

## ABC-UTC July 2023 Monthly Webinar: Prioritization Efforts for ABC in Texas

#	Questions	Responses
<b>Pre-Webinar Questions</b>		
1	Can you comment on ABC project costs and quality management systems during the execution of the project?	Since we have broadened the definition of ABC in Texas, with some element of accelerated construction in essentially all projects, we are not tracking costs or altering QC/QA processes specific to ABC.
2	Do you have assessment criteria to determine the benefits of ABC for a given location?	TxDOT does not have specific assessment criteria. Rather, we evaluate each project individually to determine suitability for ABC versus more traditional phased approaches. Justification must be provided for whichever method is chosen, including reasoning for not selecting ABC.
3	Do you have column-to-precast cap beam connection details for 1) reinforced concrete columns, and 2) driven pipe piles used as columns?	Yes, please refer to PBC-P, PBC-RC, and PPBC-RC on TxDOT's Bridge Standards page for details on precast cap connections to concrete and steel piling, and to round concrete columns: <a href="https://www.dot.state.tx.us/insdtdot/orgchart/cmd/cserve/standard/bridge-e.htm">https://www.dot.state.tx.us/insdtdot/orgchart/cmd/cserve/standard/bridge-e.htm</a>
4	Does the Texas DOT use PCI bridge design guidelines?	No, we use the AASHTO bridge design specifications with variations in the TxDOT Bridge Design Manual.
5	Has the Texas DOT used box beams with precast decks on any projects?	TxDOT has standards for spread box beams (called X-beams) that utilize precast decks, but they have seldom been utilized. Box beams are still primarily placed adjacent to one another, in which case precast deck panels are unnecessary.
<b>Questions during Webinar</b>		
6	Are precast caps and abutments cast on-site or in a shop?	TxDOT provisions allow for on-site casting, but the vast majority of precast work occurs off-site in approved fabrication yards.
7	In projects with precast cap standards versus cast-in-place concrete, do you know what percentage of contractors or projects use precast versus cast-in-place?	No, in cases where TxDOT provides equal alternates in plans, we do not currently track which option is chosen by contractors, though that information is available with as-built plans.

8	Are the precast concrete panels used in Texas commonly a full-depth panel with closure joint, or a partial-depth panel with a cast-in-place concrete deck over it?	Almost all standard bridges in Texas are constructed using partial-depth precast concrete panels. Full-depth panels are utilized only in unique circumstances (e.g., weekend closure ABC).
9	Are there significant amounts of repairs needed for precast units?	No, Quality Control provisions are such that very little repair is required on precast elements. Any repairs that do take place happen in the fabrication yard prior to shipping.
10	For the beams with precast slabs already attached, is a wearing surface treatment typically applied on top after assembly?	TxDOT has not utilized that concept very often up to this point, and each project is evaluated on a case-by-case basis to determine the most suitable riding and wearing surface.
11	What is the range of cost for ABC in dollars per square foot?	Since our definition of ABC is broad, so is the cost range. ABC projects could be as low as \$100/sq ft and as high as \$400/sq ft, but will typically land somewhere in between those extremes.
12	For determining probable costs, we usually use the Texas DOT average low bids. If the precast option is used instead, is there a different bid item number to get a better idea of cost?	TxDOT utilizes a large amount of precast in almost all of our bridges, so you should be safe using the bid item numbers. It's more unusual NOT to have mostly precast concrete elements on our bridges.
13	Does lifting ABC elements into place present a major safety hazard compared to cast-in-place construction?	Not at all. We find that using ABC elements is safer. In particular for bridge decks, the precast elements very quickly provide for a safe working surface that keeps contractors and inspectors from exposure to fall hazards.
14	There was a lot of precast shown in the presentation, but Texas DOT doesn't require precast plants to be PCI-certified producers. Why is that? If PCI certification is not required, who is certifying precast producers in Texas?	TxDOT has a very rigorous certification process that we developed in-house. Refer to TxDOT Departmental Materials Specification 7300 for Precast Concrete Fabrication Plants: <a href="https://ftp.dot.state.tx.us/pub/txdot-info/cst/DMS/7000_series/pdfs/7300.pdf">https://ftp.dot.state.tx.us/pub/txdot-info/cst/DMS/7000_series/pdfs/7300.pdf</a>
15	Do you have any examples of where you used post-tensioning to benefit ABC?	Probably the best use of post-tensioning in ABC applications has been in the spliced precast girders. We have used those in a number of projects, and it allows us to go well beyond traditional limits for precast girders.

16	Are contractors required to be pre-approved to do precast elements and, if so, what is the procedure for approval?	Contractors and fabricators must be preapproved to produce precast concrete elements, but not to erect them. Refer to TxDOT Departmental Materials Specification 7300 for Precast Concrete Fabrication Plants: <a href="https://ftp.dot.state.tx.us/pub/txdot-info/cst/DMS/7000_series/pdfs/7300.pdf">https://ftp.dot.state.tx.us/pub/txdot-info/cst/DMS/7000_series/pdfs/7300.pdf</a>
17	Are deck panels cast on site by the contractor and, if so, what is the quality control required?	Though it has happened, it is highly uncommon for contractors to set up their own precast operations on-site, even for deck panels. There are a large number of preapproved precast concrete fabricators scattered around the state, and contractors typically purchase precast elements from them.
18	Do you use segmental bridges for long spans in Texas?	Yes, Texas has one of the largest inventories of segmental bridges in the country.
19	Regarding Slide 29, did you use a cavity for the precast cap-to-column connection?	The cap depicted in the photo in Slide 29 did not include a cavity. We quickly learned that cavities were far preferable to sleeves, and our standards now reflect that.