	May 2018 ABC-UTC Webinar Featured Presentation: Owner Perspective on ABC – Spotlight on SHRP2 R04 Fort Goff Creek Project and Caltrans' Laurel Street Overcrossing Project	
#	**Q&A Session: Questions**	**Responses**
	Design	
1	Designed for scour?	Yes.
2	What was the process used to arrive at the bridge type used for the Fort Goff Creek project?	As illustrated in the presentation, multiple alternatives were evaluated in early planning and a prefabricated structure was identified as the best structure type to address the goals of the project.
3	Please comment if ABC has an effect on the calculation of column hinge over strength Plastic Moment.	The connection detailing established a fixed connection between column and cap as is the case in cast-in-place construction. The plastic moment calculations were no different than that for a cast-in-place design.
4	What seismic connections to pier caps were designed?	The seismic connections between precast elements at the cap are covered in the presentation. Further information is available in the research reports cited in the presentation.
	Construction	
5	How was the foundation prepared prior to placing the Fort Goff Creek Bridge Abutment Segments?	As shown: 4 sack slurry pad.
6	Closure durations for undercrossing?	Laurel: Full closure of Route 780 below the bridge occurred 3 times at night for approximately 6 hours each for precast erection (one night for column/cap and two nights for girders) and one longer full closure of 12 hours for the demolition of the existing bridge. Laurel Street was closed for the duration of the project.
7	Could you discuss recommendations for issues to look out for, that were not anticipated initially?	Lessons Learned covered in the presentation.
8	How did the Quality Control Manager contribute to the overall success of the project?	Quality Management overall played a very important role in both projects.
	Research	

9	Research on earthquake resilience?	Research on connection detail design to seismic loading was covered in the presentation.
	Cost	
10	Were there any savings when compared to conventional bridge construction beyond a shorter construction period?	Laurel: There were not significant savings since the pilot was not built under a rapid construction timeline. Some savings may have come from the 2-3 weeks of construction working days reduction resulting from the precast columns and caps and the RSC deck. Fort Goff: Considerable savings were realized (but not estimated) by limiting construction to a single season and avoiding stormwater managament, environmental monitoring, construction of a larger temporary culvert, contract administration, mobilization costs, maintenance of traffic and so on associated to multiple seasons.
11	Discussion related to Contractor claims emanating from any/all ABC Contracts... Weather, Supply of Materials, Access, etc.	Laurel did not receive any claims. Fort Goff had a few minor ones not related to the bridge component of the contract.
12	Is monetary incentive for early project completion common in USA?	California does employ monetary incentives on a case-by-case basis. It is most common when the project involves full closure of a route over multiple days.
	Questions during Webinar	
13	Did the Fort Goff bridge require approach slabs?	No.
14	Were the connections, for instance between the abutment stem and footing, modified to pass seismic requirements or were the standard ABC details used?	The details were standard for CA bridges.
15	Laurel St OC - Were the mockups paid for as separate items or included in permanent precast items?	The UHPC material in the mock-ups was included in the UHPC bid item. The precast mock ups themselves were paid for as separate mock-up bid items. We had bid items for the "bent cap with column mock-up" (LS) which included saw cutting and a bid item for "Pull-out Test Mock-up" (2 EA) which included the fabrication of the specimen, installation of the rebar in UHPC and delivery to the Caltrans testing facility and removal after the test. The pull-out testing was paid for and conducted by Caltrans.
16	Laurel St OC - Were normal concrete compressive strengths specified for the precast elements?	Yes. The girders were 8000 psi and the columns and cap were 5000 psi.

17	The cost of UHPC is $27,000 per cubic yard. Why so expenssive?	The high unit cost of UHPC comes down to quantity. There are several fixed cost items that factor into UHPC. These costs are spread out over the unit cost so larger quantities show a lower impact. In this case we used under 2 cubic yards of material (41 CF). We would have had the same QC/QA requirements if it had be 20 or 200 yards. I think it helps to look at the cost from a lump sum perspective to represent the UHPC cost to the project. In this case it was $41K for the UHPC and $53K for the mock-up specimens. The overall cost of the project was $5.4 Million. We anticipate the unit cost of UHPC will come down with increased quantity and also depends on the complexity of mock-up requirements.
18	Caltrans uses precast paving slabs extensively. Do you foresee Caltrans incorporating full-depth precast deck slabs in future projects?	Yes. The first implementation of full-depth precast deck panels was just completed with the deck replacement of the James E. Roberts Memorial Bridge on Route 120 in Tuolumne County. The use of full-depth deck panels is anticipated in future CT ABC projects.
19	Laurel St - Could you give more details on the duct tape debonding for the column longitudinal reinforcement? Where was it used, etc?	3 layers of duct tape were applied to the column reinforcing exiting the top of the column to create a debonded region to force the plastic hinge to form at the top of the column and reduce high strain accumulation in that zone.
20	For the Fort Goff bridge, what was the design loading used?	Live Load: HL93 w/"LOW-BOY" and permit design loads.
21	Is there any obstacle from combining ABC and design-build contracts?	ABC has been used in D-B contracts in CA.