

IBT/ABC-UTC March 2024 Accelerated Replacement of the Iconic Nashville Broadway Viaduct Bridge

#	Questions	Responses
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Please note that these responses are those of the Presenter and are not endorsed by the IBT/ABC-UTC.

Design

- 1 Was lightweight concrete considered for the bridge deck?
- 2 What is the ADT on the bridge?
- 3 Which modeling software was used to design this bridge? And was the vertical profile considered in the model?
- 4 Is the epoxy deck overlay the traffic wearing surface?
- 5 Were live load deflections limited to L/1000?
- 6 What was the overall difference in depth of simply supported girders versus continuous steel girders?
- 7 What kind of concrete did you use in the closure pours between the deck panels? Was it UHPC or some other type of concrete?
- 8 What was the relative cost of the 70 ksi high-performance steel versus the 50 ksi steel? Also, was the 70 ksi steel readily available?
- 9 Did you consider using a steel box beam topped with a concrete deck to form a module using simple span for dead load and continuous for live load as that is a very fast ABC method?
- 10 Did you consider using plates at the ends of the steel girders over the supports? This prevents the compression flange from crushing the concrete in the diaphragms at the ultimate limit state.

reference webinar archive video for answers to questions

Construction

- 11 Was anything unexpected encountered during construction?
- 12 Were construction induced vibrations a concern to the adjacent buildings and how was the risk managed?
- 13 Did the panels sit directly on the top flange or was there a haunch? How was that formed? How were the closures formed underneath?
- 14 Does the bridge have a parabolic crown? If so, how was this accommodated with the deck panels?
- 15 What was the relative construction times spent on different components of the bridge - e.g. demolition, foundation, substructure and superstructure?

Questions on ABC

- When developing an urban project, we often struggle with balancing disruption avoidance with the costs of disruption avoidance. How has TDOT managed public opinion such that ABC methods are embraced by both the public and the contracting community?
- 16 Was the decision to use precast deck panels rather than a reinforced concrete deck made because of time pressure?
 - 17 Why were micro piles used on the substructure?
 - 18 What type of micro piles were used?
 - 19 Were precast bent caps and columns considered to save time?

Questions on Delivery Method

- TDOT appears to make extensive use of alternative delivery methods. Can you give an approximate percentage of projects that use alternative delivery vs traditional design-bid-build?
- 21 Is there a decision making method for determining the delivery method for TDOT projects? How do you choose between design-bid-build, design-build, and CMGC?
 - 22 Given your extensive use of alternative delivery, do you have resources available for reference by other state DOTs? If yes, can you briefly describe the resources.
 - 23 Does TDOT develop the CMGC requests for proposal with internal resources, or make use of consultant augmentation?
 - 24 Same question for project execution - does TDOT use internal resources for CMGC construction oversight, or do you use consultant augmentation?
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