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Appendix E - Constructability Technical Memorandum

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Memo

Date:	Wednesday, February 24, 2016
Project:	P026862 US21 (Sea Island Parkway) Harbor River Bridge Replacement
To:	Dustin Hughey
From:	Brian O'Connell
Subject:	Constructability Review of Alternative 3 Design

To follow-up our conversation on 2/23/2016 concerning the constructability of Alternate 3 Harbor River Bridge, below is a list of bullet points outlining constructability concerns.

Existing utility power lines are located within 100ft south of existing structure.

North edge of proposed bridge deck is approximately 30ft south of existing structure.

Proposed bridge deck width is 46' 5-7/8".

Proposed girders at 72" MBT prestressed concrete 126ft in length

Girder erection would take place from the water (assumed).

Due to size of girders, two 250 ton cranes (minimum) with approximately 200ft of boom would be needed to set girders in place. The barges required to float these cranes would need to be >40ft in width.

The position of the cranes when setting the girders would be just south of the bent caps thus placing the crane booms within a couple feet (if not right under) the existing utility lines.

Given the size of the barges needed for the cranes, I do not see enough room to place them between the old and new structures to the north.

In closing, from a constructability standpoint, I do not feel the alignment of Alternate 3 is favorable unless the existing utilities can be relocated. Based off of what I could see on the plan sheets provided, an alignment to the north of the existing structure would be a clear choice.

Regards

Brian O'Connell

Photographs of cranes constructing the SC 41 Wando River Bridge (similar project to the proposed US 21 bridge replacement over Harbor River)