PRELIMINARY ENGINEERING REPORT

Florida Department of Transportation

District 1

DESOTO BRIDGE FROM STATE ROAD (SR) 64 (MANATEE AVENUE EAST) TO HABEN BOULEVARD-BRIDGE #130053

Manatee, Florida

Financial Management Number: 442630-1

ETDM Number: 14510

Date 08/05/2025

PROFESSIONAL ENGINEER CERTIFICATION

PRELIMINARY ENGINEERING REPORT

Project: DeSoto Bridge Replacement (SR) 64 (MANATEE AVENUE EAST) TO HABEN BOULEVARD-BRIDGE #130053

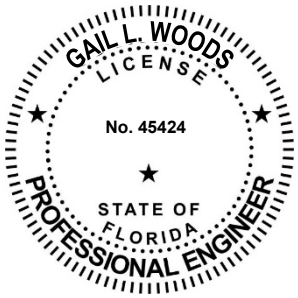
ETDM Number: 14510

Financial Project ID: 442630-1-22-01

Federal Aid Project Number: N/A

This preliminary engineering report contains engineering information that fulfills the purpose and need for the DeSoto Bridge Project Development & Environment Study SR 55 US 301/US 41 from Manatee Avenue East (SR 64) to Haben Boulevard in Manatee County, Florida. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering as applied through professional judgment and experience.

I hereby certify that I am a registered professional engineer in the State of Florida practicing with TranSystems Corporation and that I have prepared or approved the evaluation, findings, opinions, conclusions, or technical advice for this project.



This item has been digitally signed and sealed by **Gail L. Woods, P.E.** on the date adjacent to the seal.

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LIST OF ABBREVIATIONS

Abbreviation	Meaning
AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ACE	Alternative Corridor Evaluation
APE	Area of Potential Effects
BDR	Bride Development Report
BMP	Best Management Practices
CE II	Type Two Categorical Exclusion
CFR	Code of Federal Regulations
CH	Critical Habitat
CMNAA	Central Manatee Network Alternatives Analysis
CRAS	Cultural Resource Assessment Survey
CSER	Contamination Screening Evaluation Report
ERP	Environmental Resource Permit
ETAT	Environmental Technical Advisory Team
ETDM	Efficient Transportation Decision Making
FAC	Florida Administrative Code

Abbreviation	Meaning
FDEP	Florida Department of Environmental Protection
FDM	Florida Design Manual
FDOT	Florida Department of Transportation
FLUCFCS	Florida Land Use and Cover Classification System
FPID	Financial Project Identification
FPL	Florida Power and Light
FY	Fiscal Year
GIS	Geographic Information Systems
ITS	Intelligent Transportation Systems
LDCA	Location Design Concept Acceptance
LEHD	Longitudinal Employer-Household Dynamics
LiDAR	Light Detection and Ranging
LOS	Level of Service
LRE	Long Range Estimate
LRTP	Long Range Transportation Plan
MCAT	Manatee County Area Transit
MHW	Mean High Water
MPH	Miles Per Hour
MPO	Metropolitan Planning Organization
MSE	Mechanically-Stabilized Earth
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRE	Natural Resources Evaluation Report

Abbreviation	Meaning
NRHP	National Register of Historic Places
NSR	Noise Study Report
PD&E	Project Development and Environment
PIP	Public Involvement Plan
PT	Post-Tensioned
PTAR	Project Traffic Analysis Report
RCI	Roadway Characteristics Inventory
ROW	Right-of-Way
SAV	Submerged Aquatic Vegetation
SIS	Strategic Intermodal System
SLD	Straight-Line Diagram
SR	State Road
STIP	State Transportation Improvement Program
SWFWMD	Southwest Florida Water Management District
TIP	Transportation Improvement Program
TSM&O	Transportation System Management and Operations
UAO	Utility Agencies/Owners
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Services
USGS	United States Geological Survey
WBID	Water Basin ID

1.0 PROJECT SUMMARY

1.1 Project Description

The Florida Department of Transportation (FDOT), District 1, is conducting a Project Development and Environment (PD&E) Study in support of the National Environmental Policy Act (NEPA) to evaluate the structural and modal improvements for in-kind replacement alternatives of the Hernando DeSoto Bridge (DeSoto Bridge) along State Road (SR) 55 US 301/US 41 from Manatee Avenue East (SR 64) to Haben Boulevard, covering 1.3 miles of Manatee County. This bridge is one of three north-south crossings of the Manatee River that connect the Cities of Bradenton and Palmetto and is considered navigable waters. With this in-kind bridge replacement, the navigational functions that this bridge serves will not change (see **Figure 1-1**).

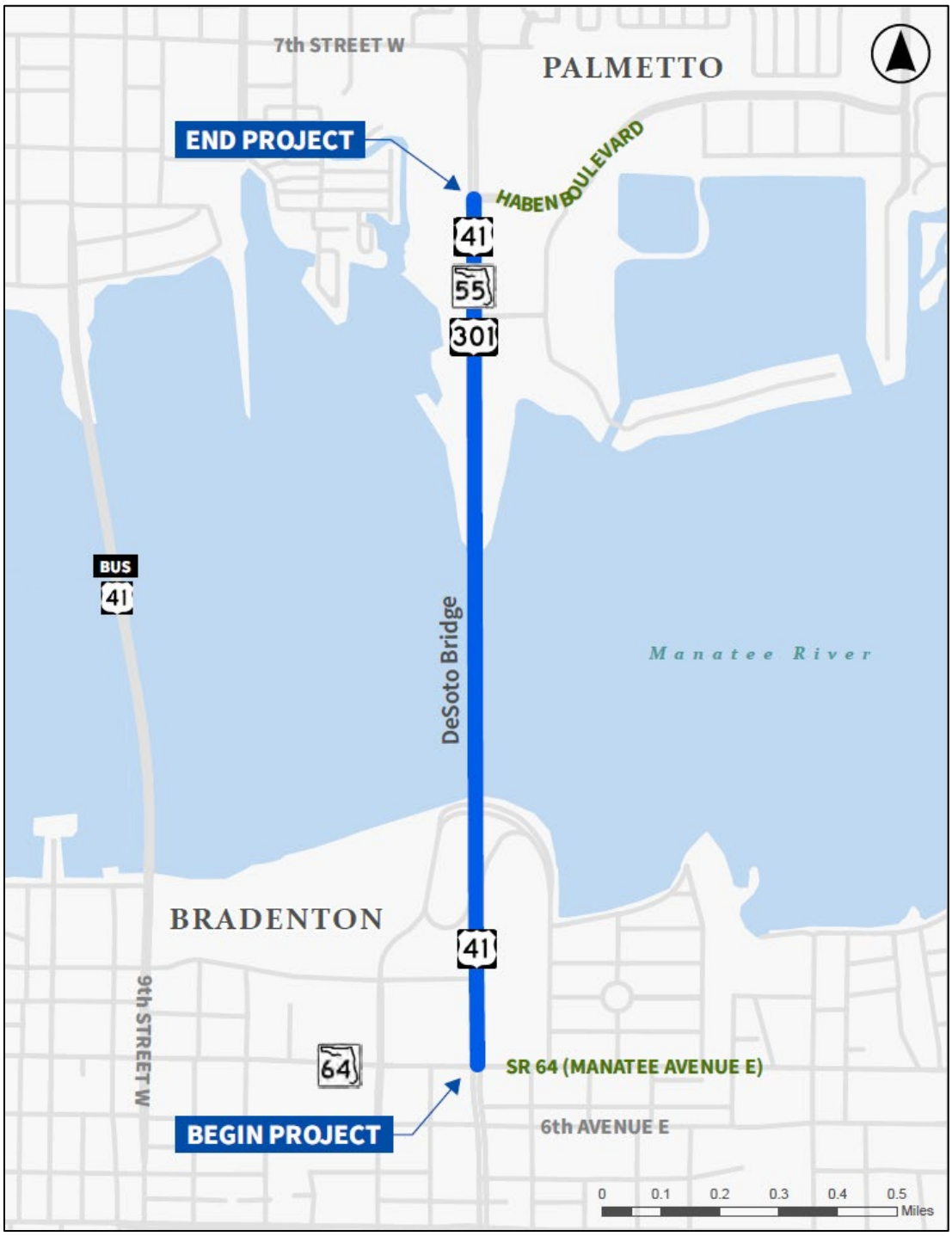
The DeSoto Bridge was originally constructed in 1957. It is one of four bridges in Manatee County (along with Anna Maria Bridge, Cortez Bridge, and Longboat Pass Bridge) that need to be replaced. Each has surpassed its 50-year life expectancy and is experiencing similar advanced corrosion issues, making rehabilitation no longer a feasible option. The bridge is a mid-level fixed structure consisting of two 12-foot travel lanes in each direction (four lanes total) separated by a four-foot median with a concrete Jersey barrier, two-foot outside shoulders, with traffic railings along the outside travel lanes. It is 62 feet-1 inch wide, 2,225 feet long, and consists of 30 concrete spans and three steel main spans. No shoulders or bicycle/pedestrian facilities are present on the bridge, although pedestrians often walk and bike on the traffic railing.

The southerly roadway approach to the bridge includes two 12-foot travel lanes in each direction, with a continuous right-turn lane to Manatee Memorial Hospital and Bradenton Waterfront Riverwalk northbound, and to SR 64 southbound. The traffic is separated by a median traffic separator that transitions to a median barrier wall. There is a short sidewalk segment in the southbound direction from SR 64 to 3rd Avenue West. North of the bridge, the two 12-foot travel lanes in each direction are separated by a raised concrete and/or grass median with left and right turn lanes to the Palmetto Estuary. There is no sidewalk in the northbound direction, except for a small segment in front of the 7-Eleven convenience store at the project's north end. While no transit service operates north-south along SR 55, Manatee County Area Transit (MCAT) Route 3-Manatee Avenue operates along SR 64.

To avoid having all four bridges become structurally deficient simultaneously, which would create challenging mobility issues for the traveling public and an unacceptable work schedule in the geographic area, FDOT District 1 has staggered the replacement of the bridges through a controlled schedule across several years. The DeSoto Bridge has been recommended for replacement as it is expected to be classified as structurally deficient by the year 2030.

The purpose of this study is to address structural deficiencies, system linkages, and modal interrelationships. Construction is scheduled for 2027, and less than an acre of right-of-way (ROW) will be acquired for the project to bring the bridge up to current design standards (such as shoulders and bicycle and pedestrian facilities).

Figure 1-1 - Project Location



FDOT	**DeSoto Bridge Replacement PD&E Study FPID 442630-1 Manatee County**	**Project Location Map**
		July 2024

1.2 Purpose & Need

The purpose of this project is to address the structural degradation and substandard design elements of the existing DeSoto Bridge along SR 55 located between SR 64 and Haben Boulevard within the Cities of Bradenton and Palmetto in Manatee County. Other goals of the project are to 1) maintain a critical link for regional travel and 2) accommodate multimodal activity within the area. The need for the project is based on the following criteria:

PRIMARY NEED:

BRIDGE DEFICIENCIES: Address Continued Structural Degradation and Substandard Design Elements

As noted within the FDOT District One 2023 summary report regarding the condition of the DeSoto Bridge, the bridge has exceeded its design life of 50 years. The bridge superstructure comprises 1950s pre-American Association of State Highway and Transportation Officials (AASHTO) standards post-tensioned (PT) concrete beams reinforced with steel PT bars. These beams have a long history of problems in Florida and are of concern due to their tendency to excessively deteriorate and the possibility of sudden failure. Although corrosion has not substantially affected the anchorage of the bridge beams to date, corrosion has been identified on the beam end anchorage zones. The substructure is also rapidly deteriorating; gunite repairs previously performed on the footers are now failing on 93% of the footers.

In addition, as revealed through an assessment of the bridge conducted by FDOT District One in March 2019 (which included corrosion testing of the concrete bridge material and rate of future corrosion progression), DeSoto Bridge falls on the low end of the fair condition per National Bridge Inspection ratings (with poor, fair, and good serving as the ratings). The substructure elements that were tested exceeded the threshold levels (two to three times) for chloride intrusion and for corrosion potential concentrations. There is evidence that the high chloride contamination levels in the existing concrete are causing recent concrete repairs to fail prematurely; the pier columns and footings have reached a point where repairing concrete materials is no longer an option to provide long-term corrosion control.

The existing DeSoto Bridge does not meet current FDOT design standards due to its lack of the required inside and outside shoulder widths and bicycle and pedestrian facilities. According to the 2024 FDOT Design Manual, the typical section for this type of bridge requires 12-foot lanes, 10-foot outside shoulders, and 6-foot inside shoulders. Sidewalks and/or bicycle facilities need to be considered to allow for the safe movement of pedestrians and bicyclists along the bridge. The lack of inside and outside shoulders on the bridge restricts the ability of drivers to avoid hazards or react to changing driving conditions within the directional travel lanes without causing crashes. In addition, the current bridge configuration constrains emergency and service vehicle access,

particularly during periods of congestion or to accommodate a maintenance vehicle or disabled vehicle to prevent it from obstructing traffic flow.

The project is intended to address the bridge's systemic deterioration and design deficiencies.

SECONDARY NEEDS:

SYSTEM LINKAGE: Maintain a Critical Link for Regional Travel

The DeSoto Bridge is integral to facilitating the movement of regional commuter, visitor, and freight traffic as one of three crossings over the Manatee River on Florida's west coast. According to United States Census Longitudinal Employer-Household Dynamics (LEHD) data, there are a total of 10,633 jobs provided within a quarter mile of the project corridor; 99.7% of these jobs are filled by individuals who commute from outside the area within a quarter mile of the project corridor. As such, much of this workforce/regional traffic (over 30% according to the Central Manatee Network Alternatives Analysis Origin-Destination Study Technical Memorandum) uses the DeSoto Bridge and the other limited number of Manatee River crossings to access the provided jobs. This percentage is anticipated to increase as Sarasota and Manatee Counties are expected to reach a regional population of over 1.1 million by 2050.

In addition, Transform 2045 (the Sarasota/Manatee Metropolitan Planning Organization's (MPO) Long Range Transportation Plan (LRTP)) identifies the safe and convenient crossing of the Manatee River as a major transportation concern. The plan notes that improvements to the river crossings are critical in maintaining access between the region and Tampa Bay. Transform 2045 lists US 301 and US 41 as two of the primary surface transportation routes used to transport goods to and through the region, underscoring the importance of the project link to the local and regional economies and associated transportation networks.

Maintaining and enhancing this regional link allows commuters, visitors, and freight providers to access area jobs, services, tourist destinations, and distribution centers. This connection is also essential for area residents to access essential services north and south of the river.

MODAL INTERRELATIONSHIPS: Accommodate Multimodal Activity

Currently, no pedestrian or bicycle facilities are present on the DeSoto Bridge. The closest crossing of the Manatee River with bicycle and pedestrian accommodation is the Green Bridge (US 41 Business/8th Ave) located 0.5 mile to the west. In addition, no transit service operates north-south on the project corridor; only one Manatee County Area Transit bus route (Route 3-Manatee Avenue) operates along SR 64 (southern project limit), crossing the project corridor twice.

The current population and projected increase in population growth, the concentrated efforts by both cities to invest in and revitalize their respective older central cores, via a designated Opportunity Zone in the City of Bradenton and a Community Redevelopment Area in the City of

Palmetto, and the appeal of destinations within the area to tourists (i.e. Bradenton Area Convention Center and waterfront recreational features) have created latent demand for increased bicycle and pedestrian activity in the area. In addition, an extensive transit-dependent population (consisting of individuals that are low-income under/just at driving age, or otherwise unable to drive, and housing units with no vehicle available) is present at the bridge approaches; this population has a higher propensity to walk, bike, or take transit to access essential services. These identified aspects reinforce the critical need for multimodal transportation options to be provided in the area. Bicycle and pedestrian facilities, potentially included as part of the proposed replacement bridge, are anticipated to enhance multimodal connectivity and access across the Manatee River and help attain local planning goals.

PROJECT STATUS

Within the FDOT 2023-2027 Work Program and current FDOT State Transportation Improvement Program (STIP), $3,070,000 was programmed for the PD&E Study in Fiscal Year (FY) 2023 under Financial Project Identification (FPID) 442630-1, and a total of $184,430,363 is allocated for Design ($6,550,000) in FY 2024, Right-of-Way Acquisition ($8,000,000) in FY 2025, Design Build ($168,430,651), and Post Design Services ($1,449,712) in FY 2027 under FPID 442630-2. The project is also included in the FYs 2022/23-2026/27 Sarasota/Manatee MPO Transportation Improvement Program (TIP). The anticipated Location Design Concept Acceptance (LDCA) is Fall 2024.

1.3 Commitments

FDOT is including the following commitments as part of the project:

1.	The most recent version of the U.S. Fish and Wildlife Services (USFWS)' *Standard Protection Measures for the Eastern Indigo Snake* will be adhered to during construction of the proposed project;
2.	The most recent version of The USFWS' *Standard Manatee Conditions for In-Water Work* will be utilized and adhered to during construction.
3.	The National Marine Fisheries Service (NMFS)' *Protected Species Construction Conditions* will be adhered to during construction of the proposed project;
4.	Updated surveys for Submerged Aquatic Vegetation (SAV) will be conducted during the design phase of the project; The seagrass beds adjacent to the existing bridge in the project's northwest and northeast quadrants will be delineated with buoys to prevent adverse impacts from barges and small work boats during new bridge construction and existing bridge demolition;
5.	Consultation will be re-initiated with NMFS regarding Section 7 and Essential Fish Habitat during the design phase of the project;
6.	FDOT will provide mitigation for impacts to wood stork Suitable Foraging Habitat within the Service Area of a Service-approved wetland mitigation bank or wood stork conservation bank;
7.	If the listing status of the tricolored bat is elevated by USFWS to Threatened or Endangered and the Preferred Alternative is located within the consultation area, FDOT commits to re-initiating consultation with the USFWS to determine the appropriate survey methodology and to address USFWS regulations regarding the protection of the tricolored bat;
8.	Upon listing of the tricolored bat, if the project contains suitable habitat and requires tree trimming and/or clearing, FDOT will not conduct tree trimming/clearing activities during

	the tricolored bat pup season (May 1st to July 15th) and when bats may be in torpor (when temperatures are below 45 degrees Fahrenheit);
9.	Upon listing of the tricolored bat, if the project contains suitable habitat and FDOT needs to trim or clear trees or perform work on bridges/culverts during the maternity season and/or when the temperature is below 45 degrees Fahrenheit, then FDOT will survey the project area for evidence of the tricolored bat. The Indiana Bat and Northern Long-eared Bat Survey Guidance (USFWS), appendix J acoustic survey protocol in the year-round range (mist netting is not being conducted in Florida at this time), will be used for areas with tree trimming/clearing. For bridges and culvers, the Indiana Bat and Northern Long-eared Bat Survey Guidance, appendix K, Assessing Bridges and Culverts for Bats, will be used. a. If the surveys result in no tricolored bats detected, then FDOT can proceed with the project activities. Negative results from bridge/culvert surveys are valid for 2 years. Negative results for acoustic surveys are valid for 5 years. However, negative results for either survey may be invalidated if additional tricolored bat survey data is submitted to FWS showing presence of the species within the vicinity of the project area. Additional survey work by FDOT, or application of the avoidance and minimization measures noted in #4, may be required if updated detections are reported, and may result in reinitiation of consultation with FWS. b. If the surveys result in positive detections of the tricolored bat, FDOT will implement conservation measures such as: not conducting tree trimming/clearing activities during the tricolored bat pup season (May 1st to July 15th) when pups are not volant and not able to escape disturbance; similarly avoid tree trimming/clearing activities when the temperatures are below 45 degrees Fahrenheit when bats may be in torpor and unresponsive to disturbance.
10.	The FDOT is committed to the construction of feasible noise abatement measures at the Aria at Bradenton Apartments upon the following conditions: • *Final recommendations on the construction of abatement measures are determined during the project's final design and through the public involvement process.* • *Detailed noise analyses during the final design process support the need, feasibility and reasonableness of providing abatement.* • *Cost analysis indicates that the cost of the noise barrier will not exceed the cost reasonable criterion.* • *Community input supporting locations of the noise barrier is provided to the District Office.*

	• *Safety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed and any conflicts or issues resolved.*

1.4 Alternatives Analysis Summary

An alternatives analysis process consists of developing, evaluating, and eliminating project alternatives based on the project's purpose and need. This process also considers engineering and environmental factors, along with public and stakeholder input. This document presents the no-build alternative, West Alternative, and East Alternative.

THE NO BUILD ALTERNATIVE:

Under the provisions of NEPA, the effects of not implementing the proposed action must be considered in the decision-making process. The No-Build (or No-Action) Alternative also serves as the baseline for comparing the impacts of the Build Alternative.

Under the No-Build Alternative, the Department will continue maintaining and repairing the aging DeSoto Bridge. This option preserves the existing typical section and does not include bridge replacement. While it avoids the costs of designing and constructing a new bridge and has no environmental impact, it presents financial and operational challenges. Maintenance becomes increasingly expensive and disruptive over time, requiring continuous funding for both design and construction efforts to keep the aging bridge functional.

The No-Build Alternative is inconsistent with the Sarasota/Manatee County MPO 2045 LRTP. Additionally, the No-Build Alternative does not meet the project purpose and need, including the need to: address continued structural degradation and substandard design elements, and accommodate multimodal activity.

BUILD ALTERNATIVES

The West Alternative proposes a new 4-lane bridge, with SR 55 being designed west of the existing DeSoto Bridge structure. The differences between the East and West alternatives are relatively minor; however, the West Alternative impacts an additional commercial parcel. This parcel, owned by the City of Bradenton, is located on the south side of the Manatee River along the west side of SR 55. Encroachment would affect multiple parking spaces, potentially reducing activity for nearby businesses. Furthermore, the West Alternative results in a Section 4(f) impact adjacent to the City of Bradenton's Waterfront Riverwalk on the south side, as well as diminishing the green space available to utilize best management practices (BMP) for drainage attenuation. Meanwhile, the East Alternative will avoid the right-of-way encroachment to the commercial parcel's parking while avoiding and minimizing the impacts to the recreational activities on the south end of the bridge during construction.

The East and West alternatives, along with their proposed typical sections, were presented at public meetings, outreach events, small group meetings, and presented to agencies. Public meetings, both in-person on October 17 and virtual on October 19, 2023, gathered feedback that generally favored the addition of wide shoulders and bicycle/pedestrian facilities as shown in the

proposed bridge's typical section. While some comments expressed a preference for constructing the new bridge to the west of the existing structure, many attendees indicated no preference between the East and West Alternatives. The written comments received did not reveal a clear preference for either alternative. The east alternative was selected over the west alternative based on several key factors. The west alternative would require right-of-way from the City of Bradenton, resulting in a Section 4(f) impact on the Bradenton Riverwalk Park and potentially affecting the Palmetto Estuary Trail west of SR 55. It would also reduce the area available for implementing stormwater Best Management Practices in the drainage design. Additionally, no objections to the preferred east alternative were received during the public hearing.

The costs estimate for the East and West Alternative are not a deciding factor because the total difference is approximately $2,318,145 (less than 0.02 percent of the total project cost of more than $172,816,553).

1.5 Description of Preferred Alternative

The East Alternative is the Preferred Alternative, which involves shifting SR 55 east of the existing bridge to construct a new mid-level fixed bridge over the Manatee River. As depicted in **Figure 1-2**, the proposed roadway's typical section, from SR 64 to the beginning bridge, will include two 12-foot travel lanes in each direction. These lanes will be separated by a median barrier wall, featuring 10-foot inside shoulders and Type F curb & gutter on the outside lane. North of the bridge, the typical section transitions to include a 22-foot raised median with Type E curb & gutter and 4-foot inside shoulders, and a 6-foot-6-inch outside shoulders, with Type E curb & gutter in **Figure 1-3**. Pedestrian features will include a 12-foot-wide shared-use path on the west side, while the east side will feature a sidewalk from SR 64 to south of the bridge, and a 12-foot-wide shared-use path from south of the bridge to Haben Boulevard. The typical section north of the bridge will require a design variation for lateral offset from the travel lane to the shared-use path. This alternative will also require approximately 0.6 acres of new right-of-way.

The preferred bridge will meet United States Coast Guard (USCG) minimum vertical clearance requirements of 40 feet for a mid-level fixed bridge, which is similar to the existing bridge. As shown in **Figure 1-4**, the proposed bridge will have two 12-foot travel lanes in each direction, 10-foot inside shoulders, 12-foot outside shoulders, and a 12-foot shared-use path on each side. The pedestrians and bicycles will be protected by a raised barrier and railing.

The preferred alternative involves a strategic shift, which is necessary to allow for the construction of the northbound half of the bridge while maintaining traffic flow on the existing bridge. This approach ensures that all lanes will remain open to traffic during peak travel times, minimizing disruptions during the anticipated 3½ year construction schedule. Once this phase is complete, traffic will be shifted to the newly constructed section, allowing for the demolition of the existing

bridge and the construction of the remaining southbound half. This project is designed to tie into the existing alignment and roadway typical section at both ends.

The design and posted speed limits for the Preferred Alternative will also be 45 miles per hour (mph) from the beginning of the project to the beginning of the bridge, then 50 mph across the bridge to the end of the project.

Figure 1-2 – Preferred Typical Section South of Manatee River

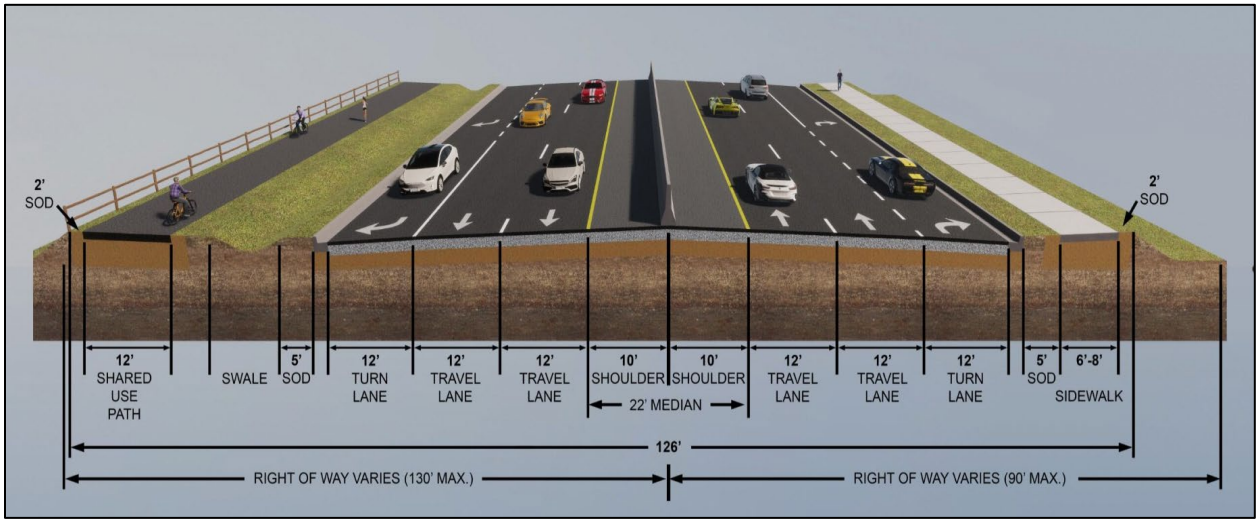


Figure 1-3 – Preferred Typical Section North of Manatee River

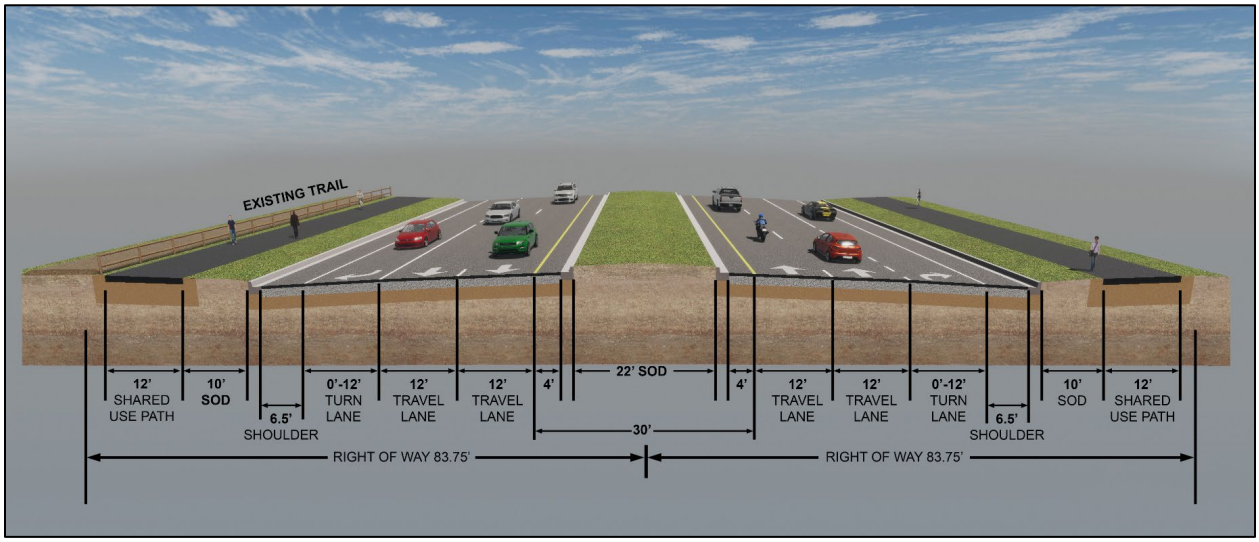
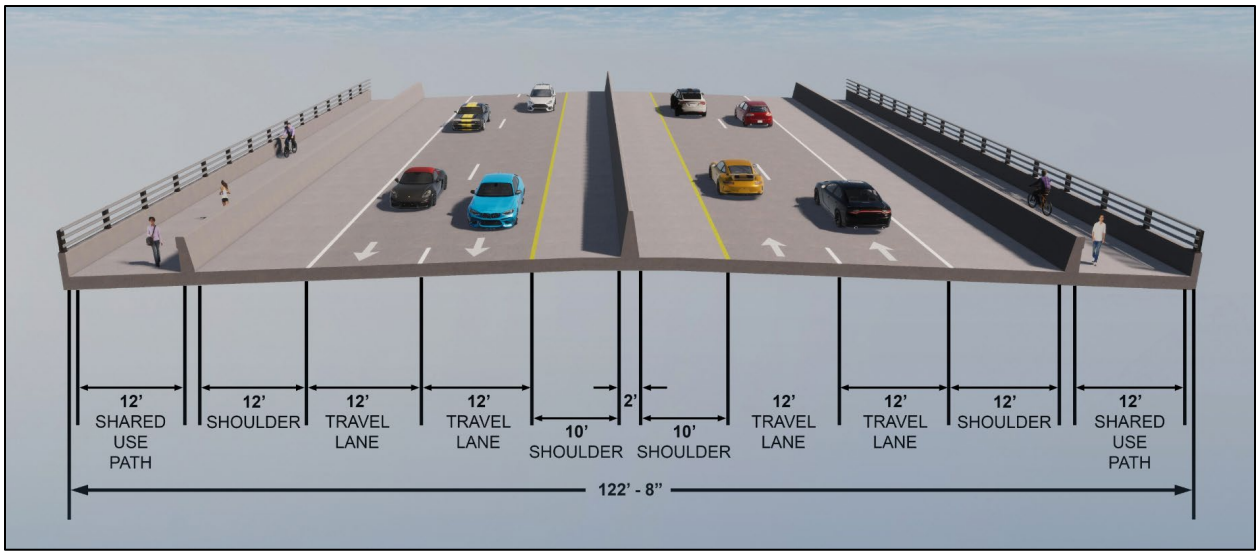


Figure 1-4 – Preferred Bridge Typical Section



1.6 List of Technical Documents

The following technical reports, documents, engineering, and environmental studies and analyses were conducted as part of the PD&E Study phase:

Public Involvement

- Public Involvement Plan (PIP) (June 2023)
- Public Hearing Transcript (April 30, 2023)
- Comments and Coordination Report (May 2025)

Environmental

- Type 2 Categorical Exclusion (May 2024)
- Natural Resources Evaluation Report (NRE) (March 2024)
- Contamination Screening Evaluation Report (CSER) (April 2024)
- Cultural Resource Assessment Survey (CRAS) (February 2024)
- Noise Study Report (NSR) (June 2024)

2.0 EXISTING CONDITIONS

The existing conditions summarized below for SR 55 within the project limits were identified from GIS data, available as-built construction plans, FDOT Roadway Characteristics Inventory (RCI), straight-line diagrams (SLD), right-of-way maps, field reviews, survey information, and as documented in supporting technical studies and reports.

2.1 Previous Planning Studies

In 2017, FDOT District 1 conducted the Central Manatee Network Alternatives Analysis (CMNAA) Study in partnership with the Sarasota/Manatee MPO, Manatee County, and the Cities of Palmetto and Bradenton. The goal was to identify and program a series of transportation projects to improve local and regional mobility for all users while supporting the long-term multi-modal vision for the Cities of Bradenton and Palmetto. The final study, released in May 2019, recommended the replacement of the DeSoto Bridge and further analysis of the six corridors identified in the CMNAA study. One of the corridors under consideration is the SR 55 corridor, which includes the DeSoto Bridge. This analysis will be conducted in the Bradenton-Palmetto Connector Alternative Corridor Evaluation (ACE) Study to address capacity, regional mobility, and multi-modal concerns within the Cities of Bradenton and Palmetto.

2.2 Existing Roadway Conditions

The existing posted and design speed is 50 miles per hour. The surrounding land uses are comprised of commercial, retail, institutional, community recreational areas, high-density residential, and undeveloped/open land. The study area also contains uplands, wetlands, and the Manatee River Estuary. The City of Bradenton designates the areas within the study area and within its jurisdiction as Urban Central Business District according to the 2010-2030 Future Land Use Map. The portion of the project that falls within the jurisdiction of the City of Palmetto designates areas within the study area as Public Use and Planned Community according to their respective future land use map.

2.2.1 Roadway Typical Sections

The existing SR 55 typical section south of the bridge is a four-lane, divided urban roadway with 12-foot travel lanes, continuous right turn lanes, and a median separator that transitions to a median barrier with Type F curb & gutter. There is a sidewalk along the west side from SR 64 to 3rd Street West, and the right-of-way varies from 106-foot to 206-foot right-of-way - see **Figure 2-1**. North of the bridge, the typical section changes to a rural roadway with five-foot paved outside shoulders. There is a 22-foot median with a Type E curb & gutter. The right-of-way is 130 feet. There is a sidewalk in front of the 7-Eleven Convenience Store near Haben Boulevard, see **Figure 2-2**.

Figure 2-1 - Existing Typical Section - South of Bridge

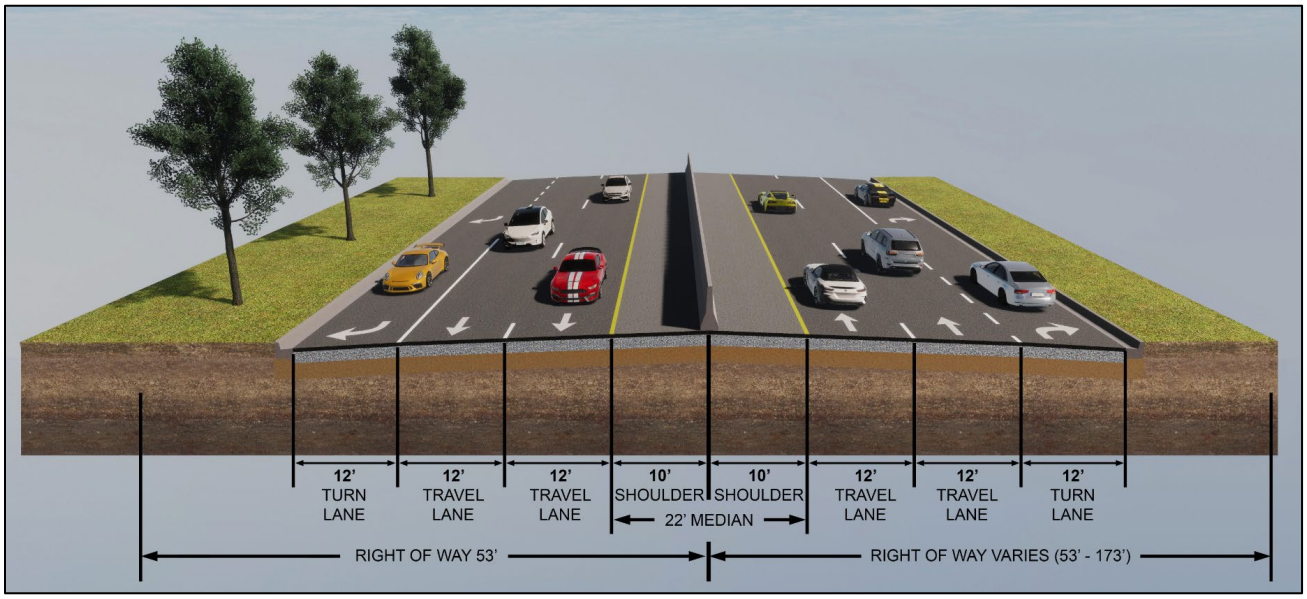
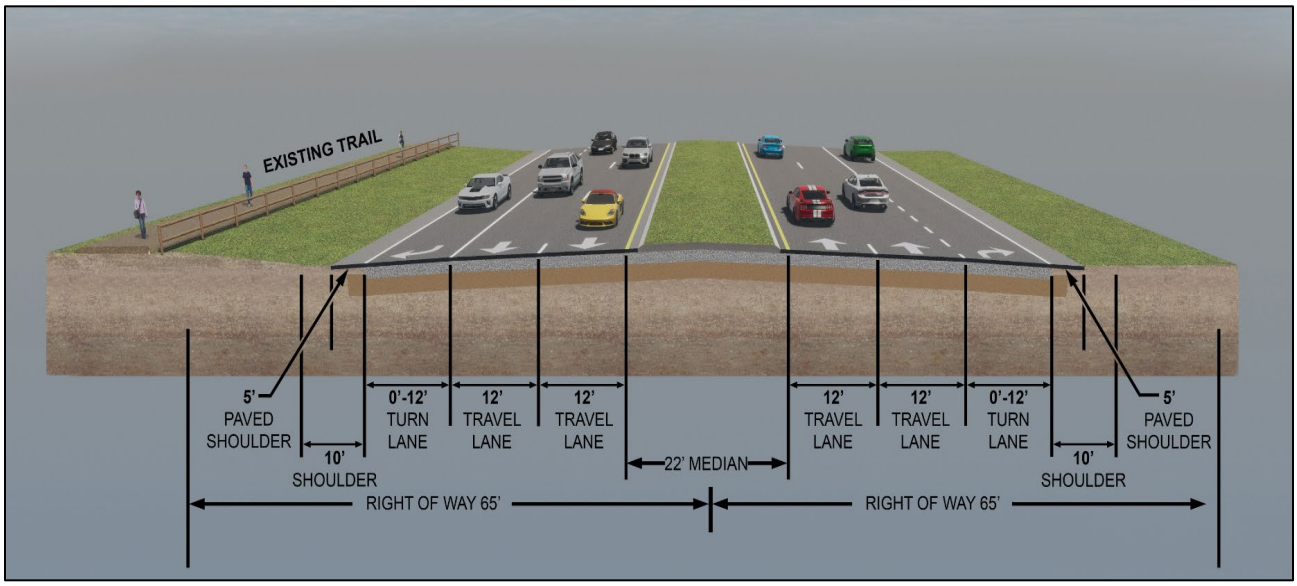


Figure -2 – Existing Typical Section – North of Bridge



2.2.2 Roadway Functional & Context Classifications

SR 55 has a functional classification of an Urban Principal Arterial Other with a context classification of C3C within the project limits.

2.2.3 Access Management Classification

Access management along the divided corridor is restrictive. North of SR 64, there is only one driveway leading to Manatee Memorial Hospital. Access for northbound traffic includes Manatee Memorial Hospital, Palmetto Estuary Preserve, and 1st Street East. Access for southbound traffic includes 3rd Avenue West, Bradenton Waterfront Riverwalk, Manatee Memorial Hospital, and Palmetto Estuary Preserve. In both directions, dedicated left and right turn lanes are provided for the Palmetto Estuary Preserve, with right turn lanes designated for Manatee Memorial Hospital and the Bradenton Waterfront Riverwalk.

The existing access management along SR 55 is designated as Access Class 3 due to its restrictive median type and connection spacing range, per Florida Design Manual (FDM) Table 201.4.2.

2.2.4 Right-of-Way

The right-of-way width varies throughout the project limits. Corresponding right-of-way widths are summarized below in Table 2-1:

Table 2-1 – Existing Right-of-Way

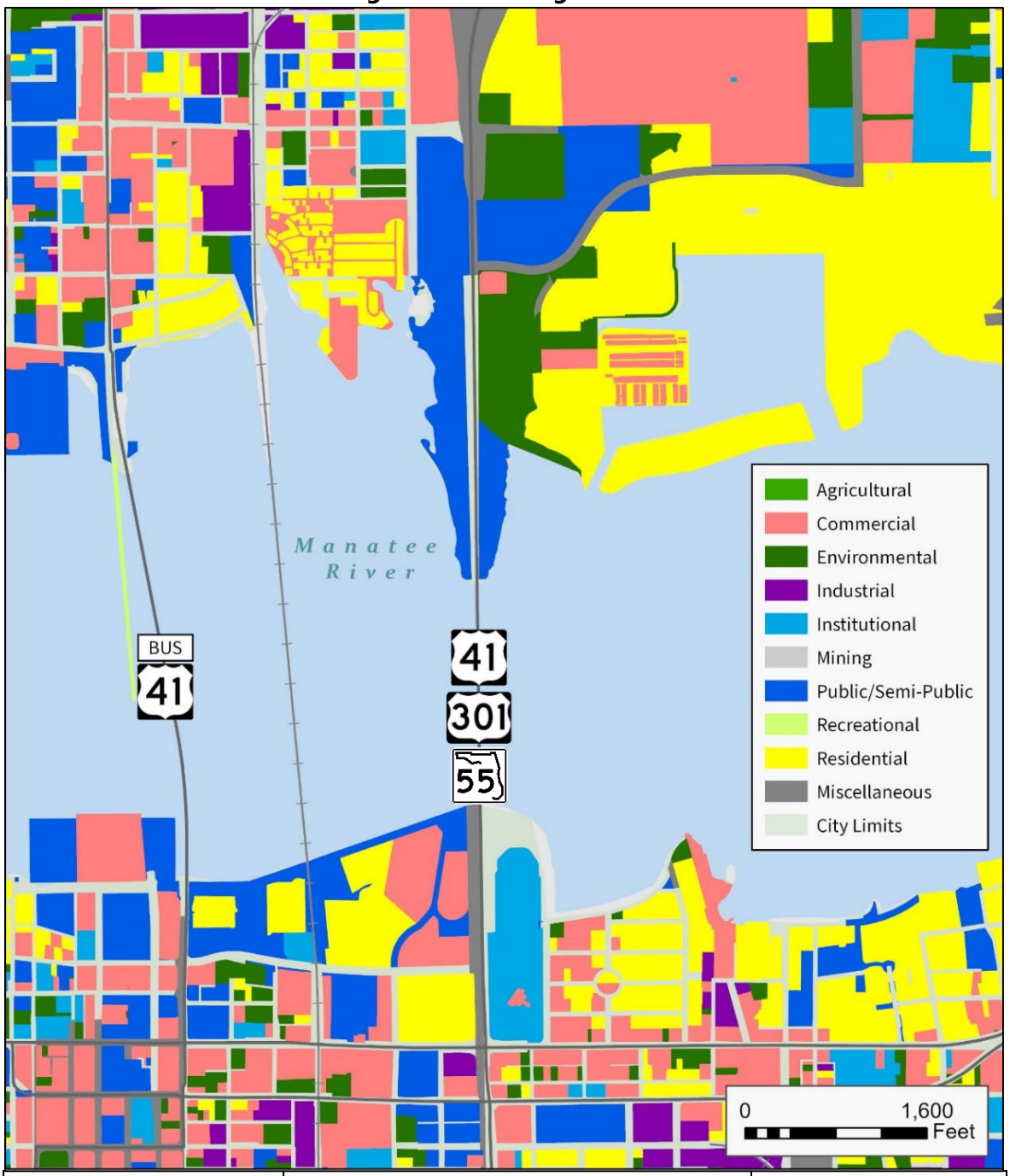
Section	MP to MP	Right-of-Way
SR 64 to begin bridge	2.255 - 2.617	106' - 226'
DeSoto Bridge	2.617 - 3.038	700'
End bridge to Haben Boulevard	3.308 - 3.552	130'

2.2.5 Adjacent Land Use

The area south of the bridge contains a mixture of commercial, retail, community recreation, high-density residential, and institutional land use. The Manatee Memorial Hospital is located east of SR 55. The Bradenton Waterfront Riverwalk is located near the southern bridge approach. The existing land use map is shown in Figures **2-3**.

The area surrounding the existing corridor to the north of the DeSoto Bridge consists predominantly of undeveloped land zoned for community development and open land designated for public use. The Riviera Dunes community is situated to the east of SR 55, set back from the roadway. A 7-Eleven Convenience Store is in the southeast quadrant of the intersection at Haben Boulevard and SR 55. The Palmetto Estuary Preserve, an open space area, is found on the west side of SR 55, north of the DeSoto Bridge.

Figure -3 - Existing Land Use



FDOT	**DeSoto Bridge Replacement** **PD&E Study** **FPID 442630-1** **Manatee County**	**Existing Land Use Map** **July 2024**

2.2.6 Pavement Type and Condition

The overall asphalt condition of the pavement along the project limits is fair, with light to moderate cracking extending through the full depth of the pavement and minimal rutting. The 2022 pavement condition survey was performed by the State Materials Office, and the results are included in Table 2-2 below. For the purposes of this study, Mile Post 2.255 to Mile Post 3.552 includes the section of the DeSoto Bridge Replacement.

Table 2-2 - Existing Pavement Conditions

			Left Roadway		Right Roadway	
Section	**Mile Post**	**Age**	**Crack**	**Ride**	**Crack**	**Ride**
13130000	1.661-2.617	16	6.0	6.3		
13130000	2.208-2.617	16			6.0	7.1
13130000	3.038-5.819	22	6.0	7.8		
13130000	3.038-5.819	22			6.5	7.8

A planned resurfacing project (FPID 447379-1-52-01; SR 55 (US 301/US 41/SR 45/US 19) from 23rd Avenue West to 39th Street East) will improve pavement conditions within the project limits. Construction is scheduled for FY 2025 at a construction cost of $15,840,888.

2.2.7 Existing Design and Posted Speed

The existing design speed and posted speed limit is 50 mph from SR 64 to Haben Boulevard.

2.2.8 Horizontal Alignment

The existing horizontal alignment follows a north-south direction of travel. The alignment is a straight line between SR 64 and Haben Boulevard at a bearing of N00° 02′ 13″ E. There are no curves or deflections within the project limits.

2.2.9 Vertical Alignment

The vertical alignment of SR 55 is influenced by the surrounding terrain. The highway has a gradual slope from the south and north, with an elevation of about 5 feet above sea level. The original as-built bridge plans show a down grade of 0.71%, then a 200-foot vertical curve going to a flat 0% grade leading up to the 3% grade going over the river, and a 3% down grade going to a 0% grade. The crest vertical curve length over the Manatee River is 1000 feet, with the sag vertical curves of

400 feet at both ends of the 3% grade. The K values are 167 for the crest curve and 133 for the sag vertical curves.

2.2.10 Multi-modal Facilities

On the south side of the DeSoto Bridge in the City of Bradenton, sidewalk is present on the west side of the facility from SR 64 to 3rd Avenue West. A crosswalk with pedestrian refuges is located at the intersection of SR 64 and SR 55, connecting the sidewalk on the west side to the sidewalk along the north side of SR 64.

On the north side of the bridge in the City of Palmetto, sidewalk is present on the east side of SR 55, from the 7-Eleven Convenience Store to Haben Boulevard. Two crosswalks, spanning Haben Boulevard and SR 55, connect the sidewalk on the east side to a small section of sidewalk on the west side adjacent to Palmetto Estuary Nature Preserve.

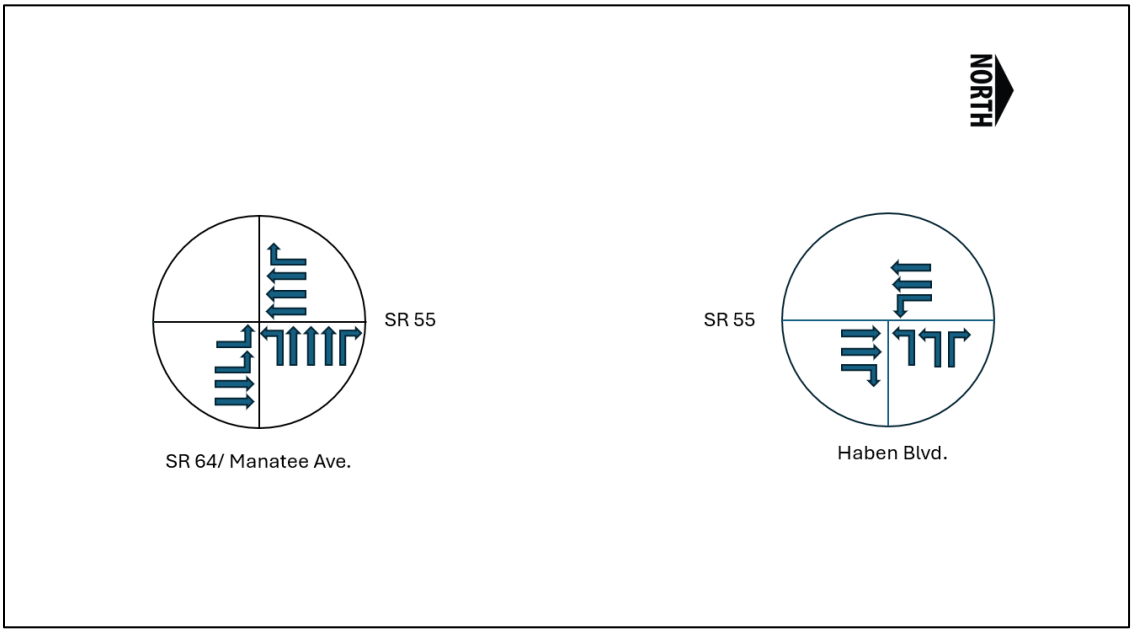
There are no bike lanes on SR 55 within the project limits. Bicyclists currently use the outside travel lane south of the bridge and the shoulders north of the bridge. There is no bicycle keyhole lane provided at the Haben Boulevard intersection or the SR 64 intersection.

There is no bus service along SR 55 within the project limits.

2.2.11 Intersections

Two signalized intersections, SR 64 and Haben Boulevard, are located within the project study area.

Figure 2-4 - Signalized Intersection Operational Configurations



2.2.12 Existing Fixed Objects within Clear Zone

The clear zone requirement for 45 mph and 50 mph is 18 ft from the edge of the travel lane and 10 ft from an auxiliary lane.

Table 2-3 - Existing Fixed Objects within Clear Zone

Fixed Object	Location	MP to MP	Existing		Meets Criteria Yes or No
			Lateral Offset (ft)	Flush Shoulder or C&G	
Conventional Light Poles	Outside Edge of Travel Lane	Throughout corridor	18 ft	Flush Shoulder	Yes
Conventional Light Poles	Bridge Median and Outside Travel Lane	2.617 - 3.038	18 ft	Median Barrier	No
Above Ground Utilities	Outside Edge of Travel Lane	Throughout corridor	Outside Clear Zone	Flush Shoulder	Yes
Above Ground Utilities	Outside Edge of Travel Lane	Throughout corridor	4 ft	C&G	Yes
Barrier	Bridge Median	2.617 - 3.038	20 feet from Travel Lane, 14 feet from Auxiliary Lane, or Clear Zone width, whichever is less	Barrier	Yes

Other fixed objects within the project limits include the guardrail at the bridge approaches and ends.

2.2.13 Traffic Data

This is a bridge replacement project; therefore, the traffic data utilized is from the resurfacing project FPID 447379-1-52-01; SR 55 (US 301/US 41/SR 45/US 19) from 23rd Avenue West to 39th Street East). The Existing Year (2024) AADT volumes from this project are depicted in **Table 2-4**.

There is no bicycle or pedestrian connectivity across the bridge, therefore pedestrian and bicycle counts were not collected.

Table 2-4 - Existing Traffic Data (2024)

Roadway	AADT
SR 55 US 301/US 41	68,200

K = 9.0% D = 55.8% T = 4.7% (24 HOUR)

2.2.14 Roadway Operational Conditions

This is a bridge replacement project to address the structural degradation and substandard design elements of the existing bridge.

2.2.15 Managed Lanes

There are no managed lanes within the project area.

2.2.16 Crash Data

Crash data for the SR 55 segment along the DeSoto Bridge was obtained for the most recent five-year period (2018-2022). According to crash data, there have been a total of 633 crash events along the DeSoto Bridge. Of these 633 crash events, 2 crashes (0.32%) resulted in fatalities, one of which was a collision with a cyclist. The remaining 631 crashes (99.68%) resulted in either property damage and/ or injury. Along the project corridor, 3 crashes (0.47%) involved a pedestrian, while 1 crash (0.16%) involved a bicyclist. The most common crash type occurring along the bridge was rear-end collision, with 384 crashes (60.66%) occurring during the data collection period. The second most common crash type to occur during the data collection period was the sideswipe, with 131 crashes (20.70%). All crash events documented along the DeSoto Bridge during the five-year data collection period are summarized in Table 2-4 below:

Table 2-5 - Crash Data Along DeSoto Bridge

Dates	01/01/2018-12/31/2018	01/01/2019-12/31/2019	01/01/2020-12/31/2020	01/01/2021-12/31/2021	01/01/2022-12/31/2022	Total
Total Crashes	114	109	125	162	123	633
Fatalities	1	0	0	0	1	2
Bicycle	0	0	0	0	1	1
Pedestrian	1	0	0	1	1	3
Angle	1	3	1	2	3	10
Animal	0	0	0	0	0	0
Head On	2	1	1	1	1	6
Rear End	78	71	73	96	66	384
Left Turn	4	1	2	6	4	17
Right Turn	1	1	2	2	2	8
Off Road	0	4	6	6	5	21
Rollover	0	0	1	0	0	1
Sideswipe	20	21	22	37	31	131
Unknown	1	3	5	5	2	16
Other	6	4	12	6	7	35
Total	114	109	125	162	123	633

2.2.17 Railroad Crossings

There are no railroad crossings within the project area.

2.2.18 Drainage

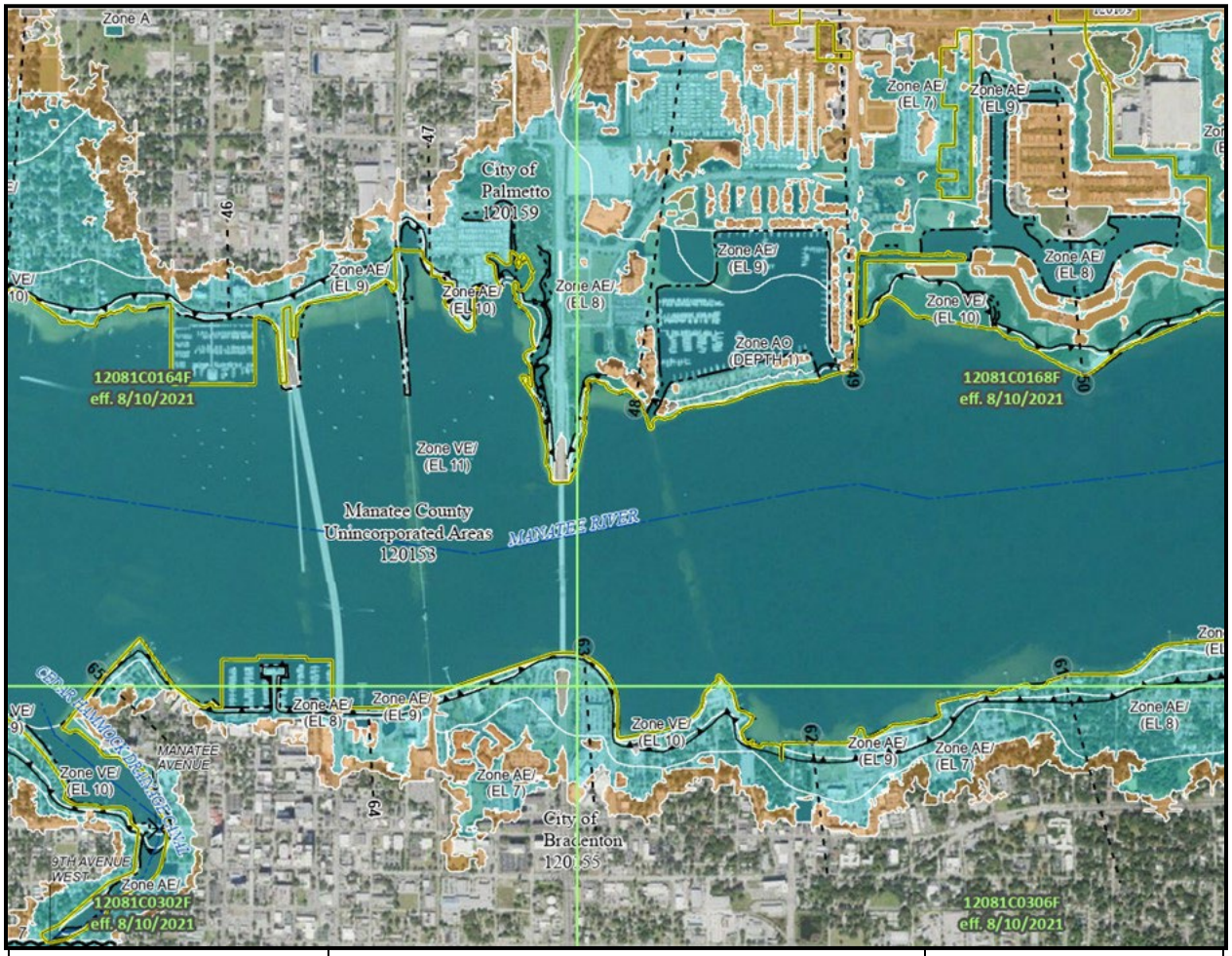
The SR 55 project corridor traverses over the Manatee River from the Cities of Bradenton to Palmetto via the DeSoto Bridge. The existing drainage system south of the bridge is an urban drainage system and includes curb inlets and storm sewers. To the north of the bridge, runoff is conveyed through roadside ditches. The outfall for both systems discharges directly into the Manatee River. No stormwater management facilities serve the SR 55 roadway or bridge. The bridge is drained via scuppers, which allow runoff to flow directly into the Manatee River below. No culverted cross drains exist within the project limits.

The project is located within the Manatee River below the Braden River Basin. The Florida Department of Environmental Protection (FDEP) has declared the Water Basin ID (WBID) #1848A not impaired for nutrients, as shown in Figures **2-5**. The Southwest Florida Water Management District (SWFWMD) maintains jurisdiction over Manatee County for FDOT transportation projects and will be the Environmental Resource Permit (ERP) issuing entity.

The National Oceanic and Atmospheric Administration Tides & Currents resource established a monitoring station at Redfish Point on the Manatee River. There, the mean high water (MHW) and mean low water elevations are estimated at 2.04 ft and 0.33 ft, respectively.

The Federal Emergency Management Agency's Flood Insurance Rate Map #12081C0164F identifies the designated floodplain as elevation 11.0 ft. This elevation is effective as of August 10, 2021. The project is also located within a designated velocity zone. **Figure 2-4** depicts the study area's existing floodplain. A copy of the drainage map can be found in **Appendix F**.

Figure -5 - Existing Flood Plain



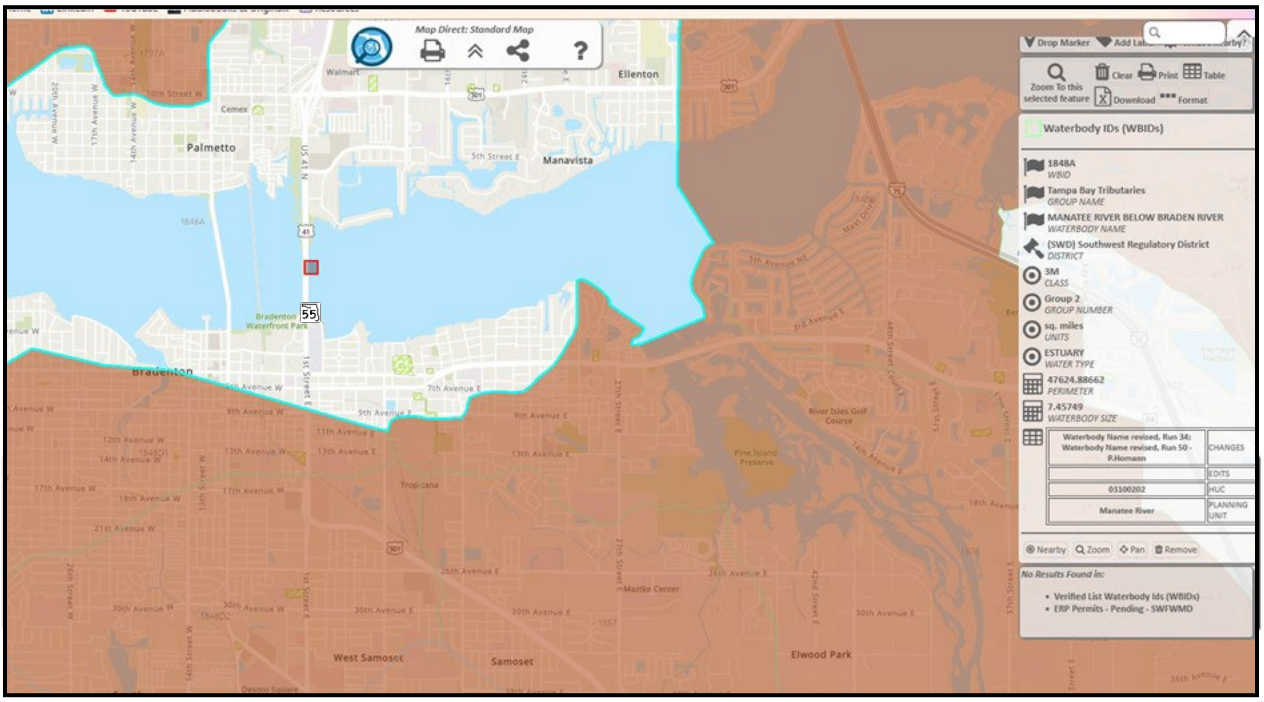
FDOT	**DeSoto Bridge Replacement PD&E Study FPID 442630-1 Manatee County**	**Existing Flood Plain Map** **July 2024**

ArcGIS Pro was utilized to view the georeferenced Manatee County stormwater drainage system asset inventory (https://www.mymanatee.org/gisits/rest/services/opendata/utilities/FeatureServer). The existing Manatee County drainage systems provide for the conveyance of both public and private runoff and perform independently of the FDOT drainage systems. There are no cross drains within the existing project limits, and no reported localized flooding because of the SR 55 drainage system.

Local topographic resources referred to include the 2018 LiDAR-derived digital elevation model from the USGS (https://www.usgs.gov/the-national-map-data-delivery/gis-data-download) and

aerials available from ESRI ArcGIS Online https://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer). Review of these resources and from field reviews performed, the project does not appear to have any off-site contributing runoff draining into the FDOT drainage system.

Figure -6 - FDEP Impaired Waters



2.2.19 Lighting

Consistent lighting exists within the project limits, including the DeSoto Bridge. The light poles are Drop Glass HPS GE Cobra heads and are owned by FDOT District One and Florida Power and Light poles. Existing light poles are 265 feet apart along both sides of the bridge.

2.2.20 Utilities

Thirteen Utility Agencies/Owners (UAO) have been identified within the project area through utility coordination efforts and a Sunshine 811 Design Ticket. **Table 2-6** identifies the UAOs contacted, and **Table 2-7** includes a description of their facilities located within the project study area. Utility contact information will be included in the Utility Assessment Package. Base maps were sent to utility providers with a request to provide information on existing and planned utilities. At the time of utility coordination efforts, Manatee County will upgrade its 16" subaqueous water line. Construction is anticipated to begin in 2025. None of the other UAOs indicated future planned facilities or upgrades to existing facilities within the project limits.

Table 2-6 - Utility Agency/Owner (UAO's) Contacted

Utility/Agency Owner	Facility Type	Contact Person	Phone Number	Email
City of Bradenton Water	Water & Sewer	Jim McLellan	(941) 462-1989	Jim.mclellan@bradentonfl.gov
City of Palmetto	Water & Sewer	Mohammed Ryan	(941) 723-4580	mryan@palmettofl.org
Crowncastle	Communication Lines, Fiber	Danny Haskett	(786) 610-7073	Danny.Haskett@crowncastle.com
Florida Power & Light Distribution	Electric	Brian Garver	(941) 723-4442	Brian.Garver@fpl.com
Florida Power & Light Transmission	Electric	Craig Ledbetter	(561) 803-7942	Craig.Ledbetter@fpl.com
Frontier Florida LLC	Communication Lines, Fiber	Denise Hutton	(941) 504-9652	Denise.Hutton@ftr.com
Manatee County Transportation	Communication Lines, Fiber	Kathy McMahon	(941) 795-3494	Kathy.mcmahon@mymanatee.org
Manatee County Utilities	Water and Sewer	Lorenzo Duarte	(941) 708-7450, Ext. 7373	Lorenzo.Duarte@mymanatee.org
MCI	Communication Lines, Fiber	Michael Krol	(813) 410-4803	Michael.krol@verizon.com
Spectrum Sunshine State, LLC	Communication Lines, Fiber	James (Alex) Fleming	(941) 213-0877	James.Fleming1@charter.com
TECO Peoples Gas	Gas	Alex McFarlane	(813) 275-3762	AMcFarlane@tecoenergy.com
Uniti	Communication Lines, Fiber	James (Alex) Fleming	(941) 213-0877	James.Fleming1@charter.com
Zayo	Communication Lines, Fiber	Jake Sansom	(813) 763-5999	Jake.Sansom@zayo.com

Table 2-7 - Existing Utilities

Utility Agency/Owners	*Facilities Within Corridor*	*Description of Existing Utilities*
City of Bradenton	Yes	1. City of Bradenton has a 20" ductile iron potable water line running east to west along the north side of Riverfront Blvd, crossing US 41 and exiting the project limits in both directions. 2. City of Bradenton has a 2" PVC force main just west of US 41 that crosses from the north side of Riverfront Blvd to the south side and continues west, exiting the project limits.
City of Palmetto	Yes	1. City of Palmetto has a 6" Reclaimed Water Main running west along the south side of Haben Blvd that crosses to the west side of US 41, turning north and eventually exiting the project limits. 2. City of Palmetto has a 6" PVC Force Main running west along the south side of Haben Blvd that crosses to the west side of US 41, turning north and eventually exiting the project limits.
Crown Castle	Yes	1. Crown Castle has 4 x 1.5" conduit with 72-count FOC running east and west along the south side of Manatee Ave E, crossing US 41 and exiting the project limits in both directions. 2. Crown Castle has 4 x 1.5" conduit with 216-count FOC at the southeast corner of the Manatee Ave E and US 41 intersection that runs north, crossing the bridge before going aerial approximately 260' north of the bridge. 3. Crown Castle has 4 x 1.5" conduit with 96 count FOC at the southeast corner of the 3rd Ave W and US 41 intersection that crosses to a handhole on the east side of US 41 and continues east exiting the project limits. 4. Crown Castle has an aerial 288-count FOC approximately 260' north of the bridge, running north along the west side of US 41 and exiting the project to the north. 5. Crown Castle has 4 x 1.5" conduit with 288 county FOC at the southeast corner of the Haben Blvd and US 41 intersection that crosses to a handhole on the east side of US 41.
Florida Power & Light – Distribution	Yes	1. FPL has an overhead electric line at the northwest corner of the Haben Blvd and US 41 intersection that runs south to the DeSoto Bridge, where it goes subaqueous, crossing to the south side but exiting the project limits. 2. FPL has a buried electric line running west along the south side of 3rd Ave W that crosses US 41 to feed the hospital on the east side of US 41.
Frontier	Yes	1. Frontier has 5 buried 4" PVC with fiber north of Haben Blvd running south along the east side of US 41 to a 3'x5' hanhole just north of the Desoto Bridge where the lines go subaqueous to cross to the south side of the bridge and cross to a hanhole on the southside of Riverfront Blvd. 2. Frontier has 2 buried 4" PVC with fiber running east and west along the south side of Riverfront Blvd that cross US 41 and exit the project limits in both directions.
Manatee County Transportation	Yes	1. Manatee County Transportation has facilities running south along the west side of US 41 until reaching the northwest corner of the Haben Blvd and US 41 intersection, where they cross to the northeast intersection. 2. Manatee County Transportation has facilities at the northwest corner of the Haben Blvd and US 41 intersection that run to the

Utility Agency/Owners	*Facilities Within Corridor*	*Description of Existing Utilities*
		southwest corner and cross to the southeast corner. 3. Manatee County Transportation has facilities starting at the north end of the project running south along the west side of US 41 to the northwest corner of the Haben Blvd and US 41 intersection. 4. Manatee County Transportation has facilities at the northwest corner of the Haben Blvd and US 41 intersection, which crosses to the northeast corner, then to the southeast corner, and crosses to the southwest corner. 5. Manatee County Transportation has facilities at the northwest corner of the Haben Blvd and US 41 intersection that runs south ending just north of 1st St E.
Manatee County Utilities	Yes	1. Manatee County Utilities has a 16" DIP water main starting at the north end of the project, running south along the east side of US 41, eventually becoming subaqueous to cross to 1st St E. Manatee County Utilities has a 16" DIP water main running southeast of 1st St E before ending at the northeast corner of the 3rd Ave W and 1st St E intersection.
MCI	Yes	1. MCI has 2 x 2" HDPE conduit with FOC just south of 3rd Ave W that runs north along the west side of US 41, where it goes subaqueous to cross along the west side of the bridge, eventually exiting the project limits to the north. 2. MCI has a 2 x 2" HDPE conduit with FOC just south of 3rd Ave W that runs north along the east side of US 41, where it goes subaqueous to cross along the east side of the bridge, eventually exiting the project limits to the north.
Spectrum	Yes	1. Spectrum has underground facilities at the northeast corner of Manatee Ave and US 41 intersection that cross to the northwest corner and continue north, going subaqueous at the bridge and crossing to the east side of US 41 just north of the end of the bridge. Spectrum has underground facilities just north of the bridge on the east side of US 41, running north until exiting the project.
TECO Peoples Gas	Yes	1. TECO Peoples Gas has an 8" gas main just south of the southern point of the bridge that runs north along the east side of the bridge, eventually ending just north of the bridge.
Uniti Fiber	Yes	1. Uniti has underground facilities north of Haben Blvd running south along the west side of US 41, attaching to the bridge to continue south along the west side.
Zayo Group	Yes	1. Zayo has a buried fiber line at the southwest corner of the Manatee Ave and US 41 intersection that runs north before going subaqueous and crossing to the north end of the bridge. 2. Zayo has a buried fiber line just north of the bridge that runs north along the west side of US 41 to the southwest corner of the Haben Blvd and US 41 intersection. 3. Zayo has a buried fiber line at the southwest corner of the Haben Blvd and US 41 intersection that crosses to the southeast corner and then runs north, exiting the project limits

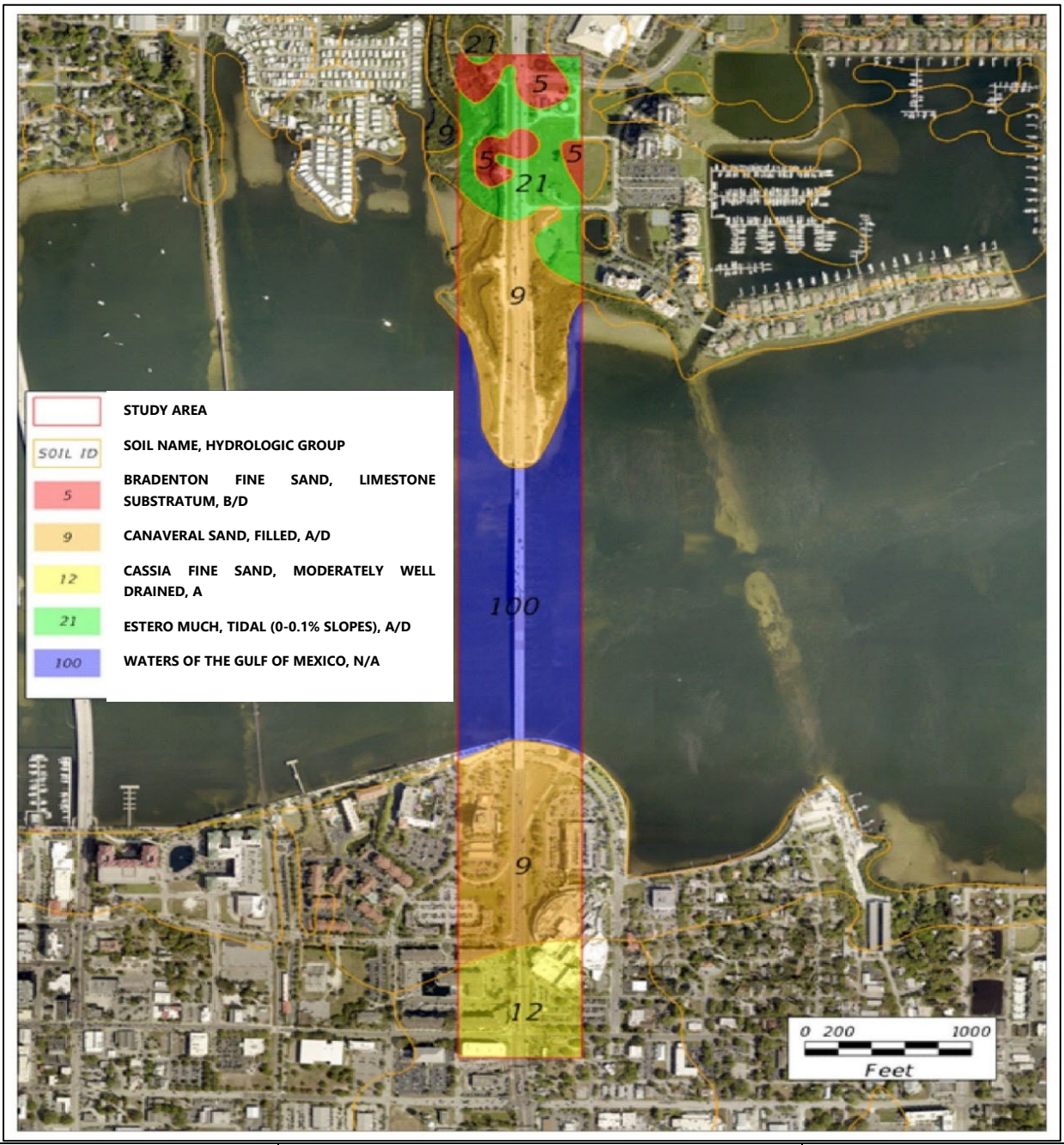
2.2.21 Soils and Geotechnical Data

According to the Natural Resources Conservation Service (NRCS) Soil Survey of Manatee County (1983), there are eight (8) soil types and one (1) water classification present within the project study area. The two (2) most prevalent features in the project study area are the Waters of the Gulf of Mexico and Canaveral Sand, Filled. Four (4) of the eight (8) soil types within the study area are classified as hydric. All soils documented within the project study area and their relative acreages are in **Table 2-8** below:

Table 2-8 - NRCS Soil Classifications

NRCS Code	NRCS Soil Description	Hydric Status	Acres	Percent of Total
5	Bradenton Fine Sand, Limestone Substratum	Hydric	17.57	8.8
9	Canaveral Sand, Filled	Non-Hydric	48.24	24.2
12	Cassia Fine Sand, Moderately Well Drained	Non-Hydric	29.00	14.5
13	Chobee Loamy fine Sand, Frequently Ponded, 0 to 1 Percent Slopes	Hydric	7.18	3.6
14	Chobee Variant Sandy Clay Loam	Hydric	0.22	0.1
20	Eaugallie-Eaugallie Wet, Fine Sand, 0 to 2 Percent Slopes	Non-Hydric	0.24	0.1
21	Estero Muck, Tidal, 0 to 1 Percent Slopes	Hydric	19.52	9.8
48	Wabasso-Wabasso, Wet, Fine Sand, 0 to 2 Percent Slopes	Non-Hydric	5.27	2.6
100	Waters of the Gulf of Mexico	Unranked	72.25	36.2
		Total	**199.49**	**100.0**

Figure -7 - NRCS Soil Classification



FDOT	**DeSoto Bridge Replacement PD&E Study FPID 442630-1 Manatee County**	**NRCS Soil Classification**
		July 2024

2.2.22 Aesthetics Features

The visual aesthetics are considered commercial in the City of Bradenton, and rural views of the Palmetto Estuary Preserve in the City of Palmetto. Riviera Dunes is set back approximately 48 feet from SR 55. The view of the Manatee River is considered a unique visual resource in the project corridor. Notable stakeholders that may be sensitive to the aesthetic effects of the project include the Riveria Dunes and recreational users (i.e., boaters).

2.2.23 Traffic Signs

There is one overhead truss and one cantilever structure within the project limits, as shown below. There are four northbound and five southbound multi-post signs, as shown in **Table 2-9,** along with numerous single-post signs.

Table 2-9 - Existing Signs

	Mile Post	Sign Message	Sign Type
Northbound	2.298	PALMETTO 1 TAMPA 41	Multi-post
	3.189	BIRD SANCTUARY WELCOME TO BEAUTIFUL HISTORIC PALMETTO	Multi-Post
	3.344	Haben Blvd NEXT SIGNAL	Multi-Post
	3.401	Bradenton Area Convention Center	Multi-Post
Southbound	2.324	Bradenton ↑ Hospital Downtown → LECOM Park DeSoto Monument	Multi-Post
	2.418	SARASOTA 12	Multi-Post
	2.455	Bradenton Performing Arts Center → Riverwalk ArtCenter Museum Downtown	Multi-Post
	2.576	Bradenton ↑ Downtown LECOM Park Riverwalk → Hospital →	Multi-Post
	2.615	Bradenton CITY LIMIT	Multi-Post

Figure -9 - MP 2.513 NB Cantilever

Figure -8 - MP 2.324 SB Overhead Truss

2.2.24 Noise Walls and Perimeter Walls

There are no noise walls or perimeter walls within the project area.

A Noise Study Report (NSR) was prepared in June 2024 using methodology established by the FDOT in the PD&E Manual.

2.2.25 Intelligent Transportation Systems (ITS)/Transportation System Management and Operations (TSM&O) Features

There are no ITS features within the project limits. There are no TSM&O features within the project limits.

2.3 Existing Bridges and Structures

The DeSoto Bridge (Structure No. 130053) was constructed in 1957 and carries SR 55 over the Manatee River. The existing structure spans 2,225 feet and consists of a three-span main channel unit (70-ft-105-ft-70-ft continuous steel girders) and fifteen approach spans (66-foot pre-AASHTO post-tensioned (PT) concrete beams) on both sides. The superstructure is supported on concrete multi-column piers. The main channel piers are founded on mudline footings with steel h-piles, and all the approach piers in the water are founded on waterline footings, and the last three approach piers on the south side are founded on buried footings using both battered and plumb composite concrete and steel h-piles. Additional existing conditions information can be found in **Table 2-10.**

The existing typical section for the structure is a divided four-lane highway comprised of two 12-foot lanes and a 2-foot outside shoulder in each direction, and a 4-foot raised median and barrier wall, as shown in **Figure 2-9**. The mid-level fixed structure provides a clear navigational width of 75 feet (measured between the inside face of the fenders) and a 40-foot vertical navigational clearance above MHW.

Recent rehabilitation projects were undertaken in 2002, 2010, 2012, and 2017 to address maintenance issues with the structural steel, scour, concrete deck, PT beams, piles, columns, footings, and fender system. Based on the bridge inspection report conducted in January 2022, the existing structure received a sufficiency rating of 74.5. The health index is 78.53, and the bridge has substandard elements with design deficiencies, including narrow shoulders, no pedestrian facilities, and substandard bridge rails. The DeSoto Bridge has reached a critical threshold in which deterioration is expected to accelerate. Based on the age of the bridge with respect to its intended design life and structural condition, the bridge was programmed by FDOT for replacement.

Figure -10 - Existing Bridge Typical Section

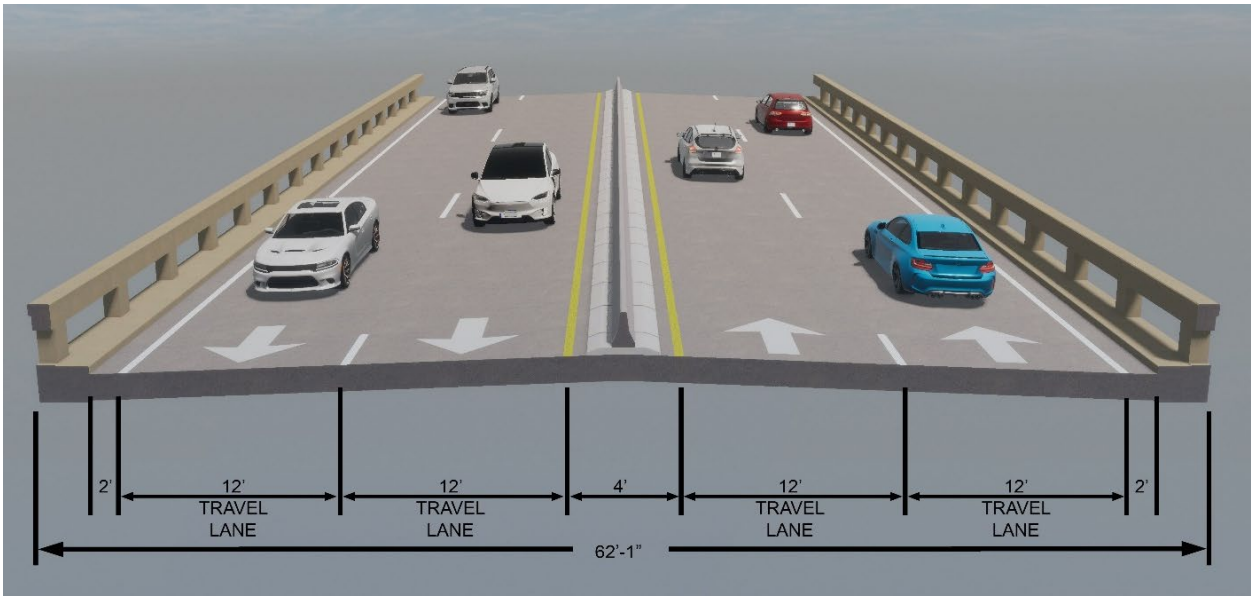


Table 2-10 - Existing Bridge Data and Structure Condition

Structure Name / ID	Hernando DeSoto Bridge / 130053
Facility Carried	SR 55 (US 301 / US 41)
Year Built	1957
Year Reconstructed	N/A
Superstructure Type (Approach / Main)	Pre-AASHTO PT Concrete Beams / Steel Girders
Number of Spans	33
Bridge Length	2,225’
Maximum Span Length	105’
Roadway Width	26’ (Each Direction)
Lane / Shoulder Width	2-12’ lanes / 1-2’ shoulder (Inside and outside in each Direction)
Overall National Bridge Inventory Ratings	
Sufficiency Rating	74.5
Deck	6
Superstructure	6
Substructure	6
Channel	6
Clearances	
Vertical Clearance	40’ above Mean High Water
Horizontal Clearance	75’ between existing bridge fenders
Pier Protection	
Channel Piers	Bridge Fender System

2.4 Existing Environmental Conditions

The project study area was evaluated for Critical Habitat (CH) as defined by Congress 17 Code of Federal Regulation (CFR) 35.1532. The project area falls within USFWS-designated CH for the West Indian manatee (*Trichechus manatus latirostris*).

Based on literature and field reviews, fifty-six (56) species of protected plants and animals are known to occur in Manatee County. Twenty-five (25) of the species are federally listed as endangered or threatened. After evaluating the habitat requirements for each species, the types of habitats present within the project study area. Thirty (30) of the 56 listed species are state-listed endangered or threatened. One (1) species is not listed as endangered or threatened but is still managed and protected, which includes the bald eagle (*Haliaeetus leucocephalus*). Thirty (30) species are state-listed as endangered or threatened. Additionally, multiple species of state-protected bats are known to live within the project study area. Thorough assessments were conducted for each wildlife and plant species by analyzing their habitat needs and the habitat types present in the project study area.

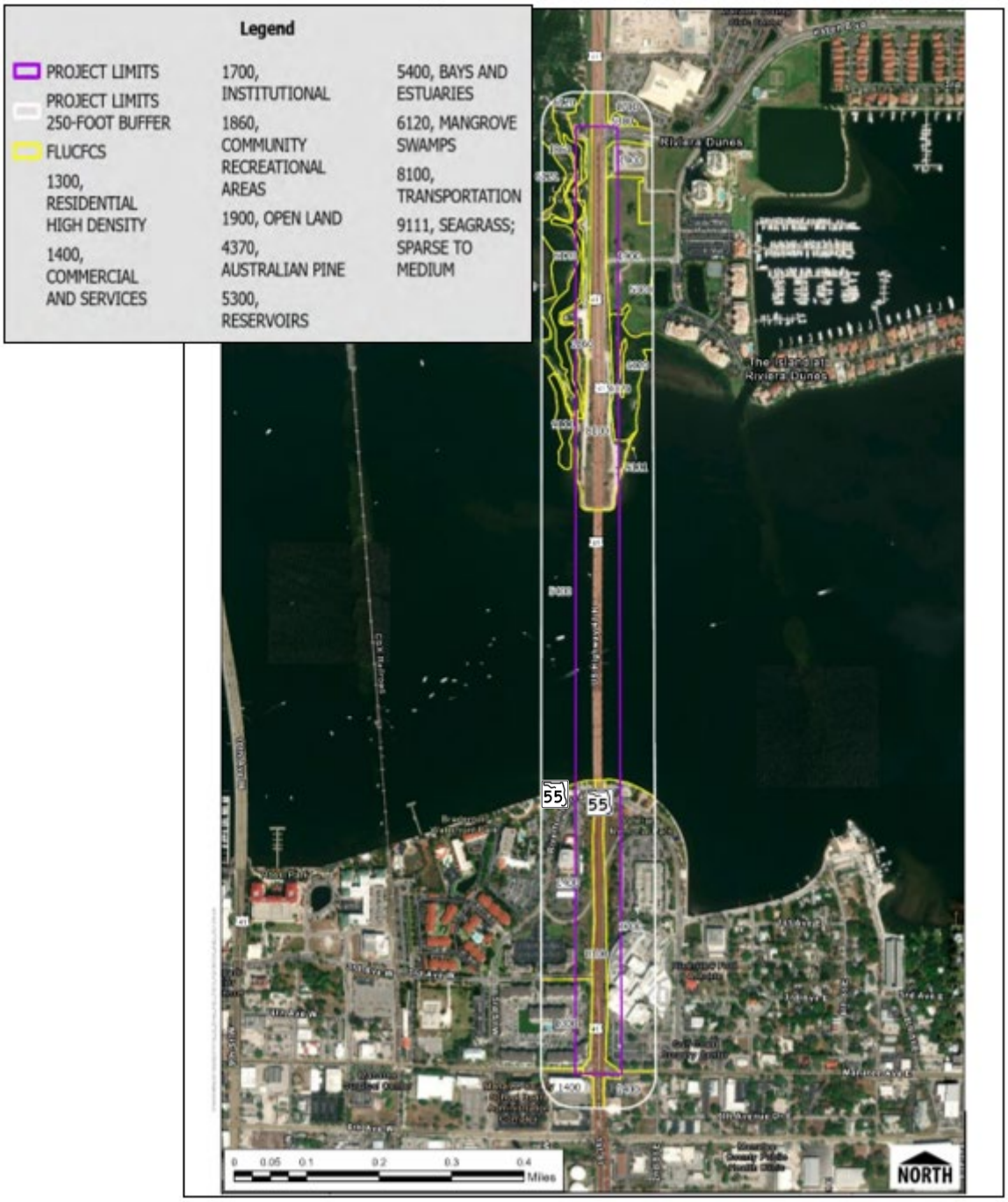
Four (4) wetland and surface water community types were identified within the project study area: reservoirs Florida Land Use and Cover Classification System (FLUCFCS) (FLUCFCS: 5300/USFWS: PUBHx (Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated), bays and estuaries (FLUCFCS: 5400/USFWS: E1UB2 (Estuarine, Subtidal, Unconsolidated Bottom, Sand)), mangrove swamps (FLUCFCS: 6120/USFWS: E2FO3N (Estuarine, Intertidal, Forested, Broad-Leaved Evergreen, Regularly Flooded)), and seagrass, sparse to medium (FLUCFCS: 9111/USFWS: E1AB3L (Estuarine, Intertidal, Aquatic Bed, Rooted Vascular, Subtidal)) see **Figure 2-10.**

Four (4) resources were identified and evaluated for the applicability of Section 4(f): Bradenton Waterfront Riverwalk, Palmetto Estuary Preserve, Donald L. Courtney Veterans' Monuments Park, and the Manatee River Blueway. Through the evaluation, it was determined that there would be no adverse impacts on any of the four resources. The Bradenton Waterfront Riverwalk and the Palmetto Estuary Preserve are exceptions and exemptions according to 23 CFR 774.11(h) due to being properties formally reserved for future transportation facilities, but temporarily function as parks, recreation spaces, or wildlife and waterfowl refuge areas. The Donald L. Courtney Veterans' Monuments Park will be unused in this project. The Manatee River Blueway is an exception and exempt based on temporary land occupancies that are so minimal they do not constitute valid use within Section 4(f) and meet all 23 CFR 774.13(d) conditions.

The study area was evaluated for compliance with Section 106 of the National Historic Preservation Act (NHPA) standards. The archaeological Area of Potential Effects (APE) was defined as the construction footprint within the existing right-of-way (ROW), except for minor proposed areas of land. The historical or architectural APE was set based on the east and west replacement bridge alternatives. The archaeological survey revealed that subsurface testing was not possible

due to marked buried utilities, steep artificial slopes, and drainage structures in the APE. No artifacts, archaeological sites, or features were identified. No historic districts, listed National Register of Historic Places (NRHP) resources, or eligible cultural resources were identified within the project APE. Tribal consultation was initiated with the initial environmental review, and no comments were received from any contacted tribes.

Figure -11 - Existing FLUCFCS



FDOT	**DeSoto Bridge Replacement PD&E Study FPID 442630-1 Manatee County**	**Existing FLUCFCS**
		July 2024

3.0 FUTURE CONDITIONS

3.1 Future Conditions Considerations

This project is a replacement bridge that will improve the substandard design elements and will not add additional lanes to the bridge. The bridge will have wider inside and outside shoulders for vehicles to pull over as needed. Pedestrian and bicycle features will be added to allow for safe travel across the bridge as well as improve connectivity to either side of the Manatee River. A crash-worthy bridge barrier would be installed to prevent vehicles involved in crashes from going over the bridge. Consequently, the future roadway context classification for SR 55 will remain Suburban Commercial (C3C) from SR 64 to Haben Boulevard. As such, a Project Traffic Analysis Report (PTAR) was not developed for this project. Traffic data from the resurfacing project FPID 447379-1-52-01 was utilized.

The land use along the SR 55 corridor around the DeSoto Bridge is commercially developed on the south side of the bridge, which includes residential apartments (Aria), commercial businesses, and the Manatee Memorial Hospital. On the north side, there are Palmetto Estuary environmentally sensitive lands, vacant developable property, and a 7-Eleven Convenience Store at the corner of Haben Boulevard. **Table 4-1** defines additional design criteria.

4.0 DESIGN CONTROLS & CRITERIA

4.1 Design Controls

- Roadway Context Classification – C3C
- Functional classification and Strategic Intermodal System (SIS) designation – Urban Principal Arterial Other – Not Designated SIS
- Traffic and Design Year – N/A and 2050
- Access Management – Class 3 – Restrictive
- Design Speed and Target Speed – 45 mph begin project to begin bridge
- Design Speed and Target Speed – 50 mph begin bridge to end project
- Capacity and Level of Service (LOS) Target – N/A
- Design vehicle – WB-62FL
- Pedestrian and bicycle requirements – Yes
- Physical constraints – Barrier Wall and guardrail
- Environmental constraints – N/A
- Type of stormwater management facilities – closed drainage system
- Navigational requirements – 40-foot vertical clearance; 75-foot horizontal clearance
- Design high water, including impacts from projections- 1.6 feet
- Design wave heights for coastal bridges – Will be determined during the Design Phase

4.2 Design Criteria

Table 4-1 - Design Criteria

Design Element	Arterial		Sources
Design Speed	45 mph	50 mph	FDM, Table 201.5.1
Lane, Median, and Border Widths			
Design Speed	45 mph	50 mph	FDM, Table 201.5.1
Design Vehicle	WB-62FL	WB-62FL	FDM, Section 201.62
Through Lanes	11 ft	12 ft	FDM, Table 210.2.1
Turn Lane	11 ft min	12 ft	FDM, Table 210.2.1
Maximum Lane "Roll-Over"	4% Tangent Sections	4% Tangent Sections	FDM, Figure 210.2.1 / FDM, Figure 211.2.1
Maximum Δ in Cross Slope at Cross Over Line (%)	6% Ramp Gores <35mph		FDM, Table 211.2.2
Pavement Cross Slope	2 lanes 2%; Additional Lane 3%, Turn Lane, Bike Lane, match adjacent through lane		FDM, Figures 210.2.1, 211.2.1, & Section 260.4

Lane Width – Shared-Use Path	10-ft (12-ft standard)	10-ft (12-ft standard)	FDM, Section 224.4
Pedestrian Facilities			
Sidewalk	6 ft	6 ft	FDM 222.2.1, Table 222.2.1
Shared Use Paths	10 ft-14 ft	10 ft-14 ft	FDM Chapter 2224.4
Shared-Use Path	18 mph	18 mph	FDM, Section 224.9
Median Widths			
SR 55	22 ft	30 ft	FDM, Table 210.3.1
Border Width			
SR 55	14 ft	14 ft	FDM, Table 210.7.1
Maximum Degree of Curve			
SR 55	8 Deg 15 ft, e max 0.05	e max 0.10	FDM, Table 210.9.2 FDM, Table 210.9.1
Shared-Use Path	25 Deg	25 Deg	FDM, Table 224.10.1
Horizontal Curve Length (Min)			
SR 55	675-ft, (400-ft min)	750 ft	FDM, Table 210.8.1
Min. Stopping Sight Distance			
SR 55	360 ft (<2%)	425 ft (<2%)	FDM, Section 210.11.1 Table 210.11.1
	385 ft (4% Downgrade)	454 ft (4% Downgrade)	
	339 ft (4% Upgrade)	399 ft (4% Upgrade)	
Shared-Use Path	120 ft downhill	120 ft downhill	FDM, Section 224.10.2 Table 224.10.2
Decision Sight Distance			
SR 55	800 lf (Avoid. Maneuver B)	890 lf (Avoid. Maneuver B)	2018 AASHTO, Table 3-3, pg. 3-7
Grades			
SR 55	6%	6%	FDM, Table 210.10.1
Shared-Use Path	5% (w/o landings)		FDM, Section 224.6
SR 55 Max grade change w/o Vertical Curve	0.70%	0.60%	FDM, Chapter 210.10.1; Table 210.10.2
Min Distance between VPI's on Curbed Roadways	250 ft	250 ft	FDM Chapter 210, Section 210.10.11

K Crest (new construction)	98	136	FDM, Table 210.10.3
K Sag	79	96	FDM, Table 210.10.3
Min Length (crest or sag)	135 ft	300 ft	FDM, Table 210.10.4
Vertical Clearance			
Road over Roadway	16.50 ft		FDM, Table 260.6.1
Road over Waterway	6 FT above MHW		FDM, Table 260.8
Base Clearance	Min 3 ft		FDM Chapter 210, Section 210.10.3 (2.a)
Signal Span Wire/Mast Arm	17.50 ft		FDM Chapter 210, Section 210.10.3 (8)
Clear Zone			
Travel Lanes	18 ft	18 ft	FDM Chapter 215.2.4, Table 215.2.1
Turn Lanes	10 ft	10 ft	FDM Chapter 215.2.4, Table 215.2.1
Shoulder Width – Bridges			
Outside	10 ft min.	10 ft min.	FDM, Figure 260.1.1
Inside	6 ft min.	6 ft min	FDM, Figure 260.1.1
Shoulder Width – Bridges			
Outside	10 ft min.	10 ft min.	FDM, Figure 260.1.1
Inside	6 ft min.	6 ft min.	FDM, Figure 260.1.1

Structural Design Criteria:

- American Association of State Highway and Transportation Officials (AASHTO) LRFD Bridge Design Specifications, 9th Edition, 2020, U.S. Customary Units
- FDOT Structures Manual, January 2025

Note: *During the Context Classification meeting with D1 staff on February 20, 2024, with the District 1 Design Engineer, it was agreed that the target and design speed would change from the recommended 45 mph for the entire project limits to 45 mph from the beginning of the project to the beginning of the bridge, and to 50 mph from the beginning of the bridge to the end of the project, as the average running speeds were closer to 50 mph from the bridge to the end of the project.*

5.0 Alternatives Analysis

5.1 No-Build (No-Action) Alternative

NEPA requires that the impacts of not implementing a proposed action be considered in the decision-making process. The advantages of the No-Build Alternative include the absence of construction replacement costs, no impact on the natural environment, and no inconvenience to the traveling public. The Department would continue with the maintenance and repairs of the existing roadway and DeSoto Bridge. The 2022 inspection report, **Appendix D,** showed that the DeSoto Bridge is at the lower end of the fair condition rating, as per the National Bridge Inventory, given its longevity of service thus far. Per the life cycle cost analysis in the Long Range Estimate (LRE) report, Appendix C, the cost for the No-Build Alternative would be $71.6 million in rehabilitation and repair costs over a 75-year design life.

A disadvantage of the No-Build Alternative is its inconsistency with the Sarasota/Manatee County MPO 2045 LRTP. Furthermore, the No-Build Alternative does not meet the project's purpose and need and does not address the substandard design elements and the structural degradation that will continue to worsen over time.

5.2 Transportation Systems Management and Operations (TSM&O) Alternative

There are no TSM&O Alternatives studied within the project limits.

5.3 Multimodal Alternatives

The in-kind bridge replacement will accommodate multimodal facilities by bringing the bridge to current standards with either a 12-ft shared-use path and/or a sidewalk on both sides of the bridge and roadway to provide bicycle/pedestrian connectivity.

5.4 Build Alternatives

The build alternatives were developed with the primary objective of replacing the existing bridge with an in-kind structure that meets current FDOT design standards, causes the least impacts to the natural, physical, cultural, and social environments, and maintains the existing number of traffic lanes throughout the construction process. The Environmental Technical Advisory Team (ETAT) comments in the Efficient Transportation Decision Making (ETDM) process pointed out the existing environmental features, including the Palmetto Estuary Preserve and the 4(f) features south of the bridge. Both alternatives were designed to avoid or minimize impacts on these features. Detailed environmental considerations for the Build Alternatives are described in **Table 5-1**, Section 2.4, and in more detail in the Type Two Categorical Exclusion (CE II) document. The two Build Alternatives (West and East Alternatives) under consideration are described as follows:

West Alternative

The southbound half of the new bridge would begin construction independently of the existing bridge, with a centerline shift of approximately 41 feet to the west. This arrangement will allow for a spacing of about 10 feet between the new and old bridges, maintaining all traffic as usual on the existing bridge and roadway while the construction of the new bridge proceeds without interference. After the completion of the southbound half of the new bridge, temporary striping will provide four lanes, with two lanes in each direction, for all traffic to be shifted onto the new bridge. The old DeSoto Bridge will then be removed, and the northbound half of the new bridge will be constructed and joined with the southbound structure. The new bridge includes 12-foot protected shared-use paths on both sides, 12-foot outside shoulders, and 10-foot inside shoulders, along with two 12-foot travel lanes, barrier-separated, in both directions. The new bridge will be approximately 2,225 feet in length and have grades of ±3.2%. It will have a minimum vertical channel clearance of 40 feet above the mean water level and 75 feet of horizontal clearance. The new bridge will meet all current FDOT design standards and could be widened in the future under a separate project.

Traffic patterns on the land side will not change, as the through lanes will remain consistent with existing conditions. However, the roadway will have to be slightly realigned and begin to skew westward approximately 825 feet north of SR 64. To accommodate the new paths on the bridge, shared-use paths will be implemented on both the northern and southern ends. Most improvements are located within the existing right-of-way. Still, additional right-of-way will need to be purchased to accommodate proposed sidewalks and shared-use path infrastructure.

East Alternative

The East Alternative is similar to the West Alternative except that the northbound half of the new bridge will be constructed first. The bridge length, width, and profile will be the same. Traffic patterns on the land side will not change, as the through lanes will remain consistent with existing conditions. The roadway will have to be slightly realigned and begin to skew eastward approximately 490 feet north of SR 64. Most improvements are located within the existing right-of-way, but some will need to be purchased in areas to accommodate proposed sidewalks and shared-use paths.

5.5 Comparative Alternatives Evaluation

The alternatives evaluation matrix of the No-Build and Build Alternatives is provided in **Table 5-1**. The matrix includes potential environmental (natural, cultural, physical) impacts and estimated costs. The construction costs were prepared using the FDOT LRE system in February 2024, located in **Appendix C**. ROW costs were estimated in September 2023. Design and Construction

Engineering & Inspection costs were calculated to be 12% of the construction cost. As of April 2024, the rates for mitigation credits available at Mangrove Point Mitigation Bank are $332,000 for one acre. The mitigation credit prices and availability are subject to change. **Table 5-1** shows that the No-Build Alternative does not meet the project purpose and need but is included as a baseline for comparison.

Table 5-1 - Alternatives Evaluation Matrix

DeSoto Bridge PD&E Study				
Evaluation Factors	**Alternative**	**No Build**	**Alternative – West**	**Alternative - East**
	Roadway	**No Improvements**	**Left Replacement with Curb & Gutter North of Bridge**	**Right Replacement with Curb & Gutter North of Bridge**
	Bridge	**No Replacement**	**Replace Bridge with Mid-Level Fixed**	**Replace Bridge with Mid-Level Fixed**
Ability to meet Purpose and Need				
Address structural degradation and substandard design		☒	☑	☑
Maintain critical link for regional travel		☒		
Accommodate multimodal Activity		☒		
Potential Right-of-Way Impacts				
Parcels (#Business | #Residential | #Other*)		0	8 | 0 | 2	7 | 0 | 2*
Area of Impact (ac)		0	0.7	0.8
Residential Relocations		0	0	0
Business Relocations		0	0	0
Utilities		No	Yes	Yes
Environmental Impacts				
Protected Species		None	Low	Low
Contamination Sites (#Medium | #High)		None	7 | 2	2 | 1
Wetland (ac)		0	0.1	0.31
Seagrass (ac)		0	0	0
Surface Water		0	Minimal	Minimal
Public Parks 4(f)		No	Minimal	None
Archaeological & Historic Resources (#)		No	1	1
Noise Sensitive Receptors (#)**		0	33	33
Estimated Project Costs (2024 $)				
Right-of-Way		$0	$800,000	$800,000
Reimbursable Utility Relocation		$0	TBD	$2,000,000
Non-Reimbursable Utility Relocation		$0	$6,100,000	$6,100,000
Wetland Mitigation		$0	$33,200	$102,920
Final Design & Roadway Construction***		$0	$146,262,172	$146,262,172
Construction Engineering & Inspection		$0	$21,939,326	$17,551,461
Preliminary Estimate of Total Project Cost		**$0**	**$175,134,698**	**$172,816,553**

* Manatee Memorial Hospital sign

** Includes 20 residences within Aria Bradenton Apartments, and portions of 2 recreation uses (Bradenton Waterfront Riverwalk and Palmetto Estuary Preserve

***Source: FDOT Long-Range Estimating System. Preliminary Estimate of Total Project Cost does not include maintenance costs; No-Build would result in higher maintenance costs.

5.6 Selection of the Preferred Alternative

The Preferred Alternative is the East Alternative. Although both Build Alternatives would meet the project purpose and need, the East Alternative was selected because it:

- Eliminates Section 4(f) impacts south of the DeSoto Bridge at the Bradenton Waterfront Riverwalk;
- Eliminates a parcel acquisition from the City of Bradenton, which would impact parking for businesses; and
- Provides an increased green area to provide BMP as requested by the SWFWMD.

The preliminary design plans for the Preferred Alternative are included in **Appendix A.**

6.0 AGENCY COORDINATION & PUBLIC INVOLVEMENT

6.1 Agency Coordination

Coordination with local government entities and the public has been ongoing throughout the project. In addition to the scheduled public meetings, 20 meetings were held with elected and appointed officials and agencies, such as Manatee County, the City of Bradenton, and the City of Palmetto, to share information about the project and receive feedback. Four presentations were given to the Sarasota/Manatee County MPO and its committees.

During the ETDM screening, the following ETAT members commented on the project: FEDP – State 404 Program, FL Department of Agriculture and Consumer Services, FL Department of Economic Opportunity, FL Department of Environmental Protection, FL Department of State, FL Fish and Wildlife Conservation Commission, National Marine Fisheries Service, National Park Service, Natural Resources Conservation Service, Southwest Florida Water Management District, U.S. Army Corp of Engineers, U.S. Coast Guard, U.S. Environmental Protection Agency, and U.S. Fish and Wildlife Service.

The overall degree of effects for the bridge replacement was either an enhancement, minimal, or moderate. There was no ETAT preference on the East Alternative or the West Alternative.

6.2 Public Involvement

A Public Involvement Plan (PIP) was developed and approved in June 2023. The PIP was implemented in compliance with Part 1, Chapter 11 of the FDOT *Project Development and Environment Manual (PD&E Manual)*; Florida Statute 339.155; Executive Orders 11990 and 11988; Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) and 23 CFR 771.

FDOT utilized the PIP to obtain input and involvement from the public, key stakeholder groups, and others who could be affected by, benefit from, and/or have an interest in the proposed project. Most of the public involvement resources have been directed toward communicating with people who live, work, or have an interest in the DeSoto Bridge PD&E Study. One of the primary goals was to provide affected communities with clear, consistent, accurate, and current information about the project throughout the NEPA process, including the alternatives being examined. The Comments and Coordination Report will provide documentation of outreach activities the FDOT has conducted and the comments that have been submitted.

6.3 Public Hearing

A Public Hearing was held on April 30, 2024. The hearing informed the public of the results of the PD&E Study associated with the No-Build and the Preferred Alternative. All comments from the

public hearing are summarized in the Environmental Document (Type 2 CE Document). Comments and responses are uploaded to the project file.

All local agencies and stakeholder meeting minutes are uploaded to the project file for reference.

Seventy (70) members of the public and three (3) elected officials signed in at the in-person meeting. Forty-nine (49) members of the public signed in to the virtual meeting. No comments were received through the virtual meeting.

Attendees were able to provide public comments through the following methods: 1) written comments at the meeting, 2) mail comments to the FDOT's project manager, 3) e-mail comments to the FDOT's project manager, and 4) via the project website: https://www.swflroads.com/project/442630-1. The comment period remained open for ten days following the hearing. Four (4) comment forms were received at the Public Hearing, and 15 comments were received through email/web portal following the public workshop within the comment period. Several comments received included a request to address additional capacity needs. No comments were received by mail following the public hearing.

There was no heavy opposition to the DeSoto Bridge Replacement during the meeting and the comment period.

While throughout the public meetings, some comments expressed a preference for constructing the new bridge to the west of the existing structure, many attendees indicated no preference between the East and West Alternatives. The written comments received did not reveal a clear preference for either alternative. The east alternative was selected over the west alternative based on several key factors. The west alternative would require right-of-way from the City of Bradenton, resulting in a Section 4(f) impact on the Bradenton Riverwalk Park and potentially affecting the Palmetto Estuary Trail west of SR 55. It would also reduce the area available for implementing stormwater Best Management Practices in the drainage design. Additionally, no objections to the preferred east alternative were received during the public hearing.

The Public Hearing comments summary report is in the project file.

7.0 PREFERRED ALTERNATIVE

7.1 Typical Sections

The proposed roadway improvements utilize a realignment of SR 55, allowing construction to take place without closing the DeSoto Bridge. The approach roadway includes two 12-foot travel lanes in each direction separated by a 22-foot raised median with Type E and F curbs along the inside and outside lanes, respectively. A 12-foot-wide shared-use path is proposed on each side of SR 55. The typical section package is included in **Appendix B**.

The target, design, and posted speed will be 45 mph from the beginning of the project to the beginning of the proposed bridge. The preferred southern landside urban segment roadway features include two 12-foot travel lanes in each direction, separated by a concrete barrier with 10-foot inside shoulders, and right turn lanes with a shared-use path near the right of way line southbound, and sidewalk northbound as shown in **Figure 7-1**. Additional right-of-way will be required at the southern end of the project to provide sidewalk connectivity, which will transition to a 12-foot shared-use path to cross the bridge and go to the Bradenton Waterfront Riverwalk.

The target, posted, and design speed increases from 45 to 50 mph from the beginning of the bridge to the end of the project. The preferred bridge typical section (**Figure 7-2**) includes two 12-foot travel lanes in each direction, separated by a concrete barrier with 10-foot inside shoulders, 12-foot outside shoulders, and 12-foot shared-use paths on each side, separated by a concrete barrier.

The preferred northern landside segment sub-urban roadway features include two 12-foot travel lanes in each direction, separated by a concrete barrier with 10-foot inside shoulders that transitions to a 22-foot median with Type E curb and gutter, 4-foot inside shoulders, 6-foot outside shoulders, Type E curb and gutter, and 12-foot shared-use path near the right-of-way line as shown in **Figure 7-3**. Additional right-of-way will be required at the project's northern end to incorporate the shared-use path.

Figure 7-1 - Preferred Typical Section South of the Manatee River

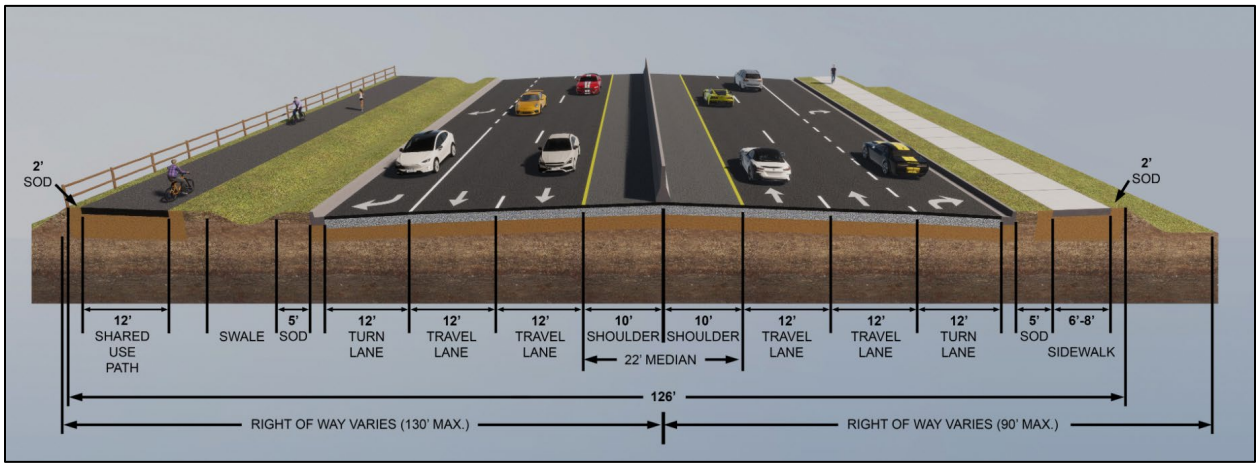


Figure 7-2 - Preferred DeSoto Bridge Typical Section

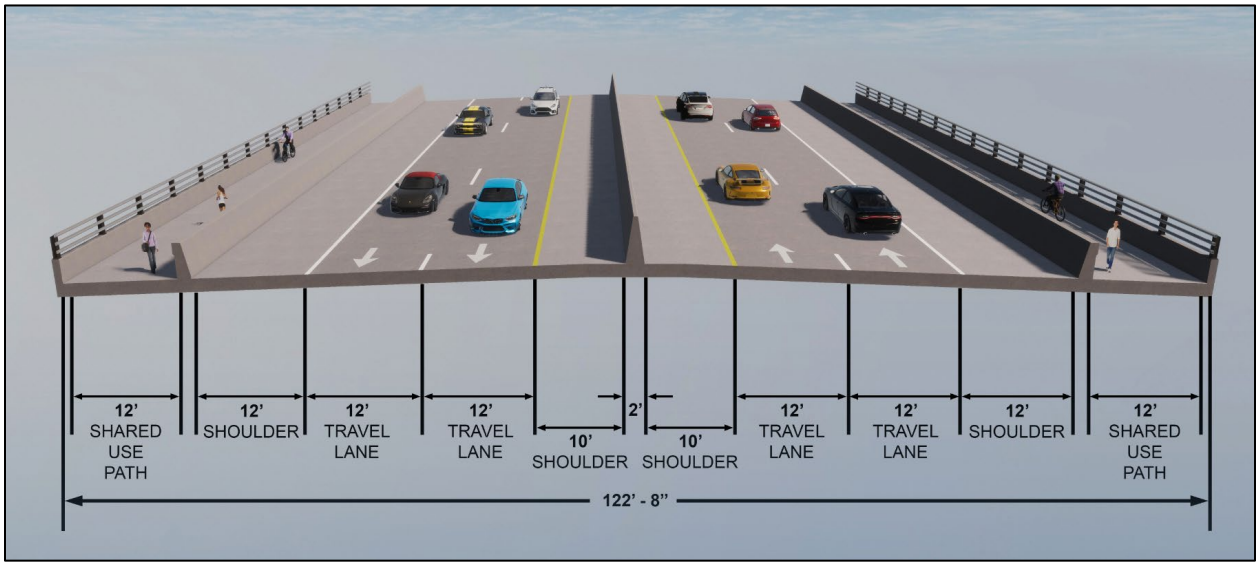
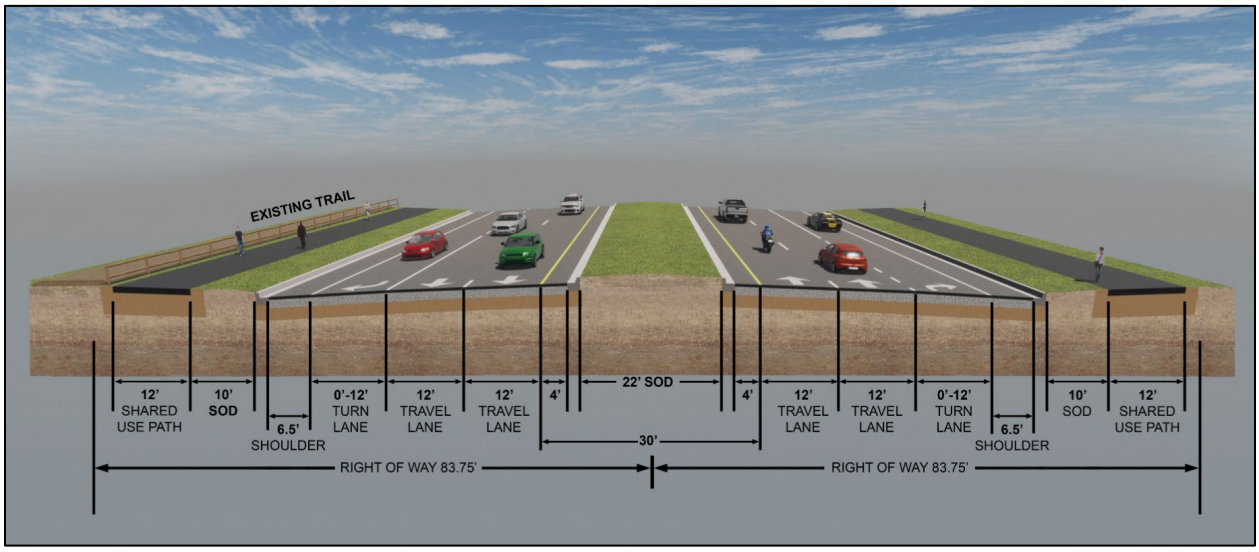


Figure 7-3 – Preferred Typical Section North of the Manatee River



7.2 Access Management

There are no access management changes based on the proposed alternatives.

7.3 Right-of-Way

The proposed project, as currently designed, will not displace any residences, businesses, or other uses. The Preferred Alternative would require approximately 0.8 acres of additional right-of-way from 7 parcels at a cost of $800,000. Should this change over the course of the project, a Right-of-Way and Relocation Assistance Program will be carried out in accordance with Florida Statute 421.55, Relocation of Displaced Persons, and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646 as amended by Public Law 100-17).

7.4 Horizontal and Vertical Geometry

The Preferred Alternative maintains the horizontal alignment from SR 64 to 500 ft north of SR 64. Then, the alignment shifts eastward to avoid impacting the City of Bradenton property, including the Bradenton Waterfront Riverwalk with an 8,250 ft curve, a short 100-foot tangent section, followed by an 8,250 ft westward curve. These shifts will also allow the construction of the new 2,570-ft bridge while maintaining traffic flow on the existing bridge. The alignment then shifts westward with 9,000 ft of reverse curves to tie into the existing roadway. **Appendix A** provides preliminary concept plans showing the Preferred Alternative's horizontal geometry.

The Preferred Alternative will utilize a 3.2% grade to achieve a 40-foot clearance over the Manatee River. The crest vertical curve over the navigable waterway is 724 feet long, and the K value is 137.

7.5 Design Variations and Design Exceptions

A variation for the border width near Manatee Memorial Hospital will be required. Additionally, the typical section north of the bridge will require a design variation for lateral offset from the travel lane to the shared-use path.

The Design Variation package will be prepared and submitted for review during the design phase.

7.6 Multimodal Accommodations

Bicycle and pedestrian facilities will be included within the project limits and on the in-kind replacement bridge with the addition of a 12-foot shared-use path along both sides of SR 55. The 12-foot shared-use path will continue along the edges of the bridge deck, separated with a crash tested barrier.

South of the bridge, a 6 to 8-foot sidewalk will be included on both sides of SR 55 in portions of the corridor. These sidewalks will connect to the 12-foot shared-use paths at the southern approach of the bridge. In addition, the shared-use path on the west side of the facility will have a connection to Riverfront Boulevard, allowing pedestrians and bicyclists access to community recreational spaces along the waterfront. The sidewalk is in a constrained area of the project from the hospital to just south of the bridge. The final location will be determined during the design phase

North of the bridge, the 12-foot shared use paths will continue along both sides of SR 55 ending at Haben Boulevard.

7.7 Intersection / Interchange Concepts and Signal Analysis

No intersection concepts or signals have been analyzed within the project areas.

7.8 Tolled Projects

There are no tolled roads within the project area.

7.9 Intelligent Transportation System and TSM&O Strategies

There are no TSM&O improvements within the proposed project limits.

7.10 Landscape

There are locations on both sides of the bridge suitable for landscaping. The design firm will collaborate with local agencies to determine the locations for the proposed landscaping opportunities.

7.11 Lighting

Proposed lighting will be required throughout most of the corridor, due to the impacts to the existing lighting.

7.12 Wildlife Crossings

There are no wildlife crossings within the project area.

7.13 Permits

The U.S. Army Corps of Engineers (USACE) and SWFWMD regulate impacts to wetlands within the project area. Other agencies, including the USFWS, U.S. Environmental Protection Agency, and the Florida Fish and Wildlife Conservation Commission, review and comment on wetland permit applications. The Fish and Wildlife Commission has authority to issue permits for gopher tortoise relocation activities and protected bird nest takes. No gopher tortoise burrows, or nests were recorded within the project study area (refer to the NRE). Additional surveys and coordination may be required during the permitting phase. In addition, the FDEP regulates stormwater discharges from construction sites. The USCG reviews permit applications for new bridges over navigable waters. It is anticipated that the following permits will be required for this project:

Permit	Issuing Agency
Section 404 Dredge and Fill Permit (Nationwide 14)	USACE
ERP	SWFWMD
National Pollutant Discharge Elimination System (NPDES) Permit	FDEP
Bridge Permit	USCG

Section 404 Dredge and Fill Permit

It is anticipated that a Nationwide 14 permit will be required from the USACE. Wetland and surface water impacts are related to proposed modifications to abutments, bridge approaches, and the realigned access roads to the Palmetto Estuary Preserve. A standard permit will require compliance with the 404(b)(1) guidelines, avoidance and minimization, and unavoidable impacts have been mitigated in the form of wetlands creation, restoration, and/or enhancement.

ERP

SWFWMD requires an ERP when the construction of any project results in the creation or modification of a surface water management system or results in impacts to jurisdictional wetlands. This project is anticipated to require an individual permit because of the extent of work proposed over wetlands and surface waters [this includes the Manatee River] exceeds the 0.5-acre threshold of the 0.443 bridge replacement General Permit.

NPDES

According to 40 CFR Part 122, discharging stormwater from point sources into the waters of the U.S. without a National Pollutant Discharge Elimination System (NPDES) permit is prohibited. Under the State of Florida's authority, delegated to administer the NPDES program, the construction activities associated with this project, which will disturb more than one acre, are required to obtain an individual permit issued in accordance with Chapter 62-620, Florida Administrative Code (FAC).

Bridge Permit

The new DeSoto Bridge over the Manatee River will require a Bridge Permit from the USCG due to the Manatee River being a navigable waterway.

7.14 Drainage and Stormwater Management Facilities

The SR 55 project area drains into the Manatee River (WBID #1848A), which is not recognized as an impaired water basin. Roadway widening projects typically require presumptive water quality treatment. However, according to the ERP Pre-Application Meeting on September 7, 2023, water quality treatment is not required for this project because it proposes to replace the existing bridge without adding additional travel lanes. Since the SR 55 crossing of the Manatee River is located at its tidal mouth leading to the Gulf of Mexico, water quantity attenuation is also not required.

Additionally, no floodplain compensation is expected, as the existing floodplain is influenced by tidal conditions.

In summary, no stormwater management facilities or additional right-of-way is required for the ERP. Considering these circumstances, the FDOT will explore the use of best management practices during the final design phase to improve the quality of conveyed roadway runoff before discharge to the Manatee River.

Based on gutter spread calculations, bridge end drainage is recommended and will be an improvement to the existing bridge with scuppers that drain the bridge runoff directly into the river. Drainage for the proposed bridge will be collected in curb inlets located at either ends of the bridge and conveyed with the SR 55 roadway runoff to a facility that takes advantage of the proposed condition at the outfall locations. For example, at the south end of the bridge, the western roadside will have expanded green space, which can be utilized as a bioretention swale. The south bridge end drainage and the SR 55 runoff draining from north of Manatee Ave can be discharged to this area. The bioretention system can be equipped with a filtration strip and a perforated pipe, which would then convey the treated water north to Manatee River.

Similarly, on the bridge's north end, the bridge end drainage can be collected by curb inlets at the northern bridge end and conveyed with the rest of the project runoff draining from south of Haben Boulevard to the western roadside area. In this location, one of the drainage junction structures required could serve as a structural facility, such as a Continuous Deflection Separation unit, to hydrodynamically separate debris, sediment, and hydrocarbons before discharging to the Manatee River see **Appendix F**, **Drainage Map for East Alternative**.

The project is located within the Coastal Building Zone, as defined by Rule 62S-7.010 of the Florida Administrative Code (F.A.C.). A Sea Level Impact Projection (SLIP) study and a Sea Level Rise Analysis were conducted in accordance with Section 3.2.5.14. No impacts to the Alternatives Analysis were identified. A copy of the SLIP study is provided in **Appendix G**.

7.15 Floodplain Analysis

There is a floodplain within the project area. However, compensation or mitigation is not needed.

7.16 Bridge and Structure Analysis

The Preferred Alternative will replace the existing structure (Bridge No. 130053) with a fixed bridge with navigational clearances of a 40-foot minimum vertical clearance and a 75-foot horizontal clearance. The structure design for the PD&E Study is based on the following elements:

Bridge Environmental Classification

The bridge is in an area classified as a marine environment and is anticipated to be classified as "extremely aggressive" for both the substructure and superstructure.

Bridge Superstructure

A superstructure consisting of approximately 150-foot spans that uses simple span precast concrete FIB-72 or FIB-78 girders. These span lengths are considered reasonable for standard delivery methods and routes, and the weight of these beams is not expected to require special coordination with FDOT's Permit Office for Over-Weight/Over-Dimension vehicles. The arrangement of the spans and the type of superstructure will be further evaluated during the design phase and documented in the Bridge Development Report (BDR).

Aesthetics Features

The viewsheds within this area include the Manatee River and nearby parks, with some immediately adjacent and surrounding areas providing scenic views of natural resources, including vegetation and wildlife.

Bridge Aesthetics

Bridge aesthetics include multi-column piers placed side-by-side to produce a visually appealing structure. Aesthetics will be further evaluated during the design phase and documented in the BDR.

Bridge Substructure

A substructure consisting of two multi-column piers that can be independently constructed during the two construction phases (see section 7.18 Constructability). All piers are anticipated to be in the water and utilize waterline footings, except the first pier on the south side, which will have a buried footing. Repetitive details could be utilized to reduce costs, increase constructability, and enhance the feasibility of using precast elements for the footings and columns if desired. The substructure type will be further evaluated during the design phase and documented in the BDR.

Bridge Foundation

Based on limited available project geotechnical data, it is anticipated that 24-inch precast concrete piles could be utilized. Installation of the proposed piles without impacting the existing piles appears possible since the majority of the proposed piers can be located away from existing foundations. This minimizes the potential for vibration impacts during the construction of proposed pilings and avoids potential conflicts with the existing piles, allowing them to remain in place and be cut off a minimum of Two (2) feet below the groundline. It is possible that proposed pier locations may be located where there is a potential conflict between the existing and proposed piles. Therefore, removing the existing piles may be required but will be avoided if possible by carefully evaluating footing locations. The foundation types and location will be further evaluated during the design phase and documented in the BDR.

Horizontal And Vertical Geometry

The horizontal and vertical geometry for the Preferred Alternative is discussed below and shown on the concept plans included in **Appendix A**.

Bridge Layout

The proposed span arrangement of the new bridge was based on maintaining a 75-foot horizontal clearance between bridge fenders to match the existing navigational channel. This can be accomplished with an approximate 150-foot main channel span and seven approximate 150-foot approach spans on both sides. The preliminary span arrangement was chosen to maximize the distance to existing bridge foundations and to minimize bridge hydraulics impacts. It is anticipated that piers may need to be placed near Riverside Boulevard and the Bradenton Waterfront Riverwalk near existing pier locations. Mechanically-stabilized earth (MSE) retaining walls are anticipated to be utilized to eliminate the use of embankment slopes and limit the need for additional ROW. The span arrangement and wall layout will be further evaluated during the design phase and documented in the BDR.

Bridge Horizontal Alignment

The horizontal alignment of the roadway mirrors that of the existing road before incorporating reverse curves. This adjustment shifts the centerline of the new bridge to the east of the existing bridge, facilitating phased construction of the bridge.

Bridge Vertical Alignment

The vertical alignment is based on a vertical clearance evaluation that considers the purpose and need for the project, impacts on both the north and south, channel location and topography, surrounding resources, maintenance, and connectivity. The preliminary clearance determination received from our USCG coordination meeting in February 2024 noted that a minimum vertical clearance of 40 feet above MHW for a fixed bridge would meet the reasonable needs of navigation for this bridge crossing.

7.17 Transportation Management Plan

The objectives of the Transportation Management Plan are to ensure that existing traffic along SR 55 experiences minimal disruptions. Construction activities on SR 55, particularly in sections of the existing roadway, will be conducted in phases to maintain four lanes of traffic (two in each direction) during peak travel hours, with lane closures occurring at night during off-peak hours. These lane closure schedules will be coordinated with Manatee County and the Cities of Bradenton and Palmetto. Currently, there is a resurfacing project (447379-1) that will start construction later this year. They are adding thrie beam to provide more protection so a vehicle crossing the bridge won't crash into the river. The placement of the thrie beam will eliminate pedestrians from walking on the bridge.

Further coordination will be necessary with Manatee Memorial Hospital and Manatee County Emergency Services during the final design phase to ensure uninterrupted access to the hospital is maintained throughout the construction period. Coordinating with local emergency service

providers is critical for facilitating accommodations and planning for emergency vehicle routes during construction. It is anticipated that detours via US 41 Business (Green Bridge) instead of SR 55 and the DeSoto Bridge could result in additional travel times ranging from approximately 12 to 30 minutes, depending on the time of day.

7.18 Constructability

The construction of the northbound half of the new bridge will start independently from the existing bridge, with a shift of approximately 41 feet to the east. This adjustment creates a 10-foot space between the new northbound section and the existing bridge, allowing traffic to flow normally on the existing bridge and roadway while the new bridge is built without any disruption. Once the northbound half is completed, temporary striping will be applied to provide four lanes — two in each direction — enabling traffic to move to the new bridge. Subsequently, the old DeSoto Bridge will be dismantled, and the southbound half of the new bridge will be constructed and connected to the northbound section. See **Appendix A** for the construction phasing of the proposed bridge.

Traffic shifts and temporary pavement, with overbuild, will be utilized to construct and maintain landside traffic patterns. Construction of the shared-use paths and sidewalks will be incorporated in the phasing plans.

7.19 Construction Impacts

This project includes several features to be considered during design and construction:

7.19.1 Palmetto Estuary Preserve

The City of Palmetto acquired the land as part of a land swap in the 1990s to construct Riviera Dunes, located on the west side of SR 55. The area was ecologically restored and has a 1.6-mile-long trail for birdwatching, hiking, and walking.

7.19.2 Bradenton Waterfront Riverwalk

The Bradenton Waterfront Riverwalk is a 1.5-mile stretch of land located between the Green and DeSoto Bridges, along the southern shoreline of the Manatee River. Amenities include a multi-use path, skatepark, beach volleyball courts, restrooms, water fountains, picnic tables/benches, and opportunities for fishing the Manatee River. Through a lease agreement between FDOT and the City of Bradenton, a portion of the Riverwalk is positioned under the current DeSoto Bridge within FDOT right-of-way. The Preferred Alternative will not have any direct use, constructive (indirect) use, or temporary impacts to the property or amenities within the Bradenton Waterfront Riverwalk that are outside of the FDOT right-of-way.

The skatepark, spanning 15,000 square feet, is partially beneath the DeSoto Bridge adjacent to the Manatee River. It features various structures, including multiple ledges, hips, manual pads,

stairs, and rails. Additionally, the park contains three granite elements: moguls, a mini bowl with a vertical wall, and a pool complete with tile and pool coping. Construction activities will impact and potentially close portions of the Riverwalk and the Skatepark, which are located within the FDOT right-of-way.

7.19.3 Boat Ramp

There is an existing boat ramp on the east side of the north end of the DeSoto Bridge. This unofficial boat ramp has picnic tables and trash cans and is used periodically throughout the day. The boat ramp is within the State of Florida Lands and will potentially be closed during construction activities.

7.19.4 Other Environmental Considerations

Construction activities for the proposed project may cause minor short-term impacts on noise, air quality, water quality, traffic congestion, and visual impacts within the immediate vicinity of the project.

For residents living along the project area, some of the construction equipment and materials stored for the project may be displeasing visually; however, this will be a temporary condition and should pose no substantial problem.

Dust from earthwork and unpaved areas may impact air quality. Adherence to applicable state regulations and to applicable sections of the FDOT's Standard Specifications for Road and Bridge Construction will minimize these impacts.

Potential water quality impacts resulting from erosion and sedimentation during construction will be controlled in accordance with the agency permit conditions, the most current edition of the FDOT's Standard Specifications for Road and Bridge Construction, Section 104 "Prevention, Control, and Abatement of Erosion and Water Pollution", and through the use of Best Management Practices (BMPs). These BMPs (e.g., siltation barriers and containment devices) will prevent water quality degradation to surrounding or nearby waters during construction activities. A National Pollutant Discharge Elimination Systems (NPDES) construction permit will be acquired, and the associated requirement to develop and implement a Stormwater Runoff Control Concept will be met.

BMPs such as delineation markers, barrier fencing, and runoff containment measures will be implemented to limit equipment access and control turbid water discharges outside of construction limits.

Maintenance of traffic (MOT) and sequencing of construction will be planned and scheduled to minimize traffic delays throughout the project. There will be no bridge closures during construction. Signage will be used as appropriate to provide pertinent information to the traveling

public. A sign providing the name, address, and telephone number of an FDOT contact person will be displayed on-site to assist the public in obtaining immediate answers to questions about project activity.

Based on these considerations, construction of the Preferred Alternative is not expected to result in significant impacts.

7.20 Environmental Impacts

7.20.1 Future Land Use

The proposed improvements associated with the Preferred Alternative are compatible with both the Bradenton and Palmetto Comprehensive Plans and support their respective plans' Future Land Use Elements. According to the City of Bradenton 2030 Comprehensive Plan Future Land Use Map and the City of Palmetto Future Land Use Map, the project area will remain urbanized with predominantly commercial, retail, institutional, community recreational areas, high-density residential, and undeveloped/ open land uses. The City of Bradenton designates the areas within the study area and within its jurisdiction as Urban Central Business District according to the 2010-2030 Future Land Use Map. The portion of the project that falls within the jurisdiction of the City of Palmetto designates areas within the study area as Public Use and Planned Community according to their respective future land use map.

7.20.2 Section 4(f)

Four resources were identified and evaluated for the applicability of Section 4(f). The evaluation determined that there will be no adverse impacts on any of the four resources reviewed as listed below and described in **Section 7.18**.

- Bradenton Waterfront Riverwalk
- Donald L. Courtney Veterans' Monuments Park
- Manatee River Blueway
- Palmetto Estuary Preserve

7.20.3 Cultural Resources

A Cultural Resource Assessment Survey (CRAS), conducted in accordance with 36 CFR Part 800, was performed for the project (December 2023), and the resources listed below were identified within the project Area of Potential Effect (APE). FDOT found that these resources do not meet the eligibility criteria for inclusion in the National Register of Historic Places (NRHP), and State Historic Preservation Officer (SHPO) concurred with this determination on 02/20/2024. Therefore, FDOT, in consultation with SHPO, has determined that the proposed project will result in No Historic Properties Affected.

The architectural history survey resulted in the identification and evaluation of one newly recorded historic building (8MA02569) within the architectural history APE. Historic building 8MA02569 lacks the architectural distinction and significant historical associations necessary to be considered for listing in the NRHP and is considered ineligible.

No historic districts, NRHP-listed or eligible cultural resources, were identified within the project APE.

7.20.4 Wetlands

A Natural Resource Evaluation (NRE) was completed in March 2024 to document and present the findings of potential wetland involvement associated with the Preferred Alternative, and is located in the project file.

Potential wetland impacts within the project corridor are located on the east side of US 301/ US 41, just north of the northern bridge approach. The Preferred Alternative will cross and shade 6.09 acres of US Army Corps of Engineers (USACE) and Southwest Florida Water Management District (SWFWMD) jurisdictional surface waters (Manatee River). Construction of bridge pilings will result in permanent surface water impacts (<0.10 acre). A summary of permanent impacts is provided in **Table 7-1** and accounts for all wetlands within the project footprint with potential impacts. The FDOT commits to conducting a seagrass survey during design. No impacts to seagrass are anticipated.

Table 7-1 - Wetland Impacts

FLUCFCS	USFWS Classification	Preferred Alternative			
		Impact Type	Impact Acreage	UMAM Score	Functional Loss
Wetlands					
6120	E2FO3N	Fill	0.31	0.73	0.23
		Secondary	0.71	0.06	0.04
		Total	**1.02**	**-**	**0.27**
Surface Waters					
5400	E1UB2	Fill	<0.10	-	<0.01

Notes:

FLUCFCS = Florida Land Use, Cover and Forms Classification System
FLUCFCS: 6120: Mangrove Swamps
FLUCFCS: 5400 = Bays and Estuaries

USFWS Classification:
E2FO3N - Estuarine, Intertidal, Forested, Broad-Leaved Deciduous, Regularly Flooded)
E1UB2 - Estuarine, Subtidal, Unconsolidated Bottom, Sand)

The Uniform Mitigation Assessment Method (UMAM) was used to determine Functional Loss.

Jurisdictional determinations and mitigation requirements will be completed during the permitting process as wetlands are subjected to further study, delineation, verification, and survey during the final design. Mitigation will be required by both the USACE and the SWFWMD for wetland impacts.

The proposed project will have no significant short-term or long-term adverse impacts to wetlands, there is no practicable alternative to construction in wetlands, and measures have been

taken to minimize harm to wetlands. FDOT will employ various strategies to fulfill mitigation needs, which may include using approved mitigation banks or restoration, enhancement, preservation, and/or creation of wetlands, either on or off-site. The proposed project is located within the service area of three mitigation banks: Mangrove Point Mitigation Bank, Braden River Mitigation Bank, and Nature Coast Mitigation Bank. Braden River Mitigation Bank and Nature Coast Mitigation Bank are within the SWFWMD basin but are not federally permitted; therefore, the most feasible option is Mangrove Point Mitigation Bank, which has estuarine credits available. These options will be investigated further during the design phase of the project. Any mitigation proposed will be pursuant to Section 373.4137, FS, to satisfy all mitigation requirements of Part IV of Chapter 373, FS, and 33 USC 1344.

7.20.5 Protected Species and Habitat

An NRE was completed in March 2024 to document and present the findings of potential protected species and habitat involvement associated with the Preferred Alternative and is located in the project file. During the Efficient Transportation Decision Making (ETDM) Programming Screen, comments were received from U.S. Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC), and Florida Department of Consumer Services (FDACS). These agencies provided feedback and a list of wildlife species that could potentially be present along the proposed alignment or in the nearby regional area based on known range and habitat preferences. Further coordination with USFWS and FWC has occurred, and commitments were made regarding protected species and habitat considerations during the design phase.

A review of USFWS (IPAC), FWC, and Florida Natural Areas Inventory (FNAI) data indicates that thirty (30) protected wildlife species are known to occur in Manatee County. Eighteen (18) of the species are federally listed as endangered or threatened. Eleven (11) listed species are state-listed, endangered, or threatened. The bald eagle (*Haliaeetus leucocephalus*) was delisted from protection under the Endangered Species Act in 2007. However, the bald eagle is still protected under the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act, and State law (Florida Administrative Code [FAC] 68A-16.002). There is one species, the tricolored bat (*Perimyotis subflavus*), that is a proposed candidate for federal listing and has been known to occur in Manatee County. Additionally, multiple species of bats are state-protected by FAC 68A-4.001 General Prohibitions and 68A-9.010 Taking Nuisance Wildlife.

A total of twenty-six (26) federally and state-protected plants are known to occur within Manatee County. Of the 26 species, seven (7) plants are federally listed species, and nineteen (19) plants are state-protected species. Field reviews did not document any observations of protected species.

Compensatory mitigation and conservation measures implemented during construction will offset negative impacts to protected species. The tricolored bat is not likely to roost within the bridge

structure, however, FDOT will continue coordination with USFWS to determine the potential effect to the tricolored bat once a final listing decision has been made. Additionally, FDOT commits to avoid tree clearing/trimming/culvert work during maternity season: May 1 - July 15 or when daytime high temperatures are below 45 degrees Fahrenheit. Therefore, no impacts are anticipated to the tricolored bat as a result of the proposed project.

No state-protected roosting bats were observed within the DeSoto Bridge during field reviews. Suitable habitat for the eastern black rail is not located in the project area; based on the Eastern Black Rail ESA determination guidelines, no additional survey is needed. No bald eagle nests are located within the secondary protection zone (660-foot) of the project study area. Therefore, no impacts are anticipated to the species.

During construction, Best Management Practices (BMPs), adherence to FDOT's "Standard Specification for Road and Bridge Construction", and use of preconstruction surveys are strategies that will be considered, as needed, for protection of listed species. Additionally, FDOT has agreed to adhere to the following commitments during construction:

- The most recent version of the USFWS' *Standard Protection Measures for the Eastern Indigo Snake* will be adhered to during construction of the proposed project;
- The most recent version of the USFWS' *Standard Manatee Conditions for In-Water Work* will be adhered to during construction of the proposed project; and
- The NMFS' *Protected Species Construction Conditions* will be adhered to during construction of the proposed project.

7.20.6 Essential Fish Habitat

An NRE was completed in March 2024 to document and present the findings of potential protected Essential Fish Habitat (EFH) involvement associated with the Preferred Alternative. It has been determined that this project will not have adverse effects on EFH.

However, since the specifications for in-water work and piling driving have not been finalized at this time, consultation with NMFS regarding Section 7 consultation for Gulf sturgeon, smalltooth sawfish, and swimming sea turtles will be deferred to the design phase of the project.

Proposed impacts to EFH from this bridge replacement project are anticipated to be minor. These impacts include: 0.31 acres of direct impacts and 0.71 acres of indirect impacts to the roadside edge of the mangrove fringe to the northeast of the existing bridge (with the rest of the fringe remaining); less than 0.10 acres of direct/permanent impacts to unconsolidated sandy bottom; and approximately 3.45 acres of indirect impacts (shading) from the wider replacement bridge structure.

As the majority of the waterward portion of the mangrove fringe will not be impacted by the project and will remain intact, EFH in the project footprint is anticipated to return to similar/equivalent conditions post-construction. Therefore, based on the environmental review of the current design of the Preferred Alternative, it is determined that this project will have minimal/ no adverse impacts to EFH. The EFH assessment is detailed in the NRE in the project file.

Project commitments provide for coordination with the NMFS to ensure that compensatory mitigation details will be finalized once the project enters the final permitting and design stage. Additionally, the NMFS Protected Species Construction Conditions will be adhered to during construction of the proposed project. Furthermore, during new bridge construction and existing bridge demolition, seagrass beds adjacent to the existing bridge in the project's northwest and northeast quadrants will be delineated with buoys to prevent adverse impacts from barges and small work boats. The FDOT has determined the potential adverse effects on EFH will be minimal as a result of the project. NMFS reviewed the NRE and concurred with FDOT, regarding the recommendation to defer ESA consultation until the Design phase, on May 22, 2024.

7.20.7 Highway Traffic Noise

Land uses within the project limits are identified in the FDOT listing of noise and vibration-sensitive sites (e.g., residences, hospitals, and parks). Construction of the proposed bridge replacement is not expected to have any significant noise or vibration impact. It is anticipated that the application of the FDOT "Standard Specifications for Road and Bridge Construction" will minimize or eliminate potential construction noise and vibration impacts. However, should unanticipated noise or vibration issues arise during the construction process, the Project Engineer, in coordination with the District Noise Specialist and the Contractor, will investigate additional methods of controlling these impacts.

7.20.8 Contamination

A Contamination Screening Evaluation Report (CSER) was developed to evaluate the potential and existing contamination sources within the 500-foot project area buffer. Ten sites of concern were identified. A contamination risk rating was assigned to each site to describe the potential for a contaminated site to impact the project area. The risk rating distribution for these identified sites/facilities is presented in **Table 7-2.** The sites with Medium and High contamination risks ratings will be reevaluated during the project design phase by performing a Level 2 Impact to Construction Assessment (ICA) if deemed necessary. The ICA effort will be coordinated through the DCIC.

Table 7-2 - Contamination Site Risk Ratings

Site No.	Site Name	Site Address	Risk Potential
1	Botts Standard Service Station, Chevron-McNitt Foodmart, CVS Pharmacy #5245	520 1st Street West	Low
2	Gulfcoast Family Practice	202 Manatee Avenue East	Low
4	The Bradenton Herald	102 Manatee Avenue West	Low
5	Manatee Memorial Hospital	206 2nd Street East	Low
6	Gould & Lamb	101 Riverfront Boulevard	Low
7	Palmetto Economic Enhancement District	Study Area	Low
8	102 1st Street East Property	102 1st Street East	Low
3	Historical Gas Station	101 Manatee Avenue West	Medium
9	7-Eleven Food Store No. 33110	208 US Highway 41	Medium
10	US 41 Bridge over the Manatee River Bridge No. 130053	US Highway 41	High

Additional details can be found in the CSER regarding the potential sites within or adjacent to the project corridor.

7.21 Special Features

MSE retaining walls will minimize the roadway footprint north of the bridge, thereby eliminating wetland impacts and reducing impacts to the access road to the Palmetto Estuary Preserve.

7.22 Utilities

Existing utilities within the project area include overhead power lines (located north of the bridge), underground fiber optic cable, water distribution, sanitary and storm sewer, and natural gas distribution, which are listed in **Table 7-3**. In addition, a subaqueous waterline (owned and operated by Manatee County, which is a critical part of the county's potable water distribution system) runs parallel to the bridge and will be replaced. Construction is anticipated to begin in 2025. It is anticipated that utility relocations will be required based on location and depth. Coordination with Utility Owners will take place during the design phase for relocation agreements and schedules. A Utilities Assessment Package (UAP) is included in the project file.

Table 7-3 - Utilities Identified Within the Project Area

Utility Agency/Owners	***Facilities Within Corridor***	***Description of Existing Utilities***
City of Bradenton	Yes	1. City of Bradenton has a 20" ductile iron potable water line running east to west along the north side of Riverfront Blvd, crossing US 41 and exiting the project limits in both directions 2. City of Bradenton has a 2" PVC force main just west of US 41 that crosses from the north side of Riverfront Blvd to the south side, and continues west, exiting the project limits
City of Palmetto	Yes	1. City of Palmetto has a 6" Reclaimed Water Main running west along the south side of Haben Blvd that crosses to the west side of US 41, turning north and eventually exiting the project limits 2. City of Palmetto has a 6" PVC Force Main running west along the south side of Haben Blvd that crosses to the west side of US 41, turning north, and eventually exiting the project limits
Crown Castle	Yes	1. Crown Castle has 4 x 1.5" conduit with 72 count FOC running east and west along the south side of Manatee Ave E crossing US 41, and exiting the project limits in both directions 2. Crown Castle has 4 x 1.5" conduit with 216 count FOC at the southeast corner of the Manatee Ave E and US 41 intersection that runs north, crossing the bridge before going aerial approximately 260' north of the bridge 3. Crown Castle has 4 x 1.5" conduit with 96 count FOC at the southeast corner of the 3rd Ave W and US 41 intersection that crosses to a handhole on the east

Utility Agency/Owners	*Facilities Within Corridor*	*Description of Existing Utilities*
		side of US 41 and continues east, exiting the project limits 4. Crown Castle has an aerial 288 count FOC approximately 260' north of the bridge, running north along the west side of US 41, exiting the project to the north 5. Crown Castle has 4 x 1.5" conduit with 288 county FOC at the southeast corner of Haben Blvd and US 41 intersection that crosses to a handhole on the east side of US 41
Florida Power & Light (FPL) Distribution	Yes	1. FPL has an overhead electric line at the northwest corner of the Haben Blvd and US 41 intersection that runs south to the DeSoto Bridge, where it goes subaqueous, crossing to the south side but exiting the project limits 2. FPL has a buried electric line running west along the south side of 3rd Ave W, that crosses US 41 to feed the hospital on the east side of US 41
Frontier	Yes	1. Frontier has 5 buried 4" PVC with fiber north of Haven Blvd, running south along the east side of US 41 to a 3' x 5' manhole just north of the DeSoto Bridge where the lines go subaqueous to cross to the south side of the bridge and cross to a manhole on the southside of Riverfront Blvd 2. Frontier has 2 buried 4" PVC with fiber, running east and west along the south side of Riverfront Blvd that crosses US 41 and exits the project limits in both directions
Manatee County Transportation	Yes	1. Manatee County Transportation has facilities running south along the west side of US 41 until reaching the northwest corner of the Haben Blvd and US 41 intersection where they cross to the northeast intersection 2. Manatee County Transportation has facilities at the northwest corner of the Haben Blvd and US 41 intersection that run to the southwest corner and

Utility Agency/Owners	*Facilities Within Corridor*	*Description of Existing Utilities*
		across to the southeast corner 3. Manatee County Transportation has facilities starting at the north end of the project, running south along the west side of US 41, to the northwest corner of the Haben Blvd and US 41 intersection 4. Manatee County Transportation has facilities at the northwest corner of the Haben Blvd and US 41 intersection that crosses to the northeast corner, then to the southeast corner, and crosses to the southwest corner 5. Manatee County Transportation has facilities at the northwest corner of the Haben Blvd and US 41 intersection that runs south, ending just north of 1st St E
Manatee County Utilities	Yes	1. Manatee County Utilities has a 16" DIP water main starting at the north end of the project running south along the east side of US 41 eventually becoming subaqueous to cross to 1st St E. Manatee County Utilities has a 16" DIP water main running southeast of 1st St E before ending at the northeast corner of the 3rd Ave W and1st St E intersection.
MCI	Yes	1. MCI has 2" x 2" HDPE conduit with FOC just south of 3rd Ave W that runs north along the west side of US 41, where it goes subaqueous, to cross along the west side of the bridge, eventually exiting the project limits to the north 2. MCI has 2" x 2" HDPE conduit with FOC just south of 3rd Ave W that runs north along the east side of US 41 where it goes subaqueous, to cross along the east side of the bridge, eventually exiting the project limits to the north
Spectrum	Yes	1. Spectrum has underground facilities at the northeast corner of the Manatee Ave and US 41 intersection that cross to the northwest corner, and continue north,

Utility Agency/Owners	*Facilities Within Corridor*	*Description of Existing Utilities*
		going subaqueous at the bridge, and cross to the east side of US 41 just north of the end of the bridge 2. Spectrum has underground facilities just north of the bridge on the east side of US 41, running north until exiting the project
TECO People's Gas	Yes	1. TECO People's Gas has an 8" gas main just south of the southern point of the bridge that runs north along the east side of the bridge, eventually ending just north of the bridge
Uniti Fiber	Yes	1. Uniti has underground facilities north of Haben Blvd, running south along the west side of US 41, attaching to the bridge to continue south along the west side
Zayo Group	Yes	1. Zayo has a buried fiber line at the southwest corner of the Manatee Ave and US 41 intersection that runs north before going subaqueous, and crossing to the north end of the bridge 2. Zayo has a buried fiber line just north of the bridge that runs north along the west side of US 41 to the southwest corner of the Haben Blvd and US 41 intersection 3. Zayo has a buried fiber line at the southwest corner of the Haben Blvd and US 41 intersection that crosses to the southeast corner, and then runs north, exiting the project limits

7.23 Cost Estimates

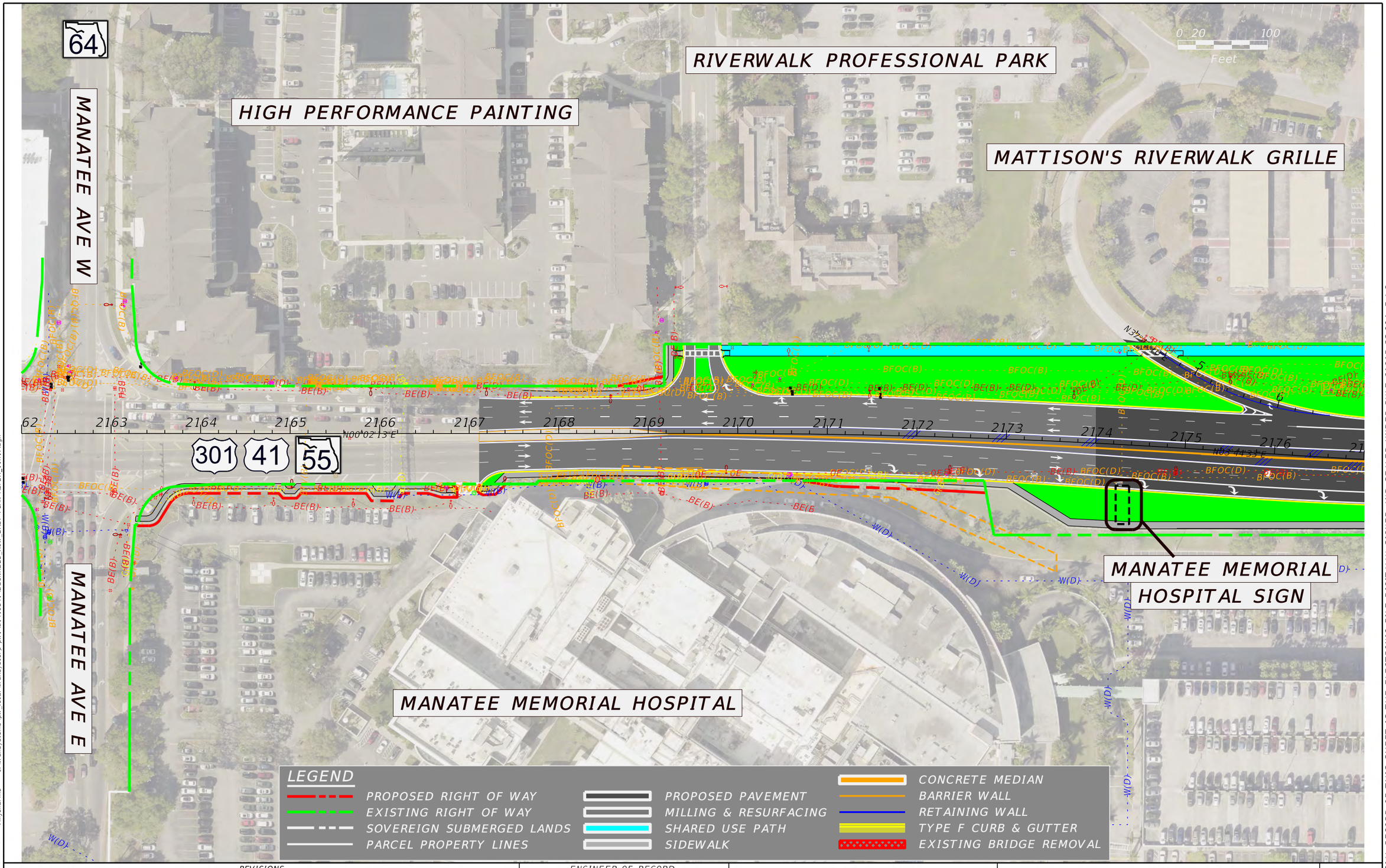
Preliminary project costs for construction, right-of-way, and construction engineering and inspection were developed for the Preferred Alternative and are included in **Table 7-4**. The project's long-range estimate has been included in **Appendix C**, which summarizes the construction cost for the Preferred Alternative.

Table 7-4 - Preliminary Cost Estimate for the Preferred Alternative

Evaluation Factors	Estimate Project Costs (2024 $)
Right-of-Way for Roadway	$ 800,000
Wetland Mitigation	$ 102,920
Final Design and Construction	$ 146,262,172
Construction Engineering and Inspection	$ 17,551,461
Preliminary Estimate of Total Project Cost	$ **172,816,553**

*Source: FDOT Long-Range Estimating System. Preliminary Estimate of Total Project Cost does not include maintenance costs; implementing the No-Build Alternative would result in higher maintenance costs.

APPENDIX A – Preliminary Concept Plans



REVISIONS				ENGINEER OF RECORD	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			DESOTO BRIDGE REPLACEMENT EAST ALTERNATIVE	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	IAN N. BIAVA, PE LICENSE NUMBER: 50700 TRANSYSTEMS CORPORATION CONSULTANTS 200 EAST ROBINSON STREET, SUITE 600 ORLANDO, FL 32801	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		SHEET-EAST-1
					SR 55	MANATEE	442630-2-52-01		

3/7/2025 12:55:02 PM rmjenarine c:\transystems\pw_local\transyscorp-pw1\d1410841\DSGNRD28_ROW_EAST-PLAN-ALTER_11X17.dgn

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

COURTYARD MARRIOTT BRADENTON

RIVERFRONT BLVD.

MATTISON'S RIVERWALK GRILLE

BRADENTON RIVERWALK SKATE PARK

MANATEE RIVER

0 20 100
Feet

301 41 55

BRADENTON RIVERWALK SKATE PARK

RIVERFRONT BLVD.

MANATEE MEMORIAL

N30°05'41"E

LEGEND

- PROPOSED RIGHT OF WAY
- EXISTING RIGHT OF WAY
- SOVEREIGN SUBMERGED LANDS
- PARCEL PROPERTY LINES
- PROPOSED PAVEMENT
- MILLING & RESURFACING
- SHARED USE PATH
- SIDEWALK
- CONCRETE MEDIAN
- BARRIER WALL
- RETAINING WALL
- TYPE F CURB & GUTTER
- EXISTING BRIDGE REMOVAL

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD

IAN N. BIAVA, PE
LICENSE NUMBER: 50700
TRANSYSTEMS CORPORATION CONSULTANTS
200 EAST ROBINSON STREET, SUITE 600
ORLANDO, FL 32801

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 55	MANATEE	442630-2-52-01

DESOTO BRIDGE REPLACEMENT
EAST ALTERNATIVE

SHEET NO.
SHEET-EAST-2

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

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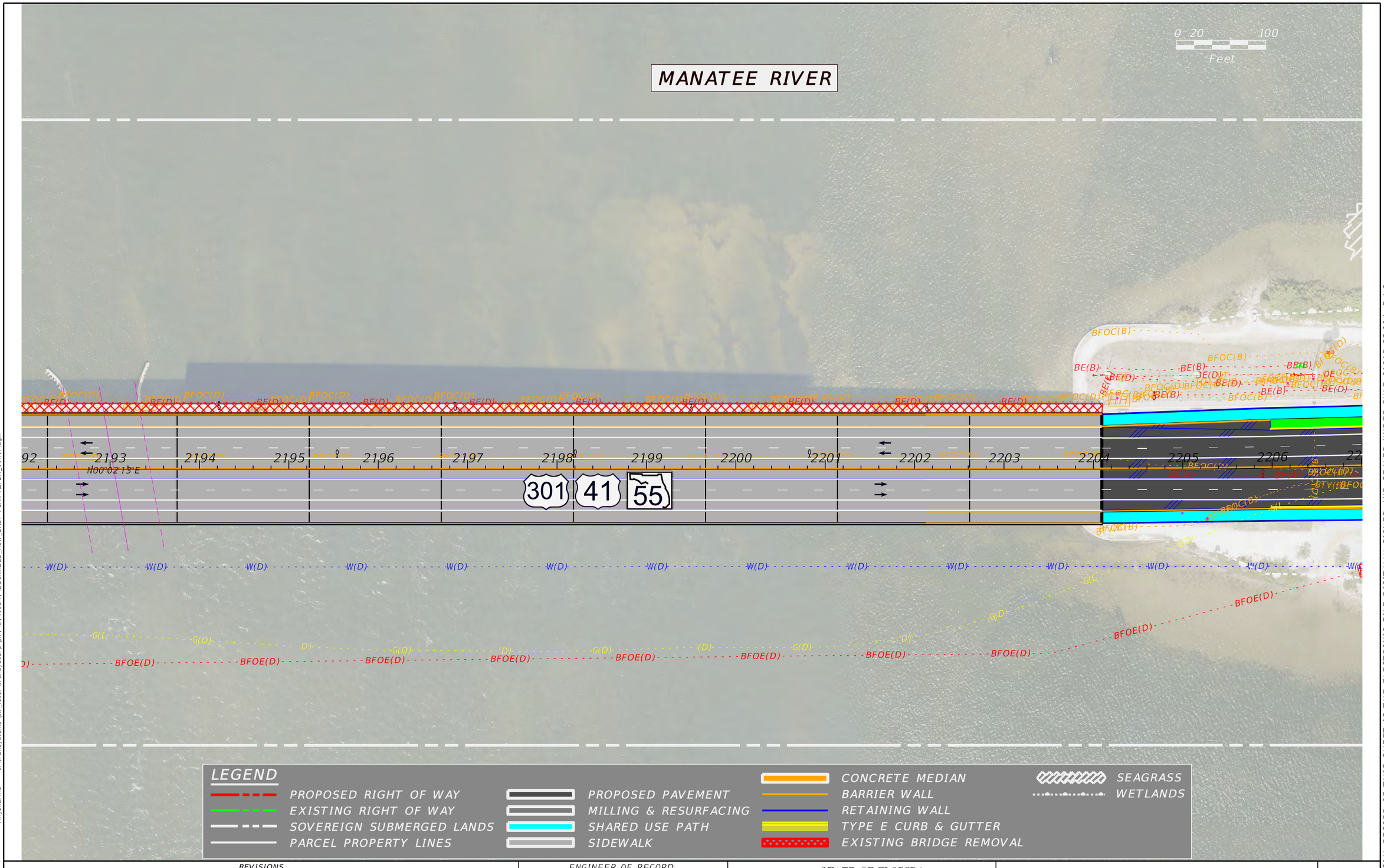

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD

IAN N. BIAVA, PE
LICENSE NUMBER: 50700
TRANSYSTEMS CORPORATION CONSULTANTS
200 EAST ROBINSON STREET, SUITE 600
ORLANDO, FL 32801

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 55	MANATEE	442630-2-52-01

DESOTO BRIDGE REPLACEMENT EAST ALTERNATIVE

SHEET NO.
SHEET-EAST-3

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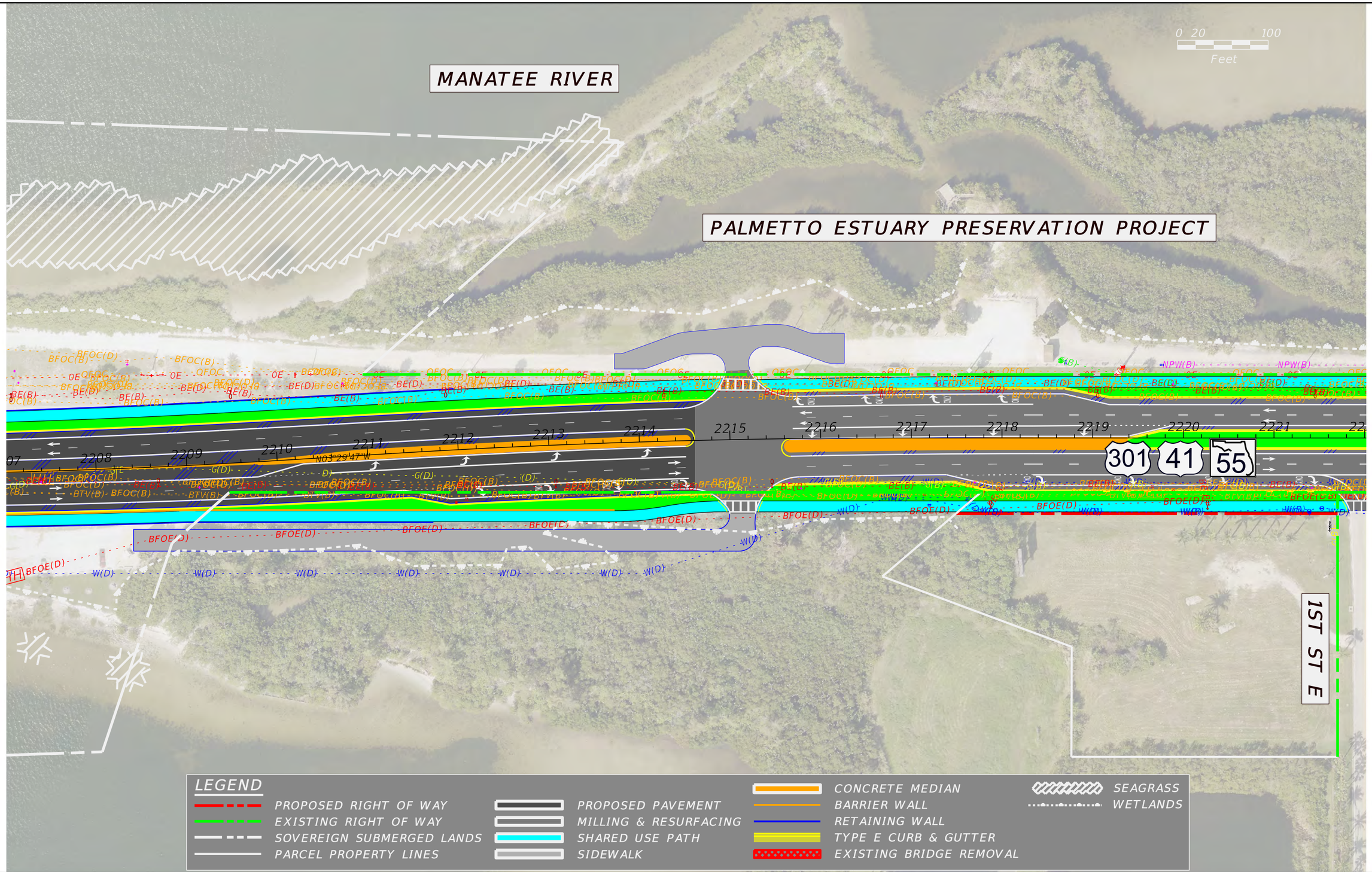
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



REVISIONS				ENGINEER OF RECORD	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			DESOTO BRIDGE REPLACEMENT EAST ALTERNATIVE	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	IAN N. BIAVA, PE LICENSE NUMBER: 50700 TRANSYSTEMS CORPORATION CONSULTANTS 200 EAST ROBINSON STREET, SUITE 600 ORLANDO, FL 32801	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		SHEET-EAST-4
					SR 55	MANATEE	442630-2-52-01		

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THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

PALMETTO ESTUARY PRESERVATION PROJECT

0 20 100
Feet

301 41 55

1ST ST E

7 ELEVEN STORE

HABEN BLVD

N00°02'13"E

LEGEND

- PROPOSED RIGHT OF WAY
- EXISTING RIGHT OF WAY
- SOVEREIGN SUBMERGED LANDS
- PARCEL PROPERTY LINES
- PROPOSED PAVEMENT
- MILLING & RESURFACING
- SHARED USE PATH
- SIDEWALK
- CONCRETE MEDIAN
- BARRIER WALL
- RETAINING WALL
- TYPE E CURB & GUTTER
- EXISTING BRIDGE REMOVAL
- SEAGRASS
- WETLANDS

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD
IAN N. BIAVA, PE
LICENSE NUMBER: 50700
TRANSYSTEMS CORPORATION CONSULTANTS
200 EAST ROBINSON STREET, SUITE 600
ORLANDO, FL 32801

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 55	MANATEE	442630-2-52-01

DESOTO BRIDGE REPLACEMENT EAST ALTERNATIVE

SHEET NO.
SHEET-EAST-5

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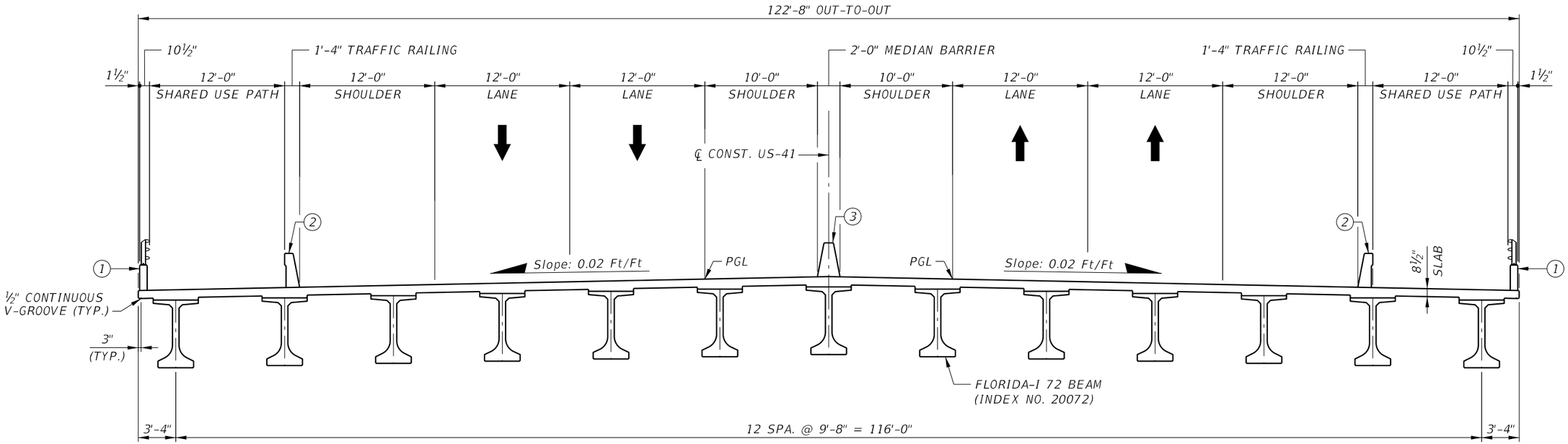


PROPOSED TYPICAL SECTION

LEGEND:

(1) 27" CONCRETE PARAPET PEDESTRIAN/BICYCLE WITH BULLET RAILING (INDEX 521-820) (TYP.)

(2) TRAFFIC RAILING (36" SINGLE SLOPE) (INDEX 521-427) (TYP.)

(3) TRAFFIC RAILING (MEDIAN 36" SINGLE SLOPE) (INDEX 521-426)

BRIDGE NO. XXXXXX

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Transystems Corporation Consultants
12802 Tampa Oaks Blvd., Suite 330
Tampa, FL. 33637
PH. (813) 379-2218
Kenneth R. Kerr, P.E. 60888

DRAWN BY: RLL
CHECKED BY:
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US 41	MANATEE	442630-1-22-01

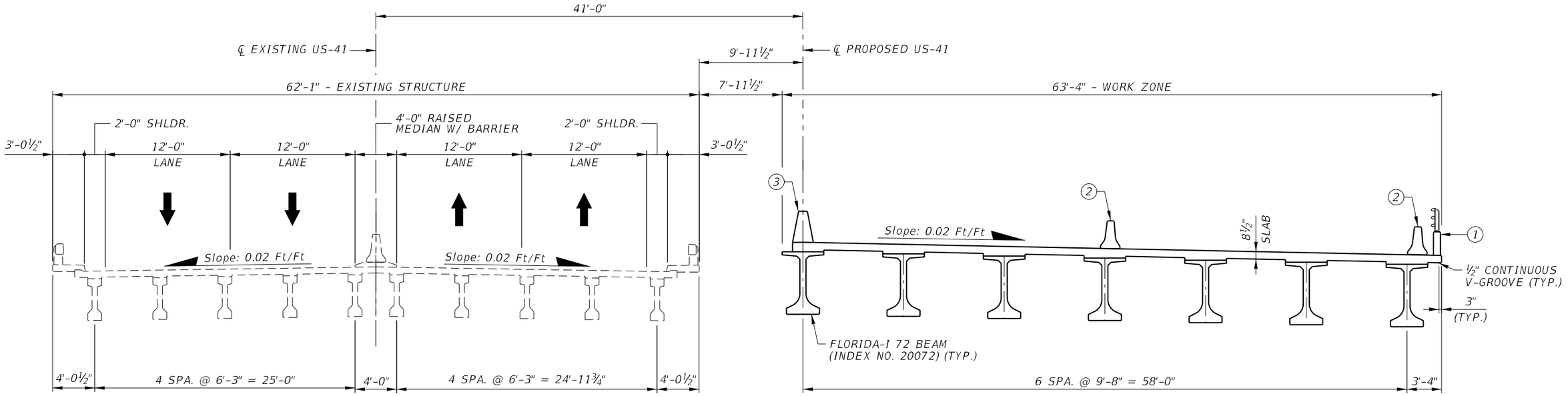
SHEET TITLE: PROPOSED TYPICAL SECTION

REF. DWG. NO.

PROJECT NAME: DESOTO BRIDGE REPLACEMENT OVER MANATEE RIVER

SHEET NO.

krkerr 3/6/2024 4:24:40 PM c:\transystems\pw_local\transyscorp-pw1\a-e_krkerr\d1261203\B0TypSec01.dgn

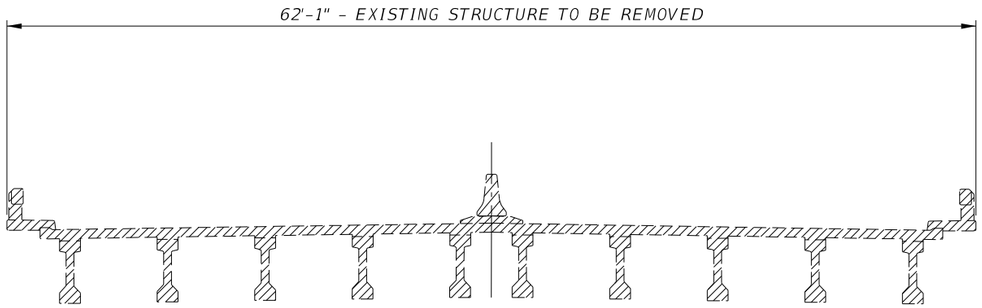


LEGEND:

(1) 27" CONCRETE PARAPET PEDESTRIAN/BICYCLE WITH BULLET RAILING (INDEX 521-820) (TYP.)

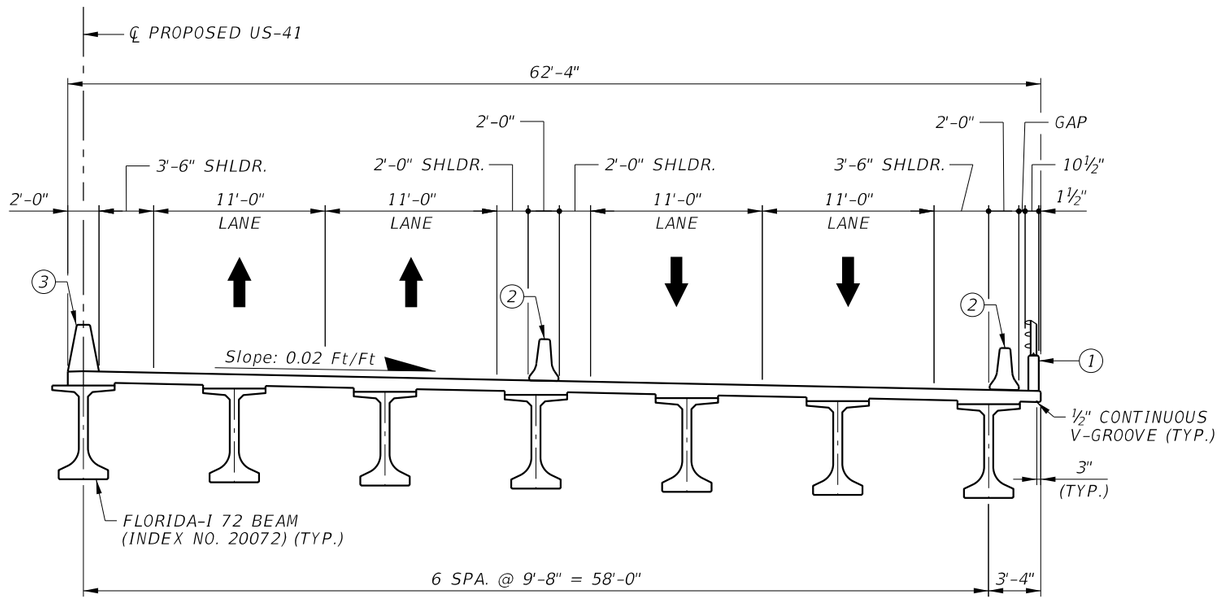
(2) TYPE K TEMPORARY CONCRETE BARRIER SYSTEM (INDEX 102-110) (TYP.)

(3) TRAFFIC RAILING (MEDIAN 36" SINGLE SLOPE) (INDEX 521-426)



PHASE 1 CONSTRUCTION

PHASE 1 CONSTRUCTION NOTES:
1. CONSTRUCT PORTION OF PROPOSED STRUCTURE.
2. PLACE TYPE K TEMPORARY BARRIER SYSTEMS ON PROPOSED STRUCTURE.



PHASE 2 DEMOLITION

PHASE 2 DEMOLITION NOTES:
1. SHIFT TRAFFIC FROM EXISTING STRUCTURE TO PROPOSED STRUCTURE.
2. DEMOLISH/REMOVE EXISTING STRUCTURE.

BRIDGE NO. XXXXXX

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Transystems Corporation Consultants
12802 Tampa Oaks Blvd., Suite 330
Tampa, FL. 33637
PH. (813) 379-2218
Kenneth R. Kerr, P.E. 60888

DRAWN BY: RLL
CHECKED BY:
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

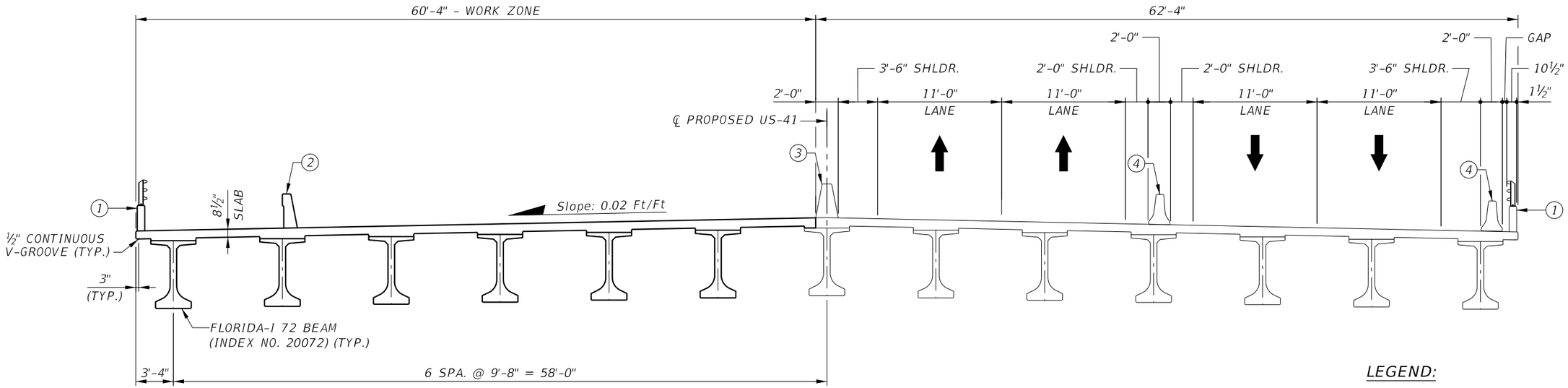
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US 41	MANATEE	442630-1-22-01

SHEET TITLE: CONSTRUCTION SEQUENCE EAST ALTERNATIVE (1 OF 2)

REF. DWG. NO.

PROJECT NAME: DESOTO BRIDGE REPLACEMENT OVER MANATEE RIVER

SHEET NO.

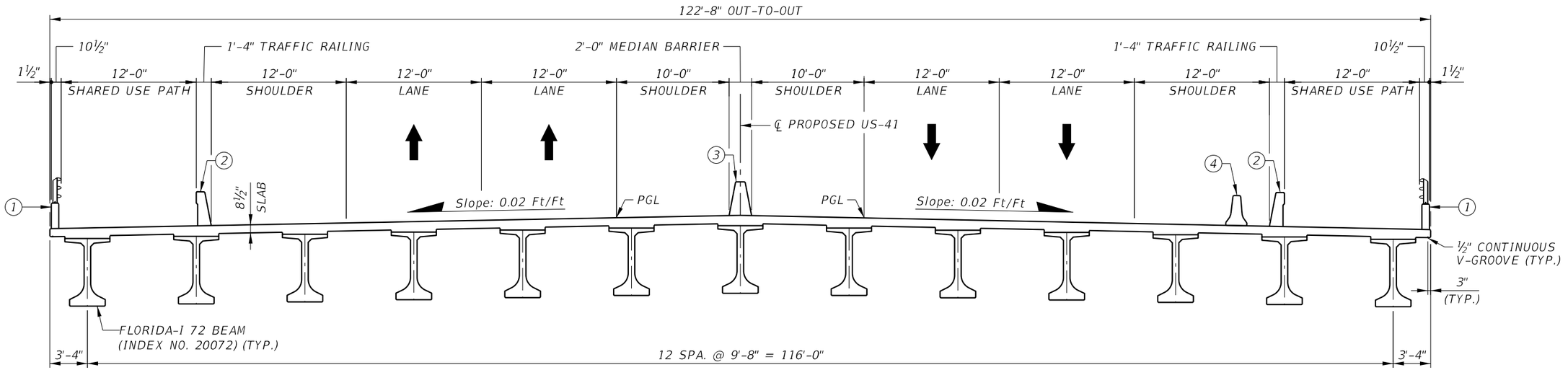


PHASE 2 CONSTRUCTION

PHASE 2 CONSTRUCTION NOTES:
1. CONSTRUCT REMAINDER OF PROPOSED STRUCTURE.

LEGEND:

1. 27" CONCRETE PARAPET PEDESTRIAN/BICYCLE WITH BULLET RAILING (INDEX 521-820) (TYP.)
2. TRAFFIC RAILING (36" SINGLE SLOPE) (INDEX 521-427) (TYP.)
3. TRAFFIC RAILING (MEDIAN 36" SINGLE SLOPE) (INDEX 521-426)
4. TYPE K TEMPORARY CONCRETE BARRIER SYSTEM (INDEX 102-110) (TYP.)



PHASE 3 CONSTRUCTION

PHASE 3 CONSTRUCTION NOTES:
1. REMOVE/MODIFY TYPE K TEMPORARY CONCRETE BARRIER SYSTEMS.
2. SHIFT TRAFFIC TO FINAL CONFIGURATION
3. CONSTRUCT 36" SINGLE-SLOPE TRAFFIC RAILING.

BRIDGE NO. XXXXXX

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Transystems Corporation Consultants
12802 Tampa Oaks Blvd., Suite 330
Tampa, FL. 33637
PH. (813) 379-2218
Kenneth R. Kerr, P.E. 60888

DRAWN BY: RLL
CHECKED BY:
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US 41	MANATEE	442630-1-22-01

SHEET TITLE: CONSTRUCTION SEQUENCE EAST ALTERNATIVE (2 OF 2)

REF. DWG. NO.

PROJECT NAME: DESOTO BRIDGE REPLACEMENT OVER MANATEE RIVER

SHEET NO.

APPENDIX B – Typical Section Package

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION PACKAGE

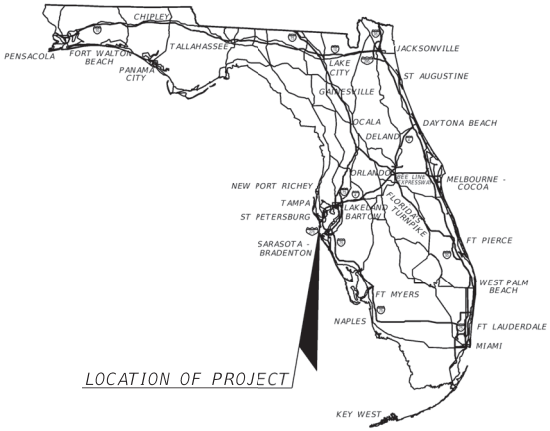
FINANCIAL PROJECT ID 442630-1-22-01
(FEDERAL FUNDS)

MANATEE COUNTY (13130)

STATE ROAD NO. 55 (US 301/US 41)

FROM MANATEE AVENUE WEST (SR 64) TO HABEN BLVD.

PROJECT LOCATION URL:	https://tinyurl.com/3s865du4
PROJECT LIMITS:	BEGIN MP 2.255 - END MP 3.552
EXCEPTIONS:	N/A
BRIDGE LIMITS:	BR#130053 MP 2.617 - MP 3.038
RAILROAD CROSSING:	N/A



FDOT DISTRICT DESIGN ENGINEER

Digitally signed by Kevin Ingle
Date: 2025.02.27 15:49:19-05'00'

CONCURRING WITH:
TYPICAL SECTION ELEMENTS
TARGET SPEED
DESIGN & POSTED SPEEDS

FDOT DISTRICT TRAFFIC OPERATIONS ENGINEER

Mark Mathes

Date: 2025.02.27 14:07:19 -05'00'

CONCURRING WITH:
TARGET SPEED
DESIGN & POSTED SPEEDS

FDOT DISTRICT INTERMODAL SYSTEMS DEVELOPMENT MANAGER

Bessie Reina

Digitally signed by: Bessie Reina
DN: CN = Bessie Reina C = US O = FLORIDA DEPARTMENT OF TRANSPORTATION
Date: 2025.02.27 08:57:15 -05'00'

CONCURRING WITH:
CONTEXT CLASSIFICATION
TARGET SPEED

FDOT DISTRICT STRUCTURES DESIGN ENGINEER

Mark L Peronto

Digitally signed by: Mark L Peronto
DN: CN = Mark L Peronto C = US O = FLORIDA DEPARTMENT OF TRANSPORTATION
Date: 2025.02.27 07:33:06 -05'00'

CONCURRING WITH:
TYPICAL SECTION ELEMENTS

FHWA TRANSPORTATION ENGINEER

CONCURRING WITH:
TYPICAL SECTION ELEMENTS

LOCAL TRANSPORTATION ENGINEER

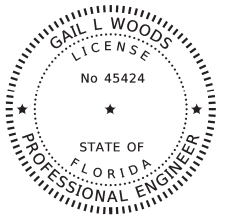
CONCURRING WITH:
TYPICAL SECTION ELEMENTS

NOT USED

CONCURRING WITH:

NOT USED

CONCURRING WITH:



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

Gail L Woods 2025.05.19 14:42:05-04'00'

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

TRANSYSTEMS CORPORATION CONSULTANTS
200 EAST ROBINSON STREET, SUITE 600
ORLANDO, FLORIDA 32801
GAIL L. WOODS, P.E. NO. 45424

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

INDEX OF SHEETS

SHEET NO.
01

PROJECT CONTROLS

CONTEXT CLASSIFICATION

( )	C1 : NATURAL	(X)	C3C : SUBURBAN COMM.
( )	C2 : RURAL	( )	C4 : URBAN GENERAL
( )	C2T : RURAL TOWN	( )	C5 : URBAN CENTER
( )	C3R : SUBURBAN RES.	( )	C6 : URBAN CORE
( )	N/A : L.A. FACILITY		

FUNCTIONAL CLASSIFICATION

( )	INTERSTATE	( )	MAJOR COLLECTOR
( )	FREEWAY/EXPWY.	( )	MINOR COLLECTOR
(X)	PRINCIPAL ARTERIAL	( )	LOCAL
( )	MINOR ARTERIAL		

HIGHWAY SYSTEM

- ( ) NATIONAL HIGHWAY SYSTEM
- ( ) STRATEGIC INTERMODAL SYSTEM
- (X) STATE HIGHWAY SYSTEM
- ( ) OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- ( ) 1 - FREEWAY
- ( ) 2 - RESTRICTIVE w/Service Roads
- ( ) 3 - RESTRICTIVE w/660 ft. Connection Spacing
- ( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- (X) 5 - RESTRICTIVE w/440 ft. Connection Spacing
- ( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- ( ) 7 - BOTH MEDIAN TYPES

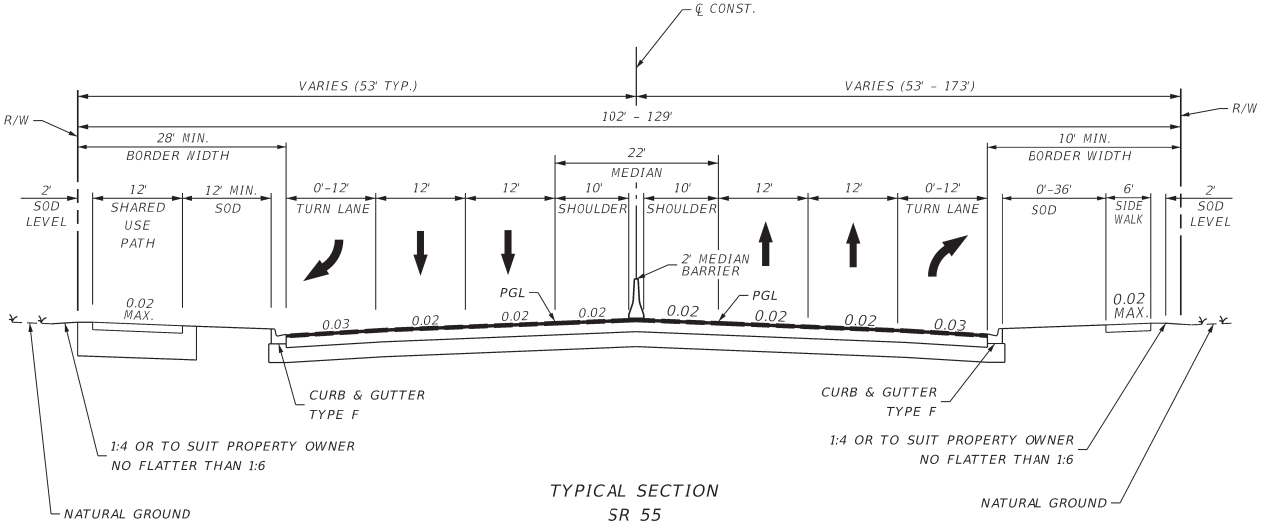
CRITERIA

- (X) NEW CONSTRUCTION / RECONSTRUCTION
- ( ) RESURFACING (LA FACILITIES)
- ( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

(X) BORDER WIDTH VARIATION ADJACENT TO MANATEE MEMORIAL HOSPITAL

TYPICAL SECTION No. 01



TYPICAL SECTION
SR 55

MP 2.255 TO MP 2.617

TRAFFIC DATA

CURRENT YEAR = 2024 AADT = 68,200
ESTIMATED OPENING YEAR = 2030 AADT = 73,700
ESTIMATED DESIGN YEAR = 2050 AADT = 92,100
K = 9.0% D = 54% T = 7.3% (24 HOUR)
DESIGN HOUR T = 3.7%
DESIGN SPEED = 45 MPH
POSTED SPEED = 45 MPH
TARGET SPEED = 45 MPH

FINANCIAL PROJECT ID	SHEET NO.
442630-1-22-01	02

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PROJECT CONTROLS

CONTEXT CLASSIFICATION

( )	C1 : NATURAL	(X)	C3C : SUBURBAN COMM.
( )	C2 : RURAL	( )	C4 : URBAN GENERAL
( )	C2T : RURAL TOWN	( )	C5 : URBAN CENTER
( )	C3R : SUBURBAN RES.	( )	C6 : URBAN CORE
( )	N/A : L.A. FACILITY		

FUNCTIONAL CLASSIFICATION

( )	INTERSTATE	( )	MAJOR COLLECTOR
( )	FREEWAY/EXPWY.	( )	MINOR COLLECTOR
(X)	PRINCIPAL ARTERIAL	( )	LOCAL
( )	MINOR ARTERIAL		

HIGHWAY SYSTEM

- ( ) NATIONAL HIGHWAY SYSTEM
- ( ) STRATEGIC INTERMODAL SYSTEM
- (X) STATE HIGHWAY SYSTEM
- ( ) OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- ( ) 1 - FREEWAY
- ( ) 2 - RESTRICTIVE w/Service Roads
- ( ) 3 - RESTRICTIVE w/660 ft. Connection Spacing
- ( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- (X) 5 - RESTRICTIVE w/440 ft. Connection Spacing
- ( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- ( ) 7 - BOTH MEDIAN TYPES

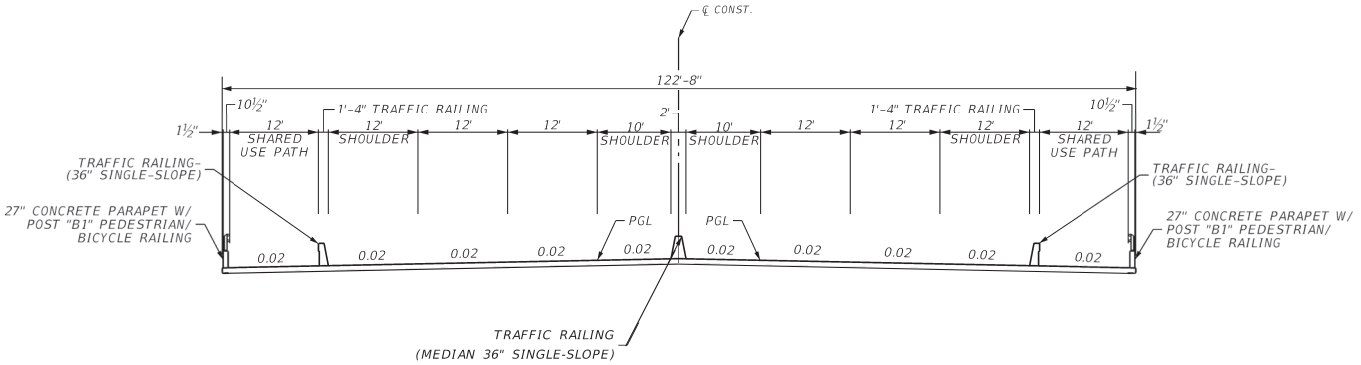
CRITERIA

- (X) NEW CONSTRUCTION / RECONSTRUCTION
- ( ) RESURFACING (LA FACILITIES)
- ( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

(X) N/A

TYPICAL SECTION No. 02



TYPICAL SECTION
SR 55

MP 2.617 TO MP 3.038

TRAFFIC DATA

CURRENT YEAR = 2024 AADT = 68,200
ESTIMATED OPENING YEAR = 2030 AADT = 73,700
ESTIMATED DESIGN YEAR = 2050 AADT = 92,100
K = 9.0% D = 54% T = 7.3% (24 HOUR)
DESIGN HOUR T = 3.7%
DESIGN SPEED = 50 MPH
POSTED SPEED = 50 MPH
TARGET SPEED = 50 MPH

FINANCIAL PROJECT ID	SHEET NO.
442630-1-22-01	03

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

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PROJECT CONTROLS

CONTEXT CLASSIFICATION

( ) C1 : NATURAL
( ) C2 : RURAL
( ) C2T : RURAL TOWN
( ) C3R : SUBURBAN RES.
( ) N/A : L.A. FACILITY
(X) C3C : SUBURBAN COMM.
( ) C4 : URBAN GENERAL
( ) C5 : URBAN CENTER
( ) C6 : URBAN CORE

FUNCTIONAL CLASSIFICATION

( ) INTERSTATE
( ) FREEWAY/EXPWY.
(X) PRINCIPAL ARTERIAL
( ) MINOR ARTERIAL
( ) MAJOR COLLECTOR
( ) MINOR COLLECTOR
( ) LOCAL

HIGHWAY SYSTEM

( ) NATIONAL HIGHWAY SYSTEM
( ) STRATEGIC INTERMODAL SYSTEM
(X) STATE HIGHWAY SYSTEM
( ) OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

( ) 1 - FREEWAY
( ) 2 - RESTRICTIVE w/Service Roads
( ) 3 - RESTRICTIVE w/660 ft. Connection Spacing
( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
(X) 5 - RESTRICTIVE w/440 ft. Connection Spacing
( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES

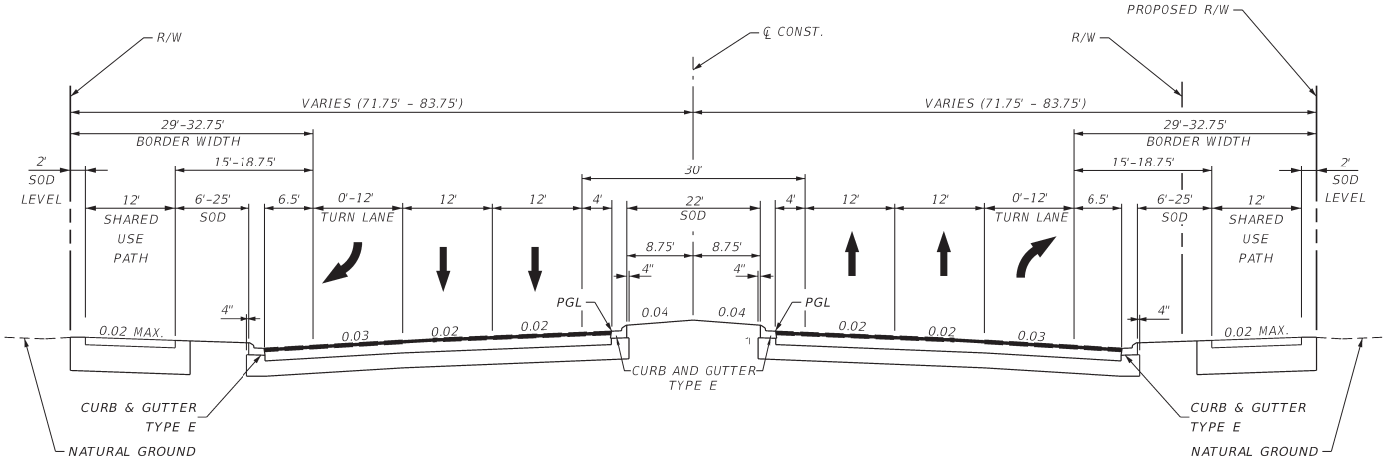
CRITERIA

(X) NEW CONSTRUCTION / RECONSTRUCTION
( ) RESURFACING (LA FACILITIES)
( ) RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

(X) N/A

TYPICAL SECTION No. 03



TYPICAL SECTION
SR 55

MP 3.038 TO MP 3.552

TRAFFIC DATA

CURRENT YEAR = 2024 AADT = 68,200
ESTIMATED OPENING YEAR = 2030 AADT = 73,700
ESTIMATED DESIGN YEAR = 2050 AADT = 92,100
K = 9.0% D = 54% T = 7.3% (24 HOUR)
DESIGN HOUR T = 3.7%
DESIGN SPEED = 50 MPH
POSTED SPEED = 50 MPH
TARGET SPEED = 50 MPH

FINANCIAL PROJECT ID	SHEET NO.
442630-1-52-01	04

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

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APPENDIX C – Long Range Estimate (LRE)

Date: 3/28/2024 3:16:56 PM

FDOT Long Range Estimating System - Production

R26: Project Details by Sequence without Initial Contingency Report

Project: 442630-2-52-01 **Letting Date:** 07/2026

Description: DESOTO BRIDGE FROM 21ST AVE W TO US 19 BRIDGE #130053

District: 01 **County:** 13 MANATEE **Market Area:** 10 **Units:** English

Contract Class: 9 **Lump Sum Project:** N **Design/Build:** Y **Project Length:** 5.242 MI

Project Manager: NEM-AEH-SAA

Version 8 Project Grand Total **$160,668,997.55**

Description: March 2024 Unit Cost Update with Markups per PM from Version 5P-3/5/24

Sequence: 1 MIS - Miscellaneous Construction **Net Length:** 0.000 MI 0 LF

Description: Bridge No. 130053

Special Conditions: total quantities for twin bridges

BRIDGES COMPONENT

Bridge 130053

Description	Value
Estimate Type	SF Estimate
Primary Estimate	YES
Type	Misc/Rehab
Structure No.	130053
Description	US 41 OVER MANATEE RIVER

Bridge Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-3	REMOVAL OF EXISTING STRUCTURES/BRIDGES	138,533.00	SF	$61.07	$8,460,210.31

Bridge X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II, APPROACH SLABS	130.00	CY	$736.37	$95,728.10
400-4-4	CONC CLASS IV, SUPERSTRUCTURE	8,917.00	CY	$1,588.19	$14,161,890.23
400-4-5	CONC CLASS IV, SUBSTRUCTURE	329.00	CY	$1,863.92	$613,229.68
400-4-25	CONC CLASS IV, MASS, SUBSTRUCTURE	16,432.00	CY	$1,139.59	$18,725,742.88
400-7-1	BRIDGE DECK GROOVING	23,123.00	SY	$7.63	$176,428.49
400-9-1	BRIDGE DECK PLANING	23,123.00	SY	$7.45	$172,266.35
400-147	COMPOSITE NEOPRENE PADS	320.00	CF	$1,257.98	$402,553.60
415-1-4	REINF STEEL- SUPERSTRUCTURE	1,828,081.00	LB	$1.48	$2,705,559.88
415-1-5	REINF STEEL- SUBSTRUCTURE	3,581,943.00	LB	$1.65	$5,910,205.95
415-1-9	REINF STEEL- APPROACH SLABS	25,989.00	LB	$1.38	$35,864.82
450-2-84	PREST BEAMS: FLORIDA-I BEAM 84"	15,420.00	LF	$480.90	$7,415,478.00
455-34-6	PRESTRESSED CONCRETE PILING, 30" SQ	75,735.00	LF	$295.37	$22,369,846.95

455-133-2	SHEET PILING STEEL, TEMPORARY-CRITICAL	7,200.00 SF	$31.42	$226,224.00
455-143-6	TEST PILES-PREST CONCRETE,30" SQ	3,000.00 LF	$436.42	$1,309,260.00
458-1-11	BRIDGE DECK EXPANSION JNT,NEW,POURED	1,392.00 LF	$66.92	$93,152.64
460-71-2	METAL TRAF RAILING, STEEL POST AND RAIL	4,930.00 LF	$264.02	$1,301,618.60
471-1-1	FENDER SYS,PLASTIC MARINE LUMBER,REINF	472.00 MB	$24,825.62	$11,717,692.64
506-2	BRIDGE DRAINAGE PIPE	1,000.00 LF	$206.24	$206,240.00
506-3	BRIDGE DRAINS	4.00 EA	$5,172.75	$20,691.00
515-2-213	PED/BICYCLE RAILING,STL, 42" TYPE 3	4,930.00 LF	$93.02	$458,588.60
521-5-12	CONC TRAF RAIL- BRG, 36" MED SING SLOPE	60.00 LF	$141.28	$8,476.80
521-5-13	CONC TRAF RAIL- BRIDGE, 36" SING SLOPE	4,800.00 LF	$132.57	$636,336.00
630-2-16	CONDUIT, F& I, EMBEDDED-BARR./RAILINGS	4,920.00 LF	$10.50	$51,660.00
635-3-13	JUNCTION BOX, FURNISH & INSTALL, EMBED	20.00 EA	$700.82	$14,016.40
	Bridge 130053 Total			$97,288,961.92
	Bridges Component Total			$97,288,961.92

MISCELLANEOUS COMPONENT

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
108-1	MONITOR EXISTING STRUCTURES- SETTL	1.00 LS	$5,000.00	$5,000.00
108-2	MONITOR EXISTING STRUCTURES- VIBRA	1.00 LS	$5,000.00	$5,000.00
108-3	MONITOR EXISTING STRUCTURES- GROUN	1.00 LS	$5,000.00	$5,000.00
	Miscellaneous Component Total			$15,000.00

Sequence 1 Total $97,303,961.92

Sequence: 2 NDU - New Construction, Divided, Urban **Net Length:** 0.379 MI 2,000 LF

Description: 1000 feet of roadway approach work for each side of bridge

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	100.00 / 100.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.379
Top of Structural Course For Begin Section	110.00
Top of Structural Course For End Section	110.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	9.19	AC	$47,163.81	$433,435.41
120-6	EMBANKMENT	98,077.11	CY	$10.71	$1,050,405.85
	Earthwork Component Total				$1,483,841.26

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Roadway Pavement Width L/R	30.00 / 30.00
Structural Spread Rate	330
Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	15,627.17	SY	$8.34	$130,330.60
285-709	OPTIONAL BASE,BASE GROUP 09	13,333.76	SY	$20.82	$277,608.88
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	2,200.07	TN	$174.00	$382,812.18
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	1,100.04	TN	$195.94	$215,541.84

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
102-2-1	SPECIAL DETOUR 1	1.00	LS	$250,000.00	$250,000.00
102-2-2	SPECIAL DETOUR 2	1.00	LS	$250,000.00	$250,000.00
102-71-15	TEMPORARY BARRIER, F&I, ANCHORED	4,600.00	LF	$31.95	$146,970.00
102-71-16	TEMPORARY BARRIER, F&I, FREE STAND	2,000.00	LF	$26.08	$52,160.00
102-71-25	TEMPORARY BARRIER, REL, ANCHORED	4,600.00	LF	$10.37	$47,702.00

102-71-26	TEMPORARY BARRIER, REL, FREE STAND	2,000.00 LF	$8.11	$16,220.00
536-8-111	CUARDR CONN TO RIGID BA, F&I, APPR N2	8.00 EA	$2,898.72	$23,189.76
536-85-20	GUARDRAIL END TREAT-TRAILING ANCHORAGE	8.00 EA	$1,770.93	$14,167.44

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	4

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	256.00 EA	$4.12	$1,054.72
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.52 GM	$1,161.41	$1,765.34
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	1.52 GM	$515.43	$783.45
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"	1.52 GM	$5,382.40	$8,181.25
711-16-131	THERMOPLASTIC, STD-OTH, WHITE, SKIP, 6"	1.52 GM	$1,243.50	$1,890.12

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	12.00 / 12.00
Bike Path Structural Spread Rate	220
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	6,222.42 SY	$8.34	$51,894.98
285-701	OPTIONAL BASE,BASE GROUP 01	5,333.50 SY	$26.17	$139,577.70
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	586.69 TN	$174.00	$102,084.06
	Roadway Component Total			$2,113,934.32

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Sidewalk Width L/R	0.00 / 0.00

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER,	3,000.00 LF	$44.98	$134,940.00

TYPE F

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	4,000.13	LF	$2.92	$11,680.38
104-11	FLOATING TURBIDITY BARRIER	6,000.00	LF	$12.01	$72,060.00
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	94.70	LF	$13.50	$1,278.45
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$3,368.97	$3,368.97
104-18	INLET PROTECTION SYSTEM	20.00	EA	$155.50	$3,110.00
107-1	LITTER REMOVAL	9.64	AC	$50.41	$485.95
107-2	MOWING	9.64	AC	$97.20	$937.01
	Shoulder Component Total				$227,860.76

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	5.34

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	4,000.13	LF	$40.65	$162,605.28
570-1-1	PERFORMANCE TURF	1,186.70	SY	$5.10	$6,052.17

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	8,000.00	LF	$40.65	$325,200.00
520-5-12	TRAF SEP CONC-TYPE I, 6' WIDE	750.00	LF	$116.39	$87,292.50
521-1-11	MEDIAN CONC BARRIER, 38" HEIGHT	1,500.00	LF	$159.52	$239,280.00
	Median Component Total				$820,429.95

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	14.00	EA	$7,825.96	$109,563.44
425-1-451	INLETS, CURB, TYPE J-5, <10'	4.00	EA	$13,944.77	$55,779.08
425-1-521	INLETS, DT BOT, TYPE C, <10'	2.00	EA	$6,206.29	$12,412.58
425-2-41	MANHOLES, P-7, <10'	2.00	EA	$6,069.82	$12,139.64
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	1,008.00	LF	$186.67	$188,163.36
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	96.00	LF	$283.21	$27,188.16
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	1,896.00	LF	$422.74	$801,515.04
430-524-100	STRAIGHT CONC ENDW 24", SINGLE, 0 ROUND	1.00	EA	$4,371.17	$4,371.17

430-536-100	STRAIGHT CONC ENDW 36", SINGLE, 0 ROUND	1.00 EA	$6,647.80	$6,647.80
430-548-200	STRAIGHT CONC ENDW 48", DOUBLE, 0 ROUND	1.00 EA	$20,141.31	$20,141.31
570-1-1	PERFORMANCE TURF	115.16 SY	$5.10	$587.32
	Drainage Component Total			$1,238,508.90

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	10.00	AS	$492.57	$4,925.70
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00	AS	$1,389.26	$1,389.26
700-2-15	MULTI- POST SIGN, F&I GM, 51-100 SF	1.00	AS	$7,908.68	$7,908.68
700-2-16	MULTI- POST SIGN, F&I GM, 101-200 SF	1.00	AS	$14,612.19	$14,612.19
	Signing Component Total				$28,835.83

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MIN

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	2,000.06	LF	$13.58	$27,160.81
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	396.98	LF	$28.74	$11,409.21
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	14.00	EA	$1,121.45	$15,700.30
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	7,304.78	LF	$3.30	$24,105.77
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	14.00	EA	$798.89	$11,184.46

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
715-61-321	LIGHT POLE CMPLT,STD,F&I, 40'MH,10'ARM L	53.00	EA	$9,313.99	$493,641.47
	Subcomponent Total				$583,202.02
	Lighting Component Total				$583,202.02

Sequence 2 Total $6,496,613.04

Sequence: 3 WDU - Widen/Resurface, Divided, Urban

Net Length: 0.455 MI
2,400 LF

Description: Milling and Resurfacing

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	25.00 / 25.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.454
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Existing Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	4.00 % / 4.00 %
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	2.75	AC	$47,163.81	$129,700.48
120-1	REGULAR EXCAVATION	2,464.59	CY	$36.61	$90,228.64
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	2,027.79	CY	$30.04	$60,914.81
	Earthwork Component Total				$280,843.93

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Existing Roadway Pavement Width L/R	30.00 / 30.00
Structural Spread Rate	0
Friction Course Spread Rate	165
Widened Outside Pavement Width L/R	6.00 / 6.00
Widened Inside Pavement Width L/R	4.00 / 4.00
Widened Structural Spread Rate	330
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	8,084.52	SY	$8.34	$67,424.90
285-709	OPTIONAL BASE,BASE GROUP 09	5,684.76	SY	$20.82	$118,356.70
327-70-3	MILLING EXIST ASPH PAVT,4 1/2" AVG DEPTH	15,998.40	SY	$6.07	$97,110.29
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	879.91	TN	$174.00	$153,104.34
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	1,319.87	TN	$195.94	$258,615.33
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	439.96	TN	$195.94	$86,205.76

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	4

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	307.00	EA	$4.12	$1,264.84
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	3.64	GM	$1,161.41	$4,227.53
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	3.64	GM	$515.43	$1,876.17
	Roadway Component Total				$788,185.86

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	10.00 / 10.00
New Total Outside Shoulder Width L/R	0.00 / 14.25
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Sidewalk Width L/R	0.00 / 12.00

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	4,799.52	LF	$2.92	$14,014.60
104-11	FLOATING TURBIDITY BARRIER	45.45	LF	$12.01	$545.85
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	45.45	LF	$13.50	$613.58
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	$3,368.97	$3,368.97
104-18	INLET PROTECTION SYSTEM	21.00	EA	$155.50	$3,265.50
107-1	LITTER REMOVAL	3.96	AC	$50.41	$199.62
107-2	MOWING	3.96	AC	$97.20	$384.91
	Shoulder Component Total				$22,393.03

MEDIAN COMPONENT

User Input Data

Description	Value
Total Median Width	22.00
Performance Turf Width	5.34

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	1,423.86	SY	$5.10	$7,261.69
	Median Component Total				$7,261.69

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	17.00	EA	$7,825.96	$133,041.32
425-1-451	INLETS, CURB, TYPE J-5, <10'	5.00	EA	$13,944.77	$69,723.85
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	256.00	LF	$186.67	$47,787.52
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	72.00	LF	$283.21	$20,391.12
570-1-1	PERFORMANCE TURF	138.17	SY	$5.10	$704.67
	Drainage Component Total				$271,648.48

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	10.00	AS	$492.57	$4,925.70
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	1.00	AS	$1,389.26	$1,389.26
700-1-50	SINGLE POST SIGN, RELOCATE	1.00	AS	$284.38	$284.38
700-1-60	SINGLE POST SIGN, REMOVE	10.00	AS	$35.75	$357.50
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	1.00	AS	$6,455.77	$6,455.77
700-2-60	MULTI- POST SIGN, REMOVE	1.00	AS	$826.65	$826.65
	Signing Component Total				$14,239.26

Sequence 3 Total $1,384,572.25

Date: 3/28/2024 3:16:57 PM

FDOT Long Range Estimating System - Production

R26: Project Details by Sequence without Initial Contingency Report

Project: 442630-2-52-01 **Letting Date:** 07/2026

Description: DESOTO BRIDGE FROM 21ST AVE W TO US 19 BRIDGE #130053

District: 01 **County:** 13 MANATEE **Market Area:** 10 **Units:** English

Contract Class: 9 **Lump Sum Project:** N **Design/Build:** Y **Project Length:** 5.242 MI

Project Manager: NEM-AEH-SAA

Version 8 Project Grand Total **$160,668,997.55**

Description: March 2024 Unit Cost Update with Markups per PM from Version 5P-3/5/24

Project Sequences Subtotal			**$105,185,147.21**
102-1	Maintenance of Traffic	15.00 %	$15,777,772.08
101-1	Mobilization	10.00 %	$12,096,291.93
Project Sequences Total			**$133,059,211.22**
Project Unknowns		5.00 %	$6,652,960.56
Design/Build		15.00 %	$20,956,825.77
Project Non-Bid Subtotal			**$0.00**
Version 8 Project Grand Total			**$160,668,997.55**

Bridge 130053 Bridge Initial CP Rehab Cost

	Quantities	Unit	Unit Cost	Amount
Cap Metalizing	24624	SF	$50.00	$1,231,200.00
Column Metalizing	30480.3	SF	$50.00	$1,524,015.00
Footing Surface Concrete Repair	12636	SF	$200.00	$2,527,200.00
Footing CP Impress Current	27783	SF	$100.00	$2,778,300.00
411 Pile CP Jacket	4110	LF	$1,800.00	$7,398,000.00
			Sub Total	$15,458,715.00
			Maintenance of Traffic (7%)	$ 1,082,110
			Mobilization (7%)	$ 1,082,110
			Total	$17,622,935.10
			Said Total	**$17,623,000**

7 year CP Replacement and Maintenance cost

	Quantities	Unit	Unit Cost	Amount
Cap Metalizing	24624	SF	$50.00	$1,231,200.00
Column Metalizing	30480.3	SF	$50.00	$1,524,015.00
Footing CP Impress Current	7	YR	$5,000.00	$35,000.00
411 Pile CP Jacket Annode	411	EA	$200.00	$82,200.00
			Sub Total	$2,872,415.00
			Maintenance of Traffic (7%)	$ 201,069
			Mobilization (7%)	$ 201,069
			Total	$3,274,553.10
			Said total	**$3,275,000**

CP Impress Current Operating Cost

Impress Current Electricity Bill	**$5,000**	per year

Bridge 130053 Bridge Replacement Cost

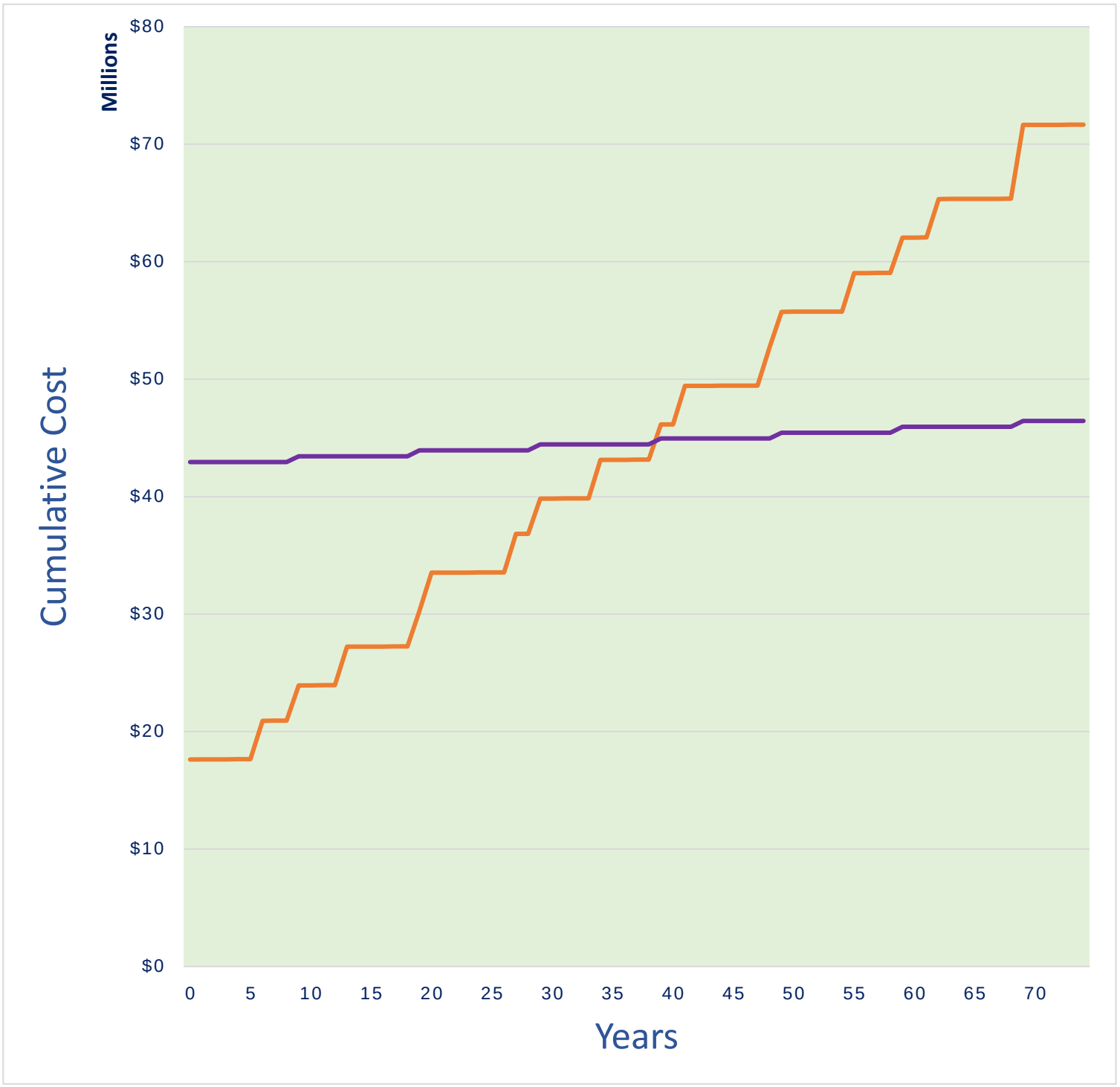
Bridge width	96	LF
Bridge Length	2225	LF
Total New Bridge Area	213600	SF
Unit Cost per SF from SDG	145	SF

Replacement Bridge	$	30,972,000
Maintenance of Traffic (10%)	$	3,097,200
Mobilization (10%)	$	3,097,200
Demolition ($35/SF)	$	4,848,445
Construction over water 3%	$	929,160
Total	**$**	**42,944,005**

Life Cycle Compare

Year	CP Rehabilitation	CP Cumulate	Replacement	Replacement Cum
0	$17,623,000	$17,623,000	$42,944,000	$42,944,000
1	$5,000	$17,628,000	$0	$42,944,000
2	$5,000	$17,633,000	$0	$42,944,000
3	$5,000	$17,638,000	$0	$42,944,000
4	$5,000	$17,643,000	$0	$42,944,000
5	$5,000	$17,648,000	$0	$42,944,000
6	$3,275,000	$20,923,000	$0	$42,944,000
7	$5,000	$20,928,000	$0	$42,944,000
8	$5,000	$20,933,000	$0	$42,944,000
9	$3,000,000	$23,933,000	$500,000	$43,444,000
10	$5,000	$23,938,000	$0	$43,444,000
11	$5,000	$23,943,000	$0	$43,444,000
12	$5,000	$23,948,000	$0	$43,444,000
13	$3,275,000	$27,223,000	$0	$43,444,000
14	$5,000	$27,228,000	$0	$43,444,000
15	$5,000	$27,233,000	$0	$43,444,000
16	$5,000	$27,238,000	$0	$43,444,000
17	$5,000	$27,243,000	$0	$43,444,000
18	$5,000	$27,248,000	$0	$43,444,000
19	$3,000,000	$30,248,000	$500,000	$43,944,000
20	$3,275,000	$33,523,000	$0	$43,944,000
21	$5,000	$33,528,000	$0	$43,944,000
22	$5,000	$33,533,000	$0	$43,944,000
23	$5,000	$33,538,000	$0	$43,944,000
24	$5,000	$33,543,000	$0	$43,944,000
25	$5,000	$33,548,000	$0	$43,944,000
26	$5,000	$33,553,000	$0	$43,944,000
27	$3,275,000	$36,828,000	$0	$43,944,000
28	$5,000	$36,833,000	$0	$43,944,000
29	$3,000,000	$39,833,000	$500,000	$44,444,000
30	$5,000	$39,838,000	$0	$44,444,000
31	$5,000	$39,843,000	$0	$44,444,000
32	$5,000	$39,848,000	$0	$44,444,000
33	$5,000	$39,853,000	$0	$44,444,000
34	$3,275,000	$43,128,000	$0	$44,444,000
35	$5,000	$43,133,000	$0	$44,444,000
36	$5,000	$43,138,000	$0	$44,444,000
37	$5,000	$43,143,000	$0	$44,444,000
38	$5,000	$43,148,000	$0	$44,444,000
39	$3,000,000	$46,148,000	$500,000	$44,944,000
40	$5,000	$46,153,000	$0	$44,944,000
41	$3,275,000	$49,428,000	$0	$44,944,000
42	$5,000	$49,433,000	$0	$44,944,000
43	$5,000	$49,438,000	$0	$44,944,000
44	$5,000	$49,443,000	$0	$44,944,000

45	$5,000	$49,448,000	$0	$44,944,000
46	$5,000	$49,453,000	$0	$44,944,000
47	$5,000	$49,458,000	$0	$44,944,000
48	$3,275,000	$52,733,000	$0	$44,944,000
49	$3,000,000	$55,733,000	$500,000	$45,444,000
50	$5,000	$55,738,000	$0	$45,444,000
51	$5,000	$55,743,000	$0	$45,444,000
52	$5,000	$55,748,000	$0	$45,444,000
53	$5,000	$55,753,000	$0	$45,444,000
54	$5,000	$55,758,000	$0	$45,444,000
55	$3,275,000	$59,033,000	$0	$45,444,000
56	$5,000	$59,038,000	$0	$45,444,000
57	$5,000	$59,043,000	$0	$45,444,000
58	$5,000	$59,048,000	$0	$45,444,000
59	$3,000,000	$62,048,000	$500,000	$45,944,000
60	$5,000	$62,053,000	$0	$45,944,000
61	$5,000	$62,058,000	$0	$45,944,000
62	$3,275,000	$65,333,000	$0	$45,944,000
63	$5,000	$65,338,000	$0	$45,944,000
64	$5,000	$65,343,000	$0	$45,944,000
65	$5,000	$65,348,000	$0	$45,944,000
66	$5,000	$65,353,000	$0	$45,944,000
67	$5,000	$65,358,000	$0	$45,944,000
68	$5,000	$65,363,000	$0	$45,944,000
69	$6,275,000	$71,638,000	$500,000	$46,444,000
70	$5,000	$71,643,000	$0	$46,444,000
71	$5,000	$71,648,000	$0	$46,444,000
72	$5,000	$71,653,000	$0	$46,444,000
73	$5,000	$71,658,000	$0	$46,444,000
74	$5,000	$71,663,000	$0	$46,444,000


Millions
$80
$70
$60
$50
$40
$30
$20
$10
$0
Cumulative Cost
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
Years

APPENDIX D – DeSoto Bridge Inspection Report

BRIDGE INSPECTION REPORT

PREPARED FOR: FLORIDA DEPARTMENT OF TRANSPORTATION

BRIDGE OWNER: FLORIDA DEPARTMENT OF TRANSPORTATION

FERROVIAL

INSPECTED BY:

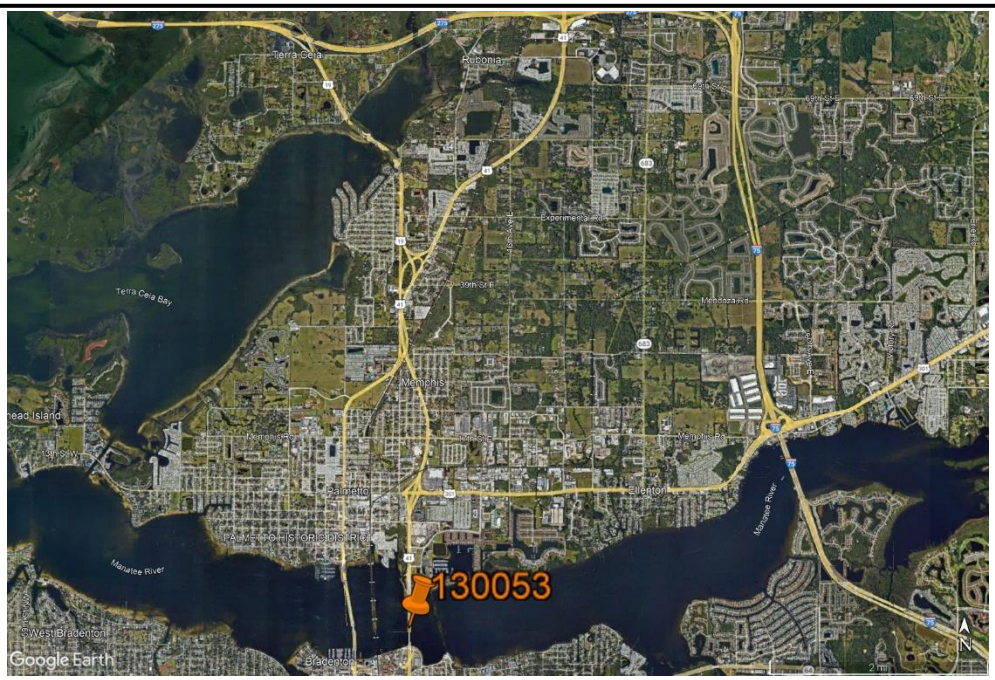
Burgess & Niple, Inc.

BRIDGE NO. 130053 **CONTENTS OF REPORT** **INSPECTION DATE:** 01/24/2024

BrM Report			U/W Inspection Report
CIDR		*	Fracture Critical Data
Scour Elevation (Profile)		*	Load Rating Analysis Summary
Addendum (Element Notes & Photos/Sketches)			

*This section is not included in this report.

HERNANDO DESOTO BRIDGE OVER MANATEE RIVER **0.6 MI NORTH OF SR-64**



FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report
Inspection

Structure ID: 130053

DISTRICT: D1 - Bartow **INSPECTION DATE: 1/24/2024 OIYF**

BY:	Burgess Niple	STRUCTURE NAME:	HERNANDO DESOTO BRIDGE
OWNER:	1 State Highway Agency	YEAR BUILT:	1957
MAINTAINED BY:	1 State Highway Agency	SECTION NO.:	13 130 000
STRUCTURE TYPE:	4 Steel Continuous - 02 Stringer/Girder	MP:	2.617
LOCATION:	0.6 MI NORTH OF SR-64	ROUTE:	00041
SERV. TYPE ON:	1 Highway	FACILITY CARRIED:	US-41/US-301
SERV. TYPE UNDER:	6 Highway-waterway	FEATURE INTERSECTED:	MANATEE RIVER 2ND ST E

☐ FUNCTIONALLY OBSOLETE ☐ STRUCTURALLY DEFICIENT

TYPE OF INSPECTION: Regular NBI

DATE FIELD INSPECTION WAS PERFORMED: ABOVE WATER: 1/24/2024 UNDERWATER: 12/20/2023

SUFFICIENCY RATING: 74.5
HEALTH INDEX: 70.31

FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report
Inspection

Structure ID: 130053

DISTRICT: D1 - Bartow **INSPECTION DATE: 1/24/2024 OIYF**

BY:	Burgess Niple	STRUCTURE NAME:	HERNANDO DESOTO BRIDGE
OWNER:	1 State Highway Agency	YEAR BUILT:	1957
MAINTAINED BY:	1 State Highway Agency	SECTION NO.:	13 130 000
STRUCTURE TYPE:	4 Steel Continuous - 02 Stringer/Girder	MP:	2.617
LOCATION:	0.6 MI NORTH OF SR-64	ROUTE:	00041
SERV. TYPE ON:	1 Highway	FACILITY CARRIED:	US-41/US-301
SERV. TYPE UNDER:	6 Highway-waterway	FEATURE INTERSECTED:	MANATEE RIVER 2ND ST E

☐ THIS BRIDGE CONTAINS FRACTURE CRITICAL COMPONENTS

☐ THIS BRIDGE IS SCOUR CRITICAL

☐ THIS REPORT IDENTIFIES DEFICIENCIES WHICH REQUIRE PROMPT CORRECTIVE ACTION

☐ FUNCTIONALLY OBSOLETE ☐ STRUCTURALLY DEFICIENT

TYPE OF INSPECTION: Regular NBI

DATE FIELD INSPECTION WAS PERFORMED: ABOVE WATER: 1/24/2024 UNDERWATER: 12/20/2023

OVERALL NBI RATINGS:

DECK:	6 Satisfactory	CHANNEL:	6 Bank Slumping
SUPERSTRUCTURE:	6 Satisfactory	CULVERT:	N N/A (NBI)
SUBSTRUCTURE:	6 Satisfactory	SUFF. RATING:	74.5
PERF. RATING:	Good	HEALTH INDEX:	70.31

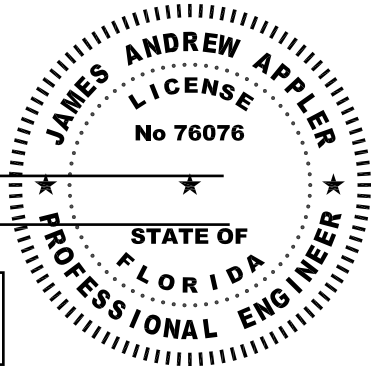
FIELD PERSONNEL / TITLE / NUMBER:	**INITIALS**
Coon, Elliott - Bridge Inspector (CBI #00530) (lead)	
Bias, Josh - Bridge Inspector (CBI #00644)	
Massotto, Matt - Bridge Inspector (CBI #00502) - Lead Diver	
Hoogland, Keith - Inspection Team Leader (CBI #00341)	
Chambless, Luke - Assistant Inspector	
Redden, Michael - Assistant Inspector	
Morton, Brooke - Assistant Inspector	
Montanez, Xavier - Assistant Inspector	

REVIEWING BRIDGE INSPECTION SUPERVISOR:

Aker, Roger - Bridge Inspector (CBI #00401) _____

CONFIRMING REGISTERED PROFESSIONAL ENGINEER:

Appler, Drew - Professional Engineer (PE #76076) Burgess & Niple
1301 Riverplace Blvd.
Suite 2430
Jacksonville Florida 32207



SIGNATURE: _____

DATE: _____

This item has been digitally signed and sealed by JAMES APPLER on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report
Inspection

Structure ID: 130053

DISTRICT: D1 - Bartow **INSPECTION DATE: 1/24/2024 OIYF**

All Elements

DECKS : Decks/Slabs

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	12 / 4	Re Concrete Deck	17046	12.31	0	.	121481	87.69	0	.	138527 sq.ft
0	1130 / 4	Cracking (RC and Other)	0	.	0	.	121481	100	0	.	121481 sq.ft
0	510 / 4	Wearing Surfaces	17042	99.96	0	.	7	0.04	0	.	17049 sq.ft
0	3210 / 4	Del/Spall/Patch/Pot(Wear Surf)	0	.	0	.	7	100	0	.	7 sq.ft

Element Inspection Notes:

12/4 Note: The left overhang underside has a 4-1/2in. fiberglass utility pipe attached. The right overhang underside has a 2in. conduit attached. Anchorage types are unknown. Spans 14, 16, 17 and 18 deck top have an asphalt overlay and Spans 16, 17, and 18 have observable live load deflection.

CS3 1130: Spans 1 through 13, 15 and 19 through 33 have map cracking up to 1/32in. spaced less than 6in. apart - INCREASE. Refer to Photo 1. (121481SF)

There are numerous longitudinal and transverse epoxy injected cracks up to 1/16in.

The deck top in Spans 1 through 13, 15 and 19 through 33 have moderate abrasive wear primarily in the wheel paths.

The deck underside at the construction joints in Spans 16, 17 and 18 have moderate corrosion bleedout - NEW. Refer to Photo 2.

There is a 16ft. x 10ft. area of fire damage to the deck top of Span 27 mid-span Lane 2.

The deck top and underside have sound repairs, spalls/delaminations, some with exposed steel, and unsound repairs. Refer to Photos 3, 4, 5, 6 and Table 1 for sizes and locations. P3WO

The deck underside in all spans have transverse, diagonal and longitudinal cracks up to 1/64in., with efflorescence. Spans 16, 17 and 18 are the most dense.

The deck underside at the built-up sections adjacent to the steel beams in Spans 16, 17, 18 has intermittent edge spalls up to 6ft. x 4in. x 1in.

CS3 3210: Span 16 in Lane 4 at Pier 16 has a pothole/impending pothole 12in. x 12in. x 1in. - NEW. P3WO (1SF)

CS3 3210: Span 18 in Lane 1 at Pier 18 has two potholes up to 2ft. x 10in. x 1/2in. - INCREASE. Refer to Photo 5. P3WO (4SF)

CS3 3210: Span 18 in Lane 4 at the 1/4 point has a pothole/impending pothole 14in. x 4in. x 1in. - NEW. P3WO (2SF)

INCIDENTAL:
The left curb of Span 26 has spalls and scrapes up to 3ft. x 1in. x 1/4in.

There is light to moderate dirt and debris in the shoulders - NEW.

There are sound repairs in the sidewalks up to 20in. x 10in. at the following locations: Abutment 1 left, Span 17 southbound at half point, Span 25 right sidewalk at Pier 25 and Span 27 left sidewalk at Pier 27.

FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report
Inspection

Structure ID: 130053

DISTRICT: D1 - Bartow **INSPECTION DATE: 1/24/2024 OIYF**

Span 5 southbound left sidewalk has seven sound repairs up to 5in. x 4in.

Span 13 northbound right sidewalk has an unsound repair 18in. x 4in.

Span 33 southbound right sidewalk has a an unsound repair 3ft. x 9in.

The deck top along the shoulders has intermittent areas of concrete spillage up to 6ft. x 3ft. x 3in.

1130/4 Refer to Parent Element

510/4 Refer to Parent Element

3210/4 Refer to Parent Element

DECKS : Joints

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	301 / 4	Pourable Joint Seal	987	93.64	12	1.14	1	0.09	54	5.12	1054 ft
0	2320 / 4	Seal Adhesion	0	.	0	.	0	.	49	100	49 ft
0	2330 / 4	Seal Damage	0	.	0	.	0	.	5	100	5 ft
0	2360 / 4	Adjacent Deck or Header	0	.	12	92.31	1	7.69	0	.	13 ft

Element Inspection Notes:

301/4 Note: The construction joints in the continuous deck over Piers 17 and 18 are not included in this element. The quantity represents the pourable joint sealant at Abutment 1, Piers 2, 3, 5, 7, 9, 11, 12, 13, 14, 15, 16, 19, 20, 22, 24, 26, 30, 32, 33 and Abutment 34. Pier 16 and 19 joints have armor headers with pourable sealant. Abutment Joints 1 and 34 are not visible due to the asphalt overlay.

CS1: There is light dirt and debris in the joint shoulders.

CS4 2320: The joints have areas of adhesion failure up to 4ft. long at the following locations:
Pier 5, Lane 1
Pier 7, Lane 1
Pier 12, Lane 1
Pier 14, Lanes 1, 3 and 4
Pier 15, Lanes 1 and 4
Pier 19, Lane 3
Pier 22, Lanes 3 and 4
Pier 24, Lane 3
Pier 26, Lanes 3 and 4
Pier 30, Lanes 3 and 4
- NEW. Refer to Photo 7. P3WO (48FT)

CS2 2360: The headers have intermittent spalls less than 6in. x 3in. x 1in. throughout; however, most have been filled with pourable sealant. (12FT)

CS4 2330: Pier Joint 9 Lane 3 has an area of missing sealant 4ft. long - NEW. Refer to Photo 8. P3WO (4FT)

CS1: Pier Joint 16, Lane 2 armor header rings hollow when sounded; but it is secure.

CS1: Pier Joint 19, Lane 4 armor header rings hollow when sounded; but it is secure.

CS3 2360: Pier Joint 19, Lane 4 armor header has a missing section 10in. x 3in. - NEW.

FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
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Inspection

Structure ID: 130053

DISTRICT: D1 - Bartow **INSPECTION DATE: 1/24/2024 OIYF**

(1FT)

CS4 2330: Pier Joint 19, Lane 4 has an area of missing sealant 12in. long - NEW. P3WO (1FT)

CS4 2320: Pier Joint 29 header in Lane 1 has a spall/failed repair 12in. x 3in. x 1in. with associated adhesion failure - NEW. P3WO (1FT)

2320/4 Refer to Parent Element

2330/4 Refer to Parent Element

2360/4 Refer to Parent Element

DECKS : Joints

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	302 / 4	Compressn Joint Seal	701	86.97	26	3.23	1	0.12	78	9.68	806 ft
0	2320 / 4	Seal Adhesion	0	.	0	.	0	.	78	100	78 ft
0	2350 / 4	Debris Impaction	0	.	24	100	0	.	0	.	24 ft
0	2360 / 4	Adjacent Deck or Header	0	.	2	66.67	1	33.33	0	.	3 ft

Element Inspection Notes:

302/4 Note: This element represents the compression seals at Pier 4, 6, 8, 10, 11, 21, 23, 25, 27, 28, 29, 31 and 33 joints.

CS2 2350: The compression seals have intermittently settled up to 2in., allowing for significant amounts of dirt to buildup in areas of the joints. (24FT)

CS4 2320: The joints have areas of adhesion failure up to 8ft. at the following locations:
Pier 4, Lanes 1, 3 and 4
Pier 6, Lanes 1, 3 and 4
Pier 8, Lanes 1, 2, 3 and 4
Pier 10, Lanes 3 and 4
Pier 21, Lane 1
Pier 23, Lanes 1, 2 and 4
Pier 25, Lanes 1, 2 and 4
Pier 27, Lanes 1, 3 and 4
Pier 29, Lanes 3 and 4
Pier 31, Lanes 2, 3 and 4
- NEW. Refer to Photo 9. P3WO (78FT)

CS2 2360: Pier Joint 10 southbound Lane 1 has two sound repairs up to 10in. x 4in. (2FT)

CS3 2360: Pier 25 header in Lane 2 has a spall/unsound repair 6in. x 3in. x 1/2in. - NEW. (1FT)

2320/4 Refer to Parent Element

2350/4 Refer to Parent Element

2360/4 Refer to Parent Element

FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report
Inspection

Structure ID: 130053

DISTRICT: D1 - Bartow **INSPECTION DATE: 1/24/2024 OIYF**

MISCELLANEOUS : Channel

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	8290 / 4	Channel	0	.	1	100	0	.	0	.	1 (EA)
0	9120 / 4	Degradation	0	.	1	100	0	.	0	.	1 (EA)

Element Inspection Notes:

8290/4 Note: This element includes the seawalls with concrete caps and sheet pile bulkhead under Spans 4 and 33 and evaluated as channel protection. Armor mat was installed in the past around Bents 31, 32 and 33. Before installation, the top layer of oysters were removed. The edges of the mats were jetted down below the groundline.

INCIDENTAL:
The northwest seawall cap has cracks up to 20ft. x 1/16in.

The north seawall cap has spalls with exposed steel and unsound repairs up to 30ft. x 9in. x 4in. Refer to Photo 10.

There are changes in the channel bottom greater than 3ft. at Piers 5 and 6 left, the reason is unknown. See the channel profiles - INCREASE.

The following was noted by the underwater inspectors:
CS2 9120: The armor mat on the south edge of Bent 33 has an undermined area, intermittently full length x 10in. high x 4ft. of penetration. (1EA)

There is an abandoned fender system lower platform lying on the channel bottom, between the north fender and east of Pier 18 and between the south fender and west of Pier 17, not obstructing marine traffic.

South seawall, east end, 12ft. west of outfall pipe, from cap down, delamination/spall, 12in. x 12in. x 1in.

There is debris (bike wheel, construction debris) in the channel.

9120/4 Refer to Parent Element

MISCELLANEOUS : Other Elements

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	321 / 4	Re Conc Approach Slab	1160	100	0	.	0	.	0	.	1160 sq.ft
0	510 / 4	Wearing Surfaces	992	90.51	0	.	104	9.49	0	.	1096 sq.ft
0	3230 / 4	Effectiveness (Wearing Surface)	0	.	0	.	104	100	0	.	104 sq.ft

Element Inspection Notes:

321/4 Note: The approach slabs are not visible due to an asphalt overlay.

CS3 3230: The south and north approach slab asphalt overlay along the abutment joints are deteriorated in the southbound lanes with upheaving up to 3/4in. in the shoulder areas with impending potholes and potholes up to 3ft. x 10in. x 2in. along Abutment Joints 1 and 34 in the travel lanes - INCREASE. Refer to Photo 11. P3WO (104SF)

510/4 Refer to Parent Element

3230/4 Refer to Parent Element

FLORIDA DEPARTMENT OF TRANSPORTATION
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Inspection/CIDR/Bridge Profile Report
Inspection

Structure ID: 130053

DISTRICT: D1 - Bartow **INSPECTION DATE: 1/24/2024 OIYF**

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	205 / 4	Re Conc Column	56	58.33	35	36.46	5	5.21	0	.	96 each
0	1080 / 4	Delamination/Spall/Patched Area	0	.	35	87.5	5	12.5	0	.	40 each

Element Inspection Notes:

205/4 Note: This element represents the columns above the footers at Piers 2 through 33 (96 total), Piers 17 and 18 each have 3 columns however, they transition into pier walls without sub-piles.

CS2 1080: Columns 10-2, 10-3, 11-3, 12-1, 12-2, 14-1, 14-3, 16-1, 17-2, 18-3, 19-1, 19-2, 19-3, 20-1, 20-2, 21-1, 22-2, 22-3, 23-1, 23-2, 23-3, 24-1, 24-2, 24-3, 26-1, 26-3, 27-3, 28-2, 28-3, 29-2 and 33-1 have sound repairs starting from the footers up, in one or more corners up to 6ft. x 1ft., some having shrinkage cracks - INCREASE. (30EA)

Column 5-2, northwest corner has an unsound area 30in. x 20in. (Not observed this inspection).

CS3 1080: Column 6-1, east face has a spall/unsound repair 6ft. x 3ft. x 2in. (1EA)

CS2 1080: Column 7-2, southwest corner has a delamination with sealed perimeter cracks 2ft. x 16in. (1EA)

CS2 1080: Column 8-1, south face and southeast edge has a delamination with sealed perimeter cracks 6ft. x 1ft. (1EA)

CS2 1080: Column 8-3, southwest corner has a delamination 2ft. 6in. x 1ft. (1EA)

CS3 1080: Column 9-2, north face from the footer up 4ft. has an unsound repair with sealed perimeter cracks 4ft. x 1ft. (1EA)

CS3 1080: Column 18-2, north face 1ft. above the marine growth has a spall, 12in. x 6in. x 1/4in. - NEW. (1EA)

CS2 1080: Column 20-3, southwest corner starting at the footer up has delamination, 3ft. x 8in. - NEW. (1EA)

Column 24-1, south and west faces each have a horizontal crack up to full width x 1/64in. with light to moderate efflorescence - NEW. Refer to Photo 12. P3WO

CS3 1080: Column 28-1, north face at footing has a delamination 30in. x 9in. (1EA)

CS3 1080: Column 28-2, south face has a unsound repair, 4-1/2ft. x 3ft. with corrosion bleedout - NEW. Refer to Photo 13. P3WO (1EA)

CS2 1080: Column 29-1, east face at top of repair has a delamination with sealed perimeter cracks 1ft. x 1ft. (1EA)

INCIDENTAL:
Piers 17 and 18 each have three columns and a web wall between the columns.

The web walls from above water extending a maximum of 6in. into the marine growth have 1/32in. vertical cracks, some with light efflorescence - INCREASE.

CORRECTIVE ACTION TAKEN:
The spall/delamination in the south and east face of column 33-1 has been repaired.

FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report
Inspection

Structure ID: 130053

DISTRICT: D1 - Bartow **INSPECTION DATE: 1/24/2024 OIYF**

Columns 18-3, 19-1 and 29-2 have been repaired.

1080/4 Refer to Parent Element

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	215 / 4	Re Conc Abutment	124	86.11	20	13.89	0	.	0	.	144 ft
0	4000 / 4	Settlement	0	.	20	100	0	.	0	.	20 ft

Element Inspection Notes:

215/4 Note: Abutment 1 has a fence around it with a pad lock.

CS2 4000: Abutment 1 cap at the groundline is exposed and undermined up to 20ft. x 3in. x 3ft. back under due to erosion. (20FT)

INCIDENTAL:
Both abutment caps have a light accumulation of dirt and debris.

4000/4 Refer to Parent Element

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	220 / 4	Re Conc Pile Cap/Ftg	0	.	262	30.97	584	69.03	0	.	846 ft
0	1080 / 4	Delamination/Spall/Patched Area	0	.	143	26.73	392	73.27	0	.	535 ft
0	1090 / 4	Exposed Rebar	0	.	0	.	2	100	0	.	2 ft
0	1120 / 4	Efflorescence/Rust Staining	0	.	0	.	185	100	0	.	185 ft
0	1130 / 4	Cracking (RC and Other)	0	.	119	95.97	5	4.03	0	.	124 ft

Element Inspection Notes:

220/4 Note: Bottom of footings were above marine growth but inspected by Divers due to minimal clearance. Refer to Photo 14 and Table 2 for deficiencies in the footers above water.

The footers have vertical cracks up to full height x 1/32in. that extend into the gunite repair throughout - NEW.

CS2 1080: The gunite (sound) repairs along the bottom of the footers have multi-directional cracks up to 1-32in. with areas of efflorescence intermittently throughout - NEW. (46FT)

CS3 1120: The gunite repairs along the bottom of the footers have multi-directional cracks up to 1-32in. with areas of corrosion bleedout intermittently throughout - INCREASE. Refer to Photo 15. (181FT)

The following was noted by the underwater inspectors:
CS2 1130: Bottoms of numerous footings have intermittent longitudinal and transverse cracks, up to full length/width x 1/32in. in the original concrete. (119FT)

CS3 1080: Bottom of Footings 5-1, 5-2, 6-2, 6-3, 7-1, 7-2, 8-1, 8-2, 8-3, 9-1, 9-2, 9-3, 10-1, 10-2, 10-3, 11-1, 11-2, 11-3, 12-1, 12-2, 12-3, 13-1, 13-2, 13-3, 14-1, 14-2, 14-3, 15-1, 15-2, 5-3, 16-1, 16-2, 16-3, 19-3, 20-1, 20-2, 20-3, 21-1, 21-2, 21-3, 22-1, 22-2, 22-3, 23-1, 23-2, 23-3, 24-1, 24-2, 24-3, 25-1, 25-2, 25-3, 26-1, 26-2, 26-3, 27-1, 27-3, 27-2, 28-1, 28-2, 28-3, 29-1, 29-2, 29-3, 30-1, 30-2, 30-3, 31-1, 31-2, 31-3, 33-1 and 33-2 have delaminations/spalls up to 6ft. x 6ft. x 2in., and/or areas of honeycomb up to 24in. x 35in. x 2in. several with corrosion bleedout – INCREASE. Refer to Photo 16.

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(370FT)

CS3 1120: Bottom of Footings 6-1 and 7-3 have areas of corrosion bleedout up to 12in. x 12in. (2FT)

CS2 1080: Bottom of Footings 7-3 and 19-2 have delaminations between the piles up to 6ft. x 6ft. - DECREASE. (10FT)

CS3 1080: Bottom of Footing 9-1 northeast corner of Pile 3, has honeycomb 12in. x 12in. x 3-1/2in., with 4in. long exposed rebar; 50% section remaining. (1FT)

CS3 1080: Footing 11-3 southeast corner at bottom edge, has an unsound/spalled repair 3ft. x 24in. x 2in. - INCREASE. (3FT)

CS3 1090: Footing 13-3 northeast corner of Pile 15 at bottom of footing, has a honeycomb/void 12in. x 8in. x 5in., with 4in. long exposed rebar with delaminative corrosion; 50% section remaining. (1FT)

CS3 1080: Bottom of Footing 13-3 southwest corner of Pile 16, has honeycomb 12in. x 4in. x 3in., with 4in. long exposed rebar; 50% section remaining. (1FT)

CS3 1090: Footing 29-2 between Piles 8 and 10, has honeycomb 11in. x 5in. x 3in., with 5in. long exposed rebar; 50% section remaining. (1FT)

The previously reported sound patch at Footing 31-2 at the NE corner of Pile 31-9 was not found this inspection.

CORRECTIVE ACTIONS TAKEN:
The previously reported delaminations/spalls/honeycomb on Footings 32-1, 32-2, 32-3, 33-2 and 33-3 have been repaired.
The previously reported delaminations/spalls on Footing 33-1 at Piles 1 and 2 have been partially repaired but remains on the list above.

1080/4 Refer to Parent Element

1090/4 Refer to Parent Element

1120/4 Refer to Parent Element

1130/4 Refer to Parent Element

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	227 / 4	Re Conc Pile	394	80.57	58	11.86	37	7.57	0	.	489 (EA)
0	1080 / 4	Delamination/Spall/Patched Area	0	.	32	53.33	28	46.67	0	.	60 (EA)
0	1120 / 4	Efflorescence/Rust Staining	0	.	0	.	9	100	0	.	9 (EA)
0	1130 / 4	Cracking (RC and Other)	0	.	26	100	0	.	0	.	26 (EA)

Element Inspection Notes:

227/4 Note: This element represents the piles below the footers at Piers 5 through 16 and 19 through 33. The piles are heavily covered with marine growth from approximately 12in. below the footers down to the mudline. There is gunite overspray at the top of the piles from footing repairs.

The following was noted by the underwater inspectors:
CS2 1080: Piles 5-12 (NW), 6-14 (SE), 6-16 (NE), 7-6 (NE/NW), 7-7 (NE), 8-12 (NW), 8-16

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(NE), 9-2 (SE), 10-2 (NW), 11-13 (SW),11-16 (NE), 11-18 (NE), 12-7 (NE/SE/SW), 13-1 (SW), 13-7 (SE), 13-8 (SW), 14-14 (SE) (previously reported NE), 14-17 (SE), 15-13 (SW), 15-16 (SE/NE), 19-5 (NW), 19-7 (SE), 21-2 (NW), 22-4 (SW), 22-6 (SW), 22-10 (NW), 22-17 (SE), 22-18 (NE), 23-2 (SE), 27-18 (SE) (previously reported NE), 28-18 (SE), 29-1 (SE), 31-10 (east face) and 32-5 (NW) have spalls less than 6in. x 6in. x 1in. - INCREASE. (31EA)

CS2 1130: Piles 5-12, 5-17, 13-16, 30-7, 32-6 (NEW), 32-11 (NEW) and 32-14, have horizontal cracks up to 10in. x 1/32in. - INCREASE. (5EA)

CS3 1080: Piles 5-13 (SE), 5-14 (SE-NEW), 6-15 (SE), 8-1 (SW), 8-3 (SE), 8-11 (NW), 8-13 (NE/NW), 9-15 (NW), 11-8 (SE), 12-15 (SE), 13-4 (SE), 13-15 (NE), 13-18 (NE), 15-6 (SW), 16-12 (NE), 21-3 (NE), 21-14 (SE), 24-1 (NW), 24-7 (NE), 25-4 (SW), 26-13 (south face), 28-8 (NE), 28-14 (SE), 30-14 (SW), 30-18 (NE), 31-14 (SE), 32-1 (NE-NEW) and 33-18 (SE-NEW) have spalls up to 30in. x 6in. x 1in., largest being Pile 13-4 - INCREASE. (26EA)

CS3 1080: Pile 5-14 southeast corner 20in. below footing, has a spall 12in. x 4in. x 1-1/2in. (1EA)

CS2 1130: Piles 5-17, 6-11 (NEW), 9-8, 12-14, 13-18, 15-13, 16-4, 23-2, 24-1, 25-14, 25-18, 26-4, 26-14 (NEW), 26-16, 27-16, 27-18, 30-7, 30-8, 30-13 (NEW), 30-18, 31-1, 31-4, 31-7 (NEW), 31-12 (NEW), 31-14 and 31-16 have vertical cracks up to 3ft. x 1/32in. - INCREASE. (21EA)

CS2 1080: Pile 12-4 northwest corner 18in. below footing, has a sound repair 12in. x 4in. - NEW. (1EA)

CS3 1080: Pile 12-8 southwest corner 7in. below footing, has a spall 7in. x 5in. x 2in. (1EA)

CS3 1130: Piles 11-4, 13-16, 15-11, 22-1, 22-14, 23-2, 24-10, 26-6, 28-14 and 29-6 below the footing, have vertical cracks up to 18in. x 1/64in., with corrosion bleedout - DECREASE. Refer to Photo 17. (9EA)

The previously reported spalls at Piles 6-9, 12-4 and 14-2 and crack on Pile 21-1 were not found this inspection.

CORRECTIVE ACTION TAKEN:
The previously reported deficiencies on Piles 6-5, 6-13, 6-17, 7-15, 9-3 and 16-14 have been repaired with jacket installation.

1080/4 Refer to Parent Element

1120/4 Refer to Parent Element

1130/4 Refer to Parent Element

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	234 / 4	Re Conc Pier Cap	1783	95.35	78	4.17	9	0.48	0	.	1870 ft
0	1080 / 4	Delamination/Spall/Patched Area	0	.	78	89.66	9	10.34	0	.	87 ft

Element Inspection Notes:

234/4 CS3 1080: Pier Cap 3 bottom face adjacent to Column 3-2 has a delamination/spall 26in. x 9in. x 1in. - NEW. Refer to Photo 18. P3WO (1FT)

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CS3 1080: Pier Cap 3, north face between Beams 3-9 and 3-10, has a spall 7in. x 6in. x 1/2in. (1FT)

CS3 1080: Pier Cap 6 at Beam 6-10 in the top north edge has a spall 10in. x 3in. x 1/2in. (1FT)

CS3 1080: Pier Cap 8 at Beam 8-6 in the top north edge has a spall 1ft. x 4in. x 1in. (1FT)

CS3 1080: Pier Cap 9, top south edge under Beam 8-9, has a spall 16in. x 4in. x 1in. (2FT)

CS3 1080: Pier Cap 9, top north edge near Beam 9-5 has a spall 1ft. x 6in. x 1in. (1FT)

CS3 1080: Pier Cap 9, top north edge under Beam 9-8 has two spalls up to 1ft. x 6in. x 1in. (2FT)

CS2 1080: Pier Caps 30, 31, 32 and 33 have sound repairs in the bottom face between Columns 1 and 2 up to 15ft. x 2ft. - INCREASE. (78FT)

1080/4 Refer to Parent Element

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	8298 / 4	Pile Jacket Bare	75	100	0	.	0	.	0	.	75 (EA)
0	520 / 4	Conc Re Prot Sys	3144	100	0	.	0	.	0	.	3144 sq.ft

Element Inspection Notes:

8298/4 Note: This element represents the jackets on Piles 5-4, 6-2, 6-5, 6-6, 6-13, 16-17, 7-15, 8-18, 9-1, 9-3, 9-8, 10-7, 10-18, 11-3, 11-5, 14-2, 14-3, 14-5, 14-8, 14-10, 14-12, 14-18, 15-2, 15-3, 15-5, 15-8, 15-14, 15-15, 15-17, 16-8, 20-9, 20-10, 22-3, 23-1, 23-4, 23-5, 23-6, 16-14, 23-14, 23-17, 23-18, 24-3, 25-5, 25-10, 25-13, 25-16, 25-17, 26-2, 26-3, 26-9, 26-10, 26-11, 26-12, 26-18, 27-4, 28-2, 29-5, 29-7, 29-10, 29-13, 29-14, 29-16, 29-17, 29-18, 30-1, 30-2, 30-4, 30-5, 30-6, 30-11, 30-13, 30-15, 31-1, 31-2, 31-5, 31-9, 31-16, 31-17, 31-18, 32-2 and 33-12. Pile 9-1 is jacketed 12in. below the footer with a 24in. square x 6ft. long fiberglass formed jacket.

The following was noted by the underwater inspectors:
New jackets have been installed on Piles 6-5, 6-13, 6-17, 7-15, 9-3 and 16-14.

CS1: Anodes have 60% or more section remaining - INCREASE.

INCIDENTAL:
The anode wires are not properly routed inside the jackets, intermittently throughout.

The anodes on Jackets 5-4, 9-1, 10-7, 23-17, 26-2, 26-9, 27-4, 28-2, 29-5, 29-7, 29-13, 29-17, 29-18, 30-2, 30-5, 30-6, 30-11, 31-1, 31-2, 31-5, 31-9, 31-17, 32-2 and 33-12 are buried.

520/4 Refer to Parent Element

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	8387 / 4	PS Fender/Dolphin	279	87.74	0	.	39	12.26	0	.	318 ft
0	1080 / 4	Delamination/Spall/Patched Area	0	.	0	.	15	100	0	.	15 ft
0	1110 / 4	Cracking (PSC)	0	.	0	.	24	100	0	.	24 ft

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Element Inspection Notes:

8387/4 CS3 1080: The battered piles for the fender system have five spalls up to 12in. x 12in. x 1in. some with with exposed rebar in the top face - NEW. Refer to Photo 19. (5FT)

CS3 1110: Several of the battered piles for the fender system have cracks up to 1/64in. with corrosion bleedout in top face - NEW. (18FT)

INCIDENTAL:
Fender Hardware = Approximately 50% of the connection hardware is heavily corroded.

The north fender is missing 2 timber walkway planks at the east end - NEW. Refer to Photo 20. P3WO

The "Clearance At Center" sign attached to the northeast corner is not secure and heavily faded and the sign at the southwest is missing - NEW. Refer to Photo 21. P3WO

The following was noted by the underwater inspectors:
CS3 1080: Ten piles have corner spalls, up to 10in. x 4in. x 1in. (10FT)

CS3 1110: North fender, 14th and 15th clusters from west end plumb piles, west and east faces, 13th cluster from west end west plumb pile, north and south faces at the marine growth, have vertical cracks up to 24in. x 1/64in., with corrosion bleedout - INCREASE. Refer to Photo 22. (6FT)

INCIDENTAL:
South fender 6th section from west end, the lower wale is hanging by one bolt - NEW.

The southwest and northeast clearance gauges are missing - NEW. Refer to Photo 21. P3WO

1080/4 Refer to Parent Element

1110/4 Refer to Parent Element

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	8396 / 4	Other Abutment Slope Protection	4069	100	0	.	0	.	0	.	4069 (SF)

Element Inspection Notes:

8396/4 Note: This element represents the sand-cement riprap bag slope protection at Abutment 34 only.

INCIDENTAL:
The joints of the abutment slope protection has intermittent areas of vegetation.

SUPERSTRUCTURE : Bearings

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	311 / 4	Moveable Bearing	0	.	0	.	316	100	0	.	316 each
0	1020 / 4	Connection	0	.	0	.	16	100	0	.	16 each
0	2210 / 4	Movement	0	.	0	.	300	100	0	.	300 each
0	8516 / 4	Painted Steel	0	.	581	91.93	0	.	51	8.07	632 sq.ft
0	3440 / 4	Eff (Stl Protect Coat)	0	.	581	91.93	0	.	51	8.07	632 sq.ft

Element Inspection Notes:

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311/4 CS3 2210: The steel bearing assemblies have restricted movement due to painted-over corrosion with active corrosion bleeding through - INCREASE. Refer to Photo 23. P3WO (300EA)

There are several bearings misaligned up to 2in.; however, limits are tolerable and there is no visible distress to the assemblies INCREASE. Refer to Photo 24.

CS3 1020: The bearing assemblies and anchor bolts at Piers 17 and 19 have recurring fretting corrosion, are skewed and the nuts are not seated. Refer to Photo 25. (16EA)

CS2 3440: The paint on the movable bearing assemblies and hardware is substantially effective due to corrosion. (581SF)

CS4 3440: The paint on the movable bearing assemblies and hardware has areas of failed paint. Refer to Photos 23, 24 and 25. (51SF)

1020/4 Refer to Parent Element

2210/4 Refer to Parent Element

8516/4 Refer to Parent Element

3440/4 Refer to Parent Element

SUPERSTRUCTURE : Bearings

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	313 / 4	Fixed Bearing	0	.	0	.	316	100	0	.	316 each
0	1020 / 4	Connection	0	.	0	.	17	100	0	.	17 each
0	2210 / 4	Movement	0	.	0	.	299	100	0	.	299 each
0	8516 / 4	Painted Steel	0	.	587	92.88	0	.	45	7.12	632 sq.ft
0	3440 / 4	Eff (Stl Protect Coat)	0	.	587	92.88	0	.	45	7.12	632 sq.ft

Element Inspection Notes:

313/4 CS3 2210: The steel bearing assemblies have restricted movement due to painted-over corrosion with active corrosion bleeding through - INCREASE. Refer to Photo 26. P3WO (299EA)

CS3 1020: The anchor bolts have recurring corrosion and sheared/missing bolts at Piers 16, 17 and 18. Refer to Photo 27. (17EA)

CS2 3440: The paint on the fixed bearing assemblies and hardware is substantially effective due to corrosion. (587SF)

CS4 3440: The paint on the fixed bearing assemblies and hardware has areas of failed paint. Refer to Photo 26. P3WO (45SF)

PREVIOUS WORK ORDER RECOMMENDATION:
Clean and paint corroded areas on all fixed bearing assemblies - Repair not complete, repeat recommendation.

1020/4 Refer to Parent Element

2210/4 Refer to Parent Element

8516/4 Refer to Parent Element

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3440/4 Refer to Parent Element

SUPERSTRUCTURE : Other Elements

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	8572 / 4	Conduit & Junction Box	0	.	1	100	0	.	0	.	1 (EA)
0	1000 / 4	Corrosion	0	.	1	100	0	.	0	.	1 (EA)

Element Inspection Notes:

8572/4 Note: This element represents the conduit and junction boxes attached to the east side of Pier 18.

CS2 1000: The junction boxes have light intermittent surface corrosion. (1EA)

CORRECTIVE ACTION TAKEN:
The platforms have been removed.

1000/4 Refer to Parent Element

SUPERSTRUCTURE : Superstructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	107 / 4	Steel Opn Girder/Beam	0	.	0	.	1976	100	0	.	1976 ft
0	1000 / 4	Corrosion	0	.	0	.	1976	100	0	.	1976 ft
0	8516 / 4	Painted Steel	0	.	11509	72.8	0	.	4299	27.2	15808 sq.ft
0	3440 / 4	Eff (Stl Protect Coat)	0	.	11509	72.8	0	.	4299	27.2	15808 sq.ft

Element Inspection Notes:

107/4 Note: This element represents the steel beams in Spans 16, 17 and 18.

CS3 1000: The beams have intermittent areas of painted-over pitting up to 1/8in. deep, primarily in the bottom flange and cover plates. (1976FT)

The beams have intermittent areas of active moderate to heavy corrosion - NEW. Refer to Photo 28. P3WO

Several of the beams at top flange to deck interface have fretting corrosion - NEW. Refer to Photo 29.

CS2 3440: The paint on the beams is substantially effective. (11509SF)

CS4 3440: The beams have intermittent areas where the paint failed - NEW. Refer to Photo 28. P3WO (4299SF)

1000/4 Refer to Parent Element

8516/4 Refer to Parent Element

3440/4 Refer to Parent Element

SUPERSTRUCTURE : Superstructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	109 / 4	Pre Opn Conc Girder/Beam	19607	98.72	105	0.53	150	0.76	0	.	19862 ft
0	1080 / 4	Delamination/Spall/Patched Area	0	.	105	45.45	126	54.55	0	.	231 ft
0	1110 / 4	Cracking (PSC)	0	.	0	.	24	100	0	.	24 ft

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Element Inspection Notes:

109/4 Note: The beam spalls in the haunches at the sole plates are documented under this element.

CS2 1080: The beams have intermittent spalls less than 6in. x 6in. x 1in. Refer to Table 3 with this report for sizes and locations of deficiencies. (105FT)

CS3 1080: The beams have intermittent spalls/delaminations, some with exposed steel. Refer to Photo 30 and Table 3 with this report for sizes and locations of deficiencies. (126FT)

CS3 1110: Cracks were observed in Beams 12-10, 14-10 and 19-10 over Pier 20. Refer to Photo 31 and Table 3 with this report for sizes and locations - INCREASE. (24FT)

INCIDENTAL:
The beam end diaphragms have intermittent spalls/delamination some with exposed steel. Refer to Table 3 with this report for sizes and locations.

The beams in Spans 1 and 33 have graffiti - NEW. Refer to Photo 32. P3WO

1080/4 Refer to Parent Element

1110/4 Refer to Parent Element

SUPERSTRUCTURE : Superstructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	331 / 4	Re Conc Bridge Railing	6537	97.52	149	2.22	17	0.25	0	.	6703 ft
0	1080 / 4	Delamination/Spall/Patched Area	0	.	148	91.36	14	8.64	0	.	162 ft
0	1090 / 4	Exposed Rebar	0	.	1	33.33	2	66.67	0	.	3 ft

Element Inspection Notes:

331/4 Note: This element represents the left and right concrete post and beam bridge rails and the Jersey-type median barrier.

CS1: The median barrier and bridge rails have intermittent cracks up to full height x 1/32in.

CS2 1080: There are spalls up to 4in. x 3in. x 1in. throughout. (41FT)

CS2 1080: The bridge rails and posts along with the median barrier have sound repairs up to 14ft. x 8in. randomly throughout - INCREASE. (107FT)

CS1: The bridge rails and post have sealed and unsealed cracks up to 3ft. x 1/32in. randomly throughout - NEW.

CS3 1080: Span 8, right inside face, top bridge rail has multiple scrapes up to 15in. x 3in. x 1/4in. starting at Bent 8 - NEW. (12FT)

CS2 1090: Span 14, Post 14-4, right has two vertical exposed rebar up to 4in. long due to lack of cover - NEW. (1FT)

CS3 1090: Span 24, Post 24-1, left top face has a spall/unsound repair, 6in. x 3in. x 1/4in. with 3in. of exposed corroded rebar with 90% section remaining - NEW. (1FT)

CS3 1080: Span 22, Post 22-1, right northeast corner has an unsound repair, 12in. x 4in. - NEW. (1FT)

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CS3 1090: Span 25, Post 25-4, right bottom southeast corner has a spall, 3in. diameter x 1in. with exposed corroded rebar with 95% section remaining - NEW. (1FT)

CS3 1080: Bridge Rail 32-9, right has a spall 8in. x 4in. x 2in. with exposed rebar in the southeast corner - INCREASE. (1FT)

PREVIOUS WORK ORDER RECOMMENDATION:
Repair Sp 5 at P6 NB RT BR Post inside traffic face - Repair complete.

1080/4 Refer to Parent Element

1090/4 Refer to Parent Element

SUPERSTRUCTURE : Superstructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	8580 / 4	Navigational Lights	1	100	0	.	0	.	0	.	1 (EA)

Element Inspection Notes:

8580/4 Note: This element represents the eight navigational lights, six mounted to the fender system and two mounted to Span 17 at mid span. The lights are solar powered. Anchorage is unknown.

PREVIOUS WORK ORDER RECOMMENDATION:
Repair center of channel navigation light in Span 18 right - Repair complete.

Total Number of Elements*: 20
*excluding defects/protective systems

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Inspector Recommendations

UNIT: 0 **DECKS**

ELEMENT/ENV: 12 / 4 Re Concrete Deck **ELEM CATEGORY: Decks/Slabs**

CONDITION STATE		PRIORITY
1 , 3	MMS Quantity: 7 sf Element Estimated Quantity: 1 sq.ft	3

WORK ORDER RECOMMENDATION:
Repair Potholes and impending potholes over Piers 16 18 and in Span 18. 7SF MOT

CONDITION STATE		PRIORITY
1 , 3	MMS Quantity: 67 sf Element Estimated Quantity: 1 sq.ft	3

WORK ORDER RECOMMENDATION:
Repair all defects marked Yes in Table 1 of this report. 67FT MOT

ELEMENT/ENV: 301 / 4 Pourable Joint Seal **ELEM CATEGORY: Joints**

CONDITION STATE		PRIORITY
1 , 2 , 3 , 4	MMS Quantity: 49 lf Element Estimated Quantity: 1 ft	3

WORK ORDER RECOMMENDATION:
Repair areas of adhesion failure in Joints 5 7 12 14 15 19 22 24 26 29 and 30. 49FT MOT

CONDITION STATE		PRIORITY
1 , 2 , 3 , 4	MMS Quantity: 5 lf Element Estimated Quantity: 1 ft	3

WORK ORDER RECOMMENDATION:
Repair areas of missing joint sealant over Piers 9 in Lane 3 and 19 in Lane 4. 5FT MOT

ELEMENT/ENV: 302 / 4 Compressn Joint Seal **ELEM CATEGORY: Joints**

CONDITION STATE		PRIORITY
1 , 2 , 3 , 4	MMS Quantity: 78 lf Element Estimated Quantity: 1 ft	3

WORK ORDER RECOMMENDATION:
Repair adhesion failure in the COMP JNTS ovr Piers 4 6 8 10 21 23 25 27 29 and 31. 78FT MOT

UNIT: 0 **MISCELLANEOUS**

ELEMENT/ENV: 321 / 4 Re Conc Approach Slab **ELEM CATEGORY: Other Elements**

CONDITION STATE		PRIORITY
1	MMS Quantity: 104 sf Element Estimated Quantity: 1 sq.ft	3

WORK ORDER RECOMMENDATION:
Repair potholes and impending potholes in the approach slab asphalt adjacent to ABUT JNTS. 104SF MOT

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Inspector Recommendations

UNIT: 0 **SUBSTRUCTURE**

ELEMENT/ENV: 205 / 4 Re Conc Column **ELEM CATEGORY: Substructure**

CONDITION STATE			PRIORITY
1 , 2 , 3	MMS Quantity: 10 mh	Element Estimated Quantity: 1 each	3

WORK ORDER RECOMMENDATION:

Repair unsound repair in Column 28-2 south face. 10MH BOAT

CONDITION STATE			PRIORITY
1 , 2 , 3	MMS Quantity: 10 mh	Element Estimated Quantity: 1 each	3

WORK ORDER RECOMMENDATION:

Repair horizontal crack with efflorescence in Column 24-1. 10MH BOAT

ELEMENT/ENV: 234 / 4 Re Conc Pier Cap **ELEM CATEGORY: Substructure**

CONDITION STATE			PRIORITY
1 , 2 , 3	MMS Quantity: 6 mh	Element Estimated Quantity: 1 ft	3

WORK ORDER RECOMMENDATION:

Repair spall-delamination in the bottom face of Pier Cap 3 adjacent to Column 3-2. 6MH

ELEMENT/ENV: 8387 / 4 PS Fender/Dolphin **ELEM CATEGORY: Substructure**

CONDITION STATE			PRIORITY
1 , 3	MMS Quantity: 12 mh	Element Estimated Quantity: 1 ft	3

WORK ORDER RECOMMENDATION:

Replace all signs and clearance gauges at the NE and SW corners of the fenders. 12MH BOAT

CONDITION STATE			PRIORITY
1 , 3	MMS Quantity: 10 mh	Element Estimated Quantity: 1 ft	3

WORK ORDER RECOMMENDATION:

Replace the two missing walkway planks for the north fender at the east end. 10MH BOAT

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Inspector Recommendations

UNIT: 0 **SUPERSTRUCTURE**

ELEMENT/ENV: 107 / 4 Steel Opn Girder/Beam **ELEM CATEGORY: Superstructure**

CONDITION STATE			PRIORITY
3	MMS Quantity: 32 mh	Element Estimated Quantity: 1 ft	3

WORK ORDER RECOMMENDATION:

Clean and paint all areas of corrosion in the beams in Spans 16 17 and 18. 21MH UB ACESS

ELEMENT/ENV: 109 / 4 Pre Opn Conc Girder/Beam **ELEM CATEGORY: Superstructure**

CONDITION STATE			PRIORITY
1 , 2 , 3	MMS Quantity: 8 mh	Element Estimated Quantity: 1 ft	3

WORK ORDER RECOMMENDATION:

Remove graffiti from the Beams in Spans 1 and 32. 8MH

ELEMENT/ENV: 311 / 4 Moveable Bearing **ELEM CATEGORY: Bearings**

CONDITION STATE			PRIORITY
3	MMS Quantity: 100 mh	Element Estimated Quantity: 1 each	3

WORK ORDER RECOMMENDATION:

Clean and paint corroded areas on all movable bearing assemblies. 100MH UB ACCESS

ELEMENT/ENV: 313 / 4 Fixed Bearing **ELEM CATEGORY: Bearings**

CONDITION STATE			PRIORITY
3	MMS Quantity: 100 mh	Element Estimated Quantity: 1 each	3

WORK ORDER RECOMMENDATION:

Clean and paint corroded areas on all fixed bearing assemblies. 100MH UB ACCESS

Structure Notes

TRAFFIC RESTRICTION: According to the load rating analysis dated 06/10/08, posting is not required. This bridge is not posted.

Bridge inventoried from south to north.

Bridge No. 130083 is south and Bridge No. 130002 is north of this Bridge No. 130053.

The Harcon under bridge inspection vehicle is required for this structure.

INSPECTION NOTES: OIYF 1/24/2024

Sufficiency Rating Calculation Accepted by KNBANDR at 1/30/2024.

LOAD CAPACITY EVALUATION:

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The current load rating dated 06/10/2008 appears complete and applicable to the reported structure conditions – Drew Appler, PE, 02/05/2024.

Divers inspected Channel, Piers 17 and 18 each with three columns, Footings, Piers 5 through 16 and 19 through 33 each with eighteen reinforced concrete piles, Jackets, Concrete Reinforcing Protective System and Fender System.

The NBI rating for SIA Item 58, Deck is coded a 6 due to deterioration.

The NBI rating for SIA Item 59, Superstructure is coded a 6 due to deterioration.

The NBI rating for SIA Item 60, Substructure is coded a 6 due to deterioration.

The NBI rating for SIA Item 61, Channel is coded a 6 due to undermining.

NON-STRUCTURAL ITEMS:

APPROACH BARRIERS:
The south and north approach median barriers have full height vertical cracks up to 1/8in. with associated spalls up to 12in. x 6in. x 1in. - INCREASE.

APPROACH GUARDRAILS:
Approach guardrail panels at the southeast, northwest and northeast corners of the bridge have minor impact damage and areas of light to moderate corrosion.

UTILITIES:
The utility junction box attached to Abutment 1 backwall on the right side of Beam 1-10 is missing a plug and cover with exposed internal wires. The conduit is separated, and the box and hardware have light corrosion - INCREASE. Refer to Photo 33. REPAIR

The following light poles are missing: left side at Piers 4, 6, 8, 16, and right side at Piers 2, 6, 17, 25 and 33 - INCREASE. Refer to Photo 34. REPAIR

Utility conduits on the right overhang are sagging at Piers 5 and 11. Refer to Photo 35. REPAIR

The utility conduit at the right overhang in Span 13 is separated from the pull elbow. REPAIR

Pier 19 southbound left light pole missing handhole access cover. Refer to Photo 36. REPAIR

The utility conduit at Abutment 34 has a corrosion hole. Refer to Photo 37. REPAIR

The conduit attached to the left side of Span 33 is separated and hanging with exposed internal wires - NEW. Refer to Photo 38. REPAIR

There are several anchor bolt covers missing for the light poles throughout - NEW.

There are exposed wires at the west side of Abutment 1 - NEW. Refer to Photo 39. REPAIR

REFLECTORS:
The bridge rails, median barriers and approach guardrails are missing reflectors randomly throughout - NEW. Refer to Photo 40. REPAIR

PREVIOUS REPAIR RECOMMENDATION:
Install light poles on left side at Piers 4 8 and 16 and right side Piers 2 17 25 and 33 - Repair not complete, repeat recommendation.

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Properly attach utilities at Piers 5 11 and Span 13 - Repair not complete, repeat recommendation.
Install a new handhole access cover for light pole at Pier 19 left - Repair not complete, repeat recommendation.
Repair or replace the conduit at Abutment 34 - Repair not complete, repeat recommendation.

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Photo 1: Element 12 Re Concrete Deck

Typical deck top map cracks.

WORK ORDER RECOMMENDATION:
None

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Photo 2: Element 12 Re Concrete Deck

Typical deck underside at the construction joint in Span 16 corrosion bleed out.

WORK ORDER RECOMMENDATION:
None

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Photo 3: Element 12 Re Concrete Deck

Spall with exposed rebar in the deck top of Span 13 Lane 3.

WORK ORDER RECOMMENDATION:
P3WO: Repair all defects marked Yes in Table 1 of this report. 67FT MOT

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Photo 4: Element 12 Re Concrete Deck

Unsound repair with exposed rebar in the deck top of Span 15 Lane 3.

WORK ORDER RECOMMENDATION:
Refer to Photo 3.

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Photo 5: Element 12 Re Concrete Deck

Pothole in the asphalt and spall/delamination in the right wheel path of Lane 1 at Pier 18.

WORK ORDER RECOMMENDATION:
P3WO: Repair Potholes and impending potholes over Piers 16 18 and 1/4 point of Span 18. 7SF MOT
Refer to Photo 3.

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Photo 6: Element 12 Re Concrete Deck

Span 18 deck underside left at Pier 19 spall with exposed rebar.

WORK ORDER RECOMMENDATION:
Refer to Photo 3.

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Photo 7: Element 301 Pourable Joint Seal

Typical area of adhesion loss Lane 3 over Pier 22 shown.

WORK ORDER RECOMMENDATION:
P3WO: Repair areas of adhesion failure in Joints 5 7 12 14 15 19 22 24 26 29 and 30. 49FT MOT

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Photo 8: Element 301 Pourable Joint Seal

Pier 9 joint in Lane 3 area of missing sealant. Typical.

WORK ORDER RECOMMENDATION:
P3WO: Repair areas of missing joint sealant over Piers 9 in Lane 3 and 19 in Lane 4. 5FT MOT

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Photo 9: Element 302 Compressn Joint Seal

Typical area of adhesion failure in the compression joints.

WORK ORDER RECOMMENDATION:
P3WO: Repair areas of adhesion failure in the compression joints over Piers 4 6 8 10 21 23 25 27 29 and 31. 78FT MOT

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Photo 10: Element 8290 Channel

Typical spall with exposed steel in the north seawall cap.

WORK ORDER RECOMMENDATION:
None

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Photo 11: Element 321 Re Conc Approach Slab

Typical pothole/impending pothole in the north approach slab asphalt.

WORK ORDER RECOMMENDATION:
P3WO: Repair the potholes and impending potholes in the approach slab asphalt adjacent to the abutment joints. 104SF MOT

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Photo 12: Element 205 Re Conc Column

Column 24-1 horizontal crack with efflorescence.

WORK ORDER RECOMMENDATION:
P3WO: Repair horizontal crack with efflorescence in Column 24-1. 10MH BOAT

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Photo 13: Element 205 Re Conc Column

Column 28-2 south face unsound repair with corrosion bleedout.

WORK ORDER RECOMMENDATION:
P3WO: Repair unsound repair in Column 28-2 south face. 10MH BOAT

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Photo 14: Element 220 Re Conc Pile Cap/Ftg

Footing 8-2 east face spall/delamination with corrosion bleedout.

WORK ORDER RECOMMENDATION:
None

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Photo 15: Element 220 Re Conc Pile Cap/Ftg

Typical area of corrosion bleedout from the gunite repairs.

WORK ORDER RECOMMENDATION:
None

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Photo 16: Element 220 Re Conc Pile Cap/Ftg

Footing 8-1 bottom face corrosion bleedout. Typical.

WORK ORDER RECOMMENDATION:
None

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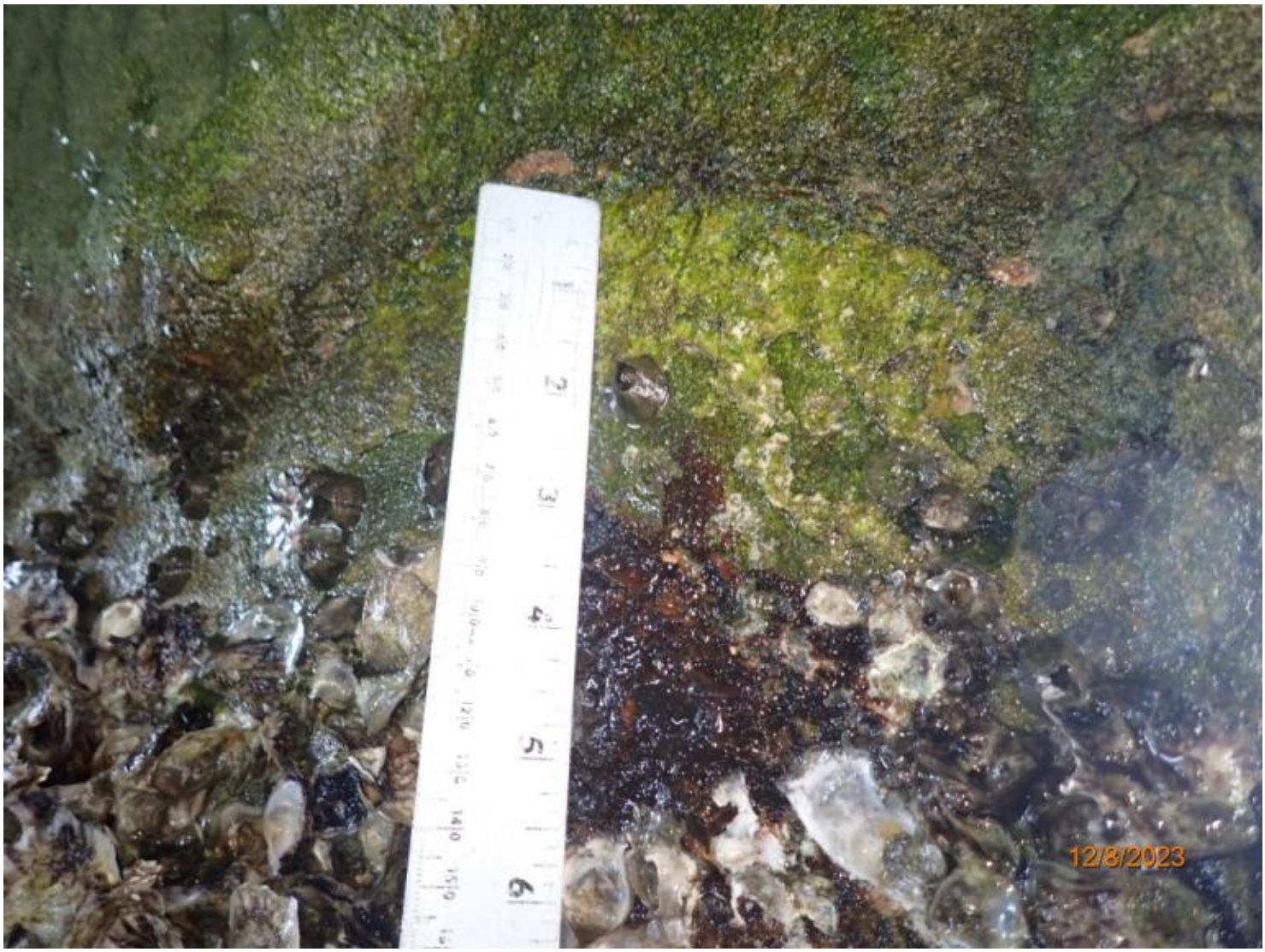

Photo 17: Element 227 Re Conc Pile

Vertical crack with corrosion bleedout at the southeast corner of Pile 11-4.

WORK ORDER RECOMMENDATION:
None

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Photo 18: Element 234 Re Conc Pier Cap

Pier Cap 3 bottom face adjacent to Column 3-2 spall/delamination.

WORK ORDER RECOMMENDATION:
P3WO: Repair spall/delamination in the bottom face of Pier Cap 3 adjacent to Column 3-2. 6MH

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Photo 19: Element 8387 PS Fender/Dolphin

Typical spall in south fender pile top face with exposed rebar.

WORK ORDER RECOMMENDATION:
None

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Photo 20: Element 8387 PS Fender/Dolphin

North fender missing timber walkway plank at the east end. Typical.

WORK ORDER RECOMMENDATION:
P3WO: Replace the two missing walkway planks for the north fender at the east end. 10MH BOAT

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Photo 21: Element 8387 PS Fender/Dolphin

"Clearance At Center" sign attached to the northeast corner not secure and heavily faded and missing clearance gauge. Typical.

WORK ORDER RECOMMENDATION:
P3WO: Replace all signs and clearance gauges at the NE and SW corners of the fenders. 12MH BOAT

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Photo 22: Element 8387 PS Fender/Dolphin

Typical vertical crack with corrosion bleedout at north fender. 14th cluster shown.

WORK ORDER RECOMMENDATION:
None

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Photo 23: Element 311 Moveable Bearing

Typical bearing with painted over corrosion.

WORK ORDER RECOMMENDATION:
P3WO: Clean and paint corroded areas on all movable bearing assemblies. 100MH UB ACCESS

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Photo 24: Element 311 Moveable Bearing

Bearing 9-5 over Pier 9 misaligned to the north. Typical.

WORK ORDER RECOMMENDATION:
None

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Photo 25: Element 311 Moveable Bearing

Bearing 18-7 over Pier 19 with fretting corrosion.

WORK ORDER RECOMMENDATION:
Refer to Photo 23.

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Photo 26: Element 313 Fixed Bearing

Typical bearing condition, restricted movement and associated corrosion.

WORK ORDER RECOMMENDATION:
P3WO: Clean and paint corroded areas on all fixed bearing assemblies. 100MH UB ACCESS

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Photo 27: Element 313 Fixed Bearing

Typical bearing missing anchor bolt.

WORK ORDER RECOMMENDATION:
None

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Photo 28: Element 107 Steel Opn Girder/Beam

Typical areas of corrosion in the beams.

WORK ORDER RECOMMENDATION:
P3WO: Clean and paint all areas of corrosion in the beams in Spans 16 17 and 18. 32MH UB ACESS

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Photo 29: Element 107 Steel Opn Girder/Beam

Typical area of fretting corrosion at the beam top flange to deck interface.

WORK ORDER RECOMMENDATION:
None

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Photo 30: Element 109 Pre Opn Conc Girder/Beam

Typical spall/delamination in the beams. Beam 4-2 shown.

WORK ORDER RECOMMENDATION:
None

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Photo 31: Element 109 Pre Opn Conc Girder/Beam

Typical crack in Beam 12-10 right face.

WORK ORDER RECOMMENDATION:
None

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Photo 32: Element 109 Pre Opn Conc Girder/Beam

Typical graffiti in Span 1 beams.

WORK ORDER RECOMMENDATION:
P3WO: Remove graffiti from the Beams in Spans 1 and 32. 8MH

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Photo 33: Inspection Notes

Utility junction box attached to Abutment 1 backwall on the right side of Beam 1-10 missing cover.

REPAIR RECOMMENDATION:
Install missing cover and plug for the utility junction box attached to Abutment 1 backwall on the right side of Beam 1-10.

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Photo 34: Inspection Notes

Pier 25 right missing light pole.

REPAIR RECOMMENDATION:
Install light poles on left side at Piers 4 6 8 and 16 and right side Piers 2 6 17 25 and 33.

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Photo 35: Inspection Notes

Pier 5 right sagging utilities. Typical.

REPAIR RECOMMENDATION:
Properly attach utilities at Piers 5 11 and Span 13.

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Photo 36: Inspection Notes

Light pole missing handhole access cover at Pier 19 left.

REPAIR RECOMMENDATION:
Install a new handhole access cover for light pole at Pier 19 left.

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Photo 37: Inspection Notes

Corrosion hole in Abutment 34 utility conduit.

REPAIR RECOMMENDATION:
Repair or replace the conduit at Abutment 34.

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Photo 38: Inspection Notes

Conduit attached to the left side of Span 33 separated and hanging.

REPAIR RECOMMENDATION:
Repair conduit attached to the left side of Span 33 separated and hanging.

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Photo 39: Inspection Notes

Exposed wires at the west side of Abutment 1.

REPAIR RECOMMENDATION:
Repair the exposed wires that are exposed at the west side of Abutment 1.

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Photo 40: Inspection Notes

Typical missing reflector for the bridge rails.

REPAIR RECOMMENDATION:
Install all missing bridge rail and median barrier reflectors throughout.

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REPORT ID: INSP005 | **CIDR** | **DATE PRINTED: 2/14/2024**

Structure ID: 130053

Description

Structure Unit Identification

Bridge/Unit Key: 130053 0
Structure Name: HERNANDO DESOTO BRIDGE
Description: SPANS 16 THROUGH 18
Type: M - Main

Structure Unit Identification

Bridge/Unit Key: 130053 1
Structure Name: HERNANDO DESOTO BRIDGE
Description: SPANS 1 THROUGH 15 & 19 THROUGH 33
Type: A - Approach

Roadway Identification

NBI Structure No (8): 130053
Position/Prefix (5): 1 - Route On Structure
Kind Hwy (Rte Prefix): 2 U.S. Numbered Hwy
Design Level of Service: 1 Mainline
Route Number/Suffix: 00041 / 0 N/A (NBI)
Feature Intersect (6): MANATEE RIVER 2ND ST E
Critical Facility: Not Defense-crit
Facility Carried (7): US-41/US-301
Mile Point (11): 2.617
Latitude (16): 027d30'12.9" Long (17): 082d33'47.0"

Roadway Traffic and Accidents

Lanes (28): 4 Medians: 1 Speed: 50 mph
ADT Class: 4 ADT Class 4
Recent ADT (29): 62000 Year (30): 2024
Future ADT (114): 107570 Year (115): 2044
Truck % ADT (109): 8
Detour Length (19): 1 mi
Detour Speed: 50 mph
Accident Count: -1 Rate:

Roadway Classification

Nat. Hwy Sys (104): 1 On the NHS
National base Net (12): 1 - On Base Network
LRS Inventory Rte (13a): 13 130 000 Sub Rte (13b): 00
Functional Class (26): 14 Urban Other Princ
Federal Aid System: ON
Defense Hwy (100): 0 Not a STRAHNET hwy
Direction of Traffic (102): 2 2-way traffic
Emergency: [X]

Roadway Clearances

Vertical (10): 99.99 ft Appr. Road (32): 58.4 ft
Horiz. (47): 26.9 ft Roadway (51): 51.8 ft
Truck Network (110): 0 Not part of natl netwo
Toll Facility (20): 3 On free road
Fed. Lands Hwy (105): 0 N/A (NBI)
School Bus Route: [X]
Transit Route: [X]

NBI Project Data

Proposed Work (075A): 38 Other Structural
Work To Be Done By (075B): 1 Contract
Improvement Length (076): 2224.41 ft

Improvement Cost (094): $ 70,000.00
Roadway Improvement Cost (095): $ 5,000.00
Total Cost (096): $ 75,000.00
Year of Estimate (097): 1996

NBI Rating

Channel (61): 6 Bank Slumping
Deck (58): 6 Satisfactory
Superstructure (59): 6 Satisfactory
Substructure (60): 6 Satisfactory

Culvert (62): N N/A (NBI)
Waterway (71): 8 Equal Desirable
Unrepaired Spalls: -1 sq.ft.
Review Required: [X]

FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report

REPORT ID: INSP005 | **Structure ID: 130053** | **CIDR** | **DATE PRINTED: 2/14/2024**

Structure Identification

Admin Area: Sarasota/Manatee
District (2): D1 - Bartow
County (3): (13) Manatee
Place Code (4): Bradenton
Location (9): 0.6 MI NORTH OF SR-64
Border Br St/Reg (98): Not Applicable (P) Share: 0 %
Border Struct No (99):
FIPS State/Region (1): 12 Florida Region 4-Atlanta
NBIS Bridge Len (112): Y - Meets NBI Length

Parallel Structure (101): No || bridge exists
Temp. Structure (103): Not Applicable (P)
Maint. Resp. (21): 1 State Highway Agency
Owner (22): 1 State Highway Agency
Historic Signif. (37): 5 Not eligible for NRHP

Geometrics

Spans in Main Unit (45): 3
Approach Spans (46): 30
Length of Max Span (48): 105 ft
Structure Length (49): 2234.3 ft
Total Length: 2278.3 ft
Deck Area: 138527 sqft
Structure Flared (35): 0 No flare

Age and Service

Year Built (27): 1957
Year Reconstructed (106): 0
Type of Service On (42a): 1 Highway
Under (42b): 6 Highway-waterway
Fracture Critical Details: Not Applicable

Structure Type and Material

Curb/Sidewalk (50): Left: 2 ft Right: 2 ft
Bridge Median (33): 3 Closed Med w/Barriers
Main Span Material (43A): 4 Steel Continuous
Appr Span Material (44A): 5 Prestressed Concrete
Main Span Design (43B): 02 Stringer/Girder
Appr Span Design (44B): 02 Stringer/Girder

Deck Type and Material

Deck Width (52): 62 ft
Skew (34): 0 deg
Deck Type (107): 1 Concrete-Cast-in-Place
Surface (108): 0 None
Membrane: 0 None
Deck Protection: None

Appraisal

Structure Appraisal

Open/Posted/Closed (41): A Open, no restriction
Deck Geometry (68): 4 Tolerable
Underclearances (69): 5 Above Tolerable
Approach Alignment (72): 7-No Accel/Reduce Curve
Bridge Railings (36a): 0 Substandard
Transitions (36b): 0 Substandard

Approach Guardrail (36c): 0 Substandard
Approach Guardrail Ends (36d): 0 Substandard
Scour Critical (113): 7 Countermeasures

Navigation Data

Navigation Control (38): Permit Required
Nav Vertical Clr (39): 39.7 ft
Nav Horizontal Clr (40): 75.4 ft
Min Vert Lift Clr (116): 0 ft
Pier Protection (111): 2 In-Place, Functioning

NBI Condition Rating

Sufficiency Rating: 74.5
Health Index: 70.31
Structural Eval (67): 6 Equal Min Criteria
Deficiency: Not Deficient

Minimum Vertical Clearance

Over Structure (53): 99.99 ft
Under (reference) (54a): H Hwy beneath struct
Under (54b): 14.4 ft

Minimum Lateral Underclearance

Reference (55a): H Hwy beneath struct
Right Side (55b): 11.8 ft
Left Side (56): 0 ft

Schedule

Current Inspection

Inspection Date: 01/24/2024
Inspector: KNBANEN - Elliott Coon
Bridge Group: E1U99
Alt. Bridge Group:
Primary Type: Regular NBI
Review Required: [X]

Next Inspection Date Scheduled

NBI: 01/24/2026
Element: 01/24/2026
Fracture Critical:
Underwater: 12/20/2025
Other/Special:
Inventory Photo Update Due: 01/30/2030

FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM

REPORT ID: INSP005 — **Inspection/CIDR/Bridge Profile Report**

Structure ID: 130053 — **CIDR** — **DATE PRINTED: 2/14/2024**

Schedule Cont.

Inspection Types Performed NBI [X] Element [X] Fracture Critical [ ] Underwater [X] Other Special [ ]

Inspection Intervals	Required (92)	Frequency (92)		Last Date (93)	
Fracture Critical	[ ]		mos		
Underwater	[X]	24	mos	12/20/2023	
Other Special	[ ]		mos	04/27/2013	
NBI		24	mos (91)	01/24/2024	(90)

Inspection Resources

Crew Hours:	16
Flagger Hours:	0
Helper Hours:	0
Snooper Hours:	0
Special Crew Hours:	23
Special Equip Hours:	10

Bridge Related

General Bridge Information

Parallel Bridge Seq:
Channel Depth: 15 ft
Radio Frequency: -1
Phone Number:
Exception Date:
Exception Type: Unknown
Accepted By Maint: 01/01/1957
Warranty Expiration: 00/00/0000
Performance Rating: Good

Bridge Rail 1: Concrete post & beam
Bridge Rail 2: Concrete jersey type
Electrical Devices: Combination values 1-7
Culvert Type: Not applicable
Maintenance Yard: 194-Manatee Ops
FIHS ON / OFF: No Routes on FIHS
Previous Structure:
2nd Previous Structure:
Replacement Structure:

Permitted Utilities: Power [ ] Water [ ] Gas [ ] Fiber Optic [X] Sewage [ ] Other [ ]

Bridge Load Rating Information

Inventory Type (065): 1 LF Load Factor
Operating Type (063): 1 LF Load Factor
Original Design Load (031): 5 MS 18 (HS 20)
Date: 06/10/2008
Initials: SDW
Load Rating Rev. Recom.: No
Load Rating Plans Status: Design or Construction

Inventory Rating (066): 39.0 tons
Operating Rating (064): 65.1 tons
FL120 Permit Rating: -1.0 tons
HS20/FL120 Max Span Rating: 94.8 tons
Dynamic Impact in Percent: 26 %
Governing Span Length: 64.2 ft
Minimum Span Length:
Distribution Method: SALOD

Load Rating Notes:

LEGAL LOADS

SU2: 59.6 tons
SU3: 61.6 tons
SU4: 62.1 tons
C3: 72.2 tons
C4: 69.7 tons
C5: 70.2 tons
ST5: 81.5 tons
Posting (070): 5 At/Above Legal Loads
Open/Posted/Closed (041): A Open, no restriction

POSTING

Recom. SU Posting: 99 tons
Recom. C Posting: 99 tons
Recom. ST5 Posting: 99 tons
Actual SU Posting: 99 tons
Actual C Posting: 99 tons
Actual ST5 Posting: 99 tons
Actual Blanket Posting: 99 tons
Emergency Vehicle: 1 EV inapplicable

FLOOR BEAM (FB) FB Present: No

FB Span Length, Gov: 0.0 ft
FB Spacing, Gov: 0.0 ft
FB OPR Rating: 0.0 tons
FB SU4 OPR Rating: 0.0 tons
FB FL120 Rating: 0.0 tons

SEGMENTAL (SEG)

SEG Wing-Span: -1.0 ft
SEG Web-to-Web Span: -1.0 ft
SEG Transverse HL93 Operating: -1.00 RF

Bridge Scour and Storm Information

Pile Driving Record: All pile driving records
Foundation Type: Foundation details
Mode of Flow: Tidal
Rating Scour Eval: Scour Critical
Highest Scour Eval: Phase IV completed
Scour Evaluation Method:

Scour Recommended I: Perform countermeasures
Scour Recommended II: Perform add'l monitoring
Scour Recommended III: Not Applicable
Scour Elevation: 0 ft
Action Elevation: 0 ft
Storm Frequency: 100

FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report

REPORT ID: INSP005
Structure ID: 130053
CIDR
DATE PRINTED: 2/14/2024

Elements

Inspection Date: 01/24/2024 **OIYF**

DECKS : Decks/Slabs

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	12 / 4	Re Concrete Deck	17046	12.31	0	.	121481	87.69	0	.	138527 sq.ft
0	1130 / 4	Cracking (RC and Other)	0	.	0	.	121481	100	0	.	121481 sq.ft
0	510 / 4	Wearing Surfaces	17042	99.96	0	.	7	0.04	0	.	17049 sq.ft
0	3210 / 4	Del/Spall/Patch/Pot(Wear Surf)	0	.	0	.	7	100	0	.	7 sq.ft

DECKS : Joints

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	301 / 4	Pourable Joint Seal	987	93.64	12	1.14	1	0.09	54	5.12	1054 ft
0	2320 / 4	Seal Adhesion	0	.	0	.	0	.	49	100	49 ft
0	2330 / 4	Seal Damage	0	.	0	.	0	.	5	100	5 ft
0	2360 / 4	Adjacent Deck or Header	0	.	12	92.31	1	7.69	0	.	13 ft

DECKS : Joints

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	302 / 4	Compressn Joint Seal	701	86.97	26	3.23	1	0.12	78	9.68	806 ft
0	2320 / 4	Seal Adhesion	0	.	0	.	0	.	78	100	78 ft
0	2350 / 4	Debris Impaction	0	.	24	100	0	.	0	.	24 ft
0	2360 / 4	Adjacent Deck or Header	0	.	2	66.67	1	33.33	0	.	3 ft

MISCELLANEOUS : Channel

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	8290 / 4	Channel	0	.	1	100	0	.	0	.	1 (EA)
0	9120 / 4	Degradation	0	.	1	100	0	.	0	.	1 (EA)

MISCELLANEOUS : Other Elements

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	321 / 4	Re Conc Approach Slab	1160	100	0	.	0	.	0	.	1160 sq.ft
0	510 / 4	Wearing Surfaces	992	90.51	0	.	104	9.49	0	.	1096 sq.ft
0	3230 / 4	Effectiveness (Wearing Surface)	0	.	0	.	104	100	0	.	104 sq.ft

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	205 / 4	Re Conc Column	56	58.33	35	36.46	5	5.21	0	.	96 each
0	1080 / 4	Delamination/Spall/Patched Area	0	.	35	87.5	5	12.5	0	.	40 each

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	215 / 4	Re Conc Abutment	124	86.11	20	13.89	0	.	0	.	144 ft
0	4000 / 4	Settlement	0	.	20	100	0	.	0	.	20 ft

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	220 / 4	Re Conc Pile Cap/Ftg	0	.	262	30.97	584	69.03	0	.	846 ft
0	1080 / 4	Delamination/Spall/Patched Area	0	.	143	26.73	392	73.27	0	.	535 ft
0	1090 / 4	Exposed Rebar	0	.	0	.	2	100	0	.	2 ft

FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report

REPORT ID: INSP005 **CIDR** **DATE PRINTED: 2/14/2024**

Structure ID: 130053

0	1120 / 4	Efflorescence/Rust Staining	0	.	0	.	185	100	0	.	185 ft
0	1130 / 4	Cracking (RC and Other)	0	.	119	95.97	5	4.03	0	.	124 ft

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	227 / 4	Re Conc Pile	394	80.57	58	11.86	37	7.57	0	.	489 (EA)
0	1080 / 4	Delamination/Spall/Patched Area	0	.	32	53.33	28	46.67	0	.	60 (EA)
0	1120 / 4	Efflorescence/Rust Staining	0	.	0	.	9	100	0	.	9 (EA)
0	1130 / 4	Cracking (RC and Other)	0	.	26	100	0	.	0	.	26 (EA)

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	234 / 4	Re Conc Pier Cap	1783	95.35	78	4.17	9	0.48	0	.	1870 ft
0	1080 / 4	Delamination/Spall/Patched Area	0	.	78	89.66	9	10.34	0	.	87 ft

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	8298 / 4	Pile Jacket Bare	75	100	0	.	0	.	0	.	75 (EA)
0	520 / 4	Conc Re Prot Sys	3144	100	0	.	0	.	0	.	3144 sq.ft

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	8387 / 4	PS Fender/Dolphin	279	87.74	0	.	39	12.26	0	.	318 ft
0	1080 / 4	Delamination/Spall/Patched Area	0	.	0	.	15	100	0	.	15 ft
0	1110 / 4	Cracking (PSC)	0	.	0	.	24	100	0	.	24 ft

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	8396 / 4	Other Abutment Slope Protection	4069	100	0	.	0	.	0	.	4069 (SF)

SUPERSTRUCTURE : Bearings

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	311 / 4	Moveable Bearing	0	.	0	.	316	100	0	.	316 each
0	1020 / 4	Connection	0	.	0	.	16	100	0	.	16 each
0	2210 / 4	Movement	0	.	0	.	300	100	0	.	300 each
0	8516 / 4	Painted Steel	0	.	581	91.93	0	.	51	8.07	632 sq.ft
0	3440 / 4	Eff (Stl Protect Coat)	0	.	581	91.93	0	.	51	8.07	632 sq.ft

SUPERSTRUCTURE : Bearings

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	313 / 4	Fixed Bearing	0	.	0	.	316	100	0	.	316 each
0	1020 / 4	Connection	0	.	0	.	17	100	0	.	17 each
0	2210 / 4	Movement	0	.	0	.	299	100	0	.	299 each
0	8516 / 4	Painted Steel	0	.	587	92.88	0	.	45	7.12	632 sq.ft
0	3440 / 4	Eff (Stl Protect Coat)	0	.	587	92.88	0	.	45	7.12	632 sq.ft

SUPERSTRUCTURE : Other Elements

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	8572 / 4	Conduit & Junction Box	0	.	1	100	0	.	0	.	1 (EA)
0	1000 / 4	Corrosion	0	.	1	100	0	.	0	.	1 (EA)

FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report

REPORT ID: INSP005
Structure ID: 130053
CIDR
DATE PRINTED: 2/14/2024

SUPERSTRUCTURE : Superstructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	107 / 4	Steel Opn Girder/Beam	0	.	0	.	1976	100	0	.	1976 ft
0	1000 / 4	Corrosion	0	.	0	.	1976	100	0	.	1976 ft
0	8516 / 4	Painted Steel	0	.	11509	72.8	0	.	4299	27.2	15808 sq.ft
0	3440 / 4	Eff (Stl Protect Coat)	0	.	11509	72.8	0	.	4299	27.2	15808 sq.ft

SUPERSTRUCTURE : Superstructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	109 / 4	Pre Opn Conc Girder/Beam	19607	98.72	105	0.53	150	0.76	0	.	19862 ft
0	1080 / 4	Delamination/Spall/Patched Area	0	.	105	45.45	126	54.55	0	.	231 ft
0	1110 / 4	Cracking (PSC)	0	.	0	.	24	100	0	.	24 ft

SUPERSTRUCTURE : Superstructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	331 / 4	Re Conc Bridge Railing	6537	97.52	149	2.22	17	0.25	0	.	6703 ft
0	1080 / 4	Delamination/Spall/Patched Area	0	.	148	91.36	14	8.64	0	.	162 ft
0	1090 / 4	Exposed Rebar	0	.	1	33.33	2	66.67	0	.	3 ft

SUPERSTRUCTURE : Superstructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	8580 / 4	Navigational Lights	1	100	0	.	0	.	0	.	1 (EA)

Total Number of Elements*: 20
*excluding defects/protective systems

FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report

REPORT ID: INSP005
Structure ID: 130053
CIDR
DATE PRINTED: 2/14/2024

Inspection Information

Inspection Date: 01/24/2024 **Type:** Regular NBI
Inspector: KNBANEN - Elliott Coon

Inspection Notes: Sufficiency Rating Calculation Accepted by KNBANDR at 1/30/2024.

LOAD CAPACITY EVALUATION:
The current load rating dated 06/10/2008 appears complete and applicable to the reported structure conditions – Drew Appler, PE, 02/05/2024.

Divers inspected Channel, Piers 17 and 18 each with three columns, Footings, Piers 5 through 16 and 19 through 33 each with eighteen reinforced concrete piles, Jackets, Concrete Reinforcing Protective System and Fender System.

The NBI rating for SIA Item 58, Deck is coded a 6 due to deterioration.

The NBI rating for SIA Item 59, Superstructure is coded a 6 due to deterioration.

The NBI rating for SIA Item 60, Substructure is coded a 6 due to deterioration.

The NBI rating for SIA Item 61, Channel is coded a 6 due to undermining.

NON-STRUCTURAL ITEMS:

APPROACH BARRIERS:
The south and north approach median barriers have full height vertical cracks up to 1/8in. with associated spalls up to 12in. x 6in. x 1in. - INCREASE.

APPROACH GUARDRAILS:
Approach guardrail panels at the southeast, northwest and northeast corners of the bridge have minor impact damage and areas of light to moderate corrosion.

UTILITIES:
The utility junction box attached to Abutment 1 backwall on the right side of Beam 1-10 is missing a plug and cover with exposed internal wires. The conduit is separated, and the box and hardware have light corrosion - INCREASE. Refer to Photo 33. REPAIR

The following light poles are missing: left side at Piers 4, 6, 8, 16, and right side at Piers 2, 6, 17, 25 and 33 - INCREASE. Refer to Photo 34. REPAIR

Utility conduits on the right overhang are sagging at Piers 5 and 11. Refer to Photo 35. REPAIR

The utility conduit at the right overhang in Span 13 is separated from the pull elbow. REPAIR

Pier 19 southbound left light pole missing handhole access cover. Refer to Photo 36. REPAIR

The utility conduit at Abutment 34 has a corrosion hole. Refer to Photo 37. REPAIR

The conduit attached to the left side of Span 33 is separated and hanging with exposed internal wires - NEW. Refer to Photo 38. REPAIR

There are several anchor bolt covers missing for the light poles throughout - NEW.

There are exposed wires at the west side of Abutment 1 - NEW. Refer to Photo 39. REPAIR

REFLECTORS:
The bridge rails, median barriers and approach guardrails are missing reflectors randomly throughout - NEW. Refer to Photo 40. REPAIR

PREVIOUS REPAIR RECOMMENDATION:
Install light poles on left side at Piers 4 8 and 16 and right side Piers 2 17 25 and 33 - Repair not complete, repeat recommendation.
Properly attach utilities at Piers 5 11 and Span 13 - Repair not complete, repeat recommendation.
Install a new handhole access cover for light pole at Pier 19 left - Repair not complete, repeat recommendation.
Repair or replace the conduit at Abutment 34 - Repair not complete, repeat recommendation.

FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
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REPORT ID: INSP005

Structure ID: 130053

CIDR

DATE PRINTED: 2/14/2024

Structure Notes

TRAFFIC RESTRICTION: According to the load rating analysis dated 06/10/08, posting is not required. This bridge is not posted.

Bridge inventoried from south to north.

Bridge No. 130083 is south and Bridge No. 130002 is north of this Bridge No. 130053.

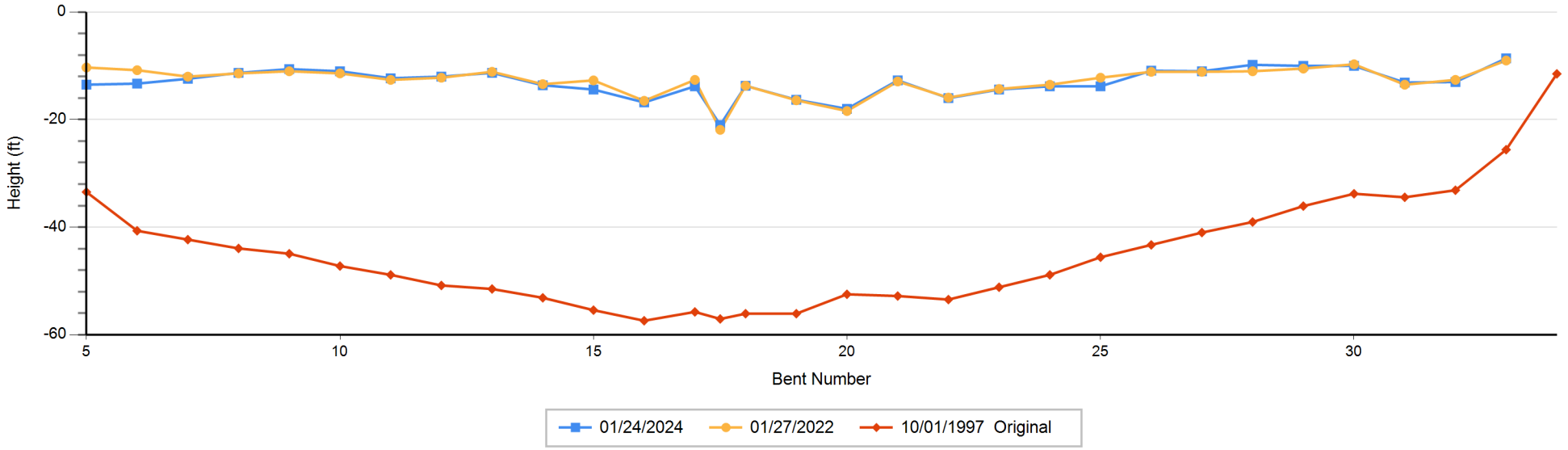
The Harcon under bridge inspection vehicle is required for this structure.

Schedule Notes

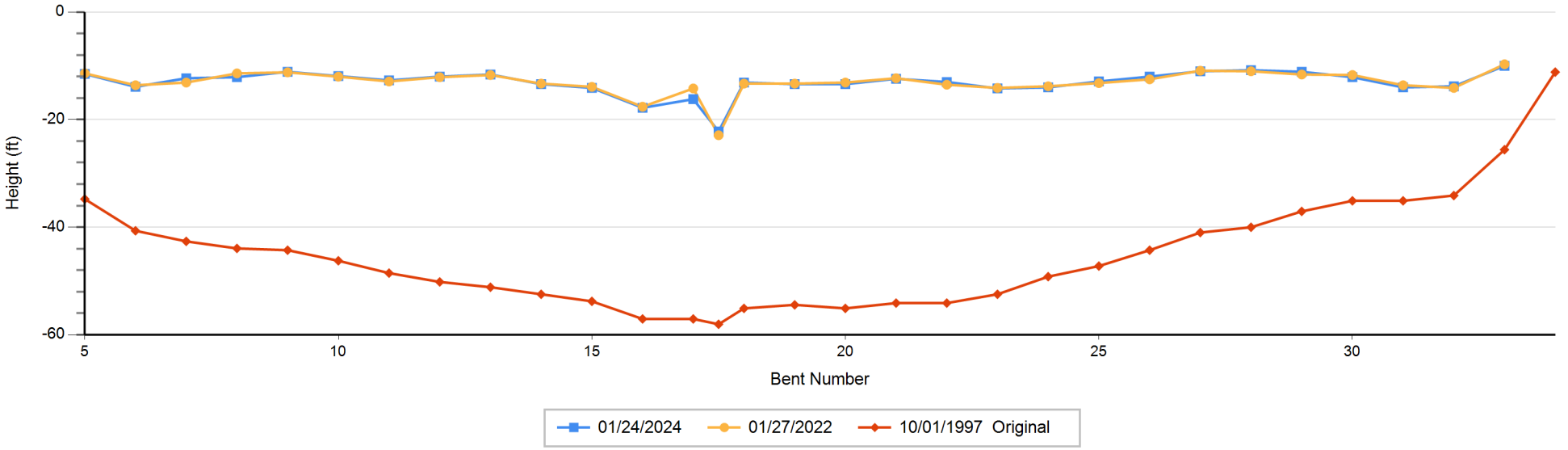
FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report
Bridge Profile

DATE PRINTED: 2/14/2024 3:16:44 AM

Left Profile by Inspection



Right Profile by Inspection



FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report
Bridge Profile

DATE PRINTED: 2/14/2024 3:16:44 AM

Profile Data - Numerical Summary

Inspection Date and Key: 1/24/2024 OIYF

Bent #	Left Height	Right Height
5	13.50	11.50
6	13.30	13.90
7	12.40	12.30
8	11.30	12.10
9	10.60	11.10
10	11.00	11.90
11	12.30	12.70
12	12.00	12.00
13	11.30	11.60
14	13.60	13.40
15	14.40	14.10
16	16.80	17.80
17	13.80	16.20
17.5	21.00	22.20
18	13.70	13.10
19	16.30	13.40
20	18.00	13.40
21	12.70	12.40
22	16.00	13.00
23	14.40	14.20
24	13.80	14.00
25	13.80	12.90
26	10.90	12.00
27	11.00	11.00

(All Heights are in Feet)

Profile Data - Numerical Summary

Bent #	Left Height	Right Height
28	9.80	10.80
29	10.00	11.10
30	10.00	12.10
31	13.10	14.00
32	13.00	13.80
33	8.60	10.00

(All Heights are in Feet)

Air Temp:

Profile Notes:

Measurements were referenced from the top of the footers.
Waterline was taken at Pier 5: Left and Right = 7.2ft.
No measurements were taken at Abutments 1 through Pier 4 and Abutment 34 due to them being out of the channel.
The reason for changes of greater than 3ft. are unknown.

Inspection Date and Key: 1/27/2022 DXRR

5	10.30	11.40
6	10.80	13.60
7	12.00	13.10
8	11.40	11.40
9	11.00	11.20
10	11.40	12.00
11	12.60	12.90
12	12.20	12.10
13	11.10	11.70
14	13.40	13.30
15	12.70	13.90
16	16.50	17.60
17	12.60	14.20

FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report
Bridge Profile

DATE PRINTED: 2/14/2024 3:16:44 AM

Profile Data - Numerical Summary

Bent #	Left Height	Right Height
17.5	21.90	22.90
18	13.70	13.30
19	16.40	13.30
20	18.40	13.10
21	12.90	12.30
22	15.90	13.50
23	14.30	14.10
24	13.50	13.80
25	12.20	13.20
26	11.10	12.50
27	11.10	10.90
28	11.00	11.00
29	10.50	11.60
30	9.70	11.70
31	13.50	13.60
32	12.60	14.10
33	9.00	9.70

(All Heights are in Feet)

Air Temp:

Profile Notes:

Measurements were referenced from the top of the footers.
Waterline was taken at Pier 5: Left and Right = 6.9ft.
No measurements were taken at Abutments 1 through Pier 4 and Abutment 34 due to them being out of the channel.
The reason for changes of greater than 2ft. are unknown.

Inspection Date and Key: 10/1/1997 STRT

(Original Inspection)

5	33.46	34.78
6	40.68	40.68

FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report
Bridge Profile

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Profile Data - Numerical Summary

(All Heights are in Feet)

Bent #	Left Height	Right Height
7	42.32	42.65
8	43.96	43.96
9	44.95	44.29
10	47.24	46.26
11	48.88	48.56
12	50.85	50.20
13	51.51	51.18
14	53.15	52.49
15	55.45	53.81
16	57.41	57.09
17	55.77	57.09
17.5	57.09	58.07
18	56.10	55.12
19	56.10	54.46
20	52.49	55.12
21	52.82	54.13
22	53.48	54.13
23	51.18	52.49
24	48.88	49.21
25	45.60	47.24
26	43.31	44.29
27	41.01	41.01
28	39.04	40.03
29	36.09	37.07
30	33.79	35.10
31	34.45	35.10

FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report
Bridge Profile

DATE PRINTED: 2/14/2024 3:16:44 AM

Profile Data - Numerical Summary

Bent #	Left Height	Right Height
32	33.14	34.12
33	25.59	25.59
34	11.48	11.15

(All Heights are in Feet)

Air Temp:
Profile Notes:

FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
Bridge Inspection Report Addendum

BRIDGE ID: 130053 **PAGE: A1 OF A10**
DISTRIC 01 BARTOW **INSPECTION DATE: 01/24/2024**

TABLE 1

Element Category

12 Bare Concrete Deck:

This table represents the deck top and underside deficiencies:

Span	CS	Defect	Location	Deficiency	Size	Qty (SF)	P3WO	Photo #
8-SB	-	1080	Left overhang at Pier 9	Spall with exposed rebar	1ft. x 4in. x 2in.	-	No	
10-NB	-	1080	Right overhang at Pier 11	Delaminaiton	1ft. x 2in.	-	No	
10-SB	-	1080	Left overhang at Pier 11	Spall with exposed rebar	1ft. x 3in. x 2in.	-	No	
11-SB	-	1090	Left overhang at Pier 12	Exposed rebar	1ft. Long	-	No	
12-NB	-	1080	Lane 2 left wheel path, 10ft. from Pier 13	Spall	8in. x 7in. x 1in.	-	No	
13-SB	-	1080	Left overhang at Pier 13	Spall with exposed rebar	1ft. x 2in. x 1in.	-	No	
13-NB	-	1080	Deck Top	Five sound repairs	Up to 5ft. x 3ft.	-	No	
13-NB	-	1080	Deck Top Lane 3 at the 1/4 point	Unsound repair with exposed rebar	8ft. x 2ft. x 1/2in. - INCREASE	-	Yes	
13-NB	-	1080	Deck Top Lane 3 at midspan	Spall with exposed rebar	3ft. x 10in. x 1in. - NEW	-	Yes	3
13-NB	-	1080	Right sidewalk Pier 13	Unsound repair	18in. x 4in.	-	No	
14-SB	-	1080	Left overhang at Pier 14	Spall/delamination	1ft. x 2in. x 1/2in.	-	No	
14-NB	-	1080	Left and Right overhang	Several delamiantions	Up to 6ft. x 18in. - NEW	-	Yes	
15-NB	-	1080	Deck Top	Five sound repairs	Up to 5ft. x 2ft.	-	No	
15-NB	-	1080	Deck Top Lane 4, 6ft. from Pier 15	Unsound repair	3ft. x 2ft. 1in. - INCREASE	-	YES	
15-NB	-	1080	Deck Top Lane 3 at midspan	Unsound repair with 4 pieces of exposed rebar	2ft. x 2ft. 1/2in. - INCREASE	-	Yes	4
17-SB	-	1080	Left overhang at Pier 17	Spall with exposed rebar	3ft. x 14in. x 3in. - NEW	-	Yes	
18-SB	-	1080	Deck Top Lane 1 at Pier 18	Spall/delamination	18in. x 9in. x 1in. - INCREASE	-	Yes	5
18-SB	-	1080	Deck underside in Bays 18-1 and 18-2	Spall/delamination	14in. x 9in. x 2in.	-	No	
18-SB & NB	-	1080	Both overhangs at Pier 19	Spalls/delaminations with exposed rebar	Up to 2ft. x 10in. x 2in. - NEW	-	Yes	6
19-NB	-	1080	Right overhang, 6ft. from Pier 19	Sound repair	7in. x 8in.	-	No	
20-SB	-	1080	Left overhang at Pier 21	Sound repair	8in. x 3in.	-	No	
22-SB	-	1080	Left overhang at Pier 23	Spall with exposed rebar	8in. x 6in. x 1in.	-	No	
23-NB	-	1080	Right overhang at Pier 23	Sound repair	8in. x 4in.	-	No	
24-NB	-	1080	Right overhang at Pier 25	Unsound repair	14in. x 10in.	-	No	
24-SB	-	1080	Left fascia at Pier 25	Sound repair	4in. x 1in.	-	No	
31-NB	-	1080	Right overhang at Pier 31	Spall with exposed rebar	1ft. x 6in. x 2in.	-	No	
31-SB	-	1080	Left overhang at Pier 31	Sound repair	2ft. x 2ft.	-	No	
31-SB	-	-	Lane 1 at centerline	Longitudinal crack	30ft. x 1/32in.	-	No	
31-SB	-	1080	Lane 1 near Pier 32	Three sound repairs	4ft. x 3ft. - INCREASE	-	No	
33-NB	-	1080	Right overhang at Pier 33	Unsound repair/spall	3ft. x 2ft. x 1in.	-	No	

FLORIDA DEPARTMENT OF TRANSPORTATION
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TABLE 2

Element Category

220 R/C Sub Pile Cap/Ftg:

This table represents the footing deficiencies above water:

FTG	CS	Defect	Location	Deficiency	Size	Qty (SF)	P3WO	Photo #
3-2	3	1080	SE corner	Spall	7in. x 4in. x 2in.	1	No	
3-2	3	1080	Top east edge	Two spalls	Up to 10in. x 6in. x 1in. - NEW	1	No	
4-1	3	1080	NE corner	Spall	7in. x 4in. x 1in.	1	No	
5-2	3	1080	NW corner (gunite)	Unsound repair	3ft. x 10in. - NEW	1	No	
7-1	2	1080	SE corner	Sound repair	3ft. x 2ft.	3	No	
7-2	2	1080	SW corner	Sound repair	2ft. x 2ft.	2	No	
8-1	3	1080	SW corner	Unsound repair	4ft. x 2ft.	4	No	
8-1	2	1080	North face	Sound repair	3ft. x 2ft.	3	No	
8-2	3	1080	South face	Unsound repair	4ft. x 2ft.	4	No	
8-2	3	1120	East face (gunite)	Spall/delamination with Corrosion Bleedout	4ft. x 2ft. x 2in.	1	No	14
9-1	3	1080	Bottom south face	Spalled unsound repair	3ft. x 3ft. x 2in. - NEW	1	No	
10-1	2	1080	Bottom SW corner	Sound repair	2ft. x 2ft.	2	No	
11-2	2	1080	SW corner	Sound repair	3ft. x 2ft.	2	No	
11-2	3	1120	Bottom east edge (gunite)	Delamination with corrosion bleedout	5ft. x 1ft.	1	No	
11-3	3	1080	Bottom south edge	Spall/delamination	2ft. x 18in. x 2in. - NEW	1	No	
13-1	2	1080	Bottom NW corner	Sound repair	3ft. x 2ft. - NEW	1	No	
13-2	2	1080	SW corner	Sound repair	3ft. x 2ft.	3	No	
14-2	2	1080	SW corner	Sound repair	2ft. x 2ft.	2	No	
15-2	2	1080	North face	Sound repair	8ft. x 2ft.	8	No	
15-2	3	1130	East face	Crack with efflorescence	5ft. x 1/16in.	5	No	
20-2	3	1080	South face	Spall	12in. x 10in. x 1/2in. - NEW	1	No	
20-3	2	1080	Bottom north face	Sound repair	3-1/2ft. x 2ft. - NEW	1	No	
20-3	2	1080	Bottom north face	Sound repair	2ft. x 2ft.	2	No	
21-2	2	1080	North and south faces	Sound repair	Up to 8ft. x 2ft.	8	No	
21-3	3	1080	NE corner	Spall	16in. x 8in. x 1/2in.	2	No	
26-1	2	1080	SE corner and top face	Sound repair	4ft. x 1ft.	1	No	
28-2	2	1080	South face	Sound repair	4ft. x 1ft.	4	No	
28-2	2	1080	North face	Sound repair	3ft. 6in. x 18in.	3	No	
29-2	2	1080	South face	Sound repair	2in. diameter	1	No	
30-2	2	1080	SE corner and top face	Sound repair	4ft. x 1ft.	1	No	
30-3	2	1080	Lower north edge	Sound repair	8ft. x 1ft.	1	No	
31-1	2	1080	NE upper corner	Delamination	1ft. x 1ft.	1	No	

FLORIDA DEPARTMENT OF TRANSPORTATION
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TABLE 2

Element Category

220 R/C Sub Pile Cap/Ftg (Continued):

This table represents the footing deficiencies above water:

FTG	CS	Defect	Location	Deficiency	Size	Qty (SF)	P3WO	Photo #
32-1	2	1080	SE Corner	Sound Repair	4ft. x 2ft.	2	No	
32-1	2	1080	Lower South and West Faces	Sound Repair	Up to 8ft. x 8ft.	8	No	
32-2	2	1080	Lower South, East and West Edges	Sound Repair	Up to 8ft. x 1ft.	8	No	
32-3	2	1080	Lower edges, all faces	Sound Repair	Up to 8ft. x 1ft.	8	No	
33-1	2	1080	Lower edges, all faces	Sound Repair	Up to 8ft. x 2ft.	8	No	
33-2	2	1080	Lower edges, all faces	Sound Repair	Up to 8ft. x 1ft.	8	No	
33-3	2	1080	Lower edges, all faces	Sound Repair	Up to 8ft. x 1ft.	8	No	

FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
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TABLE 3

Element Category

109 P/S Conc Open Girder:

This table lists beam and beam end deficiencies:

Beam at Pier	CS	Defect	Location	Deficiency	Size	Qty (SF)	P3WO	Photo #
1-1 at ABT 1	2	1080	Bottom face of right flange	Delamination	12in. x 4in.	1	No	
1-4 at ABT 1	2	1080	Bottom face of right flange	Spall	4in. x 3in. x 1/2in.	1	No	
1-5 at Pier 2	3	1080	Bottom face of right flange	Spall/delamination	8in. x 10in. x 2in.	1	No	
1-9 at ABT 1	3	1080	Bottom face of left and right flange	Spalls	Up to 7in. x 4in. x 1in.	1	No	
1-9 at midspan	2	1080	Bottom face of right flange	Spall	3in. sq. x 1/2in.	1	No	
1-10 at ABT 1	3	1080	Bottom face of east flange	Spall with exposed steel	16in. x 6in. x 2in.	2	No	
2-6 at Pier 3	3	1080	Left face	Spall	12in. x 12in. x 2in. - NEW	1	Yes	
3-1 at Pier 4	3	1080	Bottom face of beam haunch	Spall	1ft. x 4in. x 1in.	1	No	
3-10 at midspan	3	1080	Bottom east face	Spall	1ft. x 7in. x 3/4in.	1	No	
4-1 at Pier 4	3	1080	Bottom face of beam haunch	Spall	1ft. x 4in. x 1in.	1	No	
4-2 at Pier 4	3	1080	Bottom face of beam haunch	Spall	1ft. x 4in. x 1in.	1	No	
4-2 at midspan	3	1080	Bottom face of right flange	Spall	7in. x 3in. x 1in.	1	No	
Diaphragm at Pier 5	-	INDTL	Bay 4-4 diaphragm	Spall with exposed rebar	7in. x 4in. x 4in.	-	No	
4-6 at Pier 4	3	1080	Bottom face of beam haunch	Spall	7in. x 4in. x 1in.	1	No	
4-10 at Pier 4	-	INDTL	Beam end	Delamination	6in. x 12in.	-	No	
4-2 at Pier 5	3	1080	Right face over bearing area	Spall/delamination	2ft. x 2ft. x 1in.	2	No	
4-2 at Pier 5	3	1080	Right face	Spall/delamination	18in. x 20in. x 1-1/2in. - NEW	2	No	30
4-3 at Pier 5	3	1080	Left face of beam	Spall	1ft. x 8in. x 2in.	1	No	
4-4 at Pier 5	2	1080	Left face of beam	Spall with exposed rebar	2ft. x 1ft. x 1in. - INCREASE	2	No	
4-6 at Pier 5	-	INDTL	Beam end	Sound repair	1ft. x 6in.	-	No	
5-2 at Pier 5	3	1080	Right face bottom flange	Spall	2ft. x 6in. x 2in.	2	No	
5-5 at Pier 5	2	1080	Beam end and east face lower flange	Sound repair	1ft. x 6in.	1	No	
5-6 at Pier 5	-	INDTL	South face of beam end diaphragm	Sound repair	14in. x 4in.	-	No	
5-9 at Pier 5	2	1080	Left face over bearing 5-9	Sound repair	1ft. x 1ft.	1	No	
5-6, 10 ft. from Pier 5	3	1080	Bottom face of beam	Spall with painted over exposed trash steel	1ft. x 3in. x 1/4in.	1	No	
5-8 at Pier 6	3	1080	Bottom face of beam haunch	Spall	1ft. x 6in. x 1in.	1	No	
6-3 at Pier 6	3	1080	Bottom face of beam haunch	Spall/delamination	7in. x 5in. x 1/2in.	1	No	
6-6 at Pier 6	3	1080	Beam end and east and west faces of beam over haunch	Unsound repair	2ft. x 6in. - INCREASE	2	No	
6-7 at Pier 7	3	1080	Left face	Spall/delamination	14in. x 10in. x 3in. - NEW	2	No	
6-8 at Pier 6	3	1080	Bottom face of beam haunch	Spall	1ft. x 4in. x 1in.	1	No	
6-10 at Pier 6	3	1080	Bottom face of the beam haunch	Spalled repair with exposed rebar	2ft. x 7in. x 2in.	1	No	
6-5 at Pier 7	3	1080	Right face, beam end and diaphragm	Spall	1ft. x 6in. x 2in.	1	No	

FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
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TABLE 3

Element Category

109 P/S Conc Open Girder (Continued):

This table lists beam and beam end deficiencies:

Beam at Pier	CS	Defect	Location	Deficiency	Size	Qty (SF)	P3WO	Photo #
7-1 at Pier 7	2	1080	Bottom Left Face	Spall	1ft.-6in. x 6in. x 1in. - INCREASE	1	No	
7-6 at Pier 7	3	1080	Right face, beam end and diaphragm	Spall	18in. x 8in. x 1- 1/2in.	2	No	
7-7 at Pier 7	2	1080	Left face over bearing	Spall	1ft. x 1ft. x 2in. - INCREASE	1	No	
7-10 at Pier 7	1	INDTL	Poured beam end, Left and Right face	Delamination	3ft. x 1in.	-	No	
7-1 to 7-9 at Pier 8	1	INDTL	Right and left beam end diaphragms	Spalls/delaminations	Up to 18in. x 4in. x 1in.	-	No	
7-3 at Pier 8	2	1080	Beam haunch	Delamination	1ft. x 4in.	1	No	
7-7 at Pier 8	3	1080	Bottom face of beam haunch	Spalls/delaminations	1ft. x 6in. x 1in.	1	No	
7-10 at Pier 8	3	1080	Bottom face of right flange	Spall	7in. x 4in. x 1/2in.	1	No	
8-3 at Pier 8	3	1080	Bottom face of beam haunch	Spall	16in. x 4in. x 1/2in.	1	No	
8-9 at Pier 8	2	1080	Beam haunch	Delamination	1ft. x 4in.	1	No	
8-10 at Pier 8	3	1080	Beam haunch	Spall	7in. x 4in. x 1/2in.	1	No	
8-1 at Pier 9	2	1080	Left face over bearing	Delamination	1ft. x 4in.	1	No	
8-2 at Pier 9	2	1080	Right face over bearing	Delamination	1ft. x 1ft.	1	No	
8-5 at Pier 9	3	1080	Left face	Unsound repair	1ft. x 2ft.	1	No	
8-8 at Pier 9	2	1080	Left face over bearing	Delamination	1ft. x 1ft.	1	No	
8-10 at Pier 9	2	1080	Right face over bearing	Delamination	1ft. x 4in.	-	No	
9-4 at Pier 9	3	1080	Bottom beam haunch and left face	Spalls	Up to 12in. x 12in. x 2in. - INCREASE	1	No	
9-1 to 9-10 at Pier 10	1	INDTL	Right and left faces, beam pored ends	Delaminations	Up to 1ft. x 4in.	-	No	
10-1 at Pier 10	3	1080	Right face over Bearing 10-1	Spall	2ft. x 1ft. x 1in.	2	No	
10-2 at Pier 10	3	1080	Bottom face of beam haunch	Spall	10in. x 4in. x 3/4in.	1	No	
10-3 at Pier 10	3	1080	Bottom face of beam haunch	Spall	8in. x 4in. x 3.4in.	1	No	
10-4 at Pier 10	2	1080	Bottom face of beam haunch	Spall	4in. x 4in. x 3/4in.	1	No	
10-5 at Pier 10	2	1080	Bottom face of beam haunch	Spall	5in. x 4in. x 3/4in.	1	No	
10-7 at Pier 10	3	1080	Bottom face of beam haunch	Spall	16in. x 4in. x 1in.	1	No	
10-8 at Pier 10	2	1080	Beam haunch	Delamination	1ft. x 4in.	1	No	
10-9 at Pier 10	3	1080	Bottom face of beam haunch	Spall	6in. x 5in. x 1in.	1	No	
11-7 at Pier 11	2	1080	Beam haunch	Delamination	1ft. x 4in.	1	No	
11-5 at Pier 12	2	1080	Beam haunch	Delamination	1ft. x 4in.	1	No	
11-6 at Pier 12	3	1080	Bottom face of beam haunch	Spall	6in. x 3in. x 1in.	1	No	
11-8 at Pier 12	3	1080	Beam haunch	Spall	16in. x 4in. x 1/2in.	1	No	
11-10 at Pier 12	2	1080	Bottom face of haunch	Sound repair	10in. x 4in.	1	No	
12-1 at Pier 12	2	1080	Bottom face of haunch	Sound repair	10in. x 4in.	1	No	
12-3 at Pier 12	3	1080	Bottom face of haunch	Spall/delamination	1ft. x 4in. x 3/4in.	1	No	
12-6 at Pier 13	3	1080	Bottom west face	Spall	9in. x 5in. x 2in.	1	No	
12-8 at Pier 12	3	1080	Bottom face of beam haunch	Spall	10in. x 5in. x 1in.	1	No	
12-10 at Pier 12	3	1080	Beam haunch	Spall	16in. x 4in. x 1in.	1	No	
12-10 Pier 12 to Pier 13	3	1110	Right face near top of web intermittently from Pier 12 to Pier 13	Horizontal and diagonal cracks	Up to 5ft. 7in. x 1/64in.	12	No	31

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TABLE 3

Element Category

109 P/S Conc Open Girder (Continued):

This table lists beam and beam end deficiencies:

Beam at Pier	CS	Defect	Location	Deficiency	Size	Qty (SF)	P3WO	Photo #
13-2 at Pier 13	2	1080	West face of beam over bearing	Delamination	2ft. x 1ft.	2	No	
13-4 at Pier 13	1	INDTL	Beam end	Spall with exposed rebar	1ft. x 4in. x 2in.	-	No	
Bays 13-4 and 13-5 at Pier 13	1	INDTL	Diaphragm in Bays 13-4 and 13-5	Spall with exposed painted rebar	Up to 7in. diameter x 3/4in. - INCREASE	-	No	
13-8 at Pier 13	3	1080	Bottom face of beam haunch	Spall with exposed rebar	6in. x 3in. x 1in.	1	No	
13-10 at Pier 13	2	1080	Bottom face of beam haunch	Delamination	3in. x 2in.	1	No	
13-1 at Pier 14	2	1080	Beam haunch	Delamination	1ft. x 4in.	1	No	
13-2 at Pier 14	2	1080	Beam haunch	Delamination	1ft. x 4in.	1	No	
13-8 at Pier 14	3	1080	Bottom face both sides of beam haunch	Spall	6in. x 3in. x 1in.	1	No	
13-10 at Pier 14	3	1080	Bottom face of beam haunch	Spall	6in. x 4in. x 1in.	1	No	
14-4 at Pier 14	3	1080	Beam haunch	Spall/delamination	1ft. x 4in. x 1in.	1	No	
14-6 at Pier 14	3	1080	Bottom face of beam haunch	Spall	6in. x 4in. x 1in.	1	No	
14-7 at Pier 14	2	1080	Bottom face of beam haunch	Spall	3in. x 4in. x 1in.	1	No	
14-8 at Pier 14	3	1080	Bottom face	Spall	1ft. x 6in. x 1in.	1	No	
14-1 at Pier 15	2	1080	Bottom face of beam haunch	Delamination	6in. x 1in.	1	No	
14-2 at Pier 15	3	1080	Right face	Spall/delamination	12in. x 14in. x 1in. - NEW	1	No	
14-3 at Pier 15	3	1080	Right face, beam end and diaphragm	Spall	6in. x 5in. x 2in.	2	No	
14-9 at Pier 15	2	1080	Left face of Beam	Delamination	2ft. x 1ft.	3	No	
14-10 at Pier 15	3	1110	Top right fillet	Cracks	Up to 3ft. x 1/64in.	6	No	
15-2 at Pier 15	-	-	Left face of beam end	Spall/delamination – not found	1ft. x 6in. x 1in.	-	-	
15-5 at Pier 15	3	1080	Bottom face of beam haunch	Spall	8in. x 3in. x 1in.	1	No	
15-6 at Pier 15	3	1080	Left face of bottom flange	Spall	8in. x 6in. x 3/4in.	1	No	
15-7 at Pier 15	3	1080	Bottom face of beam haunch	Spall	8in. x 4in. x 1in.	1	No	
15-9 at Pier 15	2	1080	Bottom left face beam end	Delamination	2ft. x 1in.	2	No	
15-10 at 1/3pt.	2	1080	Bottom face of bottom flange	Sound repair	8in. x 1/2in.	1	No	
15-2 at Pier 16	2	1080	Bottom face of beam haunch	Delamination	1ft. x 4in.	1	No	
15-3 at Pier 16	2	1080	Bottom face of beam haunch	Delamination	1ft. x 4in.	1	No	
15-4 at Pier 16	3	1080	Bottom face of beam haunch	Spall	1ft. x 6in. x 1in.	1	No	
15-6 at Pier 16	3	1080	Left face, beam end and diaphragm	Spall/delamination	2ft. x 10in. x 3in.	2	No	
15-7 at Pier 16	3	1080	Left and right faces beam end diaphragm & bottom face of beam haunch	Spall/delamination	18in. x 4in. x 1in.	2	No	
15-7 at Pier 16	3	1080	Bottom face of beam haunch	Spall	10in. x 4in. x 1in.	1	No	
15-8 at Pier 16	1	INDTL	Left and right faces, beam end diaphragm	Delamination	8in. x 4in. x 1in.	-	No	
15-8 at Pier 16	2	1080	Bottom face of beam haunch	Spall/delamination	4in. x 3in. x 1in.	1	No	
15-9 at Pier 16	3	1080	Bottom face of beam haunch	Spall	11in. x 4in. x 1in.	1	No	

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TABLE 3

Element Category

109 P/S Conc Open Girder (Continued):

This table lists beam and beam end deficiencies:

Beam at Pier	CS	Defect	Location	Deficiency	Size	Qty (SF)	P3WO	Photo #
19-2 at Pier 19	3	1080	Bottom face of beam haunch	Spall/delamination	16in. x 4in. x 1in.	2	No	
19-5 at Pier 19	3	1080	Beam end	Spall/delamination	16in. x 4in. x 1in.	2	No	
19-2 at Pier 20	2	1080	Bottom face of beam haunch	Delamination	16in. x 4in.	1	No	
19-10 at Pier 20	2	1080	Left face, top flange	Sound repair	1ft. x 1in.	1	No	
19-10 at Pier 20	3	1110	Right face	Cracks	Up to 4ft. x 1/64in.	6	No	
20-10 at Pier 20	3	1080	Right face, beam end and diaphragm	Unsound repair	8in. x 6in.	1	No	
20-1 at Pier 21	2	1080	Bottom face of beam haunch	Delamination	16in. x 4in.	1	No	
20-4 at Pier 21	2	1080	Bottom face of beam haunch	Two spalls	Less than 6in. x 4in. x 1in.	2	No	
20-5 at Pier 21	2	1080	Bottom face of beam haunch	Spall with trash steel	3in diameter x 1/2in.	1	No	
20-9 at Pier 21	2	1080	Bottom face of beam haunch	Delamination	16in. x 4in.	1	No	
20-6 at Pier 21	2	1080	Bottom face of beam haunch	Spall	Less than 6in. x 4in. x 1-1/4in.	1	No	
21-2 at Pier 22	2	1080	Bottom flange, right face	Sound repair	10in. x 1in.	1	No	
21-2 at Pier 21	3	1080	Bottom face of beam haunch	Spall	16in. x 4in. x 1/2in.	1	No	
21-3 at Pier 21	3	1080	Bottom face of beam haunch	Spall	16in. x 4in. x 3/4in.	1	No	
21-4 at Pier 21	3	1080	Bottom face of beam haunch	Spall with exposed rebar	16in. x 4in. x 1in.	1	No	
21-6 at Pier 21	3	1080	Bottom face of beam haunch	Spall	1ft. x 2in. x 1in.	1	No	
21-7 at Pier 21	2	1080	Bottom face of beam haunch	Delamination	16in. x 4in.	1	No	
21-9 at Pier 21	3	1080	Bottom face of beam haunch	Spall	7in. x 3in. x 3/4in.	1	No	
21-10 at Pier 21	3	1080	Bottom face of beam haunch	Spall	16in. x 4in. x 3/4in.	1	No	
21-5 at Pier 22	2	1080	Right face over bearing area	Delamination	1ft. x 1ft.	1	No	
21-9 at Pier 22	2	1080	Right face over bearing area	Delamination	1ft. x 1ft.	1	No	
22-2 at Pier 22	1	INDTL	Left face, beam end	Spall/delamination	8in. x 4in. x 1/2in.	-	No	
22-4 at Pier 22	2	1080	Left face of beam	Delamination	18in. x 14in.	2	No	
22-7 at Pier 22	2	1080	Left and right faces, beam end	Delamination	1ft. x 4in.	1	No	
22-2 at Pier 23	3	1080	Bottom face of beam haunch	Spall	16in. x 4in. x 1in.	1	No	
22-3 at Pier 23	3	1080	Bottom face of beam haunch	Spall	16in. x 3in. x 1in. - NEW	1	No	
22-6 at Pier 23	3	1080	Bottom face of beam haunch	Spall	16in. x 4in. x 1/2in.	1	No	
22-10 at Pier 23	3	1080	Bottom left flange at bearing	Delamination	16in. x 2in.	2	No	
23-2 at Pier 23	2	1080	Bottom face of beam haunch	Spall with exposed rebar	3in. diameter x 1in.	1	No	
23-8 at Pier 23	2	1080	Bottom face of beam haunch	Delamination	16in. x 16in.	1	No	
23-5 at Pier 24	2	1080	Diaphragm and both faces on either side of haunch	Sound repair	12in. x 12in.	1	No	
24-2 at Pier 24	1	INDTL	Right face, beam end	Delamination	1ft. x 4in.	-	No	
24-2 at Pier 25	3	1080	Left face of beam	Spall/Ddlamination	8in. x 3in. x 1in. - INCREASE	1	No	
24-6 at Pier 25	2	1080	Left face	Delamination	6in. x 18in. - NEW	1	No	

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Element Category

109 P/S Conc Open Girder (Continued):

This table lists beam and beam end deficiencies:

Beam at Pier	CS	Defect	Location	Deficiency	Size	Qty (SF)	P3WO	Photo #
25-1 at Pier 25	2	1080	Bottom face of beam haunch	Delamination	1ft. x 3in.	1	No	
25-2 at Pier 25	3	1080	Bottom face of beam haunch	Spall	1ft x 4in. x 1in.	1	No	
25-6 at Pier 25	3	1080	Bottom face of beam haunch	Spall	6in. x 4in. x 1in.	1	No	
25-5 at Pier 25	1	INDTL	Left face, beam end diaphragm	Delamination	8in. x 5in.	-	No	
25-8 at Pier 25	2	1080	Bottom face of beam haunch	Spall	2in. diameter x 1/2in.	1	No	
26-1, 10ft. N of Pier 26	2	1080	West face of web	Sound repair	6in. x 3in	1	No	
26-3 at Pier 26	1	INDTL	Right face, beam end diaphragm	Sound repair	18in. x 4in.	-	No	
26-5 at Pier 26	3	1080	Right face of beam	Unsound repair	10in. x 8in.	1	No	
26-6 at Pier 26	3	1080	Left and right faces, beam end and diaphragm	Unsound repair/spall	Up to 18in. x 18in. x 3in.	2	No	
26-1 at Pier 27	3	1080	Bottom face of beam haunch	Spall	16in. x 2in. x 1in.	1	No	
26-3 at Pier 27	3	1080	Bottom face of beam haunch	Delamination	16in. x 2in.	1	No	
26-4 at Pier 27	3	1080	Bottom face of beam haunch	Spall	12in. x 4in. x 3/4in.	1	No	
26-5 at Pier 27	1	INDTL	Left face, beam end diaphragm	Spalled repair	18in. x 4in. x 2in.	-	No	
26-6 at Pier 27	2	1080	Bottom face of beam haunch	Sound repair	16in. x 4in.	1	No	
26-6 at Pier 27	2	1080	Left face of beam	Delamination	8in. x 4in.	1	No	
26-6 at Pier 27	2	1080	Beam end	Delamination	1ft. x 5in.	1	No	
26-7 at Pier 27	2	1080	Beam end	Delamination	8in. x 4in.	1	No	
26-8 at Pier 27	2	1080	Bottom face of beam haunch	Delamination	16in. x2in.	1	No	
27-1 at Pier 27	2	1080	Right face and beam end	Delamination	1ft. x 4in.	1	No	
27-1 at Pier 27	2	1080	Bottom face of beam haunch	Delamination	16in. x 2in.	1	No	
27-2 at Pier 27	2	1080	Bottom face of beam haunch	Delamination	16in. x 2in.	1	No	
27-3 at Pier 27	3	1080	Bottom face of beam haunch	Spall	16in. x 2in. x 1in.	1	No	
27-4 at Pier 27	3	1080	Bottom face of beam haunch	Delamination	16in. x 2in.	1	No	
27 at Pier 28	1	INDTL	Bay 27-4 diaphragm	Spall with exposed rebar	2ft. x 4in. x 2in. - NEW	-	No	
27-5 at Pier 27	3	1080	Left face over the bearing	Delamination	1ft. x 6in.	1	No	
27-6 at Pier 27	3	1080	Bottom face of beam haunch	Spall/delamination	2ft. x 4in. x 1in. - INCREASE	1	No	
27-7 at Pier 27	3	1080	Bottom face of beam haunch	Spall	8in. x 4in. x 3/4in.	1	No	
27-8 at Pier 27	2	1080	Bottom face of beam haunch	Spall	3in. x 4in. x 1in.	1	No	
27-10 at Pier 27	3	1080	Bottom face of beam haunch and right face over the bearing	Unsound repair	2ft. x 4in. - INCREASE	2	No	
27-6 at Pier 28	2	1080	Beam end and right side	Sound repair	8in. x 4in.	1	No	
28-1 at Pier 28	3	1080	Left face	Spall with exposed rebar	6in. x 10in. x 2in. – NEW	1	No	
28-1 at Pier 29	3	1080	Bottom face of beam haunch	Spall	12in. x 6in. x 2in.	1	No	
28-2 at Pier 29	3	1080	Bottom face of beam haunch	Spall	6in. x 4in. x 1-1/2in.	1	No	
28-5 at Pier 29	2	1080	Bottom face of beam haunch	Spall	4in. x 2in. x 1/2in.	1	No	

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Element Category

109 P/S Conc Open Girder (Continued):

This table lists beam and beam end deficiencies:

Beam at Pier	CS	Defect	Location	Deficiency	Size	Qty (SF)	P3WO	Photo #
29-2 at Pier 29	3	1080	Bottom face of beam haunch	Spall/delamination	16in.x 4in. x 4in.	1	No	
29-3 at Pier 29	2	1080	Bottom face of beam haunch	Spall	4in. x 4in. x 1in.	1	No	
29-3 at Pier 29	2	1080	Right bottom flange, mid-span	Sound repair	4in. x 2in.	1	No	
29-4 at Pier 29	3	1080	Bottom faces and beam haunch	Spalls	6in. x 4in. x 1in.	1	No	
29-5 at Pier 29	2	1080	Left face of beam and beam end	Delamination	2ft. 4in.	1	No	
29-7 at Pier 29	2	1080	Bottom faces and beam haunch	Delamination	16in. x 2in.	1	No	
29-10 at Pier 29	2	1080	Left face of beam	Delamination	2ft. x 3in.	2	No	
29-5 at Pier 30	2	1080	Right face over bearing, beam end and diaphragm	Sound repair	1ft. x 10in.	1	No	
29-7 at Pier 30	3	1080	Bottom face of beam haunch	Spall	16in. x 3in. x 1in.	1	No	
29-8 at Pier 30	3	1080	Bottom face of beam haunch	Spall	16in. x 4in. x 1in.	1	No	
29-9 at Pier 30	3	1080	Bottom face of beam haunch	Spall	6in. x 4in. x 2in.	1	No	
30-1 at Pier 31	2	1080	Bottom face of beam haunch	Spall	3in. x 3in. x 1in.	1	No	
30-2 at Pier 31	2	1080	Bottom face of beam haunch	Delamination	16in. x 2in.	1	No	
30-3 at Pier 31	3	1080	Bottom face of beam haunch	Spall	8in. x 2in. x 1in.	1	No	
30-5 at Pier 31	2	1080	Bottom face of beam haunch	Spall	4in. x 2in. x 1/2in.	1	No	
30-7 at Pier 31	2	1080	Bottom face of beam haunch	Spall	4in. x 4in. x 1/2in.	1	No	
30-8 at Pier 31	2	1080	Bottom face of beam haunch	Spall	4in. x 4in. x 1/2in.	1	No	
30-9 at Pier 31	2	1080	Bottom face of beam haunch	Two spalls	Up to 4in. x 4in. x 1/2in.	1	No	
31-1 at Pier 31	3	1080	Bottom face of beam haunch	Delamination	16in. x 2in.	1	No	
31-2 at Pier 31	3	1080	Bottom face of beam haunch	Delamination	16in. x 2in.	1	No	
31-3 at Pier 31	3	1080	Bottom face of beam haunch	Spall	6in. x 4in. x 1in.	1	No	
31-5 at Pier 31	3	1080	Bottom face of beam haunch	Spall	8in. x 4in. x 1/2in.	1	No	
31-7 at Pier 31	3	1080	Beam haunch and left face of beam	Spall	4in. x 4in. x 1in.	1	No	
31-9 at Pier 31	3	1080	Bottom face of beam haunch	Spall	6in. x 4in. x 1in.	1	No	
31-10 at Pier 31	3	1080	Bottom face of beam haunch	Two spalls	Up to 4in. x 4in. x 1in.	1	No	
31-4 at Pier 32	3	1080	Bottom left face of beam	Unsound repair	8in. x 4in.	1	No	
31-6 at Pier 32	2	1080	Bottom face of beam haunch	Delamination	8in. x 5in.	1	No	
31-7 at Pier 32	3	1080	Right face of beam over bearing	Delamination	1ft. x 8in.	1	No	
31-8 at Pier 32	3	1080	Right face of beam over bearing	Delamination	1ft. x 1ft.	1	No	
31-10 at Pier 32	2	1080	Right face of beam over bearing	Delamination	2ft. x 1ft.	2	No	
32-5 at Pier 32	2	1080	Left face of beam over bearing	Delamination	2ft. x 1ft.	2	No	
32-6 at Pier 32	3	1080	Left face of beam end	Spall	1ft. x 3in. x 1in.	1	No	
32-6 at 3/4 point	3	1080	Bottom face of beam	Spall	7in. x 3in. x 1in.	1	No	
32-9 at Pier 32	2	1080	Left face of beam over bearing	Delamination	2ft. x 1ft.	2	No	
32-10 at Pier 32	2	1080	Left face of beam over bearing	Delamination	1ft. x 6in.	1	No	
32-1 at Pier 33	2	1080	Bottom face of beam haunch	Spall	3in. x 2in. x 1/2in.	1	No	
32-2 at Pier 33	3	1080	Bottom face of beam haunch	Spall	14in. x 3in. x 1in.	1	No	
32-3 at Pier 33	3	1080	Bottom face of beam haunch	Spall with exposed rebar	14in. x 4in. x 1in.	1	No	
32-4 at Pier 33	3	1080	Bottom face of beam haunch	Spall with exposed rebar	14in. x 4in. x 1in.	1	No	

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TABLE 3

Element Category

109 P/S Conc Open Girder (Continued):

This table lists beam and beam end deficiencies:

Beam at Pier	CS	Defect	Location	Deficiency	Size	Qty (SF)	P3WO	Photo #
32-5 at Pier 33	2	1080	Bottom face of beam haunch	Spall	5in. x 3in. x 1in.	1	No	
32-6 at Pier 33	2	1080	Left face	Delamination	12in. x 12in. - NEW	1	No	
32-7 at Pier 33	2	1080	Bottom face of beam haunch	Spall	4in. x 2in. x 1in.	1	No	
33-1 at midspan	2	1080	Bottom left flange	Spall	4in. x 3in. x 1/2in.	1	No	
33-2 at midspan	3	1080	Bottom left flange	Spalls	Up to 7in. x 6in x 3/4in.	1	No	
33-4 at Pier 33	2	1080	Bottom face of beam haunch	Spalls	Up to 4in. x 4in. x 1in.	1	No	
33-5 at Pier 33	2	1080	Bottom face of beam haunch	Spall	16in. x 4in. x 1in.	1	No	
33-6 at Pier 33	2	1080	Bottom face of beam haunch	Spall	5in. x 4in. x 1in.	1	No	
33-7 at Pier 33	2	1080	Bottom face of beam haunch	Spall	5in. x 4in. x 1in.	1	No	
33-9 at Pier 33	2	1080	Bottom face of beam haunch	Spall	5in. x 4in. x 1in.	1	No	
33-10 at Pier 33	2	1080	Bottom face of beam haunch	Spall	5in. x 4in. x 1in.	1	No	
33-4 at Abt 34	2	1080	Bottom face of beam haunch	Spall	5in. x 4in. x 1in.	1	No	
33-5 at Abt 34	3	1080	Bottom face of beam haunch	Spall	16in. x 4in. x 1in.	1	No	
33-7 at Abt 34	2	1080	Bottom face of beam haunch	Spall	5in. x 4in. x 1in.	1	No	
33-10 at Abt 34	3	1080	Bottom face of beam haunch	Spall	8in. x 4in. x 1in.	1	No	

Routine Underwater Bridge Inspection Report
VOLKERT, INC.
for
BURGESS & NIPLE, INC.

NBI Structure ID. (8): **130053** Underwater Date (93): 12/20/23

Structure/Roadway Identification:		**Underwater Inspection Details:**	
District (2):	01	Special Crew Hours:	23.2
County (3):	Manatee	Max. Depth:	13ft. at Bent 15
Feature Intersected (6):	Manatee River 2nd St. E	Type of Dive Insp.:	Level II (SCUBA)
Facility Carried (7):	US-41/US-301	Type of Boat Used:	19ft. Skiff
		Water Type/Marine Growth:	Brackish – Barnacles/Oysters

Previous Inspection:

Lead Diver:	**P.E./C.B.I. No.:**	**Inspection Date:**
Hoogland, Keith S.	00341	12/01/21

Inspection Personnel:

Field Personnel:	**Title**	**P.E./C.B.I. No.:**	**Duty:**	**Signature:**
Massotto, Massotto T.	SUCBI	00502/Lead	Tend	
Hoogland, Keith S.	SUCBI	00341	Dive	
Chambless, Luke	AUBI		Dive	
Redden, Michael D.	AUBI		Tend	
Morton, Brooke R.	AUBI		Dive	
Montanez, Xavier V.	AUBI		Dive/Tend	

8290 CHANNEL **1** EA. = **CS-2:** 1EA.

NOTE: The seawalls under Spans 4 and 33 were evaluated as channel protection. Armor mat has been installed around Piers 31, 32 and 33.

CS-2 9120 = The armor mat on the south edge of Bent 33 has intermittently undermined full length x 10in. high x 4ft. of penetration. (1EA)

There is an abandoned fender system lower platform lying on the channel bottom, between the north fender and east of Pier 18 and between the south fender and west of Pier 17, not obstructing marine traffic.

South seawall east end, 12ft. west of outfall pipe from cap down, has a delamination/spall 12in. H x 12in. W x 1in. D.

There is debris (bike wheel, construction debris) throughout the channel, not affecting flow.

205 RE CONC COLUMN **6** EA. = **CS-1:** 6EA.

NOTE: This element represents the three columns at each of Piers 17 and 18. The web wall between the columns is incidental to this element.

INCIDENTAL:
There are 1/32in. vertical cracks in the web walls from above water extending 6in. into the marine growth.

Cleaning Log: Random strips on Pier 18.

220 RE CONC PILE CAP/FTG **689** FT. = **CS-1:** 181FT. **CS-2:** 129FT. **CS-3:** 379FT.

NOTE: Bottom of footings were above marine growth but inspected by Divers due to minimal clearance.
A = Aggressive environment.

CS-2 1130(A) = The bottom of numerous footings have intermittent longitudinal and transverse cracks up to full length/width x 1/32in. wide in the original concrete. (119FT)

CS-3 1080 = Bottom of Footings 5-1, 5-2, 6-2, 6-3, 7-1, 7-2, 8-1, 8-2, 8-3, 9-1, 9-2, 9-3, 10-1, 10-2, 10-3, 11-1, 11-2, 11-3, 12-1, 12-2, 12-3, 13-1, 13-2, 13-3, 14-1, 14-2, 14-3, 15-1, 15-2, 15-3, 16-1, 16-2, 16-3, 19-3, 20-1, 20-2, 20-3, 21-1, 21-2, 21-3, 22-1, 22-2, 22-3, 23-1, 23-2, 23-3, 24-1, 24-2, 24-3, 25-1, 25-2, 25-3, 26-1, 26-2, 26-3, 27-1, 27-3, 27-2, 28-1, 28-2, 28-3, 29-1, 29-2, 29-3, 30-1, 30-2, 30-3, 31-1, 31-2, 31-3, 33-1 and 33-2 have delaminations/spalls up to 6ft. L x 6ft. W x 2in. D, and/or areas of honeycomb up to 24in. L x 35in. W x 2in. D several with corrosion bleedout – INCREASE. (370FT)

CS-3 1120 = Bottom of Footings 6-1 and 7-3 have areas of corrosion bleedout up to 12in. L x 12in. W. (2FT)

CS-2 1080 = Bottom of Footings 7-3 and 19-2 have delaminations between the piles up to 6ft. L x 6ft. W – DECREASE. (10FT)

CS-3 1080 = Bottom of Footing 9-1: NE corner of Pile 3, has honeycomb 12in. L x 12in. W x 3-1/2in. D, with 4in. long exposed rebar; 50% section remaining. (1FT)

CS-3 1080 = Footing 11-3: SE corner at bottom edge, has an unsound/spalled repair 3ft. L x 24in. H. x 2in. D – INCREASE. (3FT)

CS-3 1090 = Footing 13-3: NE corner of Pile 15 at bottom of footing, has a honeycomb/void 12in. L x 8in. H x 5in. D, with 4in. long exposed rebar with delaminative corrosion; 50% section remaining. (1FT)

CS-3 1080 = Bottom of Footing 13-3: SW corner of Pile 16, has honeycomb 12in. L x 4in. H x 3in. D, , with 4in. long exposed rebar; 50% section remaining. (1FT)

CS-3 1090 = Footing 29-2: Between Piles 8 and 10, has honeycomb 11in. L x 5in. H x 3in. D, with 5in. long exposed rebar; 50% section remaining. (1FT)

INCIDENTAL:
The gunite repairs on the undersides of the footings have cracks up to 1/32in. wide, several with corrosion bleedout and/or efflorescence.

NOTE: The previously reported sound patch at Footing 31-2 at the NE corner of Pile 31-9 was not found this inspection.

CAT:
The previously reported delaminations/spalls/honeycomb on Footings 32-1, 32-2, 32-3, 33-2 and 33-3 have been repaired.
The previously reported delaminations/spalls on Footing 33-1 at Piles 1 and 2 have been partially repaired but remains on the list above.

227 RE CONC PILE **486** EA. = **CS-1:** 385EA. **CS-2:** 65EA. **CS-3:** 36EA.

NOTE: This element represents the piles below the footings at Piers 5 through 16 and 19 through 33.
The piles are heavily covered with marine growth from approximately 12in. below the footings down to the mudline.
There is gunite overspray at the top of the piles from footing repairs.
A = Aggressive environment.

CS-2 1080 = Piles 5-12 (NW), 6-14 (SE), 6-16 (NE), 7-6 (NE/NW), 7-7 (NE), 8-12 (NW), 8-16 (NE), 9-2 (SE), 10-2 (NW), 11-13 (SW), 11-16 (NE), 11-18 (NE), 12-7 (NE/SE/SW), 13-1 (SW), 13-7 (SE), 13-8 (SW), 14-14 (SE) (previously reported NE), 14-17 (SE), 15-13 (SW), 15-16 (SE/NE), 19-5 (NW), 19-7 (SE), 21-2 (NW), 22-4 (SW), 22-6 (SW), 22-10 (NW), 22-17 (SE), 22-18 (NE), 23-2 (SE), 27-18 (SE) (previously reported NE), 28-18 (SE), 29-1 (SE), 31-10 (east face) and 32-5 (NW) have spalls less than 6in. H x 6in. W x 1in. D – INCREASE. (32EA)

CS-2 1130 (A) = Piles 5-12, 5-17, 13-16, 30-7, 32-6 (NEW), 32-11 (NEW) and 32-14, have horizontal cracks up to 10in. L x 1/32in. W – INCREASE. (6EA)

CS-3 1080 = Piles 5-13 (SE), 5-14 (SE-NEW), 6-15 (SE), 8-1 (SW), 8-3 (SE), 8-11 (NW), 8-13 (NE/NW), 9-15 (NW), 11-8 (SE), 12-15 (SE), 13-4 (SE), 13-15 (NE), 13-18 (NE), 15-6 (SW), 16-12 (NE), 21-3 (NE), 21-14 (SE), 24-1 (NW), 24-7 (NE), 25-4 (SW), 26-13 (south face), 28-8 (NE), 28-14 (SE), 30-14 (SW), 30-18 (NE), 31-14 (SE), 32-1 (NE-NEW) and 33-18 (SE-NEW) have spalls up to 30in. H x 6in. W x 1in. D, largest being Pile 13-4 – INCREASE. (24EA)

CS-3 1080 = Pile 5-14: SE corner 20in. below footing, has a spall 12in. H x 4in. W x 1-1/2in. D. (1EA)

CS-2 1110 (A) = Piles 5-17, 6-11 (NEW), 9-8, 12-14, 13-18, 15-13, 16-4, 23-2, 24-1, 25-14, 25-18, 26-4, 26-14 (NEW), 26-16, 27-16, 27-18, 30-7, 30-8, 30-13 (NEW), 30-18, 31-1, 31-4, 31-7 (NEW), 31-12 (NEW), 31-14 and 31-16 have vertical cracks up to 3ft. L x 1/32in. W – INCREASE. (26EA)

CS-2 1080 = Pile 12-4: NW corner 18in. below footing, has a sound repair 12in. H x 4in. W – NEW. (1EA)

CS-3 1080 = Pile 12-8: SW corner 7in. below footing, has a spall 7in. H x 5in. W x 2in. D (1EA)

CS-3 1110 = Piles 11-4, 13-16, 15-11, 22-1, 22-14, 23-2, 24-10, 26-6, 28-14 and 29-6 below the footing, have vertical cracks up to 18in. L x 1/64in. W, with corrosion bleedout – DECREASE. (10EA)

NOTE: The previously reported spalls at Piles 6-9, 12-4 and 14-2 and crack on Pile 21-1 were not found this inspection.

CAT: The previously reported deficiencies on Piles 6-5, 6-13, 6-17, 7-15, 9-3 and 16-14 have been repaired with jacket installation.

Cleaning Log: Piles 6-1, 6-3, 6-4, 6-7, 6-8, 6-9, 6-10, 6-11, 6-12, 6-14, 6-15, 6-16, 6-18, 7-1, 7-2, 7-3, 7-4, 7-5, 7-6, 7-7, 7-8, 7-9, 7-10, 7-11, 7-12, 7-13, 7-14, 7-16, 7-17, 7-18, 8-1, 8-2, 8-3, 8-4, 8-5, 8-6, 8-7, 8-8, 8-9, 8-10, 8-11, 8-12, 8-13, 8-14, 8-15, 8-16, 8-17, 8-18 and 11-17.

8298 PILE JACKET BARE **75** EA. = **CS-1:** 75EA.

NOTE: This element represents the jackets on Piles 5-4, 6-2, 6-6, 8-18, 9-1, 9-8, 10-7, 10-18, 11-3, 11-5, 14-2, 14-3, 14-5, 14-8, 14-10, 14-12, 14-18, 15-2, 15-3, 15-5, 15-8, 15-14, 15-15, 15-17, 16-8, 20-9, 20-10, 22-3, 23-1, 23-4, 23-5, 23-6, 23-14, 23-17, 23-18, 24-3, 25-5, 25-10, 25-13, 25-16, 25-17, 26-2, 26-3, 26-9, 26-10, 26-11, 26-12, 26-18, 27-4, 28-2, 29-5, 29-7, 29-10, 29-13, 29-14, 29-16, 29-17, 29-18, 30-1, 30-2, 30-4, 30-5, 30-6, 30-11, 30-13, 30-15, 31-1, 31-2, 31-5, 31-9, 31-16, 31-17, 31-18, 32-2 and 33-12.

New jackets have been installed on Piles 6-5, 6-13, 6-17, 7-15, 9-3 and 16-14.

INCIDENTAL:
The anode wires are not properly routed inside the jackets, intermittently throughout.

520 CONC RE PROT SYS **3557** SF. = **CS-1:** 3557SF.

NOTE: The anodes on Jackets 5-4, 6-6 (NEW), 9-1, 10-7, 23-17, 26-9, 27-4, 28-2, 29-5, 29-7, 29-13, 29-17, 29-18, 30-1, 30-2, 30-4, 30-5, 30-6, 30-11, 31-1, 31-2, 31-9, 31-17, 32-2 and 33-12 are buried.

CS1 = The exposed anodes have 60% or more section remaining – INCREASE.

8387 PS FENDER/DOLPHIN **318** FT. = **CS-1:** 292FT. **CS-3:** 26FT.

CS-3 1080 = Ten piles have corner spalls up to 10in. H x 4in. W x 1in. D (20FT)

CS-3 1110 = North fender, 14th and 15th clusters from west end plumb piles, west and east faces, 13th cluster from west end west plumb pile, north and south faces at the marine growth, have vertical cracks up to 24in. L x 1/64in. W, with corrosion bleedout – INCREASE. (6FT)

INCIDENTAL:
South fender 6th section from west end, the lower wale is hanging by one bolt – NEW.
The SW and NE clearance gauges are missing – NEW.

INSPECTION NOTES: Divers inspected Channel, Piers 17 and 18 each with three columns, Footings, Piers 5 through 16 and 19 through 33 each with eighteen reinforced concrete piles, Jackets, Concrete Reinforcing Protective System and Fender System.
STRUCTURE NOTES: Structure inventoried south to north.

PHOTO LOG:
No.1: Structure ID
No. 2: West elevation
No. 3: NE clearance gauge missing
No. 4: South fender, hanging wale
No. 5: Footing 11-3 SE corner, unsound/spalled repair
No. 6: Footing 11-2, typical crack with corrosion bleedout in gunite repair
No. 7: Pile 5-17 north face, vertical and horizontal cracks
No. 8: Footing 5-1, delamination/spall
No. 9: Footing 5-2, delamination/spall with corrosion bleedout
No. 10: Footing 6-2, typical honeycomb
No. 11: Footing 6-3, delamination/spall
No. 12: Footing 9-1 NE corner of Pile 9-3, spall with exposed rebar
No. 13: Pile 11-4 NE west face, vertical crack with corrosion bleedout
No. 14: Footing 12-1 NE corner at Pile 3, honeycomb with corrosion bleedout
No. 15: Footing 13-3 SW corner of Pile 15, honeycomb with exposed rebar
No. 16: Pile 13-4 SE corner, spall
No. 17: North fender cluster 14 west plumb pile, crack with corrosion bleedout
No. 18: Footing 32-1, sound repair
No. 19, 20: Armor mat SE of Bent 33, undermining/collapsed
No. 21: North fender, typical spall
No. 22: Footing 8-1, area of corrosion bleedout

APPENDIX E – Technical Memorandum – Hernando DeSoto Bridge Condition Assessment

RICK SCOTT
GOVERNOR

Florida Department of Transportation
State Materials Office

CORROSION CONDITION EVALUATION OF POST-TENSIONED CONCRETE GIRDERS ON THE HERNANDO DESOTO BRIDGE (BRIDGE NO. 130053)

FINAL REPORT
JUNE 16, 2011

CORROSION CONDITION EVALUATION OF POST-TENSIONED CONCRETE GIRDERS ON THE HERNANDO DESOTO BRIDGE (BRIDGE NO. 130053)

FINAL REPORT
June 16, 2011

Prepared by:

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I. INTRODUCTION

The Hernando Desoto Bridge (Bridge No. 130053) was constructed in 1957. Currently, there are numerous locations where concrete spalling has occurred at the ends of girders and corroded post-tensioned anchorages and tendons are exposed in the spalled areas. Figure 1 shows typical examples of the concrete damage and exposed post-tensioned components.

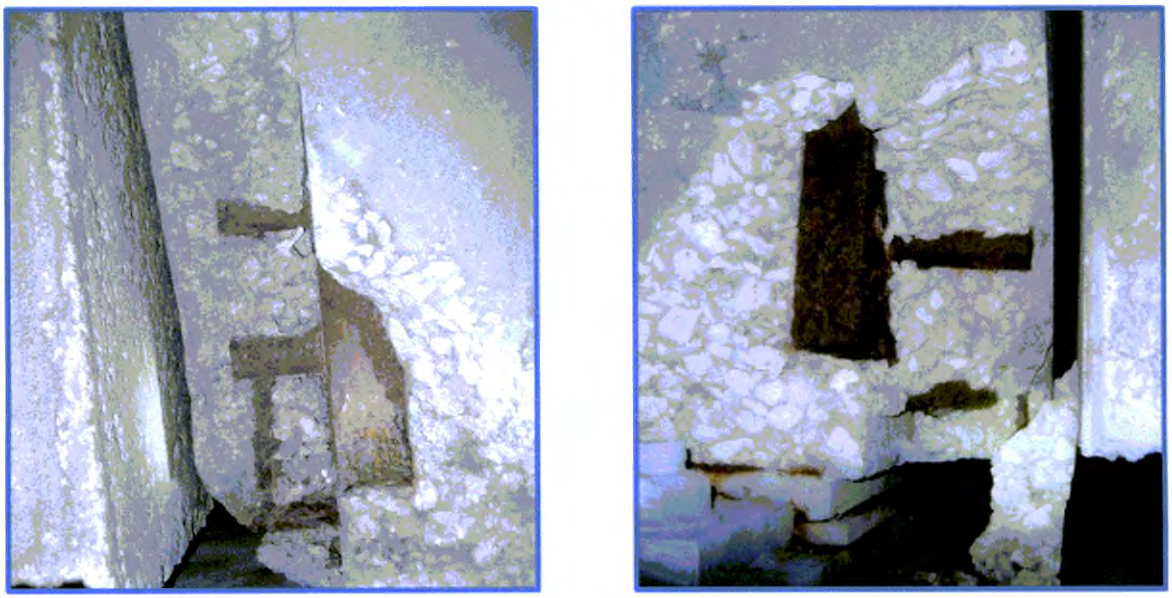


Figure 1. Typical examples of concrete damage and exposed post-tensioned components at the ends of girders.

The FDOT District Structures Maintenance Office (DSMO) and T.Y. Lin International requested the FDOT State Materials Office (SMO) to perform specific testing and sampling on a limited number of post-tensioned concrete girders for the purpose of evaluating the corrosion condition of the post-tensioned tendons at various distances away from the anchorages. The on-site investigation was performed by Concorr Florida, Inc. under contract with FDOT-SMO. Infrastructure Corporation of America provided a snooper truck to access the girders.

II. SCOPE OF WORK

At the time that the scope of work was developed, it was not known if the post-tensioned tendons were inside of a duct or what type of duct material may have been used and, therefore, it was not known if tendons could be precisely located non-destructively nor was is known what types of corrosion testing could be effectively accomplished. The

scope of work for the corrosion condition evaluation was developed in conjunction with Mr. Boon Chong, T.Y. Lin International, and is described below.

1. Select two girders (one at a high elevation and one at a low elevation) with exposed post-tensioned anchorages at one or both ends and perform the following work on each girder:

   A. Locate the bottom tendon in the bottom flange at a distance of about 43" from the end of the girder (not including the built-up portion of the girder at the end). Existing plans indicate that the bottom tendon is located 4" above the bottom face of the bottom flange. Locate the top tendon in the web approximately 5" on either side of mid-span. Existing plans indicate that the top tendon is located 16.5" above the bottom face of the bottom flange at mid-span.

   B. In order to avoid damaging tendons by coring, first saw cut one 4" by 4" area immediately adjacent to each of the two locations determined above. Carefully chip away concrete in each saw cut area and expose the tendon. Use extreme caution to avoid causing any damage to the tendons. Visually inspect the condition of each tendon and measure the concrete cover.

      If duct is encountered, visually inspect the condition of the duct and measure the concrete cover. Also, extract a sample of the duct material and, where possible, collect a sample of any grout material in the duct and then continue excavating to expose the tendon.

   C. Using the information obtained from each excavation, extract a 2" diameter core sample at each location determined in Step A. If there is no duct, drill each core to a depth that is 1/8" less than the concrete cover measured over the tendon in the adjacent excavation. If there is a duct, drill each core to the depth of the duct.

   D. If there is no duct, use the exposed tendon in each excavation as a ground and measure corrosion potentials along the tendon at a spacing of 6" for as long a distance as possible in both directions.

      If there is a metallic duct, use the exposed duct in each excavation as a ground and measure corrosion potentials along the duct at a spacing of 6" for as long a distance as possible in both directions.

   E. Obtain three concrete resistivity measurements at each location determined in Step A. Take one measurement 3" above the bottom face of the bottom flange, one measurement in the vertical center of the web, and one measurement 3" below the top surface of the top flange.

   F. Patch excavations and cored holes with a fast setting high quality cementitious grout material containing pea gravel.

2. If any of the tendons that are exposed in the excavations made exhibit corrosion, repeat all of the above work on a third girder that does not have any exposed post-tensioned anchorages at either end.

3. Collect a water sample at the site to determine the environmental classification at the bridge location.

On-site work was conducted on the evenings of June 6 and 7, 2011. Laboratory analyses of the concrete core samples and the water sample were performed by FDOT-SMO. Findings from the on-site work and the results of the laboratory analyses are presented below.

III. VISUAL OBSERVATIONS AND COVER MEASUREMENTS

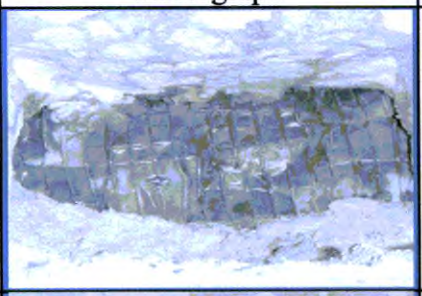
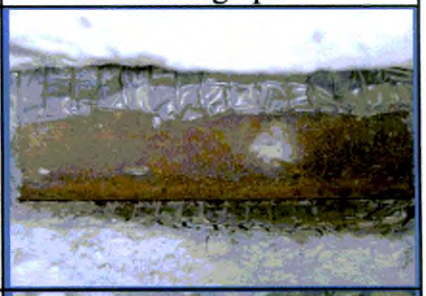
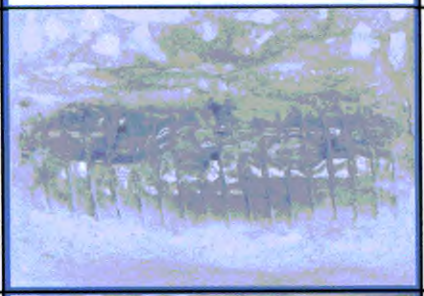
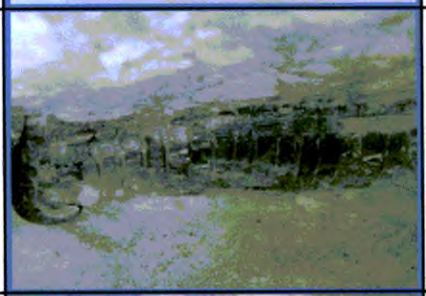
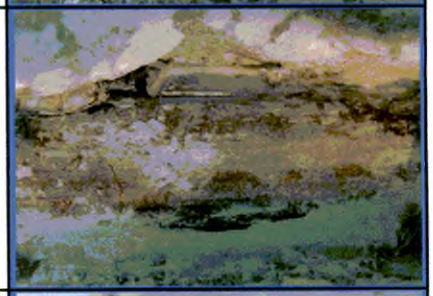
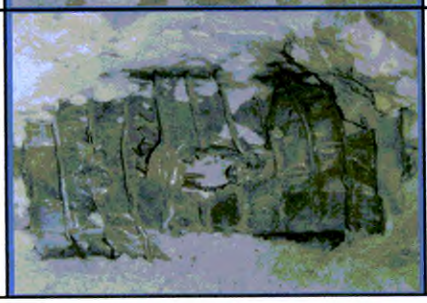
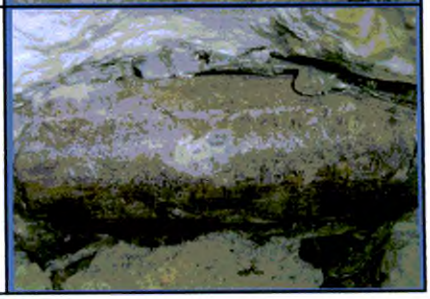
Girders 5-1 and 26-1 were selected for evaluation and, based on the findings on these girders, a third girder (Girder 22-1) with no exposed post-tensioned anchorages and no apparent past repairs at the ends of the girder was investigated. A bottom tendon and top tendon were located on each of the three girders at the approximate locations defined in the scope of work and excavations were made to expose the tendons. A corrugated metallic duct was found at all six of the locations where excavations were made. A sample of the duct was obtained at each location and the samples were provided to FDOT-SMO. In most cases, there was a 1/8" thick hard and brittle grout inside the duct (the diameter of the duct was apparently about 1/4" greater than the tendons). At the bottom tendon location on Girder 5-1, there was very little grout inside the duct and the grout that was present was soft and flaky. At the top tendon location on Girder 5-1, the grout was soft, but still brittle. The grout at each of the six locations was removed to expose the tendons. The depths of the duct and tendon measured in each excavation are shown in Table 1.

Table 1. Depth of ducts and tendons.

Girder	Location	Duct Depth, in.	Tendon Depth, in.
5-1	Bottom Tendon	4.25	4.38
	Top Tendon	3.00	3.13
26-1	Bottom Tendon	5.50	5.63
	Top Tendon	2.13	2.25
22-1	Bottom Tendon	4.88	5.00
	Top Tendon	2.63	2.75

Table 2 shows the condition of the duct (exterior surface) and tendon at each excavation. No corrosion was found on the exterior surface of the ducts. All of the tendons exhibited varying amounts of minor surface corrosion with no discernable pitting. The inside surface of the ducts had varying amounts of minor corrosion (see Figure 2).

Table 2. Condition of ducts and tendons.

Girder	Location	Exterior Surface of Duct		Tendon	
		Condition	Photograph	Condition	Photograph
5-1	Bottom Tendon	No corrosion.		Uniform minor surface corrosion, no pitting.	
	Top Tendon	No corrosion.		Spotty minor surface corrosion, no pitting.	
26-1	Bottom Tendon	No corrosion.		Spotty minor surface corrosion, no pitting.	
	Top Tendon	No corrosion.		Spotty minor surface corrosion, no pitting.	
22-1	Bottom Tendon	No corrosion.		Spotty minor surface corrosion, no pitting.	
	Top Tendon	No corrosion.		Spotty minor surface corrosion, no pitting.	

Girder 5-1 Bottom Tendon Duct

Girder 5-1 Top Tendon Duct

Girder 26-1 Bottom Tendon Duct

Girder 26-1 Top Tendon Duct

Girder 22-1 Bottom Tendon Duct

Girder 22-1 Top Tendon Duct

Figure 2. Condition on the inside surface of the ducts.

IV. ENVIRONMENTAL CLASSIFICATION

To determine the environmental classification at the location of the bridge (i.e. to characterize the corrosive properties of the water), laboratory analyses were performed on a water sample that was collected at the bridge. Chloride content, sulfate content, resistivity, and pH of the sample are shown in Table 3. Based on the laboratory test results and parameters provided in the FDOT Structures Design Guidelines, the corrosion classification for the bridge is "Extremely Aggressive".

Table 3. Results of laboratory testing of a water sample.

Chloride Content, ppm	Sulfate Content, ppm	Resistivity, ohm-cm	pH
12,046	3,383	22	7.68

V. CORROSION SAMPLING AND TESTING

Core samples were taken in accordance with the scope of work and all cores were drilled to the depth of the ducts. Due to the hard and brittle nature of the grout at four of the excavated areas and the minimal amount of soft and flaky grout at another location, only one grout sample could be obtained for chloride content analysis. This sample was taken on Girder 5-1 at the top tendon excavation. The grout at this location was soft and brittle allowing small chunks of the grout to be collected.

Chloride content analyses of the concrete core samples and the grout sample were performed in accordance with the procedures defined in Florida Method 5-516 and assuming a concrete unit weight of 3,800 lb/yd^3 and a grout unit weight of 3,105 lb/yd^3. Samples were extracted from the cores at or near the depth of the duct. Chloride content analyses results are shown in Table 4.

It is generally recognized that a total chloride content of about 1.2 lb/yd^3 (pcy) of concrete is sufficient to initiate corrosion of reinforcing steel, although other variables, such as oxygen and moisture availability and concrete quality can significantly affect this threshold. The test results in Table 4 indicate a negligible chloride content for all of the samples analyzed.

Table 4. Chloride content analysis of concrete and grout samples.

Girder	Core Location	Duct Depth, in.	Material Sampled	Chloride Content, pcy
5-1	Bottom Tendon	4.25	Concrete	0.1
	Top Tendon	3.00	Concrete	0.1
			Grout	0.2
26-1	Bottom Tendon	5.50	Concrete	0.1
	Top Tendon	2.13	Concrete	0.1
22-1	Bottom Tendon	4.88	Concrete	0.1
	Top Tendon	2.63	Concrete	0.1

Corrosion potential measurements were taken in accordance with the scope of work using a copper-copper sulfate reference electrode (CSE). Although corrosion potential

measurements can be affected by the moisture content of the concrete and other factors that exist at the time measurements are taken, ASTM C876, "Standard Test Method for Half-Cell Potentials of Uncoated Reinforcing Steel in Concrete," states the following:

- Corrosion potentials more negative than –350 mV CSE indicate that there is a greater than 90% probability that active corrosion is occurring within the tested area.
- If corrosion potentials are between –200 and –350 mV CSE, corrosion activity is uncertain.
- Measurements less negative than –200 mV CSE indicate with a greater than 90% probability that active corrosion is not occurring within the tested area (i.e. the reinforcing steel is in a passive state).

Corrosion potential measurements obtained along the metallic ducts are shown in Table 5. The test data indicate a high probability that no corrosion is occurring on the exterior surfaces of the ducts. However, FDOT-SMO determined that that the duct is comprised of some type of electroplated metal. In addition, the ducts probably contact the tendons at some point or points along their length. Consequently, the corrosion potential measurements may or may not be accurate. Due to the presence of the ducts, corrosion potential measurements could not be obtained along the tendons.

Table 5. Corrosion potential measurements on metallic ducts.

Girder	Location	Corrosion Potentials, mV CSE		
		Average	Minimum	Maximum
5-1	Bottom Tendon	-52	-131	158
	Top Tendon	-46	-87	71
26-1	Bottom Tendon	66	-7	135
	Top Tendon	72	-25	161
22-1	Bottom Tendon	20	-35	71
	Top Tendon	24	-148	94

Concrete resistivity measurements were taken in accordance with the scope of work for the purpose of determining the ability of the concrete to allow corrosion current to flow. Results of these measurements indicate the concrete electrical resistance to a depth of approximately 2 to 2.5 inches.

Corrosion criteria suggest that concrete resistivity measurements of about 12 kohm-cm or less indicate a very high probability that the concrete will allow corrosion current to flow. At higher resistivity values, the probability of corrosion current flow proportionally decreases. The concrete resistivity measurements obtained are shown in Table 6 and indicate a very high probability that the girder concrete will not permit corrosion current to flow through it.

APPENDIX F – Drainage Map for Preferred Alternative


NORTH
3RD ST. W.
WATERMARK
3RD ST W
COURTYARD BY MARRIOTT
SCHOOL DISTRICT MANATEE COUNTY
2ND ST. W.
ARIA BRADENTON
ERP# 42043427.00
RIVERWALK PROFESSIONAL PARK
ERP# 44020760
3RD AVE W
MANATEE RIVER
MANATEE AVE W
CVS
BIO SWALE
BIO SWALE
1ST ST. (US 41, US 301 & SR 55)
BRIDGE END DRAINAGE
BRIDGE END DRAINAGE
MANATEE AVE E
5TH AVE DR E
MANATEE MEMORIAL HOSPITAL
ERP# 44027803.000
MANATEE RIVER
RIVERFRONT BLVD
2ND ST E
4TH AVE E
3RD AVE E
2ND AVE E
RIVERSIDE DR E
NORTH
MANATEE RIVER
STRUCTURAL BMP
CITY OF PALMETTO ESTUARY PARK
ERP# 44035487.000
PALMETTO ESTUARY NATURE PRESERVE
7TH ST W
BRIDGE END DRAINAGE
BRIDGE END DRAINAGE
US 41 (US 301 & SR 45)
1ST ST E
7-ELEVEN
HABEN BLVD
2ND AVE E
MANATEE RIVER
RIVER DUNES WAY
BRADENTON AREA CONVENTION CENTER
ERP# 44044753.001

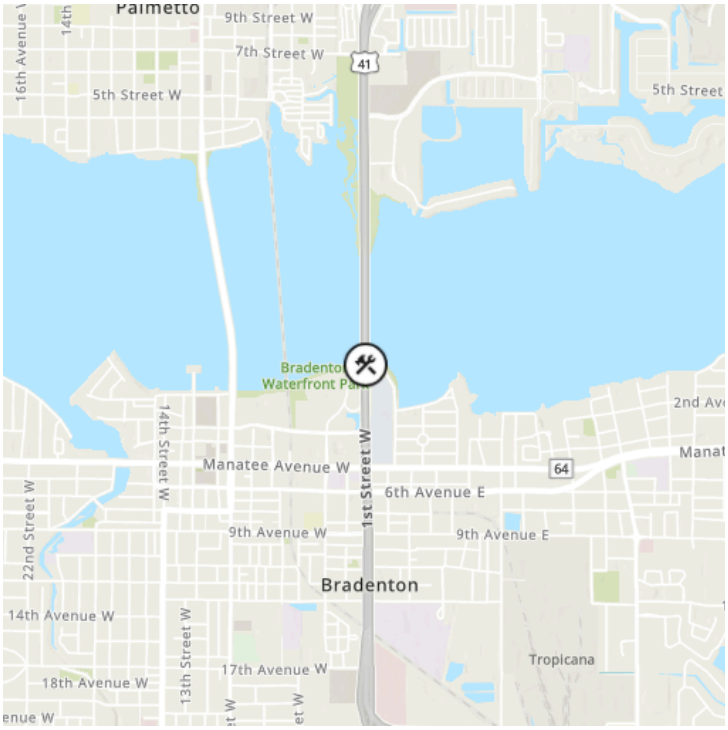
APPENDIX G – Sea level Impact Projection (SLIP) Study

Florida Department of Environmental Protection

Statewide Vulnerability Assessment

Sea Level Impact Projection (SLIP) Study Report

Project Name	DeSoto Bridge Replacement 3 - Land Elevation
County	MANATEE
Coordinates	27.50072506, -82.56306589
Project Category	TransportationAndEvacuation
Risk Category	Risk Category II
Construction Start Year	2027
Expected Life	75 Years
Estimated Construction Cost	$172,816,553
Critical Elevation	7.3 ft NAVD88
Organization	Florida Department of Transportation District 1
Report Date	Jul 16, 2025
Published Date	Pending



Results

N/A

Metric	value
FEMA Flood Hazard Zone	AE
Base Flood Elevation (ft NGVD29)	8
Terrain Elevation (ft NAVD88)	2.54
Int-High Sea Level Rise (year 2100) (ft NAVD88)	3.4776902
Wind Zone (mph)	160.0

Average Annual Chance of Substantial Flood Damage (AACSFD) is calculated using NOAA sea level projections, FEMA coastal storm surge events, and associated wave heights. This flood risk probability does not include high-tide flooding, precipitation (stormwater), or riverine flooding.

Mitigation Strategies Evaluated

The following mitigation strategies were considered as part of this SLIP Study:

A living shoreline may be implemented in the northern area of the bridge.

Potential Beneficial Adaptation Strategies

Based on the results of the SLIP Study, the following adaptation strategies may be beneficial to consider in the construction design. These are not recommendations, merely standard strategies used to mitigate risk.

Build on Partially Elevated Areas
Sea level varies based on the rate of sea level rise relative to land elevation in a particular location. It amplifies near-term vulnerability to storm surge and increases long-term flood and inundation risks. Building on partially elevated areas can mitigate and reduce these risks.

Solution Timeline	**Long Term**
Scale	**Micro**
Adaptation Interface	**Hybrid**
Degree of Protection	**Medium**
Relative Cost ($, $$, $$$)	**$$**

Check Valve / Non-Return Valves
A check valve or non-return valve can be installed in pipes that are vulnerable to backflow during various flood conditions. The valve will work by blocking the flow of water if it is entering in the wrong direction. This will help with flooding control, standing water control, and water quality issues. Different size and shape valves can be used, as needed.

Projects:
R1928 - St. Augustine Stormwater Outfall Resiliency Retrofit

Solution Timeline	**Intermediate**
Scale	**Macro**
Adaptation Interface	**Gray**
Degree of Protection	**Medium**
Relative Cost ($, $$, $$$)	**$$$**

Elevated Flood Wall / Flood Gate
A flood wall can be constructed to protect individual buildings or facilities against flooding. Flood walls can either be permanent or dismountable depending on short or long-term goals. Sometimes flood gates are built in a flood wall to create space for roads. These gates are only closed during a flood event.

Resources:
FEMA - Floodwall with Passive Floodgates Signals Commitment

Solution Timeline	**Long Term**
Scale	**Macro**
Adaptation Interface	**Gray**
Degree of Protection	**High**
Relative Cost ($, $$, $$$)	**$$$**

Flood Barriers (Passive or Active)

Solution Timeline	**Intermediate**

Flood barriers are used around a building or its utility components to protect from flooding. Flood barriers can be categorized as either passive or active devices. Passive flood barriers operate automatically during a flood or storm event and do not require any human intervention or power source. An example of a passive flood barrier is a floodwall or levee. Active flood barriers require warnings in advance to deploy during a flood or storm event. This strategy is of limited value when flash floods are frequent. FEMA recommends passive flood barrier devices when planning and building.

Resources:
FEMA - Floodwall with Passive Floodgates Signals Commitment

Scale	**Micro**
Adaptation Interface	**Gray**
Degree of Protection	**Medium**
Relative Cost ($, $$, $$$)	**$$**

Flood Damage-Resistant Materials
Flood damage-resistant materials such as non-paper-faced gypsum board and terrazzo tile flooring for building materials and furnishings located below the base flood elevation help to reduce structural and nonstructural damage and post-flood event cleanup. The useful life of flood damage-resistant materials ranges between 10 and 20 years with annual maintenance costs depending on the type of material.

Solution Timeline	**Intermediate**
Scale	**Micro**
Adaptation Interface	**Gray**
Degree of Protection	**Medium**
Relative Cost ($, $$, $$$)	**$$**

Raising Land
Raising land is often used to increase the difference between water levels and construction levels. Usually, sand is used to raise the new roads above the existing ground level. This measure reduces the flood risk for that area and structure. Raising land also provides added time during a flood event for ground and surface waters to rise, slowing down the time it would take for exponential damage to take place.

Projects:
R1930- Marina Boat Ramp Resiliency Improvements

Solution Timeline	**Long Term**
Scale	**Macro**
Adaptation Interface	**Hybrid**
Degree of Protection	**Medium**
Relative Cost ($, $$, $$$)	**$$$**

Reduced Paved Surfaces
Paved surfaces like roofs, roads, and parking lots reduce the infiltration capacity of the soil and increase the surface water

Solution Timeline	**Long Term**
Scale	**Macro**

runoff. Consequently, flood risk and the need for additional water retention capacity are increased. By decreasing the total area of paved surfaces, more water can infiltrate the soil and extra green space is created.

Adaptation Interface	**Green**
Degree of Protection	**Medium**
Relative Cost ($, $$, $$$)	**$$**

Utility Elevation

Installing or locating utility systems and components at or above the flood protection level can lessen the impacts/damage to units during flood events. The flood protection level is set by local flood plain management regulations or building codes. Floodproofing building utilities will work best when all utility meters are elevated as well.

Resources:
FEMA - Protecting Building Utilities from Flood Damage

Solution Timeline	**Long Term**
Scale	**Micro**
Adaptation Interface	**Gray**
Degree of Protection	**High**
Relative Cost ($, $$, $$$)	**$**

Foundation Flood Vents

Flood vents can reduce the overall structural damage caused by flooding. These permanent openings allow for water to pass into or out of a building's exterior foundation walls, lessening erosion impacts to the foundation elements.

Resources:
FEMA – Reducing Flood Risk to Residential Buildings that Cannot be Elevated

Solution Timeline	**Intermediate**
Scale	**Micro**
Adaptation Interface	**Gray**
Degree of Protection	**Low**
Relative Cost ($, $$, $$$)	**$$**

Elevate Finished First Floor

A common method in mitigating flood damage to structures is elevating the first floor to the required Flood Protection Elevation (FPE). An FPE is generally above the base flood elevation plus freeboard level required by the local municipality where the structure is located. Another method is to abandon the lowest floor, given that the building is at least two stories tall. Here the lowest floor walls must be retrofitted with flood openings that allow automatic entry and exit of floodwaters and any utility systems and associated equipment on the lowest floor must be elevated to protect utilities from damage or loss of function from flooding.

Solution Timeline	**Long Term**
Scale	**Macro**
Adaptation Interface	**Gray**
Degree of Protection	**High**
Relative Cost ($, $$, $$$)	**$$$**

Resources:
FEMA - Elevating Your House
FEMA – Reducing Flood Risk to Residential Buildings that Cannot be Elevated

Floodable Park / Water Square

This type of park or square can combine water storage with the added benefits of an urban public space. A floodable park or water square is considered a twofold strategy: (1) It makes money invested in water storage facilities visible and enjoyable, and (2) it generates opportunities to create quality environmentally friendly spaces central in neighborhoods. Most of the time the park or square can be used as a recreational space. When heavy rains occur, rainwater that is collected from the surrounding area will flow into the floodable park or water square for a short duration. After it has been used as a buffering space for floodwaters, this water is filtered by the vegetation and soils, and the filtered water is returned to the water system.

Solution Timeline	**Intermediate**
Scale	**Macro**
Adaptation Interface	**Hybrid**
Degree of Protection	**Medium**
Relative Cost ($, $$, $$$)	**$$**

Projects:
R1933 - Good Neighbor Stormwater Park

Increase Plantings

Using groundcover and shrubbery has many benefits compared to unplanted and paved surfaces. The velocity of floodwaters is reduced, which in turn can reduce damage from floating debris. Infiltration and uptake of floodwaters are improved and accelerated by plants, which resolves the flood event sooner and more effectively than bare ground. And, erosion occurring as flooding recedes is reduced when the soil is held in place by plant roots.

Solution Timeline	**Long Term**
Scale	**Macro**
Adaptation Interface	**Green**
Degree of Protection	**Low**
Relative Cost ($, $$, $$$)	**$**

Projects:
R1804 - Fruit Farm Creek Mangrove Restoration Project

Potential Public Safety and Environmental Impacts

Based on the results of the SLIP Study, consider the following potential public safety and environmental impacts:

Flood Risk

When factoring in the flood zone, base flood elevation, terrain, and sea level rise trends for the project location, a moderate flood risk is present.

Wind Risk

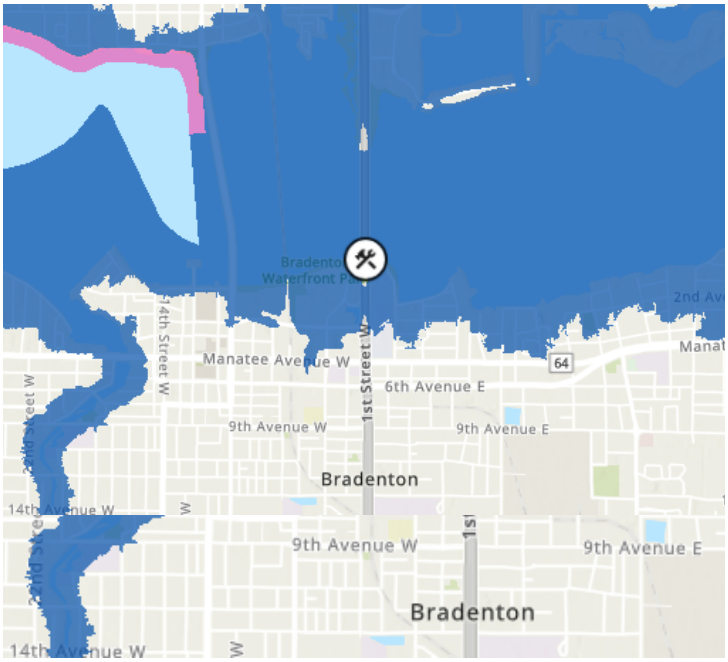
The project location was found to be located in an area of moderate wind risk with a maximum wind speed of 160.0mph. There is potential risk from flying debris.

Explosion Risk

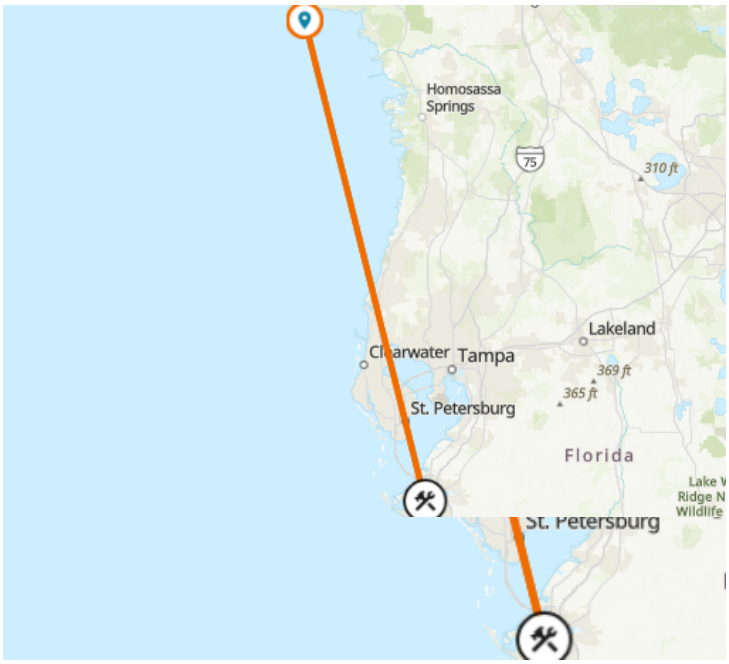
The moderate wind risk in this project location may contribute to a higher risk of explosion due to potential downed powerlines.

FEMA Flood Hazard Information

Flood Zone	AE
Zone Subtype	COASTAL FLOODPLAIN
Static BFE (ft NAVD88)	8
Vertical Datum	NAVD88

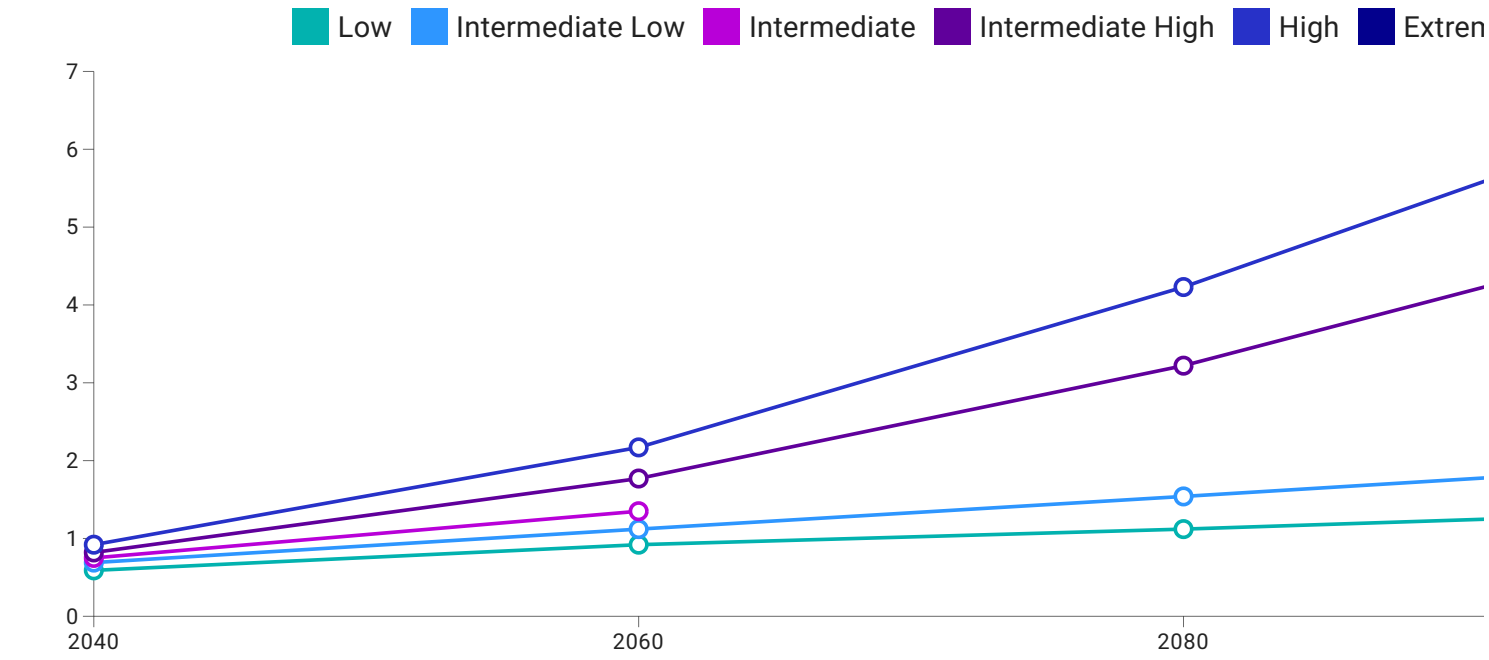


Regional Sea Level Rise Scenarios



NOAA Regional Scenarios (ft NAVD88)

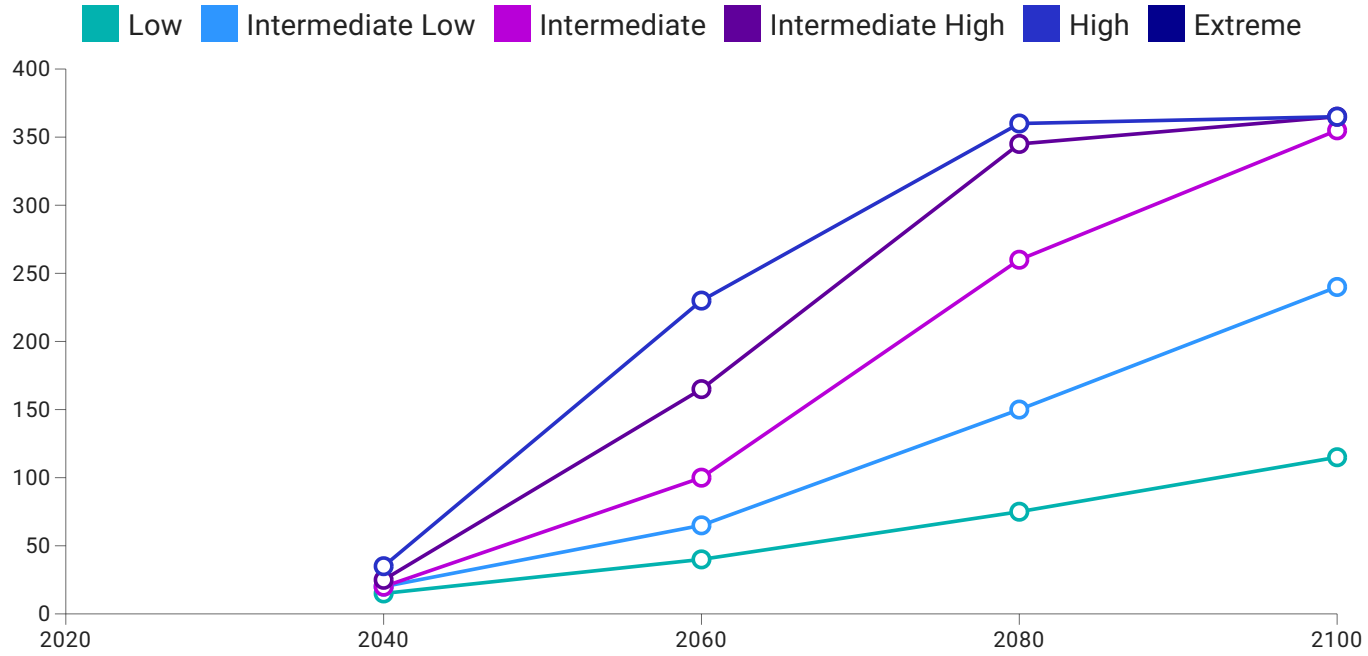
Scenario	2040	2060	2080	2100
Low	0.59	0.92	1.12	1.35
Intermediate Low	0.69	1.12	1.54	1.97
Intermediate	0.75	1.35		
Intermediate High	0.82	1.77	3.22	5.05
High	0.92	2.17	4.23	6.69
Extreme				



The five relative sea level rise (RSL) scenarios shown in this report are derived from NOAA Technical Report NOS CO-OPS 083 “Global and regional sea level rise scenarios for the United States” using the same methods as the USACE Sea Level Rise Calculator. These new scenarios were developed by the Sea Level Rise and Coastal Flood Hazard Scenarios and Tools Interagency Task Force, jointly convened by the U.S. Global Change Research Program (USGCRP) and the National Ocean Council as input to the USGCRP Sustained Assessment process and 4th National Climate Assessment. These RSL scenarios provide a revision to the (Parris et. al, 2012) global scenarios which were developed as input to the 3rd National Climate Assessment.

These RSL scenarios begin in year 2020 and take into account global mean sea level rise (GMSL), regional changes in ocean circulation, changes in Earth's gravity field due to ice melt redistribution, and local vertical land motion.

NOAA High Tide Flooding Information

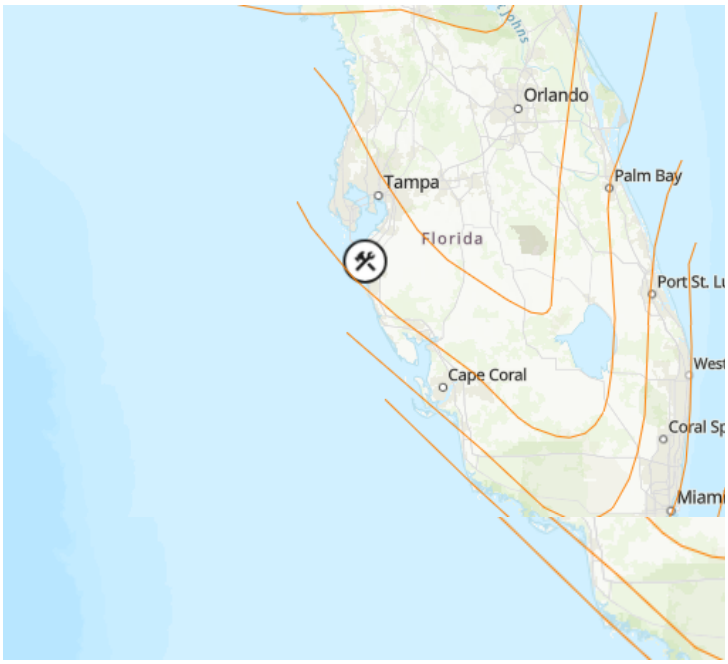


Annual occurrences of tidal flooding—exceeding local thresholds for minor impacts to infrastructure—have increased 5- to 10-fold since the 1960s in several U.S. coastal cities. The changes in high tide flooding over time are greatest where elevation is lower, local RSL rise is higher, or extreme variability is less.

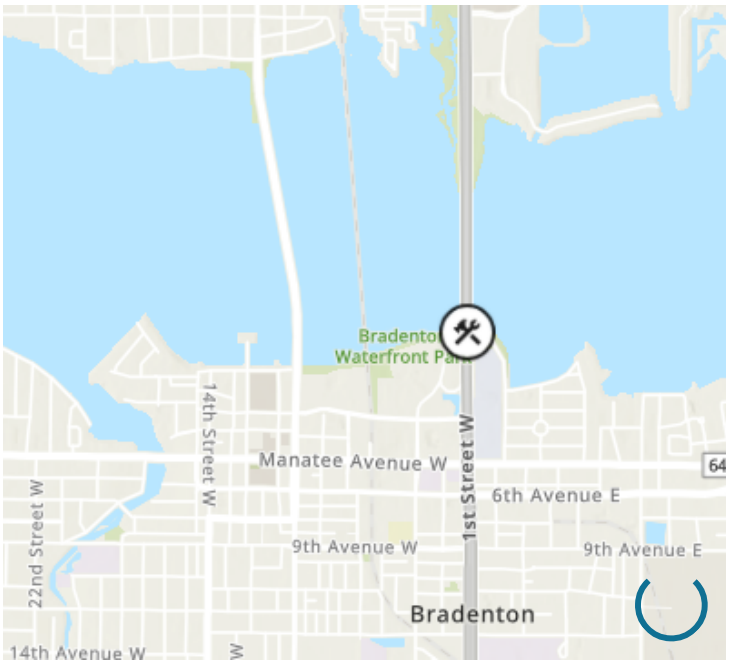
In a sense, today's flood will become tomorrow's high tide, as sea level rise will cause flooding to occur more frequently and last for longer durations of time.

Wind Zones

Metric	value
Maximum Wind Speed	160.0



Terrain



Metric	value
Elevation (ft)	2.54
Vertical Datum	NAVD88

This terrain elevation is derived from the latest compilation of terrain data from NOAA. This dataset contains the best publicly available terrain data in a 3m resolution.

Design Alternatives

The selection of a construction project location involves a considerable number of factors, including but not limited to regulatory issues, engineering, and logical decisions. The SLIP Study Tool may be run multiple times with different project locations and critical elevations, to achieve a desired result. Please use the SLIP Map along with the Coastal Hazard layers to assist you in selecting the optimal location. Review this report and assess the risks which may be mitigated by changing the design parameters, then run the SLIP Study Tool again