December 2021 ABC-UTC Monthly Webinar: MBTA Weekend Railroad Bridge Replacement over Parker Street		
#	**Questions**	**Responses**
1	Was there any special reason for using Self-Propelled Modular Transporters (SPMTs)?	The SPMTs allowed the installation of the bridge to meet track outage allowances in the contract. The site lent itself to the use of SPMTs over other ABC methods due to the roadways beneath the bridges.
2	Are there more railroad projects in Massachusetts under consideration for similar replacement after completion of this project?	Yes, the MBTA has multiple other bridges under design that will likely use this technique.
3	Was the "drive-in" engineering of the new spans a performance-based specification? Was there separate compensation in the contract for the SPMT move?	This was a Design-Build project so there was no separate compensation for the SPMT move; it was all included in the bid price.
4	Where were the new bridges constructed prior to moving into place?	The new superstructures were assembled over the roadway adjacent to the existing bridges.
5	Please discuss impacts of weather, scheduling, and contractor claims on this bridge project.	Since the track outages were planned well in advance of weather forecasts and could not be altered, the team took care to minimize weather-dependent details.
6	Was ABC cost effective for this project?	The track outage limitations in the contract required the use of ABC and, therefore, a comparison with traditional methods was not completed.
7	Since this was a design-build project, what type of agreement was there with the railroad in terms of their sign-off on the design, and how much was it?	The owner (MBTA) approved the designs and provided the track outage requirements.
	Questions during Webinar	
8	What software was used to construct the animations? Do you think moving forward, 3D models will be required to clearly display plans for the client and the public?	Autodesk products were used to create the 3D renderings. They were extremely helpful for use in public meetings.

9	If the sewer was not behind one of the abutments, would the design have reverted to new foundations behind the abutments?	There were other contributing factors such as a large utility pole behind the other abutment and geometric constraints of adjacent buildings that led to the decision to construct the new abutments in front of the existing abutments.
10	You mentioned that the track profile did not change. Did the low steel elevation have to increase at all, or did the existing bridge have the required 14'-6" clearance already?	The existing bridge already had the required clearance.
11	What overhead clearance was required to use micropiles?	The overhead clearance was approximately 14 ft.
12	Was welding required for splicing the micropiles together during the time of driving?	Micropiles were spliced using threaded couplers.
13	Given the limited space, was a load test on the micropiles waived, or was it performed off to the side of the bridge on a sacrificial pile?	A load test was perfomed at track level near the bridge.
14	What was the reason for the tie-back anchors? They appeared to anchor the existing wall abutment into the backfill and did not appear to anchor the cast-in-place concrete wall extension into the existing abutment.	The tie-backs provided lateral resistance at the abutment with the fixed bearing.
15	It is not clear whether you used two groups of tie-backs on each side (one for the old abutment and another for the new - through the old - abutment), or is it only one group of tie-backs that went through both abutments (the old and new)? Would you please elaborate on this?	The tie-backs were drilled through the existing abutment, and the anchor plate was at the face of the existing abutment. The anchor plate had rebar welded to it so that when the new concrete was poured against the existing, the two concrete portions acted compositely as one mass that was tied back.
16	Were the tie-backs installed only to help with the lateral force due to construction from the crane right behind the abutment?	The tie-backs resisted the lateral force at the fixed bearing due to traction and braking forces when the bridge is in service.
17	How is the existing abutment tied to the new abutment?	Grouted dowels were used to tie both portions of the abutment together.
18	Is the existing abutment concrete or masonry?	The existing abutment is concrete.

19	What modifications, if any, were made to the existing abutments to ensure a 75-year design life?	The new abutments were designed to carry all loads to achieve the 75-year design life.
20	Were there any utilities under Parker Street to be concerned with the pressures from the SPMT trailers?	Yes, steel road plates were used to distribute loads during the move.
21	How did you manage the existing utilities from the old structures to the new ones?	Utilities were temporary relocated overhead and then moved to the bridges once complete.
22	Were there any utilities that had to be relocated as part of this project?	Utilities (PTC, electric, FO) were temporary relocated overhead and then moved to the bridges once complete.
23	What method was used to give adjustability to the bearings?	The bearings were shimmed as needed and then grout was injected under the masonry plate to provide full bearing on the abutment.
24	Was shimming under the bearings required?	The bearings were shimmed as needed and then grout was injected under the masonry plate to provide full bearing on the abutment.
25	Can you elaborate on the bearing adjustment problem that you mentioned, and what was the solution?	When the superstructure was lowered, all of the six bearings did not touch down simultaneously. The bearings were shimmed as needed and then grout was injected under the masonry plate to provide full bearing on the abutment.
26	Did you use the existing bearings or new ones? If the old ones were used,what type of bearings were they, and how long have they been in use?	New bearings were used for the new bridge.
27	Did you build the superstructures offline at the final proposed elevation, or were the bridges built low to the ground and raised for the SPMTs?	They were built offline above the roadway at the approximate final elevation.
28	Did you consider using SPMTs for demolition?	No, traditional means were faster for demolition.

29	How long did it take to stage/assemble the SPMTs under the bridge and be ready to move?	The SPMTs were assembled off-site and driven under the superstructures. Final rigging and lifting of the superstructures took a few hours. A road closure starting ahead of the track outage facilitated this schedule.
30	Was the station removed adjacent to the bridge?	Portions of the abandoned station were removed to facilitate bridge construction.
31	If the assembly area was to the south of the project and the north line was constructed first, how was the north structure passed under the south line that was kept in service?	Both superstructures were assembled to the south and moved in south to north once both existing superstructures were removed.
32	Was there any fatigue analysis conducted on the track? What maintenance provisions were considered for the new bridge?	The project team was not required to conduct fatigue analysis on the track. Walkways were provided on the bridges for maintenance access.
33	Was there a backup plan if the bridge erection caused delay to MBTA and the railroad operations?	The backup plan would include emergency alternate transportation (busing).
34	Could you share with us the lessons learned or what you would do differently given this experience?	The biggest lesson learned is to incorporate design details that maximize the ability to make adjustments in the field during the weekend outages and to incorporate details that minimize the amount of work during the track outages. Some examples include adjustability between precast pieces and at the bearings.
35	Discussion with the Contractor during design was mentioned. Does this mean that the Contractor was selected at that time?	This was a Design-Build project; the Contractor was involved during the design phase.
36	What was the connection between the precast track slabs and backwalls? Were grouted splice sleeves used?	PVC sleeves were used in the concrete. Dowels were placed in the sleeves and then grouted.
37	How much time was allotted for track construction? Was track construction performed by the contractor or the MBTA?	The tracks were installed in panels and, therefore, the operations took a few hours. This was completed by the contractor. Final welding took place after the outage weekend.

38	Are approach slabs typical in railroad bridge construction?	Approach slabs are standard for the MBTA.
39	Was the project design-bid-build or design-build?	The project was Design-Build.
40	How did you manage to get the best price for construction if the contractor was already chosen from the beginning ?	This was a Design-Build project where the winning team was selected based on technical score from a proposal and bid to determine the best value.
41	What was the total cost for this bridge?	The cost for this bridge was difficult to determine as this bridge was part of a larger Design-Build contract which included a total of six bridges.