

September 2018 ABC-UTC Webinar Featured Presentation: Contractor Perspective on ABC – SHRP2 R04 Spotlight on IL 115 Gar Creek Bridge Lateral Slide

#	Questions	Responses
Design		
1	Would you have liked to see an alternative design idea for components or the entire structure?	No, the plan as let worked well.
2	Was lightweight concrete considered for the project?	No, but it would have allowed the use of a smaller crane potentially. It was not seen as something that would have improved the consturctiuon process.
3	Is there any information from the designer that would make the structure easier to construct?	No, the plan was well detailed and we understood the expectations of the designer.
Construction		
4	What were the specifications for allowable differential movements during the slide?	Less than 1/4" differential deflection.
5	What kinds of monitoring were performed on the superstructure, both during and after the slide-in?	Standard surveying equipment was used to track any differential deflections.
6	What measurement and control procedures were in place during the slide?	Surveying equipment was used to track any differential deflections of the super structure during the lateral slide.
7	How did you maintain the bridge alignment?	The hydraulic roller system could move forward or back and was used to keep the alignment of the superstructure true.
Cost		
		The added cost of the ABC method (slide) for this project was approximately 20%.

8	What are the added costs for ABC construction?	Mary Lou: ABC projects are not always more costly. It depends on the specific site constraints and the advantages that ABC provides to address those constraints. For example, we know of a project that was field changed by the contractor to precast the bent caps due to the advantages of prefabrication of the caps because the project had multiple bents and the bridge was over water and near power lines. Another project was field changed by the contractor to precast the substructure to minimize the days on site because of safety concerns related to limited sight distance. You'll hear next week during the in-depth web training that Vermont is saving money with their ABC program because of, among other things, the elimination of temporary structures that are otherwise required due to long detours. We have examples of various projects as well in which other advantages of ABC drove its use. The above examples don't even consider the advantages provided by ABC when user costs are considered for high-traffic-volume locations. So it just depends on the site constraints and the smart use of ABC to address those constraints.
9	What does it cost to do a lateral slide installation versus lift-in or SPMT?	Lift-in is normally the least expensive (but takes a couple weeks). A slide is a bit more expensive, but much faster. The SPMT is the quickest, but also the most costly as the SPMT is pricey.
10	What is the cost comparison of rolled beam versus tub-girder?	Comparison was not calculated.
Questions during Webinar		
11	How did you check and assure the cap was set at the right elevation?	The two end piles on each abutment were cut to the right length to set the abutment at the correct elevation. The inner piles were cut a few inches shorter and grouted in place to set the correctly elevation for each abutment.
12	How much was shipping cost, with overload permit, for the precast cap?	Don't know the shipping cost. It was integrated into the number they gave us for the precast elements.
13	Who fabricated the roller/jack system?	A heavy move specialty contractor supplied the equipment and lateral slide method.
14	Were the rollers rented or purchased? What was the cost, with pumps?	The rollers and hydraulic system were supplied by the heavy move subcontractor.
15	Do you know if the design engineers had considered placing the new abutments behind the existing, in a box, much as Iowa and Alabama did on their bridge slides?	The span was chosen to fit the hydraulic requirements of the bridge. The existing abutments were removed in order to install the new bridge.
16	Why did you choose a plate with center guide rod in lieu of a typical steel channel to guide?	This was the system supplied by the heavy move subcontractor. The system worked quite well showing there are many good methods available to do lateral slides.

17	How were the fixed bearings installed in the final position? How was the temperature adjustment made?	The bridge was rather short so no temperature adjustments were needed on this structure. The fixed bearings were installed after the slide.
18	Precast approach slabs - having been through that, would you prefer that method again or would you want to consider high-early set poured concrete?	If getting it done fast is the driver of the ABC project, the precast slabs are faster than high-early-strength concrete. If a bit more time would be allowed, the high-early-strength concrete would be a viable option.
19	What are the disadvantages of using the hydraulic jack system?	None come to mind. The system worked very well for this project.
20	Was fatigue of critical staff of the contractor and DOT an issue?	Fatigue of the workers needs to be considered for all ABC projects. Need to have enough workers and inspection staff to rotate through at reasonable shifts for all the folks involved.
21	In lieu of double handling the riprap and having an intermediate staging area, was the option of having the quarry open outside of normal business hours considered?	No, they would not have stayed open during night hours for us.
22	What was the force required to move the structure?	Force was not measured.
23	I presume two sets of equipment were used for pile driving and abutment installations (one set at each abutment). Would conventional construction utilize one set or two sets of equipment?	Conventional construction allows time so the abutments would be built one at a time. This is part of the reason standard methods take 4 to 6 months to complete this kind of bridge.
24	Can you review the roller jack assemblies and what jacking step was avoided through the use of the roller-jacks?	The rollers have a built in lifting/jacking system, avoiding the need for separate jacks at the beginning or end of the bridge slide.
25	Was the bridge cost per area higher than conventional?	The cost of the slide construction was approximately 20% higher than standard bridge construction.
26	Was the 72-hour closure limit met? How much of the 72 hours was used?	It was met and all 72 hours of the allowed time were used.
27	What was the basis for the 72-hour construction schedule? I ask this because the bridge looked to be in a rural/low traffic area.	This was a test for the slide-in process on a lower volume road. It was a good learning opportunity. The slide went well and could now be used on higher volume roads with confidence.
28	Was the guide track for the bridge slide left in place?	No, it was removed.

29	Was this method faster than using full-depth precast slabs over the steel girders?	Yes, slides are fast and predictable. Setting steel girders and placing a precast deck on it with grouted joints would take at least a week to perform.
30	How did the \$2000 per hour liquidated damages affect your bid price?	Penalties are always a risk. This was a reasonable disincentive and, fortunately, was not used on this project.
31	What were the pumping problems? Was it just material clogging?	Material was setting up too fast to pump fluently through the 40 to 50 feet of hose.
32	How many days was the heavy crane at the site?	2 days.
33	Was the project won by low bid or best value?	This was a competitive low bid process.
34	What was the cost premium to jack the bridge into place over what the cost would have been to build with a detour?	The up cost of the jacking was approximately 20%. The detour would have been somewhat less, but it too would have had a cost to maintained for 4 to 6 months of standard construction.
35	How was the existing abutment removed?	Removed rapidly with standard methods.
36	Were the precast approaches provided in the design at the time of bid, or was this a contractor decision?	Provided in the design as part of the bid package.
37	Were there any mis-alignment issues with getting the piles into the precast cap voids?	A template system was used to reduce the risk of misalignment of the piles.
38	Did you place any additional supports between the temporary abutments and the permanent abutments?	No supports, but it is important to connect the temporary support works to the final abutment for proper face transfer.
39	Once the bridge was slid in place, was the bridge jacked up so that the guide could be removed and replaced with bearings?	The roller system had the needed jacking system built into the rollers.
40	If given the option in the design plans for CIP or precast approach slabs, which would you use on future projects?	If time permits the cast in place works fine. If time is short (weekend), precast approaches are the way to go.
41	Did the jacking height have to take into account the bearing anchor bolts?	The bearings for this short bridge did not have anchor bolts required.
	Other	

42	Will this presentation be recorded to be made available for viewing at a later date?	Mary Lou: Yes, monthly webinars are recorded and posted in the Monthly Webinar Archives on the ABC-UTC website. In addition to the recording of the featured presentation, we also post a pdf of the presentation, a pdf of the Q&A session, and links to videos shown or discussed in the featured presentation. These resources are made available for your subsequent use, but you only receive the email with link to a certificate of attendance if you register for and attend the webinar live. Emails with certificate links are sent for those who register and attend the monthly webinars, quarterly research seminars, and annual in-depth web training.
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