New Jersey Turnpike Authority

P.O. Box 5042, Woodbridge, NJ 07095

March 09, 2018

Document Change Announcement

2007 Procedures Manual

Constructability Report

DCA2018PM-01

Subject: Revisions to

Section 3 Submission Requirements, Subsection 3.5 Constructability Report

Description of Change:

Additional language has been added via new section 3.5 for the purposes of outlining the scope and intent of a new deliverable, the "Constructability Report". Interim submission requirements have been added to the phase deliverable descriptions and checklists. Minor changes for formatting have also been made throughout the document, but are not noted.

Notice to New Jersey Turnpike Authority Staff and Design Consultants

Effective immediately, all contracts currently in the design phase shall incorporate the revisions herein. For advertised contracts awaiting the opening of bids this revision may be incorporated via addendum. Contact your New Jersey Turnpike Authority Project Manager for instruction.

The revisions may be accessed on the Authority's webpage: http://www.state.nj.us/turnpike/professional-services.html

Recommended By:

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Approved By:

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Chief Engineer

Distribution: Senior Staff Engineering, Law, Maintenance & Operations Depts., All Prequalified Consultant Firms, File

ORIGINAL PLANS, SPECIFICATIONS AND MODIFICATIONS, AS IDENTIFIED HEREIN AS-BUILT."

c. All other sheets must be stamped "AS-BUILT" on top of the TITLE BLOCK or REVISION BOX. Note: The text "AS-BUILT" shall be shown with a bold face font at a one-half inch text height on the Title Sheet above the signatures and above all Title Blocks on all other drawings.

d. The REVISION BOX must have the following information:

- 1st Column (REV.) – shall denote a number inside a triangle to indicate the number of times the sheet was revised.
- 2nd Column (DESCRIPTION) – shall denote either "ADDENDUM NO." "COP NO." or "AS-BUILT"
- 3rd Column (DATE) – shall denote date ADDENDUM, COP OR "AS-BUILT" of sheet completed.
- 4th Column (BY) – shall denote initials of DRAFTER.
- 5th Column (CHK) – shall denote initials of Resident Engineer.

2. One (1) CD of Individual and combined Electronic Files in PDF Version with all required signatures and MicroStation Format. Electronic Files shall contain the same information above.

3. One (1) half-size bound set of As-Built prints and shall contain the same information above.

3.4.6.8. Lighting System

After the lighting system has been constructed, the Engineer shall perform a verification of the lighting installation, to ensure that the lighting has been installed according to the approved design. This procedure is outlined in Section 7 (Lighting and Power Distribution Systems) of the Design Manual, and will be required before the Authority's Engineering Department issues final acceptance for any lighting system.

3.5. CONSTRUCTABILITY REPORT

3.5.1. Purpose and Intent

A constructability review shall be performed for specific projects with concurrence of the Chief Engineer. The purpose of this review is to verify that subject projects are safely and logistically constructible using means and methods available to the local contractor community. The intent of the review is not to identify the actual means and methods a contractor will use to construct the project, or to identify all means and methods possible to construct the project. The intent is to identify obstacles before a project is

advertised to reduce or prevent delays and unnecessary cost overruns as well as verify that the prepared contract documents are "biddable and buildable" and that the work described in those documents is theoretically capable of being completed as follows:

- Within the time provided for each stage and for the overall Contract
- Using available construction work force, materials, equipment and methods
- Allowing for the physical space necessary for the work and storage, and available site access
- Without affecting the safety of the traveling public and without significantly affecting the flow of traffic (i.e. adhering to operational constraints)
- Without affecting the integrity of the Authority's infrastructure / structures to remain
- Respecting external control factors such as environmental / permit restrictions (i.e. in-water work restrictions), seasonal weather, and coordination, with local road, rail, and utility crossings (where present)
- With due consideration of current or planned projects in the vicinity, as determined by project specific maintenance and protection of traffic (MPT) requirements. For the purposes of the Constructability Report, the limit of consideration is defined in approximate as 3 miles from the outer limits of defined roadway MPT limits visible to the travelling public. This limit may be extended on a project by project basis.

The constructability review shall be completed by qualified construction personnel and shall meet qualifications defined in the OPS RFEOI/RFP. The staff performing the constructability review shall not be members of the design team, i.e. they shall be construction supervision personnel or an independent constructability expert.

A copy of the Final Constructability Report should be provided to the Construction Manager at the Design to Construction handoff meeting.

3.5.2. When to Submit the Report

The constructability review should be initiated coincident with preparation of the Phase "A" submission documents, and be advanced as maintenance and protection of traffic is being reviewed. An updated version of the Constructability Report is to be submitted with each phase submission. Comments to the Constructability Report provided by the reviewers are to be addressed with a comment resolution summary document and returned with the phase review comments. Results of the review shall be consolidated in the form of the Constructability Report. The draft Constructability Report shall be submitted no later than four (4) weeks prior to the formal Phase "B" submission so that the Authority may better compare the documents. It is understood that at the Phase "B" level of development, estimates of work durations and costs will not be exact. The

finalized version of the Report shall be submitted coincident with the Phase "D" submission package.

Depending on the type of work being designed, the Constructability Report will follow the general format below, but will vary on the type of construction proposed. The Design Engineer is advised to consult their Authority Project Engineer for specific format requirements prior to assembling the draft report. It is highly recommended that the Design Engineer submit the proposed table of contents for the report to the Authority Project Engineer prior to proceeding with the draft report.

3.5.3. General Report Format

The following format shall be utilized for the Constructability Report:

3.5.3.1. Introduction

Provide a general description of the work including type, location, milepost limits, total anticipated project construction duration, and milepost-to-milepost limits of traffic lane shifts (taper point to taper point or placement of advance signing, whichever is greater) where present with any potential detours or roadway closures.

3.5.3.2. Construction Methods

Describe anticipated methods of construction with respect to protecting adjacent traffic, facilities / roadways underneath, size of equipment to be used, temporary works or erection support placement and staging of components to be erected, and anticipated duration and timeframe of construction activities subdivided by construction stage.

3.5.3.3. Existing Structure Demolition

Describe methods of demolishing major existing structures with respect to protecting adjacent traffic, facilities / roadways underneath, maintaining integrity of structures to remain, size of equipment to be used, behavior changes to the existing structure from partial demolition (if anticipated), placement and staging of both demolition equipment and demolition spoils, and anticipated duration and timeframe of demolition activities subdivided by construction stage.

3.5.3.4. Limits of Traffic Effects

Where existing traffic must be shifted, show in schematic form the severity of the move as a cross section through the work zone. Also list the limits of the traffic effects, i.e. impacts to entrance / exit ramps and toll plazas, and detours or alternate routes, as the outer limits of the project lane shift taper point mile posts. Also, the availability of lane closings to implement shifts shall

be reviewed. The Design Engineer shall review the need for special provisions such as stand-by wrecker service, emergency pull-offs, or special traffic / queue monitoring systems, especially if the length of closing / shift requires such measures and / or the number of lanes are reduced, or shoulders are eliminated during peak travel periods.

The Design Engineer shall also verify with their Authority Project Engineer whether other projects (Authority and non-Authority) are anticipated to be taking place concurrently to the subject project within the vicinity of the work zones, and where force account work in the Contract is to be provided to allow for emergency maintenance of other structures / infrastructure within the limits of the work zones.

The Design Engineer shall identify the improvements to be addressed by the Contract prior to the traffic shift so flow of traffic in the shifted position is maintained for the stage duration (i.e. installation of additional / new safety features, construction of pavement, reconstruction of existing pavement, pavement repairs, welding of inlet grates, etc.).

The Design Engineer shall identify any anticipated detours or High Intensity Construction Cycle (HICC) work as may be required to complete the work or to respect stakeholder limited timeframe accessible work (such as railroads or other facility owners).

3.5.3.5. Specialty Equipment or Water Work

Identify specialty construction equipment as it may be required to construct the project, such as large cranes, barge based work, transport equipment for large or heavy prefabricated bridge components, etc. Where long lead times to obtain specialty equipment may be anticipated or if limited use of specialty equipment is required by adjacent facility owners, the Design Engineer shall adjust the project duration as appropriate.

3.5.3.6. Construction Staging and Storage Areas

Identify lay-down areas for major equipment and components and describe how equipment will access the construction site for supply of labor and materials and for placement of large equipment including temporary construction easements and rights of entry. Need for barges or trestles should be considered for shallow draft water work. Use of schematic representations of the laydown areas and access routes to the construction site is encouraged for the report.

3.5.3.7. Approximate Construction Schedule

Create a baseline schedule that roughly estimates the order of various construction operations and their durations. The schedule should account for mobilization time for the contractor, winter shut-downs for concrete work, black-out periods for environmental concerns or utility work, any external restrictions such as seasonal traffic, water work limits, stakeholder constraints (railroad closures, navigable channel impacts, etc.) and adjacent roadway project work, lead times for complex or specialty construction items and coordination efforts where long lead times are anticipated such as for local agency approvals or DEP/USCG/ACOE/etc. review periods.

The approximate construction schedule need only be submitted with the draft Constructability Report up to the Phase "B" submission. For Phase "C" and Phase "D" submissions, the overall construction schedule is expected to be submitted as a separate item.