

# TECHNICAL MEMORANDUM

## LOCATION HYDRAULICS MEMORANDUM

### SR 60 (Courtney Campbell Causeway) Multi-Use Trail Project Development and Environment Study

From Bayshore Boulevard to west of the Ben T. Davis Beach entrance  
Pinellas & Hillsborough Counties  
WPI Segment No. 422640-2  
FAP No. 9045-090 C

May 2011

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) study to evaluate the construction of a multi-use trail on the south side of State Road (SR) 60 (Courtney Campbell Causeway) from Bayshore Blvd. to west of the Ben T. Davis Beach entrance. A project location map is attached as **Figure 1**. The proposed trail will be located along the existing fill from the Causeway with two new proposed bridges located adjacent to the existing SR 60 highway bridges. The proposed trail typical sections are shown in **Figures 2A and 2B**, and the proposed bridge typical section are shown in **Figure 3**.

This Location Hydraulic Memorandum has been prepared to determine if any floodplains will be significantly affected due to the proposed improvements. There are no cross drains within the study limits. Two existing SR 60 highway bridges (FDOT bridge no. 150138 and 100301) are located within the project limits and span portions of Old Tampa Bay. The project site has been field reviewed by Department Modal Planning and Development staff, and routinely reviewed by local Department Maintenance Supervisors. The following 10 items have been addressed to document that the floodplain encroachments will be minimal.

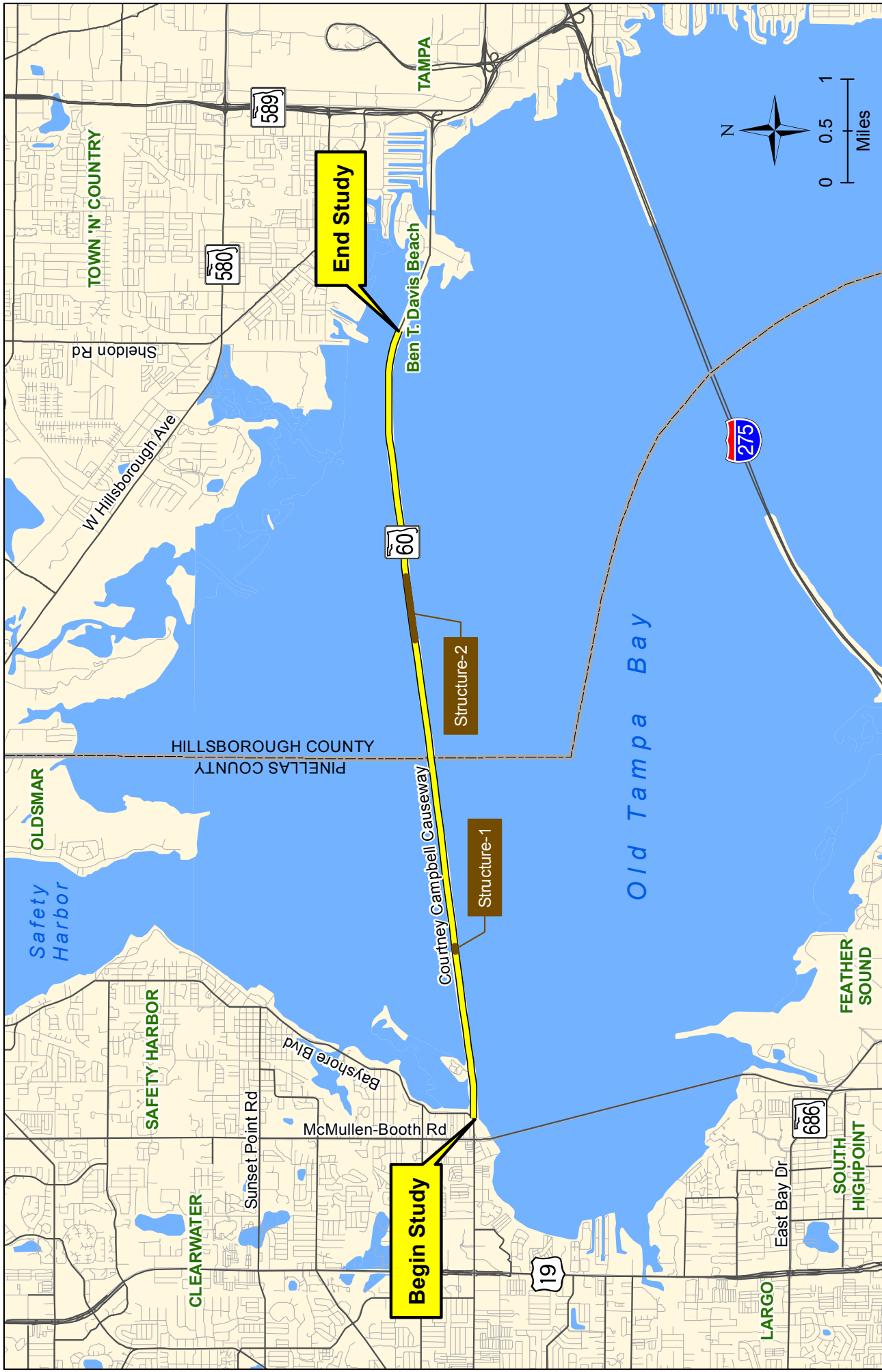
1. History of Flooding: No flooding problems have been identified within the project area. Local maintenance offices having jurisdiction in the project area were contacted to determine the history of flooding problems in the project area. A representative (Anita Montjoy – Asst. Maintenance Engineer) with the FDOT Tampa Maintenance Office indicated that there is no record of flooding issues along the project limits.
2. Longitudinal or Transverse Encroachments: All of the floodplain encroachments will be longitudinal encroachments of existing floodplain along the Causeway. These will occur at the proposed bridge approaches. The bridge approaches are being located within the existing limits of the Causeway fill. Pile supported approaches may be a possible alternative to reduce the amount of fill within the floodplain. However, since these bridge approaches will be located in tidally influenced flood zones, there will be no adverse impacts.

3. Avoidance Alternatives: All of the floodplain encroachments will be minimal due to the proposed trail alignment following the same general alignment as the existing highway. There are no Build Alternatives available which would completely avoid any new floodplain encroachment.
4. Emergency Services and Evacuations: SR 60 has no history of stormwater overtopping due to the existing floodplain. Therefore, no emergency services or evacuation opportunities will be adversely affected.
5. Base Flood Impacts: The project's drainage design will be consistent with local (FEMA), FDOT, and Southwest Florida Water Management District's (SWFWMD) design guidelines. Therefore, no significant changes in base flood elevations or limits will occur.
6. Regulatory Floodway: There are no regulatory floodways within the limits of this project.
7. Natural and Beneficial Floodplain Values: The proposed trail will follow the same general alignment as the existing roadway. Most of the project will be constructed at existing grade and in some places areas that are currently paved. Therefore, no natural and beneficial floodplain values will be significantly affected.
8. Floodplain Consistency and Development: The trail is consistent with the Comprehensive Plans for Hillsborough County, Pinellas County, City of Tampa, and City of Clearwater. The trail has also been identified in the City of Tampa *Greenways & Trails Master Plan* (2001), the City of Clearwater *Bikeways and Trails Plan* (1996) and *Shifting Gears: Clearwater's Bicycle and Pedestrian Master Plan* (2007). The construction of the trail is consistent with the Courtney Campbell Causeway Scenic Highway Corridor Management Plan (CMP) as stated in Section 2, Goal 2(b)(i). The proposed project will not encourage floodplain development due to local (FEMA) floodplain and SWFWMD regulations.
9. Floodplain/FIRM: A FEMA floodplain map showing the proposed project is attached as **Figure 3**. The entire Causeway is identified within FEMA floodplain, most of which is tidally influenced. The project is located within FIRM maps 12103C0129G, 12103C0133G, 12103C0134G for Pinellas County and 12057C0307H, 12057C0309H, 12057C0326H, and 12057C0327H for Hillsborough County. The project is located in Zone VE, a special flood hazard area inundated by 100-year flooding with velocity hazard and where the base flood elevation has been determined to be 9-ft North American Vertical Datum (NAVD) of 1988, and Zone AE, a special flood hazard area inundated by 100-year flooding where the base flood elevation has been determined to be 9-ft NAVD of 1988. Therefore, there will be floodplain involvement with the Preferred Build Alternative.
10. Risk Assessment: Based on the FDOT's floodplain categories, this project falls under: "Category 2: projects which will not involve the replacement or modification of any drainage structures.." "This project will not involve the replacement or modification of any existing structures, or the addition of any new drainage structures. As a result, this project will not affect flood heights or base floodplain limits. This project will not result in increased or new adverse environmental impacts. It will not increase flood risks or damage; and there will be no significant change in the potential for interruption or

termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant."

A Bridge Hydraulic Report (BHR) has not been developed as part of the PD&E study. A BHR will be developed during the design phase of this project. Two bridges are proposed as part of this trail project and will be located adjacent to the existing SR 60 highway bridges. Structure 1 (Bridge No. 150138) is located on the west end of the project within Pinellas County. Structure 2 (Bridge No. 100301) is located east of the Hillsborough/Pinellas county line in Hillsborough County. Since a BHR has not been prepared as part of the PD&E study, the following items are discussed as part of this LHM:

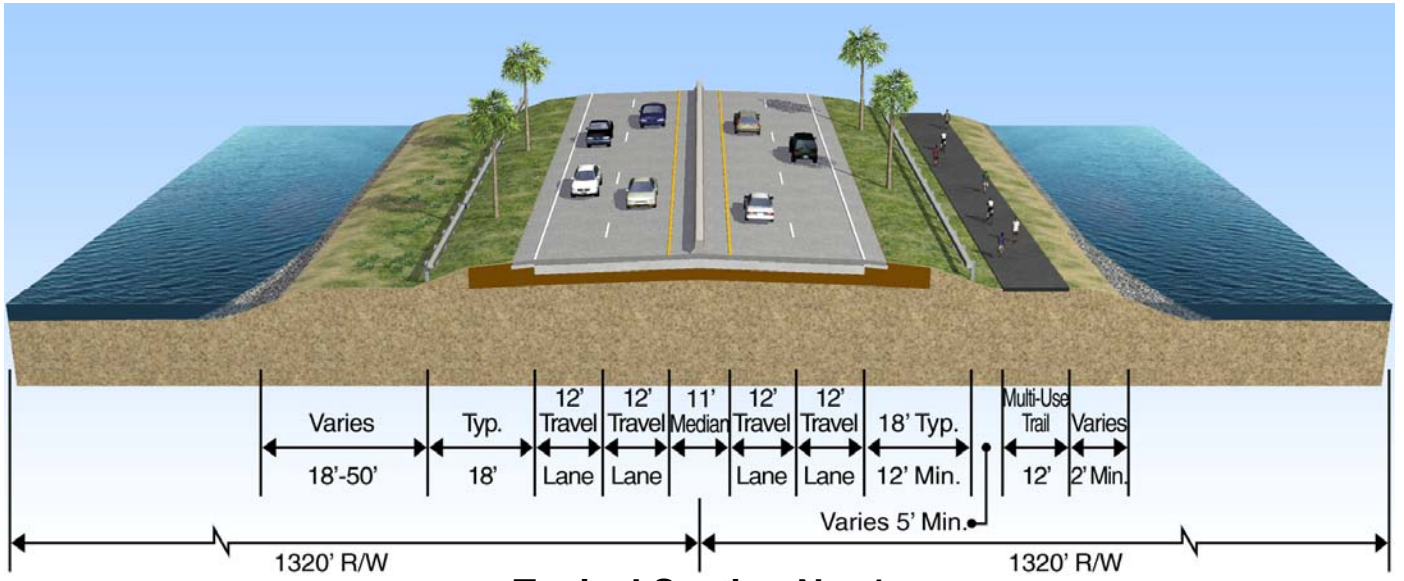
1. Conceptual Length: The conceptual length of proposed bridge adjacent to Structure 1 is approximately 500 feet and the proposed bridge adjacent to Structure 2 is approximately 3,500 feet.
2. Conceptual Scour Considerations: The proposed bridges will be located within Old Tampa Bay, which is a tidally influenced waterbody. Some scour caused by tidal fluctuation is anticipated at the proposed bridge locations. A hydraulic analysis will be conducted during the design phase of the project pursuant to *Section 4.8.2 – Tidal Crossings* of the *FDOT Drainage Manual*.
3. Preliminary Vertical Grade Requirements: The vertical clearances of the proposed bridges will be designed at a minimum to meet the vertical clearances of the existing SR 60 bridges. Currently the SR 60 highway bridge elevations are as follows: Structure 1 is 10.7 feet above the mean high water elevation, and Structure 2 is 43.5 feet above the mean high water elevation.



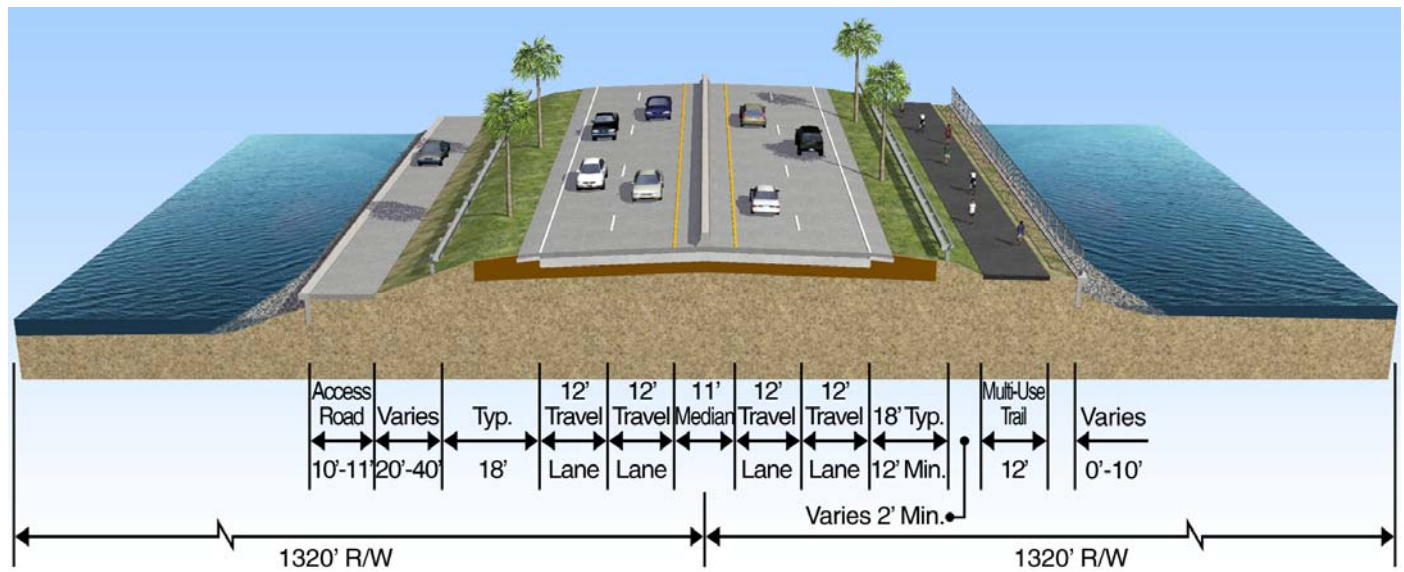
**SR 60 Multi-Use Trail PD&E Study**  
*Bayshore Blvd to West of Ben T. Davis Beach Entrance*  
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**Project Location Map**

**Figure 1**



**Typical Section No. 1**  
Station 21+00 to Station 69+00



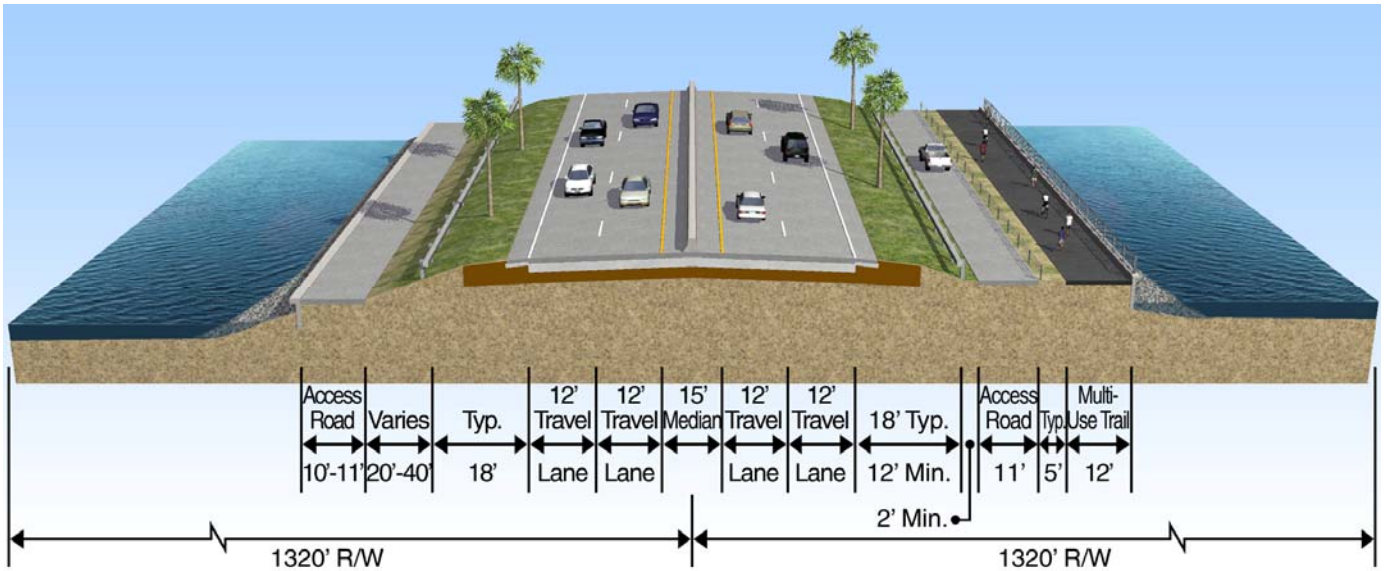
**Typical Section No. 2**  
Station 69+00 to Station 106+00 / Station 111+00 to Station 256+50  
Station 394+00 to Station 412+00



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**Proposed Roadway/Trail  
 Typical Sections  
 (facing east)**

**Figure 2A**



### Typical Section No. 3

Station 256+50 to Station 265+00 / Station 300+00 to Station 394+00

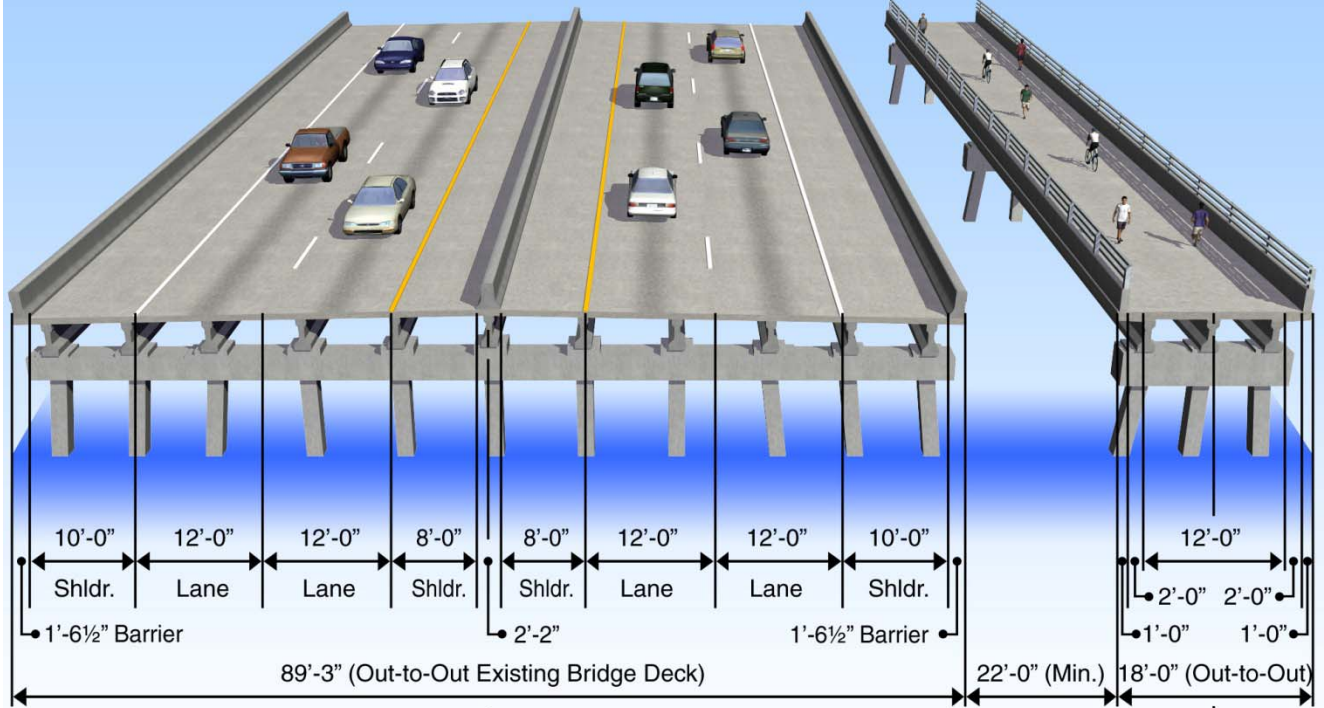


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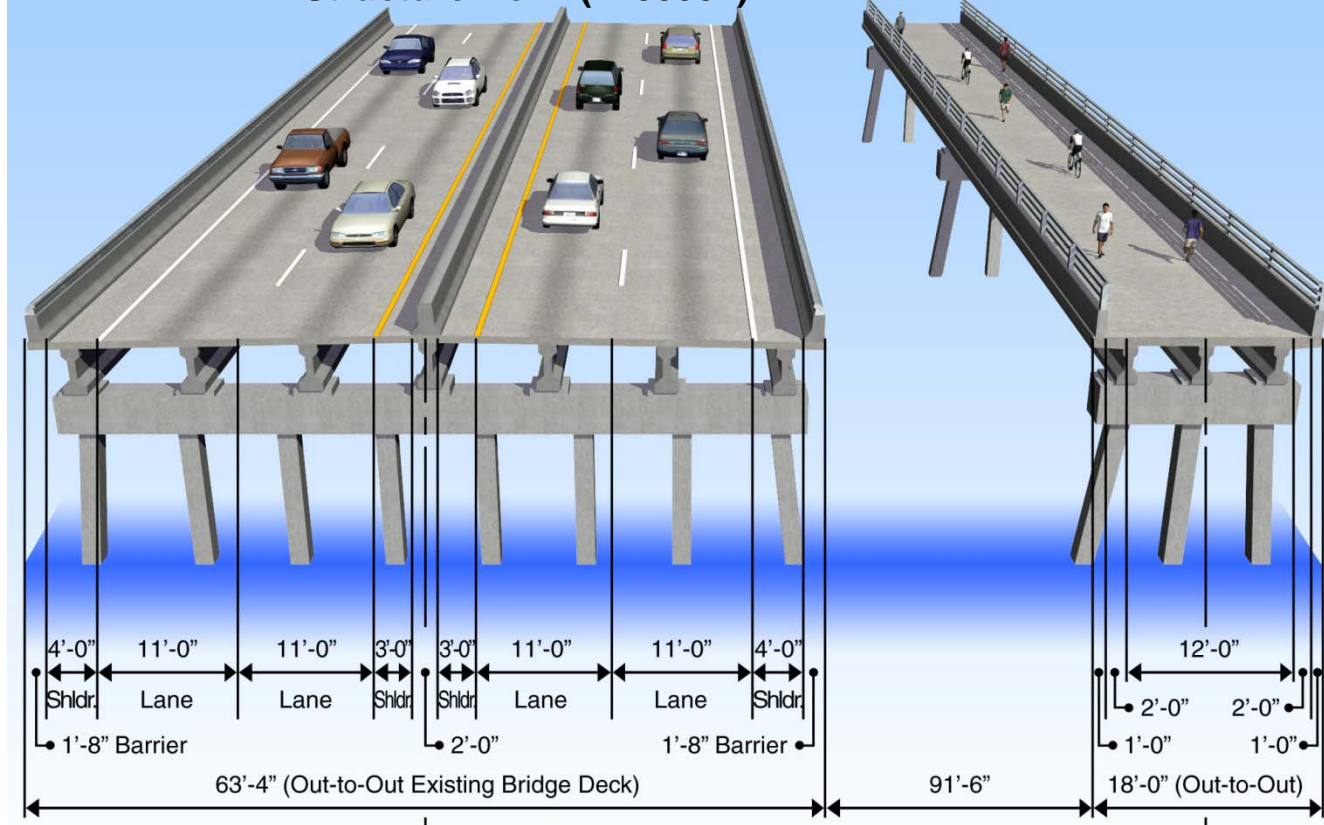
Proposed Roadway/Trail  
 Typical Sections  
 (facing east)

Figure 2B

### Structure No. 1 (#150138)



### Structure No. 2 (#100301)



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Proposed Bridge  
 Typical Sections  
 (facing east)

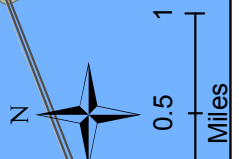
Figure 3



**Legend**

- Zone A
- Zone AE
- Zone VE

FEMA FIRM's  
 12103C0129G, 12103C0133G, 12103C0134G  
 12057C0307H, 12057C0309H, 12057C0326H, 12057C0327H



**Figure 4**

**FEMA Floodplain Map**

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