Rejection or non-certification will be reflected by a stamp stating "**REVISE AND RESUBMIT**".

Where submitted Working Drawings are not certified due to nonconformance with the Contract Documents, poor quality, or other stated problem or error, the submitted Working Drawings will be returned directly to the Contractor by the designated design unit for the project with a copy to the Resident Engineer. The Contractor shall make any and all required revisions, corrections, additions and changes to the Working Drawings and otherwise comply with the directions of the designated design unit and shall promptly re-submit to the Engineer appropriately revised Working Drawings along with the required number of copies. The Contractor shall direct specific attention to the Engineer in writing or on resubmitted Working Drawings to those revisions, corrections, changes or additions that were not requested or directed by the designated design unit on previous submissions. The above-described process shall apply to all re-submissions and revised Working Drawings. The carrying out of the Work or the ordering of those materials relating to submitted Working Drawings before certification or conditional certification is rendered by the designated design unit in writing shall constitute a cause for rejection or non-certification by the Engineer of the submitted Working Drawings and/or a cause for the temporary suspension of the Work so affected, pursuant to Subsection 108.15.

Where the Working Drawings are either certified or conditionally certified, the designated design unit for the Project will return the Working Drawings directly to the Contractor with a copy to the Resident Engineer. Upon receiving certification or conditional certification from the designated design unit in the form of a signed stamp affixed to the submitted Working Drawings, the Contractor may then order material and carry out any work relating to a submitted Working Drawings; however, where conditional certification is granted by the designated design unit, as reflected by a signed stamp affixed to the submitted drawing stating "**CERTIFIED AS NOTED**", the Contractor, as a condition of certification, shall submit to the Engineer revised Working Drawings incorporating or satisfying the conditions of the certification as reflected in the designated design unit's notes or comments within 30 days of receipt of the conditionally certified Working Drawings by the Contractor.

Unless prior written approval of the Engineer has been given to the Contractor, the Contractor shall not make any deviations from the approved, certified or conditionally certified Working Drawings. Where the Contractor fails to abide by the Working Drawings as approved or certified or fails to abide by the conditions of a conditional certification, while performing that item of Work to which same applies, such failure shall constitute a cause for the temporary suspension of such work pursuant to Subsection 108.15.

The designated design unit's certification or conditional certification, or the Engineer's approval of Working Drawings, does not relieve the Contractor of any responsibility or liability or modify such responsibility or liability that the Contractor may have under the Contract Documents or under law or equity arising out of or from the Working Drawings, for errors or omissions contained within the Working Drawings or for work carried out pursuant thereto. Also, the designated design unit's certification or conditional certification or the Engineer's approval of Working Drawings shall not be the basis of a claim by the Contractor against the State for indemnification, extra work, change in the character of the work or other similar cause of action. The designated design unit's certification or conditional certification or the Engineer's approval of a separate item of work is not to be construed as certification or approval of an assembly in which

the item of work functions; the entire assembly must also be certified or conditionally certified by the designated design unit or approved by the Engineer.

The design of all permanent and temporary structures shall conform to the current AASHTO Standard Specifications for Highway Bridges or, if directed by the Department, the design shall be based on the current AASHTO LRFD Bridge Design Specifications. Additionally, the provisions of the current NJDOT Bridges and Structures Design Manual shall be adhered to.

Working Drawings shall be 594 by 841 millimeters (A1), which shall have 540 millimeter by 775 millimeter drawing area within the border, or 210 by 297 millimeters (A4). Seven copies shall be submitted to the designated design unit for review and a copy of the transmittal letter shall be sent to the Resident Engineer, except that for railroad carrying structures, four additional copies shall be submitted to the designated design unit. One additional copy each shall be submitted when an outside testing agency or an outside authority is involved in the Project. The above submittal procedure will simultaneously facilitate both certification and distribution.

Each Working Drawing, shall be identified by a title block in the lower right-hand corner, containing the following minimum information:

1. Route and Section or Contract number
2. Name of bridge/structure (on structural drawings only)
3. Municipality and County
4. Contractor's name
5. Fabricator's name (if applicable).
6. Federal Project Number or Data Processing (D.P.) Number
7. Title of drawing
8. Sheet number

The structure number designated on the Contract Plans for each bridge shall be shown in the upper right-hand corner of each Working Drawing.

Each A1 Working Drawing requiring certification of fabrication, shall contain two blank blocks placed directly above the title block. One block, designated for design unit certification, shall be used for the stamped markings "**CERTIFIED**" and "**CERTIFIED AS NOTED**" and, "**REVISE AND RESUBMIT**" and the other block is designated for the Contractor's approval stamp. Each A1 Working Drawing requiring approval of final design, shall contain three blank blocks placed directly above the title block. One block, designated for design unit recommendation for approval, shall be used for the signature and stamped marking "**RECOMMENDED FOR APPROVAL**", and the second block designated for the Engineer's approval, shall be used for the signature and stamped marking "**APPROVAL BY THE ENGINEER**". The third block is designated for the Contractor's approval stamp. All calculations required for the Working Drawings shall be submitted on A4 paper. The calculation submission shall include a cover sheet, which shall also contain a block for an embossed New Jersey Professional Engineer's seal. Each Working Drawing shall contain a revision block, which shall be located to the left and adjacent to the title block. Working Drawings or calculations submitted on A4 sheets shall be accompanied by a cover sheet, which shall contain the above blocks; the blocks shall not be included on the other A4 Working Drawing/calculation sheets in the submission. The specific format and direction for submission of Working Drawings will be supplied after Award.

The original tracings for each A1 Working Drawing or the cover sheet for A4 Working Drawings or calculations shall include the Contractor's approval stamp, containing the word "**APPROVED**", and the Contractor's original signature and date. Future revisions to the original tracing shall have the date within the approval stamp updated with each revision to verify that the revision was reviewed and approved by the Contractor.

Original tracings shall be on A1, 80 micrometers minimum thickness, polyester film, such as Mylar or Herculene, and shall be done in ink, drafting lead, or similar writing material. All lines and lettering on tracings shall be dense in opacity and of sufficient height and width so as to have residual density to produce microfilm negatives from which legible 297 by 420 millimeters (A3) prints may be made.

Clear and legible A1 prints produced from the original tracings shall be submitted as Working Drawings for the following:

1. Precast concrete culverts
2. Site specific items not covered by contract documents
3. Structural steel
4. Bearings
5. Machinery for movable bridges
6. Prestressed concrete beams and piles
7. Permanent steel bridge deck forms
8. Expansion dams/strip seals
9. Armored deck joints

10. Bridge storm drains
11. Sign support structures
12. Breakaway and non-breakaway tubular GA sign support posts
13. Prefabricated modular walls
14. Mechanical stabilized earth (MSE) walls
15. Alternate retaining wall designs
16. Concrete crib walls
17. Noise barriers
18. Cofferdams
19. Sheeting left in place
20. Electrical items for movable bridges
21. Bridge railings and fencing anchorages

Working Drawings and the cover sheet for the following shall be on A4 or A1 medium of any type so as to produce clear and legible prints or facsimile copies:

1. Sign legends
2. Electrical items not pre-approved
3. Impact attenuators
4. Temporary shielding
5. Cofferdams with temporary sheeting
6. Temporary structures
7. Temporary sheeting
8. Recycled/Synthetic routed spacers

Material specification designations shall be noted on the Working Drawings.

The original tracings (sepias not accepted) cited above shall be furnished to the Resident Engineer thirty calendar days prior to Completion. A duplicate set shall be furnished for railroad structures.

All costs for providing the Working Drawings shall be included in the prices bid for the various Pay Items scheduled in the Proposal.

## **DIVISION 500 - BRIDGES AND STRUCTURES**

### **SECTION 501 - CONCRETE STRUCTURES**

#### **501.12 Placing Concrete.**

##### **17. Reinforced Concrete Box Culvert, Precast.**

###### **a. Design and Detail Requirements.**

THE TWELFTH PARAGRAPH IS CHANGED TO:

Design calculations shall be submitted in accordance with Subsection 105.04.

### **SECTION 512 - TEMPORARY STRUCTURES**

#### **512.03 Working Drawings.**

THE ENTIRE TEXT OF THIS SUBSECTION IS CHANGED TO:

Working Drawings and design calculations shall be furnished in accordance with Subsection 105.04.

### **SECTION 513 - SHEETING, TEMPORARY AND LEFT IN PLACE**

#### **513.03 Working Drawings.**

THE ENTIRE TEXT OF THIS SUBSECTION IS CHANGED TO:

Working Drawings and design calculations shall be furnished in accordance with Subsection 105.04.

Design of steel sheet piles shall conform to the structural design criteria as provided in Subsection 513.04.

### **SECTION 519- PREFABRICATED MODULAR WALLS**

#### **519.04 Working Drawings.**

THE ENTIRE TEXT OF THIS SUBSECTION IS CHANGED TO:

The Contractor shall submit detailed Working Drawings including design calculations, signed and sealed by a Professional Engineer licensed in the State of New Jersey, giving complete information as to the proposed method of fabrication and erection of precast units and related components. Design parameters shall be verified and be consistent with those parameters that are in place at the time of Advertisement. Working Drawings shall be prepared and submitted in accordance with Subsection 105.04. The Working Drawings submission shall include, but not be limited to, the descriptive plan presentations that are listed in Subsection 521.01.

## **SECTION 520 – MECHANICALLY STABILIZED EARTH (MSE) WALLS**

### **520.04 Working Drawings.**

THE ENTIRE TEXT OF THIS SUBSECTION IS CHANGED TO:

Working Drawings for MSE walls shall be in accordance with Subsection 519.04.

## **SECTION 521 – ALTERNATE RETAINING WALL DESIGNS**

### **521.01 Description.**

THE FIRST SENTENCE OF THE SECOND PARAGRAPH IS CHANGED TO:

Notwithstanding the provisions of Subsection 104.11, only those wall types designated shall be constructed.

THE FOLLOWING IS ADDED TO THIS SUBSECTION:

Final design of alternate retaining walls shall be submitted as Working Drawings in accordance with Subsection 105.04. The Working Drawing submission shall include, but not be limited to, the following:

1. An elevation view of the wall indicating elevations at the top of the wall and at the beginning and end wall stations
2. A numbered panel layout for fabrication and erection purposes
3. All breaks in vertical alignments and elevations at whole stations and at plus 10-meter increments
4. Elevations at the top of leveling pads or footings
5. Locations of all steps in the leveling pads or footings
6. Panel or unit length and size and designation
7. The location of the proposed final ground line
8. Plan view of the wall, which indicates the offset from the construction baseline to face of wall units at all changes in horizontal alignment
9. Distance from front of wall to the extreme limit of module
10. Right-of-way limits and their relationship to the wall, with offsets and stations to corners
11. Location of any noise walls or sign structures near the wall by station and offsets
12. Centerline of any drainage structures or utilities behind and passing through or under walls
13. All piles, if warranted, on any adjoining structure's foundation plans with details to avoid any conflict
14. General notes, design parameters, soil characteristics, and factors of safety
15. Typical panels as well as special panels, such as at bends, dimensions necessary to construct the element, the location of reinforcing steel in the element and the location of reinforcement element attachment devices, that are embedded in the panels
16. All details for footings and leveling pads, including step details and actual maximum bearing pressure
17. Architectural details, such as special facing finish, texture, and color
18. All details for the construction of walls around obstructions
19. Connections to barriers, copings, signs, lights, railing, fences, noise barriers, or any other element
20. Fully detailed design computations
21. Typical sections of the wall indicating internal drainage and surface drainage behind the wall, typical cross-sections of cut and fill sections and limits and extent of select granular backfill material placed above original ground
22. All details for constructing walls around bridge supports, drainage facilities, sign footings, or any other element and particular attention shall be given to accommodating wall construction at bridge abutments
23. Limits and extent of common structure value, such as excavation, volume of concrete, reinforcement steel, backfill, etc

24. All quantities and Special Provisions, including suggested sequence of construction, necessary to construct the wall

### **Instructions to Designers and NJDOT Project Managers**

The revisions shall be effective immediately. For all projects that have not been advertised, the respective Specification Development Group responsible for preparing the Special Provisions will incorporate the revisions, therefore, designers need not insert these changes in the Standard Input. For projects that are currently being advertised, the Project Manager will be responsible for incorporation of the revisions by either an Addendum prepared by the Bureau of Contract Administration Services or a Construction Order prepared by the resident engineer.

### **Distribution and Announcement Access Information**

This announcement is being distributed electronically to our in-house staff and various public agencies based on our Standard Specifications distribution list maintained by the Engineering Documents Unit.

Internet access to this BDC Announcement can be downloaded and viewed from the following New Jersey Department of Transportation Web Page:

<http://www.state.nj.us/transportation/cpm/BaselineDocuments/bdcdownloads.htm>.

In-house staff can copy or view the above-mentioned files in the QM shared area on the NJDOT-FA-NTS7 server. To access this area, open Windows Explorer on an NJDOT Network Computer. Go to the drop down menu labeled **Tools**, and then select **Map Network Drive**. In the path box type in **\\NJDOT-FA-NTS7\QM**, then click on the OK button. All files are located in the **QM\BDC Announcements\BDC 01 Folder**. Standard Input (SI98 DOT2) files are located in the **QM\Baseline Documents & Other Attachments\Standard Input** folder.

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