



# **SCOPING REPORT**

## PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY

SR 5/US 1/Seven Mile Bridge (Bridge No. 900101) over the Moser Channel  
Monroe County, Florida

FM No. 448207-1-22-01  
ETDM #: 14513

Prepared for:  
Florida Department of Transportation, District Six

**June 2023**

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# 1 Project Introduction

The Florida Department of Transportation (FDOT) District Six prepared this Project Development and Environment (PD&E) Study Scoping Report to support programming a future PD&E Study with Phase 1 Design (30% design plans) to evaluate the potential replacement of the existing Seven Mile Bridge (Bridge #900101) which is located predominantly within unincorporated Monroe County, Florida. State Road (SR) 5/US Highway (US) 1, also known as the Overseas Highway, is an east-west facility that carries traffic from the southern terminus of the Florida Keys to the mainland of Florida. This section of SR 5/US 1/Overseas Highway (US 1) also is included in the Federal Highway Administration America's Byways Program as an All-American Road, designated as the Florida Keys Scenic Highway. US 1 is the only route in and out of the lower keys and serves as the evacuation route. Within the project limits, SR 5/US 1/Overseas Highway is identified as section 90030000 of the State Highway System.

The Seven Mile Bridge extends from MP 8.932 in the west to MP 15.725 in the east. The study area extends from Little Duck Key (MP 8.649) to Knight's Key (MP 16.202), approximately 7.5 miles. The study is predominantly within unincorporated Monroe County, Florida, however the east limits (MP 15.714 to MP 16.202) lie within the City of Marathon, Florida. Figure 1-1 presents the Project Location Map.

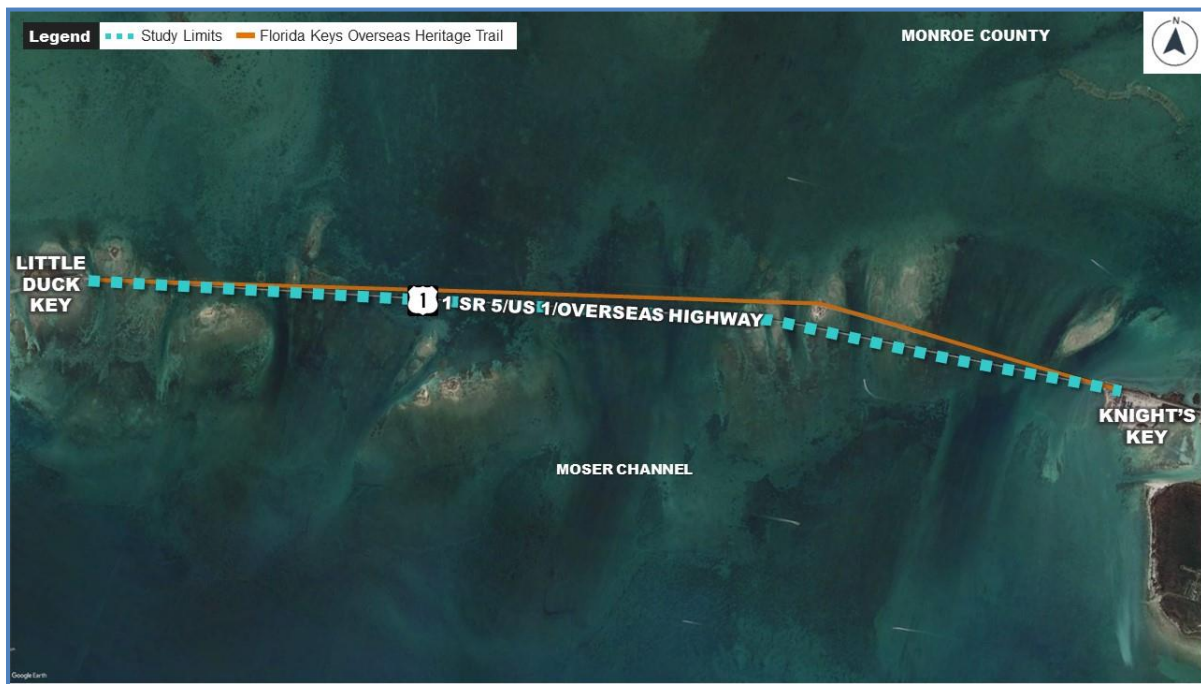


Figure 1-1 Project Location Map

## 1.1 Project Background

The Seven Mile Bridge, constructed in 1982, is a prestressed concrete segmental box girder bridge connecting Knight's Key to Little Duck Key and consists of 266, 135-ft spans for a total length of 35,863.38-ft, approximately seven miles (6.793 miles) as the name suggests. The bridge has undergone several rehabilitations over its life – the latest rehabilitation project, conducted in 2016, remedied several substructure issues with pile jacketing and cathodic protection. The 2020 Bridge Inspection Report rates the bridge Deck as 6, Superstructure as 5 and Substructure as 6, with a

Sufficiency Rating of 49.1 and a Health Index of 74.91. The report also indicates that structural element deficiencies that were previously identified, but not addressed, in the 2016 rehabilitation have worsened and new deficiencies have developed. The 2020 inspection report quantified the following:

- 2,990 deficiencies (cracks, spalls, exposed corroded rebar, etc.) within the interior of the box girder
- 952 deficiencies on the exterior of the box girder
- 283 deficiencies in drilled shafts
- 2,971 Post-Tensioning related deficiencies in the superstructure
- 1,265 deficiencies in the top slab of the bridge.

Based on the condition of Seven Mile Bridge, the Department has decided to replace this bridge.

## 1.2 Project Justification and Study Objectives

As a result of the analyses performed to date including A Life-Cycle Cost Analysis conducted by FDOT in September 2021, the Department determined a PD&E Study is needed to evaluate bridge replacement alternatives to address the structural degradation and substandard design elements of the existing Seven Mile Bridge. The PD&E Study will document the effects associated with a bridge rehabilitation alternative for comparative analysis based on prior evaluations previously noted.

The future PD&E Study will provide an opportunity to analyze multimodal, safety, operational, and other deficiencies along the project limits and evaluate improvement alternatives. A PD&E Study along with Phase 1 Design is being programmed to fulfill FDOT objectives to address the bridge's structural degradation, potential safety and operational concerns, and potential multimodal improvements.

## 1.3 Current Funding

The FDOT 2023-2028 Five Year Work Program reflects funding for the following phases: PD&E phase in Fiscal Year (FY) 2024, Preliminary Engineering in FY 2026, and Right of Way (ROW) in FY 2027. The project is not funded for construction. The project is not listed in the Monroe County 2022-2027 Capital Improvement Plan.

Funding for the repair/rehabilitation of Seven Mile Bridge (FM No. 446231-1) is included in the current FDOT State Transportation Improvement Program and the FDOT 2023-2028 Five Year Work Program with funding for Preliminary Engineering in FY 2023 and construction funded in FY 2026.

# 2 Project Description/Purpose and Need

An Efficient Transportation Decision Making (ETDM) Programming Screen (ETDM No. 14513), along with the Advanced Notification Package, was completed in Spring 2023. The ETDM Screening Summary Report is not yet available. The information within this section is preliminary and includes a project description, logical termini, purpose and need, and status of planning consistency.

## 2.1 Project Description

The following preliminary project description was developed as part of the ETDM Programming Screen.

*This project involves the potential replacement of the SR 5/US 1/Overseas Highway Seven Mile Bridge (Seven Mile Bridge), a prestressed concrete segmental box girder bridge, located within the Florida Keys in unincorporated Monroe County. The bridge is part of State Road 5 (SR 5)/US 1/Overseas Highway, a roadway classified as "Rural Principal Arterial - Other" spanning from Key West to Miami, connecting the Florida Keys to the mainland of Florida. The specific limits of the bridge project extend from Milepost 8.649 (Little Duck Key) to Milepost 16.202 (Knights Key). The project is approximately 7.5 miles in length.*

*Connecting Little Duck Key to Knights Key, the current 35,867-foot-long bridge structure consists of two 12-foot travel lanes (one lane in each direction) with 6-foot paved shoulders on both sides which function as undesignated bicycle lanes. In addition, there are 1.5-foot barriers on each side of the bridge. While no sidewalks exist on either side of the bridge structure or on the approaches, the Florida Keys Overseas Heritage Trail is present on a separate structure (OHT Bridge) located approximately between 40 and 750 feet from the Seven Mile Bridge on the north side. However, the Florida Keys Overseas Heritage Trail is not continuous as sections from the structure have been removed for safety. The approaches to the bridge include two 12-foot travel lanes with shoulders varying in width (0-12 feet) on both sides which are generally marked as bicycle lanes. Crossing over Moser Channel, the Seven Mile Bridge has a vertical clearance of 65 feet and a horizontal clearance of 90 feet. Moser Channel is deemed a navigable waterway by the United States Coast Guard (USCG) and a USCG Bridge Permit will be required.*

*A Life-Cycle Cost Analysis was conducted by the Florida Department of Transportation (FDOT) in September 2021 to evaluate repair/rehabilitation versus replacement of the existing bridge. Based on the findings in the report, bridge replacement is the recommended course of action for the bridge improvements. Alternate alignments parallel to the existing bridge, as well as alternate vertical alignments and structure types, may be evaluated during the Project Development and Environment (PD&E) Study. Wider paved shoulders, additional travel lanes, and enhanced/new bicycle and pedestrian facilities are also to be considered with the improvements. Additional Right of Way may be needed depending on the selected alignment and typical section. Likewise, vessel traffic may be disrupted intermittently as temporary closures of the waterway under the bridge occur during project construction. The existing Right of Way is approximately 150 feet for the southern side of the bridge and varies on the northern side of the bridge with a minimum of 150 feet provided; specific Right of Way requirements for the project will be determined during the PD&E Study.*

## **2.2 Purpose and Need**

The purpose and need for a project provides the basis for developing, considering, evaluating, and eliminating alternatives. The following project purpose and need was developed as part of the ETDM Programming Screen.

*The purpose of this project is to evaluate alternatives to address the structural degradation and substandard design elements of the existing Seven Mile Bridge along SR 5/US 1/Overseas Highway. The project limits extend from Milepost 8.649 (Little Duck Key) to Milepost 16.202 (Knights Key) within the Florida Keys in unincorporated Monroe County. The alternatives will also evaluate improving emergency evacuation/response times and providing enhanced or new bicycle and pedestrian facilities.*

The need for the project is based on the following criteria:

**BRIDGE DEFICIENCIES: Address Structural Degradation & Substandard Design Elements**

The Seven Mile Bridge was constructed in 1982 and has been repaired and rehabilitated since construction. Past superstructure rehabilitations have included epoxy injection due to cracking in superstructure elements and cracking and spall repair due to concrete high chloride content. The latest tests performed by the FDOT State Materials Office Corrosion Research Laboratory, in December 2020, found that the samples taken on the segmental box girders contained significantly high chloride contamination, ranging from 4.8 to 19.2 pounds of chlorides per cubic yard. These values are between 4 to 16 times the threshold of 1.2 pounds of chlorides per cubic yard of concrete, enough to initiate corrosion.

Substructure rehabilitations have been performed on the bridge, the last one being in 2020. The rehabilitation work has typically been comprised of epoxy material injection at cracking in substructure elements, spall repairs due to severe cracking in columns, cathodic protection zinc anode system with integral jackets for drilled shafts and connecting struts, repairs of low-level top columns, replacement of deteriorated composite neoprene pads, and cathodic protection with zinc aluminum spray for footers on high level box columns. Because the Seven Mile Bridge is not transversely post-tensioned, the deck has exhibited cracking since the completion of construction; this deficiency has been addressed by sealing the deck every 10 to 20 years. Past rehabilitation has also included expansion joint replacement using finger joints every 10 to 20 years.

Based on an interim FDOT Bridge Inspection Report conducted in December 2021, the Seven Mile Bridge received a Sufficiency Rating of 49.1 (on a scale of 0-100). The Sufficiency Rating is essentially an overall rating of a bridge's fitness to remain in service. A Sufficiency Rating below 50.0 may qualify a bridge for replacement funding.

The bridge inspection report further examined a number of components and assigned a rank or condition to each. The ranks/conditions were based on a scale of zero (0) through nine (9). A ranking of zero generally means that the bridge is out of service, beyond corrective action, and in need of replacement; a ranking of 9 means that the bridge is in excellent condition and no deficiencies have been identified. The rankings/conditions for components of the bridge examined in the report are as follows:

- Deck: 6 Satisfactory
- Superstructure: 5 Fair
- Substructure: 6 Satisfactory
- Performance Rating: Fair
- Channel: 8 Protected

The Seven Mile Bridge is not considered structurally deficient. Should one of the above rankings go below a five (5) during a future inspection, the bridge would then qualify as structurally deficient.



While the bridge is not considered functionally obsolete, the existing Seven Mile Bridge does not meet current FDOT design standards as it has narrow outside shoulders and lacks inside shoulders as well as bicycle and pedestrian facilities. According to the 2023 Florida Design Manual, the typical section for this type of bridge should feature 12-foot travel lanes and 10-foot outside shoulders.

#### **MODAL INTERRELATIONSHIPS: Accommodate Pedestrian and Bicycle Activity**

While no sidewalks exist on either side of the bridge structure or on the approaches, the Florida Keys Overseas Heritage Trail is present on a separate structure (OHT Bridge) located approximately between 40 and 750 feet from the Seven Mile Bridge on the north side. However, the Florida Keys Overseas Heritage Trail is not continuous as sections from the structure have been removed for safety. The addition of sidewalks and/or bicycle facilities should be considered in the bridge alternatives to allow for the safe continuous movement of pedestrians and bicyclists along the bridge from Little Duck Key to Knights Key.

#### **SAFETY: Improve Evacuation and Emergency Response Times**

Serving as part of the emergency evacuation route network designated by the Florida Division of Emergency Management (FDEM) and Monroe County, SR 5/US 1/Overseas Highway [including Seven Mile Bridge] plays a critical role in facilitating traffic during emergency evacuation periods. The existing 6-foot bridge shoulders do not meet current design standards; they are too narrow to accommodate emergency service vehicles, maintenance vehicles, and/or disabled vehicles. As such, wider paved shoulders (which could be converted to travel lanes in emergency situations) will potentially be considered with the bridge improvements to help facilitate higher traffic volumes during evacuation events and emergency service vehicles during traffic incidents.

## **2.3 Logical Termini**

The study area extends from Little Duck Key (MP 8.649) to Knight's Key (MP 16.202). The study is predominantly within unincorporated Monroe County, Florida, however the east limits (MP 15.714 to MP 16.107) lie within the city of Marathon, Florida. These project limits extend 0.391 miles to the west and 0.382 miles to the east of the bridge limits to accommodate any future transitions to the new bridge.

## **2.4 ETDM Screening**

The proposed project qualifies for ETDM screening because it is a roadway project with a potential bridge replacement. When the ETDM Programming Screening is complete, a Class of Action (COA) determination will be made.

## **2.5 Project Status/Planning Consistency**

Improvements to SR 5/US 1/Overseas Highway Seven Mile Bridge over Moser Channel are included in the FDOT current State Transportation Improvement Program and the FDOT 2023-2028 Five-Year Work Program

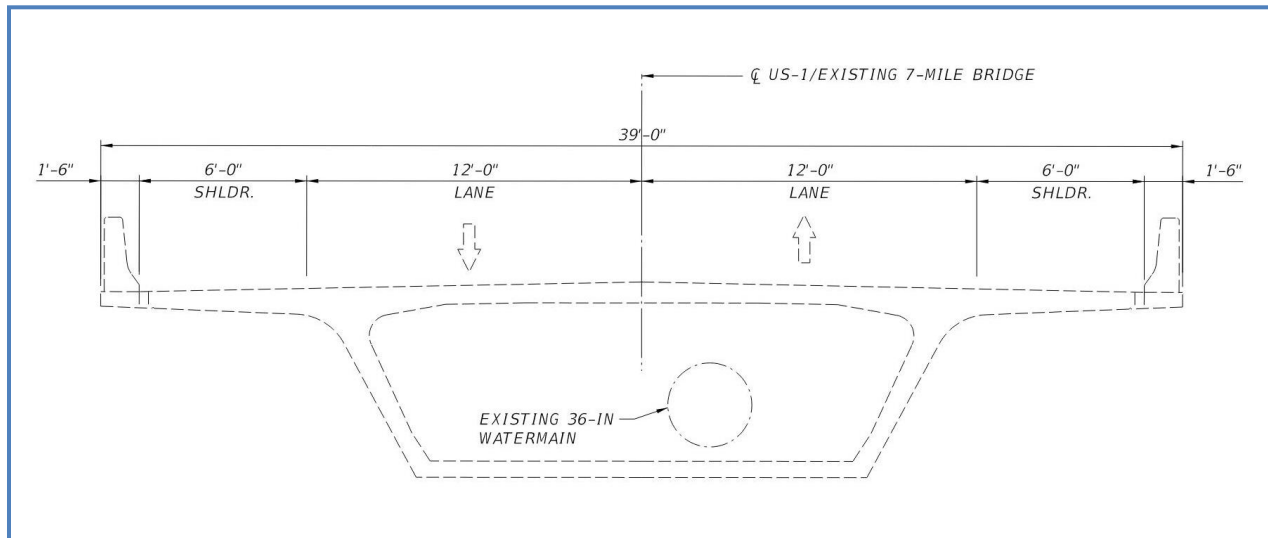
## 3 Engineering Analysis

### 3.1 Data Collection

The existing conditions described in the following sections were obtained by analyzing previous plans and studies, aerial photography, as well as a field visit to the project location in November 2022. Existing plans are included in **Appendix A**.

#### 3.1.1 Existing Seven Mile Bridge

Field review observations, the Straight-Line Diagram (SLD) and as-built plans (FM No. 433381-1) indicate that the current Seven Mile Bridge features two 12-ft lanes with 6-ft shoulders as depicted in **Figure 3-1**.



**Figure 3-1 Existing Seven Mile Bridge Typical Section**

The bridge was built using the span-by-span method of erection with an overhead gantry, external tendons, and dry joints between segments. The bridge substructure includes 239 piers composed of two 3-ft diameter columns connected by a precast strut and 27 vertically post-tensioned box column piers at the high-level spans. The bridge also supports a 36-in diameter water main and other utilities. **Figure 3-2** and **Figure 3-3** show the bridge at low-and high-level spans, respectively.



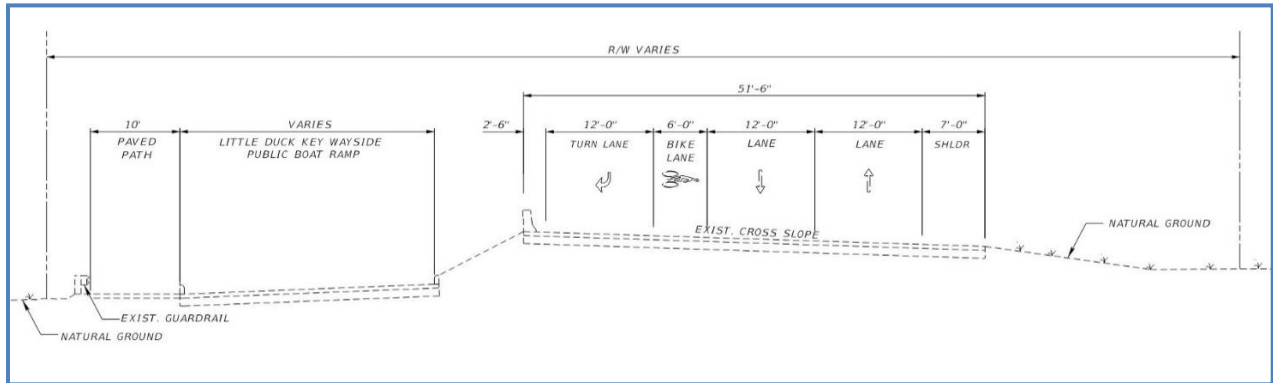
**Figure 3-2 View of Bridge Low Span Section**



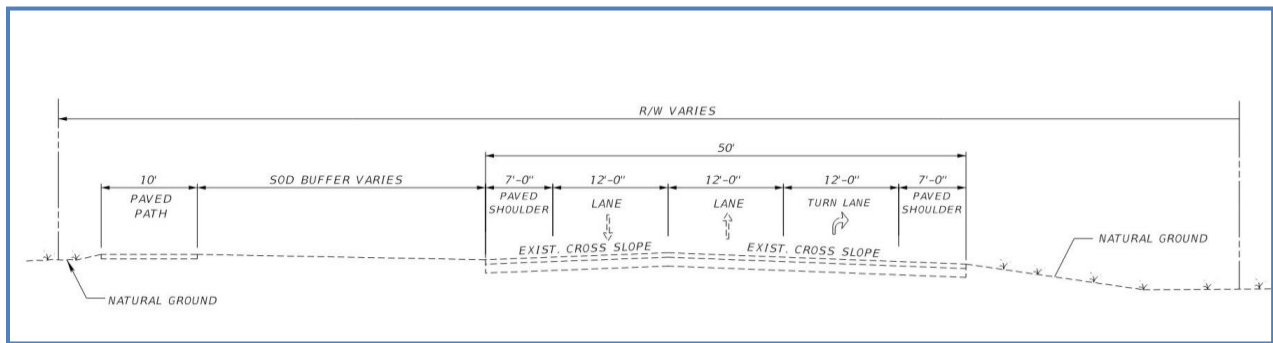
**Figure 3-3 View of Bridge High Span Section**

### 3.1.2 Existing Roadway approaches to Seven Mile Bridge

Per the SLD and field inspection, the approaching roadway typical section on the west terminus of the bridge features two 12-ft travel lanes, 7-ft shoulder on the south side, a 6-ft bike lane and 12-ft turning lane on the north side. The OHT parking area and the Little Duck Key Wayside Park Public Boat Ramp are farther to the north. Farther west, beyond the OHT parking area, the roadway has two 12-ft travel lanes with 7-ft shoulders on both sides and a 12-ft turning lane on the south side. The paved OHT is 10-ft wide and parallel to this segment of US 1 on the north and Veterans Memorial Beach is to the south. The right turn lanes are provided in each direction for access to the parks and the public boat ramp. The existing typical sections for the west end of the bridge approach roadway are depicted in **Figure 3-4** and **Figure 3-5**.

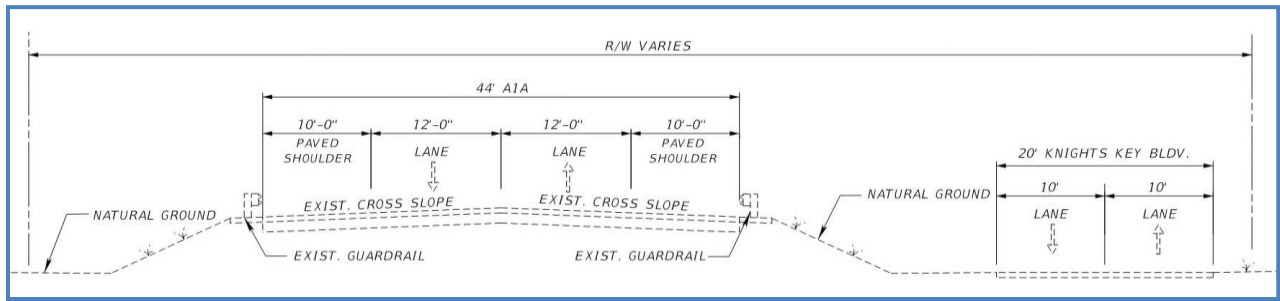


**Figure 3-4 Typical Section: Roadway Approach at Bridge West End**

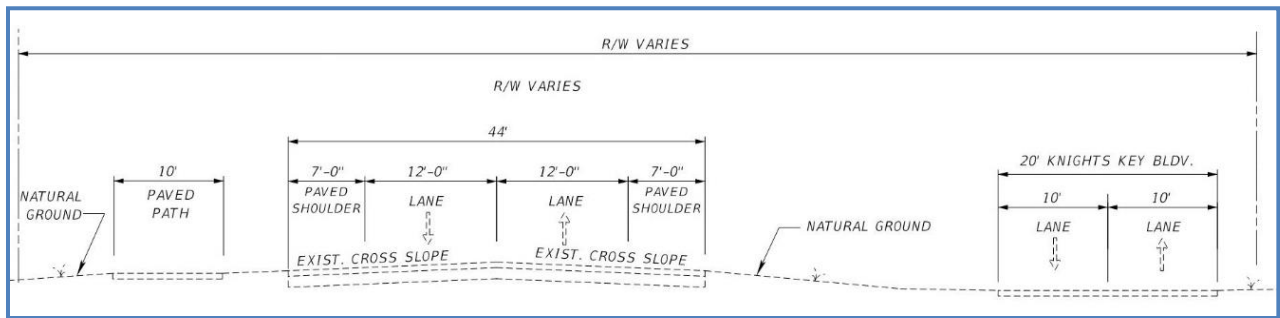


**Figure 3-5 Typical Section: Roadway Farther West Figure 3-6**

At the east side of the bridge, US 1 features two 12-ft travel lanes with 10-ft shoulders on approach to the bridge with guardrail along both sides. Farther east, the paved shoulders narrow to 7-ft. On the north side, the paved OHT is 10-ft wide and parallel to this segment of US 1. The OHT parking area and 7 Mile Bridge Vista Point are farther to the north. On the south side, Knights Key Blvd is parallel to US 1 and is comprised of two, 10-ft travel lanes. The existing typical sections for the east end of the bridge approach roadway are depicted in **Figure 3-6** and **Figure 3-7**.



**Figure 3-6 Typical Section: Roadway Approach at Bridge East End**



**Figure 3-7 Typical Section: Roadway Farther East of Figure 3-6**

### 3.1.3 Existing Right of Way

The existing ROW is approximately 150-ft for the southern side of the bridge and varies on the northern side of the bridge with a minimum of 150-ft provided; specific ROW requirements for the project will be determined during the PD&E Study.

### 3.1.4 Roadway Classifications and Speeds

The project corridor has the following classifications and speed limit:

- Functional Classification: Rural Principal Arterial Other
- Access Classification: 4
- Context Classification:
  - C1-Natural MP 8.649 - MP 15.78
  - C4-Urban General MP 15.78 - MP 16.202
- Design Speed: 70 mph (Per Existing Plans 90030\_3521)
- Posted Speed: 55 mph along the bridge and 35 mph along bridge approaches.

### 3.1.5 Existing Drainage

Based on a review of FDOT's Straight-Line Diagram and a pedestrian field review for SR 5/US 1/Overseas Highway, there are no drainage structures within the project limits. The existing roadside slopes and bridge scuppers direct stormwater runoff from the project corridor into the Moser Channel.

### 3.1.6 Pedestrian and Bicycle Facilities

The approaching roadway shoulders are marked and signed as designated bicycle lanes. However, no bicycle symbol markings are present along bridge shoulders. The OHT is located along the north side US 1 and accommodates pedestrian and bicycle traffic. The OHT utilizes the OHT Bridge structure and is not continuous within the project limits, with several segments of the OHT bridge having been removed.

### 3.1.7 Lighting

There is no existing lighting along the corridor.

### 3.1.8 Utilities

An inventory of the Utility Agency Owners (UAOs) within the project limits was obtained through Sunshine 811 on February 22, 2023 (**Appendix B**). **Table 3-1** presents the UAOs that may be located within the project limits, their respective facilities, and contact information.

**Table 3-1 Utility Agency Owners**

No.	Utility Agency Owner	Facilities	Contact
1	Comcast Cable	Cable Television, Fiber	Ricardo Davidson 786-586-8505
2	FDOT District 6 Intelligent Transportation Systems	Fiber	Thomas Miller 305-470-5757 x7352
3	Florida Keys Electric Cooperative Association	Electric	Bill Lee 305-852-2431 x310
4	Florida Keys Aqueduct Authority Wastewater Lower Keys	Sewer	Marnie Walterson 305-295-2154
5	Florida Keys Aqueduct Authority Area 2	Water	Marnie Walterson 305-295-2154

6	Florida Keys Aqueduct Lower Keys Trans	Water	Marnie Walterson 305-295-2154
7	Florida Keys Aqueduct Authority Technical Service	Electric	Marnie Walterson 305-295-2154
8	AT&T Distribution	Telephone	Dino Farruggio 561-683-2729
9	Keys Energy Services	Electric	Ashlee Townsend Tejada 305-295-1047

### 3.2 Design Criteria and Standards

The design criteria and standards are based on design parameters outlined in the 2011 version of the American Association of State Highway and Transportation Officials (AASHTO) *Policy on Geometric Design of Highways and Streets* (commonly referred to as the “Green Book”) (AASHTO 2011) and the current version of the Florida Design Manual (FDM). **Table 3-2** lists applicable roadway design criteria for the project. Drainage and bridge design criteria will be developed during the PD&E Study.

**Table 3-2 SR 5/US 1/Overseas Highway Design Criteria**

Design Element		FDM Criteria (Current Ed.)	FDM Reference	AASHTO Criteria (2018, 7th Edition)	AASHTO Reference
General	Context Classification	C1	FDOT Context Classification Guide FDM 200, Table 200.4.1	Rural Context	Section 1.3
	Access Classification	Access Class 4	Section 201 Table 201.4.2	--	Section 2.5.3 Page 2-44
	Design Speed	70 mph (C1)	Section 201.5.1 Table 201.5.1	70 mph (C1)	Section 2.3.6 Page 2-22
Typical Section	Travel Lane Widths	12-ft (≥50 mph)	Section 210.2 Table 210.2.1	12-ft	Section 4.3 Page 4-10
	Bike Lane Width	7-ft, buffered	Section 223.2.1.1	4 to 6-ft	Table 9.1 Page 9-8
	Sidewalk Width	5-ft (C1)	Section 222.2.1.1 Table 222.1.1	4 to 6-ft	Section 4.17.1 Page 4-66
	Sidewalk Grade and Cross Slope	5% max 2% max	Section 222.2.1.3	--	--
	Outside Shoulder Width (Full/Paved)	10-ft/5-ft	Section 210.4 Table 210.4.1	10-ft min. 12-ft desired	Section 4.4.2, Page 4-12
Horizontal	Border Width	40-ft (C1, DS: 70 mph)	Section 210.7 Table 210.7.1	5-ft min., 10 feet desired	Section 5.3.2.8 Page 5-18
	Max Deflection without Curve	00°45'00"	Section 210.8.1	--	--

Design Element		FDM Criteria (Current Ed.)	FDM Reference	AASHTO Criteria (2018, 7th Edition)	AASHTO Reference
	Length of Curve	1050-ft	Section 210.8.1 Table 210.8.1	--	--
	Maximum Curvature	05°15'00"	Section 210.9.2.1 Table 210.9.1	--	--
	Minimum Radius SHS	1637-ft	Section 210.8.2.1 Table 210.8.2	--	--
Shoulders	Full Width	15.5-ft	Section 210.4 Table 210.4.1	--	--
	Paved width	8-ft	Section 210.4 Table 210.4.1	--	--

### 3.3 Alternatives to be Considered

The PD&E Study alternatives analysis should consider safety, traffic operations, pedestrians and bicycle accommodations, access management, transportation management plan, roadway geometric considerations, structures and bridge analysis, bridge hydraulics, stormwater management, sea level rise (SLR), utility impacts, geotechnical investigation, constructability, construction impacts, ROW needs, construction cost, Section 4(f)/5(f) resources, and avoidance/minimization of environmental impacts. The following sections describe the proposed typical sections, the No-Action Alternative (or No-Build Alternative) and the proposed Build Alternatives.

#### 3.3.1 Proposed Roadway Typical Sections

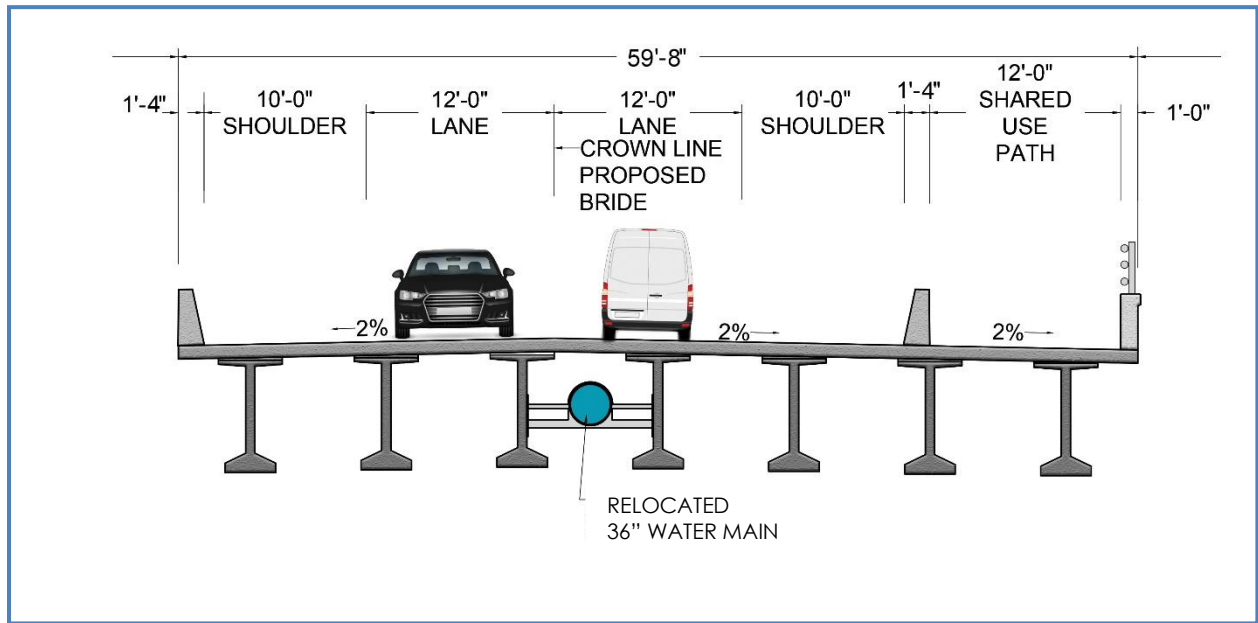
Based on a review of the FDM, the existing roadway typical sections do not meet FDM criteria for shoulder width and existing guardrail. The PD&E Study shall evaluate roadway typical sections to accommodate the proposed bridge improvements, specifically potential roadway widening to harmonize the recommended alignment with the existing roadway. It is estimated that the current lanes at both approaches of the bridges will remain as described above in **Figures 3.4-3.7** and harmonization could stretch to approximately half mile on each bridge end.

#### 3.3.2 Proposed Bridge Typical Section

The proposed bridge typical section includes a two-lane undivided typical section with 10-ft shoulders and a 12-ft shared used path (to be evaluated on either side of the bridge during the PD&E Study) in accordance with current standards. The 12-ft shared used path accommodates bicycle and pedestrian needs since the OHT is not continuous throughout the length of the Seven Mile bridge.

**Figure 3-8** presents the recommended bridge typical section. The girders and relocation of 36-in water main are shown for graphic purpose only. The type of structure and relocation of utilities will be determined during the PD&E study.





**Figure 3-8 Proposed Bridge Typical Section Option**

### 3.3.3 No-Action Alternative

The No-Action Alternative serves as a baseline against which the Build Alternatives are evaluated. The No-Action Alternative is defined as the alternative in which the proposed action would not take place and it remains under consideration throughout the PD&E Study. The No-Action Alternative includes the previously programmed repair and rehabilitation improvements to extend the service life of the existing bridge under FM No. 446231-1. Advantages and disadvantages of the No-Action Alternative are listed below.

#### Advantages

- No construction cost
- No noise impacts due to construction
- No changes to access management
- No disruption of travel patterns
- No environmental impacts due to construction

#### Disadvantages

- Does not address the project's primary purpose and need to address the structural degradation and substandard design elements of the existing bridge
- Does not address the additional project goal to maintain emergency evacuation capabilities

### 3.3.4 Proposed Build Alternatives

Based on the Life-Cycle Cost Analysis (LCCA) conducted on September 2, 2021, bridge replacement was the recommended course of action. Therefore, this Scoping Report is focused on bridge replacement alternatives.

The following sections describe the proposed two bridge replacement alternative alignments to be considered for the PD&E Study, an alignment to the north of the OHT bridge and one to the south of the existing Seven Mile Bridge. Alternatives considered but eliminated are also described in the following sections.

### **3.3.4.1 Proposed Build Alternative 1 – Replace Bridge on Full Offset Alignment to the North**

This alignment alternative would construct the new bridge north of the OHT bridge.

The existing bridge would maintain traffic while the new bridge is constructed.

#### **Advantages**

- Construction can occur while traffic utilizes existing bridge
- No added cost of temporary detour bridge
- New bridge will be constructed in one phase so no additional cost from phased construction

#### **Disadvantages**

- Full shift to the north will create significant challenges for approach roadway tie-in; this may also result in reduced speed because of reverse curves
- Impacts with OHT and parking areas
- Seawalls will be required to contain approach roadway embankment section
- Potential impacts to Pigeon Key
- ROW impacts

### **3.3.4.2 Proposed Build Alternative 2– Replace Bridge on Full Offset Alignment to the South**

This alignment alternative would construct the new bridge south of the existing Seven Mile bridge, which would remain in operation while the new bridge is constructed.

#### **Advantages**

- Construction can occur while traffic utilizes existing bridge
- No added cost of temporary detour bridge
- Less ROW impacts than Build Alternative 1
- Minimal impacts to OHT
- No impacts to OHT bridge
- No impacts to Pigeon Key

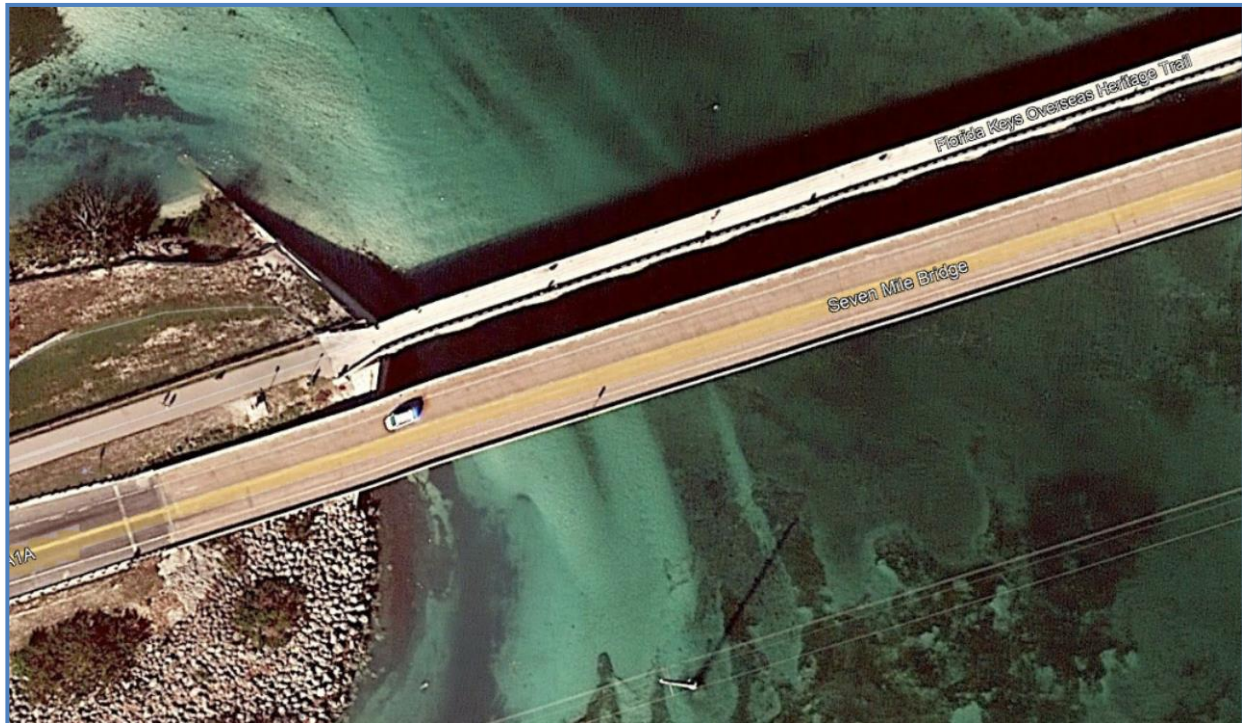
#### **Disadvantages**

- Roadway tie-ins will be challenging because of shift in the alignment
- Less environmental impacts
- Seawalls will be required to contain approach roadway embankment section

### 3.3.4.3 Alternatives Considered but Eliminated

#### 3.3.4.3.1 Reconstruct Bridge Between the OHT Bridge and Existing Seven Mile Bridge

This alignment alternative would consist of building the new bridge between the existing bridges along an alignment that closely follows the existing Seven Mile Bridge. Traffic will be maintained on the existing bridge. Several significant challenges arise at the bridge terminals due to inadequate spacing available between the existing bridges, particularly at the west end where the spacing between them is less than 25-ft as depicted in **Figure 3-9**.



**Figure 3-9 West End of Bridge**

The maintenance of traffic at the bridge terminals will require a complex scheme with the potential need for temporary bridges to shift traffic. Advantages and additional challenges or disadvantages are outlined below. Because of inadequate gap between the two existing bridges, constructability issues relating to barge staging at both ends and potential impacts to the historic OHT bridge, this alternative is not recommended to be evaluated in detail during the PD&E Study.

### 3.3.5 Transportation Systems Management and Operations Considerations

TSMO alternatives are not expected to meet the project's purpose and need to address the structural degradation and substandard design elements associated with the Seven Mile Bridge. However, to comply with the PD&E Manual, the PD&E Study will consider Transportation System Management and Operations (TSMO) alternative in relation of the implementation of the recommended Build Alternative. The TSMO analysis shall be documented in the Preliminary Engineering Report.

## 4 Environmental Analysis

The purpose of the environmental analysis is to identify social, cultural, natural, and physical environment features within the project area to facilitate compliance with the National Environmental Policy Act (NEPA). The environmental analysis will be used to identify potential resource involvement, a discussion of potential impacts, and advise the appropriate agencies of the initial understanding of the social, cultural, natural, and physical resources in the project study area. Anticipated technical reports (e.g., economy, land use, mobility, community and recreational resources, historic and archaeological sites, wetlands, water quality, wildlife and habitat, traffic noise, air quality, and contamination) endangered species surveys, and required permits will also be identified. The project was evaluated using the following resources:

- Efficient Transportation Decision Making (ETDM) Environmental Screening Tool (EST) GIS Layers (contamination; historic and archaeological sites; recreation; wetlands; wildlife habitat; farmlands)
- Florida Department of Environmental Protection (FDEP) - Contamination Locator Map & Solid Waste Facility Locator Map
- Florida Department of Environmental Protection (FDEP) – Aquatic Preserve Map
- National Wetlands Inventory (NWI) Wetland Mapper
- National Marine Fisheries Service (National Oceanic and Atmospheric Administration (NOAA) Fisheries) Essential Fish Habitat (EFH) Mapper
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC)
- National Marine Fisheries Service (NOAA Fisheries) Endangered Species Act (ESA) Mapper
- Audubon Center for Birds and Prey EagleWatch Program
- Audubon Guide to North American Birds
- Federal Emergency Management Agency (FEMA) National Flood Hazard Layer Viewer
- Aerial Photographs using FDOT GIS and Google Earth
- USFWS Environmental Conservation Online System
- Florida Natural Areas Inventory (FNAI)
- Monroe County Transit System-Wide Map
- Monroe County Future Land Use Map
- Environmental Protection Agency's Environmental Justice Tool (EJSCREEN)
- U.S. Census Bureau 2015–2019 American Community Survey (ACS) (ACS 2021)
- The Floristic Inventory of the Florida Keys Online System
- The Institute for Regional Conservation Online System

The database/GIS information within the EST is only applicable to date, due to continual updates of these databases. From this evaluation, the following environmental features were identified that should be considered during preparation of the future project plans.

## 4.1 Social and Economic

### 4.1.1 Socioeconomic Characteristics

The Seven Mile Bridge is part of SR 5/US 1/Overseas Highway, and is the only roadway that connects Knights Key in the Middle Keys to Little Duck Key in the Lower Keys. It is amongst the longest bridges in existence during its construction and consists of two bridges; the modern bridge open to vehicular traffic and the OHT Bridge open only to pedestrians and cyclists. The Seven Mile Bridge carries and supplies water from the Florida Keys aqueduct, in addition to fiber optic cables providing telecommunications, to the lower Keys. The project area is an area of high tourist activity as it is adjacent to the OHT. The Seven Mile Bridge is essential to maintaining the movement of people and goods through the project limits as well as maintain access to tourist destinations, residences, and local businesses on Knights Key and Little Duck Key, and within the lower Florida Keys.

The Seven Mile Bridge locally connects the unincorporated communities of Knights Key and Little Duck Key. A 1,320-ft wide project buffer was used to identify socioeconomic characteristics. Community facilities within the project buffer include the OHT (which is also a Florida Managed Area, state park, Office of Greenways and Trails [OGT] multiuse trail opportunity/hiking trail priority, and part of the SUN Trail Network), one Florida Greenways and Trails System (FGTS) Priority Paddling Trail (Segment 15 of the Florida Circumnavigational Paddling Trail, Florida Keys Overseas Saltwater Paddling Trail), one FGTS Paddling Trail Opportunity (Florida Keys Paddling Trail), Seven Mile Bridge Wayside Park Boat Ramp (39900 Overseas Highway), Pigeon Key Park (44800 Overseas Highway), Veterans Memorial Park (Overseas Highway), and Pigeon Key Historic District Park (1 Knights Key Boulevard).

Demographic information for the project area was obtained from the U.S. Census Bureau 2017–2021 ACS estimates (ACS 2021). One census block group is located within the project buffer. **Tables 4-1 through 4-3** summarize the block group demographics and compares them to the overall demographics of Monroe County. Note that the block group may not be representative of the specific neighborhoods or businesses affected by the project because of the larger size of the block group compared to the 500-ft wide project buffer.

**Table 4-1 Comparison of Race, Ethnicity, and Age**

Race, Ethnicity, and Age	Seven Mile Bridge Study Area %	Monroe County %
White	60.87%	79.94%
African American	0%	7.16%
Other*	38.04%	12.90%
Hispanic	67.39%	25.12%
Not Hispanic or Latino	32.61%	74.88%
Minority Populations	68.48%	35.22%
Under the Age of 18	10.87%	15.50%
Age 18 to 64	65.22%	61.95%
Age 65 and Over	21.74%	22.55%

\* Other includes Asian, American Indian, Native Hawaiian & Other Pacific Islander Alone, Some Other Race, & Two or More Races

**Table 4-2 Comparison of Income, Housing, and Disability**

<b>Income, Housing, and Disability</b>	<b>Seven Mile Bridge Study Area</b>	<b>Monroe County</b>
Median Family Income	\$77,735	\$86,530
Median Household Income	\$67,098	\$73,153
Population Below Poverty Level	4.35%	10.97%
Households Below Poverty Level	7.14%	9.70%
Households with Public Assistance Income	7.14%	2.54%
Mobile Home Units	35	5,050
Multi-Family Units	14	14,909
Owner-Occupied Units	16	20,603
Renter-Occupied Units	26	13,040
Single Family Units	15	33,551
Vacant Units	24	20,056
Median Housing Value	\$231,800	\$613,400
Occupied Housing Units with No Vehicle	9.30%	7.17%
Population 20 to 64 Years with a Disability	3.23%	7.16%

**Table 4-3 Comparison of Education and Language**

<b>Education and Language</b>	<b>Seven Mile Bridge Study Area %</b>	<b>Monroe County %</b>
Less Than 9 <sup>th</sup> Grade	10.26%	3.52%
9 <sup>th</sup> to 12 <sup>th</sup> Grade, No Diploma	6.41%	4.41%
High School Graduate or Higher	8.77%	92.07%
Bachelor's Degree or Higher	10.26%	35.69%
Speak English Well	3.57%	4.46%
Speaks English Not Well or Not at All	46.43%	5.77%
Speaks English Less Than Very Well	51.19%	10.23%

When comparing the social characteristics of the project to that of Monroe County, the project area appears to include higher minority and lower youth populations, as well as a lower median family income. The median family income for the U.S. Census Block Groups composing the buffer area is \$77,735 which is lower than the median family income for Monroe County as a whole (\$86,530).

When compared to Monroe County, the project area includes lower percentages of poverty status populations and a slightly lower population over 65 years of age. Regarding educational attainment, the 500-ft project buffer contains a higher percentage of individuals with less than a 9<sup>th</sup> grade education and a higher percentage of individuals between 9<sup>th</sup> and 12<sup>th</sup> grade when compared to Monroe County. The percentage of the population within the 500-ft project buffer that is a high school graduate, holds a bachelor's degree, or a higher level of education is significantly lower than that of Monroe County.

The block group also contains a higher percentage of populations that do not speak English well or not at all. Public involvement for this project must comply with Title VI of the Civil Rights Act, Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. A Sociocultural Effects Evaluation will be completed during the PD&E.

### **4.1.2 Land Use Changes**

A review of Monroe County's Existing Land Use map indicates that land uses within the 500-ft project buffer along Little Duck Key are a mix of conservation, parks, refuge, and transportation. Land uses within the 500-ft project buffer along Knights Key are a mix of residential, retail/office, public/semi-public, transportation, and vacant/non-residential.

The Seven Mile Bridge is parallel to the OHT and the OHT Bridge which connects to Pigeon Key, a small public/semi-public island intended for recreational use. There are two entrances to the Florida Keys Overseas Heritage Trail within the project buffer, and associated parking areas on Little Duck Key and Knights Key. Pigeon Key can be accessed by boat or from the OHT parking area on Knights Key. Pigeon Key Park (44800 Overseas Highway), Veterans Memorial Park (Overseas Highway), and Pigeon Key Historic District Park (1 Knights Key Boulevard) are also within the project buffer. In addition, the project area is designated as a Tier I (Natural Areas) Overlay District by Monroe County. Tier Overlay District designations were developed between 2005 and 2006 by Monroe County as part of the County's Rate of Growth Ordinance, which is a competitive permit allocation system implemented to provide safe evacuations to residents and preserve environmentally sensitive areas. The project buffer also includes a large area of wetlands along Little Duck Key.

Monroe County's Future Land Use map (Monroe County 2021a) indicates that land uses in and around the Little Duck Key and Pigeon Key are expected to remain similar to existing land uses. Future land use along Knights Key is expected to shift from transportation to conservation and incorporate more residential areas of high density and medium density. Analysis and documentation of potential impacts to land use will be completed during the PD&E.

### **4.1.3 Mobility**

The Seven Mile Bridge is part of SR 5/US 1/Overseas Highway, which is the only roadway providing access between Knights Key and Little Duck Key. SR 5/US 1/Overseas Highway is classified as a Rural Principal Arterial – Other and is a Florida Division of Emergency Management and Monroe County designated evacuation route (FDEM 2021). Additionally, emergency services within and around the project area rely on the Seven Mile Bridge for access to Knights Key and the lower keys through Little Duck Key during emergencies.

There are two bridges in this location; The Seven Mile Bridge which is open to vehicular traffic and the OHT Bridge which is only open to pedestrians and cyclists. The OHT Bridge connects to the Florida Keys Overseas Heritage Trail and from Pigeon Key to the parking areas on Knights Key. Another segment of the OHT Bridge connects to a parking area on Little Duck Key and extends towards Pigeon Key but does not connect to the island. The Seven Mile Bridge does not contain designated pedestrian or bicycle facilities.

There are no bus stops within the project limits, however, the Key West Transit operates the lower keys shuttle which connects Marathon Key to Key West. Additional mobility features within the project area include the OHT Segment 15 of the Florida Circumnavigational Paddling Trail, Florida Keys Overseas Saltwater Paddling Trail, Florida Keys Paddling Trail, and the Seven Mile Bridge Wayside Park Boat Ramp. Further mobility analysis will be completed during the PD&E.

#### 4.1.4 Aesthetic Effects

Aesthetic effects are to be considered during the PD&E because of their effect on community cohesion, community values, and travel experience. This analysis should consider landscaping opportunities and document any impacts to existing vegetation, including the potential removal and relocation of existing vegetation within existing and proposed ROW. Within the project limits, SR 5/US 1/Overseas Highway (including the Seven Mile Bridge) has a federal designation as the Florida Keys Scenic Highway. Pigeon Key Historic District located on Pigeon Key and the historic OHT Bridge, which was repurposed as part of the OHT, is listed in the National Register of Historic Places (NRHP). Viewsheds from the land and water may be affected by changes to the width, alignment, and height of the new bridge. Aesthetic effects resulting from this project will be documented in the Sociocultural Effects Evaluation as part of the PD&E.

#### 4.1.5 Relocation Potential

There are retail/office, residential, and public/semi-public land uses within the 500-ft project buffer. However, the existing SR 5/US 1/Overseas Highway does not directly border residential or non-residential properties as there is transportation ROW on Knight Key within 100-ft of the project corridor. Acquisition of additional ROW may be required from public/semi-public land on Little Duck Key depending on the bridge alternative, however, relocations are not anticipated. Specific ROW impacts will be determined during the PD&E. Bridge design is to be evaluated based on the ability to minimize ROW impacts. A Conceptual Stage Relocation Plan (if necessary) will be completed during the PD&E.

#### 4.1.6 Farmlands

Based on a review of the ETDM EST farmlands layer, there are no agricultural lands or soils classified as Farmlands of Unique Importance within the 500-ft project buffer. This project is not subject to the provisions of the Farmland Protection Policy Act of 1981 because no designated farmlands are within the project vicinity. No further coordination with the National Resources Conservation Service (NRCS) is needed.

## 4.2 Cultural Resources

### 4.2.1 Section 106 of the National Historic Preservation Act

Based upon a review of the ETDM EST, a cultural resource assessment survey (CRAS) was conducted in 2002 along the SR 5/US 1 corridor, except for the Seven Mile Bridge which has never been surveyed. A CRAS was also conducted on Pigeon Key, Little Duck Key, and Knights Key in 2019. The survey resulted in the identification of ten (10) recorded historic structures, one (1) archaeological resource, and three (3) State Historic Preservation Office (SHPO) resource groups (**Table 4-4**).

**Table 4-4. Historic and Archaeological Resources**

Resource	Site ID	NRHP Eligibility
Overseas Highway and Railway Bridges	MO01131	Eligible for NRHP
Pigeon Key Historic District	MO01260	Eligible for NRHP
Knight Key Pier	MO00140	Not evaluated by SHPO



OHT Bridge	MO01230	Eligible for NRHP
Knight Key Bathroom and Scenic Overlook	MO01483	Eligible for NRHP
Veteran's Memorial Park	MO02708	Not evaluated by SHPO
Bridge Foreman's House, Pigeon Key	MO03731	Not evaluated by SHPO
Assistant Paint Foreman's House	MO03730	Not evaluated by SHPO
Bridge Tender's House	MO03727	Not evaluated by SHPO
Assistant Bridge Tender's House	MO03728	Not evaluated by SHPO
Paint Foreman's House	MO03729	Not evaluated by SHPO
Honeymoon Cottage	MO03726	Not evaluated by SHPO
Commissary	MO03725	Not evaluated by SHPO
Section Gang's Quarters/Main Dining Hall	MO03724	Not evaluated by SHPO

The Overseas Highway and Railway Bridges SHPO resource group includes the OHT Bridge (built in 1909 as a railroad bridge and known today as the OHT Bridge), which is NRHP-eligible. The Knights Key Bathroom and Scenic Overlook (MO01483) is also an NRHP-eligible resource. The Veteran's Memorial Park (MO02708), on Little Duck Key, has not been evaluated by SHPO. The Pigeon Key Historic District (MO01260, eligible for NRHP) connects to the Overseas Heritage Trail Bridge and consists of eight (8) recorded historic structures that have not been evaluated by SHPO (MO03731, MO03730, MO03727, MO03728, MO03729, MO03726, MO03725, MO03724). A portion of the OHT Bridge that connects to Pigeon Key has recently undergone a significant restoration project through FDOT.

No tribal resources are documented within the 500-ft project buffer. The modern Seven Mile Bridge, constructed from 1978 to 1982, is nearing historic age. A CRAS evaluation and coordination with the Monroe County Historic Preservation Board, the Office of Environmental Management (OEM) and the SHPO will be required during the PD&E to determine the effects associated with the project design.

#### 4.2.2 Section 4(f) of the USDOT Act of 1966

An evaluation of Section 4(f) regulations of the USDOT Act of 1966 governing the use of publicly owned parks, recreation areas, wildlife and waterfowl refuges, and public or private historic sites was done per 23 Code of Federal Regulations (CFR) 774. Based on a review of the ETDM EST, there are nine (9) public resources within a 500-ft buffer of the corridor that may qualify for Section 4(f) protection:

- Florida Keys OHT (which also is a Florida Managed Area, state park, OGT multiuse trail opportunity/hiking trail priority, and part of the SUN Trail Network)
- One FGTS Priority Paddling Trail (Segment 15 of the Florida Circumnavigational Paddling Trail, Florida Keys Overseas Saltwater Paddling Trail)
- One FGTS Paddling Trail Opportunity (Florida Keys Paddling Trail)
- Seven Mile Bridge Wayside Park Boat Ramp (39900 Overseas Highway)
- Pigeon Key Park (44800 Overseas Highway)
- Veterans Memorial Park (Overseas Highway)
- Monroe County Managed Areas on Little Duck Key
- Pigeon Key Historic District Park (1 Knights Key Boulevard)

Section 4(f) also applies to historic resources which may be found eligible for the NRHP, either individually or as a contributing resource. There is one (1) historic structure and three (3) SHPO resource groups within the 500-ft project buffer. The resource groups are linear resources that consist of the Overseas Highway and Railway Bridges (MO01131), Pigeon Key Historic District

(MO01260), and the OHT Bridge (MO01230). The historic structure eligible for NRHP is the Knight Key Bathroom and Scenic Overlook (MO01483) located at MM47 Overseas Highway. This structure is in poor condition and under evaluation by FDOT for potential removal, which would require further coordination with SHPO. Any work proposed within or adjacent to Section 4(f) resources will require evaluation. Section 4(f) applicability and impacts will be further evaluated during the PD&E.

### 4.3 Natural Resources

#### 4.3.1 Protected Species and Habitat

Based on a review of the ETDM EST and a review of the USFWS IPaC, the project is within the Florida Keys National Marine Sanctuary (FKNMS), a NOAA Marine Protected Area. The project area includes the USFWS Consultation Areas for the several species listed in **Table 4-5**. **Table 4-6** presents the federally listed protected species that have the potential to occur within the 500-ft project buffer.

**Table 4-5 USFWS Species Consultation Areas**

Common Name	Scientific Name	Listing
American Crocodile	<i>Crocodylus acutus</i>	Threatened
Piping Plover	<i>Charadrius melodus</i>	Threatened
West Indian Manatee	<i>Trichechus manatus</i>	Threatened
Roseate Tern	<i>Sterna dougallii</i>	Species of Least Concern
Green Sea Turtle	<i>Chelonia mydas</i>	Threatened
Hawksbill Sea Turtle	<i>Eretmochelys imbricata</i>	Endangered
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	Endangered

**Table 4-6. Federally Listed Protected Species**

Common Name	Scientific Name	Listing
Bachman's Warbler	<i>Vermivora bachmanii</i>	Endangered
Eastern Black Rail	<i>Laterallus jamaicensis ssp. jamaicensis</i>	Threatened
Florida Keys Mole Skink	<i>Plestiodon egregius</i>	Proposed Threatened
Gulf Sturgeon	<i>Acipenser oxyrinchus desotoi</i>	Threatened
Florida Leafwing Butterfly	<i>Anaea troglodyta floridalis</i>	Endangered
Miami Blue Butterfly	<i>Cyclargus thomasi bethunebakeri</i>	Endangered
Bartram's hairstreak butterfly	<i>Strymon acis bartrami</i>	Endangered
Big Pine Partridge Pea	<i>Chamaecrista lineata keyensis</i>	Endangered
Blodgett's Silverbush	<i>Argythamnia blodgettii</i>	Threatened
Cape Sable Thoroughwort	<i>Chromolaena frustrata</i>	Endangered
Everglades Bully	<i>Sideroxylon reclinatum ssp. austrofloridense</i>	Threatened
Florida Pineland Crabgrass	<i>Digitaria pauciflora</i>	Threatened
Key Tree Cactus	<i>Pilosocereus robinii</i>	Endangered
Florida Prairie-Clover	<i>Dalea carthagenensis floridana</i>	Endangered
Florida Semaphore Cactus	<i>Consolea corallicola</i>	Endangered
Wedge Spurge	<i>Chamaesyce deltoidea serpyllum</i>	Endangered

Sand Flax	<i>Linum Arenicola</i>	Endangered
Boulder Star Coral	<i>Orbicella franksi</i>	Threatened
Lobed Star Coral	<i>Orbicella annularis</i>	Threatened
Mountainous Star Coral	<i>Orbicella faveolata</i>	Threatened
Pillar Coral	<i>Dendrogyra cylindrus</i>	Threatened
Rough Cactus Coral	<i>Mycetophyllia ferox</i>	Threatened
Staghorn Coral	<i>Acropora cervicornis</i>	Endangered
Elkhorn Coral	<i>Acropora palmata</i>	Endangered
Goliath Grouper	<i>Epinephelus itajara</i>	Endangered
Smalltooth Sawfish	<i>Pristis pectinata</i>	Endangered
Manta Ray	<i>Mobula birostris</i>	Threatened
American Crocodile	<i>Crocodylus acutus</i>	Threatened
Piping Plover	<i>Charadrius melodus</i>	Threatened
West Indian Manatee	<i>Trichechus manatus</i>	Threatened
Roseate Tern	<i>Sterna dougallii</i>	Threatened
Green Sea Turtle	<i>Chelonia mydas</i>	Threatened
Hawksbill Sea Turtle	<i>Eretmochelys imbricata</i>	Endangered
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	Endangered
Eastern Indigo Snake	<i>Drymarchon couperi</i>	Threatened

The 500-ft project buffer is additionally located in watersheds that contain habitat for Rare and Imperiled Fish such as the mangrove rivulus (*Kryptolebias marmoratus*) and the river goby (*Awaous banana*). According to the Florida Natural Areas Inventory (FNAI), species that have been documented or are likely to occur within the project buffer include the mangrove gambusia (*Gambusia rhizophorae*, vulnerable), the spottail goby (*Ctenogobius stigmaturus*, species of least concern), and the red rat snake (*Pantherophis guttatus*, species of least concern).

The 500-ft project buffer includes NMFS-designated critical habitat for Elkhorn and Staghorn coral and proposed critical habitat for boulder star, lobed star, mountainous star, and pillar corals. The project is also within the NMFS-designated critical habitat for the loggerhead sea turtle (*Caretta caretta*, threatened). There have been documented occurrences of the loggerhead sea turtle and green sea turtle around Veteran's Beach on Little Duck Key, and a total of 28 sea turtle strandings have been documented within the project buffer since 2020. Pigeon Key and many beaches surrounding the area, including Veterans Beach, are documented sea turtle nesting beaches for loggerhead sea turtles, green sea turtles, and leatherback sea turtles. The project area also contains a FWC Wildlife Sensitive Conventional Lighting area for sea turtles along Little Duck Key and a FWC Dark Sky Lighting Recommended Area around both Little Duck Key and Knights Key. Lighting changes resulting from this project will need to be evaluated and coordinated with FWC, USFWS, and other appropriate agencies, while also meeting FDOT criteria as specified in the FDM Section 231.2.1 and the FDOT *Standard Specifications for Road and Bridge Construction* Section 992-2.4.2.

Avoidance and minimization measures should be implemented during design and construction to the greatest extent practicable, and agency coordination will take place to address potential project impacts to the noted species and habitat. A Natural Resources Evaluation (NRE) will be performed to determine potential effects to protected species and habitat from the proposed improvements as part of the PD&E.

### 4.3.2 Wetlands and Other Surface Waters

Based on a review of the ETDM EST, the 500-ft project buffer is primarily marine and estuarine with areas containing non-vegetated wetlands of tidal flats and wetland hardwood forests of mangrove swamps. Submerged state land records indicate that there is submerged and fill marsh land along the underneath of SR 5/US 1. In addition, a strip of submerged land 400-ft wide underneath of the Overseas Heritage Trail Bridge has previously been granted as ROW to the FDOT for the construction of SR 4A. The project is also within the Florida Keys (Special) and FKNMS (NOAA Marine Protected Area) which are designated as Outstanding Florida Waters (OFW).

Best management practices should be followed to mitigate potential impacts to wetlands. Impacts to mangroves and wetlands will require coordination with and permits from federal and state regulatory agencies. Wetland and other surface water impacts will be further evaluated through an NRE, which will be prepared during the PD&E. If any impacts are unavoidable, a Conceptual Mitigation Plan should be developed during the PD&E.

### 4.3.3 Essential Fish Habitat (EFH)

Based on a review of the NOAA EFH mapper, the project is within EFH for several managed species (**Table 4-7**) with Fishery Management Plans (FMP) from the South Atlantic Fishery Management Council (SAFMC).

**Table 4-7 Managed Species**

Common Name	Scientific Name	Life Stage
Bonnethead shark	<i>Sphyrna tiburo</i>	All
Bull shark	<i>Carcharhinus leucas</i>	Juvenile/Adult
Spinner Shark	<i>Carcharhinus brevipinna</i>	Neonate
Caribbean Reef Shark	<i>Carcharhinus perezii</i>	All
Nurse Shark	<i>Ginglymostoma cirratum</i>	Juvenile/Adult
Lemon Shark	<i>Negaprion brevirostris</i>	All
Sailfish	<i>Istiophorus platypterus</i>	Juvenile/Adult
Bluefish	<i>Pomatomus saltatrix</i>	All
Blacktip Shark	<i>Carcharhinus limbatus</i>	All
Tiger Shark	<i>Galeocerdo cuvier</i>	All
Scalloped Hammerhead Shark	<i>Sphyrna lewini</i>	Juvenile/Adult
Blacknose Shark	<i>Carcharhinus acronotus</i>	Juvenile/Adult
Sandbar Shark	<i>Carcharhinus plumbeus</i>	Adult
Great Hammerhead Shark	<i>Sphyrna mokarran</i>	All
Spiny Lobster	<i>Panulirus spp.</i>	All
Snapper Grouper	<i>Lutjanidae and Serranidae spp</i>	All
Corals		All

The project area is also designated as the FKNMS Habitat Area of Particular Concern (HAPC). A benthic survey will be required to document seagrass and other benthic communities in the project area, and guide avoidance and minimization strategies. Impacts to EFH will be further

evaluated through an NRE. If any impacts are unavoidable, a Conceptual Mitigation Plan shall be developed. Coordination with the NOAA Fisheries will be required in accordance with the requirements set forth in the Magnuson-Stevens Fishery Conservation Management Act.

#### **4.3.4 Floodplains**

Based upon a review of the ETDM EST, the project lies within Zone AE and VE of FEMA's 100-year floodplain, and within the 500-year floodplain. While the proposed improvements are not anticipated to affect flood heights or base floodplain limits, minimal involvement regarding floodplains is anticipated because of the Special Flood Hazard Areas within the project buffer. A Location Hydraulic Report and/or Bridge Hydraulic Report will be prepared during the PD&E.

#### **4.3.5 Aquatic Preserves, Outstanding Florida Waters, and Special Designations**

Based upon a review of the ETDM EST and the FDEP Aquatic Preserves Map, there are no aquatic preserves within the project corridor. The 500-ft project buffer is located within the Florida Keys (Special) designated OFW under rule 62-302.700(9)(i) of the Florida Administrative Code (FAC) and the FKNMS resource under Rule 62-302.700(9)(l) of the FAC. Coordination with the FDEP will be required to determine the impact the project will have on these OFW resources during the PD&E.

The Monroe County Managed Public Land located on Little Duck Key is listed as a Trustees of the Internal Improvement Trust Fund (TIITF) land (Site ID: M.USFLHP\*1968). A portion of this land connecting with the Southern portion of the Florida Keys Overseas Heritage Trail is listed with the FDEP Division of State Lands (DSL) and the Florida Forever Board of Trustees (BOT) Projects. The entire Florida Keys Overseas Heritage Trail is listed as State Managed Conservation Lands (FNAI) (Site ID: M.USFLHP\*1257). Additionally, a portion of land located on Knights Key is listed as the Florida Keys Ecosystem with the Florida Forever BOT Project (Site ID: S.USFLHP\*3143).

Impacts to the TIITF land will be further evaluated during the PD&E phase and should be avoided to the greatest extent feasible. Any unavoidable impacts to these areas will need to be coordinated with NOAA Marine Fisheries and the FDEP Acquisition and Restoration Council (ARC), in addition to and separate from the Section 4(f) evaluation. ARC typically requires that replacement lands of a similar nature be provided to offset impacts to state-owned lands at a 1.5 to 1 ratio. The lands mitigation will be in addition to and separate from any mitigation required for natural resource impacts.

#### **4.3.6 Water Quality and Quantity**

Based on a review of the ETDM EST, the project is within the Florida Keys (Special) and the FKNMS which is designated as an OFW. The project has the potential to impact water quality through in-water work activities associated with bridge construction and stormwater discharge during and post-construction. The project is within the jurisdiction of the South Florida Water Management District (SFWMD). SFWMD requires that all projects meet state water quality criteria as set forth in Chapter 62-302, FAC. Water quality criteria for this project will be stringent due to the OFW designations.

In addition, there are no drainage structures within the project limits. The existing roadside slopes and bridge scuppers direct stormwater runoff from the project corridor into the Moser Channel. These features may be altered as a result of the improvements. Permitting and drainage will be further evaluated during the PD&E phase. Best Management Practices (BMPs) must be implemented during construction to minimize impacts to water quality. Impacts to water quality and OFW's will be further evaluated in the drainage report and Water Quality Impact Evaluation during the PD&E phase.

## 4.4 Physical Resources

### 4.4.1 Highway Traffic Noise

Noise sensitive sites within or near the project buffer include Knight's Key Village, the Florida Keys OHT, one OGT Priority Paddling Trail (Segment 15 of the Florida Circumnavigational Paddling Trail, Florida Keys Overseas Saltwater Paddling Trail), and one OGT Paddling Trail Opportunity (Florida Keys Paddling Trail). Knight's Key Village includes Knight's Key Inn (40 Kyle Way West), Isla Bella Beach Resort (1 Knights Key Boulevard), Hawk's Nest Condominium (1 Kyle Way South), and several homeowners. There are no eye clinics, laser facilities, or senior care facilities (features that have a higher propensity to be impacted by noise and vibration effects) reported within the project area. There are no noise barriers located along the project corridor. The bridge design could result in impacts to existing noise sensitive sites within the project area and will be further evaluated during the PD&E. This project may require a Noise Study Report to be completed during the PD&E Study to document potential noise impacts from this project.

### 4.4.2 Air Quality

The project is located in an area designated in attainment for the six air quality pollutants designated in the National Ambient Air Quality Standards provided in the Clean Air Act. Therefore, the Clean Air Act conformity requirements do not apply to the project. Localized air quality impacts may result during construction. No permanent effects to air quality are anticipated. An Air Quality Technical Memorandum is the anticipated level of documentation anticipated for the PD&E.

### 4.4.3 Contamination

Potential sources of contamination within the 500-ft wide project buffer include three (3) FDEP Hazardous Waste Facilities, one (1) FDEP Petroleum Contamination Monitoring Sites, two (2) FDEP Storage Tank Contamination Monitoring Sites, three (3) FDEP Solid Waste Facilities, three (3) United States Environmental Protection Agency (USEPA) Resource Conservation and Recovery Act Regulated Facilities, one (1) Florida Department of Health (FDOH) Likely Septic Sites, and one (1) FDOH Super Act Risk Source.

Given the presence of a former railroad corridor within the project area and the age of the existing bridge, there is a potential for unreported sources of contamination to be encountered during project activities. Considering the proximity of these sources to the project corridor and the potential for unreported sources of subsurface contamination, impacts to the proposed project from existing contamination may exist. During the PD&E, coordination with the FDOT Bridge Maintenance Office will be required prior to the environmental certification to confirm the need for asbestos surveys and/or lead-based paint surveys. If required, FDOT will provide asbestos and metal-based coatings survey services for documentation in the Bridge Development Report. A Contamination Screening Evaluation Report (CSER) will be prepared during the PD&E to document potential sources of contamination and their risk to the project's construction.

### 4.4.4 Navigation

The project crosses the Moser Channel, Gulf Deep Water Spur, and the Florida Shallow Water Spine, which are navigable waterways near Pigeon Key. The proposed vertical and horizontal clearances of the replacement bridge will be evaluated during the PD&E and coordinated with the United States Coast Guard (USCG). No permanent adverse impacts to navigation are anticipated to result from this project. Minimal temporary impacts to navigation are anticipated during temporary waterway closures under the bridge during the project construction phase. The USCG may request that a Bridge Project Questionnaire and/or Navigation Impact Report be prepared during the PD&E Study.

## 4.5 Permits

Potential permits required for the design phase will be identified and documented for the preferred alternative during the PD&E Study. Anticipated Federal permits and coordination include: an Individual US Army Corps of Engineers (USACE) Section 404 Dredge and Fill permit for work in, under, or above surface waters or wetlands; a USACE Section 408 Review to ensure that the proposed project does not compromise the navigational channels for which the Federal Government holds Operations and Maintenance responsibility; USACE coordination and authorization for any geotechnical borings that may be required; and a USCG bridge permit for the new bridge or causeway across a United States navigable waterway. Coordination with the FKNMS will occur through the USACE permitting process. This may either trigger a Letter of Permission or Letter of Authorization after a benthic survey and report has been completed and submitted to this agency.

An Environmental Resource Permit (ERP) from the SFWMD will be required, which may include Submerged Land Lease coordination with the FDEP. A SFWMD permit exemption for the geotechnical borings will be required. A National Pollutant Discharge Elimination System (NPDES) Permit from the FDEP is anticipated to be required prior to construction. A Coastal Construction Control Line Program Permit from the FDEP may be required if any work is proposed within the setback line. A Mangrove Alteration and/or Trimming permit may be required from the FDEP.

Local utility agency owner coordination may include the Florida Keys Electric Cooperative for overhead electric and the Florida Keys Aqueduct Authority for watermain relocation. Any additional permits that may be required will be evaluated during the PD&E.

## 4.6 Potential Class of Action

Based on the project design, the project qualifies for screening through the Efficient Transportation Decision Making (ETDM) process. The Class of Action will be determined following the ETDM Screening. For the purposes of this study, the Class of Action is assumed to be an Environmental Assessment. The class of action will need to be confirmed during the PD&E Study. Any major changes to the scope of the proposed improvements will require reconsideration of the COA.

## 5 PD&E Study and Phase 1 Design Submittals

The following deliverables have been identified for the PD&E Study. FDOT will review the following list and determine which documents are required for the project. It is anticipated that FDOT will use the Statewide Environmental Project Tracker Tool to upload all final submittals and appropriate supporting project files upon completion of technical studies and the environmental document.

### 5.1 PD&E Provisions for Work

- Quality Control Plan
- Project Schedule

### 5.2 Public Involvement

- Public Involvement Plan
- Public Involvement Comment Database
- Agency Coordination Meeting Summaries
- Public Hearing Transcript
- Comments and Coordination Report
- Meeting Agendas, Handouts, Notes, Summaries

### 5.3 Engineering

- Traffic Analysis Methodology Technical Memorandum
- Project Traffic Analysis Report
- Safety Analysis Memorandum
- Preliminary Engineering Report
- Conceptual Drainage Report
- Conceptual Design Plan Set
- Conceptual Signing Plan
- Geotechnical Report
- Typical Section Package
- Transportation Management Plan
- Bridge Analysis Report
- Bridge Hydraulic Report
- Project-level Concept of Operations
- Preliminary System Engineering Management Plan
- Design Variations and Exceptions Package
- Utilities Assessment Package

### 5.4 Environmental

- Environmental Assessment (COA to be confirmed during PD&E Study)
- Sociocultural Effects Evaluation Report
- Cultural Resource Assessment Survey
- Section 106 Determination of Effects/Case Study (if applicable)
- Section 4(f) Determination of Applicability
- Natural Resources Evaluation
- Water Quality Impact Evaluation
- Sole Source Aquifer Checklist
- EPA coordination letter(s)
- Conceptual Mitigation Plan
- Noise Study Memorandum
- Air Quality Technical Memorandum
- Contamination Screening Evaluation Report

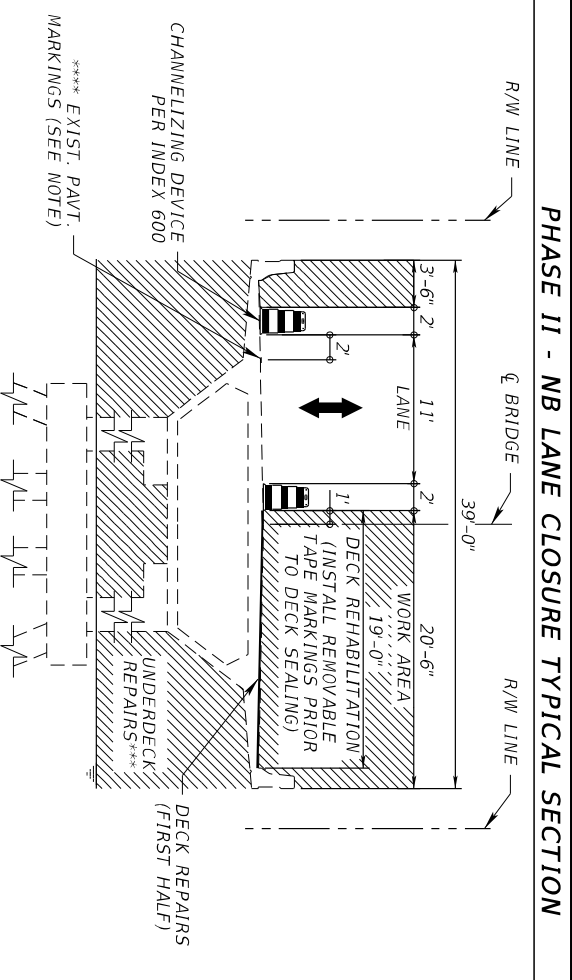
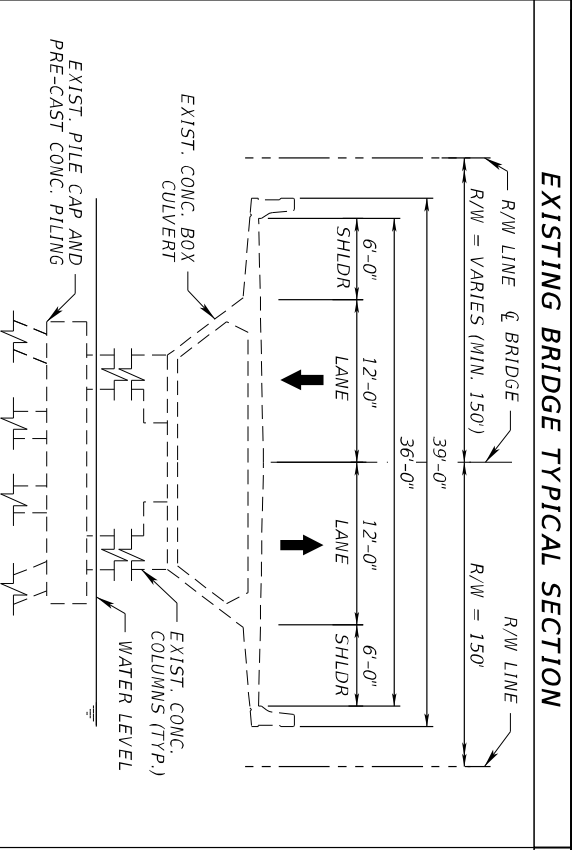


## 5.5 General

- Project Commitments Record
- Planning Consistency Form

# **APPENDIX A**

## **Bridge Plans**



### PHASE II - NORTHBOUND LANE CLOSURE

**PHASE OBJECTIVE:** CONSTRUCT/REHABILITATE FIRST HALF OF BRIDGE DECK

**NOTES:**

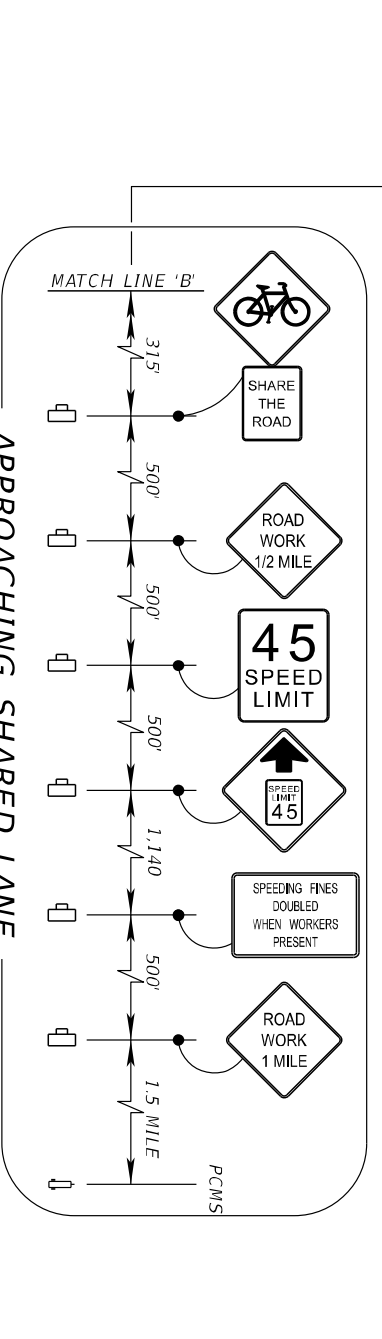
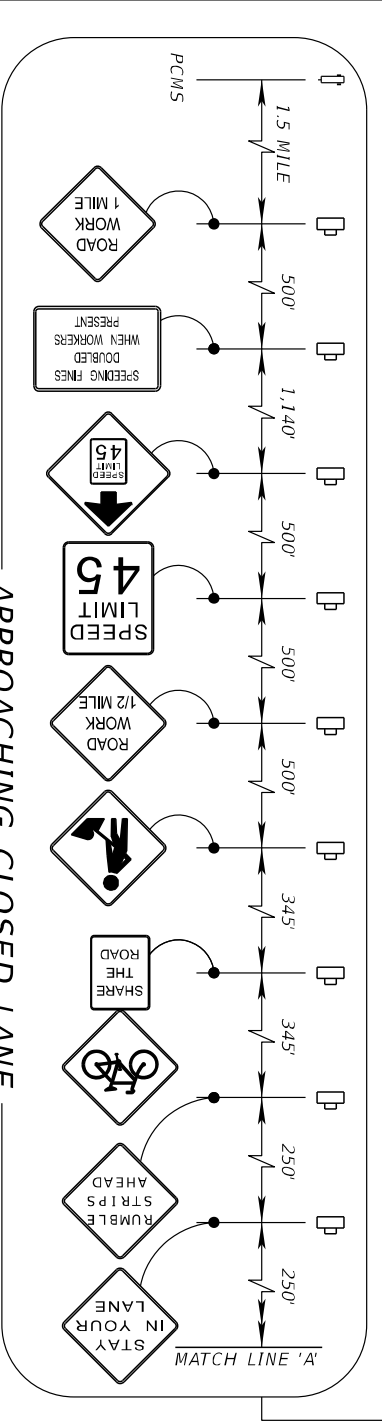
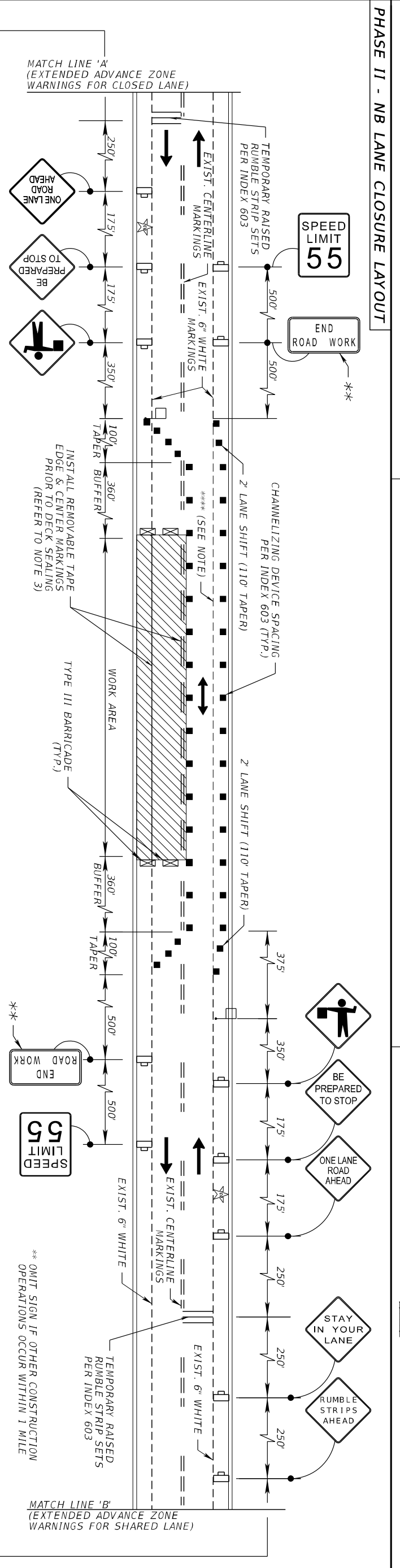
1. INSTALL PCMS USING ADVANCED CONSTRUCTION NOTICE TWO WEEKS PRIOR TO LANE CLOSURE.
2. SET UP NOT WORK AREA. COVER CONFLICTING SIGNS. ADJUST PCMS MESSAGE AND PERFORM NB LANE CLOSURE USING FLAGGERS. GENERAL REQUIREMENTS OF INDEX 603 STILL APPLY.
3. PERFORM SURFACE PREPARATION AS INDICATED ON THE STRUCTURAL DRAWINGS. INSTALL TEMPORARY STRIPING (TAPE) AT FINAL LOCATIONS PER SIGNING AND PAVEMENT MARKING PLANS PRIOR TO DECK SEALING. REMOVE WORK AREA SIGNAGE. ADJUST PCMS MESSAGE AND RE-OPEN CLOSED LANE.
4. UNDERDECK REPAIRS CAN BE ACCOMPLISHED DURING ANY OF THE NOT PHASES PER INDEX 600. CONFLICTING MARKINGS SHALL BE REMOVED IF WORK ZONE DURATION EXCEEDS ONE DAYLIGHT PERIOD

\*\*\* UNDERDECK REPAIRS CAN BE ACCOMPLISHED DURING ANY OF THE NOT PHASES PER INDEX 600. CONFLICTING MARKINGS SHALL BE REMOVED IF WORK ZONE DURATION EXCEEDS ONE DAYLIGHT PERIOD

\*\*\*\*

**LEGEND**

- CHANNELIZING DEVICE (SEE INDEX 600)
- ▨ TYPE III BARRICADE
- ◇ WORK AREA SIGN (FACE)
- WORK AREA SIGN (PLAN)
- ⬇ LANE IDENTIFICATION AND DIRECTION OF TRAFFIC
- ☆ TRAFFIC CONTROL OFFICER
- ▨ WORK AREA



REVISIONS		DESCRIPTION	
DATE	DESCRIPTION	DATE	DESCRIPTION

FERNANDO AMADO-MATEUS, P.E. P.E. LICENSE NUMBER 76201 BOLTON PEREZ & ASSOCIATES 7205 CORPORATE CENTER DRIVE, SUITE 201 MIAMI, FLORIDA 33126 CERTIFICATE OF AUTHORIZATION 7904		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION COUNTY MONROE	
ROAD NO. SR 5		FINANCIAL PROJECT ID 433381-1-52-01	
TEMPORARY TRAFFIC CONTROL PLAN (3 OF 5)		SHEET NO. B1-66	

Exist. Transverse P.T. Tendons  
(Exercise Care to Avoid Damage - Typ.)

Exist. Longitudinal External P.T. Tendons  
(Exercise Care to Avoid Damage - Typ.)

2'-2" - Diaph. Extension  
Non-Shrink Grout Varies (1 1/2" Min.)

Q Bridge (Sym. U.N.O.)

NOTE: Pier cap repairs not shown.  
See Pier 22 Post-Tensioning Retrofit Plans.

6" Dia. Core Hole for Conc. Placement & Grout Venting (Beyond - Typ.)  
3/8" Thk. x 18" Sq. Cover R (Typ.)

2" Dia. Core Hole for P.T. Bar (Typ.)

1 3/8" Dia. P.T. Bar  
(See Note 4 - Typ.)

2-MC12x50 Strongback Beams (Typ.)

Steel Support Weldment (Typ.)

3" Thk. x 18" Dia. Brg. R  
5" Thk. x 16" Dia. Comp. Neop. Brg. Pad

1 3/8" Dia. P.T. Bar (Typ.)

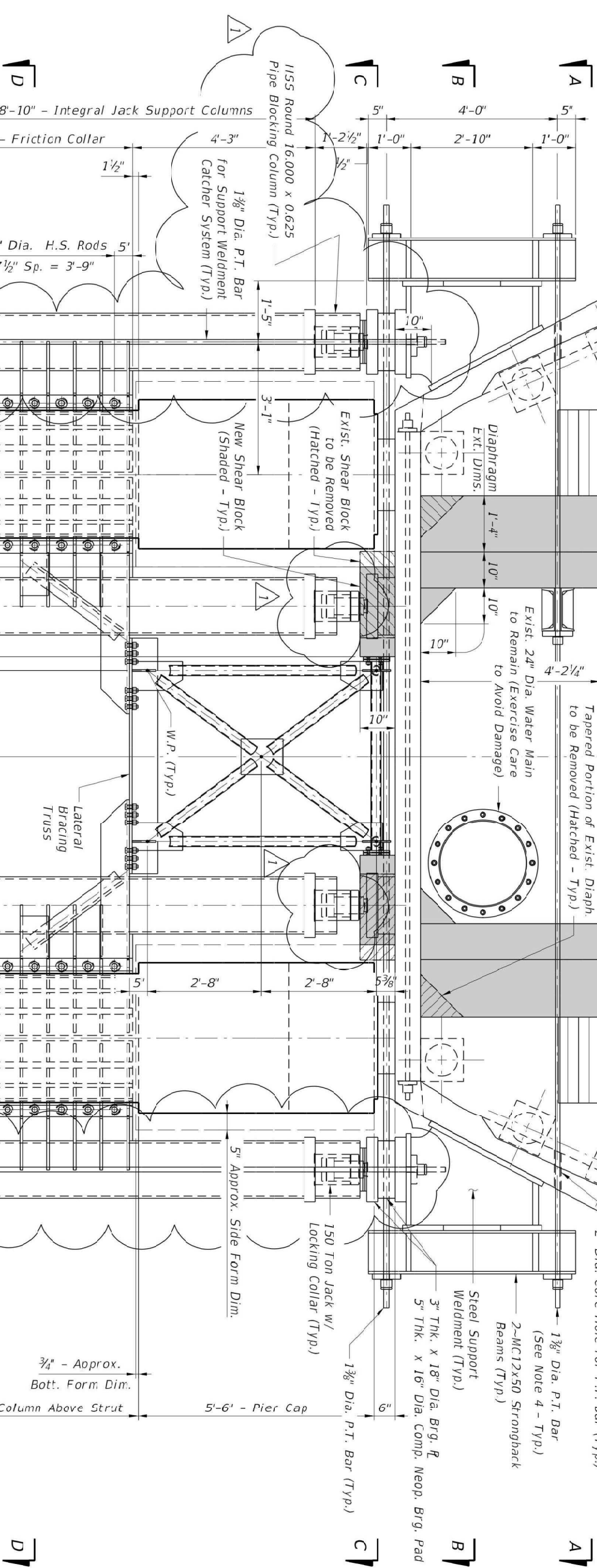
150 Ton Jack w/ Locking Collar (Typ.)

5" Approx. Side Form Dim.

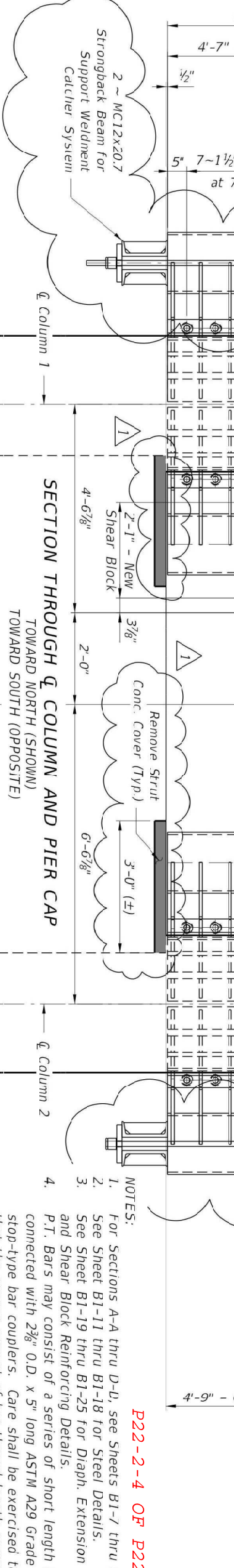
3/4" - Approx. Bott. Form Dim.

4'-9" - Column Above Strut

5'-6" - Pier Cap



SECTION THROUGH Q COLUMN AND PIER CAP  
TOWARD NORTH (SHOWN)  
TOWARD SOUTH (OPPOSITE)



BRIDGE NO. 900101

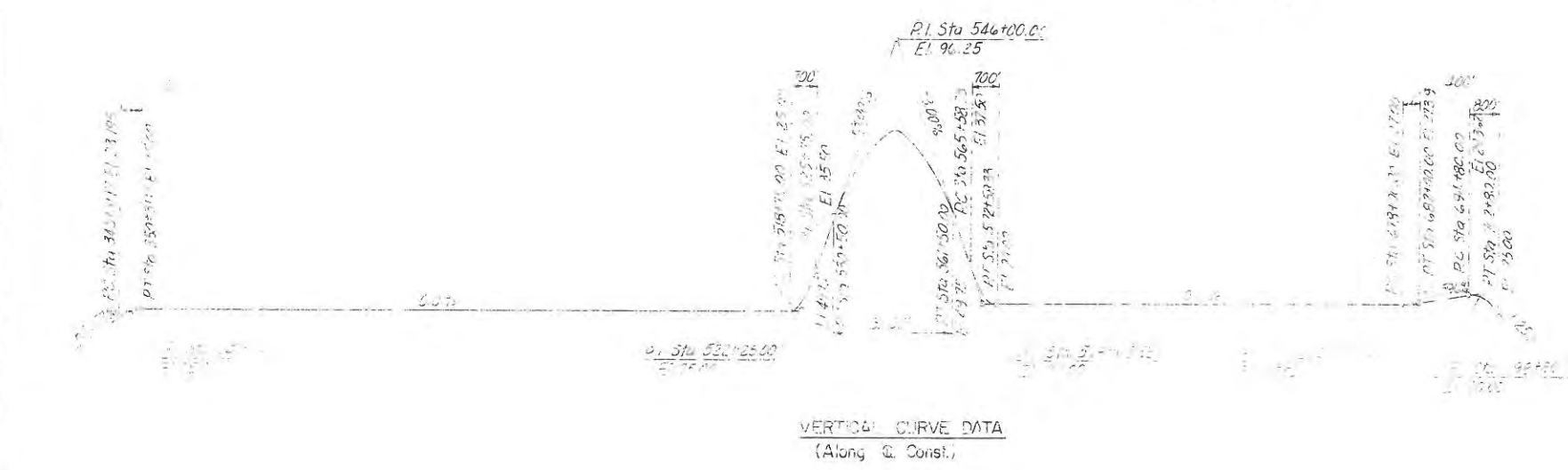
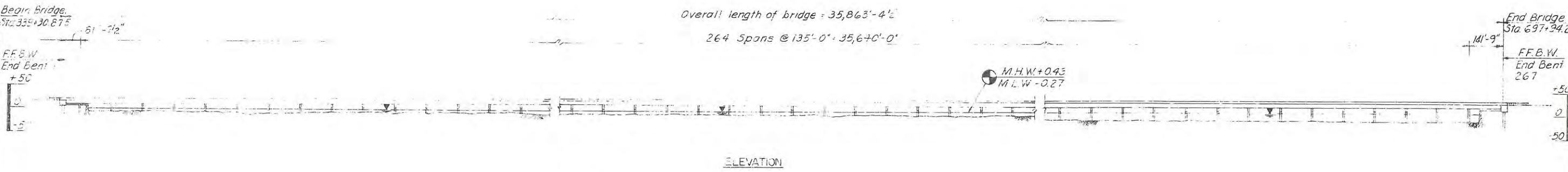
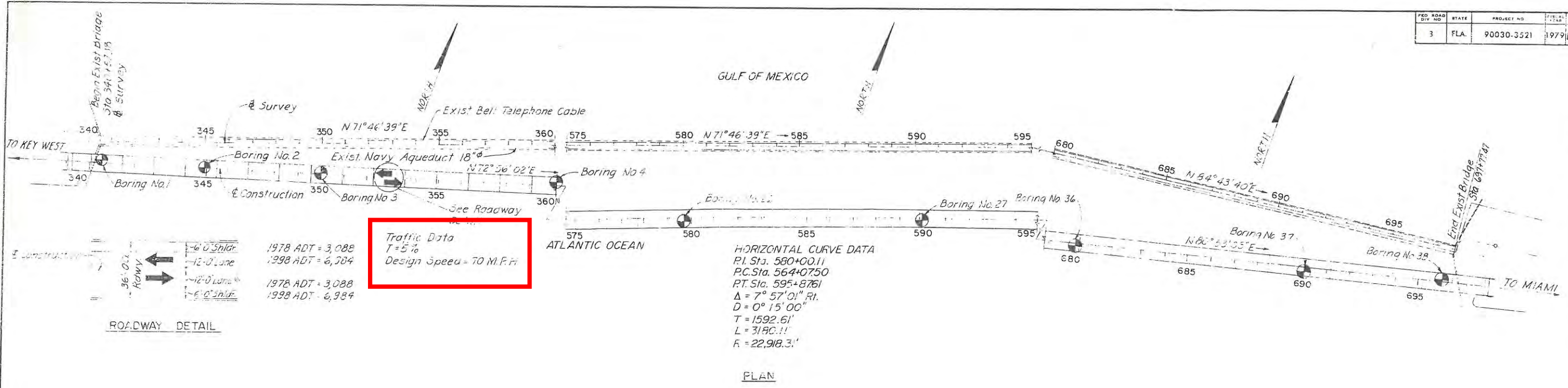
- NOTES:
1. For Sections A-A thru D-D, see Sheets B1-7 thru B1-10.
  2. See Sheet B1-11 thru B1-18 for Steel Details.
  3. See Sheet B1-19 thru B1-25 for Diaph. Extension and Shear Block Reinforcing Details.
  4. P.T. Bars may consist of a series of short length bars connected with 2 3/8" O.D. x 5" long ASTM A29 Grade C1045 stop-type bar couplers. Care shall be exercised to ensure that the proper amount of bar thread length engages each half of the bar coupler.

REVISIONS	
DATE	DESCRIPTION
6/29/20	3Y GCP Add Support Weldment Catcher System and Pipe Column Blacking, Removal of Strut Cover Conc.
12/7/20	2 JR ADDED AS PART OF P22 TSS PACKAGE; P22-2-1 THROUGH P22-1-15

DRAWN BY		DESIGNED BY		CHECKED BY	
GP	18-18	RV	18-18	GMH	18-18
GEOGE PATTON, P.E. P.E. LICENSE NUMBER 45966 HARDESTY & HANOVER, LLC 5110 EISENHOWER BLVD, SUITE 310 TAMPA, FLORIDA 33634 CERTIFICATE OF AUTHORIZATION 29741		SOUTHERN ROAD & BRIDGE, LLC 715 WESLEY AVENUE TARPOON SPRINGS, FL 34689 PHONE: (727) 940-5395 FAX: (727) 499-7158 LICENSE NO. CGC 1521093		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION COUNTY MONROE FINANCIAL PROJECT ID 433381-1-52-01 433381-2-72-01	

PROJECT NAME		SHEET NO.	
SR 5 (OVERSEAS HIGHWAY) OVER MOSER CHANNEL	7 MILE BRIDGE (NO. 900101) REPAIR/REHABILITATION	PIER 22 TSS - GENERAL ASSEMBLY (2 OF 10)	B1-2

FED. ROAD DIV. NO.	STATE	PROJECT NO.	SHEET NO.
3	FLA.	90030-3521	1979/204



SPAN BY SPAN ASSEMBLY  
 PLAN & ELEVATION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
 STRUCTURES

SEVEN MILE BRIDGE

REVISIONS	ROAD NO.	COUNTY	PROJECT NO.
Date: Description:	5	MONROE	90030-3521
Designed by: O.M. 5/78	Checked by: J.D.H. 5/78	APPROVED BY: <i>[Signature]</i>	
Quantity by:	Checked by:	Direct Design Engineer, Structures	
Supervised by: J.D.	Drawn No: 4 of 152	Sheet No: 12850	

FRIG AND MULLER ENGINEERS, INC.

## **APPENDIX B**

### **Utility Design Ticket**

SEVEN MILE BRIDGE REPLACEMENT PD&E SCOPING REPORT  
 Ticket : 053306050 Rev:000 Taken: 02/22/23 14:32ET

State: FL Cnty: MONROE GeoPlace: BIG PINE KEY  
 CallerPlace: BIG PINE KEY  
 Subdivision:

Address : 7  
 Street : SEVEN MILE BRG

Locat: R/W TO R/W ON 7 MILE BRIDGE FROM MP 8.541 TO MP 16.107

:  
 Remarks : IN RESPONSE TO RECEIPT OF A DESIGN TICKET, SSOCOF PROVIDES THE  
 ORIGINATOR OF THE DESIGN TICKET WITH A LIST OF SSOCOF MEMBERS IN THE VICINITY  
 OF THE DESIGN PROJECT. SSOCOF DOES NOT NOTIFY SSOCOF MEMBERS OF THE RECEIPT BY  
 SSOCOF OF A DESIGN TICKET. IT IS THE SOLE RESPONSIBILITY OF THE DESIGN  
 ENGINEER TO CONTACT SSOCOF MEMBERS TO REQUEST INFORMATION ABOUT THE LOCATION OF  
 SSOCOF MEMBERS' UNDERGROUND FACILITIES. SUBMISSION OF A DESIGN TICKET WILL NOT  
 SATISFY THE REQUIREMENT OF CHAPTER 556, FLORIDA STATUTES, TO NOTIFY SSOCOF OF  
 AN INTENT TO EXCAVATE OR DEMOLISH. THAT INTENT MUST BE MADE KNOWN SPECIFICALLY  
 TO SSOCOF IN THE MANNER REQUIRED BY LAW. IN AN EFFORT TO SAVE TIME ON FUTURE  
 CALLS, SAVE YOUR DESIGN TICKET NUMBER IF YOU INTEND TO BEGIN EXCAVATION WITHIN  
 90 DAYS OF YOUR DESIGN REQUEST. THE DESIGN TICKET CAN BE REFERENCED, AND THE  
 INFORMATION ON IT CAN BE USED TO SAVE TIME WHEN YOU CALL IN THE EXCAVATION  
 REQUEST.

\*\*\* LOOKUP BY STREET \*\*\*

:  
 Grids : 2440A8113B 2441A8109A 2441A8110A 2441A8110B 2441A8110C  
 Grids : 2441A8110D 2441B8110A 2441B8110B 2441D8113B 2442C8107A  
 Grids : 2442C8107B 2442C8108A 2442C8108B 2442C8108C 2442C8108D  
 Grids : 2442D8108A 2442D8108B 2442D8108C 2442D8109A 2442D8109B  
 Grids : 2442D8109C 2442D8109D 2442D8110D

Work date: 02/22/23 Time: 14:30ET Hrs notc: 000 Category: 6 Duration: UNKNOWN  
 Due Date : 02/24/23 Time: 23:59ET Exp Date : 03/24/23 Time: 23:59ET  
 Work type: DESIGN Boring: N White-lined: N  
 Ug/Oh/Both: U Machinery: N Depth: UNK Permits: N N/A  
 Done for : DESIGN

Company : STANTEC CONSULTING INC Type: CONT  
 Co addr : 901 PONCE DE LEON BLVD 900  
 Co addr2: 901 PONCE DE LEON BLVD 900  
 City : CORAL GABLES State: FL Zip: 33134  
 Caller : LARISSA FARIA Phone: 305-445-2900 Ext: 2283  
 BestTime: 8 TO 5  
 Email : LARISSA.FARIA@STANTEC.COM

Submitted: 02/22/23 14:32ET Oper: LAR Chan: WEB  
 Mbrs : CC1279 CEC446 FDOT06 FK1295 FK1791 FK1793 FK2331 SBF23

\* Responses are current as of 02/22/2023 02:32 PM

<u>Ex. Circum</u>	<u>Service Area</u>	<u>Utility Type(s)</u>	<u>Contact</u>	<u>Alternate Contact</u>	<u>Emergency Contact</u>	<u>Positive Response</u>
No	COMCAST CABLE CC1279	CATV, FIBER	RICARDO DAVIDSON (786) 586-8505		HFC HELP DESK (855) 962-8525	
No	KEYS ENERGY SERVICES CEC446	ELECTRIC	ASHLEE TOWNSEND TEJEDA (305) 295-1047	MATTHEW ALFONSO (305) 295-1055	MATTHEW ALFONSO (305) 295-1055	
No	FLORIDA DEPARTMENT OF TRANSPORTATION VI ITS FDOT06	FIBER	THOMAS MILLER (305) 470-5757 x7352	IT ADMIN (305) 470-5757 x7340	ANTONIO VALLADARES (561) 703-1113	
No	FLORIDA KEYS ELECTRIC COOPERATIVE ASSOC. FK1295	ELECTRIC	BILL LEE (305) 852-2431 x310	USIC DISPATCH (800) 778-9140	SYSTEM OPERATION & CONTROL (S O C) ** (305) 853-7160	
No	FLORIDA KEYS AQUEDUCT AUTHORITY AREA 2 FK1791	WATER	MARNIE WALTERSON (305) 295-2154	CHRISTINE MALSHEIMER (305) 240-3868	PETER GOMEZ (305) 809-2455	
No	FLORIDA KEYS AQUEDUCT AUTHORITY LOWER KEYS TRANS FK1793	WATER	MARNIE WALTERSON (305) 295-2154	CHRISTINE MALSHEIMER (305) 240-3868	BRENT CRANNEY (305) 809-2600	
No	FLORIDA KEYS AQUEDUCT AUTHORITY TECHNICAL SERVICE- FK2331	ELECTRIC	MARNIE WALTERSON (305) 295-2154	JON STRAUSS (305) 809-2632	REYNER LOPEZ (786) 349-6551	
No	A T & T/ DISTRIBUTION SBF23	TELEPHONE	DINO FARRUGGIO G27896@ATT.COM	UTILIQUEST LLC * (888) 357-1922	AT&T NETWORK OPERATIONS CENTER (800) 247-2020	