STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

650.050-38

ENVIRONMENTAL MANAGEMENT 08/22

DRAFT LOCATION HYDRAULIC REPORT

Florida Department of Transportation

District 4

SR 5/ US 1 at Aviation Boulevard

Indian River, Florida

Financial Management Number: 441693-1-22-02

ETDM Number: 14475

February 2024

The environmental review, consultation and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022, and executed by the Federal Highway Administration (FHWA) and FDOT

Project Development & Environment (PD&E) Study

SR 5/US 1 at Aviation Boulevard

Financial Management Number: 441693-1-22-02 ETDM Number: 14475 Indian River County, Florida

LOCATION HYDRAULICS REPORT

Prepared for:



Florida Department of Transportation

District 4

Prepared by:

WGI, Inc.

2035 Vista Parkway

West Palm Beach, FL 33411

February 2024

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PROFESSIONAL ENGINEER CERTIFICATION

LOCATION HYDRAULICS REPORT

Project: SR 5/US 1 at Aviation Boulevard

ETDM Number: 14475

Financial Project ID: 441693-1-22-02

Federal Aid Project Number: N/A

This Location Hydraulics Report contains engineering information that fulfills the purpose and need for the SR 5/US 1 at Aviation Boulevard Project Development & Environment Study in Indian River 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 WGI, Inc., 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 Jerome Saval P.E. 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.

Table of Contents

Tab	ole of Co	ontents	.i		
List	List of Appendicesii				
1.	. Introduction				
	1.1	Purpose	1		
	1.2	Project Background	1		
	1.3	Land Use Data	2		
	1.4	Datum And Conversion	2		
2. Existing Conditions			2		
	2.1	Natural and Biological Features	2		
	2.2	Geotechnical Information	2		
	2.3	Existing Drainage Conditions	3		
	2.4	Known On and Off-site Drainage Issues	4		
	2.5	Existing Major Culverts and Bridges	4		
3.	Base Floodplain		5		
4.	Water Quality		5		
5.	Risk Assessment				

List of Appendices

Appendix A - Figures	
Figure 1: Project Location Map	A-1
Figure 2: USGS Quadrangle Map	A-2
Figure 3: Web Soils Survey	A-3
Figure 4: FEMA FIRMettes	A-4
Figure 5: SJRWMD Watershed Map	A-5
Figure 6: Land Use Map	A-6
Figure 7: Archaeological Site Map	A-7
Figure 8: Straight Line Diagram	A-7
Appendix B – Pre-Development Drainage Maps	
Pre-Development Drainage Maps	B-1
Appendix C – Design Alternatives Layouts	
Alternatives 1	C-1
Alternatives 2	C-2
Alternatives 7	C-3
Alternatives 8	C-4
Appendix D – Correspondence and Excerpts from SJRWMD Permits	
City & County Coordination Meeting Minutes 6/16/2023	D-1
IRFWCD - Phone Notes-2023-07-27	D-2
IRFWCD - Meeting Notes-2023-08-04	D-3
Indian River Memorial Hospital (1987) - Permit 40-061-0027	D-4
Alcohope of the Treasure Coast (2003) - Permit 42-061-86755-3	D-5
Aviation Boulevard Roadway Widening (2010) - Permit 40-061-123418-1	D-6
All Aboard Florida - Fiber Optic Cable (2015) - Permit 144190-1	D-7
Executive Order 11988, "Floodplain Management"	D-8
USDOT Order 5650.2, "Floodplain Management and Protection	D-9
Bridge Load Rating Report	D-10
Bridge Inspection Report	D-11

1. Introduction

1.1 Purpose

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study to evaluate alternatives for mobility and safety improvements to SR 5/US 1 and Aviation Boulevard in City of Vero Beach, Indian River County, Florida. In accordance with Executive Order 11988, "Floodplain Management, "United States Department of Transportation (USDOT) Order 5650.2, "Floodplain Management and Protection", and Federal-Aid Policy Guide 23 CFR 650A, the Department must take the appropriate measure to protect flood plains and minimize impacts. The intent of these regulations is to avoid or minimize highway encroachments within the 100-year (base) floodplain, where practicable, and to avoid supporting land use development which is incompatible with floodplain values. Therefore, the purpose of this Location Hydraulics Report is to address base floodplain encroachments resulting from the roadway widening and reconstruction that is being evaluated as part of this PD&E Study.

1.2 **Project Background**

The project intersection of SR 5/US 1 and Aviation Boulevard is located within the urbanized area of the City of Vero Beach in Indian River County, Florida. This is a 4-legged, signalized intersection that accommodates the Florida East Coast (FEC) Railroad crossing on the eastbound approach. The FEC Railroad, which is part of the Strategic Intermodal System (SIS) Railroad Corridor, includes double-tracks running north-south parallel to SR 5/US 1 on the west side. Pedestrian crosswalks are provided on the northbound and westbound approaches of the intersection. There are no dedicated bicycle facilities. Nearby landmarks include Vero Beach Regional Airport, Cleveland Clinic Indian River Hospital and Indian River Medical Center, and downtown Vero Beach. The intersection is near a Runway Protection Zone (RPZ) of the Vero Beach Regional Airport.

The project proposes operational and capacity improvements to the intersection of SR 5/US 1 and Aviation Boulevard. Various alternatives were considered during the Project Development & Environment (PD&E) study, which include grade-separated crossings over the FEC Railroad. Additional features were considered such as multi-modal improvements. To account for potential grade separation and other solutions that address the purpose and need, the north-south limits of the PD&E study extend beyond the intersection along US 1 between 21st Street and 41st Street (approximately 2 miles). The west limits extend along Aviation Boulevard between 27th Avenue and US-1 (approximately 1 mile). East of SR 5/US 1, Aviation Boulevard becomes 32nd Street. The east limits include several side streets east of US 1 to 13th Avenue. The PD&E study limits are shown in **Figure 1, Appendix A**.

SR 5/US 1 constitutes the north and south approaches of the intersection, as a proposed four-lane divided facility with a painted center turn-lane, curb and gutter on both sides, and a sidewalk on the east side. SR 5/US 1 has a functional classification of Urban Principal Arterial Other and a context classification of C4 Urban General since there are mostly non-residential land uses along the corridor with residential neighborhood connections. Indian River County has designated SR 5/US 1 corridor as a hurricane evacuation route.

At the eastbound approach of the intersection, Aviation Boulevard crosses the FEC Railroad. This is a 2-lane undivided roadway with no pedestrian facilities. Aviation Boulevard has a functional classification of Urban Minor Arterial and a context classification of C3 Commercial due to the non-residential land uses. The westbound approach is served by 32nd Street as a local 2-lane undivided street serving limited commercial and residential properties.

The project is located within Sections 35 of Township 32 South, Range 39 East and Sections 2 of Township 33 South, Range 39 East.

1.3 Land Use Data

The land uses throughout the project corridor are designated as mostly mixed use and industrial with some residential and commercial land uses along the east side of SR 5/US 1. The existing roadway elevations along this section of Aviation Blvd. and SR 5/US 1 range from 10 to 19 feet NAVD'88. The Land Use Map is provided as **Figure 6** in **Appendix A**.

1.4 **Datum And Conversion**

All elevations and stages shown in this document are referenced to the North American Vertical Datum 1988 (NAVD'88) unless otherwise noted. The elevations shown in parenthesis are referenced to the National Geodetic Vertical Datum 1929 (NGVD'29). Datum conversion was obtained from the VDatum software tool available from NOAA's National Geodetic Survey (NGS), Office of Coast Survey (OCS), and Center for Operational Oceanographic Products and Services (CO-OPS) website: <u>https://vdatum.noaa.gov/vdatumweb/</u>. The datum conversion is as follows: NAVD'88 = NGVD'29 - 1.486.

2. Existing Conditions

2.1 Natural and Biological Features

Forested and herbaceous freshwater wetlands and surface waters are located within the study area. Estuarine systems and the Indian River Lagoon are one mile to the east. Wetland impacts are expected to be minimal. There is a large archaeological zone called the Vero man Ice Age site just south of Aviation Boulevard and west of the intersection with SR 5/US 1. This is a Section 106 archaeological site. The Archaeological Site Maps are provided as **Figure 7** in **Appendix A**.

2.2 **Geotechnical Information**

The United States Department of Agriculture (USDA) Soil Conservation Service (SCS), currently the Natural Resources Conservation Service (NRCS), Web Soil Survey Report for Indian River County, Florida (**Figure 3 – Appendix A**) was used to identify soil types within and adjacent to the proposed project. A list of the predominant soil types is documented in the Web Soil Survey Report and Section 2.17 of the Preliminary Engineering Report, "Soils and Geotechnical Data".

There are five main types of soil that are encountered along the project limits. The soil types are listed for Hydrological Soil Group A, B, or D. Type D soils are very poorly drained with high water tables. Table 2.2 summarizes and lists the soil types including relevant information.

Soil Number	Name	Hydrologic Soil Group	Surface Runoff
5	Myakka	A/D	Very high
11	St. Lucie	A	Negligible
13	Wabasso	B/D	Very high
22	Urban land	A/D	Very high
23	Arents	A	Low

Table 2.2: Soil Information – Indian River County, FL

2.3 Existing Drainage Conditions

The project improvements are located within the jurisdictional boundaries of the SJRWMD and IRFWCD and is situated within the Indian River Lagoon Basin.

The existing roadway drainage system along SR 5/US 1 is comprised of "closed conveyance systems" where stormwater runoff is collected and conveyed via curb and gutter to inlets and underground pipes, ultimately discharging into the Indian River Farms Main Relief Canal. The existing roadway drainage system along Aviation Blvd. is comprised of "open conveyance systems" where stormwater runoff sheet flows from the roadway into roadside ditches and an existing The SHGWT elevation is approximately 6.00 NAVD. This was obtained from the existing SJRWMD permit for the 2011 Aviation Blvd. widening project. dry detention pond, ultimately discharging into the Indian River Farms Main Relief Canal. There are no formal ponds or other Stormwater Management Facility (SMFs) for the local roadways located east of SR 5/US 1. Runoff sheet flows into shallow roadside ditches the discharges into the groundwater by soil percolation.

The project corridor, within the project limits, is divided into five (5) distinct sub-basins that correspond to the existing drainage patterns along the project corridor. The five existing drainage basins are depicted on the drainage maps included in **Appendix B** and described below:

Basin 100 (550 feet west of Airport North Drive to SR 5/US 1 on Aviation Blvd.): The existing roadway consists of east, west through lanes and turn lanes at SR 5/US 1 and Airport North Drive. Runoff from the roadway sheet flows into roadside ditches and is conveyed to the Indian River Farms Main Relief Canal. There is an existing dry detention pond located on the south side of Aviation Blvd. This pond discharges into the IRFWCD Canal that ultimately flows into the Indian River Lagoon. There are several cross drains that run under Aviation Blvd.

Basin 200 (26th Street to Indian River Farms Main Relief Canal on SR 5/US 1): The existing roadway consists of two through lanes in each direction and with a center flush paved median for left turns. Runoff from the roadway sheet flows to curb inlets on either side of SR 5/US 1 and is conveyed to the Indian River Farms Main Relief Canal. There are no existing pondss on SR 5/US 1 and the roadway storm system directly discharges into the IRFWCD Canal that ultimately flows into the Indian River Lagoon.

Basin 300 (Indian River Farms Main Relief Canal to Aviation Blvd. on SR 5/US 1): The existing roadway consists of two through lanes in each direction and with a center flush paved median for

left turns. Runoff from the roadway sheet flows to curb inlets on either side of SR 5/US 1 and is conveyed to the Indian River Farms Main Relief Canal. There are no existing ponds on SR 5/US 1 and the roadway storm water directly discharges into the IRFWCD Canal that ultimately flows into the Indian River Lagoon.

Basin 400 (Local roads; 30th Street, 31st Street, 32nd Street, 33rd Street and surrounding properties east of SR 5/US 1): The existing roadways consist of one through lane in each direction. Runoff sheet flows into shallow roadside ditches then discharges into the groundwater by soil percolation. This area will accommodate the proposed roadway improvements associated with the proposed design alternatives.

Basin 500 (Aviation Blvd to approximately 1,500 feet north of Aviation Blvd. on SR 5/US 1): The existing roadway consists of two through lanes in each direction and with a center flush paved median for left turns. Runoff from the roadway sheet flows to curb inlets on either side of SR 5/US 1 and is conveyed to the Indian River Farms Main Relief Canal. There are no existing ponds on SR 5/US 1 and the roadway storm water directly discharges into the IRFWCD Canal that ultimately flows into the Indian River Lagoon.

2.4 Known On and Off-site Drainage Issues

There is no known significant issue on drainage or runoff conveyance within or outside the project limits. There are potential restrictions for the drainage design within the project. New SMFs may not be within 100 feet of public wells. Due to the dense development along the corridor, detention ponds will have to be located north of the canal. The Indian River Farms Main Relief Canal is classified as an impaired waterbody. Additionally, SMF detention ponds must have a maximum 48-hour detention period per the Federal Aviation Administration (FAA) Advisory Circular 150/5200-33C.

2.5 Existing Major Culverts and Bridges

The project limits include one existing bridge structure along SR 5/US 1 over the Indian River Farms Main Relief Canal (Bridge No. 880085) located at Mile Post (MP) 7.053 approximately 866 feet south of the intersection of SR 5/US 1 with Aviation Boulevard (MP 7.217) within Indian River County, Florida. The existing conditions at the bridge were analyzed during field reviews and reviews of the as-built construction plans and corresponding bridge inspection reports. Excerpts of the Bridge Load Rating and Inspection Reports are included in **Appendix D**. There are two major culverts within the project limits. There are two 60" culverts that come from the airport property that cross under Aviation Blvd. at the west end of the project. There are also several minor cross drains that cross under Aviation Blvd. that will require extension because of the widening.

The proposed structure will perform hydraulically in a manner equal to or greater than the existing structure, and backwater surface elevations are not expected to increase. Thus, there will be no significant adverse impacts on natural and beneficial floodplain values. There will be no significant change in flood risk, and there will not be a significant change in the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

3. Base Floodplain

Most of the project limits are located within Floodplain Zone X, an area of minimal flood hazard, and poses no significant floodplain encroachment as shown in Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) 12061C0244J (effective 1/26/23). The Indian River Farms Main Relief Canal is located within Floodplain Zone AE, areas where base flood elevations are determined. The flood base elevations within Zone AE range from 16 to 5 feet NAVD'88. The FEMA FIRMette is provided as **Figure 4** in **Appendix A**. In addition, there are no regulated floodway(s) within the project limits. However, the only floodplain involvement with federally defined floodplains will be the proposed bridge widening.

4. Water Quality

This project will have no adverse impact to the area's water quality. Stormwater treatment of the additional impervious areas will be treated as required by the SJRWMD Permit Information Manual, 2018. However, part of the existing dry pond within Basin 100 will be impacted by the proposed widening. Therefore, the pond capacity will be verified to ensure it will accommodate runoff from Aviation Blvd.

5. Risk Assessment

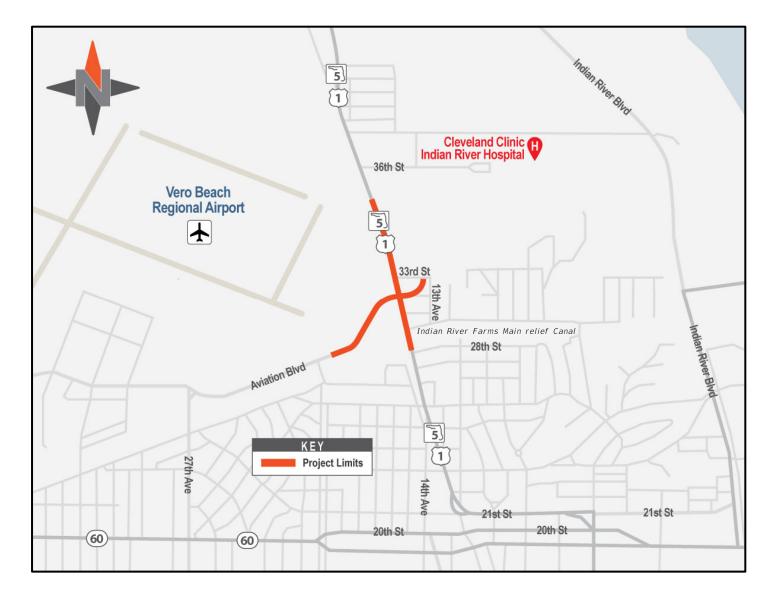
The modifications to the existing drainage system within the project limits will result in an insignificant change in the capacity to carry floodwater. These changes will cause minimal increases in flood heights and flood limits. These minimal increases will not result in any significant adverse impacts on the natural and beneficial floodplain values or any significant change in flood risks or damage. There will not be a significant change in the potential for interruption or termination of emergency service or emergency evacuation routes.

Therefore, it has been determined that there is no change in flood "Risk" or floodplain impacts associated with this project.

Appendix A Figures

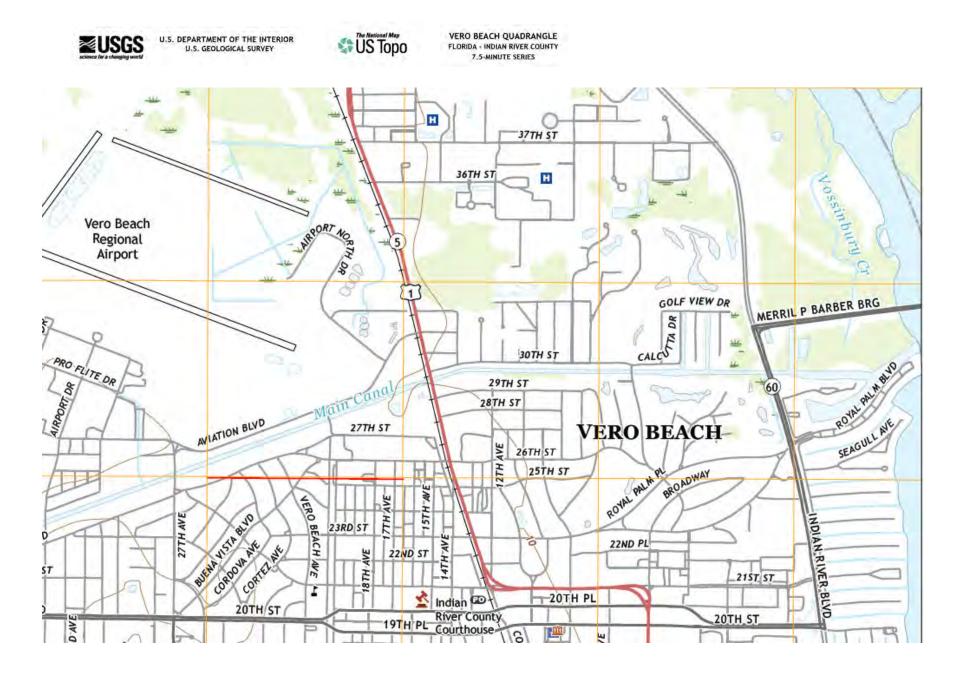
- Figure 1: Project Location Map
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- Figure 8: Straight Line Diagram





Project Location Map



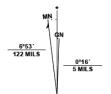


Produced by the United States Geological Survey North American Datum of 1983 (NAD83) World Geodetic System of 1984 (WGS84). Projection and

1 000-meter grid:Universal Transverse Mercatór, Zone 17R This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before

reservations may not be shown. Obtain permission before entering private lands.

Imagéry			
Roads	U.S. Census	Buréau,	2016
Names		GNIS, 1979	- 2020
HydrographyNatio	nal Hydrography I	Dataset, 1899 -	2019
Contours	National Elevation	n Dataset, 1999	2012
BoundariesMultiple sources;	see metadata	file 2018 -	2019
Public Land Survey System		BLM,	2020
WetlandsFWS National	Wetlands	Inventory	2010



UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET



US Route State Route

ROAD CLASSIFICATION

Local Connector

Local Road

4WD

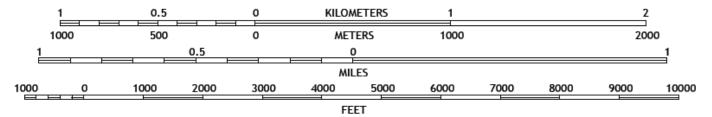
Expressway

Ramp

Secondary Hwy

2021

SCALE 1:24 000



CONTOUR INTERVAL 10 FEET NORTH AMERICAN VERTICAL DATUM OF 1988

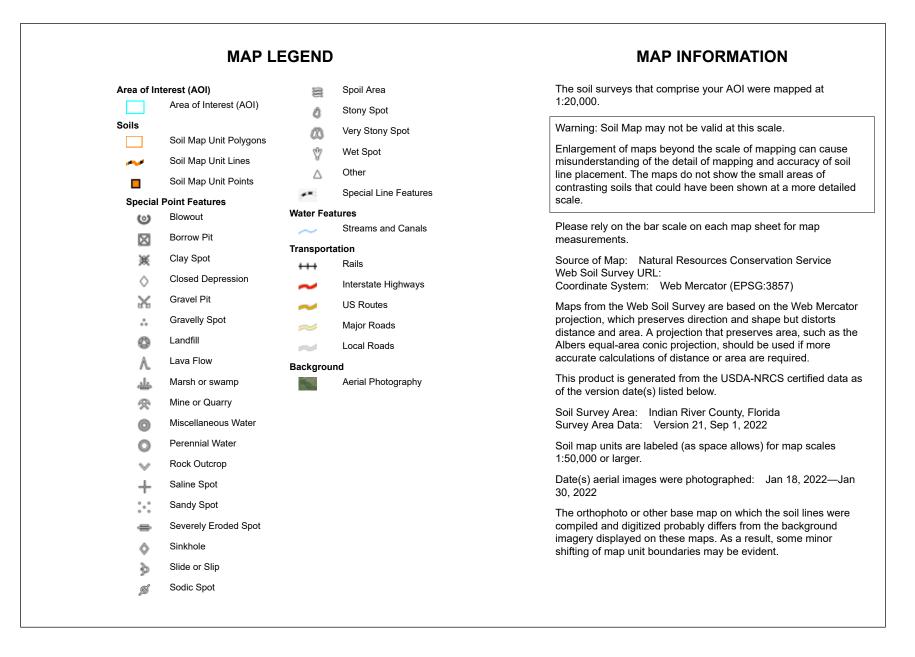
This map was produced to conform with the National Geospatial Program US Topo Product Standard.



National Cooperative Soil Survey

Conservation Service

2/6/2023 Page 1 of 3



USDA

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
5	Myakka-Myakka, wet, fine sands, 0 to 2 percent slopes	105.9	41.1%
8	Paola sand, 0 to 5 percent slopes	5.8	2.3%
10	Riviera fine sand, 0 to 2 percent slopes	3.4	1.3%
11	St. Lucie sand, 0 to 8 percent slopes	22.4	8.7%
13	Wabasso-Wabasso, wet, fine sand, 0 to 2 percent slopes	12.2	4.7%
21	Pomello sand, 0 to 5 percent slopes	16.8	6.5%
22	Urban land, 0 to 2 percent slopes	63.4	24.6%
23	Arents, 0 to 5 percent slopes	18.7	7.3%
29	Immokalee-Urban land complex	3.6	1.4%
32	Jonathan sand, 0 to 5 percent slopes	0.8	0.3%
36 Cypress Lake-Cypress Lake, wet, fine sands, 0 to 2 percent slopes		0.4	0.2%
100	Waters of the Atlantic Ocean	4.3	1.7%
Totals for Area of Interest		257.6	100.0%

Hydrologic Soil Group and Surface Runoff

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

Report—Hydrologic Soil Group and Surface Runoff

Absence of an entry indicates that the data were not estimated. The dash indicates no documented presence.

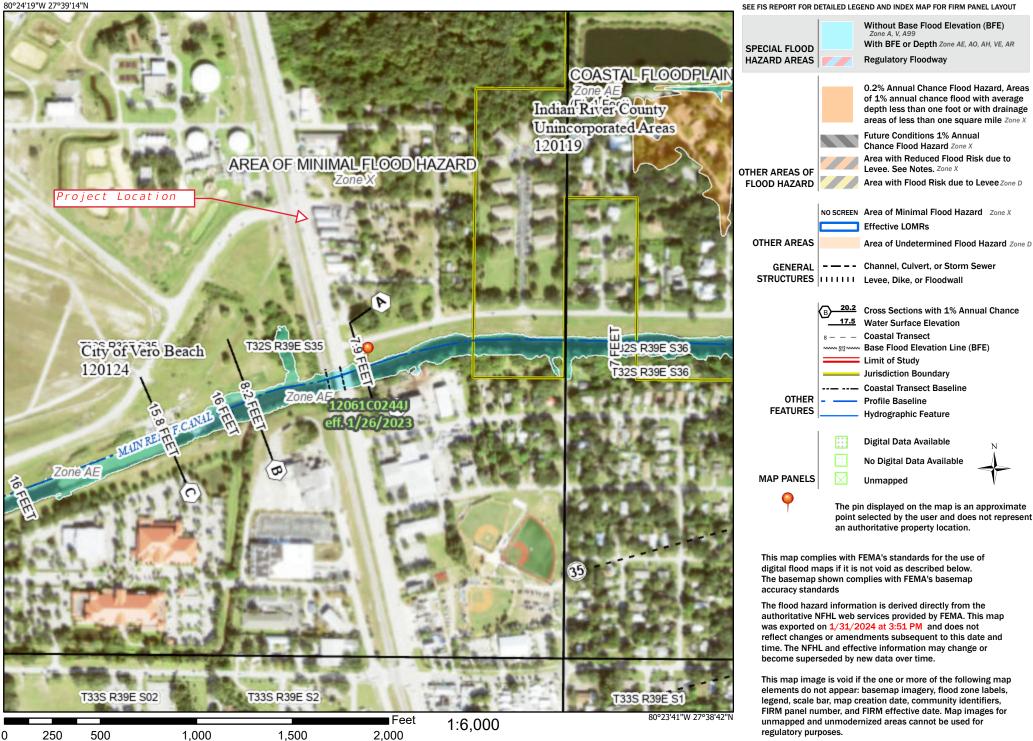
	Hydrologic Soil Group and Surface Runoff–Indian River County, Florida			
	Map symbol and soil name	Pct. of map unit	Surface Runoff	Hydrologic Soil Group
Г				

Hydrologic Soil Group and Surface Runoff–Indian River County, Florida			
Map symbol and soil name	Pct. of map unit	Surface Runoff	Hydrologic Soil Group
5—Myakka-Myakka, wet, fine sands, 0 to 2 percent slopes			
Myakka	70	Very high	A/D
Myakka, wet	15	Very high	A/D
8—Paola sand, 0 to 5 percent slopes			
Paola	85	Negligible	A
10—Riviera fine sand, 0 to 2 percent slopes			
Riviera	80	Very high	A/D
11—St. Lucie sand, 0 to 8 percent slopes			
St. lucie	90	Negligible	A
13—Wabasso-Wabasso, wet, fine sand, 0 to 2 percent slopes			
Wabasso	70	Very high	B/D
Wabasso, wet	15	Very high	B/D
21—Pomello sand, 0 to 5 percent slopes			
Pomello	85	Negligible	A
22—Urban land, 0 to 2 percent slopes			
Urban land	85	Very high	_
23—Arents, 0 to 5 percent slopes			
Arents	90	Low	A
28—EauGallie-Urban land complex			
Eaugallie, non-hydric	50	High	A/D
Urban land	30	_	—
Eaugallie, hydric	10	High	A/D
29—Immokalee-Urban land complex			
Immokalee, non-hydric	50	High	A/D
Urban land	25		—
Immokalee, hydric	10	High	A/D
32—Jonathan sand, 0 to 5 percent slopes			
Jonathan	85	Negligible	A
36—Cypress Lake-Cypress Lake, wet, fine sands, 0 to 2 percent slopes			
Cypress lake, non-hydric	60	Very high	B/D
Cypress lake, hydric	25	Very high	B/D
100—Waters of the Atlantic Ocean			
Waters of the atlantic ocean	100	_	—

National Flood Hazard Layer FIRMette

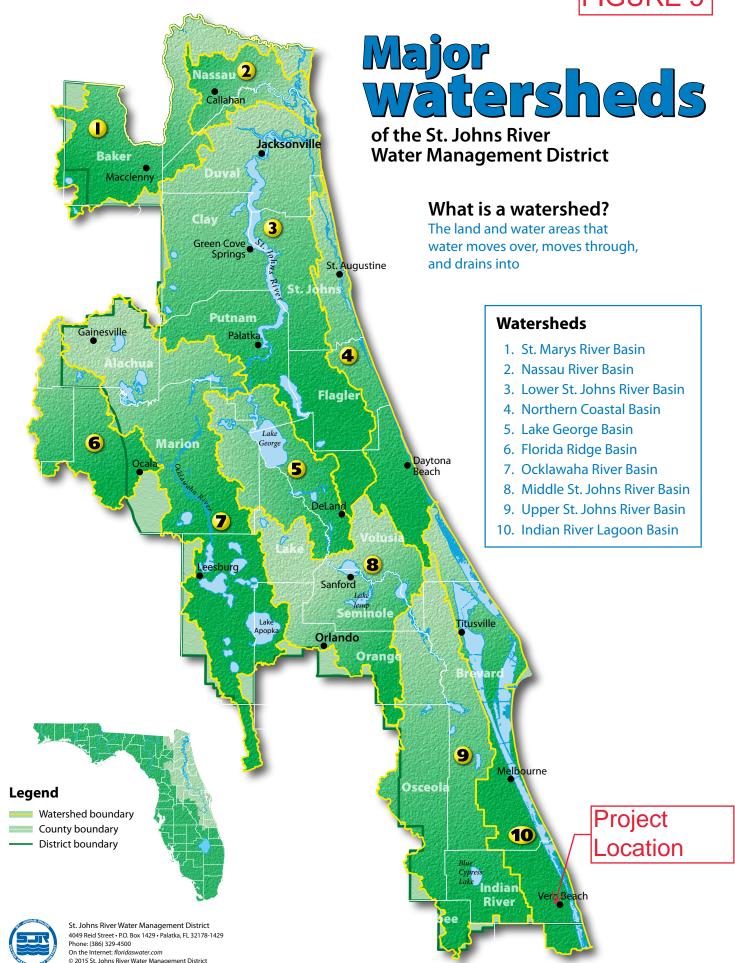


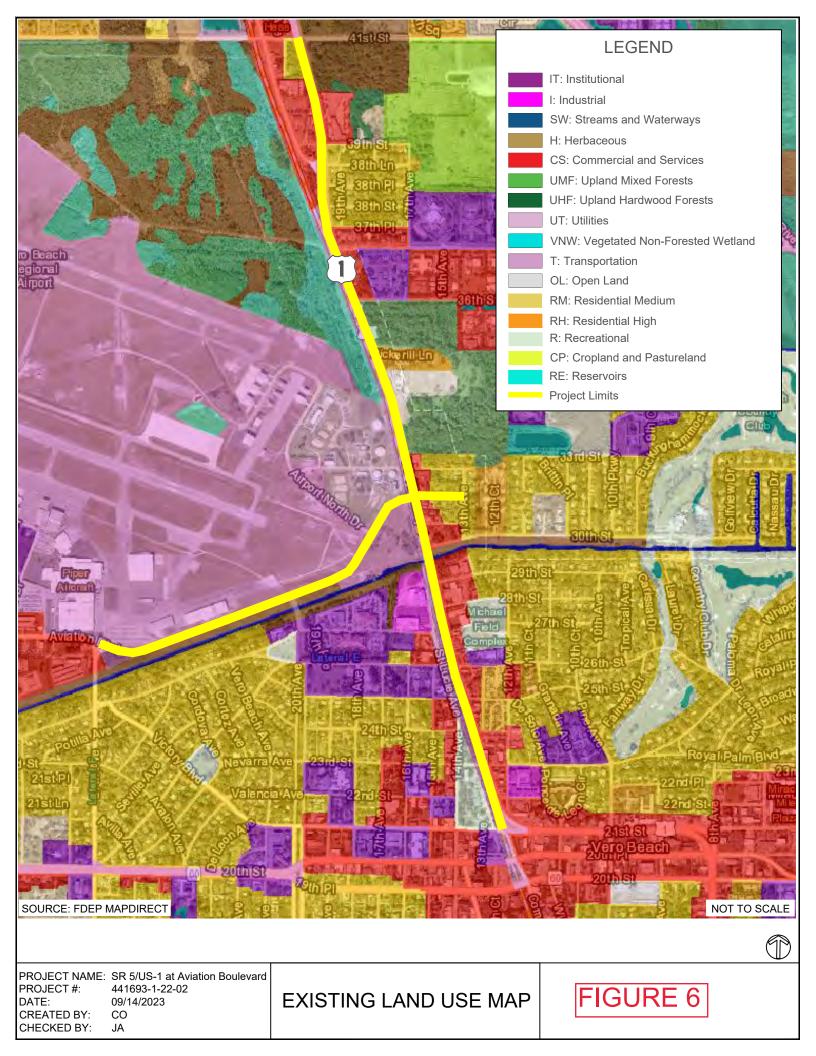
Legend FIGURE 4



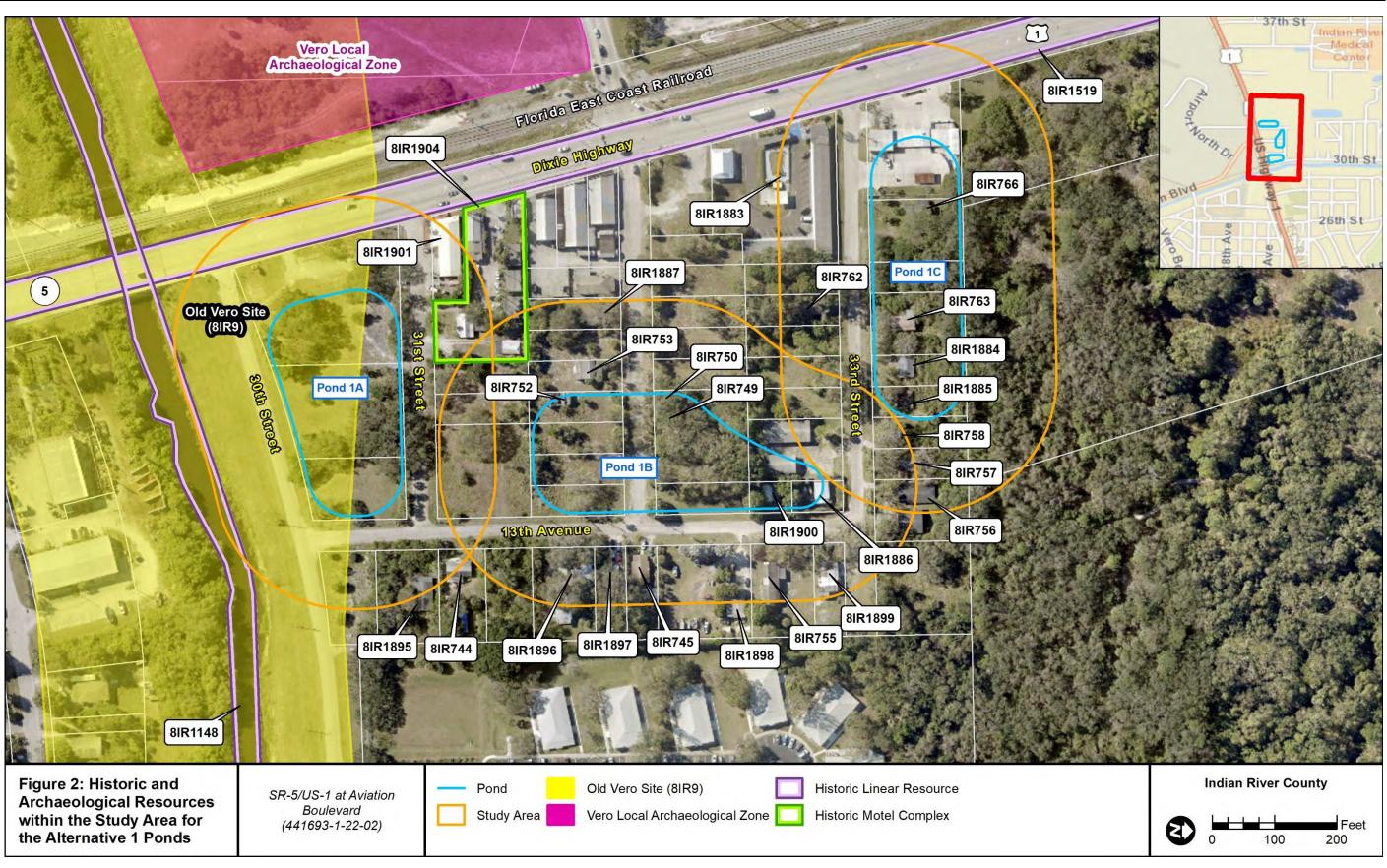
Basemap Imagery Source: USGS National Map 2023

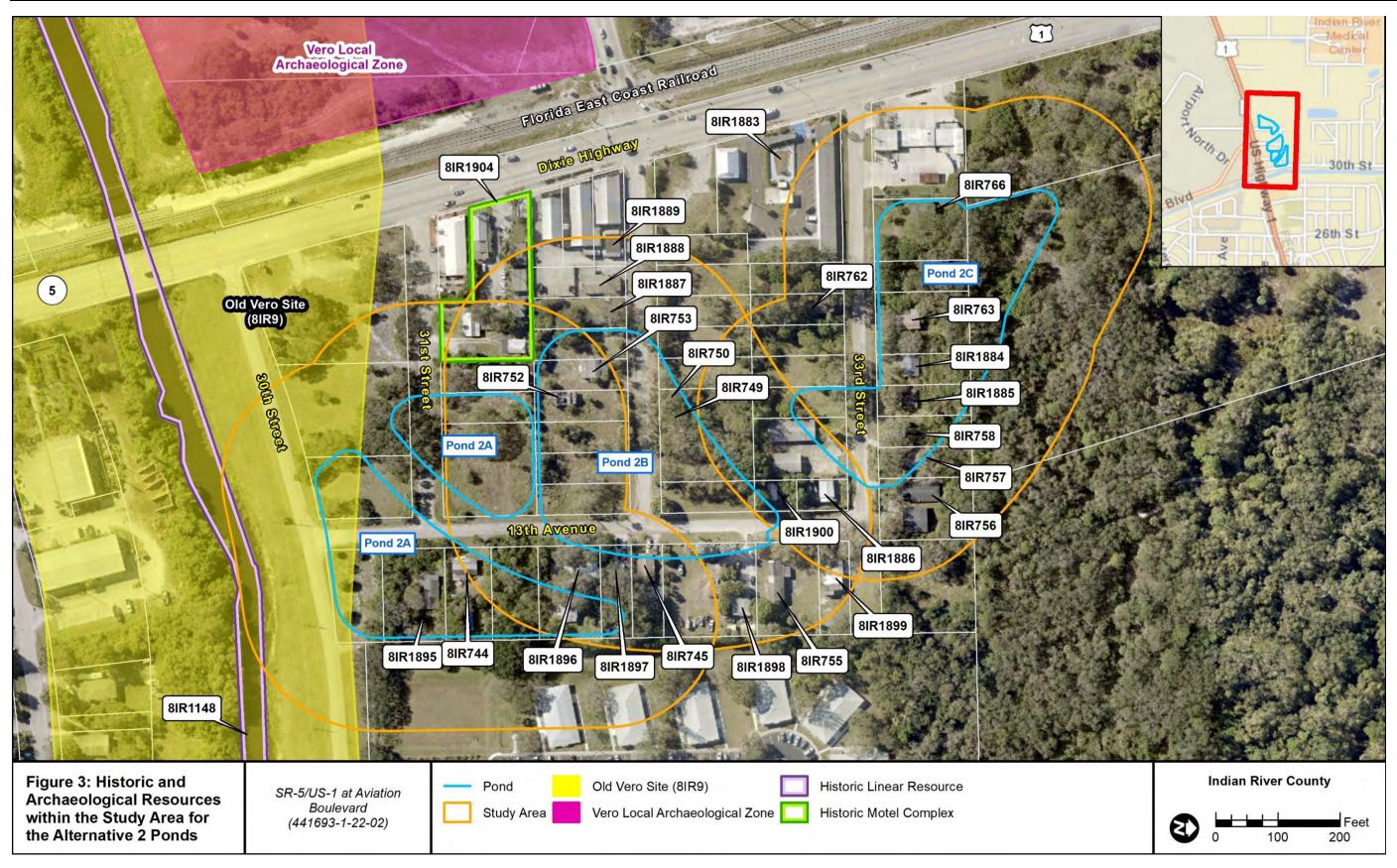


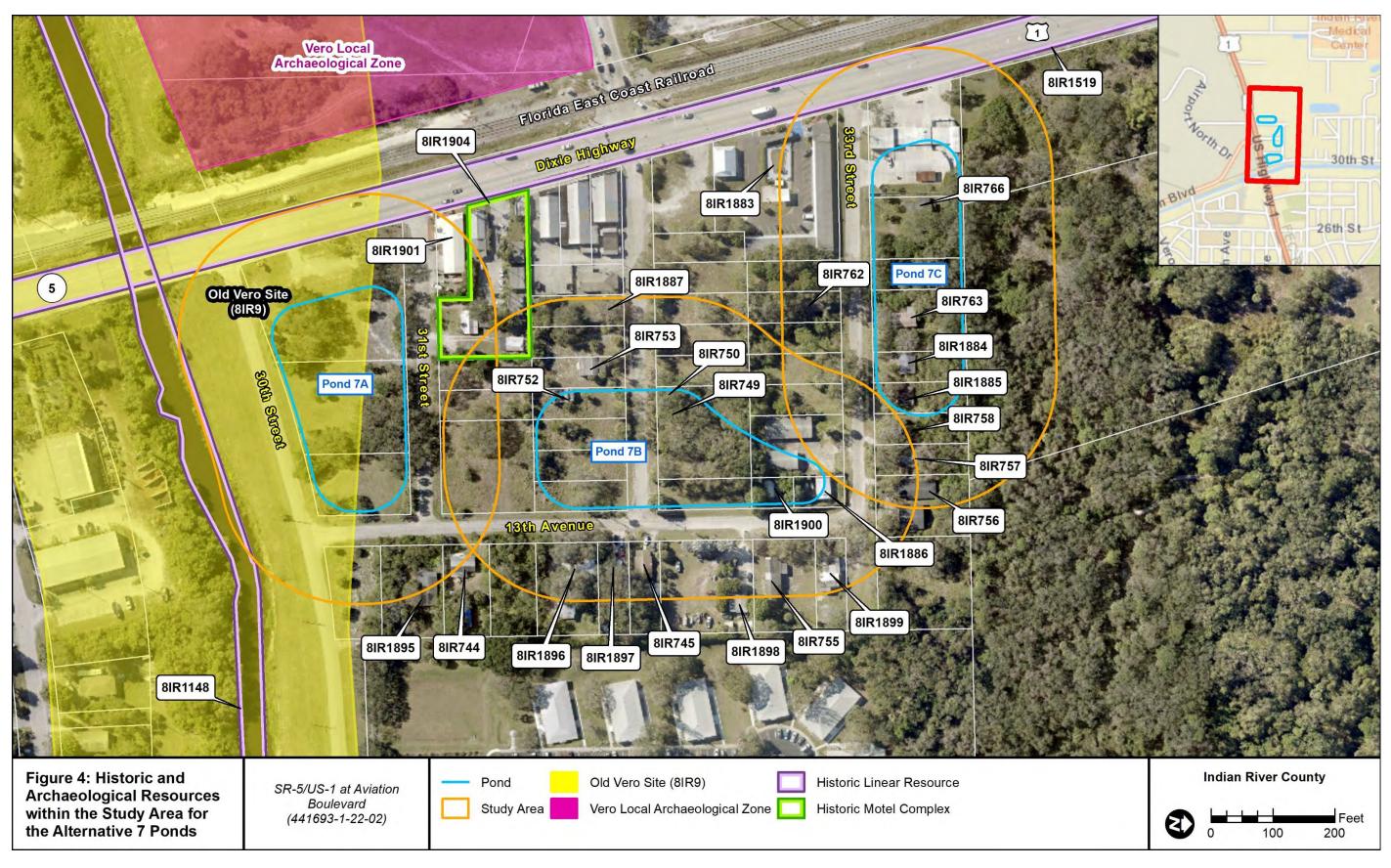


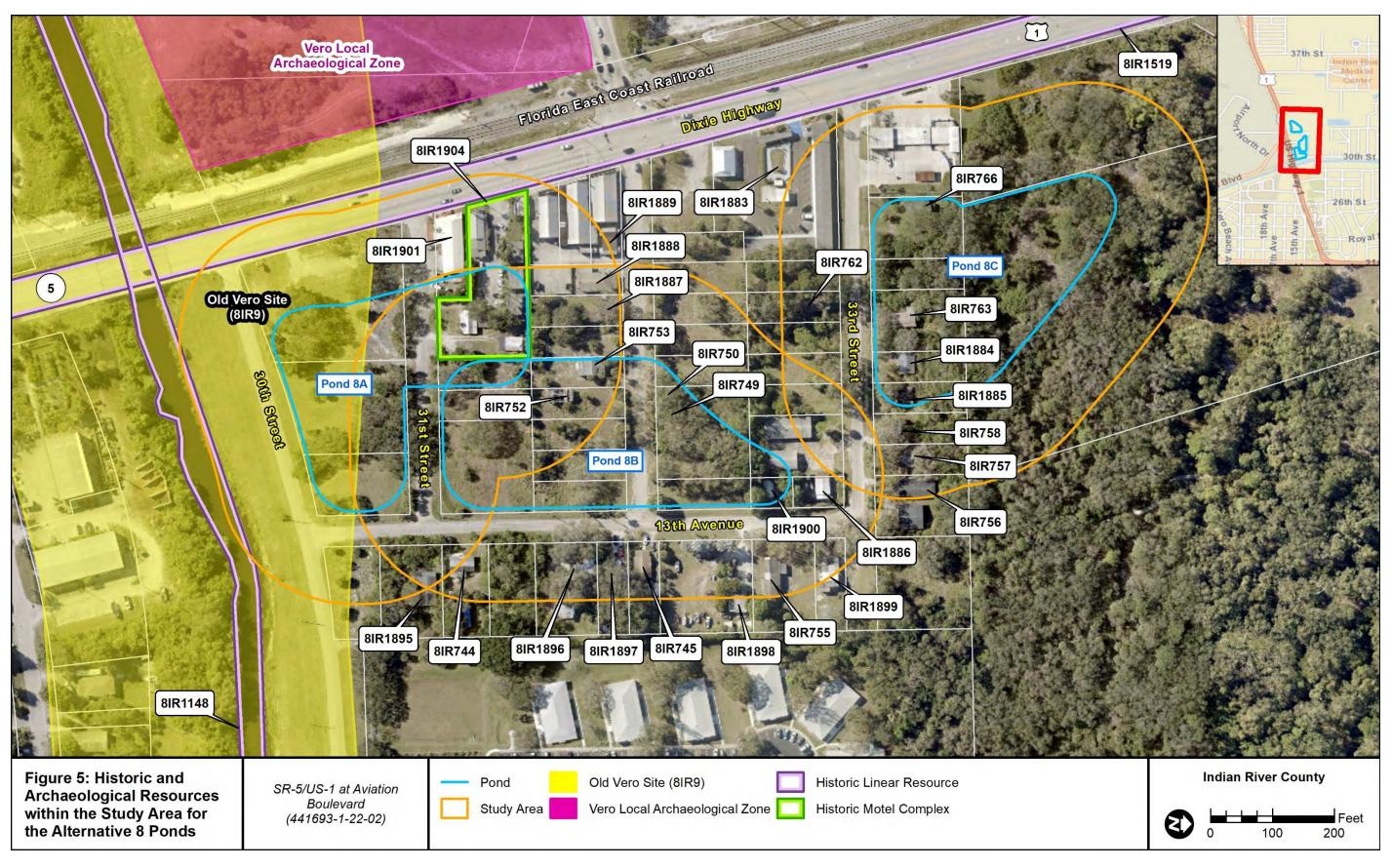


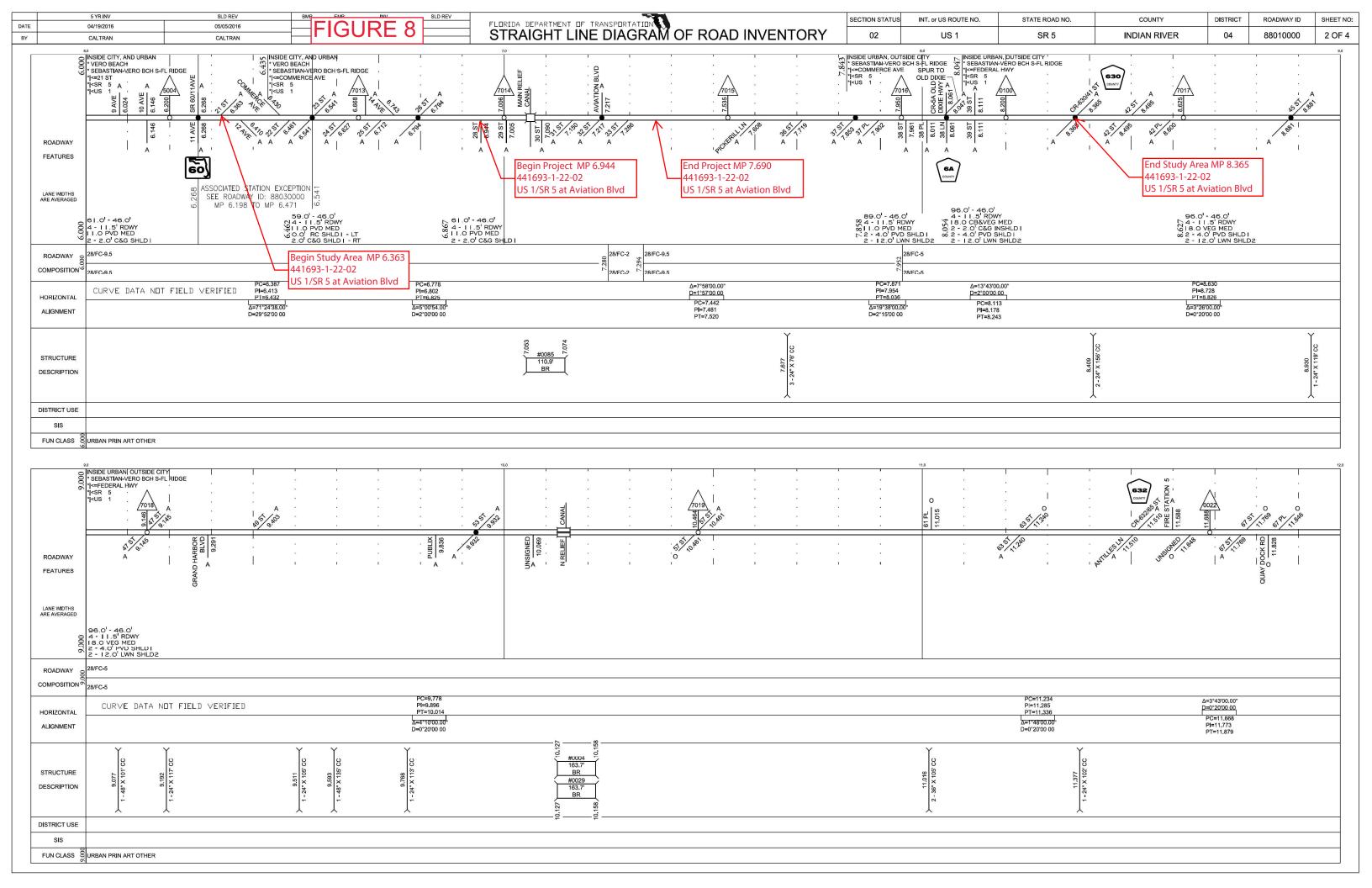






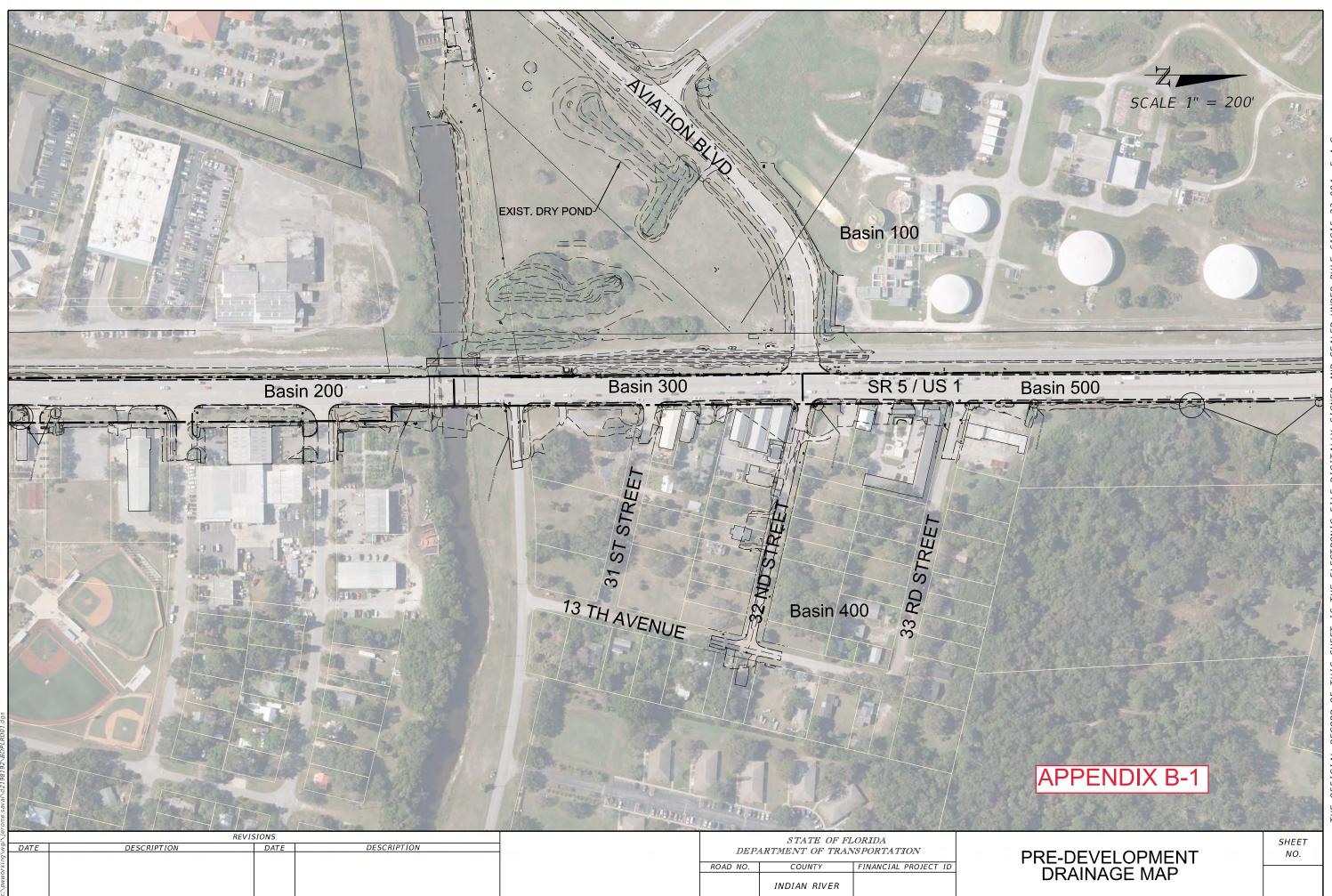






Appendix B Pre-Development Drainage Map

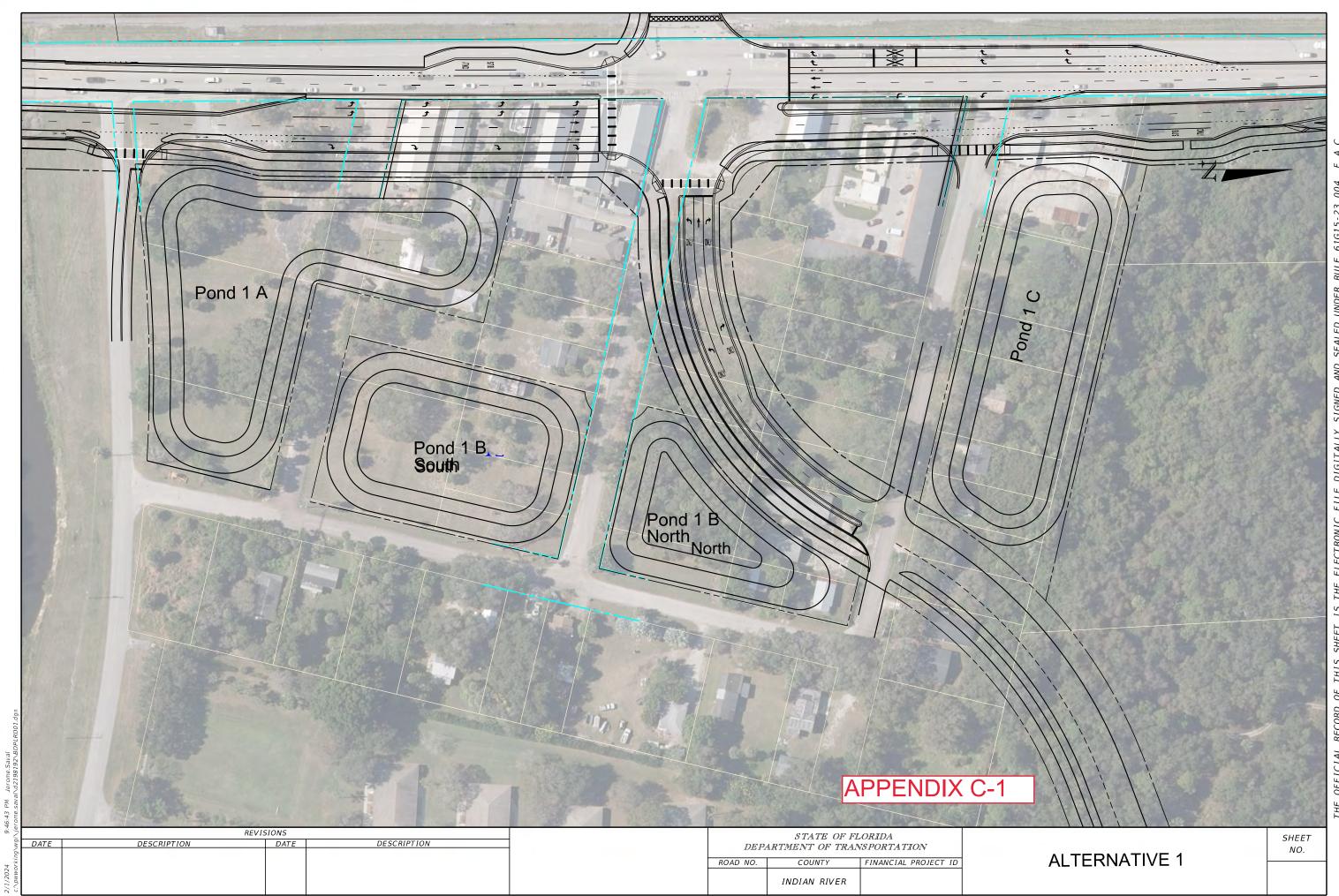
- Pre-Development Drainage Map



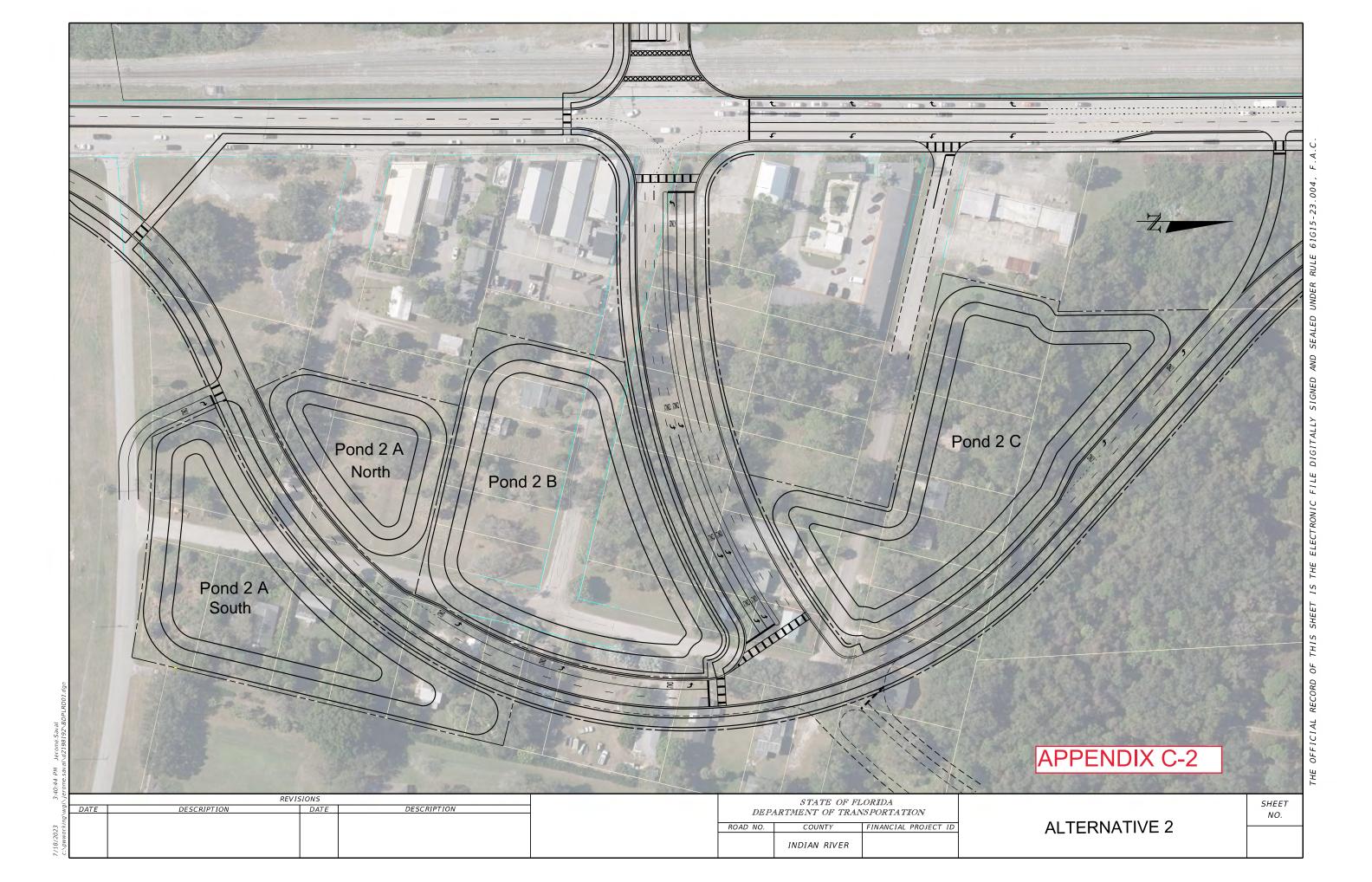
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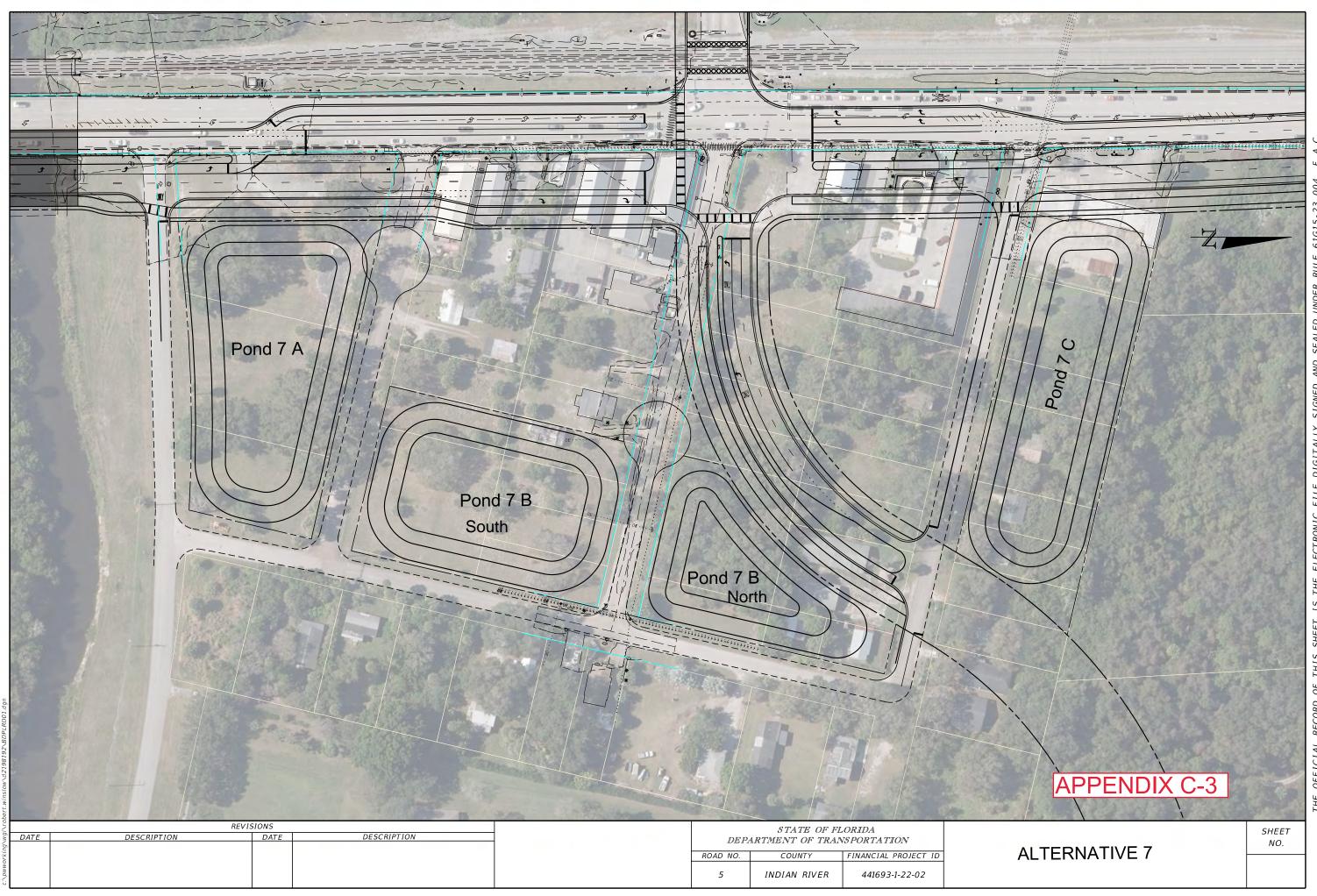
Appendix C Pond Alternatives Layouts

- Alternative 1
- Alternative 2
- Alternative 7
- Alternative 8

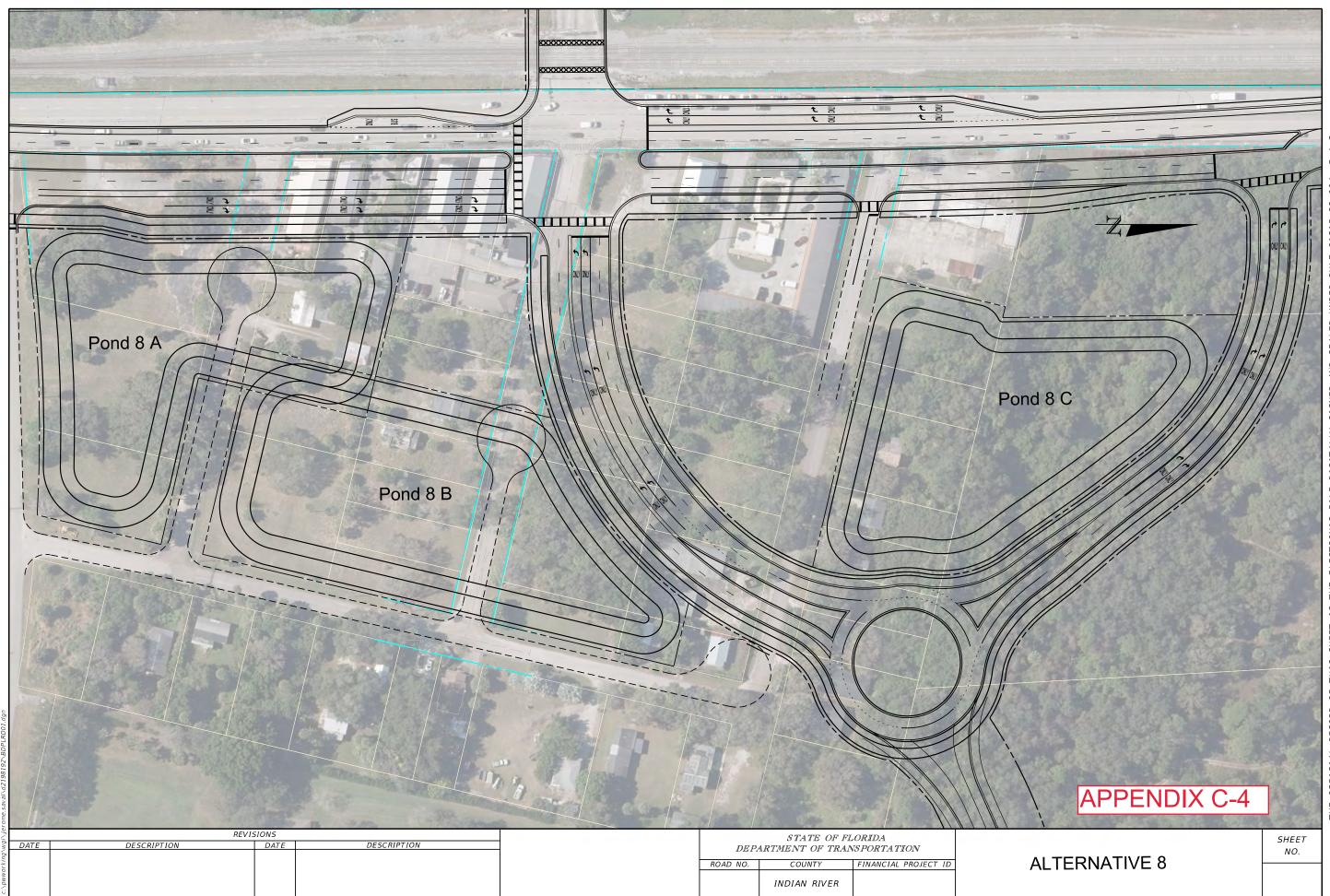


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Appendix D Correspondence and Excerpts from SJRWMD Permits

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- Bridge Inspection Report

PPENDIX D-



RON DESANTIS GOVERNOR 3400 West Commercial Boulevard Fort Lauderdale, FL 33309 JARED W. PERDUE, P.E. SECRETARY

MEETING NOTES

DATE:	June 16, 2023 at 9:30 AM via TEAMS call
то:	Rich Szpyrka, William Howard, Jason Jefferies, John Thompson, Jim Mann, Laurie McDermott, Mary Soderstrum
FROM:	Vandana Nagole
COPIES:	Bill Evans, Jim Hughes, Brian Freeman, Matthew Mitts
SUBJECT:	Local Coordination Meeting SR 5/US 1 at Aviation Boulevard PD&E Study Indian River County FM: 441693-1-22-02 ETDM: 14475

Agenda Topics:

The purpose of the meeting is to present the FDOT SR 5 PD&E build alternatives, screening evaluation matrix, and gain input from the local public works and planning departments. The meeting was attended by Indian River County, City of Vero Beach, Vero Beach Regional Airport and Indian River County MPO public works and/or planning managers.

Meeting Notes:

- 1. An update was provided by Jason Jefferies, City Planning, regarding the May 16th City Council Meeting and resolution.
 - a. Resolution was tabled and will be reconsidered when the RPZ analysis is complete.
 - b. The alternative that was mentioned during the Council meeting isn't feasible as it goes through the archaeological site.
- 2. Rich Szpyrka, IRC County Public Works, provided an update on the status of the Aviation Blvd extension project.
 - a. The Aviation Blvd extension Project is moving ahead and property is being appraised and purchased. ROW is being coordinated with FDOT District 4 ROW office to ensure county acquired property is according to FDOT regulations.
 - b. The county will adjust their project as needed to match the outcome of the PD&E study. Construction start dates will be better known when ROW is finalized and design is complete. Design is currently at 30-45%.



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- 3. Mary Soderstrum (FDOT aviation consultant) provided an update on the findings of the Runway Protection Zone analysis that FDOT District 4 conducted.
 - a. FDOT conducted the study at the request of the FAA and the Vero Beach Airport.
 - b. RPZ analysis considered the 8 PD&E alternatives and another 6 RPZ alternatives. The RPZ alternatives were developed to evaluate options to move either the RPZ or Aviation Blvd from occupying the same space and clear the RPZ area. The RPZ analysis recommends Alternative 1 (at grade) due to the least impact to the existing RPZ, cost and need to service the airport.
 - c. Jason Jefferies noted the city and airport master plans require Aviation Blvd to be in place to provide mobility for the planned growth and relocating Aviation Blvd traffic to the south via 26th Street is not feasible due to probable impacts and existing traffic congestion on the other roadways.
 - d. The Vero Beach Airport reviewed and commented on the RPZ report.
 - e. The RPZ report will be updated and sent to FAA with copies sent to the Airport, city and county public works. The RPZ report will be sent to FAA the week of 6/19/23.
 - f. FAA will offer a formal response after their review which is anticipated to conclude the RPZ analysis process.
- 4. The discussion of the eight (8) PD&E alternatives and the screening evaluation matrix was led by Bill Evans. Two new alternatives were presented as a recommendation from the Intersection Control Evaluation (ICE) analysis. The two new concepts are Alternative 7 (displaced left turn) and Alternative 8 (median u-turn and roundabout).
- 5. The screening evaluation matrix was presented and the following comments obtained.
 - a. The local government and public support criteria and ratings were discussed.
 - i. Rich Szpyrka, IRC disagreed with the lack of independent utility as a negative factor for Alternative 6 (Aviation Blvd overpass) since the roadway is in the design phase. Bill Evans noted the main factors for the elimination of Alternative 6 were conflicts within the airport RPZ due to the elevated roadway, impacts to access and splitting of the properties east of SR 5, city and public opposition to an overpass, and the overpass did not have an existing connecting road, hence no independent utility.
 - b. Bill Evans stated that all participants review the local support item and provide positions on the alternatives if they are different than shown on the matrix.
 - i. Following the meeting, Jason Jeffries, City of Vero Beach, provided a response from the City Manager regarding the city's support:
 - Alternative 1, at grade, City Supports
 - Alternative 2, twin intersections, City Opposed, due to impacts to adjacent properties and property owner opposition
 - Alternative 7, deflective left turn, City Neutral, need property owner input prior to offering City position



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- Alternative 8, median u-turn roundabout, City Neutral, need property owner input prior to offering City position
- City Opposed to any overpass alternative.
- c. FEC RR criteria: IRC noted the FEC RR is asking for lane-per-lane closure to match any intersection expansions and asked what city street was being proposed for closure for the Aviation Blvd expansion, since Aviation Blvd is a city street at the railroad crossing. Bill Evans noted the FEC had identified 14th Avenue as a potential crossing closure candidate. The city noted it may have reviewed that crossing in the past and it may have needs to access downtown. It was agreed that the FDOT will reach out to FEC again to obtain clarification.
- d. Right of way criteria: The portion of Aviation Blvd within the airport property is under the regulations of the federal Surplus Property Act of 1944 and Section 163 of the FAA Reauthorization Act of 2018 that provides FAA approval authority on improvements. The FDOT ROW office will be reviewing the ROW requirements for the alternatives and follow-up coordination with the airport is anticipated.
- e. An additional right of way amount of 2 acres is being considered for potential pond sites. The city will be contacted as the pond sitting process is conducted.
- f. The city and county requested copies of the ROW acquisition sheets that will be utilized for the ROW acquisition estimates.
- 6. The four viable alternatives to advance into detailed PD&E analysis are:
 - a. Alternative 1: Conventional Intersection
 - b. Alternative 2: Twin Intersections or One-way Pairs
 - c. Alternative 7: Displaced Left Turn
 - d. Alternative 8: Median U-turn with Roundabout
- 7. Coordination dates with City Council, County Commission, MPO Board prior to workshop was discussed.
 - a. The county noted the best way to coordinate with the county officials is through the MPO Board meeting. The September 13th MPO Board meeting and August 25th MPO TAC meetings will be scheduled.
 - b. The City will get back to FDOT on whether the city council needs to be briefed prior to the public meeting.
- 8. Tentative Public Alternatives Workshop
 - a. November 14th (virtual)
 - b. November 15th (in person) at City Community Center in Pocahontas Park

The attendance report follows on the next page.



RON DESANTIS GOVERNOR

Fort Lauderdale, FL 33309

JARED W. PERDUE, P.E. SECRETARY

Attendance Report:

Meeting title	Project Alternatives Call - 441693-1 SR 5 at Aviation Blvd				
Attended participants	10				
Start time	6/16/23, 9:19:57 AM				
End time	6/16/23, 11:52:45 AM				
Average attendance time	1h 16m 33s				
2. Participants					
Name	First Join	Email			
William Evans	6/16/23, 9:26:19 AM	William.Evans@wginc.com			
Rick Joseph	6/16/23, 9:26:32 AM	Rick.Joseph@wginc.com			
Soderstrum, Mary	6/16/23, 9:28:21 AM	msoderstrum@avconinc.com			
Rich Szpyrka (Guest)	6/16/23, 9:28:21 AM	rszpyrka@ircgov.com			
Will KVRB (Guest)	6/16/23, 9:28:21 AM	whoward@covb.org			
McDermott, Laurie	6/16/23, 9:29:11 AM	Laurie.McDermott@dot.state.fl.us			
Jim Mann	6/16/23, 9:29:11 AM	jmann@ircgov.com			
John Thompson	6/16/23, 9:30:49 AM	JThompson@hanson-inc.com			
Nagole, Vandana	6/16/23, 9:31:17 AM	Vandana.Nagole@dot.state.fl.us			
Jason Jeffries (Guest)	6/16/23, 9:31:21 AM	jjeffries@covb.org			

Vn:wte



PPENDIX D



RON DESANTIS GOVERNOR 3400 West Commercial Boulevard Fort Lauderdale, FL 33309 JARED W. PERDUE, P.E. SECRETARY

TELEPHONE CALL NOTES

DATE: July 27, 2023

TO: George Simons, IRFWCD Consultant

FROM: Bill Evans (WGI)

COPIES: Vandana Nagole (FDOT), David Gunter (IRWCD), Attendees

SUBJECT: Pond Sites and Main Canal Bridge SR 5/US 1 at Aviation Boulevard PD&F

SR 5/US 1 at Aviation Boulevard PD&E Study Indian River County FM: 441693-1-22-02 ETDM: 14475

Attendees: George Simons, Bill Evans, Robert Carballo, Jerry Saval

Purpose:

The purpose of the call was to identify the best method of coordination and introduce the FDOT SR 5/US-1 PD&E Study and build alternatives and gain input related to the design requirements of IRFWCD related to the project pond sites and widening or replacement of the low level bridge over the Main Canal.

Notes:

The project alternatives, pond sites and bridge were briefly presented to George Simons, Consultant for Indian River Farms Water Control District (IRFWCD).

- 1. Permit Application and Review:
 - a. Mr. Simons mentioned that general information can be provided, but that any detailed reviews would require a permit application and associated review fees. It was discussed that the detailed reviews typically happened with final design and what the study team was looking for at this time is clarity on design and permitting requirements as well as identifications of fatal flaw opinions on the concepts.
- 2. Pond Sites
 - a. Three pond sites per PD&E roadway alternative were presented. Each pond will be a dry pond due to the nearby aviation runway located just west of the railroad. The roadway alternative would require one pond that may range in size from 1.6 acres to 2.8 acres depending on the alternative.



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- b. IRCWCD noted typically the ponds are required to outfall to a sub-lateral canal to allow for spillage to be contained outside of the main lateral connections. In the case of this project, there are no sublateral canals in proximity to the proposed improvements. The outfalls would need to be directly connect to the Main Canal. The use of oil separators were discussed to assist in controlling contamination from entering the canal. It was agreed that his would be a practical approach combined with the use of dry detention swales.
- 3. The main canal and bridge was discussed. It is anticipated the existing four span bridge will be replaced with potentially a three span bridge.
 - a. IRFWCD noted the bridge requirements are discussed on a case-by-case basis. David Gunter will provide input on the maintenance requirements and historical major storm observations. A follow up meeting was scheduled for a later date.
 - b. Downstream or east of the bridge is a salinity weir structure.
 - c. Upstream or west of the bridge is a county owned water control structure that collects floating debris and plant material prior to reach the Indian River Lagoon.
 - d. The IRFWCD has model information that can be provided for the peak stage elevation, tailwater elevation and clearance above high water. It was mentioned that the department typically seeks to obtain stage and flow information for the 10, 25, 50 and 100-year recurrence events. Mr. Simmons indicated that they have information on all events except the 50-yr.
 - e. The IRFWCD requires a minimum of 25 ft horizontal clearance between the central spans which is consistent with what the design team is proposing with the three-span structure. Robert Carballo indicated that the three-span concept places a new line of pile 5-ft from the existing intermediate bents on either side of the channel thus creating a larger center span than the 25-ft minimum in the permanent condition. He did mention that during construction the separation between the new intermediate bents and the existing center bent (to be removed) would be less than 25-ft.
 - f. IRFWCD noted, if during construction, clearance is reduced for end bent construction or slope stabilization, sheet pile cofferdams have been allowed one foot above the low water elevation. The top elevation of the cofferdams must be low enough to allow water to flow over the top during the large storm events that result in the higher water levels. This allows better flow and reduces upstream flood levels.
 - g. It was mentioned that IRFWCD will accept rip-rap for bank protection, but does not want it placed along the bottom of the canal beyond the toe of slope since this impacts their ability to dredge sediment build-up. Riprap up and downstream of the bridge will be required, keep the center canal bottom clear of riprap to facilitate maintenance operations, and no riprap placement under the center bridge span.



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- h. Further discussion is needed to identify the IRFWCD bridge maintenance access requirements. Access is open along the north canal bank. Access is available from 12th Avenue to the south canal bank.
- i. The Main Canal right of way (ROW) is approximately 300 ft wide east of the bridge and 30th Street pavement is shown within the IRFWCD right of way. A right of way permit will be required for work on 30th Street. There is some current encroachments into the canal ROW along the south bank.
- j. The two US-1 outfalls are located adjacent to the Main Canal Bridge along the east side of the bridge. Two new outfalls will be constructed, one on each bank of the canal, east of the new bridge.
- 4. Public Alternatives Workshop dates:
 - a. October 10th (virtual) at 5:30 PM
 - b. October 11th (in person) at 5:30 PM in the Vero Beach Community Center
 - c. A meeting announcement will be sent to the IRFWCD.

WE:wte



PPENDIX D-



Florida Department of Transportation

RON DESANTIS GOVERNOR 3400 West Commercial Boulevard Fort Lauderdale, FL 33309 JARED W. PERDUE, P.E. SECRETARY

MEETING NOTES

DATE: August 04, 2023

TO: Attendees

FROM: Bill Evans, Project Manager (WGI)

COPIES: Vandana Nagole, Project Manager (FDOT)

SUBJECT: Pond Sites and Main Canal Bridge

SR 5/US 1 at Aviation Boulevard PD&E Study Indian River County FM: 441693-1-22-02 ETDM: 14475

Attendees:

IRFWCD: George Simons, David Gunter, Ward Gunter WGI FDOT PD&E Team: Bill Evans, Robert Carballo, Jerry Saval

Purpose:

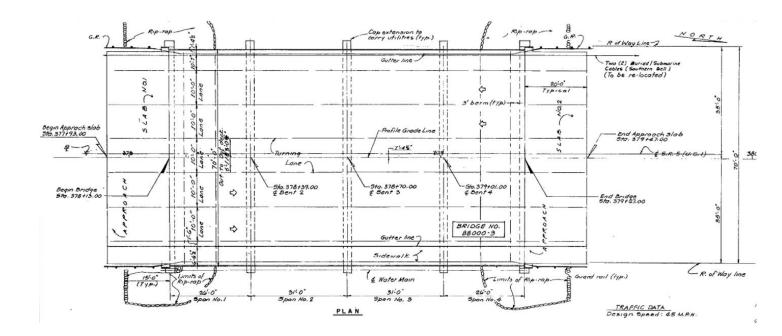
The purpose of the teleconference meeting was to introduce the FDOT SR 5/US-1 PD&E Study build alternatives (Alt. 1, 2, 7 and 8, attached), preliminary pond sites, and bridge replacement concepts to gain input from the Indian River Farms Water Control District (IRFWCD) design requirements.

Notes:

The project alternatives, pond sites and bridge were presented to Indian River Farms Water Control District (IRFWCD).

- 1. Ponds site discussion:
 - a. Each roadway alternative contained three pond site alternatives A, B, and C. One pond (A, B or C) is required for a roadway alternative.
 - b. IRFWCD noted there is a shallow hard pan layer that is deeper on the west side of US-1 and shallower on the east side of US-1. Pond site "B" and "C" locations may encounter the hard pan layer and may need underdrain to dry the ponds in 72 hours. Typically, the underdrains have one foot of cover and one foot of good drainage below the pond. Pond sites "A" are located where the prior natural creek flowed from near the main canal bridge, to the northeast, towards the existing pond site and Indian River Lagoon. Pond sites "A" are more likely to have less hard pan and some soils suitable for fill than sites "B" and "C".

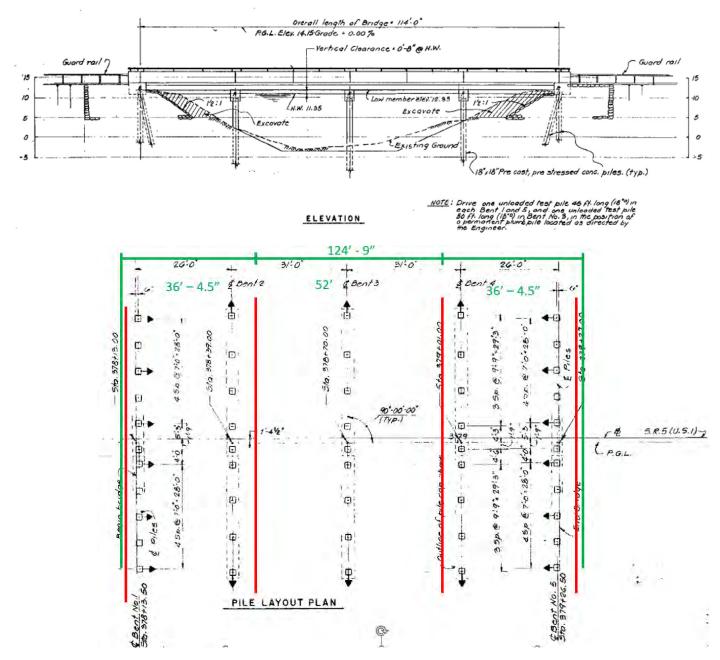
- c. Dry ponds are to recover within 72 hours per Saint John's Water Management District (SJRWMD) permitting requirements.
- d. IRFWCD suggested providing underdrains within the dry ponds to ensure timely storage recovery period and to include the cost in the PD&E alternatives. If during final design a more detailed geotechnical investigation determines that they are not needed then they could be removed at that time from the project. This approach ensures the initial budget accounts for the possible need for an underdrain system.
- e. The petroleum skimmer located just prior to the outfall is preferred by IRFWCD.
- 2. Main Canal and Bridge
 - a. The study team provided a brief overview of the existing bridge configuration as seen below. Reference: FDOT Plans 88010-3510, The existing bridge consists of 4 spans (26ft, 31ft, 31ft, 26ft).



IRFWCD Meeting

August 4, 2023

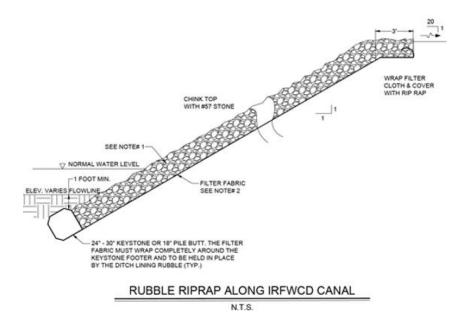
- b. The existing bridge elevation reflects a low member elevation of 12.33-ft NGVD and a highwater elevation of 11.35-ft NGVD. See Bridge Elevation View below.
- c. The study team mentioned that the existing 4 span bridge is anticipated to be replaced with a new 3 span bridge with a 52 ft center span and 36 ft 4.5-inch end spans. The proposed piles would be located approximately five feet away from existing piles. See layout presented during the meeting of the existing bridge pile locations and the proposed new center of pile lines depicted in RED.



IRFWCD Meeting

August 4, 2023

- d. The study team inquired about IRFWCD minimum horizontal clearance requirements for the bridge main span. IRFWCD noted the minimum horizontal clearance should be at least 25 ft.
- IRFWCD noted the center of the bridge should be located on the center of the canal e. cross section. The study team explained that to facilitate construction and maximize the horizontal opening for the main span over the channel a three-span arrangement is being incorporated into the concepts. This would remove the existing center pier. The team also explained that the bridge would need to be constructed in phases to accommodate traffic along SR 5 / US-1. During construction of the first phase of the bridge the new intermediate pier locations will reduce the spacing between the center line of the proposed piles and the existing center intermediate bent piles from 31-ft to 26-ft. Given that the intermediate bent caps are approximately 4-ft in width this would temporarily reduce the horizontal opening between caps to approximately 22-ft during construction. IRFWCD indicated that they could work with the department given that this was a temporary condition during construction and the permanent horizontal opening would be greater the 25-ft (currently estimated to be 48-ft (52-ft minus 4-ft for caps) between front face of intermediate bent to front face of intermediate bent assuming 18-inch prestressed precast concrete piling.
- f. IRFWCD indicated that a sacrificial pile located upstream of the intermediate piers is desired to avoid damaging the bridge structure during debris removal maintenance.
- g. IRFWCD asked if the existing piles would be extracted. The study team indicated that once the bridge is removed the existing intermediate and end bent piles would be cut and removed 2 ft below permanent canal bottom grade.
- h. IRFWCD does not want any soil bench under the deck along the embankment slopes into the water as depicted in the existing bridge cross section above. They indicated that a sloped riprap is preferred with a pile cap and liner and presented the detail below during the meeting. IRFWCD will provide canal riprap armor and liner detail sheet.

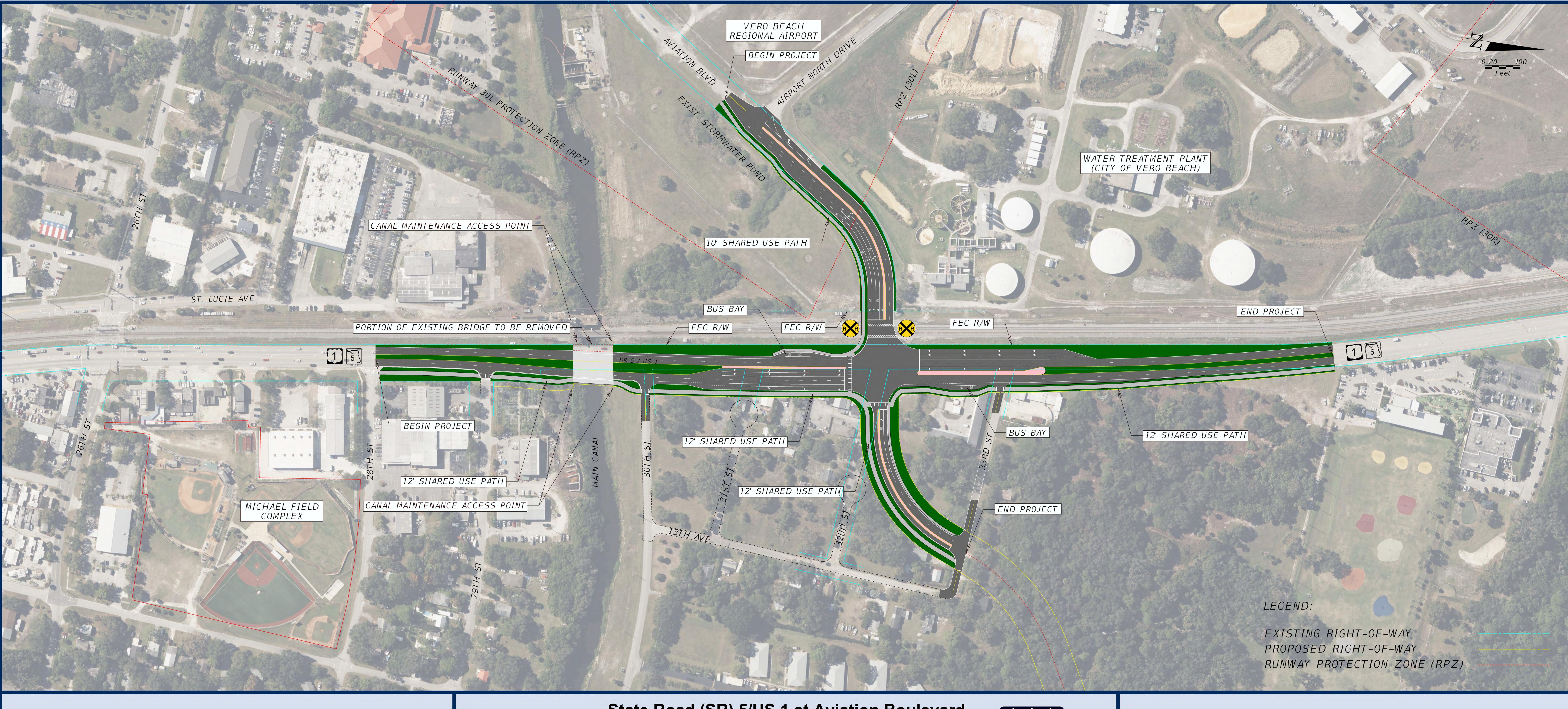


i. The study team asked about the design water elevations for the bridge crossing and reviewed the existing bridge elevations and the bridge hydraulics sheet information from the 88010-3510 plans. The study team indicated that there appeared to be discrepancies between the information on IRFWCD's website data, FEMA Maps and the BHRS information. IRFWCD reviewed their model information during the meeting and noted the following elevations below. They confirmed that they do not have data on the 50 yr storm event.

i.	Storm	NGVD	NAVD
ii.	100 yr.	9.8	8.3
iii.	25 yr.	8.7	7.2
iv.	10 yr.	7.9	6.4

- j. The highwater elevation of 11.35-ft NGVD noted on the existing bridge elevations was discussed with the assumption that it accounted for potential effects of storm surge. IRFWCD will run the flood model to evaluate storm surge to assist with determining the low member elevations. It was agreed that the existing low member elevation of 12.33-ft NGVD should be maintained. They indicated that they have not seen elevations in the canal reach those levels in the past.
- k. The study team asked when IRFWCD could complete their modeling analysis of the water elevations since the study team had an upcoming Alternatives Workshop with the Public on October 10 and 11, 2023. IRFWCD indicated that they would try an have some results by the end of September.
- 1. IRFWCD indicated that the salinity weir located in the main canal approximately 4000 feet east of US-1 has a top elevation of approximately 1.5 NGVD or 0.0 NAVD.
- m. The potential construction sequencing of the bridge was discussed along with the implications of the existing 12-inch watermain on the east side of the structure. IRFWCD concurred that the existing bridge mounted utilities should be removed and a new utility lines horizontally directional drilled under the canal to facilitate construction of the bridge and associated sequencing.
- n. IRFWCD desires access to each quadrant of the bridge for maintenance. A width of 15 feet is desired. Along the northbound US-1 approach to the canal, a 15 ft wide access was requested to access the canal. Details of this access will be discussed further after the preferred alternative has been selected.
- 3. Right of Way (ROW)
 - a. The existing canal right of way is approximately 300 feet wide and has the existing pavement of 30th Street located within a portion of canal ROW. IRFWCD noted this ROW condition should be investigated for ownership or existing agreements. They suggested reaching out to Richard Glass (Glass Land Acquisition) who they have coordinated with in the past.

WE:wte



Alternative 1 - Conventional Intersection SR 5 at Aviation Boulevard

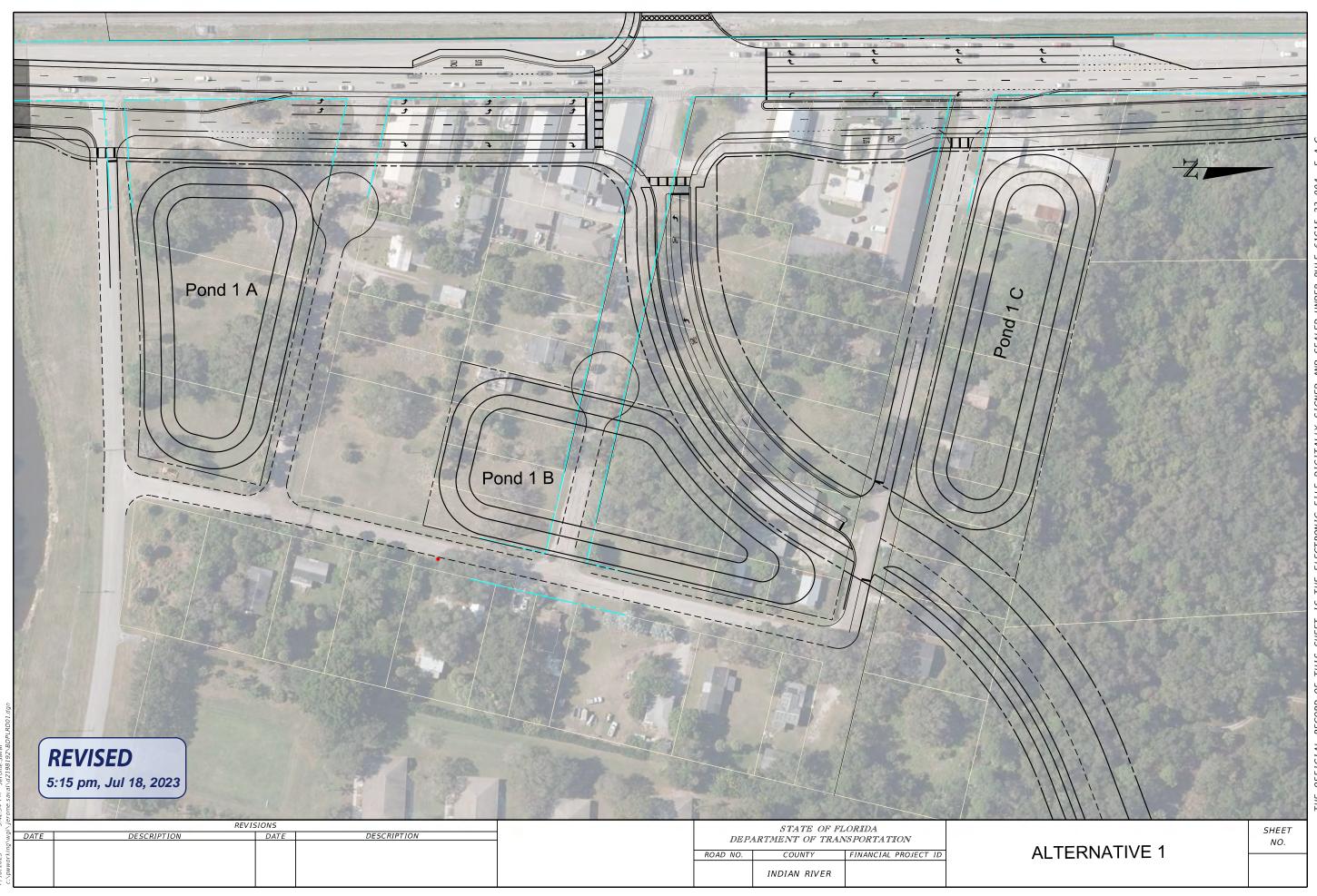
State Road (SR) 5/US 1 at Aviation Boulevard

Project Development and Environment (PD&E) Study Indian River County, Florida Financial Project ID: 441693-1-22-02 Efficient Transportation Decision Making (ETDM) Number: 14475



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June 6th, 2023



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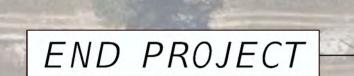


Alternative 2 - One-Way Pair **SR 5 at Aviation Boulevard**

State Road (SR) 5/US 1 at Aviation Boulevard

Project Development and Environment (PD&E) Study Indian River County, Florida Financial Project ID: 441693-1-22-02 Efficient Transportation Decision Making (ETDM) Number: 14475





12' SHARED USE PATH

LEGEND:

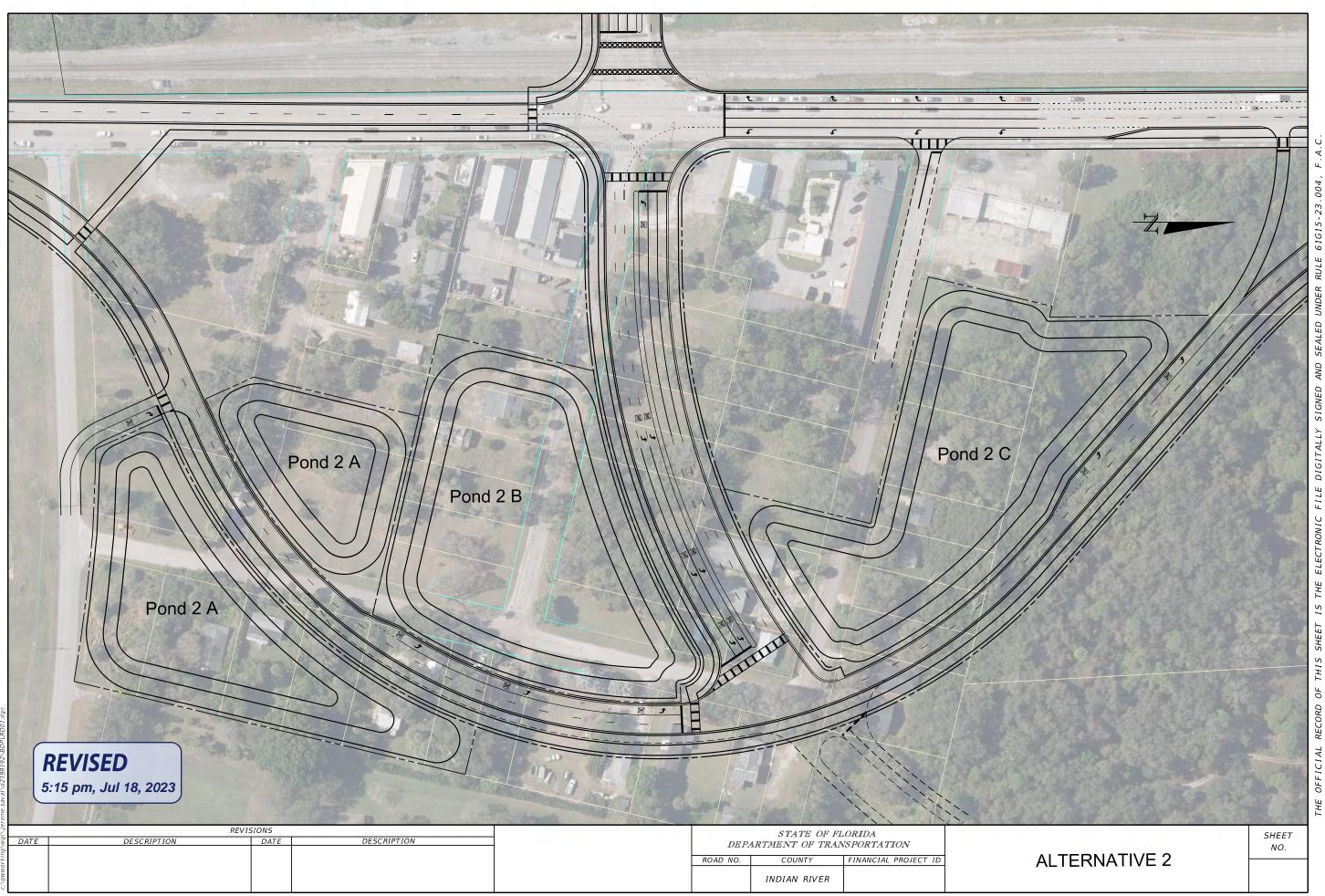
EXISTING RIGHT-OF-WAY PROPOSED RIGHT-OF-WAY RUNWAY PROTECTION ZONE (RPZ)

15

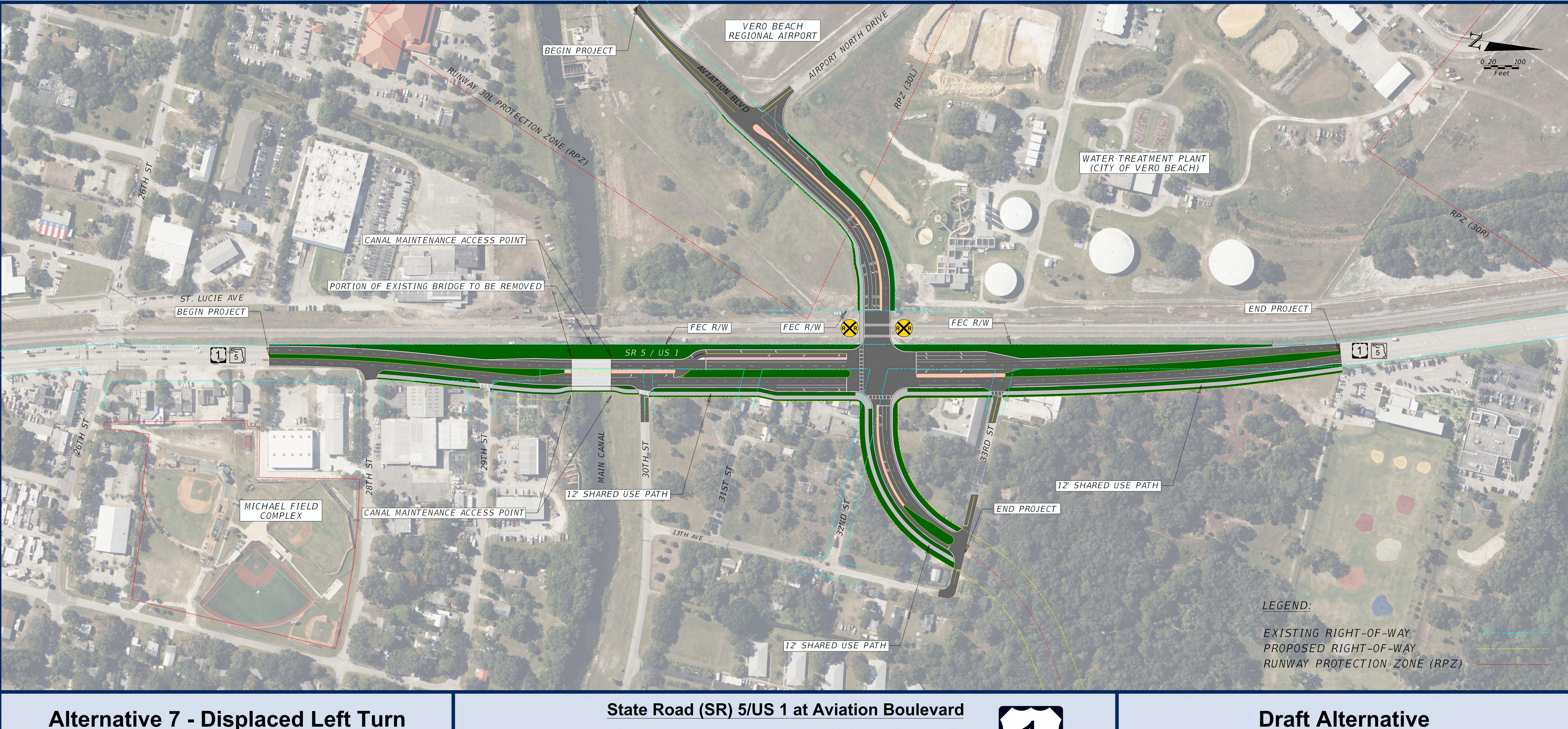
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June 6th, 2023



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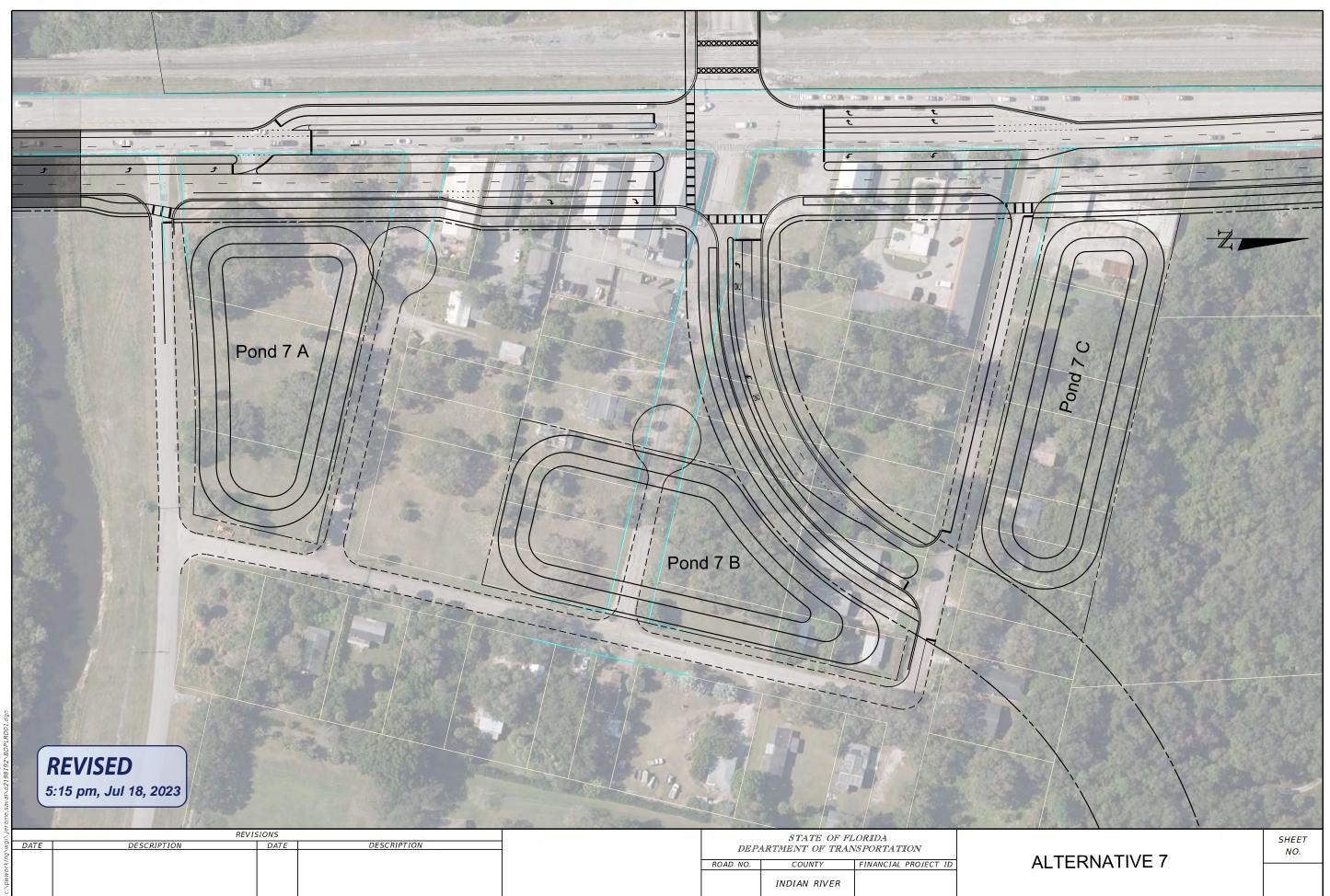


Alternative 7 - Displaced Left Turn Intersection **SR 5 at Aviation Boulevard**

Project Development and Environment (PD&E) Study Indian River County, Florida Financial Project ID: 441693-1-22-02 Efficient Transportation Decision Making (ETDM) Number: 14475

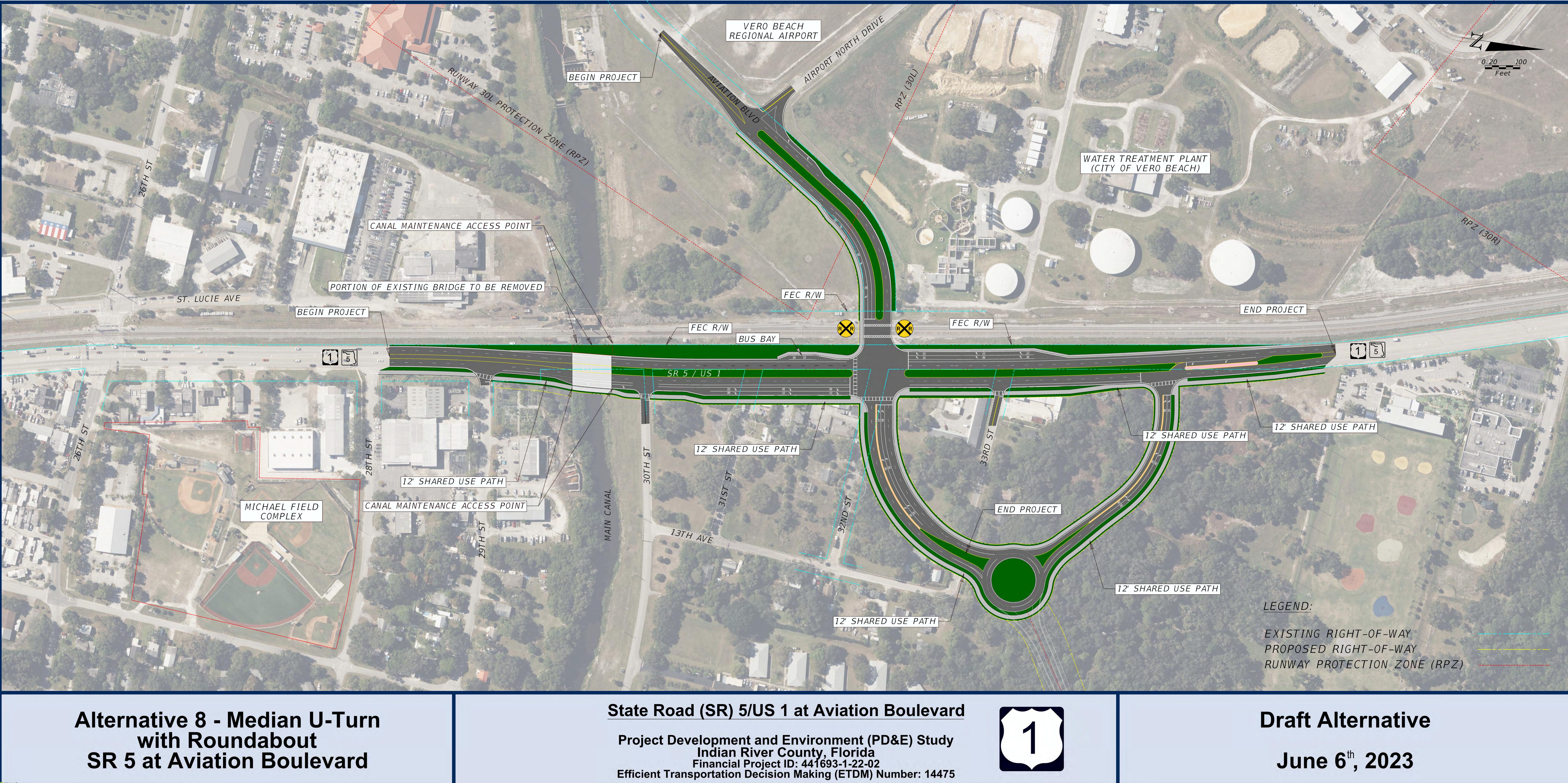


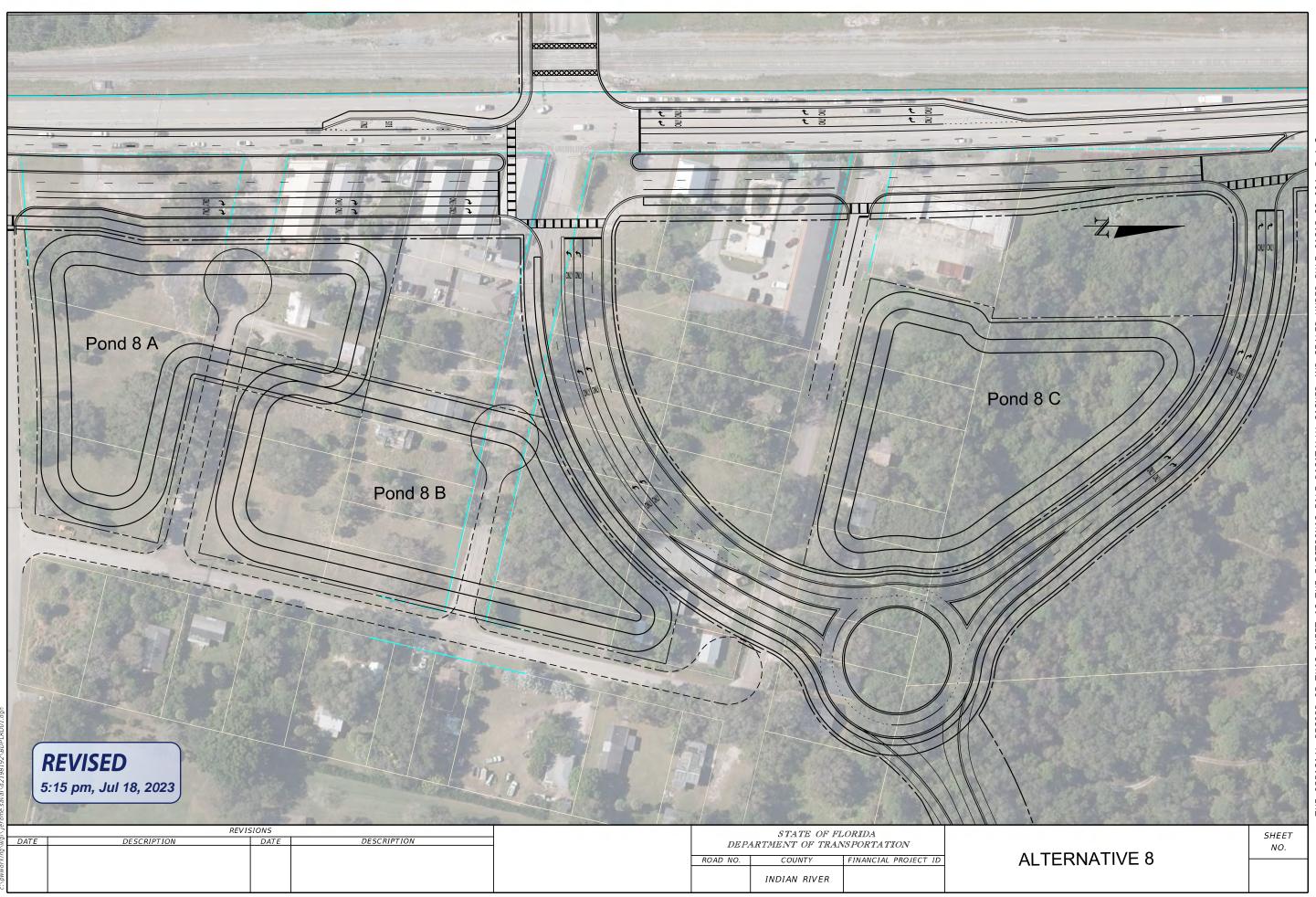
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ST. JOHNS' KIVER WATER MANAGEMENT DISTRICT Post Office Box 1429 Palatka, Florida 32078-1429

PERMIT NO. ______ 40-057-0027 ______ DATE ISSUED ______NOVENBER 10, 1987

A PERMIT AUTHORIZING:

CLEARING ALL UNDERBRUSH AND BRAZILIAN PEPPER TREES FOR PROPOSED RETENTION/DETENTION PONDS TO SERVE A 21 ACRE SITE TO BE KNOWN AS INDIAN RIVER MEMORIAL HOSPITAL.

LOCATION:

Section 36, Township 32 South, Range 39 East Indian River County

ISSUED TO:

INDIAN RIVER MEMORIAL HOSPITAL 1000 36TH ST. VERO BEACH, FL 32960 ATTN: MICHAEL O'GRADY

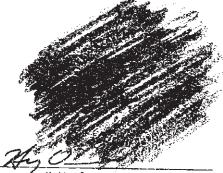
Permittee agrees to hold and save the St. Johns River Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

This permit does not convey to permittee any property rights nor any rights or privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This Permit may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes:

PERMIT IS CONDITIONED UPON:

See Conditions on Attached "Exhibit A", dated NOVEMBER 10, 1987



(Assistant Secretary)

HENRY DEAN

AUTHORIZED BY: St. Johns River Water Management District

Department of Resource Management Governing Board By; JEFF ELLEDGE

"EXHIBIT A"

CONDITIONS FOR ISSUANCE OF PERMIT NUMBER 40-061-0027

INDIAN RIVER MEMORIAL HOSPITAL

DATED NOVEMBER 10, 1987

- 1. Prior to lot or unit sales, or construction, whichever occurs first, the District must receive the Permittee's proposal of an entity to be responsible for operation and maintenance of the permitted system. With the designation of the proposed entity, the District must also receive a draft document enumerating enforceable affirmative obligations on the entity to properly operate and maintain the system for its expected life. The draft document may consist of a showing of compliance with the requirements of a public body that will result in that body's acceptance of the system for maintenance, articles of incorporation for a condominium or homecwner's association, plat or deed restrictions apportioning maintenance responsibility, or in the event the property is being developed for a corporate permittee's corporate use without contemplating sales of lots or units, a letter signed by the corporate officer authorized to bind the corporation stating the corporation's acceptance of permanent maintenance responsibility. Prior to the District's acceptance of a completed system, the submitted document must be approved by the District and recorded, if the latter is appropriate. Failure to submit the designated entity and the appropriate document will result in the permittee remaining personally liable for carrying out maintenance and operation of the permitted system.
- All construction, operation and maintenance shall be as set forth in the plans, specifications and performance criteria as approved by this permit.
- District authorized staff, upon proper identification, will have permission to enter, inspect and observe the system to insure conformity with the plans and specifications approved by the permit.
- 4. Turbidity barriers must be installed at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the proposed work. Turbidity barriers must remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. Thereafter the permittee will be responsible for the removal of the barriers.
- 5. The operation phase of the permit shall not become effective until a Florida Registered Professional Engineer certifies that all facilities have been constructed in accordance with the design approved by the District. Within 30 days after completion of construction of the surface water management system, the permittee shall submit the certification or one set of plans which reflect the surface water management system as actually constructed and notify the District that the facilities are ready for inspection and approval. Upon approval of the completed surface water management system, the permittee shall request transfer of the permit to the responsible entity approved by the District.
- 6. If any other regulatory agency should require revisions or modification to the permitted project, the District is to be notified of the revisions so that a determination can be made whether a permit modification is required.

40-051-0027

- 7. Within thirty (30) days after sale or conveyance of the permitted surface water management system or the land on which the system is located, the owner in whose name the permit was granted shall notify the District of such change of ownership. Transfer of this permit shall be in accordance with the provisions of Chapter 373, Florida Statutes, and Chapters 40C-4, 40C-40, and 40C-41, Florida Administrative Code. All terms and conditions of this permit shall be binding upon the transferee.
- 8. This permit for construction will expire 60 days from the date of issuance.
- 9. The proposed clearing must be performed as per plans received by the District on October 6, 1987.
- 10. Permanent vegetative cover must be established on all exposed surfaces until the master drainage system is constructed.

NOTICE OF RIGHTS

1. A party whose substantial intertests are determined has the tight to request an administrative heating by filing a written petition with the St. Johns River Water Management Distriet (District) within 14 days of teceipt of notice of the Disttire's intent to geant of drny a permit applieation by mailing it to the Disttiet of by presenting the written petition at the District Governing Board meeting in which action is proposed to be taken regatding the application, whichever is later.

2. A party whose substantial interests are determined has the right to request on administrative hearing by filing a written petition within 21 days of tecript of notite of final District action on a permit application, if the Governing Board took action inconsistent with the notice of intent to grant of deny the permit application. or if that substantially interested party did nor receive notice of the District's intent to grant or deny the permit application.

3. A substantially interested party has the tight to a formal administrative heating pursuant to Section 120.57(1). Florida Statutes, where there is a dispute between the District and the party regarding an issue of material fact. A petition first a formal heating must comply with the requirements set forth in Section 28-5.201. Florida Administrative Code, and Section 40C-1.11, Florida Administrative Code.

4. A substantially interested party has the tight to an informal hearing p-itsuant to Sertion 120.57(2), Florida Statutes, where no material facts are in disputy. A petition for an informal heating must comply with the requirements set forth in Section 40C-1.11, Florida Administrative Cod=

5. Filing of a petition for an administrative heating occurs upon delivery at the District headquarters or when the petition, properly addressed and stamped, is postmarked.

6. Failure to file a petition for an administrative heating within the tequisite time frame shall constitute a waivet of the right 10 an administrative heating.

7. The tight to an administrative lieating and the televant procedures to be followed are governed by Chapter 120. Florida Statutes, and Chapters 40C-1 and 28-5. Florida Administrative Code.

8. Any substantially affected person who elaires that final action of the Disttict constitutes an unconstitutional

taking of property without just compensation may seek review of the artion in titcuit court pursuant to Section 373.617. Florida Statutes, and the Florida Rules of Civil Procedutes, by filing an action within 90 days of the rendering of the final District artion.

9. Pursuant to Section 120.68, Elorida Statutes, a patty who is adversely affected by final District action may seek teview of the action in the district court of appeal by filing a notice of appeal pursuant to Fla.R App.P. 9.110 within 30 days of the tendering of the final District action.

10. A party to the proceeding who rlaims that a District order is inconsistent with the provisions and purposes of Chapter 373. Florida Statutes, may seek review of the order putsuant to Section 373.114, Florida Statutes, by the Land and Watet Adjudicatory Commission (Commission) by filing a request for review with the Commission and serving a copy on the Department of Environmental Regulation and any person named in the order within 20 days of the rendering of the District order. However, if the order to be teview rd is determined by the Commission within 60 days after receipt of the request for review to be of statewide or regional significance, the Commission may accept a request for teview within 30 days of the cendeting of the order.

11. A District action of order is considered "tendered" after it is signed by the Chairman of the Governing Board on behalf of the District and is filed by the District Clerk.

12. Failute to observe the relevant time frames for filing a petition for judicial teview as described in paragraphs #8 and #9 or for Commission review as described in paragraph #10 will result in waivet of that right to review.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing Notice of Rights has been furnished by U.S. Mail to INDIAN RIVER MEMORIAL HOSPITAL 1000 36TH STREET

VERO BEACH, FL 32960

4:00P.M.

this 19TH _ day of __

19 87

unise Keno

NOVEMBER

Dannise Kemp, Ditector Division of Records St. Johns Watet Management District Post Office Box 1429 Palatka, FL 32078-1429 (904) 328-8321

40-061-0027



APPEND	X D-5
	St. Johns Riv Modered to Water Management Dis
.	Kirby B. Green III, Executive Director • David W. Fisk, Assistant Exec 4049 Reid Street • P.O. Box 1429 • Palatka, FL 32178-1429 • (386) 329-4500 JAN 0 5 2004 JAN 0 5 2004

CHAPTER 40C-42, F.A.C.

PERMIT NO. <u>42-061-86755-3</u> A PERMIT AUTHORIZING:

DATE ISSUED: December 22, 2003

CARTER ASSOC., INC

Construction and operation of a Stormwater Management System with stormwater treatment by retention and wet detention for Alcohope of the Treasure Coast and adjacent facilities, a 28.35-acre project to be constructed as per plans received by the District on November 26, 2003.

LOCATION:

Section(s):

Township(s): 32S

Range(s):

39E

Indian River County

Health Systems of Indian River Inc. 1000 36th Street Vero Beach, FL 32960

36

This document shall serve as the formal permit for construction and operation of stormwater management system in accordance with Chapter 40C-42, F.A.C., issued by the staff of the St. Johns River Water Management District on December 22, 2003. This permit is subject to the standard limiting conditions and other special conditions approved by the staff. These conditions are enclosed.

This permit is a legal document and should be kept with your other important records. The permit requires the submittal of an As-built certification and may require submittal of other documents. All information provided in compliance with permit conditions should be submitted to the District office from which the permit was issued. An As-built certification form is attached. Complete this form within 30 days of completion of construction of the permitted system, including all site work.

Upon receipt of the As-built certification, staff will inspect the project site. Once the project is found to be in compliance with all permit requirements, the permit may be converted to its operation phase and responsibility transferred to the operation and maintenance entity in accordance with Chapter 40C-42.028, F.A.C.

Permit issuance does not relieve you from the responsibility for obtaining permits from any federal, state, and/or local agencies asserting concurrent jurisdiction over this work. Please note that if dewatering is to occur during any phase of construction or thereafter and the surface

	 	GOVERNIN	G BOARD-			
Duane Ottenstroe JACKSONV		19, VICE CHAIRMAN DPKA	R. Clay Albright,	SECRETARY		Iam, TREASURER
W. Michael Branch FERNANDINA BEACH	i. Sowinski LANDO	William	Кепт	Ann T. M BUNNE	loore	Susan N. Hughes JACKSONVILLE

water pump(s), wells, or facilities are capable of withdrawing one million gallons of water per day or more, or an average of 100,000 gallons per day or more over a year, and any discharge is to be off-site, you must apply for and obtain a Consumptive Use Pennit (40C-2) from the District prior to starting the dewatering. Please contact the District if you need additional information or application materials.

Permittee agrees to hold and save the St. Johns River Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part thereof.

This permit does not convey to Permittee any property rights nor any rights or privileges other than those specified herein, nor relieve the Permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by Permittee hereunder shall remain the property of the Permittee.

This permit may be revoked, modified, or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes.

In the event you sell your property, the permit will be transferred to the new owner, if we are notified by you within thirty days of the sale. Please assist us in this matter so as to maintain a valid permit for the new property owner.

Thank you for your cooperation, and if this office can be of any further assistance to you, please do not hesitate to contact us.

Fariborz Zanganeh, Supervising Prof Engineer - Palm Bay

Department of Water Resources

Enclosures: As-built Certification Form Exhibit A

cc: District Permit File

Agent: Carter Assoc Inc 1708 21st St Vero Beach, FL 32960

Consultant: Carter Assoc Inc 1708 21st St Vero Beach, FL 32960







4049 Reid Street • P.O. Box 1429 • Palatka, FL 32178-1429 • (386) 329-4500 On the Internet at floridaswater.com.

July 12, 2011

Indian River County 1801 27th St Vero Beach, FL 32960

SUBJECT: Permit Number 40-061-123418-1 Aviation Boulevard Roadway Widening - 43rd Avenue to US Highway 1

Dear Sir/Madam:

Enclosed is your general permit as authorized by the staff of the St. Johns River Water Management District on July 12, 2011.

This permit is a legal document and should be kept with your other important documents. The attached MSSW/Stormwater As-Built Certification Form should be filled in and returned to the Palatka office within thirty days after the work is completed. By so doing, you will enable us to schedule a prompt inspection of the permitted activity.

In addition to the MSSW/Stormwater As-Built Certification Form, your permit also contains conditions which require submittal of additional information. All information submitted as compliance to permit conditions must be submitted to the Palatka office address.

Permit issuance does not relieve you from the responsibility of obtaining permits from any federal, state and/or local agencies asserting concurrent jurisdiction for this work.

Please be advised that the District has not published a notice in the newspaper advising the public that it is issuing a permit for this proposed project. Publication, using the District form, notifies members of the public (third parties) of their rights to challenge the issuance of the general permit. If proper notice is given by publication, third parties have a 21-day time limit on the time they have to file a petition opposing the issuance of the permit. If you do not publish, a party's right to challenge the issuance of the general permit extends for an indefinite period of time. If you wish to have certainty that the period for filing such a challenge is closed, then you may publish, at your own expense, such a notice in a newspaper of general circulation. A copy of the form of the notice and a list of newspapers of general circulation is attached for your use.

In the event you sell your property, the permit will be transferred to the new owner, if we are notified by you within thirty days of the sale and if you provide the information required by 40C-1.612, F.A.C. Please assist us in this matter so as to maintain a valid permit for the new property owner.

W. Leonard Wood, Chairman FERNANDINA BEACH Douglas C. Bournique VERO REACH GOVERNING BOARD Hans G. Tanzier III, vice chairman Maryam H

JACKSONVILLE Tiels Chuck Drake VILLE ORLANDO

Lad Daniels

JACKSONVILLE

Maryam H. Ghyabi, TREASURER ORMOND BEACH Richard G. Hamann GAINESVILLE John A, Miklos, sechetary Orlando Arlen N, Jumper FORT McCOY Thank you for your cooperation, and if this office can be of any further assistance to you, please do not hesitate to contact us.

Sincerely,

and White

Janet White Regulatory Support Specialist I Division of Regulatory Support

Enclosures: Permit with As-built Certification Form Notice of Rights List of Newspapers for Publication

cc: District Permit File

Consultant: Brian Good Kimley-Horn & Associates Inc 601 21st St Ste 300 Vero Beach, FL 32960

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT Post Office Box 1429 Palatka, Florida 32178-1429

PERMIT NO. <u>40-061-123418-1</u> DATE ISSUED: <u>July 12, 2011</u> PROJECT NAME: <u>Aviation Boulevard Roadway Widening - 43rd Avenue to US Highway 1</u>

A PERMIT AUTHORIZING:

Construction of a Surface Water Management System with stormwater treatment by wet detention and retention for Aviation Boulevard Roadway Widening - 43rd Avenue to US Highway 1, a 87.65 - acre project to be constructed as per plans received by the District on January 14, 2010, revised sheets receive on March 12, 2010, and additional sheets A through H received on June 14, 2011.

LOCATION:

Section(s):	33, 34, 35	Township(s):	32S	Range(s):	39E
	3, 4	10110111111	33S		39E

Indian River County

Indian River County 1801 27th St Vero Beach, FL 32960

Permittee agrees to hold and save the St. Johns River Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

This permit does not convey to permittee any property rights nor any rights or privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This permit may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes:

PERMIT IS CONDITIONED UPON:

See conditions on attached "Exhibit A", dated July 12, 2011

AUTHORIZED BY: St. Johns River Water Management District Department of Environmental Resource Management

(Service Center Director - Palm Bay) John Juilianna

By:







4049 Reid Street • P.O. Box 1429 • Palatka, FL 32178-1429 • (386) 329-4500 On the Internet at floridaswater.com.

October 28, 2015

Kollen Cobb All Aboard Florida - Operations, LLC 2855 S Le Jeune Rd Ste 100 Coral Gables, FL 33134-6612

SUBJECT: General Permit 144190-1

Dear Ms. Cobb:

The District has received your notice to use a general permit. Based on the submitted information, the proposed activity qualifies for a General Environmental Resource Permit pursuant to section 62-330.447, Florida Administrative Code, provided it is constructed and operated in accordance with that general permit and the general and special conditions set forth in section 62-330.405 and 62-330.447, Florida Administrative Code (attached).

Please be advised that the St. Johns River Water Management District will not publish a notice in the newspaper advising the public that it has determined your project qualifies for this general permit. Newspaper publication, using the District's notice form, notifies members of the public of their right to challenge the use of the general permit. If proper notice is given by newspaper publication, then there is a 21-day time limit for someone to file a petition for an administrative hearing to challenge the use of the permit. To close the point of entry for filing a petition, you may publish (at your own expense) a one-time notice of the District's decision in a newspaper of general circulation within the affected area as defined in Section 50.11 of the *Florida Statutes*. If you do not publish a newspaper notice to close the point of entry, the time to challenge your use of the permit will not expire and someone could file a petition even after your project is constructed.

A copy of the notice form and a partial list of newspapers of general circulation are attached for your convenience. However, you are not limited to those listed newspapers. If you choose to close the point of entry and the notice is published, the newspaper will return to you an affidavit of publication. In that event, it is important that you either submit a scanned copy of the affidavit by emailing it to <u>compliancesupport@sjrwmd.com</u> (preferred method) or send a copy of the original affidavit to:

Margaret Daniels, Bureau Chief Bureau of Regulatory Support 4049 Reid Street Palatka, FL 32177

A copy of your application was transmitted to the U.S. Army Corps of Engineers for review. This

John A. Miklos, chairman orlando Douglas C. Bournique vero beach GOVERNING BOARD

Maryam H. Ghyabi

ORMOND BEACH

Fred N. Roberts Jr., VICE CHAIRMAN OCALA Douglas Burnett Mary

ST. AUGUSTINE

Chuck Drake, secretary ORLANDO

Ron Howse

Carla Yetter, treasurer FERNANDINA BEACH George W. Robbins JACKSONVILLE authorization to use a general environmental resource permit does not obviate the need for obtaining all necessary permits or approval from other agencies.

Sincerely,

M. Danus

Margaret Daniels, Bureau Chief Bureau of Regulatory Support

Enclosures: Notice of Rights List of Newspapers for Publication

cc: District Permit File

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT GENERAL ENVIRONMENTAL RESOURCE PERMIT

PERMIT NO: 144190-1

DATE ISSUED: October 28, 2015

PROJECT NAME: All Aboard Florida - D08 Fiber Optic Cable Installation

A PERMIT AUTHORIZING:

Use of the General Permit for Installation, Maintenance, Repair, and Removal of Utility Lines for installation of 67 miles of fiber optic cable to be constructed as per plans received by the District on October 22, 2015.

LOCATION:

Section(s):	31, 36	Township(s):	23S	Range(s):	35E
	17, 28, 20, 6,		24S		36E
	7, 33, 21, 18		28S		38E
	31, 30		32S		39E
	35, 10, 4, 15,		25S		36E
	22, 26, 3, 23		29S		38E
	10, 9, 26, 4,		30S		38E
	36, 14, 23,		33S		40E
	15, 35		26S		36E
	5, 33, 21, 16,		31S		39E
	28, 8, 17, 34,		26S		37E
	6		27S		37E
	11, 14, 10, 3		28S		37E
	31, 30, 19 12, 1, 13		33S		39E
	8, 17, 6, 33,				
	7, 28, 21, 29,				
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	31, 32, 30,				
	18 19				

18, 19 28, 16, 8, 9,

34, 5, 27, 21

24, 11, 2, 13,

25, 3, 14

2, 12, 1, 13, 24

Indian River; Brevard County

Receiving Water Body:

Indian River Lagoon

ISSUED TO:

All Aboard Florida - Operations, LLC 2855 S Le Jeune Rd Ste 100 Coral Gables, FL 33134-6612

The District received your notice to use a General Environmental Resource Permit pursuant to Chapter 62-330, Florida Administrative Code (F.A.C.) on October 7, 2014.

Based on the forms, design plans, and other documents submitted with your notice, it appears that the project meets the requirements for a General Environmental Resource Permit. Any

activities performed under a General Environmental Resource Permit are subject to the general conditions and special conditions specified in rules 62-330.405 and, , F.A.C. respectively (attached). Any deviations from these conditions may subject you to enforcement action and possible penalties.

Please be advised that the General Environmental Resource Permit expires 5 years from the date on which the notice of intent to use a General Environmental Resource Permit was received by the District.

A copy of your notice also has been sent to the U.S. Army Corps of Engineers (USACOE) for review. The USACOE may require a separate permit. Failure to obtain this authorization prior to construction could subject you to enforcement action and possible penalties.

AUTHORIZED BY: St. Johns River Water Management District Division of Regulatory Engineering and Environmental Services

By: Suban Moor.

Susan Moor Supervising Regulatory Scientist





Executive Order 11988 Floodplain Management 42 Fed. Reg. 26951 (Issued 5/24/77)

By virtue of the authority vested in me by the Constitution and statutes of the United States of America, and as President of the United States of America. in furtherance of the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.), the National Flood Insurance Act of 1968, as amended (42 U.S.C. 4001 et seq.), and the Flood Disaster Protection Act of 1973 (Public Law 93-234, 87 Star. 975), in order to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative, it is hereby ordered as follows:

Section 1. Each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety. health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for (1) acquiring, managing. and disposing of Federal lands and facilities; (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

Section 2. In carrying out the activities described in Section 1 of this Order, each agency has a responsibility to evaluate the potential effects of any actions it may take in a floodplain; to ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management; and to prescribe procedures to implement the policies and requirements of this Order, as follows:

(a)

(1) Before taking an action, each agency shall determine whether the proposed action will occur in a floodplain--for major Federal actions significantly affecting the quality of the human environment, the evaluation required below will be included in any statement prepared under Section 102(2)(C) of the National Environmental Policy Act. This determination shall be made according to a Department of Housing and Urban Development (HUD) floodplain map or a more detailed map of an area, if available. If such maps are not available, the agency shall make a determination of the location of the floodplain based on the best available information. The Water Resources Council shall issue guidance on this information not later than October 1, 1977.

(2) If an agency has determined to, or proposes to, conduct, support, or allow an action to be located in a floodplain. the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains. If the head of the agency finds that the only practicable alternative consistent with the law and with the policy set forth in this Order requires siting in a floodplain, the agency shall, prior to taking action, (i) design or modify its action in order to minimize potential harm to or within the floodplain, consistent with regulations issued in accord with Section 2(d) of this Order, and (ii) prepare and circulate a notice containing an explanation of why the action is proposed to be located in the floodplain.

(3) For programs subject to the Office of Management and Budget Circular A-95, the agency shall send the notice, not to exceed three pages in length including a location map, to the state and areawide A-95 clearinghouses for the geographic areas affected. The notice shall in-elude:
(i) the reasons why the action is proposed to be located in a floodplain; (ii) a statement indicating whether the action conforms to applicable state or local floodplain protection standards and (iii) a list of the alternatives considered. Agencies shall endeavor to allow a brief comment period prior to taking any action.

(4) Each agency shall also provide opportunity for early public review of any plans or proposals for actions in floodplains, in accordance with Section 2(b) of Executive Order No. 11514, as amended, including the development of procedures to accomplish this .objective for Federal actions whose impact is not significant enough to require the preparation of an environmental impact statement under Section 102(2)(C) of the National Environmental Policy Act of 1969, as amended.

(b) Any requests for new authorizations or appropriations transmitted to the Office of Management and Budget shall indicate, if an action to be proposed will be located in a floodplain, whether the proposed action is in accord with this Order.

(c) Each agency shall take floodplain management into account when formulating or evaluating any water and land use plans and shall require land and water resources use appropriate to the degree of hazard involved. Agencies shall include adequate provision for the evaluation and consideration of flood hazards in the regulations and operating procedures for the licenses, permits, loan or grants-in-aid programs that they administer. Agencies shall also encourage and provide appropriate guidance to applicants to evaluate the effects of their proposals in floodplains prior to submitting applications for Federal licenses, permits, loans or grants. (d) As allowed by law, each agency shall issue or amend existing regulations and procedures within one year to comply with this Order. These procedures shall incorporate the Unified National Program for Floodplain Management of the Water Resources Council, and shall explain the means that the agency will employ to pursue the nonhazardous use of riverine, coastal and other floodplains in connection with the activities under its authority. To the extent possible, existing processes, such as those of the Council on Environmental Quality and the Water Resources Council, shall be utilized to fulfill the requirements of this Order. Agencies shall prepare their procedures in consultation with the Water Resources Council, the Federal Insurance Administration, and the Council on Environmental Quality, and shall update such procedures as necessary.

Section 3. In addition to the requirements of Section 2, agencies with responsibilities for Federal real property and facilities shall take the following measures:

(a) The regulations and procedures established under Section 2(d) of this Order shall, at a minimum, require the construction of Federal structures and facilities to be in accordance with the standards and criteria and to be consistent with the intent of those promulgated under the National Flood Insurance Program. They shall deviate only to the extent that the standards of the Flood Insurance Program are demonstrably inappropriate for a given type of structure or facility.

(b) If, after compliance with the requirements of this Order, new construction of structures or facilities are to be located in a floodplain, accepted floodproofing and other flood protection measures shall be applied to new construction or rehabilitation. To achieve flood protection, agencies shall, wherever practicable, elevate structures above the base flood level rather than filling in land.

(c) If property used by the general public has suffered flood damage or is located in an identified flood hazard area, the responsible agency shall provide on structures, and other places where appropriate, conspicuous delineation of past and probable flood height in order to enhance public awareness of and knowledge about flood hazards.

(d) When property in floodplains is proposed for lease, easement, right-of-way, or disposal to non-Federal public or private parties, the Federal agency shall (1) reference in the conveyance those uses that are restricted under identified Federal, State or local floodplain regulations; and (2) attach other appropriate restrictions to the uses of properties by the grantee or purchaser and any successors, except where prohibited by law; or (3) withhold such properties from conveyance.

Section 4. In addition to any responsibilities under this Order and Sections 202 and 205 of the Flood Disaster Protection Act of 1973, as amended (42 U.S.C. 4106 and 4128), agencies which guarantee, approve, regulate, or insure any financial transaction which is related to an area located in a floodplain shall, prior to completing action on such transaction, inform any private parties participating in the transaction of the hazards of locating structures in the floodplain. **Section 5.** The head of each agency shall submit a report to the Council on Environmental Quality and to the Water Resources Council on June 30, 1978, regarding the status of their procedures and the impact of this Order on the agency's operations. Thereafter, the Water Resources Council shall periodically evaluate agency procedures and their effectiveness. **Section 6.** As used in this Order:

(a) The term "agency" shall have the same meaning as the term "Executive agency" in Section 105 of Title 5 of the United States Code and shall include the military departments; the directives contained in this Order, however, are meant to apply only to those agencies which perform the activities described in Section 1 which are located in or affecting floodplains.
(b) The term "base flood" shall mean that flood which has a one percent or greater chance of occurrence in any given year.

(c) The term "floodplain" shall mean the lowland and relatively flat areas adjoining inland and coastal waters including floodprone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year.

Section 7. Executive Order No. 11296 of August 10, 1966, is hereby revoked. All actions, procedures, and issuances taken under that Order and still in effect shall remain in effect until modified by appropriate authority under the terms of this Order.

Section 8. Nothing in this Order shall apply to assistance provided for emergency work essential to save lives and protect property and public health and safety, performed pursuant to Sections 305 and 306 of the Disaster Relief Act of 1974 (88 Stat. 148, 42 U.S.C. 5145 and 5146).

Section 9. To the extent the provisions of Section 2(a) of this Order are applicable to projects covered by Section 104 (h) of the Housing and Community Development Act of 1974. as amended (88 Stat. 640, 42 U.S.C. 5304(h)), the responsibilities under those provisions may be assumed by the appropriate applicant, if the applicant has also assumed, with respect to such projects, all of the responsibilities for environmental review, decision making, and action pursuant to the National Environmental Policy Act of 1969, as amended.

The White House, President Carter May 24, 1977



Department of Transportation Office of the Secretary

Washington, D.C.

NRNFR

DOT 5650.2

4-23-79

PPENDIX D-9

SUBJECT: FLOODPLAIN MANAGEMENT AND PROTECTION

- 1. PURPOSE. This Order prescribes policies and procedures for ensuring that proper consideration is given to the avoidance and mitigation of adverse floodplain impacts in agency actions, planning programs, and budget requests.
- 2. AUTHORITY. This Order is issued pursuant to the following statutes and executive order:
 - The National Environmental Policy Act of 1969 (NEPA) a. (P.L. 91-190) establishes a national policy to, among other things, "...promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man.... " NEPA requires preparation of an environmental impact statement (EIS) for any major Federal action significantly affecting the quality of the human environment. DOT 5610.1B, Procedures for Considering Environmental Impacts, of 9-30-74, Attachment 2, paragraph 11, requires that information on flood hazards, if relevant, be included in the EIS.
 - The National Flood Insurance Act of 1968, Title XIII of b. the Housing and Urban Development Act of 1968 (P.L. 90-448, 8-1-68), provides previously unavailable flood insurance protection to property owners in flood-prone areas. Section 1302(c) of the Act stipulates that "the objectives of a flood insurance program should be integrally related to a unified national program for flood plain management...."
 - Executive Order 11988 Floodplain Management, promulgated c. on 5-24-77, links the need to protect lives and property with the need to restore and preserve natural and beneficial floodplain values. Federal agencies are directed to avoid conducting, allowing, or supporting

actions on the base floodplain unless the agency finds that the base floodplain is the only practicable alternative location, and to issue procedures for implementing the requirements of the Executive Order.

- d. The Flood Disaster Protection Act of 1973 (P.L. 93-234, 87 Stat. 975) requires the purchase of flood insurance as a condition of receiving any form of federal or federally-related financial assistance for acquisition or construction purposes with respect to insurable buildings and mobile homes within an identified special flood, mudslide, or flood-related erosion hazard area.
- 3. <u>POLICY</u>. It is the policy of the Department of Transportation (DOT) (1) to encourage a broad and unified effort to prevent uneconomic, hazardous, or incompatible use and development of the Nation's floodplains, (2) to avoid, where practicable, encroachments by Departmental actions, (3) to minimize the adverse impacts which such actions may have on base floodplains, including direct or indirect support for development, and (4) to restore and preserve natural and beneficial floodplain values that are adversely affected by such actions.
- 4. DEFINITIONS.
 - a. Action the construction or reconstruction of a federal or federally-financed, licensed, or approved transportation improvement (including any relocation housing built or moved to a new site); and the acquisition, management, or disposition of Departmental lands and facilities.
 - b. Base Flood that flood having a one percent chance of being exceeded in any given year (commonly known as a 100-year flood).
 - c. Base Floodplain the area which would be inundated by a base flood.
 - d. Encroachment an action within the limits of the base floodplain.

e.

f. Facility - any element of the built environment other than a walled or roofed building.

mental Policy Act of 1969 (ref: DOT 5610.1B).

- f. Flood or Flooding a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland and/or tidal waters, and/or the unusual and rapid accumulation or runoff of surface waters from any source.
- g. Flood of Record the largest historical flood event which has been reliably determined and recorded.
- h. Floodplain the lowland areas adjoining inland and coastal waters which are periodically inundated by flood waters, including flood-prone areas of offshore islands.
- i. Floodproofing the incorporation of design features in, or modifications to, individual structures and facilities, their sites and their contents to protect against structural failure, to keep water out, or to reduce effects of water entry, so that threats to human life and property are reduced.
- j. Minimize to reduce to the smallest practicable amount or degree.
- k. Natural and Beneficial Floodplain Values include but are not limited to: natural moderation of floods, water quality maintenance, groundwater recharge, fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, and forestry.
- 1. Negative Declaration a determination by the responsible official that a particular action does not significantly affect the quality of the human environment.
- m. Practicable capable of being done within natural, social, and economic constraints.

- n. Restore to establish a setting or environment in which the natural and beneficial values impacted by the transportation agency action can again operate. In some situations, a transportation improvement may represent a positive enhancement or negligible use of natural and beneficial floodplain values.
- o. Risk the adverse consequences associated with the probability of flooding attributable to an encroachment, specifically including the potential for property loss and the hazard to life.
- p. Significant Encroachment an encroachment resulting in one or more of the following construction or flood-related impacts:
 - (1) a considerable probability of loss of human life;
 - (2) likely future damage associated with the encroachment that could be substantial in cost or extent, including interruption of service on or loss of a vital transportation facility; and
 - (3) a notable adverse impact on "natural and beneficial floodplain values", as defined in item k, above.

It is not contemplated that detailed design would be necessary in order to determine whether there is a significant encroachment.

q. Support Base Floodplain Development - to encourage, allow, serve, or otherwise facilitate additional development in a base floodplain. Direct support results from an action on the base floodplain. Indirect support results from actions out of the base floodplain.

5. APPLICATION.

a. Paragraph 3 of this Order applies to all actions affecting base floodplains. The other provisions apply, except as indicated in subparagraphs b and c below.

DOT 5650.2 4-23-79

- b. The provisions of this Order do not apply to or alter decisions, approvals, or authorizations which were given by the Department or its elements pursuant to directives in effect before the date of this Order's publication in the Federal Register, nor do they apply to transportation projects where:
 - (1) the final EIS is filed with the Environmental Protection Agency within 12 months after the date of this Order's publication in the Federal Register; or any public hearings have been held and a negative declaration has been approved, within 120 days after that publication date; or
 - (2) the only step being taken in the floodplain is the relocation of persons into existing housing units, except that potential occupants shall be advised at the appropriate stage if the relocation housing is located in a base floodplain and be offered alternative comparable housing at their option.
- c. DOT elements may develop categories of projects which are not subject to the requirements of this Order due to their negligible potential, alone or cumulatively, for resulting in adverse impacts associated with the occupancy or modification of floodplains, or the direct or indirect support of floodplain development.
- 6. <u>FLOODPLAIN IDENTIFICATION</u>. Base floodplain limits shall be determined and encroachments delineated for reasonable alternative actions through the following sources:
 - a. Federal Insurance Administration (FIA) maps shall be used as the primary reference for establishing base floodplain limits (obtain maps from the U.S. Department of Housing and Urban Development sources listed in 43 FR 6050).
 - (1) A Flood Insurance Rate Map (FIRM) or Flood Insurance Study Report (FIS) shall be consulted first.

- (2) If a FIRM or FIS is not available, a Flood Hazard Boundary Map (FHBM) may be available from the same sources. These approximate maps shall be used to determine if the alternatives under consideration are clearly out of the floodplain. If one or more of the alternatives appears to be near or inside the indicated base floodplain boundary, more detailed information on the floodplain boundary shall be developed or obtained.
- b. If a FIRM, FIS, or floodplain delineation from other agency sources as listed in 43 FR 6049-51 is not available and current, or if the site is near or inside the FHBM boundaries, base floodplain limits shall be established by the best available method meeting acceptable professional engineering standards.
- c. The delineation of floodplain limits shall take proper account of previous alterations to the floodplain by flood retention works or other elements of the built environment.
- 7. <u>PUBLIC INVOLVEMENT</u>. Where any of the alternatives identified for accomplishing an action are proposed in the base floodplain, opportunity shall be provided for early public review and comment. The following steps shall be made a part of existing review procedures (including the EIS review process) as appropriate to the nature of the encroachment.
 - a. Public hearing presentations shall include identification of encroachments.
 - b. If one or more alternatives under consideration include significant encroachments, any public notices, public hearing notices, notices offering an opportunity for a hearing, and notices of availability for negative declarations shall make reference to that fact.
- 8. ENVIRONMENTAL REVIEW PROCESS. Whenever appropriate, the procedures established in DOT 5610.1B, Procedures for Considering Environmental Impacts, of 9-30-74, shall be the vehicle through which implementation of this policy is documented.

- a. Draft environmental review documents (draft EISs $\frac{1}{}$ and any preliminary versions of negative declarations) shall cover the items below for all alternatives involving encroachments:
 - (1) any risk to, or resulting from, the transportation action;
 - (2) the impacts on natural and beneficial floodplain values; and
 - (3) the degree to which the action provides direct or indirect support for development in the base floodplain.
- b. Draft environmental review documents shall also include sufficient discussion to permit an initial review of the adequacy of methods proposed to minimize harm, and, where practicable, to restore and preserve the natural and beneficial floodplain values affected.²/ In most cases, conceptual design (as opposed to detailed engineering studies) should be sufficient to help establish the adequacy of mitigation measures. Commitments to later compliance with special flood-related design criteria or the imposition, in advance, of protective conditions may be warranted in some situations.
- c. Final environmental review documents (final EISs and final versions of negative declarations) reflecting a decision on the preferred alternative shall clearly identify the floodplain concerns and impacts associated with that alternative and cover the items listed in subparagraphs a and b above.

Guidance and examples regarding methods for minimizing harm to floodplains and for restoring and preserving the natural and beneficial floodplain values affected can be found in 43 FR 6047-48.

DOT elements shall follow a rule of reason in determining how much floodplain information needs to be incorporated in draft EISs circulated during a six-month period after the date of the Order's publication in the Federal Register.

- 9. ONLY PRACTICABLE ALTERNATIVE FINDING. Where it is proposed to conduct, support, or allow an action involving a significant encroachment, the final EIS or final version of the negative declaration shall reflect consideration of alternatives to avoid such encroachment, and to reduce its adverse base floodplain impacts.
 - a. A preferred alternative involving a significant encroachment shall not be approved unless the responsible official can make a finding, in writing, that the proposed significant encroachment is the only practicable alternative, together with:
 - A description of why the proposed action must be located in the floodplain, including the alternatives considered and why they were not practicable.
 - (2) A statement indicating that the action conforms to applicable State and/or local floodplain protection standards.
 - b. The finding shall be incorporated into, or attached to, the final environmental review document.
 - c. On occasion, a proposal for which an environmental review document is unnecessary may nevertheless have the potential for causing a significant encroachment. Under such circumstances, the above written finding shall still be made and included with the project records.
 - d. The above written finding, within or together with any final EIS prepared for the proposed action, shall be provided to State and areawide clearinghouses and other interested parties.
 - e. A determination that a given action outside of a floodplain is or is not practicable requires a careful balancing and application of individual judgment. While such balancing should include the full range of environmental, social, economic, and engineering considerations, special weight should be given to floodplain management concerns.

10. PROGRAM DIRECTIVES

a. DOT elements which have programs potentially affecting base floodplains shall include adequate provision consistent with this Order for the evaluation and consideration of flood hazards and measures to avoid or minimize floodplain impacts. As appropriate, modifications shall be made to regulations and operating procedures for licenses, permits, and loan or grant-inaid programs to accomplish this purpose. These changes should be submitted to the Assistant Secretary for Policy and International Affairs for review within 120 days after the date of this Order's publication in the Federal Register.

- b. Each DOT element shall have the option of applying this Order directly to its programs and activities within 120 days of its date of publication in the Federal Register or of issuing its own floodplain regulations or procedures, consistent with this Order. Such regulations or procedures shall be submitted within the same 120-day period, to the Assistant Secretary for Policy and International Affairs for concurrence.
- c. DOT elements may elect to develop project-related engineering design standards reflecting flood hazard and floodplain considerations, for their individual programs.
- 11. <u>BUDGET REQUESTS</u>. Any requests for new authorizations or appropriations transmitted to the Office of Management and Budget shall indicate, if a specific proposal will involve significant encroachment upon a floodplain, that the proposed action is in accord with Executive Order 11988.
- 12. FEDERAL REAL PROPERTY AND FACILITIES. Departmental elements with responsibilities for Federal real property and facilities shall take the following measures, in addition to those specified in the other sections of this Order.
 - a. The construction of walled or roofed buildings or other facilities shall be consistent with the intent of the standards and criteria promulgated under the National Flood Insurance Program, and shall deviate only to the extent that the standards of the Flood Insurance Program are demonstrably inappropriate for the given case.
 - b. If, after compliance with the requirements of this Order, new or rehabilitated buildings are to be located in a floodplain, accepted floodproofing and other flood protection measures shall be applied. To achieve flood

protection, DOT elements shall elevate the buildings above the base flood level, wherever practicable, rather than filling in land.

- c. If property used by the general public has suffered flood damage or is located in an identified flood hazard area, the responsible DOT element shall provide on buildings or other places, where appropriate, conspicuous delineation of the level of the base flood and flood of record (if larger), in order to enhance public awareness of flood hazards.
- d. When property in floodplains is proposed for lease, easement, right-of-way, or disposal to nonfederal parties, the responsible DOT element shall indicate if a flood hazard exists and (1) identify in the conveyance those uses that are restricted under Federal, State, or local floodplain regulations; and (2) attach other restrictions consistent with this Order to the uses of properties by the grantee or purchaser and any successors, except as prohibited by law; or (3) withhold such properties from conveyance.

13. RESPONSIBILITIES.

- a. The Assistant Secretary for Administration and Heads of Operating Administrations shall assure that the requirements of this Order are met and that appropriate steps are taken to implement it.
- b. The Assistant Secretary for Policy and International Affairs shall oversee the implementation of the policy set forth in paragraph 3, review and concur in any floodplain procedures of the operating administrations, and recommend any modifications of procedures that may be appropriate. The Assistant Secretary shall consult periodically with the Council on Environmental Quality, the Water Resources Council, and FIA to evaluate the Department's implementation of these policies and shall be responsible for the preparation of any required reports on floodplain management, including such monitoring of the floodplain evaluation process as may be appropriate.

DOT 5650. 2 4-23-79

- 14. UNIFIED NATIONAL PROGRAM FOR FLOODPLAIN MANAGEMENT. This Order incorporates by reference "A Unified National Program for Flood Plain Management," a report to the Congress by the Water Resources Council, July 1976 (available from the U.S. Government Printing Office, Documents Department, Washington, D.C. 20402, Order Number GPO 052-045-00047, price \$1.95), and future revisions.
- 15. FLOOD DISASTER PROTECTION ACT. The Flood Disaster Protection Act contains certain provisions which can affect DOT programs. Basically, the Act mandates the purchase of flood insurance as a condition of receiving Federal assistance for the construction or repair of buildings located in areas having special flood hazards as identified by FIA. The requirement also applies when Federal assistance is being used to purchase equipment which will be housed in buildings which are located in such special flood hazard areas. Flood-prone communities may arrange for flood insurance through FIA's National Flood Insurance Program. DOT elements shall take steps to assure full compliance with this requirement (set forth in section 202(a) of the Act), where applicable.
- 16. EMERGENCY PROVISIONS. Nothing in this Order shall prevent the timely provision of assistance or funds for emergency repairs essential to save lives and to protect property and public health and safety. However, a reasonable effort to comply with the Order shall be made during and/or after the emergency period.

FOR THE SECRETARY OF TRANSPORTATION:

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Alan Butchman Deputy Secretary



APPENDIX D-10

Bridge No.

880085

Analysis Method: LRFR-LRFD

Location

SR5 (US1) over Main Canal, Indian County

FDOT Bridge Load Rating Summary Form (Page 1 of 1)

Description Concrete prestressed panels with CIP deck (4 spans, 26-31-31-26)

Rating Type	Rating Type	Gross Axle Weight (tons)	Moment/Shear,	/Service	Dead Load Factor	Live Load Factor	Live Load Distrib. Factor (axles)	Rating Factor	Span No Girder No., Interior/Exterior, %Span Length	RF·Weight (tons)
Level	Vehicle	Weight	Member Type	Limit	DC	ш	LLDF	RF	Governing Location	RATING
Inventory	HL93	36	Prestressed	Strength, Moment	1.25/0.90	1.75	NA	0.944	Bending at middle of Spans 2 and 3	34.0
Operating	HL93	36	Prestressed	Strength, Moment	1.25/0.90	1.35	NA	1.224	Bending at middle of Spans 2 and 3	44.1
Permit	FL120	60	Prestressed	Strength, Moment	1.25/0.90	1.35	0.499	1.083	Bending at middle of Spans 2 and 3	65.0
Permit Max Span	FL120	60	Prestressed	Strength, Moment	1.25/0.90	1.35	0.499	1.083	Bending at middle of Spans 2 and 3	65.0
	SU2	17	Prestressed	Strength, Moment	1.25/0.90	1.35	0.499	2.706	Bending at middle of Spans 2 and 3	46.0
	SU3	33	Prestressed	Strength, Moment	1.25/0.90	1.35	0.499	1.514	Bending at middle of Spans 2 and 3	50.0
	SU4	35	Prestressed	Strength, Moment	1.25/0.90	1.35	0.499	1.393	Bending at middle of Spans 2 and 3	48.8
Legal	C3	28	Prestressed	Strength, Moment	1.25/0.90	1.35	0.499	2.133	Bending at middle of Spans 2 and 3	59.7
	C4	36.7	Prestressed	Strength, Moment	1.25/0.90	1.35	0.499	1.501	Bending at middle of Spans 2 and 3	55.0
	C5	40	Prestressed	Strength, Moment	1.25/0.90	1.35	0.499	1.492	Bending at middle of Spans 2 and 3	59.7
	ST5	40	Prestressed	Strength, Moment	1.25/0.90	1.35	0.499	1.737	Bending at middle of Spans 2 and 3	69.5
Emergency Vehicle	EV2	28.75	Member Type	Limit Test	NA	NA				-1
(EV)	EV3	43	Member Type	Limit Test	NA	NA				-1

Original Design Load	H20		Performed by:	Soheila Sadough		Date:	06/04/23
Rating Type, Analysis	LRFR-LRFD		Checked by:			Date:	
Distribution Method	AASHTO Formula				This item has bee signed and sealed		
Impact Factor	33.0%	(axle loading)			Cohoilo		L
FL120 Gov. Span Length	31.0	(feet)			Soheila	Sadoug	n
Minimum Span Length	26.0	(feet)			on the date adjac of this document		
Recommended Posting	At/Above legal loads.	Posting Not Required.	P.E.	Seal	sealed and the signature must be verified electronic copies.		
Recommended SU Posting	99	(tons)					
Recommended C Posting	99	(tons)					
Recommended ST5 Posting	99	(tons)					
Owner	01 State Highway Age	ency					
Location	Neither interstate tra reasonable access to		Comments:				
EV Posting	No. EV posting is not FAST Act does not ap	recommended. The					
Floor Beam Present?	No						
Segmental Bridge?	No						
Project No. & Reason	FIN No.	Update					
Plans Status	Built						

This 01-01-2022 summary follows the FDOT Bridge Load Rating Manual (BLRM), and the FDOT BMS Coding Guide. *Recommended SU Posting levels for Florida SU trucks adequately restricts AASHTO SU trucks; see BLRM Chapter 7.

TABLE OF CONTENTS

TABLE OF CONTENTS	1
SECTION 1 – EXECUTIVE SUMMARY	2
SECTION 2 – BRIDGE DESCRIPTION	3
SECTION 3 – LOAD RATING PARAMETERS AND CRITERIA	5

APPENDIX A – Bridge Plans APPENDIX B – Existing Load Rating APPENDIX C – Load Rating Computations

SECTION 1 – EXECUTIVE SUMMARY

The objective of this evaluation is to load rate Bridge No. 880085, SR5 (US1), over the Main Canal located in Indian County. The bridge consists of four spans with simple precast slabs and a continuous cast-in-place deck. The structure was designed in the late 1970s using the AASHTO Standard Specifications of 1973 and built in 1980. The total length of the bridge is 114 feet, with four spans of 26-31-31-26 feet. The bridge width is 70 feet.

The load rating is performed using the LRFR methodology. The load rating evaluation is performed using spreadsheets. The analysis for live loads is performed using MIDAS Civil. The rating is based on the design drawings included in Appendix A. The design drawings do not show details related to the prestressing of the precast slab panels, and this information was gathered from the existing load ratings in 1990 and included in Appendix B. The rating is performed for the HL-93 design load at the inventory and operating rating, the Florida permit vehicle FL120, and the legal loads, SU2, SU3, SU4, C3, C4, C5, and ST5.

The results for the load rating analysis of the superstructure for the design load (HL-93) are as follows:

For the HL-93 design vehicle, the LRFR rating factor at inventory level is 0.944, with a load carrying capacity of 34.0 tons, and is controlled by bending at the middle of the interior spans 2 and 3 at the strength limit state. The operating rating is 1.224 with a load carrying capacity of 44 tons and occurs at the same location as the inventory rating. The FL-120 LRFR operating rating factor is 1.083, with a load carrying capacity of 39 tons. All ratings for the legal loads are adequate. The details of the load rating analysis are presented in Appendix C.

SECTION 2 – BRIDGE DESCRIPTION

Bridge No. 880085, SR5 (US1) over Main Canal is in Indian County and consists of four simply supported spans. The superstructure consists of flat slabs with prestressed slab units with a cast-in-place concrete toping. The structure was designed in the late 70's using the AASHTO Standard Specifications of 1973 and built in 1980. The total length of the bridge is 114 ft with four spans of 26-32-31-26 feet. The bridge width is 70 ft.

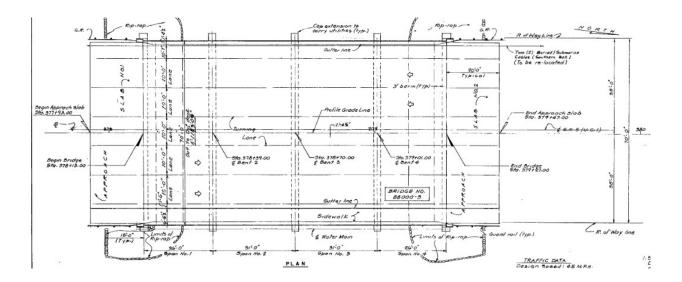


Figure 2-1: Plan View

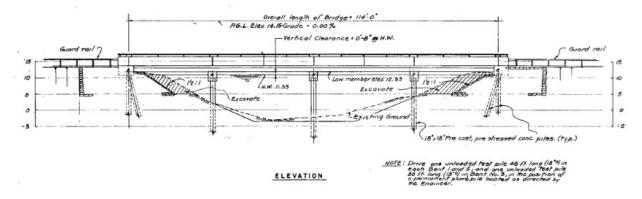


Figure 2-2: Elevation View

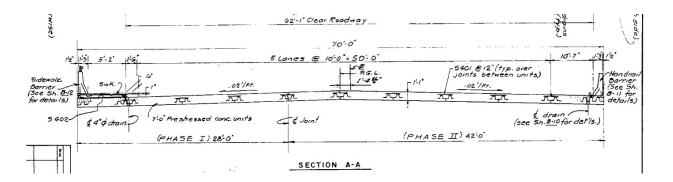


Figure 2-3: Cross Section

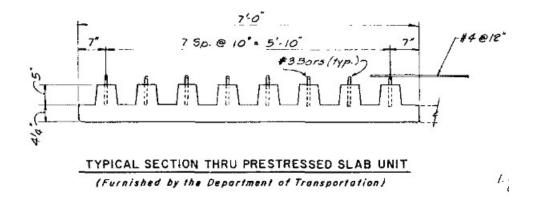


Figure 2-3: Typical Prestresses Slab Unit

The existing bridge drawings do not show the prestressed reinforcement for the slab unit. The information used for this rating was gathered from the existing load rating.

Additional details of the bridge are included in the design drawings in Appendix A.

SECTION 3 – LOAD RATING PARAMETERS AND CRITERIA

Standards and Specifications

- AASHTO Manual for Bridge Evaluation, 3er Edition (2018).
- FDOT Structures Manual, January 2023.
- FDOT Bridge Load Rating Manual, January 2022.
- American Association of State Highway and Transportation Officials (AASHTO) LRFD Bridge Design Specifications – 9th Edition

Load Rating Method

• Load and Resistance Factor Rating (LRFR).

Load Rating Program Used

- Leap Bridge Concrete (prestress beams)
- In house spreadsheets (Concrete T beams)
- Midas Civil for live load analysis

Loadings

٠	Dead Loads (DC):	
	Concrete, Structural:	150 pcf
	Barriers and sidewalks:	Weight evaluated within calcs

- Live Load (LL+IM): Design Loading: Permit Loading: Legal Loads:
- Material Properties Reinforcing Steel: Reinforcing Strands: Concrete: Deck: Precast panels:

HL-93 FL 120 SU2, SU3, SU4, C3, C4, C5 and ST5.

Grade 60 ½" diameter, Grade 270

3.4 ksi 5.0 ksi

Bridge Plans

The design plans are provided in Appendix A.

Summary of Load Rating

The rating is controlled by bending at the strength limit state at the middle of the interior spans 2 and 3.

Level	Vehicle	Limit	RF
Inventory	HL93	Service	1.084
Inventory	HL93	Strength	0.944
Operating	HL93	Strength	1.224
	SU2	Strength	2.706
	SU3	Strength	1.514
	SU4	Strength	1.393
Legal	C3	Strength	2.133
	C4	Strength	1.501
	C5	Strength	1.492
	ST5	Strength	1.737
Permit	FL120	Strength	1.083

The load rating computation details are shown in Appendix C.



APPENDIX D-11

Structure ID: 880085 DISTRICT: D4 - Ft. Lauderdale

INSPECTION DATE: 5/5/2021 FZPZ

BY:	VOLKERT, INC.	STRUCTURE NAME:	Not recorded
OWNER:	1 State Highway Agency	YEAR BUILT:	1980
MAINTAINED BY:	1 State Highway Agency	SECTION NO .:	88 010 000
STRUCTURE TYPE:	5 Prestressed Concrete - 01 Slab	MP:	7.053
LOCATION:	0.75 Mile North of SR-60	ROUTE:	00001
SERV. TYPE ON:	5 Highway-pedestrian	FACILITY CARRIED:	US-1 (SR-5)
SERV. TYPE UNDER:	5 Waterway	FEATURE INTERSECTED:	MAIN CANAL VERO BEACH

FUNCTIONALLY OBSOLETE

STRUCTURALLY DEFICIENT

TYPE OF INSPECTION: Regular NBI

DATE FIELD INSPECTION WAS PERFORMED: ABOVE WATER: 5/5/2021 UNDERWATER: 5/24/2021

SUFFICIENCY RATING: 96.5 HEALTH INDEX: 97.35

Structure ID: 880085

DISTRICT: D4 - Ft. Lauderdale

INSPECTION DATE: 5/5/2021 FZPZ

OWNER: MAINTAINED BY: STRUCTURE TYPE:	VOLKERT, INC. 1 State Highway Agen 1 State Highway Agen 5 Prestressed Concret 0.75 Mile North of SR-	cy e - 01 Slab	STR	UCTURE NAME: YEAR BUILT: SECTION NO.: MP: ROUTE:	Not recorded 1980 88 010 000 7.053 00001
2007.000	5 Highway-pedestrian			CILITY CARRIED:	
THIS BRIDGE CONTA	INS FRACTURE CRITIC	CAL COMPONE	INTS		
THIS BRIDGE IS SCO	UR CRITICAL				
	IFIES DEFICIENCIES V	VHICH REQUIR	E PROMPT COP	RRECTIVE ACTION	١
FUNCTIONALLY OBS	OLETE		STRUCTURALL	Y DEFICIENT	
TYPE OF INSPECTION:	Regular NBI				
DATE FIELD INSPECTION	WAS PERFORMED:	ABOVE WATE	R: 5/5/2021	UNDERWATER:	5/24/2021
OVERALL NBI RATINGS:					
DECK: 7 SUPERSTRUCTURE: 7			ANNEL: 7 Minor	-	
SUBSTRUCTURE: 7			ILVERT: N N/A (RATING: 96.5	NDI)	
PERF. RATING: 0	-		INDEX: 97.35		
FIELD PERSONNEL / TITL	E / NUMBER:				INITIALS
Hughes, Scott - CBI (#0037	9) (lead)			Digitally signed	by scott p hughes
Bias, Josh - Bridge Inspecto	scot	tph	ughe	PS DN: c=US, o=VC ou=A01427E00 Date: 2021.06.0	DLKERT INC, 000169DA37A1E1000016C5, cn=scott p hughes 8 06:35:28 -04'00'
Jensen, Denise R CBI Div		,			
Redden, Michael D Assist					
Mauer, Jarred - Assistant U	w Bridge Inspector/Dive	er			
REVIEWING BRIDGE INSP	PECTION SUPERVISOR	र:			
Rucks, Edward - CBI (#002	73)	Fc	Iward I		Jigitally signed by Edward L Rucks JN: C=US, 0=VOLKERT INC, 100 C = 000 C = 0000 C = 000 C = 000 C = 000 C = 000 C
CONFIRMING REGISTERE	ED PROFESSIONAL EN				ou=A01427D00000168DE38331200004C7A, cn=Edward L Rucks Date: 2021.06.08 06:37:14 -04'00'
DeReus, Scott - Professiona 1408 N. Westshore Blvd., S Certificate of Authorization I Tampa Florida 33607	uite 600) Volkert, Inc.	•	lly signed tt DeReu	
SIGNATURE:					
DATE:)21.06.08	101 0 001 55
			'09:32:	:51 -04'0	J SSIONAL ENIL
This item has been digitally sign	ed and sealed by Scott De	Reus on the date			annum mer.

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.

Structure ID: 880085

DISTRICT: D4 - Ft. Lauderdale

INSPECTION DATE: 5/5/2021 FZPZ

All Elements

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	8099 / 4	PS Conc Slab (Sonovoid)	7967	99.97	0	•	2	0.03	0	•	7969 (SF)
0	1080 / 4	Delamination/Spall/Patched Area	0		0		2	100	0		2 (SF)
0	510/4	Wearing Surfaces	7116	99.72	20	0.28	0		0		7136 sq.ft
0	3210/4	4 Del/Spall/Patch/Pot(Wear Surf)	0		20	100	0	•	0		20 sq.ft

Element Inspection Notes:

8099/4 Note: There is a concrete wearing surface over the slab units.

DECK UNDERSIDE: CS3 1080: Slab Unit 4-9 west edge, 7-1/2ft. from Bent 4 has a 20in. x 2-1/2in. x 1in. spall - NO CHANGE SINCE 2018 INSPECTION. (2SF)

CORRECTIVE ACTION TAKEN: The dirt and debris in the shoulder area has been removed.

- 1080/4 Refer to Parent Element
- 510/4 The concrete wearing surface has longitudinal cracks of various lengths x 1/64in. wide NO CHANGE SINCE 2019 INSPECTION.

CS2 3210: The concrete wearing surface has edge spalls up to 5in. x 2in. x 3/4in. which has been filled with pourable sealant along the longitudinal joints - NO CHANGE SINCE 2018 INSPECTION. (20SF)

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	140	100	0		0		0		140 ft

Element Inspection Notes:

301/4 Note: This element represents the joints at Abutments 1 and 5. The sealed longitudinal joints are considered incidental to this element.

There is a light accumulation of loose dirt in the shoulder areas and near centerline - NO CHANGE SINCE 2018 INSPECTION.

MISCELLANEOUS : Channel

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

Element Inspection Notes:

8290/4 The following was noted by the underwater inspectors:

CORRECTIVE ACTION TAKEN:

The previously reported debris throughout the channel is no longer present - DECREASE SINCE 2019 INSPECTION.

Structure ID: 880085

DISTRICT: D4 - Ft. Lauderdale

INSPECTION DATE: 5/5/2021 FZPZ

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	2796	100	0		0		0		2796 sq.ft
0	510/4	Wearing Surfaces	2480	100	0		0		0		2480 sq.ft

Element Inspection Notes:

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

510/4 **INCIDENTAL:**

> There is an intermittent transverse crack up to 1/8in. wide in the asphalt surfacing at each approach roadway/approach slab transition - NO CHANGE SINCE 2018 INSPECTION.

The southwest approach slab has moderate vegetation in the shoulder - NEW.

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	215 / 4	Re Conc Abutment	154	100	0		0		0		154 ft

Element Inspection Notes:

215/4 No Notes

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	226 / 4	Pre Conc Pile	7	25.93	20	74.07	0		0	•	27 (EA)
0	1080 / 4	Delamination/Spall/Patched Area	0		4	100	0		0		4 (EA)
0	1190 / 4	Abrasion(PSC/RC)	0		16	100	0		0		16 (EA)

Element Inspection Notes:

226/4 CS2 1080: Piles 2-3, 3-3, and 3-6 have construction related edge spalls up to 4in. x 3in. x 3/4in. - NO CHANGE SINCE 2018 INSPECTION. (3EA)

> CS2 1190: Bent 2 piles have scale up to 1/16in. deep from the high-water mark down - NO CHANGE SINCE 2018 INSPECTION. (8EA)

CS2 1080: Pile 3-4, northeast corner 6ft. below cap, spall, 5in. x 2in. x 1/2in. - NO CHANGE SINCE 2018 INSPECTION. (1EA)

The following was noted by the underwater inspectors: CS2 1190: The piles have scale (loss of matrix) up to 1/16in. deep from the high-water mark down - NO CHANGE SINCE 2018 INSPECTION. (8EA)

- 1080/4 Refer to Parent Element
- 1190/4 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	231	100	0		0		0		231 ft

Element Inspection Notes:

234/4 PREVIOUS RECOMMENDATION:

Permanently attach west haunch on top of Bent Caps 2 and 3 - Repair completed.

Structure ID: 880085

DISTRICT: D4 - Ft. Lauderdale

INSPECTION DATE: 5/5/2021 FZPZ

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	8396 / 4	Other Abutment Slope Protection	2860	100	0		0		0		2860 (SF)

Element Inspection Notes:

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

INCIDENTAL:

There is moderate vegetation growing at all four corners of the slopes - DECREASE SINCE 2019 INSPECTION. Refer to Photo 1. P3WO

PREVIOUS RECOMMENDATION:

Remove vegetation from all four corners of slopes - Repair completed, recurring, repeat recommendation.

SUPERSTRUCTURE : Bearings

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	310 / 4	Elastomeric Bearing	6	75	2	25	0		0	•	8 each
0	2240 / 4	Loss of Bearing Area	0		2	100	0		0		2 each

Element Inspection Notes:

310/4 CS2 2240: The bearing pads for Slab Unit 1-2 at Bent 2 and Slab Unit 2-2 at Bent 3 are protruding 4in. - NO CHANGE SINCE 2018 INSPECTION. Refer to Photo 2. (2EA)

2240/4 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	114	100	0		0		0		114 ft

Element Inspection Notes:

331/4 Notes: This element represents the Jersey barrier wall along the west side of the structure.

The northwest and southwest end posts are incidental to this element.

SUPERSTRUCTURE : Superstructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	333 / 4	Other Bridge Railing	114	100	0	•	0		0		114 ft

Element Inspection Notes:

333/4 Note: This element represents the concrete bicycle barrier along the right (east) side of the structure.

The southeast and northeast end posts are incidental to this element.

Total Number of Elements*: 11

*excluding defects/protective systems

This report contains information relating to the physical security of a structure and depictions of the structure. This information is confidential and exempt from public inspection pursuant to sections 119.071(3)(a) and 119.071(3)(b), Florida Statutes. Only the cover page of this report may be inspected and copied.

Structure ID: 880085

DISTRICT: D4 - Ft. Lauderdale

INSPECTION DATE: 5/5/2021 FZPZ

PRIORITY

3

Inspector Recommendations

UNIT: 0 SUBSTRUCTURE

ELEMENT/ENV: 8396 / 4 Other Abutment Slope Protection

ELEM CATEGORY: Substructure

CONDITION STATE

MMS Quantity: 8 mh Element Estimated Quantity: 1 (SF)

WORK ORDER RECOMMENDATION:

Remove vegetation from all four corners of slopes. 8MH

Structure Notes

TRAFFIC RESTRICTION: Based on the results of the most recent load rating analysis dated 05/21/1991, posting is not required. The structure is not posted.

Structure inventoried from south to north.

Bridge 880004 and 880029 is north of and Bridge 880089 is south of Bridge 880085.

UTILITIES:

There is a 14in. utility pipe resting on the east side of the extended portion of the caps.

INSPECTION NOTES: FZPZ 5/5/2021

Sufficiency Rating Calculation Accepted by knvolsc at 6/01/2021 3:16:51 PM.

LOAD CAPACITY EVALUATION

The current load rating dated 05/21/1991 appears complete and applicable to the reported structure conditions – Scott DeReus, PE, 05/25/2021.

New Inventory photos have been submitted.

Note: Divers inspected Channel and Bent 3 with nine 18in. concrete piles.

Structure ID: 880085 DISTRICT: D4 - Ft. Lauderdale

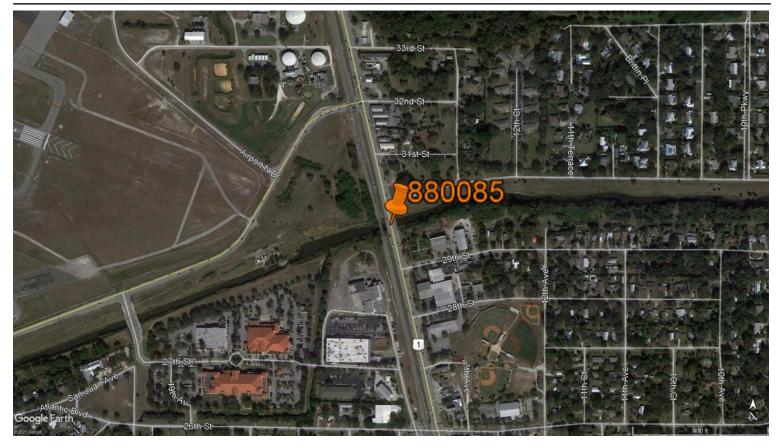
INSPECTION DATE: 5/5/2021 FZPZ



EAST ELEVATION

Structure ID: 880085 DISTRICT: D4 - Ft. Lauderdale

INSPECTION DATE: 5/5/2021 FZPZ



US-1 (SR-5) over Main Canal Vero Beach

0.75 Miles North of SR-60

Structure ID: 880085

DISTRICT: D4 - Ft. Lauderdale

INSPECTION DATE: 5/5/2021 FZPZ

	GE NUMBE	R: _	8800	85													D	ATE:	03/9/90
NVE FO	NTORY RAT RM (HS 20)	ING:			47.	0				3)			G DA		_; IF	YE	S, EXIS	STING	
01		LOA	Divid	-		-							NG					YES, S	SEE TABLE BELOW.
	ERNING SP/																		
) <u>ME</u>	X LFC		1818:		*					C)			NO	-			<u>s</u> :		
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AN	X BAF										0	IST	R. F.	1.0	61	- 0	DISTR.	F. MET	HOD AASHTO
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) <u>MC</u>	MBER ANA	LTZE	<u>D</u> :			S	UPE	RST	RUCI	TURE									SUBSTRUCTURE
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		CAS		GM	ENT	AL	вох						-			F	BOX		OAF
	POS	ST TE	NSIC	ONE	Ð									C	OM	205	SITE		
OAD	RATING SU	JMM	ARY	AB	LE:														
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19-01 -1-56210	1	O BRG		-		L.L.									2 1	H O	LNG	ŇŤ	BEARING TO
CLASS-F-CAT-ON	SPAN NO.	O BRG	25'	3 MOMENT		SHEAR	RAT-NO	NTWAR	RAT-NG	NTWAR	RATING	NOMENT	EAH-NG	NOMENT	EAH-ZO	SOMME-	- G N G	DWD	BEARING LENGTH IN SPACES
FL	SPAN NO. LTH. BRG. T TYPE OF	Т	RAT-NG 43	-	RAT-NG 38.	SHEAR	88.	STWAR OD	43.	0 x	11		EAH-ZG	IONENT .	-ZG	LAR	38.3	DED	BEARING LENGTH
F	SPAN NO. LTH. BRG. TO TYPE OF LOADING	TONS	43 48.1	MOMENT	38. 42.	SHEAR 3	NG	O O APMIN	43.		11	HEAR .	E4H-ZG	IOMENT .	€zg	LAR	38.3 42.6	DWD DWD	BEARING LENGTH IN SPACES PROVIDED. 2. FOR LOAD RATINGS CALCULATED BY
FL	SPAN NO. LTH. BRG. TO TYPE OF LOADING SU2	T O N S 17	43 46.4	MOMENT	38. 42.	SHEAR 3 3	88. 48.	Bx	43. 48.) x 1 x 4 x	11	OMENT .	E41-20	IOMENT I	6 ZG	LAR	38.3 42.6 41.7		BEARING LENGTH IN SPACES PROVIDED. 2. FOR LOAD RATINGS CALCULATED BY WORKING STRESS DESIGN. PLACE
FLORIDA	SPAN NO. LTH. BRG. TO TYPE OF LOADING SU2 SU3 SU4 C3	T O N S 17 33	43 48.1 46.4	STWAR X X X	38. 42. 41.	STEAR 3 J 5 X 7 X	48. 48. 41. 68.	3 x 6 x 7 x 2 x	43. 48. 46. 65.	0 x 1 x 4 x 5 x	11	MEAR	E41-20		4	LAR	38.3 42.6 41.7 65.2		BEARING LENGTH IN SPACES PROVIDED. 2. FOR LOAD RATINGS CALCULATED BY WORKING STRESS
FLORIDA LE	SPAN NO. LTH. BRG. T. TYPE OF LOADING SU2 SU3 SU4 C3 C4	T O N S 17 33 35 28 36.6 36.6	43 48.1 46.4 56.4	STEAR X X X X	8 38. 42. 41. 55.	SHEAR 3 J	48. 48. 41. 68.	3 x 6 x 7 x 2 x 6 x	43. 48. 46. 65. 56.	0 x 4 x 5 x 4 x	11	MEAR	E420		GTZQ		38.3 42.6 41.7 65.2 56.4		BEARING LENGTH IN SPACES PROVIDED. 2. FOR LOAD RATINGS CALCULATED BY WORKING STRESS DESIGN, PLACE ASTERISK (*) TO RIGHT OF RATING. 3. WHEN SHEAR
FLOR-DA LEGA	SPAN NO. LTH. BRG. T. TYPE OF LOADING SU2 SU3 SU4 C3 C4 C5	T O N S 17 33 35 28	43 48.1 46.4 65.5 56.4	STEAR X X X X	R 38. 38. 42. 41. 55. 59. 54.	STEAR 3 1 X X X X X X X X X X X X X X X X X X	88. 48. 41. 68. 59. 64.	3 x 6 x 7 x 2 x 6 x 8 x	43. 48. 46. 65. 56. 61.	0 x 1 x 4 x 5 x 4 x	11	MEAR	E4ZQ		420		38.3 42.6 41.7 65.2 56.4 61.6		BEARING LENGTH IN SPACES PROVIDED. 2. FOR LOAD RATINGS CALCULATED BY WORKING STRESS DESIGN, PLACE ASTERISK (*) TO RIGHT OF RATING. 3. WHEN SHEAR OR MOMENT DETERMINES LOAD
FLORIDA LEGAL	SPAN NO. LTH. BRG. THE TYPE OF LOADING SU2 SU3 SU4 C3 C4 C5 ST5	T O N S 17 33 35 28 36.6 40.0 36.6	43 48.1 46.4 65.9 56.4 61.6 78.9	STEAR X X X X	88. 38. 42. 41. 55. 59. 54. 70.	SHEAR 3 J 5 X 7 X 2 X	48. 48. 41. 68. 59. 64. 70.	3 x 6 x 7 x 2 x 6 x 8 x 5 x	43. 48. 46. 56. 56. 51. 78.	0 x 4 x 5 x 4 x	11	MEAR .	E41-20	OMENT ONENT	67-20		38.3 42.6 41.7 65.2 56.4 61.6 70.5		BEARING LENGTH IN SPACES PROVIDED. 2. FOR LOAD RATINGS CALCULATED BY WORKING STRESS DESIGN, PLACE ASTERISK (*) TO RIGHT OF RATING. 3. WHEN SHEAR OR MOMENT DETERMINES LOAD RATING, MARK APPROPRIATE
FLOR-DA LEGA	SPAN NO. LTH. BRG. T. TYPE OF LOADING SU2 SU3 SU4 C3 C4 C5	T O N S 17 33 35 28 36.6 36.6 40.0	43 48.1 46.4 65.5 56.4	STEAR X X X X	R 38. 38. 42. 41. 55. 59. 54.	STEAR 3 1 X X X X X X X X X X X X X X X X X X	88. 48. 41. 68. 59. 64.	3 x 6 x 7 x 2 x 6 x 8 x 5 x	43. 48. 46. 65. 56. 61.	0 x 1 x 4 x 5 x 4 x	11	OMUNT	E41-20	IOSHNT IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	41-20		38.3 42.6 41.7 65.2 56.4 61.6		BEARING LENGTH IN SPACES PROVIDED. 2. FOR LOAD RATINGS CALCULATED BY WORKING STRESS DESIGN, PLACE ASTERISK (*) TO RIGHT OF RATING. 3. WHEN SHEAR OR MOMENT DETERMINES LOAD RATING, MARK
FLORIDA LEGAL	SPAN NO. LTH. BRG. THE TYPE OF LOADING SU2 SU3 SU4 C3 C4 C5 ST5	T O N S 17 33 35 28 36.6 40.0 36.6	43 48.1 46.4 65.9 56.4 61.6 78.9	STEAR X X X X	88. 38. 42. 41. 55. 59. 54. 70.	STEAR 3 1 X X X X X X X X X X X X X X X X X X	48. 48. 41. 68. 59. 64. 70.	3 x 6 x 7 x 2 x 6 x 8 x 5 x	43. 48. 46. 56. 56. 51. 78.	0 x 1 x 4 x 5 x 4 x	11	OMENT .	E4120	IOAWSE			38.3 42.6 41.7 65.2 56.4 61.6 70.5		BEARING LENGTH IN SPACES PROVIDED. 2. FOR LOAD RATINGS CALCULATED BY WORKING STRESS DESIGN, PLACE ASTERISK (*) TO RIGHT OF RATING. 3. WHEN SHEAR OR MOMENT DETERMINES LOAD RATING, MARK APPROPRIATE
FLORIDA LEGAL	SPAN NO. LTH. BRG. T. TYPE OF LOADING SU2 SU3 SU4 C3 C4 C4 C5 ST5 HS	T O N S 17 33 35 28 36.6 40.0 36.6	43 48.1 46.4 65.9 56.4 61.6 78.9	STEAR X X X X	88. 38. 42. 41. 55. 59. 54. 70.	STEAR 3 1 X X X X X X X X X X X X X X X X X X	48. 48. 41. 68. 59. 64. 70.	3 x 6 x 7 x 2 x 6 x 8 x 5 x	43. 48. 46. 56. 56. 51. 78.	0 x 1 x 4 x 5 x 4 x	11	OMENT	E41		4zg		38.3 42.6 41.7 65.2 56.4 61.6 70.5		BEARING LENGTH IN SPACES PROVIDED. 2. FOR LOAD RATINGS CALCULATED BY WORKING STRESS DESIGN, PLACE ASTERISK (*) TO RIGHT OF RATING. 3. WHEN SHEAR OR MOMENT DETERMINES LOAD RATING, MARK APPROPRIATE
FLORIDA LEGAL	SPAN NO. LTH. BRG. T. TYPE OF LOADING SU2 SU3 SU4 C3 C4 C5 ST5 HS MENTS:	T O N S 33 35 36.6 36.6 36.6 36.6 36.6 36.6 36.	43 43 48.1 46.4 55.1 56.4 61.0 78.9 62.0	STEAR X X X X X X X X X X X X X X X X X X X	842. 38. 42. 41. 55. 59. 64. 70. 57.	STEAR 3 5 x x x x x x 7 x	48. 48. 41. 68. 59. 64. 70.	3 x 6 x 2 x 6 x 8 x 5 x 7 x	43. 48. 46. 56. 51. 78. 62.	0 x 1 x 4 x 5 x 4 x 6 x 9 x	-20		E4Zg	IOMENT	<		38.3 42.6 41.7 65.2 56.4 61.6 70.5		BEARING LENGTH IN SPACES PROVIDED. 2. FOR LOAD RATINGS CALCULATED BY WORKING STRESS DESIGN, PLACE ASTERISK (*) TO RIGHT OF RATING. 3. WHEN SHEAR OR MOMENT DETERMINES LOAD RATING, MARK APPROPRIATE COLUMN.
FLORIDA LEGAL	SPAN NO. LTH. BRG. T. TYPE OF LOADING SU2 SU3 SU4 C3 C4 C4 C5 ST5 HS	T O N S 17 33 35 28 36.6 36.6 40.0 36.6 9 36.6 9	43 43 48.1 46.4 55.1 56.4 61.0 78.9 62.0	STUAR X X X X X X X X X X X X X X X X X X X	84 1 8 1 1 1 1 1 1 1 1 1 1 1 1 1	STEAR 3 5 X X X X X X X X X X X X X X X X X X	k 88. 48. 41. 68. 59. 64. 70. 57. R.N	3 x 6 x 2 x 6 x 8 x 5 x 7 x	 43. 48. 46. 55. 56. 51. 78. 62. TII/ 	0 x 1 x 4 x 5 x 4 x 6 x 9 x	-20			IOMENT IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	4zg		38.3 42.6 41.7 65.2 56.4 61.6 70.5		BEARING LENGTH IN SPACES PROVIDED. 2. FOR LOAD RATINGS CALCULATED BY WORKING STRESS DESIGN, PLACE ASTERISK (*) TO RIGHT OF RATING. 3. WHEN SHEAR OR MOMENT DETERMINES LOAD RATING, MARK APPROPRIATE

LOAD RATING ANALYSIS SUMMARY

Structure ID: 880085 DISTRICT: D4 - Ft. Lauderdale

INSPECTION DATE: 5/5/2021 FZPZ



Photo 1: Element 8396 Other Abutment Slope Protection

Moderate vegetation on slopes, southwest shown.

WORK ORDER RECOMMENDATION: Remove vegetation from all four corners of slopes. 8MH

Structure ID: 880085 DISTRICT: D4 - Ft. Lauderdale

INSPECTION DATE: 5/5/2021 FZPZ



Photo 2: Element 8396 Other Abutment Slope Protection

Typical protruding bearing pad at Bent 2.

WORK ORDER RECOMMENDATION: NONE

Structure ID: 880085 DISTRICT: D4 - Ft. Lauderdale

INSPECTION DATE: 5/5/2021 FZPZ

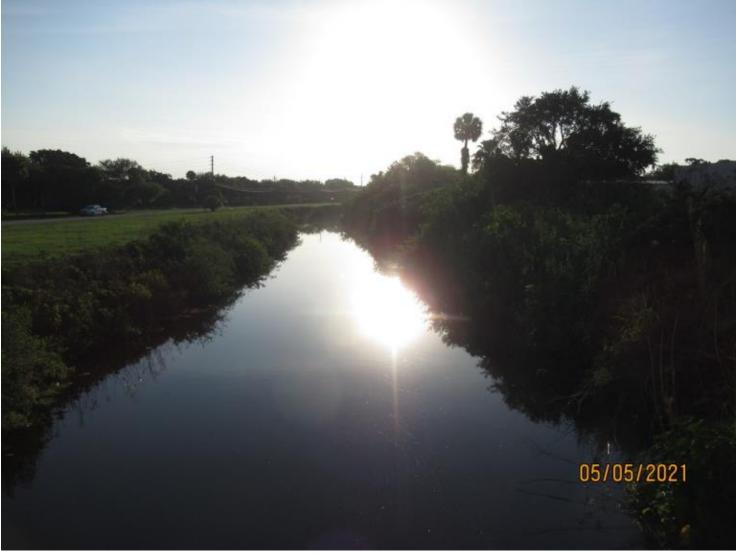


SCOUR ELEVATION

Channel Looking West

Structure ID: 880085 DISTRICT: D4 - Ft. Lauderdale

INSPECTION DATE: 5/5/2021 FZPZ



SCOUR ELEVATION

Channel Looking East

...

Structure ID: 880085

DISTRICT: D4 - Ft. Lauderdale

INSPECTION DATE: 5/5/2021 FZPZ

		VOLK	ERT, INC.	
BI Structure ID. (8):	880085			ter Date (93): 05/24/21
Structure/R	oadway Identificati	on:	Unde	rwater Inspection Details:
Dist	trict (2): 04 Indian	River	Special Crew Hours:	3.0
	inty (3): Indian Riv	Conservation and reasonable conservations	Max. Depth: Type of Dive Insp.:	7ft. 6in. at Bent 3
Feature Intersec Facility Carr		al Vero Beach	Type of Boat Used:	Level II (SCUBA) N/A
r donity our			er Type/Marine Growth:	Brackish/Tidal – Algae/Barnacles
Previous Inspection:				
Lead Diver:	C.B.I. No	o.:	Inspection Date: 05/15/19	
Qualls, Dion C.	00470		05/15/19	
nspection Personnel: Field Personnel:	Title	C.B.I. No.:	Duty: Sign	ature:
Jensen, Denise R.	UCBI	00592/Lead	Dive	_1
Redden, Michael D.	AUBI		Dive	L
Mauer, Jarred M.	AUBIT		Tend	
3290 CHANNEL		1 EA. = CS-	1: 1EA.	
	ionea aebns through	out the channel is no	longer present.	
226 PRE CONC PILE	ionea aeons inrougn	9 EA. = CS.		
NOTE: This element rep	presents the nine 18	9 EA. = CS. in. piles at Bent 3.	2: 9EA.	
NOTE: This element rep	presents the nine 18	9 EA. = CS. in. piles at Bent 3.	2: 9EA.	k down – NO CHANGE. (9EA)
NOTE: This element rep CS-2 1190 The piles hav	oresents the nine 18	9 EA. = CS. in. piles at Bent 3. rix) up to 1/16in. deep	2: 9EA.	k down – NO CHANGE. (9EA)
NOTE: This element rep CS-2 1190 The piles hav	oresents the nine 18	9 EA. = CS. in. piles at Bent 3. rix) up to 1/16in. deep	2: 9EA.	k down – NO CHANGE. (9EA)
NOTE: This element rep CS-2 1190 The piles hav Cleaning Log: No cleani	oresents the nine 18 ve scale (loss of mat ng due to lack of ma Divers inspected Cf	9 EA. = CS. in. piles at Bent 3. rix) up to 1/16in. deep rine growth. annel and Bent 3 with	2: 9EA.	

CIDR

DATE PRINTED: 6/7/2021

Description

Structure Unit Identification

Bridge/Unit Key: 880085 0 Structure Name: Description: Spans 1 thru 4 Type: M - Main

Roadway Identification

880085	
1 - Route On Structu	re
2 U.S. Numbered Hv	vy
1 Mainline	
00001 / 0 N/A (NBI)	
MAIN CANAL VERO	BEACH
Not Defense-crit	
US-1 (SR-5)	
7.053	
027d38'57.4"	Long (17): 080d24'01.5"
	1 - Route On Structu 2 U.S. Numbered Hv 1 Mainline 00001 / 0 N/A (NBI) MAIN CANAL VERO Not Defense-crit US-1 (SR-5) 7.053

Roadway Classification

Nat. Hwy Sys (104): 1 On the NHS National base Net (12): 1 - On Base Network LRS Inventory Rte (13a): 88 010 000 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

NBI Project Data

Proposed Work (075A): Not Applicable (P) Work To Be Done By (075B): Not Applicable (P) Improvement Length (076): 0 ft

NBI Rating

Channel (61): 7 Minor Damage Deck (58): 7 Good Superstructure (59): 7 Good Substructure (60): 7 Good

Roadway Traffic and Accidents

Lanes (28): 4	Medians: 0	Speed: 45 mph
ADT Class:	4 ADT Class 4	
Recent ADT (29):	23000	Year (30): 2021
Future ADT (114):	39905	Year (115): 2041
Truck % ADT (109):	6	
Detour Length (19):	2.0 mi	
Detour Speed:		
Accident Count:	-1	Rate:

Roadway Clearances

Vertical (10):	99.99 ft	Appr. Road (32): 56.4 ft
Horiz. (47):	62 ft	Roadway (51): 62 ft
Truck Network (110):	0 Not part of nat	tl netwo
Toll Facility (20):	3 On free road	
Fed. Lands Hwy (105):	0 N/A (NBI)	
School Bus Route:		
Transit Route:		

Improvement Cost (094): \$ 0.00 Roadway Improvement Cost (095): \$ 0.00 Total Cost (096): \$ 0.00 Year of Estimate (097):

Culvert (62):	N N/A (NBI)
Waterway (71):	9 Above Desirable
Unrepaired Spalls:	-1 sq.ft.
Review Required:	X

CIDR

DATE PRINTED: 6/7/2021

Structure ID: 880085

REPORT ID: INSP005

Structure Identification

Admin Area:	Indian River County	/
District (2):	D4 - Ft. Lauderdale	l.
County (3):	(88)Indian River	
Place Code (4):	Vero Beach	
Location (9):	0.75 Mile North of S	SR-60
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 Leng	jth
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

Structure Type and Material

Curb/Sidewalk (50): Left: 0 ft Right: 5.2 ft Bridge Median (33): 0 No median Main Span Material (43A): 5 Prestressed Concrete Appr Span Material (44A): Not Applicable Main Span Design (43B): 01 Slab Appr Span Design (44B): Not Applicable

Appraisal

Structure Appraisal

Open/Posted/Closed (41): A Open, no restriction Deck Geometry (68): 6 Equal Min Criteria Underclearances (69): N Not applicable (NBI) Approach Alignment (72): 8-No Speed Red thru Curv Bridge Railings (36a): 1 Meets Standards Transitions (36b): 1 Meets Standards Approach Guardrail (36c): 1 Meets Standards Approach Guardrail Ends (36d): 1 Meets Standards Scour Critical (113): 8 Stable Above Footing

Minimum Vertical Clearance

Over Structure (53): 99.99 ft Under (reference) (54a): N Feature not hwy or RR Under (54b): 0 ft

Schedule

Current Inspection

Inspection Date: 05/05/2021 Inspector: KNVOLSH - Scott Hughes Bridge Group: E4S94 Alt. Bridge Group: Primary Type: Regular NBI Review Required: X

<u>Geometrics</u>

Spans in Main Unit (45): 4	
Approach Spans (46): 0	
Length of Max Span (48): 31.6 ft	
Structure Length (49): 114 ft	
Total Length: 154 ft	
Deck Area: 7969 sqft	
Structure Flared (35): 0 No flare	

Age and Service

Year Built (27): 1980 Year Reconstructed (106): 0 Type of Service On (42a): 5 Highway-pedestrian Under (42b): 5 Waterway Fracture Critical Details: Not Applicable

Deck Type and Material

Deck Width (52): 69.9 ft Skew (34): 0 deg Deck Type (107): 2 Concrete Precast Panel Surface (108): 2 Integral Concrete Membrane: 0 None Deck Protection: None

Navigation Data

Navigation Control (38): Permit Not Required Nav Vertical Clr (39): 0 ft Nav Horizontal Clr (40): 0 ft Min Vert Lift Clr (116): 0 ft Pier Protection (111): Not Applicable (P)

NBI Condition Rating

Sufficiency Rating: 96.5 Health Index: 97.35 Structural Eval (67): 7 Above Min Criteria Deficiency: Not Deficient

Minimum Lateral Underclearance

Reference (55a): N Feature not hwy or RR Right Side (55b): 0 ft Left Side (56): 0 ft

Next Inspection Date Scheduled

NBI: 05/05/2023 Element: 05/05/2023 Fracture Critical: Underwater: 05/05/2023 Other/Special: Inventory Photo Update Due: 05/05/2031

Page 17 of 22

FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM

REPORT ID: INSP005	Ir	spec	tion/(CIDR/	Bridge Pro	ofile Re	eport			
Structure ID: 880085		-			CIDR		-	DA		ED: 6/7/2021
Schedule Cont.										
Inspection Types Performed	NBI 🗶 Ele	ement	X	Fra	cture Critical		Underwater X	Other	Special [
Inspection Intervals	Required (92)	Freq	uency	<u>(92)</u>	Last Date	<u>(93)</u>	Inspection Resource	es:		
- Fracture Critical	\square	•	mos	. ,		. ,	Crew Hours:			
Underwater		24	mos		05/24/2021		Flagger Hours:	0		
Other Special	H		mos				Helper Hours:	0		
NBI		24	mos	(91)	05/05/2021	(90)	Snooper Hours:	0		
				()			Special Crew Hours:	3		
Bridge Related							Special Equip Hours:	0		
General Bridge Informa	ation									
Parallel Bridge Seq:						Bridge	Rail 1: Concrete bicycle ba	arrier		
Channel Depth:	7.1 ft					Bridge	Rail 2: Concrete jersey typ	e		
Radio Frequency:	-1				Ele	ectrical D	evices: No electric service			
Phone Number:						Culver	t Type: Not applicable			
Exception Date:							e Yard: 490-Ft. Pierce			
Exception Type:							/ OFF: No Routes on FIHS	5		
Accepted By Maint:						vious Str				
Warranty Expiration:						vious Str				
Performance Rating:		~	_			ement Str				
Permitted Utilities: Power	Water	Gas	\Box	Fiber	Optic	Sewag	e Other			
Bridge Load Rating Inf										
Inventory Type (065):							(066): 47.0 tons			
Operating Type (063):							(064): 57.7 tons			
Original Design Load (031):							Rating: -1.0 tons			
Date: Initials:	05/21/1991						Rating: 57.7 tons ercent: 30 %			
Load Rating Rev. Recom.:					-		ength: 30.8 ft			
Load Rating Plans Status:							_ength: 30.8 ft			
							1ethod: AASHTO formula			
Load Rating Notes:										
LEGAL LOADS				PC	<u>DSTING</u>					
SU2:	38.3 tons				Reco	om. SU F	osting: 99 tons			
SU3:	42.6 tons						osting: 99 tons			
SU4:	41.7 tons				Reco	m. ST5 F	osting: 99 tons			
C3:	65.2 tons				Act	tual SU F	osting: 99 tons			
	56.4 tons						osting: 99 tons			
	61.6 tons						osting: 99 tons			
	70.5 tons	l -					osting: 99 tons			
Open/Posted/Closed (041):	5 At/Above Legal Los				Eme	ergency v	ehicle: 1 EV inapplicable			
		11								
FLOOR BEAM (FB)	FB Present: No			55	GMENTAL (SE		0			
FB Span Length, Gov:						-	-Span: -1.0 ft			
FB Spacing, Gov: FB OPR Rating:				95			9 Span: -1.0 ft erating: -1.00 RF			
FB SU4 OPR Rating:				30	G Hansverse r	IL93 Obe	eraung1.00 Kr			
FB FL120 Rating:										
Bridge Scour and Stor										
Pile Driving Record:					Scour P	ecomme	nded I: Stop scour evaluati	ons		
Foundation Type:							nded II: No recommendatio			
Mode of Flow:							ded III: No recommendatio			
Rating Scour Eval:							evation: -1 ft			
Highest Scour Eval:							evation: -1 ft			
Scour Evaluation Method:	•						uency: 100			

DATE PRINTED: 6/7/2021

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

REPORT ID: INSP005

Structure ID: 880085

Elements

Inspection Date: 05/05/2021 FZPZ

DECKS : Decks/Slabs

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	8099 / 4	PS Conc Slab (Sonovoid)	7967	99.97	0	•	2	0.03	0		7969 (SF)
0	1080 / 4	Delamination/Spall/Patched Area	0		0		2	100	0		2 (SF)
0	510/4	Wearing Surfaces	7116	99.72	20	0.28	0		0		7136 sq.ft
0	3210 / 4	Del/Spall/Patch/Pot(Wear Surf)	0		20	100	0		0		20 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	140	100	0		0		0		140 ft

MISCELLANEOUS : Channel

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

MISCELLANEOUS : Other Elements

S	r Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0		321 / 4	Re Conc Approach Slab	2796	100	0		0		0		2796 sq.ft
	0	510 / 4	Wearing Surfaces	2480	100	0		0		0		2480 sq.ft

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	215 / 4	Re Conc Abutment	154	100	0		0		0		154 ft

SUBSTRUCTURE : Substructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	226 / 4	Pre Conc Pile	7	25.93	20	74.07	0		0		27 (EA)
0	1080 / 4	Delamination/Spall/Patched Area	0		4	100	0		0		4 (EA)
0	1190 / 4	Abrasion(PSC/RC)	0		16	100	0		0		16 (EA)

SUBSTRUCTURE : Substructure

Str Unit Elem	/Env Des	scription	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0 234 /	4 Re	Conc Pier Cap	231	100	0		0		0		231 ft

SUBSTRUCTURE : Substructure

Str Unit Elem/	nv Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0 8396 /	Other Abutment Slope Protection	2860	100	0		0		0		2860 (SF)

SUPERSTRUCTURE : Bearings

St	r Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0		310 / 4	Elastomeric Bearing	6	75	2	25	0	•	0	•	8 each
Γ	0	2240 / 4	Loss of Bearing Area	0		2	100	0		0		2 each

SUPERSTRUCTURE : Superstructure

Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty
0	331 / 4	Re Conc Bridge Railing	114	100	0		0		0		114 ft
SUPERSTRUCTURE : Superstructure											
Str Unit	Elem/Env	Description	Qty1	%1	Qty2	%2	Qty3	%3	Qty4	%4	T Qty

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

REPORT ID: INSP005

Structure ID: 880085			CIDR						DATE PRINTED: 6/7/2021				
Ī	0	333 / 4	Other Bridge Railing	114	100	0		0	· ·	0		114 ft	Ī

Total Number of Elements*: 11 *excluding defects/protective systems

Inspection Information

Inspection Date:

Type: Regular NBI

Inspector: KNVOLSH - Scott Hughes

Sufficiency Rating Calculation Accepted by knvolsc at 6/01/2021 3:16:51 PM. Inspection Notes:

LOAD CAPACITY EVALUATION

05/05/2021

The current load rating dated 05/21/1991 appears complete and applicable to the reported structure conditions - Scott DeReus, PE, 05/25/2021.

New Inventory photos have been submitted.

Note: Divers inspected Channel and Bent 3 with nine 18in. concrete piles.

Structure Notes

TRAFFIC RESTRICTION: Based on the results of the most recent load rating analysis dated 05/21/1991, posting is not required. The structure is not posted.

Structure inventoried from south to north.

Bridge 880004 and 880029 is north of and Bridge 880089 is south of Bridge 880085.

UTILITIES:

There is a 14in. utility pipe resting on the east side of the extended portion of the caps.

Schedule Notes

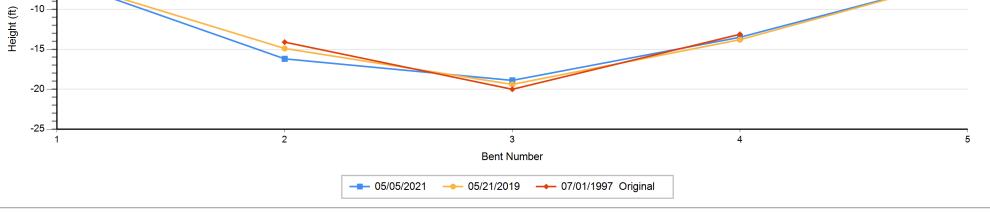
FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM

Inspection/CIDR/Bridge Profile Report

Bridge Profile

DATE PRINTED: 6/7/2021 12:47:59 PM





FLORIDA DEPARTMENT OF TRANSPORTATION BRIDGE MANAGEMENT SYSTEM

Inspection/CIDR/Bridge Profile Report Bridge Profile

DATE PRINTED: 6/7/2021 12:47:59 PM

		Profile Data - Nur	nerical Summary		
		Bent #	Left Height	Right Height	(All Heights are in Feet)
Inspection Date and Key: 5/5/2021	FZPZ				
		1	4.60	6.20	
		2	16.70	16.20	
		3	21.70	18.90	
		4	13.10	13.50	
		5	5.40	6.00	
Air Temp: Profile Notes:					
Measurements were referenced from the top of the concre Waterline at Bent 3: Left Side: 14.6ft. Right Side: 15.3ft.	ete barrier.				
Inspection Date and Key: 5/21/2019	HLFN				
		1	4.60	6.20	
		2	16.70	14.90	
		3	21.80	19.40	
		4	13.00	13.80	
		5	5.40	6.00	
Air Temp: Profile Notes: Measurements were referenced from the top of the concre Waterline at Bent 3: Left Side: 14.4ft. Right Side: 15.2ft.	ete barrier.				

Inspection/CIDR/Bridge Profile Report Bridge Profile

DATE PRINTED: 6/7/2021 12:47:59 PM

	Profile Data - Numerical Summary												
		Bent #	Left Height	Right Height	(All Heights are in Feet)								
Inspection Date and Key: 7/1/1997	STRT												
(Original Inspect	tion)												
		2	14.11	14.11									
		3	20.01	20.01									
		4	13.12	13.12									
Air Temp: Profile Notes:													