

TRANSMITTAL

TO: Tom Pridgen

RE: Updates for Website

FROM: Mike Davis

Type of Update:

New Criteria

Addendum

Lessons Learned

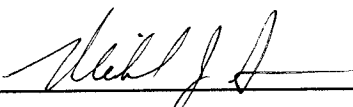
DATE: December 20, 2006

I am sending you Attached
 Under Separate Cover
 Included

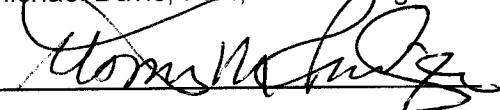
The following item(s) are for review and concurrence:

COPIES	DATE	No. of Sheets	DESCRIPTION
1	12/20	5	Lessons Learned from Design Errors or Omissions

REMARKS: The attached represents Lessons Learned from construction projects that have had repetitive problems or "big ticket" claims. These items will be added to the Design website under the Lessons Learned button.

Concurrence: 
Michael Davis, P.E., Senior Program Manager

12/20/06
Date

Concurrence: 
Thomas Pridgen, P.E., Assistant Turnpike Design Engineer

12/20/2006
Date

16. Stay-in-Place Forms in Conflict with Bracing on Steel Tub Girder

The Contractor used Stay-in-Place (SIP) forms instead of cellular forms to support a concrete deck slab, as required in the plans. Field solutions resulted in added costs for modifying the superstructure.

Article 400-5.7 of the specification addresses stay in place (SIP) metal forms. This article permits use of permanent SIP in lieu of removable forms to form concrete bridge deck slabs only when allowed by design note in the plans, subject to other conditions in that article. The article also states: "The Contractor is responsible for the performance of stay-in-place forms....Where stay-in-place forms are permitted, the Contractor is responsible and shall obtain the approval of the Engineer for the additional slab thickness, elevation changes, changes in design, etc., to accommodate the use of stay-in-place forms."

Plans general notes on SIP forms indicated that these were permitted as long as they complied with specifications, and required cellular forms to be used where clear distance between edges of girder top flanges exceed 10'-0". The Contractor submitted shop drawing for review with SIP forms that were deeper than cellular forms, and were in conflict with girder lateral braces and gusset plates. The Contractor did not request a substitution of SIP for cellular forms, and the design reviewers did not question the use of those forms. Conflicts were discovered during construction. Less than optimal solutions were found to avoid construction delay. Extra support for lateral bracing was added on one bridge and a higher haunch on the flanges of another to modify the PGL.

The extra cost was the result of construction methods used by the Contractor. These were not due to designer error.

Lesson Learned: When reviewing shop drawings, the Designer must make sure these are the same items as shown in the plans. Any substitution must be properly identified by the Contractor. It is recommended that a note be placed on the connection sheet that the contractor must coordinate with the fabricator to avoid interference with SIP forms.