



# State Road 405 NASA Causeway Bridge Replacement

May 6<sup>th</sup>, 2021

Brevard County

Financial Project Identification Number: 440424-1

Contract Number: T5735

Presentation By: Hatem Aguib, P.E. and Kevin Hayden, P.E.

FDOT In-house Consultant Project Manager Ty Garner

FDOT Construction Project Manager Esther Montoya, P.E.

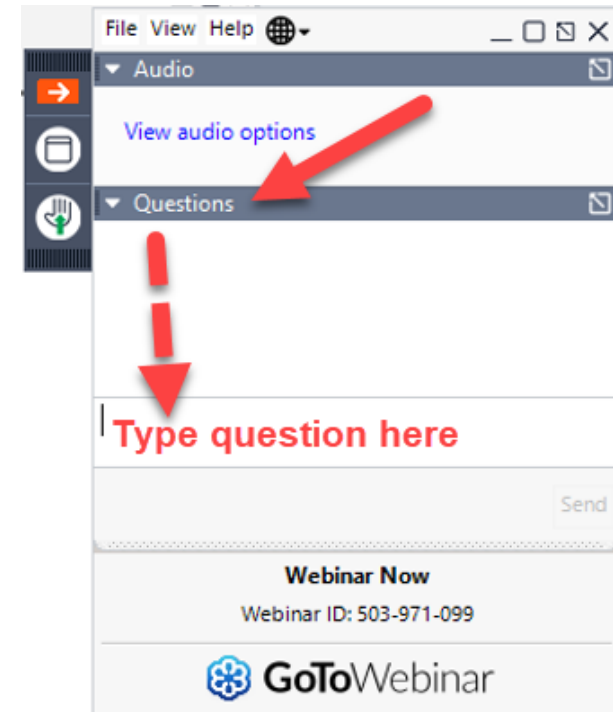
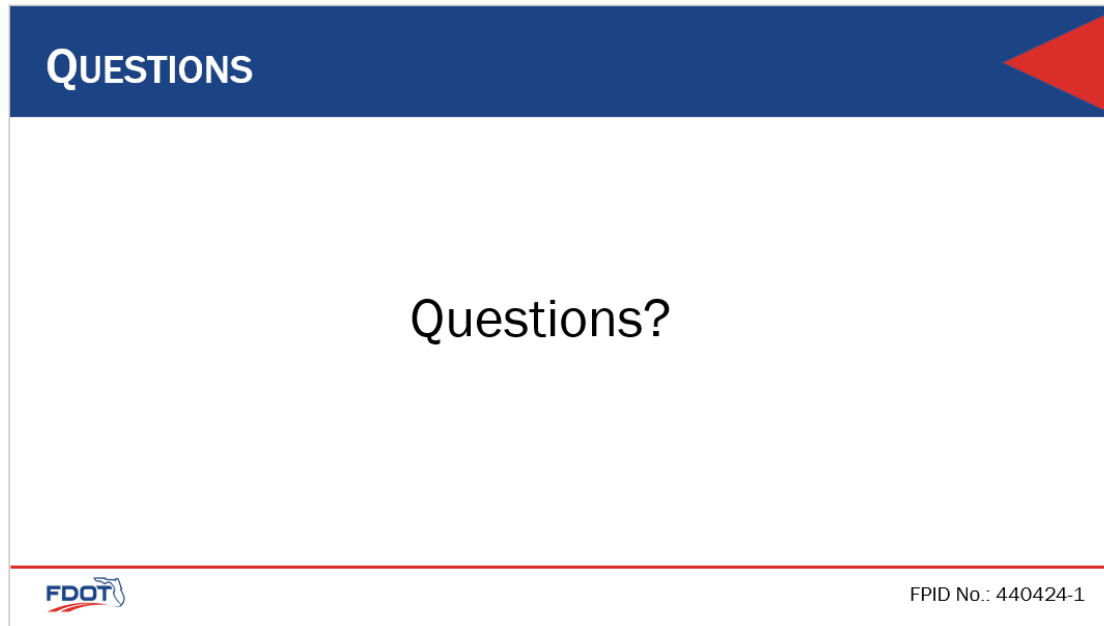
# FORUM AGENDA



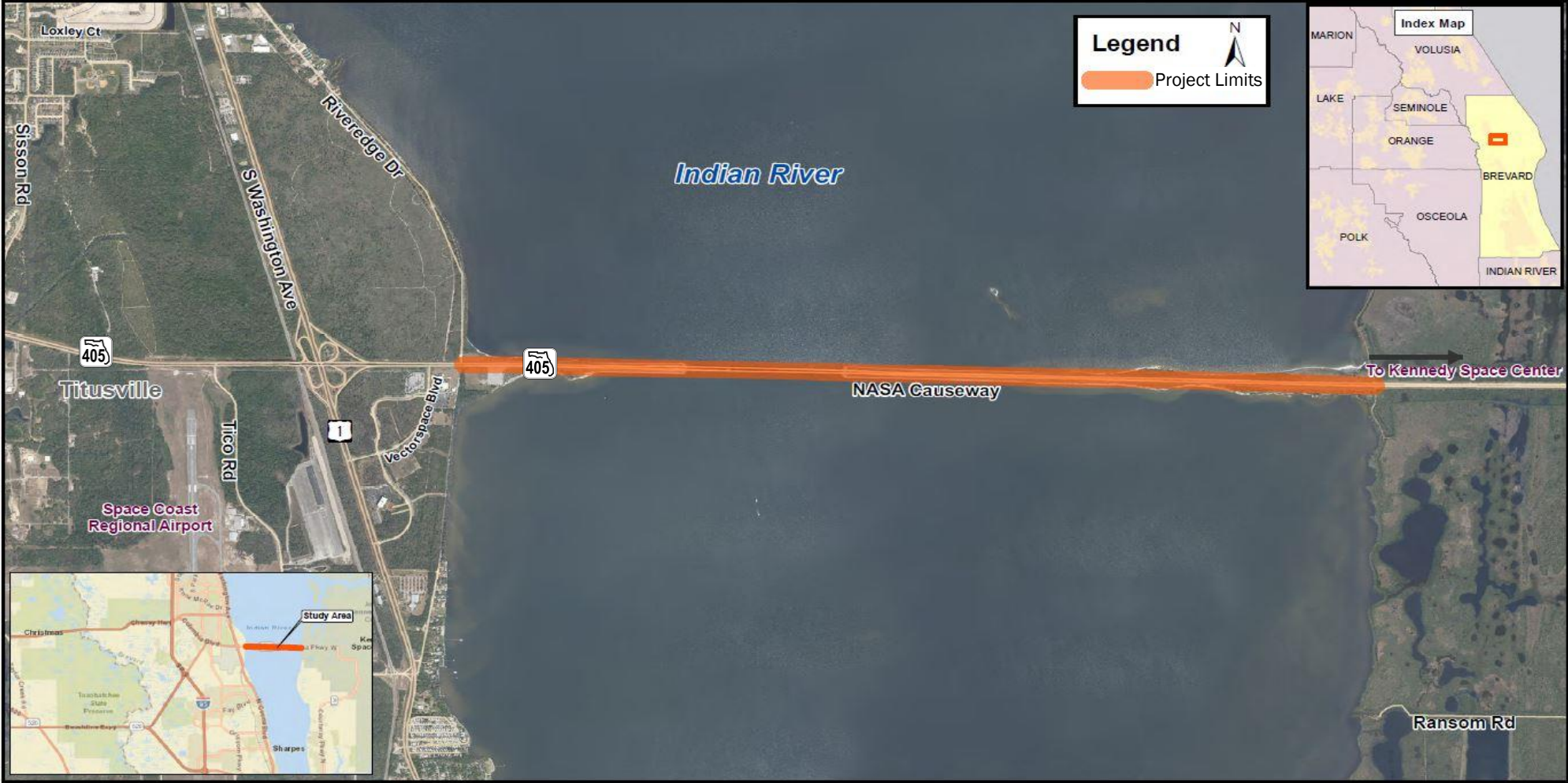
- Project Overview
- Specific Technical Requirements
- Environmental Considerations & Commitments
- Utilities and ITS
- Procurement Schedule
- Questions

# How To Ask QUESTIONS

All questions will be answered at the conclusion of the presentation.

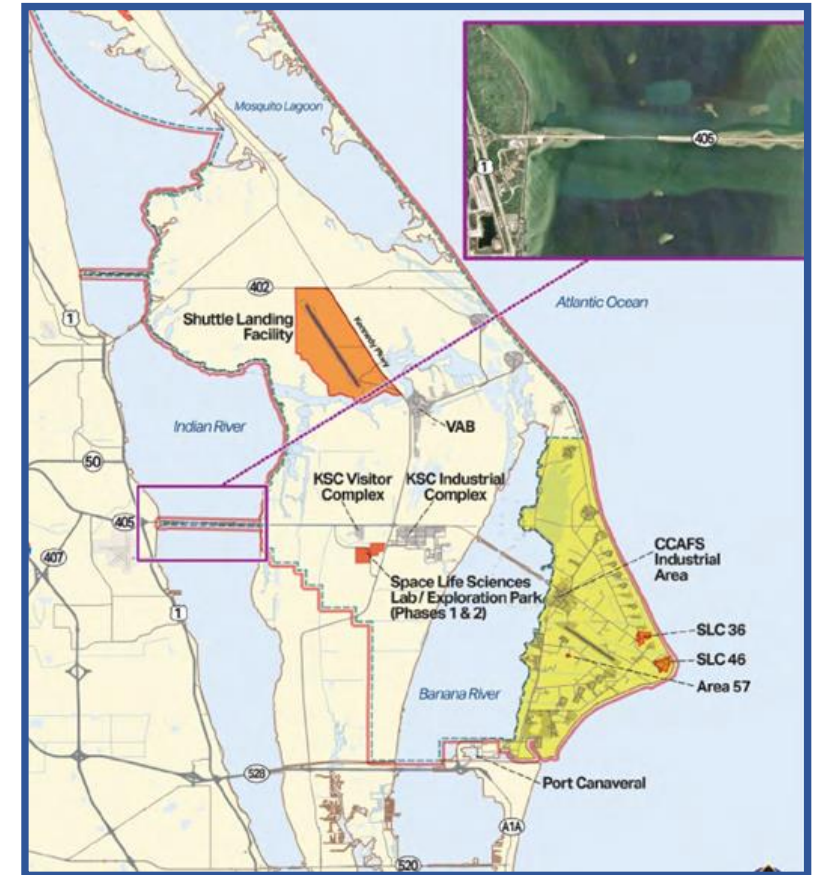


# LOCATION MAP



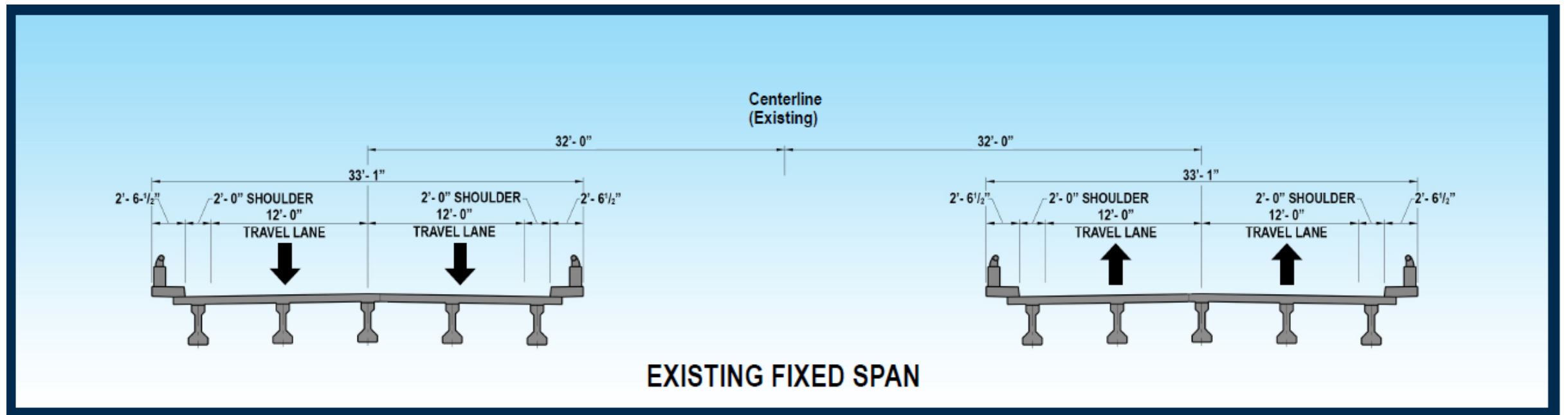
# PROJECT OVERVIEW

- Bridges are main access to Kennedy Space Center and Cape Canaveral Space Force Station
- Replacement of existing bascule bridges with high level fixed bridges
- PD&E Study completed spring 2020
- Design began summer 2019
- Funding sources include federal INFRA grant



# EXISTING BRIDGES

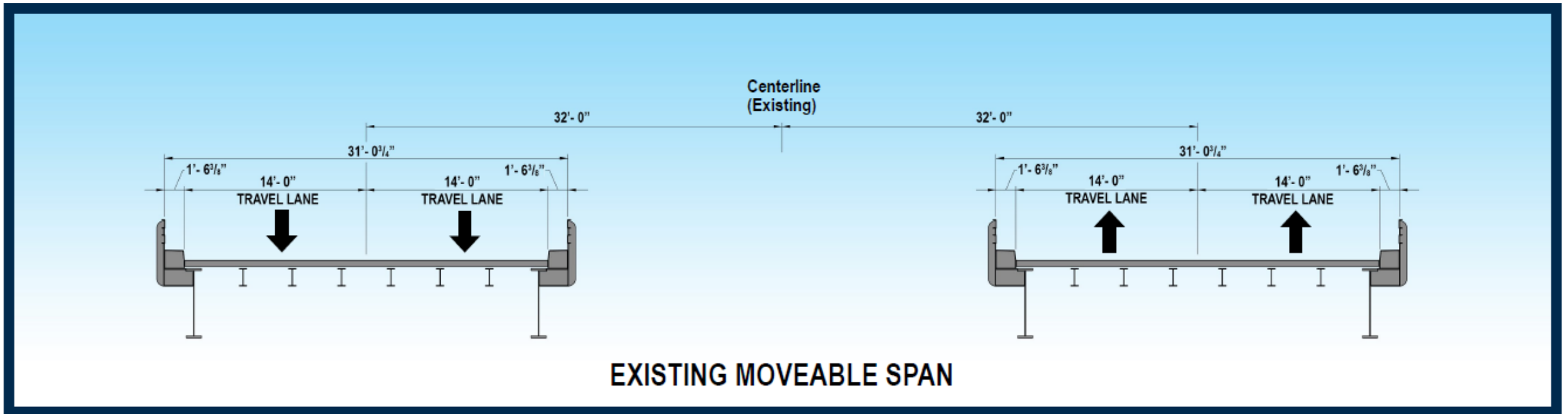
- Existing Bridges
  - Dual 2,993-foot-long structures with fixed concrete approach spans and double leaf bascules over the channel of the Indian River
  - 53 approach spans each 52 feet long
  - AASHTO Type II girders spaced at 6.5 feet O.C.
  - 7-inch cast in place deck with asphalt wearing surface





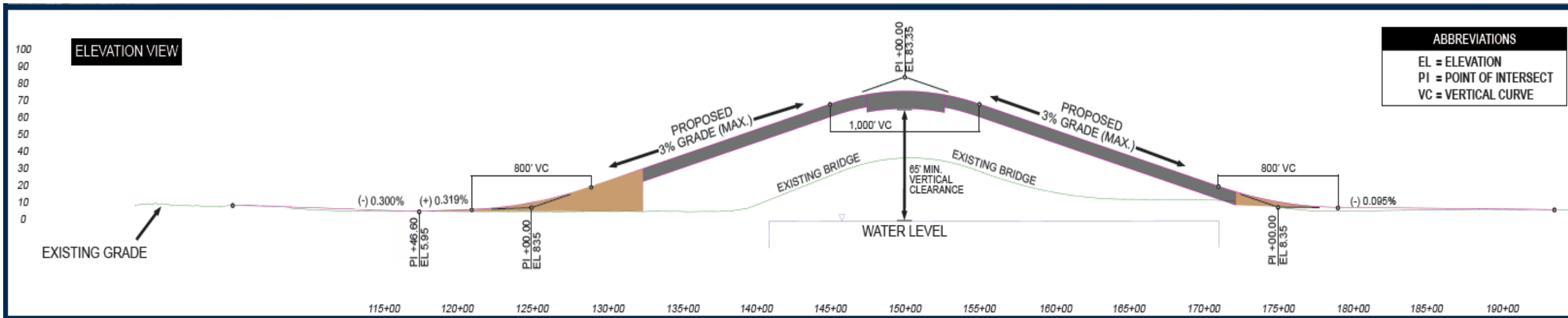
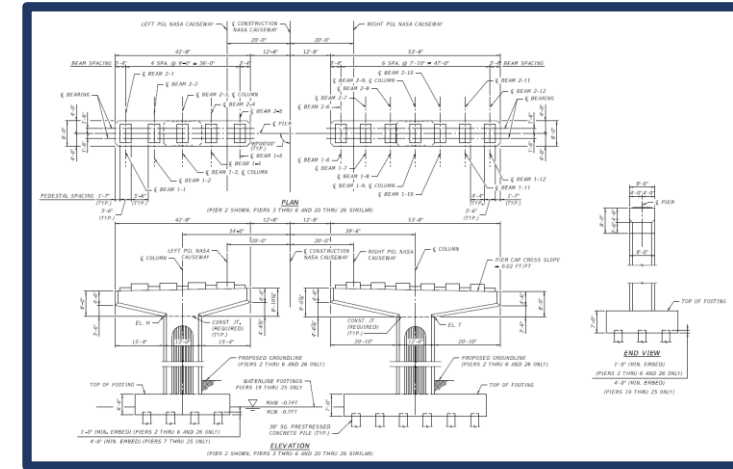
# EXISTING BRIDGES

- Movable Span – Main Channel
  - Double-leaf bascule span - 142 feet, 9 inches long, with a flanking span on either side
  - Each bascule leaf consists of two main girders with a floor beam and stringer system
  - Transverse girders frame each counterweight
  - The trunnions pass through the main girders and are connected to trunnion girders



# PROPOSED BRIDGES

- Dual 4,025-foot-long long high-level concrete structures
- 26 spans
  - Main channel span 185 feet
  - Approach spans vary 122-156 feet
- Hammer head piers
- 12-ft. x 8-ft. Columns
- 30-inch square prestressed concrete piles (high moment capacity)

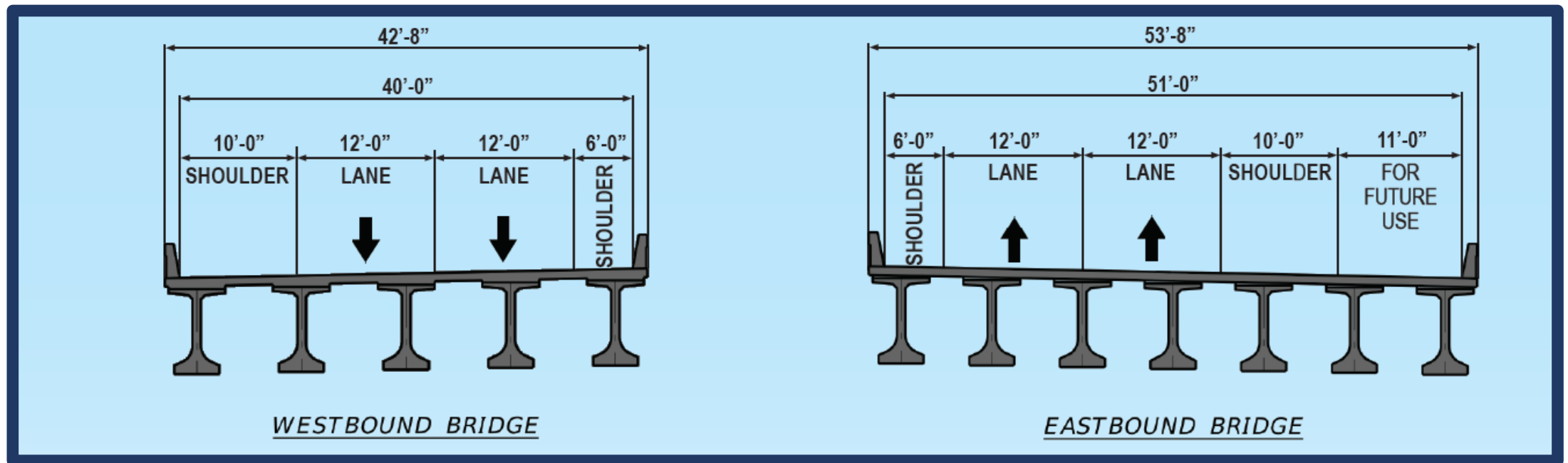




# PROPOSED BRIDGES

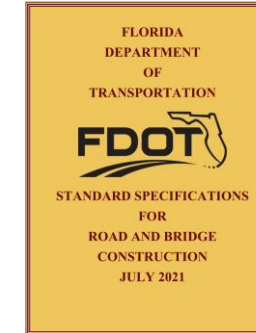
- Eastbound Bridge (703009) 53 feet, 8 inches wide
- Westbound Bridge (703008) 42 feet, 8 inches wide
- Environmental Classification
  - Extremely Aggressive

- Level One aesthetics
- Florida I-Beams
  - Approach Spans: FIB 78
  - Main Span: FIB 96



# SPECIFIC TECHNICAL REQUIREMENTS

- July 2021 FDOT Standard Specifications for Road and Bridge Construction.
- Technical Special Provisions
  - T508 – Temporary Back-Up Generator for Existing Tender House Operations
- Modified Special Provisions
  - MSP 109 – Field Office
    - Contractor is responsible for providing field office for FDOT/CEI.
  - MSP 120 Excavation and Embankment
    - These provisions are at the request of NASA for any Contractor performing excavation activities on NASA/KSC property. An Excavation Permit Request shall be obtained from NASA by the Contractor prior to the start of any excavation.
  - MSP 510 Navigation Lights For Fixed Bridges
    - The installation of the solar-powered navigation lighting system



FDOT  
 SPECIFICATIONS PACKAGE  
 CREATION DATE: 04/04/21  
 FINANCIAL PROJECT ID: 440424-1-52-01  
 FEDERAL FUNDING DISTRICT FIVE  
 BREVARD COUNTY

The July 2021 Edition of the Florida Department of Transportation Standard Specifications is revised as follows:

I hereby certify that this specifications package has been properly prepared by me, or under my responsible charge, in accordance with procedures adopted by the Florida Department of Transportation.

This form has been digitally signed and sealed by \_\_\_\_\_ on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature will be needed on any electronic copies.

Date: \_\_\_\_\_  
 State of Florida: \_\_\_\_\_  
 Professional Engineer License No.: \_\_\_\_\_  
 Firm Agency Name: \_\_\_\_\_  
 Firm Agency Address: \_\_\_\_\_  
 City, State, Zip Code: \_\_\_\_\_  
 Page(s): \_\_\_\_\_

## TECHNICAL SPECIAL PROVISION for T508 – TEMPORARY BACK-UP GENERATOR

Financial Project ID: 440424-1-52-01

### MODIFIED SPECIAL PROVISION APPROVAL REQUEST (REV 3.2.21)

on: 4/30/2021 District: 5 Type: Project Specific

ing Month: August 2021 FPD Number: 440424-1-52-01

vised by: Tyler Wallum Office/Phone: 321-724-4752

ification being modified: 109

vised Pay Items: 109-71-20

ected Cost Impact to this project: \$300,000

**Just Description:** The Florida Department of Transportation (FDOT), District Five, is conducting all design services on behalf of the National Aeronautics and Space Administration (NASA) to place the NASA Causeway Bridge in Brevard County, Florida. The NASA Causeway Bridge is the inner corridor used to transport space freight, spare equipment and launch materials to Kennedy Space Center's Commercial Air Force Station (KSC/CCAFS). The bridge is currently the only passage for space freight moving between the processing facilities in Titusville and the KSC/CCAFS launch pad. The purpose for the bridge replacement is related to the existing structural deficiencies and the necessity for the safe and efficient movement of freight and launch materials. In addition to existing structural deficiencies, the factors contributing to the proposed and need include safety, transportation demand and economic development.

**Background Data:** The use of a field office is being requested by the Department due to the nature of the project and the limited office space in the area. It is also recommended by the Department, the CCEI and Contractor are in the same office trailer to strengthen communication and coordination for this project.



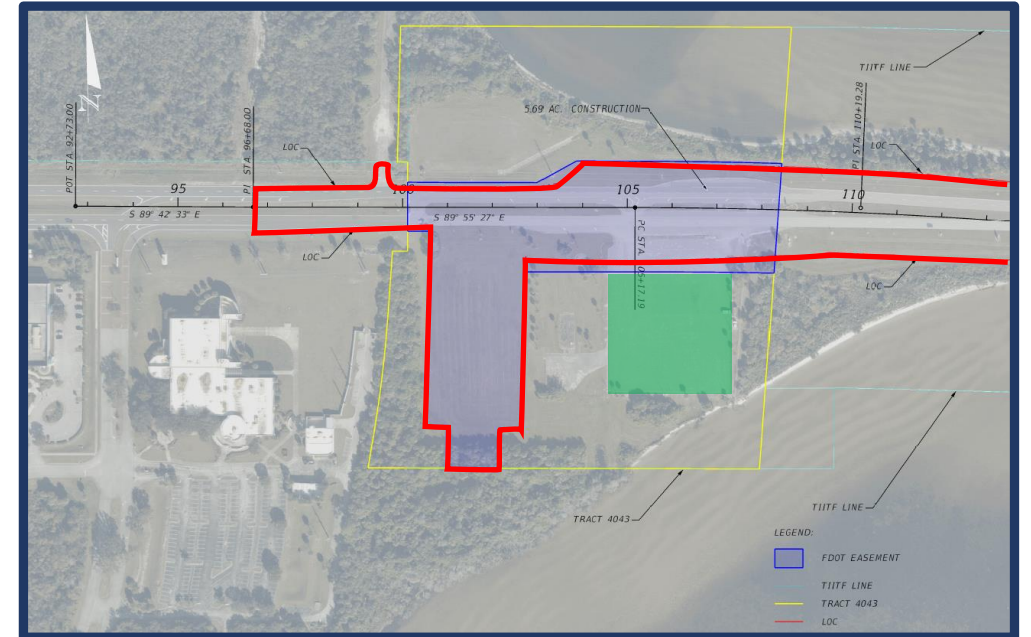
# SPECIFIC TECHNICAL REQUIREMENTS

- NASA/KSC will maintain the existing bridges until traffic is shifted to the new eastbound bridge
  - There is a chance NASA/KSC contractor will be on site
- **Special Provision 8-13.1 “Bonus” Payment and Waiver of Contractor Claims**
  - Milestone date for completion of eastbound bridge
  - Completion date
- Work stoppage for NASA/KSC specified launches
- NASA/KSC has right to enter project worksite anytime
  - The contractor must provide safe access
- NASA/KSC may require security clearance on launch days
- In the event of an emergency or hazardous material spill, NASA/KSC must be notified



# SPECIFIC TECHNICAL REQUIREMENTS

- Limits of construction shown in the roadway plans. Contactor cannot work/stage/store etc. outside of the LOC and within NASA/KSC property without written permission and a permit from NASA/KSC.
- Four-lanes of traffic shall remain open throughout construction
  - Limited lane closures will be approved
- TTCP provides access for NASA/KSC security during launches
  - See TTCP for security staging areas
- NASA/KSC and Space Florida will coordinate with the contractor for special transport vehicles.





# ENVIRONMENTAL CONSIDERATIONS & COMMITMENTS

- The Department has determined that the project occurs within the known habitat of:
  - Manatees (*Trichechus manatus*)
  - Smalltooth Sawfish (*Pristis pectinata*)
  - Sea Turtles (*Caretta pectinate*, *Chelonia mydas*, *Dermochelys coriacea*, *Lepidochelys kempi*, *Eretmochelys imbricate*)
  - Indigo Snake (*Drymarchon corais couperi*)
- The Department has determined seagrass beds are located within or nearby the project area
- Asbestos Containing Materials (ACM) Identified in the plans
- All permits procured by the Department are posted on the Department's website
- Blasting is prohibited as means for bridge demolition



# UTILITIES AND ITS

- Utilities

- NASA to relocate impacted utilities prior to construction (except power to the existing tender house).
- FP&L has provided a UWS for new power connection for the existing tender house.
  - Contractor will be responsible for making connection.
  - Contractor will provide and maintain a backup generator for tender house operation (TSP T508)

- ITS

- Future project





# PROCUREMENT SCHEDULE

Design Complete May 3, 2021

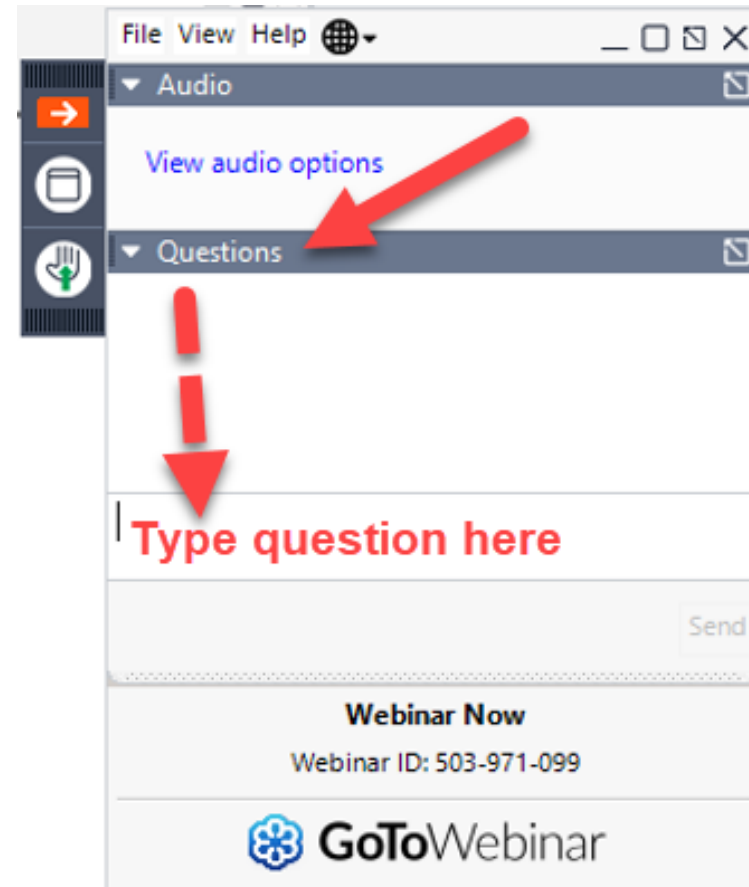
CEI Advertisement May 17, 2021

60-Day Advertisement June 25, 2021

Letting August 25, 2021

# QUESTIONS

Questions?



**THANK YOU**

**Thank you for Attending**

**State Road 405**

**NASA Causeway Bridge Replacement**

**Informational Forum**