

## Massena Lateral Bridge Slide Post-Construction Review (Internal)

**Date:** November 14, 2013 11:00 am to noon

### **Attendance:**

Lee Shepard, Jim Norris, David Evans, Scott Nixon, Ahmad Abu-Hawash, Jim Nelson – Iowa DOT

Joe Jurassic and Tyler Wilson – Iowa FHWA

### **Notes:**

Iowa DOT and FHWA personnel met to discuss the project and identify potential improvements for future projects. The following is a list of comments made at the meeting. Designers and construction contract administrators of future ABC lateral slide projects should evaluate these comments for applicability to their specific project.

1. Consider the use of Attolist (now Newforma) to manage the number of submittals and RFI's. This would be beneficial for the number of questions and changes.
2. TBR was added to the project by contract modification to shield the project bridge staging area. The existing guardrail was too short.
3. Falsework and acceptance of falsework was an issue. Consider that the contractor's design engineer sign off on acceptance of the falsework. The contractor's design engineer would be in a quality control role and the Iowa DOT inspector a quality assurance role.
4. Critical closure date freedom was good for the contractor but caused some difficulties for the DOT. Concerns were with the coordination of the detour setup by DOT maintenance forces and the notification of the public. Add plan note for advance notice to the RCE for critical closure. Consider a specified critical closure date with say a one day grace for inclement weather. Other options would be an I/D for meeting the critical closure date or a no excuse bonus on the critical closure date. Concern was also voiced for specifying a critical closure date due to cost implications and weather risk for the contractor.
5. The critical closure for the project could've been shortened if we would've allowed for lane closures and flaggers for longitudinal grooving and painting. This work was required to be completed during the critical closure. Evaluate whether some work can be done with lane closures and prepare the contract period and traffic control details accordingly.
6. The bridge deck met the specification for smoothness incentive. The approaches were not the best product and required grinding. Typically the quality of the approaches from this contractor is good so the tight time frame of the approach work on the critical closure likely affected their quality.
7. If we want a slide, we should specify a slide – this relates to the fact that the plans were detailed showing a stainless steel sliding plate and a Teflon sliding surface but the specification is open to alternate methods of laterally moving the bridge. This contractor changed to rollers which

affected various details in the plans. There was also the opinion that flexibility for the move system was good for contractor pricing.

8. During the slide the bridge was out of alignment by up to 6 inches. This is the relative position along the abutment footing where one diaphragm got ahead of the other diaphragm.
9. Lighting wasn't very good for the night work. Night lighting for construction should be discussed with the contractor prior to the work.
10. A plan note should be used to allow the critical closure I/D to be prorated on an hourly basis or half day basis.
11. Consider letting ABC projects similar to steel bridges with a fall letting to allow the submittals to be worked out over the winter and ready for spring construction.
12. For abutment footings include details for a precast and CIP option.
13. Be prepared to fully evaluate the impact of contractor method changes.
14. Do not allow the re-use of laminated neoprene bearings. There were significant shear deformations during the slide and the bearings were inspected and did not exhibit any signs of damage but there was some concern.
15. Slide channel exhibited warping during move and binding against the diaphragm. Not enough clearance between the channel flange and diaphragm.
16. Be aware that this design takes more design team time both for plan preparation and submittal review.
17. Bearing bar studs were added by the contractor to retain the steel bearings during bridge jacking. These were a good addition and should be added to the design.
18. One of the bearing bars was only ½" thick and we did not get good concrete consolidation around it. This area needs to be pre-grouted or a slightly thicker bar used.
19. For the SP separate out the requirements for SPMT's from the slide requirements. SPMT's are a very specific technology with certain requirements and should have their own SP.
20. Pile construction acceptance specification needs to be revised for ABC projects with pile driving on the critical path. Instead of plan length or practical refusal we should switch to WEAP design bearing cutoff.
21. The plans omitted the materials specification on the stud that was welded to the stainless steel sliding plate. This did not become a problem on the project since the sliding plate was deleted due to the contractor's methodology for rolling.

We had a short list of comments that did not get discussed at the meeting related to the special provision that have been added below:

1. There should be more specifics in terms of what is required for the QC/QA and contingency plan submittal by the contractor.
2. The location of equipment requirement can be deleted from the SP.
3. Any additional loads on the structure during construction need to be accounted for by the contractor's engineer (PE calculations).
4. Clearly identify if the barrier rail can be on the bridge or not during the slide.

5. Add note that location and number of slide bearing points are indicated in the plans. Deviation from this requires design calculations by PE.