

LOCATION HYDRAULIC REPORT

Florida Department of Transportation
District One

SR 29 from Oil Well Road to SR 82
Project Development and
Environment Study

Collier County, Florida

Financial Management Number: 417540-1-22-01
ETDM Number: 3752

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 December 14, 2016 and executed by FHWA and FDOT.

August 2018

PROFESSIONAL ENGINEER CERTIFICATE

I hereby certify that I am a registered professional engineer in the State of Florida practicing with H. W. Lochner, Inc., a corporation authorized to operate as an engineering business, Certificate of Authorization Number 894, by the State of Florida, Department of Business & Professional Regulation, Board of Professional Engineers. I have prepared or approved the evaluation, findings, opinions and conclusions as reported for:

PROJECT:	SR 29 from Oil Well Road to SR 82
FINANCIAL PROJECT ID:	417540-1-22-01
ETDM PROJECT NUMBER:	3752
LOCATION:	Collier County, Florida
CLIENT:	FDOT, District One
FDOT PROJECT MANAGER:	Gwen Pipkin

I acknowledge that the procedures and references used to develop the results contained in this **Location Hydraulic Report** are standard to the professional practices of Civil Engineering as applied through design standards and criteria set forth by federal, state and local regulatory agencies, as well as professional judgment and experience.

SIGNATURE: *Theresa D. Ellison*

NAME:	Theresa D. Ellison, PE
FIRM:	H. W. Lochner, Inc.
FL PE NO:	53918
DATE:	August 2018

TABLE OF CONTENTS

SECTION	Page
Executive Summary	ES-1
1.0 Introduction.....	1-1
1.1 Project Overview.....	1-1
1.2 Project Description and Need.....	1-1
1.3 Alternatives	1-4
2.0 Existing Conditions.....	2-1
2.1 Roadway.....	2-1
2.2 Drainage	2-6
2.3 Soils.....	2-10
2.4 Land Use	2-10
2.5 Cross Drains	2-10
2.6 Bridge Structures.....	2-14
2.7 Floodplains and Floodways.....	2-14
2.7.1 Flooding History	2-14
2.7.2 Flood Insurance Rate Maps (FIRMs)	2-15
2.7.3 Flood Zone Description	2-15
2.7.4 Regulatory Floodways	2-15
3.0 Proposed Conditions.....	3-1
3.1 Roadway.....	3-1
3.1.1 SR 29 Typical Sections.....	3-1
3.1.2 New Market Road Typical Sections	3-7
3.1.3 SR 29 Bypass Typical Sections	3-9
3.1.4 Intersections	3-11
3.2 Drainage	3-12
3.3 Soils.....	3-12
3.4 Land Use	3-13
3.5 Cross Drains	3-13
3.6 Bridge Structures.....	3-13
3.7 Floodplains and Floodways.....	3-16
3.8 Project Classification.....	3-17
3.9 Risk Evaluation	3-18
3.10 Coordination with Local Agencies.....	3-18
3.11 PD&E Manual Requirements with Minimal Encroachment.....	3-19
4.0 Recommendations and Conclusion	4-1
5.0 References.....	5-1

LIST OF TABLES

Table 2-1: Regional Drainage Basins	2-8
Table 2-2: Soil Types and Coverage within the Project Study Area	2-11
Table 2-3: Existing Cross Drain Inventory	2-12
Table 2-4: Flood Insurance Rate Maps (FIRMs) – Collier County	2-15
Table 3-1: Estimated Total Floodplain Impacts.....	3-16

LIST OF FIGURES

Figure 1-1: Project Location Map.....	1-3
Figure 1-2: Project Build Alternatives	1-5
Figure 2-1: SR 29 Existing Typical Section from Oil Well Road to Farm Worker Way.....	2-3
Figure 2-2: SR 29 Existing Typical Section from Farm Worker Way to Seminole Crossing Tr	2-3
Figure 2-3: SR 29 Existing Typical Section from Seminole Crossing Tr to New Market Rd	2-4
Figure 2-4: SR 29 Existing Typical Section from New Market Rd to North 1 st St.....	2-4
Figure 2-5: SR 29 Existing Typical Section from N 1 st St to N 9 th St.....	2-5
Figure 2-6: SR 29 Existing Typical Section from N 9 th St to Westclox St/New Market Rd.....	2-5
Figure 2-7: SR 29 Existing Typical Section from Westclox St/New Market Rd to S of SR 82..	2-6
Figure 2-8: USGS Quadrangle Map	2-7
Figure 2-9: Regional Drainage Basins	2-9
Figure 3-1: SR 29 Typical Section from Oil Well Rd to S of Kaicasa Entrance.....	3-4
Figure 3-2: SR 29 Typical Section from S of Kaicasa Entrance to Seminole Crossing Tr	3-4
Figure 3-3: SR 29 Typical Section from Seminole Crossing Tr to New Market Rd.....	3-5
Figure 3-4: SR 29 Typical Section from Seminole Crossing Tr to CR 846	3-5
Figure 3-5: SR 29 Typical Section from N of Westclox St to the SR 29 Bypass Junction	3-6
Figure 3-6: SR 29 Typical Section from the SR 29 Bypass Junction to Experimental Rd.....	3-6
Figure 3-7: SR 29 Typical Section from Experimental Rd to South of SR 82	3-7
Figure 3-8: New Market Rd Typical Section from SR 29 to N of Airport Access	3-8
Figure 3-9: New Market Rd Typical Section from N of Airport Access to Flagler St.....	3-8
Figure 3-10: SR 29 Bypass Typical Section from Flagler Street to SR 29	3-10
Figure 3-11: SR 29 Bypass Typical Section from CR 846 to Gopher Ridge Road.....	3-10
Figure 3-12: SR 29 Bypass Typical Section from Gopher Ridge Road to SR 29	3-11
Figure 3-13: Future Land Use Map	3-14
Figure 3-14: Immokalee Future Land Use Map	3-15

APPENDICES

Appendix A	Build Alternative Concept Plans
Appendix B	Drainage Maps
Appendix C	FEMA FIRMs
Appendix D	Soils Map and Soil Descriptions
Appendix E	Floodplain Impact Calculations
Appendix F	Correspondence

Executive Summary

The Florida Department of Transportation (FDOT) District One is conducting a Project Development and Environment (PD&E) Study, in accordance with the National Environmental Policy Act (NEPA), to assess the need for capacity and traffic operational improvements along a two-lane undivided section of SR 29 extending 15.6 miles from Oil Well Road [southern terminus] to SR 82 [northern terminus] in unincorporated Collier County, Florida. The project entails the potential widening of existing two-lane undivided sections of SR 29 up to four lanes, as well as the addition of a new four-lane roadway bypassing the downtown area of the City of Immokalee.

In compliance with Presidential Executive Order 11988, “Floodplain Management,” USDOT Order 5650.2, “Floodplain Management and Protection,” and Federal-Aid Policy Guide 23 CFR 650A and using assessment methodology, evaluation procedures and document preparation guidance found in Part Two, Chapter 13 of the FDOT PD&E Manual, the project alternatives were designed to protect floodplains and floodways.

Roadway improvements along the corridor will result in the extension of existing cross drains and bridge culverts, as well as the addition of fill in existing floodplains due to the construction of roadway embankment. The modifications are necessary for motorist safety and will not impact drainage conveyance to floodplains and floodways.

Floodplain impacts are anticipated due to the proposed widening of SR 29, the proposed widening of New Market Road, proposed SR 29 Bypass and proposed stormwater management facilities. Using the Federal Emergency Management Agency’s (FEMA) Flood Insurance Rate (FIR) Maps, the impacts were estimated. The 100-year base floodplain boundaries are within the project limits at three (3) separate locations. It is estimated that approximately 25.36 acre-feet of floodplain impacts are associated with the proposed improvements in this study. The proposed project can be best described as follows:

The proposed structures will perform hydraulically in a manner equal to or greater than the existing structures, 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.

Acquiring and utilizing the County’s floodplain model to reduce or eliminate the floodplain compensation required should be explored during the design phase of the project.

1.0 Introduction

1.1 Project Overview

The Florida Department of Transportation (FDOT) District One is conducting a Project Development and Environment (PD&E) Study, in accordance with the National Environmental Policy Act (NEPA), to assess the need for capacity and traffic operational improvements along a two-lane undivided section of SR 29 extending 15.6 miles from Oil Well Road [southern terminus] to SR 82 [northern terminus] in unincorporated Collier County, Florida. The project section of SR 29 specifically traverses the unincorporated community of Immokalee in eastern Collier County. **Figure 1-1** shows the location of the project.

The PD&E Study for this project commenced in 2007. An Environmental Assessment with a Finding of No Significant Impact is being pursued. The PD&E Study provides documented environmental and engineering analyses to assist FDOT in reaching a decision on the location and conceptual design for improvements to SR 29. Additional products of the PD&E Study include preliminary engineering conceptual plans, environmental studies, a public outreach program, and other information that can be directly used in the final design of the project.

1.2 Project Description and Need

The project segment of SR 29 is designated as an Emerging Strategic Intermodal System (SIS) highway corridor. Additionally, SR 29 is classified as a rural principal arterial from Oil Well Road to south of Farm Worker Way and from north of Westclox Road/CR 29A to SR 82; the roadway is also classified as an urban principal arterial from south of Farm Worker Way to north of Westclox Road/CR 29A. Speed limits of 40 – 60 miles per hour (mph) are posted for the majority of the corridor. However, the speed limit is 35 mph from south of CR 846/Airport Road to west of 9th Street due to frequent activity of commercial and agricultural trucks, as well as daily activity of pedestrians and bicyclists, using this section of SR 29.

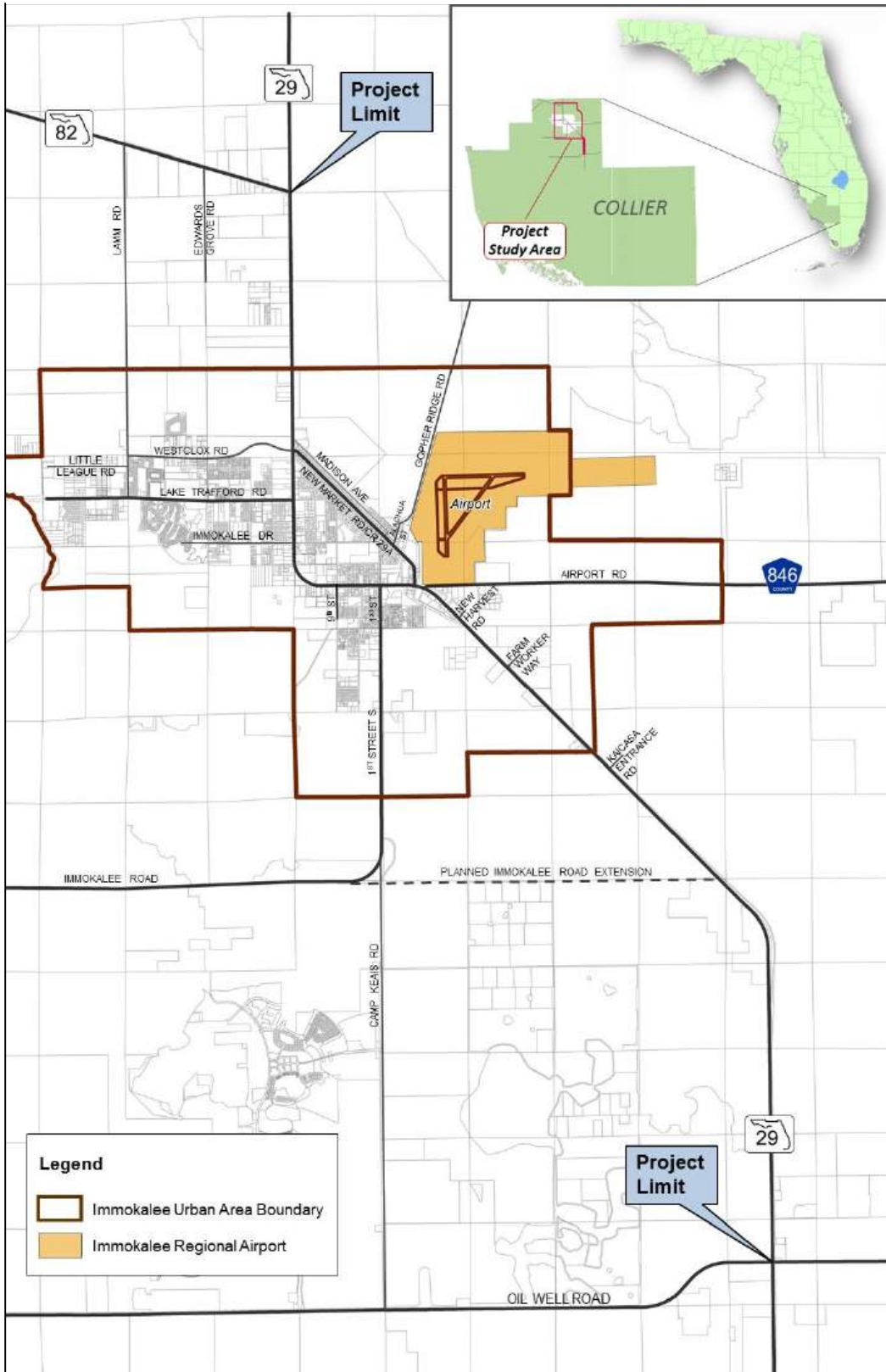
The project entails the potential widening of existing two-lane undivided sections of SR 29 up to four lanes, as well as the addition of a new four-lane roadway bypassing the downtown area of the City of Immokalee, in order to meet the following needs:

- Enhance economic competitiveness of the area,
- Improve regional connections,
- Correct current roadway design deficiencies/improve safety conditions,

- Reduce truck traffic in downtown Immokalee,
- Support future growth/accommodate projected travel demand, and
- Improve emergency evacuation capabilities.

No improvements are currently proposed to the existing SR 29 project segment between Immokalee Road and New Market Road North.

**Figure 1-1
Project Location Map**



1.3 Alternatives

Presently, the No Build Alternative and two Build Alternatives are being considered as part of the PD&E Study.

The No Build Alternative assumes that no lanes will be added to SR 29 from Oil Well Road to SR 82 through the 2045 design year.

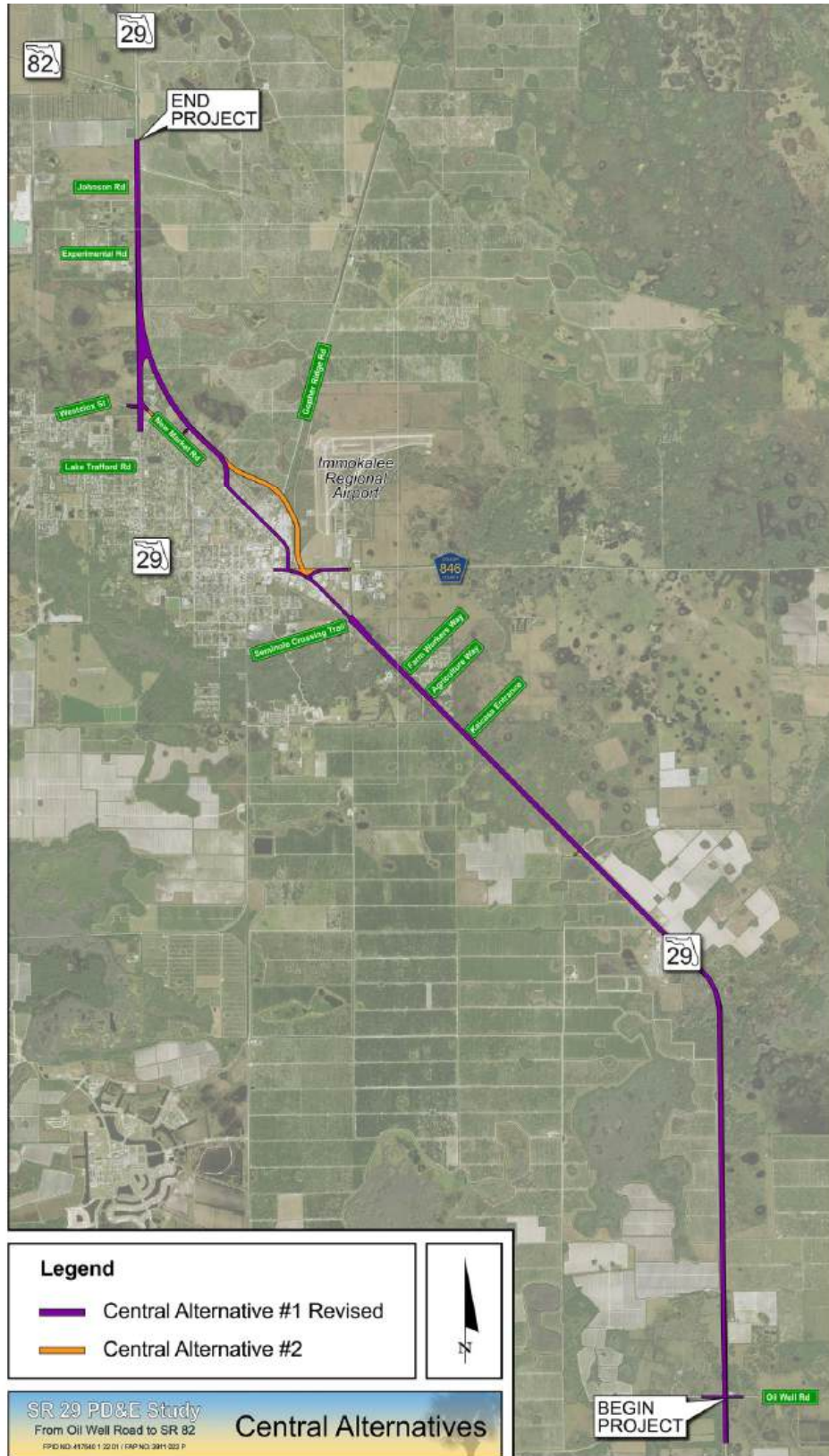
The two Build Alternatives [Central Alternative #1 Revised and Central Alternative #2] follow the existing alignment of SR 29 from Oil Well Road to south of Farm Workers Village and use similar typical four-lane sections.

At CR 846/Airport Road, Central Alternative #1 Revised follows the eastern portion of New Market Road providing direct access to the agribusiness/commercial areas of Immokalee and State Farmers Market. This alternative continues just past Flagler Street then turns northward on new alignment to avoid a residential neighborhood. It parallels Madison Avenue then skirts the east side of Collier Health Services Medical Center and the Florida State University College of Medicine before reconnecting to SR 29. From this point, Central Alternative #1 Revised follows SR 29 to SR 82. A roundabout is being considered at SR 29 north of Westclox Street.

At CR 846/Airport Road, Central Alternative #2 travels north from SR 29 on new alignment along the west side of the Immokalee Regional Airport to avoid the commercial/industrial areas of Immokalee and the State Farmers Market to the west. This alternative then turns to the northwest just past Gopher Ridge Road to parallel Madison Avenue and New Market Road. It then travels along the east side of Collier Health Services Medical Center and the Florida State University College of Medicine before reconnecting to SR 29. From this point, Central Alternative #2 follows SR 29 to SR 82. A roundabout is being considered at SR 29 north of Westclox Street.

Figure 1-2 shows the location of the two project Build Alternatives [Central Alternative #1 Revised and Central Alternative #2].

**Figure 1-2
Project Build Alternatives**



2.0 Existing Conditions

2.1 Roadway

Within the project limits, SR 29 can be broken up into the following seven typical sections:

From Oil Well Road to Farm Worker Way

SR 29 is a two-lane undivided roadway with one 12-foot lane in each direction and 4-foot shoulders on either side of the roadway. There is an open drainage system and the corridor is classified as an Emerging SIS Highway. The existing right-of-way (ROW) varies from 173.75 feet to 181 feet. **Figure 2-1** depicts this typical section.

From Farm Worker Way to Seminole Crossing Trail

SR 29 is a two-lane undivided roadway with one 12-foot lane in each direction, 4-foot shoulders on either side of the roadway, and an 8-foot sidewalk on the west side of the roadway. There is an open drainage system and the corridor is classified as an Emerging SIS Highway. The existing ROW varies from 177.95 feet to 183 feet. **Figure 2-2** depicts this typical section.

From Seminole Crossing Trail to New Market Road

SR 29 is a two-lane undivided roadway with one 12-foot lane in each direction, 5-foot shoulders on either side of the roadway, and an 8-foot sidewalk on the west side of the roadway. There is an open drainage system and the corridor is classified as an Emerging SIS Highway. The existing ROW is from 100 feet. **Figure 2-3** depicts this typical section.

From New Market Road to North 1st Street

SR 29 is a six-lane divided roadway with two 12-foot through lanes and one 8-foot right turn lane in each direction, an 18-foot median, and 5-foot sidewalks on each side of the roadway. There is a closed drainage system with curb and gutter and the corridor is classified as an Emerging SIS Highway. The existing ROW is from 100 feet. **Figure 2-4** depicts this typical section.

From North 1st Street to North 9th Street

SR 29 is a four-lane divided roadway with two 12-foot lanes in each direction, 8 feet of on street parking on each side of the roadway, an 18-foot median, and 5-foot sidewalks on each side of the roadway. There is a closed drainage system with curb and gutter and the corridor is classified as an Emerging SIS Highway. The existing ROW is from 100 feet. **Figure 2-5** depicts this typical section.

From North 9th Street to Westclox Street/New Market Road

SR 29 is a two-lane divided roadway with one 12-foot lane in each direction, 4-foot shoulders on either side of the roadway, a 14-foot shared left turn lane, and 5-foot sidewalks on each side of the roadway. There is an open drainage system and the corridor is classified as an Emerging SIS Highway. The existing ROW varies from 100 feet to 200 feet. **Figure 2-6** depicts this typical section.

From Westclox Street/New Market Road to South of SR 82

SR 29 is a two-lane undivided roadway with one 12-foot lane in each direction and 4-foot shoulders on either side of the roadway. There is an open drainage system and the corridor is classified as an Emerging SIS Highway. The existing ROW varies from 100 feet to 200 feet. **Figure 2-7** depicts this typical section.

The posted speed limit along SR 29 from Oil Well Road to south of Agriculture Way is 60 miles per hour (mph), the posted speed decreases to 55 mph and then to 45 mph south of Agriculture Way, and then decreases again to 35 mph at 13th Street and remains at 35 mph to North 9th Street. At North 9th Street, the posted speed limit on SR 29 increases to 40 mph, the posted speed limit increases again to 45 mph at 7th Avenue, and to 55 mph and 60 mph north of Westclox Street/New Market Road and remains at 60 mph to SR 82.

There are six (6) signalized and four (4) stop controlled study intersections within the study limits. All intersections are at-grade. The signalized intersections are:

- SR 29 and Farm Worker Way
- SR 29 and North 1st Street
- SR 29 and North 9th Street
- SR 29 and Immokalee Drive
- SR 29 and Lake Trafford Road
- New Market Road and Charlotte Street

Figure 2-1
SR 29 Existing Typical Section from Oil Well Road to Farm Worker Way

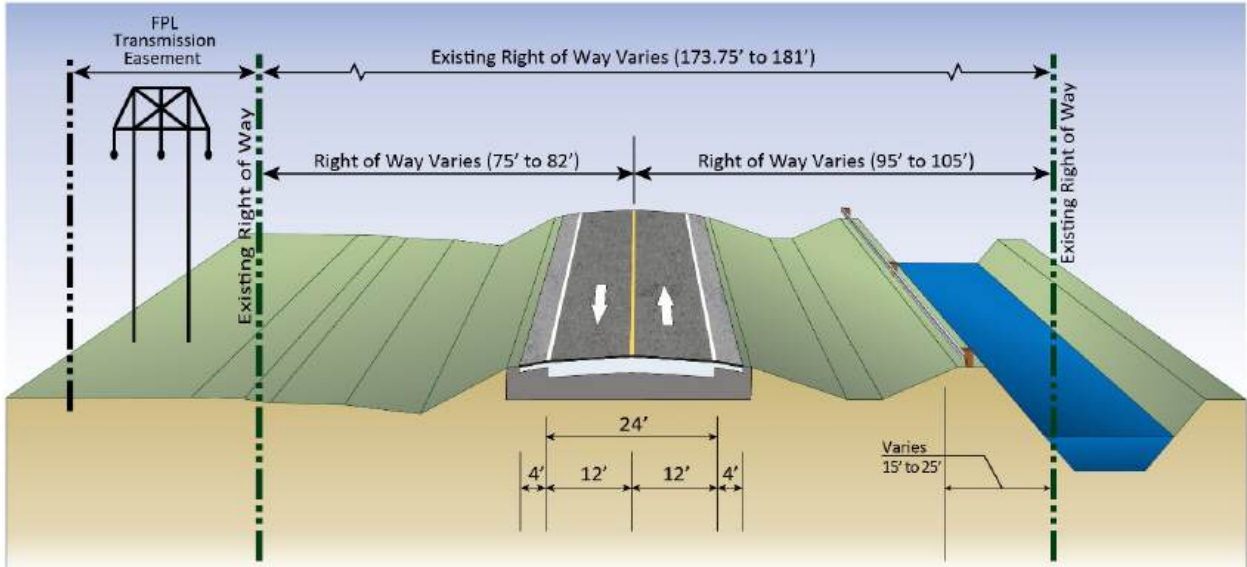


Figure 2-2
SR 29 Existing Typical Section from Farm Worker Way to Seminole Crossing Trail

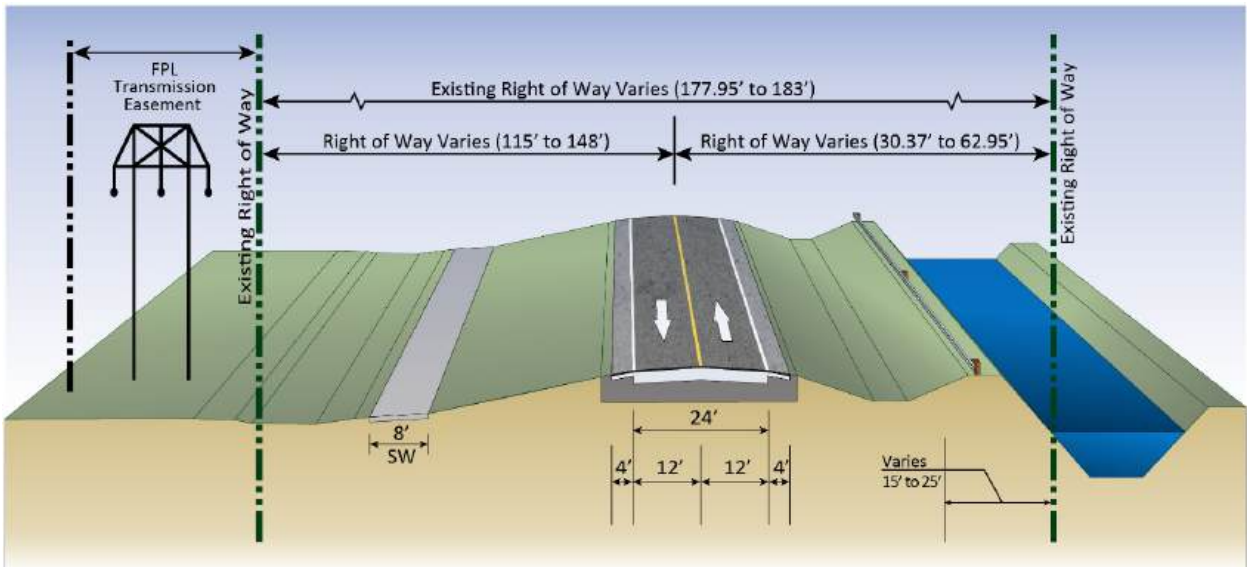


Figure 2-3
SR 29 Existing Typical Section from Seminole Crossing Trail to New Market Road

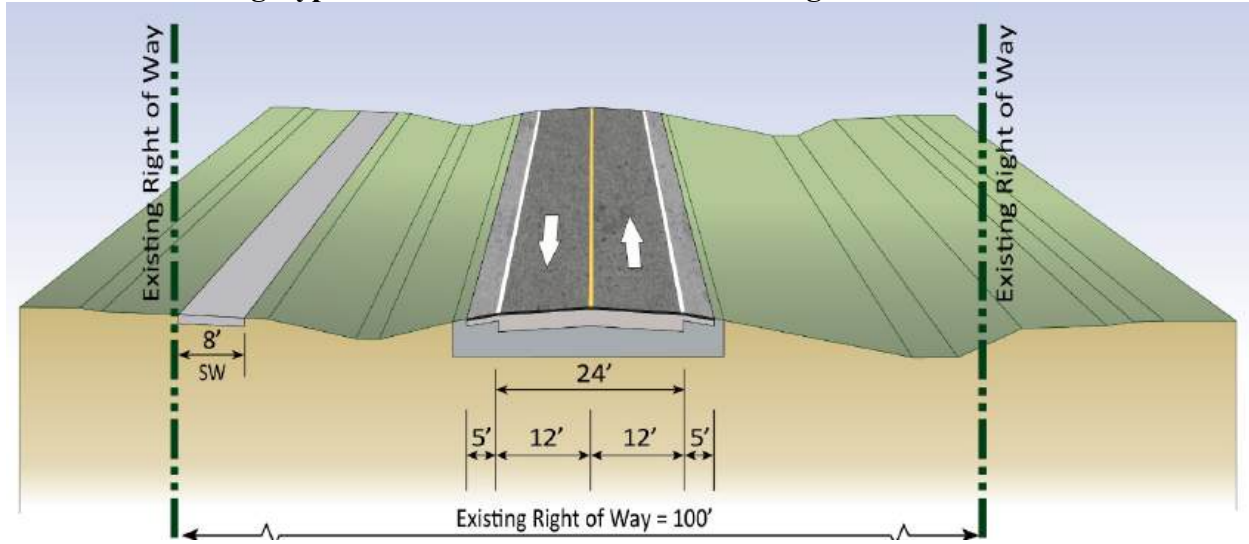


Figure 2-4
SR 29 Existing Typical Section from New Market Road to North 1st Street

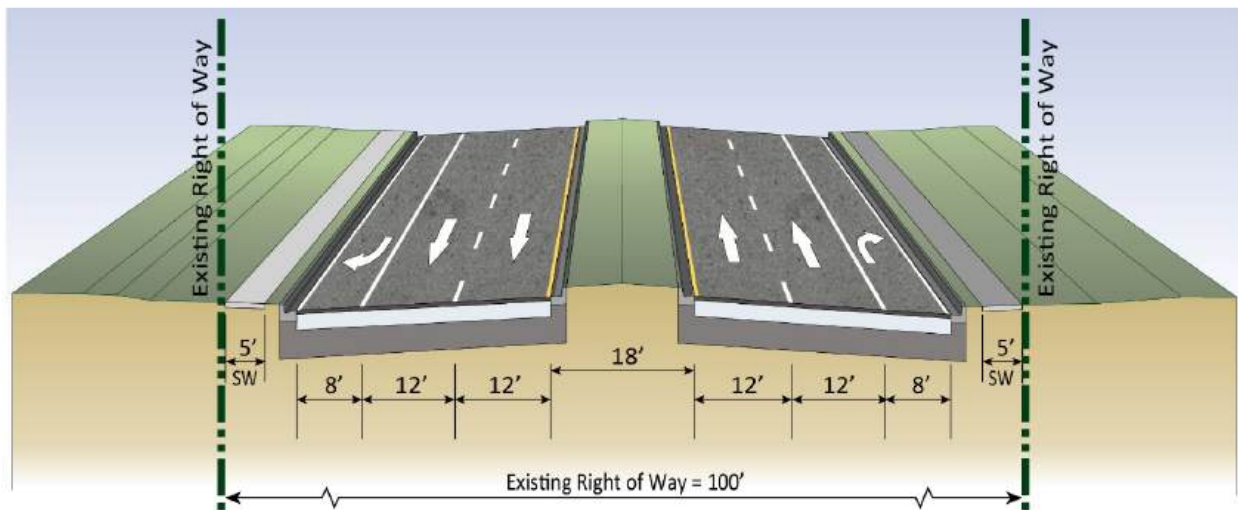


Figure 2-5
SR 29 Existing Typical Section from North 1st Street to North 9th Street

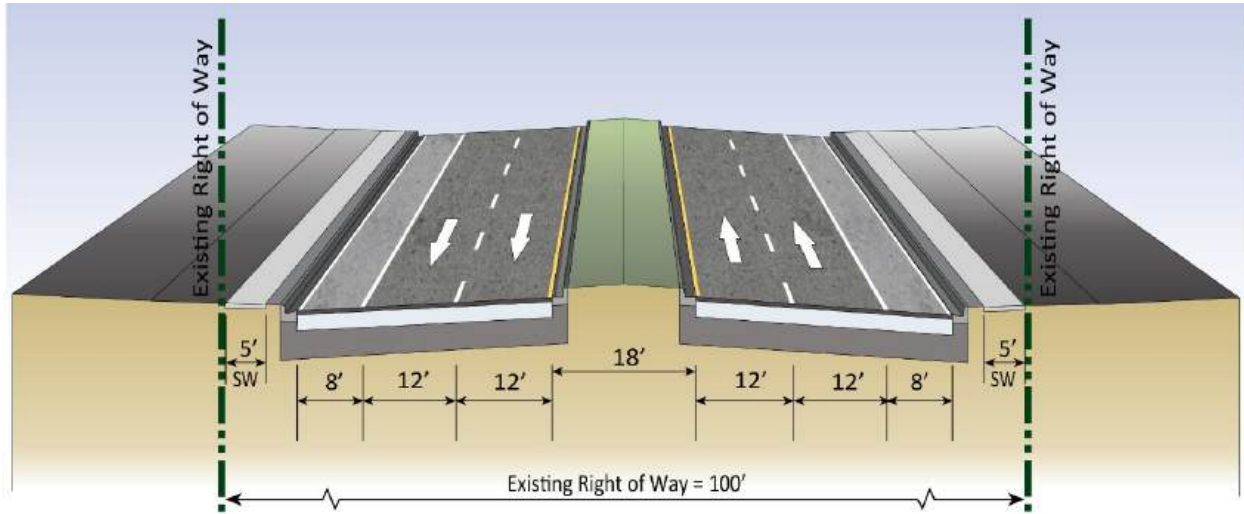


Figure 2-6
SR 29 Existing Typical Section from North 9th Street to Westclox Street/New Market Road

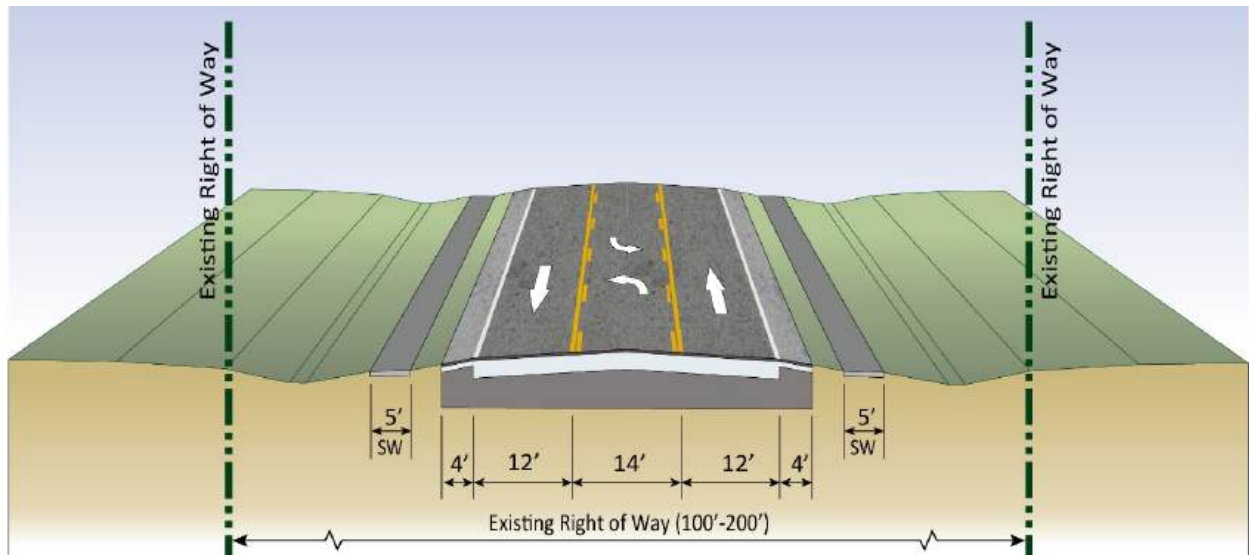
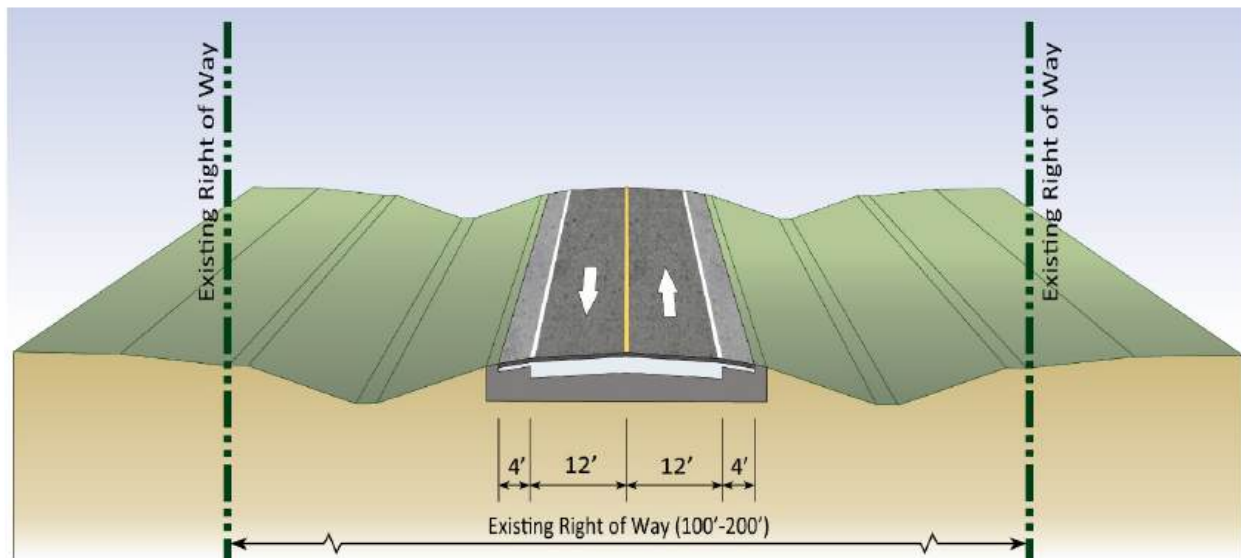


Figure 2-7
SR 29 Existing Typical Section from Westclox Street/New Market Road to South of SR 82

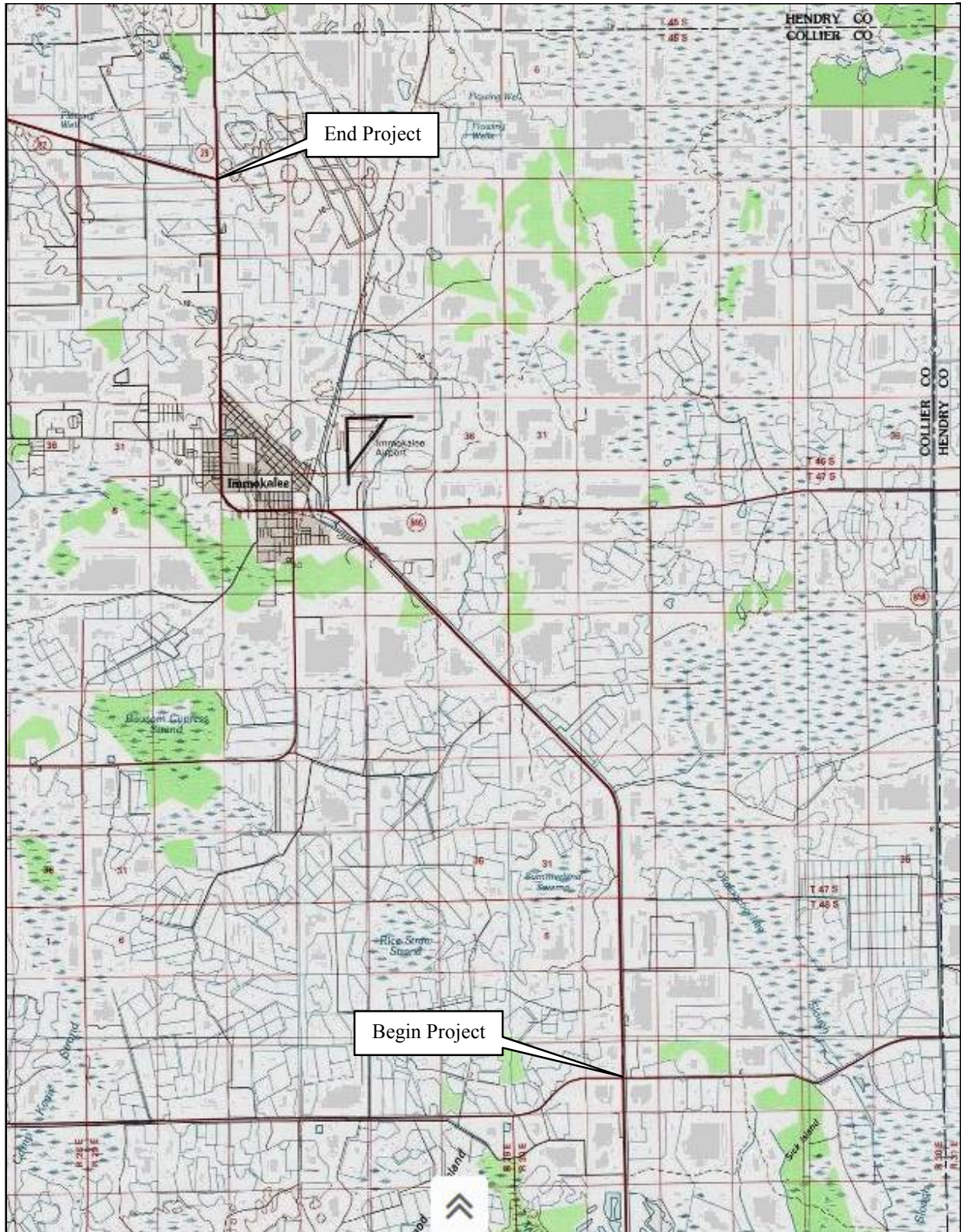


2.2 Drainage

The topography along SR 29 is relatively flat with elevations ranging from a low of approximately 20 feet at the beginning of the study area at Oil Well Road to a high of approximately 40 feet in the vicinity of SR 82. All elevations are referenced to the North American Vertical Datum (NAVD 88). Please see the USGS Quadrangle Map, included as **Figure 2-8**.

Drainage along the existing roadway is accomplished through collection and conveyance by open roadside ditches, side drains, ditch bottom inlets and cross drains. Typically, roadside ditches are present for the length of the project. These ditches and depressional areas provide some degree of attenuation and water quality treatment. The runoff in the ditches is co-mingled with offsite runoff and ultimately conveyed to the outfall. From 13th Street to 9th Street, runoff is collected by curb and gutter and conveyed to the outfall by a storm drain system. The SR 29 study corridor traverses three major watersheds within the project study area, Okaloacoochee Watershed, Cocohatchee-Corkscrew and the Caloosahatchee River Watershed. Within these watersheds, there are four regional drainage basins as described in **Table 2-1** and shown in **Figure 2-9**.

Figure 2-8
USGS Quadrangle Map



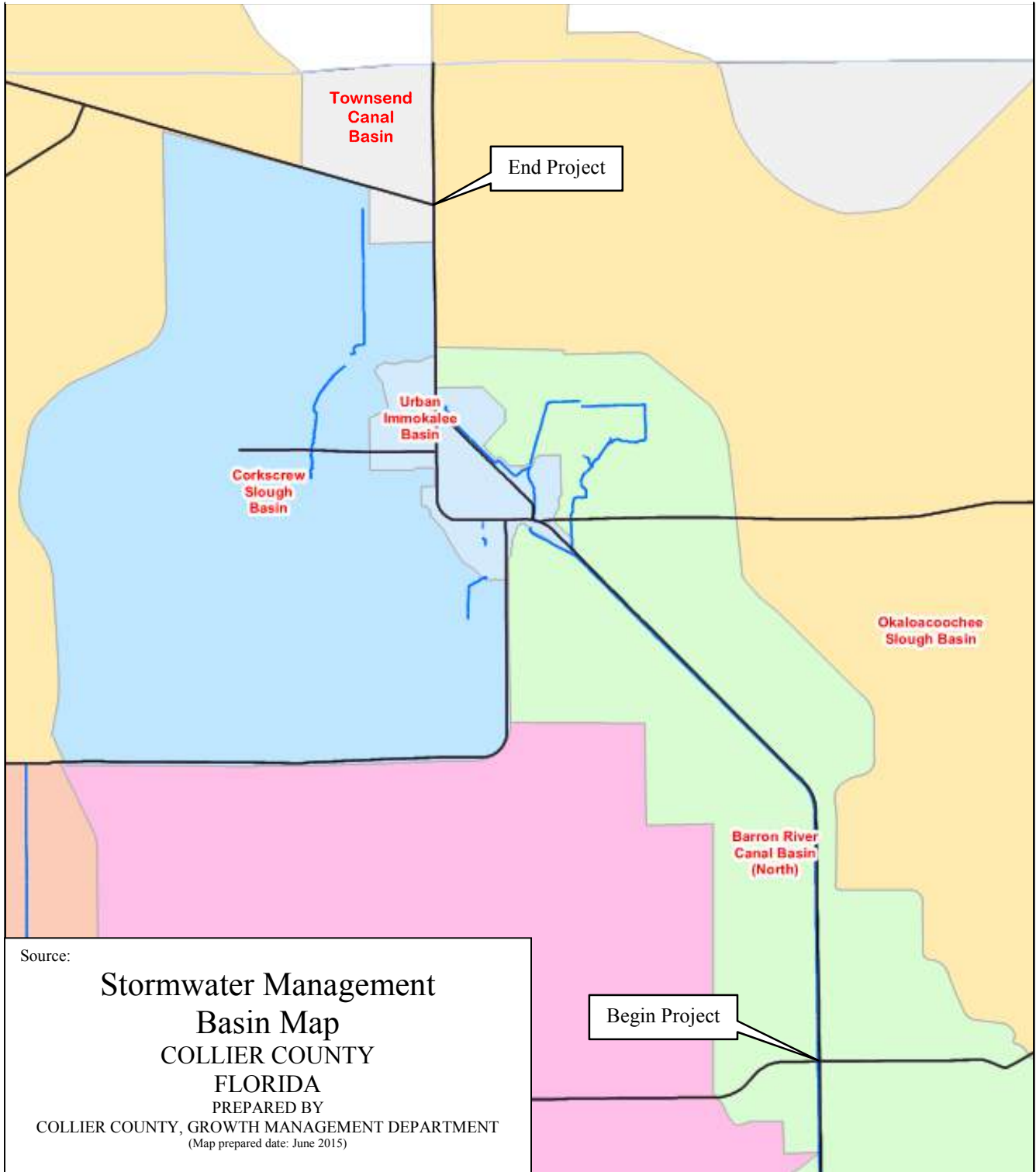
**Table 2-1
Regional Drainage Basins**

Watershed	Drainage Basin	Water Body ID (WBID)
Okaloacoochee-SR 29	Barron River Canal (North)	3278W - Silver Strand
Cocohatchee-Corkscrew	Urban Immokalee Corkscrew Slough	3278L - Immokalee Basin 3278E - Cow Slough
Caloosahatchee	Townsend Canal	3235L – Townsend Canal

The project study area was further subdivided into forty-one (41) roadway basins, 1 through 41, as shown in **Appendix B**, Drainage Maps.

A portion of SR 29 was permitted under SFWMD ERP Modification Number 11-00968-S, issued on March 14, 1996. The limits of this ERP begin approximately 1.5 miles north of Oil Well Road and extend north approximately 2.4 miles to just south of CR 846. Basins 8 through 25 are within the limits of this ERP, which was obtained due to the widening of SR 29 under State Project Nos. 03080-3517, 03080-3529 and 03080-3530. Water quality treatment for the east side of SR 29 is provided in shallow retention areas between the road and the Barron Canal. Runoff from the west side of SR 29 sheet flows directly to existing grade with no permitted treatment. Stormwater quantity attenuation was not required under this permit.

**Figure 2-9
Regional Drainage Basins**



2.3 Soils

Based on a review of the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soil Survey of Collier County, Florida, much of the project corridor consists of nearly level, poorly drained soils. Generally, the natural seasonal high groundwater table (SHWT) is at depths of about 6 to 18 inches below the natural grade within the project limits.

The Soil Survey indicates that there are eighteen (18) mapped soil units along the project corridor. According to the Hydric Soils of Florida Handbook (Hurt, 2007), 10 of the 18 soil types identified within the project study area are classified as hydric. **Table 2-2** lists the acreage and percentage of each mapped soil type within the study limits.

Please see **Appendix D** for the Soils Map and soils descriptions.

2.4 Land Use

Primary land uses along the project corridor include transportation, agriculture, residential subdivisions, individual residences, schools, commercial, and industrial complexes. Within the urban areas, the existing right-of-way generally abuts commercial properties along with some residential properties. Within the rural areas, the land uses adjacent to the project are generally pasture lands as well as some commercial and undeveloped properties. Pasture land and agricultural land (citrus groves) are the primary land uses to the north of the city. To the north and south of the city, the primary land uses adjacent to the existing SR 29 right-of-way are agricultural land (citrus groves and cultivated row crops) and pasture land with dispersed residential, commercial, and undeveloped properties. One school and one planned residential community are adjacent to the existing SR 29 right-of-way at Farm Worker Way in southeast Immokalee.

2.5 Cross Drains

Existing cross drains were located based on existing construction plans, USGS Quadrangle Maps, Flood Insurance Rate Maps (FIRMs), survey/GIS data and field investigations. A review of this information indicates that there are 37 cross drain structures within the study limits. The cross drains, along with their respective drainage basin location, are listed in **Table 2-3** and can be located on the Drainage Maps in **Appendix B**.

**Table 2-2
Soil Types and Coverage within the Project Study Area**

Soil Type	Hydric Y/N	Central Alternative #1 Revised		Central Alternative #2	
		Area (acres)	% of Total	Area (acres)	% of Total
3 - Malabar fine sand, 0 to 2 percent slopes	Y	4.22	1.14	4.31	1.13
7 - Immokalee fine sand, 0 to 2 percent slopes	N	69.20	18.78	75.41	19.73
8 - Myakka fine sand, 0 to 2 percent slopes	N	14.11	3.83	15.38	4.02
10 - Oldsmar fine sand, limestone substratum	N	4.71	1.31	4.71	1.23
15 - Pomello fine sand, 0 to 2 percent slopes	N	16.33	4.42	16.42	4.30
16 - Oldsmar fine sand, 0 to 2 percent slopes	N	74.12	20.1	74.42	19.47
17 - Basinger fine sand, 0 to 2 percent slopes	Y	30.10	8.17	30.10	7.87
20 - Fort Drum, and Malabar, high fine sands	N	11.01	3.01	11.01	2.89
21 - Boca fine sand, 0 to 2 percent slopes	Y	14.22	3.81	14.37	3.75
22 - Chobee, Winder, and Gator soils, depressional	Y	6.11	1.69	6.31	1.64
23 - Holopaw and Okeelanta soils, depressional	Y	0.30	0.1	0.30	0.08
25 - Boca, Riviera, limestone substratum and Copeland fine sands, depressional	Y	1.36	0.37	1.62	0.43
27 - Holopaw fine sand, 0 to 2 percent slopes	Y	21.19	5.67	31.27	8.18
28 - Pineda and Riviera fine sands	Y	16.51	4.52	16.70	4.37
29 - Wabasso fine sands, 0 to 2 percent slopes	N	19.12	5.23	19.12	5.01
34 - Urban land -Immokalee-Oldsmar , limestone substratum complex	N	31.66	8.58	26.34	6.89
37 - Tuscawillia fine sand	Y	12.71	3.4	12.76	3.33
43 - Winder, Riviera, limestone substratum and Chobee soils, depressional	Y	21.65	5.87	21.71	5.68
Total		368.60	100%	382.26	100%

**Table 2-3
Existing Cross Drain Inventory**

Structure No.	Station	Size	Drainage Basin
CD-1	1414+64 BL SR 29	36"	1
CD-2	39+64 CL SR 29	36"	4
CD-3	54+69	36"	5
CD-4	79+12	36"	6
CD-5	94+00	43"x68"	7
CD-6	133+13	(2)-24"	8, 9
CD-7	169+55	24"	10
CD-8	182+34	(2)-24"	11
CD-9 ⁽¹⁾	217+29	(2)-9'x5' CBC Gator Creek	12, 13
CD-10	247+92	(2)-24"	14
CD-11	262+17	(2)-24"	15
CD-12	277+00	24"	15
CD-13	293+34	(2)-24"	16
CD-14	317+28	24"	17
CD-15	359+25	36"	18, 19
CD-16 ⁽¹⁾	384+60	(2)-10'x5' CBC Milton's Creek	20
CD-17	407+55	(3)-24"	21
CD-18	435+00	(4)-24"	22, 23
CD-19	459+00	24"	23
CD-20	474+12	(2)-24"	24, 25
CD-21 ⁽¹⁾	500+80	(3)-10'x5' CBC Dry Gulch Creek	26

**Table 2-3
Existing Cross Drain Inventory**

CD-22 ⁽¹⁾	540+50	(2)-10'x5' CBC Eutopia Canal	28
CD-23	138+70	(2)-24"	29-1R
CD-24	168+00	24"	30-1R
CD-25	174+50	24"	30-1R
CD-26	175+00	24"	30-1R
CD-27	186+00	24"	30-1R
CD-28	186+60	24"	30-1R
CD-29	2075+25 BL SR 29	42"	33
CD-30	2107+10	36"	34
CD-31	2119+90	36"	35
CD-32	2133+90	(2)-48"	37
CD-33	301+27 CL SR 29	36"	38
CD-34	314+00	36"	39
CD-35	379+00	(2)-36"	40
CD-36	396+10	(2)-36"	41
CD-37	SR 82	(3)-42"	41

⁽¹⁾ Denotes bridge culvert

2.6 Bridge Structures

There are four bridge structures, all bridge culverts, within the project limits. All are currently owned and maintained by FDOT.

Bridge No. 030303 carries SR 29 over Gator Creek and is located from begin milepost (MP) 30.749 to end MP 30.758. The structure is a 49.9' long concrete flat slab bridge that was constructed in 1999. According to the latest FDOT Bridge Inspection Report dated March 8, 2016, the structure has a Sufficiency Rating of 95.9 and a Health Index of 98.37.

Bridge No. 030304 carries SR 29 over Milton's Canal and is located at MP 33.924. The structure is a double 10-foot x 5-foot reinforced concrete box culvert that was constructed in 1999. According to the latest FDOT Bridge Inspection Report dated March 10, 2016, the structure has a Sufficiency Rating of 95.9 and a Health Index of 77.09.

Bridge No. 030305 carries SR 29 over Dry Gulch Creek and is located at MP 36.122. The structure is a triple 10-foot x 5-foot reinforced concrete box culvert that was constructed in 1999. According to the latest FDOT Bridge Inspection Report dated March 24, 2016, the structure has a Sufficiency Rating of 93.9 and a Health Index of 70.60.

Bridge Culvert No. 030019 carries SR 29 over Eutopia Canal and is located at MP 36.873. The structure is a double 10-foot x 5-foot reinforced concrete box culvert that was constructed in 1965. According to the latest FDOT Bridge Inspection Report dated March 8, 2016, the structure has a Sufficiency Rating of 81.0 and a Health Index of 80.73.

2.7 Floodplains and Floodways

The Federal Emergency Management Agency (FEMA) has designated locations of the 100-year base floodplains within the project corridor.

2.7.1 Flooding History

To determine the flooding history in the project area, Collier County staff knowledgeable about local drainage conditions were contacted. During Hurricane Irma in 2017, Main Street (SR 29) was flooded from 7th Street to 9th Street, and businesses in this area were also flooded. Also, the Barron Canal (SR 29 Canal) has been overrun by vegetation and experienced debris obstructions at times that have impeded its water flow and resulted in flooding upstream in the city of Immokalee. In March of 2018, the SFWMD Governing Board approved a partnership with Collier County to improve flood protection for the Immokalee area by clearing the canal of trees and debris. A field inspection was also conducted to identify obvious drainage problems. No flooding problems associated with existing drainage structures were identified through field review of the existing cross drains.

2.7.2 Flood Insurance Rate Maps (FIRMs)

FEMA has compiled Flood Insurance Rate Maps (FIRMs) and has conducted a Flood Insurance Study (FIS) for Collier County. FIRMs covering the project area are listed in **Table 2-4**. The FEMA FIRMs are shown in **Appendix C**.

Table 2-4
Flood Insurance Rate Maps (FIRMs) – Collier County

Map Number	Date
12021C0290H	May 16, 2012
12021C0280H	May 16, 2012
12021C0165H	May 16, 2012
12021C0145H	May 16, 2012
12021C0135H	May 16, 2012

2.7.3 Flood Zone Description

FEMA has designated locations of the 100-year base floodplain within the project corridor. The entire project is within Zone AH, which is the flood insurance rate zone that corresponds to areas of 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations derived from detailed hydraulic analyses are shown at selected intervals within this zone. The base flood elevation ranges from elevation 19 feet just south of Oil Well Road to elevation 36.5 feet at SR 82.

2.7.4 Regulatory Floodways

There are no FEMA regulatory floodways located within the project limits

3.0 Proposed Conditions

3.1 Roadway

The two Build Alternatives described below use similar typical four-lane sections.

- Central Alternative #1 Revised: This alternative follows the existing alignment of SR 29 from Oil Well Road to south of Farm Workers Village. At CR 846/Airport Road, it follows the eastern portion of New Market Road and provides direct access to the agribusiness/commercial areas of Immokalee and State Farmers Market. This alternative continues just past Flagler Street then turns northward on new alignment to avoid a residential neighborhood. It parallels Madison Avenue then skirts the east side of Collier Health Services Medical Center and the Florida State University College of Medicine before reconnecting to SR 29. From this point, Central Alternative #1 Revised follows SR 29 to SR 82. A roundabout is being considered at SR 29 north of Westclox Street.
- Central Alternative #2: This alternative follows the existing alignment of SR 29 from Oil Well Road to south of Farm Workers Village. At CR 846/Airport Road, this alternative travels north from SR 29 on new alignment along the west side of the Immokalee Regional Airport to avoid the commercial/industrial areas of Immokalee and the State Farmers Market to the west. This alternative then turns to the northwest just past Gopher Ridge Road to parallel Madison Avenue and New Market Road. It then travels along the east side of Collier Health Services Medical Center and the Florida State University College of Medicine before reconnecting to SR 29. From this point, Central Alternative #2 follows SR 29 to SR 82. A roundabout is being considered at SR 29 north of Westclox Street.

3.1.1 SR 29 Typical Sections

Typical sections have been developed for the portions of SR 29 south and north of the SR 29 Bypass Junction. No changes have been proposed for the portion of SR 29 that passed through downtown Immokalee, from the southern to the northern SR 29 Bypass Junctions. Therefore, new typical sections have not been developed along SR 29 from New Market Road (the southern SR 29 Bypass terminus) to Westclox Street/New Market Road (south of the northern SR 29 Bypass terminus).

Within the project limits, SR 29 can be broken up into the following six typical sections:

From Oil Well Road to South of Kaicasa Entrance

Central Alternative 1R and Central Alternative 2

The existing 2-lane undivided roadway is widened to a 4-lane divided typical section (two (2) 12-foot lanes in each direction and a 40-foot median), with a 5-foot sidewalk on the west side of the corridor. There is an open drainage system, the design speed is 65 MPH, and the corridor is classified as an Emerging SIS Highway.

The existing ROW varies from 173.75 feet to 181 feet. The ROW width needed for this typical section can be accommodated within the existing ROW limits. Additional ROW may be needed for turn lanes. **Figure 3-1** depicts this typical section.

From South of Kaicasa Entrance to Seminole Crossing Trail

Central Alternative 1R and Central Alternative 2

The existing 2-lane undivided roadway is widened to a 4-lane divided typical section (two (2) 12-foot travel lanes in each direction and a 30-foot median), with a 10-foot shared use path on the west side of the corridor. There is an open drainage system, the design speed is 55 MPH, and the corridor is classified as an Emerging SIS Highway.

The existing ROW varies from 173.75 feet to 181 feet. The ROW width needed for this typical section can be accommodated within the existing ROW limits. Additional ROW may be needed for turn lanes. **Figure 3-2** depicts this typical section.

From Seminole Crossing Trail to New Market Road

Central Alternative 1R Only

The existing 2-lane to 4-lane undivided roadway is widened to a 4-lane divided typical section (two (2) 11-foot travel lanes in each direction and a 22-foot median), with 7-foot buffered bicycle lanes and 6-foot sidewalks in each direction. There is a closed drainage system with curb and gutter, the design speed is 45 MPH, and the corridor is classified as an Emerging SIS Highway.

The existing ROW is 100 feet. The ROW width needed for this typical section can be accommodated within the existing ROW limits. Additional ROW may be needed for turn lanes. **Figure 3-3** depicts this typical section.

From Seminole Crossing Trail to CR 846

Central Alternative 2 Only

The existing 2-lane undivided roadway is widened to a 4-lane divided typical section (two (2) 11-foot lanes in each direction and a 22-foot median), with 7-foot buffered bicycle lanes and 6-foot sidewalks in each direction. There is a closed drainage system with curb and gutter, the design speed is 45 MPH, and the corridor is classified as an Emerging SIS Highway.

The existing ROW is 100 feet. The ROW width needed for this typical section can be accommodated within the existing ROW limits. Additional ROW may be needed for turn lanes. **Figure 3-4** depicts this typical section.

From North of Westclox Street to the SR 29 Bypass Junction

Central Alternative 1R and Central Alternative 2

The existing 2-lane undivided roadway is widened to a 4-lane divided typical section (two (2) 12-foot travel lanes in each direction and a 30-foot median), with a 10-foot shared use path on the west side of the corridor. There is an open drainage system and the design speed is 50 MPH.

The existing ROW is 200 feet. The ROW width needed for this typical section can be accommodated within the existing ROW limits. Additional ROW may be needed for turn lanes. **Figure 3-5** depicts this typical section.

From the SR 29 Bypass Junction to Experimental Road

Central Alternative 1R and Central Alternative 2

The existing 2-lane undivided roadway is widened to a 4-lane divided typical section (two (2) 12-foot travel lanes in each direction and a 30-foot median), with a 10-foot shared use path on the west side of the corridor. There is an open drainage system, the design speed is 55 MPH, and the corridor is classified as an Emerging SIS Roadway.

The existing ROW is 200 feet. The ROW width needed for this typical section can be accommodated within the existing ROW limits. Additional ROW may be needed for turn lanes. **Figure 3-6** depicts this typical section.

From Experimental Road to South of SR 82

Central Alternative 1R and Central Alternative 2

The existing 2-lane undivided roadway is widened to a 4-lane divided typical section (two (2) 12-foot travel lanes in each direction and a 40-foot median), with a 10-foot shared use path on the

west side of the corridor. There is an open drainage system, the design speed is 65 MPH, and the corridor is classified as an Emerging SIS Roadway.

The existing ROW is 200 feet. The ROW width needed for this typical section can be accommodated within the existing ROW limits. Additional ROW may be needed for turn lanes. **Figure 3-7** depicts this typical section.

Figure 3-1
SR 29 Typical Section from Oil Well Road to South Kaicasa Entrance

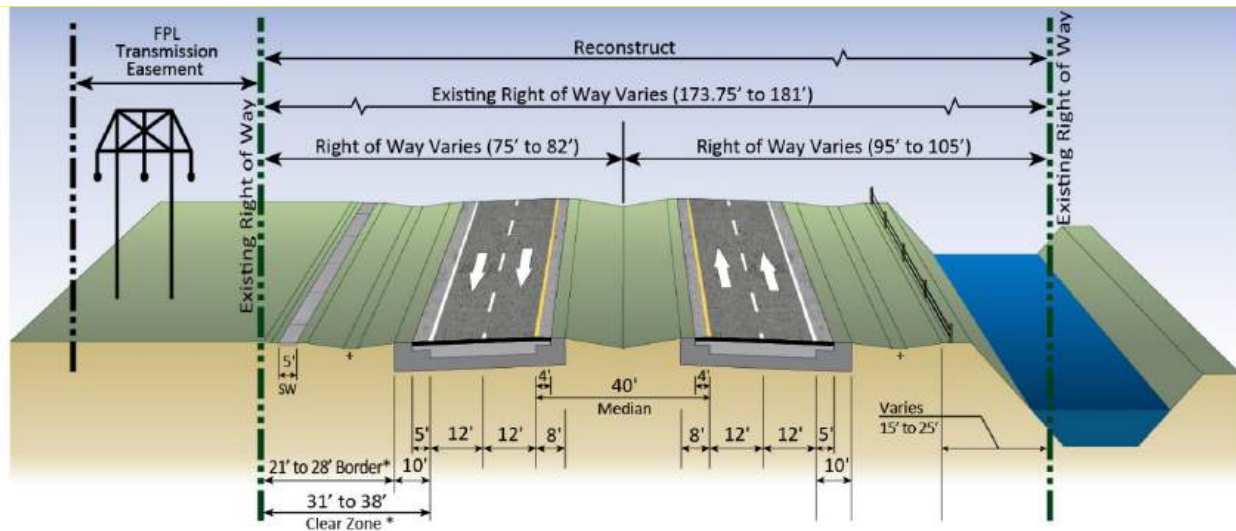


Figure 3-2
SR 29 Typical Section from South of Kaicasa Entrance to Seminole Crossing Trail

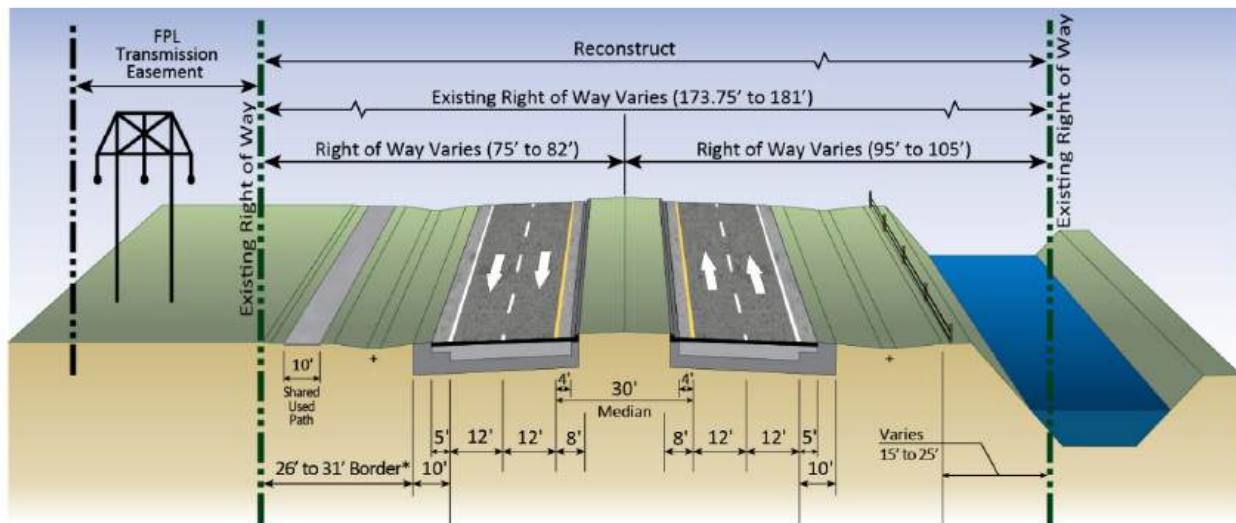


Figure 3-3
SR 29 Typical Section from Seminole Crossing Trail to New Market Road
(Central Alternative #1 Revised)

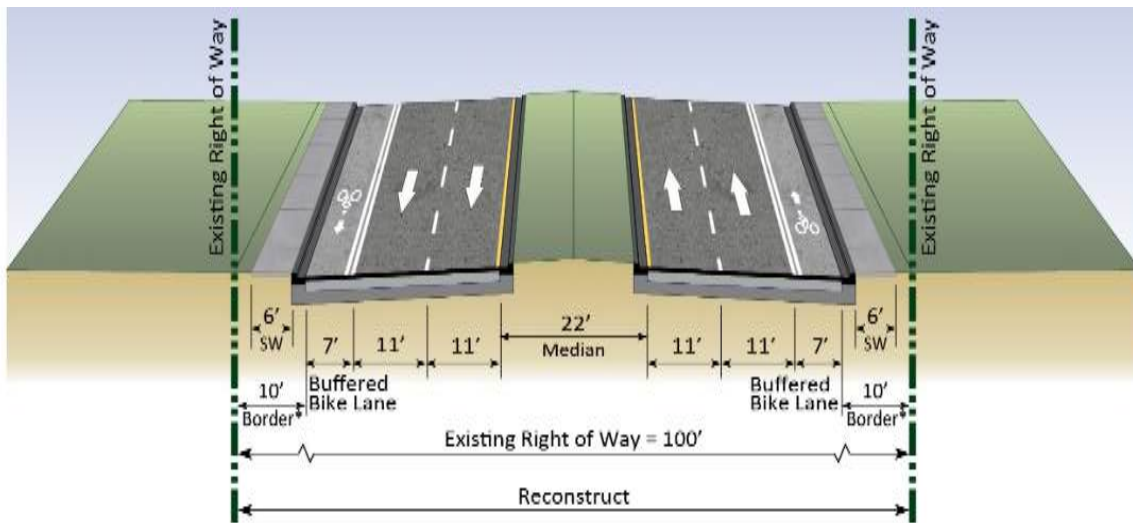


Figure 3-4
SR 29 Typical Section from Seminole Crossing Trail to CR 846
(Central Alternative #2)



Figure 3-5
SR 29 Typical Section from North of Westclox Street to the SR 29 Bypass Junction

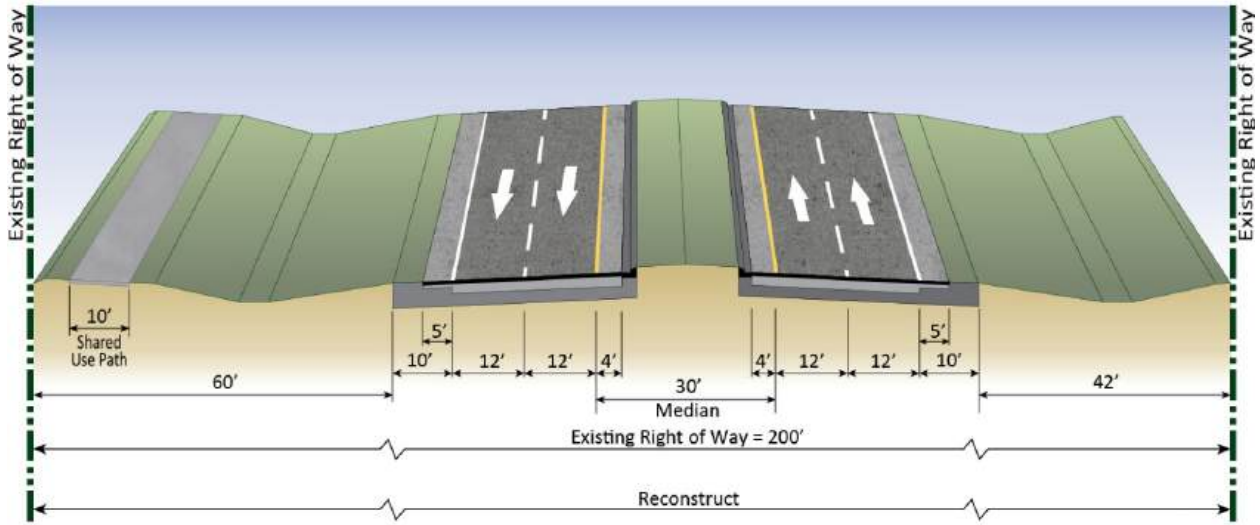


Figure 3-6
SR 29 Typical Section from the SR 29 Bypass Junction to Experimental Road

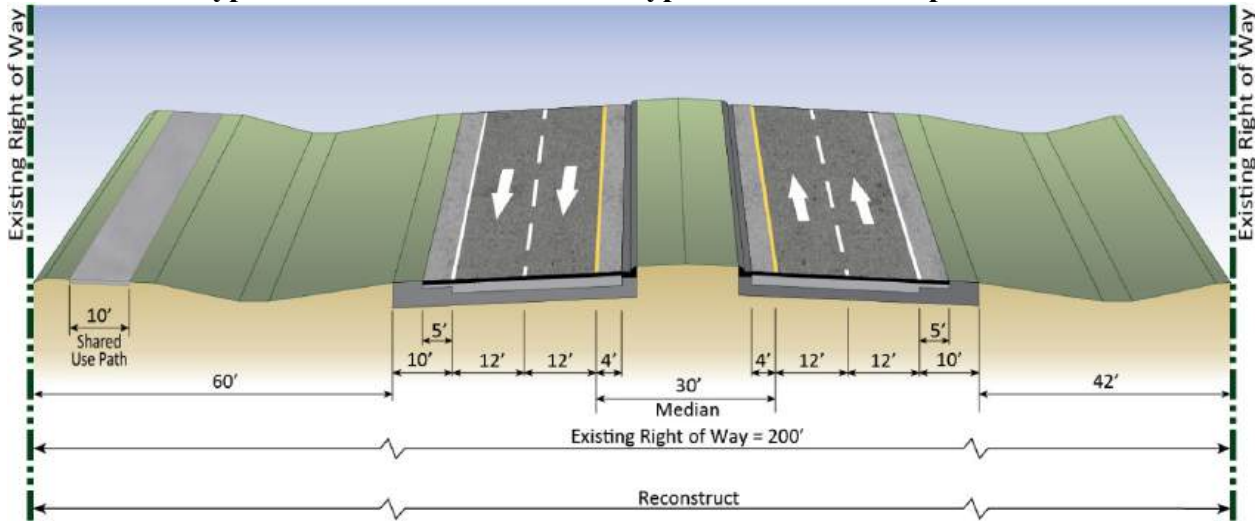
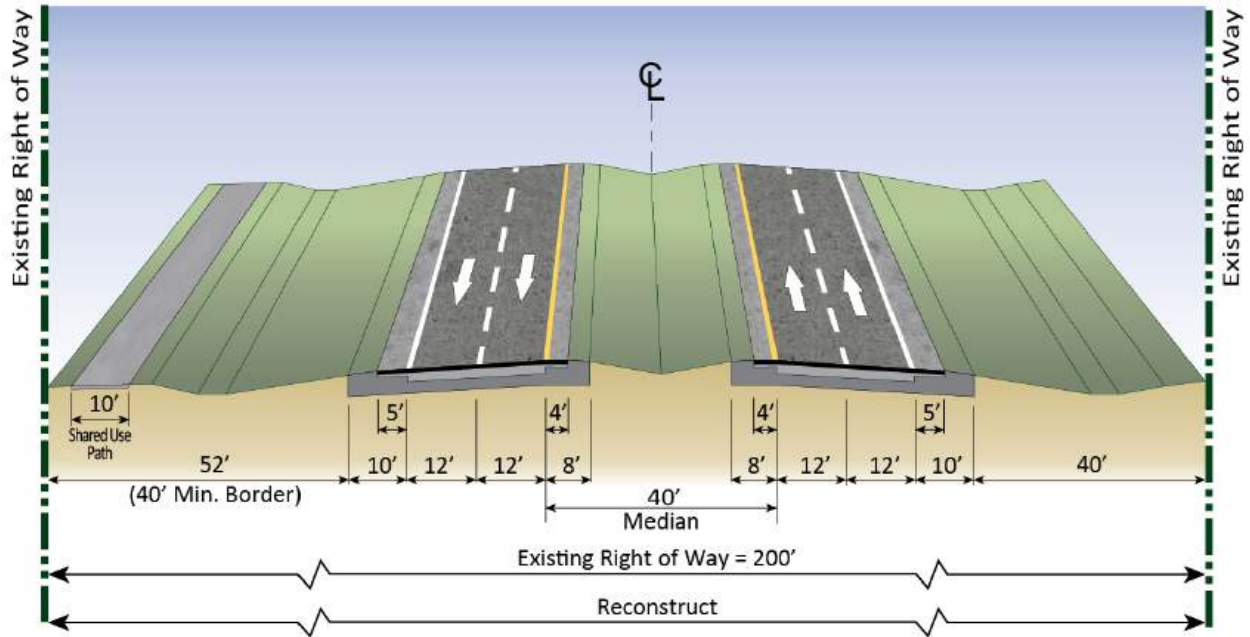


Figure 3-7
SR 29 Typical Section from Experimental Road to South of SR 82



3.1.2 New Market Road Typical Sections

Within the project limits, New Market Road can be broken up into the following two typical sections.

From SR 29 to North of Airport Access

Central Alternative 1R Only

The existing 2-lane undivided roadway is widened to a 4-lane divided typical section (two (2) 11-foot travel lanes in each direction and a 22-foot median), with 7-foot buffered bicycle lanes and 6-foot sidewalks in each direction. There is a closed drainage system with curb and gutter, the design speed is 45 MPH, and the corridor is classified as an Emerging SIS Highway.

The existing ROW is 80 feet. The ROW width needed for this typical section is 100 feet. Additional ROW may be needed for turn lanes. **Figure 3-8** depicts this typical section.

From North of Airport Access to Flagler Street

Central Alternative 1R Only

The existing 2-lane undivided roadway is widened to a 4-lane divided typical section (two (2) 11-foot travel lanes in each direction and a 22-foot median), with 7-foot buffered bicycle lanes and 6-

foot sidewalks in each direction. There is a closed drainage system with curb and gutter, the design speed is 45 MPH, and the corridor is classified as an Emerging SIS Highway.

The existing ROW is 100 feet. The ROW width needed for this typical section can be accommodated within the existing ROW limits. Additional ROW may be needed for turn lanes.

Figure 3-9 depicts this typical section.

Figure 3-8
New Market Road Typical Section from SR 29 to North of Airport Access
(Central Alternative #1 Revised)

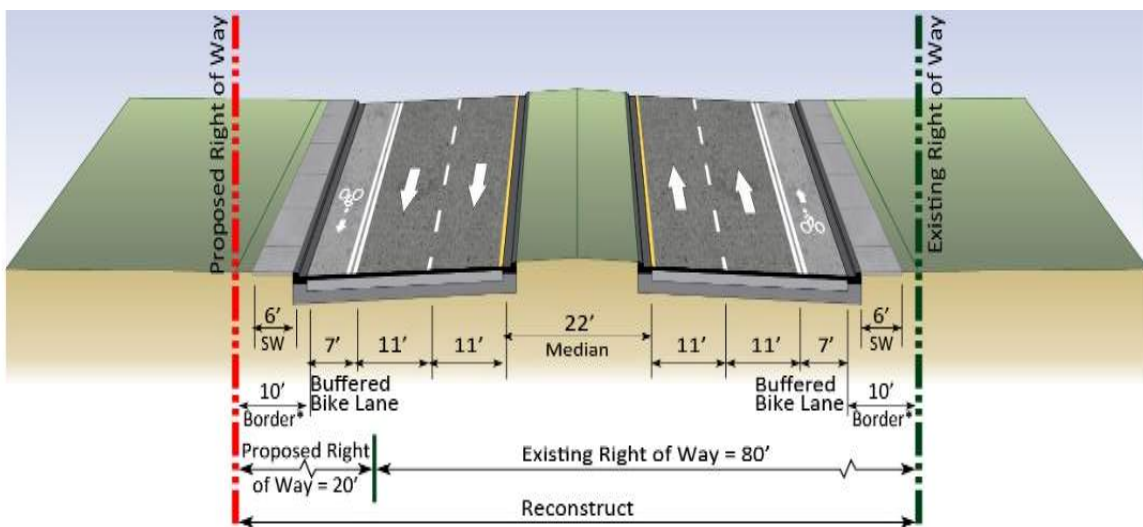
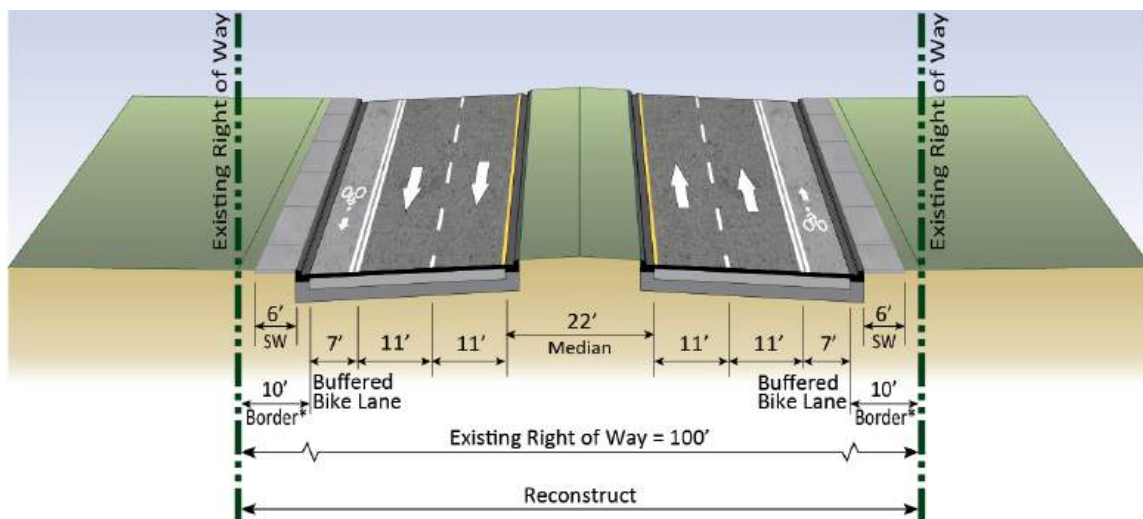


Figure 3-9
New Market Road Typical Section from North of Airport Access to Flagler Street
(Central Alternative #1 Revised)



3.1.3 SR 29 Bypass Typical Sections

Within the project limits, the proposed SR 29 Bypass can be described by the following typical sections.

From Flagler Street to SR 29

Central Alternative 1R Only

A 4-lane divided typical section (two (2) 12-foot travel lanes in each direction and a 30-foot median) is proposed, with a 10-foot shared use path on the west side of the corridor. There is an open drainage system, the design speed is 50 MPH, and the corridor is classified as an Emerging SIS Roadway.

The ROW width needed for this typical section is 200 feet. Additional ROW may be needed for turn lanes. **Figure 3-10** depicts this typical section.

From CR 846 to Gopher Ridge Road

Central Alternative 2 Only

A 4-lane divided typical section (two (2) 11-foot travel lanes in each direction and a 22-foot median) is proposed, with 7-foot buffered bicycle lanes and 6-foot sidewalks in each direction. There is a closed drainage system with curb and gutter, the design speed is 45 MPH, and the corridor is classified as an Emerging SIS Highway.

The ROW width needed for this typical section is 108 feet. Additional ROW may be needed for turn lanes. **Figure 3-11** depicts this typical section.

From Gopher Ridge Road to SR 29

Central Alternative 2 Only

A 4-lane divided typical section (two (2) 12-foot travel lanes in each direction and a 30-foot median) is proposed, with a 10-foot shared use path on the west side of the corridor. There is an open drainage system, the design speed is 50 MPH, and the corridor is classified as an Emerging SIS Highway.

The ROW width needed for this typical section is 200 feet. Additional ROW may be needed for turn lanes. **Figure 3-12** depicts this typical section.

Figure 3-10
SR 29 Bypass Typical Section from Flagler Street to SR 29
(Central Alternative #1 Revised)

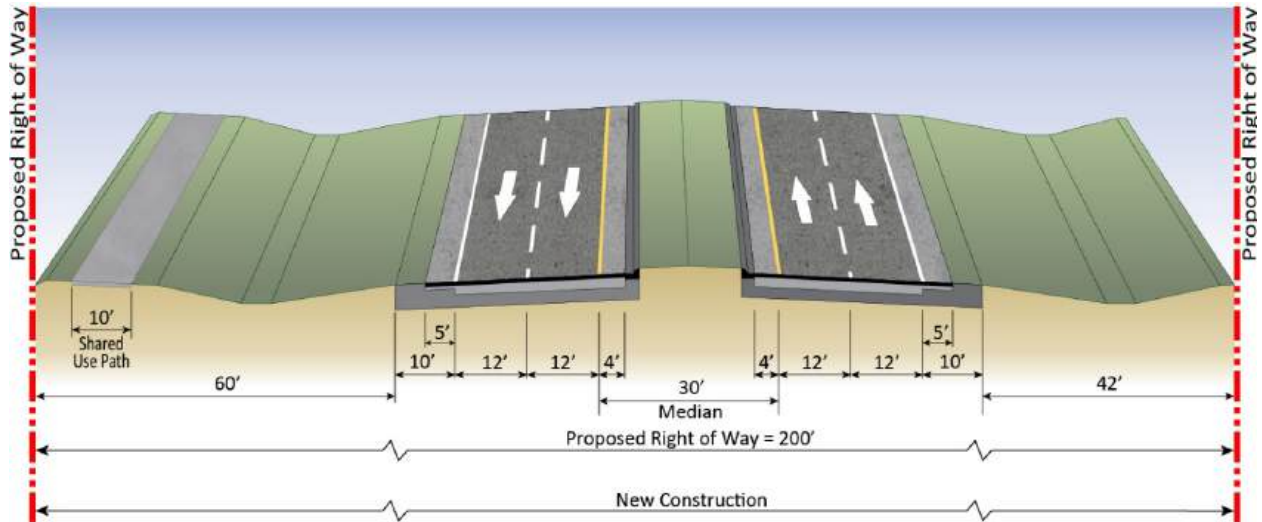


Figure 3-11
SR 29 Bypass Typical Section from CR 846 to Gopher Ridge Road
(Central Alternative #2)

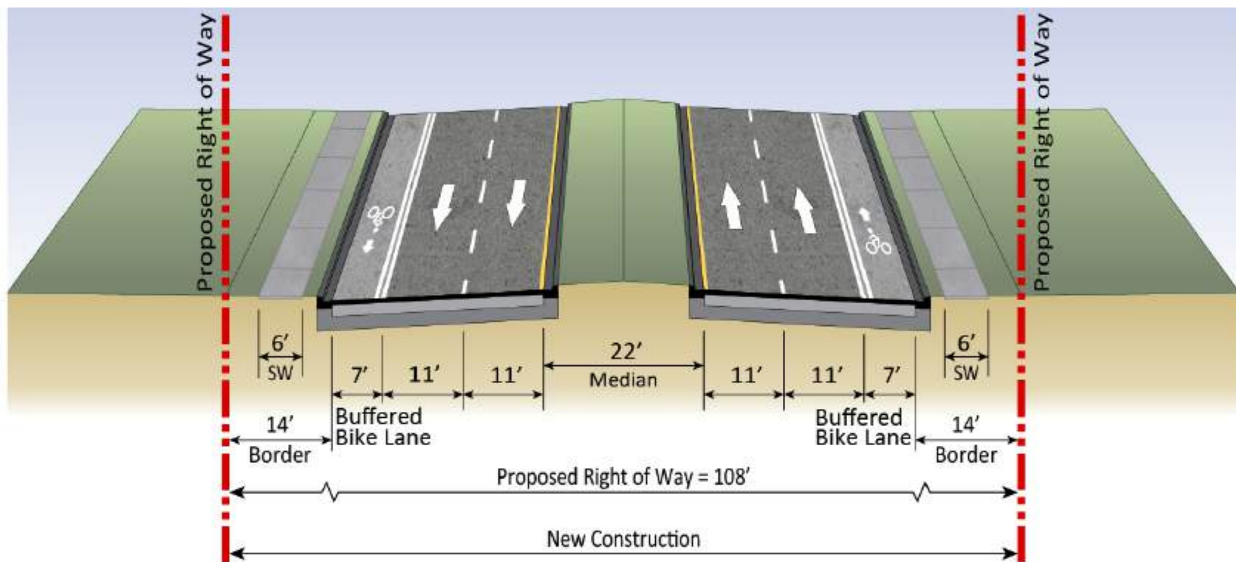
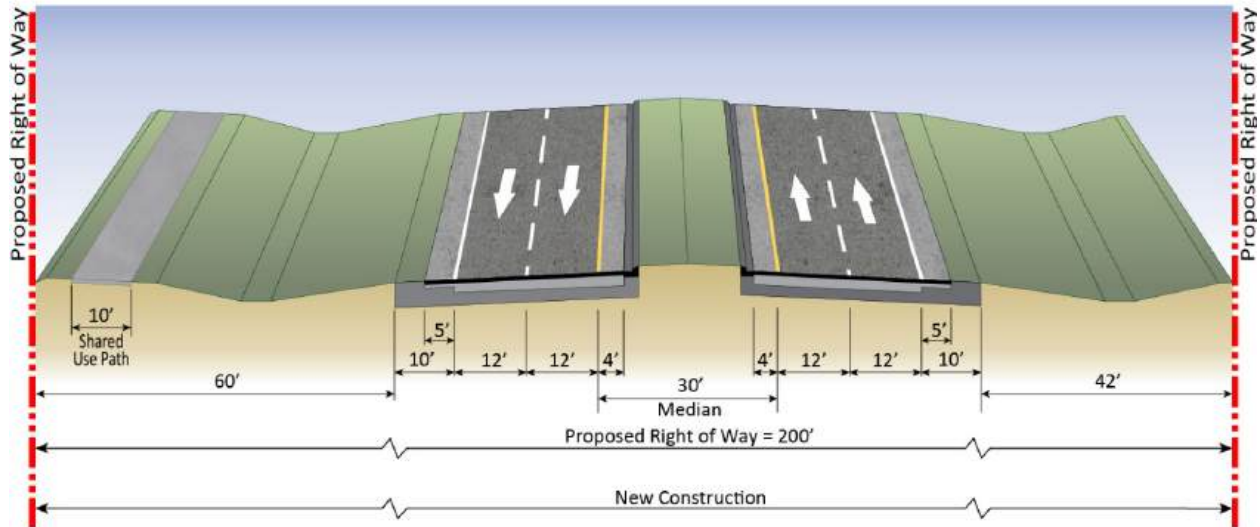


Figure 3-12
SR 29 Bypass Typical Section from Gopher Ridge Road to SR 29
(Central Alternative #2)



3.1.4 Intersections

For both build alternatives, signalized intersections have been proposed at each of the existing stop controlled intersections. Also, capacity increases, from 2-lane to 4-lane facilities, have been proposed along the existing SR 29 and New Market corridors north and south of the SR 29 Bypass. Additional left and right turn lanes have been proposed at various intersections along the study corridor. No geometric changes to SR 29 within downtown Immokalee, from New Market Road to Westclox Street/New Market Road, have been proposed.

The FDOT Step 1 Roundabout Screening was conducted for each of the study intersections within each build alternative. The intersections at Westclox Street/New Market Road and the northern SR 29 Bypass Junction were advanced to the Step 2 Benefit-Cost Evaluation for Central Alternative #1 Revised.

3.2 Drainage

The project consists of 41 drainage basins for each alignment alternative, Central 1R and Central 2. Basins 1 through 24 and Basins 33 through 41 are identical for each alignment alternative. A proposed wet detention pond has been identified within each of these basins. Through the central “bypass” portion of the study area, basins were delineated for each alignment alternative: Basins 29-1R through 32-1R for Central 1R; and, Basins 29-2 through 32-2 for Central 2. A proposed wet detention pond has been identified within each of these central alternative basins, as well.

In the proposed condition, the proposed ponds outfall to the same localized point as the existing basins. Portions of some of the existing basins have been rerouted to adjacent basins for treatment and attenuation in order to reduce the overall number of ponds required. Therefore, not all basins have a proposed pond; however, existing basin limits were used to determine allowable post-development runoff volumes. Basin limits and pond alternatives are shown in **Appendix B, Drainage Maps**.

Existing flow patterns will be maintained and stormwater management facilities will be utilized to provide the necessary stormwater management (water quality and quantity).

It is assumed that the existing offsite stormwater runoff will be “passed through” the proposed ponds, where necessary, with no additional treatment required. Weir structures and pipes must be sized to accommodate the additional offsite flows passing through the proposed ponds.

3.3 Soils

The eighteen (18) primary soil-mapping units present within the project study area are shown on the Soils Map in **Appendix D**. Most of the soils present with the study limits are designated as Hydrologic Soil Group B/D. For this Preliminary Pond Siting Report, curve numbers for these soils groups were chosen based on the “D” soils. This approach yielded curve numbers consistent with adjacent permits in the area. Also, seasonal high water table (SHWT) elevations were estimated based on the soil type present at the proposed pond site unless a permitted SHWT could be utilized.

3.4 Land Use

The Collier County Community Planning Section is currently updating several Collier County area land use plans. This PD&E Study is located within two of the four areas currently being assessed in the eastern portion of the county, the Rural Lands Stewardship Area and the Immokalee Area.

The Rural Lands Stewardship Area is approximately 185,000 acres surrounding the Immokalee area. The original plan for this area was adopted in 2002. A 5-year restudy of the Overlay was completed in 2009 and resulted in several policy change recommendations. The current restudy effort will consider the previous recommendations, procure new data and analysis where needed, and determine if further changes will have positive results. The Future Land Use Map is shown as **Figure 3-13**.

The Immokalee Area Master Plan has undergone significant restudy in the past few years. The current restudy effort will determine if any further changes will improve the Immokalee Area Master Plan. The Immokalee Future Land Use Map is shown as **Figure 3-14**.

3.5 Cross Drains

Most of the cross drains listed in **Table 2-3** in Section 2.5 of this report will require lengthening or other modifications as part of the proposed improvements. During the final design phase, the exact nature of the modifications will be determined and the cross drains will be analyzed.

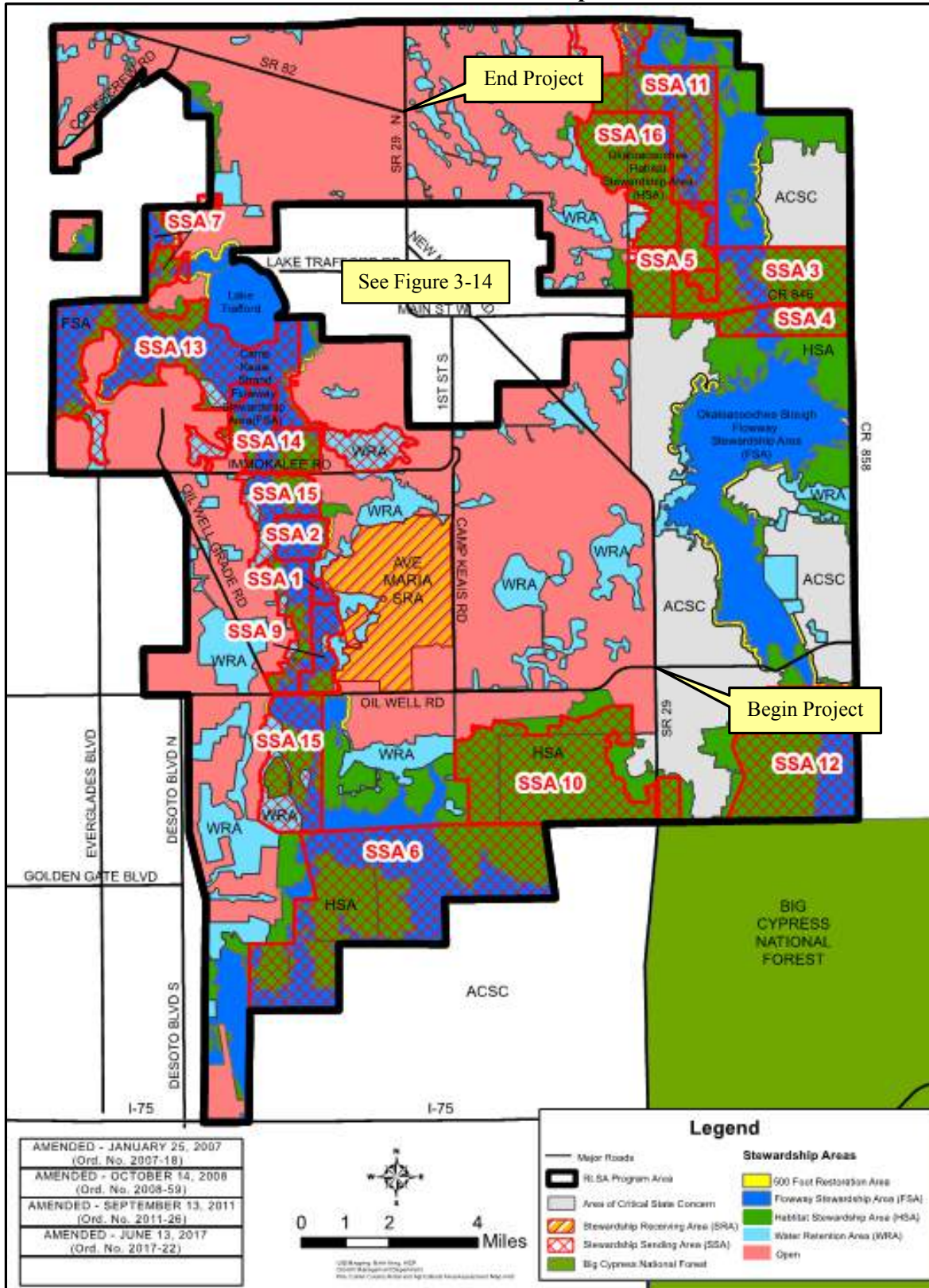
3.6 Bridge Structures

The widening of SR 29 for Central Alternative #1 Revised requires the lengths of three existing bridge culverts (Bridge Nos. 030019, 030304 and 030305) to be extended. All of the bridge culverts have Load Resistance Factor (LRF) ratings above 1.0, which makes them suitable for widening.

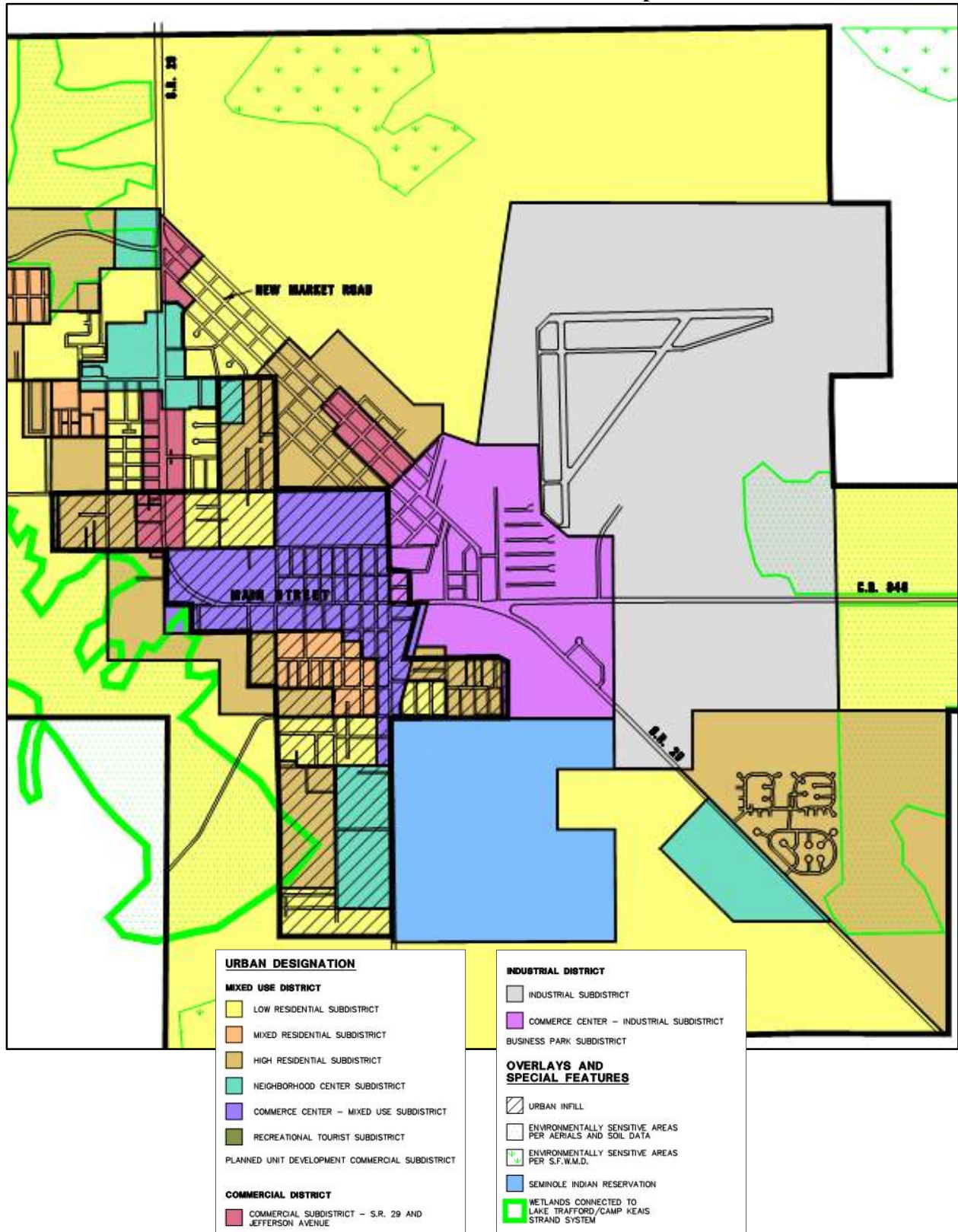
The widening of SR 29 also requires the addition of a new bridge over Gator Creek adjacent to Bridge No. 030303. The existing concrete flat slab existing bridge was constructed in 1999. It has a Sufficiency Rating of 95.9 and a LRF rating over 1.0, which indicates that it is in good overall condition and is suitable to remain in service. The existing bridge will carry the two northbound lanes of traffic and the new bridge will carry the two southbound lanes.

Replacement of the existing pedestrian overpass Bridge No. 039001 over SR 29 is required due to insufficient bridge length to accommodate the widening of SR 29.

**Figure 3-13
Future Land Use Map**



**Figure 3-14
Immokalee Future Land Use Map**



3.7 Floodplains and Floodways

The entire project is within the 100-year base floodplain designated as Zone AH, which is the flood insurance rate zone that corresponds to areas of 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations derived from detailed hydraulic analyses are shown at selected intervals within this zone. The base flood elevation ranges from elevation 19 feet just south of Oil Well Road to elevation 36.5 feet at SR 82. The proposed improvements would impact the base floodplain storage in the following ways:

- The widening of the cross drains and bridge culverts will encroach upon the floodplain in the form of concrete and fill material.
- The widening of the roadway portion of the project would add embankment fill material upon the base floodplain within the existing right-of-way.

According to Fidel Herrera, Maintenance Manager/Field Operations for Ferrovial Services (FDOT Asset Management Consultant), there are no issues with the existing drainage structures or function of the drainage system. In addition, aside from occasional nuisance ponding, there are no known flooding problems within the project limits. Please refer to **Appendix F**.

In order to estimate and quantify floodplain impacts, the project area was divided into three impact areas, identified as F-1, F-2 and F-3. Potential floodplain encroachment was evaluated using cross sections created from LiDAR data and existing SFWMD ERP information in the areas within the 100-year floodplain to calculate the additional fill due to widening that would be added. Estimated encroachment volumes, based on the proposed concept plans and typical sections, are shown in

Table 3-1. Refer to **Appendix E** for estimated floodplain impact calculations.

Table 3-1

Floodplain Impact	Encroachment (ac-ft)	Excavation (ac-ft)	Comment
F-1	25.36	-	
F-2	-	6.37	No compensation required
F-3	-	7.90	No compensation required

Estimated Total Floodplain Impacts

Approximately 25.36 acre-feet of floodplain impacts are expected.

Part III, Section 3.6 of the SFWMD Environmental Resource Permit (ERP) Applicant's Handbook Volume II (effective May 22, 2016) states "No net encroachment into the floodplain, between the average wet season water table and that encompassed by the 100 year event, which will adversely affect the existing rights of others, will be allowed." Compliance with "Historic Basin Storage" (Part III, Section 3.7) and "Offsite Lands" (Part III, Section 3.8) criteria will also be necessary. Therefore, floodplain compensating storage will be provided as required by SFWMD and as a result, no significant changes in base flood elevations or limits will occur.

In addition, the encroachments into the floodplain may be decreased (minimized) through adjustment to the typical section. Minimization and/or avoidance measures will be taken into consideration during the design phase to reduce any impacts to the 100-year floodplain by steepening the side slopes or adding retaining/gravity walls, if feasible. Since proposed roadway widening occurs along the existing alignment, floodplain encroachments are considered minimal.

The Collier County FEMA representative was contacted to ensure that the project is consistent with the existing watershed and floodplain management programs. The County staff indicated that they do not have more restrictive requirements than FEMA for infrastructure projects at this time. Since the project will be designed to FEMA, FDOT, and state regulatory requirements, it was concluded that the project will be consistent with local floodway plans and floodplain management programs. The county agencies are the designated FEMA representative for this project; therefore, there was no need for further coordination with FEMA.

3.8 Project Classification

In accordance with FDOT's PD&E Manual, Part 2, Chapter 13, Figure 13-1 Floodplain Statements, the corridor has been evaluated to determine the impact of the proposed hydraulic modifications. Hydraulic improvements are grouped into six categories based upon the type of hydraulic improvements and estimated floodplain impact. The proposed project can be best described as Project Activity Category 4 – "Projects on Existing Alignment Involving Replacement of Existing Drainage Structures with No Record of Drainage Problems". This classification excludes replacement activities that would reduce the hydraulic performance of existing facilities.

Projects on Existing Alignment Involving Replacement of Existing Drainage Structures with No Record of Drainage Problems

The proposed structures will perform hydraulically in a manner equal to or greater than the existing structures, and backwater surface elevations are not expected to increase. As a result, 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.

3.9 Risk Evaluation

Chapter 13 - Floodplains of the FDOT's PD&E Manual, Part 2, refers to the Federal-Aid Policy Guide CFR 650A in conducting the risk evaluation. Because it has been determined that the floodplain encroachments are not significant, it can be concluded that the encroachments do *not* create:

- a significant potential for interruption or termination of a transportation facility which is needed for emergency vehicles or provides a community's only evacuation route
- a significant flood risk
- a significant adverse impact on natural and beneficial floodplain values

Therefore, the floodplain encroachments will not create a risk to **transportation infrastructure** (road closure, repair costs), **highway users** (loss of life, service disruption) or to **residents** (damages, service disruption, property loss).

In addition, since all floodplain encroachments are limited to existing roadway right-of-way, there will be no effect on the beneficial values listed below as a result of this project's estimated impacts:

- Natural moderation of floods
- Water quality maintenance
- Groundwater recharge
- Fish and wildlife habitat
- Plants
- Open space and natural beauty
- Recreation
- Agriculture and aquaculture
- Forestry

3.10 Coordination with Local Agencies

Throughout all phases of the PD&E Study, coordination with local agencies has taken place. This coordination includes the following communication and documentation received from local agencies:

- ETDM Programming Screen Summary Report Agency Comments (12/4/17)
- SFWMD Pre-Application Meeting (2/13/2009)
- Correspondence with Collier County regarding maintenance/flooding issues and Immokalee Stormwater Master Plan (May 2018)

Refer to **Appendix F** for the correspondence.

3.11 PD&E Manual Requirements with Minimal Encroachment

Chapter 13 - Floodplains of the FDOT's PD&E Manual, Part 2, lists the report criteria for projects with floodplains within the project limits. The FDOT has different requirements based on the level of significance of the encroachment. This SR 29 widening project was determined to have minimal encroachment and, as a result, the requirements for this level of significance are listed below:

- **The history of flooding of the existing facilities and/or measures to minimize any impacts due to the proposed improvements.**
 - *There is no history of flooding of the existing facilities. According to Fidel Herrera, Maintenance Manager/Field Operations for Ferrovial Services (FDOT Asset Management Consultant), there are no issues with the existing drainage structures or function of the drainage system. In addition, aside from occasional nuisance ponding, there are no known flooding problems within the project limits. Measures to minimize impacts due to the proposed improvements include widening along the existing alignment and maintaining improvements within the existing right-of-way. For the new alignment portion of the project (SR 29 Bypass), the proposed right-of-way is sufficient to balance floodplain encroachment and excavation, thus providing no net encroachment into the base floodplain.*
 - **Determination of whether the encroachment is longitudinal or transverse, and if it is a longitudinal encroachment an evaluation and discussion of practicable avoidance alternatives.**
 - *The impact to the base floodplain is a longitudinal encroachment. F-1, F-2 and F-3 occur along existing SR 29. Because the proposed improvements widen the existing roadway, impacts to this floodplain are unavoidable. However, steepening of the slopes or the use of retaining/gravity wall during the final design phase may reduce impacts to the floodplain.*
 - **The practicability of avoidance alternatives and/or measures to minimize impacts.**
 - *This project involves the widening of a heavily-traveled existing roadway facility. Because of the high traffic volumes within the project limits, avoidance is not practical. However, retaining/gravity walls or steeper side slopes can be employed to minimize impacts.*
 - **Impact of the proposed improvement on emergency services and evacuation.**
 - *The existing roadway is elevated above the 100-year floodplain along the entire project corridor. Therefore, the roadway will continue to provide flood-free access and will not adversely impact the operation of emergency services and evacuation routes.*

- **Impacts of the proposed improvement on the base flood, likelihood of flood risk, overtopping, location of overtopping, backwater, etc.**
- *The floodplain encroachments due to the proposed improvements are minimal and will be mitigated as per the requirements of the South Florida Water Management District (SFWMD). The impacts to the base flood and likelihood of flood risk are minimal. No overtopping of the roadway is anticipated for the entire roadway corridor.*
- **Determination of the impact of the proposed improvements on regulatory floodways, if any, and documentation of coordination with FEMA and local agencies to determine the project's consistency with the regulatory floodway.**
- *There are no regulatory floodways within the project limits.*
- **The impacts on natural and beneficial floodplain values, and measures to restore and preserve these values (this information may also be addressed as part of the wetland impact evaluation and recommendations).**
- *Since the majority of the improvements are located within the existing right-of-way, no adverse impact on natural and beneficial floodplain values is anticipated. All floodplain mitigation will be provided per SFWMD's requirements. Please refer to the Natural Resource Evaluation Report for additional information.*
- **Consistency of the proposed improvements with the local floodplain development plan or the land use elements in the Comprehensive Plan, and the potential of encouraging development in the base floodplain.**
- *Coordination with local authorities is currently ongoing.*
- **A map showing project, location, and impacted floodplains. Copies of applicable FIRM maps should be included in the appendix.**
- *A project location map is included as Figure 1-1 of this report. The FEMA FIRMs are located in Appendix C and Floodplain Impact Maps are located in Appendix E.*

➤ **Results of any risk assessments performed.**

- *This Location Hydraulic Report (LHR) is in support of the SR 29 PD&E Study and determines if any impacts to floodplains and floodways occur as a result of the proposed improvements to the roadway and associated drainage/conveyance systems. The results of the risk assessment performed indicate that the floodplain encroachment level will be minimal and is classified as Category 4.*

4.0 Recommendations and Conclusion

4.1 Recommendations

The floodplain model used to establish the Zone AH base flood elevations was not obtained for this PD&E Study. However, acquiring and utilizing the County's floodplain model to reduce or eliminate the floodplain compensation required should be explored during the design phase of the project.

4.2 Conclusion

The encroachments to the floodplains along the project corridor are considered insignificant and are determined to have minimal encroachment.

Minimal Encroachments:

“The proposed drainage systems will perform hydraulically in a manner equal to or greater than the existing conveyance systems, and surface water elevations are not expected to increase upstream or downstream of the project limits. This project will have a minimal impact on the existing floodplains within and adjacent to this roadway improvement project. As a result, 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.”

5.0 References

The references used in defining and developing the information base included, but was not necessarily limited to, the following:

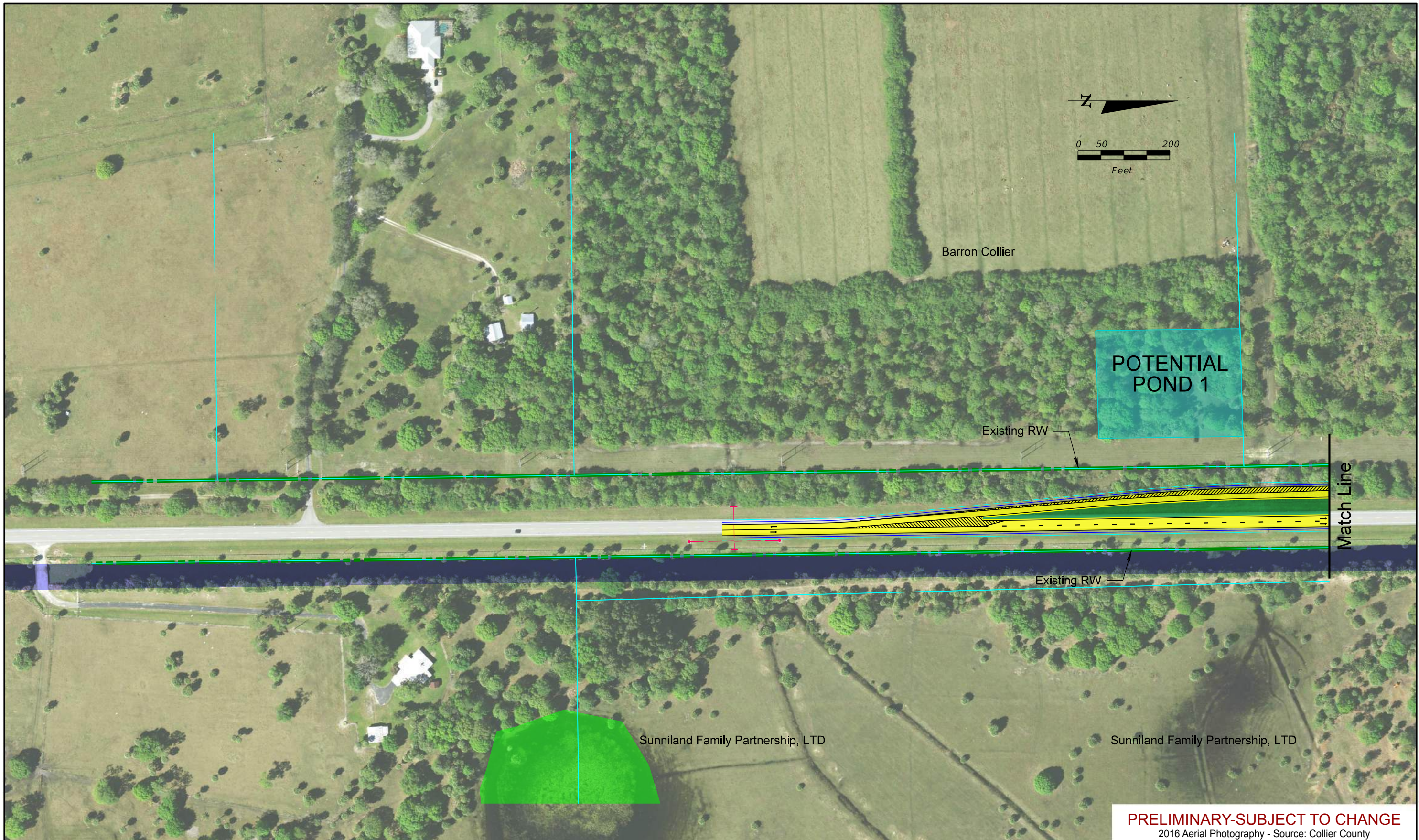
- Collier County Light Detection and Ranging (LiDAR) data (2' contours)
- United States Department of Agriculture, Natural Resource Conservation Service, Soil Survey of Collier County, Florida
- Federal Emergency Management Agency Flood Insurance Rate Map Numbers:
 - 12021C0290H (Effective Date: May 16, 2012)
 - 12021C0280H (Effective Date: May 16, 2012)
 - 12021C0165H (Effective Date: May 16, 2012)
 - 12021C0145H (Effective Date: May 16, 2012)
 - 12021C0135H (Effective Date: May 16, 2012)
- Straight Line Diagram (SLD) for SR 29 in Collier County, Florida
- Straight Line Diagram (SLD) for SR 82 in Collier County, Florida
- FDOT Drainage Manual (January 2018)
- FDOT Project Development and Environment Manual, Part 2, Chapter 13: Floodplains (June 2017)
- Environmental Resource Permit Applicant's Handbook Volume I (General And Environmental) (October 2013)
- Environmental Resource Permit Applicant's Handbook Volume II for use within the Geographic Limits of the South Florida Water Management District (May 2016)
- South Florida Water Management District (SFWMD) Environmental Resource Permits (Various in Collier County)
- SFWMD ERP No. 11-00592-S for State Project Nos. 03080-3530 and 03080-3517, SR 29 from N of CR 858 (Oil Well Road) to CR 846
- SFWMD Coordination Meeting, February 13, 2009
- Collier County Floodplain Management Plan (2010)
- Stormwater Management Basin Map, Collier County, Florida (June 2015)
- Collier County Surface Water Canal System Facilities Geographic Information Systems Web Map (updated May 2018)

APPENDICES

Appendix A
Build Alternative Concept Plans

APPENDIX A
TABLE OF CONTENTS

A-1	Central Alternative #1 Revised Concept Plans
A-35	Central Alternative #2 Concept Plans



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

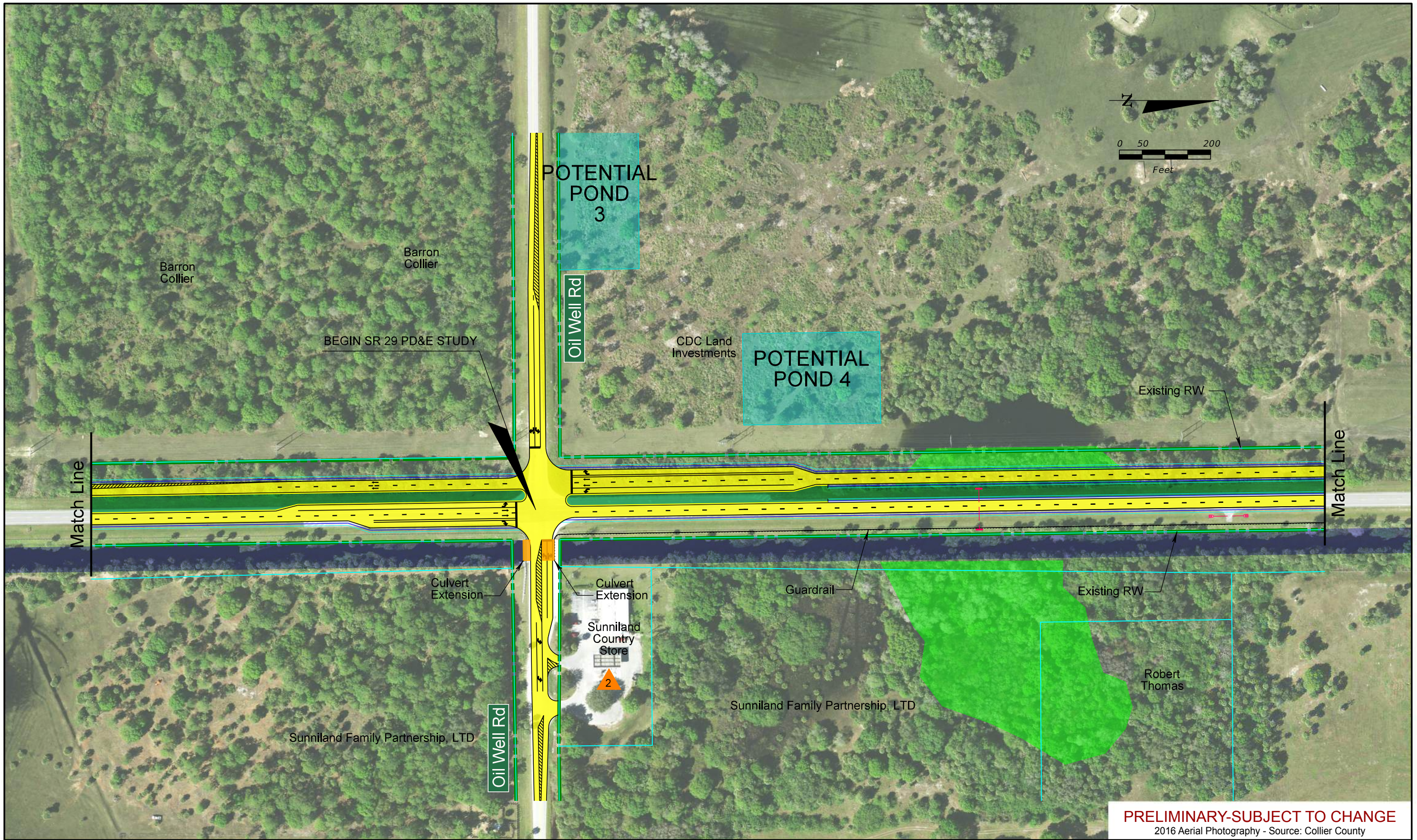
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-1



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Proposed Pavement
	Seminole Land		Proposed Sidewalks
	Traffic Signal		Proposed Structure
	Proposed Guardrail		Potential Business Relocation
	Potential Contamination (Low)		Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-2



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

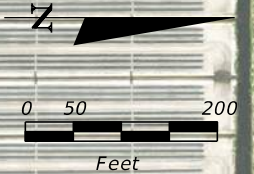
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Proposed Pavement
	Seminole Land		Proposed Median/Border
	Traffic Signal		Proposed Sidewalks
			Proposed Structure
			Proposed Guardrail
			Potential Business Relocation
			Potential Contamination (Low)
			Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-3



Match Line

Match Line



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

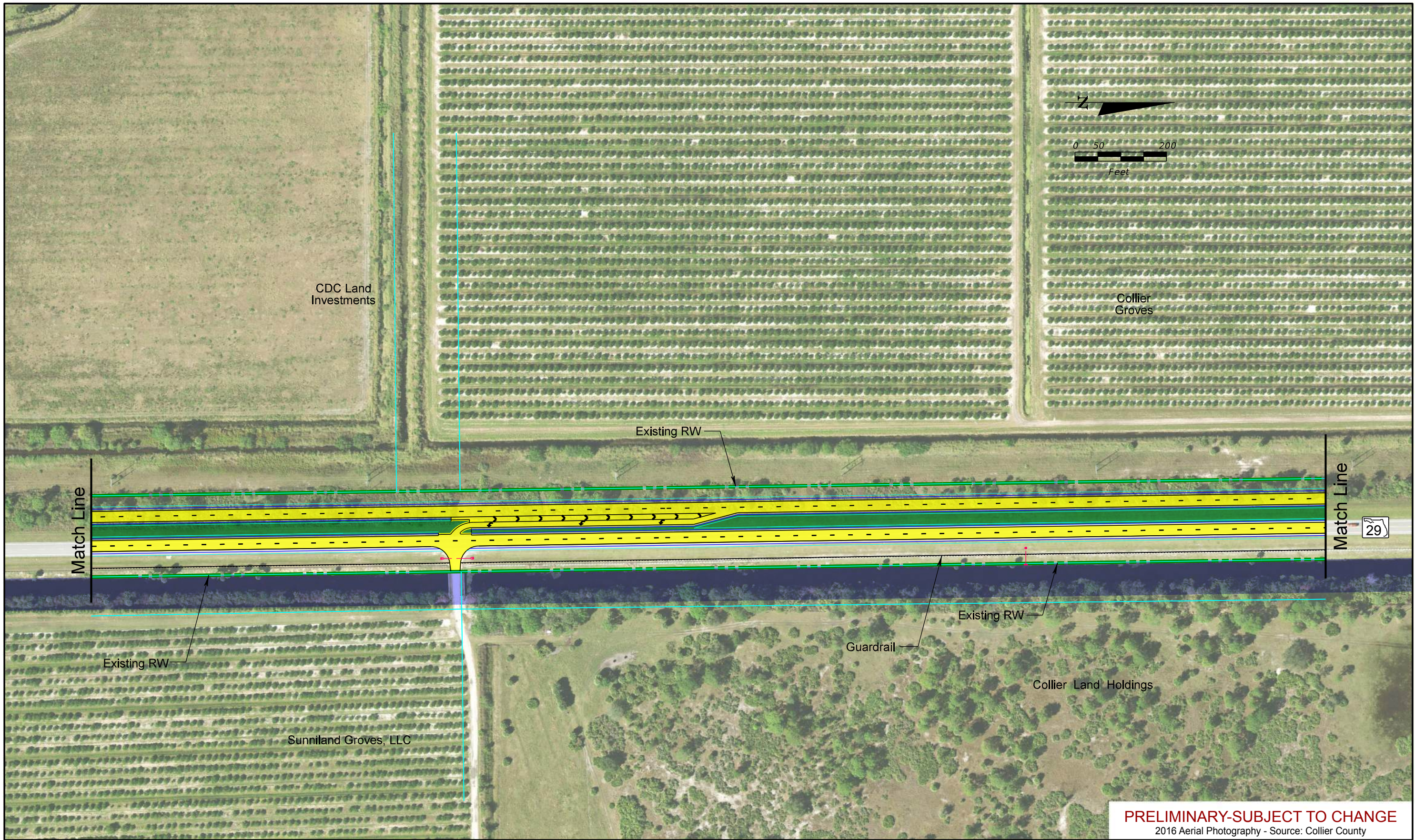
Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

Central Alternative
#1 Revised

Sheet No.
A-4



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

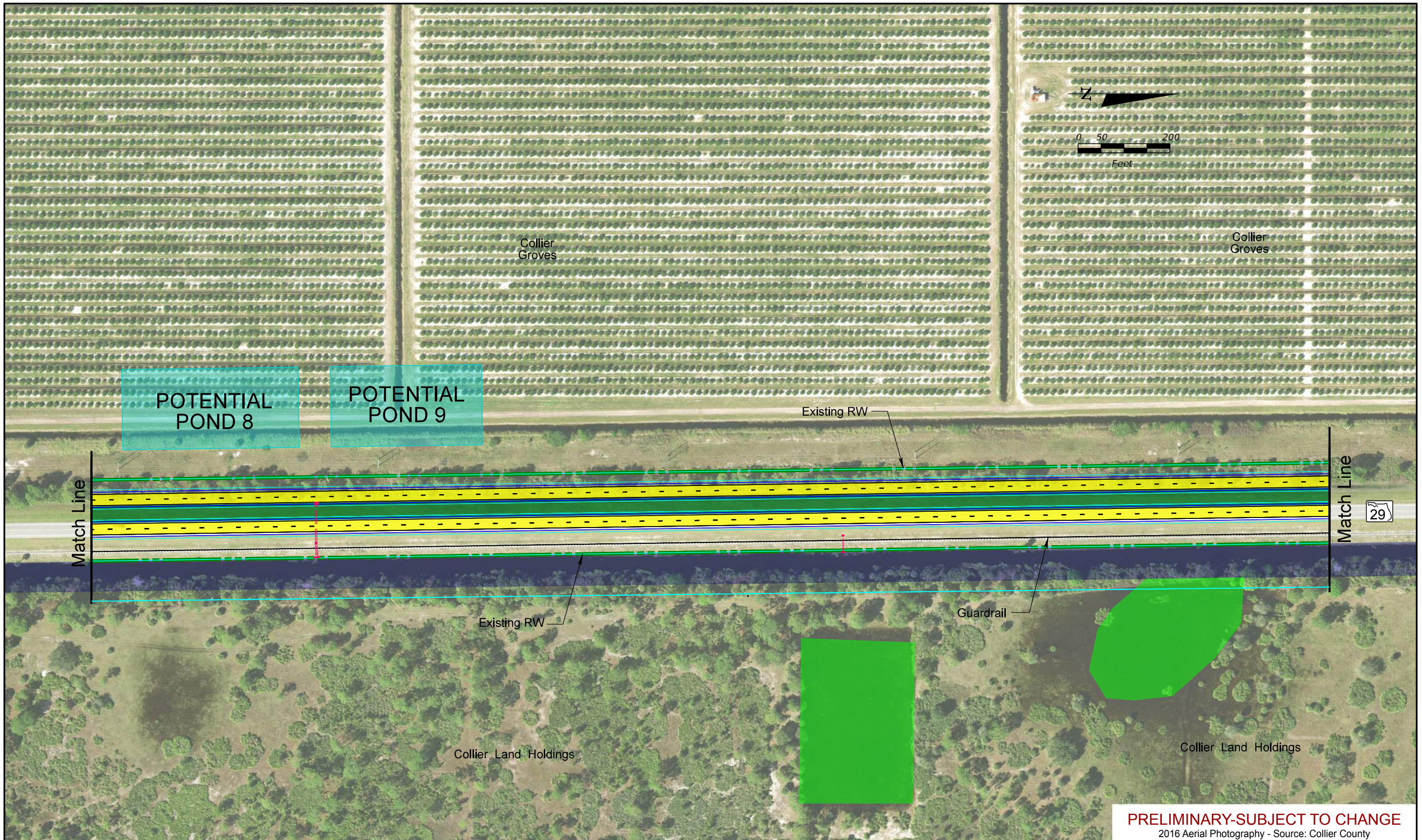
Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

**Central Alternative
 #1 Revised**

Sheet No.
 A-5



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

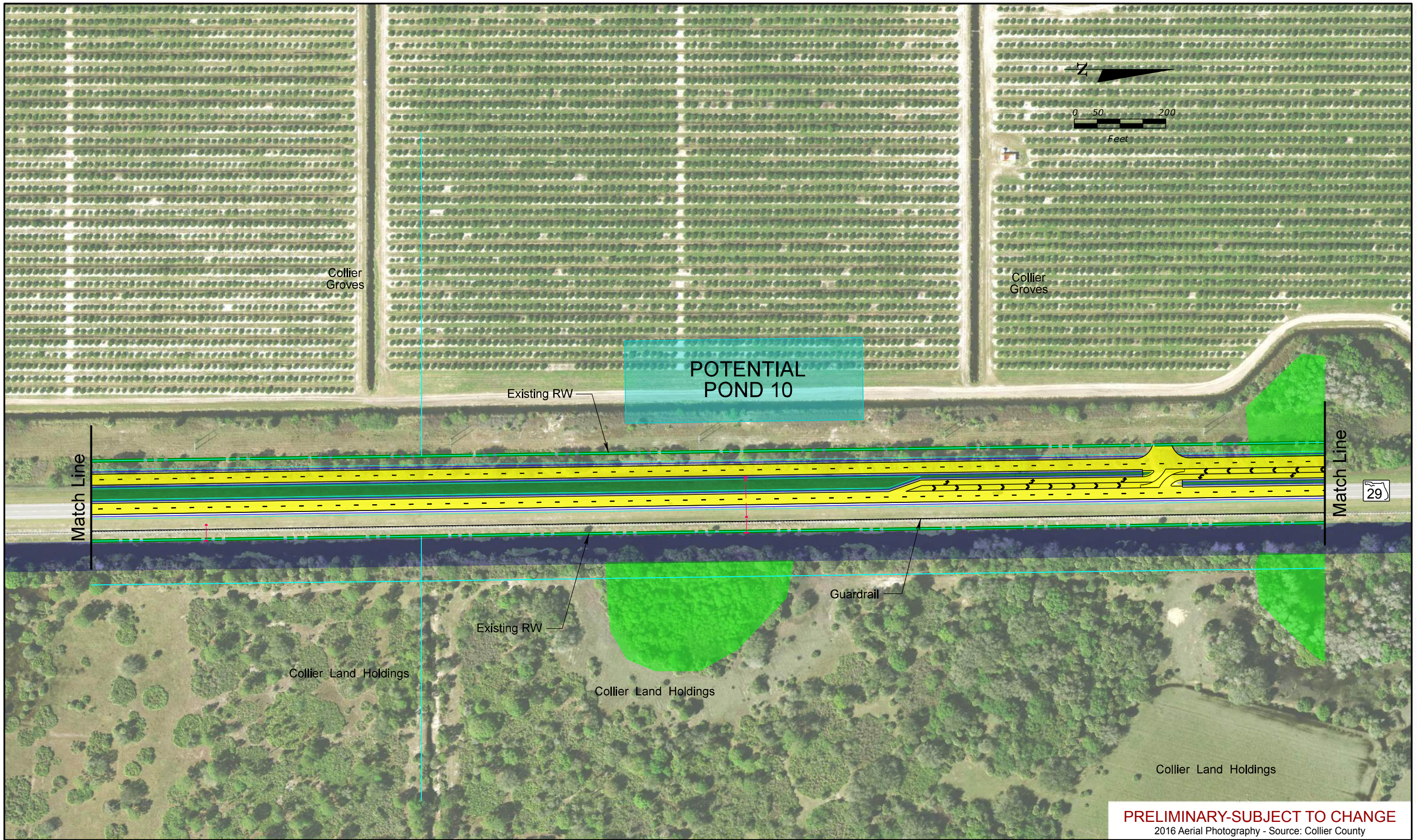
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Proposed Pavement
	Seminole Land		Proposed Median/Border
	Proposed Pavement		Proposed Sidewalks
	Proposed Median/Border		Proposed Structure
	Proposed Sidewalks		Proposed Guardrail
	Proposed Structure		Potential Business Relocation
	Proposed Guardrail		Potential Contamination (Low)
	Potential Business Relocation		Potential Contamination (Medium or High)
	Potential Contamination (Low)		Traffic Signal
	Potential Contamination (Medium or High)		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
 #1 Revised

Sheet No.
 A-6



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

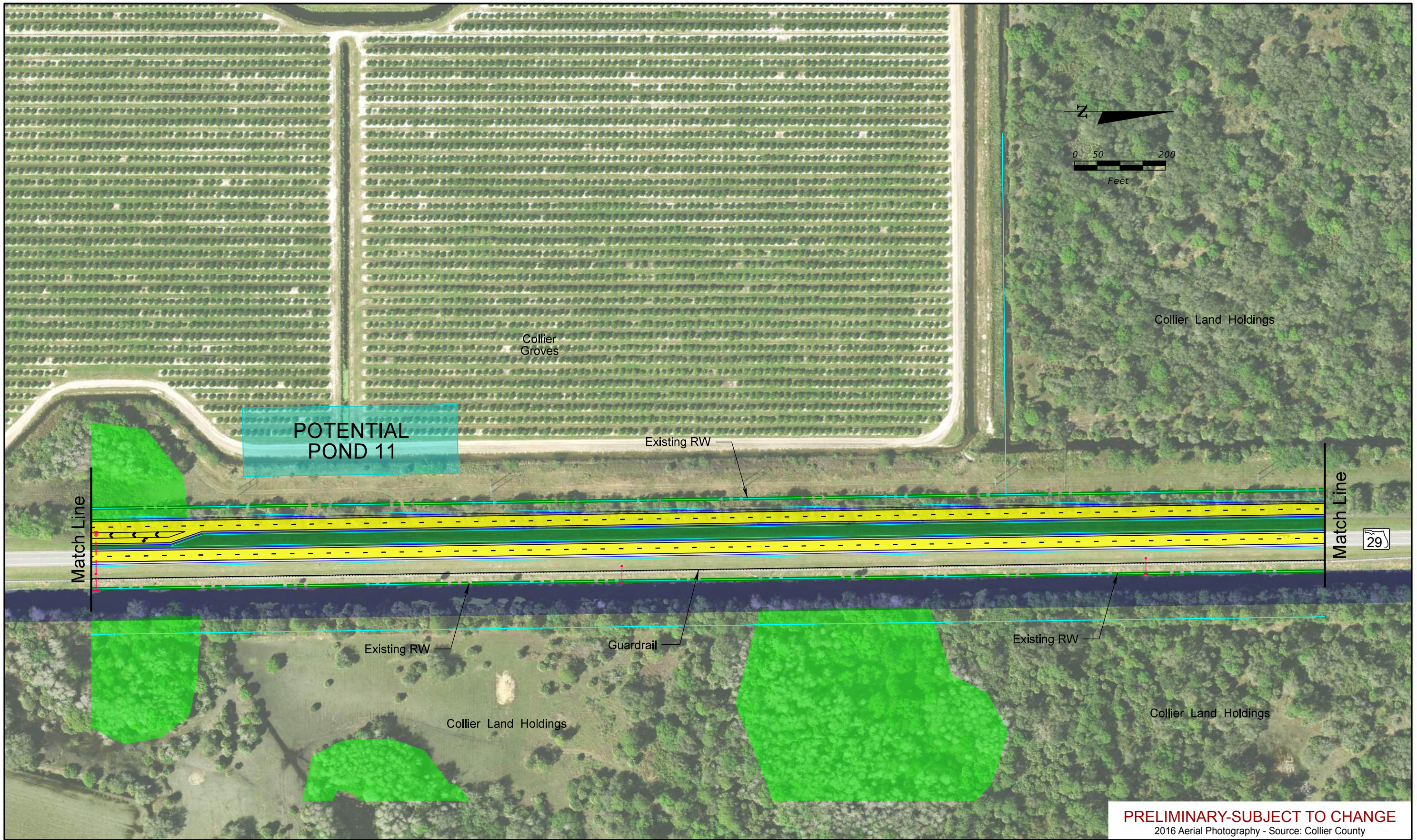
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-7



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

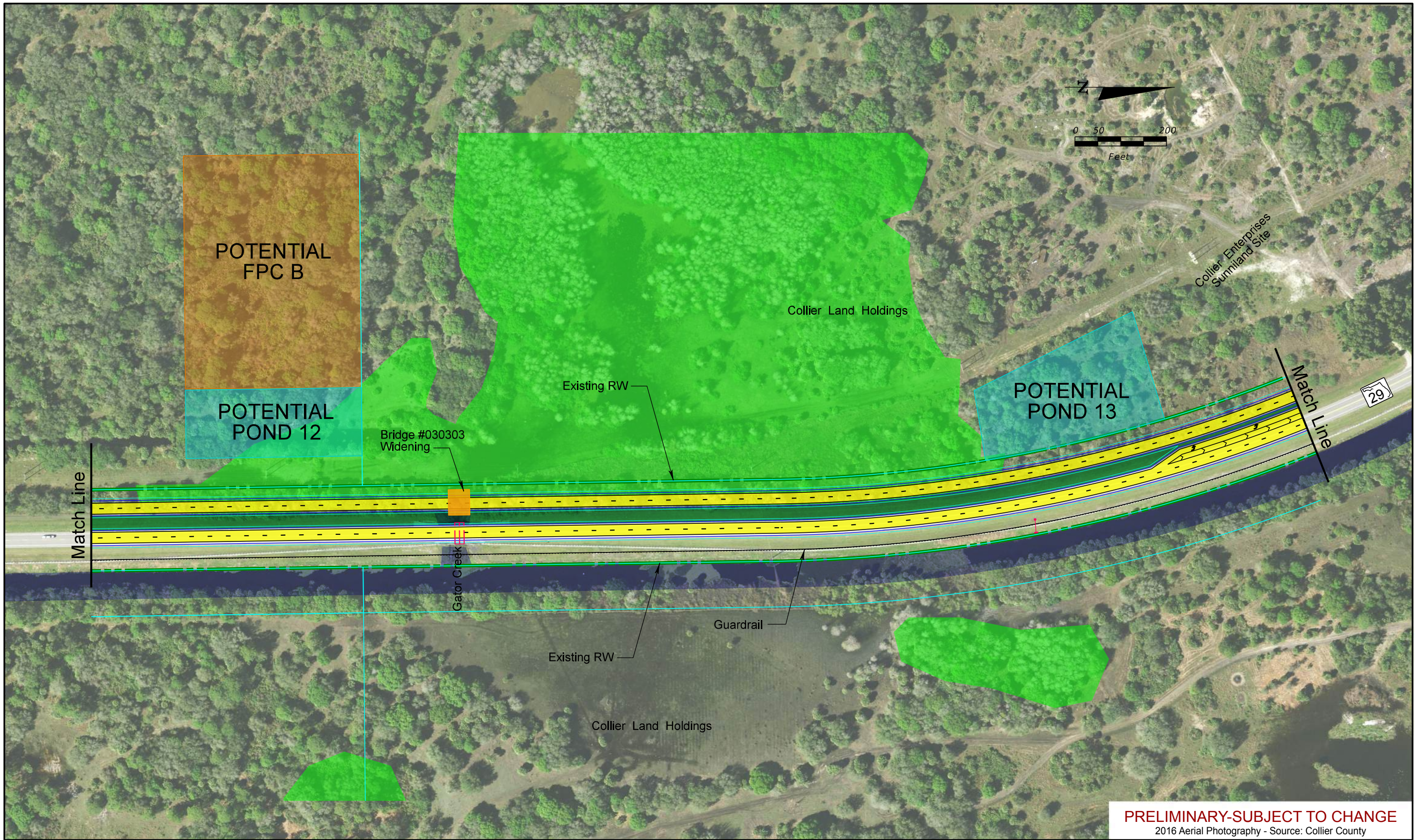
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- | | | | |
|---|--|---|--|
| <ul style="list-style-type: none"> --- Existing Right-of-Way --- Parcels --- Proposed Right-of-Way --- Water/Canal --- Seminole Land | <ul style="list-style-type: none"> ■ Wetland ■ Potential Pond ■ Potential Flood Plain Compensation ■ Traffic Signal | <ul style="list-style-type: none"> ■ Proposed Pavement ■ Proposed Median/Border ■ Proposed Sidewalks ■ Proposed Structure | <ul style="list-style-type: none"> --- Proposed Guardrail ● Potential Business Relocation ▲ Potential Contamination (Low) ▲ Potential Contamination (Medium or High) |
|---|--|---|--|

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-8



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

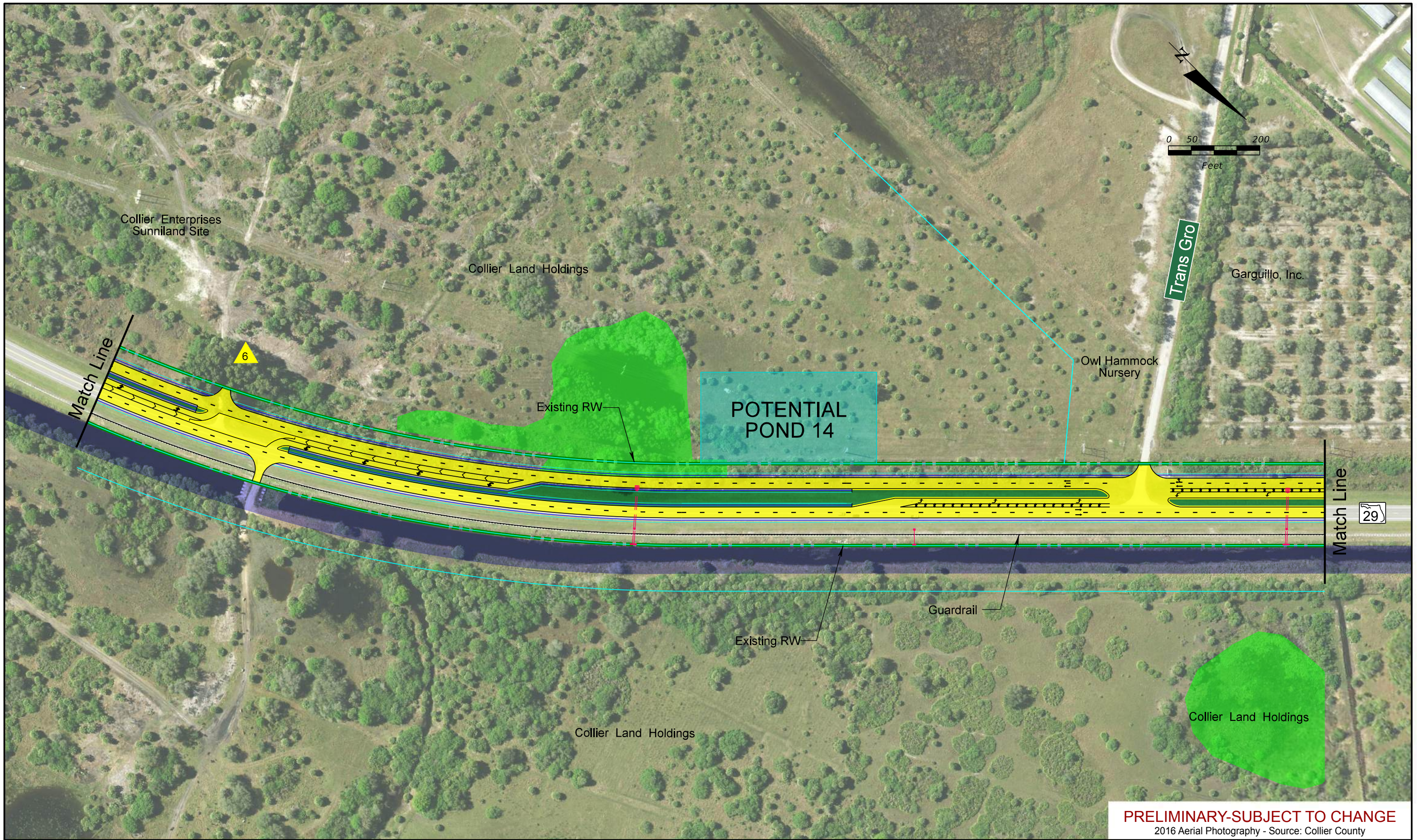
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Traffic Signal
	Seminole Land		Proposed Pavement
			Proposed Median/Border
			Proposed Sidewalks
			Proposed Structure
			Proposed Guardrail
			Potential Business Relocation
			Potential Contamination (Low)
			Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-9



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

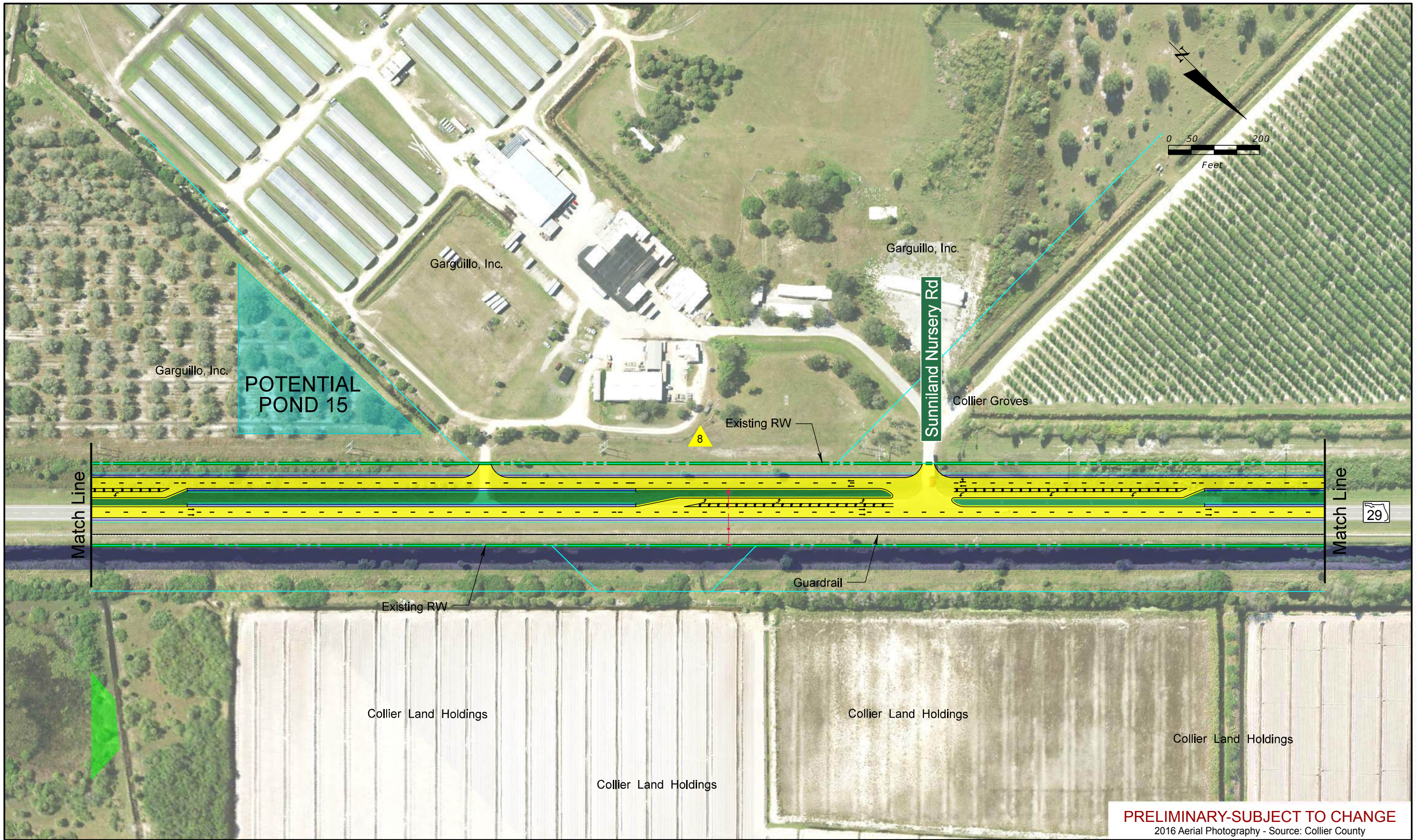
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
Existing Right-of-Way	Wetland	Proposed Pavement	Proposed Guardrail
Parcels	Potential Pond	Proposed Median/Border	Potential Business Relocation
Proposed Right-of-Way	Potential Flood Plain Compensation	Proposed Sidewalks	Potential Contamination (Low)
Water/Canal	Traffic Signal	Proposed Structure	Potential Contamination (Medium or High)
Seminole Land			

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-10



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Proposed Pavement
	Seminole Land		Proposed Median/Border
	Traffic Signal		Proposed Sidewalks
			Proposed Structure
			Proposed Guardrail
			Potential Business Relocation
			Potential Contamination (Low)
			Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-11



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

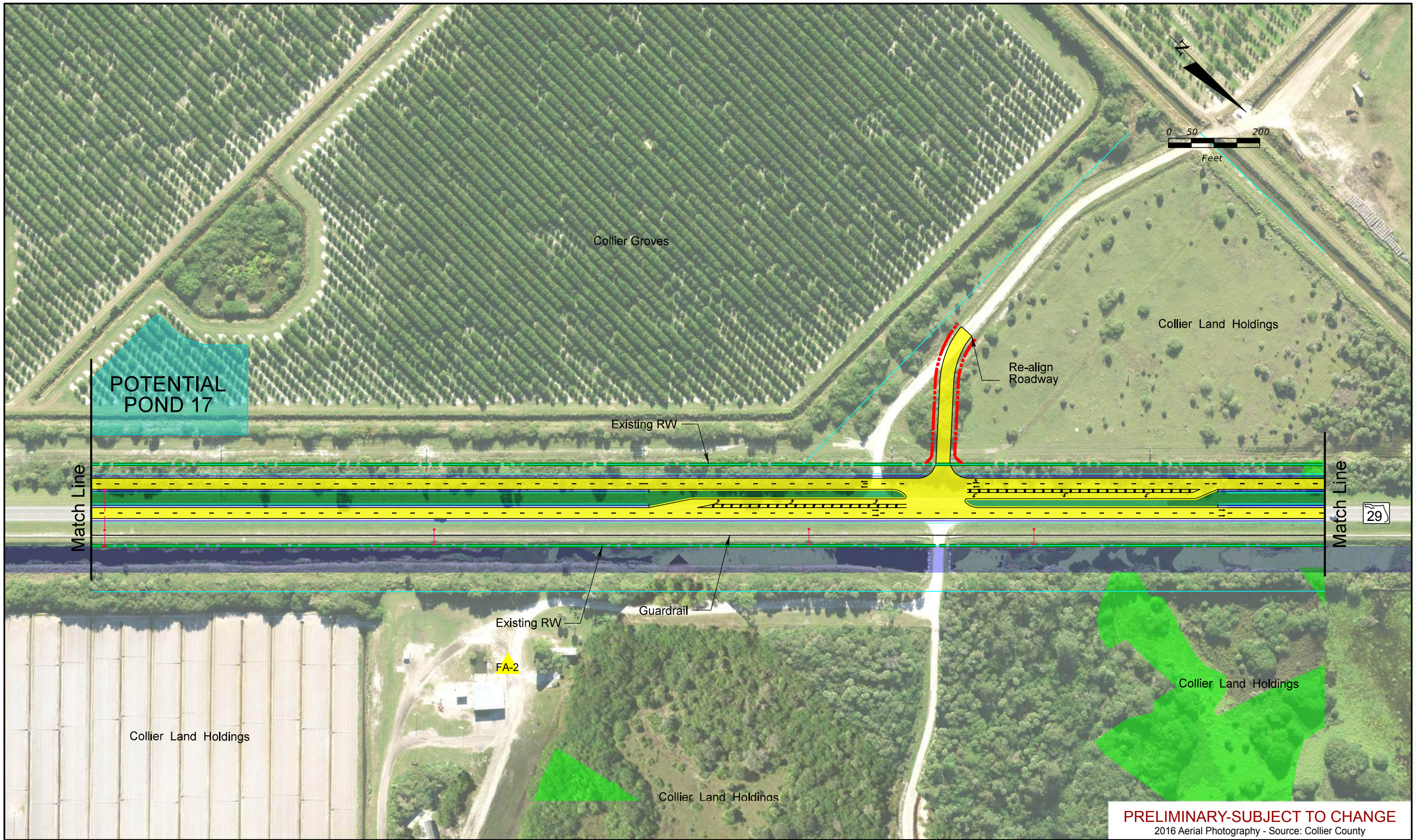
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Traffic Signal
	Seminole Land		Proposed Pavement
	Proposed Median/Border		Proposed Guardrail
	Proposed Sidewalks		Potential Contamination (Low)
	Proposed Structure		Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-12



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

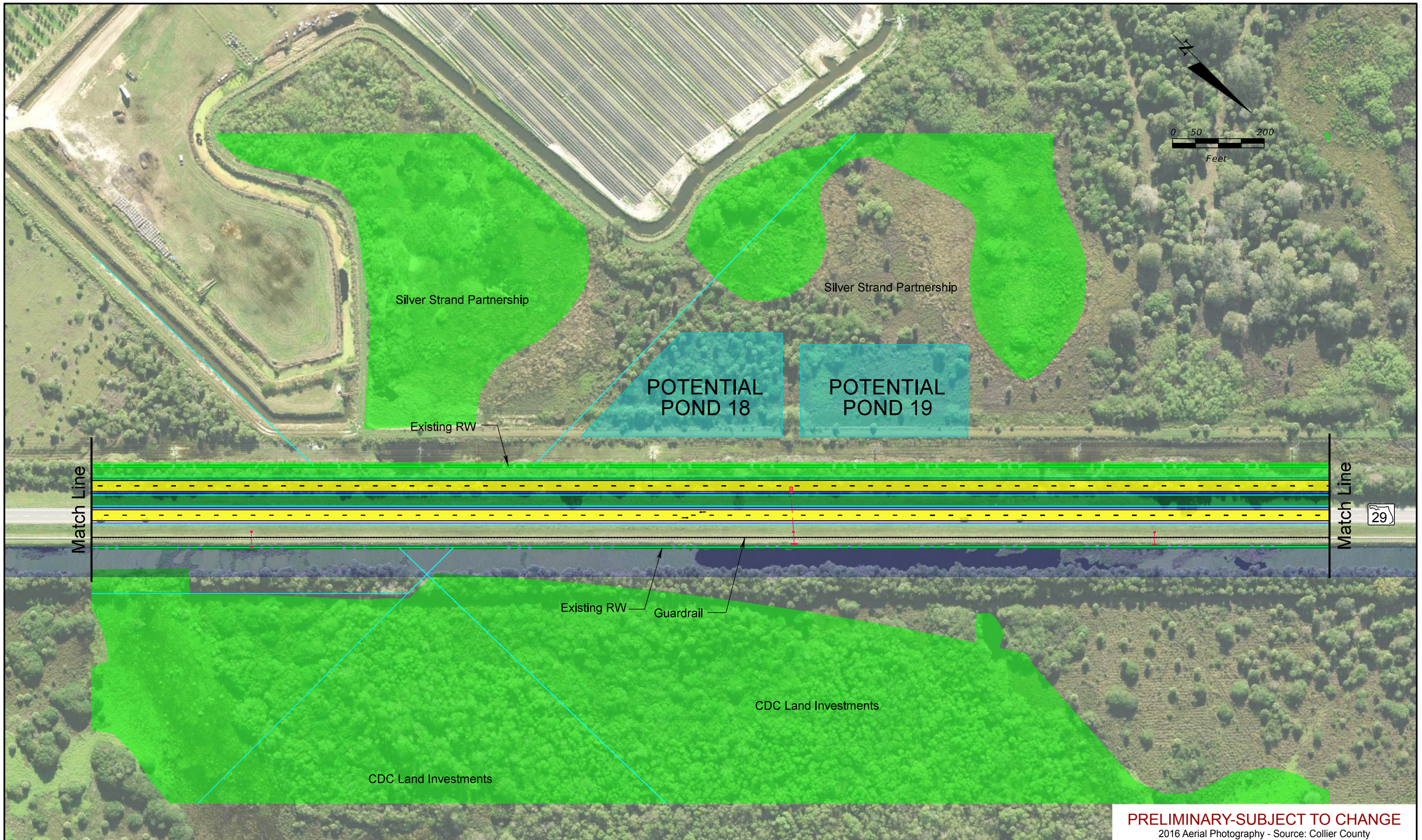
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-13



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Existing Right-of-Way
- Parcels
- Proposed Right-of-Way
- Water/Canal
- Seminole Land

- Wetland
- Potential Pond
- Potential Flood Plain Compensation
- Traffic Signal

Legend

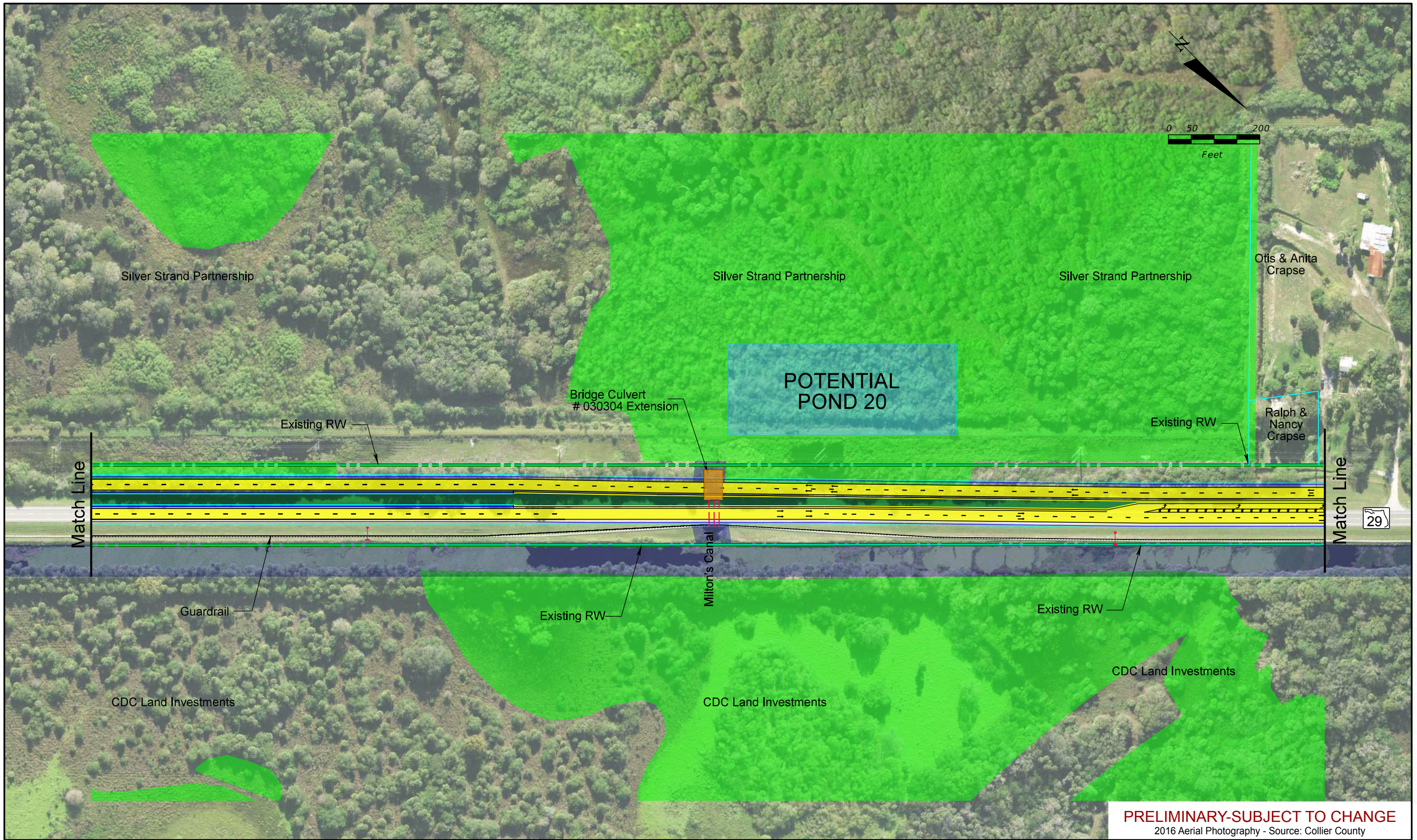
- Proposed Pavement
- Proposed Median/Border
- Proposed Sidewalks
- Proposed Structure

- Proposed Guardrail
- Potential Business Relocation
- Potential Contamination (Low)
- Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-14



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-15



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

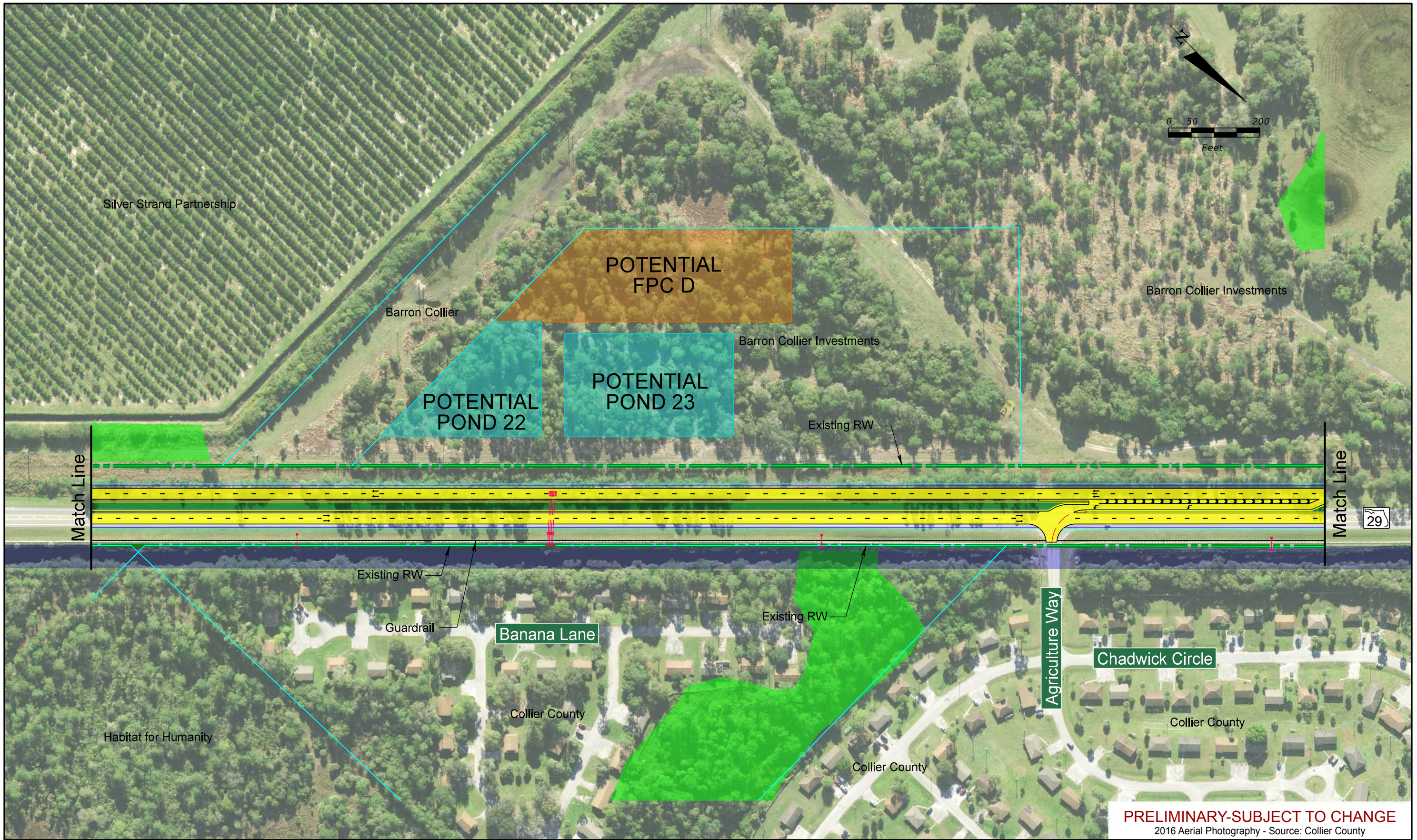
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Proposed Pavement
	Seminole Land		Proposed Median/Border
	Traffic Signal		Proposed Sidewalks
			Proposed Structure
	Proposed Guardrail		Potential Business Relocation
			Potential Contamination (Low)
			Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-16



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

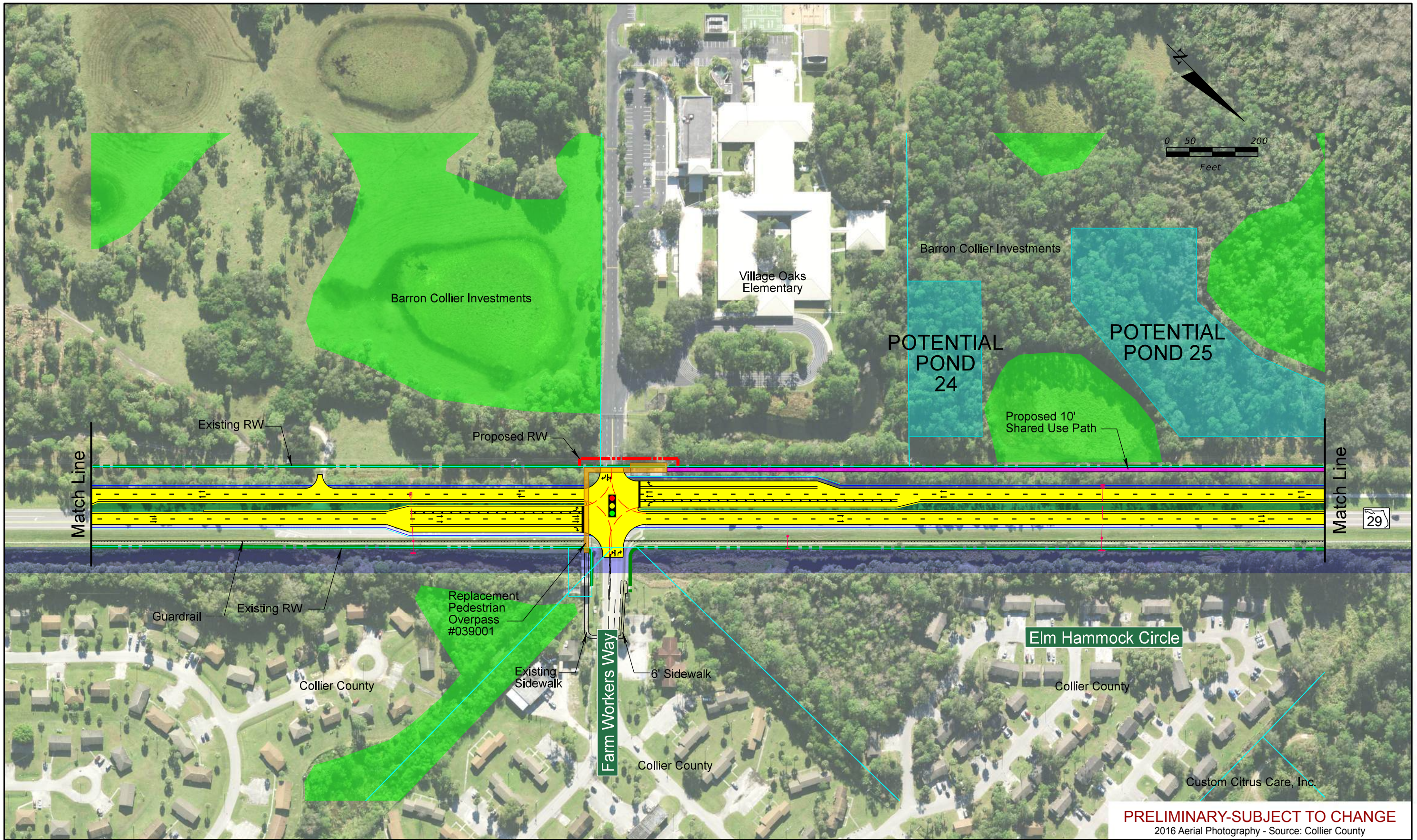
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Proposed Pavement
	Seminole Land		Proposed Sidewalks
	Traffic Signal		Proposed Structure
	Proposed Guardrail		Potential Business Relocation
	Potential Contamination (Low)		Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-17



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

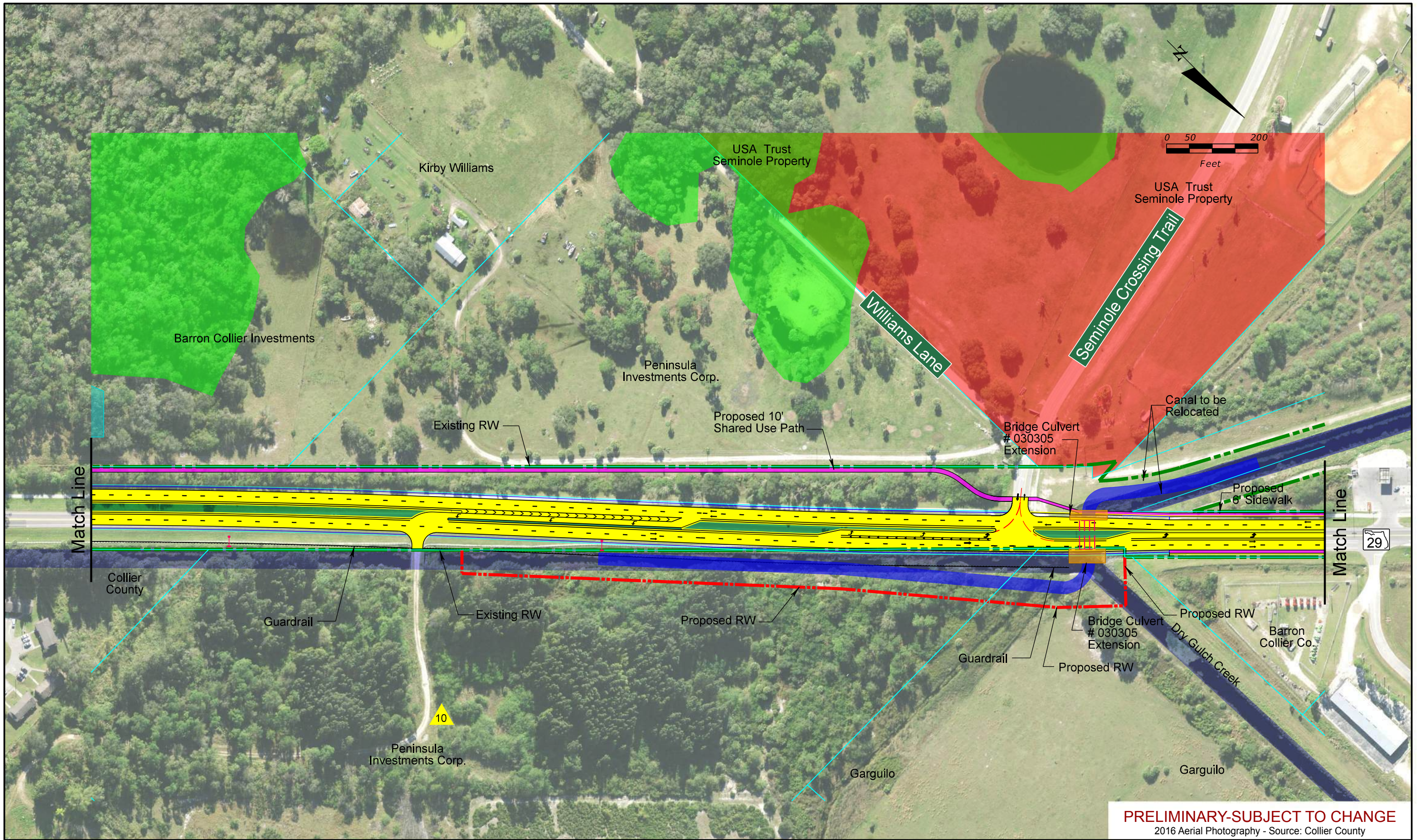
Legend			
Existing Right-of-Way	Wetland	Proposed Pavement	Proposed Guardrail
Parcels	Potential Pond	Proposed Median/Border	Potential Business Relocation
Proposed Right-of-Way	Potential Flood Plain Compensation	Proposed Sidewalks	Potential Contamination (Low)
Water/Canal	Traffic Signal	Proposed Structure	Potential Contamination (Medium or High)
Seminole Land			

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

**Central Alternative
 #1 Revised**

**Sheet No.
 A-18**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

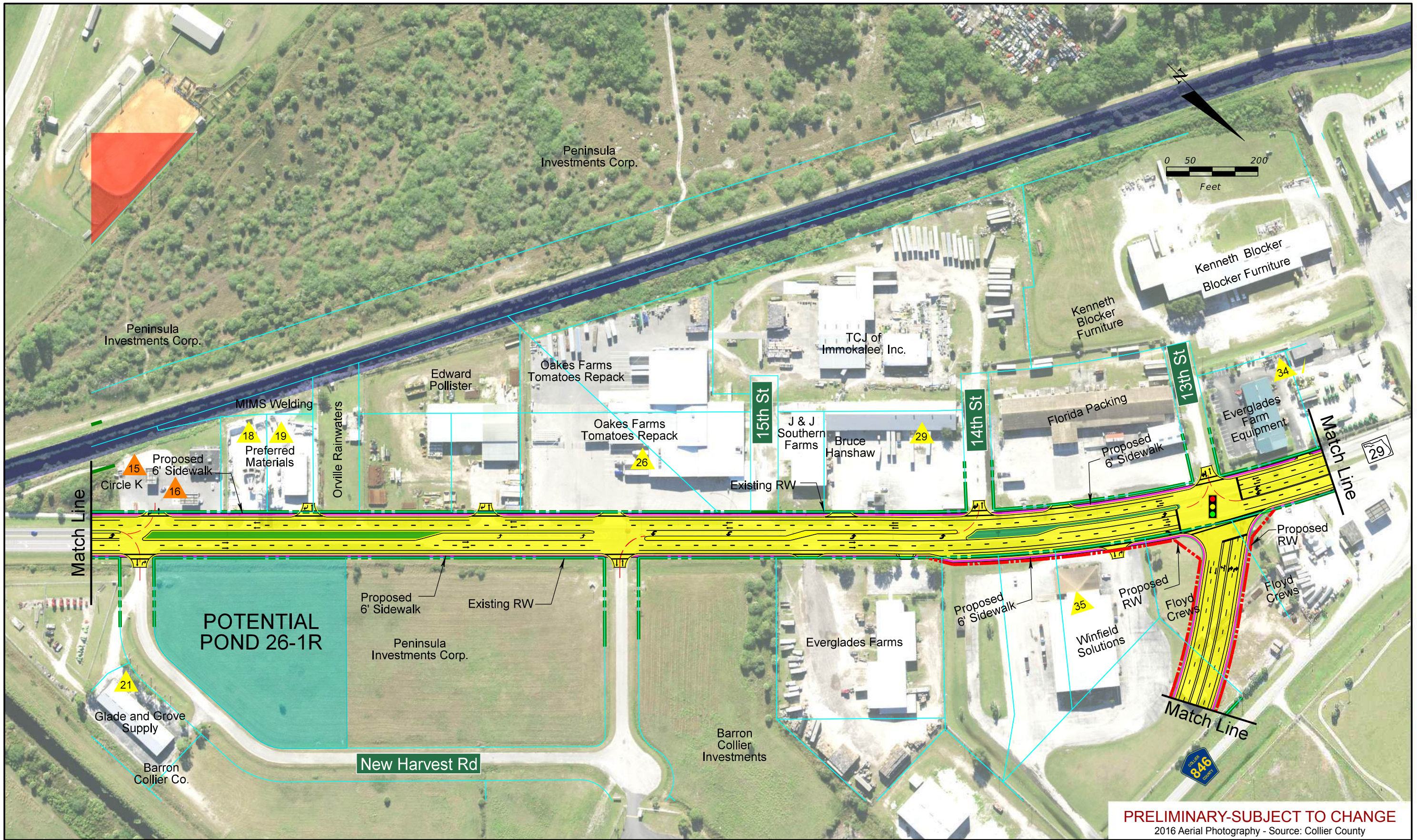
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> --- Existing Right-of-Way --- Parcels --- Proposed Right-of-Way --- Water/Canal --- Seminole Land | <ul style="list-style-type: none"> ■ Wetland ■ Potential Pond ■ Potential Flood Plain Compensation ■ Traffic Signal | <p>Legend</p> <ul style="list-style-type: none"> ■ Proposed Pavement ■ Proposed Median/Border ■ Proposed Sidewalks ■ Proposed Structure --- Proposed Guardrail ● Potential Business Relocation ▲ Potential Contamination (Low) ▲ Potential Contamination (Medium or High) |
|--|--|--|

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-19



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

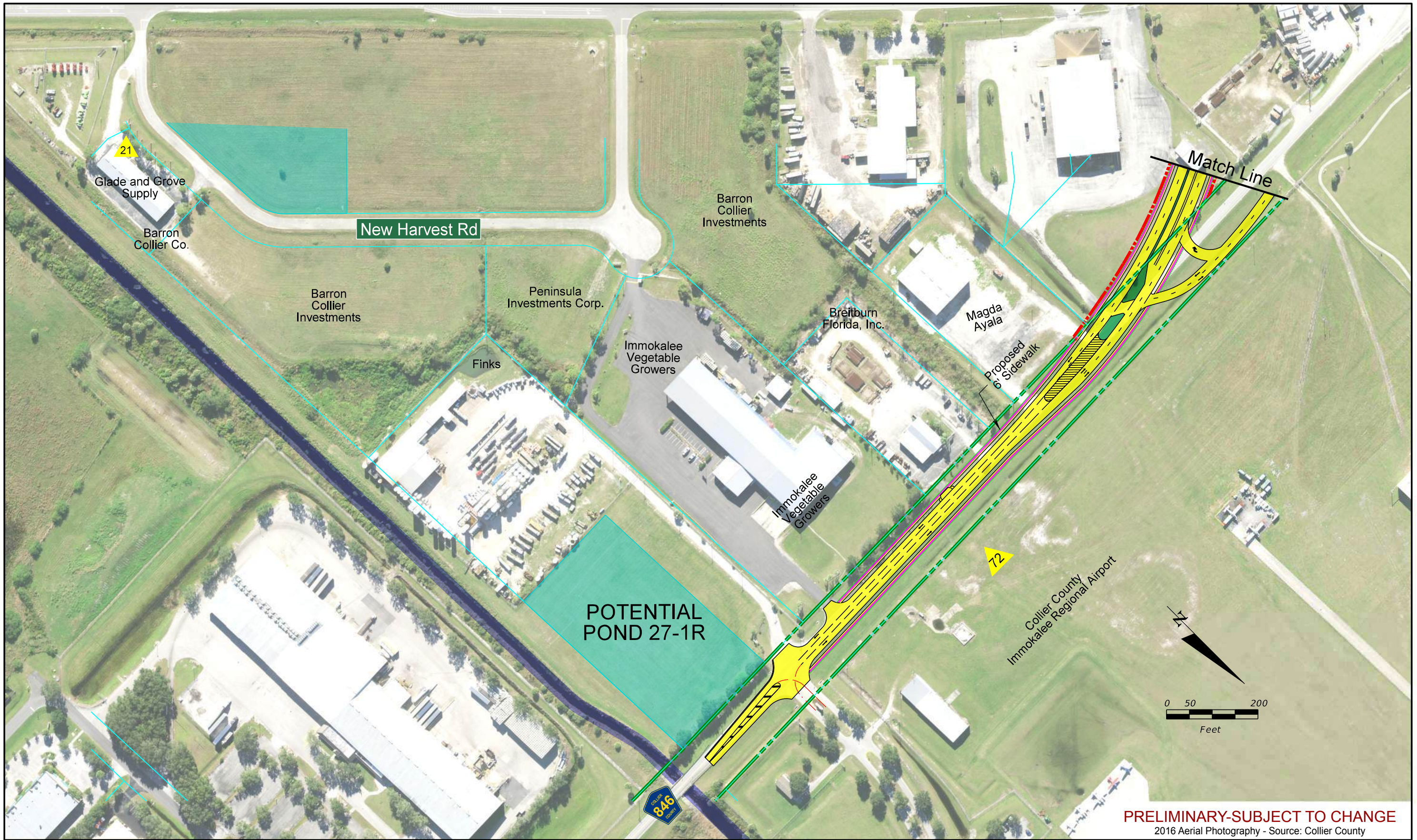
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend	
Existing Right-of-Way	Wetland
Parcels	Potential Pond
Proposed Right-of-Way	Potential Flood Plain Compensation
Water/Canal	Proposed Pavement
Seminole Land	Proposed Median/Border
Traffic Signal	Proposed Sidewalks
Potential Business Relocation	Proposed Structure
Potential Contamination (Low)	Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-20



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

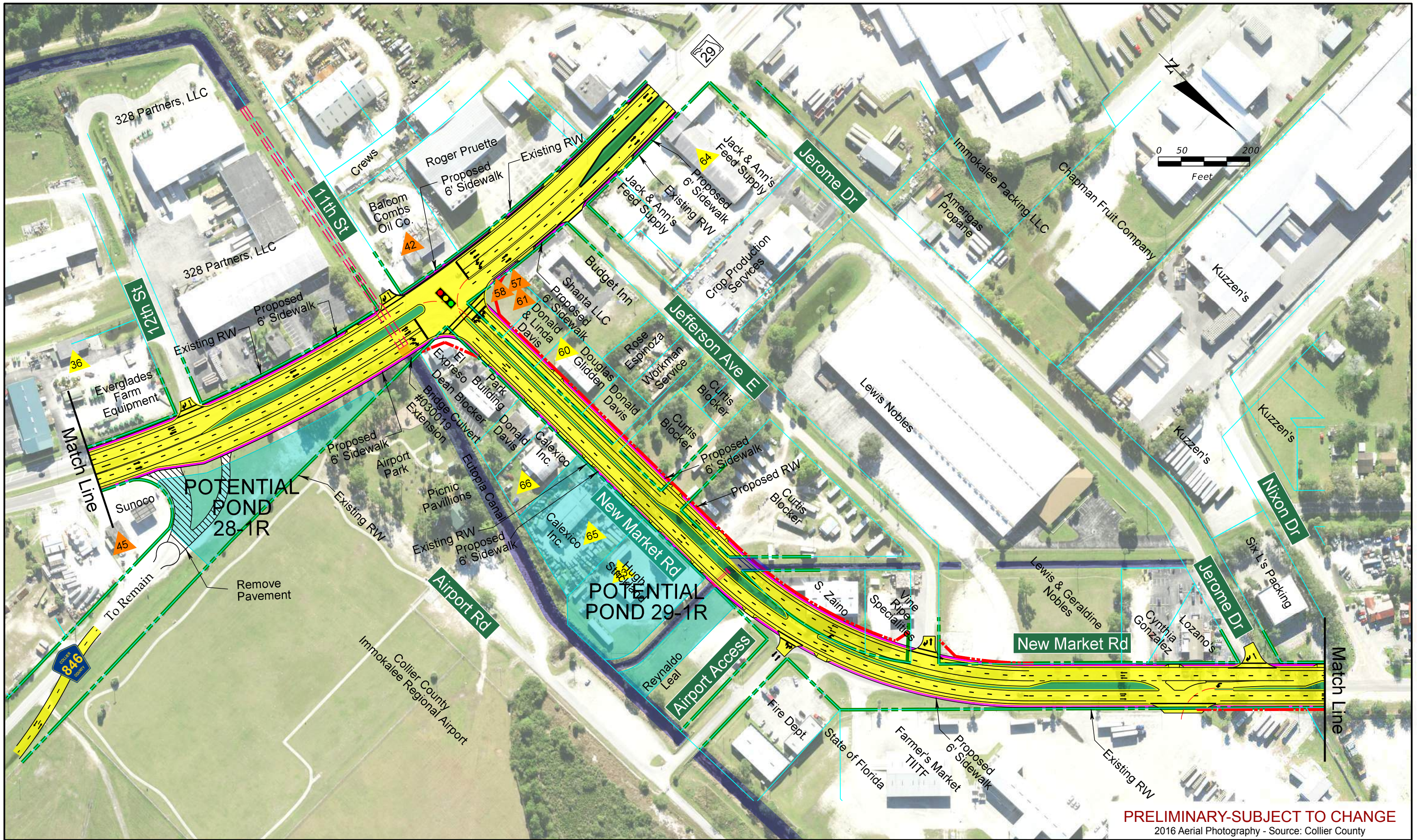
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-21



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

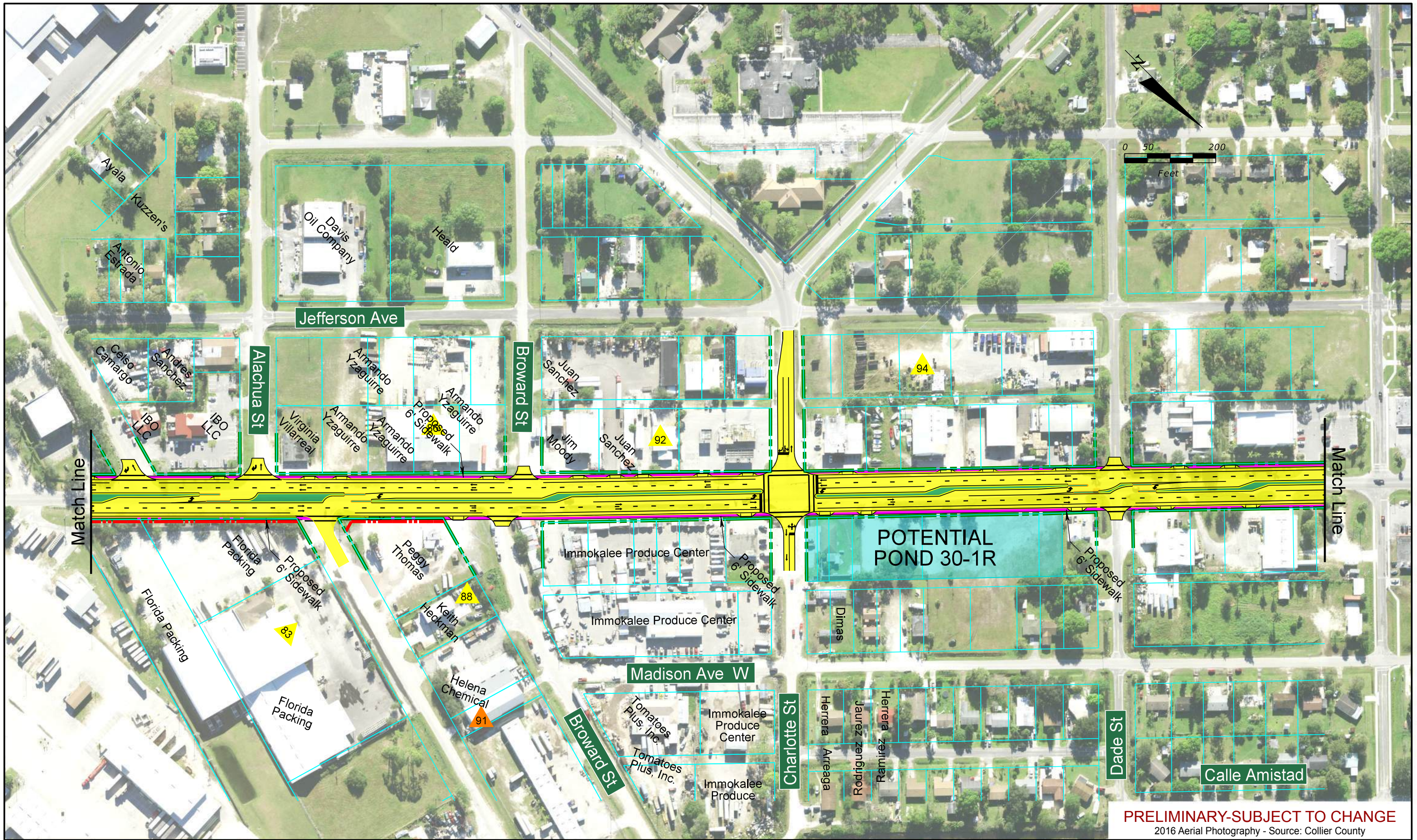
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Potential Business Relocation
	Wetland		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Potential Pond		Proposed Guardrail
	Potential Flood Plain Compensation		
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
 #1 Revised

Sheet No.
 A-22



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

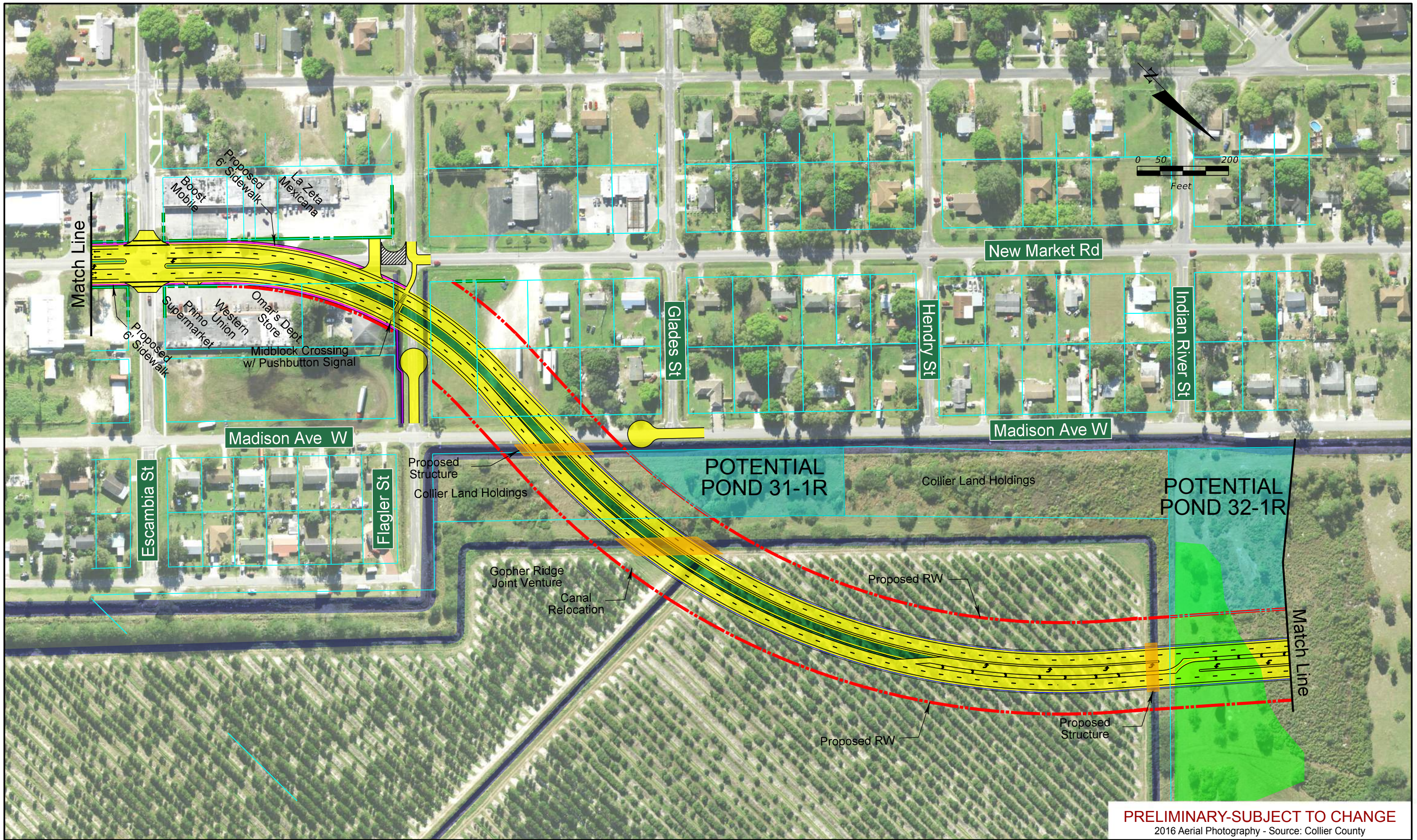
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Parcels
	Proposed Right-of-Way		Potential Pond
	Water/Canal		Potential Flood Plain Compensation
	Seminole Land		Proposed Pavement
	Wetland		Proposed Median/Border
	Potential Pond		Proposed Sidewalks
	Potential Flood Plain Compensation		Proposed Guardrail
	Proposed Pavement		Potential Business Relocation
	Proposed Median/Border		Potential Contamination (Low)
	Proposed Sidewalks		Potential Contamination (Medium or High)
	Proposed Structure		Traffic Signal

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-23



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
Existing Right-of-Way	Wetland	Proposed Pavement	Proposed Guardrail
Parcels	Potential Pond	Proposed Median/Border	Potential Business Relocation
Proposed Right-of-Way	Potential Flood Plain Compensation	Proposed Sidewalks	Potential Contamination (Low)
Water/Canal	Traffic Signal	Proposed Structure	Potential Contamination (Medium or High)
Seminole Land			

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-24



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

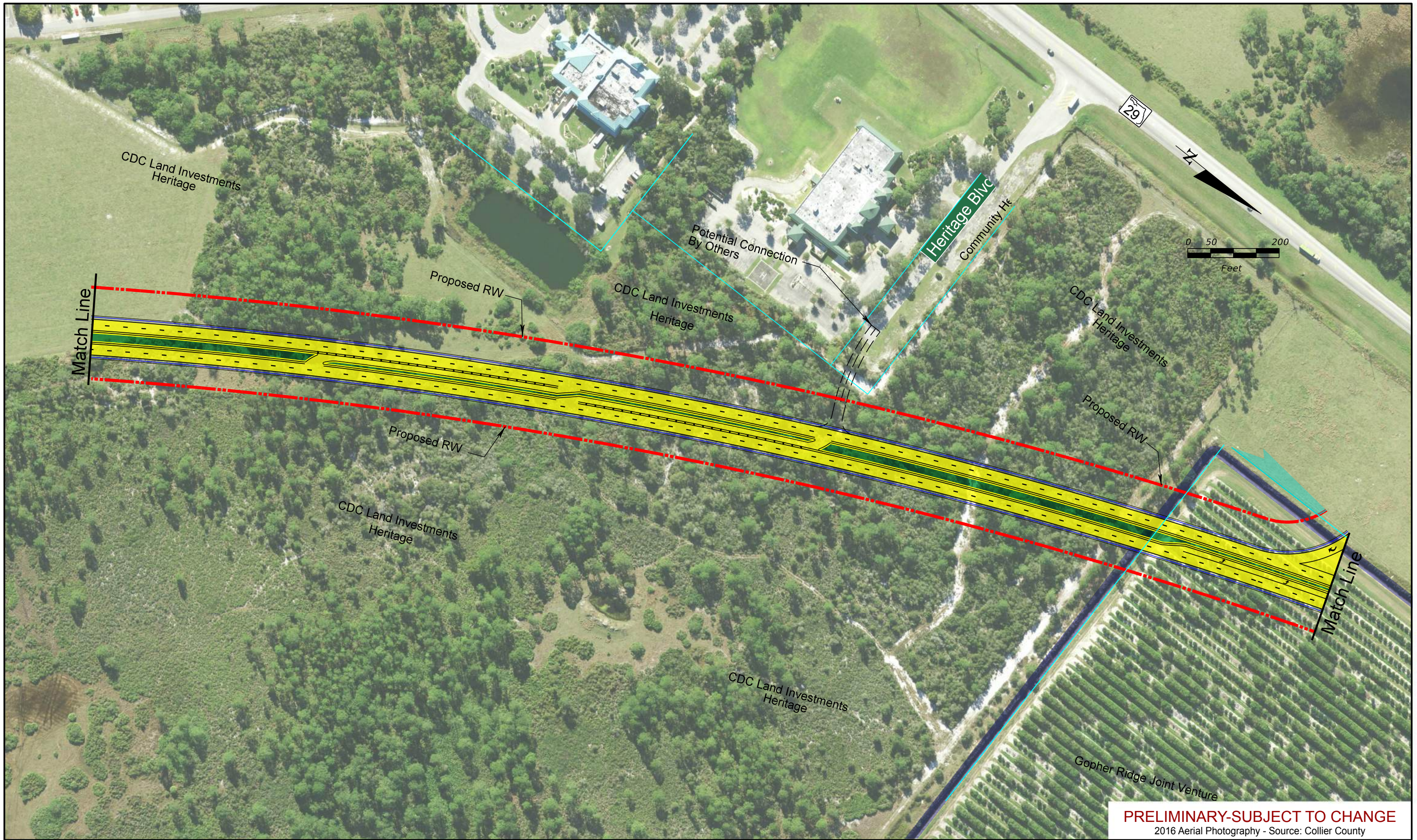
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-25



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

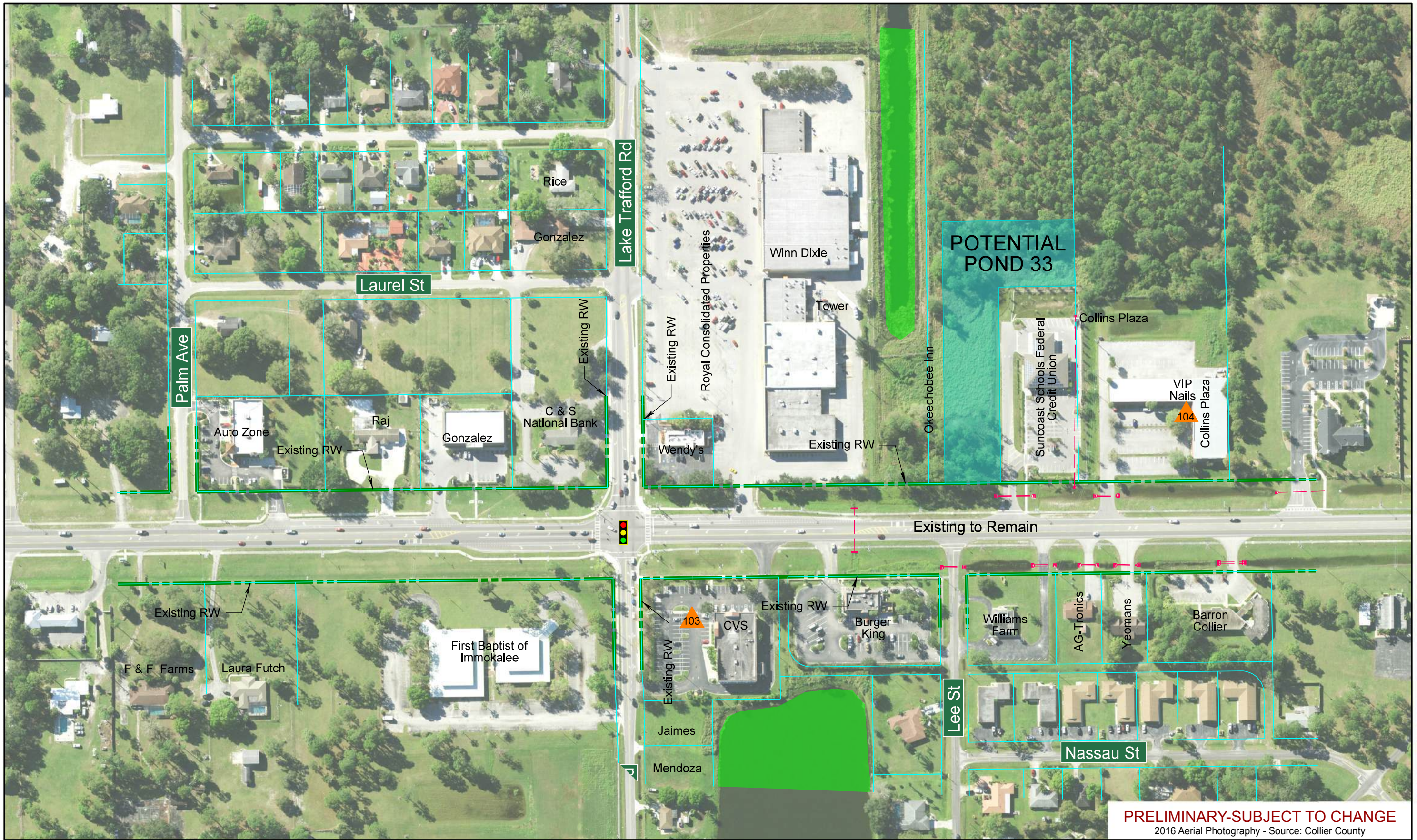
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Proposed Pavement
	Seminole Land		Proposed Sidewalks
	Traffic Signal		Proposed Structure
			Proposed Guardrail
			Potential Business Relocation
			Potential Contamination (Low)
			Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-26



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

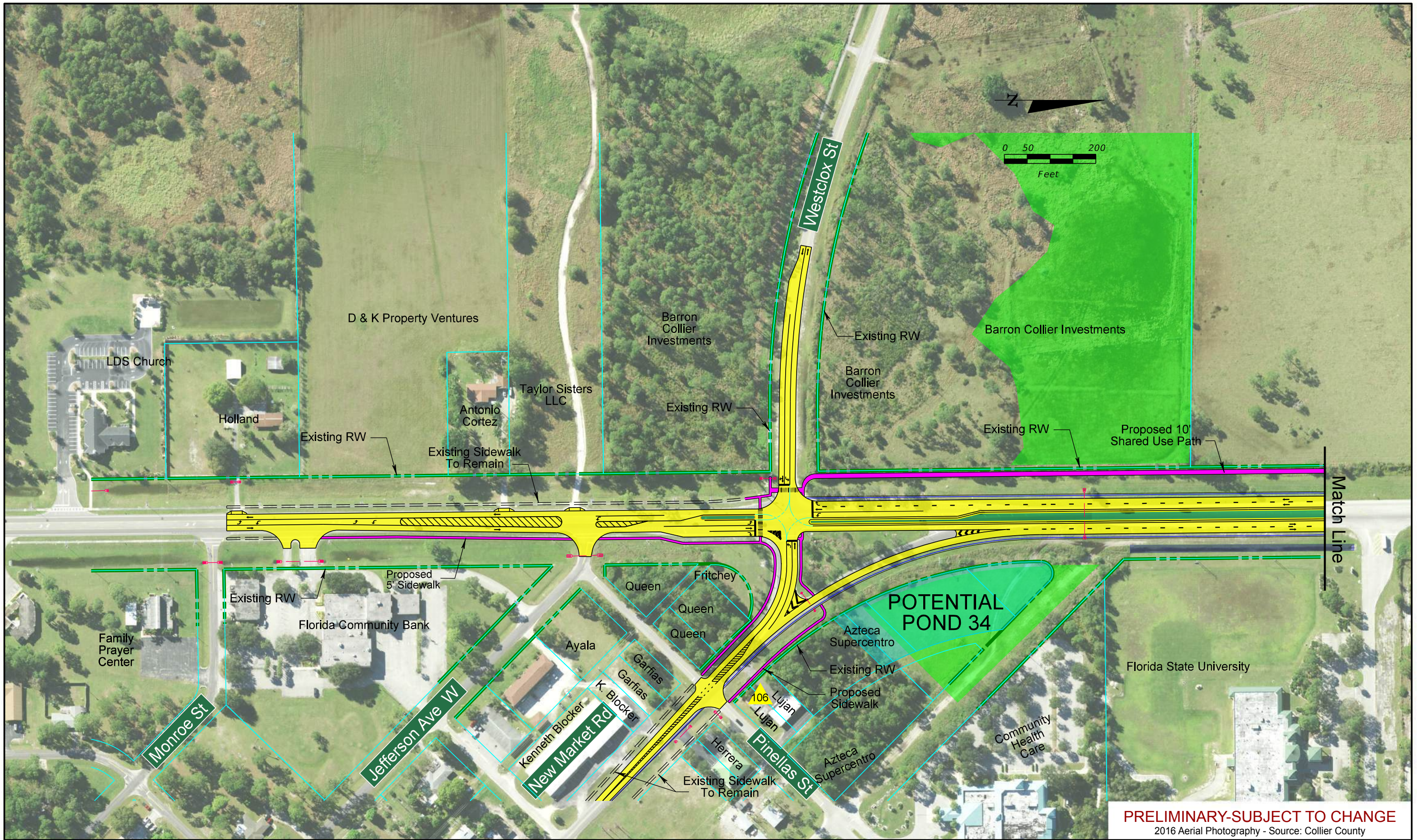
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
 #1 Revised

Sheet No.
 A-27



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

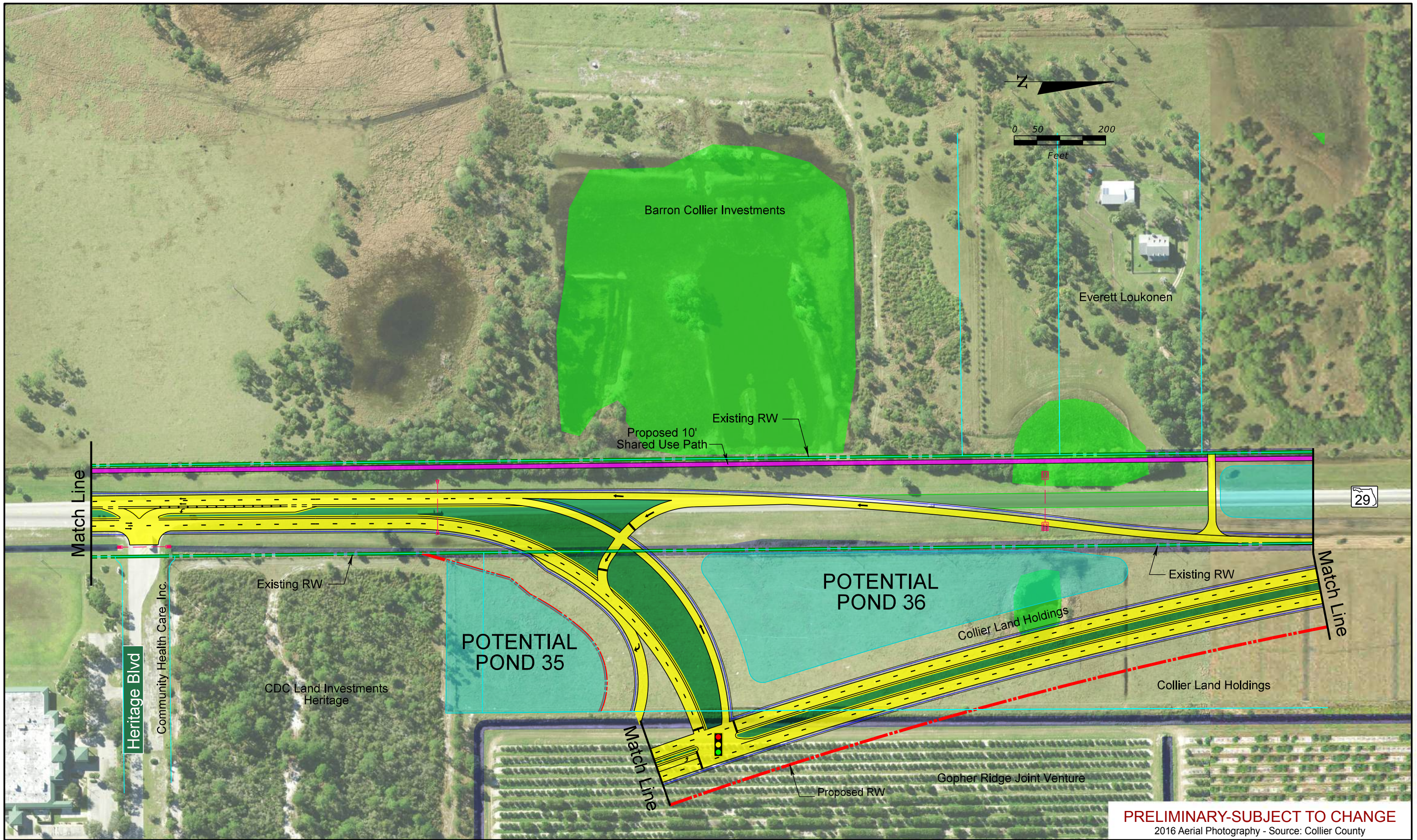
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-28



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

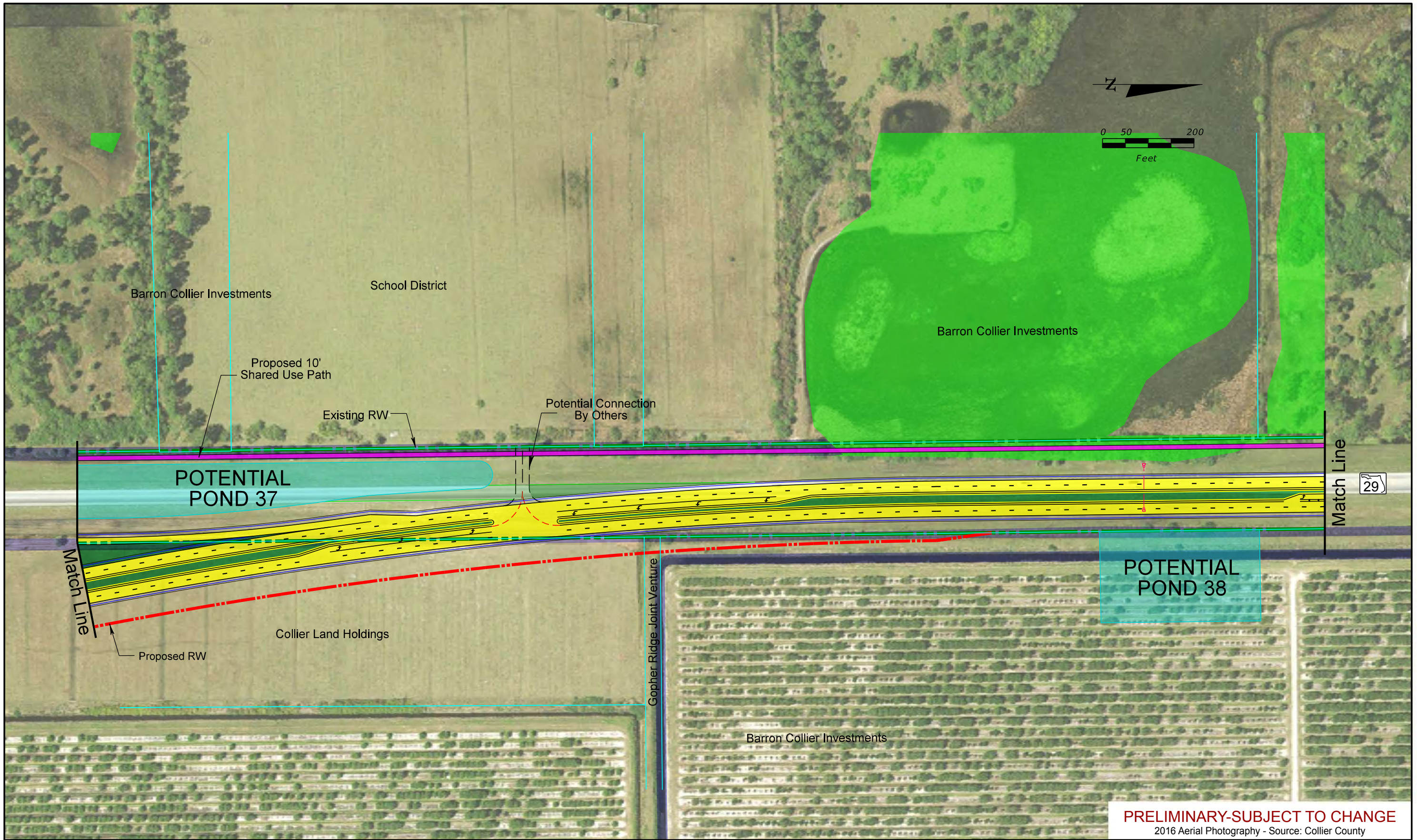
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
Existing Right-of-Way	Wetland	Proposed Pavement	Proposed Guardrail
Parcels	Potential Pond	Proposed Median/Border	Potential Business Relocation
Proposed Right-of-Way	Potential Flood Plain Compensation	Proposed Sidewalks	Potential Contamination (Low)
Water/Canal	Traffic Signal	Proposed Structure	Potential Contamination (Medium or High)
Seminole Land			

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-29



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

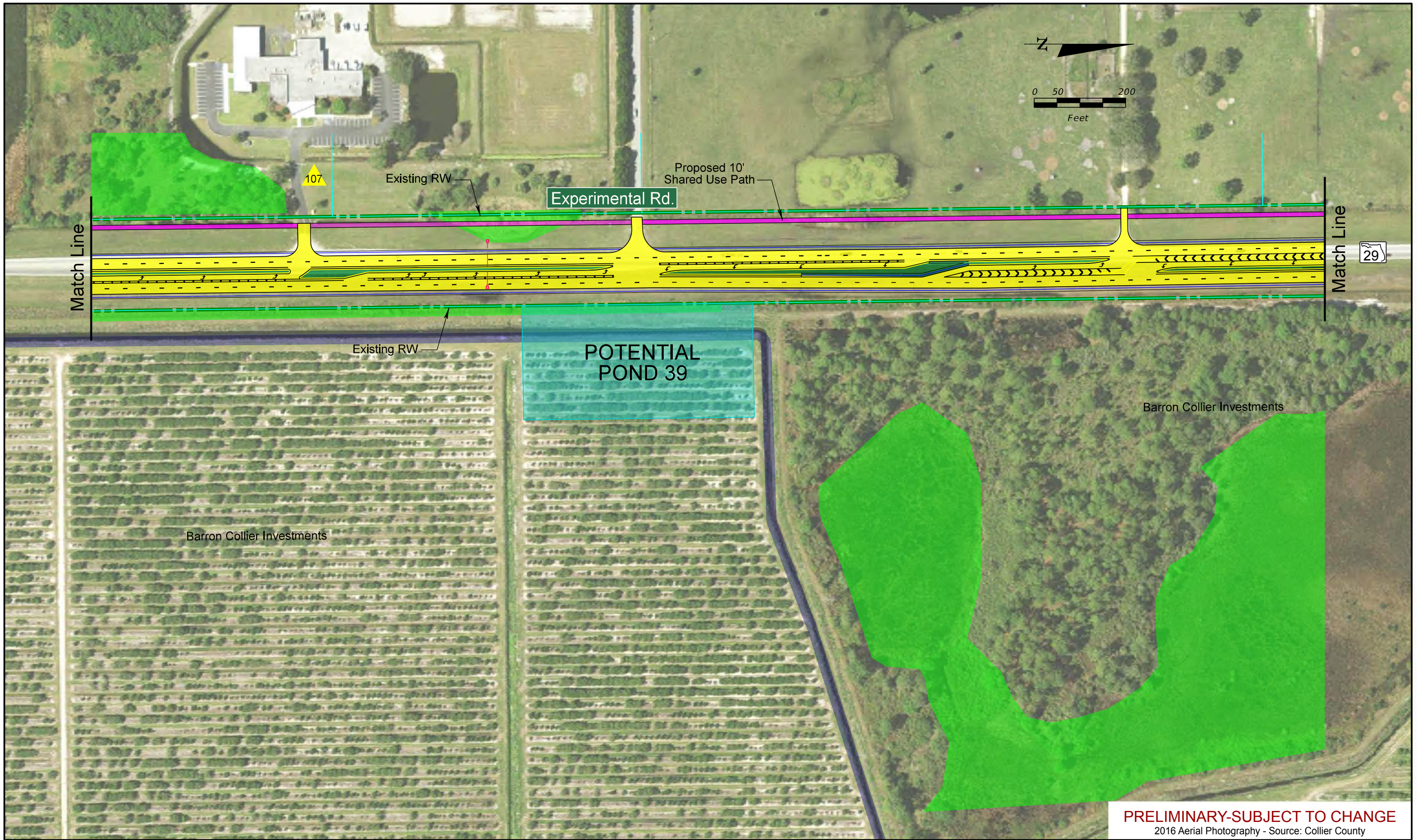
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Proposed Pavement
	Seminole Land		Proposed Median/Border
	Traffic Signal		Proposed Sidewalks
			Proposed Structure
			Proposed Guardrail
			Potential Business Relocation
			Potential Contamination (Low)
			Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-30



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

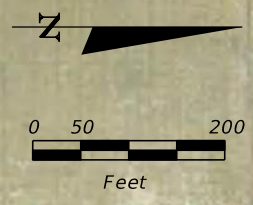
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- | | | | |
|-----------------------|------------------------------------|------------------------|--|
| Existing Right-of-Way | Wetland | Proposed Pavement | Proposed Guardrail |
| Parcels | Potential Pond | Proposed Median/Border | Potential Business Relocation |
| Proposed Right-of-Way | Potential Flood Plain Compensation | Proposed Sidewalks | Potential Contamination (Low) |
| Water/Canal | Traffic Signal | Proposed Structure | Potential Contamination (Medium or High) |
| Seminole Land | | | |

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-31



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

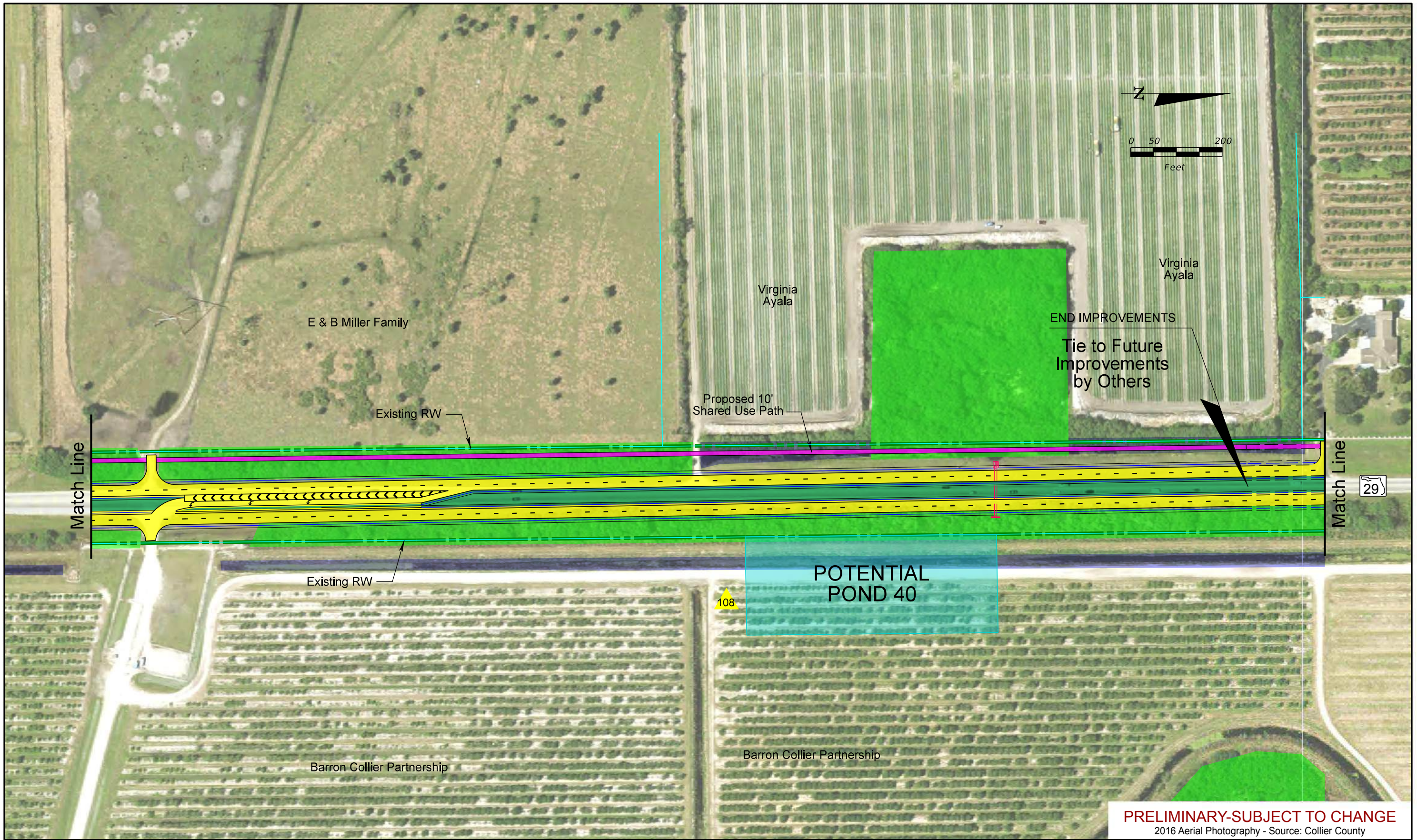
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-32



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

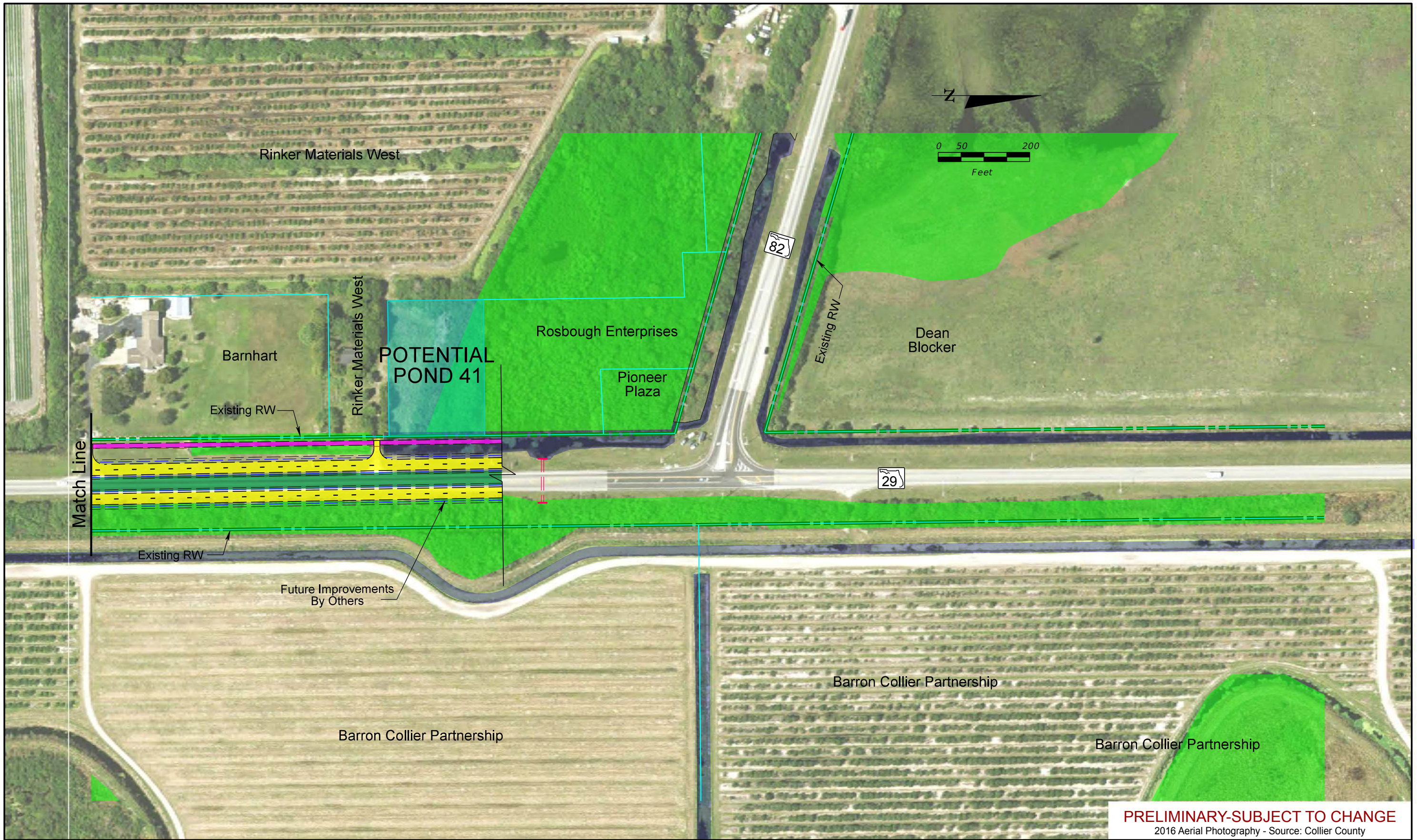
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-33



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

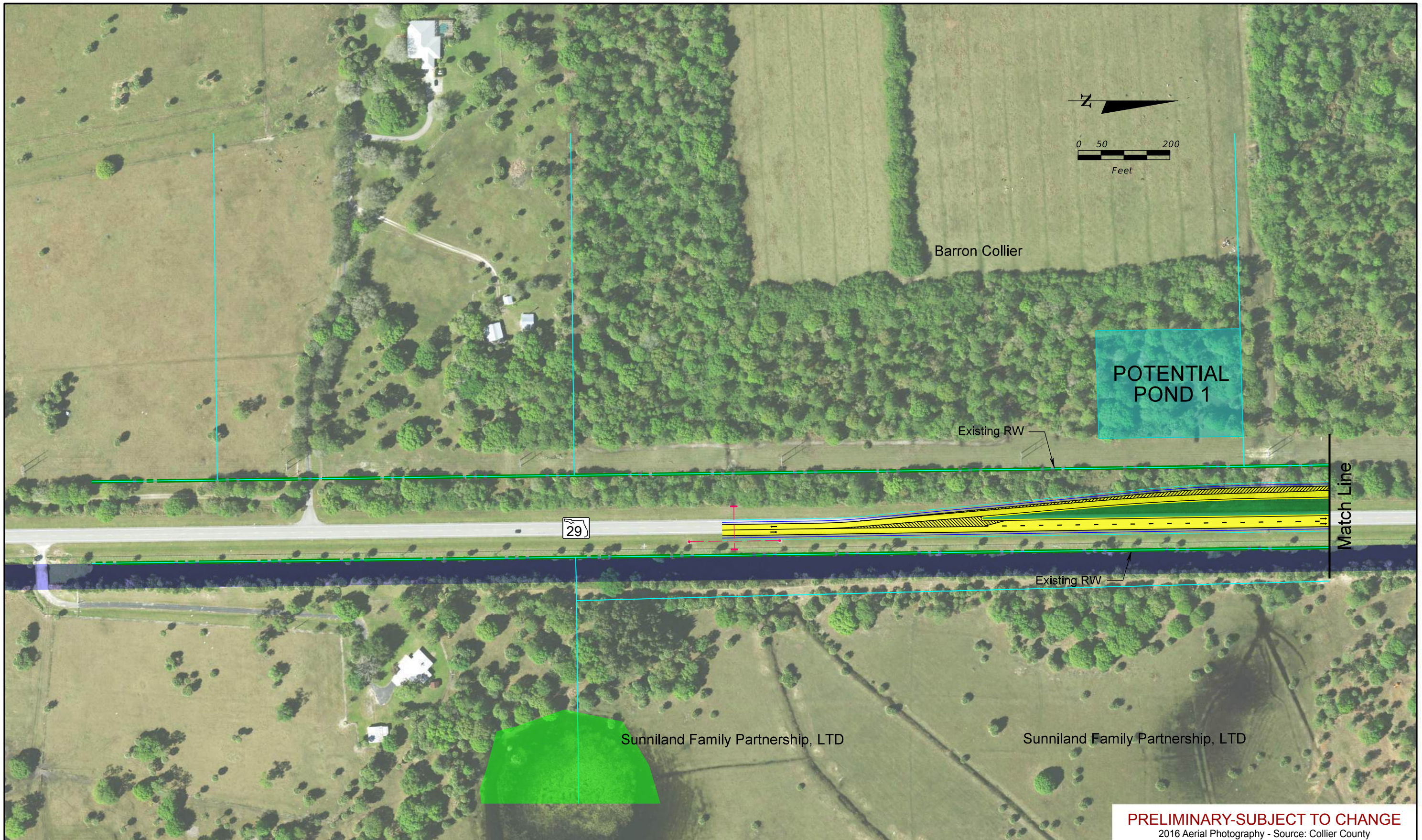
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- | | | | |
|-----------------------|------------------------------------|------------------------|--|
| Existing Right-of-Way | Wetland | Proposed Pavement | Proposed Guardrail |
| Parcels | Potential Pond | Proposed Median/Border | Potential Business Relocation |
| Proposed Right-of-Way | Potential Flood Plain Compensation | Proposed Sidewalks | Potential Contamination (Low) |
| Water/Canal | Traffic Signal | Proposed Structure | Potential Contamination (Medium or High) |
| Seminole Land | | | |

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative
#1 Revised

Sheet No.
A-34



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

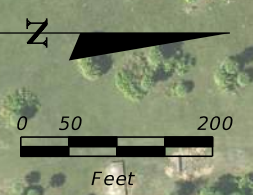
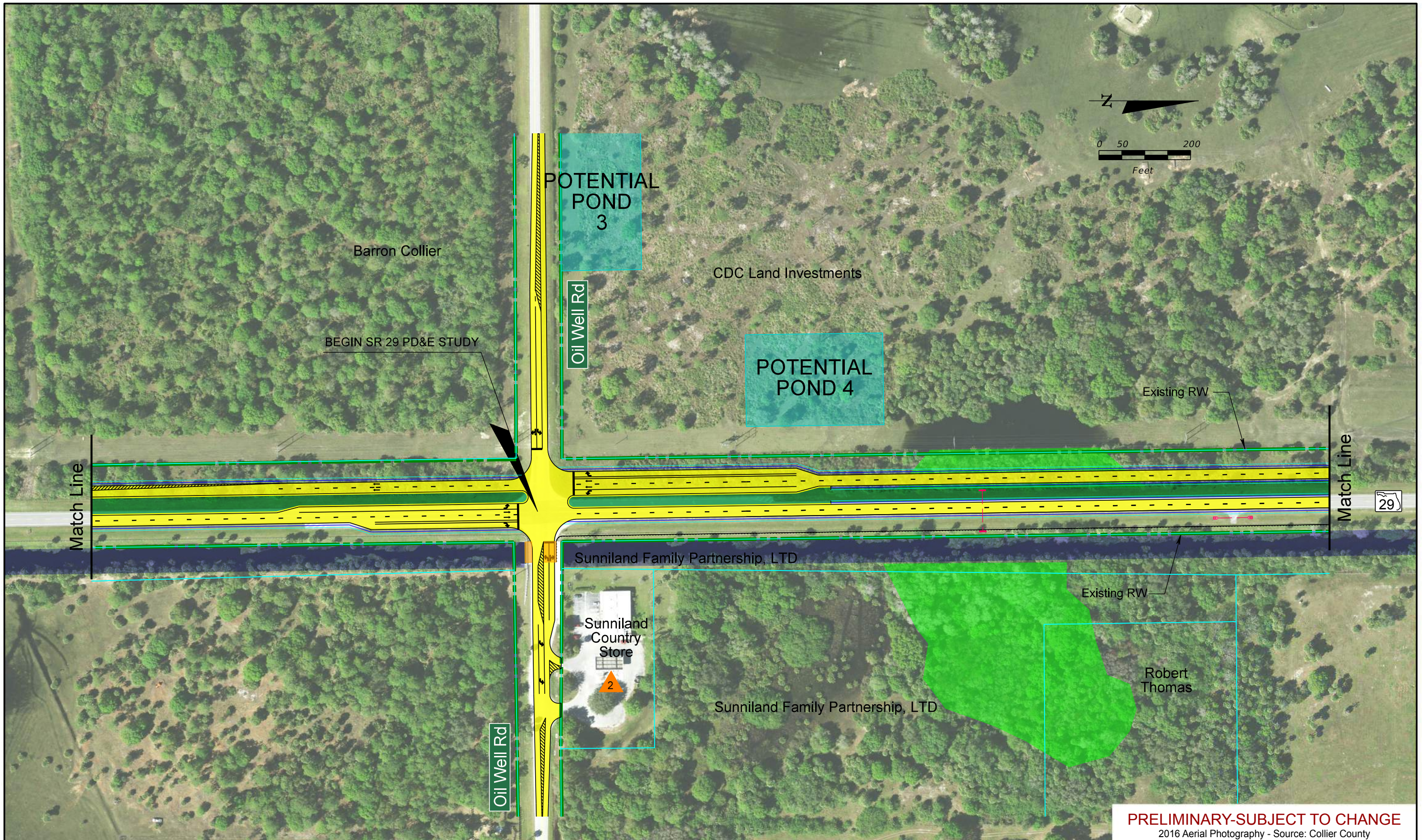
Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

Central Alternative #2

Sheet No.
 A-35



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend

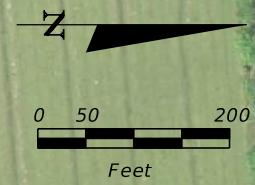
Existing Right-of-Way	Wetland	Proposed Pavement	Proposed Guardrail
Parcels	Potential Pond	Proposed Median/Border	Potential Business Relocation
Proposed Right-of-Way	Potential Flood Plain Compensation	Proposed Sidewalks	Potential Contamination (Low)
Water/Canal	Traffic Signal	Proposed Structure	Potential Contamination (Medium or High)
Seminole Land			

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

Central Alternative #2

Sheet No.
 A-36



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Proposed Pavement
	Seminole Land		Proposed Median/Border
	Traffic Signal		Proposed Sidewalks
			Proposed Structure
			Proposed Guardrail
			Potential Business Relocation
			Potential Contamination (Low)
			Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-37



Match Line

Match Line



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

Central Alternative #2

Sheet No.
A-38



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

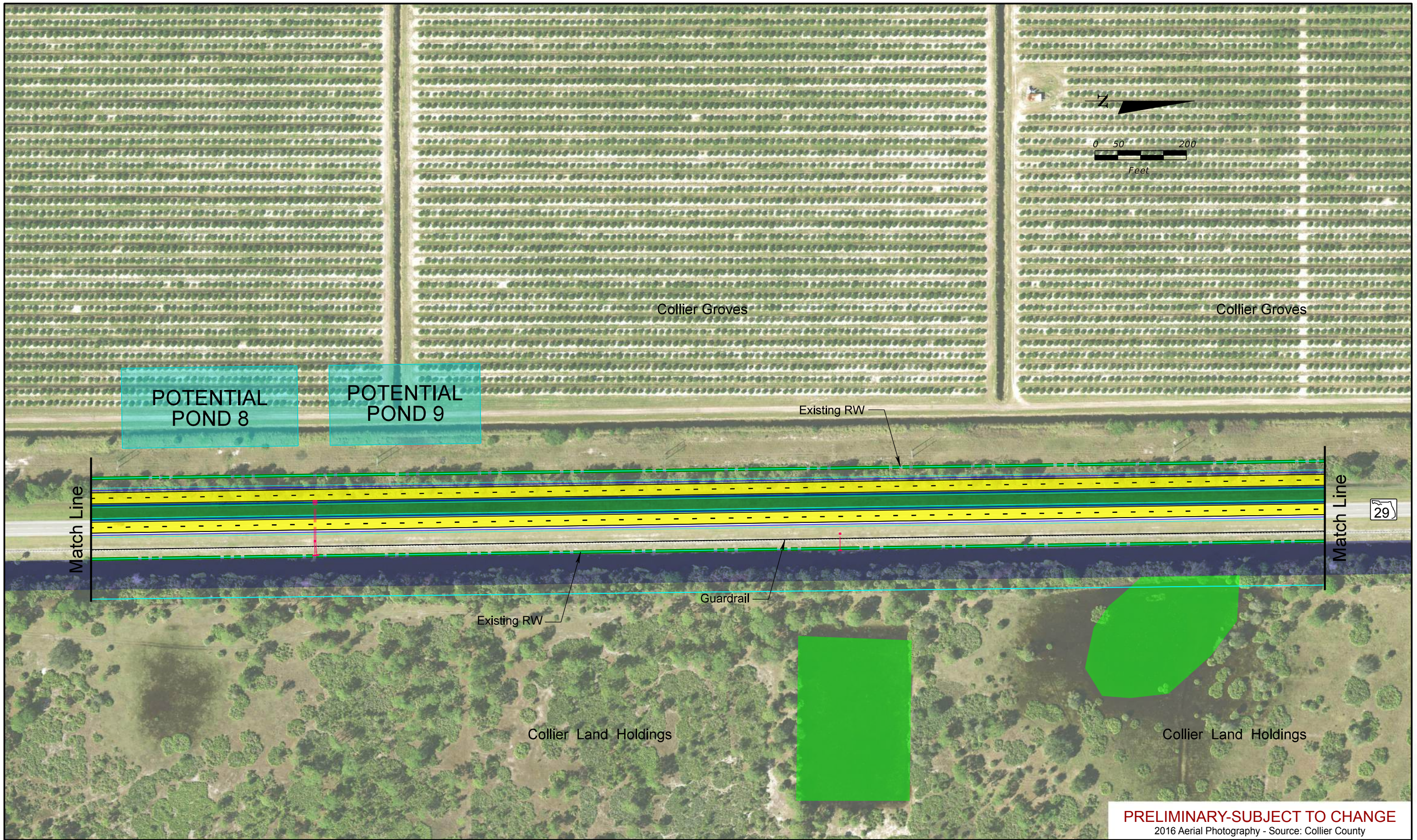
Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

Central Alternative #2

Sheet No.
A-39



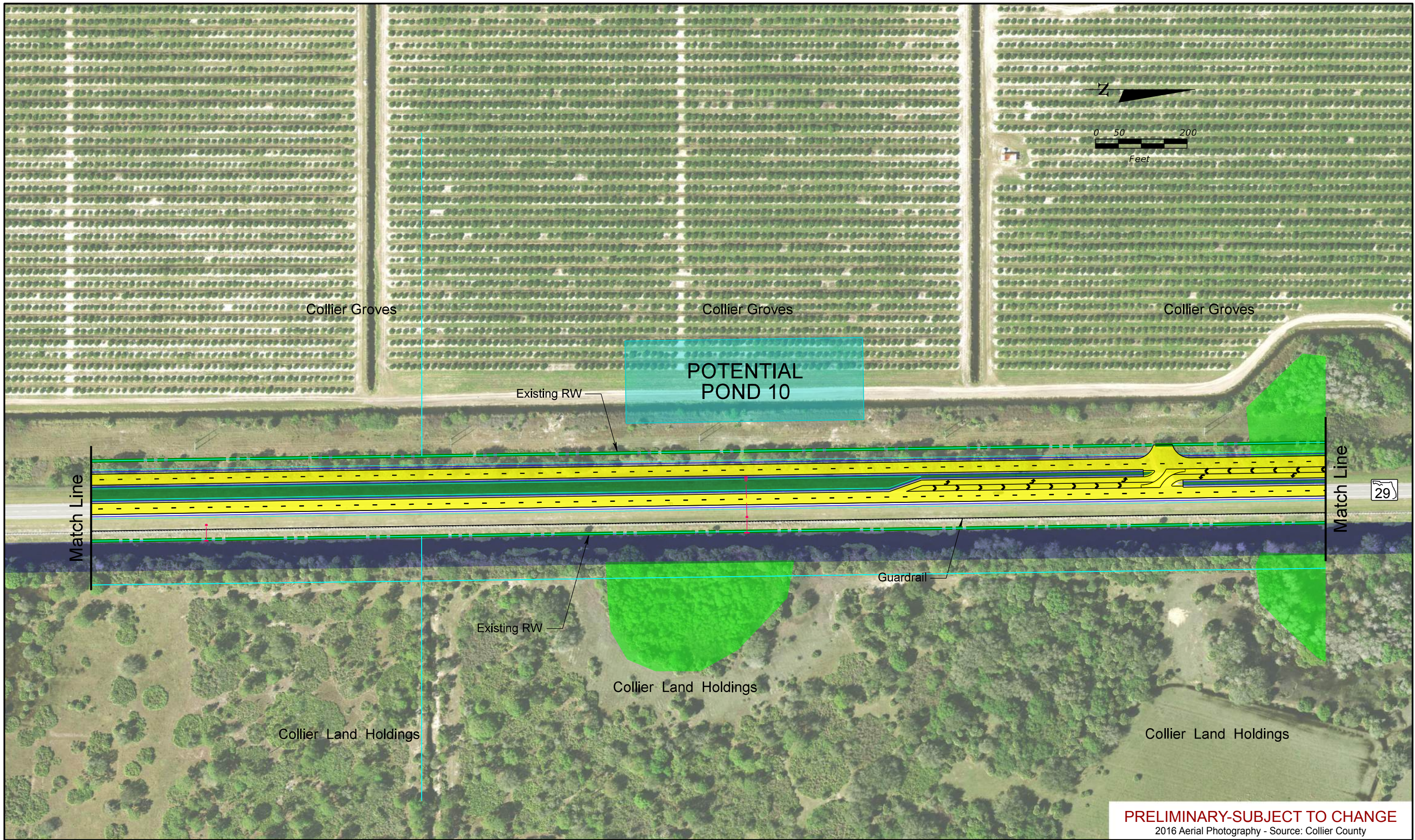
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Proposed Pavement
	Seminole Land		Proposed Sidewalks
	Traffic Signal		Proposed Structure
	Proposed Guardrail		Potential Business Relocation
	Potential Contamination (Low)		Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County
Central Alternative #2

Sheet No.
A-40



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-41



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

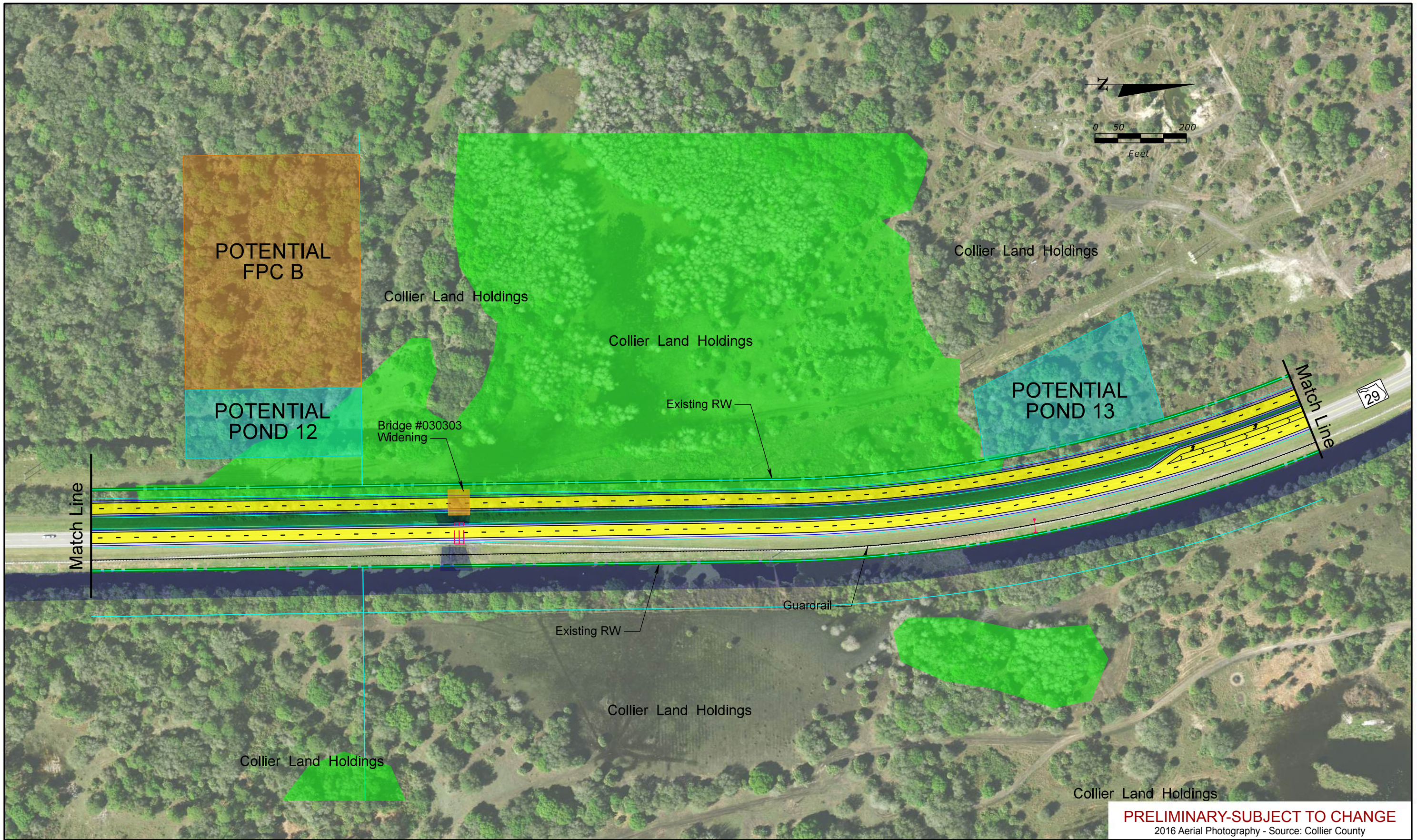
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Proposed Pavement
	Seminole Land		Proposed Median/Border
			Proposed Sidewalks
			Proposed Structure
	Proposed Guardrail		Potential Business Relocation
			Potential Contamination (Low)
			Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-42



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

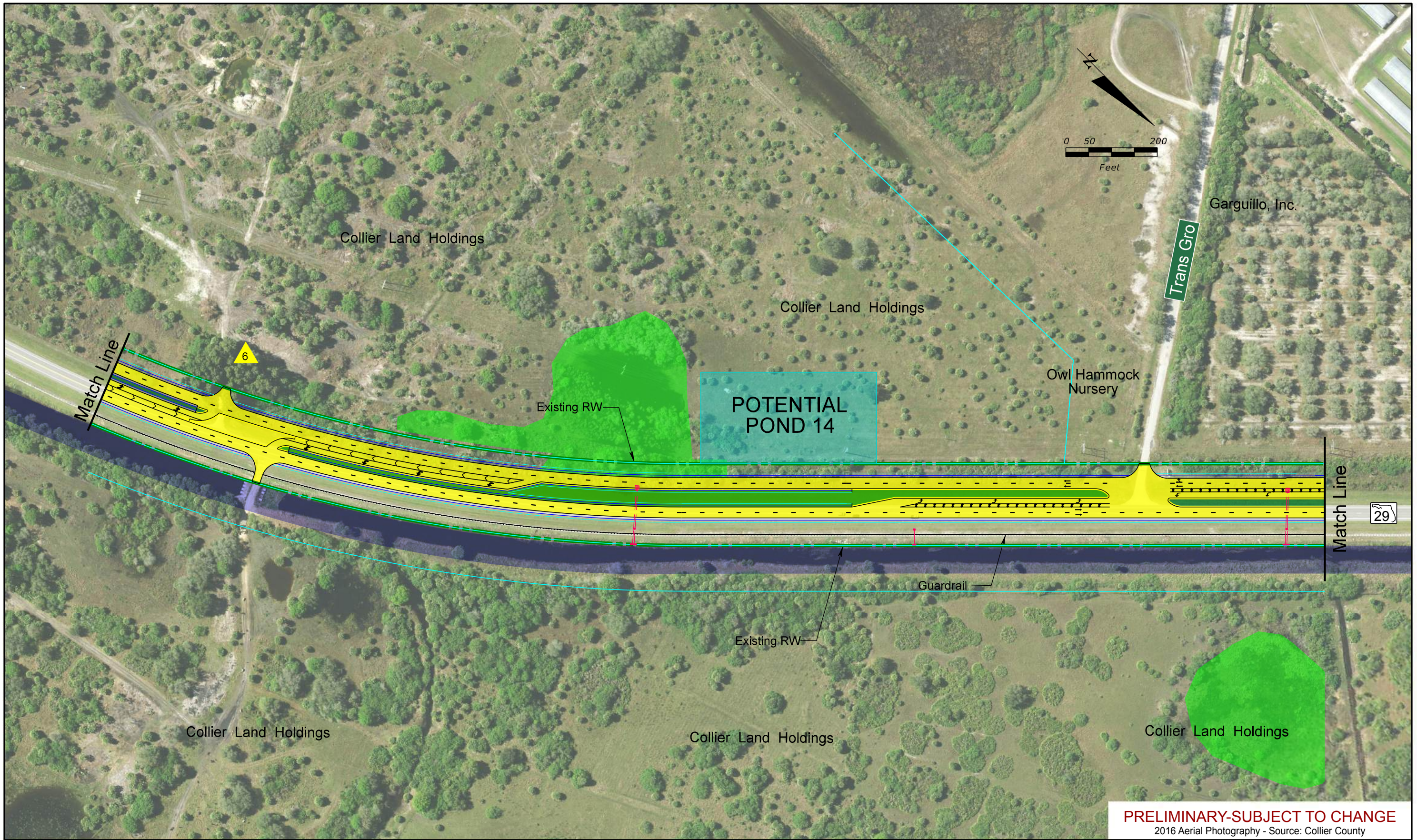
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Traffic Signal
	Seminole Land		Proposed Pavement
	Proposed Median/Border		Proposed Sidewalks
	Proposed Structure		Potential Business Relocation
	Proposed Guardrail		Potential Contamination (Low)
			Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-43



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

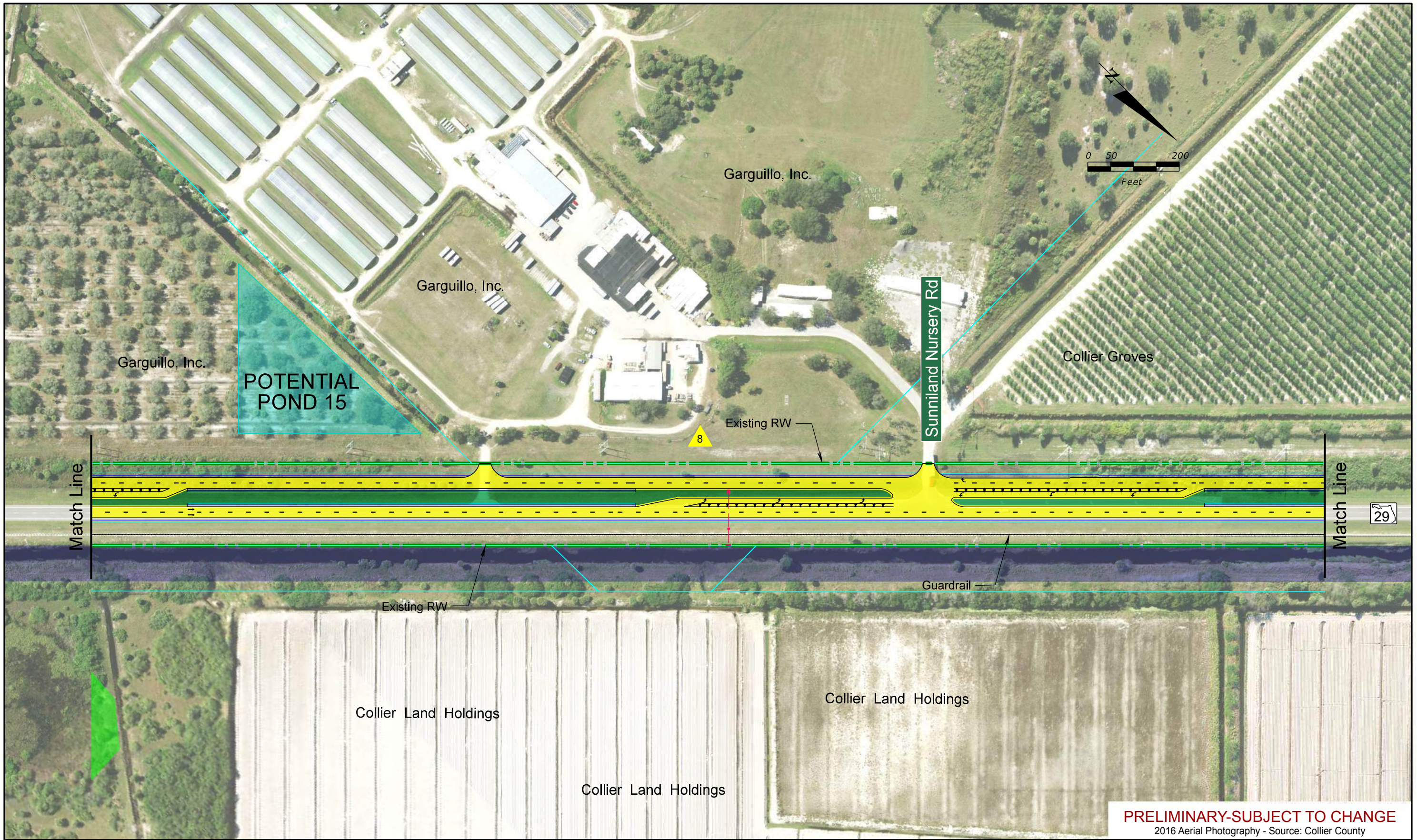
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- | | | | |
|-----------------------|------------------------------------|------------------------|--|
| Existing Right-of-Way | Wetland | Proposed Pavement | Proposed Guardrail |
| Parcels | Potential Pond | Proposed Median/Border | Potential Business Relocation |
| Proposed Right-of-Way | Potential Flood Plain Compensation | Proposed Sidewalks | Potential Contamination (Low) |
| Water/Canal | Traffic Signal | Proposed Structure | Potential Contamination (Medium or High) |
| Seminole Land | | | |

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-44



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-45



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

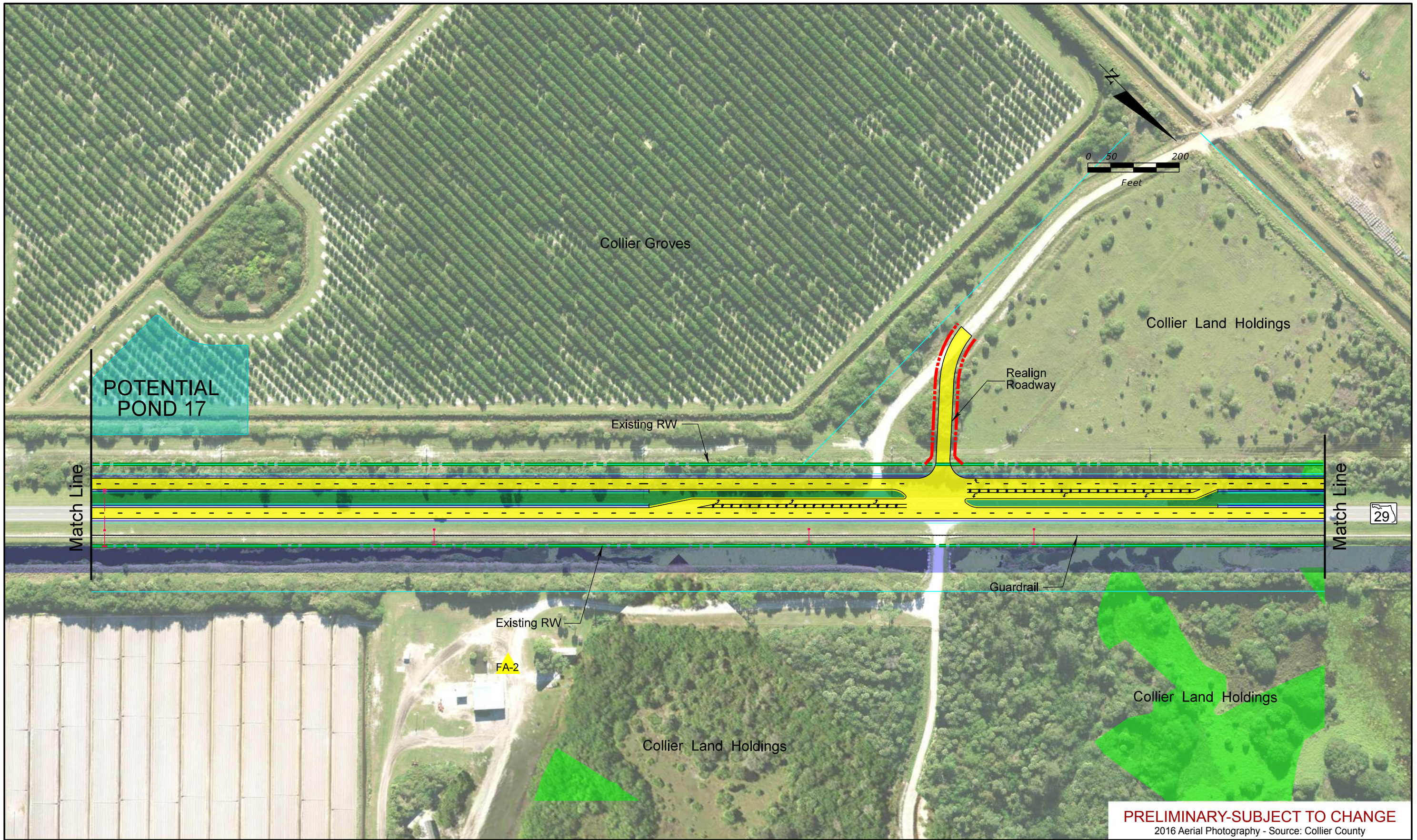
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- | | | | |
|-----------------------|------------------------------------|------------------------|--|
| Existing Right-of-Way | Wetland | Proposed Pavement | Proposed Guardrail |
| Parcels | Potential Pond | Proposed Median/Border | Potential Business Relocation |
| Proposed Right-of-Way | Potential Flood Plain Compensation | Proposed Sidewalks | Potential Contamination (Low) |
| Water/Canal | Traffic Signal | Proposed Structure | Potential Contamination (Medium or High) |
| Seminole Land | | | |

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
 A-46



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

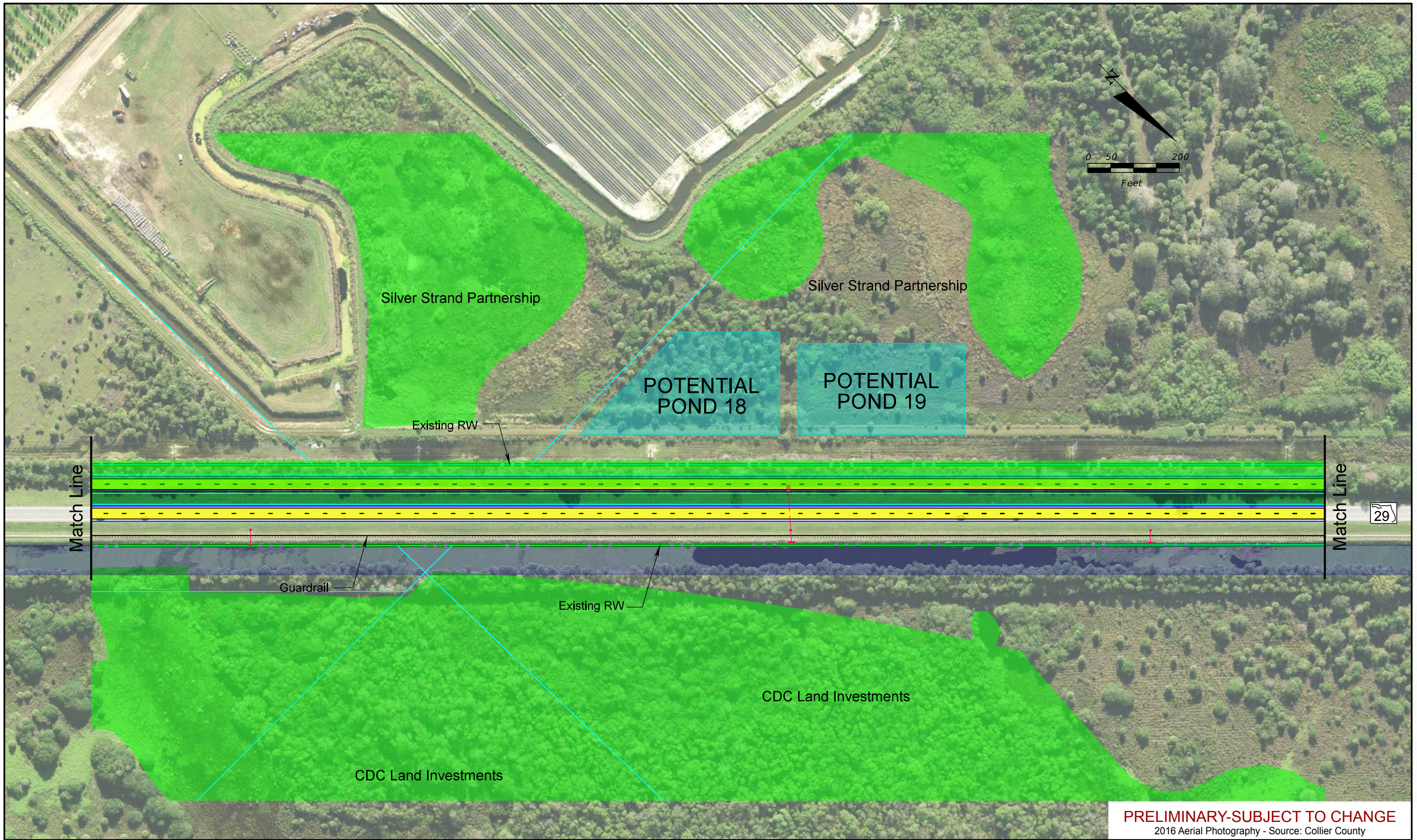
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-47



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

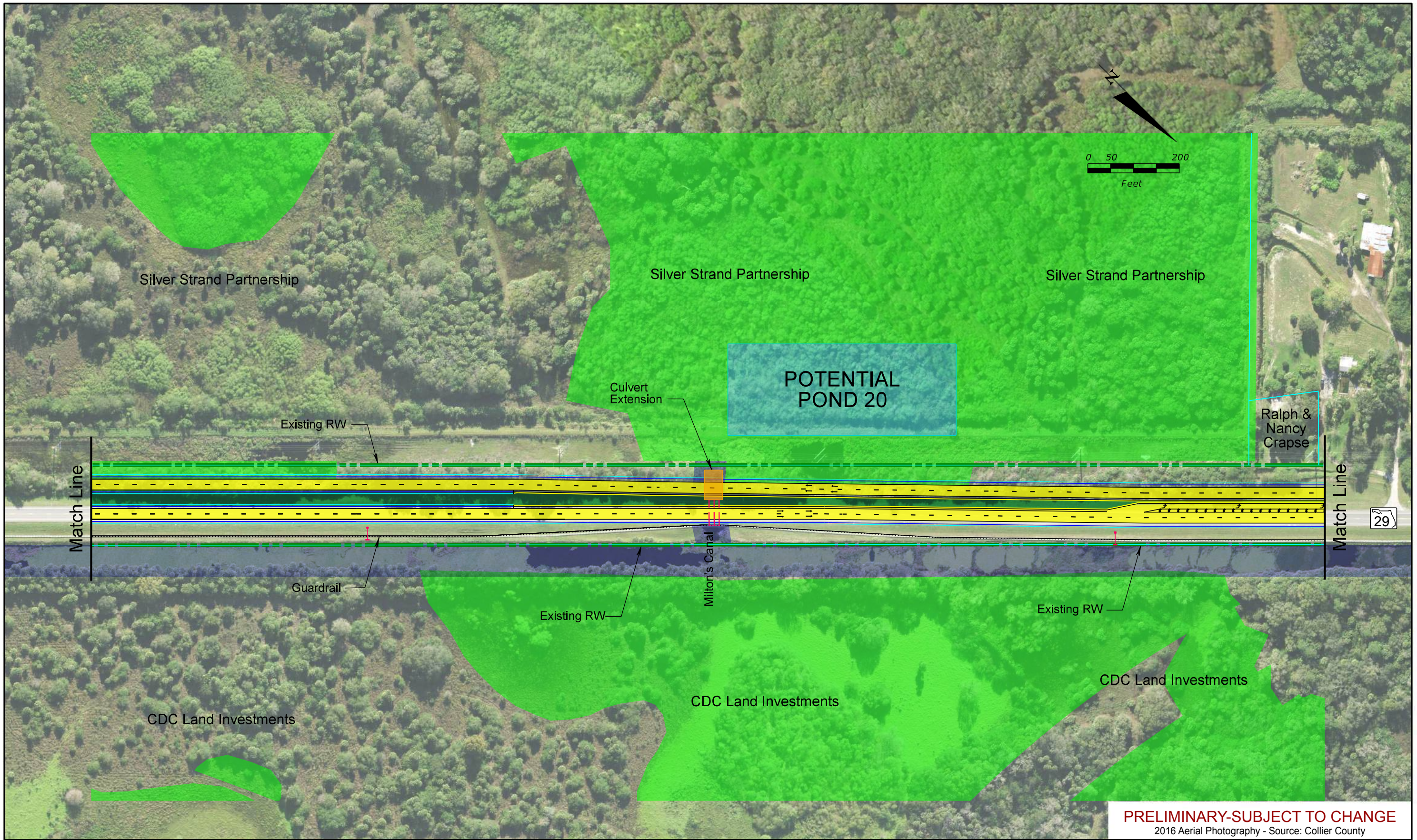
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Parcels
 - Proposed Right-of-Way
 - Water/Canal
 - Seminole Land
 - Wetland
 - Potential Pond
 - Potential Flood Plain Compensation
 - Traffic Signal
 - Proposed Pavement
 - Proposed Median/Border
 - Proposed Sidewalks
 - Proposed Structure
 - Proposed Guardrail
 - Potential Business Relocation
 - Potential Contamination (Low)
 - Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-48



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

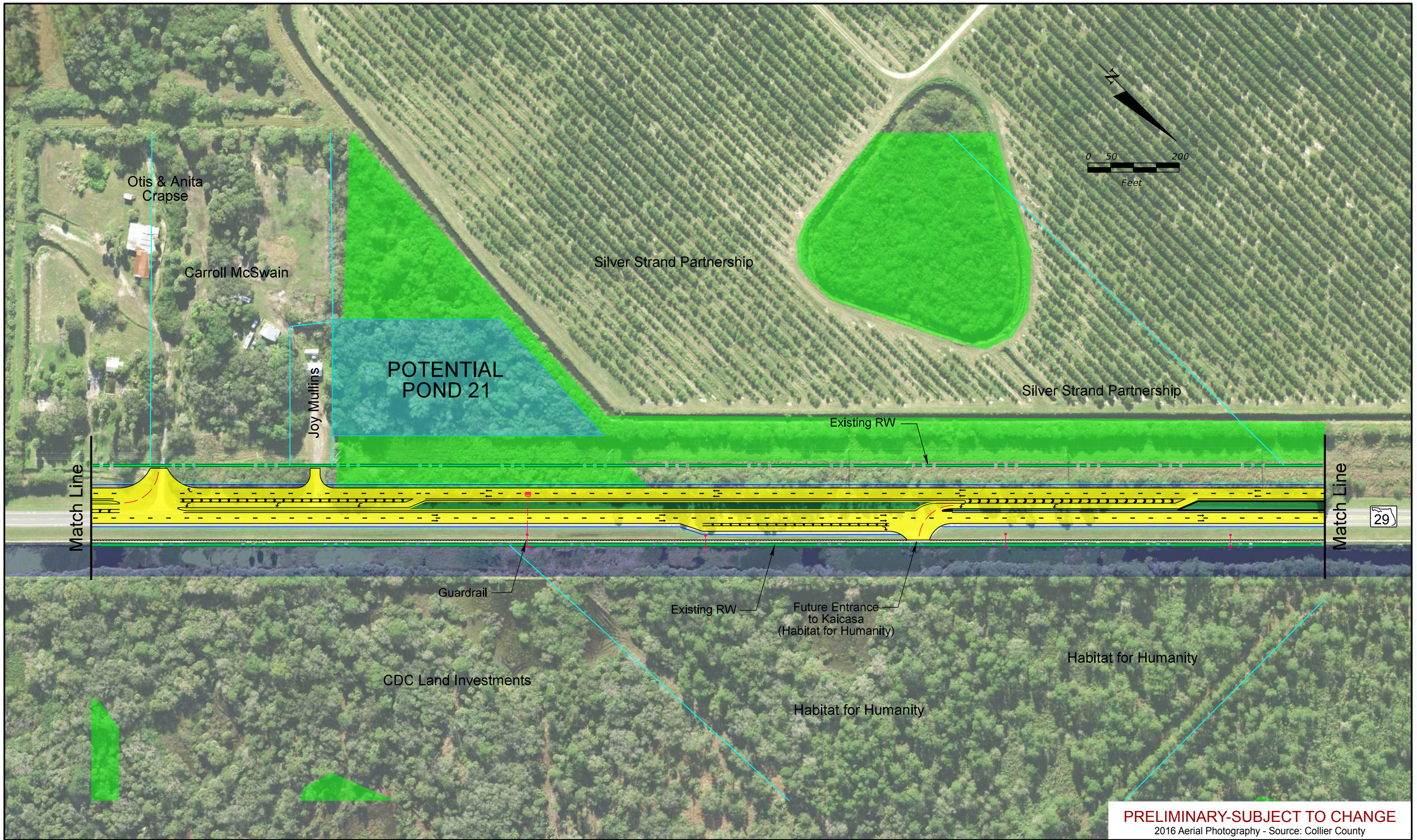
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-49



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

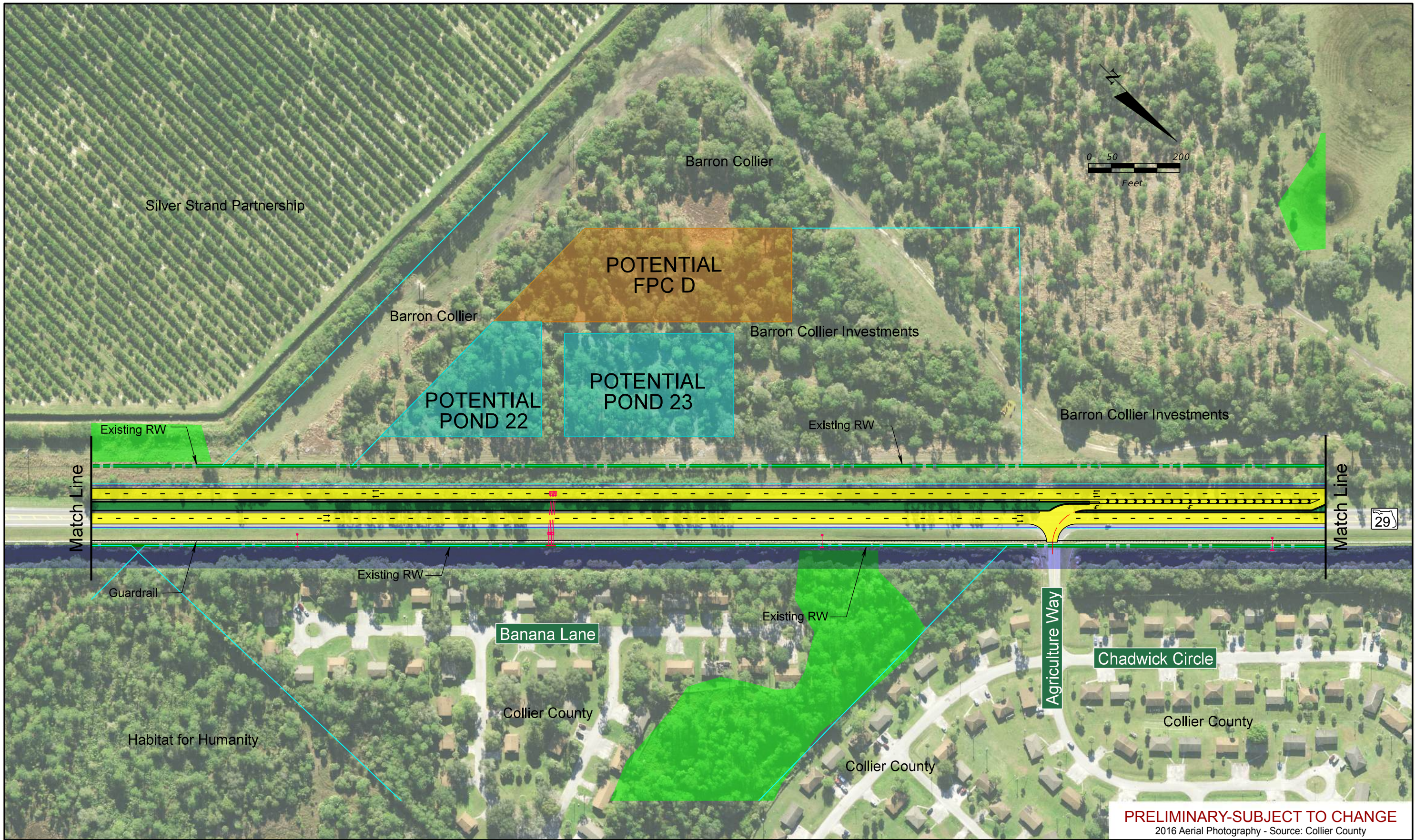
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Proposed Pavement
	Seminole Land		Proposed Median/Border
	Traffic Signal		Proposed Sidewalks
			Proposed Structure
	Proposed Guardrail		Potential Business Relocation
			Potential Contamination (Low)
			Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-50



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

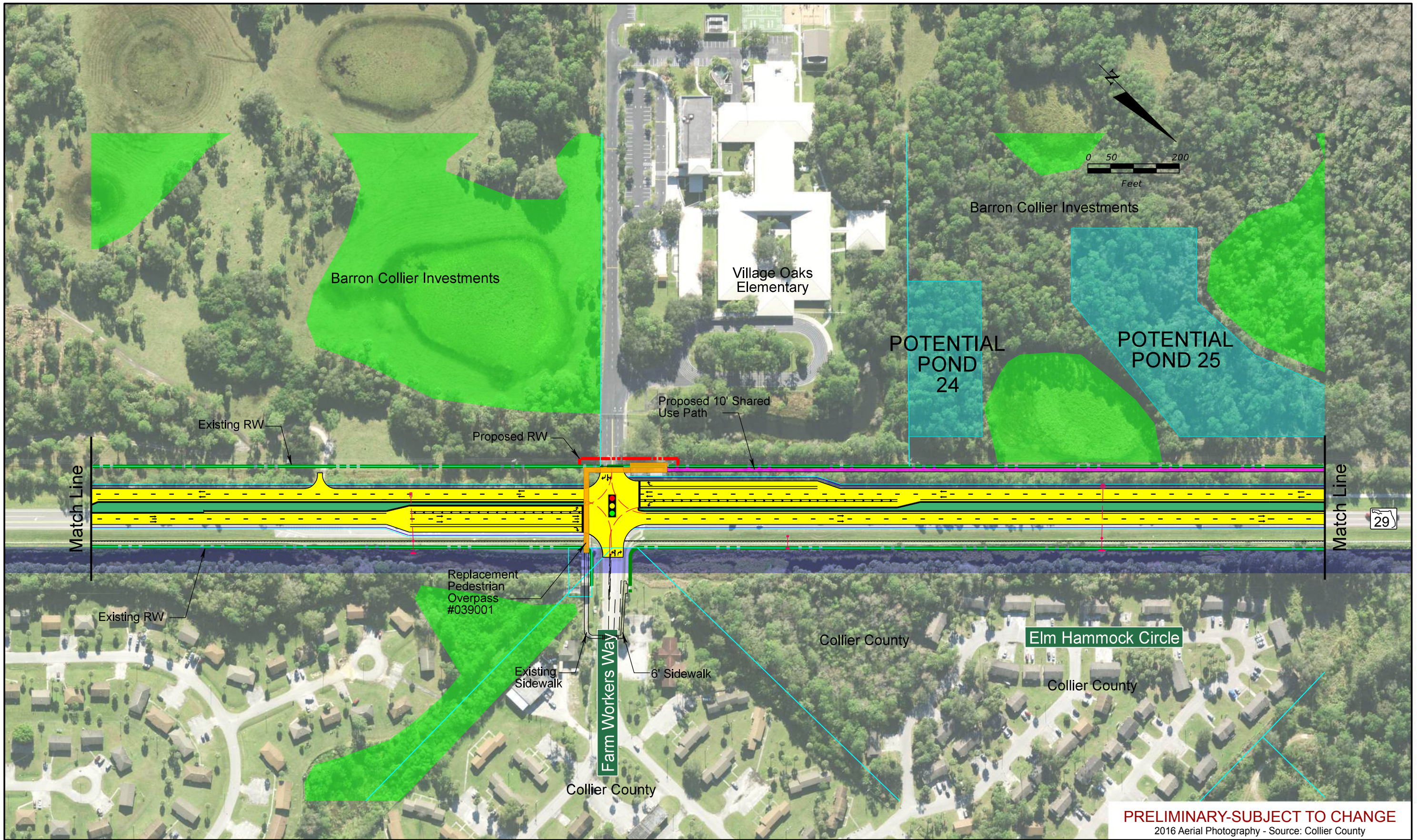
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Proposed Pavement
	Seminole Land		Proposed Sidewalks
	Traffic Signal		Proposed Structure
	Proposed Guardrail		Potential Business Relocation
	Potential Contamination (Low)		Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-51



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

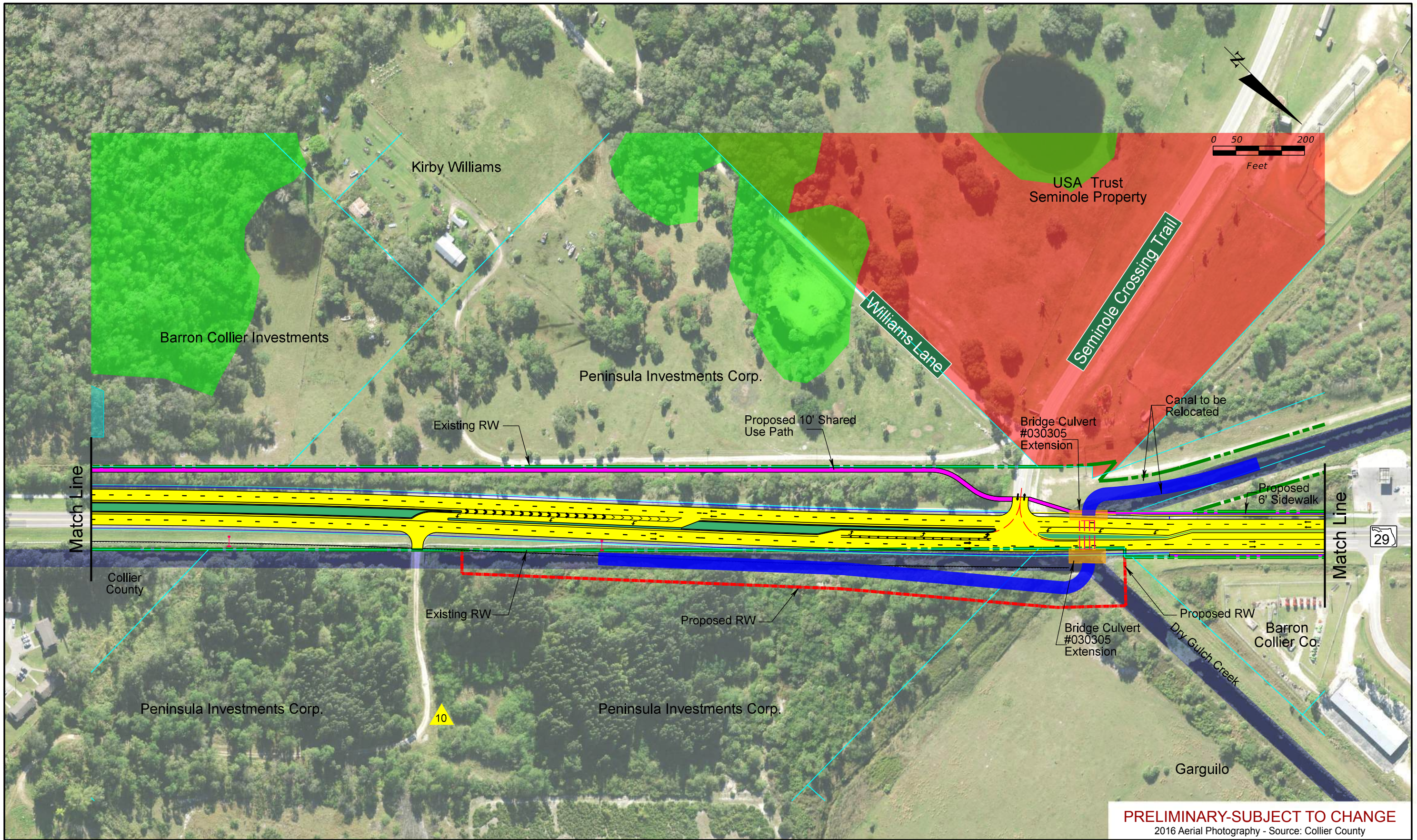
Legend			
Existing Right-of-Way	Wetland	Proposed Pavement	Proposed Guardrail
Parcels	Potential Pond	Proposed Median/Border	Potential Business Relocation
Proposed Right-of-Way	Potential Flood Plain Compensation	Proposed Sidewalks	Potential Contamination (Low)
Water/Canal	Traffic Signal	Proposed Structure	Potential Contamination (Medium or High)
Seminole Land			

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

Central Alternative #2

Sheet No.
A-52



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

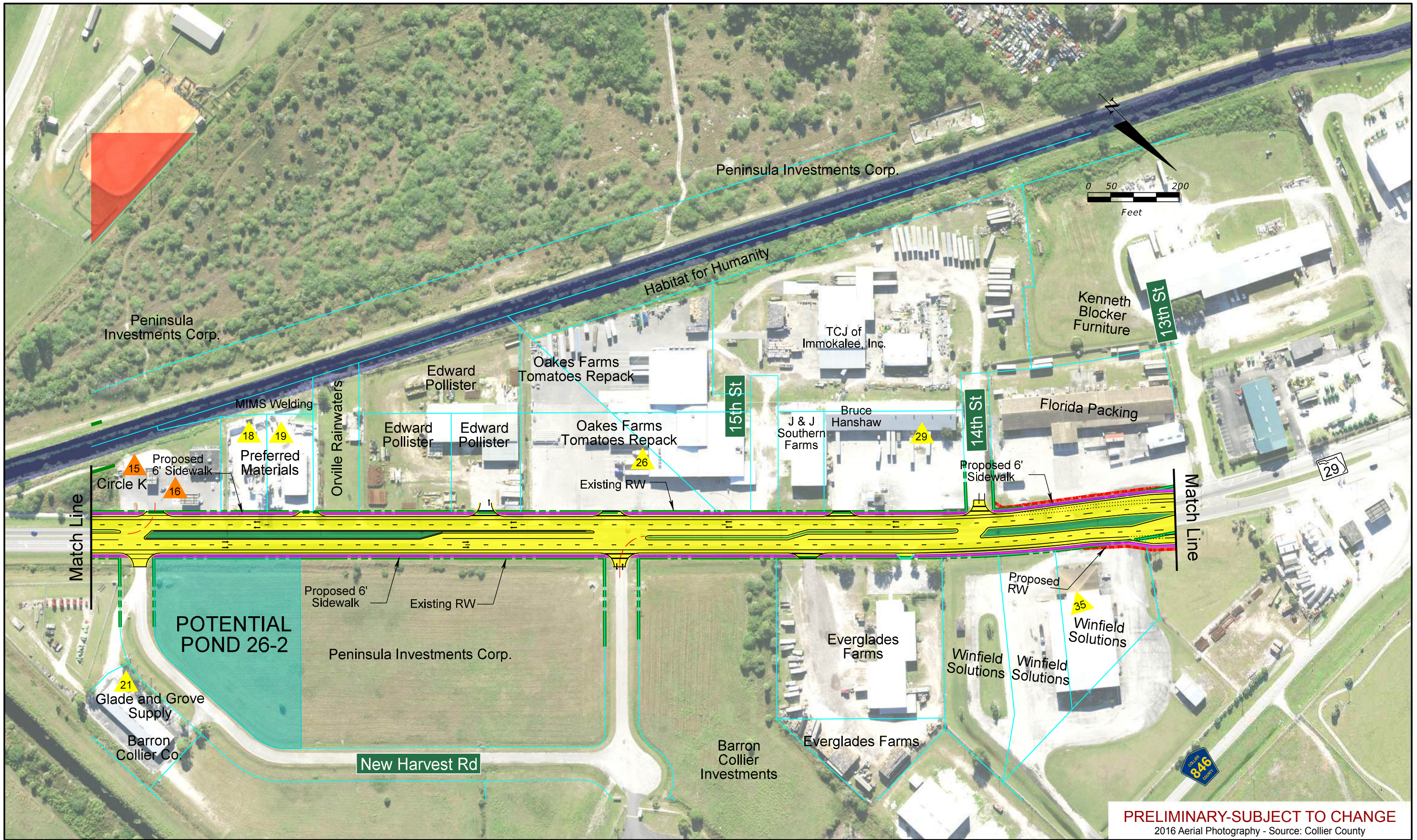
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Proposed Pavement
	Seminole Land		Proposed Median/Border
	Traffic Signal		Proposed Sidewalks
			Proposed Structure
			Potential Business Relocation
			Potential Contamination (Low)
			Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-53



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

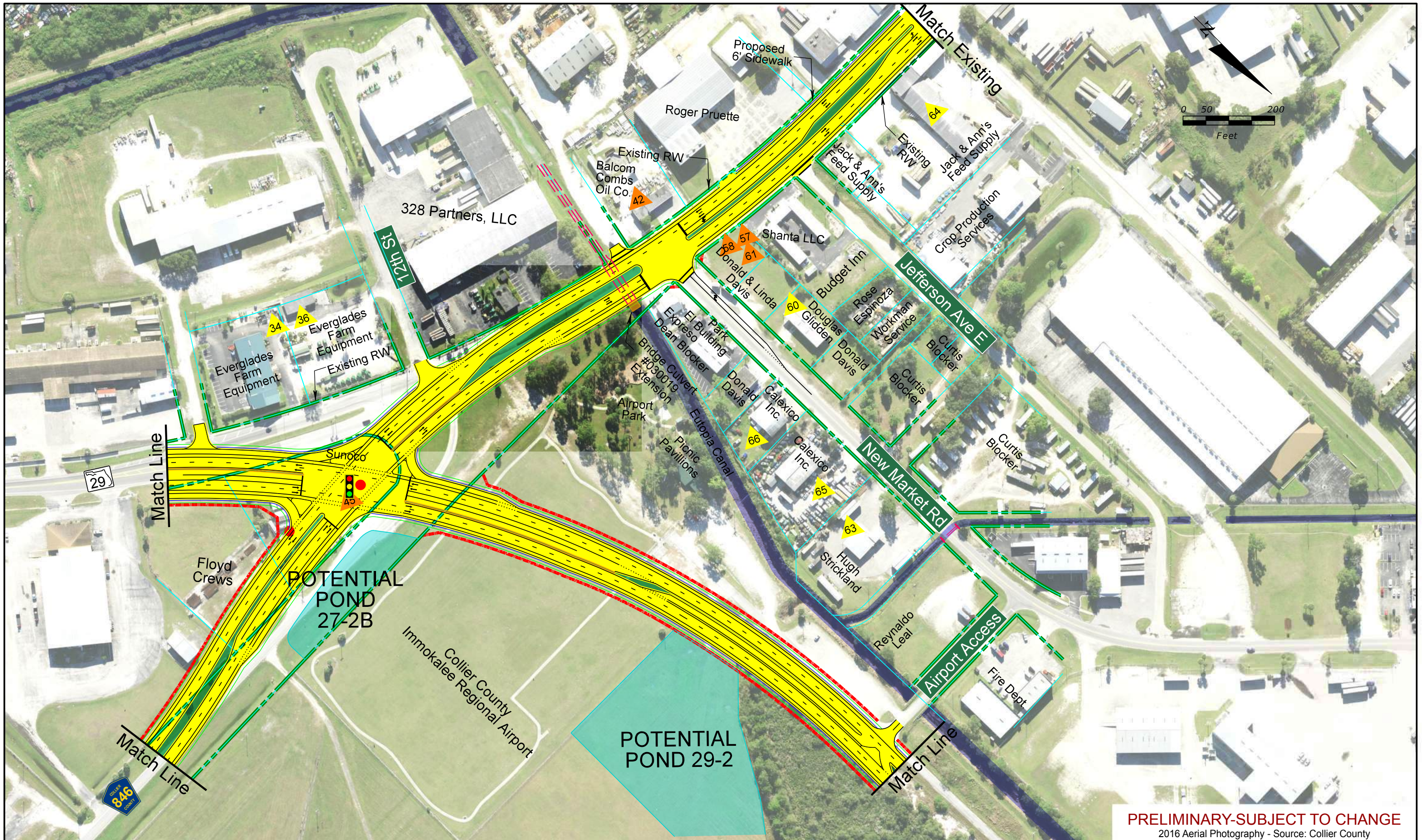
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Potential Business Relocation
	Wetland		Potential Contamination (Low)
	Potential Pond		Potential Contamination (Medium or High)
	Potential Flood Plain Compensation		Proposed Guardrail
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-54



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

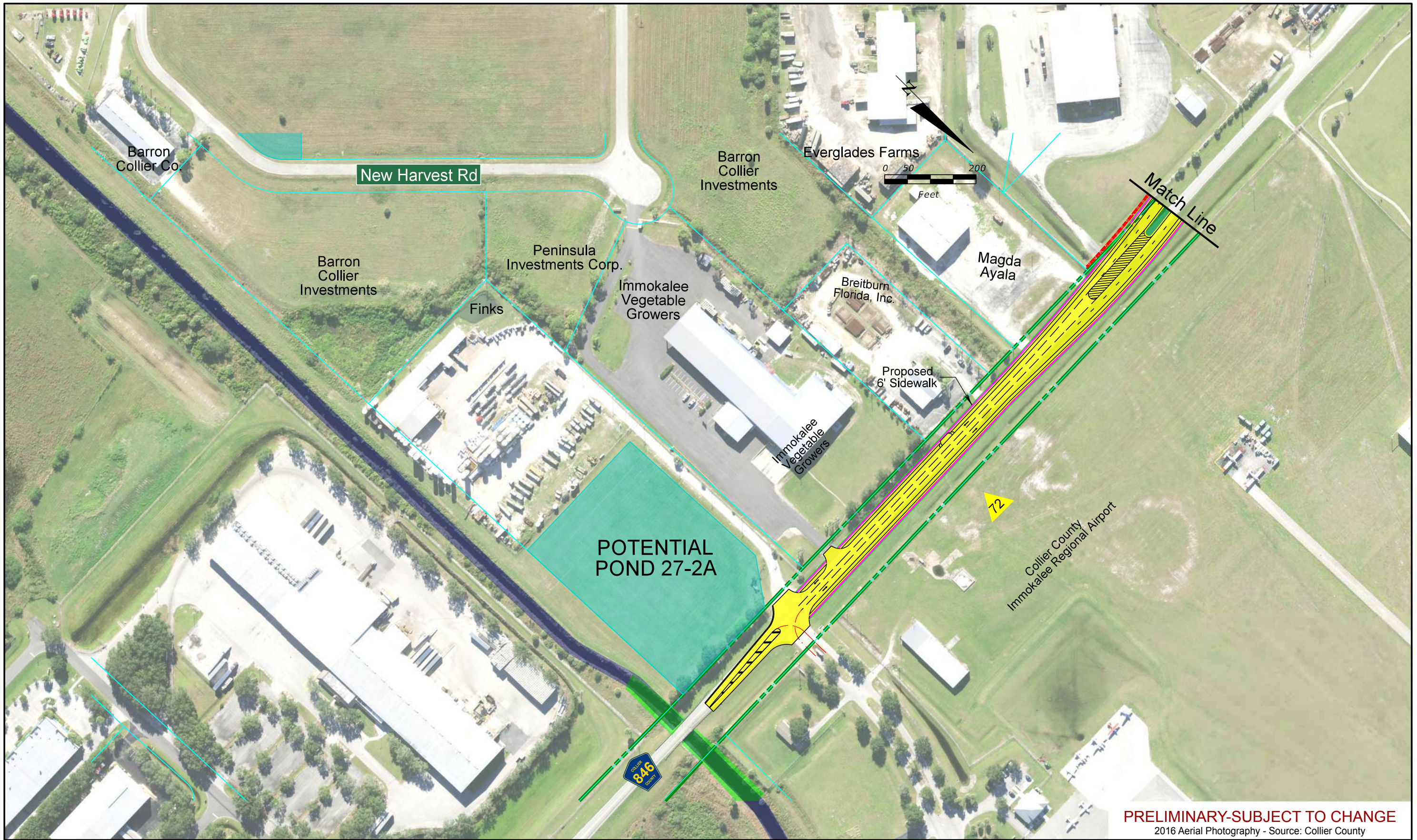
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend	
	Existing Right-of-Way
	Parcels
	Proposed Right-of-Way
	Water/Canal
	Seminole Land
	Wetland
	Potential Pond
	Potential Flood Plain Compensation
	Traffic Signal
	Proposed Pavement
	Proposed Median/Border
	Proposed Sidewalks
	Proposed Structure
	Proposed Guardrail
	Potential Business Relocation
	Potential Contamination (Low)
	Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-55



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

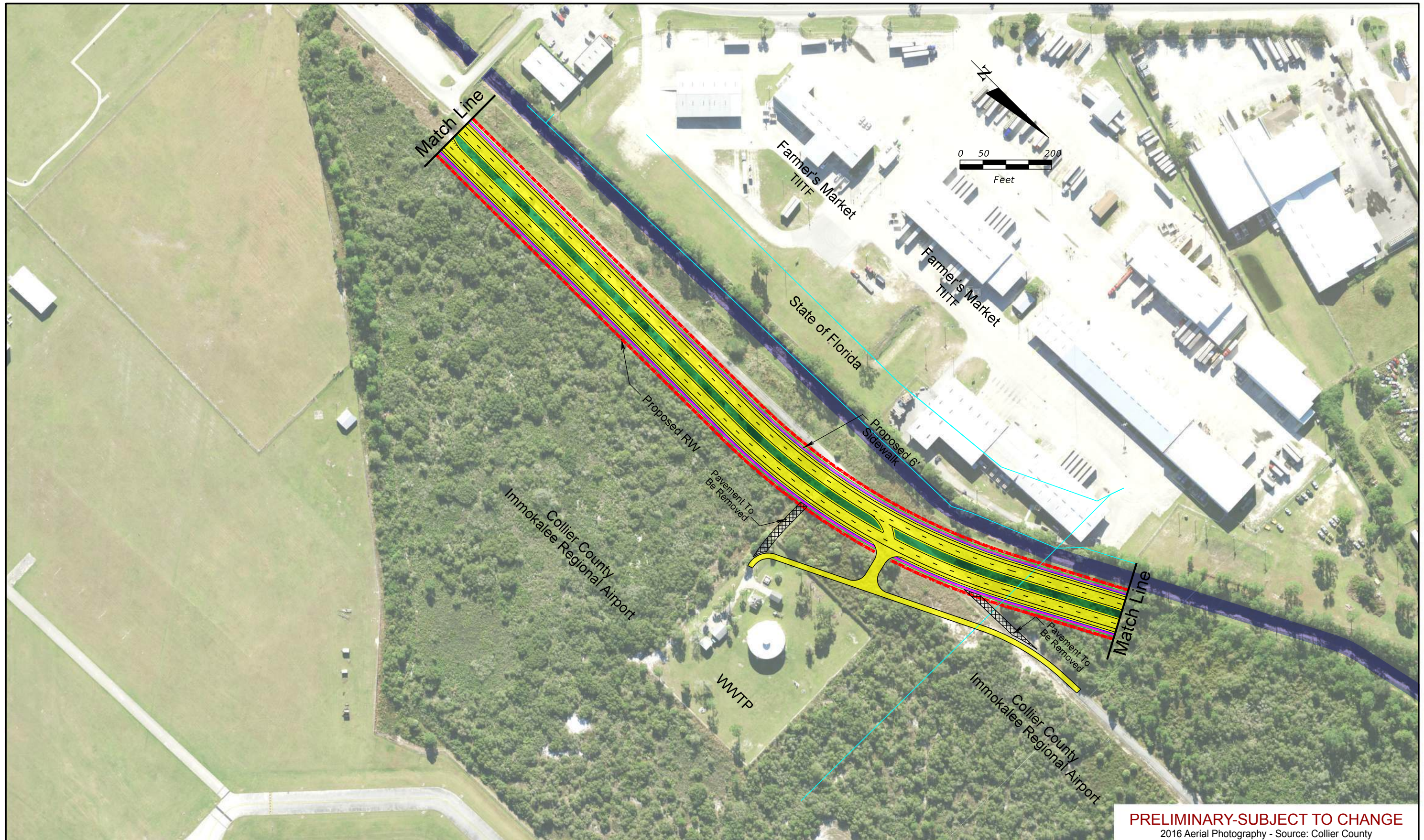
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-56



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

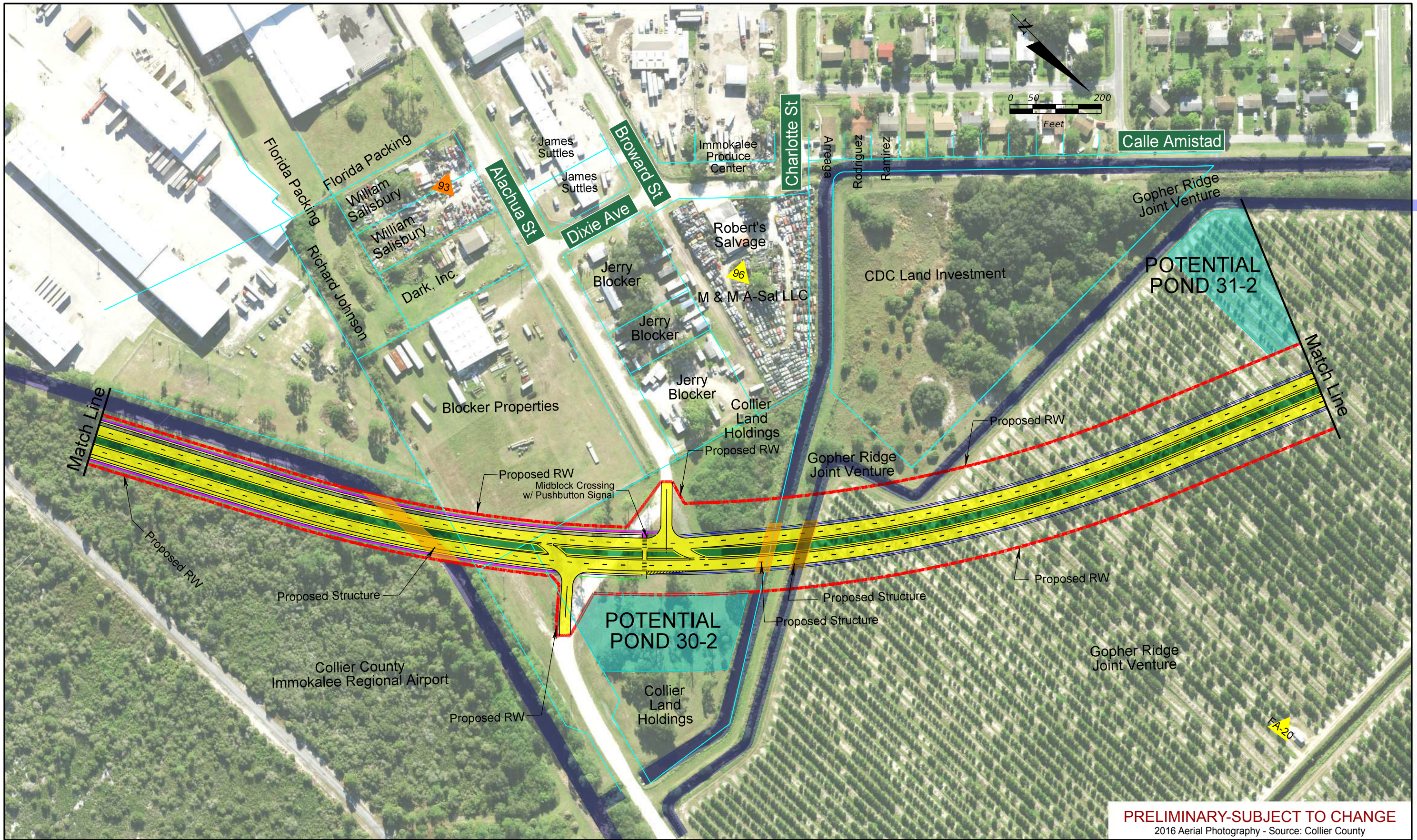
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-57



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

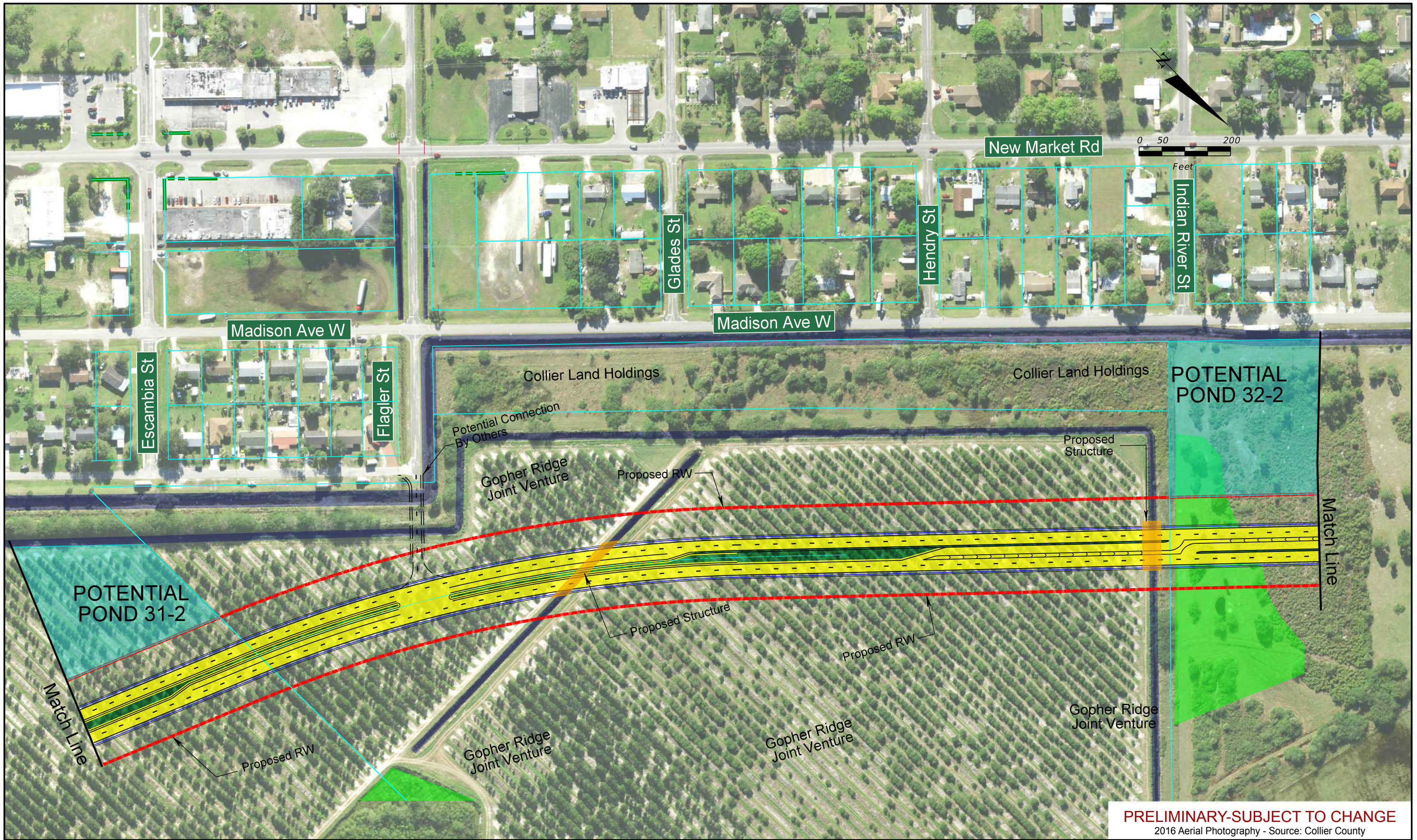
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
Existing Right-of-Way	Wetland	Proposed Pavement	Proposed Guardrail
Parcels	Potential Pond	Proposed Median/Border	Potential Business Relocation
Proposed Right-of-Way	Potential Flood Plain Compensation	Proposed Sidewalks	Potential Contamination (Low)
Water/Canal	Traffic Signal	Proposed Structure	Potential Contamination (Medium or High)
Seminole Land			

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-58



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

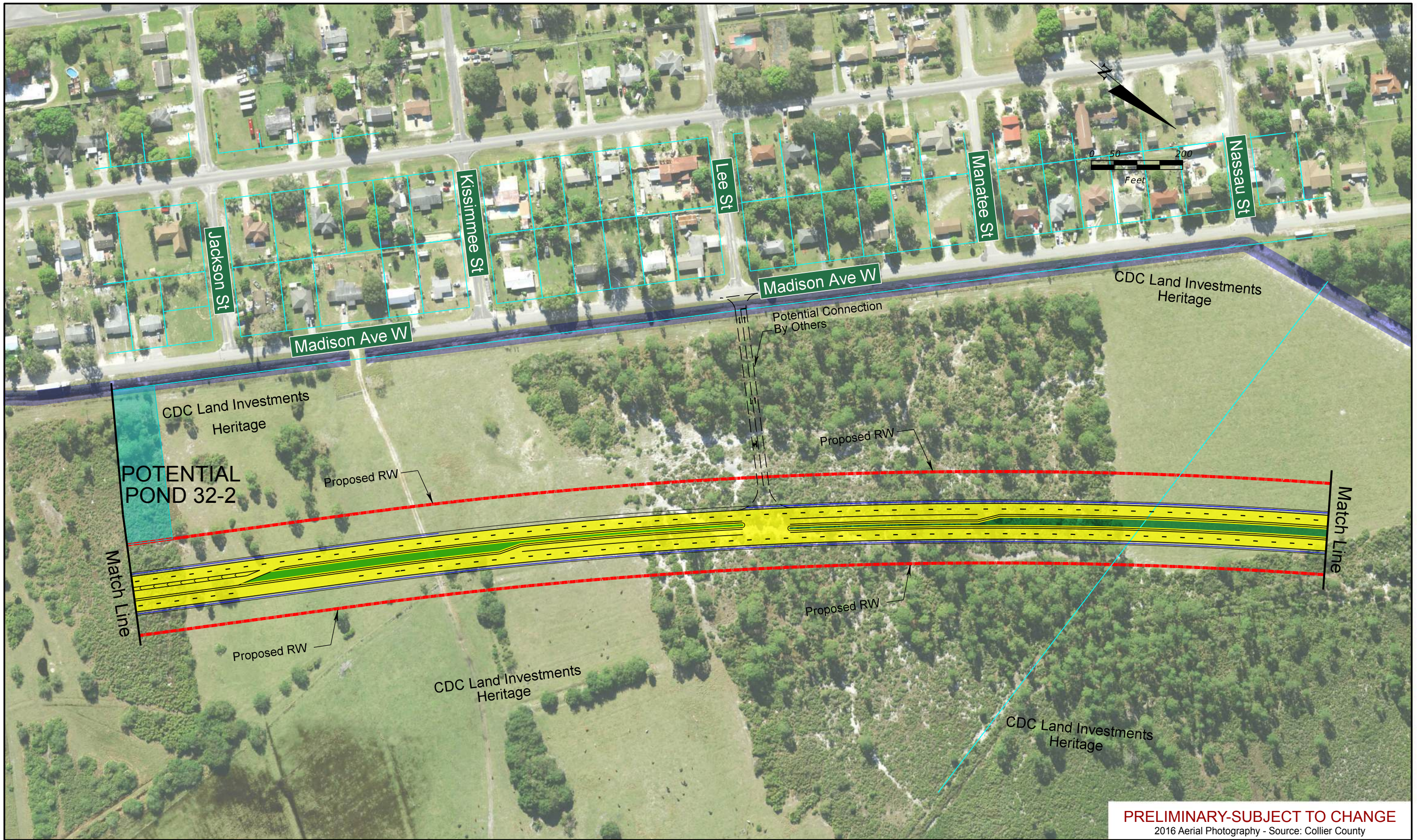
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 Parcels
 Proposed Right-of-Way
 Water/Canal
 Seminole Land
 - Wetland
 Potential Pond
 Potential Flood Plain Compensation
 Traffic Signal
 - Proposed Pavement
 Proposed Median/Border
 Proposed Sidewalks
 Proposed Structure
 Proposed Guardrail
● Potential Business Relocation
▲ Potential Contamination (Low)
▲ Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-59



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

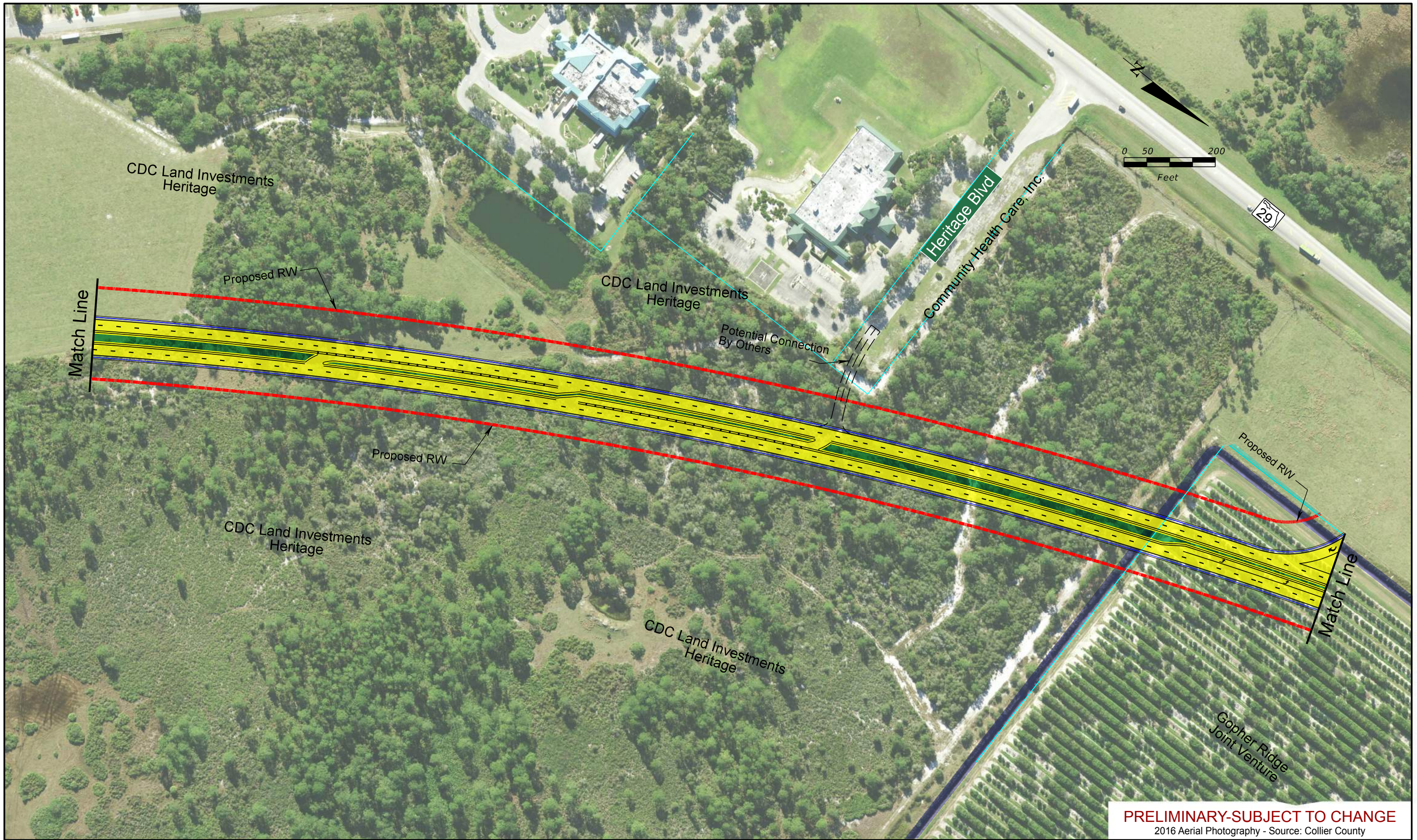
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-60



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

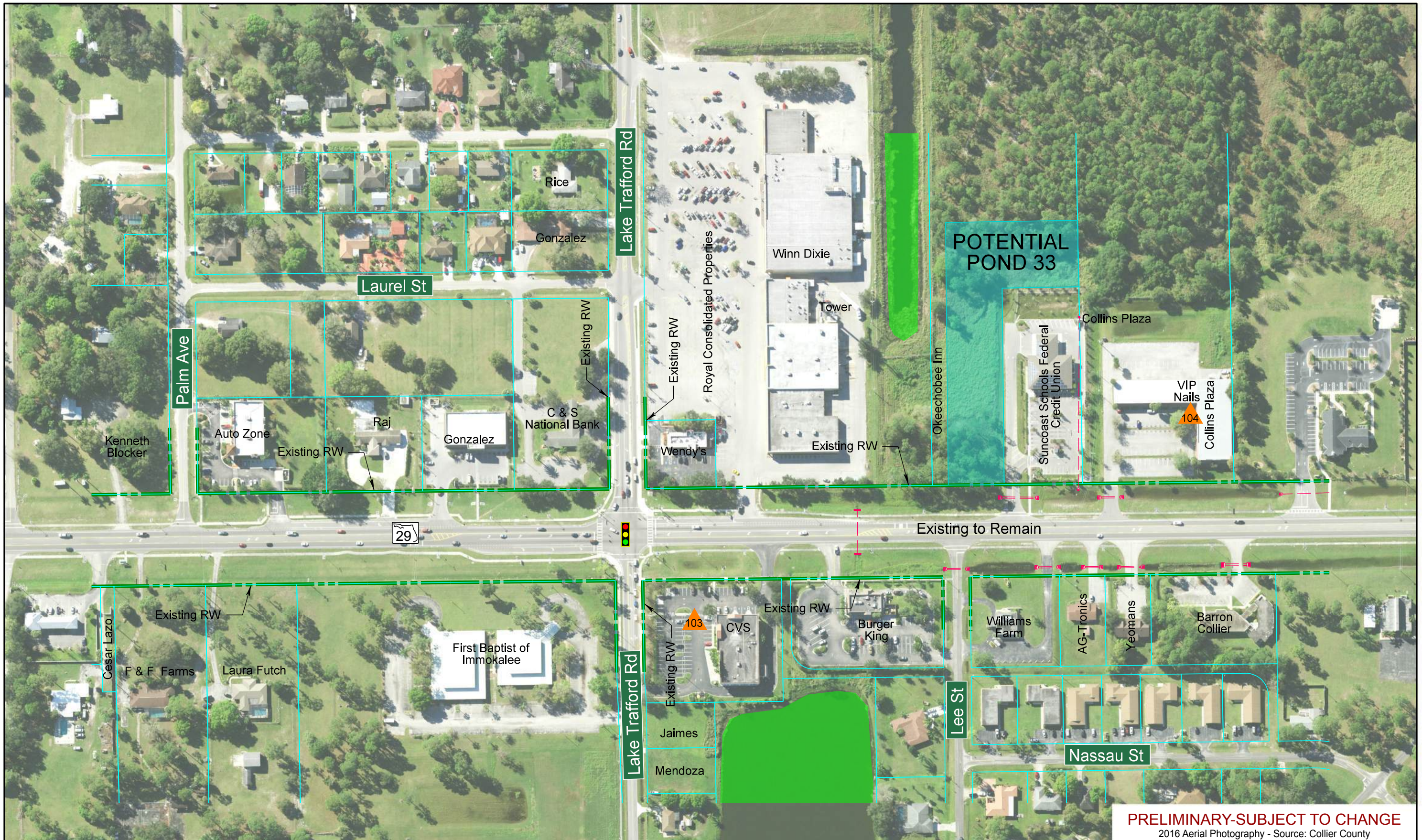
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Proposed Pavement
	Seminole Land		Proposed Median/Border
	Proposed Pavement		Proposed Sidewalks
	Proposed Structure		Proposed Guardrail
	Potential Business Relocation		Potential Contamination (Low)
	Potential Contamination (Medium or High)		Traffic Signal

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-61



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

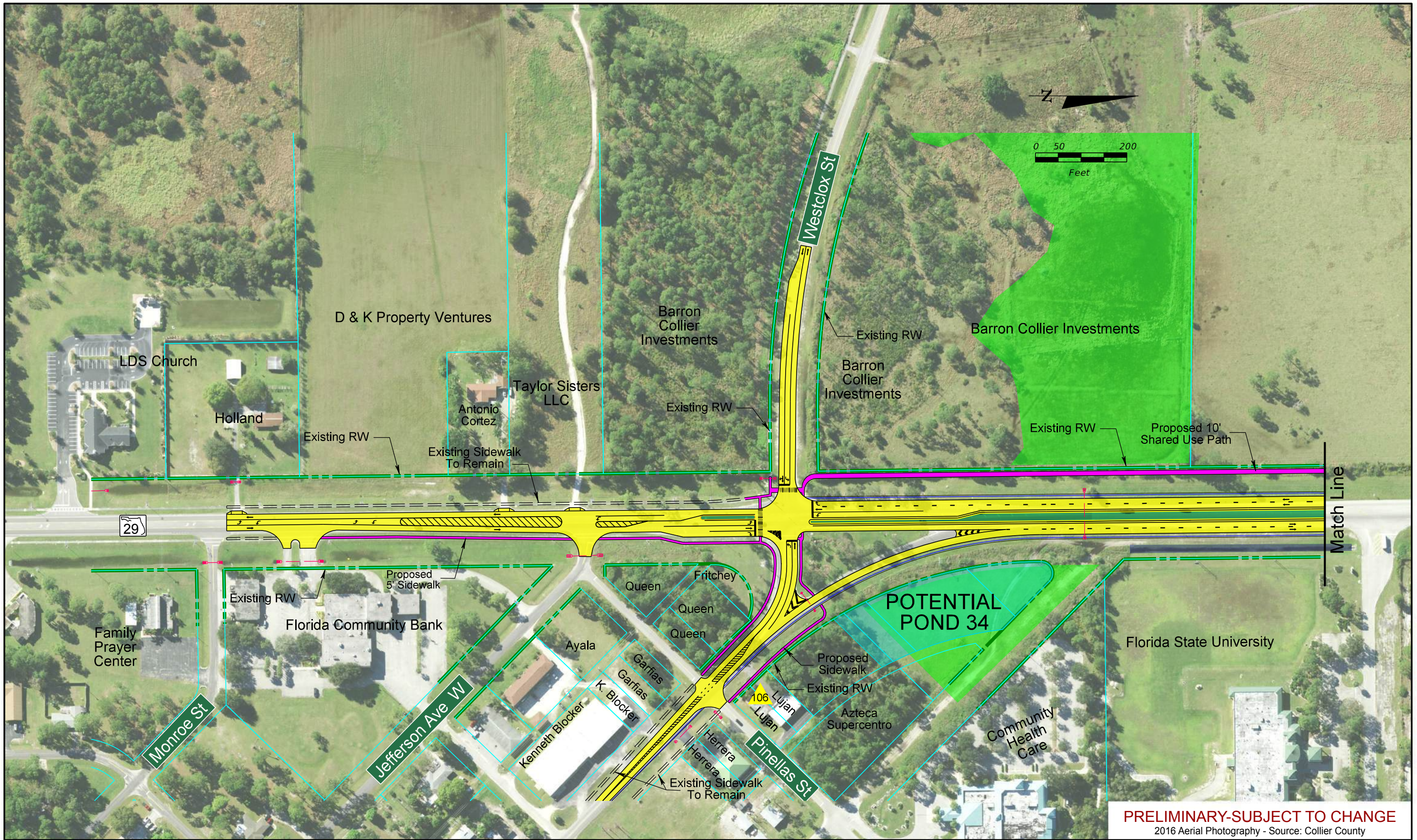
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Proposed Pavement
	Seminole Land		Proposed Median/Border
	Traffic Signal		Proposed Sidewalks
	Proposed Guardrail		Proposed Structure
	Potential Business Relocation		Potential Contamination (Low)
	Potential Contamination (Low)		Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-62



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

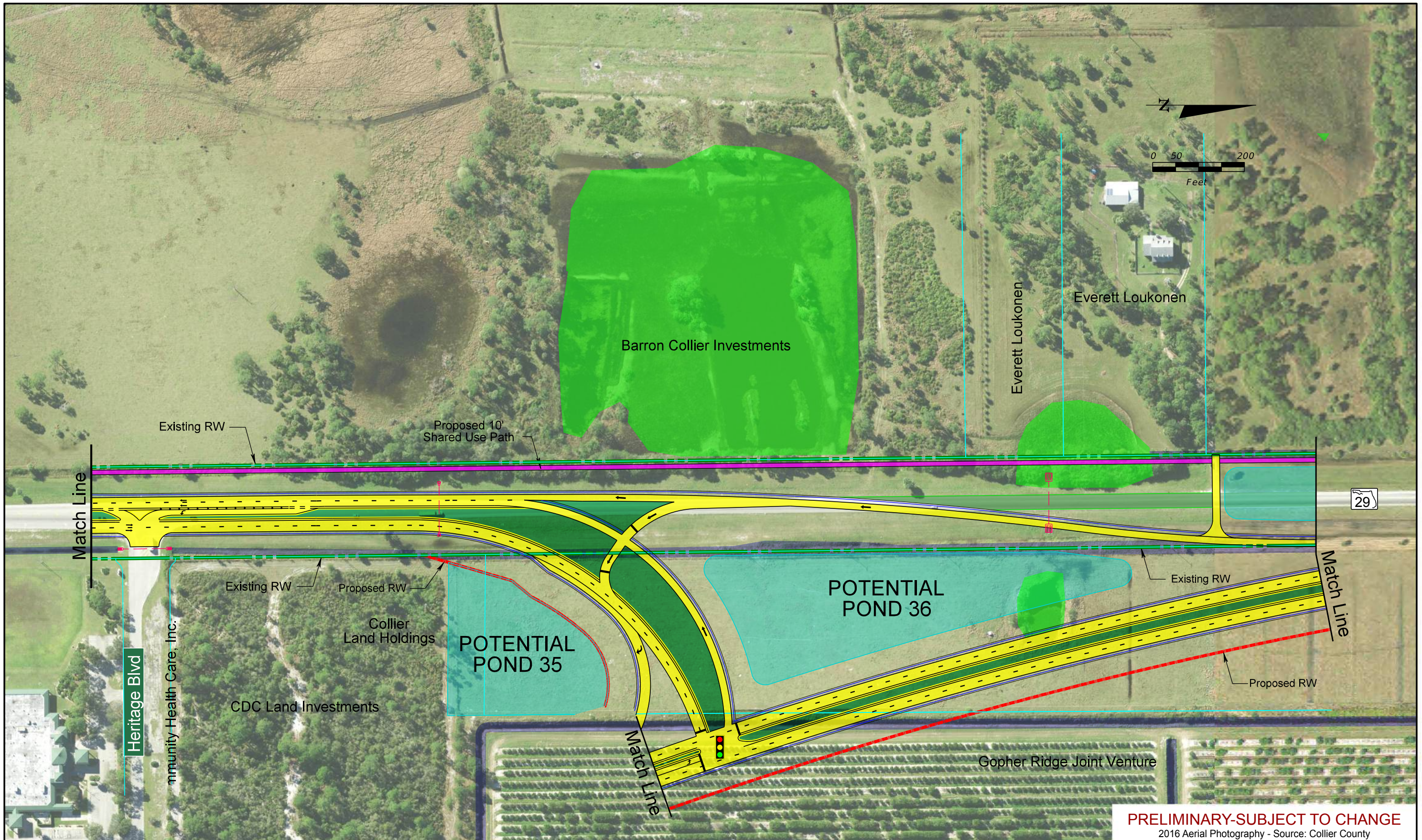
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-63



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

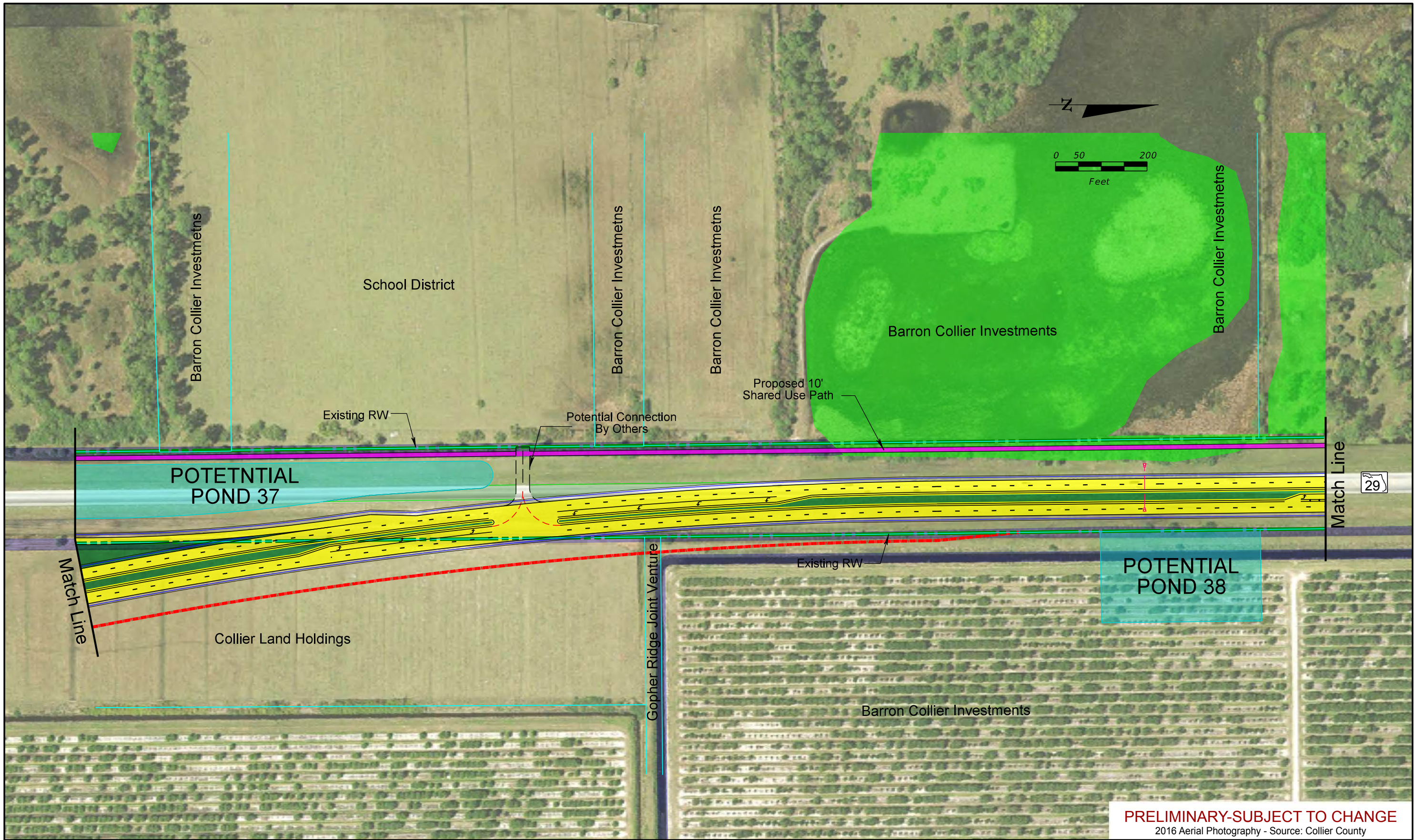
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Seminole Land
	Proposed Pavement		Proposed Structure
	Proposed Median/Border		Proposed Guardrail
	Potential Contamination (Low)		Potential Business Relocation
	Potential Contamination (Medium or High)		Traffic Signal

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-64



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-65



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Wetland
	Parcels		Potential Pond
	Proposed Right-of-Way		Potential Flood Plain Compensation
	Water/Canal		Traffic Signal
	Seminole Land		Proposed Pavement
			Proposed Median/Border
			Proposed Sidewalks
			Proposed Structure
			Proposed Guardrail
			Potential Business Relocation
			Potential Contamination (Low)
			Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County
Central Alternative #2

Sheet No.
A-66



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

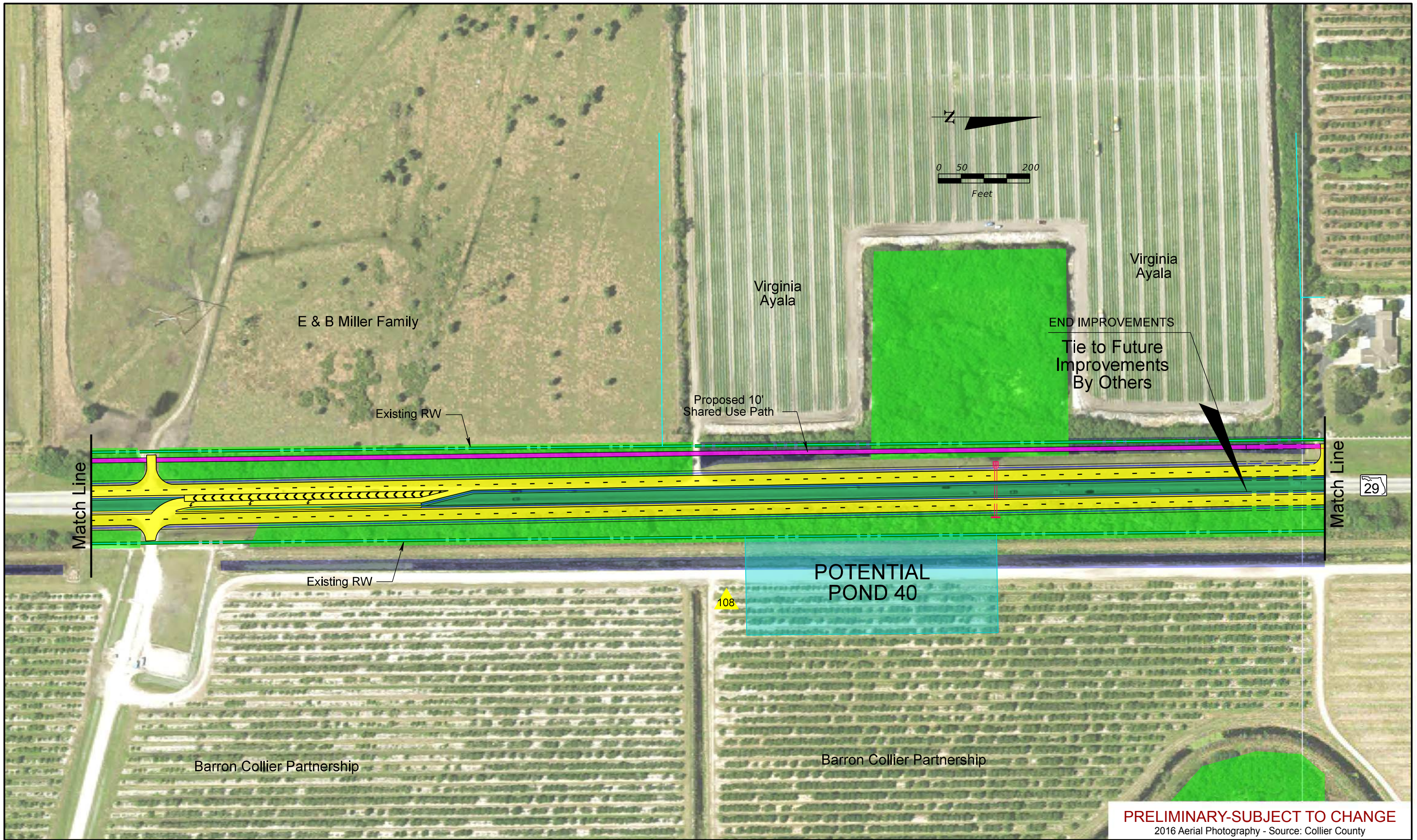
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

Central Alternative #2

Sheet No.
A-67



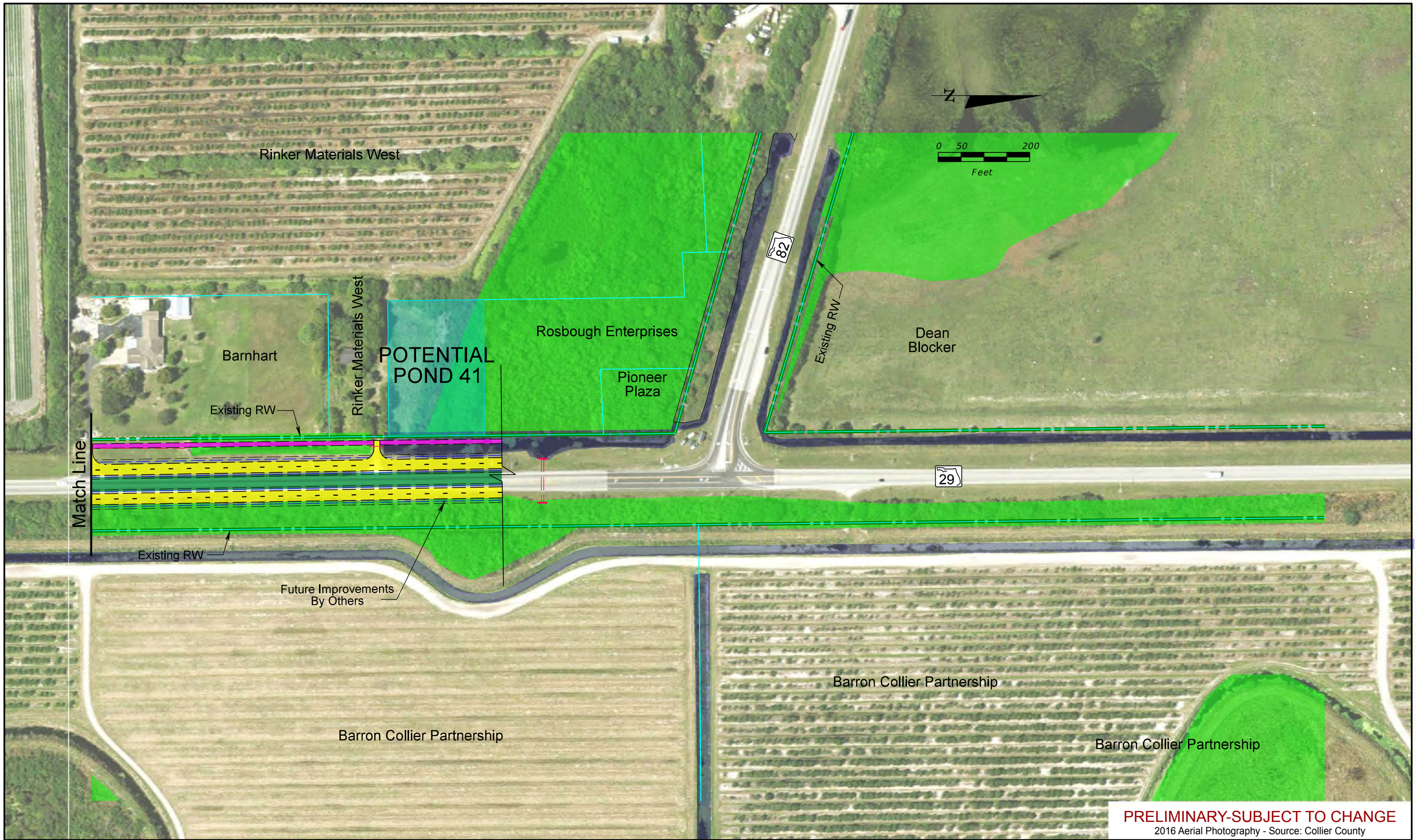
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend			
	Existing Right-of-Way		Proposed Pavement
	Parcels		Proposed Median/Border
	Proposed Right-of-Way		Proposed Sidewalks
	Water/Canal		Proposed Structure
	Seminole Land		Proposed Guardrail
	Wetland		Potential Business Relocation
	Potential Pond		Potential Contamination (Low)
	Potential Flood Plain Compensation		Potential Contamination (Medium or High)
	Traffic Signal		

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County
Central Alternative #2

Sheet No.
A-68



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend	
	Existing Right-of-Way
	Parcels
	Proposed Right-of-Way
	Water/Canal
	Seminole Land
	Wetland
	Potential Pond
	Potential Flood Plain Compensation
	Traffic Signal
	Proposed Pavement
	Proposed Median/Border
	Proposed Sidewalks
	Proposed Structure
	Proposed Guardrail
	Potential Business Relocation
	Potential Contamination (Low)
	Potential Contamination (Medium or High)

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

Central Alternative #2

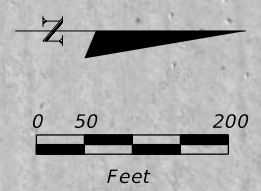
Sheet No.
A-69

Appendix B

Drainage Maps

APPENDIX B
TABLE OF CONTENTS

B-1 Proposed Drainage Maps Alternative #1 R
B-36 Proposed Drainage Maps Alternative #2



BASIN A
AREA: 9.3 AC.

POTENTIAL
POND 1
1.68 AC.

**Begin
Project**

FP&L TRANSMISSION EASEMENT

Match Line

CD - 1
36" RCP

EQN. STA. 1426+39.50 @ =
EQN. STA. 18+92.34 @

Sunniland Family Partnership, LTD

Sunniland Family Partnership, LTD

PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

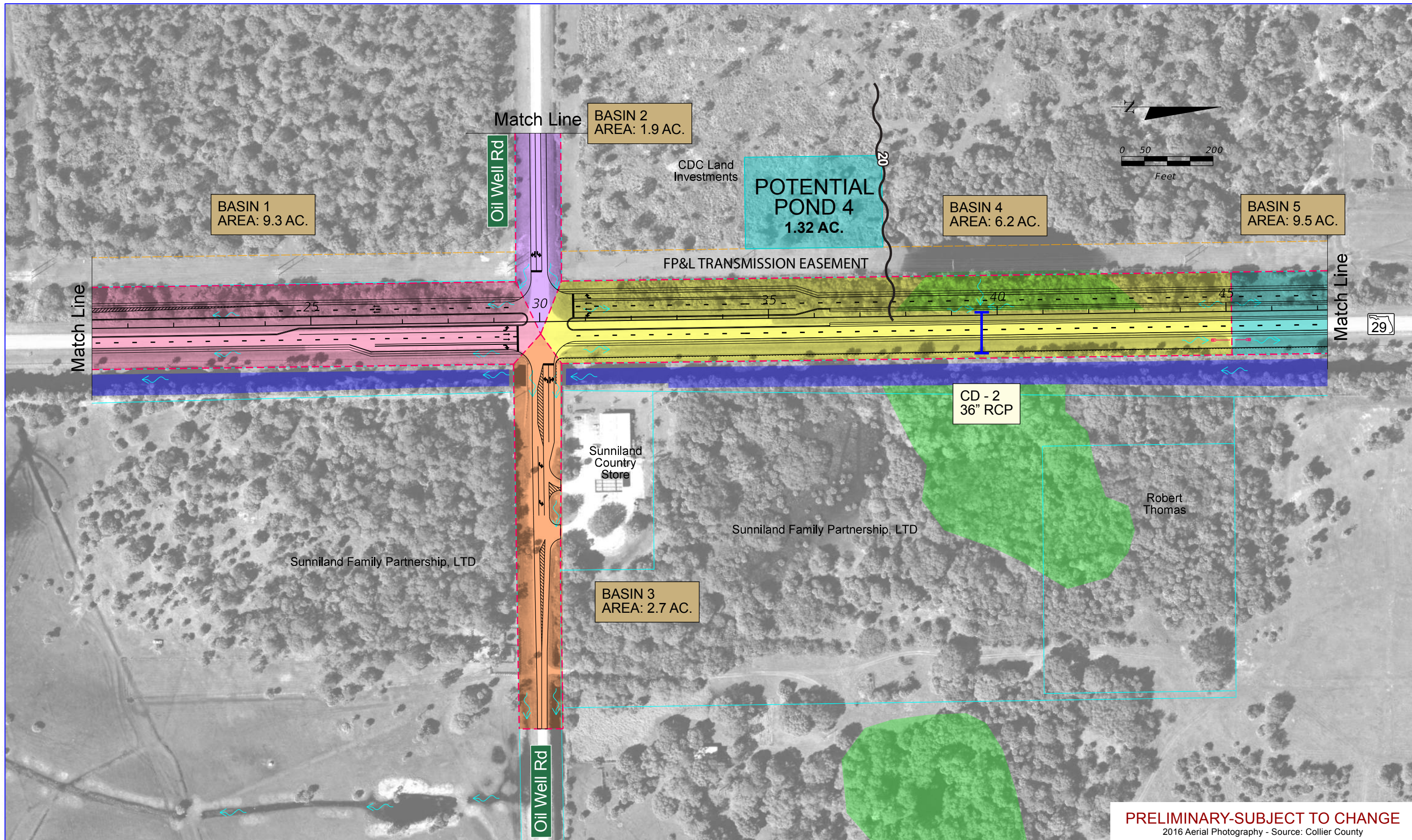
SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - ~> Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

**Proposed
Drainage Maps
Alternative #1 R**

**Sheet
No.
B-1**



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend

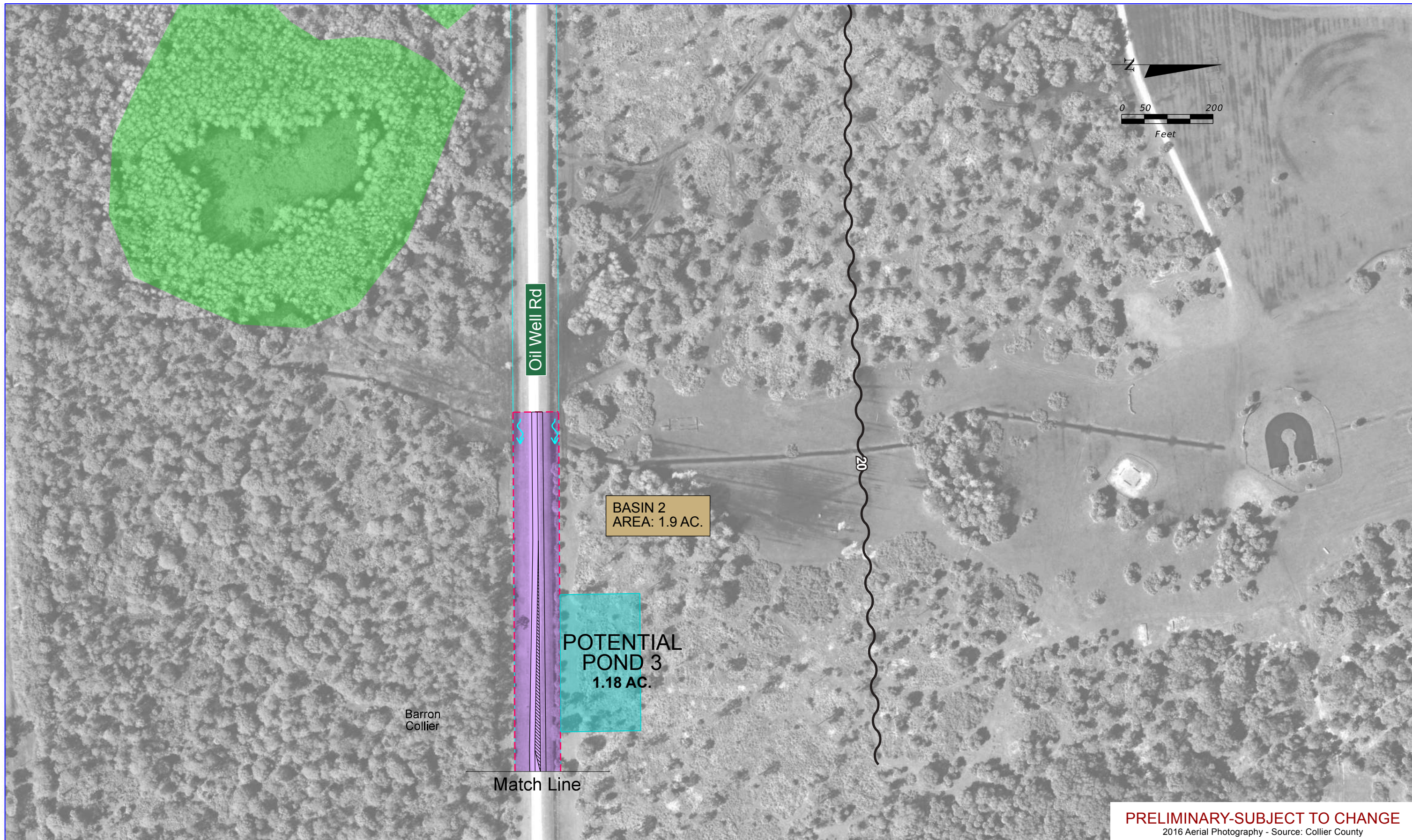
Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-2**



PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

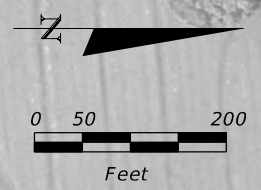
- Legend**
- Existing Right-of-Way
 - Property Lines
 - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain

- Wetlands
- Potential Pond
- Potential Floodplain
- Barron Canal
- Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

**Proposed
Drainage Maps
Alternative #1 R**

**Sheet
No.
B-3**



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend

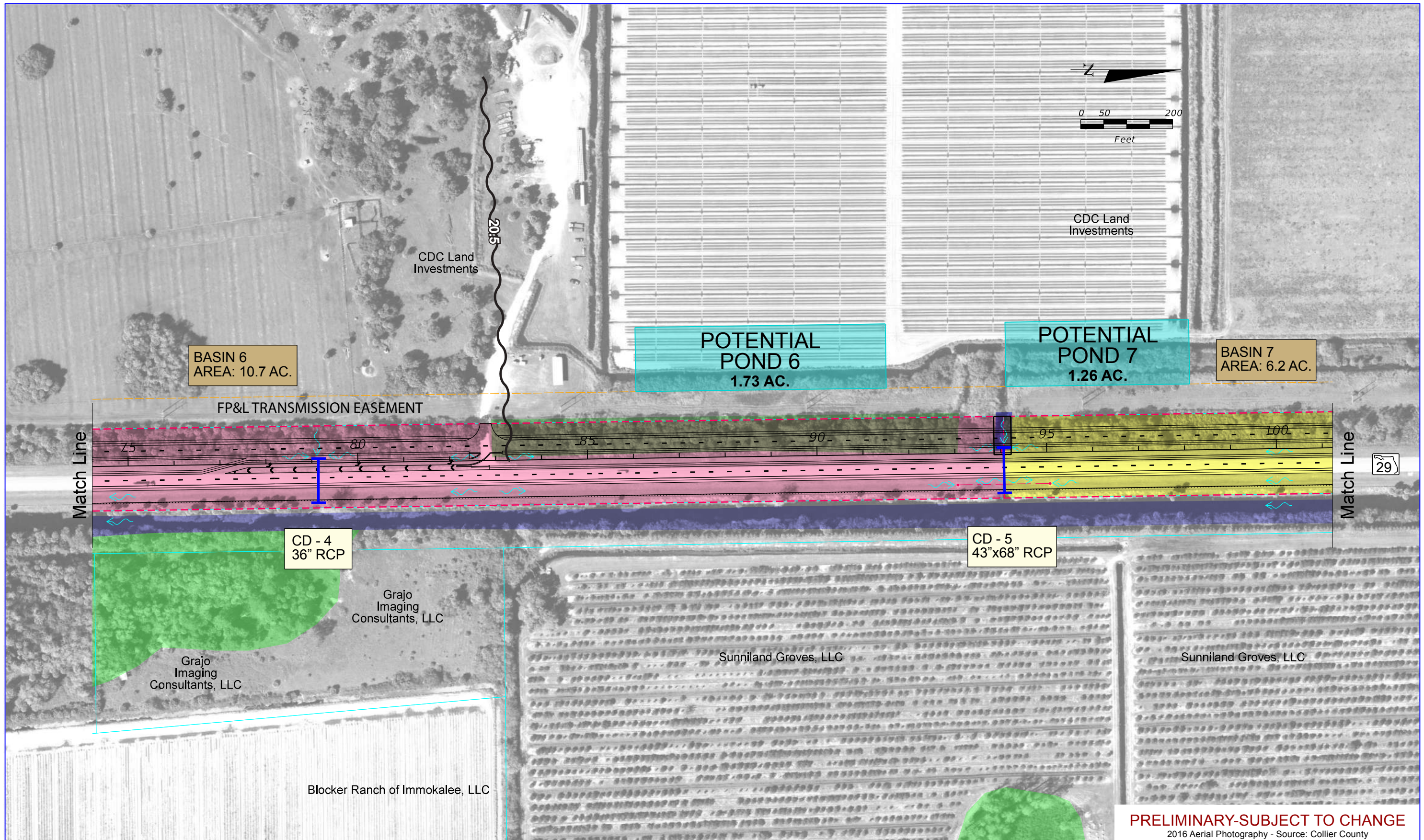
Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-4**

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

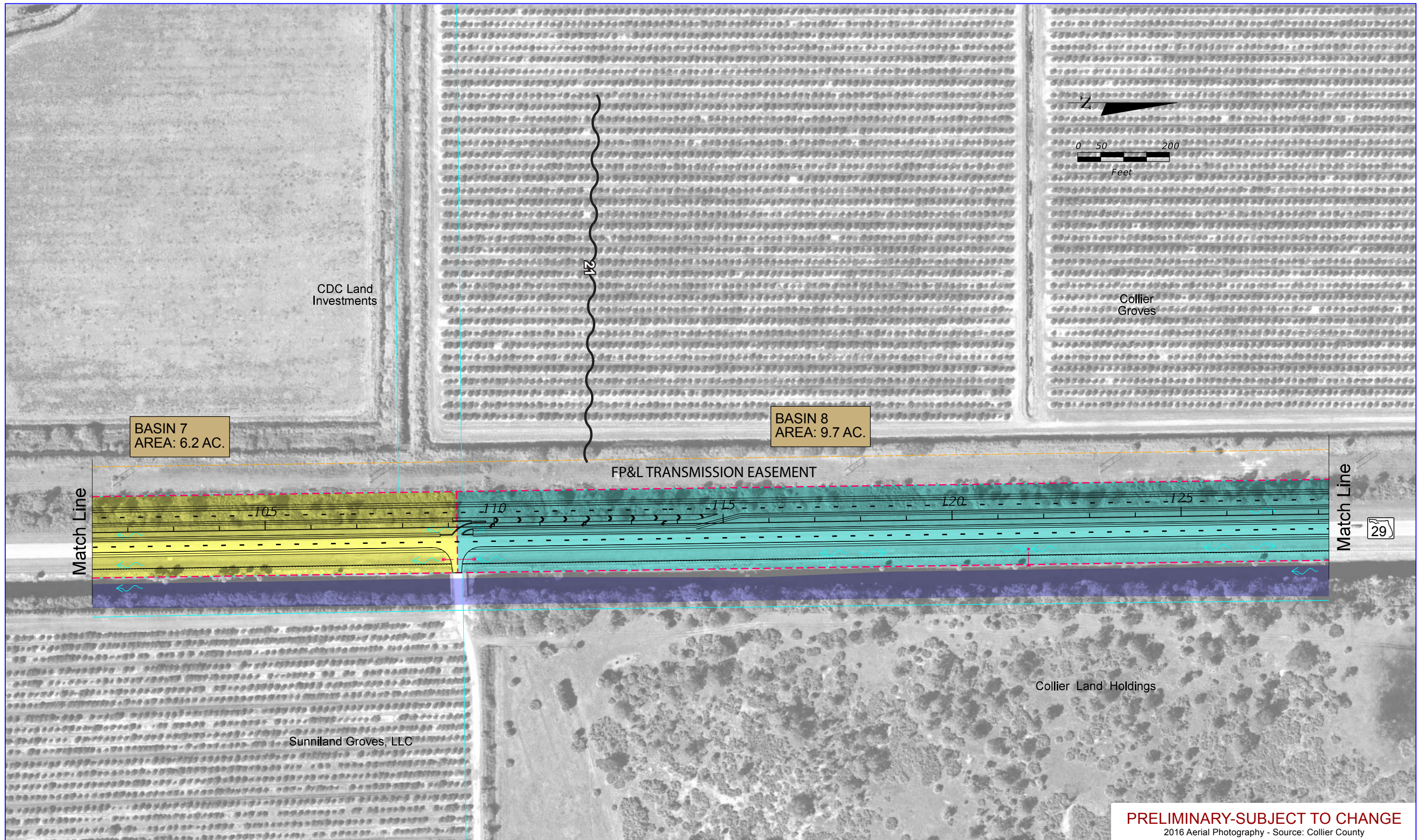
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-5**



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

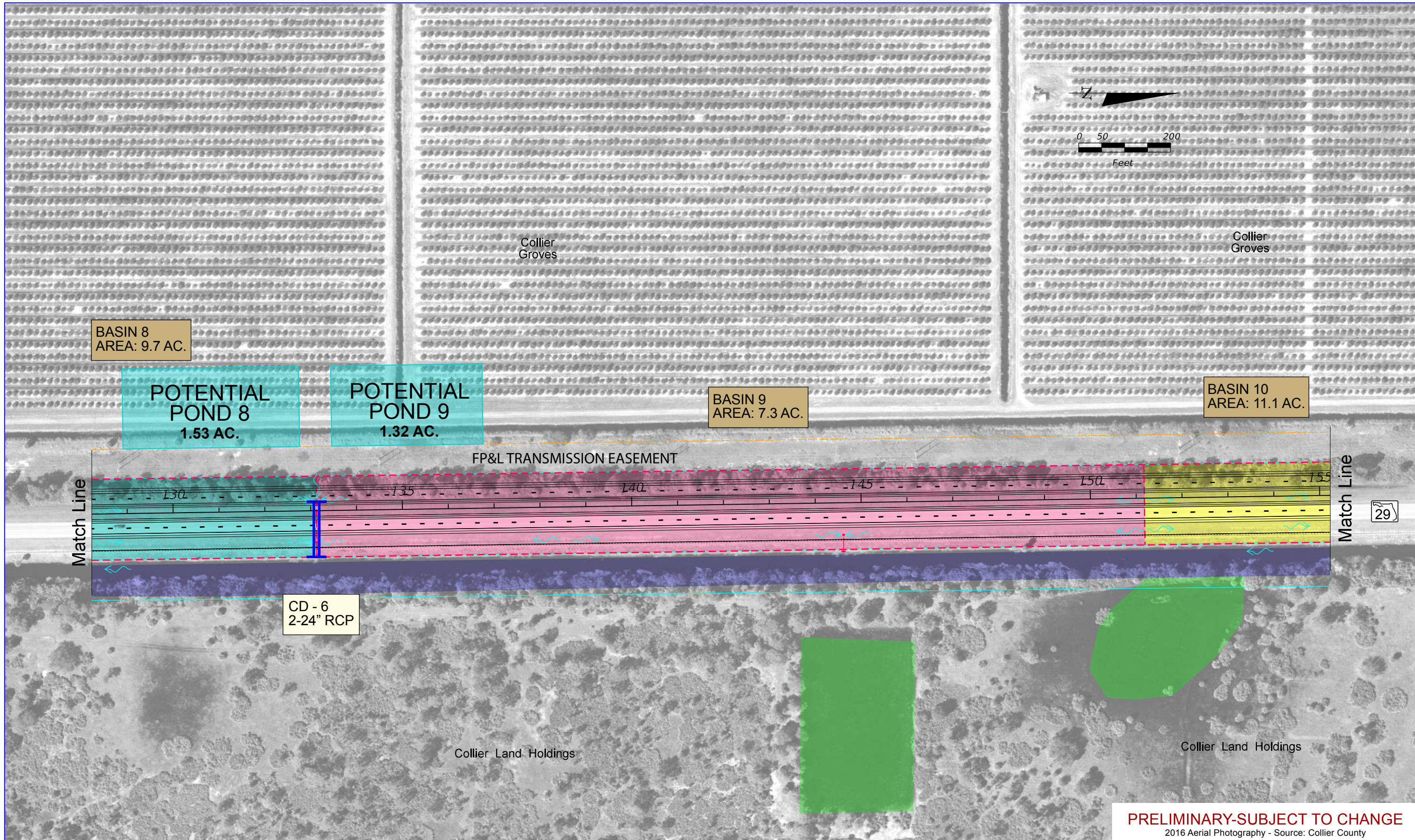
- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-6**



PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

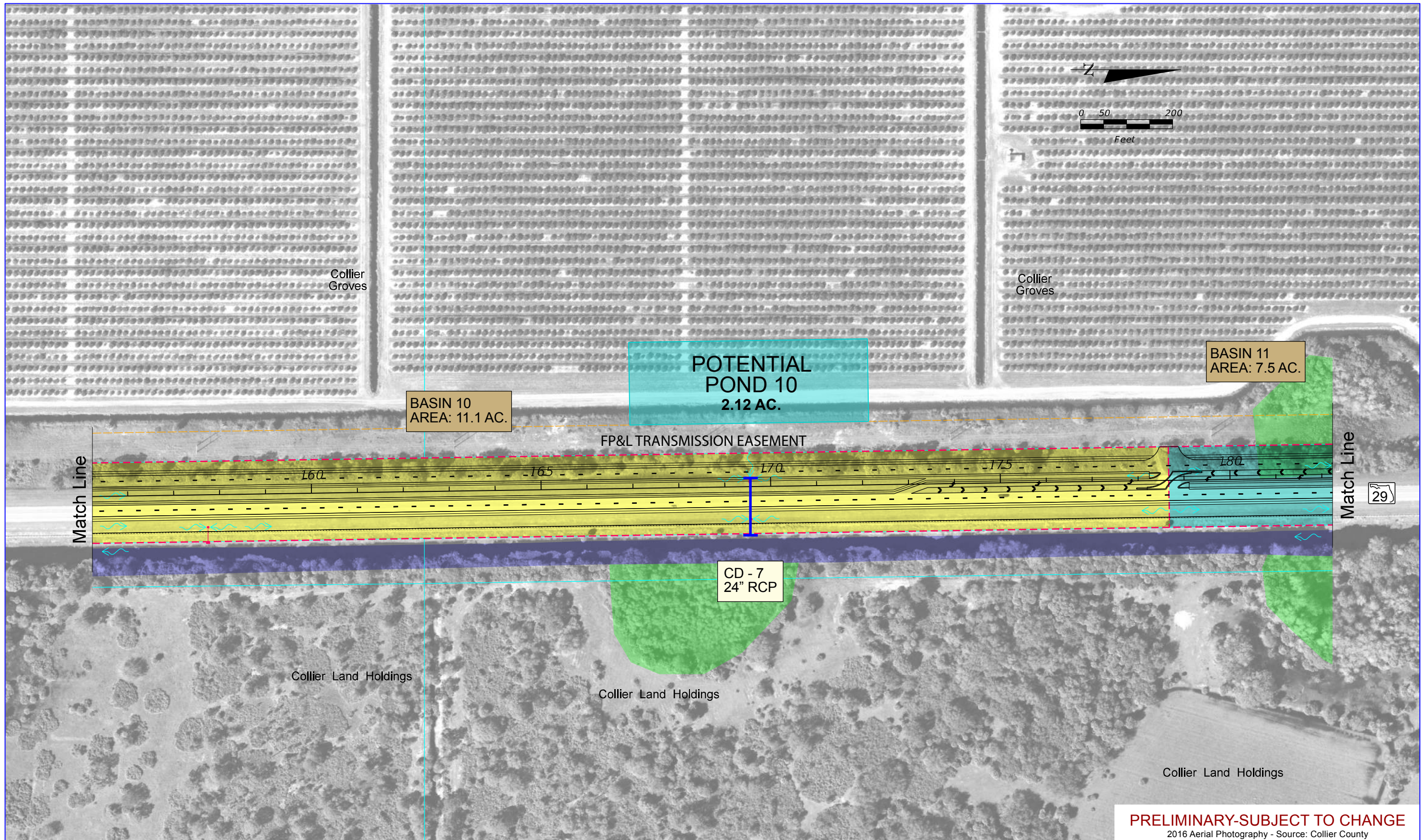
- Legend**
- Existing Right-of-Way
 - Property Lines
 - Proposed Right-of-Way
 - ~ Flow Arrow
 - | Cross Drain

- Wetlands
- Potential Pond
- Potential Floodplain
- Barron Canal
- ~ Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

Proposed
Drainage Maps
Alternative #1 R

Sheet
No.
B-7



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

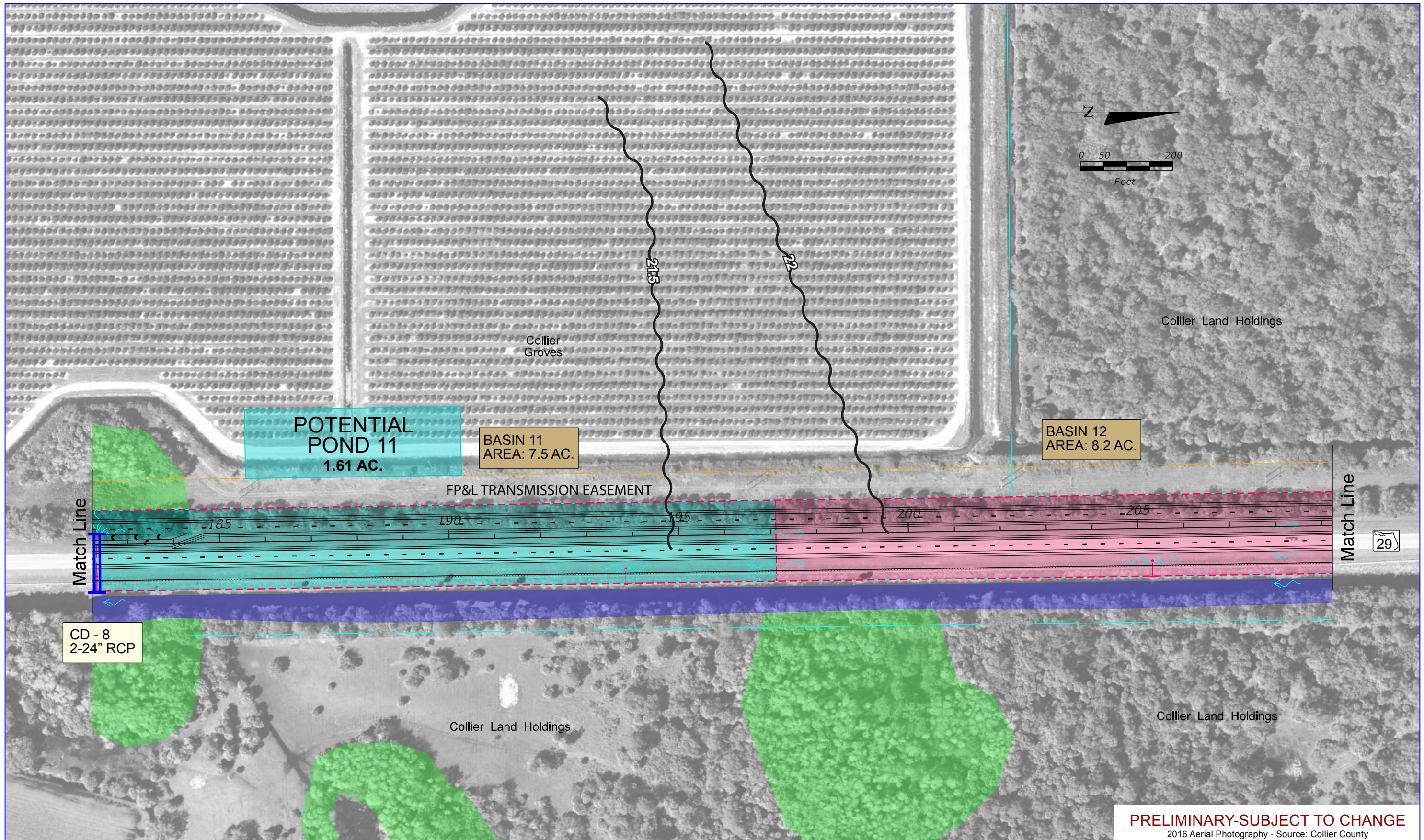
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-8**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

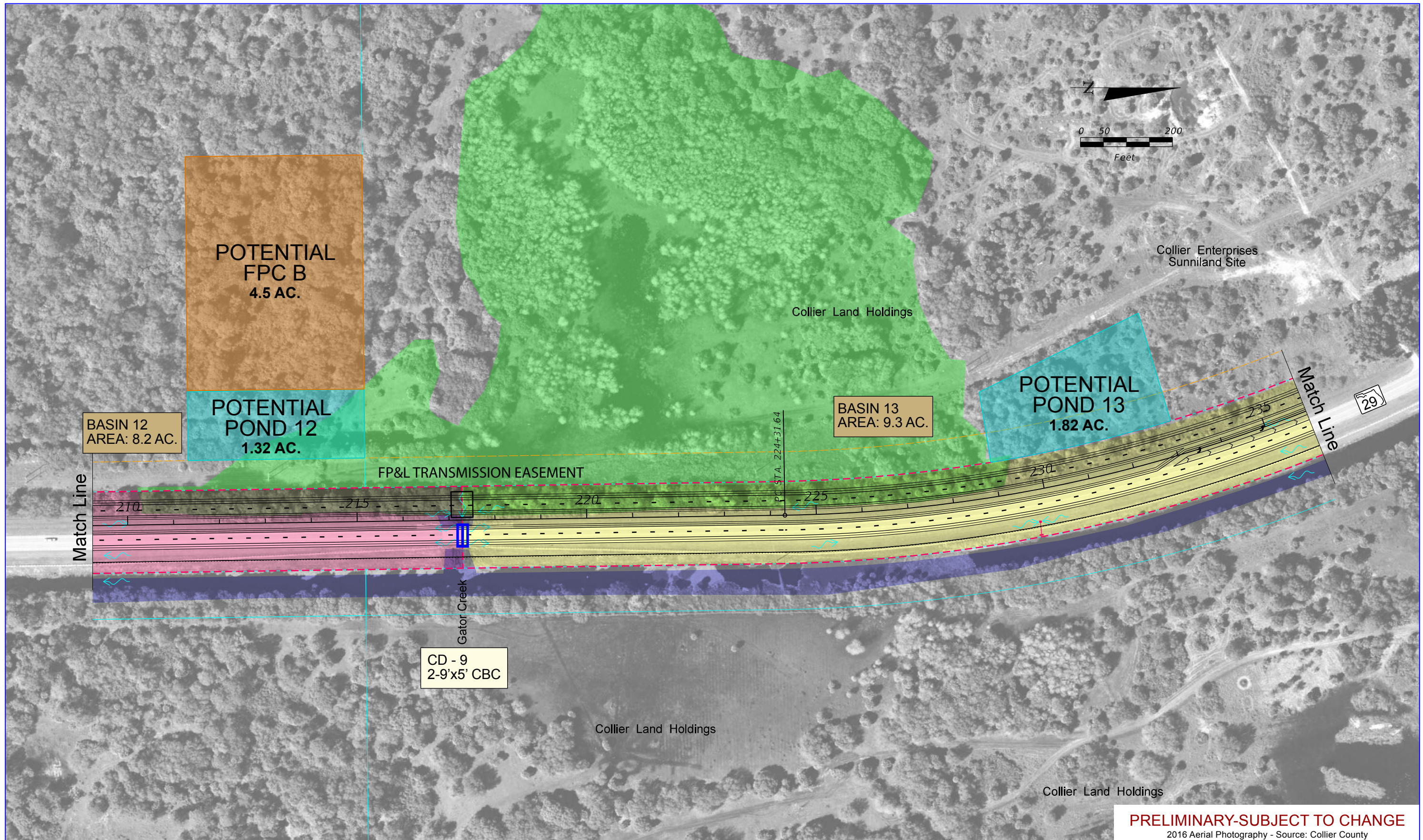
Legend

Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-9**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

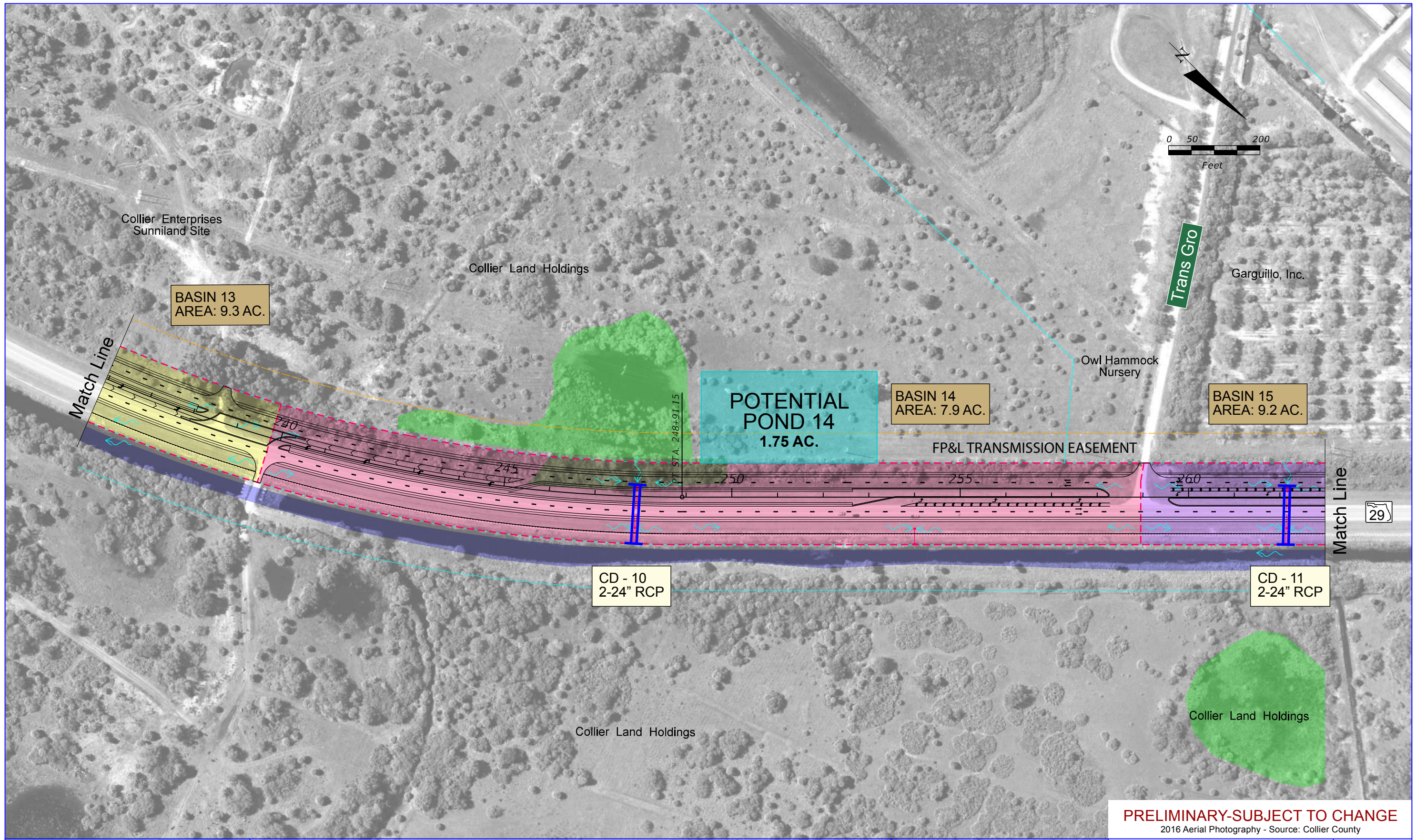
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-10**



PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

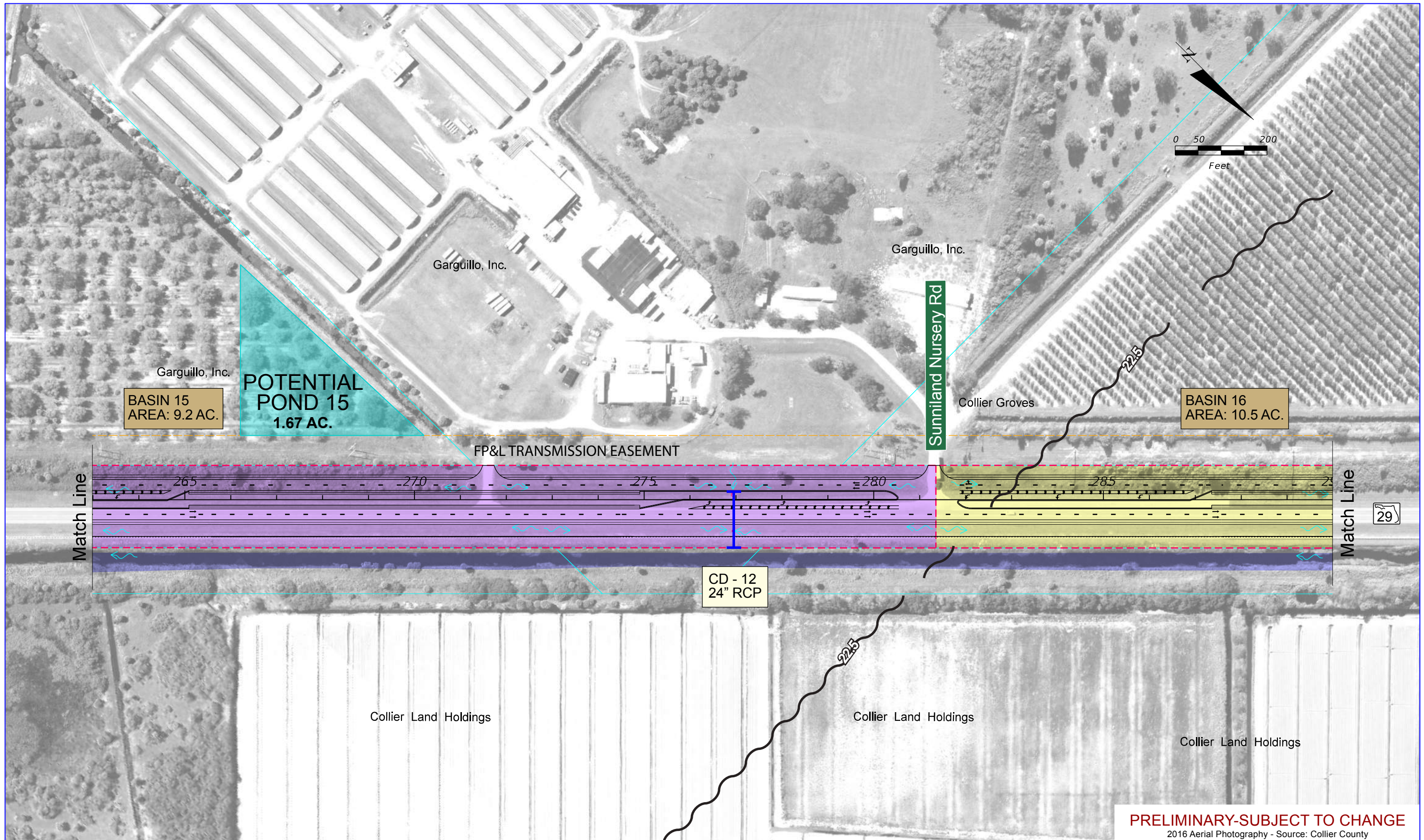
Legend

Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

**Proposed
Drainage Maps
Alternative #1 R**

**Sheet
No.
B-11**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

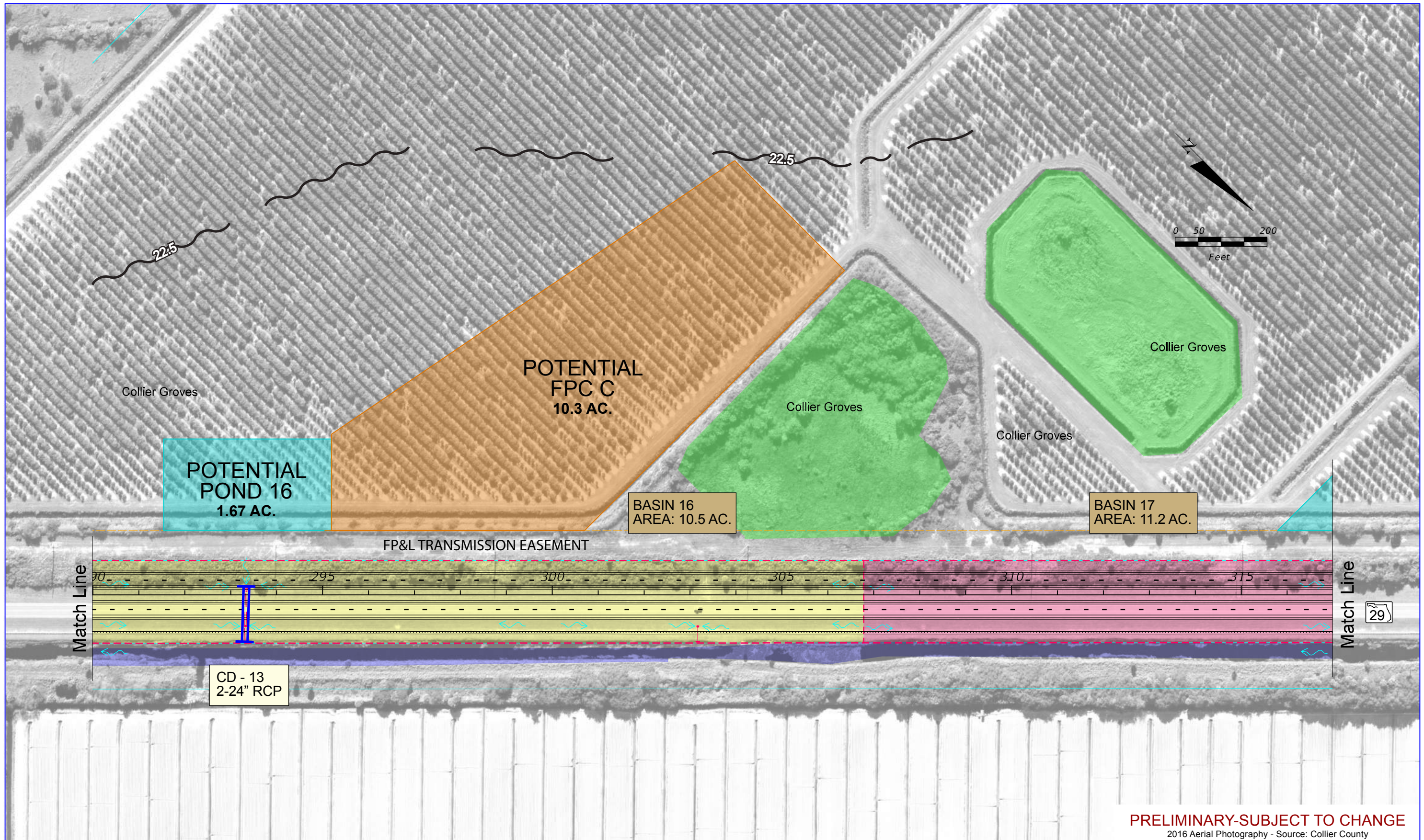
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend*
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-12**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

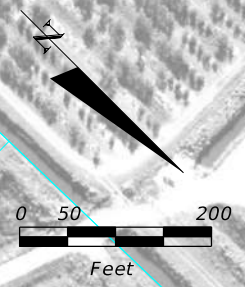
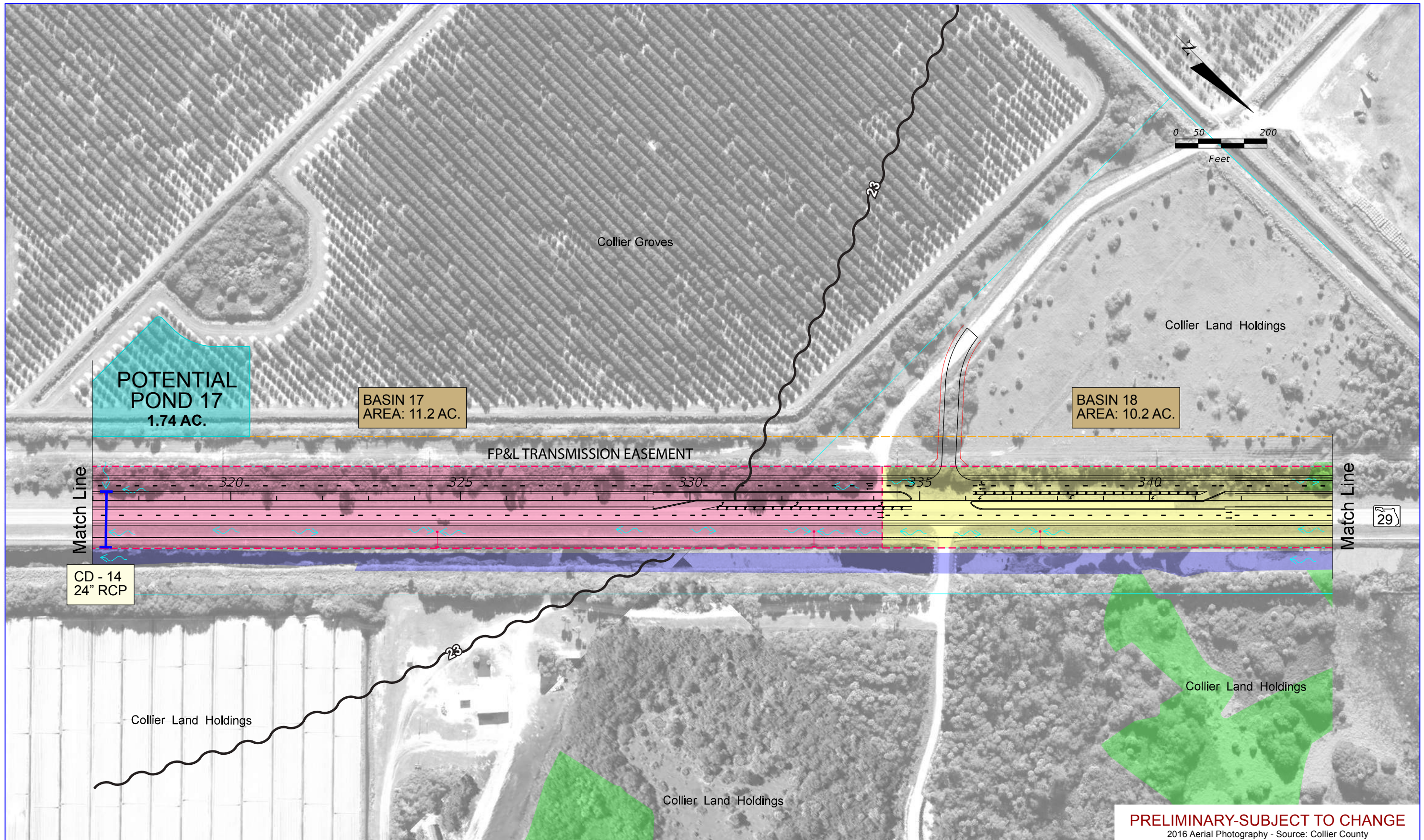
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-13**



Match Line

Match Line



PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

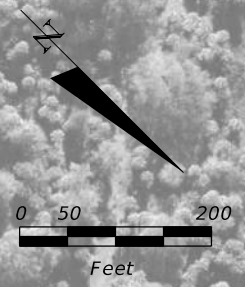
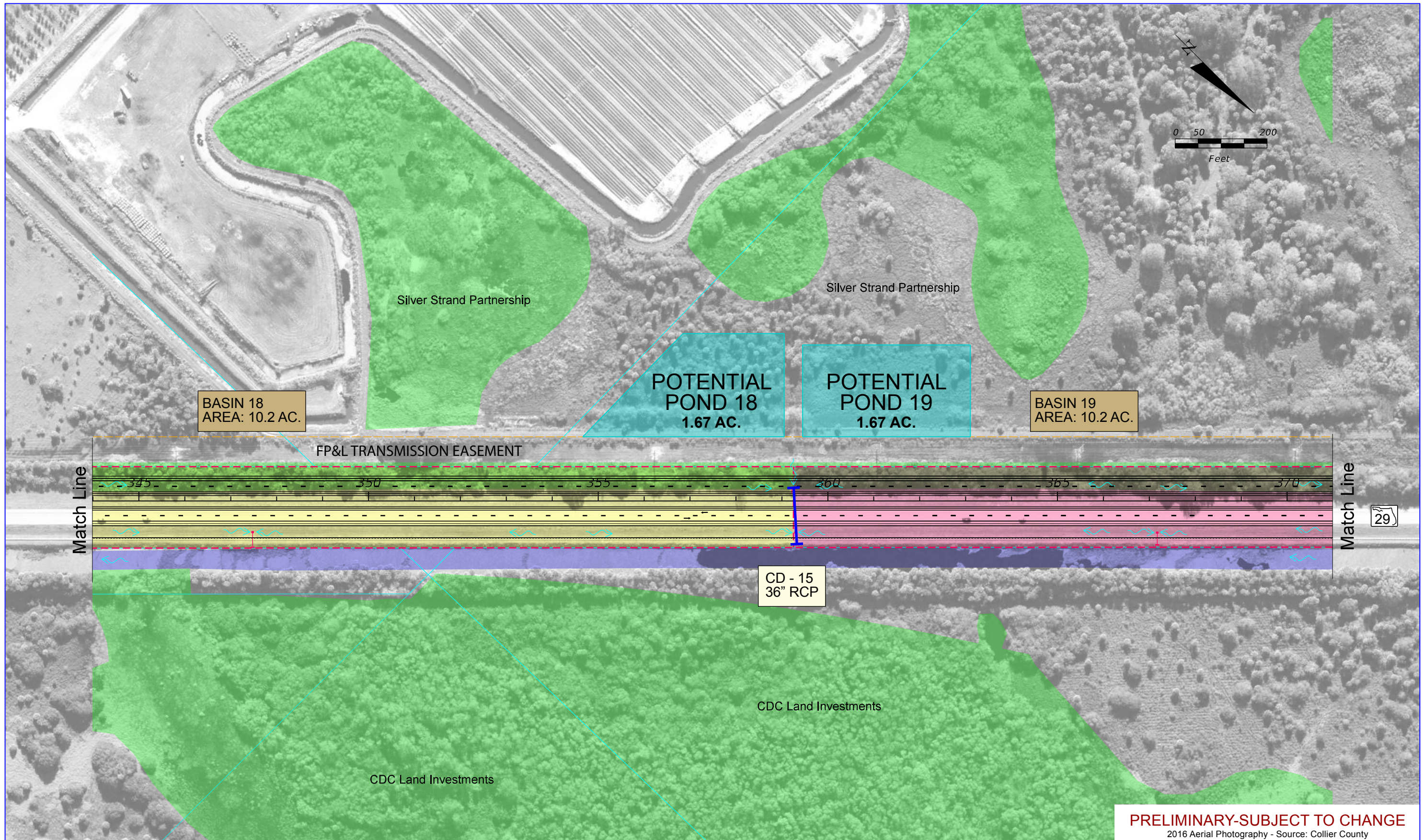
SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

**Proposed
Drainage Maps
Alternative #1 R**

**Sheet
No.
B-14**



Match Line

Match Line



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

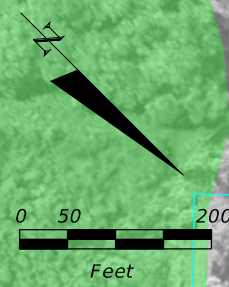
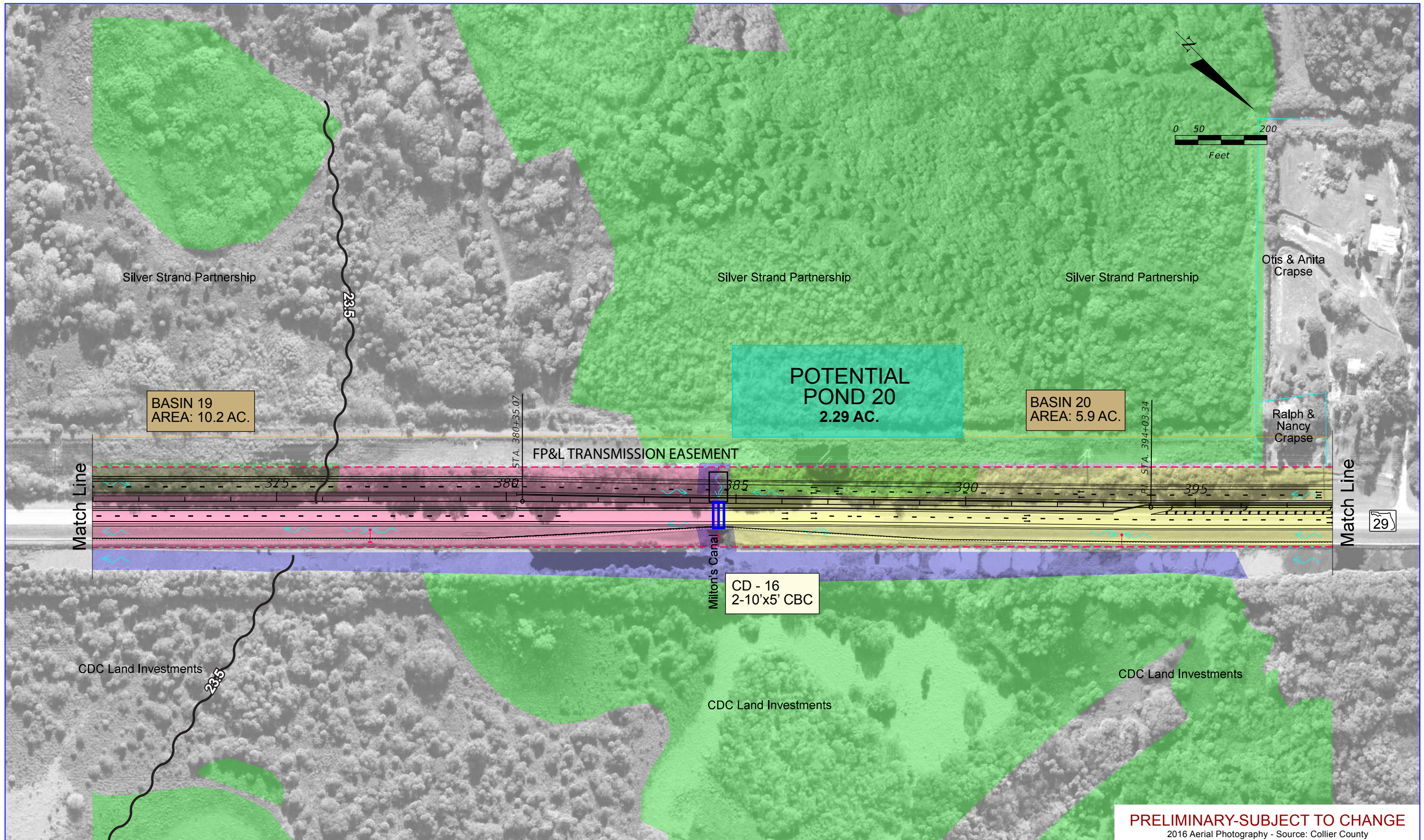
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-15**



BASIN 19
AREA: 10.2 AC.

POTENTIAL
POND 20
2.29 AC.

BASIN 20
AREA: 5.9 AC.

CD - 16
2-10'x5' CBC

PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

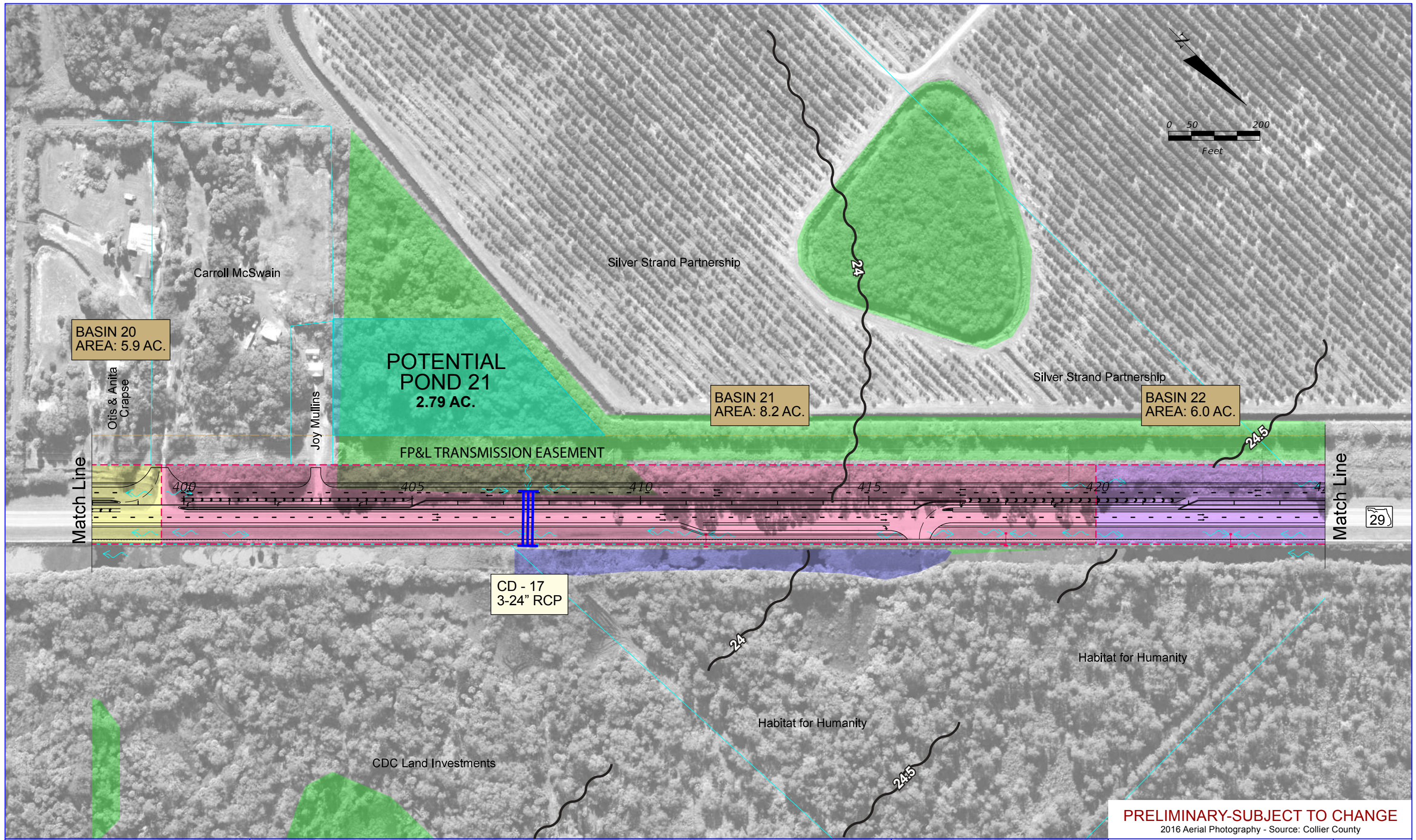
SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

**Proposed
Drainage Maps
Alternative #1 R**

**Sheet
No.
B-16**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

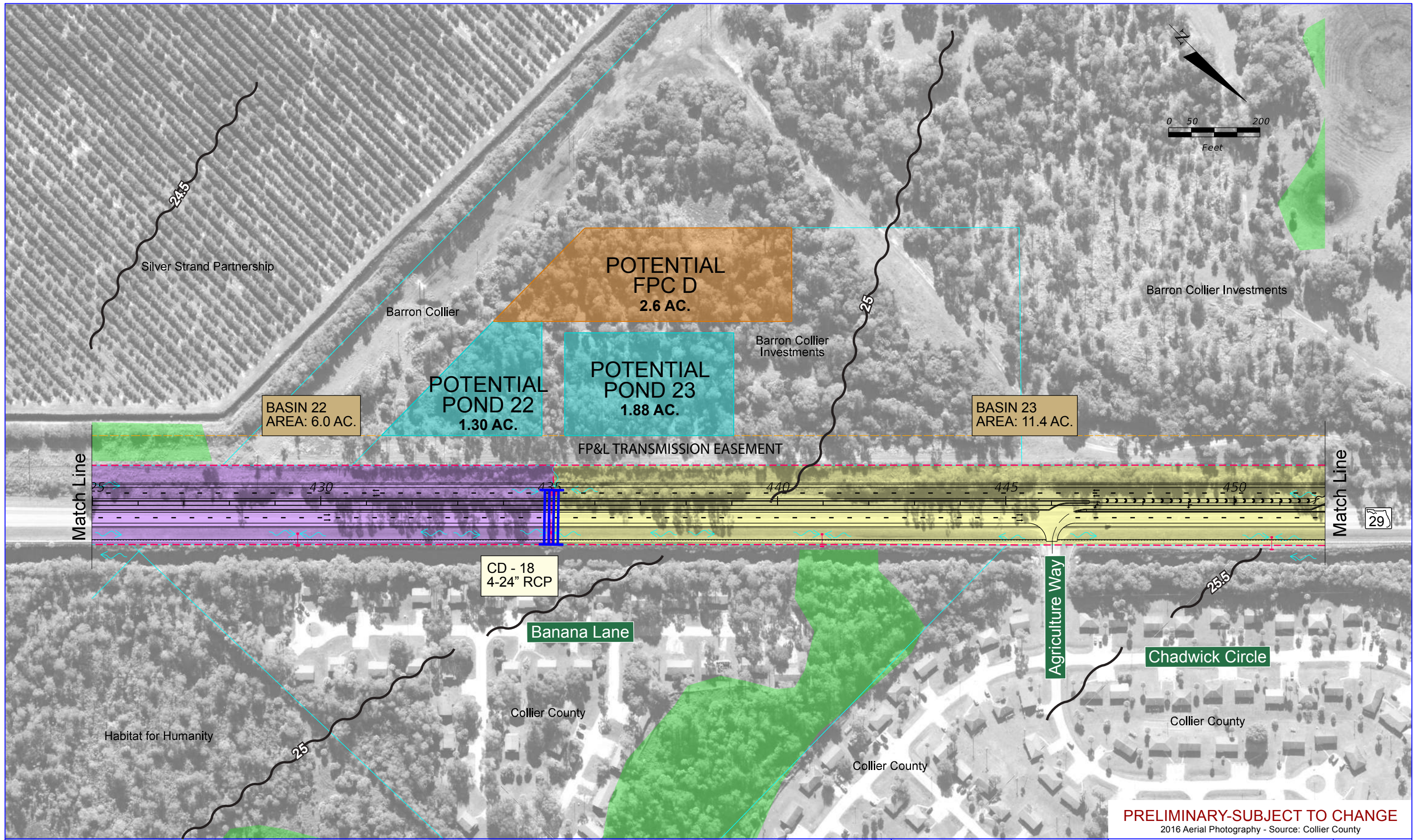
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-17**



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend

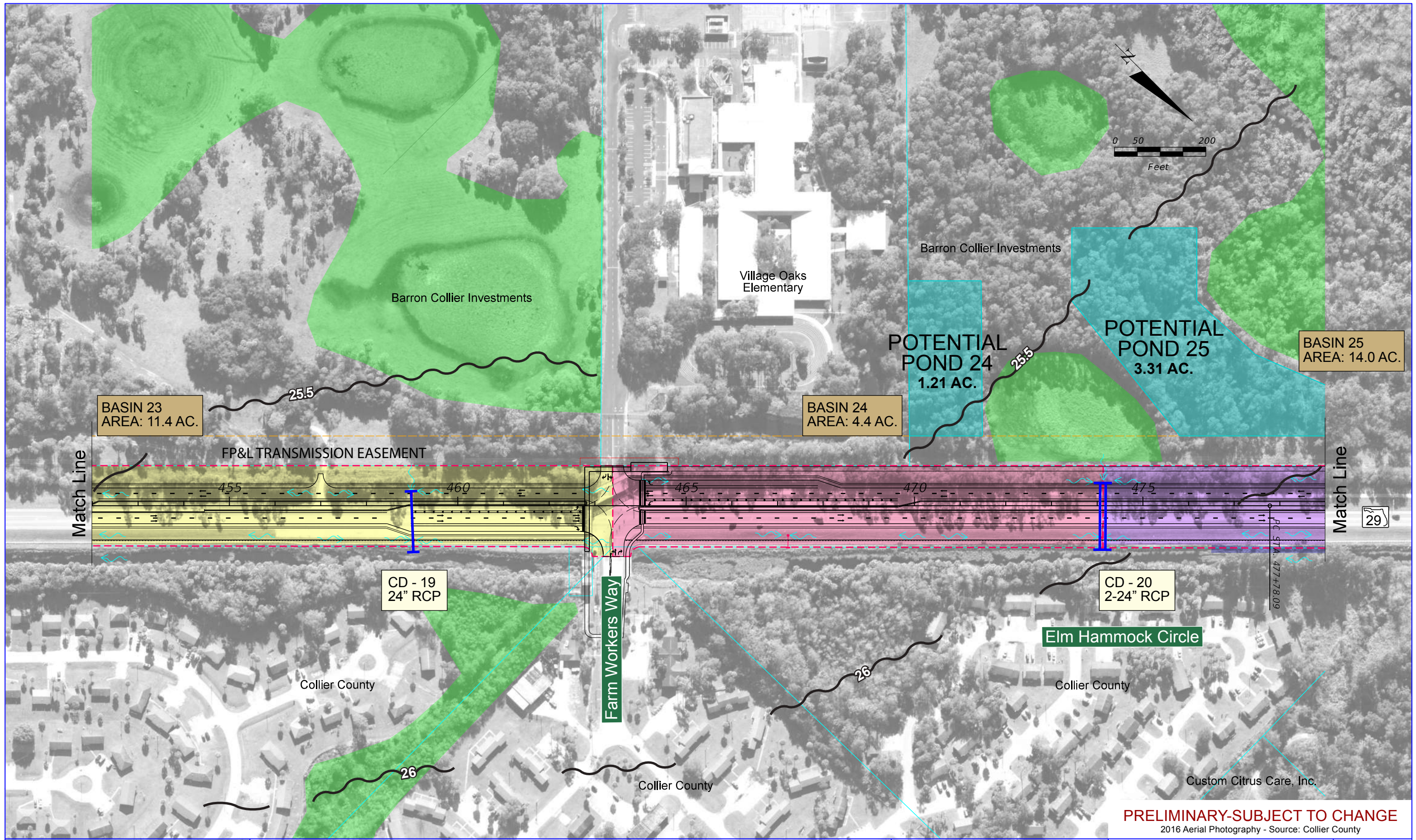
Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-18**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

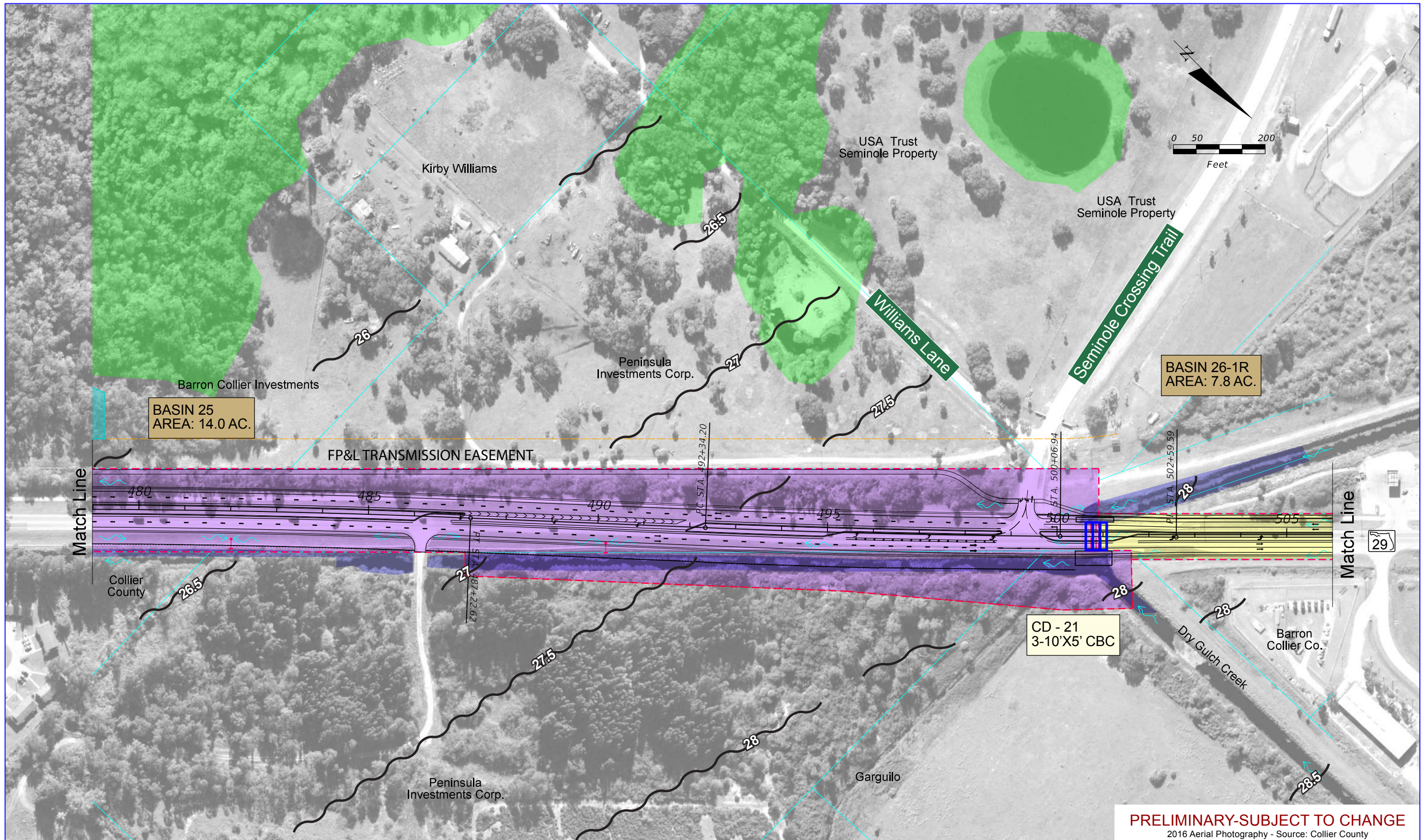
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-19**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

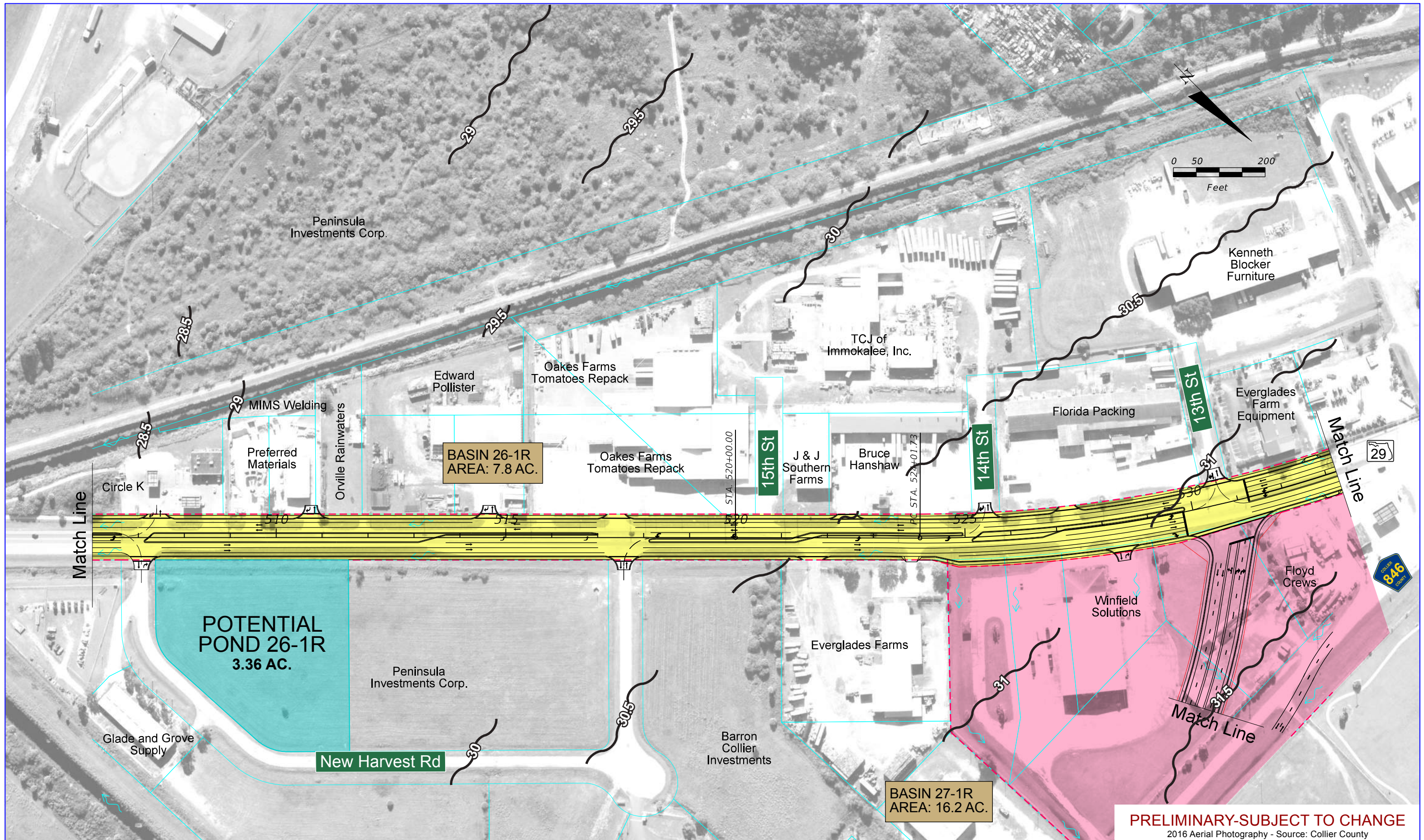
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-20**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

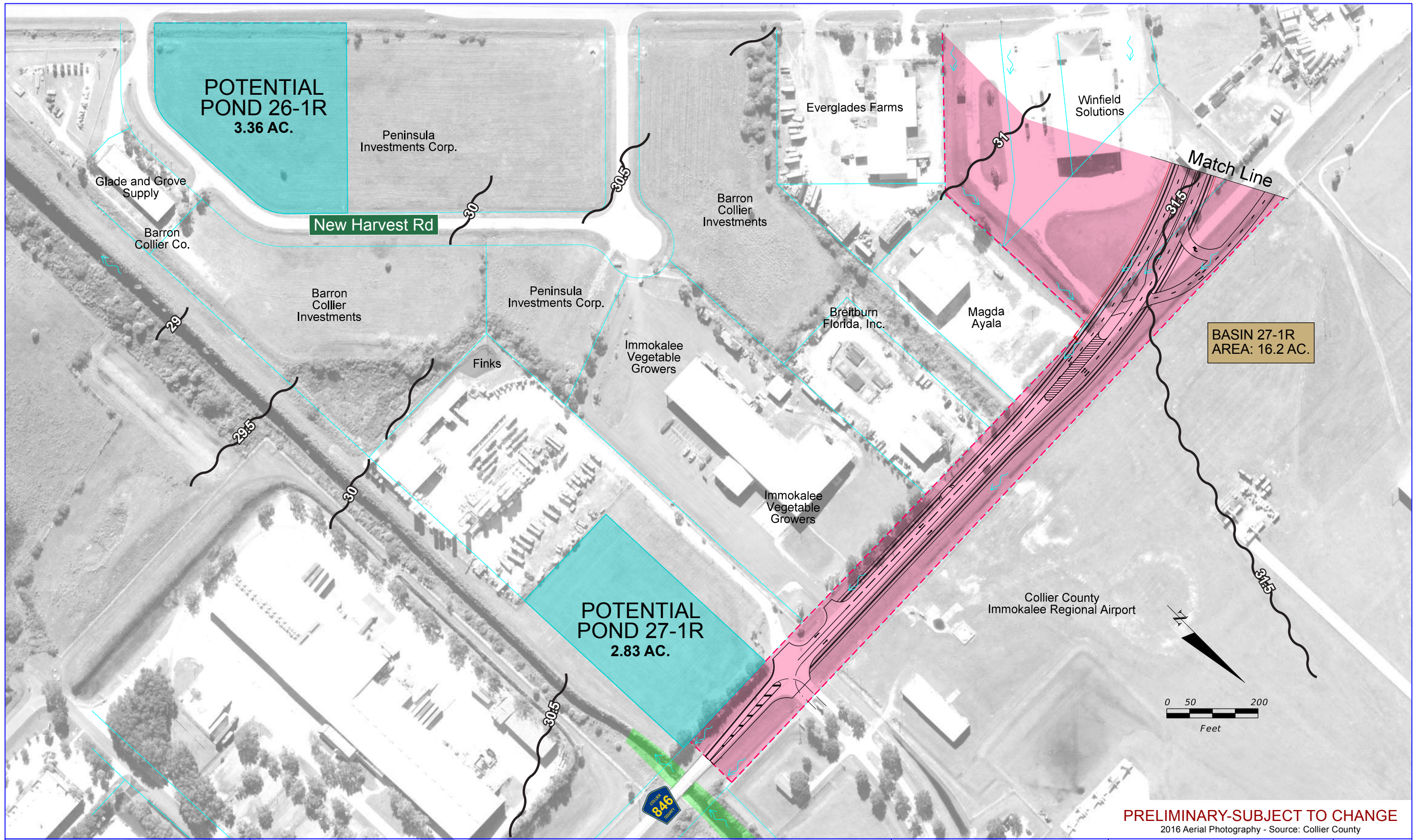
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-21**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

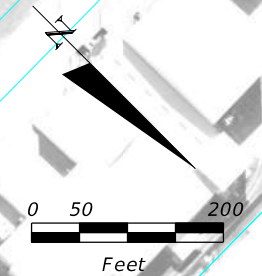
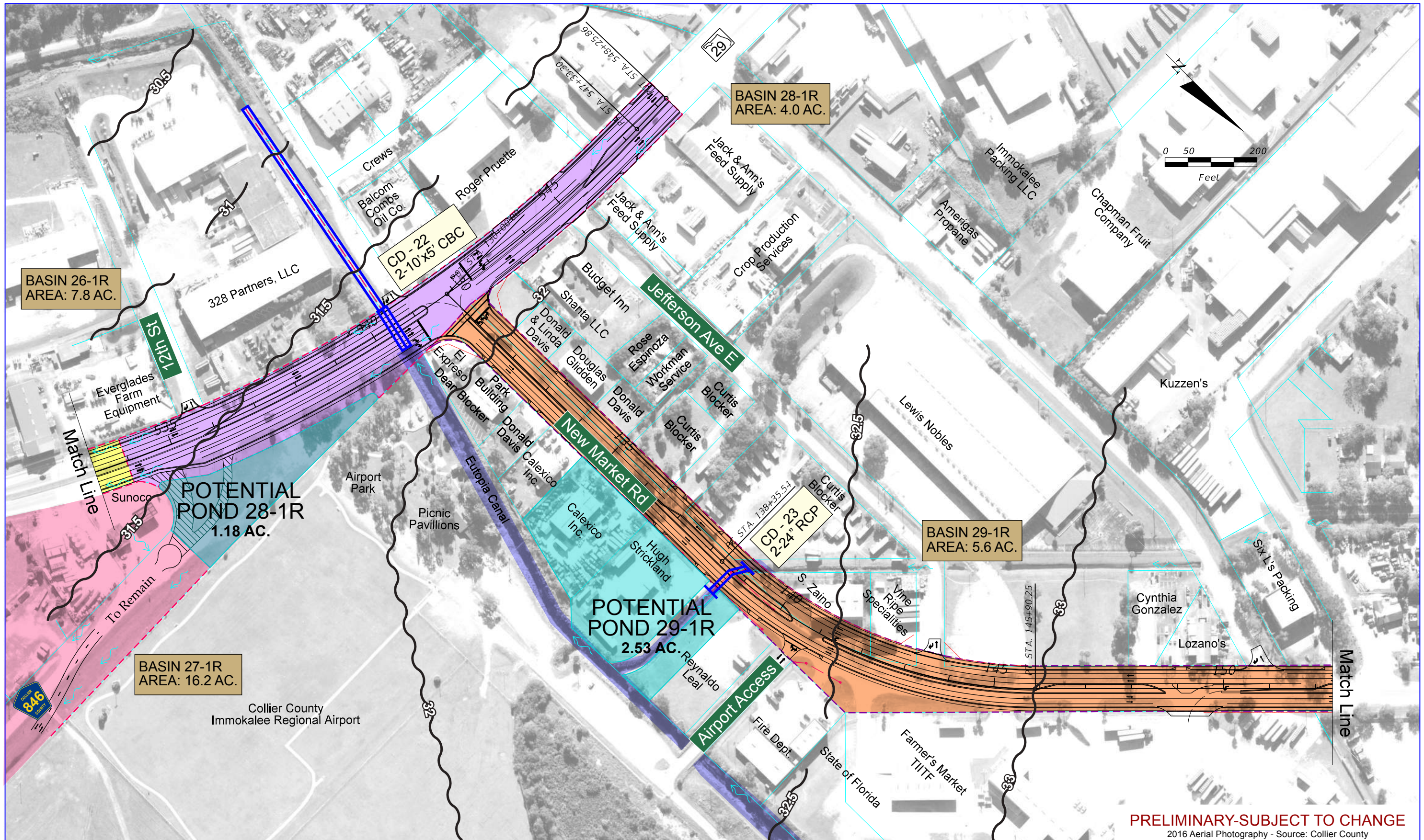
Legend

Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-22**



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

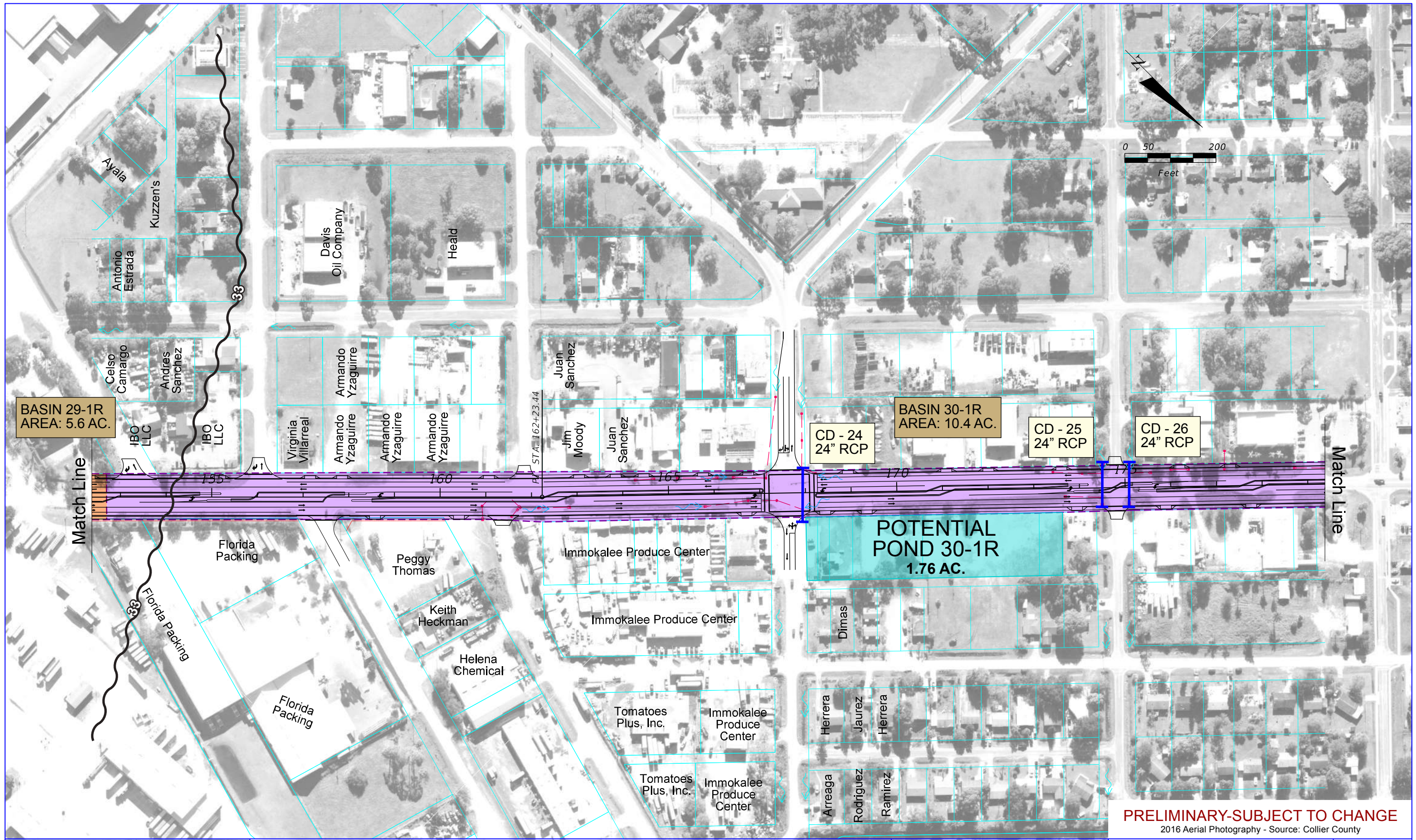
- Legend**
- Existing Right-of-Way
 - Property Lines
 - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-23**



BASIN 29-1R
AREA: 5.6 AC.

BASIN 30-1R
AREA: 10.4 AC.

CD - 24
24" RCP

CD - 25
24" RCP

CD - 26
24" RCP

POTENTIAL
POND 30-1R
1.76 AC.

SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

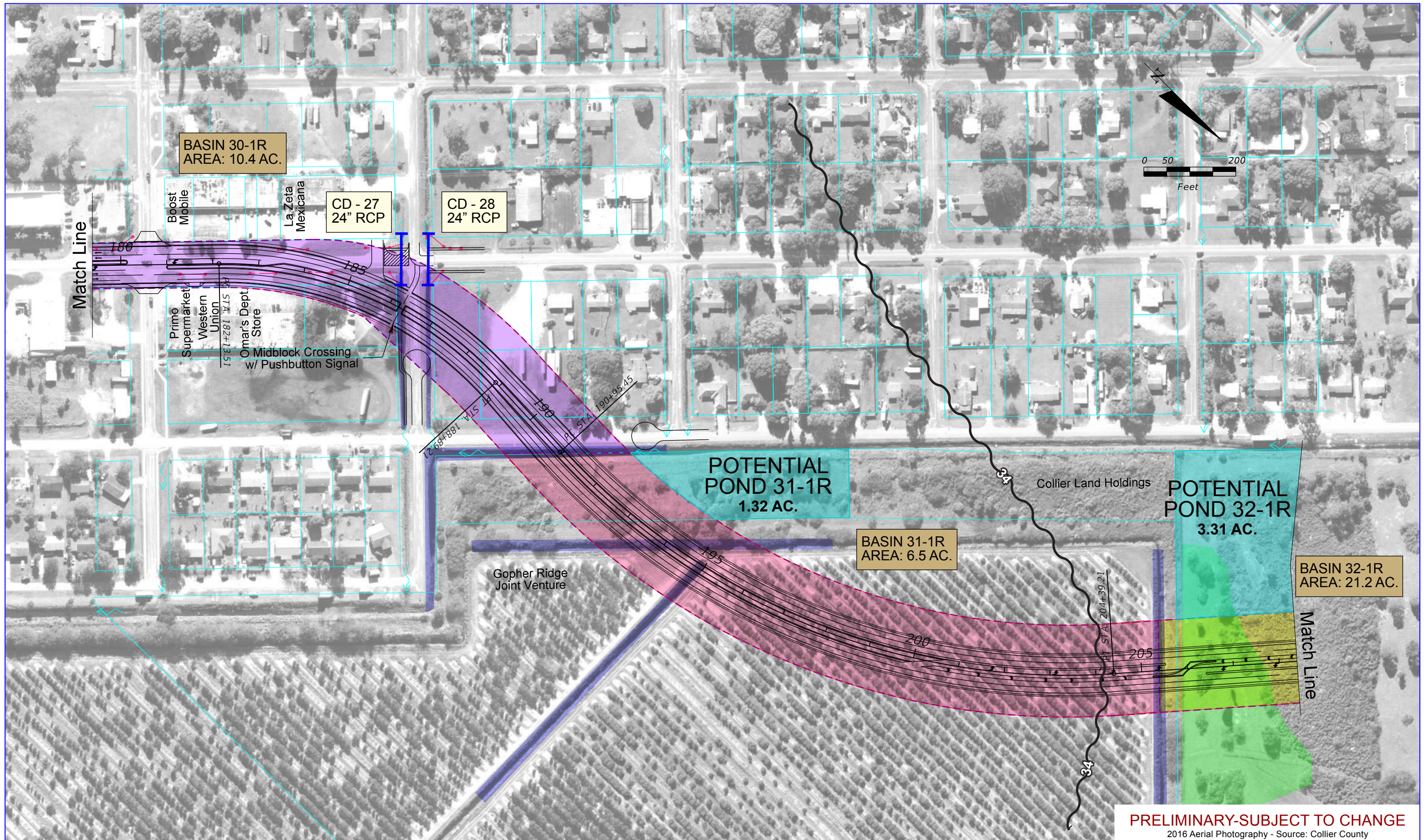
- Legend**
- Existing Right-of-Way
 - Property Lines
 - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

**Proposed
Drainage Maps
Alternative #1 R**

**Sheet
No.
B-24**



PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

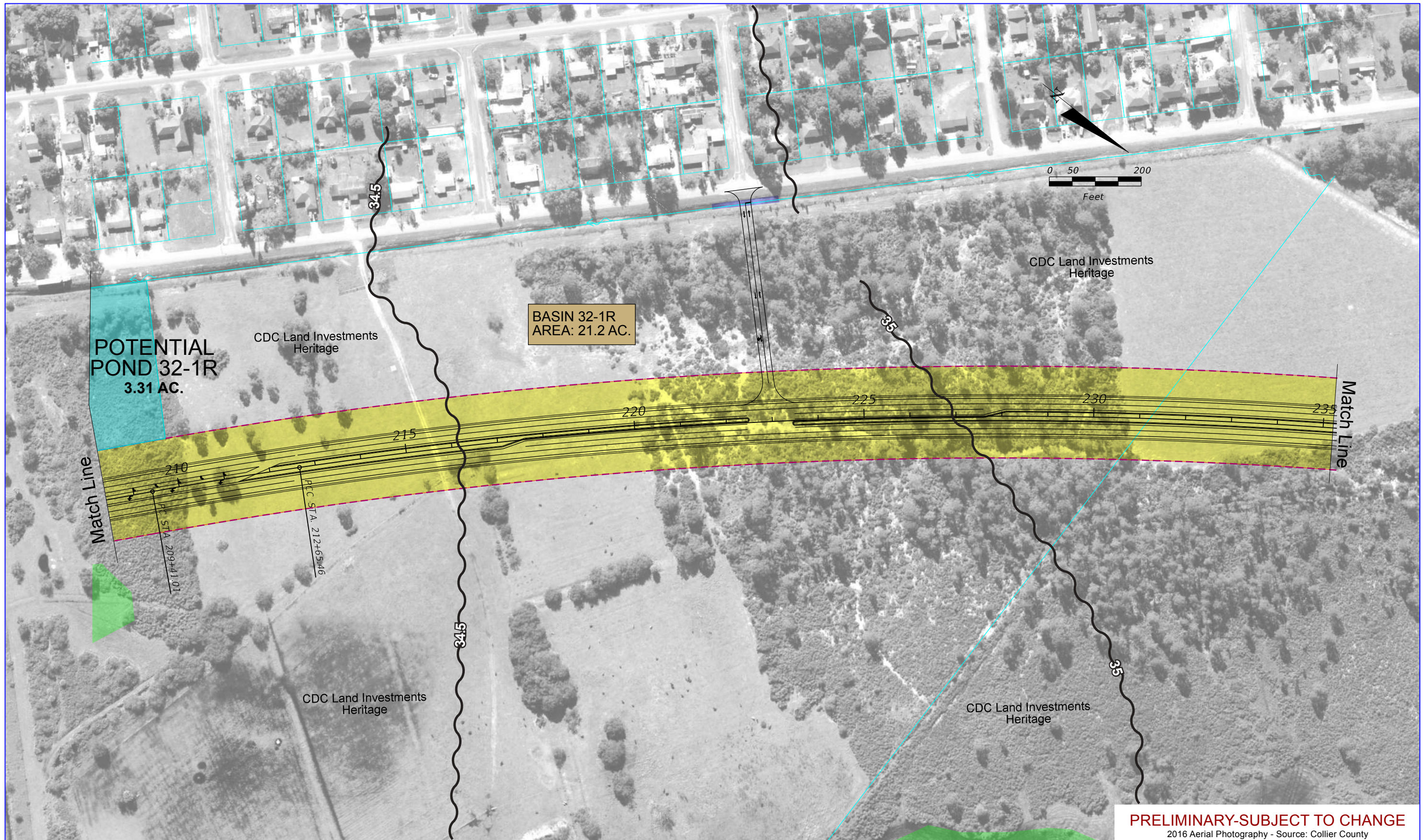
Legend

Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

**Proposed
Drainage Maps
Alternative #1 R**

**Sheet
No.
B-25**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

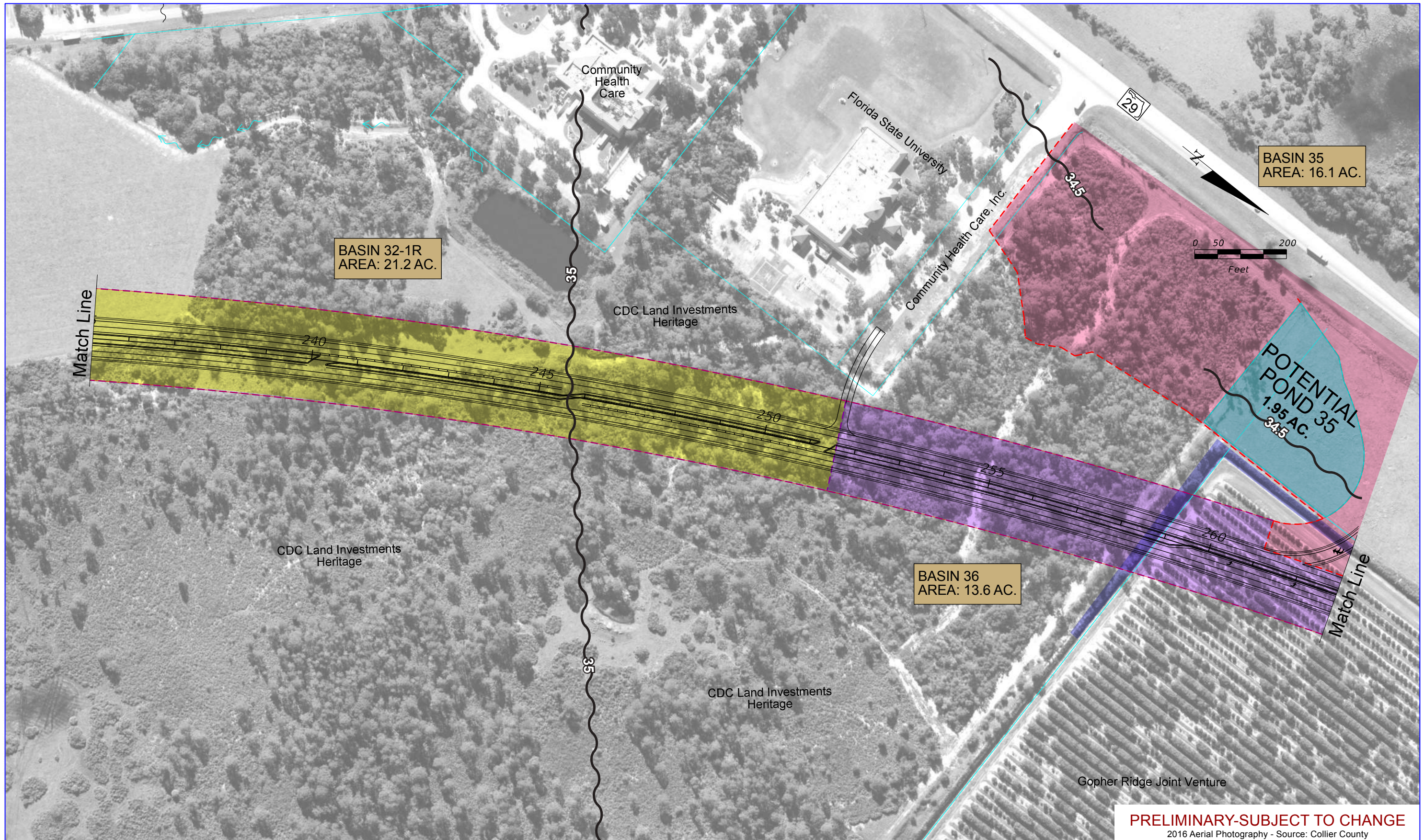
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-26**



BASIN 35
AREA: 16.1 AC.

BASIN 32-1R
AREA: 21.2 AC.

BASIN 36
AREA: 13.6 AC.

POTENTIAL
POND 35
1.95 AC.



SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

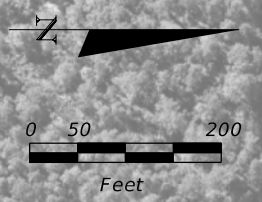
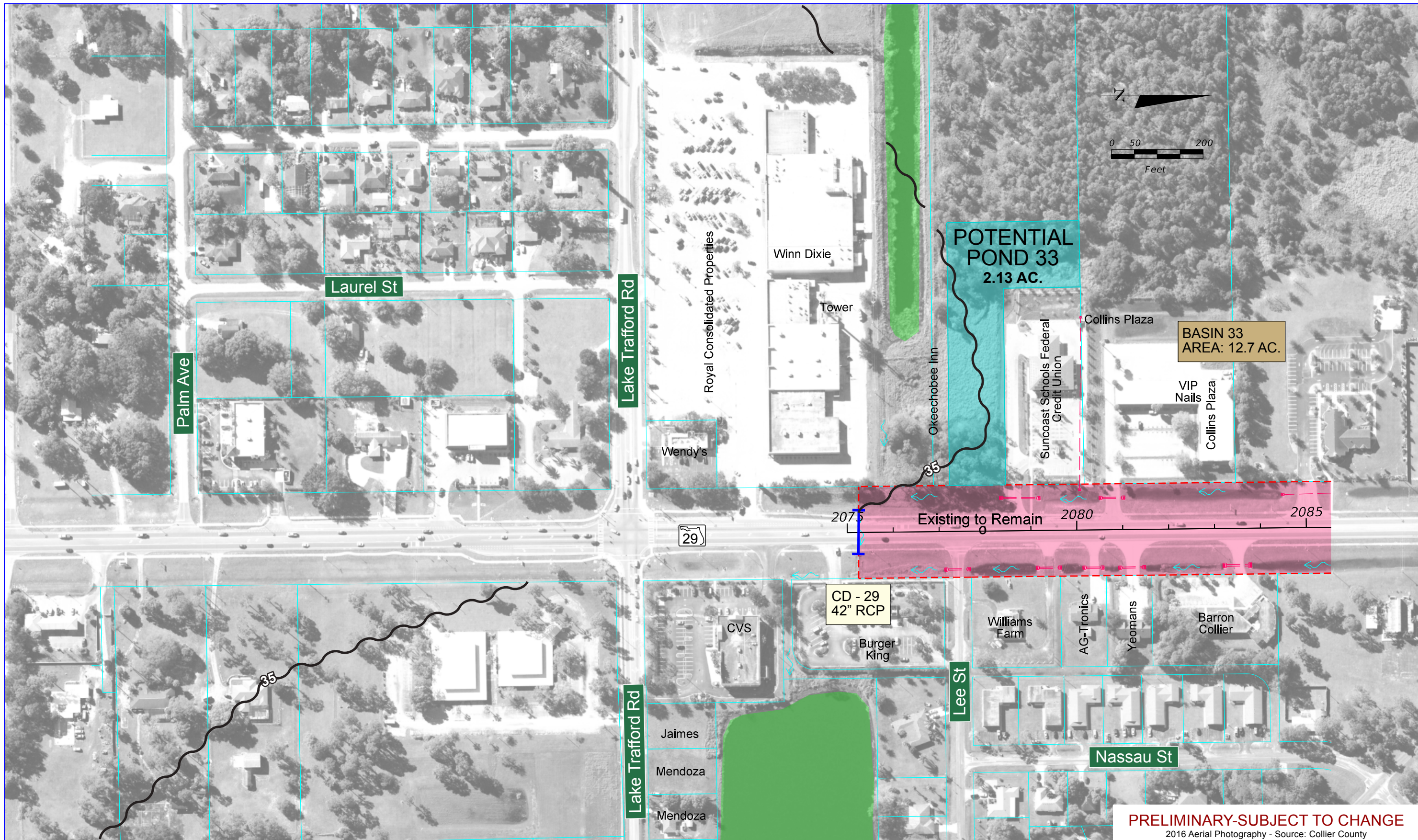
- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

**Proposed
Drainage Maps
Alternative #1 R**

**Sheet
No.
B-27**



Legend

- Existing Right-of-Way
- Property Lines
- - - Proposed Right-of-Way
- ~> Flow Arrow
- | Cross Drain
- Wetlands
- Potential Pond
- Potential Floodplain
- Barron Canal
- ~ Base Flood Elevation

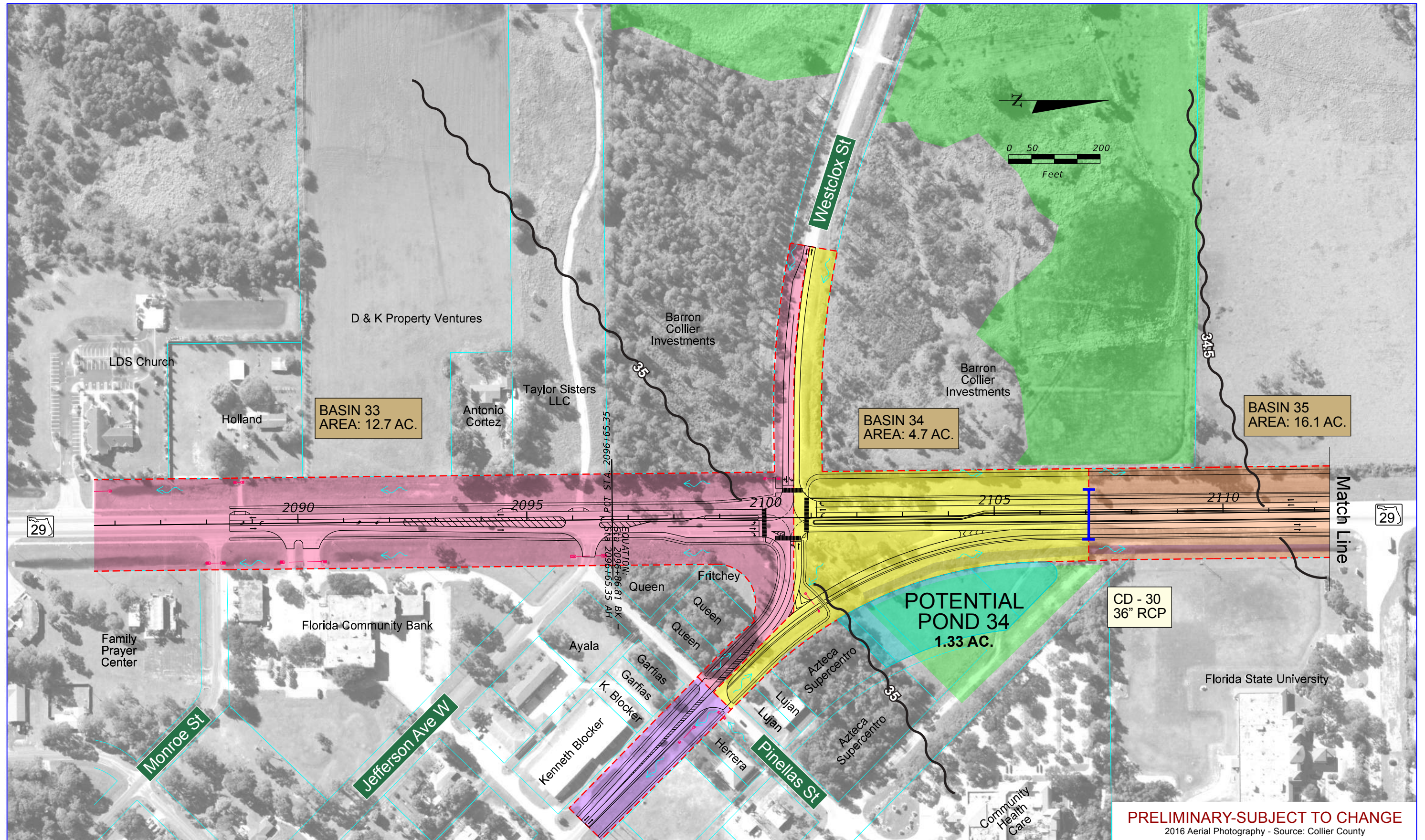
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-28**



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

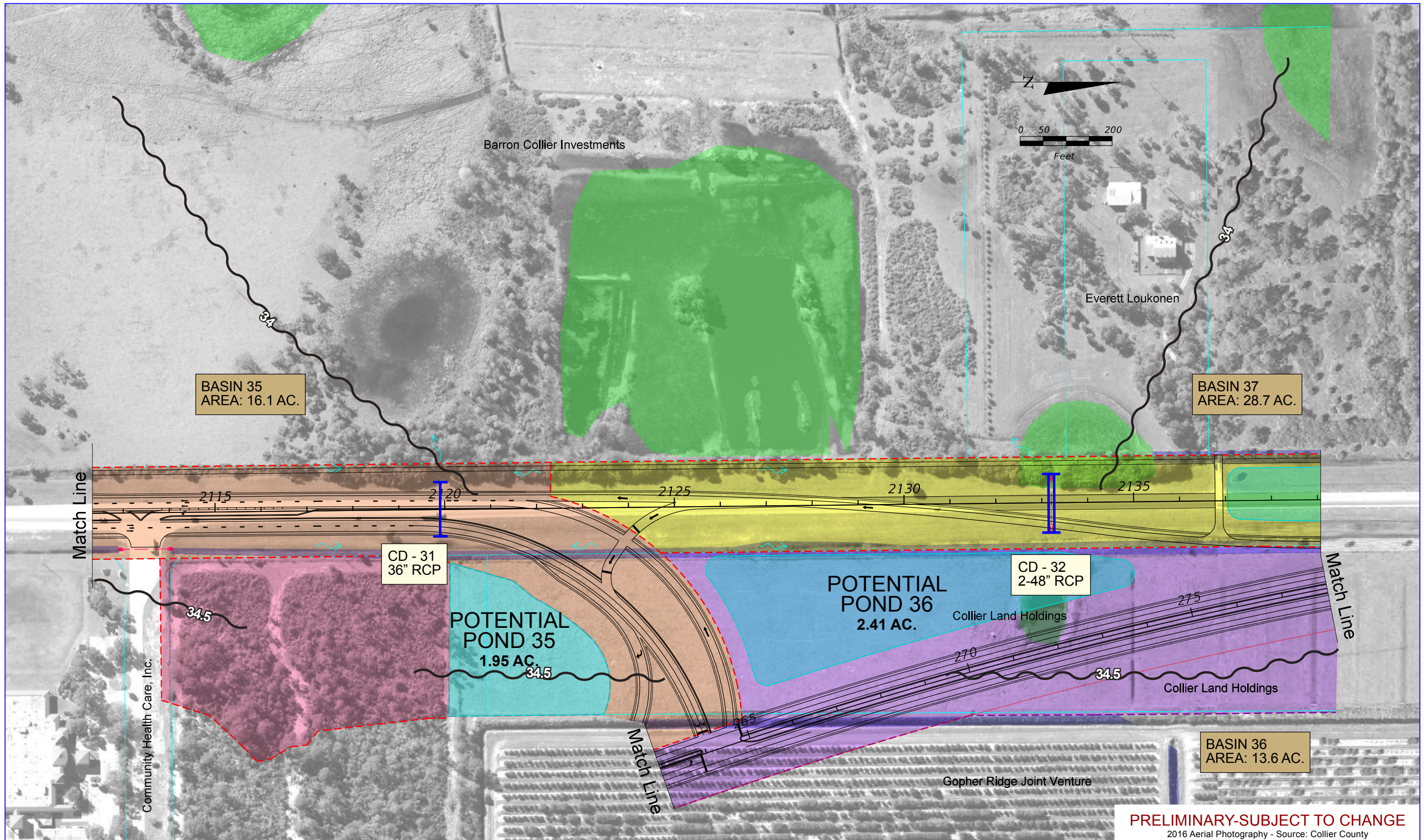
- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-29**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

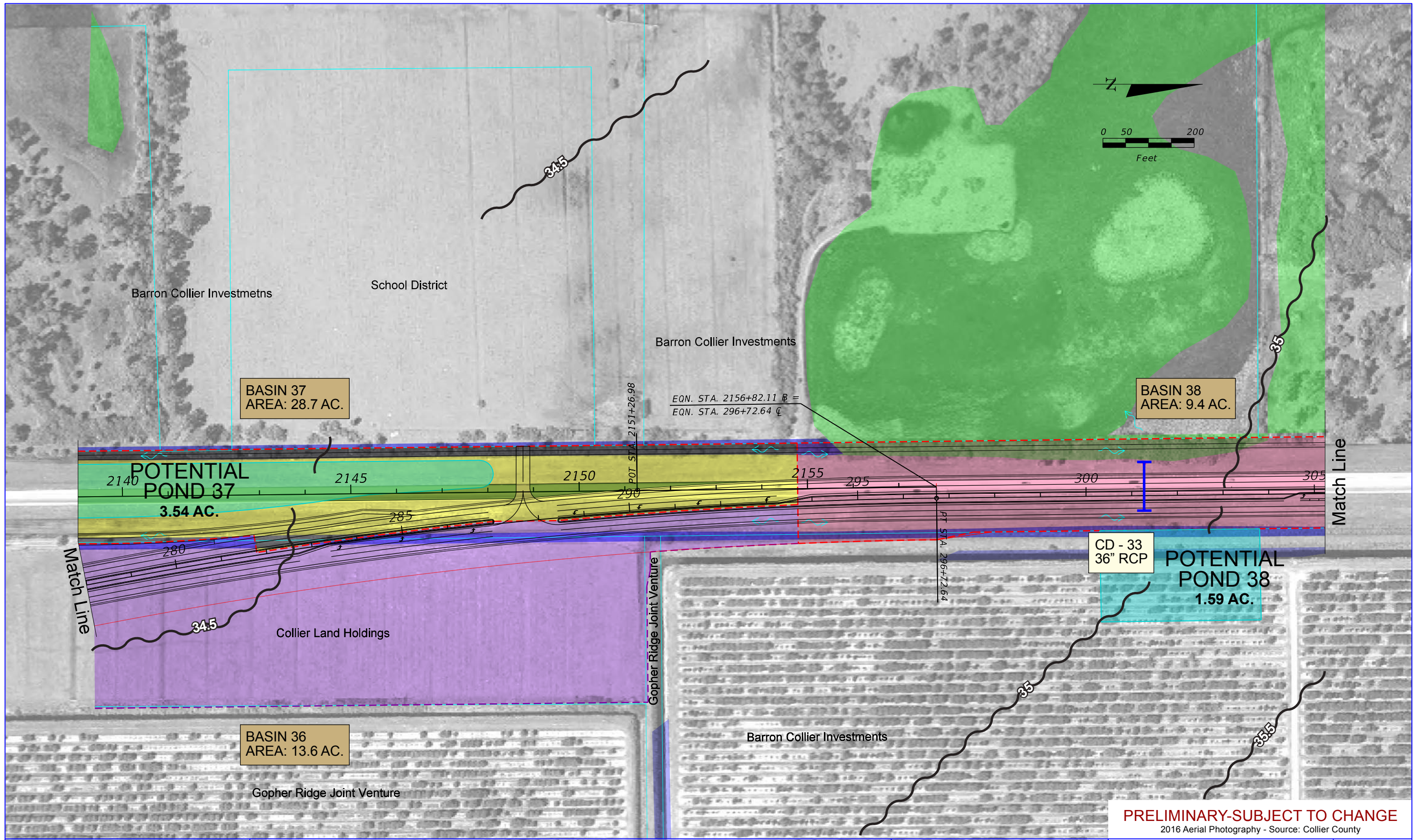
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-30**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

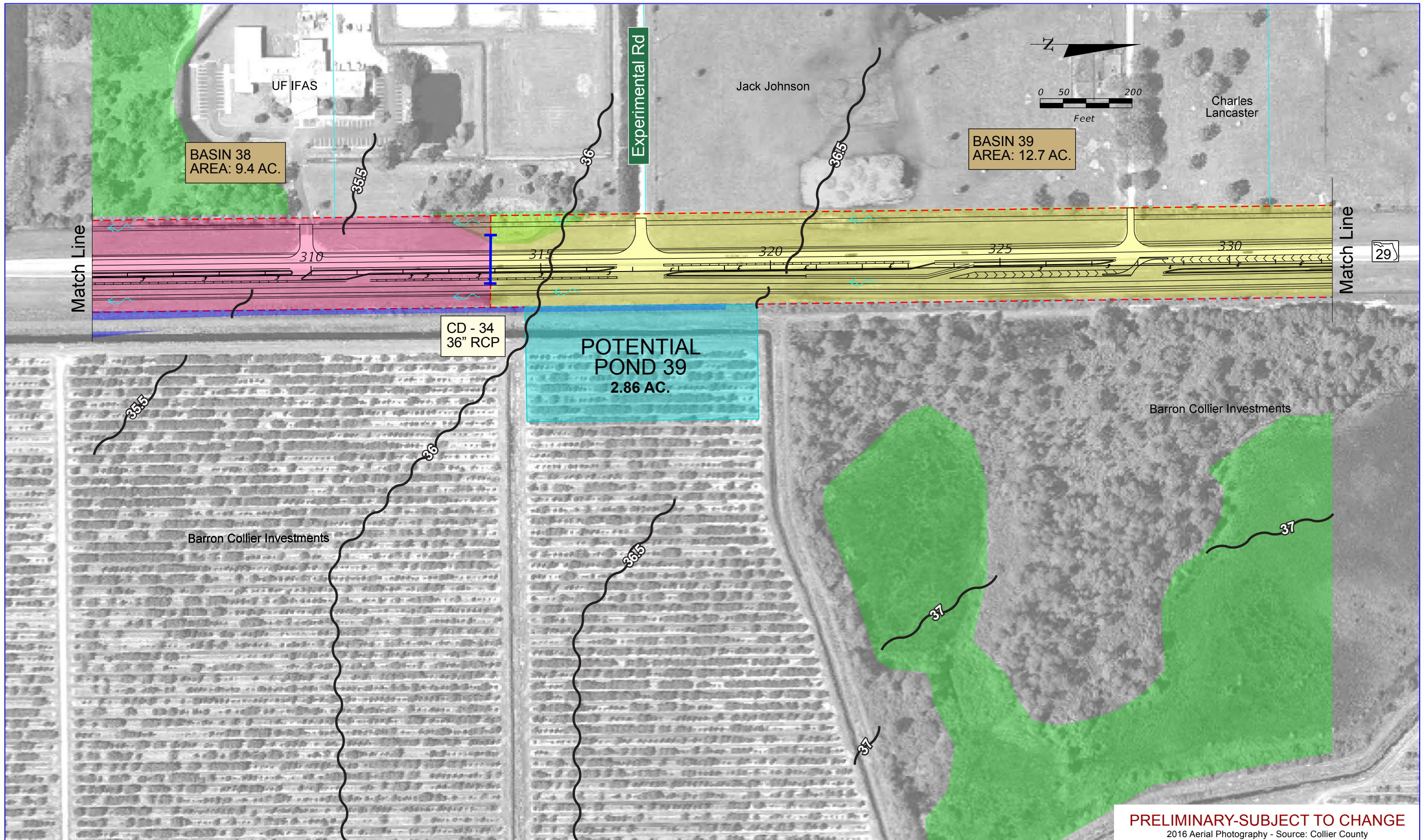
Legend

	Existing Right-of-Way		Wetlands
	Property Lines		Potential Pond
	Proposed Right-of-Way		Potential Floodplain
	Flow Arrow		Barron Canal
	Cross Drain		Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-31**



Match Line

29

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

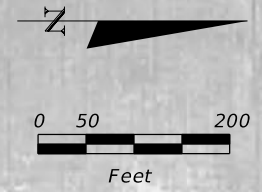
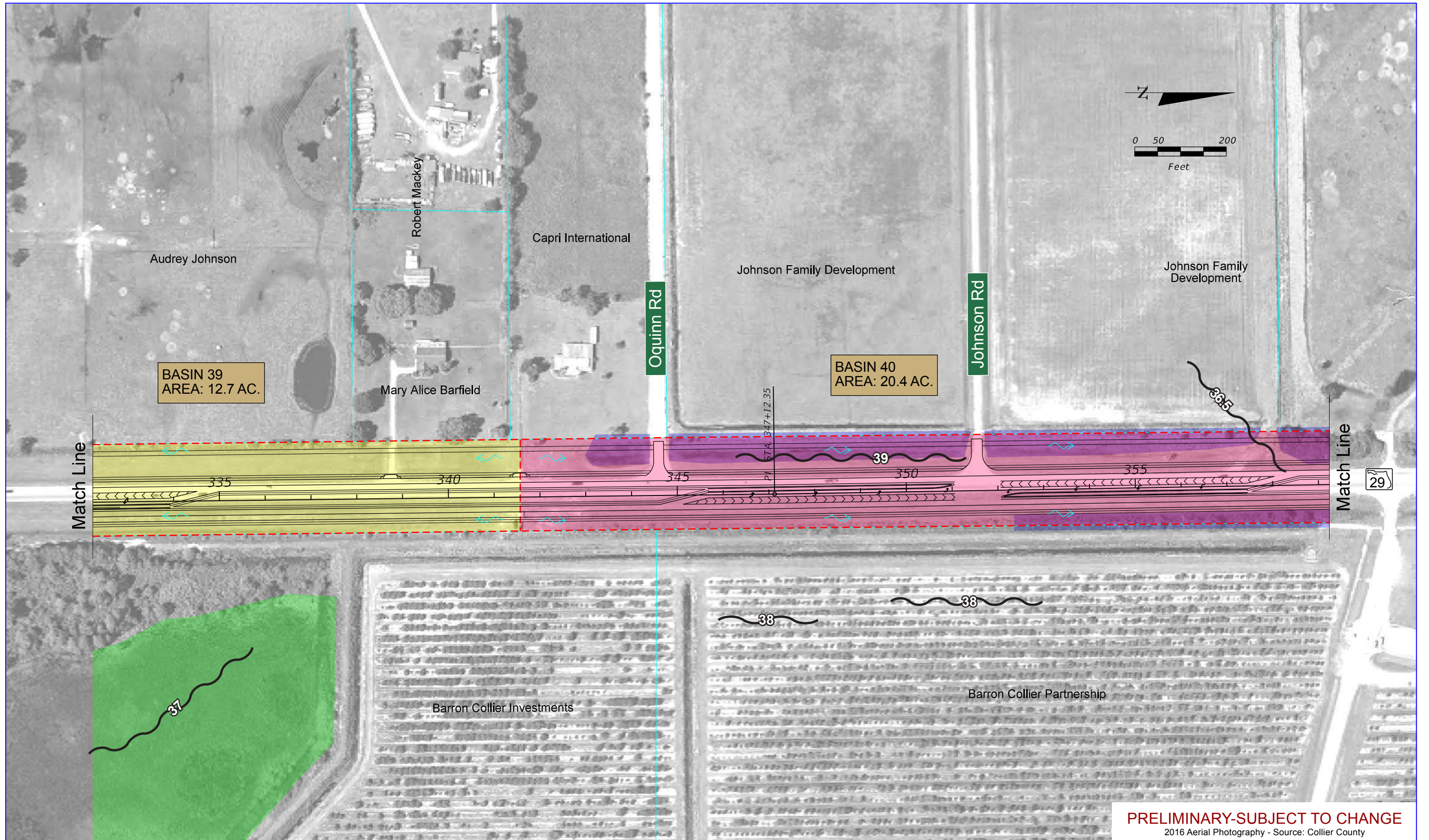
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-32**



BASIN 39
AREA: 12.7 AC.

BASIN 40
AREA: 20.4 AC.

Match Line

Match Line

29

SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend

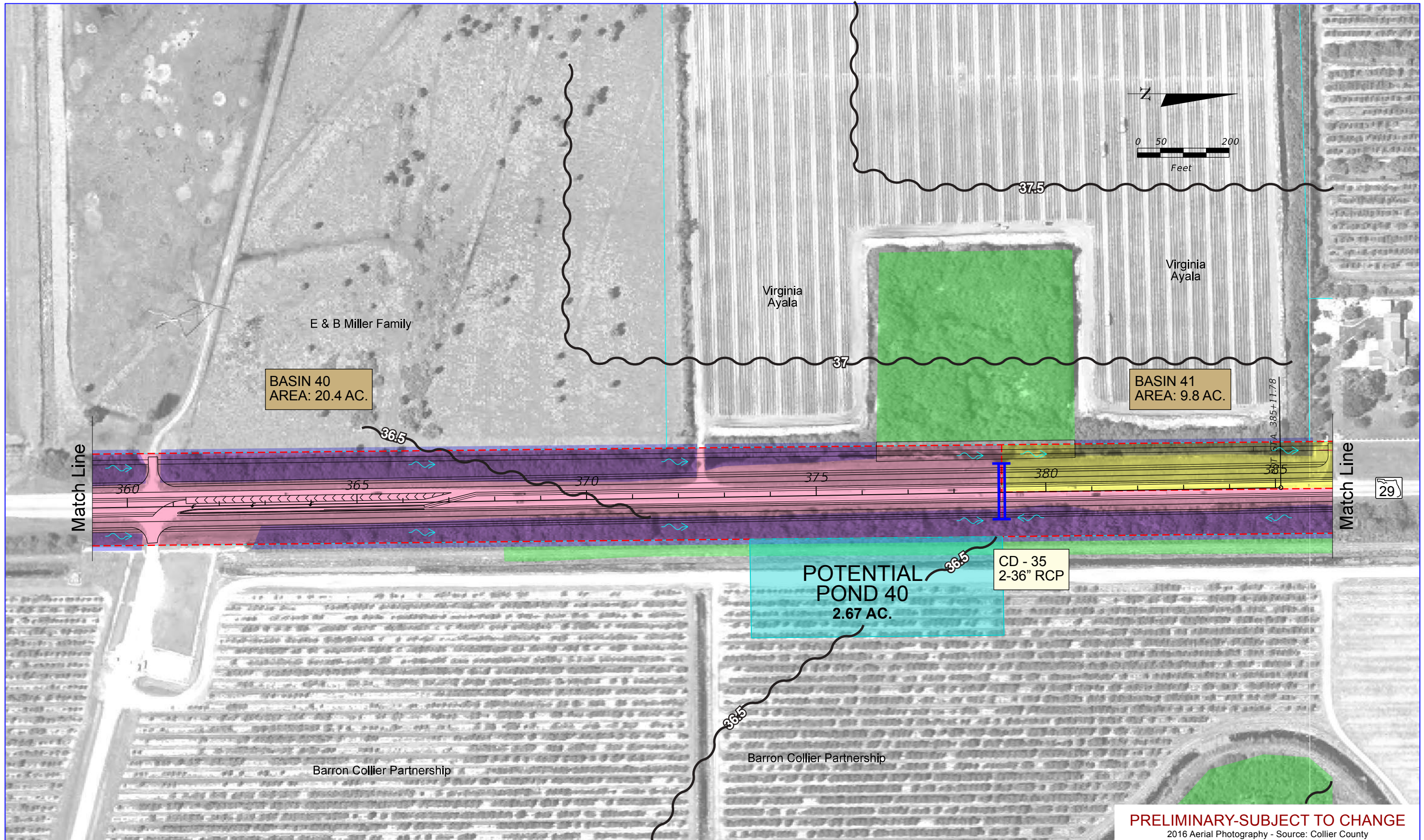
Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

**Proposed
Drainage Maps
Alternative #1 R**


**Sheet
No.
B-33**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

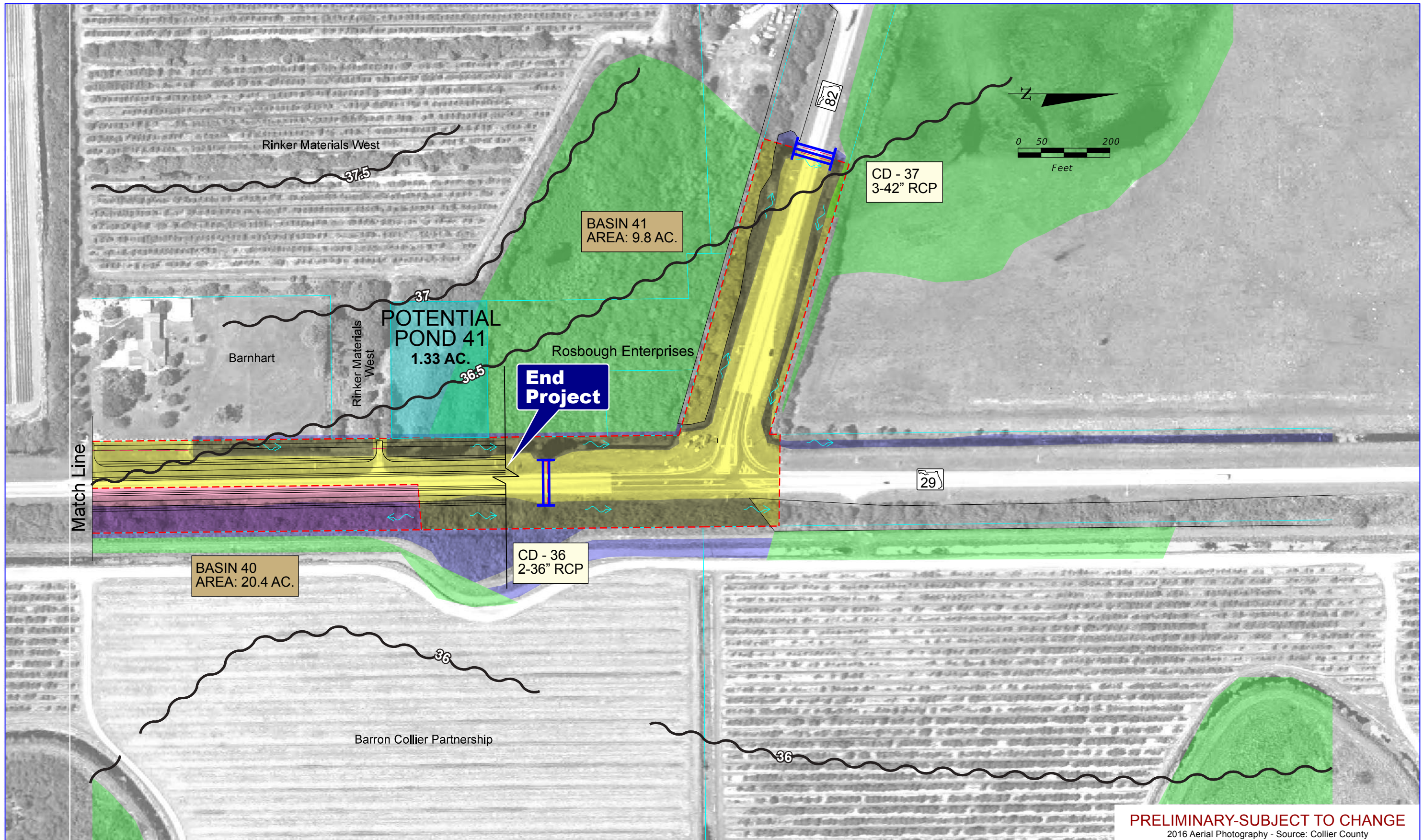
Legend

 Existing Right-of-Way	 Wetlands
 Property Lines	 Potential Pond
 Proposed Right-of-Way	 Potential Floodplain
 Flow Arrow	 Barron Canal
 Cross Drain	 Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-34**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

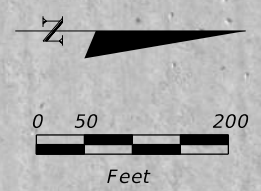
Legend

<ul style="list-style-type: none"> — Existing Right-of-Way — Property Lines - - - Proposed Right-of-Way → Flow Arrow Cross Drain 	<ul style="list-style-type: none"> ■ Wetlands ■ Potential Pond ■ Potential Floodplain ■ Barron Canal ~ Base Flood Elevation
---	--

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #1 R**

**Sheet
 No.
 B-35**



Barron Collier

BASIN A
AREA: 9.3 AC.

POTENTIAL
POND 1
1.68 AC.

Begin
Project

FP&L TRANSMISSION EASEMENT

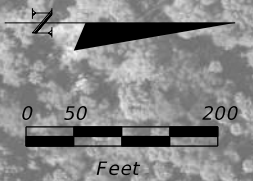
Match Line

CD - 1
36" RCP

EQN. STA. 1426+39.50 @ =
EQN. STA. 18+92.34 @

Sunniland Family Partnership, LTD

Sunniland Family Partnership, LTD



SR 29 PD&E Study
From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend

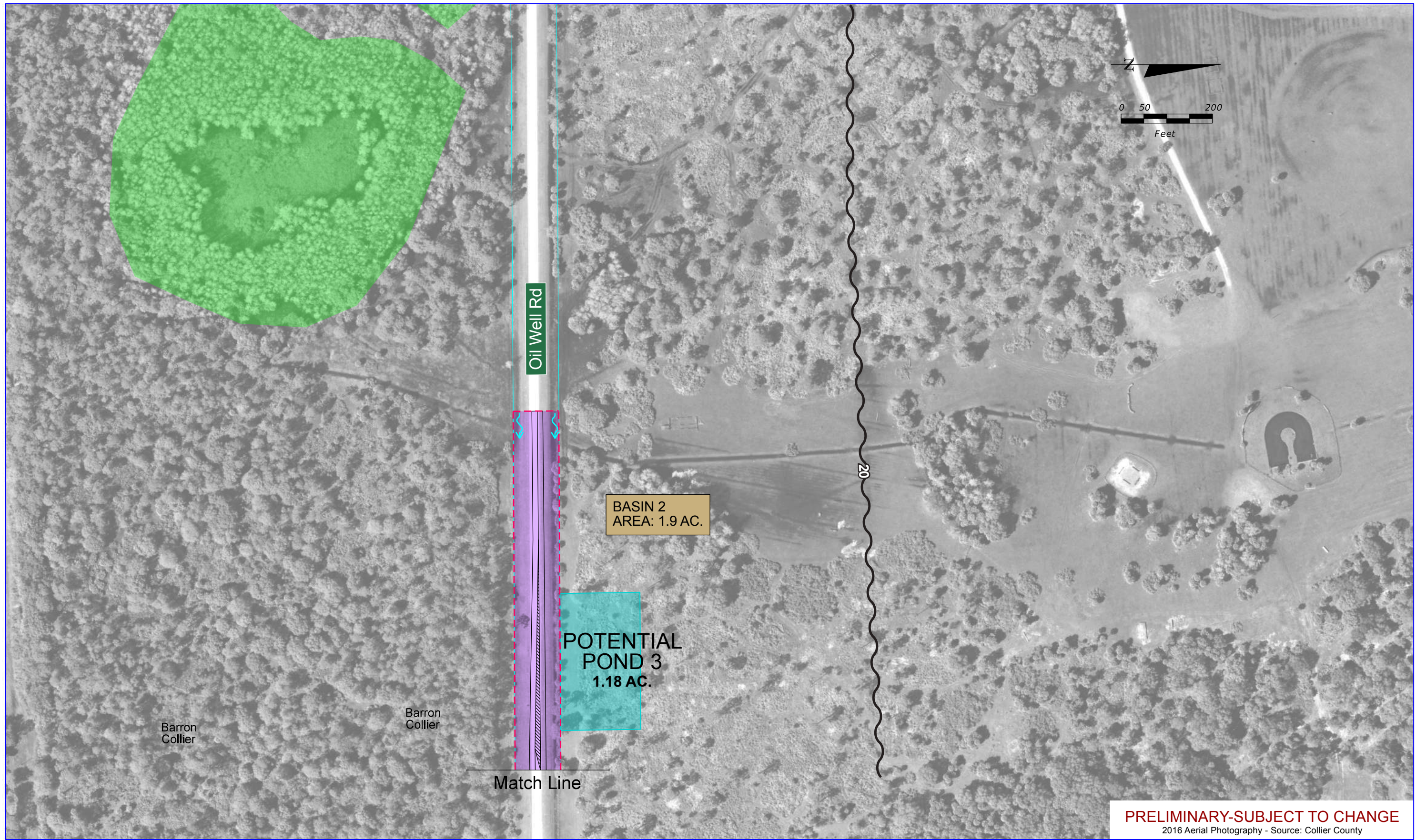
Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-37**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

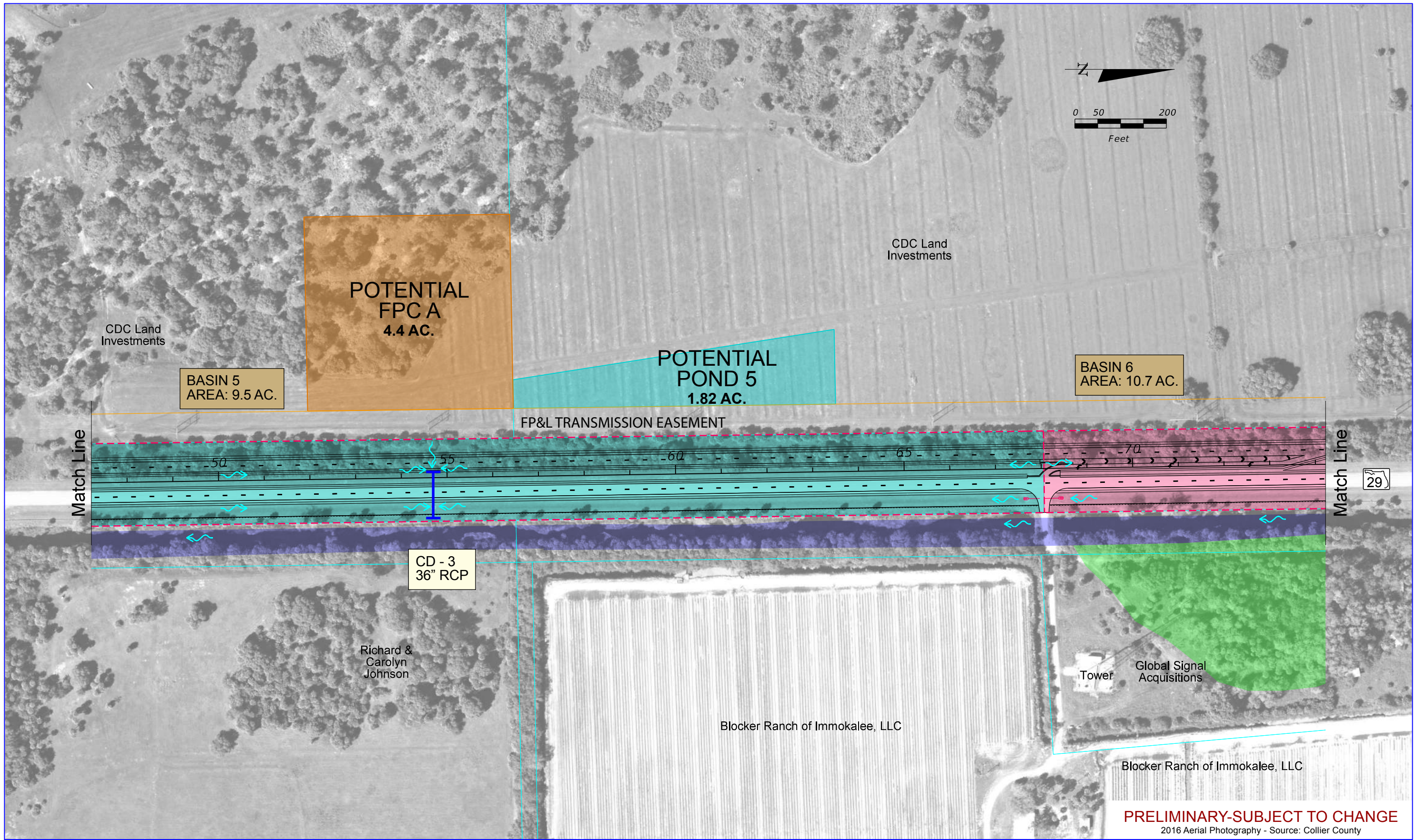
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend*
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-38**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

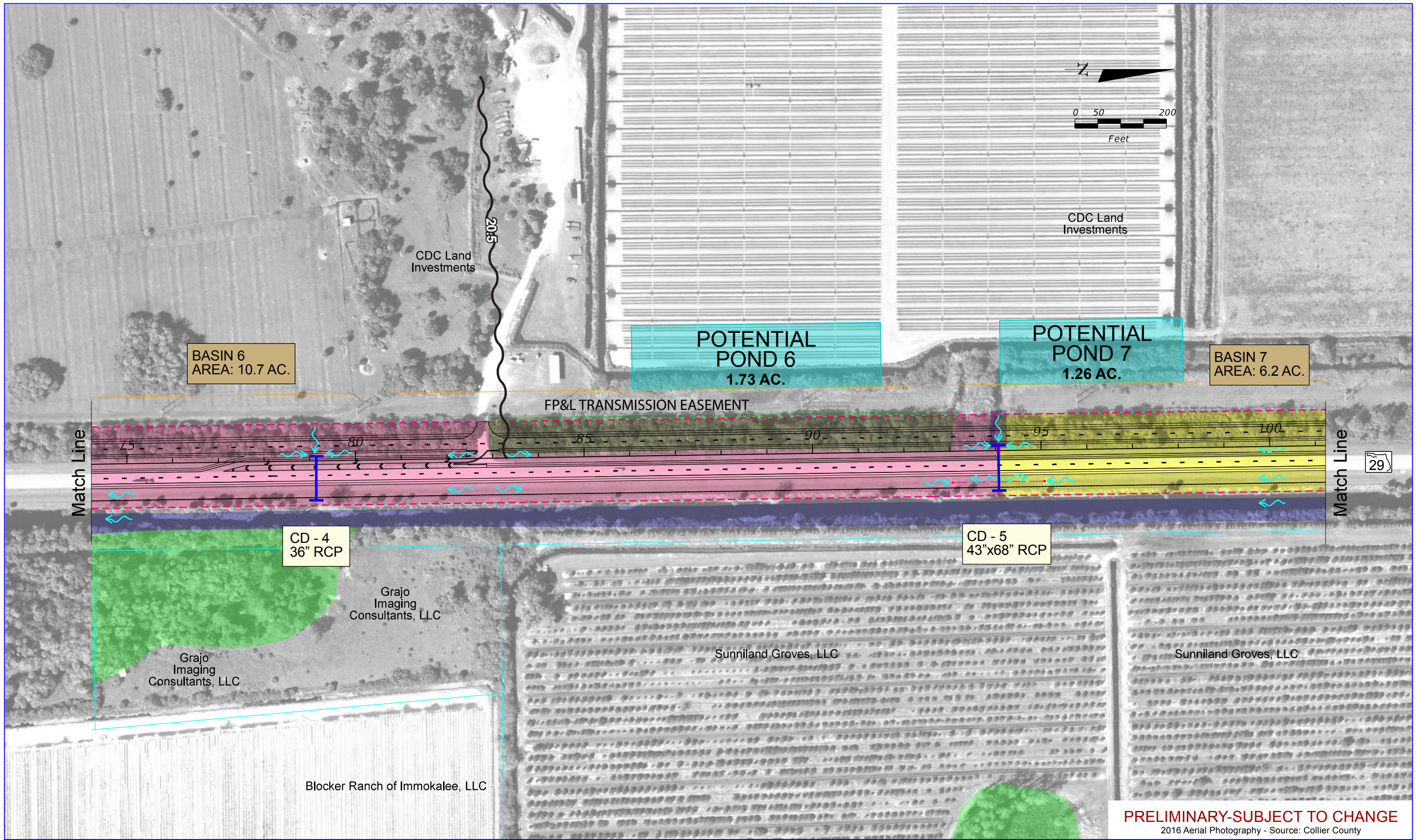
Legend

Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-39**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

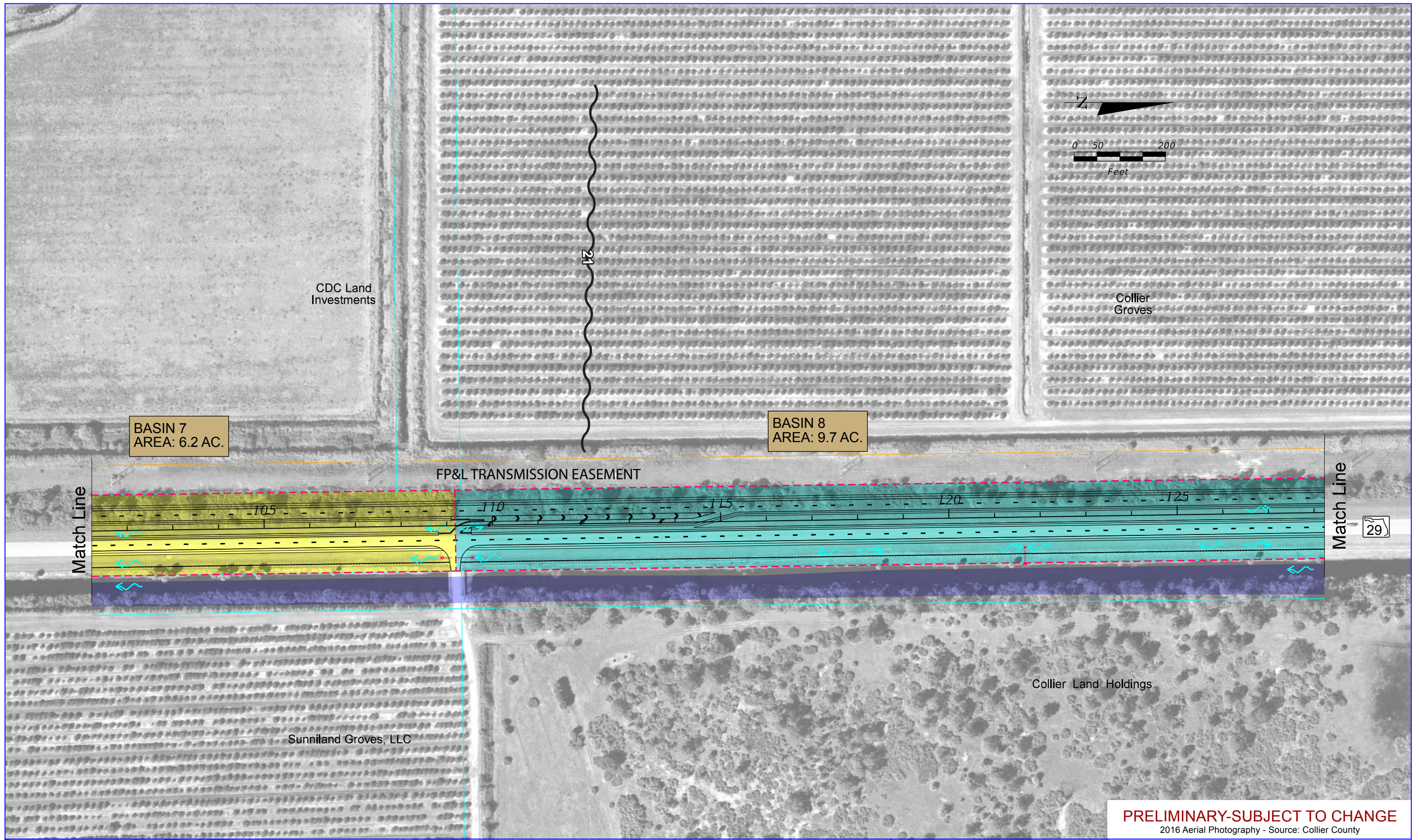
Legend

Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-40**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

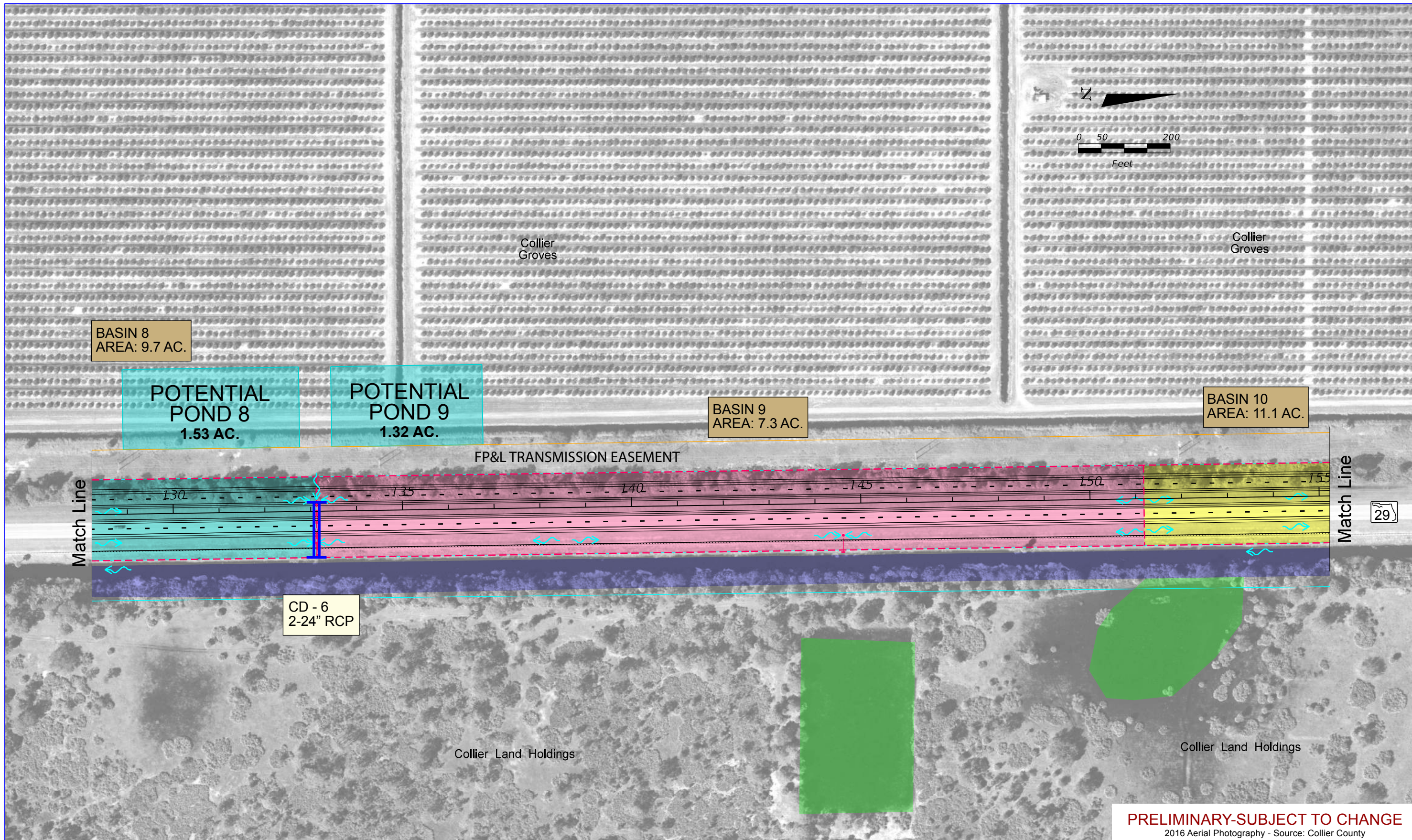
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

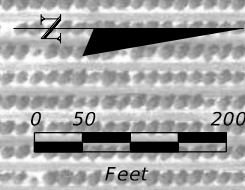
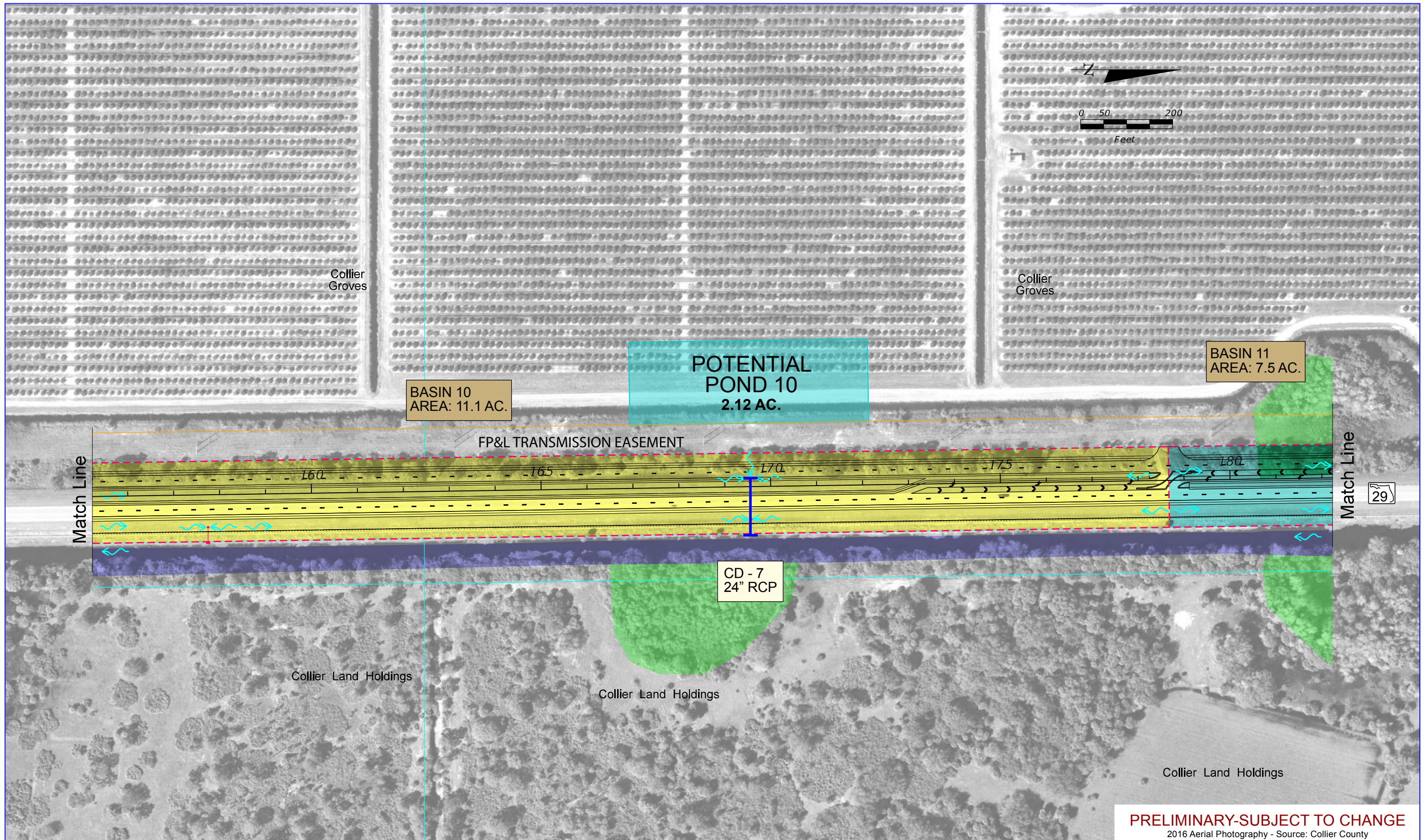
- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-41**





PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

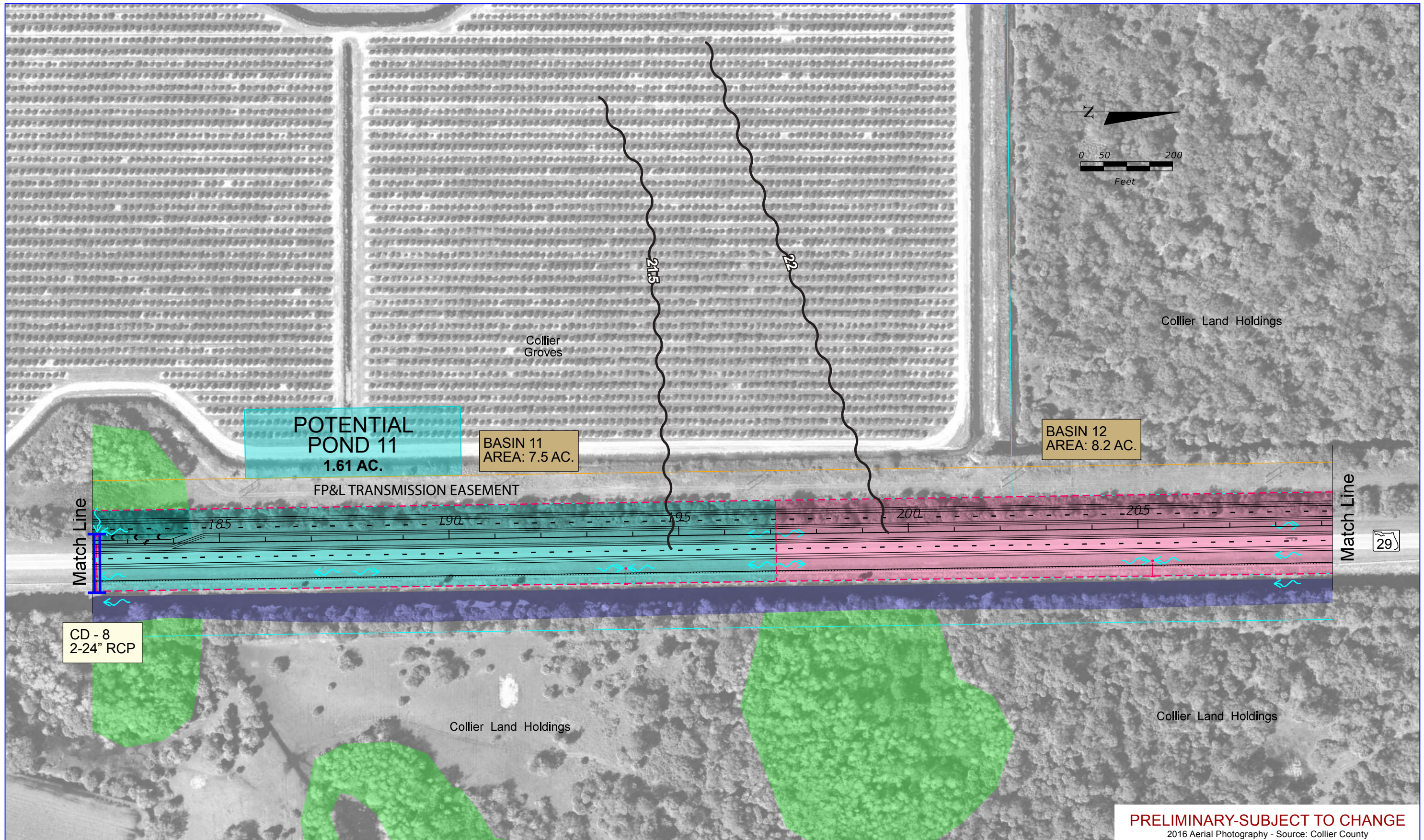
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-43**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

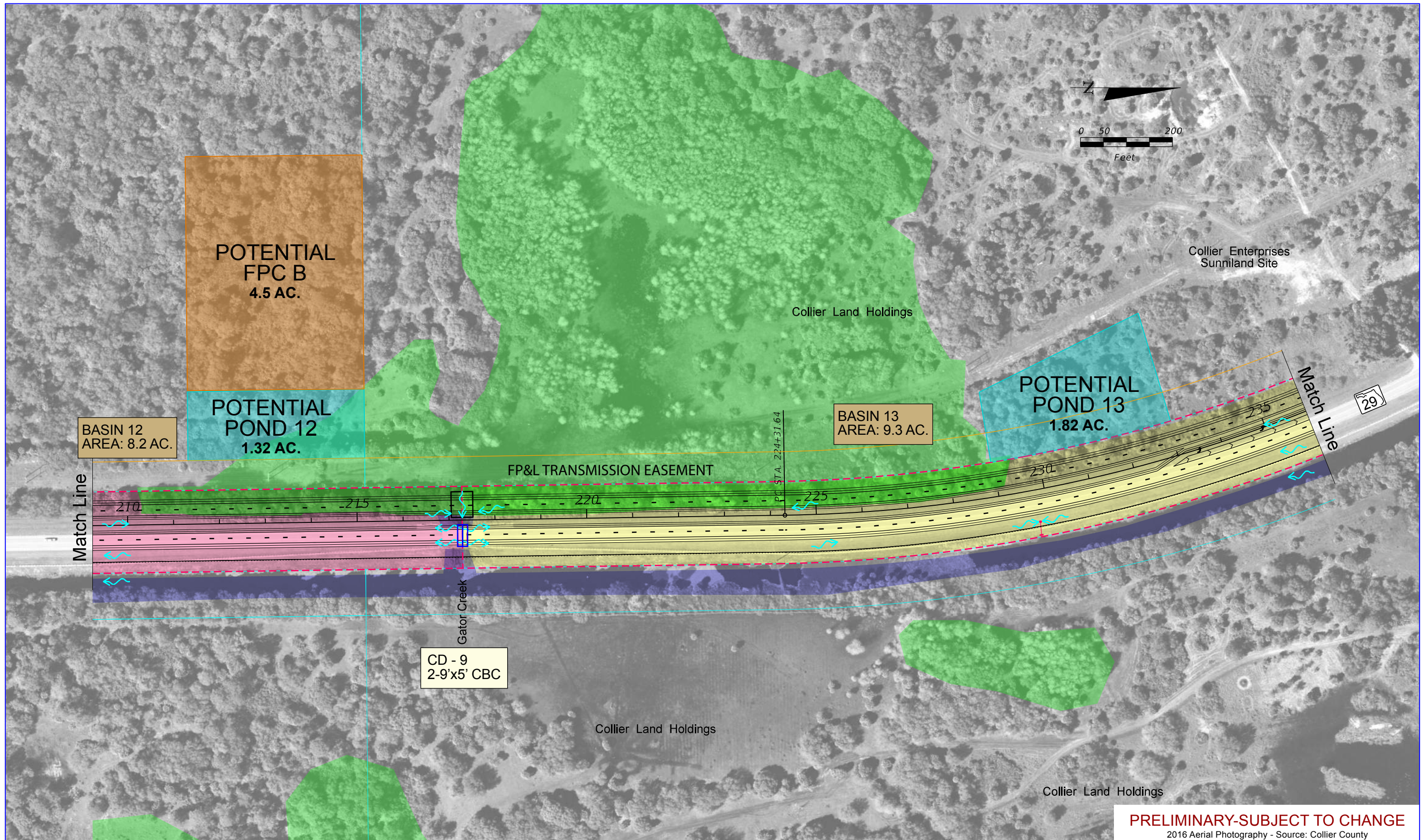
Legend

Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-44**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

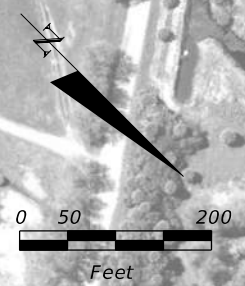
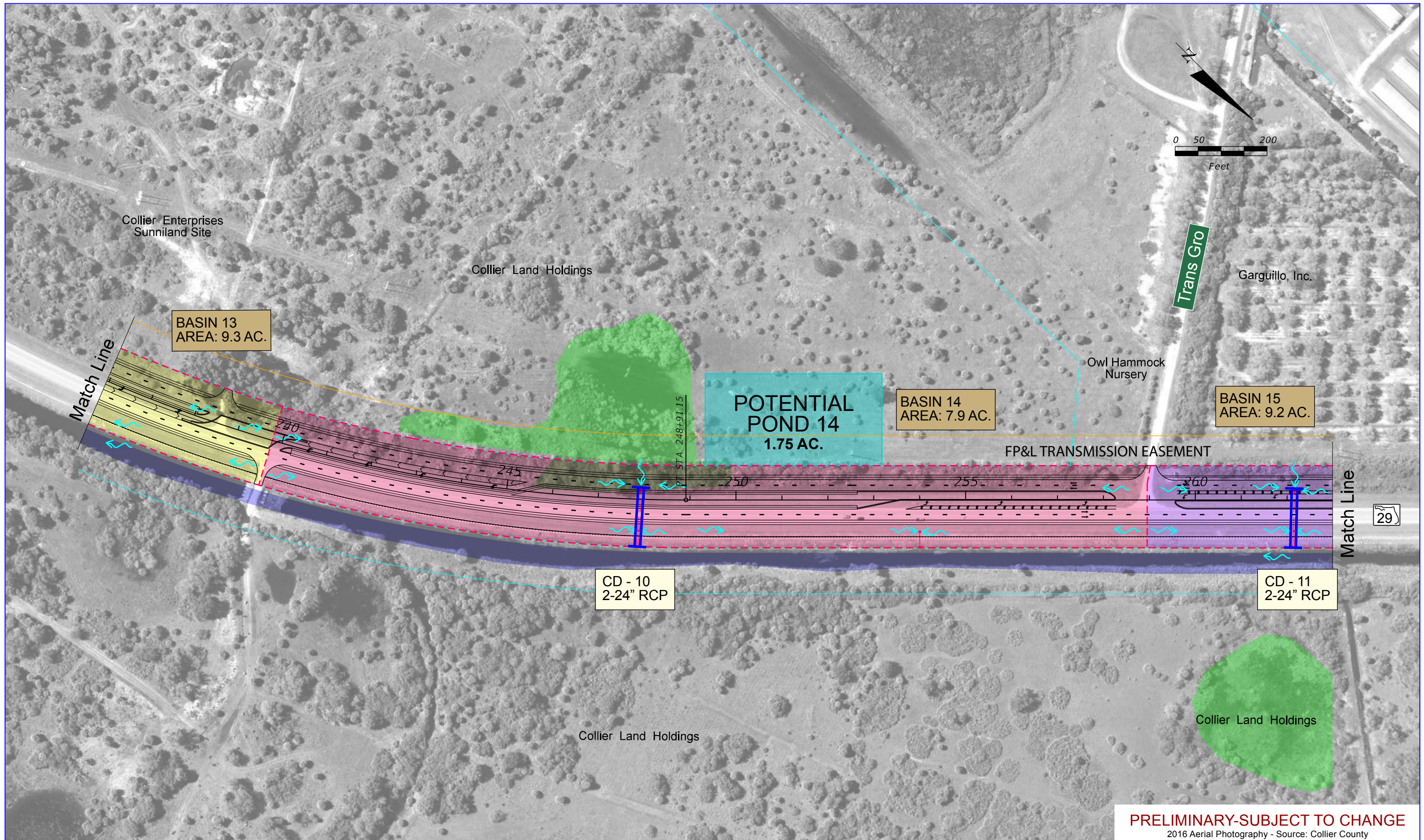
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain
 - Wetlands
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-45**



PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

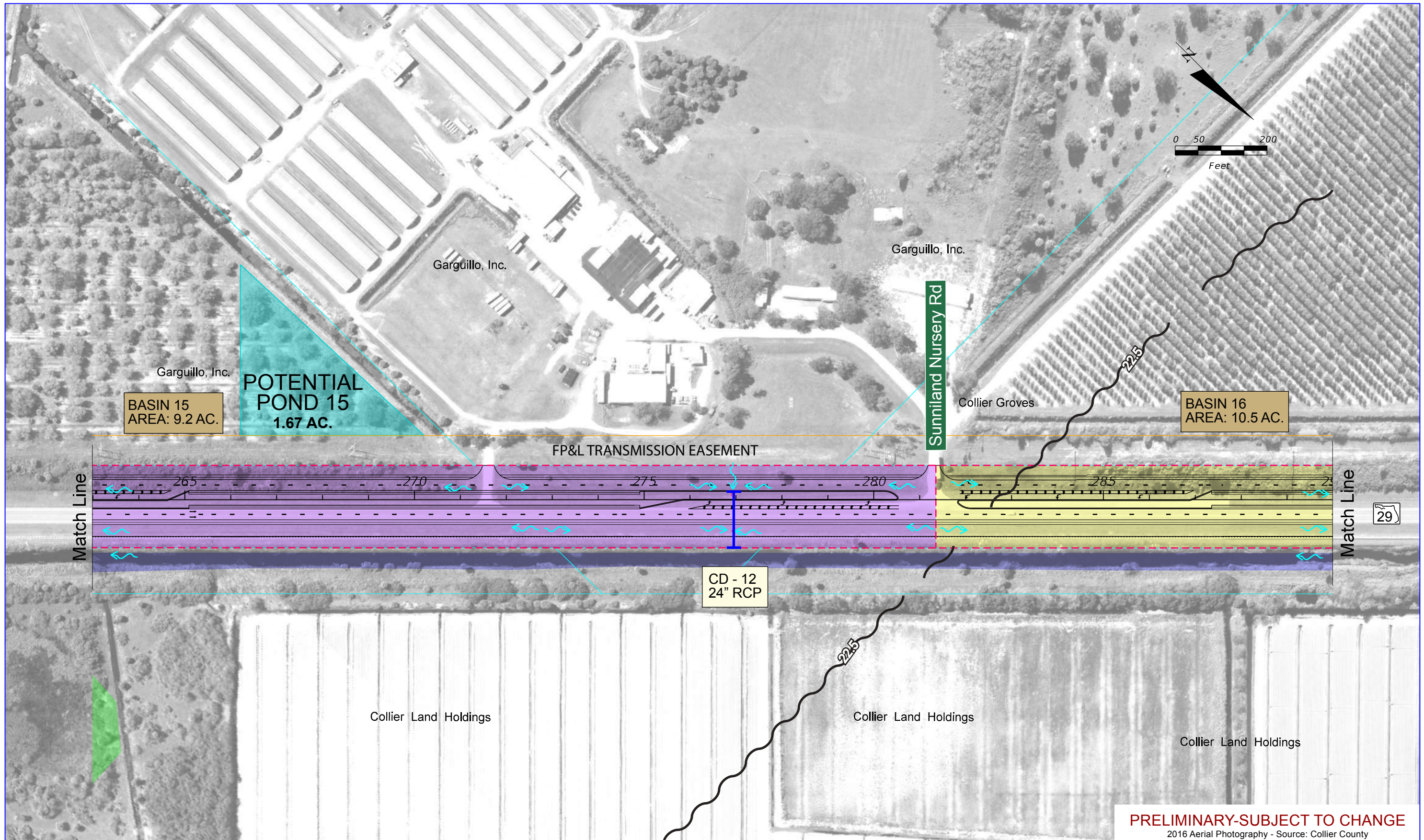
Legend

Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	SR 29 Canal
Cross Drain	

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

**Proposed
Drainage Maps
Alternative #2**

**Sheet
No.
B-46**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

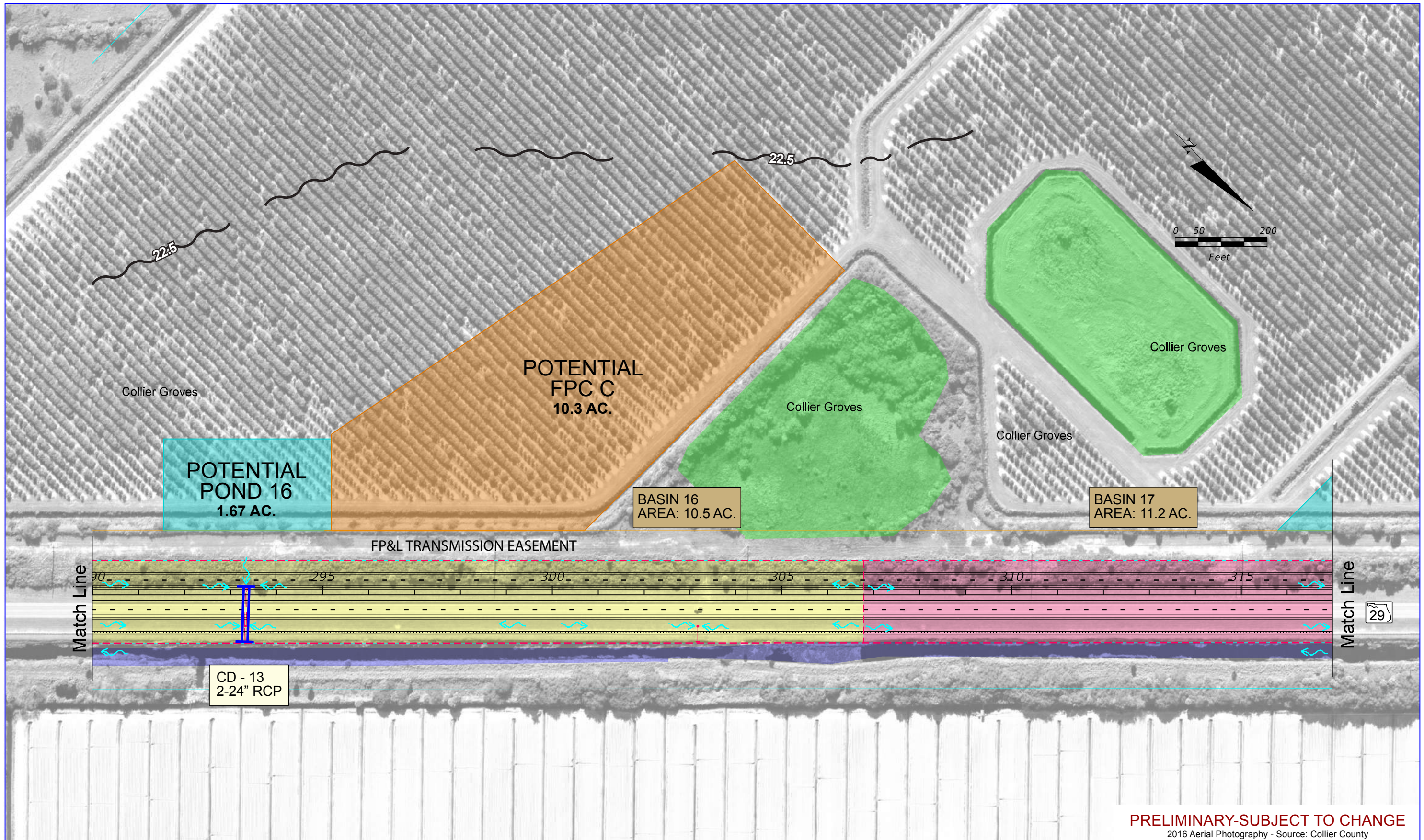
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-47**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

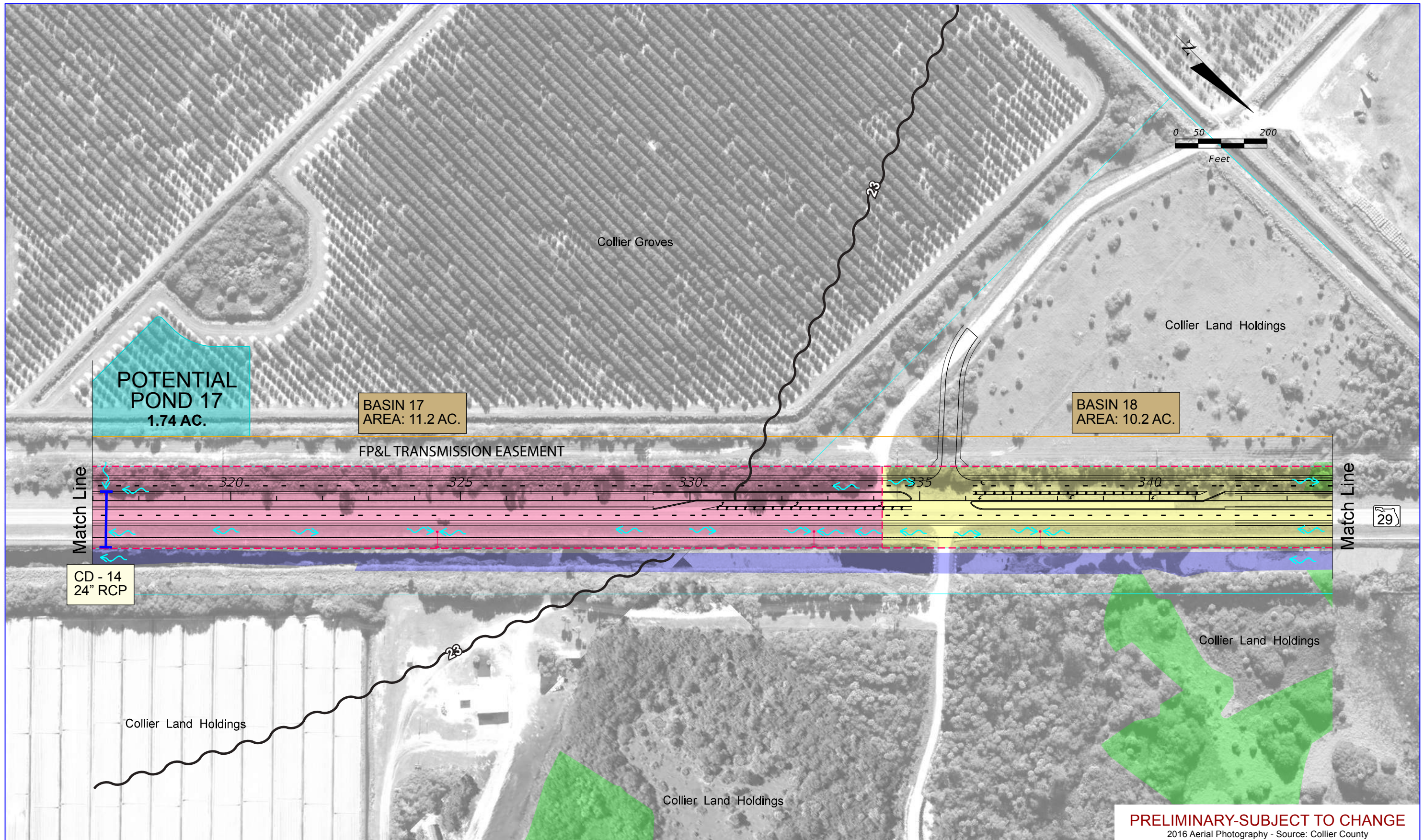
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-48**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

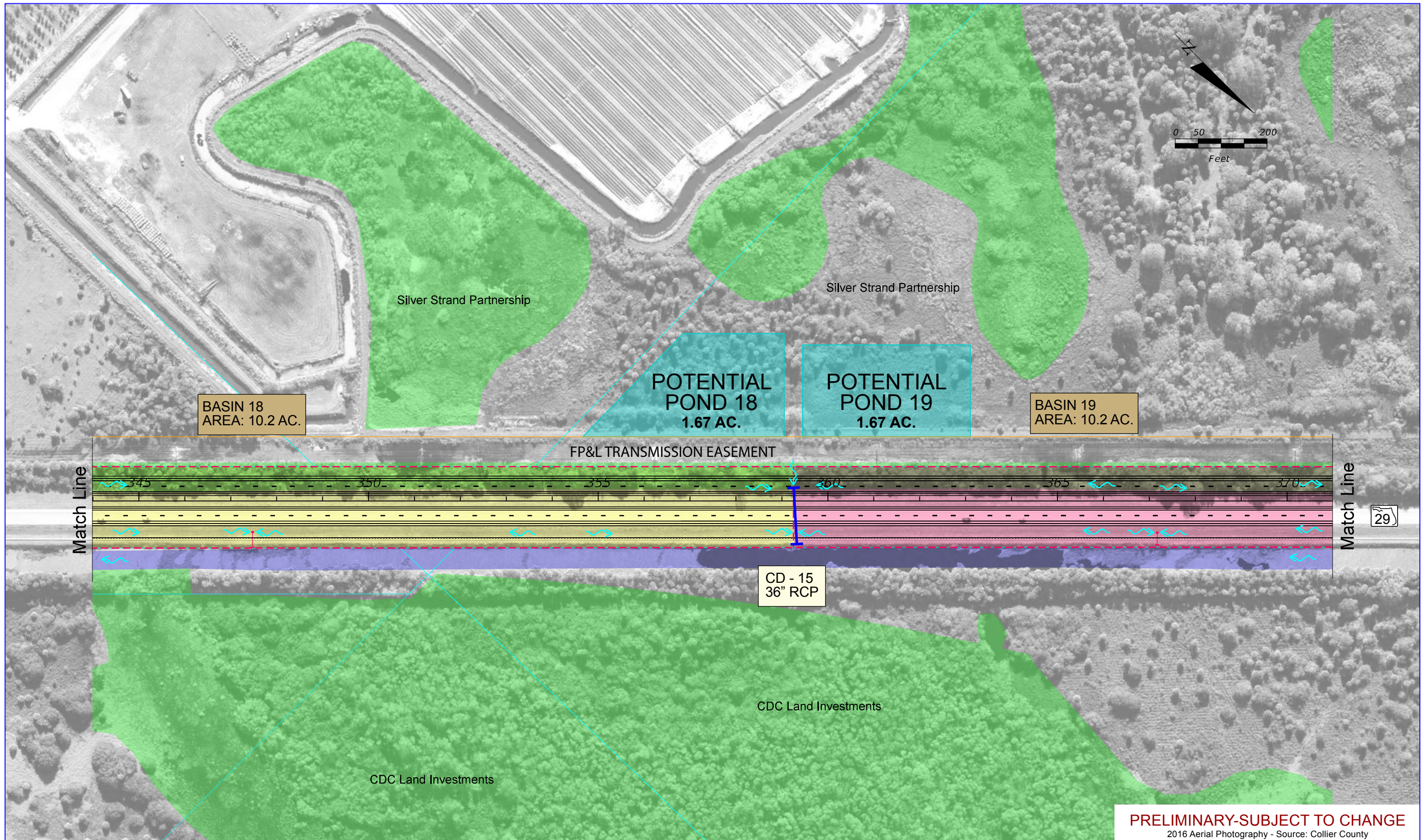
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-49**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

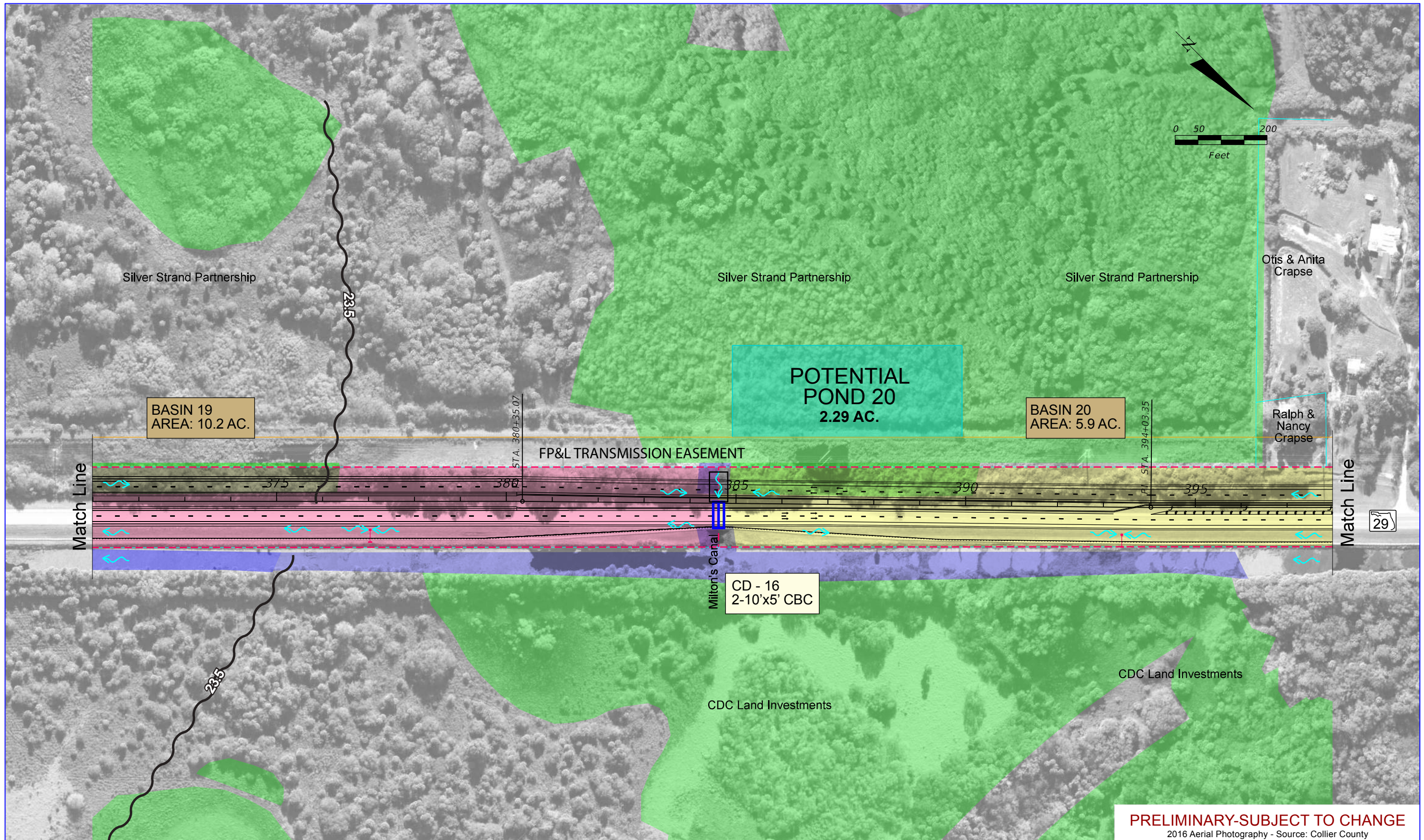
Legend

 Existing Right-of-Way	 Wetlands
 Property Lines	 Potential Pond
 Proposed Right-of-Way	 Potential Floodplain
 Flow Arrow	 Barron Canal
 Cross Drain	 Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-50**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

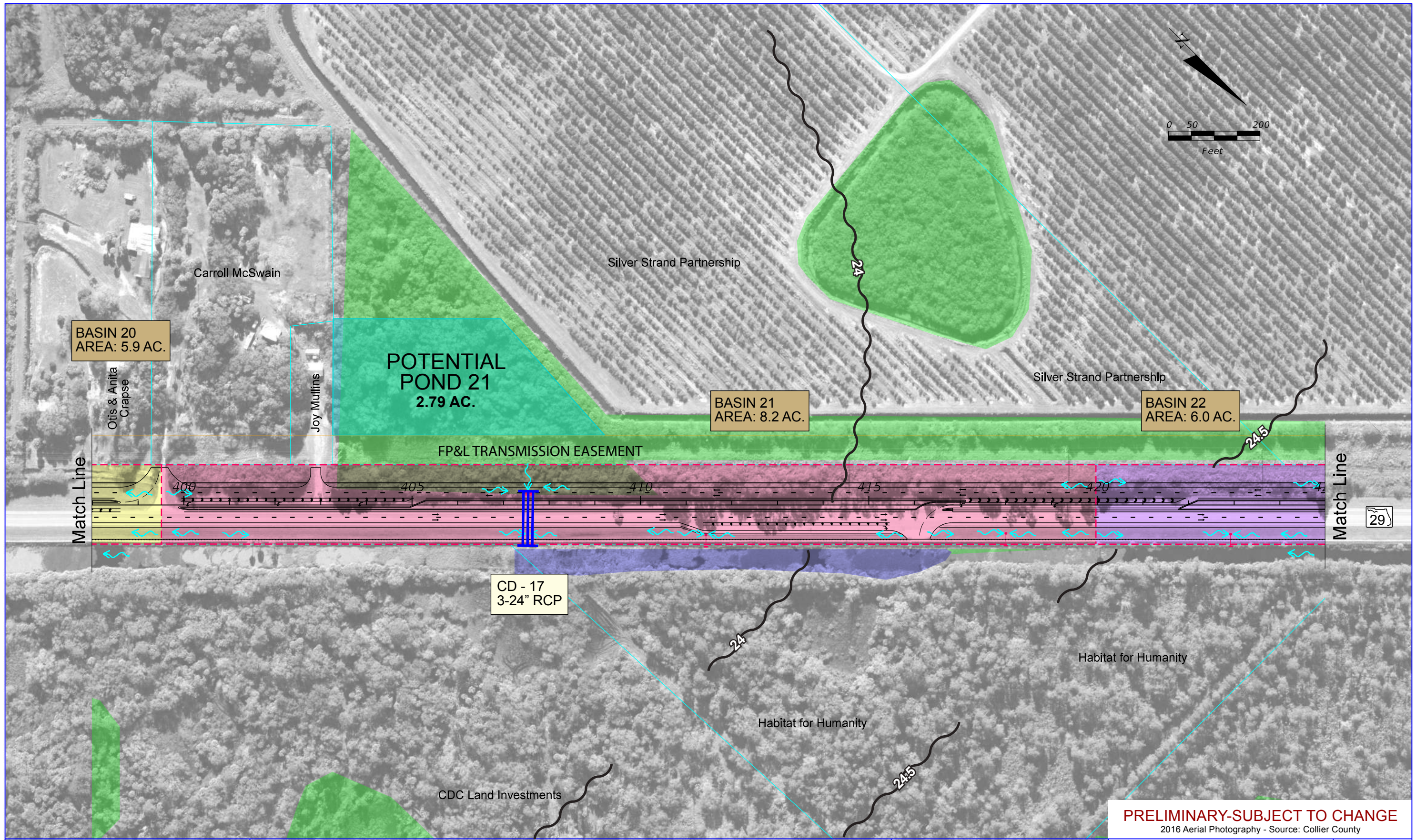
Legend

 Existing Right-of-Way	 Wetlands
 Property Lines	 Potential Pond
 Proposed Right-of-Way	 Potential Floodplain
 Flow Arrow	 Barron Canal
 Cross Drain	 Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-51**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

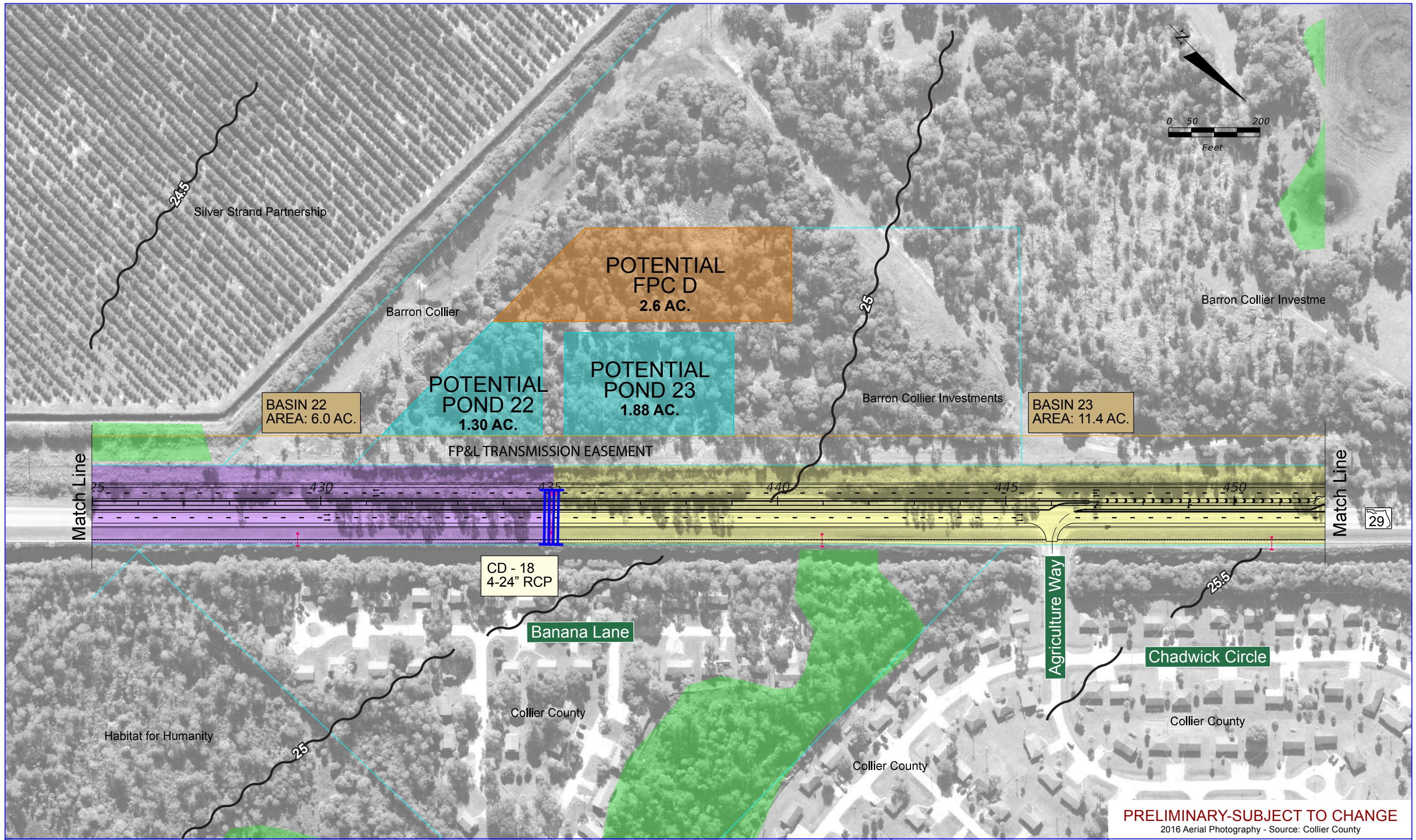
Legend

Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-52**



PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

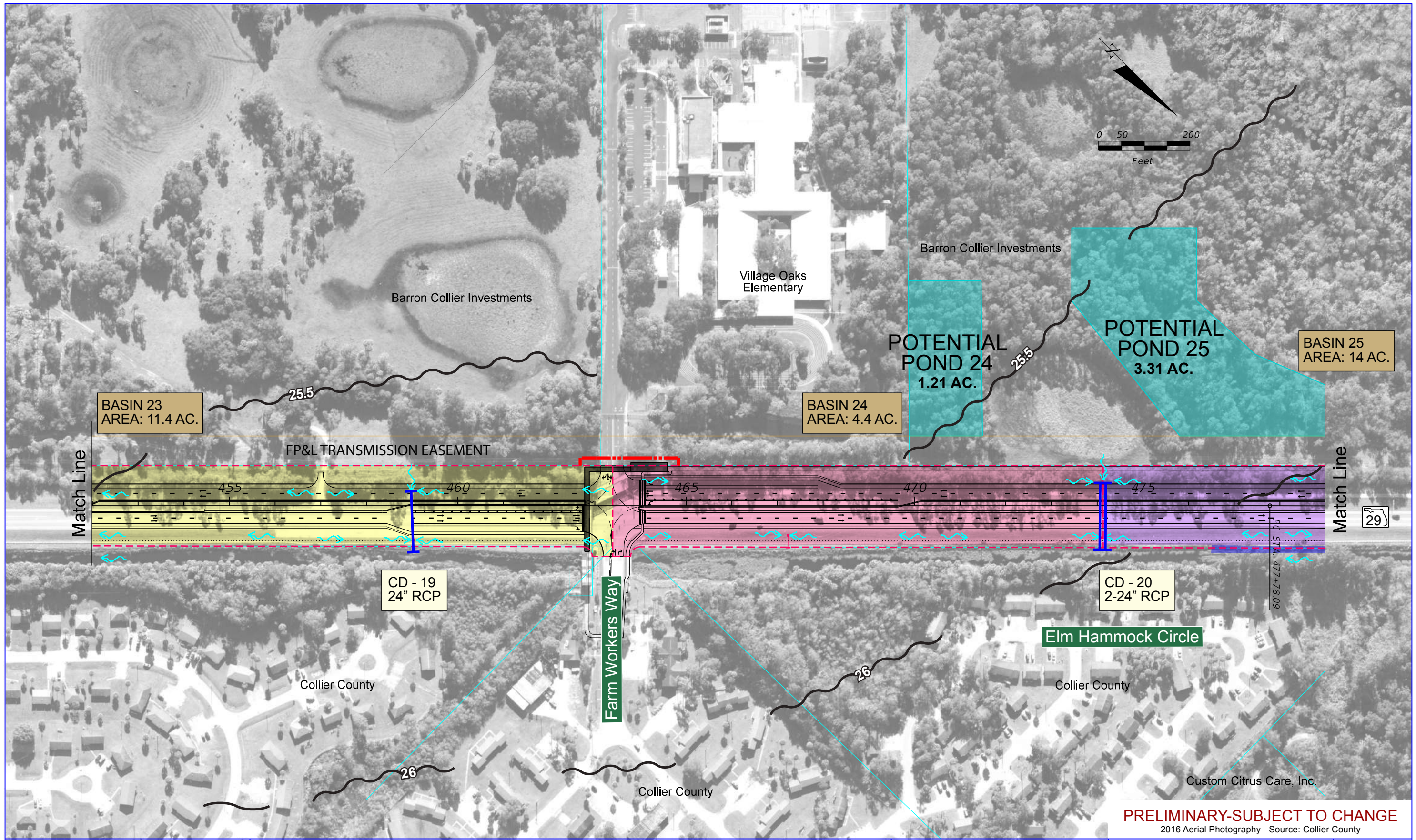
Legend

Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

**Proposed
Drainage Maps
Alternative #2**

**Sheet
No.
B-53**



PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

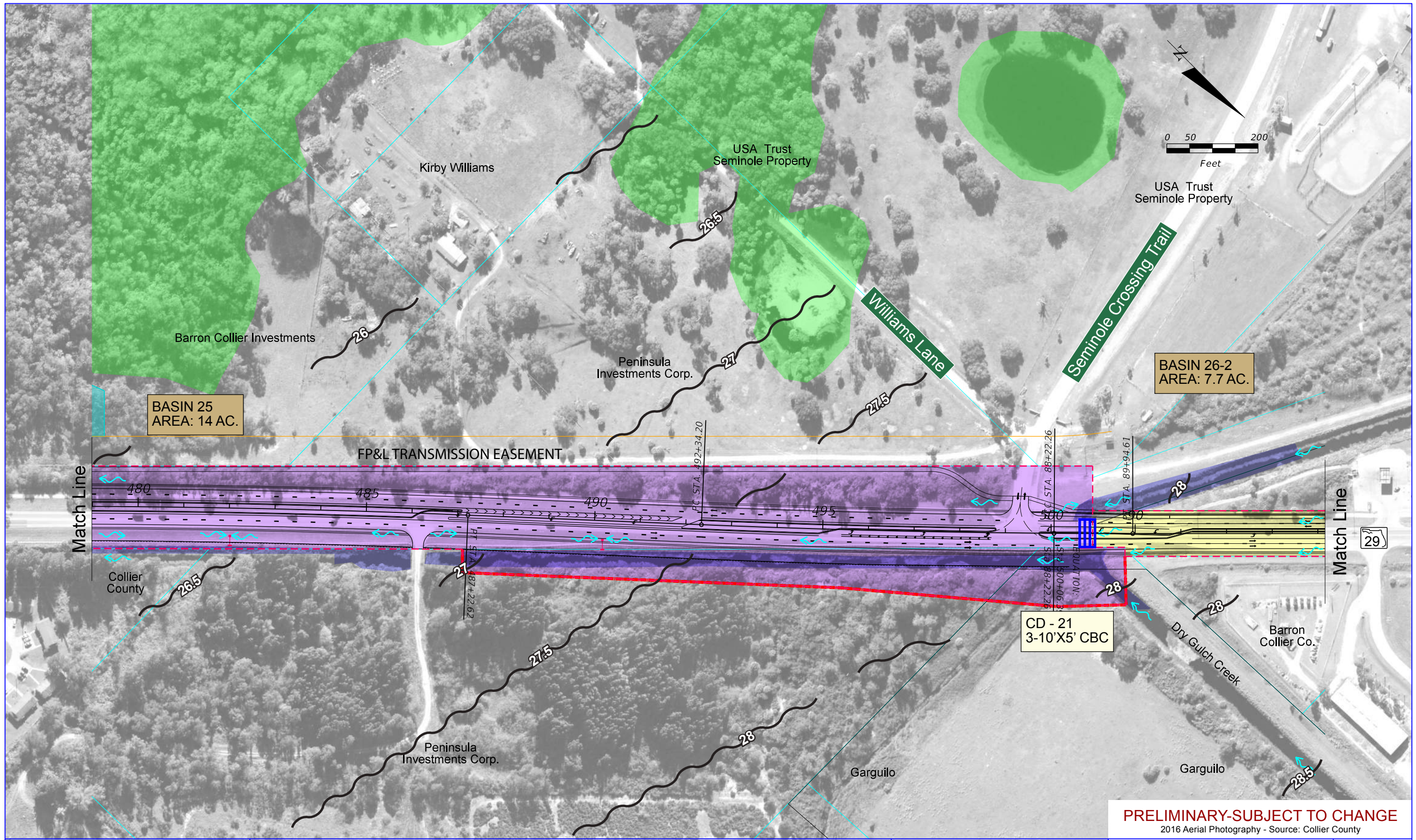
Legend

Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

**Proposed
Drainage Maps
Alternative #2**

**Sheet
No.
B-54**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

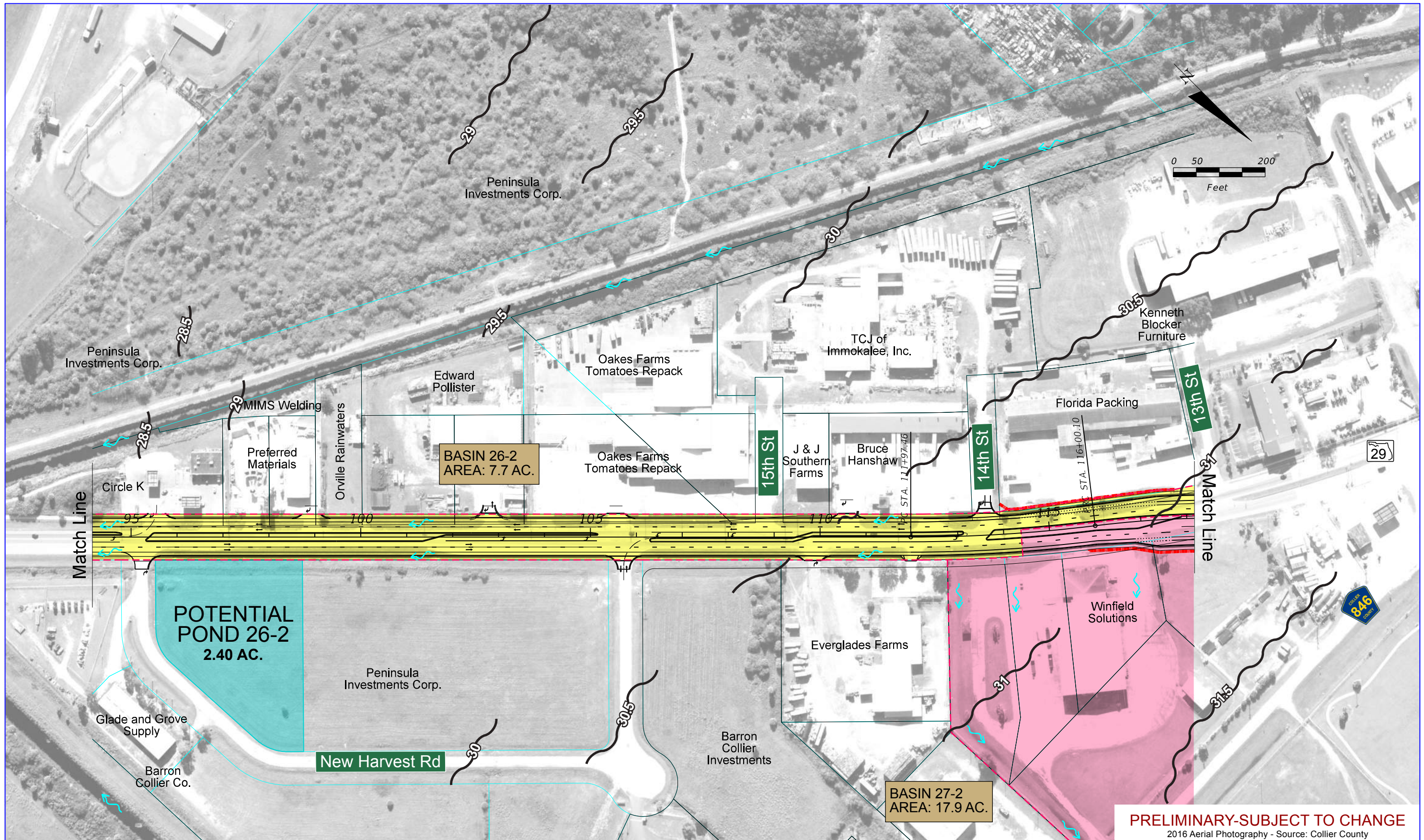
Legend

Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-55**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

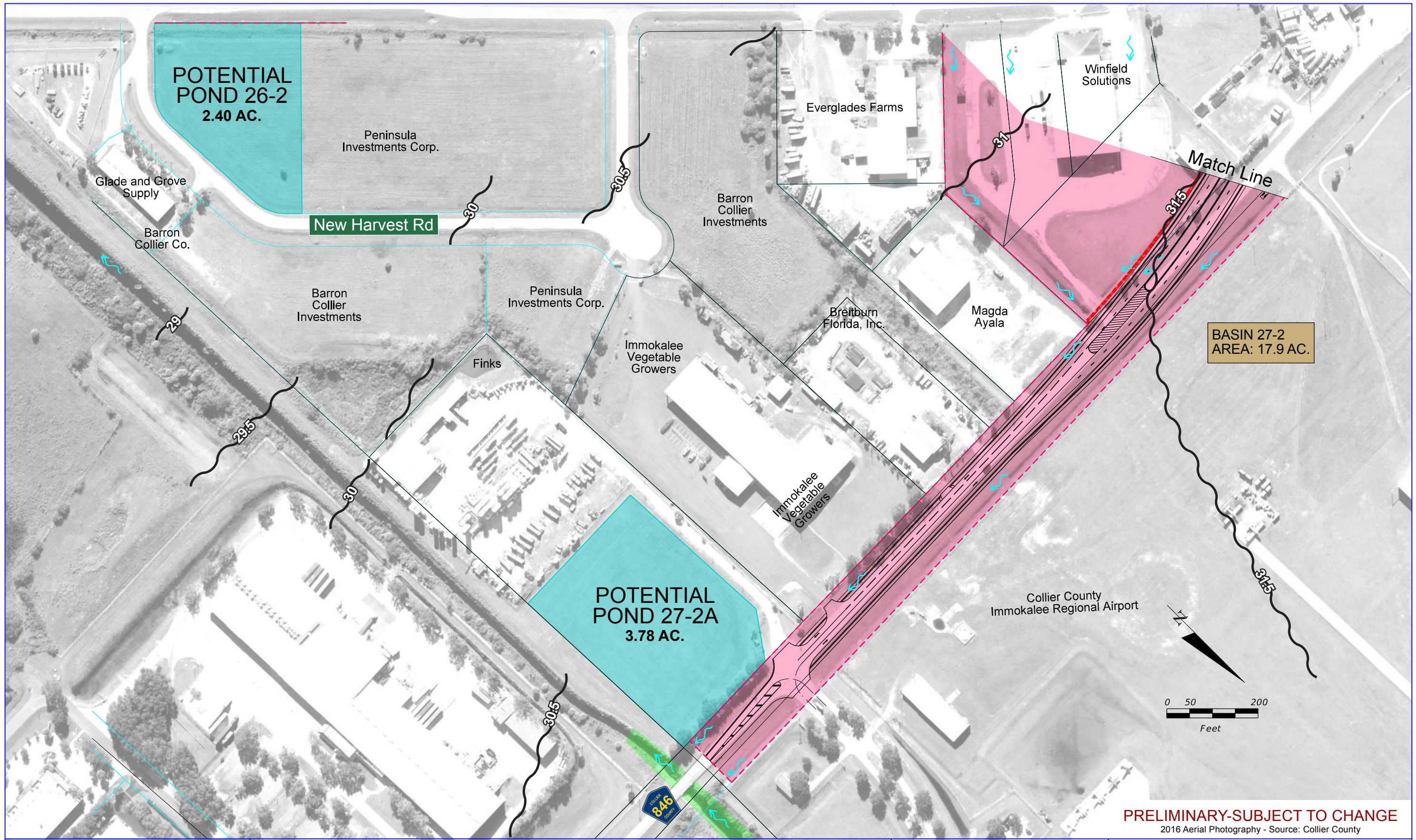
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-56**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

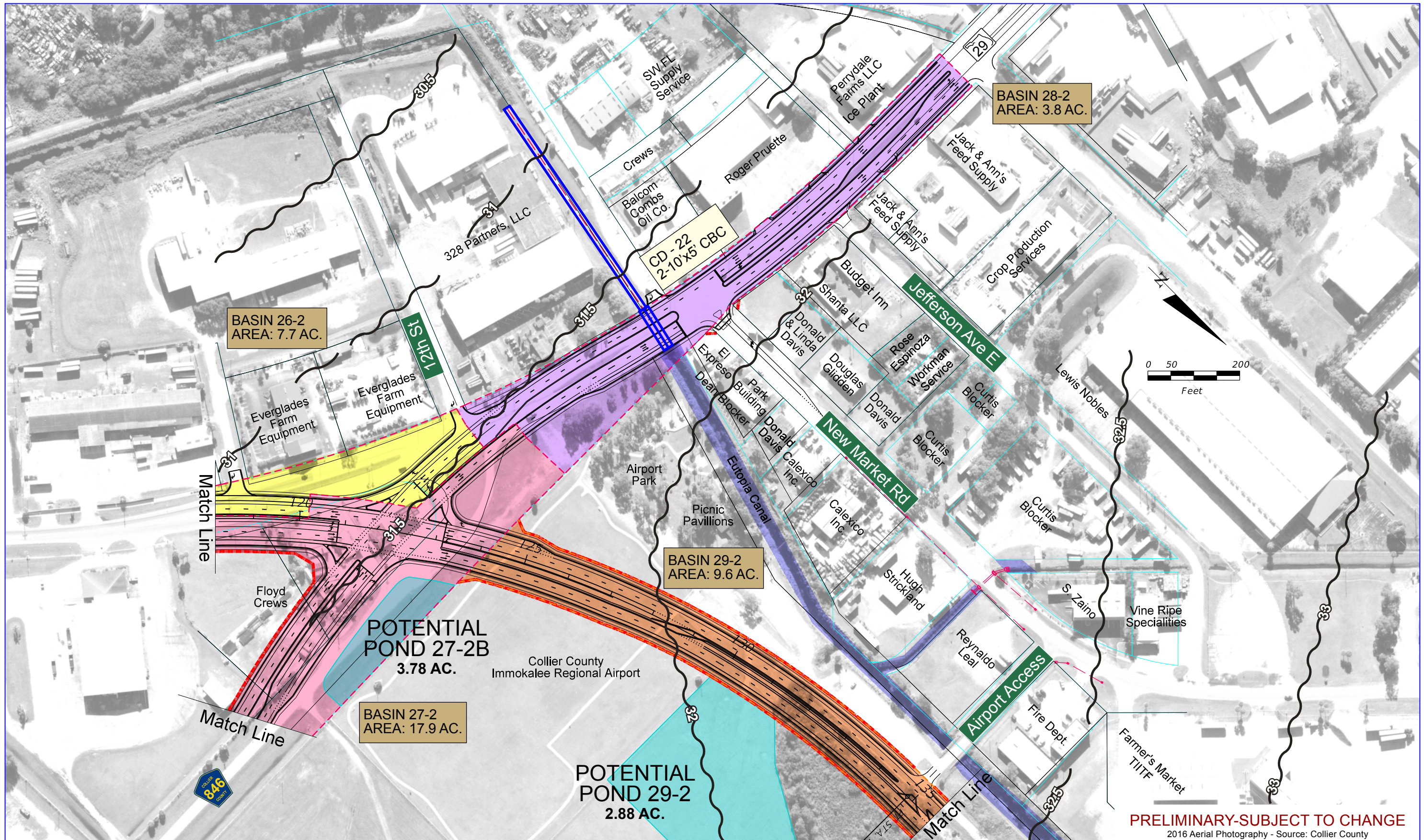
Legend

Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-57**



BASIN 26-2
AREA: 7.7 AC.

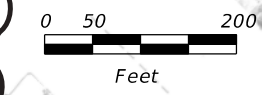
BASIN 28-2
AREA: 3.8 AC.

CD - 22
2-10'x5' CBC

BASIN 29-2
AREA: 9.6 AC.

POTENTIAL
POND 27-2B
3.78 AC.
BASIN 27-2
AREA: 17.9 AC.

POTENTIAL
POND 29-2
2.88 AC.



PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

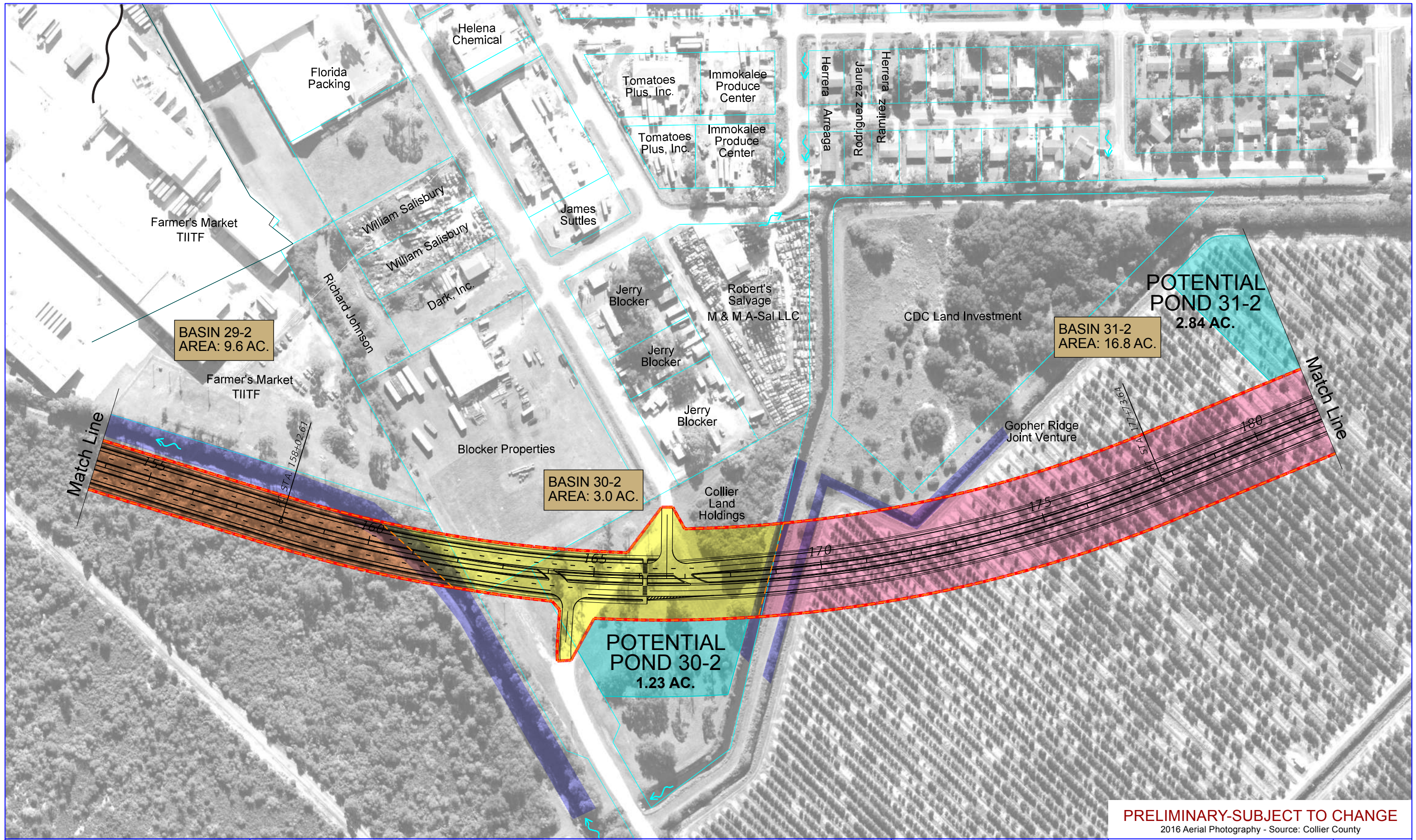
SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

**Proposed
Drainage Maps
Alternative #2**

**Sheet
No.
B-58**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

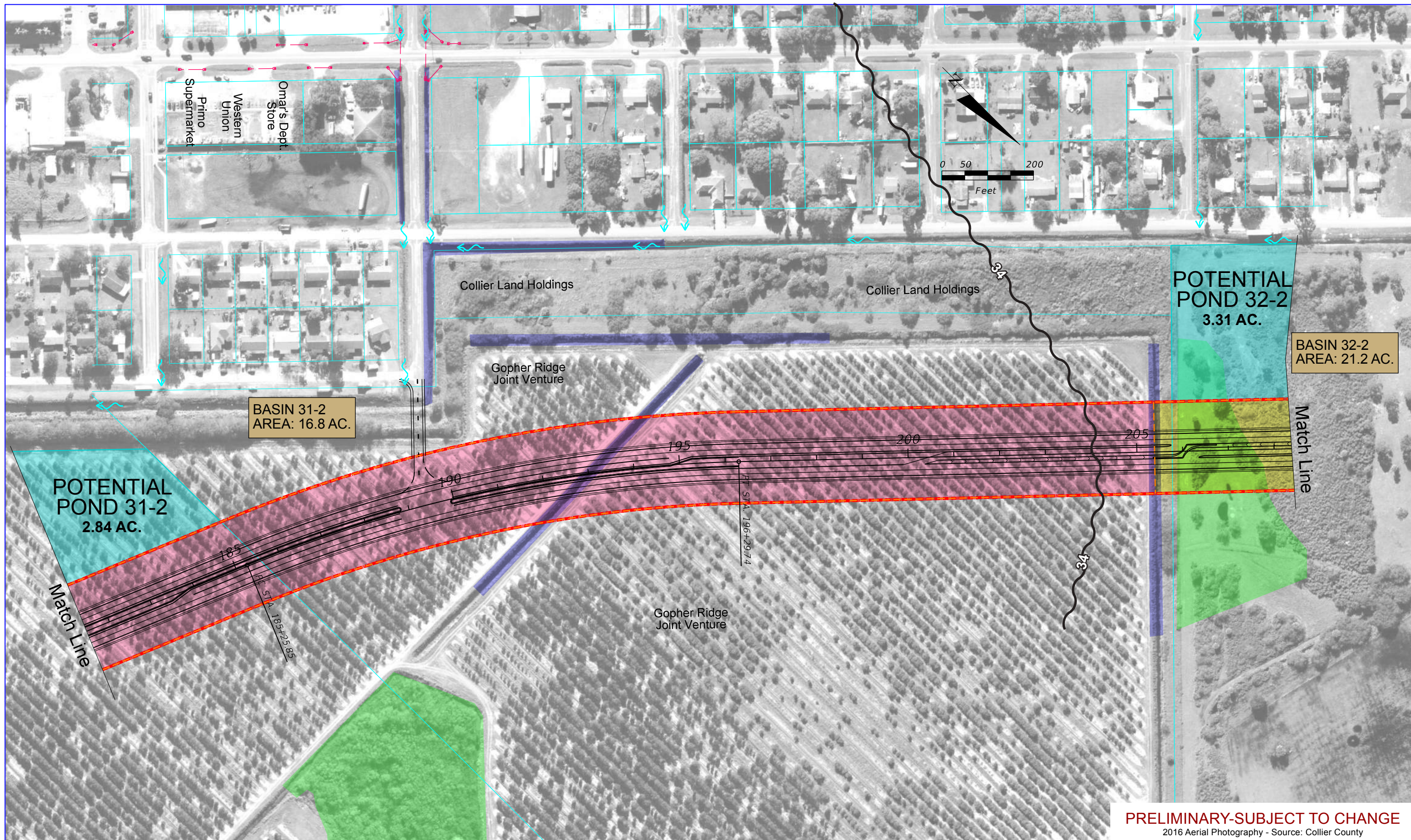
Legend

Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-59**



PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

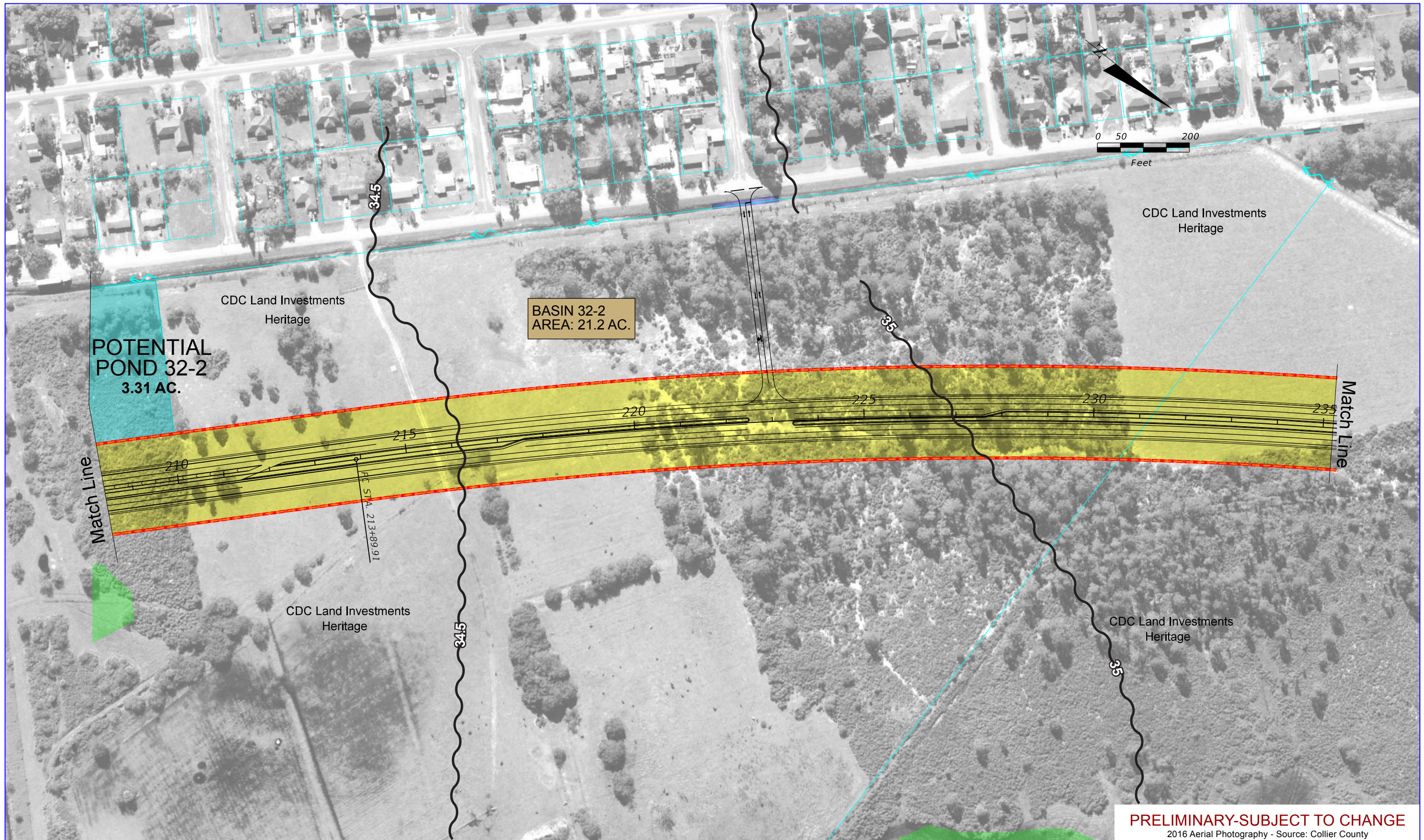
SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

**Proposed
Drainage Maps
Alternative #2**

**Sheet
No.
B-60**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

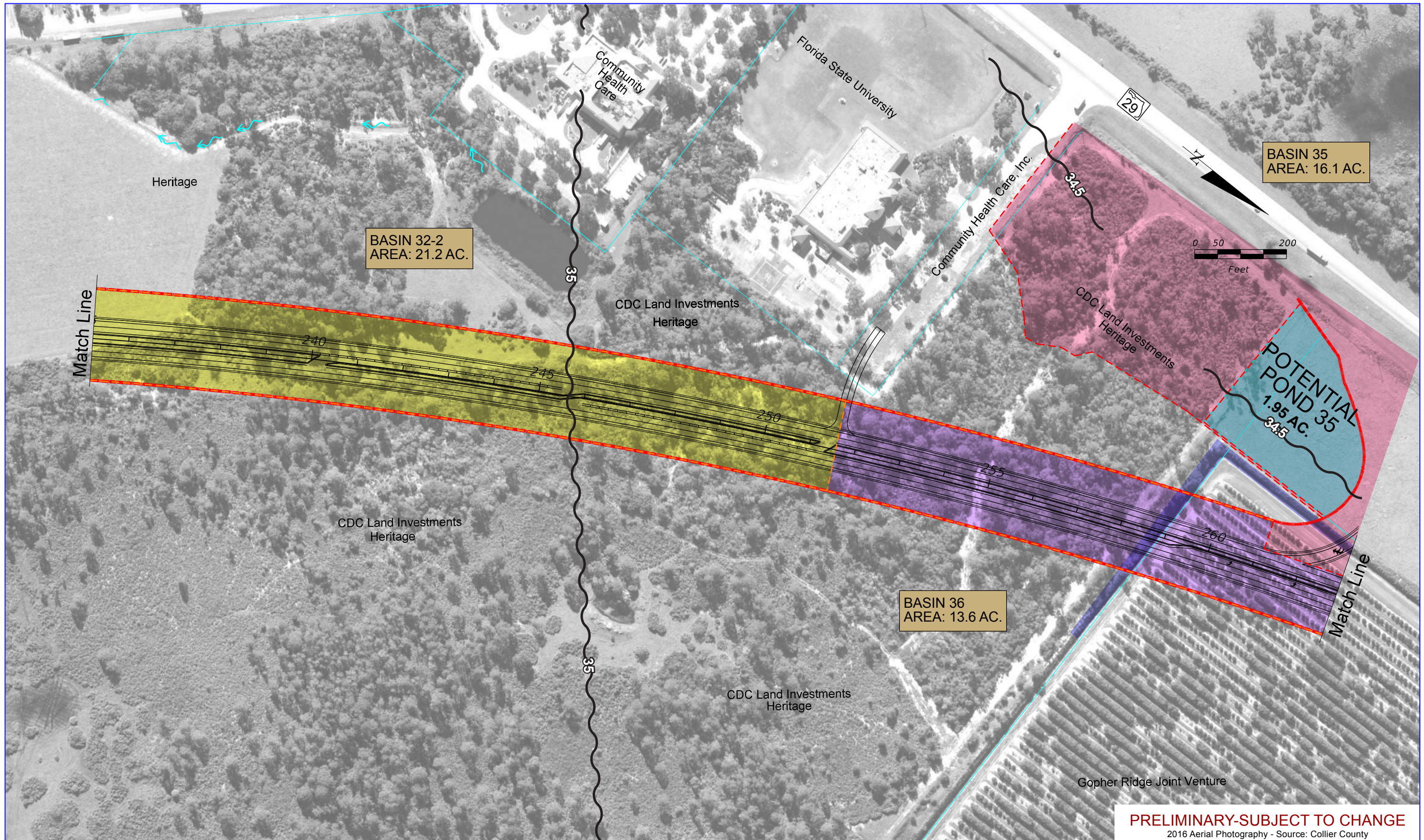
Legend

	Existing Right-of-Way		Wetlands
	Property Lines		Potential Pond
	Proposed Right-of-Way		Potential Floodplain
	Flow Arrow		Barron Canal
	Cross Drain		Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-61**



PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

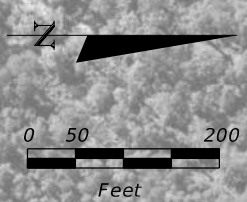
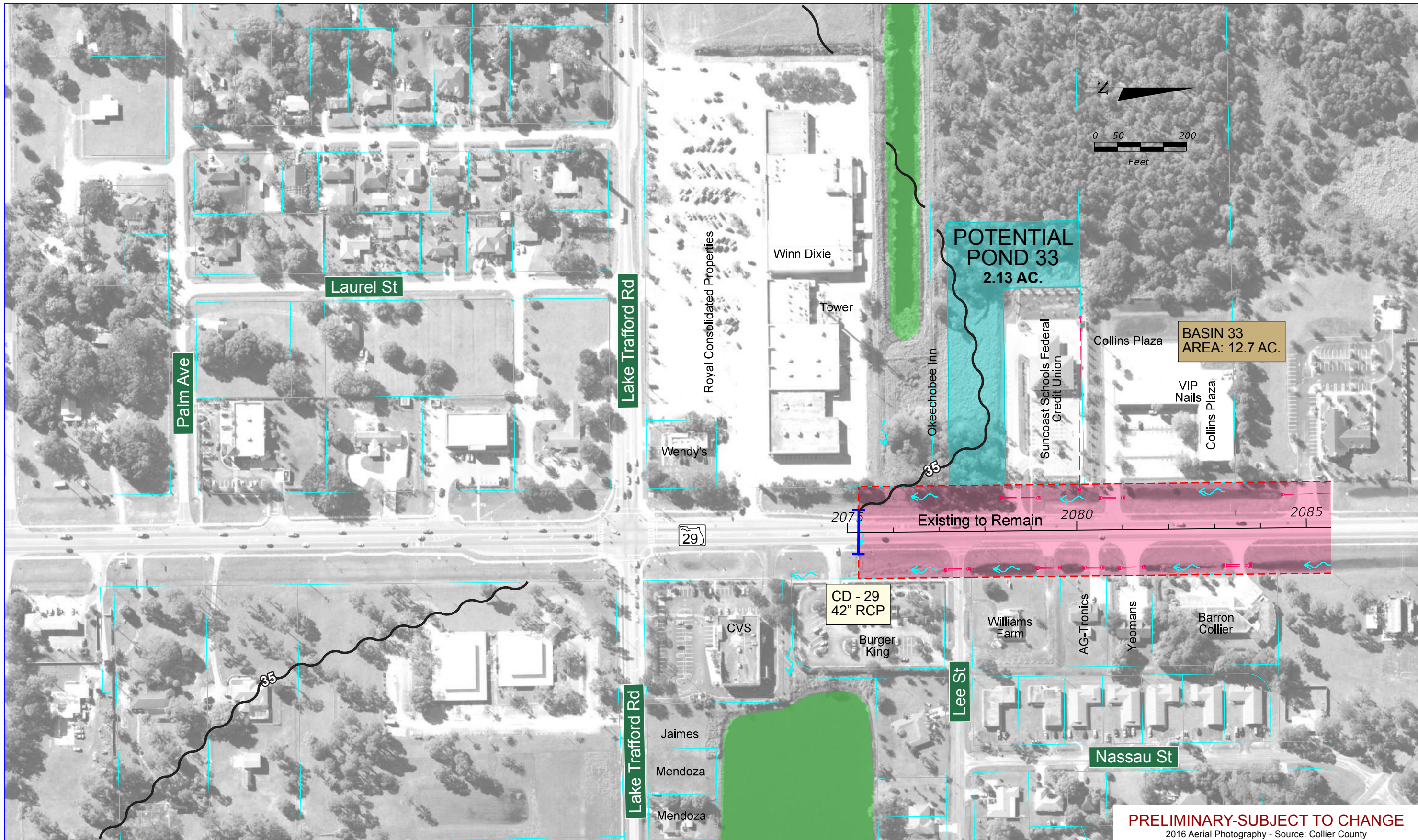
SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - ↗ Flow Arrow
 - Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

**Proposed
Drainage Maps
Alternative #2**

**Sheet
No.
B-62**



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

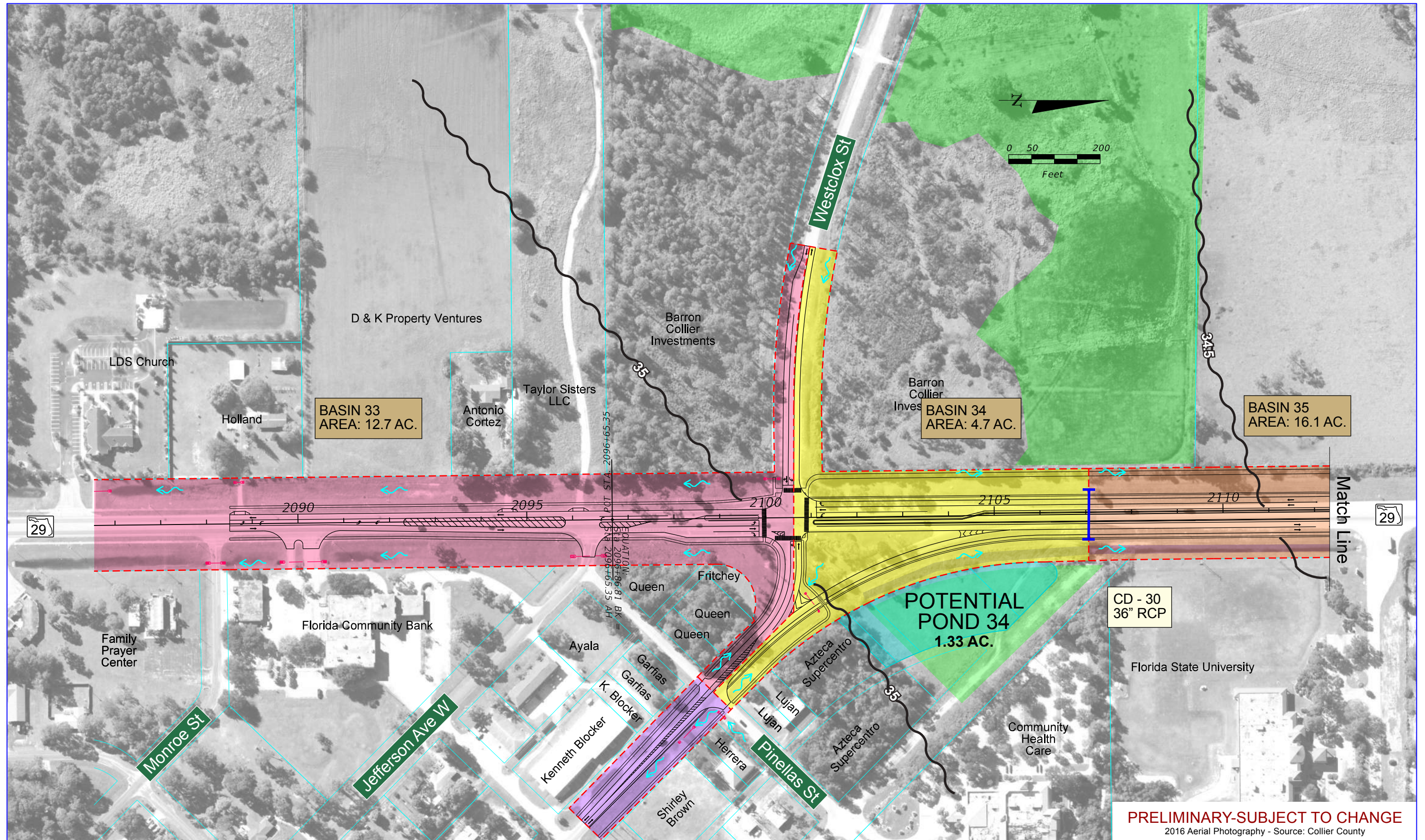
- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - ~> Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-63**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

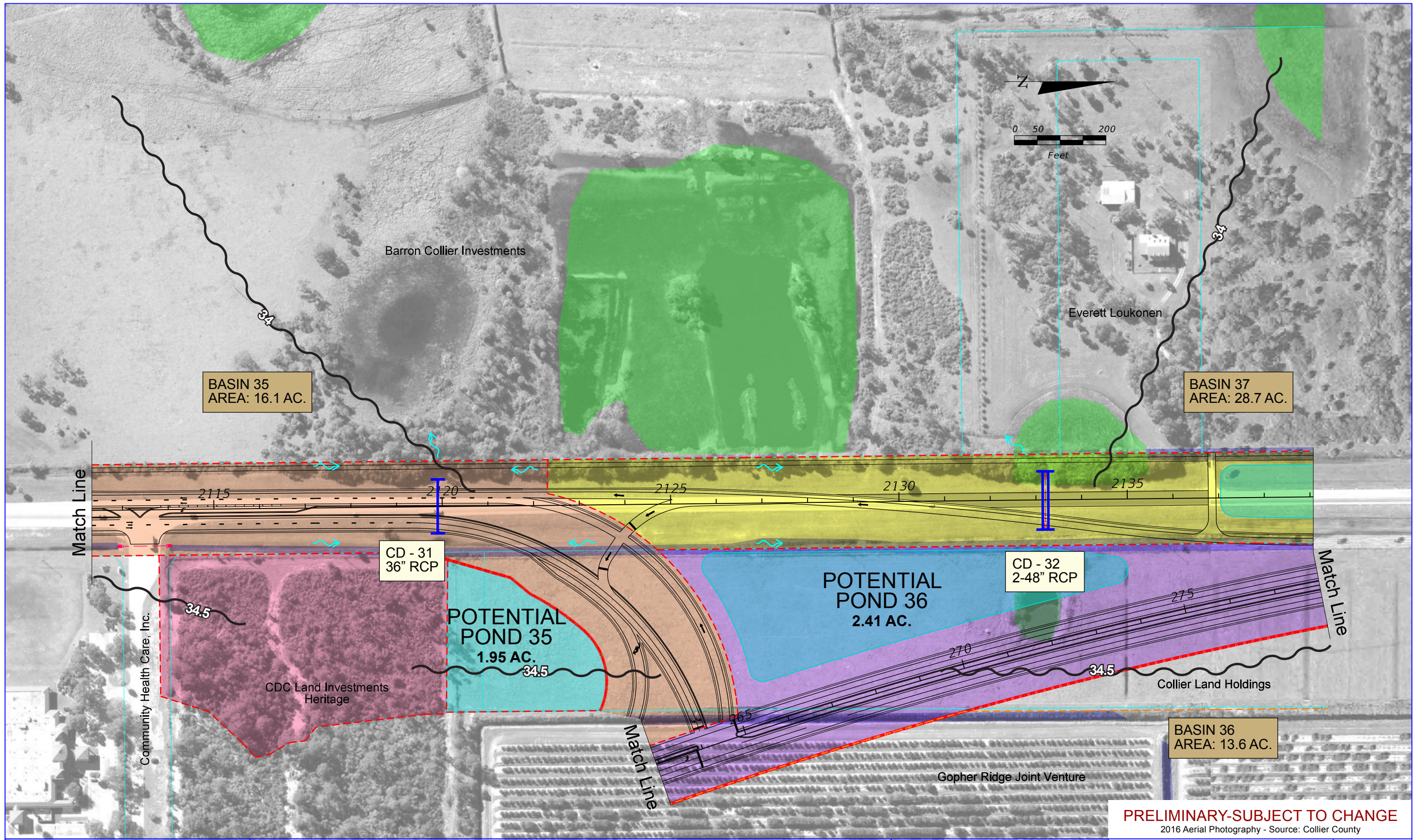
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-64**



BASIN 35
AREA: 16.1 AC.

BASIN 37
AREA: 28.7 AC.

CD - 31
36" RCP

CD - 32
2-48" RCP

POTENTIAL
POND 35
1.95 AC.

POTENTIAL
POND 36
2.41 AC.

BASIN 36
AREA: 13.6 AC.

PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

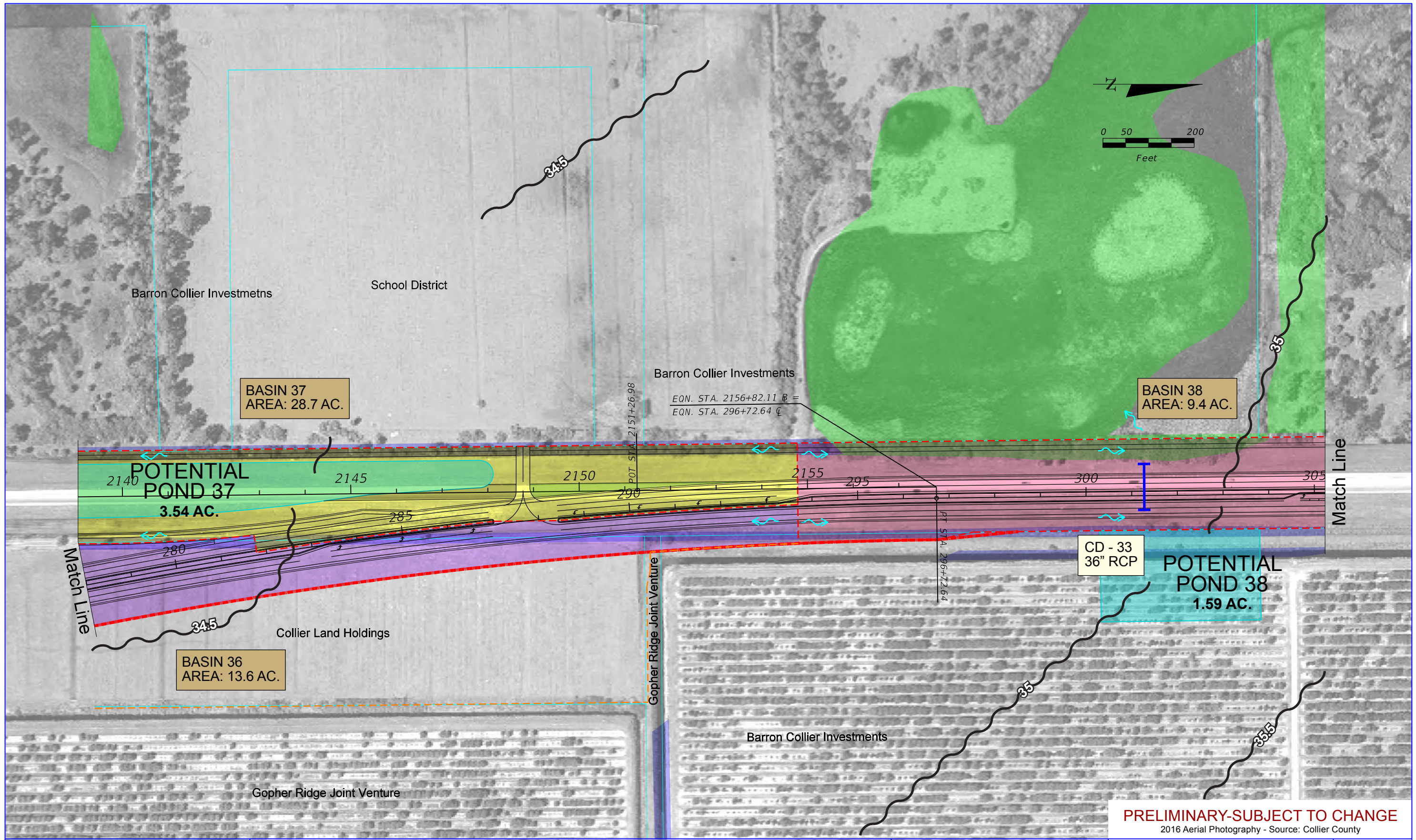
- Legend**
- Existing Right-of-Way
 - Property Lines
 - Proposed Right-of-Way
 - Flow Arrow
 - Cross Drain

- Wetlands
- Potential Pond
- Potential Floodplain
- Barron Canal
- Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

**Proposed
Drainage Maps
Alternative #2**

**Sheet
No.
B-65**



SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

Legend

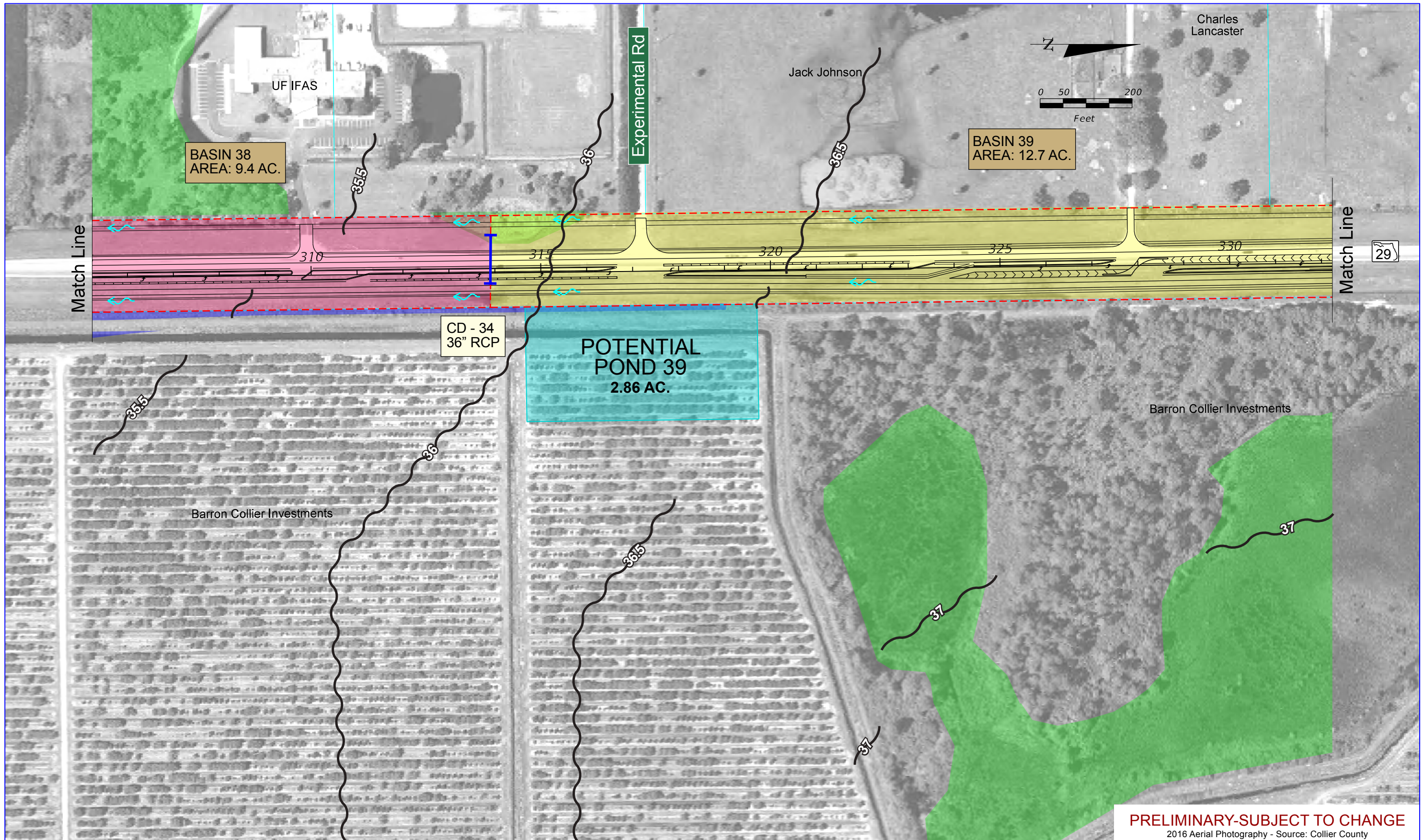
Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-66**

PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

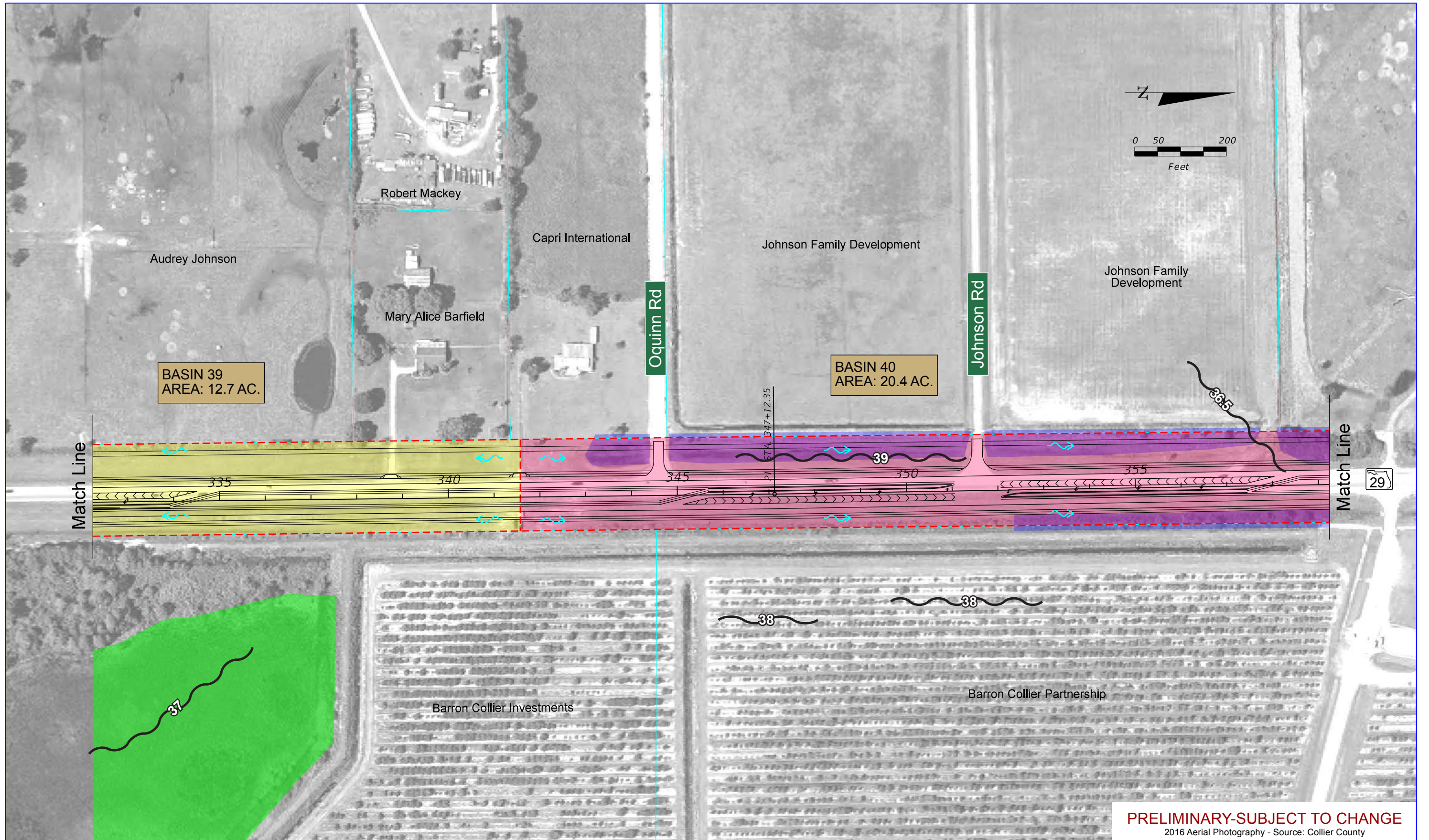
SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-67**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

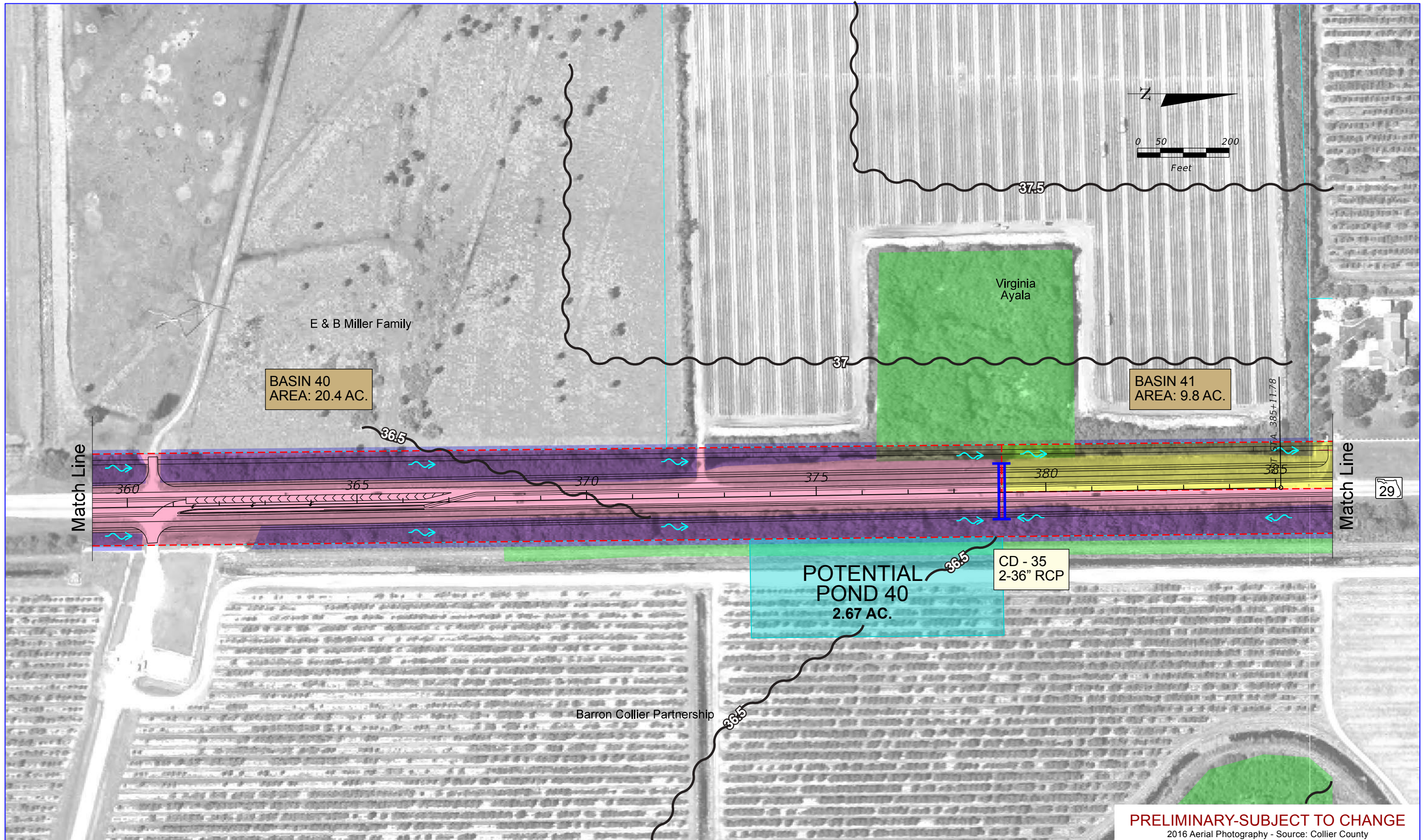
Legend

Existing Right-of-Way	Wetlands
Property Lines	Potential Pond
Proposed Right-of-Way	Potential Floodplain
Flow Arrow	Barron Canal
Cross Drain	Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-68**



PRELIMINARY-SUBJECT TO CHANGE
 2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
 From Oil Well Road to SR 82
 FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

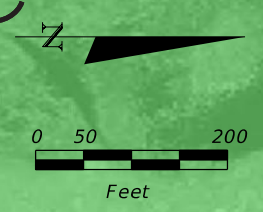
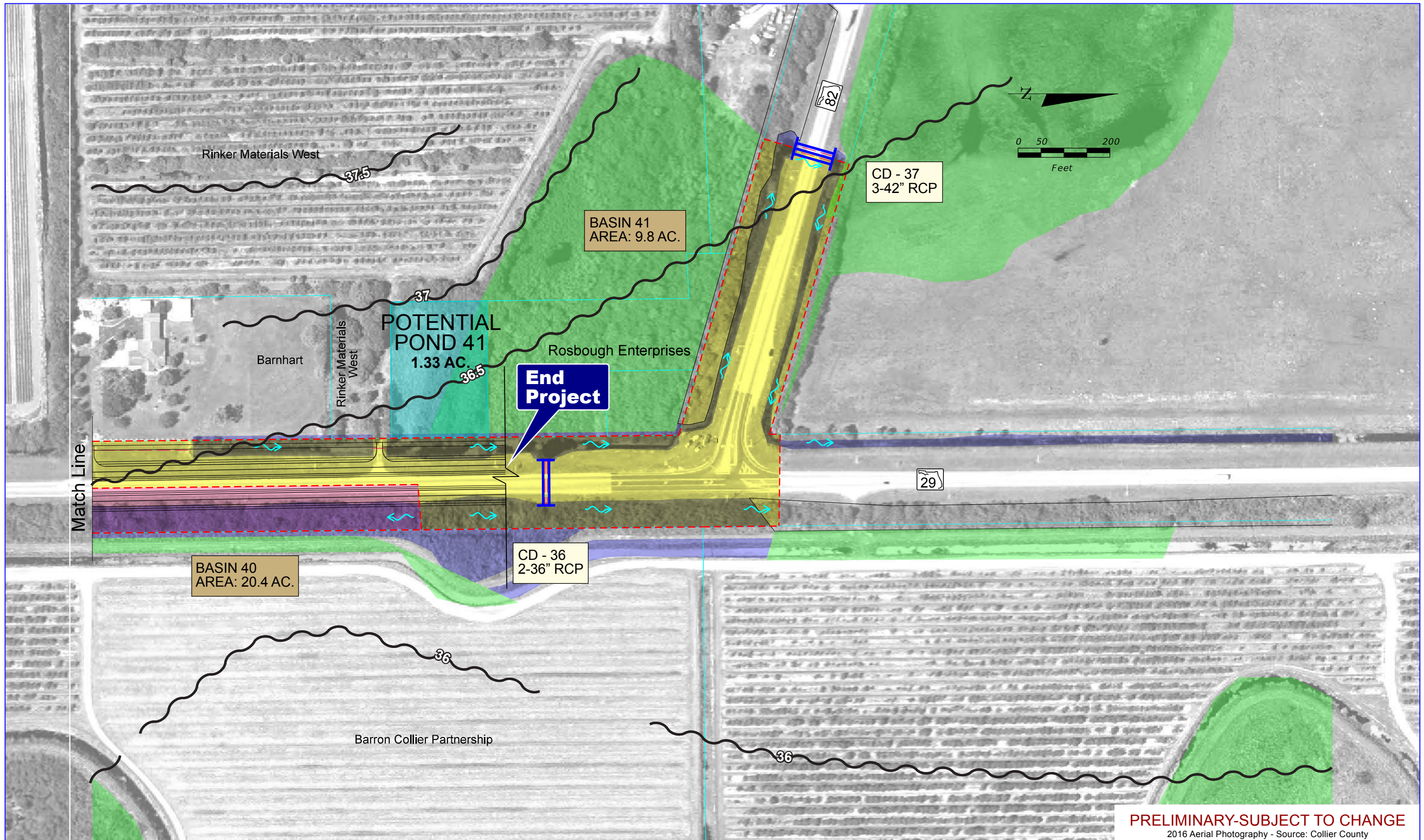
Legend

 Existing Right-of-Way	 Wetlands
 Property Lines	 Potential Pond
 Proposed Right-of-Way	 Potential Floodplain
 Flow Arrow	 Barron Canal
 Cross Drain	 Base Flood Elevation

H. W. Lochner, Inc.
 4350 W. Cypress St., Suite 800
 Tampa, Florida 33607
 FBPR Certificate of Auth. #894

**Proposed
 Drainage Maps
 Alternative #2**

**Sheet
 No.
 B-69**



End Project

Match Line

PRELIMINARY-SUBJECT TO CHANGE
2016 Aerial Photography - Source: Collier County

SR 29 PD&E Study
From Oil Well Road to SR 82
FPID NO: 417540 1 22 01 / FAP NO: 3911 022P

- Legend**
- Existing Right-of-Way
 - Property Lines
 - - - Proposed Right-of-Way
 - Flow Arrow
 - | Cross Drain
 - Wetlands
 - Potential Pond
 - Potential Floodplain
 - Barron Canal
 - ~ Base Flood Elevation

H. W. Lochner, Inc.
4350 W. Cypress St., Suite 800
Tampa, Florida 33607
FBPR Certificate of Auth. #894

**Proposed
Drainage Maps
Alternative #2**

**Sheet
No.
B-70**

Appendix C
FEMA FIRMS

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on this map represent numerical height values. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are not presented in the Community Flood Profile Tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Florida State Plane east zone (FIPSZONE 0501) horizontal datum was NAD 83. Differences in datum, spheroid, projection or state plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NADSG12
National Geodetic Survey
SSMC-3, #9202
1215 East-West Highway
Beltway Station, MD 20745-5508

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

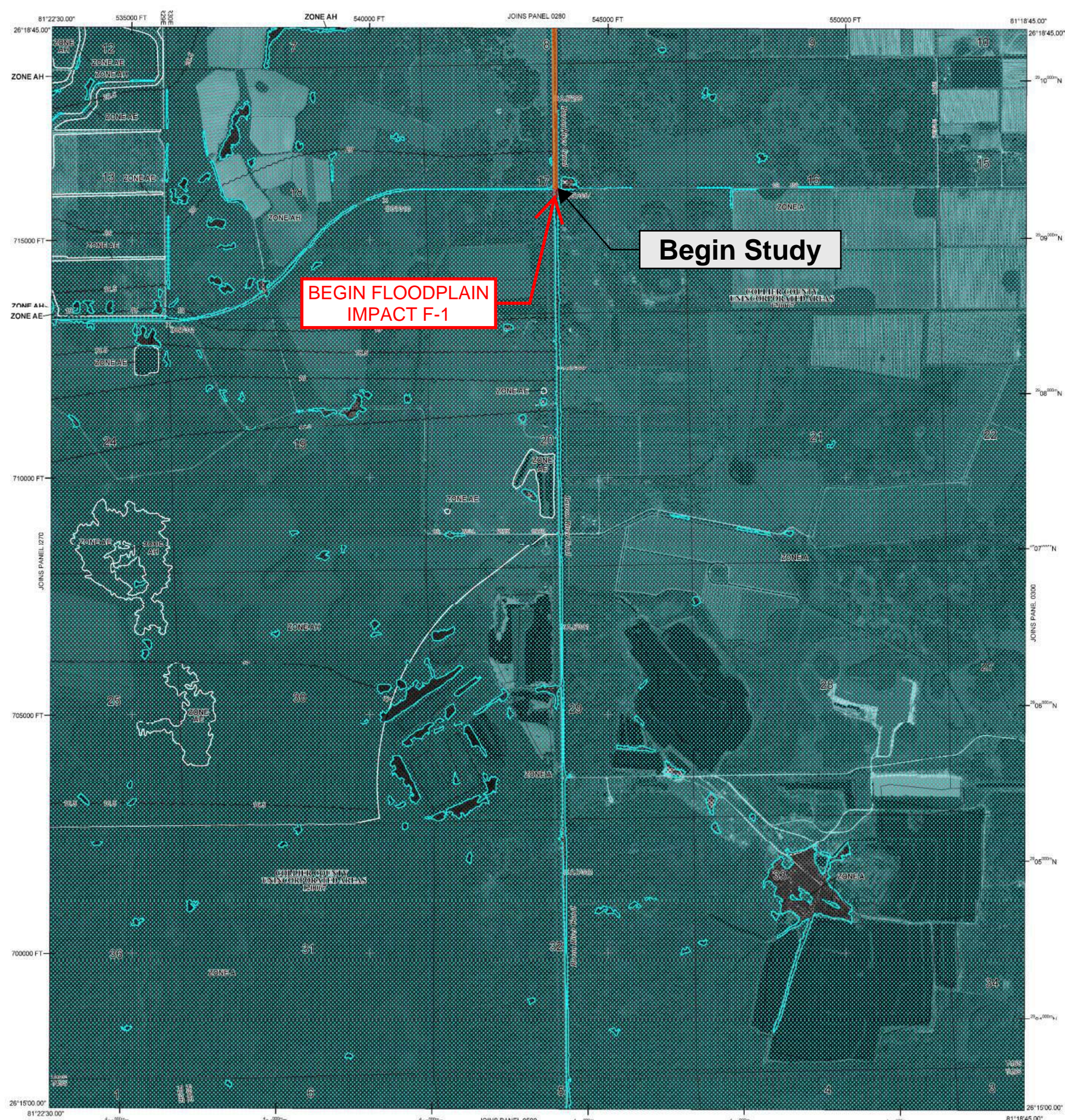
Base map information shown on this FIRM was derived from multiple sources. This information was compiled from Collier County Government (2003, 2008, 2009), U.S. Bureau of Land Management (2005), 3001, Inc. (2004), NOAA National Geodetic Survey (2005), U.S. Geological Survey (2005), and other sources.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels, community map repository addresses, and a listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Information eXchange may also be reached by Fax at 1-800-368-9620 and its website at <http://www.msc.fema.gov>.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov>.



BEGIN FLOODPLAIN IMPACT F-1

Begin Study

LEGEND

- SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
- The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AV, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
- ZONE A** No Base Flood Elevations determined.
- ZONE AE, AE** Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE
- The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- OTHER AREAS
- ZONE D** Areas determined to be outside the 0.2% annual chance floodplain. Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
- OTHERWISE PROTECTED AREAS (OPAs)
- CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary of Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Base Flood Elevation line and value, elevation in feet*
- (EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*
- * Referenced to the North American Vertical Datum of 1988 (NAVD 88)
- Cross section line
- Transit line
- 91°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4790000N 1000-meter Universal Transverse Mercator grid, zone 17
- 6000000 FT 5000-foot grid; Florida State Plane coordinate system, east zone (FIPSZONE 0501), Lambert Conformal Conic
- DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile
- MAP REPOSITORY:**
Refer to Map Repositories list on Map Index
- EFFECTIVE DATE OF MAJOR FIRM FLOOD INSURANCE RATE MAP:**
November 17, 2005
- EFFECTIVE DATES OF REVISIONS TO THIS PANEL:**
May 16, 2012 to update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to change zone designations, to update roads and road names, to update the effects of wave action, to reflect revised shoreline, to reflect updated topographic information, and to modify Coastal Barrier Resources Areas and Otherwise Protected Areas.
- For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
- To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

PANEL 0290H

FIRM
FLOOD INSURANCE RATE MAP
COLLIER COUNTY,
FLORIDA
AND INCORPORATED AREAS

PANEL 290 OF 1225
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY	NUMBER	PANEL	SUFFIX
COLLIER COUNTY	12067	0290	H

Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for

MAP NUMBER
12021C0290H
MAP REVISED
MAY 16, 2012
Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that the FIRM represents numerical elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Florida State Plane east zone (FIPSZONE 9901). The **horizontal datum** was NAD 83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the national geodetic vertical datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSMDC-3, #0232
1010 Coast View Highway
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

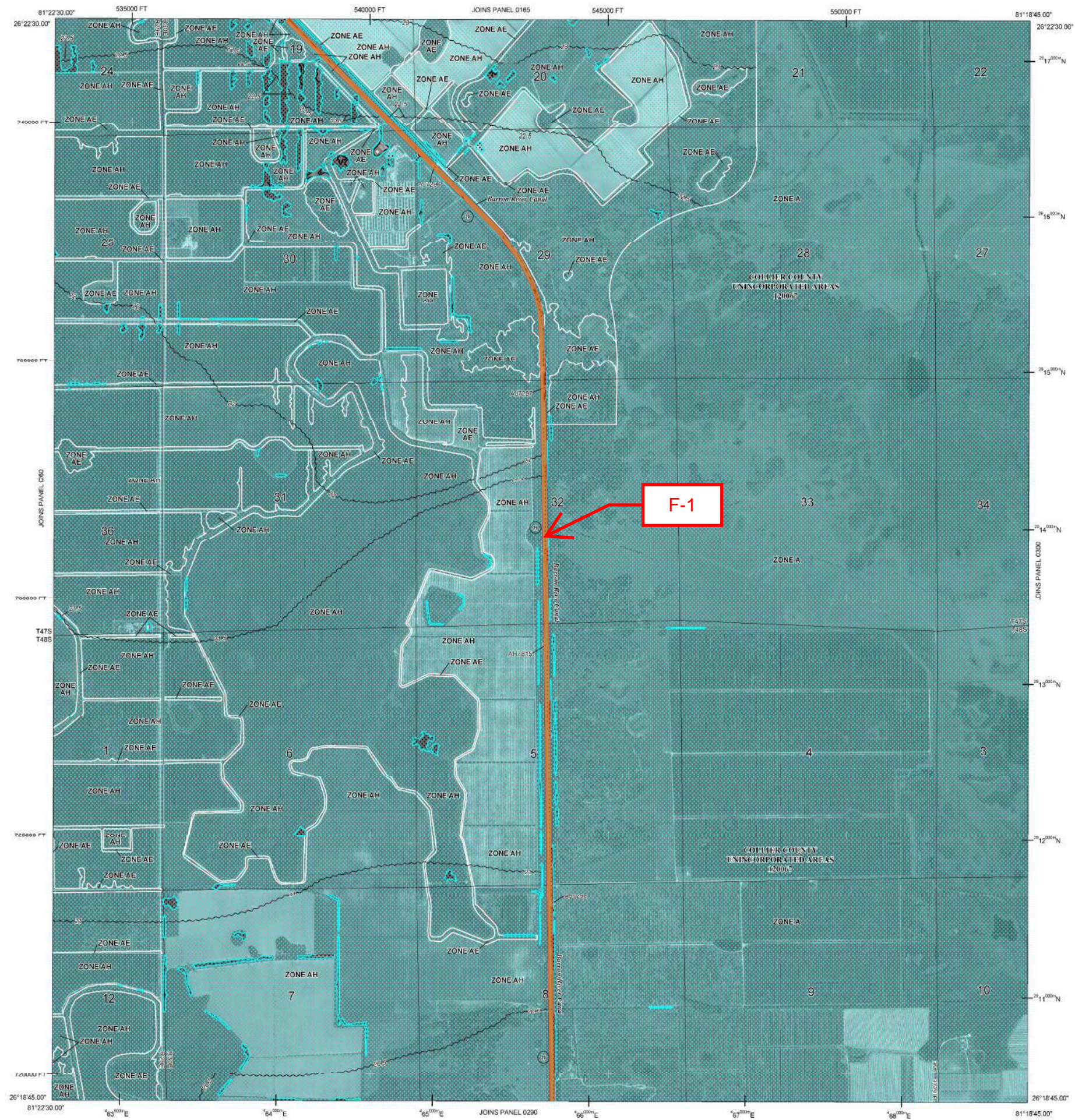
Base map information shown on this FIRM was derived from multiple sources. This information was compiled from Collier County Government (2003, 2008, 2009), U.S. Bureau of Land Management (2005, 2001, Inc. (2004), NOAA/National Geodetic Survey (2006), and U.S. Geological Survey (2009) at a scale of 1:24,000.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or disannexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **map index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Information eXchange** at 1-877-FEMA MAP (1-877-336-2627) for information on available products associated with this FIRM. Available products may include previously issued editions of Map Documents, Flood Insurance Study reports, and/or digital versions of this map. The FEMA Map Information eXchange may also be reached by Fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov>.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, AV, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE, AE Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is greater flood.

ZONE AR9 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE AV Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE D Areas determined to be outside the 0.2% annual chance floodplain. Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Base Flood Elevation line and value, elevation in feet* (EL 987)
- Base Flood Elevation value where uniform within zone; elevation in feet
- * Referenced to the North American Vertical Datum of 1988 (NAVD 88)
- Cross section line
- Transect line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 1000-meter Universal Transverse Mercator grid value, zone 17
- 5000-foot grid value; Florida State Plane coordinate system, east zone (FIPSZONE 9901); Lambert Conformal Conic projection
- Bench mark (see explanation in Notes to Users section of this FIRM panel)
- River Mile
- MAP REPOSITORY: Refer to Map Repositories list on Map Index
- EFFECTIVE DATE OF REVISIONS TO THIS PANEL: FLOOD INSURANCE RATE MAP: November 17, 2005
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL: May 16, 2012 to update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to change zone designations, to update roads and road names, to update the effects of wave action, to reflect revised shoreline, to reflect updated topographic information, and to modify Coastal Barrier Resources Areas and Otherwise Protected Areas.
- For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
- To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET
300 0 300 600 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0280H

FIRM FLOOD INSURANCE RATE MAP

COLLIER COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 280 OF 1225
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY	NUMBER	PANEL	SUFFIX
COLLIER COUNTY	120067	0280	H

Notice to User: The Map Numbers shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for

MAP NUMBER 12021C0280H

MAP REVISED MAY 16, 2012

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent vertical height without reference to the datum. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are not provided for the Community Flood Hazard Areas in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Florida State Plane east zone (FIPSZONE 9901). The horizontal datum was NAD 83. CRS 1983 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geospatial Intelligence Agency (NGS) datum and the National Vertical Datum of 1988, visit the National Geospatial Survey website at <http://www.ngs.noaa.gov/> or contact the National Geospatial Survey at the following address:

NGS Information Services
 NOAA, NANS12
 National Geospatial Survey
 SSMC-3, #9202
 1916 East West Highway
 Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geospatial Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov/>.

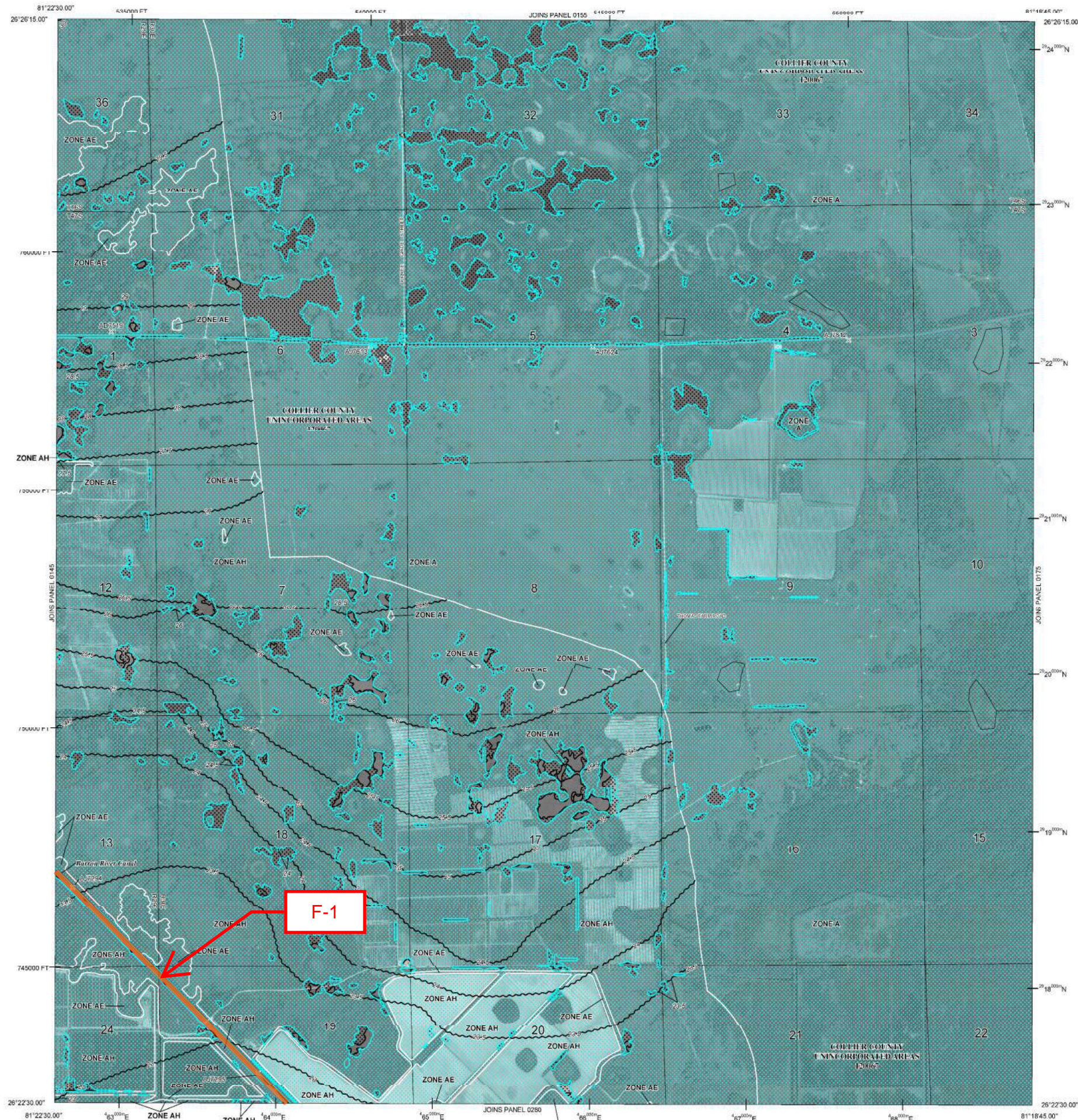
Base map information shown on this FIRM was derived from multiple sources. This information was compiled from Collier County Government (2003, 2008, 2009), U.S. Bureau of Land Management (2005, 2001, 1994, 1984), NOAA National Geospatial Survey (2008), and U.S. Geological Survey (2009) at a scale of 1:24,000.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed Map Index for a complete map of the county showing the layout of map panels, community map repository addresses, and a listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2637) for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Information eXchange may also be reached by Fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov/>.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2637) or visit the FEMA website at <http://www.fema.gov/>.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
 The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AV, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE, AE Base Flood Elevations determined. Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is greater flood.

ZONE AV Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE
 The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS
ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS
ZONE X Areas determined to be outside the 0.2% annual chance floodplain. Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)
 CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
 0.2% annual chance floodplain boundary
 Floodway boundary
 Zone boundary
 Zone D boundary
 CBRS and OPA boundary
 Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities
 Base Flood Elevation line and value; elevation in feet*
 Base Flood Elevation value where uniform within zone; elevation in feet

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

— A — A — Cross section line
 ———— Transient line
 97°07'30" W, 26°22'30" N Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
 4750000 N 1000-meter Universal Transverse Mercator grid value, zone 17
 600000 FT 5000-foot grid value; Florida State Plane coordinate system, east zone (FIPSZONE 9901); Lambert, Conformal Conic projection
 DX5510 Bench mark (see explanation in Notes to Users section of this FIRM page)
 M.1.5 River Mile

MAP REPOSITORY
 Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF REVISIONS TO THIS PANEL
 November 17, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
 May 16, 2012 - to update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to change zone designations, to update roads and road names, to update the effects of wave action, to reflect revised shoreline, to reflect updated topographic information, and to modify Coastal Barrier Resources Areas and Otherwise Protected Areas.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-9620.

MAP SCALE 1" = 1000'
 500 0 1000 2000 FEET
 300 0 300 600 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL D165H

FIRM
FLOOD INSURANCE RATE MAP
COLLIER COUNTY, FLORIDA
AND INCORPORATED AREAS

PANEL 165 OF 1225
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
 COMMUNITY NUMBER PANEL SUFFIX
 COLLIER COUNTY 120087 0165 H

Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the National Flood Insurance Program.

MAP NUMBER 12021C0165H
MAP REVISED MAY 16, 2012
 Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should not create their own BFEs or floodway data. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are not shown for the community of Immokalee, Florida, as shown in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Florida State Plane east zone (FIPSZONE 9901). The horizontal datum was NAD 83. CRS 1983 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Survey datum of 1988 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services
 NOAA, NAD83/2
 National Geodetic Survey
 SSMC-3, #9202
 1916 East West Highway
 Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov/>

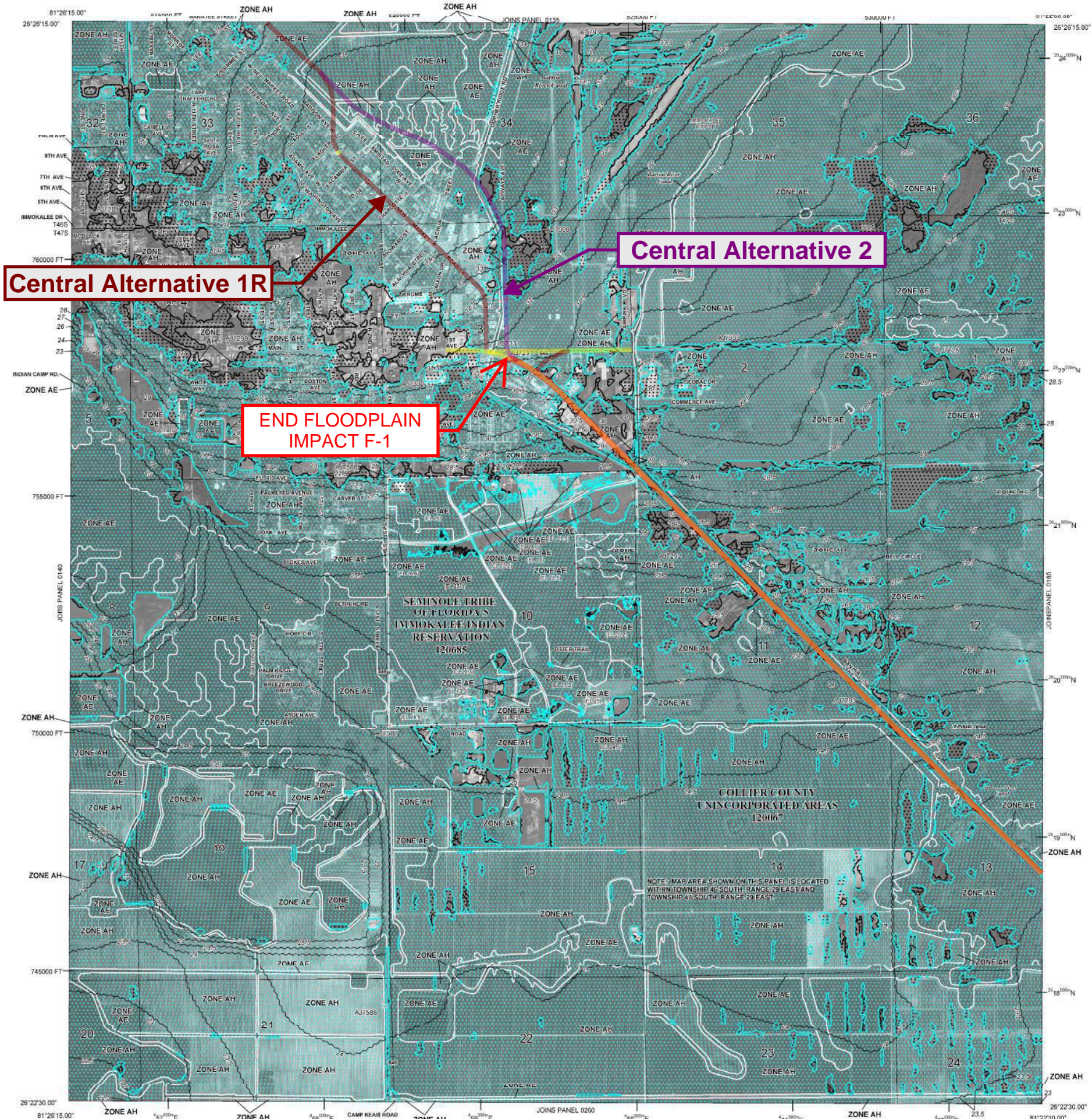
Base map information shown on this FIRM was derived from multiple sources. This information was compiled from Collier County Government (2003, 2005, 2009), U.S. Bureau of Land Management (2006, 2007), (re: 2004), NOAA National Oceanic and Atmospheric Administration (2006, 2007), (re: 2004), NOAA National Oceanic and Atmospheric Survey (2008), and U.S. Geological Survey (2009) at a scale of 1:24,000.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or deannexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Information eXchange may also be reached by Fax at 1-800-358-9620 and its website at <http://www.fema.gov/>

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/>



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE, AE Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain. Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different base flood elevations, flood depths or flood velocities
- Base Flood Elevation line and value; elevation in feet* (EL 987)
- Base Flood Elevation value where uniform within zone; elevation in feet

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

Cross section line

Transect line

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)

1000-meter Universal Transverse Mercator grid value, zone 17

500-foot grid value; Florida State Plane coordinate system, east zone (FIPSZONE 9901); Lambert, Conformal Conic projection

Bench mark (see explanation in Notes to Users section of this FIRM page)

M.1.5 River Mile

MAP REPOSITORY
 Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF REVISIONS TO THIS PANEL
 FLOOD INSURANCE RATE MAP
 November 17, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
 May 16, 2012 - to update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to change zone designations, to update roads and road names, to update the effects of wave action, to reflect revised shorelines, to reflect updated topographic information, and to modify Coastal Barrier Resources Areas and Otherwise Protected Areas.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000
 300 0 300 600
 FEET
 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0145H

FIRM
FLOOD INSURANCE RATE MAP
COLLIER COUNTY, FLORIDA
AND INCORPORATED AREAS

PANEL 145 OF 1225
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
COLLIER COUNTY	120067	0145	H
SEMINOLE TRIBE OF FLORIDA	120685	0145	H

Notes to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the National Flood Insurance Program.

MAP NUMBER 12021C0145H
MAP REVISED MAY 16, 2012
 Federal Emergency Management Agency

NOTES TO CROSS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that these BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that elevations shown in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Florida State Plane east zone (FIPSZONE 9901). The horizontal datum was NAD 83 (GRS1980) spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Survey Vertical Datum of 1988 (NAVD 88) and the National Geodetic Survey Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NAD83
National Geodetic Survey
SSMDC-5, 80212
1416 Coast West Highway
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (201) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

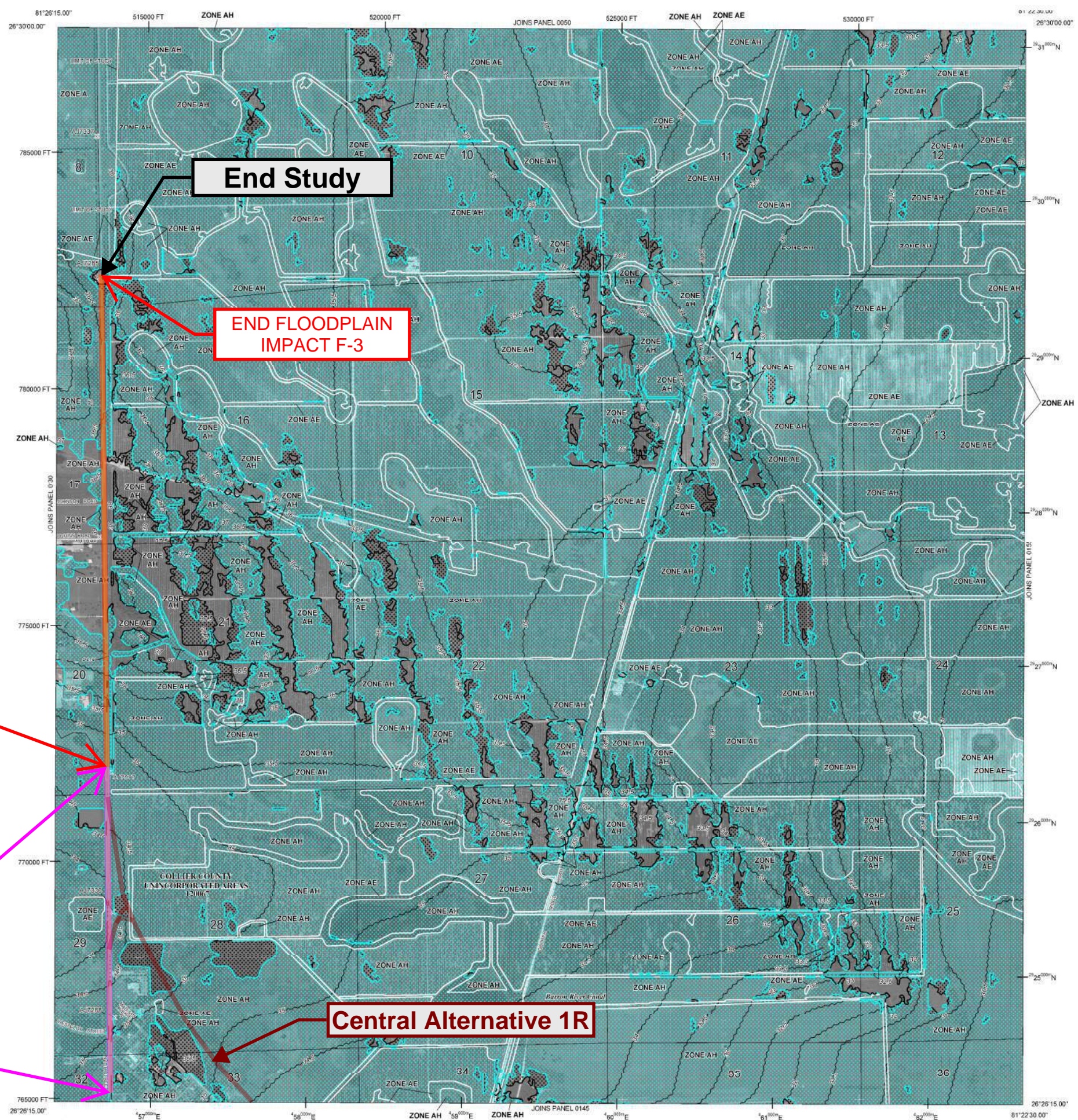
Base map information shown on this FIRM was derived from multiple sources. This information was compiled from Collier County Government (2003, 2008, 2009), U.S. Bureau of Land Management (2005, 2001, etc.), NOAA/National Geodetic Survey (2006), and U.S. Geological Survey (2009) at a scale of 1:24,000.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please note that this map is not a survey map. It is a map of an existing situation showing the layout of map panels; community map repository addresses; and a listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the FEMA Map Information eXchange at 1-877-FEMA MAP (1-877-336-2627) for information on available products associated with this FIRM. Available products may include printed hard copies of Map Changes, Flood Insurance Study reports, and/or digital versions of this map. The FEMA Map Information eXchange may also be reached by Fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov>.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov>.



End Study

END FLOODPLAIN IMPACT F-3

BEGIN FLOODPLAIN IMPACT F-3

END FLOODPLAIN IMPACT F-2

Central Alternative 1R

BEGIN FLOODPLAIN IMPACT F-2

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, AV, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE, AV Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is greater flood.

ZONE AV Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE D Areas determined to be outside the 0.2% annual chance floodplain. Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary

Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
Base Flood Elevation line and value; elevation in feet*
(EL 987)
Base Flood Elevation value where uniform within zone; elevation in feet

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

—○—○— Cross section line
--- Transient line

97°07'30" 32°22'30"
42°75'00"N
1000-meter Universal Transverse Mercator grid value, zone 17
600000 FT
DX5510
Bench mark (see explanation in Notes to Users section of this FIRM panel)
M.15
River Mile

MAP REPOSITORY
Refer to Map Repositories list on Map Index

REVISION HISTORY

FLOOD INSURANCE RATE MAP
November 17, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
May 16, 2012 - to update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to change zone designations, to update roads and road names, to update the effects of wave action, to reflect revised shoreline, to reflect updated topographic information, and to modify Coastal Barrier Resources Areas and Otherwise Protected Areas.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000
300 0 300 600
FEET
METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0135H

FIRM
FLOOD INSURANCE RATE MAP
COLLIER COUNTY, FLORIDA
AND INCORPORATED AREAS

PANEL 135 OF 1225
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

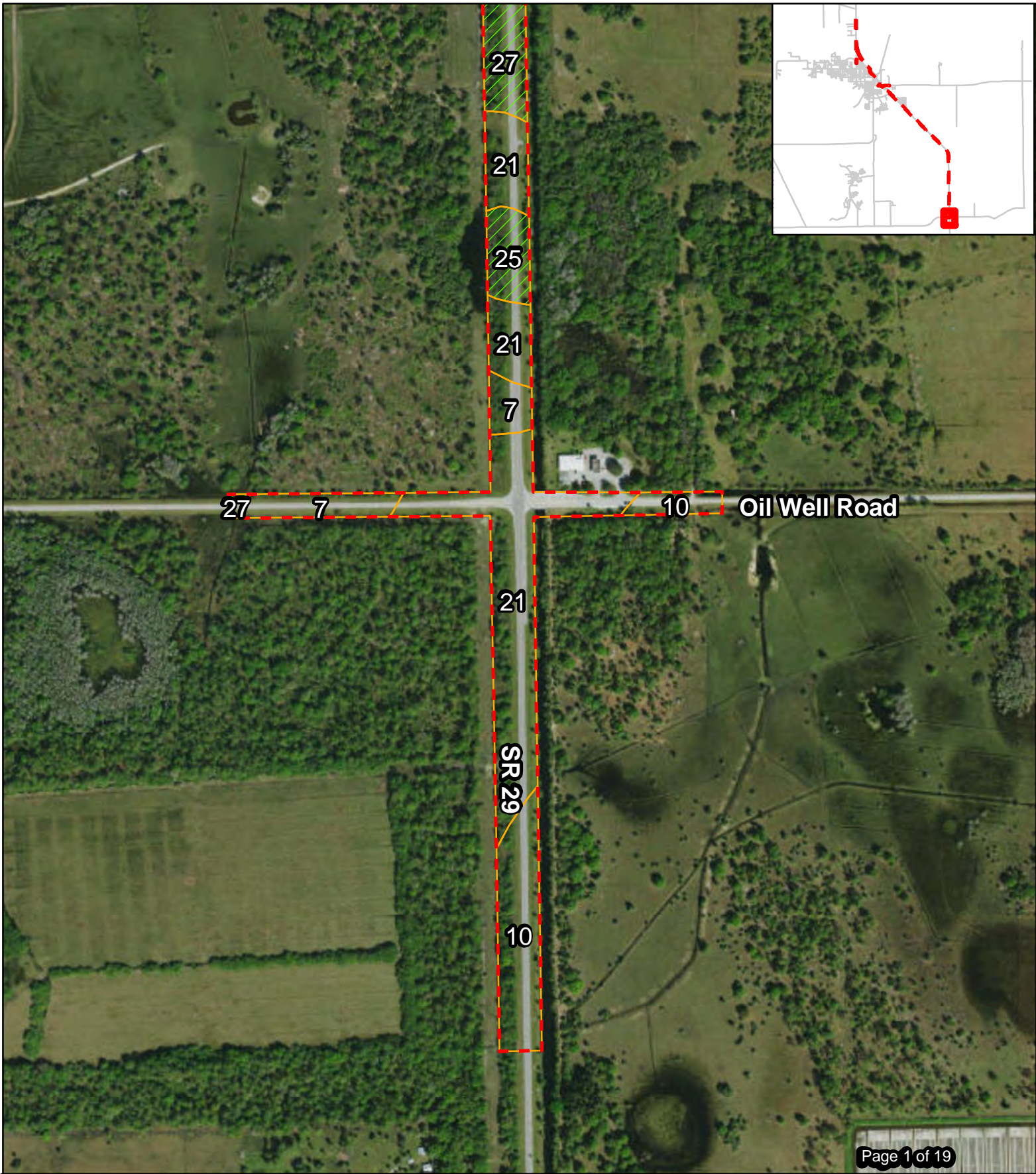
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
COLLIER COUNTY 130687 0135 H

MAP NUMBER 12021C0135H
MAP REVISION MAY 16, 2012
Federal Emergency Management Agency

Appendix D
Soils Map and Soils Descriptions

APPENDIX D
TABLE OF CONTENTS

D-1	Soils Maps for Central Alternative #1 Revised
D-20	Soils Maps for Central Alternative #2
D-39	Soils Descriptions



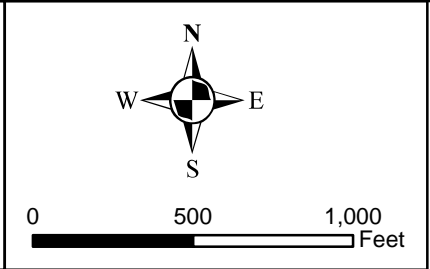
MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

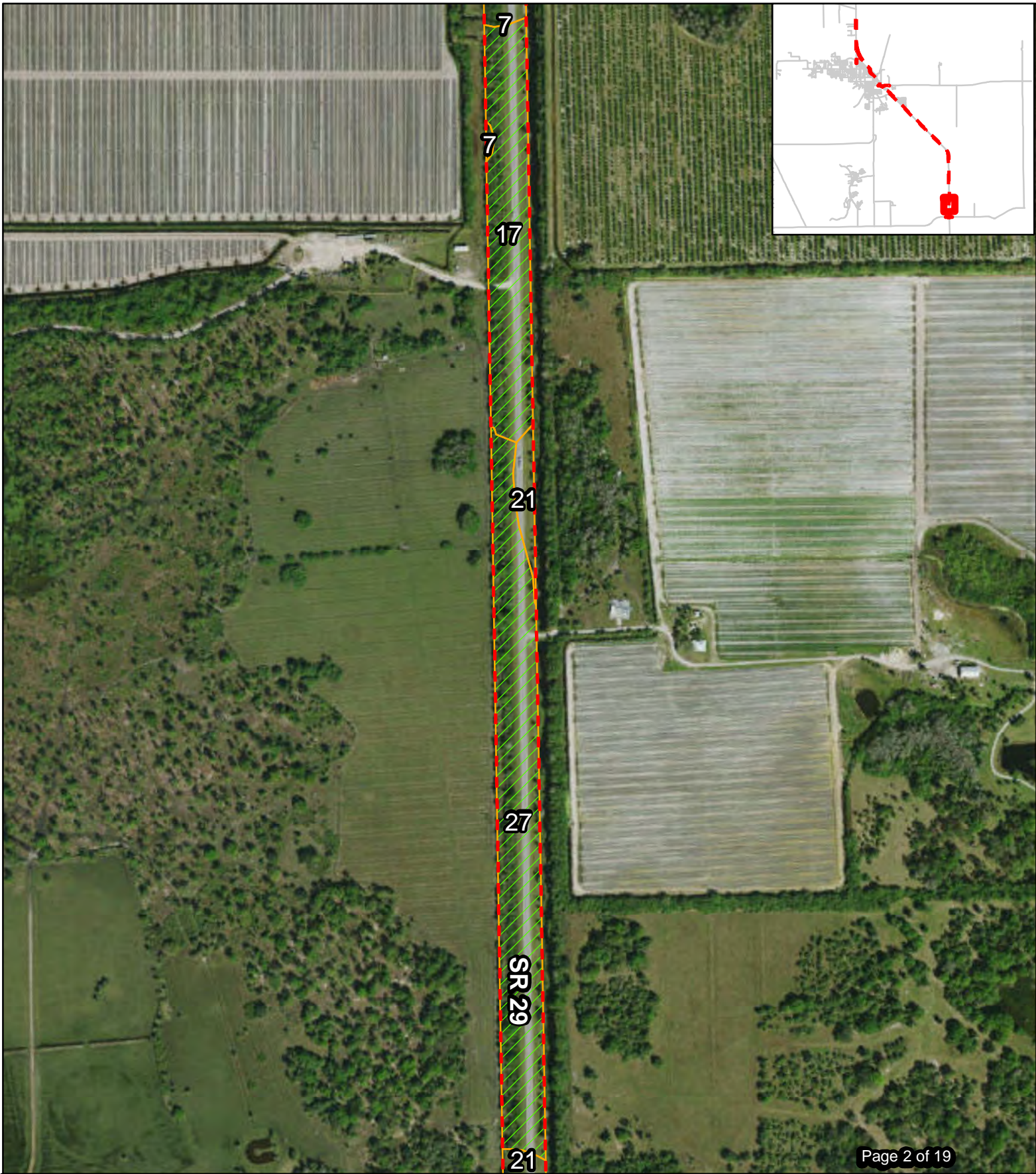
Legend

- Central Alternative #1 Revised
- Central Alternative #1 Revised Soils
- Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised




Date: 6/1/2018 D-1





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

Legend

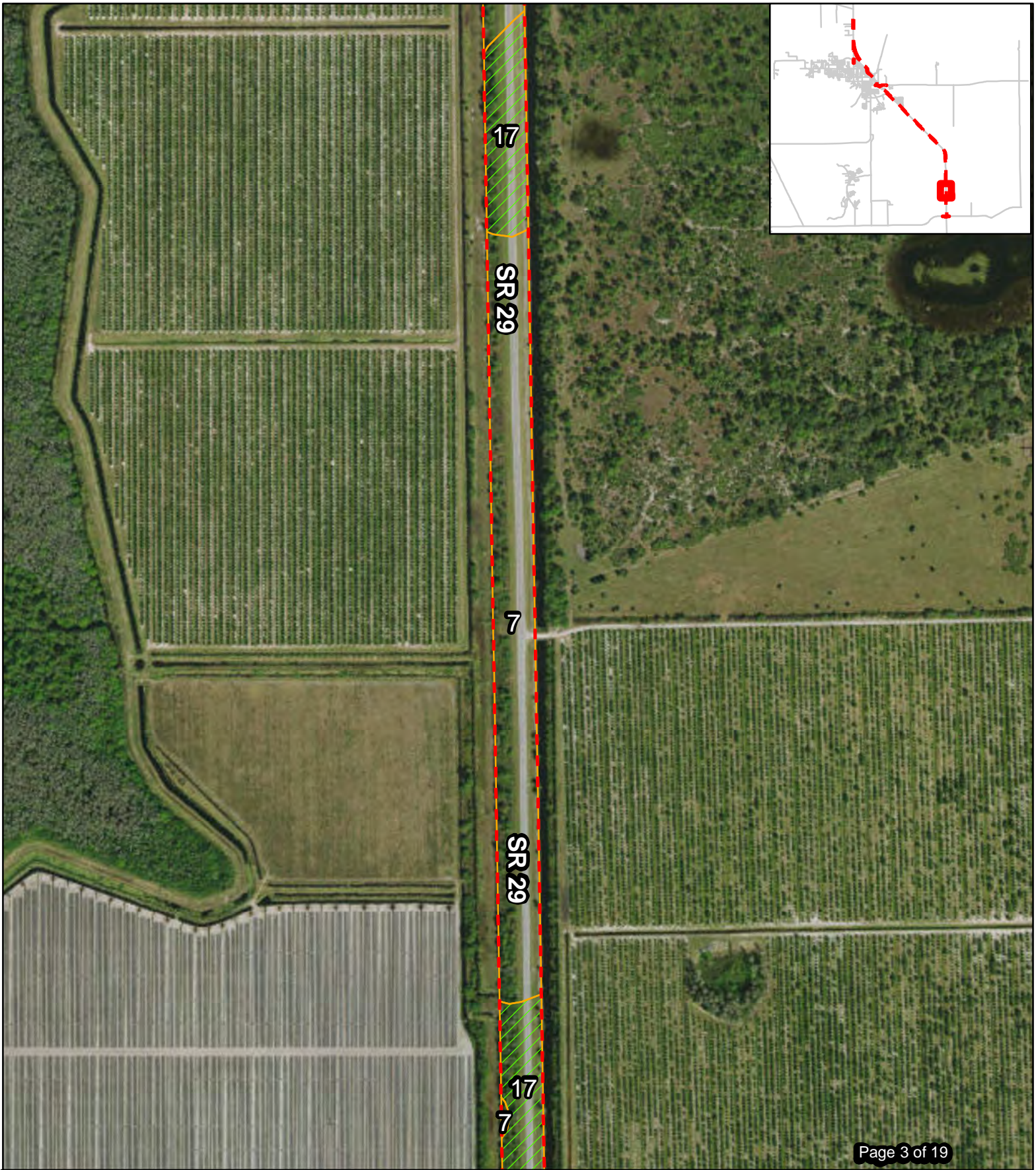
-  Central Alternative #1 Revised
-  Central Alternative #1 Revised Soils
-  Hydric Soils




Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised

Date: 6/1/2018 D-2

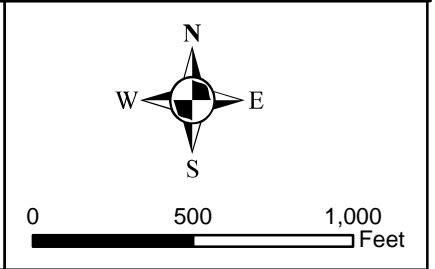
N
 W E
 S

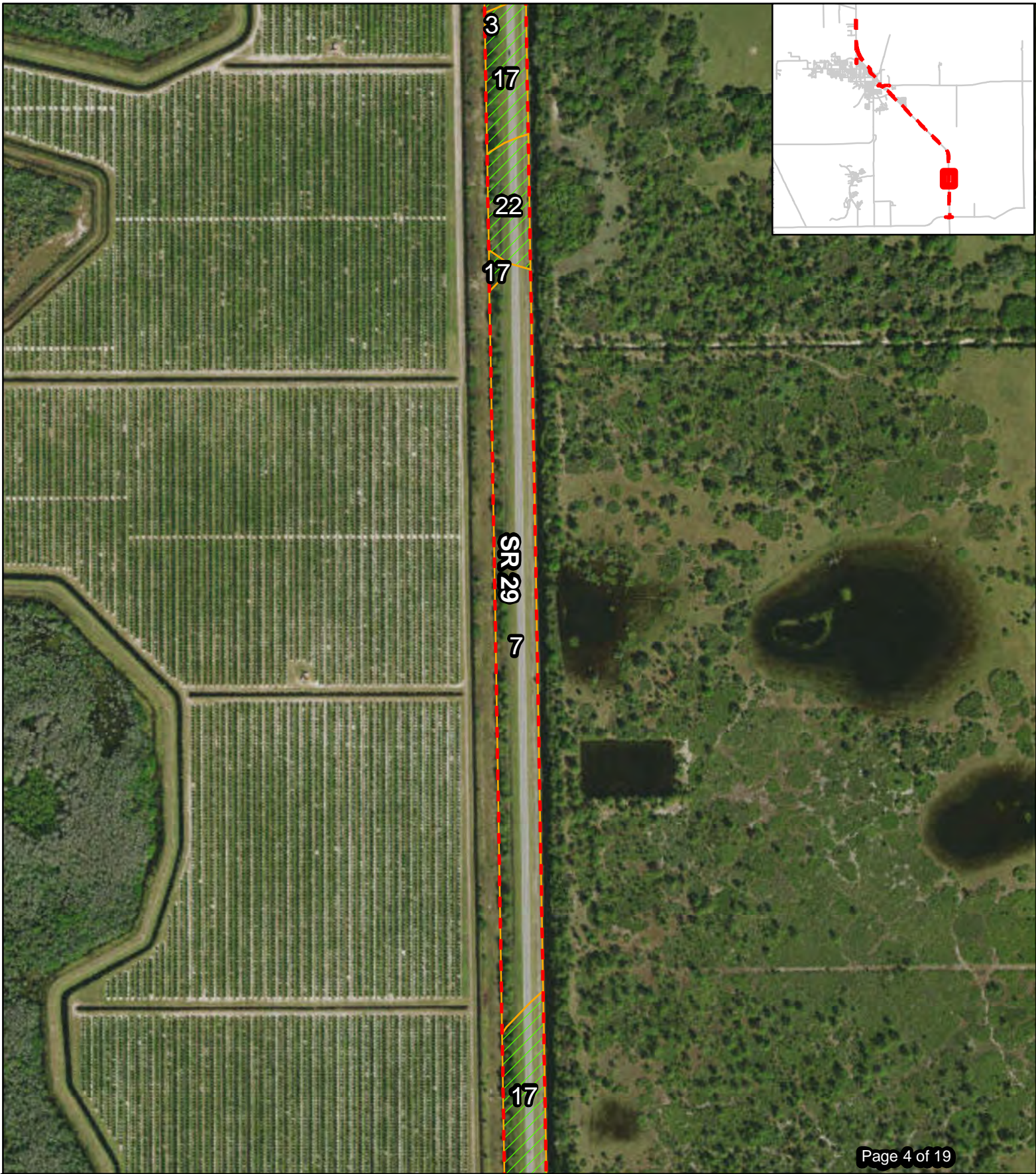
0 500 1,000
 Feet



MAP SOURCE : ESRI	
DATA SOURCE : AECOM 2018	
Legend	
	Central Alternative #1 Revised
	Central Alternative #1 Revised Soils
	Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised
 Date: 6/1/2018 D-3





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

Legend

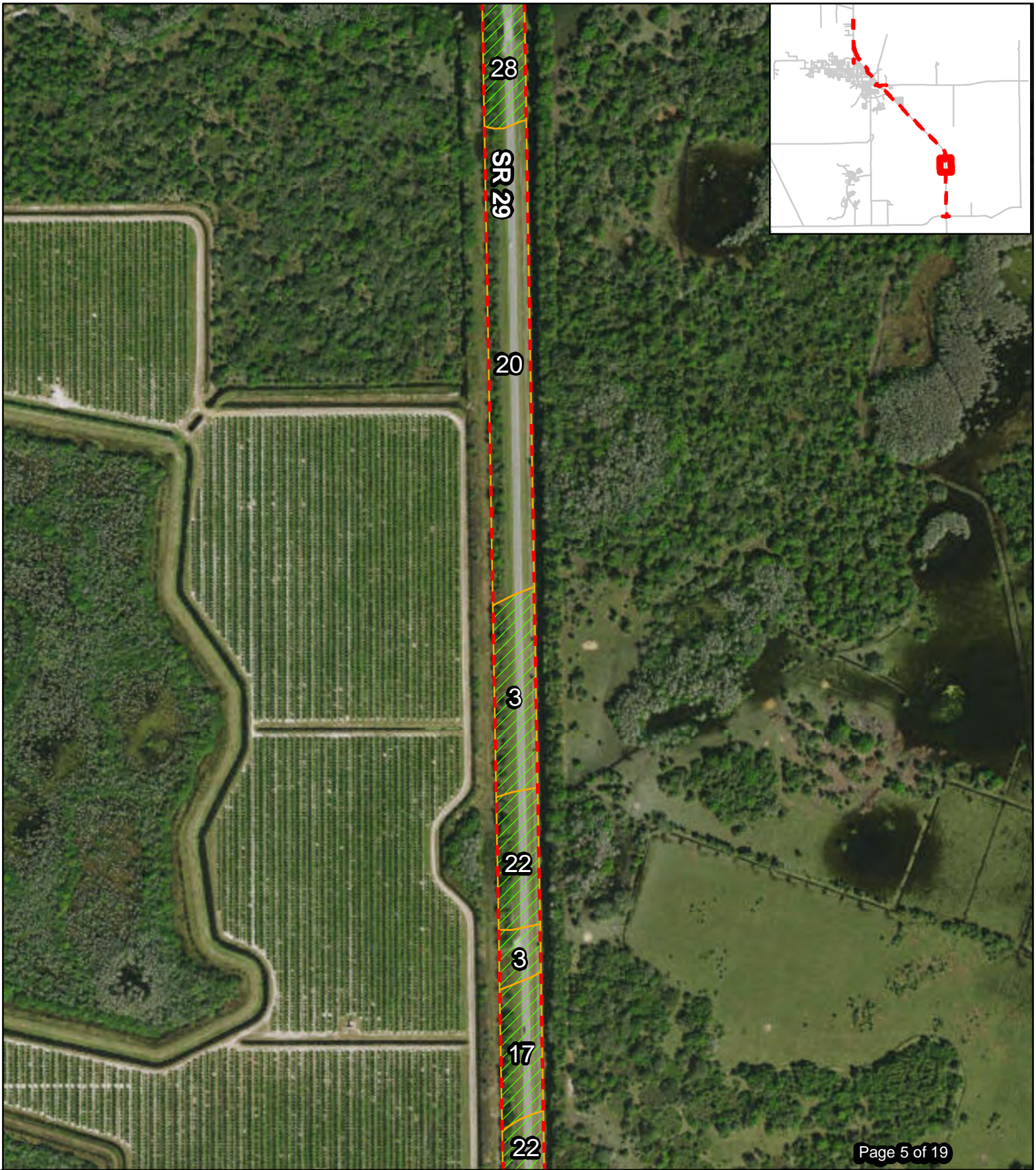
- Central Alternative #1 Revised
- Central Alternative #1 Revised Soils
- Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised

Date: 6/1/2018 D-4




N
 W E
 S

0 500 1,000
 Feet



MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

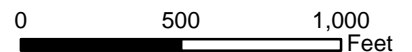
Legend

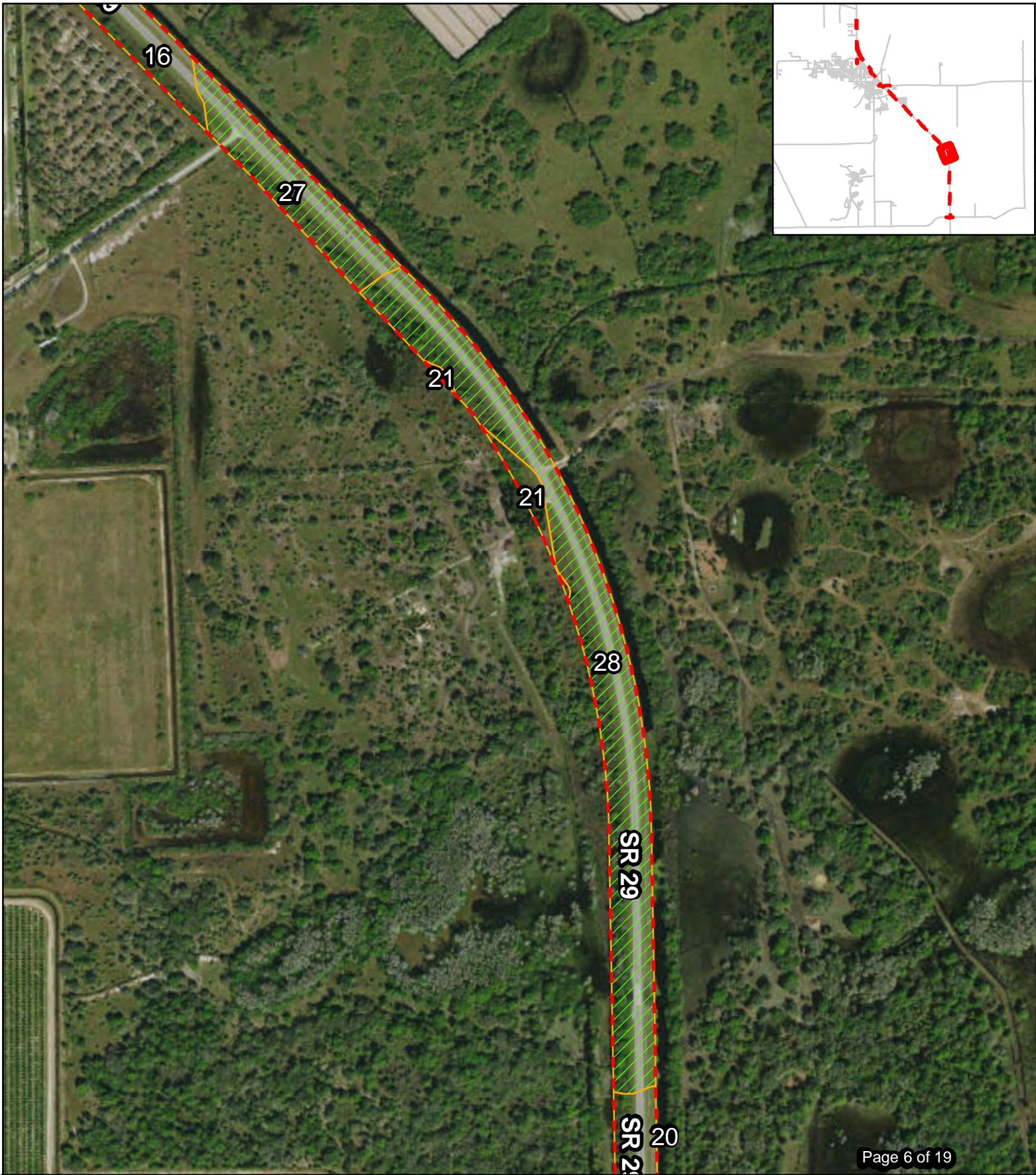
-  Central Alternative #1 Revised
-  Central Alternative #1 Revised Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised

Date: 6/1/2018




D-5





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

Legend

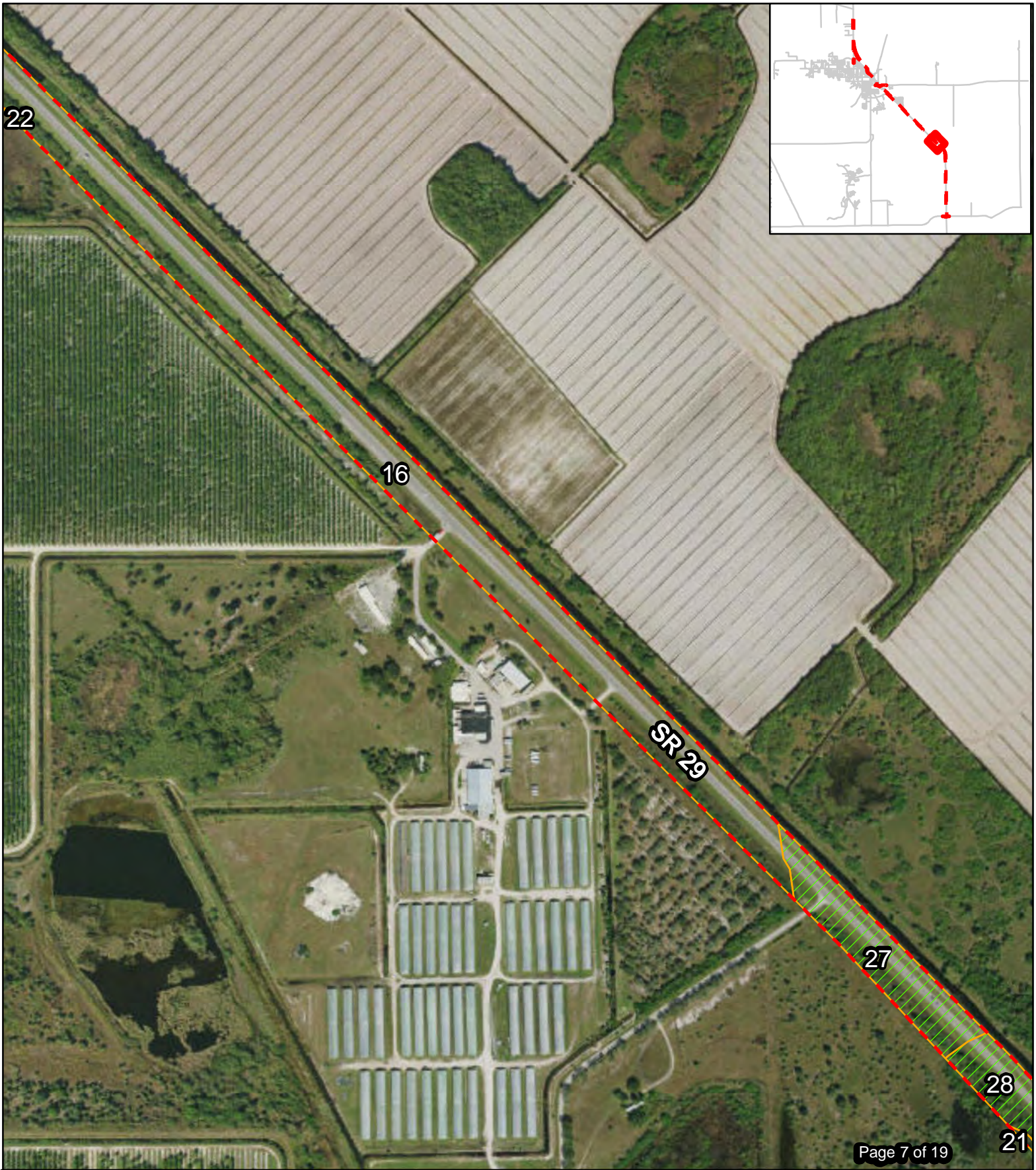
-  Central Alternative #1 Revised
-  Central Alternative #1 Revised Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised

Date: 6/1/2018 D-6




N
 W E
 S

0 500 1,000
 Feet



MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

Legend

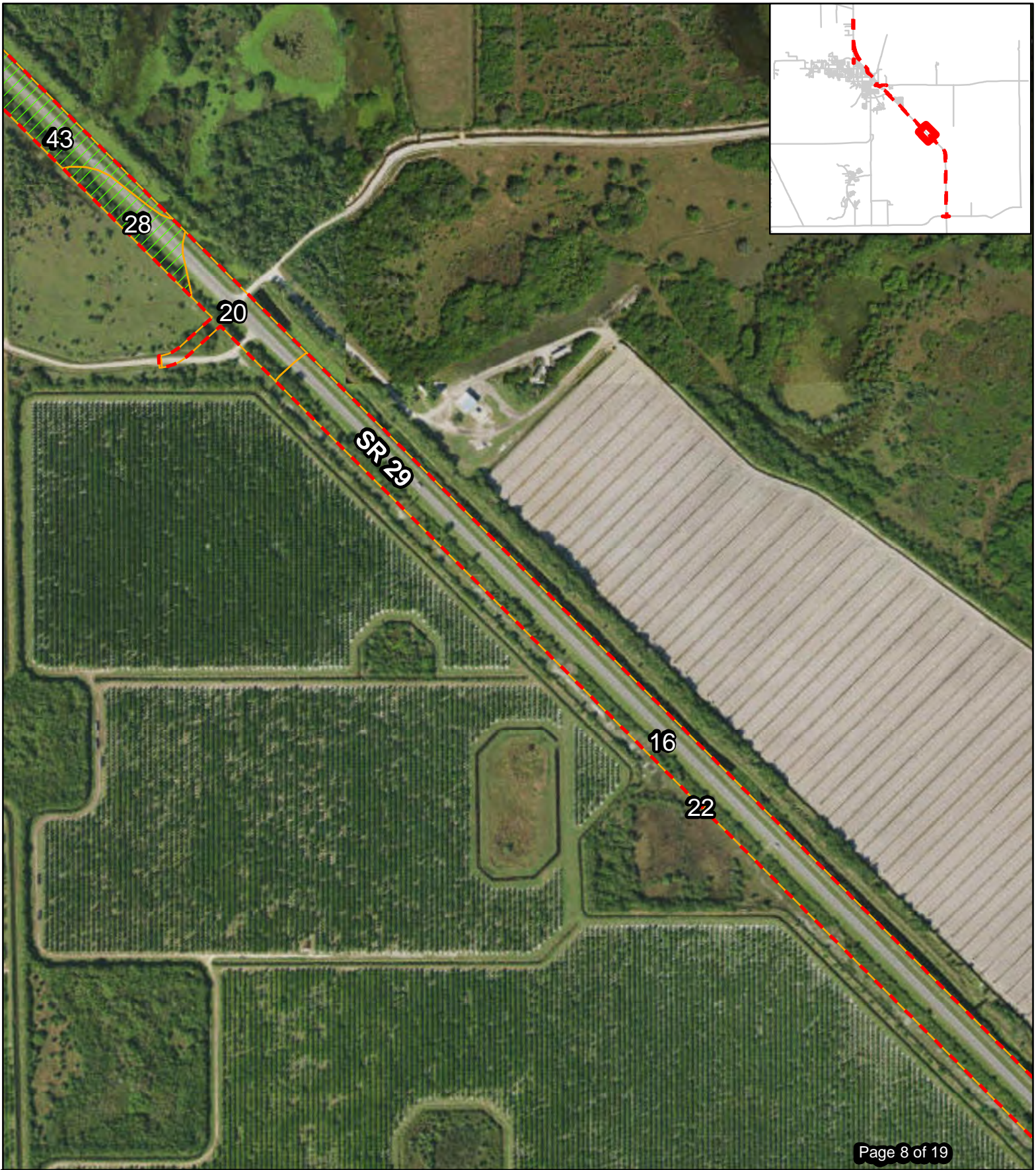
-  Central Alternative #1 Revised
-  Central Alternative #1 Revised Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised

Date: 6/1/2018 D-7




N
 W E
 S

0 500 1,000
 Feet



MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

Legend

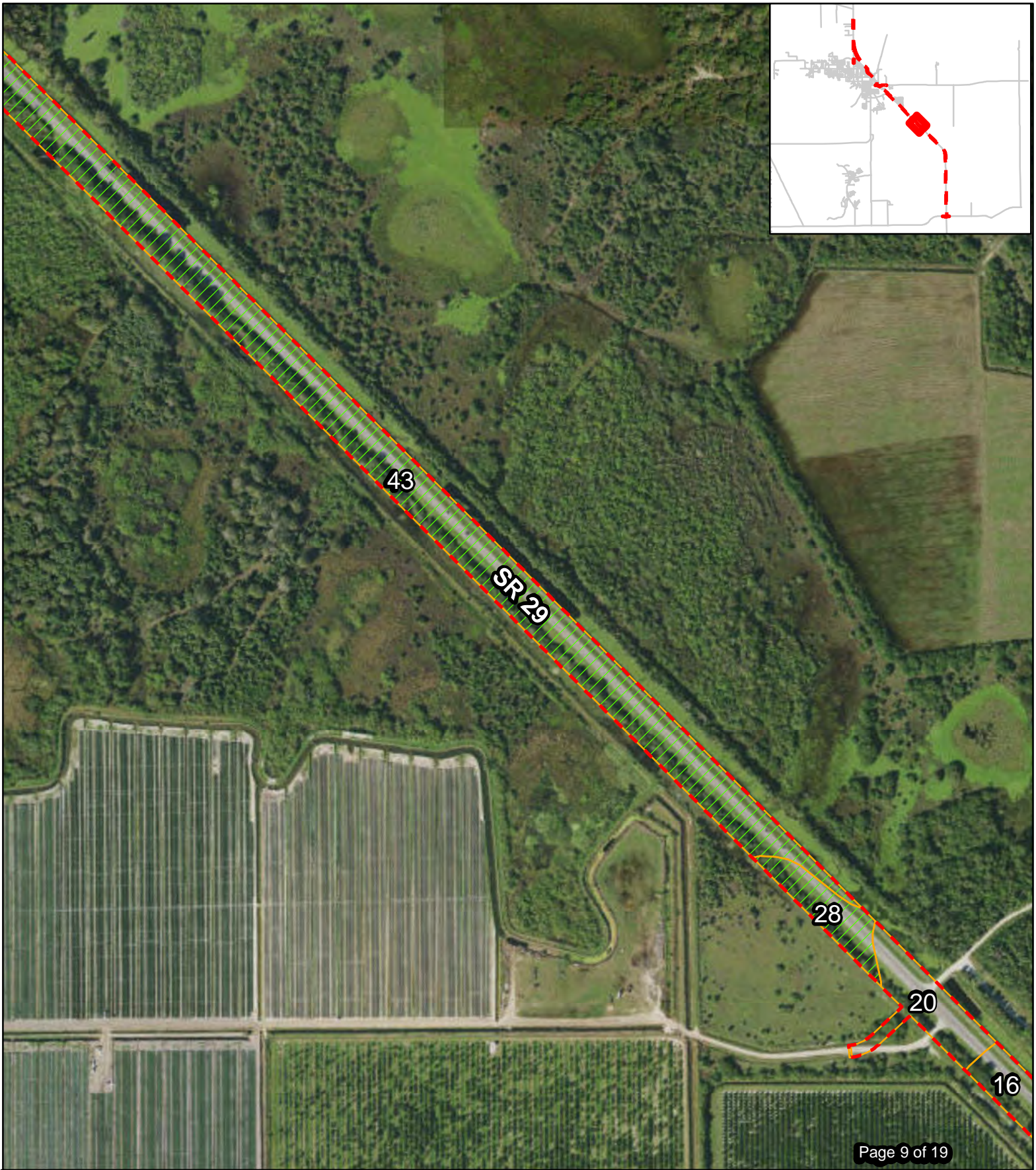
-  Central Alternative #1 Revised
-  Central Alternative #1 Revised Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised

Date: 6/1/2018 D-8




N
 W E
 S

0 500 1,000
 Feet



MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

Legend

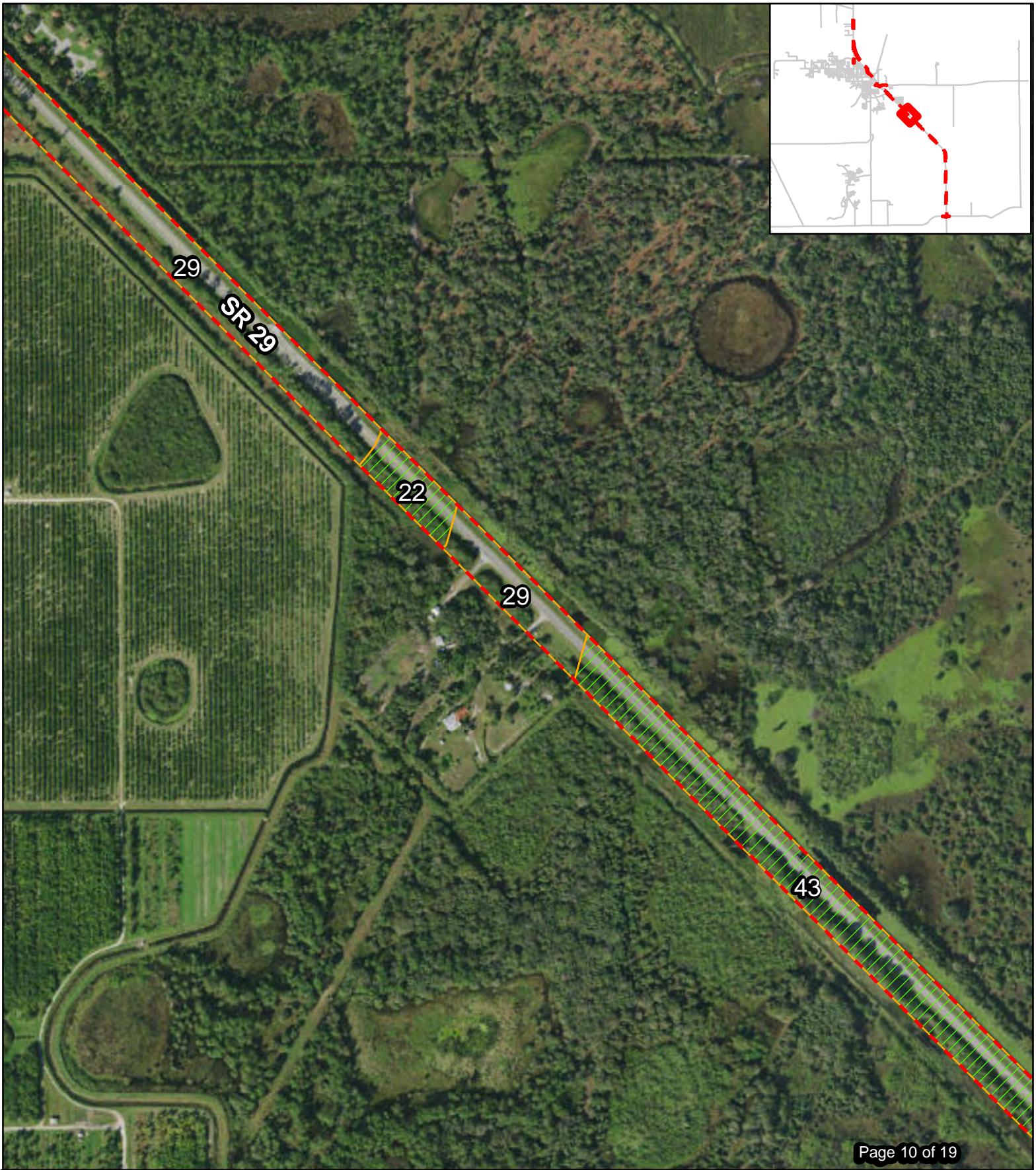
-  Central Alternative #1 Revised
-  Central Alternative #1 Revised Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised

Date: 6/1/2018 D-9




N
 W E
 S

0 500 1,000
 Feet



MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

Legend

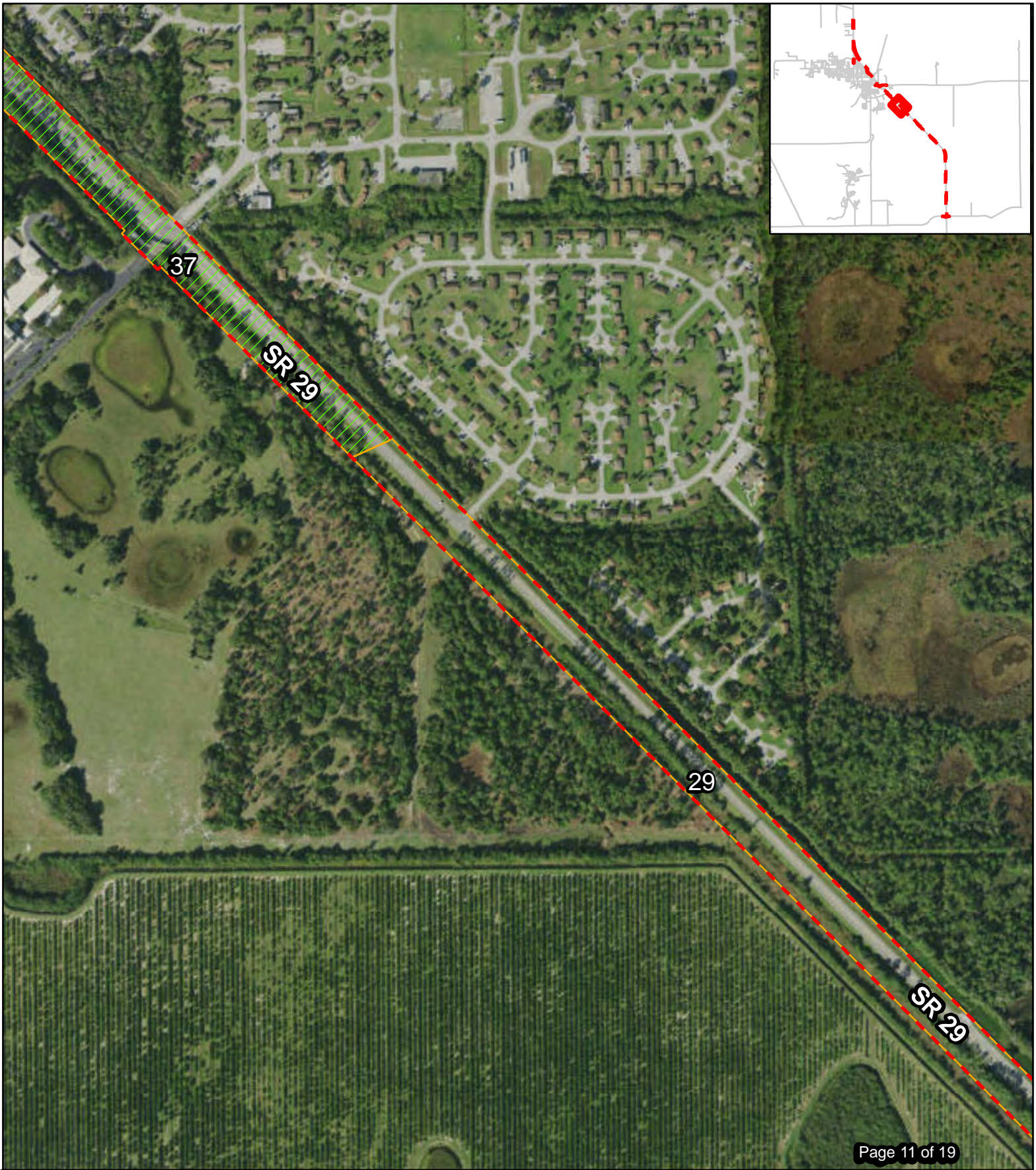
-  Central Alternative #1 Revised
-  Central Alternative #1 Revised Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised

Date: 6/1/2018 D-10




N
 W E
 S

0 500 1,000
 Feet



MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

Legend

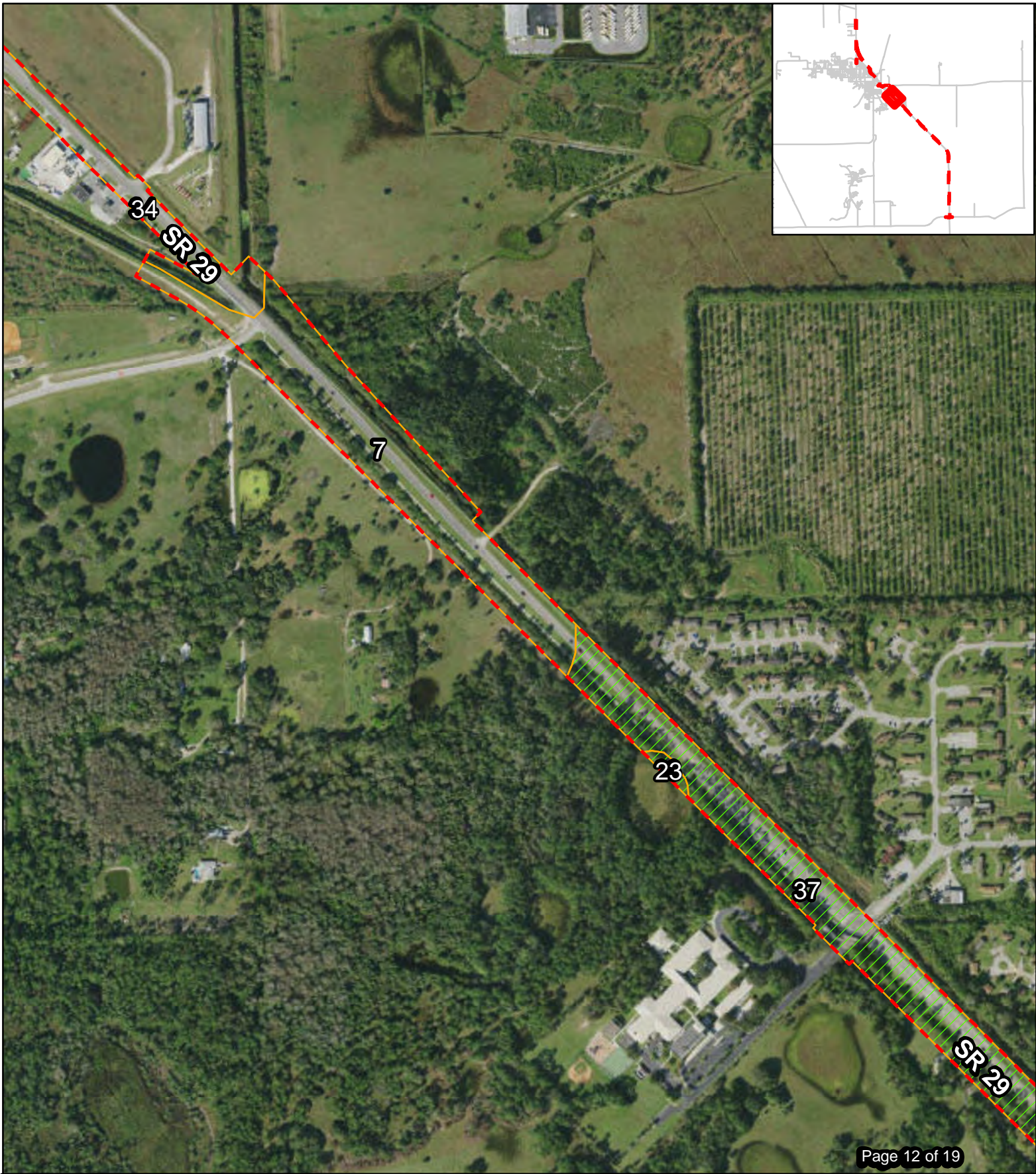
-  Central Alternative #1 Revised
-  Central Alternative #1 Revised Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised

Date: 6/1/2018 D-11




N
 W E
 S

0 500 1,000
 Feet



MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

Legend

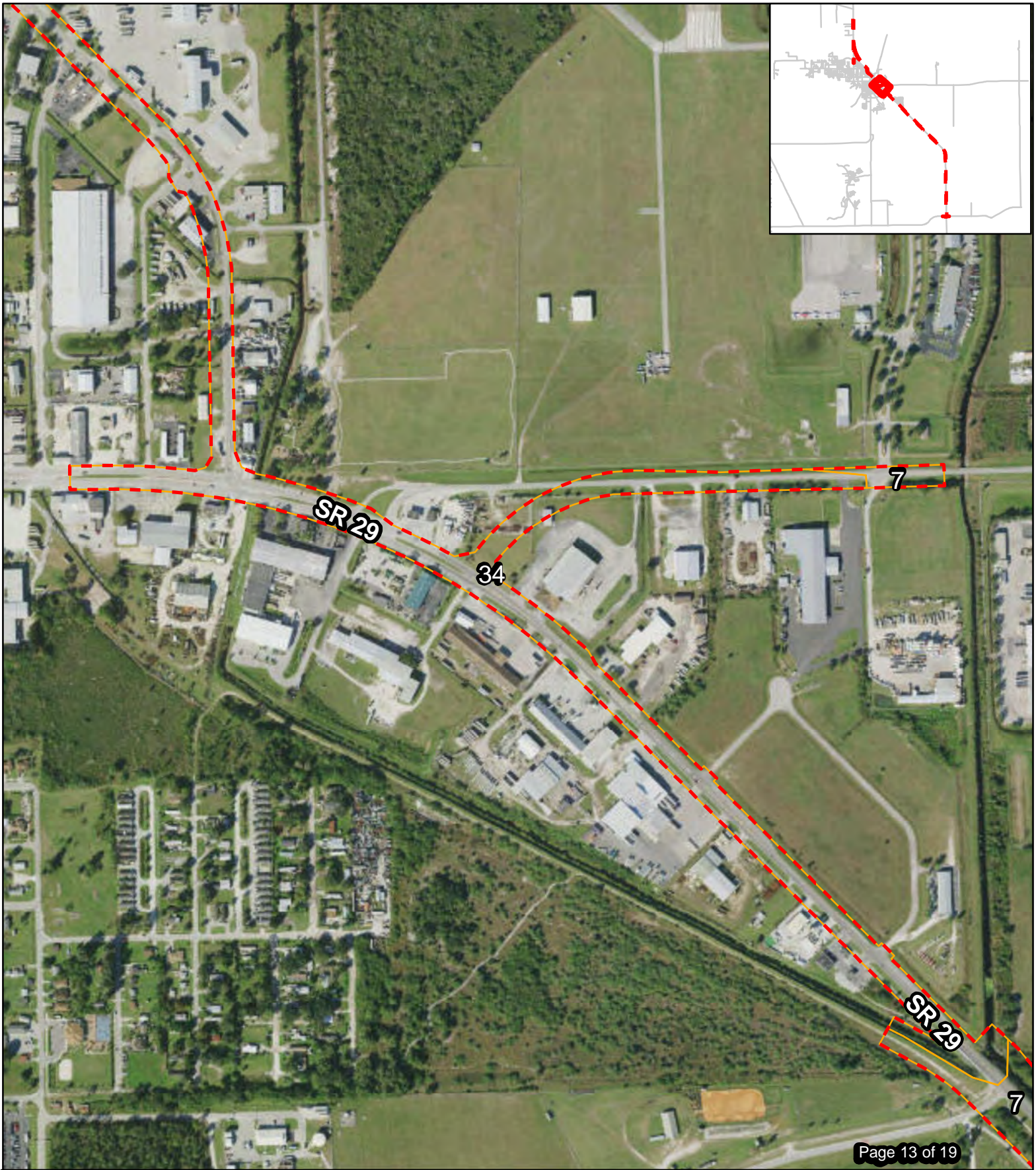
-  Central Alternative #1 Revised
-  Central Alternative #1 Revised Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised

Date: 6/1/2018 D-12




N
 W E
 S

0 500 1,000
 Feet



MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

Legend

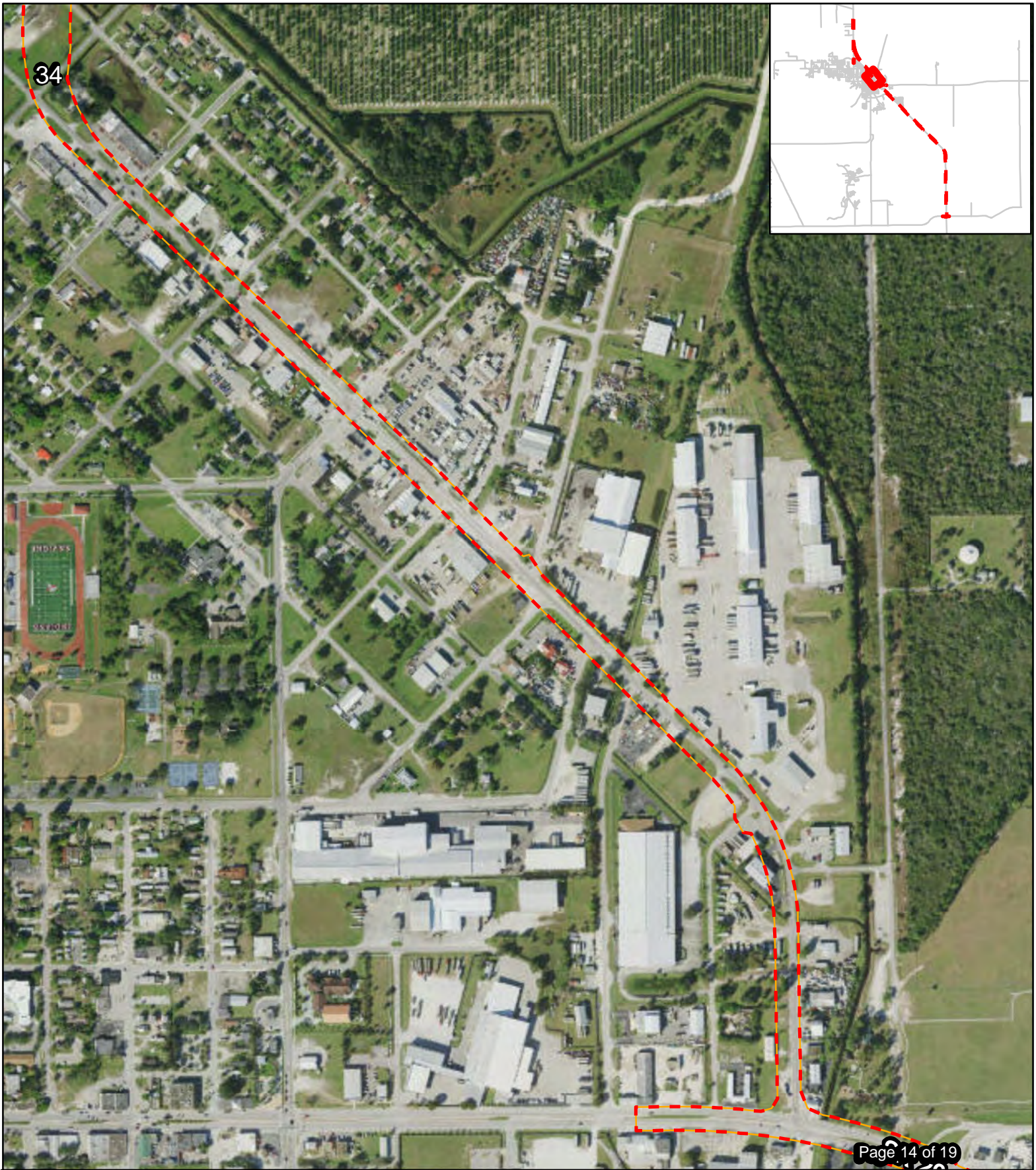
-  Central Alternative #1 Revised
-  Central Alternative #1 Revised Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised

Date: 6/1/2018 D-13




N
 W E
 S

0 500 1,000
 Feet



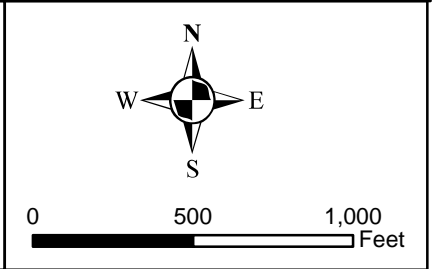
MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

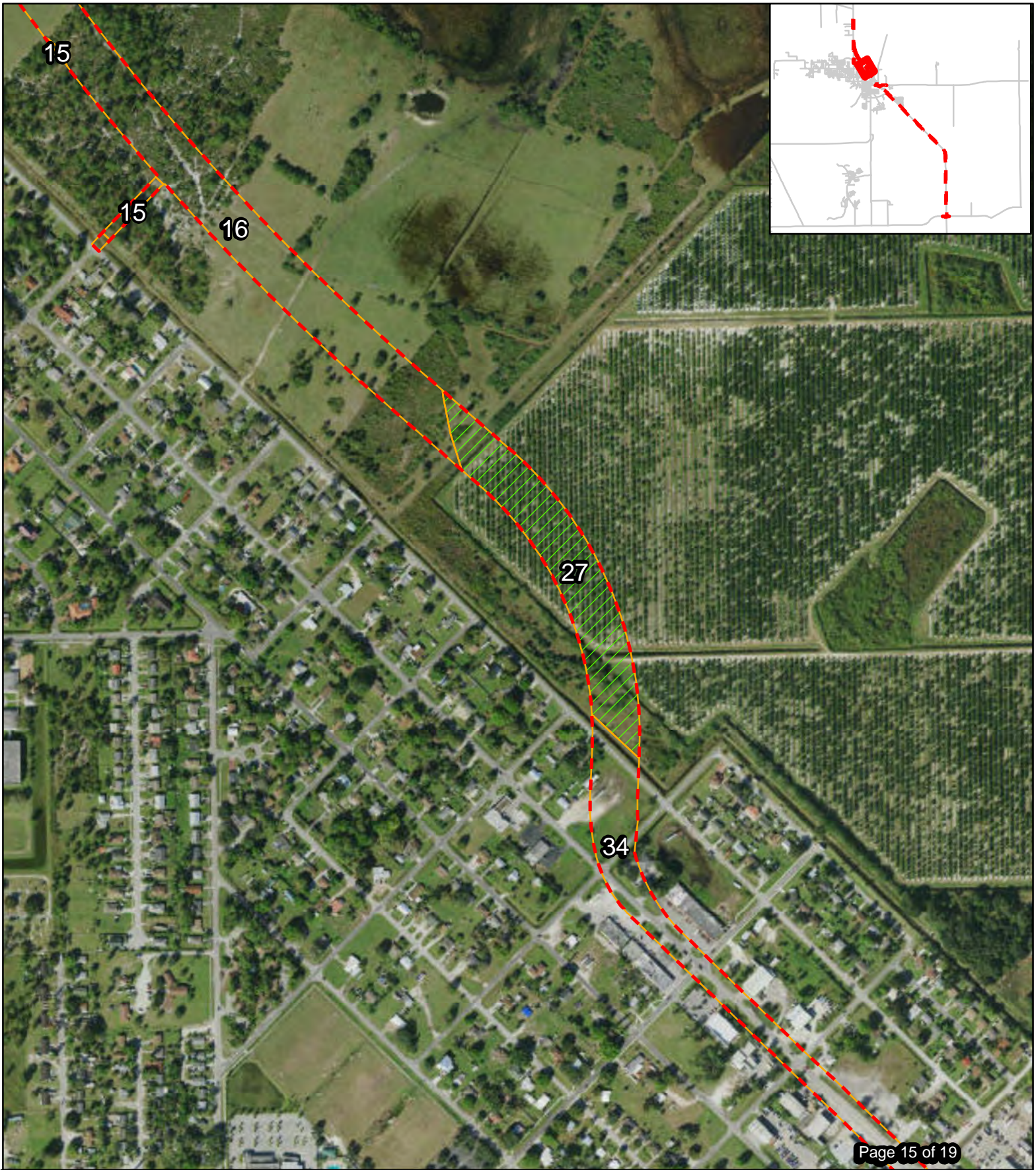
Legend

-  Central Alternative #1 Revised
-  Central Alternative #1 Revised Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised




Date: 6/1/2018 D-14





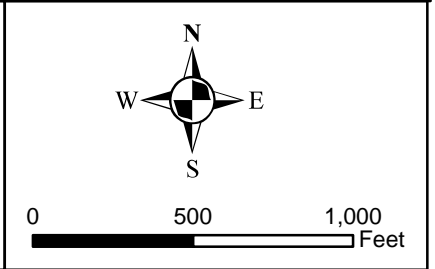
MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

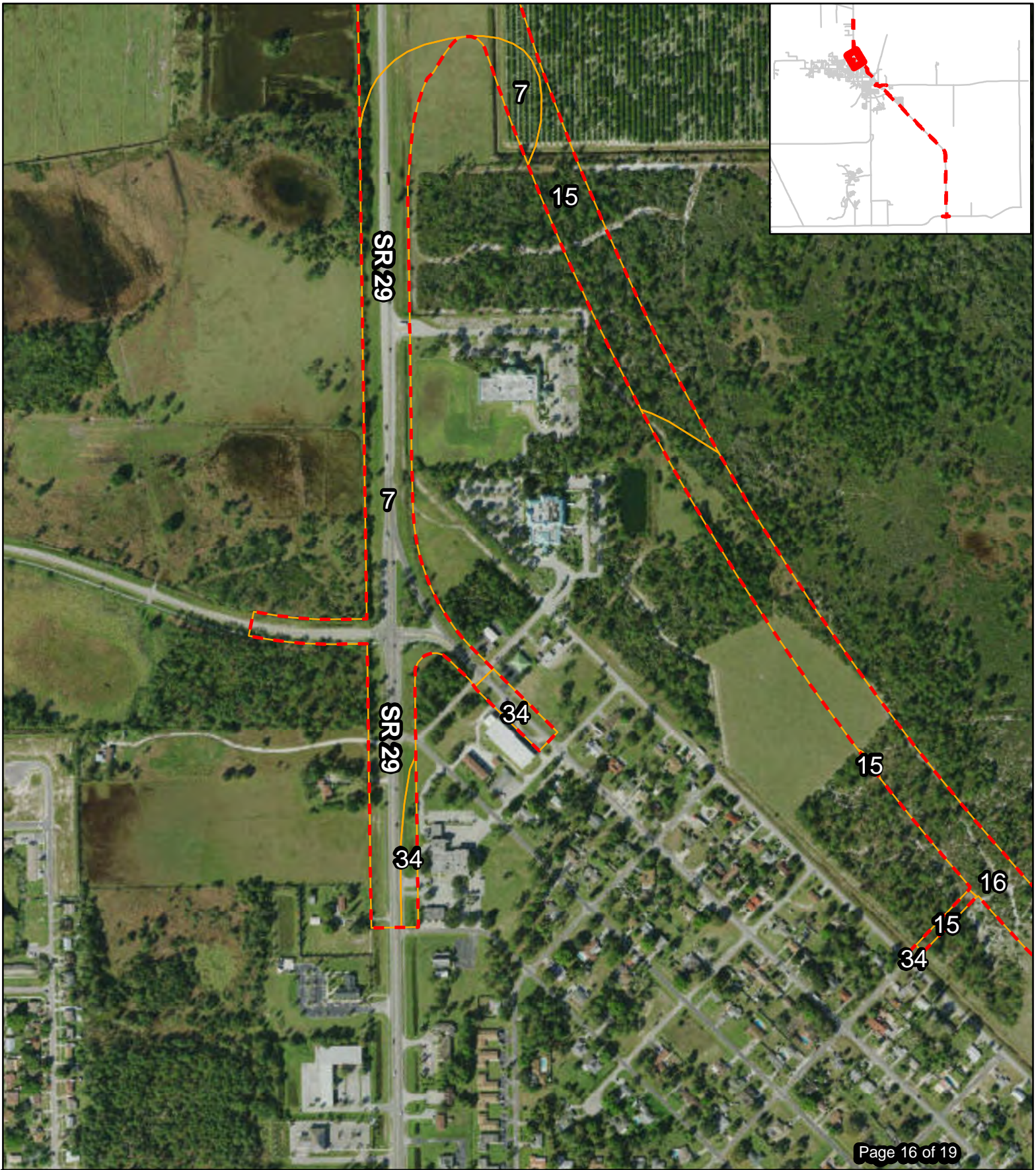
Legend

-  Central Alternative #1 Revised
-  Central Alternative #1 Revised Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised




Date: 6/1/2018 D-15





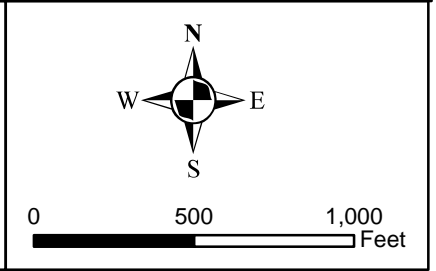
MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

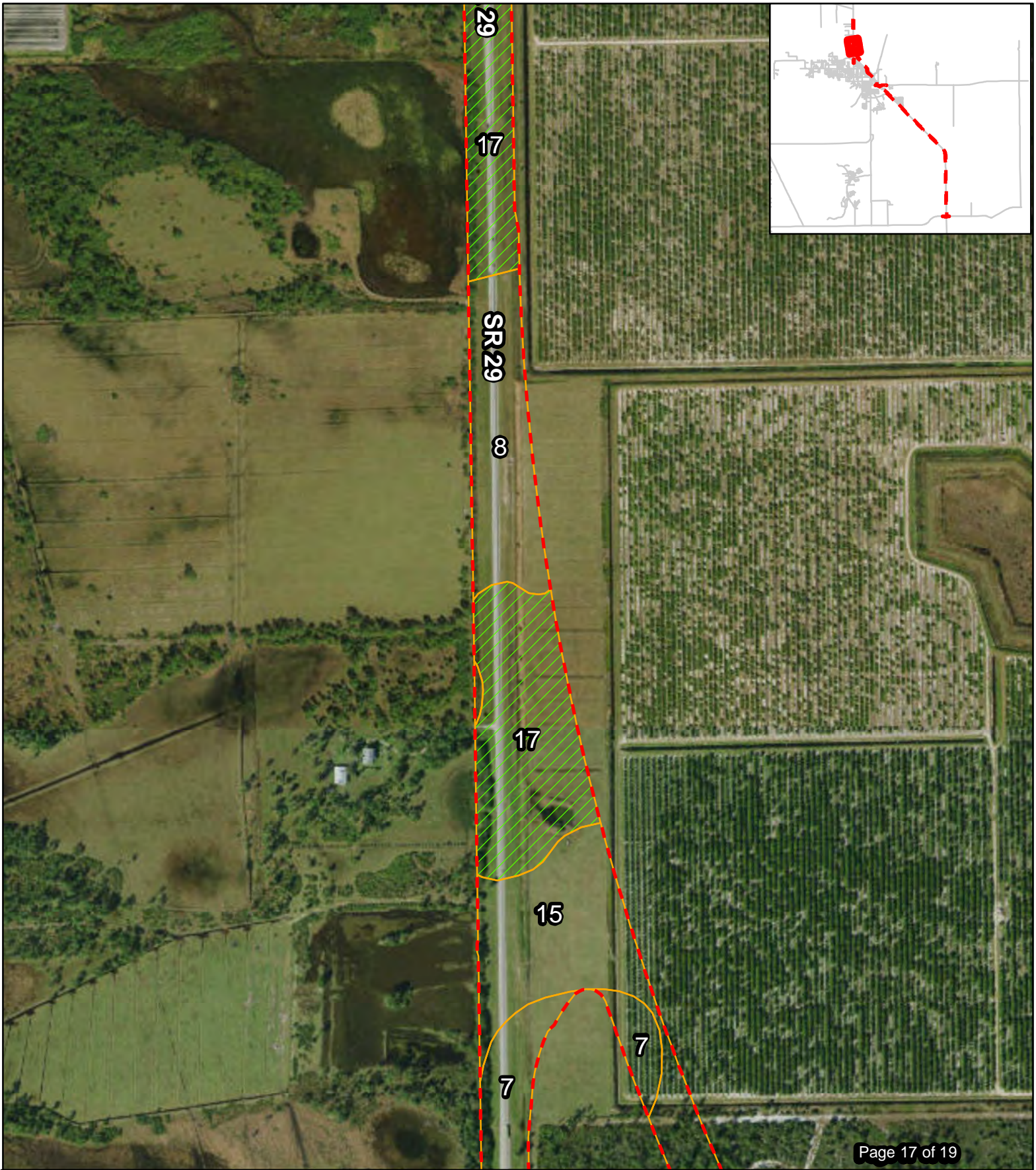
Legend




-  Central Alternative #1 Revised
-  Central Alternative #1 Revised Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised

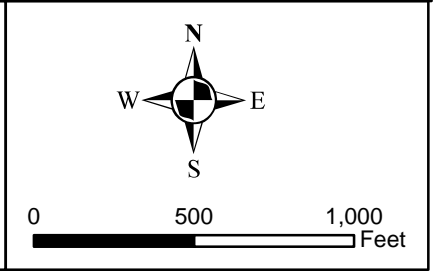
Date: 6/1/2018 D-16

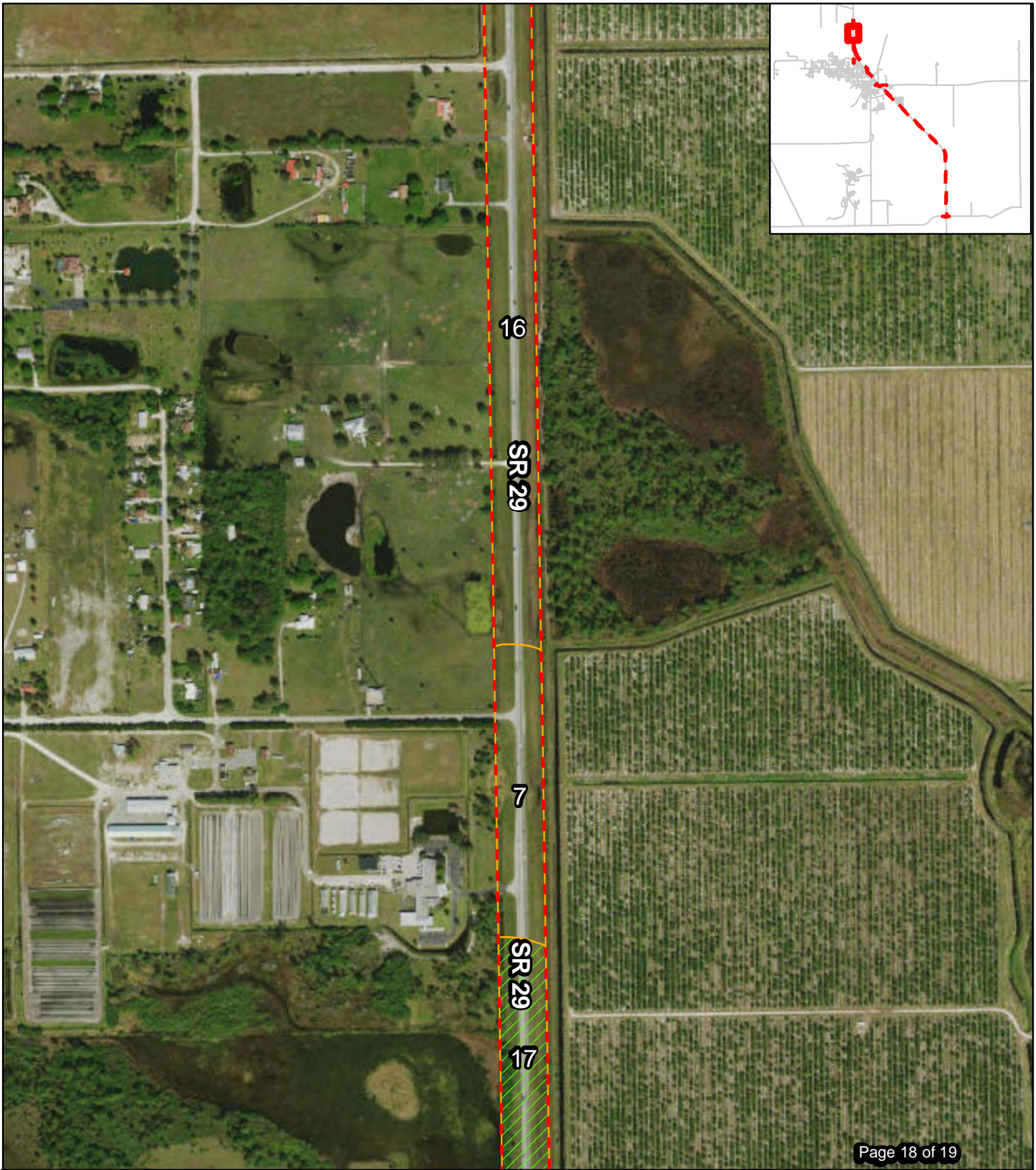




MAP SOURCE : ESRI	
DATA SOURCE : AECOM 2018	
Legend	
	Central Alternative #1 Revised
	Central Alternative #1 Revised Soils
	Hydric Soils




Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised
 Date: 6/1/2018 D-17





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

Legend

-  Central Alternative #1 Revised
-  Central Alternative #1 Revised Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised

Date: 6/1/2018 D-18




N
 W E
 S

0 500 1,000
 Feet



MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

Legend

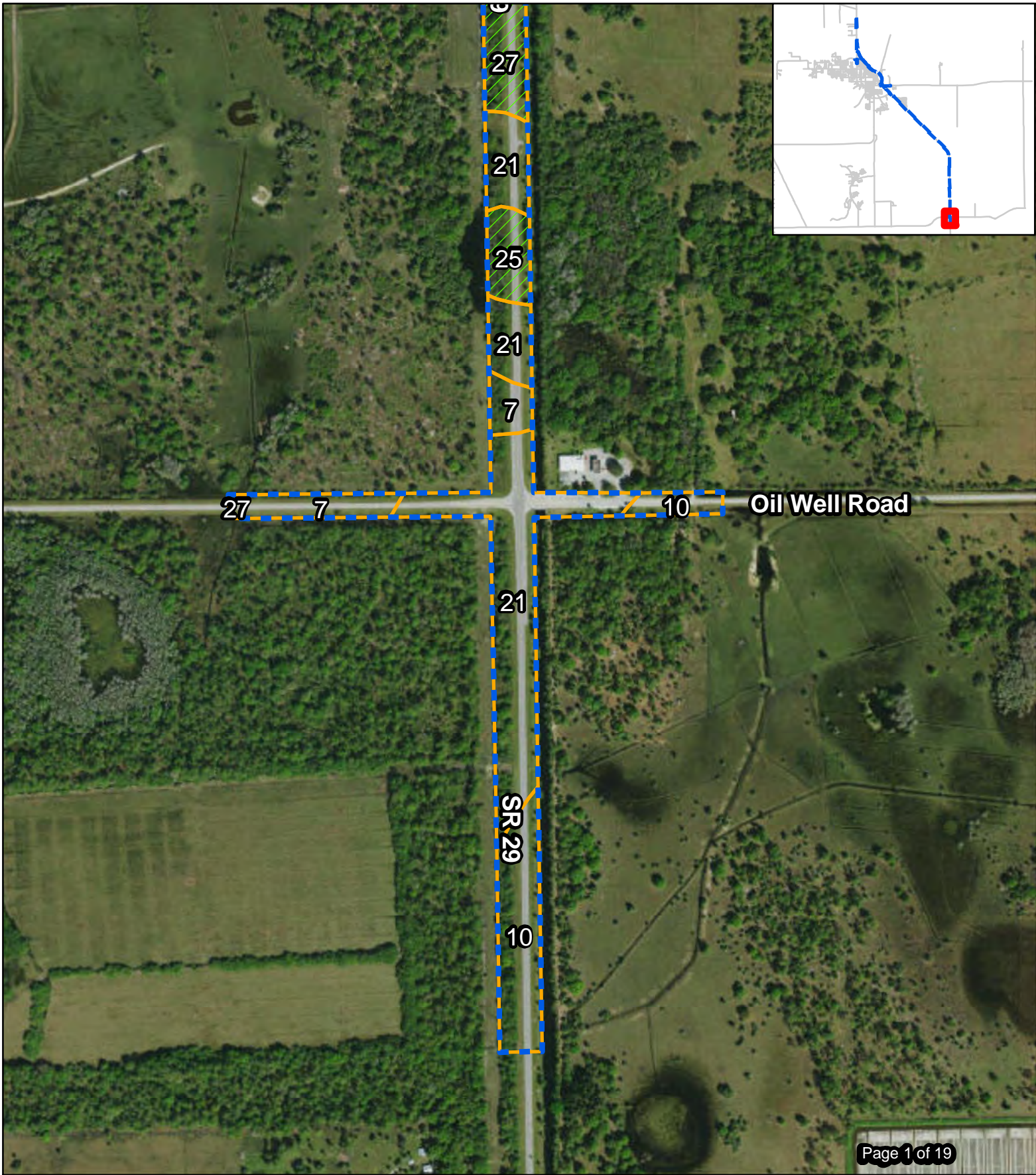
-  Central Alternative #1 Revised
-  Central Alternative #1 Revised Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #1 Revised

Date: 6/1/2018 D-19




N
 W E
 S

0 500 1,000
 Feet



MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

Legend

-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

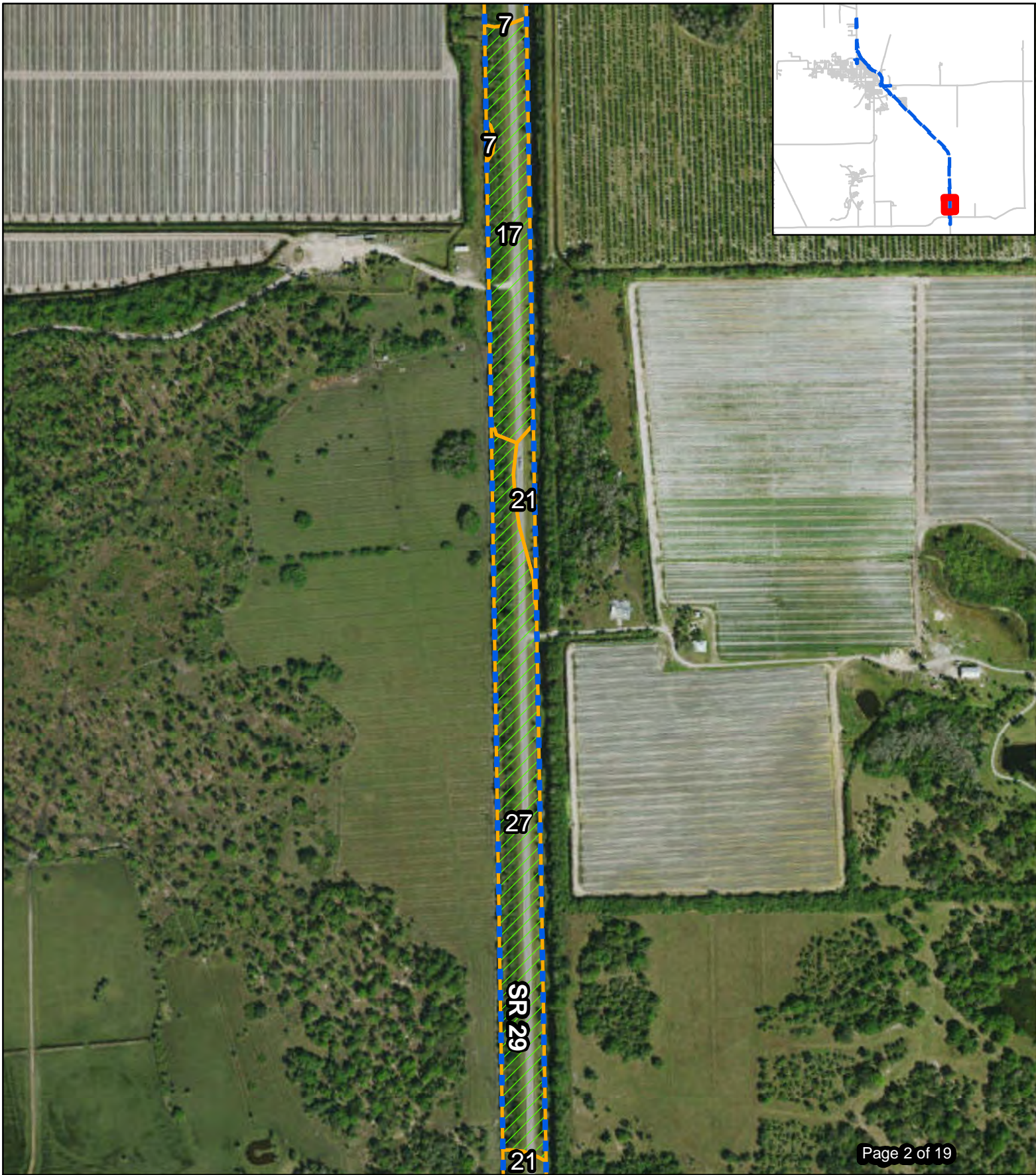
Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018

D-20






0 500 1,000
 Feet



MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

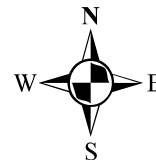
Legend

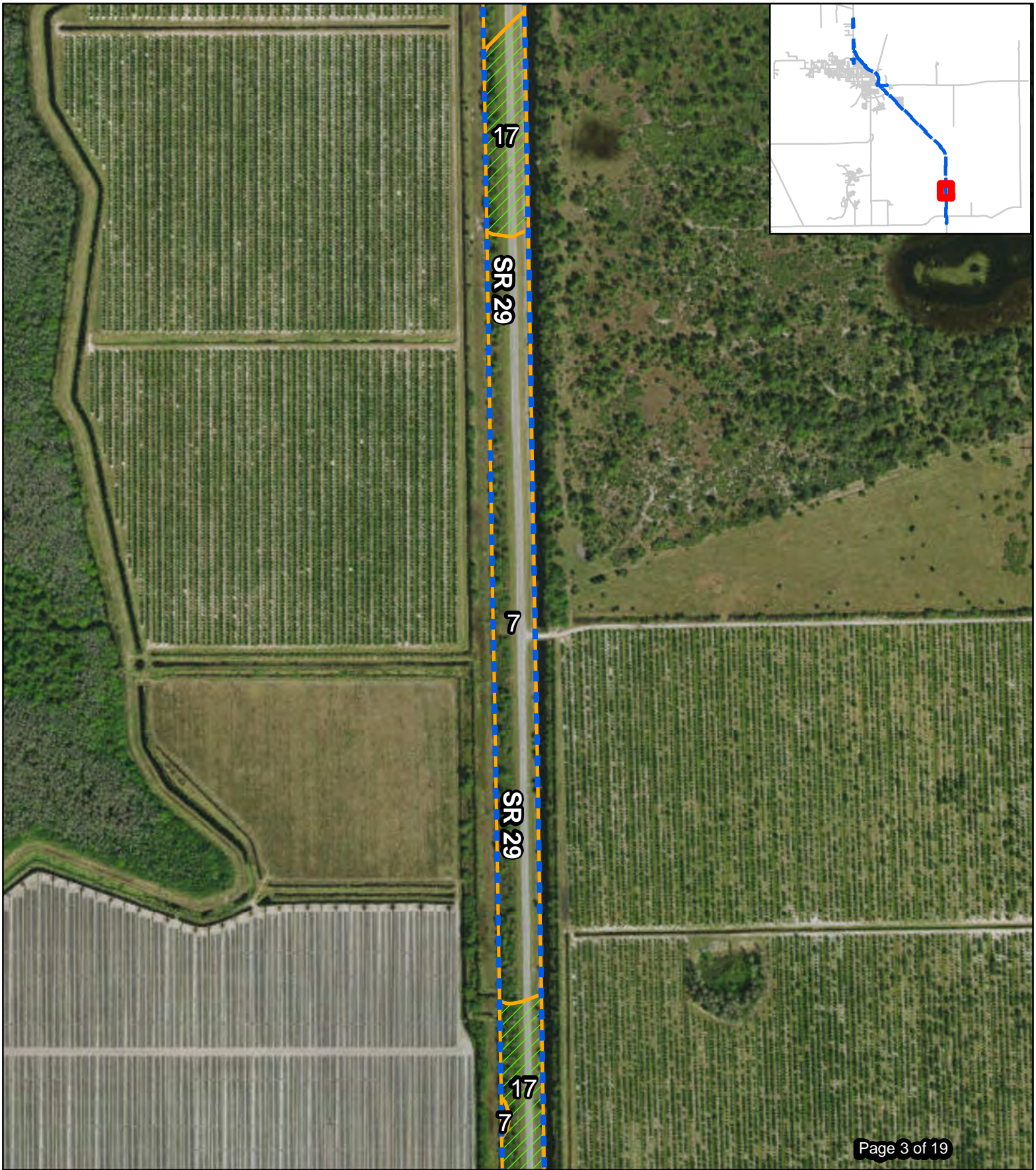
-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018




D-21





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

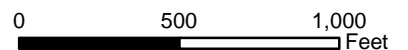
Legend

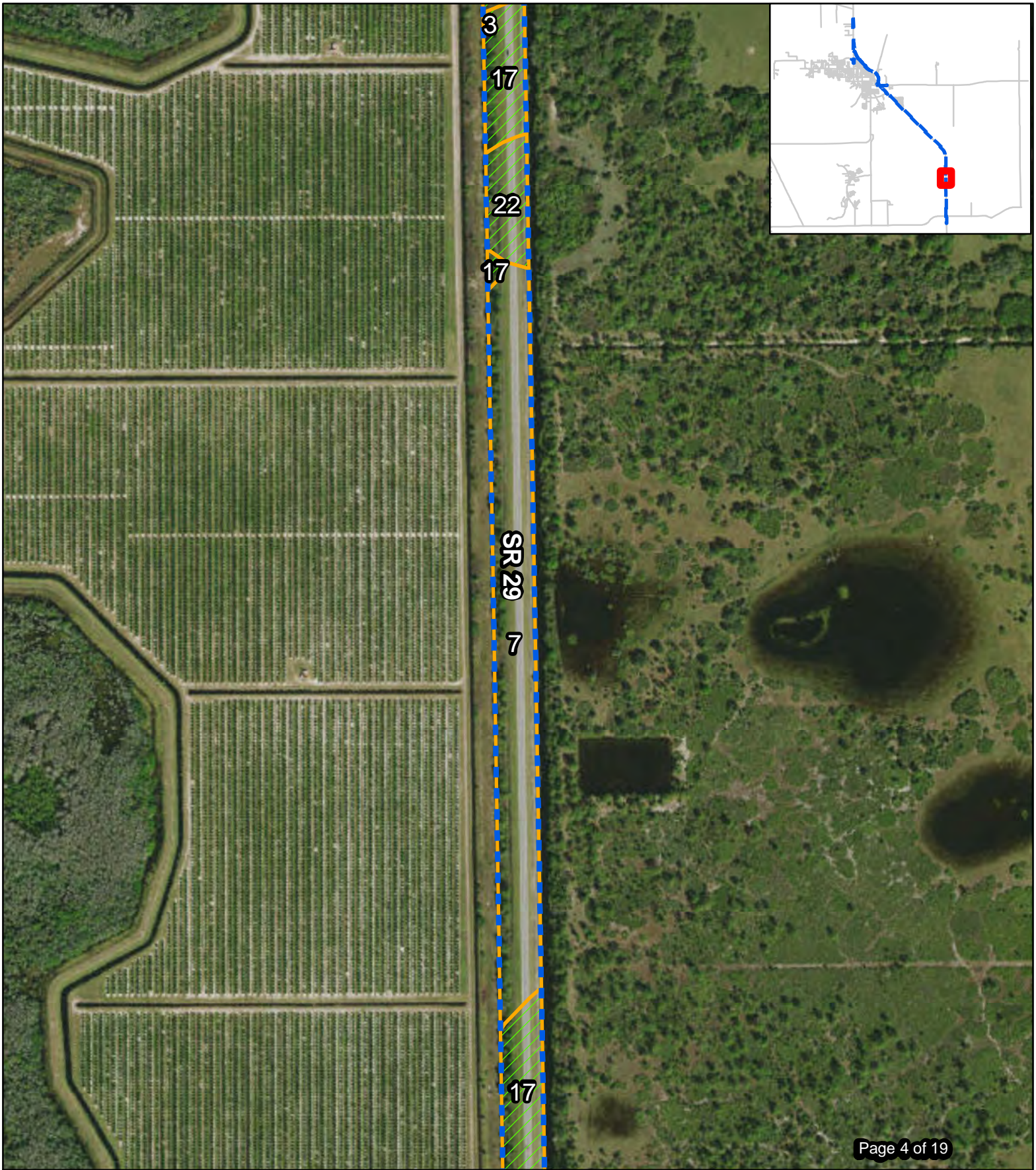
-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018




D-22





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

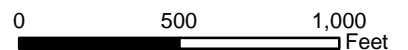
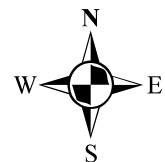
Legend

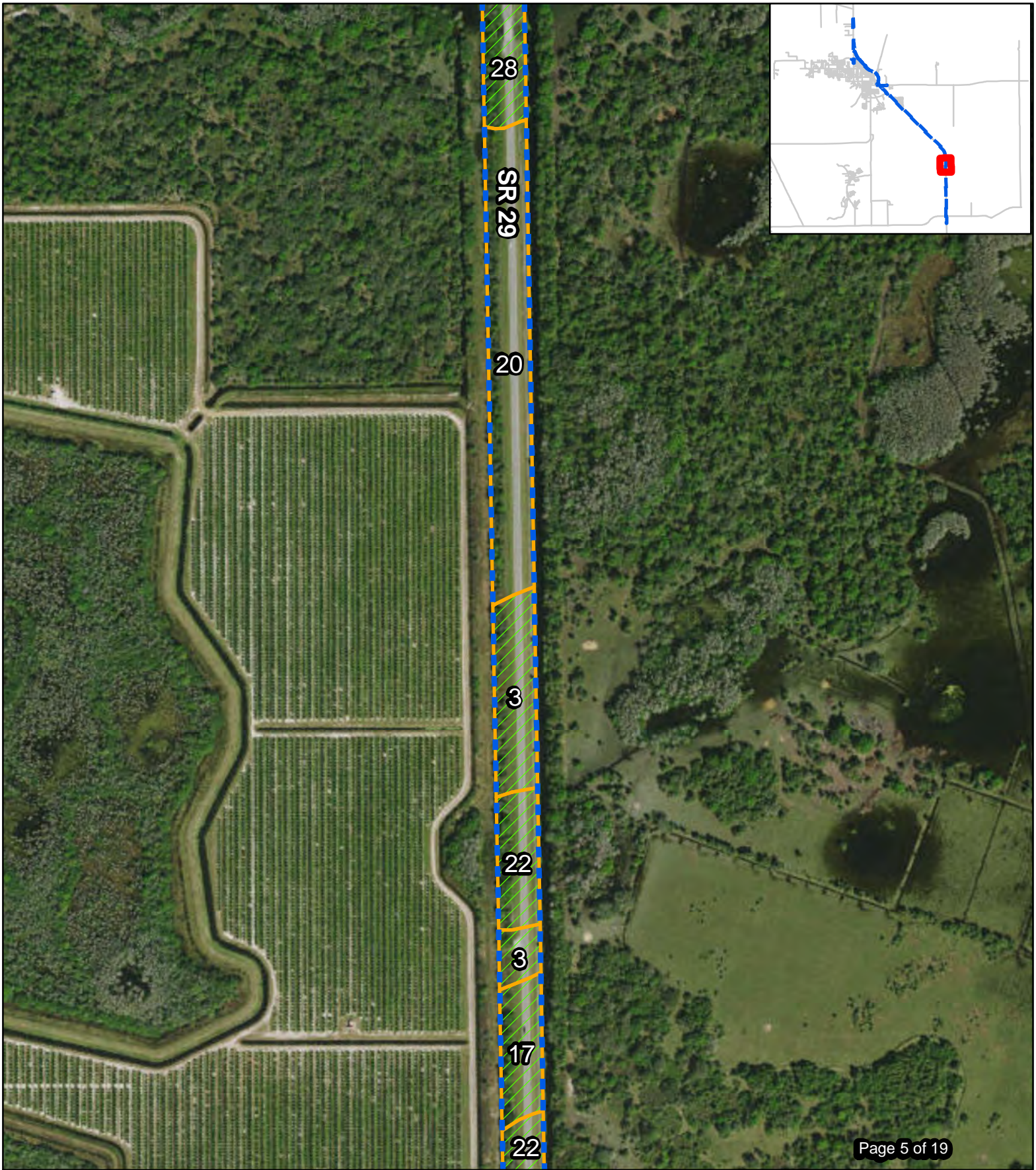
-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018




D-23





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

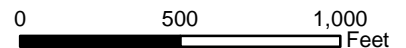
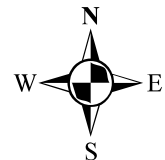
Legend

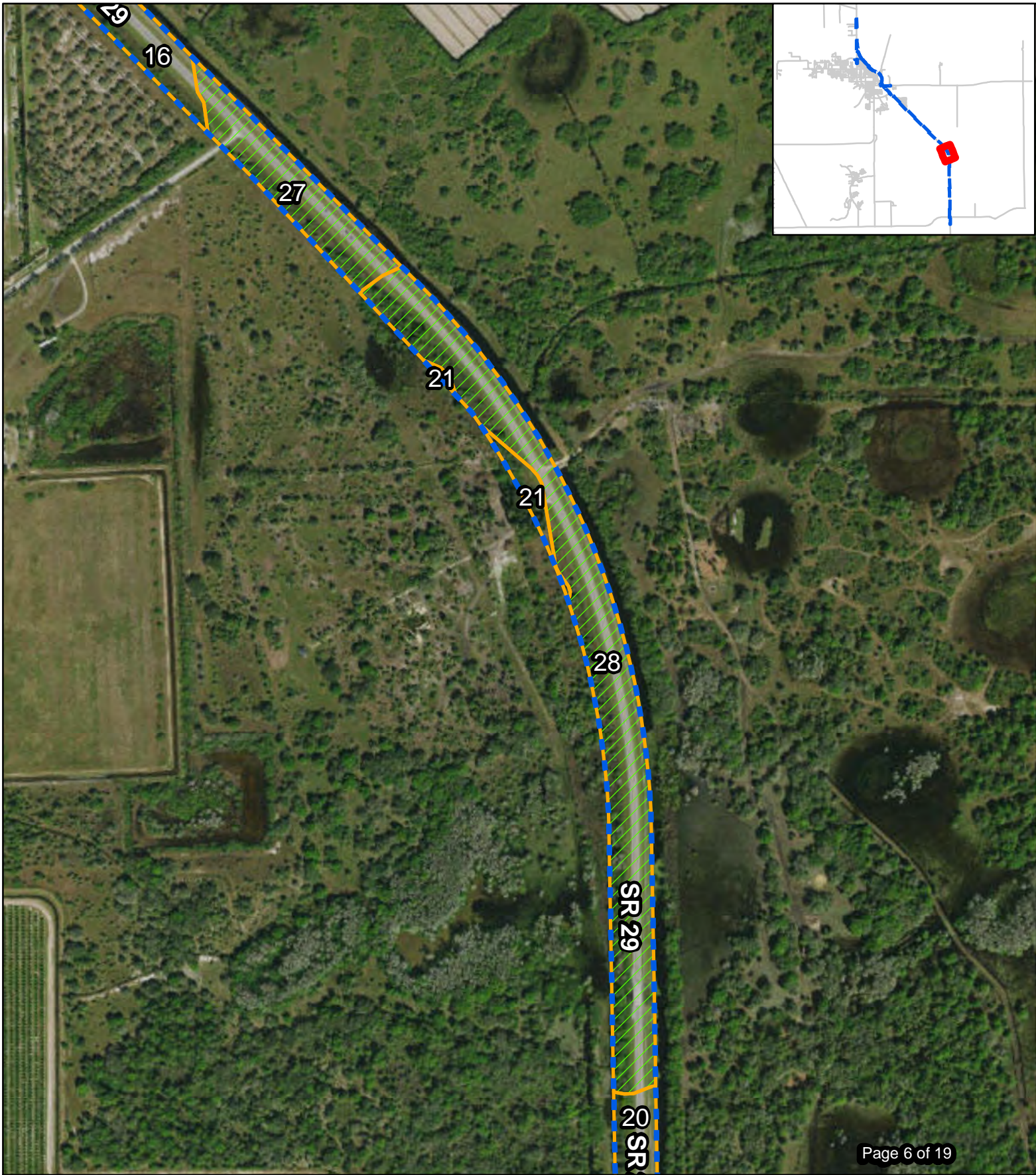
-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018




D-24





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

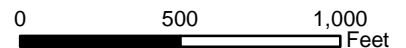
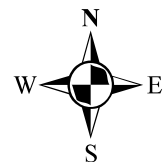
Legend

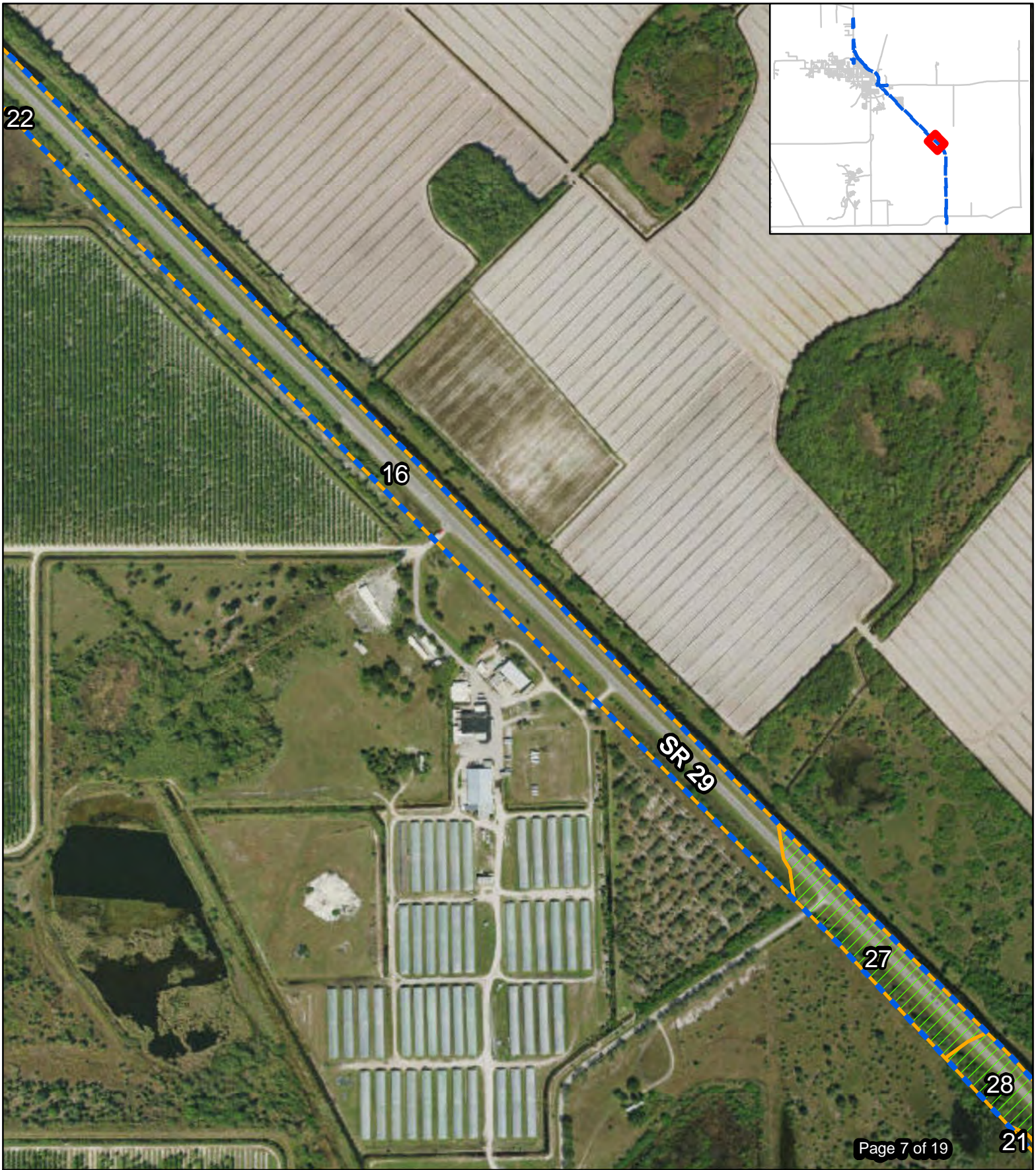
-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018




D-25





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

Legend

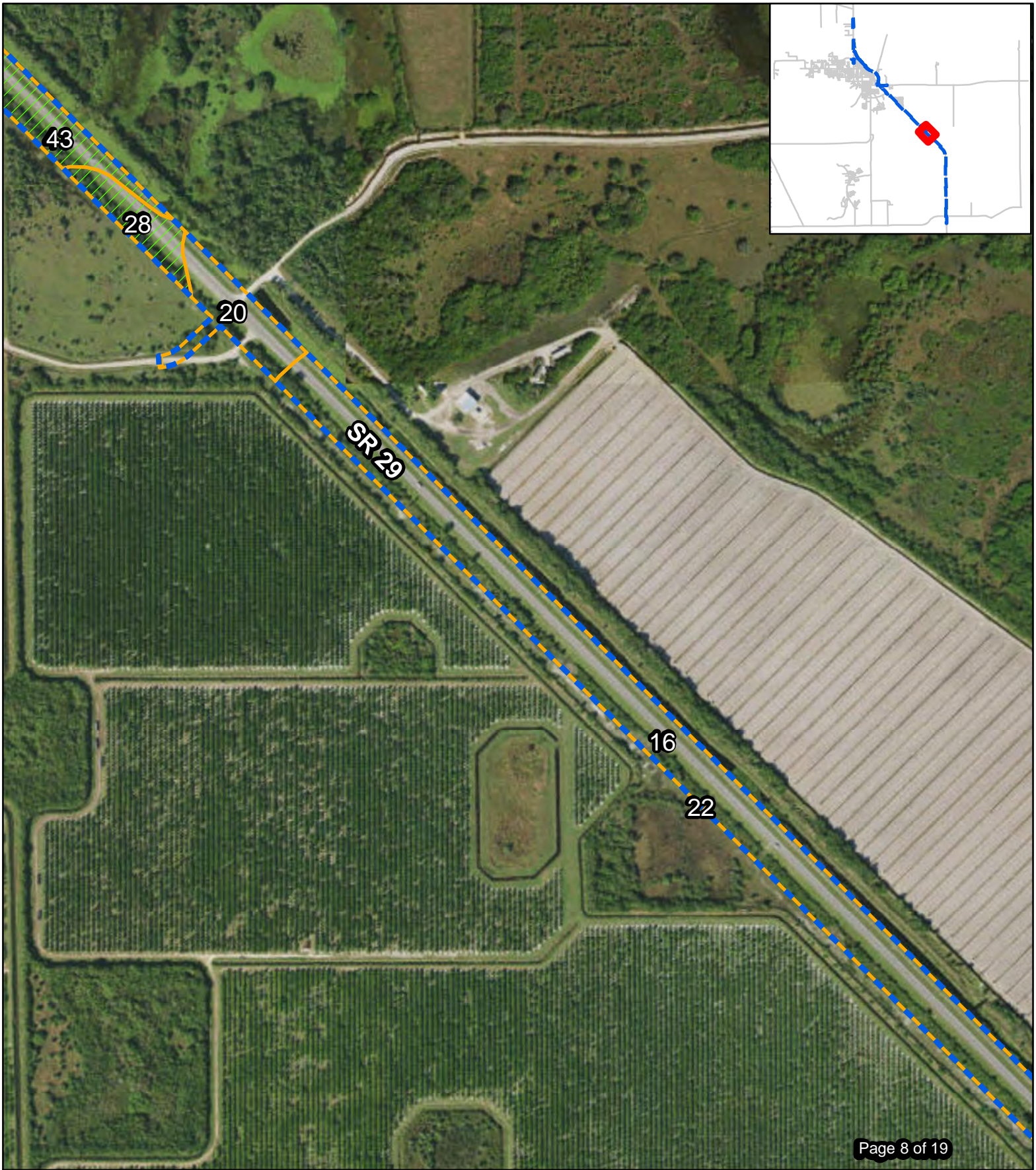
-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018 D-26




N
 W —+— E
 S

0 500 1,000
 Feet



MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

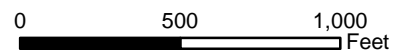
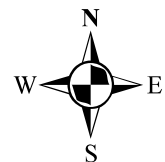
Legend

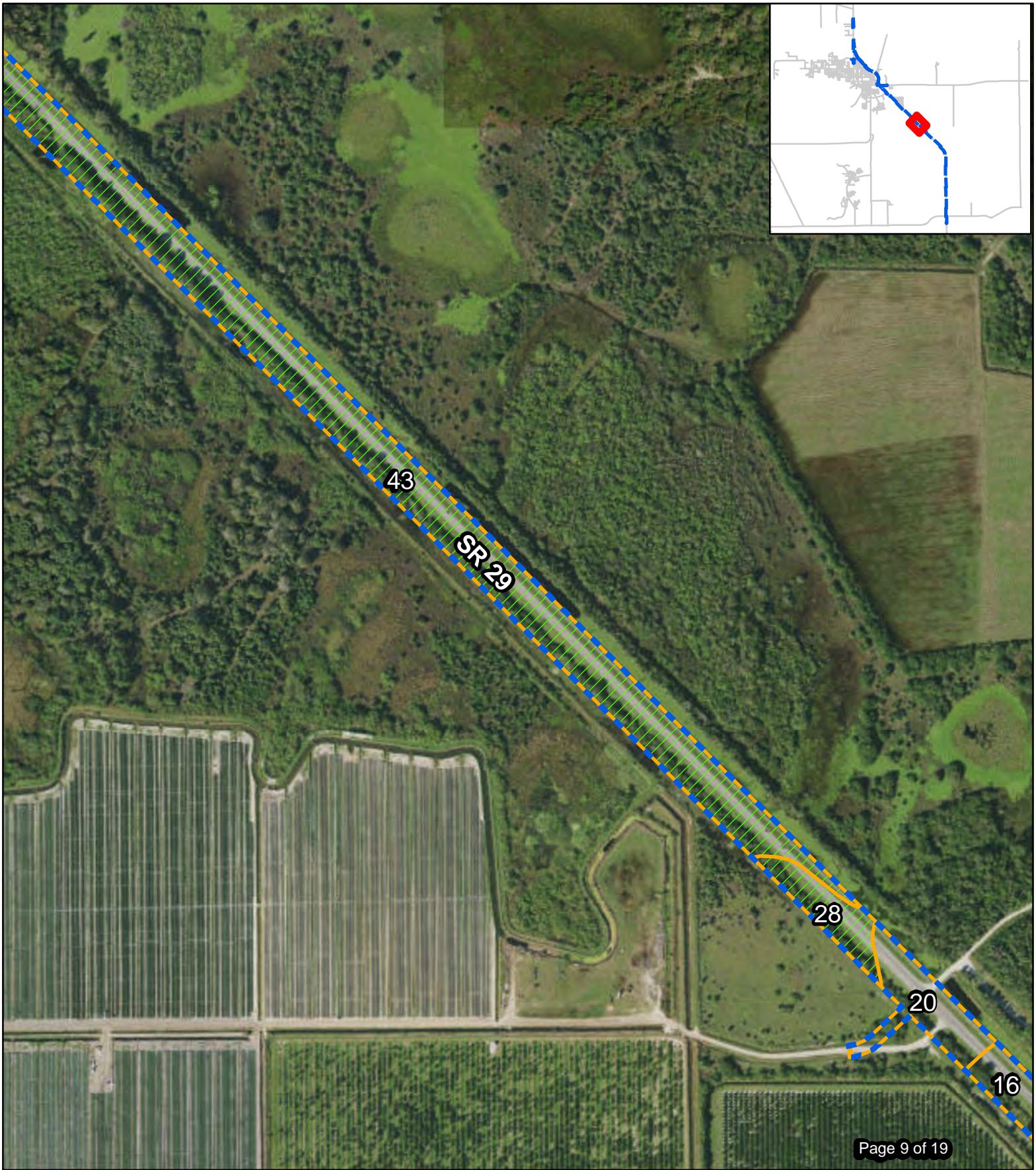
-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018




D-27





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

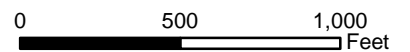
Legend

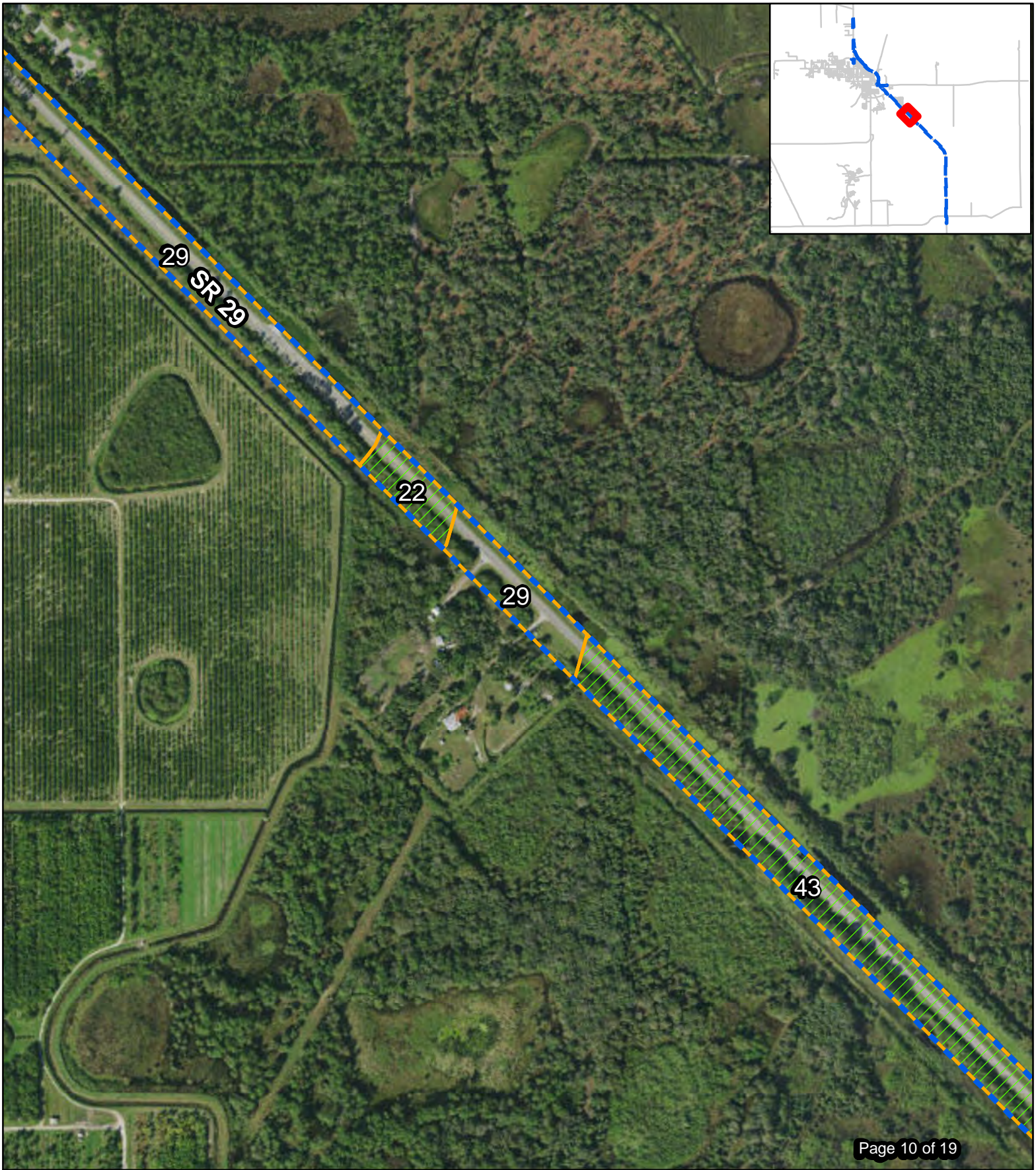
-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018




D-28





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

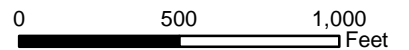
Legend

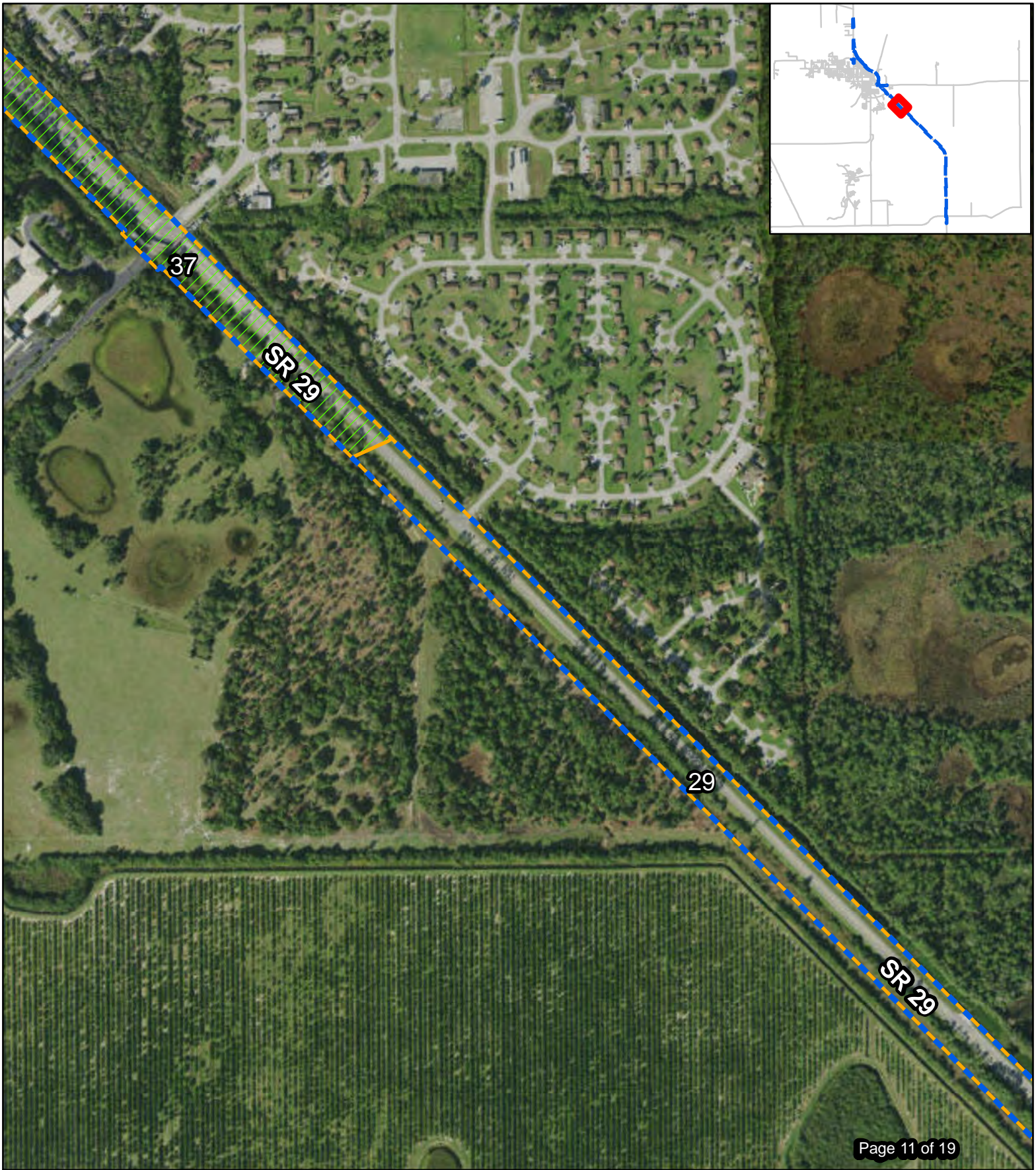
-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018




D-29





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

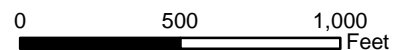
Legend

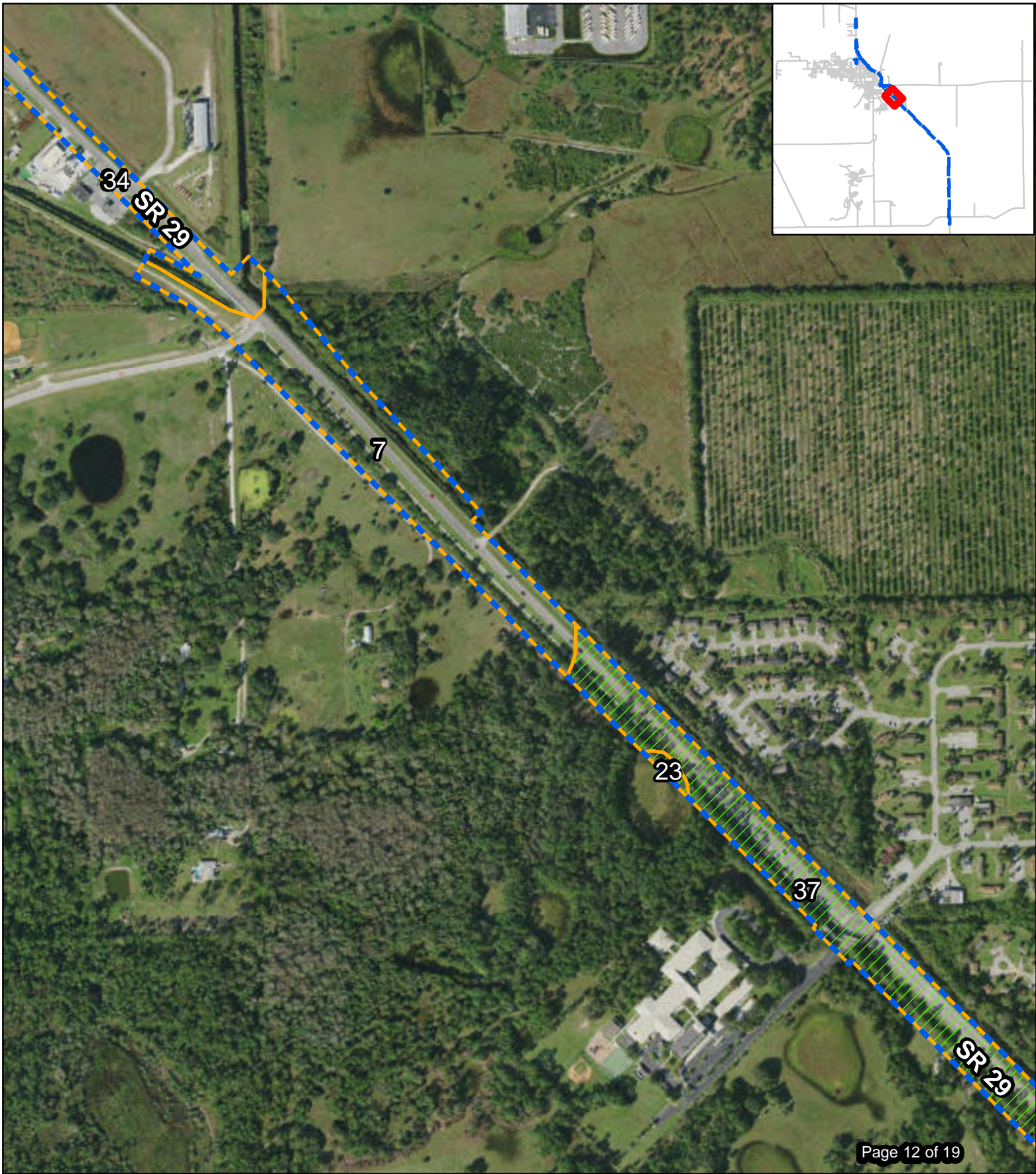
-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018




D-30





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

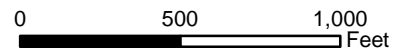
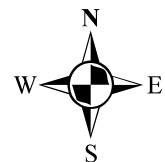
Legend

-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018




D-31





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

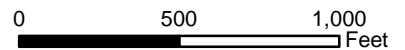
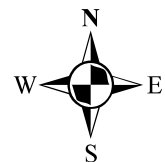
Legend

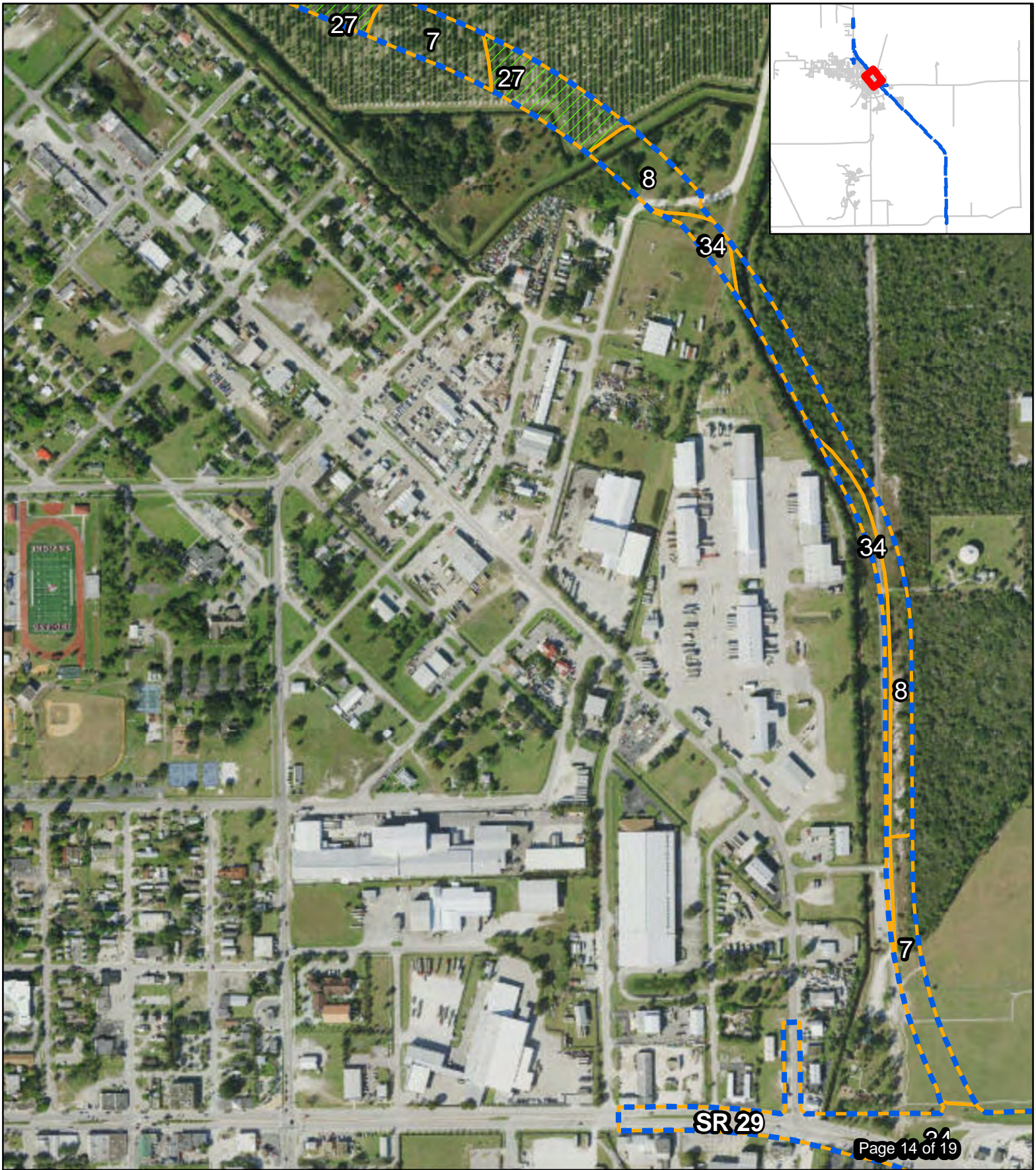
-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018




D-32





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

Legend

-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

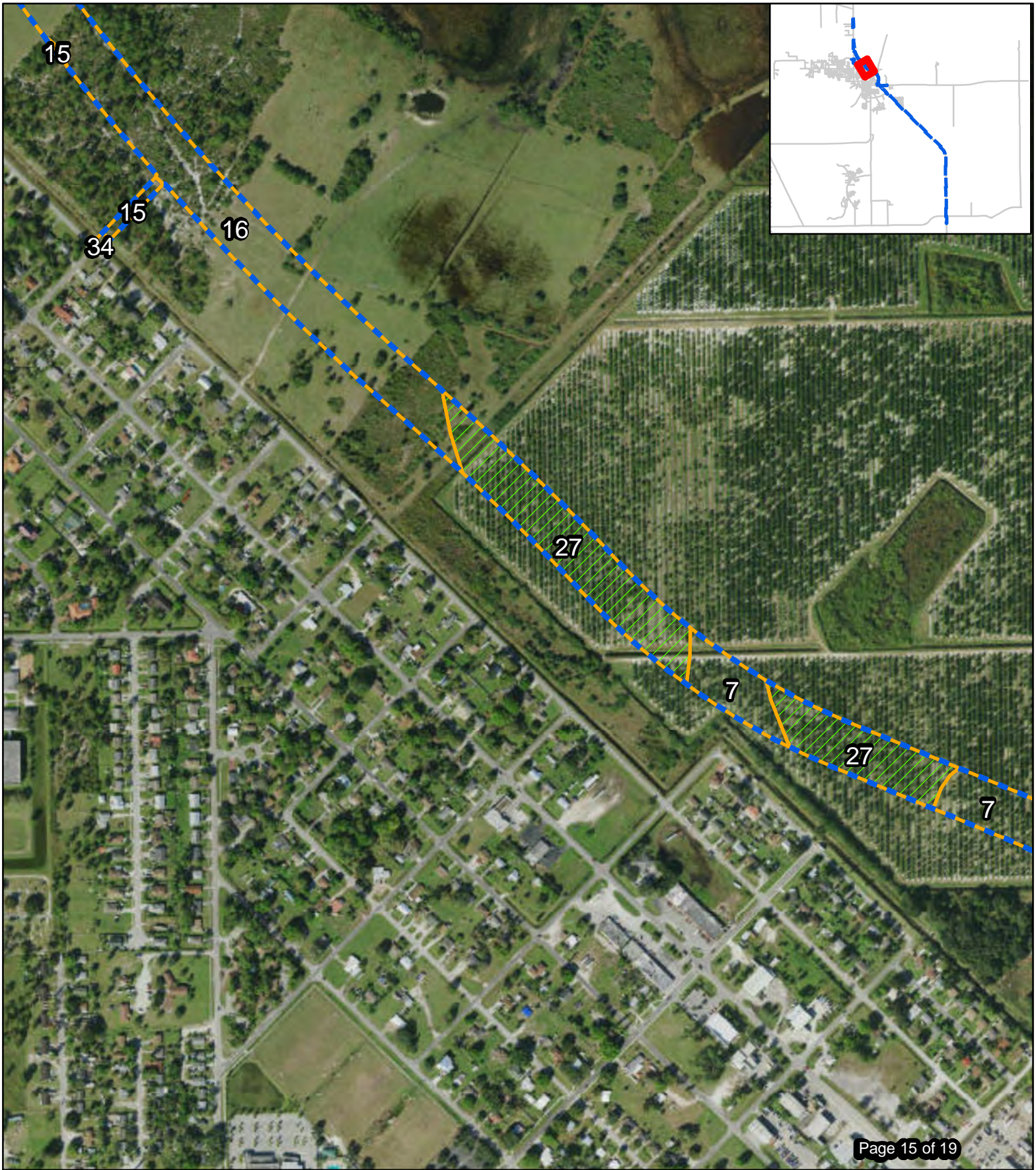
Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018

D-33






0 500 1,000
 Feet



MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

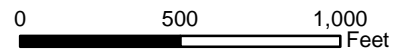
Legend

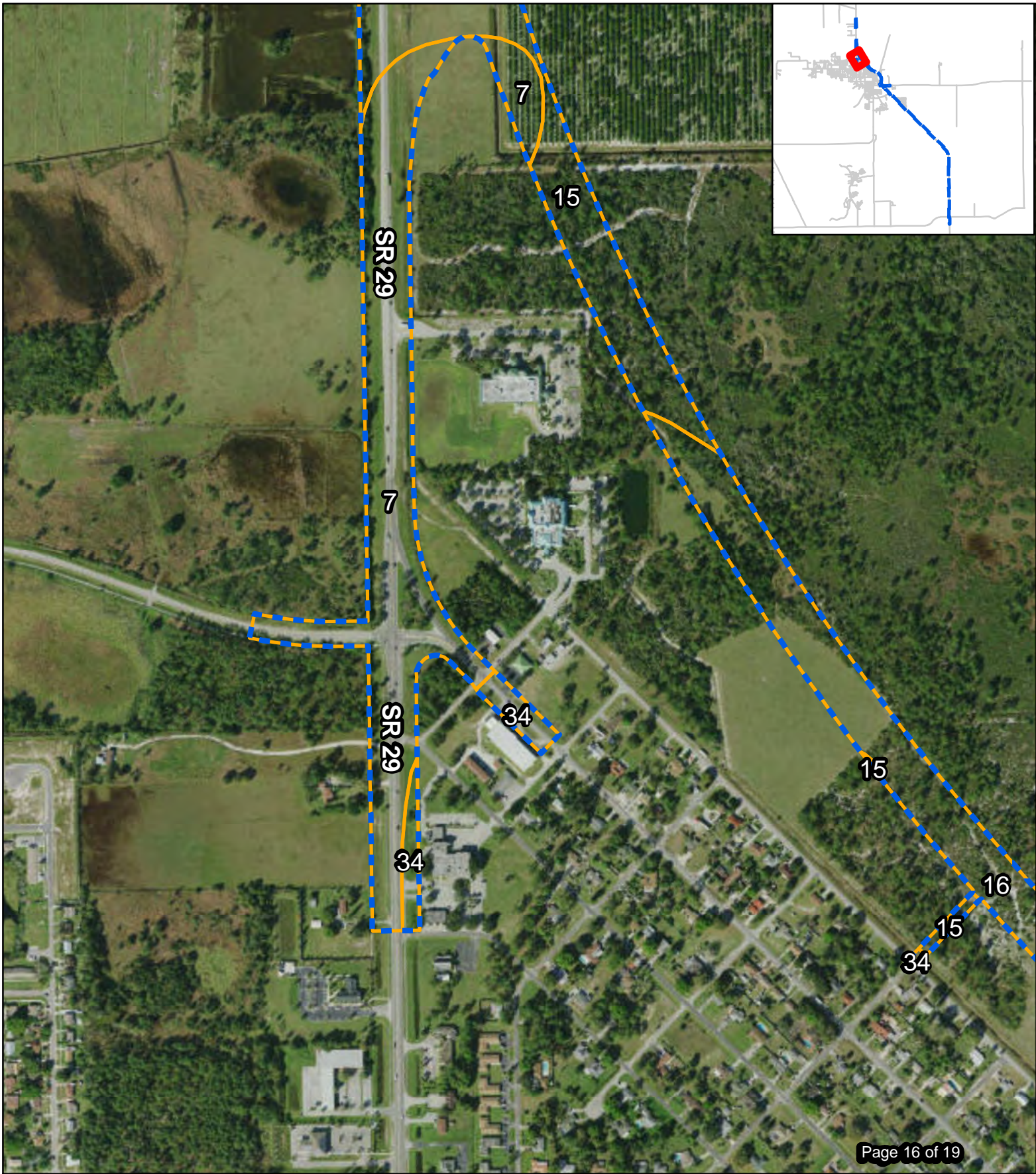
-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018




D-34





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

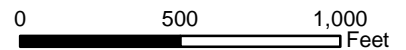
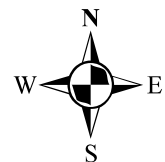
Legend

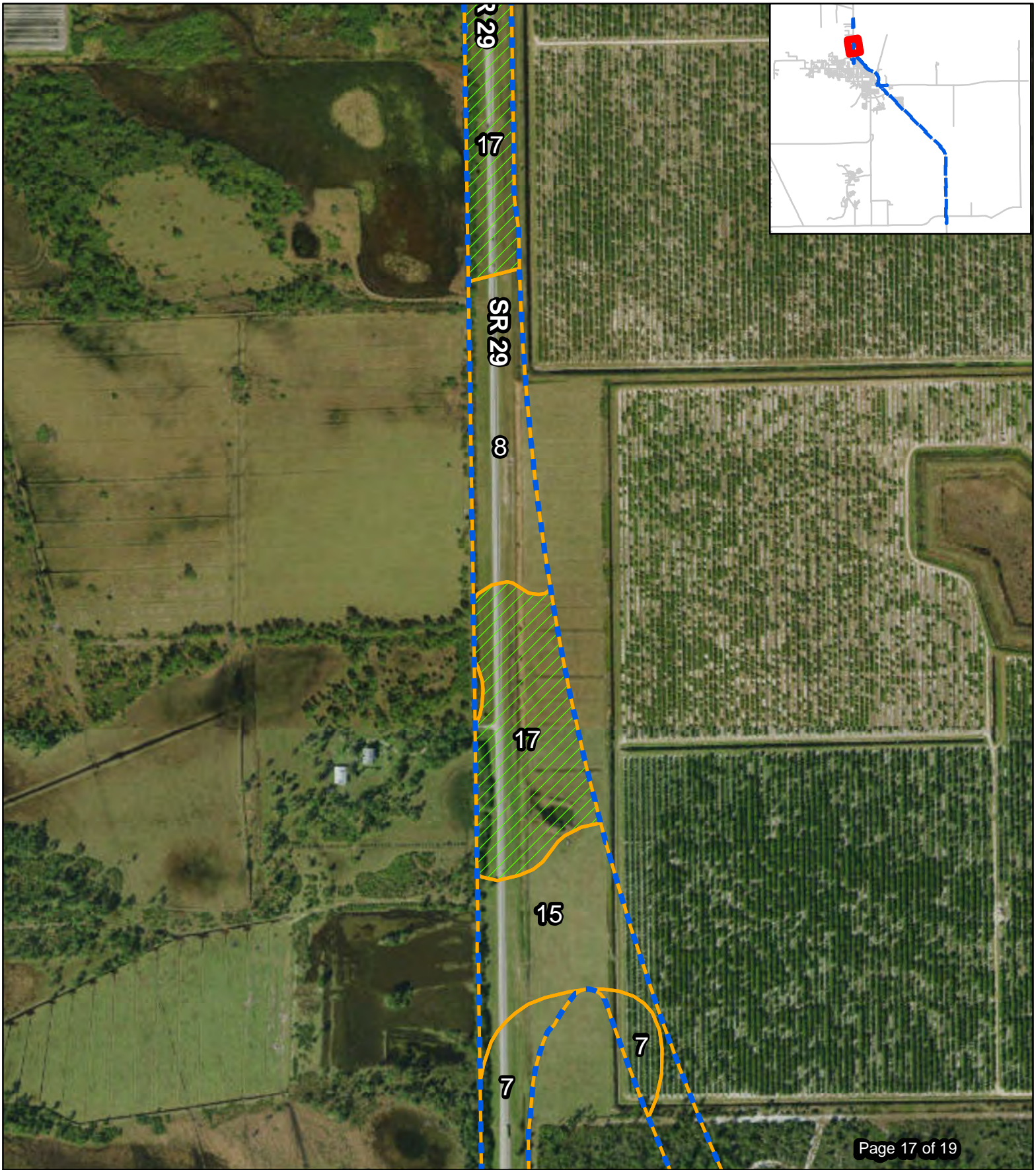
-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018




D-35





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

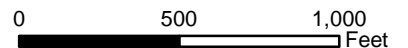
Legend

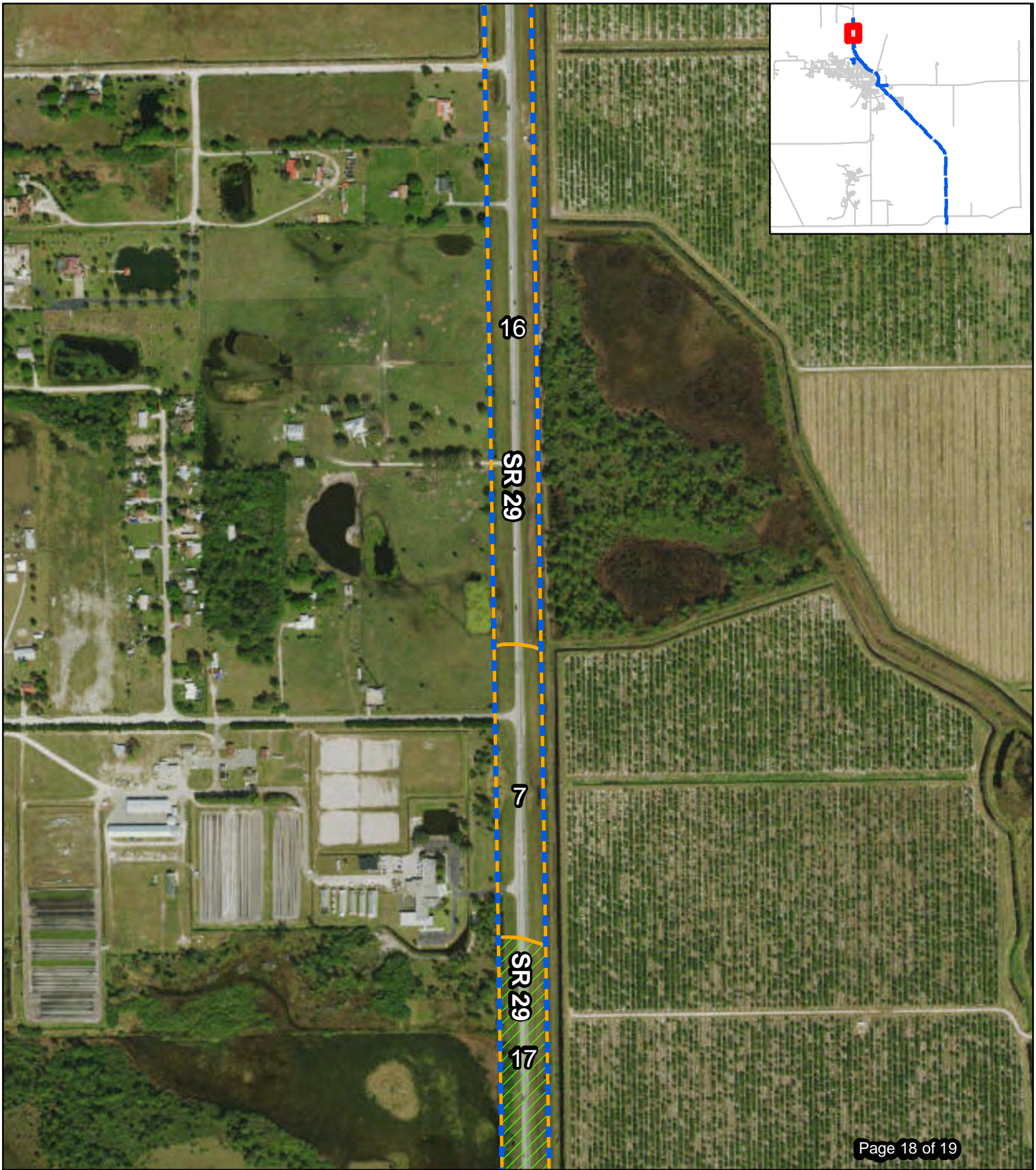
-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018




D-36





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

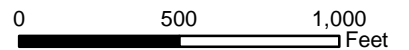
Legend

-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018




D-37





MAP SOURCE : ESRI
 DATA SOURCE : AECOM 2018

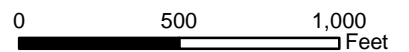
Legend

-  Central Alternative #2
-  Central Alternative #2 Soils
-  Hydric Soils

Soils Map
SR 29 from Oil Well Road to SR 82
PD&E Study
Central Alternative #2

Date: 6/1/2018

D-38



Appendix D

Soils Descriptions

Map Unit 3 – Malabar fine sand, 0 to 2 percent slopes

This map unit consists of nearly level, poorly drained soils on flatwoods and in sloughs. The permeability of this soil is slow or very slow. The available water capacity is low. Under natural conditions, the seasonal high water table is within a depth of 12 inches for 3 to 6 months during most years. Malabar fine sand is classified as hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007). This soil unit comprises 4.22 acres (1.14%) of Central Alternative #1 Revised and 4.31 acres (1.13%) of Central Alternative #2.

Map Unit 7 – Immokalee fine sand, 0 to 2 percent slopes

This nearly level, poorly drained soil is on flatwoods. The permeability of this soil is moderate. The available water capacity is low. Under natural conditions, the seasonal high water table is within a depth of 6-18 inches for 1 to 6 months during most years. Immokalee fine sand is not classified as hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007). This soil unit comprises 69.20 acres (18.78%) of Central Alternative #1 Revised and 75.41 acres (19.73%) of Central Alternative #2.

Map Unit 8 - Myakka fine sand, 0 to 2 percent slopes

This nearly level, poorly drained soil is on flatwoods. The permeability of this soil is moderate. The available water capacity is low. Under natural conditions, the seasonal high water table is within a depth of 6-18 inches for 1 to 6 months during most years. Myakka fine sand is not classified as hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007). This soil unit comprises 14.11 acres (3.83%) of Central Alternative #1 Revised and 15.38 acres (4.02%) of Central Alternative #2.

Map Unit 10 - Oldsmar fine sand, limestone substratum

This nearly level, poorly drained soil is found on flatwoods. The permeability of this soil is slow, and the available water capacity is low. Under natural conditions, the seasonal high water table is within a depth of 6-18 inches for 1 to 6 months during most years. Oldsmar fine sand, limestone substratum is not classified as hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007). This soil unit comprises 4.71 acres of the project study area (1.31% of Central Alternative #1 Revised and 1.23% of Central Alternative #2).

Map Unit 15 - Pomello fine sand, 0 to 2 percent slopes

This nearly level, moderately well drained soil is on low ridges on flatwoods. The permeability of this soil is moderately rapid. The available water capacity is low. Under natural conditions, the seasonal high water table is at a depth of 24 to 42 inches for 1 to 5 months during most years. Pomello fine sand is not classified as hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007). This soil unit comprises 16.33 acres (4.42%) of Central Alternative #1 Revised and 16.42 acres (4.30%) of Central Alternative #2.

Map Unit 16 - Oldsmar fine sand, 0 to 2 percent slopes

This is a nearly level, poorly drained soil on flatwoods. The permeability of this soil is slow or very slow. The available water capacity is low. Under natural conditions, the seasonal high water table is between depths of 6 to 18 inches for 1 to 6 months during most years. Oldsmar fine sand is not classified as hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007). This soil unit comprises 74.12 acres (20.10%) of Central Alternative #1 Revised and 74.42 acres (19.47%) of Central Alternative #2.

Map Unit 17 - Basinger fine sand, 0 to 2 percent slopes

This nearly level, poorly drained soil is found in sloughs and poorly defined drainageways. The permeability of this soil is rapid. The available water capacity is low. Under natural conditions, the seasonal high water table is within a depth of 12 inches for 3 to 6 months during most years. Basinger fine sand is classified as hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007). This soil unit comprises 30.10 acres of the project study area (8.17% of Central Alternative #1 Revised and 7.87% of Central Alternative #2).

Map Unit 20 – Fort Drum and Malabar high fine sands

These nearly level, poorly drained soils are on ridges along sloughs. The permeability in the Ft. Drum soil is rapid. The permeability in the Malabar soil is slow or very slow. The available water capacity of both soils is low. Under natural conditions, the seasonal high water table is at a depth of 6 to 18 inches for 1 to 6 months during most years. Fort Drum and Malabar high fine sands are not classified as hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007). This soil unit comprises 11.01 acres of the project study area (3.01% of Central Alternative #1 Revised and 2.89% of Central Alternative #2).

Map Unit 21 - Boca fine sand, 0 to 2 percent slopes

This nearly level, poorly drained soil is on flatwoods. The permeability of this soil is moderate. The available water capacity is low. Under natural conditions, the seasonal high water table is within a depth of 6-18 inches for 1 to 6 months during most years. Boca fine sand is classified as hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007). This soil unit comprises 14.22 acres (3.81%) of Central Alternative #1 Revised and 14.37 acres (3.75%) of Central Alternative #2.

Map Unit 22 – Chobee, Winder, and Gator soils, depressional

These are level, very poorly drained soils in depressions and marshes. The permeability in these soils is slow or very slow. The available water capacity is moderate in the Chobee and Winder soils and high in the Gator soil. Under natural conditions, these soils are ponded for 6 months or more each year during most years. Chobee, Winder, and Gator soils, depressional are classified as hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007). This soil unit comprises 6.11 acres (1.69%) of Central Alternative #1 Revised and 6.31 acres (1.64%) of Central Alternative #2.

Map Unit 23 - Holopaw and Okeelanta soils, depressional

These are level, very poorly drained soils in depressions and marshes. The permeability in the Holopaw soil is moderate to moderately slow, and the available water capacity is low. The permeability in the Okeelanta soil is slow or very slow, and the available water capacity is high. Under natural conditions, these soils are ponded for 6 months or more each year. Holopaw and Okeelanta soils, depressional are classified as hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007). This soil unit comprises 0.30 acres (0.10% of Central Alternative #1 Revised and 0.08% of Central Alternative #2).

Map Unit 25 - Boca, Riviera, limestone substratum and Copeland fine sands, depressional

These are level, very poorly drained soils in depressions, cypress swamps, and marshes. The permeability in the Boca soil is moderate, and the available water capacity is very low. The permeability in the Riviera soil is moderately rapid to moderately slow, and the available water capacity is low. The permeability in the Copeland soil is moderately slow, and the available water capacity is moderate. Under natural conditions, these soils are ponded for 6 months or more each year. Boca, Riviera, limestone substratum and Copeland fine sands, depressional are classified as hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007). This soil unit comprises 1.36 acres (0.37%) of Central Alternative #1 Revised and 1.62 acres (0.43%) of Central Alternative #2.

Map Unit 27 - Holopaw fine sand, 0 to 2 percent slopes

This nearly level, poorly drained soil is found in sloughs and poorly defined drainageways. The permeability of this soil is moderate to moderately slow. The available water capacity is low. Under natural conditions, the seasonal high water table is within a depth of 12 inches for 3 to 6 months during most years. Holopaw fine sand is classified as hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007). This soil unit comprises 21.19 acres (5.67%) of Central Alternative #1 Revised and 31.27 acres (8.18%) of Central Alternative #2.

Map Unit 28 - Pineda and Riviera fine sands

This is a nearly level, poorly drained soil found in sloughs and poorly defined drainageways. The permeability of Pineda and Riviera soils is slow or very slow. The available water capacity for both soils is low. Under natural conditions, the seasonal high water table is within a depth of 12 inches for 3 to 6 months during most years. Pineda and Riviera fine sands are classified as hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007). This soil unit comprises 16.51 acres (4.52%) of Central Alternative #1 Revised and 16.70 acres (4.37%) of Central Alternative #2.

Map Unit 29 - Wabasso fine sands, 0 to 2 percent slopes

This nearly level, moderately well drained soil is found on flatwoods. The permeability of this soil is slow or very slow, and the available water capacity is low. Under natural conditions, the seasonal high water table is at a depth of 6 to 18 inches for 1 to 6 months during most years. Wabasso fine sand is not classified as hydric by the *Hydric Soils of*

Florida Handbook (Hurt, 2007). This soil unit comprises 19.12 acres (5.23%) of Central Alternative #1 Revised and 19.12 acres (5.01%) of Central Alternative #2.

Map Unit 34 - Urban land -Immokalee-Oldsmar, limestone substratum complex

These areas of Urban land and nearly level, poorly drained soils are in urban areas. The permeability in the Immokalee soil is moderate, and the available water capacity is low. The permeability in the Oldsmar soil is moderately slow, and the available water capacity is low. Under natural conditions, the seasonal high water table is at a depth of 6 to 18 inches for 1 to 6 months during most years. Urban land -Immokalee-Oldsmar, limestone substratum complex is unranked. This soil unit comprises 31.66 acres (8.58%) of Central Alternative #1 Revised and 26.34 acres (6.89%) of Central Alternative #2.

Map Unit 37 -Tusawilla fine sand

This nearly level, poorly drained soil is found in flatwoods and hammocks. The permeability of this soil is moderate to moderately slow. The available water capacity is low. Under natural conditions, the seasonal high water table is within a depth of 6 to 18 inches for 1 to 6 months during most years. Tusawilla fine sand is classified as hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007). This soil unit comprises 12.71 acres (3.40%) of Central Alternative #1 Revised and 12.76 acres (3.33%) of Central Alternative #2.

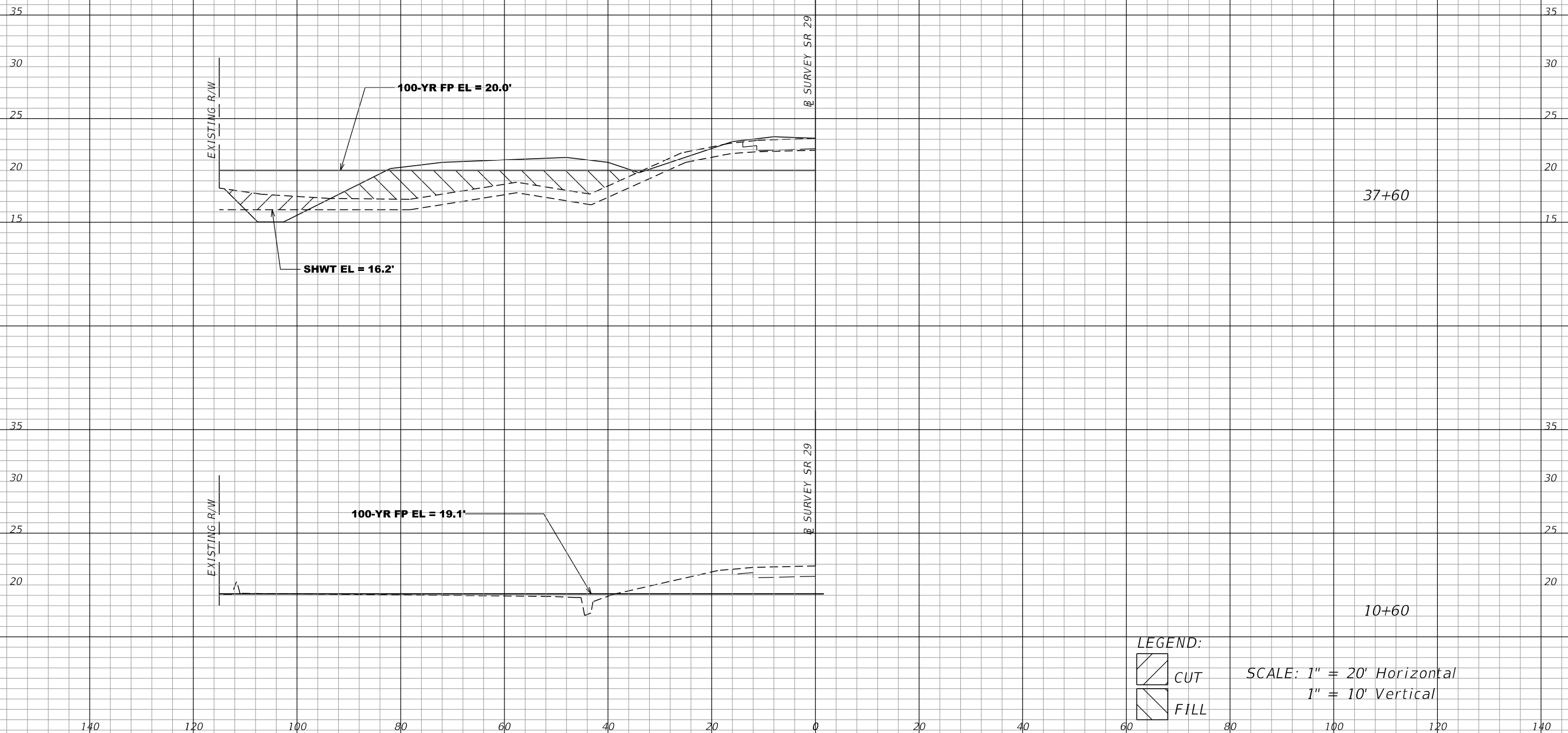
Map Unit 43 -Winder, Riviera, limestone substratum and Chobee soils, depressional

These are level, very poorly drained soils in marshes. The permeability in the Winder and Chobee soils is slow or very slow. The available water capacity of both soils is moderate. The permeability in the Riviera soil is moderately rapid to moderately slow. The available water capacity is low. Under natural conditions, the soils in this unit are ponded for 6 months or more during most years. Winder, Riviera, limestone substratum and Chobee soils, depressional are classified as hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007). This soil unit comprises 21.65 acres (5.87%) of Central Alternative #1 Revised and 21.71 acres (5.68%) of Central Alternative #2.

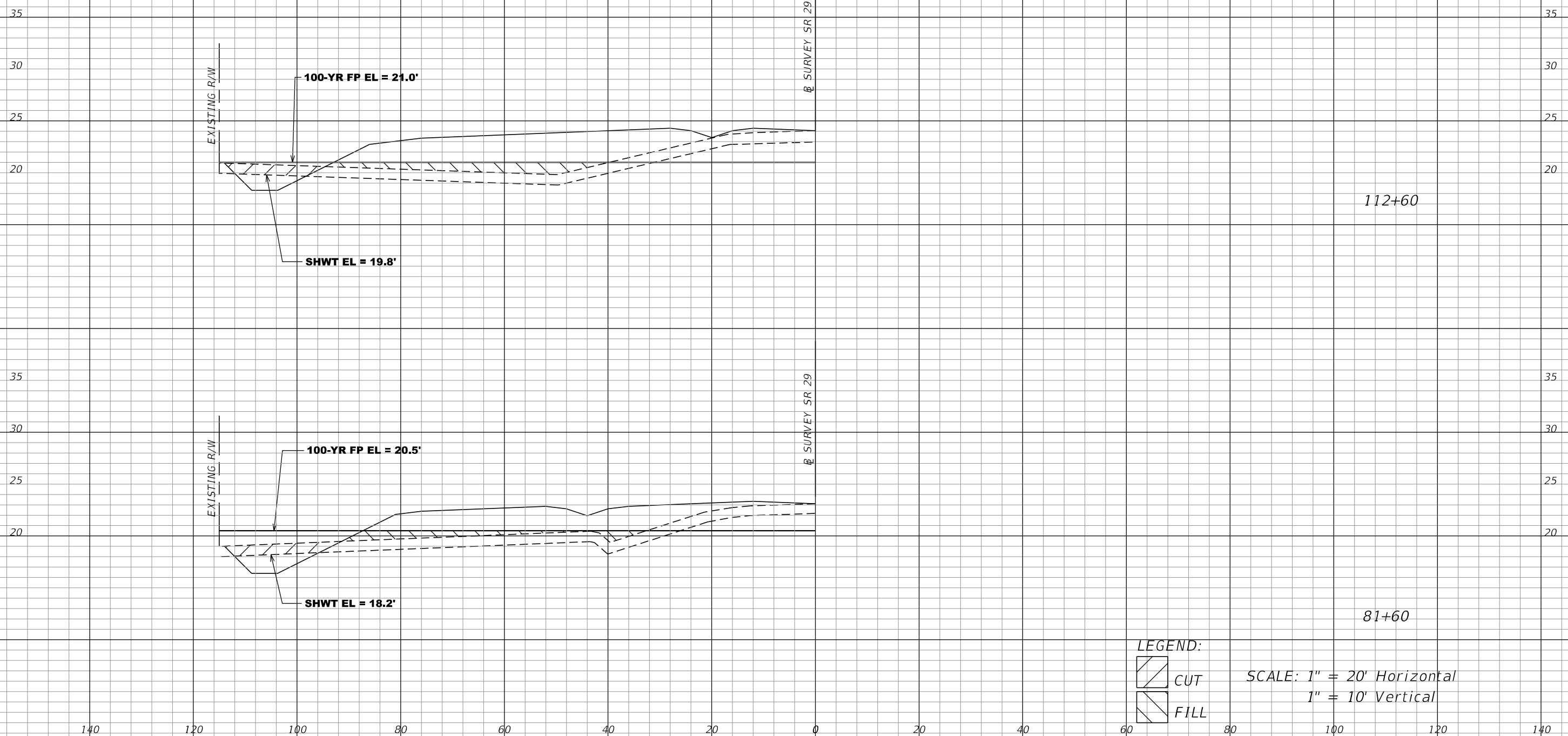
Appendix E
Floodplain Impact Calculations

APPENDIX E
TABLE OF CONTENTS

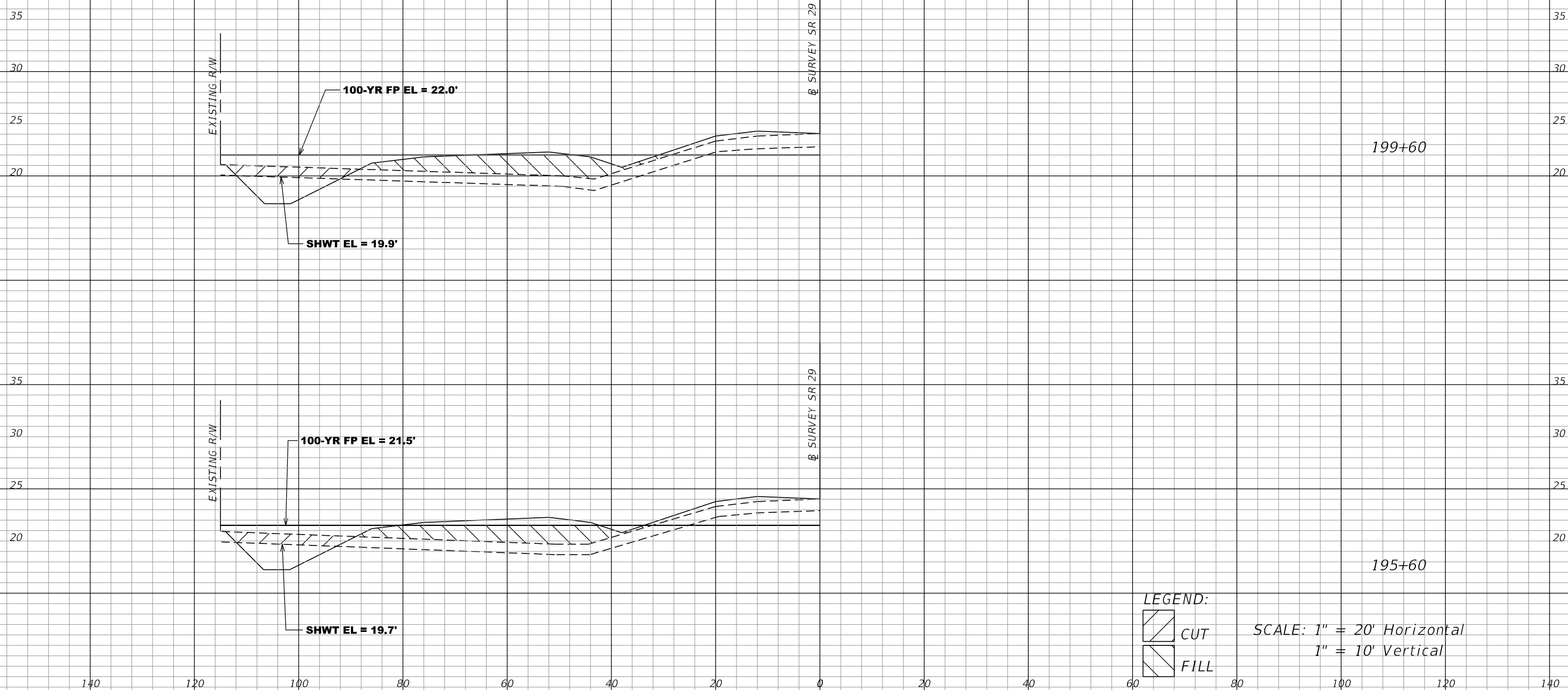
E-1	Cross Sections
E-23	Floodplain Impact Calculations
E-26	Available Pond Volumes for Floodplain Compensation Areas



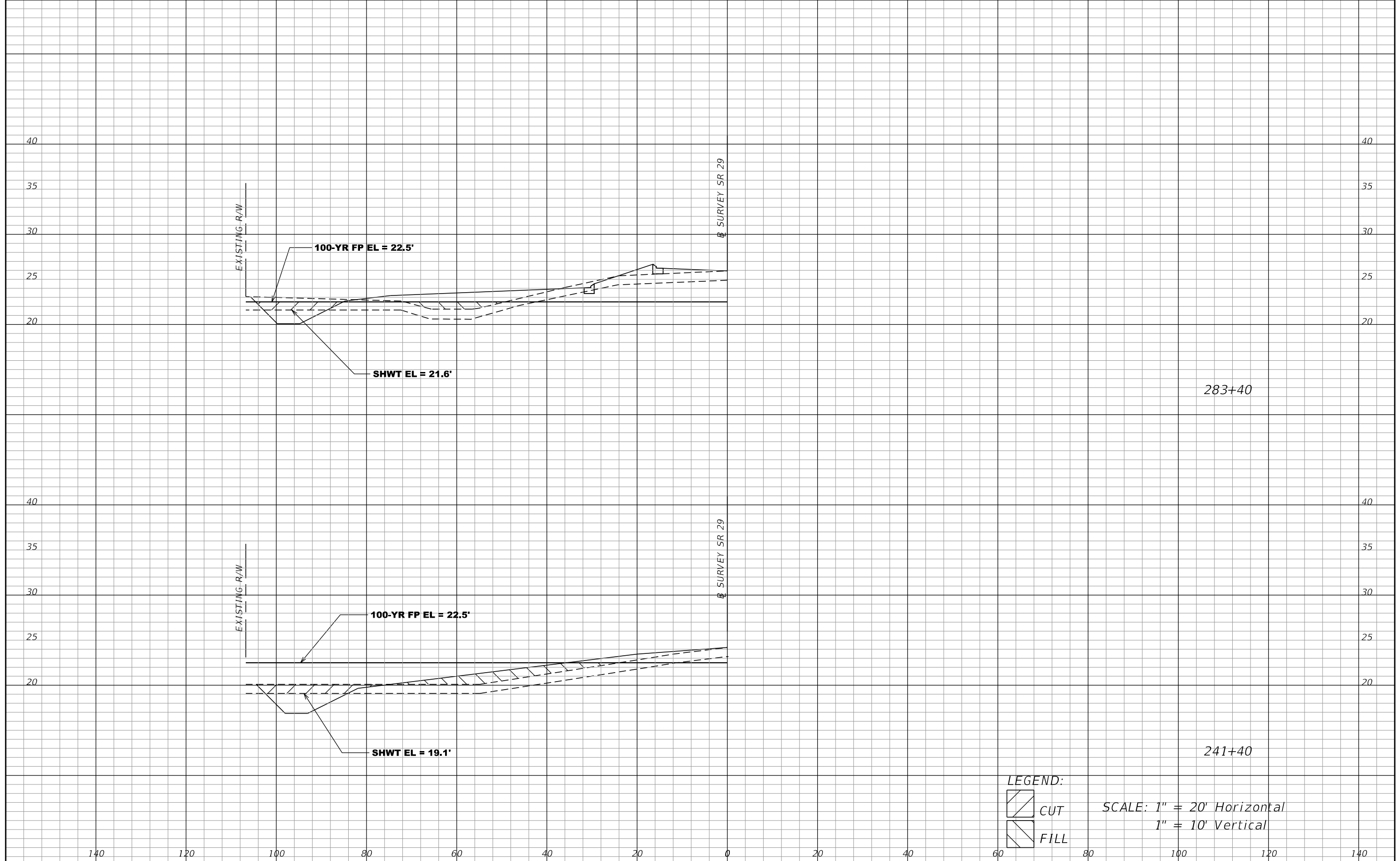
Floodplain Compensation Cross Sections (F-1)



Floodplain Compensation Cross Sections (F-1)



Floodplain Compensation Cross Sections (F-1)



Floodplain Compensation Cross Sections (F-1)

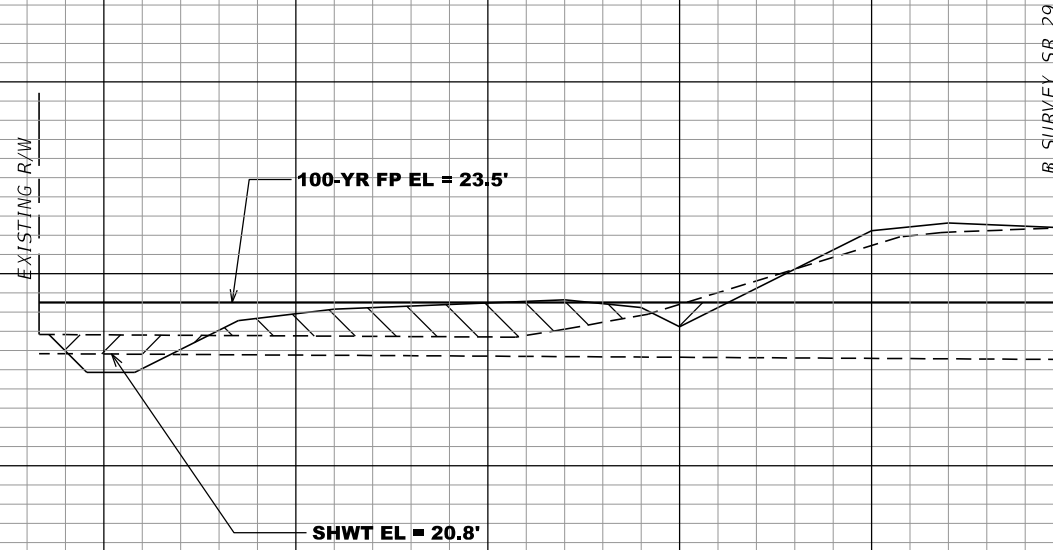
40

35

30

25

20



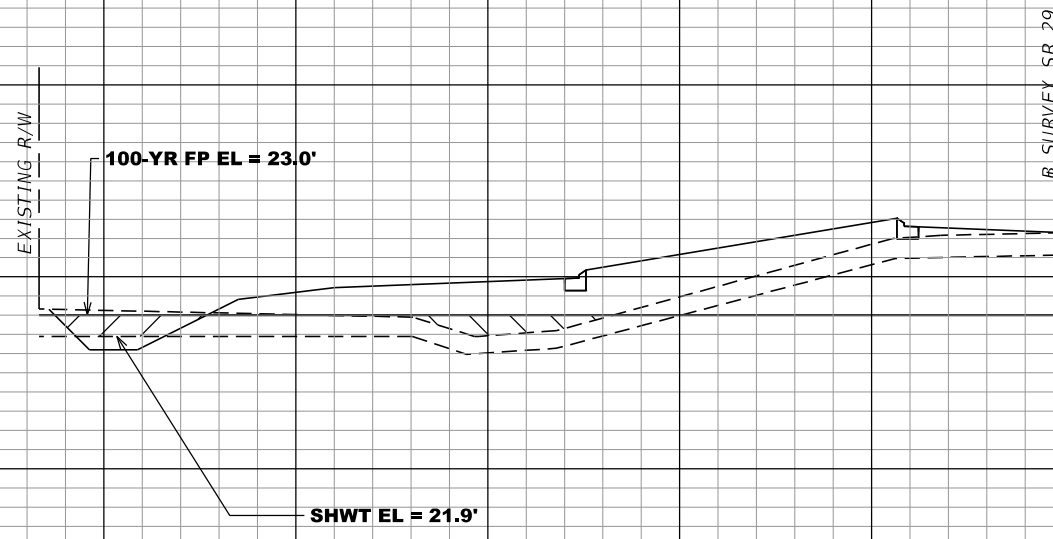
374+40

40

35

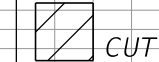
30

25

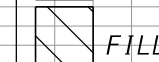


329+40

LEGEND:



CUT



FILL

SCALE: 1" = 20' Horizontal
 1" = 10' Vertical

140

120

100

80

60

40

20

0

20

40

60

80

100

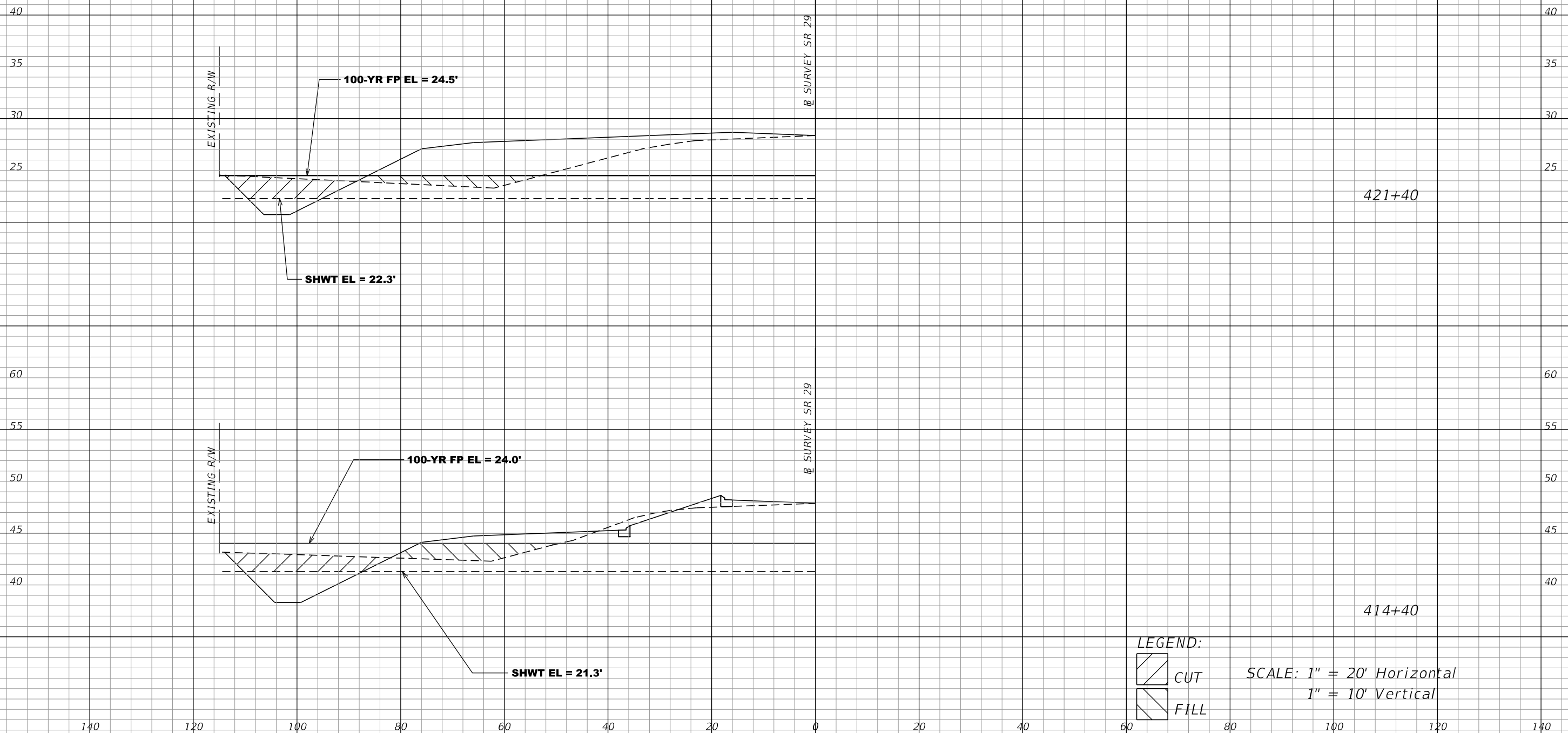
120

140

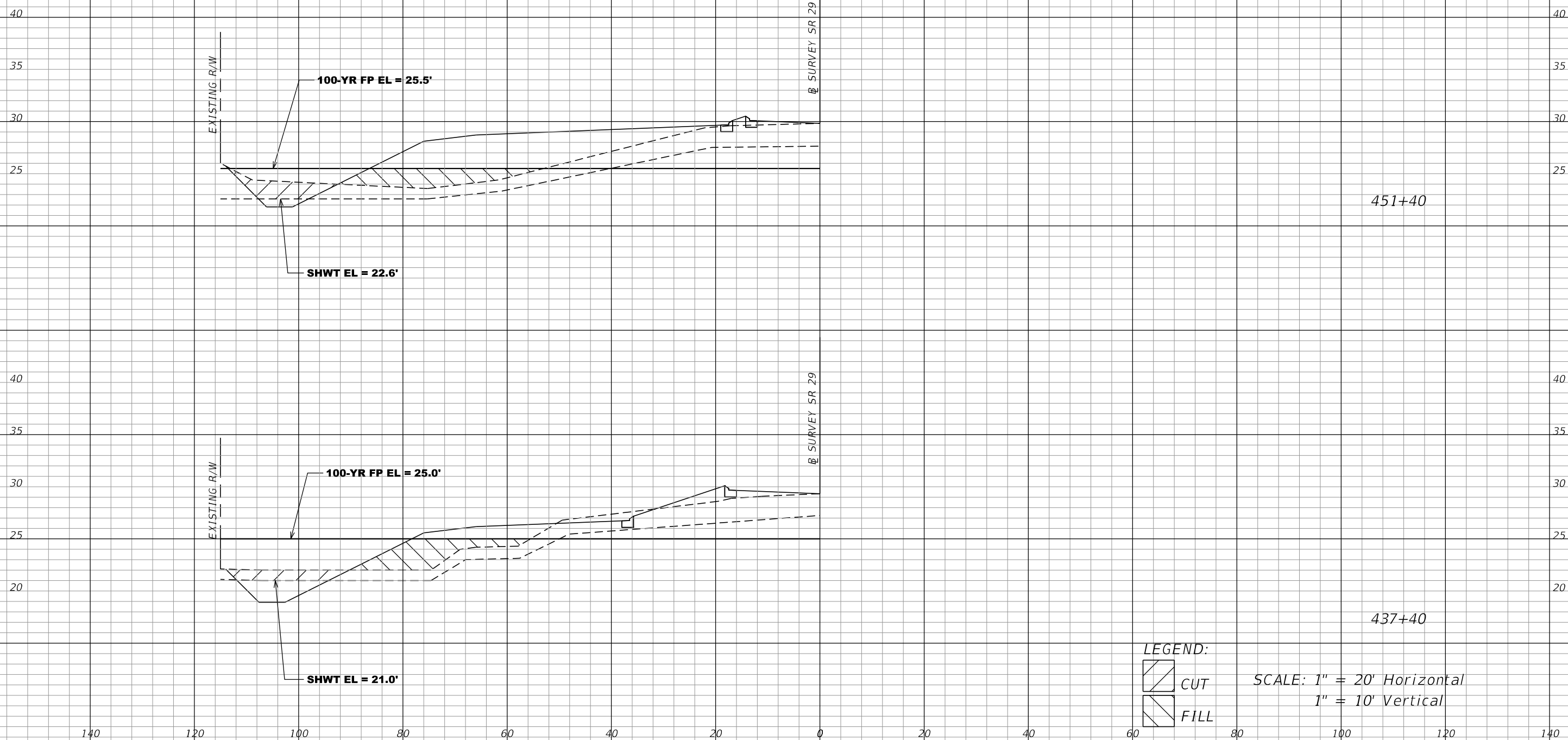
Floodplain Compensation Cross Sections (F-1)

PAGE NO.

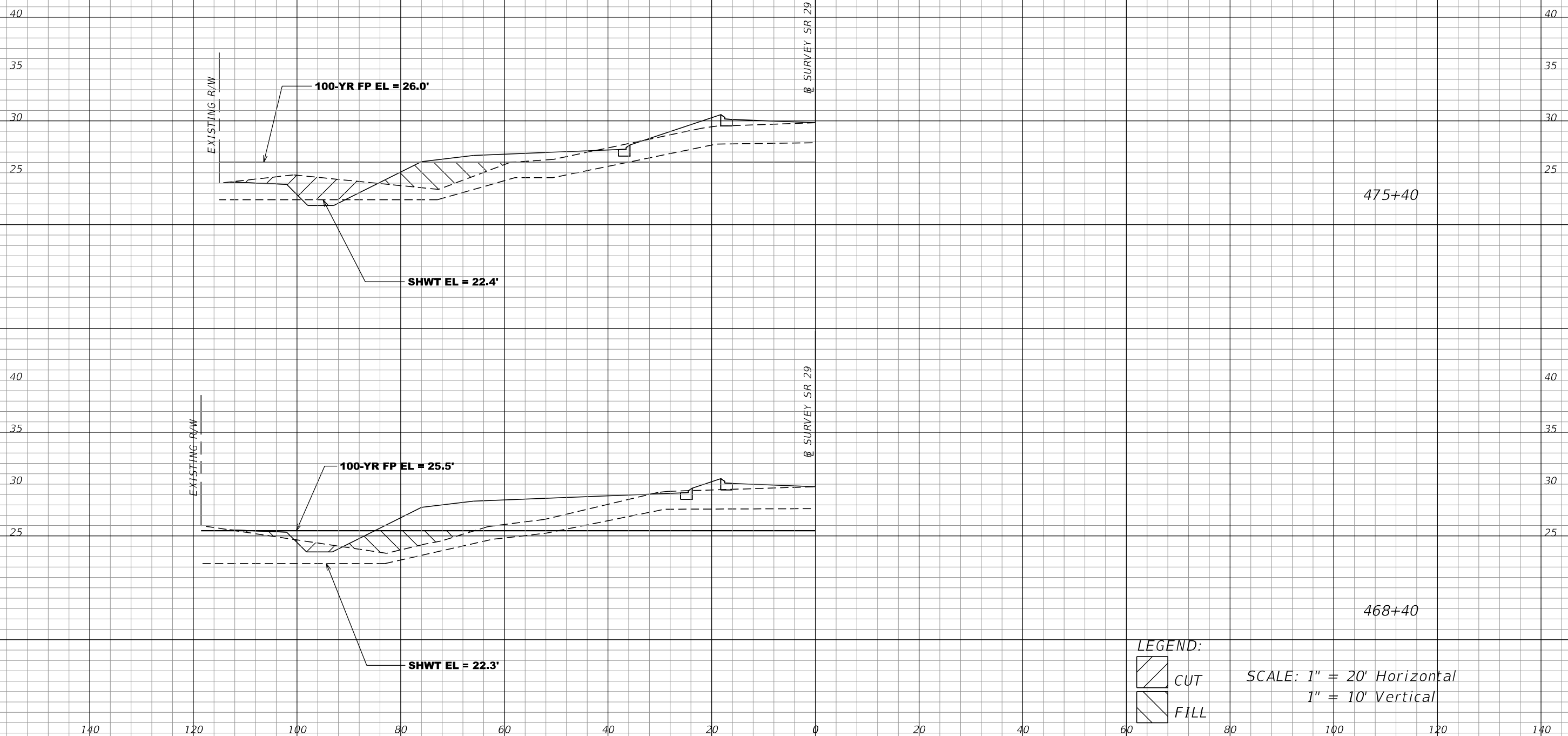
E-5



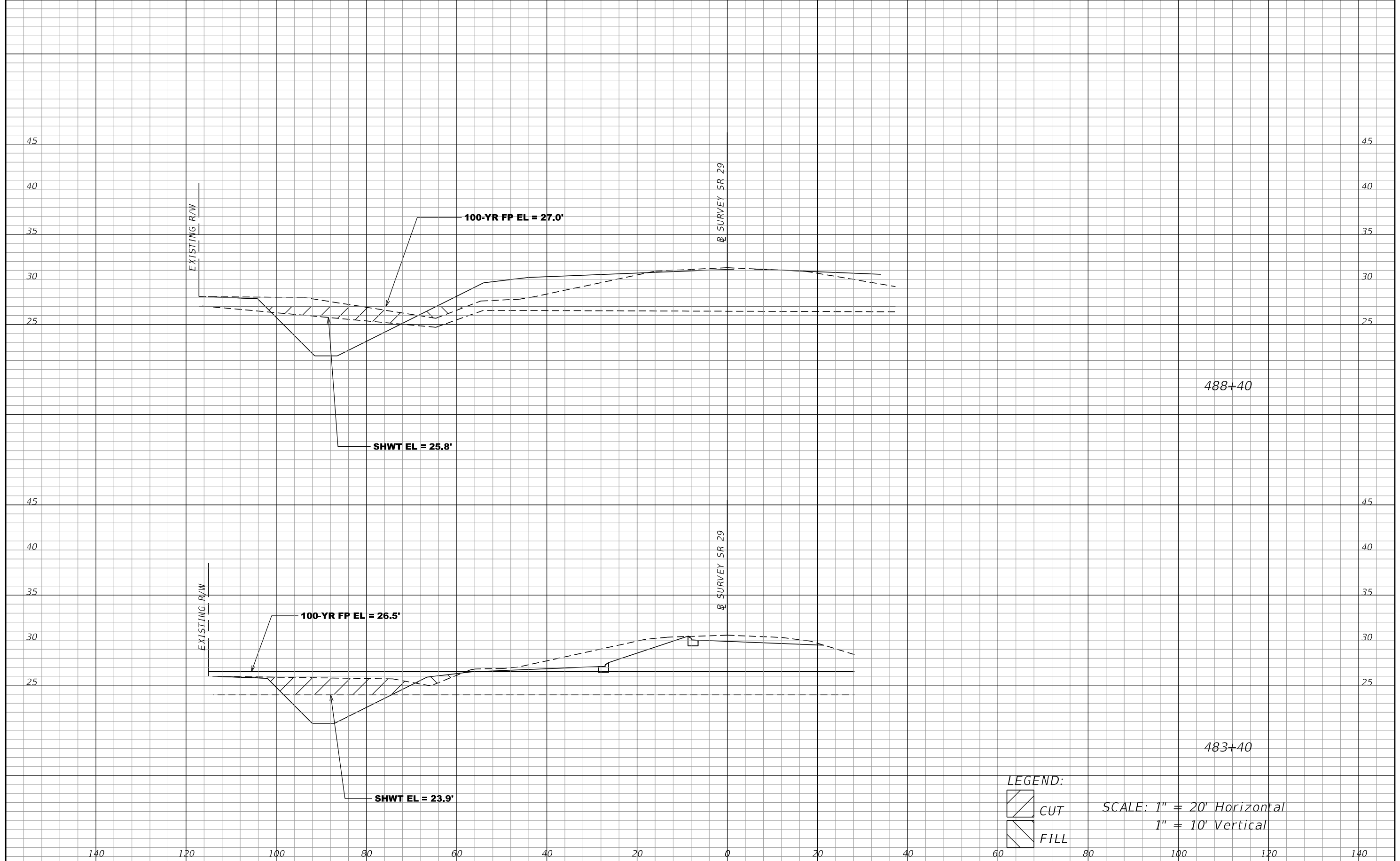
Floodplain Compensation Cross Sections (F-1)



Floodplain Compensation Cross Sections (F-1)



Floodplain Compensation Cross Sections (F-1)



488+40

483+40

LEGEND:



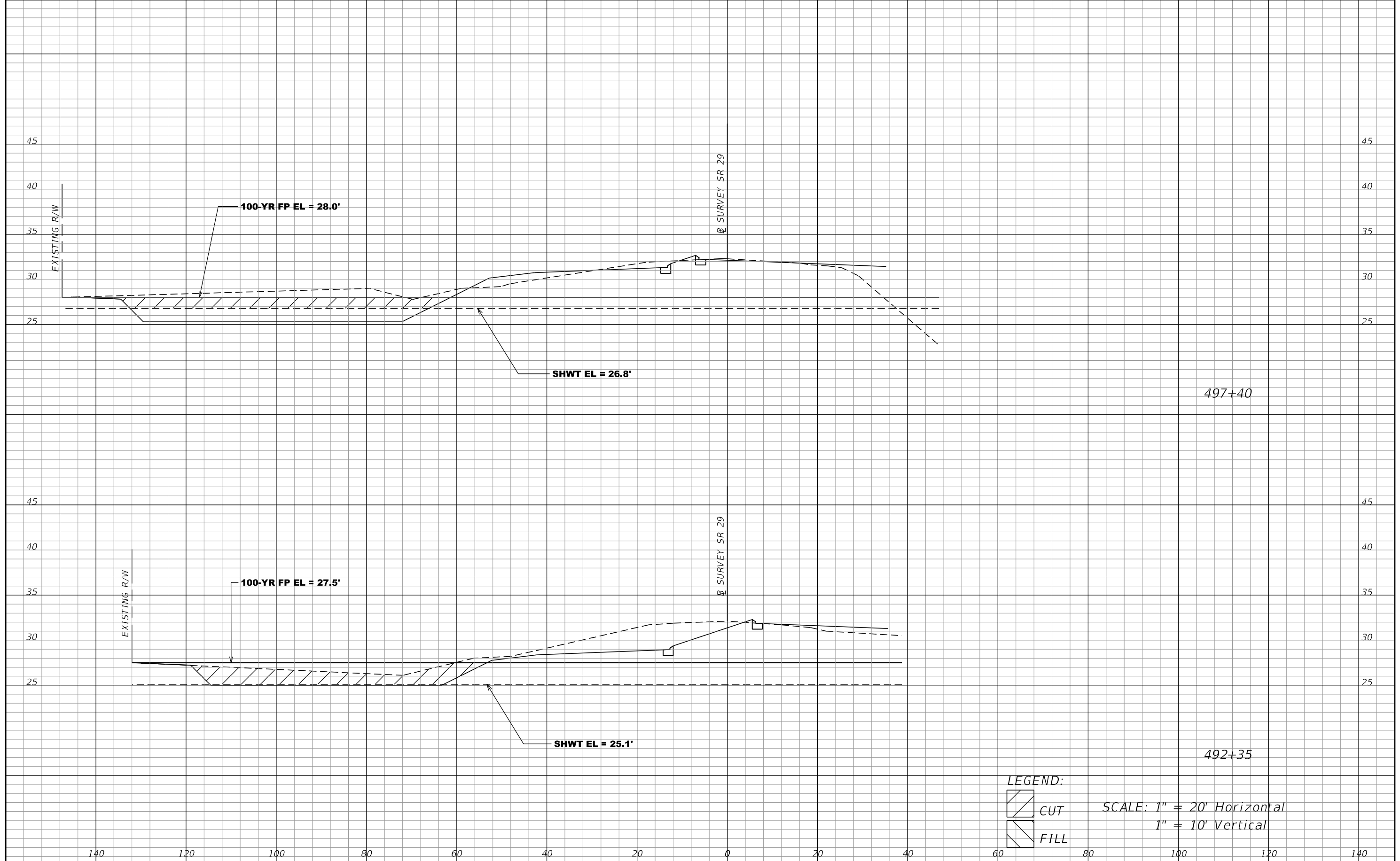
CUT



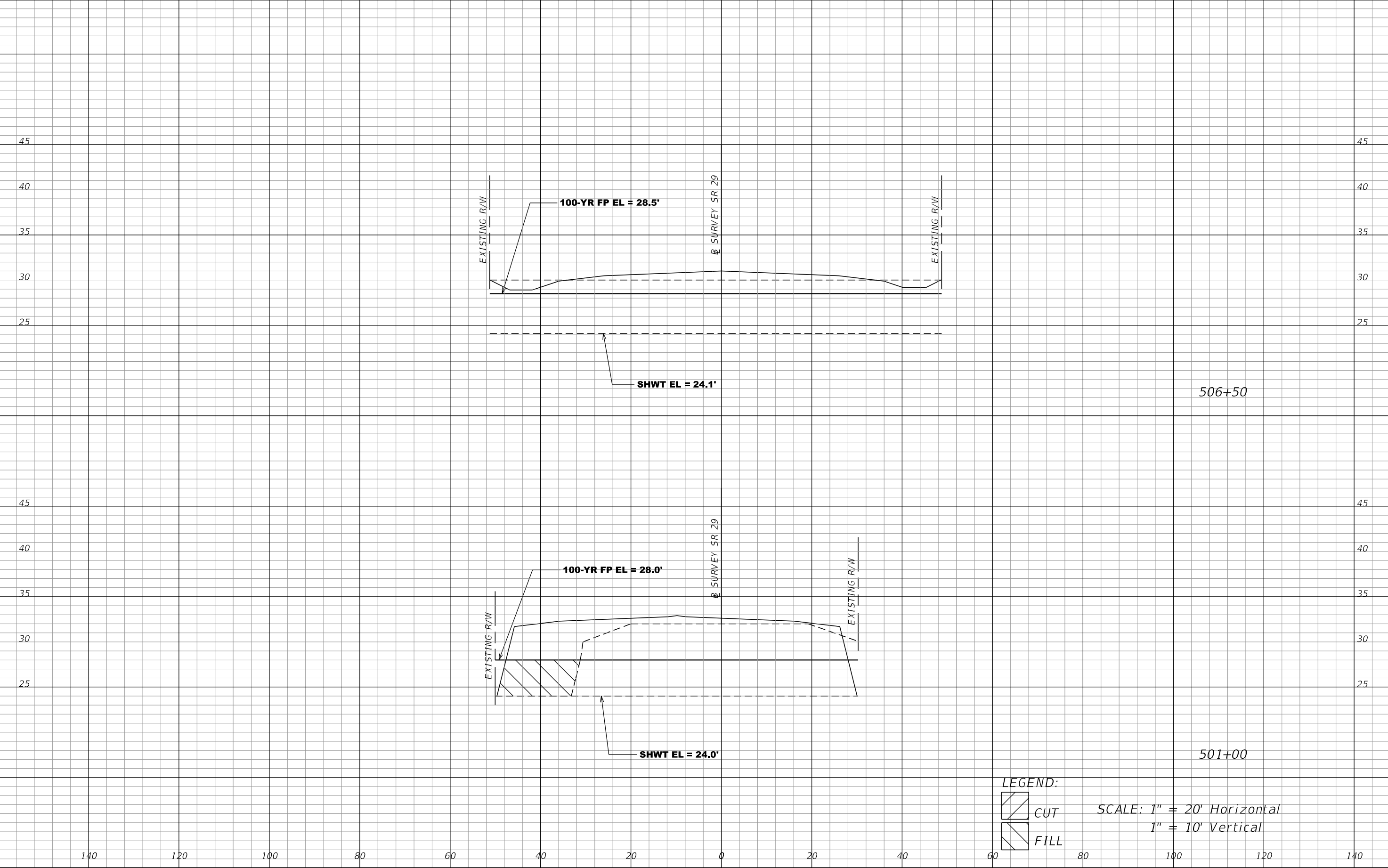
FILL

SCALE: 1" = 20' Horizontal
1" = 10' Vertical

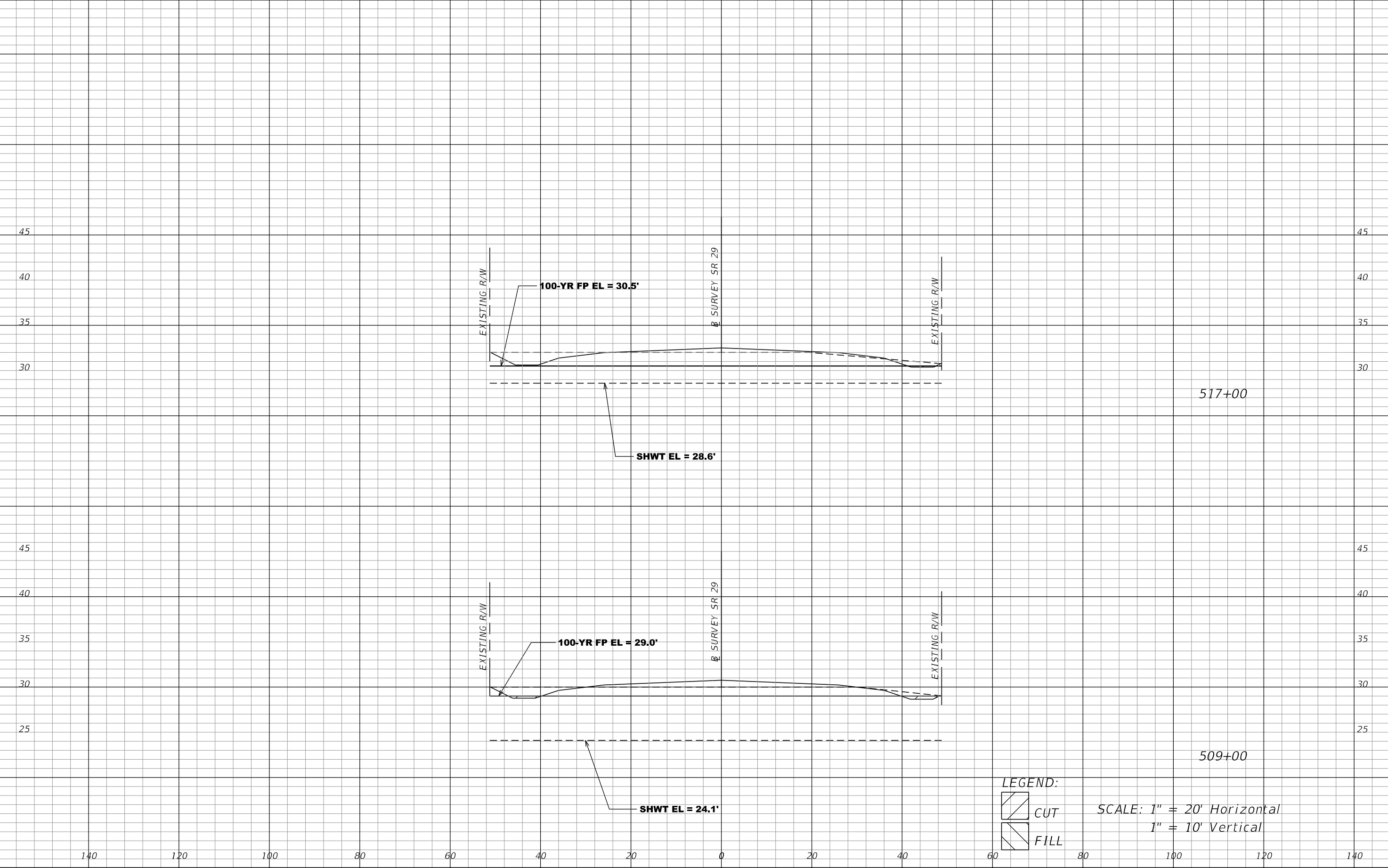
Floodplain Compensation Cross Sections (F-1)



Floodplain Compensation Cross Sections (F-1)



Floodplain Compensation Cross Sections (F-1)



Floodplain Compensation Cross Sections (F-1)

45

40

35

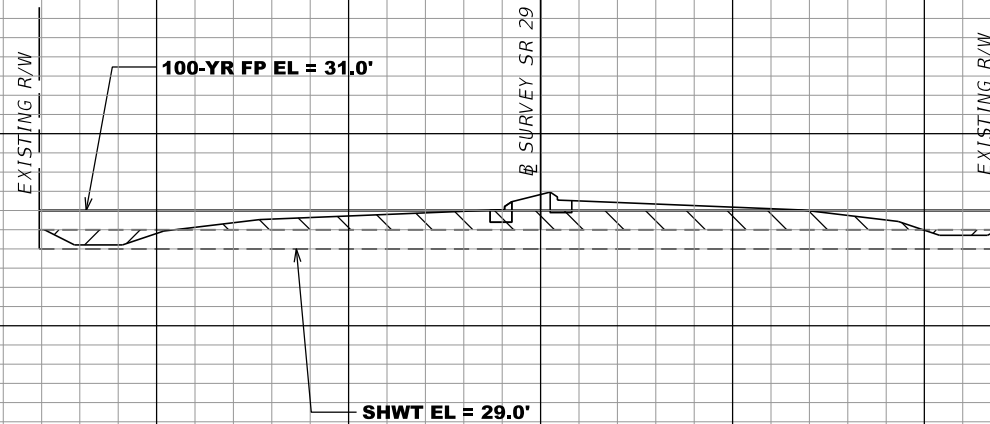
30

45

40

35

30



529+00

45

40

35

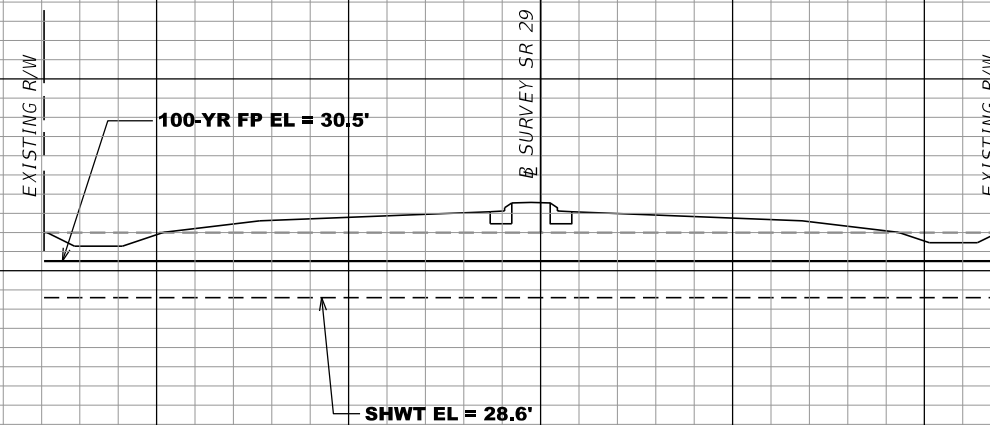
30

45

40

35

30

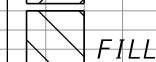


522+00

LEGEND:



CUT



FILL

SCALE: 1" = 20' Horizontal
1" = 10' Vertical

140

120

100

80

60

40

20

0

20

40

60

80

100

120

140

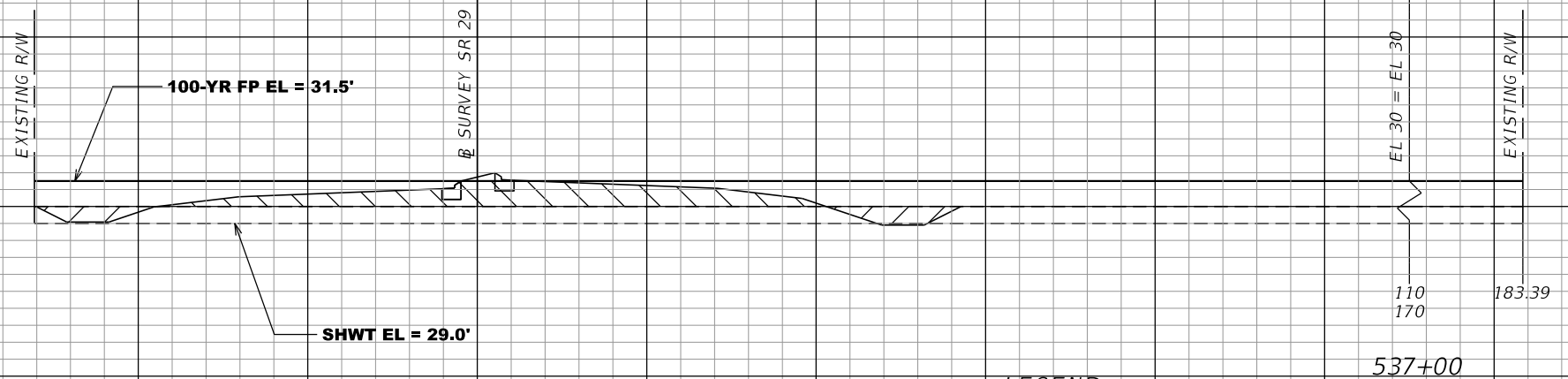
Floodplain Compensation Cross Sections (F-1)

PAGE NO.

E-13

45
40
35
30

45
40
35
30



140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

LEGEND:



CUT



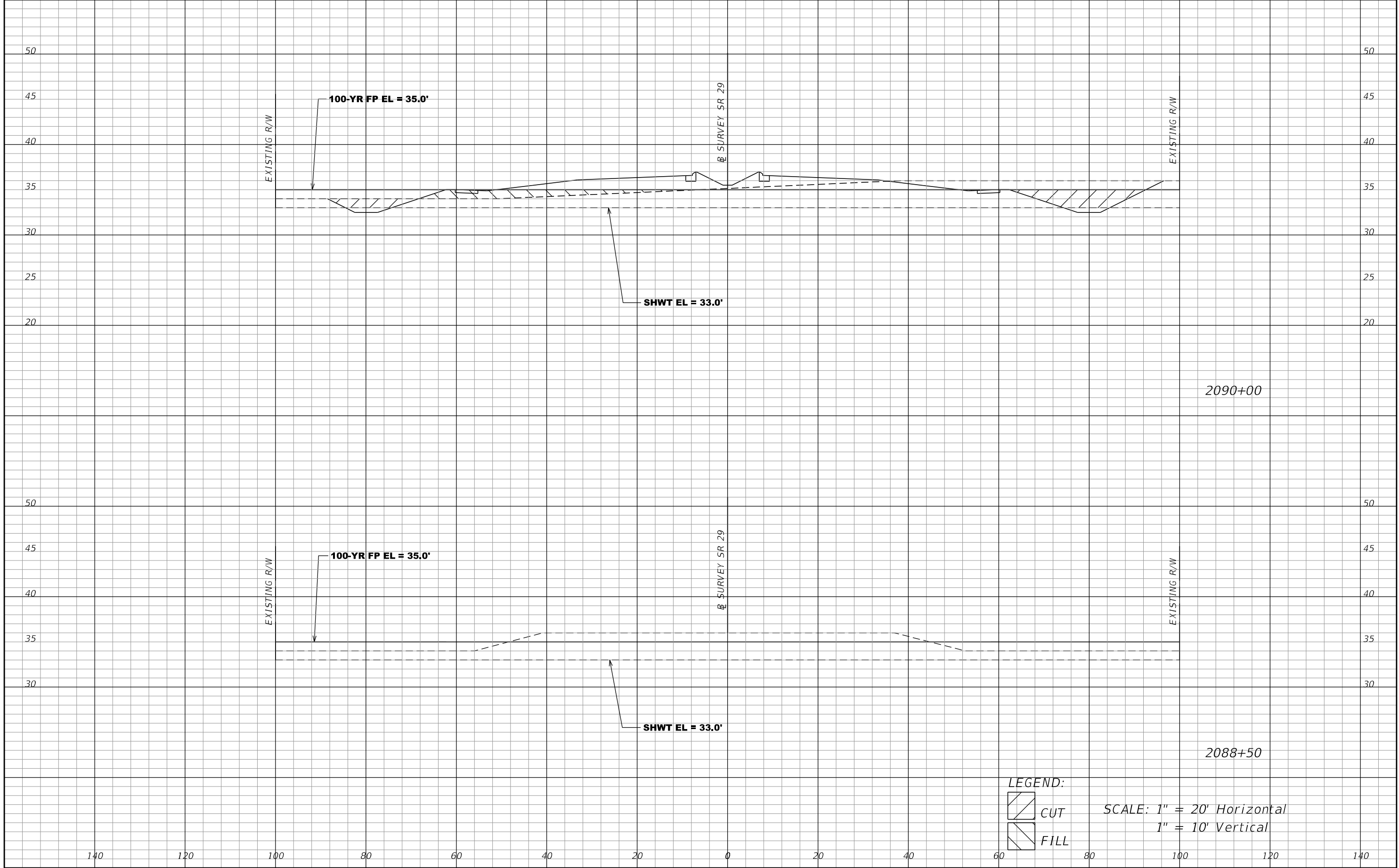
FILL

SCALE: 1" = 20' Horizontal
1" = 10' Vertical

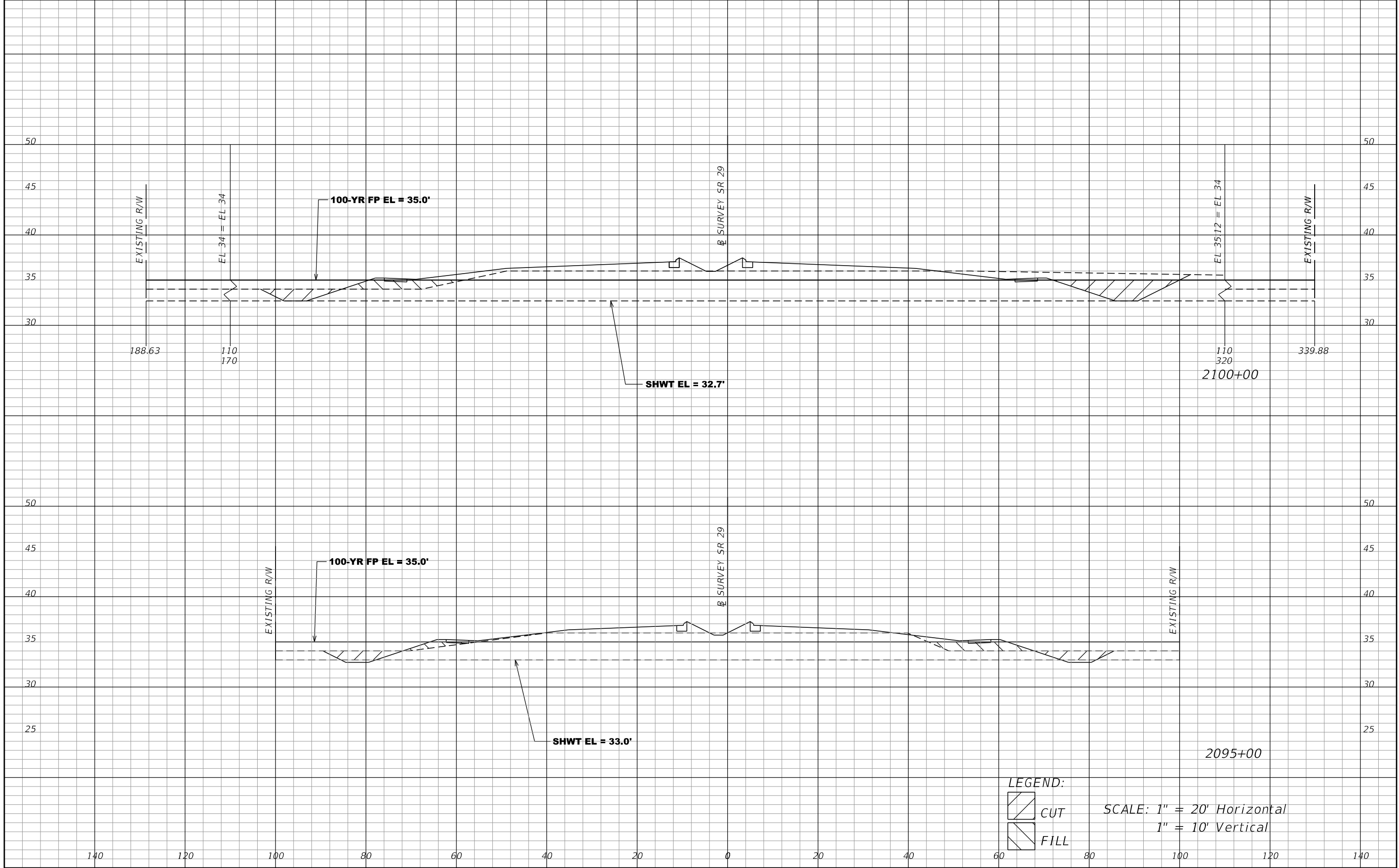
Floodplain Compensation Cross Sections (F-1)

PAGE NO.

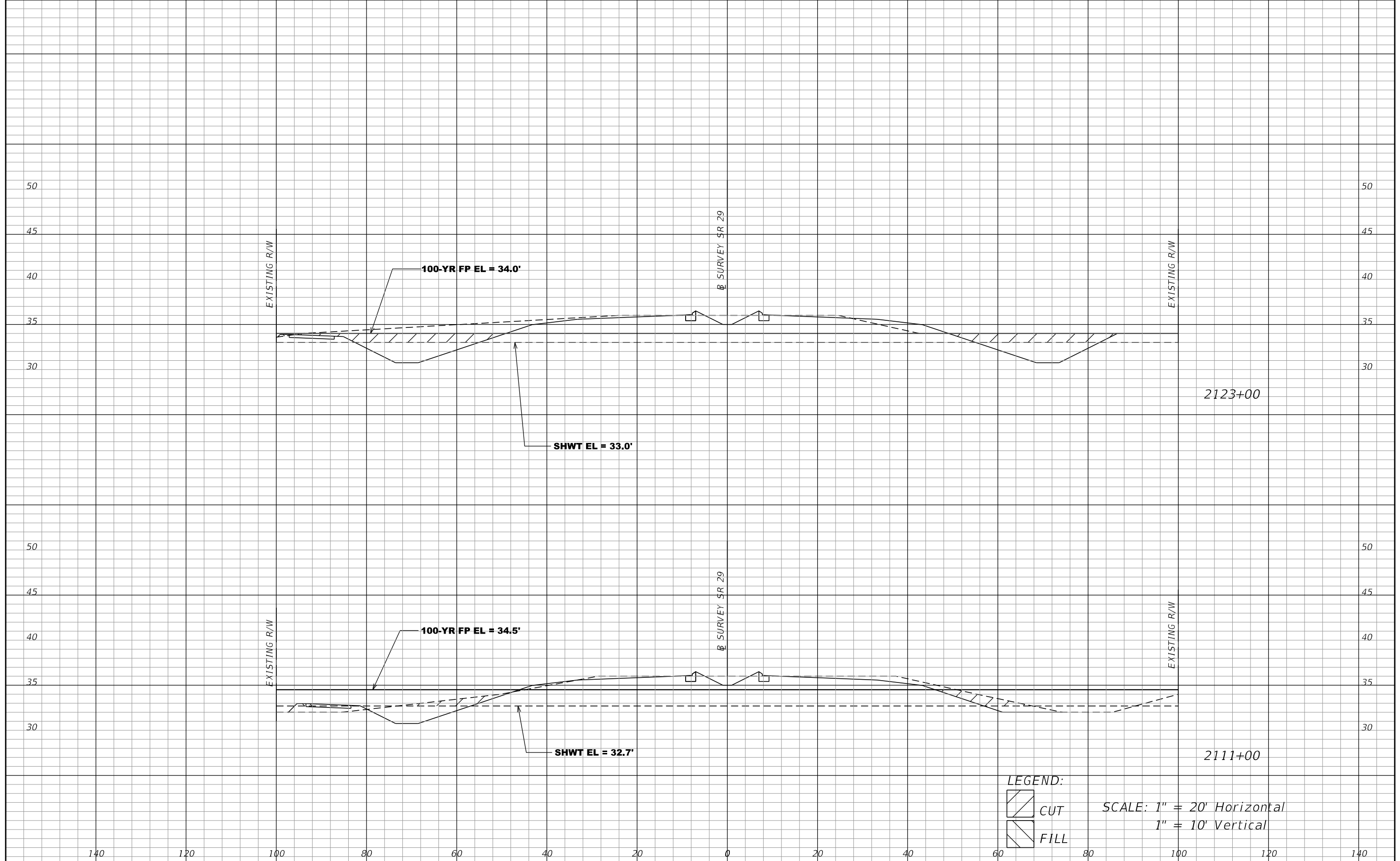
E-14



Floodplain Compensation Cross Sections (F-2)



Floodplain Compensation Cross Sections (F-2)



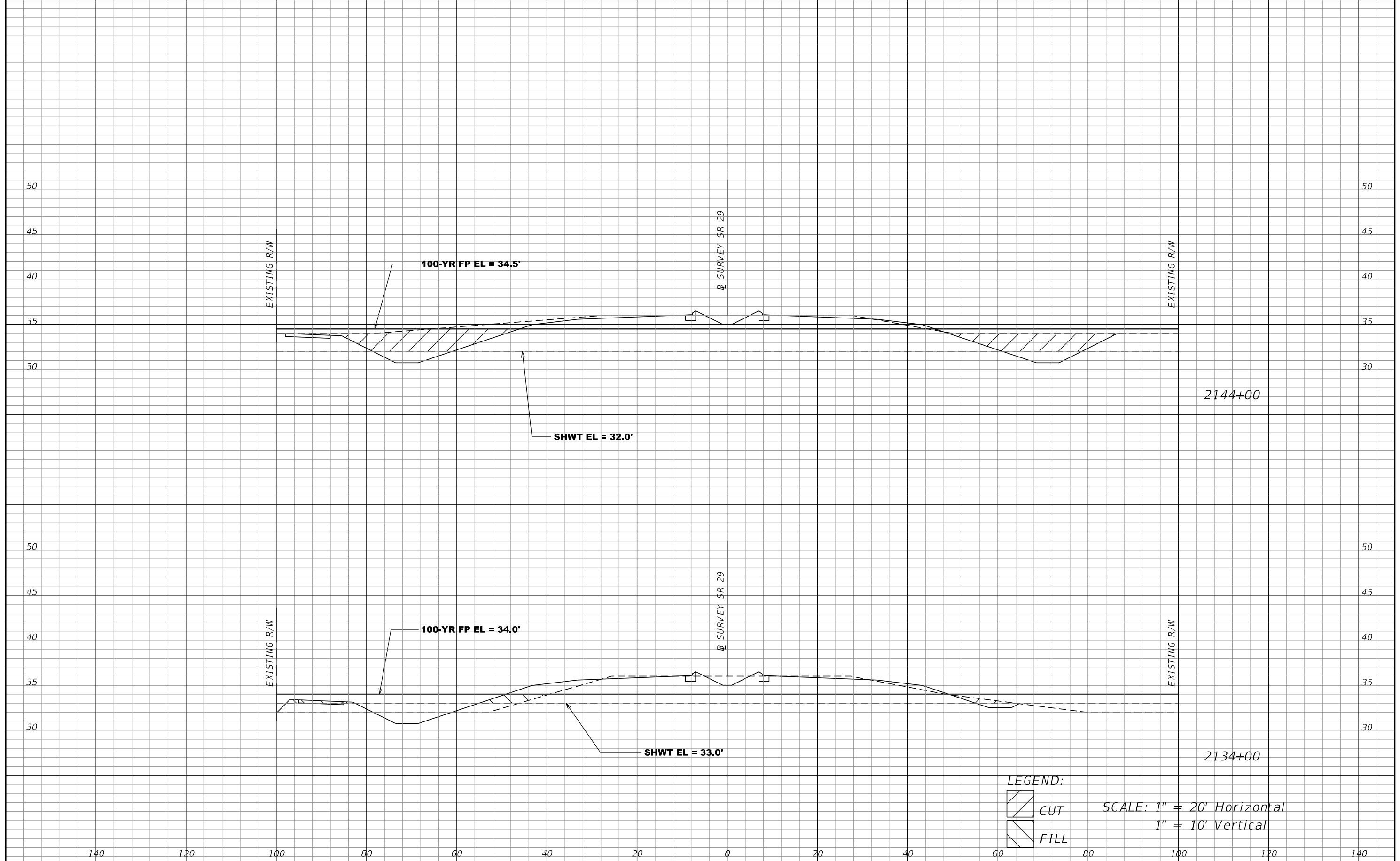
LEGEND:

CUT

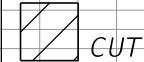
FILL

SCALE: 1" = 20' Horizontal
1" = 10' Vertical

Floodplain Compensation Cross Sections (F-2)



LEGEND:



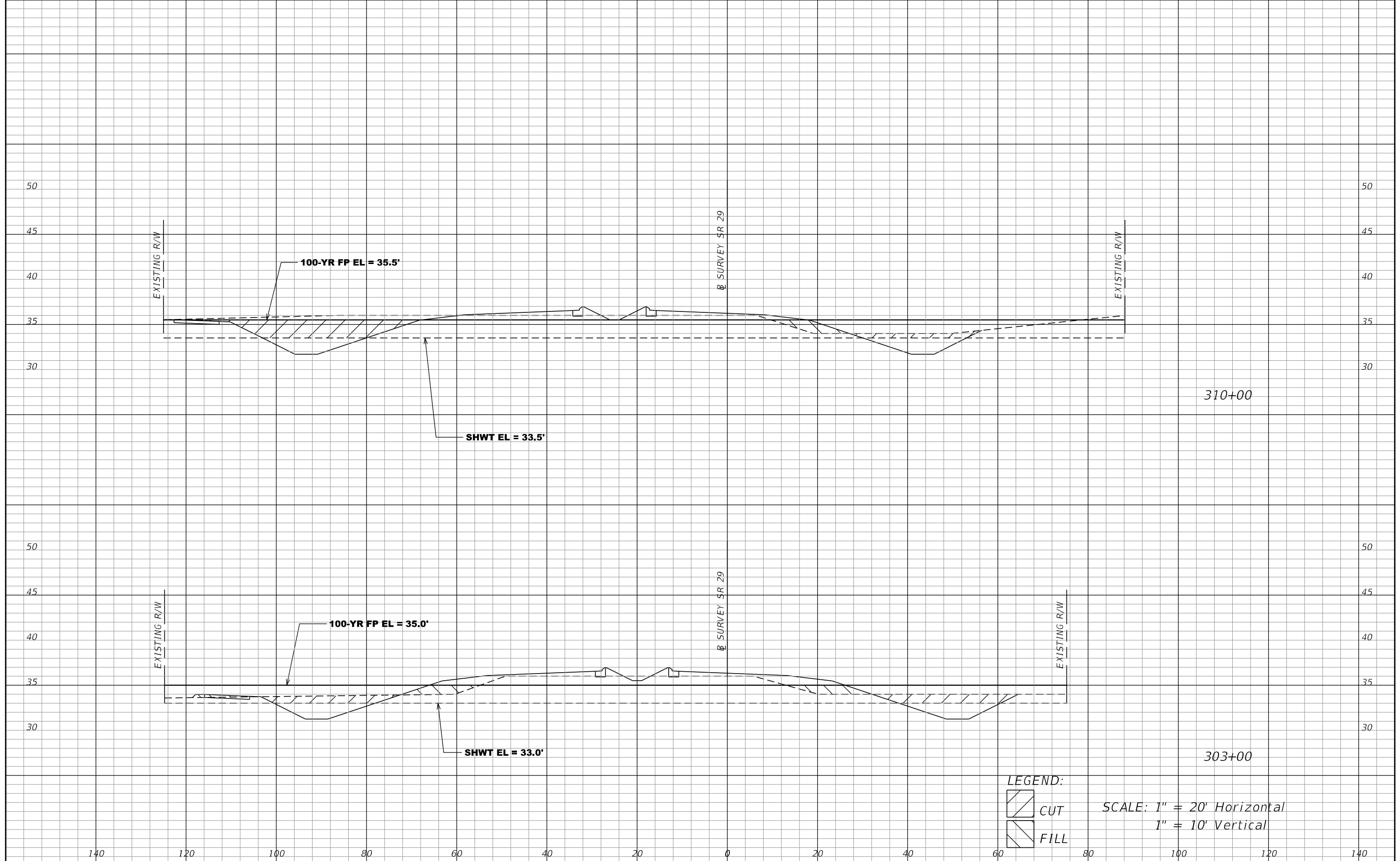
CUT



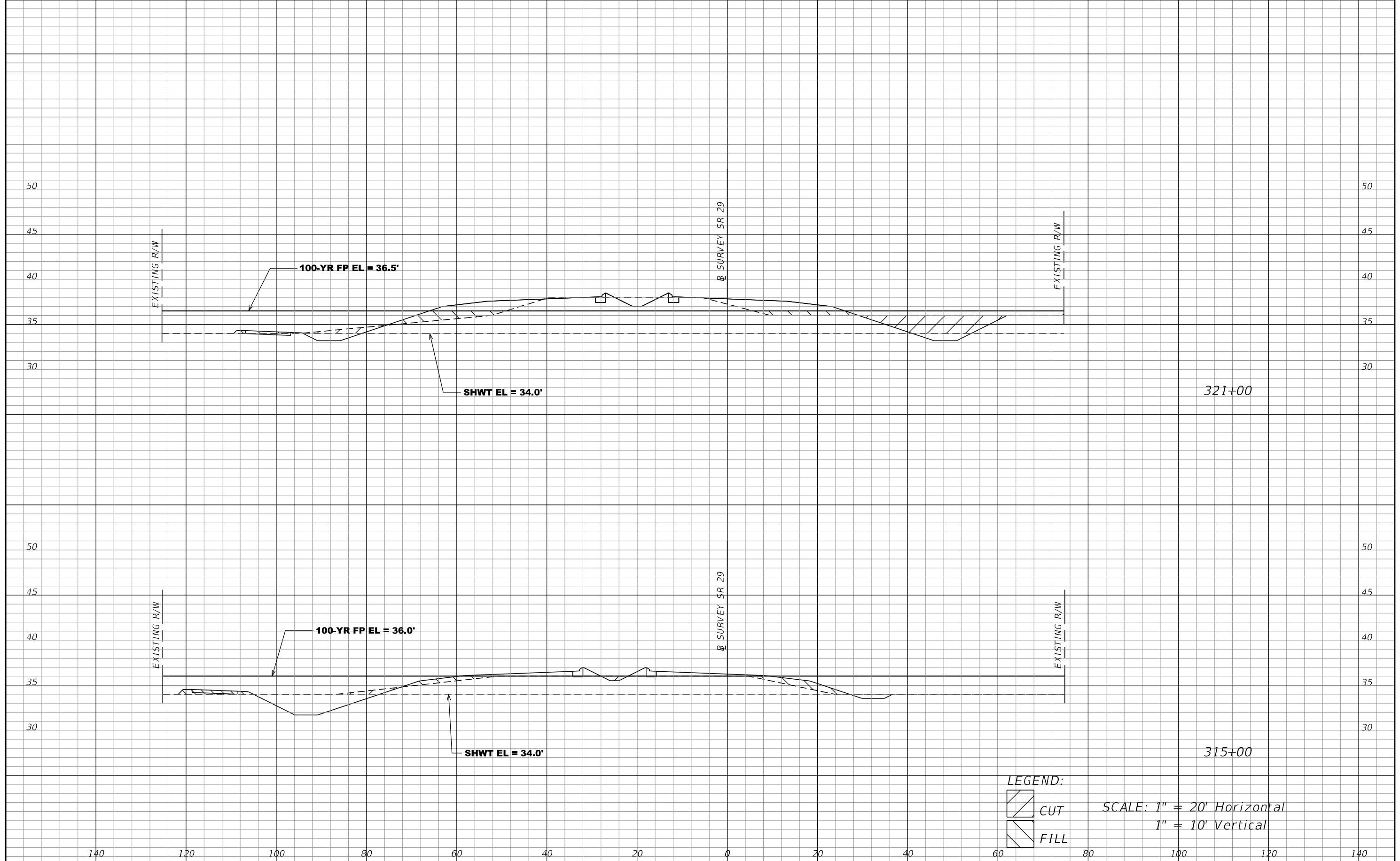
FILL

SCALE: 1" = 20' Horizontal
1" = 10' Vertical

Floodplain Compensation Cross Sections (F-2)



Floodplain Compensation Cross Sections (F-3)



LEGEND:



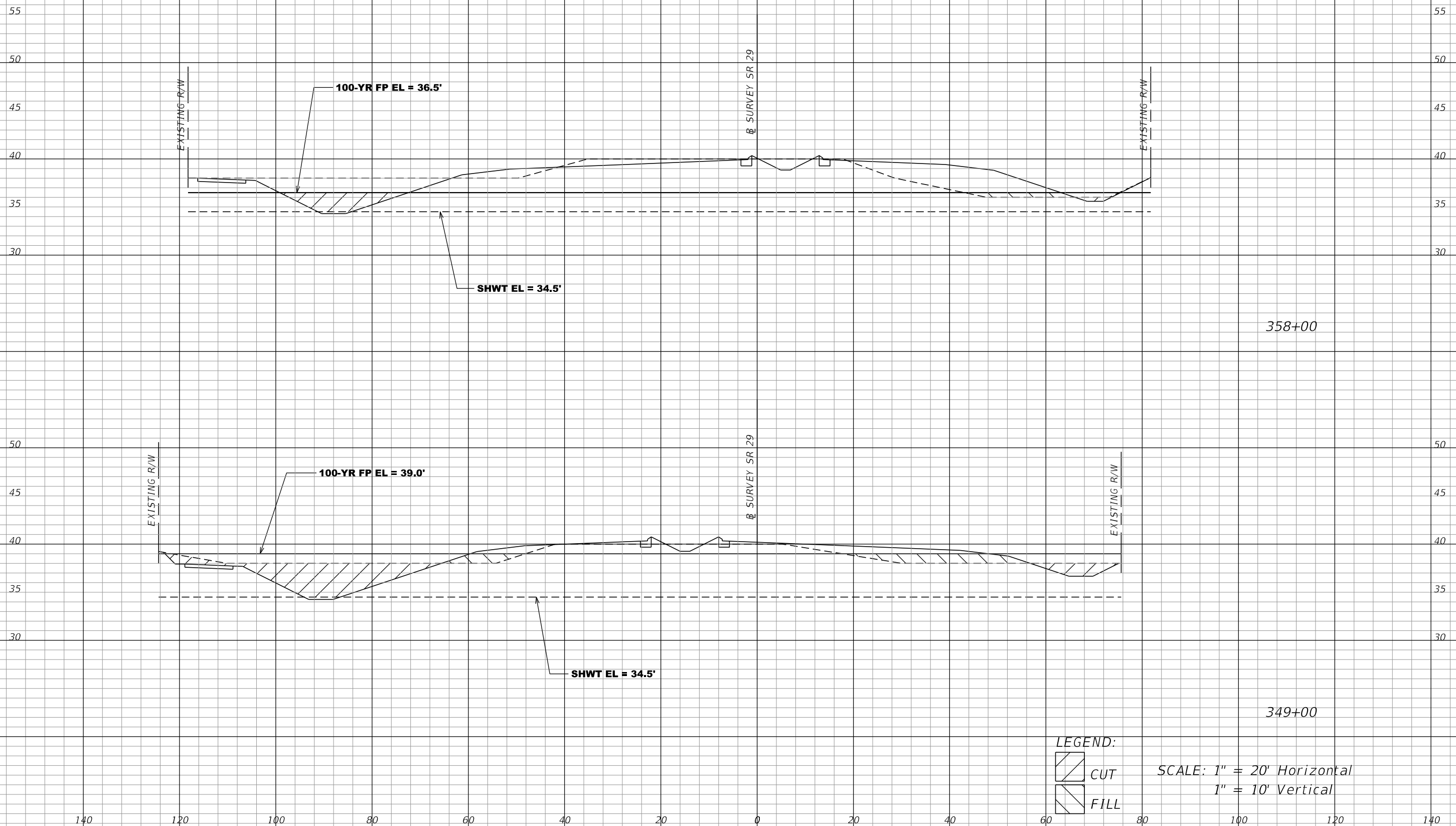
CUT



FILL

SCALE: 1" = 20' Horizontal
1" = 10' Vertical

Floodplain Compensation Cross Sections (F-3)



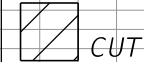
Floodplain Compensation Cross Sections (F-3)



386+00

370+00

LEGEND:



CUT



FILL

SCALE: 1" = 20' Horizontal
1" = 10' Vertical

Floodplain Compensation Cross Sections (F-3)

FLOODPLAIN IMPACT CALCULATIONS

ZONE AH (EL. 20.0 TO 31.5)

F-1: STA. 10+60 TO STA. 537+00, SR 29

SHWT EL. 16.2 TO 29.0

Station (ft)	Area (sf)	Acu. Volume (cf)	Total Volume (cf)
1060.00	0.0	0.0	0.0
3760.00	80.0	108000.0	108000.0
8160.00	9.4	196680.0	304680.0
11260.00	24.3	52235.0	356915.0
19560.00	49.5	306062.5	662977.5
19960.00	55.9	21060.0	684037.5
24140.00	15.0	148076.5	832114.0
28340.00	(2.3)	26670.0	858784.0
32940.00	1.2	(2645.0)	856139.0
37440.00	45.0	103725.0	959864.0
41440.00	(7.0)	75900.0	1035764.0
42140.00	(10.5)	(6107.5)	1029656.5
43740.00	29.2	15000.0	1044656.5
45140.00	24.9	37870.0	1082526.5
46840.00	27.9	44837.5	1127364.0
47540.00	3.8	11060.0	1138424.0
48340.00	(48.1)	(17740.0)	1120684.0
48840.00	(30.2)	(19575.0)	1101109.0
49235.00	(93.5)	(24430.8)	1076678.3
49740.00	(85.7)	(45248.0)	1031430.3
50100.00	65.8	(3591.0)	1027839.3
50650.00	0.0	18081.3	1045920.5
50900.00	(3.8)	(468.8)	1045451.8
51700.00	(0.7)	(1760.0)	1043691.8
52200.00	0.0	(162.5)	1043529.3
52900.00	52.4	18340.0	1061869.3
53700.00	54.5	42766.0	1104635.3
F-1 NET ENCROACHMENT =			1104635.3 cf 25.36 ac-ft

FLOODPLAIN IMPACT CALCULATIONS

ZONE AH (EL. 34.0 TO 35.0)

F-2: STA. 2088+50 TO STA. 2156+82.11, SR 29

SHWT EL. 32.0 TO 33.0

Station (ft)	Area (sf)	Acu. Volume (cf)	Total Volume (cf)
208850.00	0.0	0.0	0.0
209000.00	(19.6)	(1470.0)	(1470.0)
209500.00	(1.2)	(5200.0)	(6670.0)
210000.00	(33.6)	(8687.5)	(15357.5)
211100.00	(22.9)	(31047.5)	(46405.0)
212300.00	(66.6)	(53670.0)	(100075.0)
213400.00	(0.1)	(36657.5)	(136732.5)
214400.00	(123.3)	(61700.0)	(198432.5)
215682.11	0.0	(79042.1)	(277474.6)
F-2 NET EXCAVATION =			277474.6 cf
			6.37 ac-ft

FLOODPLAIN IMPACT CALCULATIONS

ZONE AH (EL. 35.0 TO 39.0)

F-3: STA. 296+72.64 TO STA. 395+24.75, SR 29

SHWT EL. 33.0 TO 35.0

Station (ft)	Area (sf)	Acu. Volume (cf)	Total Volume (cf)
29672.64	0.0	0.0	0.0
30300.00	(22.0)	(6901.0)	(6901.0)
31000.00	(68.3)	(31605.0)	(38506.0)
31500.00	20.2	(12037.5)	(50543.5)
32100.00	(21.3)	(345.0)	(50888.5)
34900.00	(71.0)	(129220.0)	(180108.5)
35800.00	(26.5)	(43852.5)	(223961.0)
37000.00	(46.6)	(43830.0)	(267791.0)
38600.00	(30.8)	(61920.0)	(329711.0)
39524.75	0.0	(14241.2)	(343952.1)
F-3 NET EXCAVATION =			343952.1 cf
			7.90 ac-ft

Available Pond Volume

FPC-A

Estimated Seasonal High Water Table (SHWT) = 19.0 ft
 Floodplain Elevation = 20.2 ft

Available Stage Storage						REMARKS
Elevation (ft)	Area (sf)	Area (ac)	Acu. Volume (cf)	Total Volume (cf)	Total Volume (ac-ft)	
19.0	181269.7	4.15	0.0	0.0	0.00	SHWT EL
19.5	186424.8	4.27	91923.6	91923.6	2.11	
20.0	192060.0	4.40	94621.2	186544.8	4.28	

Provided FPC Volume = 4.28 ac-ft 186545 cf

Available Pond Volume

FPC-B

Estimated Seasonal High Water Table (SHWT) = 19.0 ft
 Floodplain Elevation = 22.0 ft

Available Stage Storage						REMARKS
Elevation (ft)	Area (sf)	Area (ac)	Acu. Volume (cf)	Total Volume (cf)	Total Volume (ac-ft)	
19.0	185949.0	4.26	0.0	0.0	0.00	SHWT EL
19.5	191187.0	4.38	94284.0	94284.0	2.16	
20.0	196425.0	4.50	96903.0	191187.0	4.39	

Provided FPC Volume = 4.39 ac-ft 191187 cf

Available Pond Volume

FPC-C

Estimated Seasonal High Water Table (SHWT) = 21.0 ft
 Floodplain Elevation = 22.5 ft

Available Stage Storage						REMARKS
Elevation (ft)	Area (sf)	Area (ac)	Acu. Volume (cf)	Total Volume (cf)	Total Volume (ac-ft)	
21.0	424531.2	9.73	0.0	0.0	0.00	SHWT EL
22.0	442069.7	10.13	433300.5	433300.5	9.95	
22.5	449595.0	10.30	222916.2	656216.6	15.06	

Provided FPC Volume = 15.06 ac-ft 656217 cf

Available Pond Volume

FPC-D

Estimated Seasonal High Water Table (SHWT) = 23.0 ft
 Floodplain Elevation = 24.9 ft

Available Stage Storage						REMARKS
Elevation (ft)	Area (sf)	Area (ac)	Acu. Volume (cf)	Total Volume (cf)	Total Volume (ac-ft)	
23.0	104048.5	2.38	0.0	0.0	0.00	SHWT EL
23.5	108723.4	2.49	53193.0	53193.0	1.22	
24.0	113490.0	2.60	55553.4	108746.3	2.50	

Provided FPC Volume = 2.50 ac-ft 108746 cf

Appendix F

Correspondence

APPENDIX F
TABLE OF CONTENTS

F-1	Meeting Minutes – Regulatory Meeting for SR-29 at SFWMD Naples Office
F-4	Memorandum – Telephone Conversation with Robert Wiley (FEMA)
F-5	Memorandum – Telephone Conversation with Fidel Herrera (Ferrovial Services)
F-6	ETDM Summary Report

MEETING MINUTES

February 13th, 2009

Regulatory Meeting for SR-29 at SFWMD Naples Office

Attendees:

Tim Howard	Special Engineering Assistant	SFWMD
Mark Kuntz	Senior Drainage Engineer	HWLOCHNER
Anata Nath	Chief Engineer	SFWMD
Satish Vijjapu	Project Engineer	HWLOCHNER
Clarence Tears, Jr.	Director	BIG CYPRESS BASIN

Distribution:

Bill Howell	Project Manager	HWLOCHNER
John Kenty	Project Manager	HWLOCHNER
Mark Kuntz	Senior Drainage Engineer	HWLOCHNER
Jesus Mustafa	Vice President	HWLOCHNER
Satish Vijjapu	Project Engineer	HWLOCHNER

On Friday, February 13th 2009, a permit coordination meeting was held at the Naples Office of the South Florida Water Management District. The meeting was requested by H.W.Lochner to introduce the project to the District so that their concerns could be identified.

Mark Kuntz introduced the project and explained that four general alternatives: east, west, SR-29, and SR-29A were being considered. Mr. Kuntz explained that the preferred alternatives were those that utilized the existing SR-29 corridor as much as possible. These two alternatives included SR-29 and SR-29A.

Tim Howard explained that there was a DRI (Development of Regional Impact) for the Immokalee Airport in the works. It was moving forward, albeit slowly because of the economic situation. He requested that HWLochner consider the existence of this DRI when evaluating potential alternatives.

He stated that the expected expansion to the airport would, more than likely occur to the east of the airport, posing possible conflicts with any alternative east of the airport. In addition, he also stated

that there are a myriad of environmental issues associated with an eastern alternative. These issues include wetland, habitat, etc. He suggested that HWLOCHNER try to avoid this area if possible.

He explained that the District thought that most feasible (since it was the most desirable to the public) alternative would be one which lies east of 29A and west of the airport, next to the existing rail corridor which lies between. Such an alternative would be considered a hybrid between the eastern and central corridor alternatives. This alternative would place SR-29 near the existing businesses located near the airport. This would be of benefit since they are the businesses most likely in need of using this route.

Mark Kuntz suggested that this alternative would have additional merit if the existing rail corridor, which was now abandoned, could be used, since utilization of the existing corridor in this fashion might result in significant reductions in impacts associated with the project.

District staff expressed that this might be a good idea. Mr. Kuntz asked about obtaining information of the abandoned corridor. Tim Howard mentioned that the corridor was probably owned by the Barr Collier Corp. Mr. Kuntz was directed to contact either of their engineers, Bob Roth or Ray March.

The District expressed that the development of the western alternative would involve several challenges. These challenges include coordination with the Seminoles (since it impacts Seminole Lands), and impacts to an existing slough. The District referred Lochner to see Metcalf & Eddy's website for more information about an existing report detailing environmental concerns for this area. Metcalf & Eddy participated in a study which includes much of southwest Florida.

The District suggested that Lochner contact Tim Lieberman at extension 7799. Tim is expecting updated Lidar data of the corridor. The data should be available after February 18th. This data is being obtained as part of the Coastal Lidar Initiative. It should include good information around Owl Hammock Curve including inlets, outfalls, and the centerline of the SR-29 Borrow Canal.

SFWMD confirmed that the airport canal and Madison Avenue Ditch drain to the SR-29 Canal.

Tim Howard also mentioned that there was a high level of uncertainty regarding the existing drainage patterns located below the bell (which is located to the west and at the south end of Immokalee). All drainage studies for this area had difficulty assessing the natural drainage pattern for this area.

Mr. Tears also emphasized that the vast majority of folks within Immokalee (including the mayor) wish to see a proposed corridor that has an eastern alignment.

Mr. Tears also stated that the existing runway will need to be lengthened to 7000 ft. (more than likely to the east).

In addition, Lake Trafford has been classified as an impaired water body. As such, the design of any proposed alignment to the west of Immokalee will need to consider measures related to this classification.

Mr. Kuntz expressed his concern that the current flood plain maps for the areas surrounding Immokalee did not give specific flood plain elevations. Mr. Kuntz asked if there was better data available regarding this determination.

Mr. Kuntz was directed to contract Mr. Robert Wiley with FEMA. Mr. Wiley is currently involved in an effort to improve flood plain elevation determination. He used to work for Collier County, but now works for FEMA. His phone number is (239) 213-5858.

SFWMD extended to LOCHNER staff the opportunity to come look at their files regarding this area at any time.

Memorandum

Date: January 18, 2018

Subject: Telephone Conversation with Robert Wiley

Contact was made with **Robert Wiley** Principal Project Manager at FEMA and Floodplain Section in Collier County. As per Robert Wiley, new Floodplain maps are currently in production and would take a minimum 1 year to complete. His suggestion was to use the current maps available at FEMA Map Service center on the website <http://msc.fema.gov/>.

Robert Wiley's contact number & email:
239-252-5858
RobertWiley@colliergov.net

TELEPHONE MEETING MEMORANDUM

Date: July 31, 2018

Prepared By: Tracy Ellison, PE

Attendees: Fidel Herrera, Maintenance Manager/Field Operations – Ferrovia Services
Tracy Ellison, PE - Lochner

Subject: FPID 417540-1-22-01, SR 29 from Oil Well Road to SR 82 PD&E
Existing Drainage/Flooding Concerns

Fidel Herrera, Maintenance Manager/Field Operations for Ferrovia Services (FDOT Asset Management Consultant) and Tracy Ellison (Lochner) discussed the SR 29 PD&E project from Oil Well Road to SR 82. Tracy described the project objectives and asked if there were any known existing drainage concerns or flooding issues within the project limits. Mr. Herrera stated that there were no issues with the existing drainage structures or function of the drainage system. In addition, aside from occasional nuisance ponding, there are no known flooding problems within the project limits.



Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

MIKE DEW
SECRETARY

ETDM Summary Report

Project #3752 - SR 29 Add Lanes

Programming Screen - Published on 02/03/2009

Printed on: 12/04/2017

Table of Contents

Chapter 1 Overview	2
Chapter 2 Project Details	3
2.1. Purpose and Need	3
2.2. Project Description Data	7
Chapter 3 Alternative #5	9
3.1. Alternative Description	9
Chapter 4 Eliminated Alternatives	29
Chapter 5 Project Scope	30
5.1. General Project Recommendations	30
5.2. Anticipated Permits	30
5.3. Anticipated Technical Studies	30
5.4. Class of Action	30
5.5. Dispute Resolution Activity Log	31
Chapter 6 Hardcopy Maps: Alternative #5	32
Appendices	54
7.1. PED Comments	54
7.2. GIS Analyses	54
7.3. Project Attachments	54
7.4. Degree of Effect Legend	54

Introduction to Programming Screen Summary Report

The Programming Screen Summary Report shown below is a read-only version of information contained in the Programming Screen Summary Report generated by the ETDM Coordinator for the selected project after completion of the ETAT Programming Screen review. The purpose of the Programming Screen Summary Report is to summarize the results of the ETAT Programming Screen review of the project; provide details concerning agency comments about potential effects to natural, cultural, and community resources; and provide additional documentation of activities related to the Programming Phase for the project. Available information for a Programming Screen Summary Report includes:

- Screening Summary Report chart
- Project Description information (including a summary description of the project, a summary of public comments on the project, and community-desired features identified during public involvement activities)
- Purpose and Need information (including the Purpose and Need Statement and the results of agency reviews of the project Purpose and Need)
- Alternative-specific information, consisting of descriptions of each alternative and associated road segments; an overview of ETAT Programming Screen reviews for each alternative; and agency comments concerning potential effects and degree of effect, by issue, to natural, cultural, and community resources.
- Project Scope information, consisting of general project commitments resulting from the ETAT Programming Screen review, permits, and technical studies required (if any)
- Class of Action determined for the project
- Dispute Resolution Activity Log (if any)

The legend for the Degree of Effect chart is provided in an appendix to the report.

For complete documentation of the project record, also see the GIS Analysis Results Report published on the same date as the Programming Screen Summary Report.

#3752 SR 29 Add Lanes

District: District 1

County: Collier

Planning Organization: FDOT District 1

Plan ID: Not Available

Federal Involvement: Federal Action

Phase: Programming Screen

From: Oil Well Road

To: SR 82

Financial Management No.: Not Available

Contact Information: Gwen G. Pipkin (863) 519-2375 x2375 gwen.pipkin@dot.state.fl.us

Snapshot Data From: Summary Report Re-Published 2/03/2009

Issues and Categories are reflective of what was in place at the time of the screening event.

	Natural										Cultural			Community					Secondary and Cumulative Effects		
	Air Quality	Coastal and Marine	Contaminated Sites	Farmlands	Floodplains	Infrastructure	Navigation	Special Designations	Water Quality and Quantity	Wetlands	Wildlife and Habitat	Historic and Archaeological Sites	Recreation Areas	Section 4(f) Potential	Aesthetics	Economic	Land Use	Mobility		Relocation	Social
Alternative #5 From: Oil Well Road To: SR 82 (polygon) <i>Re-Published: 02/03/2009 Reviewed from 01/07/2008 to 02/21/2008</i>	2	N/A	3	4	3	2	N/A	3	2	4	4	4	3	3	3	2	3	1	3	3	4

Purpose and Need

Purpose and Need

EXECUTIVE SUMMARY

The expansion of SR 29 from Oil Well Road and SR 82 is identified as a needs project within the Collier County Metropolitan Planning Organization (MPO) 2030 Long Range Transportation Plan (LRTP) and is consistent with Collier County's adopted Growth Management Plan. This capacity improvement is intended to accommodate travel demand generated by population and employment growth, as well as approved development in the project study area. In addition, this improvement is anticipated to enhance emergency evacuation capacity and traffic circulation leading to improved evacuation and response times. SR 29 is part of the state's Strategic Intermodal System (SIS). This enhancement will improve the circulation of goods, as SR 29 serves as a key intrastate freight corridor providing access to local agricultural and ranching operations, as well as to freight activity centers located in central Florida and the populated coastal areas.

Due to the possibility of a new bypass alignment, this project is expected to be completed as an Environmental Impact Statement (EIS). This ETDM screening will help to locate all potential alignments that have the least impacts to natural and cultural resources, as well as to community features.

TRANSPORTATION PLAN CONSISTENCY

The expansion of SR 29 from Oil Well Road and SR 82 is identified as a needs project within the Collier County Metropolitan Planning Organization (MPO) 2030 Long Range Transportation Plan (LRTP) and is consistent with Collier County's adopted Growth Management Plan.

EMERGENCY EVACUATION

Serving as part of the evacuation route network established by the Florida Division of Emergency Management, SR 29 plays a significant role in facilitating traffic during emergency evacuation periods as it connects to other major arterials designated on the state evacuation route network (SR 82 and SR 80). Designated by Collier County as a primary evacuation route, this facility is critical in evacuating residents of Everglades City/Chokoloskee and Naples as it serves as the only north-south route in eastern Collier County. The expansion of SR 29 from Oil Well Road to SR 82 is anticipated to enhance evacuation capacity and traffic circulation which will lead to improved evacuation and response times.

FUTURE POPULATION AND EMPLOYMENT GROWTH

Traffic in the study area is expected to increase due to projected population and employment growth along the corridor. The Collier County MPO population and employment growth forecasts for the area within a 1-mile buffer of the SR 29 corridor are shown in Table 1.

Table 1: 2025 Population and Employment Forecasts for SR 29 (Oil Well Road to SR 82)

2000 Population: 19,034

2025 Population: 35,394

Growth from 2000 to 2025: 16,360

Annual Growth Rate: 3.4%

2000 Employment: 11,175

2025 Employment: 28,625

Growth from 2000 to 2025: 17,450

Annual Growth Rate: 6.2%

The buffer includes the Town of Ave Maria Development of Regional Impact (DRI) that is expected to be approved in spring 2005. It is located north of Oil Well Road and west of Camp Keais Road, approximately five miles west of SR 29. At buildout in 2016, this development is projected to contain 11,000 residential units, approximately 700,000 square feet of retail space, a 6,000-student university and 510,000 square feet of office space.

According to the Bureau of Economic Business Research (BEBR), the population of Collier County is projected to increase from 317,788 in year 2005 to 619,095 in year 2030. In conjunction with population growth, employment within the county is projected to grow from 118,100 in year 2005 to 153,500 in year 2015. These figures are shown in Tables 2 and 3.

Table 2: Collier County 2030 Population Forecast

2005 Population (1): 317,788

2030 Population (2): 619,095
Growth from 2005 to 2030: 301,307
Annual Growth Rate (3): 3.8%

Sources:

- (1) BEBR: Florida Population Studies, Estimates of Population by County, 2005.
- (2) BEBR: Florida Population Studies, Medium Forecast Estimates of Population by County, 2005.
- (3) Linear growth rate between 2005 and 2030 population figures.

Table 3: Collier County 2015 Employment Forecast

2005 Employment (1): 118,100
2015 Employment (1): 153,500
Growth from 2005 to 2015: 35,400
Annual Growth Rate (2): 3.0%

Sources:

- (1) BEBR: Florida Long-Term Economic Forecast 2002 - Volume 2 - State and Counties, 2002.
- (2) Linear growth rate between 2000 and 2015 employment figures.

This capacity improvement is intended to accommodate travel demand generated by population and employment growth, as well as improved development in the project study area.

TRAFFIC CONDITIONS

Table 4 presents 2003 and projected 2025 Annual Average Daily Traffic (AADT) volumes and truck traffic percentages for SR 29 from Oil Well Road to SR 82. The percentage of trucks on this section of SR 29 is assumed to remain the same in the future. It should be noted, however, that SR 29 serves as a key intrastate freight corridor providing access to local agricultural and ranching operations, as well as to freight activity centers located in central Florida and the populated coastal areas. The SR 29 capacity enhancement is expected to improve the circulation of goods. The volume of trucks on this roadway, in turn, is anticipated to increase to keep pace with population and economic growth.

The 2003 and projected 2025 roadway levels of service on SR 29 from Oil Well Road to SR 82 are also presented in Table 4. The levels of service are based on the Generalized Annual Average Daily Volumes for Florida's Urbanized Areas table found within the Florida Department of Transportation's 2002 Quality/Level of Service Handbook. Without the proposed improvement on SR 29, as shown in Table 4, the operating condition on this section of SR 29 is expected to deteriorate to an unacceptable level of service.

Table 4: 2003 and Projected 2025 AADT Volumes, Truck Traffic Percentages, and Levels of Service on SR 29 (Oil Well Road to SR 82)

2003 AADT: 17,200
2003 Truck Traffic Percentage: 11.0%
2003 LOS: D

2025 AADT: 48,600
2025 Truck Traffic Percentage: 11.0%
2025 LOS: F

SAFETY/ CRASH RATES

The expansion of SR 29 from Oil Well Road to SR 82 will likely enhance safety on the roadway by dispersing traffic and improving traffic operations. Table 5 presents 2001-2003 actual crash rates per million vehicle miles on this section of SR 29. Based on data obtained from the Florida Department of Transportation (FDOT) Safety Office, crash rates have fluctuated on this segment of SR 29 over the three year period; however, the number of crashes appears to be increasing. According to the FDOT Safety Office, the crash rates on SR 29 from Oil Well Road to SR 82 are higher than the statewide average crash rates for similar facility types (2-lane undivided). The 2001-2003 statewide average crash rates are also depicted in Table 5.

Table 5: Actual Crash Rates on SR 29 (Oil Well Road to SR 82) and Statewide Average Crash Rates

Actual Crash Rates

2001: 6.265

2002: 5.052

2003: 5.438

Statewide Average Crash Rates

2001: 1.357

2002: 1.328

2003: 1.258

REGIONAL CONNECTIVITY

SR 29 is a north-south principal arterial in eastern Collier County that connects the fast-growing community of Immokalee with I-75 in the south and US 27 and SR 80 in the north. Immokalee is located in a Rural Area of Critical Economic Concern (RACEC) designated by the State of Florida.

In conjunction with SR 82, SR 29 provides regional connectivity between Immokalee, the Florida Gulf Coast University, and Southwest Florida International Airport in Lee County. The Florida Department of Transportation has designated SR 29 as an Emerging Strategic Intermodal System (SIS) facility because it serves regional interests and provides access to the RACEC. SR 82, the northern terminus of this project, has also been identified as an Emerging Strategic Intermodal System facility from I-75 in Lee County to SR 29. The expansion of SR 29 from Oil Well Road to SR 82 is part of an overall plan to improve corridor access and relieve traffic congestion.

SR 29, SR 82, and the Immokalee Regional Airport are included in the Bi-County Regional Transportation Network that was adopted by the Lee County and Collier County MPOs on October 22, 2004. SR 29 and SR 82 are listed as "First Order" facilities and Immokalee Regional Airport is listed as a "Second Order" facility. First Order facilities are generally those that will be the subject of future funding prioritization activities and will directly link Collier County with Lee County. Interstate 75 forms the backbone of the First Order network. Second Order facilities provide important connections between the First Order network and major population, employment, or intermodal centers.

FREIGHT MOBILITY

In connecting to such regional transportation facilities as I-75 and the Southwest Florida International Airport, this facility links the Immokalee Regional Airport to agricultural and industrial centers of the Rural Area of Critical Economic Concern (RACEC). The Florida Department of Transportation has designated SR 29 as an Emerging Strategic Intermodal System (SIS) facility because it serves regional interests and provides access to the RACEC. Its importance to freight mobility is reflected in the high daily truck volumes. In 2003, 11% of the traffic on SR 29 consisted of trucks. This volume is projected to increase to keep pace with population and economic growth.

BICYCLE AND PEDESTRIAN FACILITIES

Undesignated bicycle lanes are present on both sides along the entire segment of SR 29 from Oil Well Road to SR 82. Discontinuous sidewalks exist along this same section. Per policies of the 2030 Collier County Metropolitan Planning Organization LRTP, all roadway improvements are to include bicycle and pedestrian components either by inclusion of sidewalks and bike lanes or multi-use pathways, depending on the characteristics of the roadway. According to the 2030 Collier County Metropolitan Planning Organization LRTP and the Collier County Pathways Plan, bicycle and pedestrian facilities will be included on this section of SR 29 from SR 29-A to SR 82 as part of the proposed widening. In addition, other transportation alternatives will be considered during the Project Development phase in order to accommodate the needs of the large transportation disadvantage population within the project study area.

TRANSIT

SR 29 from Oil Well Road to downtown Immokalee currently serves as a Collier Area Transit (CAT) System route. While transit service enhancements are planned for the future (connecting SR 29 service to Lee County), the proposed improvements are not anticipated to affect traffic on this section of SR 29.

Purpose and Need Reviews

FL Department of Community Affairs

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	02/19/2008	Gary Donaldson (gary.donaldson@dca.state.fl.us)	No Purpose and Need comments found.

FL Department of Environmental Protection

Acknowledgement	Date Reviewed	Reviewer	Comments
-----------------	---------------	----------	----------

Understood	02/20/2008	Lauren Milligan (lauren.milligan@dep.state.fl.us)	No Purpose and Need comments found.
------------	------------	--	-------------------------------------

FL Department of State

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	02/15/2008	Sherry Anderson (sanderson@dos.state.fl.us)	No Purpose and Need comments found.

FL Fish and Wildlife Conservation Commission

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	02/11/2008	Scott Sanders (scott.sanders@myfwc.com)	No Purpose and Need comments found.

Federal Highway Administration

Acknowledgement	Date Reviewed	Reviewer	Comments
Accepted	02/20/2008	BSB Murthy (nepa-assignment-transition-team@fla-etat.org)	<p>Purpose and Need The project description does not indicate that the project is consistent with the LRTP. FHWA will not give NEPA approval if the project is not consistent with the STIP and LRTP. This inconsistency must be reconciled as soon as possible.</p> <p>This project description states that the addition of the Babcock Ranch Development in the nearby area will ultimately include 17,800 acres, 18,000 housing units, 50,000 residents and 6,000,000 square feet of retail space. This will likely create an impact on traffic volumes and it seems premature to determine that this facility should go from 2 lanes to a 4 lane divided facility. The number of lanes to be added should be determined after the traffic impacts of the pending development are analyzed, which by the admission of the project description has not been done yet. The analysis may reveal that constructing an altogether new facility may be more appropriate. This project should be moved to the planning screen, instead of being listed in the programming screen as is currently shown.</p> <p>The purpose and need do an excellent job of describing the project and various impacting factors. What it does not seem to do is explain clearly in a concise statement, what the purpose and need is for this corridor.</p> <p>More information regarding the location and development schedule of Babcock Ranch would be helpful. The project description simply states that the development will be north of SR78, how far north? A specified distance or showing the development on the map would be helpful. Also including the timeframe for various stages of proposed development would be helpful here if they are available.</p>

National Marine Fisheries Service

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	01/14/2008	David Rydene (David.Rydene@noaa.gov)	No Purpose and Need comments found.

Natural Resources Conservation Service

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	02/07/2008	Rick Robbins (rick.a.robbins@fl.usda.gov)	No Purpose and Need comments found.

US Coast Guard

Acknowledgement	Date Reviewed	Reviewer	Comments
-----------------	---------------	----------	----------

Understood	01/22/2008	Randall Overton (randall.d.overton@uscg.mil)	I have reviewed the ETDM project #3752 for "SR 29 Add Lanes" Collier County FDOT District 1. A preliminary review indicates there are no navigable waterways within the scope of the project. Therefore a Coast Guard Bridge Permit will not be required. If you have any questions about our jurisdiction determination, please call me at (305) 415-6749 or email at Randall.D.Overton@uscg.mil
------------	------------	---	---

Project Description Data

Project Description

This roadway improvement consists of increasing capacity on State Road (SR) 29 between Oil Well Road and SR 82 in Collier County. The project involves widening the existing 2-lane undivided segment of SR 29 to four lanes, as well as the study of an alternative route that bypasses downtown Immokalee.

This project has been screened through ETDM previously. In response to a dispute, the references to "alternatives" have been removed. The project study area is now represented by a polygon. This screening will help to locate all potential alignments that have the least impacts to natural and cultural resources, as well as to community features. All potential alternatives will be located within the limits of the polygon visible on the Environmental Screening Tool (EST).

The limits of the polygon, or "study area" are listed below for reference:

Southern Boundary: Oil Well Road

- Begins ~ 1,000' west of SR 29 and extends ~ 1,000' east of SR 29

Northern Boundary: ~ 1,500' north of SR 29 and SR 82 interchange (~ 9,000' south of Lee County Line)

- Begins ~ 1,000' west of SR 29 and extends ~ 1,000' east of SR 29
- At this point, it extends southeast for ~ 16,000' and then extends east for ~ 9,000'

Western Boundary: ~ 9,000' west of SR 29

- Extends ~ 46,000' north along SR 29 from Oil Well Road
- At this point, it juts further west for ~ 9,000' and then extends northwest for ~ 14,000'
- From this point (~ 9,000' west of SR 29), the boundary stretches north ending ~ 9,000' south of Lee County Line

Eastern Boundary: Eastern Boundary of Immokalee

- Extends ~ 25,000' north along SR 29 from Oil Well Road
- At this point, it extends along the Eastern Boundary of Immokalee to ~ 19,000' south of Lee County Line

Summary of Public Comments

FDOT District 1 initiated outreach and coordination activities to resolve the SR 29 dispute issued by USFWS. The report summarizing these activities is located under the Dispute Resolution Activity Log for this project.

DCA Review of Local Government Comprehensive Plan Consistency

Date: 07/14/2008

Determination: Consistent with Local Government Comp Plan.

Comment:

The Department has determined that each alignment referenced in this ETDM project is consistent with the Collier County Future Transportation Map. In addition, summary response comments for this project submitted by FDOT staff in 2005 were re-reviewed by DCA staff during the current ETDM review cycle. Staff concurs with FDOT findings that the State Road 29 alignment which would bypass the Immokalee Community Redevelopment Area could have possible adverse effects on redevelopment planning efforts in the area. The Department also understands that the current re-introduction of this project may prompt different comprehensive plan consistency responses than those submitted in previous reviews. The roadway configurations identified in the polygon remain consistent with the Collier County adopted Growth Management/Comprehensive Plan. However, if any other alignments are identified within the polygon, those alignments would be considered inconsistent with the Comprehensive Plan at this time. Under this circumstance, the project should not be advanced into the Florida Department of Transportation's Five Year Work Program until the comprehensive plan is amended to reflect the proposed new roadway alignment. If needed, staff will make a determination of the consistency of the proposed roadway with the respective comprehensive plan and also determine if the comprehensive plan needs to be amended to include the roadway on an adopted future transportation map.

Additional Consistency Information

- Consistent with Air Quality Conformity.
- Consistent with MPO Goals and Objectives.

Lead Agency

Federal Highway Administration

Participating and Cooperating Agencies

No Cooperating Agencies have been identified.

No Participating Agencies have been identified.

Exempted Agencies

No exemptions have been assigned for this project.

Community Desired Features

No desired features have been entered into the database. This does not necessarily imply that none have been identified.

User Defined Communities Within 500 Feet

- Corkscrew
- Immokalee

Census Places Within 500 Feet

- Immokalee

Alternative #5

Alternative Description

Name	From	To	Type	Status	Total Length	Cost	Modes	SIS
Alternative was not named.	Oil Well Road	SR 82 (polygon)	Widening	ETAT Review Complete	16.5 mi.		Roadway To Be Determined	Y

Project Effects Overview for Alternative #5

Issue	Degree of Effect	Organization	Date Reviewed
Natural			
Coastal and Marine	N/A N/A / No Involvement	National Marine Fisheries Service	01/14/2008
Contaminated Sites	3 Moderate	FL Department of Environmental Protection	02/20/2008
Farmlands	4 Substantial	Natural Resources Conservation Service	02/07/2008
Navigation	N/A N/A / No Involvement	US Coast Guard	01/22/2008
Water Quality and Quantity	3 Moderate	FL Department of Environmental Protection	02/20/2008
Wetlands	4 Substantial	FL Department of Environmental Protection	02/21/2008
Wetlands	4 Substantial	US Fish and Wildlife Service	02/04/2008
Wetlands	3 Moderate	Federal Highway Administration	02/20/2008
Wetlands	N/A N/A / No Involvement	National Marine Fisheries Service	01/14/2008
Wildlife and Habitat	4 Substantial	US Fish and Wildlife Service	02/04/2008
Wildlife and Habitat	4 Substantial	Federal Highway Administration	02/20/2008
Wildlife and Habitat	4 Substantial	FL Fish and Wildlife Conservation Commission	02/11/2008
Cultural			
Historic and Archaeological Sites	4 Substantial	FL Department of State	02/15/2008
Historic and Archaeological Sites	4 Substantial	Miccosukee Tribe of Indians of Florida	01/08/2008
Recreation Areas	2 Minimal	FL Department of Environmental Protection	02/20/2008
Community			
Aesthetics	3 Moderate	FDOT District 1	02/19/2008
Economic	2 Minimal	FDOT District 1	02/19/2008
Land Use	3 Moderate	FL Department of Community Affairs	02/19/2008
Land Use	3 Moderate	FDOT District 1	02/19/2008
Mobility	1 Enhanced	FDOT District 1	02/19/2008
Mobility	3 Moderate	Federal Highway Administration	02/20/2008
Relocation	3 Moderate	FDOT District 1	02/19/2008
Social	3 Moderate	Federal Highway Administration	02/20/2008
Social	3 Moderate	FDOT District 1	02/19/2008

Social	3 Moderate	FL Department of Community Affairs	02/19/2008
Secondary and Cumulative			
Secondary and Cumulative Effects	4 Substantial	FL Department of State	02/20/2008
Secondary and Cumulative Effects	3 Moderate	Federal Highway Administration	02/20/2008

ETAT Reviews and Coordinator Summary: Natural

Air Quality

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 04/18/2008 by FDOT District 1

Comments:

No ETAT member comments were provided for this issue. Collier County is not in an air quality non-attainment or maintenance area for any of the four pollutants - nitrogen oxides, ozone, carbon monoxide, and small particulate matter - specified by the USEPA in National Ambient Air Quality Standards. The project is consistent with air quality conformity.

Due to the fact that some impacts to air quality may occur during project construction, a Summary DOE of Minimal has been assigned to the Air Quality issue.

Commitments and Responses: An Air Quality Report will not be required for this project.

None found

Coastal and Marine

Project Effects

Coordinator Summary Degree of Effect: N/A *N/A / No Involvement* assigned 04/18/2008 by FDOT District 1

Comments:

The NMFS conducted a site inspection of the project study area and determined that there are no natural resources for which the NMFS Habitat Conservation Division is responsible for; therefore, the NMFS has no comments to provide regarding potential project impacts. Coordination Document: No Involvement.

Based on the fact that the proposed project will not affect coastal and marine resources, a Summary DOE of N/A / No Involvement has been assigned to the Coastal and Marine issue.

Commitments and Responses: An Essential Fish Habitat (EFH) Assessment will not be required for this project.

Degree of Effect: N/A *N/A / No Involvement* assigned 01/14/2008 by David A. Rydene, National Marine Fisheries Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

None.

Comments on Effects to Resources:

NOAA's National Marine Fisheries Service (NMFS), Habitat Conservation Division (HCD), has reviewed the information contained in the Environmental Screening Tool for ETDM Project # 3752. The project is designed to improve capacity on SR 29 near Immokalee, Florida. The Florida Department of Transportation proposes to either widen the existing two-lane divided segment of SR 29 through Immokalee to four lanes, or alternatively, to construct a new route that bypasses downtown Immokalee in Collier County, Florida.

NMFS staff conducted a site inspection of the project area on March 24, 2005 to assess potential concerns to living marine resources. The resources affected are not ones for which NMFS, HCD, is responsible and therefore, we have no comment to provide regarding the projects impacts.

Additional Comments (optional):

CLC Commitments and Recommendations:

Contaminated Sites

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 04/18/2008 by FDOT District 1

Comments:

The FDEP reported that there are a significant number of geocoded petroleum tanks, two solid waste facilities, and three RCRA-Regulated facilities within the project buffer zones. The FDEP stated that a Contamination Screening Evaluation should be conducted along the project right-of-way in order to determine the project's proximity to potential petroleum and hazardous material handling facilities. Attention should be directed towards historical land uses that may have an affect on the proposed project, including stormwater retention and treatment areas. In the event contamination is detected during construction, the FDEP and Collier County should be notified; the FDOT may need to address the problem through additional

assessment and/or remediation activities. Dewatering projects will require permits/approval from the South Florida Water Management District. The project managers should consider developing contingency plans in the event of a natural disaster, spill, fire, or environmental release of hazardous materials stored/handled during project construction activities.

According to the EST GIS analysis results, the 100-foot project buffer contains twelve geocoded petroleum tanks, two solid waste facilities, and three RCRA-Regulated facilities. For this reason and based on agency comments, a Summary DOE of Moderate has been assigned to the Contaminated Sites issue.

Commitments and Responses: Preparation of a Contamination Screening Evaluation Report will be included in the scoping recommendations for this project.

Degree of Effect: 3 *Moderate* assigned 02/20/2008 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: No Selection

Direct Effects

Identified Resources and Level of Importance:

GIS data indicates that there are a significant number of geocoded petroleum tank sites, two solid waste facilities and three RCRA Regulated Facilities within the project buffer zones.

Comments on Effects to Resources:

A Contamination Screening Evaluation (similar to Phase I and Phase II Audits) will need to be conducted along the project right-of-way in considering the proximity to potential petroleum and hazardous material handling facilities. The Contamination Screening Evaluation should outline specific procedures that would be followed by the applicant in the event drums, wastes, tanks or potentially contaminated soils are encountered during construction. Special attention should be made in the screening evaluation to historical land uses (such as solid waste disposal) that may have an affect on the proposed project, including storm water retention and treatment areas.

-- In the event contamination is detected during construction, DEP and Collier County need to be notified and the FDOT may need to address the problem through additional assessment and/or remediation activities. Please note that revisions to Chapters 62-770, 62-782, 62-785, 62-777, F.A.C., and a new rule, Chapter 62-780, F.A.C., all involving contamination assessment and cleanup along with other notification requirements, took effect on April 17, 2005.

-- Groundwater monitoring wells (and possibly water production wells) are likely present at/near the project corridor. Arrangements need to be made to properly abandon (in accordance with Chapter 62-532, F.A.C.) and or replace any wells that may be destroyed or damaged during construction. These wells may also be used to gather data for the Contamination Screening Evaluation report.

-- Depending on the findings of the Contamination Screening Evaluation and the proximity to known contaminated sites, projects involving "dewatering" should be discouraged, since there is a potential to spread contamination to previously uncontaminated areas and affect contamination receptors, site workers and the public. Dewatering projects would require permits/approval from the South Florida Water Management District, Water Use Section.

-- Any land clearing or construction debris must be characterized for proper disposal. Potentially hazardous materials must be properly managed in accordance with Chapter 62-730, F.A.C. In addition, any solid wastes or other non-hazardous debris must be managed in accordance with Chapter 62-701, F.A.C.

-- Staging areas, with controlled access, should be planned in order to safely store raw material paints, adhesives, fuels, solvents, lubricating oils, etc. that will be used during construction. All containers need to be properly labeled. The project managers should consider developing written construction Contingency Plans in the event of a natural disaster, spill, fire or environmental release of hazardous materials stored / handled for the project construction.

Additional Comments (optional):

CLC Commitments and Recommendations:

Farmlands

Project Effects

Coordinator Summary Degree of Effect: 4 *Substantial* assigned 04/17/2008 by FDOT District 1

Comments:

The NRCS commented that based on the EST GIS analysis results (and verification through the use of DOQQ imagery), it is evident that the project footprint or polygon study area will impact substantial acreages of cropland. The USDA-NRCS considers most commodity crops (citrus groves, row crops, etc.) to be unique farmland in South Florida. The NRCS stated that the project has the potential to attract more development to the region which, in turn, will trigger the conversion of cropland to urban/residential use.

Based on agency comments, a Summary DOE of Substantial has been assigned to the Farmlands issue.

Commitments and Responses: A Farmlands Assessment will be included in the scoping recommendations for this project.

Degree of Effect: 4 *Substantial* assigned 02/07/2008 by Rick Allen Robbins, Natural Resources Conservation Service

Coordination Document: No Selection

Direct Effects

Identified Resources and Level of Importance:

Based solely on the 2000 land use data and verification by assesment of DOQQ imagery, it is obvious that the widening of SR 29 by using a 1000'

buffer (as defined in the Project) would impact significant acreage of surrounding cropland. The USDA considers most commodity crops (citrus groves, row crops, etc.) as a Unique Farmland resource in south Florida. Since the project footprint would impact 1000' on either side of the existing right-of-way, and there is no inbetween buffer width between 500 and 5,280 feet, we are using the statistics from the 5,280 foot buffer.

Comments on Effects to Resources:

In excess of 21,000 acres of citrus crops and 4,000 acres of row crops would be impacted by this project. In addition, this would open the region to an increased possibility of conversion of cropland to more urban/residential use. Therefore, we are assigning a Substantial degree of effect on Unique Farmland Resources.

Additional Comments (optional):

CLC Commitments and Recommendations:

Floodplains

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 04/18/2008 by FDOT District 1

Comments:

No ETAT member comments were provided for this issue. The ETDM GIS analysis results indicate that approximately 21,008 acres (100%) of the project's 100-foot buffer is classified as FEMA Flood Zone D (1996 data) - an area of undetermined but possible flood hazard.

Due to the uncertainty of potential flood hazards and the issues regarding floodplain compensation, a Summary DOE of Moderate has been assigned to the Floodplains issue.

Commitments and Responses: Preparation of a Floodplains Assessment will be included in the scoping recommendations for this project.

None found

Infrastructure

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 04/18/2008 by FDOT District 1

Comments:

No ETAT member comments were provided for this issue. The ETDM GIS analysis results identified the following infrastructure related features within the project study area: railway (12,130 linear feet), one cellular tower, one Federal Aviation Administration tower, two solid waste facilities, three water treatment facilities, and four wireless antenna structures.

Due to the limited number of infrastructure related features located within the project study area, a Summary DOE of Minimal has been assigned to the Infrastructure issue.

Commitments and Responses: None.

None found

Navigation

Project Effects

Coordinator Summary Degree of Effect: N/A *N/A / No Involvement* assigned 04/18/2008 by FDOT District 1

Comments:

The USCG stated that based on a preliminary review there are no navigable waterways within the project area; therefore, a Coast Guard bridge permit will not be required. Coordination Document: No Involvement.

Based on agency comments and the fact that no navigable waterways exist within the project study area, a Summary DOE of N/A / No Involvement has been assigned to the Navigation issue.

Commitments and Responses: Neither a Navigation Study, Bridge Questionnaire, nor a USCG Bridge Permit will be required for this project.

Degree of Effect: N/A *N/A / No Involvement* assigned 01/22/2008 by Randall D Overton, US Coast Guard

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Navigation

Comments on Effects to Resources:

I have reviewed the ETDM project #3752 for "SR 29 Add Lanes" Collier County FDOT District 1.

A preliminary review indicates there are no navigable waterways within the scope of the project. Therefore a Coast Guard Bridge Permit will not be required.

If you have any questions about our jurisdiction determination, please call me at (305) 415-6749 or email at Randall.D.Overton@uscg.mil

Additional Comments (optional):

CLC Commitments and Recommendations:

Special Designations

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 04/18/2008 by FDOT District 1

Comments:

No ETAT member comments were provided for this issue. The EST GIS analysis results report the presence of Native American Lands (Immokalee Tribe), the Corkscrew Regional Ecosystem Watershed Florida Forever BOT Project, and the Lake Trafford Impoundment (public land) within the project's 100-foot buffer.

Due to the presence of these resources, a Summary DOE of Moderate has been assigned to the Special Designations issue.

Commitments and Responses: During the Project Development phase, the special provisions chapter of the PD&E Manual for special designations will be consulted.

None found

Water Quality and Quantity

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 04/18/2008 by FDOT District 1

Comments:

The FDEP reviewed the project and reported that stormwater runoff from the road surface will likely alter the existing hydrology and natural drainage patterns of adjacent wetlands and surface waters through increased pollutant loading. The FDEP stated that stormwater treatment should be designed to maintain the natural pre-development hydroperiod and water quality, as well as to protect the natural function of wetlands. The FDEP recommended that the PD&E study include an evaluation of existing stormwater treatment adequacy and details on future stormwater treatment facilities. Coordination Document: Permit Required.

The EST GIS analysis results report that there are no Outstanding Florida Waters or aquatic preserves located within the project's 100-foot buffer. In addition, the project will be designed to meet state water quality and quantity standards. For these reasons, a Summary DOE of Minimal has been assigned to the Water Quality and Quantity issue.

Commitments and Responses: A Water Quality Impact Evaluation will be included in the scoping recommendations for this project.

Degree of Effect: 3 *Moderate* assigned 02/20/2008 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: Permit Required

Direct Effects

Identified Resources and Level of Importance:

Stormwater runoff from the road surface may alter adjacent wetlands and surface waters through increased pollutant loading. Increased runoff carrying oils, greases, metals, sediment, and other pollutants from the increased impervious surface will be of concern. Natural resource impacts within and adjacent to the proposed road right-of-way may include alteration of the existing surface water hydrology and natural drainage patterns, and reduction in flood attenuation capacity of area creeks, ditches, and sloughs as a result of increased impervious surface within the watershed.

Comments on Effects to Resources:

Every effort should be made to maximize the treatment of stormwater runoff from the proposed road project to prevent ground and surface water contamination. Stormwater treatment should be designed to maintain the natural predevelopment hydroperiod and water quality, as well as to protect the natural functions of adjacent wetlands. We recommend that the PD&E study include an evaluation of existing stormwater treatment adequacy and details on the future stormwater treatment facilities.

Additional Comments (optional):

CLC Commitments and Recommendations:

Wetlands

Project Effects

Coordinator Summary Degree of Effect: 4 *Substantial* assigned 04/18/2008 by FDOT District 1

Comments:

The FDEP commented that there are approximately 4,601 acres of palustrine wetlands within the 500-foot project buffer based on National Wetlands Inventory data. The FDEP noted that the project will require an Environmental Resource Permit (ERP) from the South Florida Water Management District; the ERP applicant will be required to eliminate or reduce the proposed project impacts on wetlands to the greatest extent practicable. Coordination Document: Permit Required.

The FHWA reported that wetlands are present within the project study area, particularly in the southern portion. The FHWA stated that coordination should take place with the appropriate environmental agencies regarding potential project impacts on wetlands. The proposed project should be located

and designed in a manner to avoid or minimize impacts on wetlands. Coordination Document: PD&E Support Document As Per PD&E Manual.

The NMFS conducted a site inspection of the project study area and determined that there are no natural resources for which the NMFS Habitat Conservation Division is responsible for; therefore, the NMFS has no comments to provide regarding the project's impacts. Coordination Document: No Involvement.

Based on data provided by the EST, the USFWS reported that wetlands are abundant in the project area. The USFWS recommended that the project be designed to avoid or minimize wetland impacts to the greatest extent practicable. If impacts to wetlands are unavoidable, the USFWS recommended that the FDOT provide mitigation that fully compensates for impacts to wetland resources. Coordination Document: To Be Determined: Further Coordination Required.

According to the EST GIS analysis results, there are approximately 4,145 acres (19.7%) of palustrine wetlands located within the project's 100-foot buffer. Due to the abundance of wetlands within the project study area and agency concerns regarding potential wetland impacts, a Summary DOE of Substantial has been assigned to the Wetlands issue.

Commitments and Responses: Preparation of a Wetlands Evaluation Report will be included in the scoping recommendations for this project.

Degree of Effect: 4 *Substantial* assigned 02/21/2008 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: Permit Required

Direct Effects

Identified Resources and Level of Importance:

The National Wetlands Inventory GIS report indicates that there are 4601.34 acres of palustrine wetlands within 500 ft. of the project corridor area. The Wetlands 2000 data indicate that there are 166.87, 909.54, 474.85, 470.43, 40.95, 1656.31, 98.97, 962.48, 323.52, 17.33 and 509.97 acres of cattail, cypress, cypress/melaleuca infested, cypress/pine/cabbage palm, emergent aquatic vegetation, freshwater marshes, mixed wetland hardwoods, mixed wetland shrubs, wet prairies, wet prairies with pine and wetland forested mixed, respectively, within the 500-ft. project corridor.

Comments on Effects to Resources:

The proposed project will require an environmental resource permit (ERP) from the South Florida Water Management District. The ERP applicant will be required to eliminate or reduce the proposed wetland resource impacts of highway construction to the greatest extent practicable:

- Minimization should emphasize avoidance-oriented corridor alignments, wetland fill reductions via pile bridging and steep/vertically retained side slopes, and median width reductions within safety limits.
- Wetlands should not be displaced by the installation of stormwater conveyance and treatment swales; compensatory treatment in adjacent uplands is the preferred alternative.
- After avoidance and minimization have been exhausted, mitigation must be proposed to offset the adverse impacts of the project to existing wetland functions and values. Significant attention is given to forested wetland systems, which are difficult to mitigate.
- The cumulative impacts of concurrent and future road improvement projects in the vicinity of the subject project should also be addressed.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 4 *Substantial* assigned 02/04/2008 by John Wrublik, US Fish and Wildlife Service

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

Wetlands

Comments on Effects to Resources:

Data provided by the environmental screening tool indicate that wetlands are abundant in the project area. The Service recommends that the project be designed to avoid and minimize impacts to these valuable natural resources to the greatest extent practicable (please see our comments for the Florida panther). If impacts to wetlands are unavoidable, we recommend that the FDOT provide mitigation that fully compensates for impacts to wetland resources.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 3 *Moderate* assigned 02/20/2008 by BSB Murthy, Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

There are wetlands, particularly in the southern half of the proposed project. Potential impacts to wetland areas should be coordinated with the appropriate agencies, and the proposed project should be located and designed in a manner to avoid or minimize these impacts.

Comments on Effects to Resources:

Mimimize these impacts

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: N/A *N/A / No Involvement* assigned 01/14/2008 by David A. Rydene, National Marine Fisheries Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

None.

Comments on Effects to Resources:

NOAA's National Marine Fisheries Service (NMFS), Habitat Conservation Division (HCD), has reviewed the information contained in the Environmental Screening Tool for ETDM Project # 3752. The project is designed to improve capacity on SR 29 near Immokalee, Florida. The Florida Department of Transportation proposes to either widen the existing two-lane divided segment of SR 29 through Immokalee to four lanes, or alternatively, to construct a new route that bypasses downtown Immokalee in Collier County, Florida.

NMFS staff conducted a site inspection of the project area on March 24, 2005 to assess potential concerns to living marine resources. The resources affected are not ones for which NMFS, HCD, is responsible and therefore, we have no comment to provide regarding the projects impacts.

Additional Comments (optional):

CLC Commitments and Recommendations:

Wildlife and Habitat

Project Effects

Coordinator Summary Degree of Effect: 4 *Substantial* assigned 04/18/2008 by FDOT District 1

Comments:

The FFWCC reported that the previous letters provided to the FDOT on August 1, 2005; December 20, 2006; and April 20, 2007 were thoroughly reviewed and the previous comments regarding the project remain applicable. The referenced letters detail the fish, wildlife, and habitat resources located within the project area and the potential adverse effects that may impact these resources. In the referenced letters, the FFWCC stated that the project area is situated between regionally significant tracts of public land which include the Corkscrew Regional Ecosystem Watershed to the west, the Okaloacoochee Slough State Forest to the east, and the Big Cypress National Preserve and Florida Panther National Wildlife Refuge to the south. The FFWCC also noted that natural communities within the project study area potentially provide habitat for a number of listed species. The FFWCC commented that (of paramount importance) potential impacts will occur within primary and secondary Florida panther habitat zones.

The FFWCC stated that it would like to coordinate with the FDOT to form appropriate impact avoidance, minimization, and mitigation measures in order to ensure that the result of the final highway design is consistent with FFWCC goals and programs regarding the protection of the Florida panther and its habitat, as well as other state-listed species. The FFWCC recommended that a Task Group be formed consisting of representatives from FFWCC, FDOT, USFWS, USACOE, SWFWMD, NPS, conservation groups (including the Florida Wildlife Federation), and possibly other parties. Coordination Document: To Be Determined: Further Coordination Required.

The FHWA commented that the GIS analysis results indicate that the project study area is located within primary and secondary panther habitat zones. In addition, the results report black bear road kill occurrences in the project vicinity. The FHWA stated that alternatives proposed in areas currently undeveloped (i.e. new roadways) will have more impacts on panther habitat than would alternatives following existing roadway alignments. Use of existing alignments may allow for the placement of new wildlife crossings (where they do not exist today) in areas where there is need to provide safe connections for wildlife. The FHWA recommended that the FDOT coordinate with the appropriate agencies to address potential impacts to the panther and other wildlife species (including how to minimize wildlife road kills), as well as to determine the use, location, and design of wildlife crossings. Coordination Document: PD&E Support Document As Per PD&E Manual.

The USFWS reviewed its GIS database for recorded locations of federally listed threatened and endangered species on or adjacent to the project study area. Based on the data review, the USFWS believes that the following federally listed species have the potential to occur in or near the project site: Florida panther, Florida scrub-jay, wood stork, and Eastern indigo snake. The USFWS reported that the project is located within the core foraging area (CFA) of active wood stork nesting colonies. To minimize adverse affects to the wood stork, the USFWS recommended that any lost foraging habitat resulting from the project be replaced within the CFA of the affected nesting colony. In addition, a large portion of the expanded study area is located in the USFWS's focus area for the Florida panther, as well as within designated primary and secondary panther habitat zones. To minimize impacts to the panther, the USFWS suggested that the FDOT widen existing roadways as opposed to constructing a new roadway. The USFWS recommended that the FDOT prepare a Biological Assessment for the project during the Project Development and Environment (PD&E) phase in order to minimize impacts to valuable fish and wildlife habitat to the greatest extent practicable. Coordination Document: To Be Determined: Further Coordination Required.

The EST GIS analysis results indicate that the project study area is located within 1) consultation areas for the crested caracara, the Florida panther, the Florida scrub-jay, and the snail kite; 2) two ecosystem management areas (Caloosahatchee to Lee Coast EMA and Southwest Coast EMA); and 3) designated primary and secondary Florida panther habitat zones. For these reasons and based on agency concerns, a Summary DOE of Substantial has been assigned to the Wildlife and Habitat issue.

Commitments and Responses: Preparation of an Endangered Species Biological Assessment will be included in the scoping recommendations for this project.

Degree of Effect: 4 *Substantial* assigned 02/04/2008 by John Wrublik, US Fish and Wildlife Service

Coordination Document: To Be Determined: Further Coordination Required

Direct Effects

Identified Resources and Level of Importance:

Federally-listed species and fish and wildlife resources

Comments on Effects to Resources:

Federally-listed species - The Service has reviewed our Geographic Information Systems (GIS) database for recorded locations of federally listed

threatened and endangered species on or adjacent to the project study area. The GIS database is a compilation of data received from several sources.

Wood Stork - The project is located in the Core Foraging Areas ((CFA) i.e., within 18.6 miles) of five active nesting colonies of the endangered wood stork (*Mycteria americana*). The Service believes that the loss of wetlands within a CFA due to an action could result in the loss of foraging habitat for the wood stork. To minimize adverse effects to the wood stork, we recommend that any lost foraging habitat resulting from the project be replaced within the CFA of the affected nesting colony. Moreover, wetlands provided as mitigation should adequately replace the wetland functions lost as a result of the action. In some cases, the Service accepts wetlands compensation located outside the CFA of the affected wood stork nesting colony. Specifically, wetland credits purchased from a Service Approved mitigation bank located outside of the CFA would be acceptable to the Service, provided that the impacted wetlands occur within the permitted service area of the bank.

For projects that impact 5 or more acres of wood stork foraging habitat, the Service requires a functional assessment be conducted using our Wood Stork Foraging Analysis Methodology(Methodology)on the foraging habitat to be impacted and the foraging habitat provided as mitigation. The Methodology can found in the Services November 9, 2007, Eastern Indigo Snake and Wood Stork Key (Service Federal Activity Code Number 41420-2007-FA-1494) provided to the Corps to guide their effect determinations for these two species. The Methodology is also described in the Services August 28, 2007, Biological Opinion for the Terafina (G.L. Homes) development project (Service Federal Activity Code Number 41420-2007-FA-0653) located at <http://www.fws.gov/filedownloads/ftp%5Fverobeach/BIOLOGICAL%5FOPINIONS/TERAFINA/>.

Florida Panther

A large proportion of the expanded study area located in the Services focus area for the endangered Florida Panther (*Puma concolor coryi*), and the primary and secondary habitat zones for the Florida panther as defined by Kautz et al. (2006). Lands within the primary and secondary zones are considered important to Florida panther conservation in south Florida. Telemetry data provided by the Florida Fish and Wildlife Conservation Commission (FWC) indicates that the panther has been documented within the study area. Therefore, we believe that this project may adversely impact the panther. The adverse effects of the project would consist of direct and indirect effects to the panther and its habitat. Direct effects would include the loss of panther habitat in the construction footprint, potential further fragmentation of existing panther habitat, and an increase in the likelihood of vehicle collisions with panthers due to increased capacity of the roadway and the expected increase in vehicle use. The project could also indirectly result in additional habitat loss and fragmentation by promoting additional development of panther habitat in the project area that would not go forward without the presence of an efficient transportation infrastructure.

To minimize the projects impacts to the panther, the Services continues to recommend that the FDOT enlarge existing roadways within, or adjacent to, the State Road 29 corridor to accomplish the project. This most practical roads to be widened would be either the existing State Road 29 corridor through downtown Immokalee, or the widening of New Market Road.

The FDOT has indicated that they will investigate the construction of a bypass road within the study area surrounding the city of Immokalee. The Service notes that a large proportion of the proposed study area contains undeveloped lands that provide valuable habitat for the Florida panther. We believe that the construction of a new bypass roadway within the majority of the proposed study area surrounding the city of Immokalee could result in significant adverse impacts to the Florida panther, and panther habitat (as described above). As such, our preference would be that the FDOT complete the project by widening existing roads as described above. To further minimize the potential of the project to adversely affect the Florida panther, the Service urges that the FDOT reduce the size of the study area surrounding Immokalee by eliminating all lands east of the Immokalee Airport and all lands north of Heritage Boulevard.

The Service believes that the proposed project will increase the potential for panther mortality due to vehicle collisions. We note that panther mortalities due to vehicle collisions have been recorded in the project corridor (A total of 4 panthers were killed by vehicles in the project corridor in 2003 and 2004). Consequently, the Service requests that panther/wildlife crossings be installed within the corridor to minimize the potential for panther mortalities from vehicle collisions. The crossings should be similar in design to the latest crossings installed by the FDOT on State Road 29 south of Oil Well Road, and include similar chain-link exclusion fencing.

The Service believes that four crossings are warranted in the segment of State Road 29 corridor from County Road 846 to Oil Well Road. The locations for these crossing are indicated in Map L-6, Page 140 of Smith et al. (2006). We have based our recommendations concerning the number and location of crossings needed in this area on panther vehicle-related mortality data and panther telemetry collected by the FWC, the Services knowledge of the area, and on studies conducted by Swanson et al. (In Review) and Smith et al. (2006). To maintain connectivity for panthers and other wildlife in the project area, the Service also believes that a wildlife crossing is warranted for this project on County Road 858 (Oil Well Road), just west of its intersection with State Road 29. The Service will work with the FDOT and the FWC to site this crossing.

To further protect the panther, we recommend that the FDOT purchase panther habitat to compensate for impacts to panther habitat resulting from the project. The Services functional panther habitat assessment should be used to determine the habitat value of the lands impacted and the lands provided as compensation in Panther Habitat Units. We recommend that the FDOT consider acquiring and protecting lands adjacent to the panther crossings sites described above to ensure that the crossings will continue to function adequately in the future.

The Service also recommends that the project be designed to minimize impacts to panther habitat within the project corridor to the greatest extent practicable. We believe that this could be accomplished within areas of panther habitat by eliminating or reducing the width of the center median usually constructed for a project of this type. To address safety concerns, we envision the installation of a guard rail that is designed to prevent automobile collisions and not act as a barrier for wildlife attempting to cross the highway. We also recommend designating a speed limit of no more than 55 miles per hour for rural sections of the highway. We look forward to working with the FDOT to design a project footprint that minimizes impacts to the Florida panther and fish and wildlife.

No other federally listed species were identified on your project site. The Service has not conducted a site inspection to verify species occurrence or validate the GIS results. However, we assume that listed species occur in suitable ecological communities and recommend site surveys to determine the presence or absence of listed species. Ecological communities suitable for listed species can be found in the species accounts in the South Florida Multi-Species Recovery Plan (1999). This document is available on the internet at [http://verobeach.fws.gov/Programs/Recovery/esvb recovery.html](http://verobeach.fws.gov/Programs/Recovery/esvb%20recovery.html).

The Service believes that the following federally listed species have the potential to occur in or near the project site: Florida panther, Florida scrub-jay (*Aphelocoma coerulescens*), Wood stork and, Eastern indigo snake (*Drymarchon corais couperi*). Accordingly, the Service recommends that the Florida Department of Transportation (FDOT) prepare a Biological Assessment for the project (as required by 50 CFR 402.12) during the FDOTs Project Development and Environment process.

Fish and Wildlife Resources -

The project has the potential to impact undeveloped uplands and wetlands that provide valuable habitat for a variety of fish and wildlife species. Accordingly, we recommend that the project be designed to minimize impacts to fish and wildlife to the greatest extent practicable (please see our comments pertaining to the endangered Florida panther).

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 4 *Substantial* assigned 02/20/2008 by BSB Murthy, Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Coordination Document Comments: Alternatives which introduce a roadway into a new location in a currently undeveloped area more internal to the panther zones, appears to have more of an impact to the panther habitat than would alternatives following existing roadway alignments. Using existing alignments would also allow wildlife crossings to be located in existing locations that have a need for safe wildlife connectivity.

TNC Resource Conservation Areas the GIS analysis tool identifies priority ecological resource conservation areas within the polygon which may be affected by various alternatives.

Direct Effects

Identified Resources and Level of Importance:

Panther Habitat - The project is located in primary and secondary panther zones.

Black Bear-The GIS analysis tool indicates black bear road kills in this area of SR 29. Coordination is needed with the agencies to determine how to minimize wildlife road kills, such as the appropriate use, location and design of wildlife crossings.

Comments on Effects to Resources:

Panthers

Please coordinate with the appropriate agencies concerning potential impacts to the panther and other wildlife species.

Black Bear

Please consider the likely increase in project costs to address these needs. Use of existing alignments may allow for new wildlife crossings in areas of demonstrated need where they do not exist today.

Additional Comments (optional):

Alternatives which introduce a roadway into a new location in a currently undeveloped area more internal to the panther zones, appears to have more of an impact to the panther habitat than would alternatives following existing roadway alignments. Using existing alignments would also allow wildlife crossings to be located in existing locations that have a need for safe wildlife connectivity.

TNC Resource Conservation Areas the GIS analysis tool identifies priority ecological resource conservation areas within the polygon which may be affected by various alternatives.

CLC Commitments and Recommendations:

Degree of Effect: 4 *Substantial* assigned 02/11/2008 by Scott Sanders, FL Fish and Wildlife Conservation Commission

Coordination Document: To Be Determined: Further Coordination Required

Coordination Document Comments: We appreciate the opportunity to provide input on highway design and the conservation of fish and wildlife resources. We remain committed to working with FDOT and other state and federal agencies in an effort to avoid, minimize, or mitigate the adverse effects of this project on regional habitat systems and fish and wildlife resources. Please contact Terry Gilbert at (850) 402-6311 or email terry_gilbert@urscorp.com to initiate the overall process for additional agency coordination on this project. For issues related to the Florida panther, please contact Darrell Land at (239) 643-4220, or via e-mail at darrell.land@MyFWC.com, for further coordination.

Direct Effects

Identified Resources and Level of Importance:

The Habitat Conservation Scientific Services Section of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated an agency review of ETDM #3752, Collier County, and provides the following comments related to potential effects to fish and wildlife resources on this Programming Phase project.

The Project Description Summary states that this project consists of expanding SR-29 from Oil Well Road north to SR-82. The PD&E Study will include the preparation of an Environmental Impact Statement which will consider the widening of the two-lane highway along the existing alignment though Immokalee, as well as a study of alternative routes that bypasses the downtown area of the city.

Comments on Effects to Resources:

According to the Florida Department of Transportation (FDOT), this current project modification submitted for review was required due to the expansion of the existing Study Area polygon to the west of Immokalee. We have thoroughly reviewed our previous agency letters which detail fish, wildlife and habitat resources in the project area, and assess adverse effects. These letters were provided to FDOT on August 1, 2005, December 20, 2006, and April 20, 2007, and we find that these previous comments remain applicable.

Additional Comments (optional):

We appreciate the opportunity to provide input on highway design and the conservation of fish and wildlife resources. We remain committed to working with FDOT and other state and federal agencies in an effort to avoid, minimize, or mitigate the adverse effects of this project on regional habitat systems and fish and wildlife resources. Please contact Terry Gilbert at (850) 402-6311 or email terry_gilbert@urscorp.com to initiate the overall process for additional agency coordination on this project. For issues related to the Florida panther, please contact Darrell Land at (239) 643-4220, or via e-mail at darrell.land@MyFWC.com, for further coordination.

ETAT Reviews and Coordinator Summary: Cultural Historic and Archaeological Sites

Project Effects

Coordinator Summary Degree of Effect: 4 *Substantial* assigned 04/18/2008 by FDOT District 1

Comments:

The FDOS and the Miccosukee Tribe of Indians of Florida commented that portions of the project study area have been subject to previous cultural resource assessment surveys. These surveys are concentrated within the southern portion of the project area and along SR 82 (northern extent of project area). To date, the following resources have been identified within the project study area: 1) three previously recorded Florida Master Site File (FMSF) archaeological sites - one has been determined likely eligible for listing in the National Register of Historic Places (NRHP) and two have been determined potentially eligible for listing in the NRHP, 2) two previously recorded historic structures (ineligible for listing in the NRHP), 3) one resource group that has not been evaluated by the State Historic Preservation Officer (SHPO) for NRHP eligibility, and 4) one linear resource that has been determined ineligible for listing in the NRHP. In addition, there are approximately 10 historic structures that are currently unrecorded. There is also potential for unrecorded archaeological sites to occur in hammocks within the project vicinity. The FDOS and the Miccosukee Tribe recommended that the status of the above resources be field verified and that resources not evaluated by the SHPO be updated and evaluated for potential eligibility.

All reviewers stated that a systematic cultural resource assessment survey should be conducted for the selected project alignment prior to any ground-disturbing activity. The surveyors should coordinate with the Collier County Historic and Archaeological Preservation Board. Early consultation with the Seminole and Miccosukee Tribal Historic Preservation Officers (THPOs) should also be conducted prior to the survey to assist in the identification of archaeological probability areas or areas that may have cultural importance to the tribes. Consultation with both tribes should continue throughout the cultural resource investigation. Confidential: Review will not be displayed on Public Access website.

Based on the foregoing, a Summary DOE of Substantial has been assigned to the Historic and Archaeological Sites issue.

Commitments and Responses: Preparation of a Cultural Resource Assessment Survey (CRAS), as per FDOT Guidance and in coordination with the Seminole and Miccosukee Tribes, will be included in the project scoping recommendations.

Degree of Effect: 4 *Substantial* assigned 02/15/2008 by Sherry Anderson, FL Department of State

Coordination Document: No Selection

Coordination Document Comments: Given the existence of an eligible property within the 200 foot buffer and the presence of unevaluated resources within 100 feet, it is highly probable that project activities will impact historic properties potentially eligible for listing in the National Register of Historic Places, or otherwise of historical, architectural or archaeological value. Our office recommends a cultural resource assessment survey. Resources that have not been evaluated by our office should be updated and evaluated for potential eligibility.

Direct Effects

Identified Resources and Level of Importance:

ONLY PREVIOUSLY RECORDED RESOURCES WITHIN 500 FEET NOTED BELOW

Florida Site File Historic Bridges

NONE PREVIOUSLY RECORDED WITHIN 500 FEET

Historic Standing Structures

Buffer distance: 100 feet

CR00901 POLE BARN, ineligible by SHPO

Florida Site File Archaeological or Historic Sites

Buffer distance: 100 feet

CR00704 WILLIAMSON SITE 2 GLADES, 1000 B.C.-A.D. 1700 PREHISTORIC MOUND(S) NOT EVALUATED BY SHPO LIKELY NRHP ELIGIBLE

Buffer distance: 200 feet

CR00828 ARROWHEAD MIDDEN GLADES, 1000 B.C.-A.D. 1700 CAMPSITE (PREHISTORIC) POTENTIALLY ELIGIBLE FOR NRHP ELIGIBLE FOR NRHP

Buffer distance: 500 feet

CR00703 WILLIAMSON MOUND 1 LAND-TERRESTRIAL GLADES, 1000 B.C.-A.D. 1700 ELIGIBLE FOR NRHP POTENTIALLY ELIGIBLE FOR NRHP

Resource Groups

Buffer distance: 100 feet

BIG CORKSCREW ISLAND TRAM LINE, insufficient information by SHPO

Comments on Effects to Resources:

A portion of this project corridor was subject to a cultural resource assessment survey in 1982 and 1995. Several general surveys also overlap the project area.

Within the 200 foot buffer zone is a potentially eligible midden. A prehistoric mound, not evaluated by SHPO, is located within 100 feet. SHPO has also reviewed the Big Corkscrew Island Tram Line (within 100 feet) but determined there was insufficient information to evaluate this resource.

Additional Comments (optional):

Given the existence of an eligible property within the 200 foot buffer and the presence of unevaluated resources within 100 feet, it is highly probable that project activities will impact historic properties potentially eligible for listing in the National Register of Historic Places, or otherwise of historical, architectural or archaeological value. Our office recommends a cultural resource assessment survey. Resources that have not been evaluated by our office should be updated and evaluated for potential eligibility.

CLC Commitments and Recommendations:

Degree of Effect: **4** *Substantial* assigned 01/08/2008 by Steve Terry, Miccosukee Tribe of Indians of Florida

Coordination Document: No Selection

Coordination Document Comments: If the Cultural Resources Survey shows there are no archaeological sites that will be impacted by this project, then no further consultation is necessary. However, if the Cultural Resources Survey does show that archaeological sites will be impacted by this project, then further consultation with the Miccosukee Tribe should be done.

Direct Effects

Identified Resources and Level of Importance:

There are 4 prehistoric sites found within 1,320' of this alternative, two of which are mounds. One mound is found within 100' of this alternative. A Cultural Resources Survey needs to be conducted to determine the impacts, if any, to these sites.

Comments on Effects to Resources:

Once a Cultural Resources Survey has been done, then effects, if any, to archaeological sites can be ascertained.

Additional Comments (optional):

If the Cultural Resources Survey shows there are no archaeological sites that will be impacted by this project, then no further consultation is necessary. However, if the Cultural Resources Survey does show that archaeological sites will be impacted by this project, then further consultation with the Miccosukee Tribe should be done.

CLC Commitments and Recommendations:

Recreation Areas

Project Effects

Coordinator Summary Degree of Effect: **3** *Moderate* assigned 04/17/2008 by FDOT District 1

Comments:

The FDEP noted the presence of several conservation lands within the vicinity of the project. Interested in preserving the functions and natural communities of these lands, the FDEP recommended that an evaluation be conducted of the primary, secondary, and cumulative impacts of the proposed roadway construction/widening on the identified public lands and proposed acquisition sites.

Based on the foregoing, a Summary DOE of Moderate has been assigned to the Recreation Areas issue.

Commitments and Responses: A Section 4(f) Determination of Applicability (DOA) will be required for this project.

Degree of Effect: **2** *Minimal* assigned 02/20/2008 by Lauren P. Milligan, FL Department of Environmental Protection

Coordination Document: No Selection

Direct Effects

Identified Resources and Level of Importance:

The following South Florida Water Management District-managed conservation lands and Florida Forever project lands are located within a mile of the corridor study area: Lake Trafford Impoundment, Corkscrew Regional Ecosystem Watershed and Corkscrew Regional Ecosystem Watershed Florida Forever BOT Project.

Comments on Effects to Resources:

These lands contain significant natural communities and numerous element occurrences of listed species, as indicated by the Florida Natural Areas Inventory. The Department is interested in preserving the area's natural communities, wildlife corridor functions, natural flood control, stormwater runoff filtering capabilities, aquifer recharge potential, contributions to regional spring complexes, and recreational trail opportunities. Therefore, future environmental documentation should include an evaluation of the primary, secondary, and cumulative impacts of the proposed highway construction on the above public lands and proposed acquisition sites.

Additional Comments (optional):

CLC Commitments and Recommendations:

Section 4(f) Potential

Project Effects

Coordinator Summary Degree of Effect: **3** *Moderate* assigned 04/18/2008 by FDOT District 1

Comments:

No agencies commented on this issue. As stated under the Recreation Areas issue, the FDEP noted that several conservation lands are located in the vicinity of the project. Based on comments under the Historic and Archaeological Sites issue, cultural resources also exist within the project study area. Due to the presence of these above-mentioned features, there is potential for Section 4(f) impacts to occur as a result of the project.

Based on the foregoing, a Summary DOE of Moderate has been assigned to the Section 4(f) Potential issue.

Commitments and Responses: A Section 4(f) Determination of Applicability (DOA) will be required for this project.

None found

ETAT Reviews and Coordinator Summary: Community

Aesthetics

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 04/18/2008 by FDOT District 1

Comments:

The FDOT District 1 commented that the community of Immokalee highly values the aesthetic character of its core area. The Immokalee Beautification Committee recently completed a streetscaping project along the SR 29 corridor in Immokalee; this project is part of an organized local effort to stimulate economic development and improve quality of life for residents of the community. The FDOT District 1 stated that despite the approved Ave Maria Development of Regional Impact and two existing Planned Unit Developments in the area, the community is anticipated to retain its rural character over the comprehensive planning period considering the large presence of agricultural land within the vicinity of the project.

It should be noted that the community has expressed interest in improving the appearance and function of the open drainage swales throughout Immokalee, as well as installing additional streetlights and sidewalks to increase safety and enhance neighborhood revitalization efforts in the Lake Trafford Road area. As such, the residents of Immokalee are likely to have an interest in the visual appearance of the corridor, including a preference regarding corridor beautification standards and the design of the project.

Based on the foregoing, a Summary DOE of Moderate has been assigned to the Aesthetics issue.

Commitments and Responses: During the Project Development phase, the FDOT District 1 will conduct public outreach in coordination with the Collier County MPO and the Immokalee Beautification Committee to solicit community input regarding the design of the project, the aesthetic treatments along the project corridor, as well as strategies to avoid or mitigate potential noise and vibration related impacts.

Degree of Effect: 3 *Moderate* assigned 02/19/2008 by Lauren Brooks, FDOT District 1

Coordination Document: No Selection

Direct Effects

Identified Resources and Level of Importance:

Streetscaping Project on SR 29 (Immokalee)

Project Study Area 100-Foot Buffer:

Collier Village Planned Unit Development

Arrowhead Planned Unit Development

Fixed Single Family Units - 202.8 acres (0.97%)

Multi-Family Units - 70.5 acres (0.34%)

Comments on Effects to Resources:

The community has placed a high value on the aesthetic character of Immokalee (its core area). The Immokalee Beautification Committee recently completed a streetscaping project along the SR 29 corridor in Immokalee, which included the addition of street lighting and furniture. The streetscaping project is part of an organized local effort to stimulate economic development and improve quality of life for residents of the community.

Despite the approved Ave Maria Development of Regional Impact (DRI) and two existing Planned Unit Developments, it is anticipated that much of the area will retain its rural character over the comprehensive planning period considering the large tracts of agricultural land present within the project area. The residents of these small communities, as well as those located within the small clusters of multi-family and single family units scattered along the SR 29 corridor, will likely have an interest in the visual appearance of the corridor (including a preference for corridor beautification standards).

Recommendation:

During the Project Development phase, the FDOT D1 will coordinate with the Collier County MPO and the Immokalee Beautification Committee to solicit community opinion on potential project effects in order to identify strategies to mitigate potential project impacts related to corridor aesthetics.

Additional Comments (optional):

CLC Commitments and Recommendations:

Economic

Project Effects

Coordinator Summary Degree of Effect: 2 *Minimal* assigned 04/18/2008 by FDOT District 1

Comments:

The FDOT District 1 reported that SR 29 is a principal north-south arterial in eastern Collier County that connects the community of Immokalee with I-75 in the south and US 27 and SR 80 in the north. In addition, this facility is part of Florida's Emerging Strategic Intermodal System (SIS) as it serves regional economic interests by connecting Immokalee (a Rural Area of Critical Economic Concern), the Florida Gulf Coast University, and the Southwest Florida International Airport in Lee County. As such, SR 29 is also a critical freight corridor.

The FDOT District 1 stated that the proposed bypass/expansion of SR 29 from Oil Well Road to SR 82 is part of an overall plan to improve corridor access and relieve traffic congestion. With the expected increase in population and employment along the SR 29 corridor and in the region, this project is likely to serve as a stimulus for local and regional economic activity. The FDOT District 1 noted, however, that this project involves the study of an alternative route that bypasses downtown Immokalee. In moving traffic away from downtown Immokalee, downtown businesses may be negatively impacted as local/pass-through traffic (on SR 29) is essential to the viability of these businesses.

Due to the potential negative impacts that may occur on downtown businesses as a result of a bypass, a Summary DOE of Minimal has been assigned to the Economic issue.

Commitments and Responses: During the Project Development phase, the FDOT District 1 will conduct public outreach in coordination with the Collier County MPO to solicit input on the project from the businesses which rely on SR 29 access. The needs of freight movement type businesses and "Main Street" type businesses should be explored relative to the design alternatives.

Degree of Effect: 2 Minimal assigned 02/19/2008 by Lauren Brooks, FDOT District 1

Coordination Document: No Selection

Direct Effects

Identified Resources and Level of Importance:

Project Study Area 100-Foot Buffer:

Empowerment Alliance of Southwest Florida Enterprise Zone

Immokalee/Collier County Enterprise Zone

Railroad Line (12,130 linear feet)

Comments on Effects to Resources:

SR 29 is a north-south principal arterial in eastern Collier County that connects the fast-growing community of Immokalee with I-75 in the south and US 27 and SR 80 in the north. Immokalee is located in a Rural Area of Critical Economic Concern (RACEC) designated by the State of Florida.

In conjunction with SR 82, SR 29 provides regional connectivity between Immokalee, the Florida Gulf Coast University, and Southwest Florida International Airport in Lee County. The Florida Department of Transportation has designated SR 29 as an Emerging Strategic Intermodal System (SIS) facility because it serves regional interests and provides access to the RACEC. SR 82, the northern terminus of this project, has also been identified as an Emerging Strategic Intermodal System facility from I-75 in Lee County to SR 29. The expansion of SR 29 from Oil Well Road to SR 82 is part of an overall plan to improve corridor access and relieve traffic congestion.

SR 29, SR 82, and the Immokalee Regional Airport are included in the Bi-County Regional Transportation Network that was adopted by the Lee County and Collier County MPOs on October 22, 2004. SR 29 and SR 82 are listed as "First Order" facilities and Immokalee Regional Airport is listed as a "Second Order" facility. First Order facilities are generally those that will be the subject of future funding prioritization activities and will directly link Collier County with Lee County. Interstate 75 forms the backbone of the First Order network. Second Order facilities provide important connections between the First Order network and major population, employment, or intermodal centers.

Its importance to freight mobility is reflected in the high daily truck volumes. In 2003, 11% of the traffic on SR 29 consisted of trucks. This volume is projected to increase to keep pace with population and economic growth.

In anticipation of the future growth to occur within Collier County, the SR 29 capacity improvement is critical in terms of enhancing overall safety, emergency access, and truck access. With the expected increase in population and employment along the corridor and in the region, this project is likely to serve as a stimulus for economic activity in Immokalee.

It should be noted, however, that this project involves the study of an alternative route that bypasses downtown Immokalee. In moving traffic away from downtown Immokalee, downtown businesses may potentially be negatively impacted.

Due to the potential negative impacts that may occur to downtown businesses as a result of the proposed bypass, a degree of effect of minimal is recommended.

Recommendation:

During the Project Development phase, the FDOT D1 will coordinate with the Collier County MPO to solicit input on the project from the residents and businesses which rely on SR 29 access.

Additional Comments (optional):

CLC Commitments and Recommendations:

Land Use

Project Effects

Coordinator Summary Degree of Effect: 3 Moderate assigned 04/18/2008 by FDOT District 1

Comments:

The FDCA noted that the three previously screened project alignments are consistent with the adopted Collier County Growth Management Plan. The FDCA stated that if other alignments are identified within the polygon (as part of the current screening process), they will not be considered consistent

with the comprehensive plan at this time. Under this circumstance, the project should not be advanced into the FDOT's Work Program until the comprehensive plan is amended to reflect the proposed new roadway alignment. The FDCA also commented that the SR 29 alternative which bypasses the Immokalee Community Redevelopment Area could have possible adverse effects on redevelopment planning efforts in the area by moving traffic away from the downtown businesses.

The FDOT District 1 reported that agricultural land composes the majority of the project area in terms of existing land uses and future land uses. As such, the community is anticipated to retain its rural character over the comprehensive planning period despite the approved Ave Maria Development of Regional Impact and two existing Planned Unit Developments in the area. The FDOT District 1 also stated that this project is consistent with the adopted Collier County Growth Management Plan. The FDOT District 1 additionally noted that this project involves the study of an alternative route that bypasses downtown Immokalee; in moving traffic away from the Immokalee Community Redevelopment Area, adverse effects on redevelopment planning efforts in the area could potentially occur.

Due to the potential negative impacts that may occur to the Immokalee Community Redevelopment Area as a result of a bypass, a Summary DOE of Moderate has been assigned to the Land Use issue.

Commitments and Responses: During the Project Development phase, the FDOT District 1 will coordinate with Collier County and the Collier County MPO to ensure that the selected project alignment is reflected in both the Collier County Growth Management Plan and the Collier County MPO 2030 Long Range Transportation Plan. In conjunction with the Collier County MPO, public outreach will be conducted to solicit community opinion on potential project effects to land use, focusing on the Immokalee urban core. As more detailed project information becomes available, potential impacts on surrounding land use will be further assessed.

Degree of Effect: 3 Moderate assigned 02/19/2008 by Gary Donaldson, FL Department of Community Affairs

Coordination Document: No Selection

Direct Effects

Identified Resources and Level of Importance:

The Department has determined that each alignment referenced in this ETDM project is consistent with the Collier County Future Transportation Map. In addition, summary response comments for this project submitted by FDOT staff in 2005 were re-reviewed by DCA staff during the current ETDM review cycle. Staff concurs with FDOT findings that the State Road 29 alignment which would bypass the Immokalee Community Redevelopment Area could have possible adverse effects on redevelopment planning efforts in the area. The Department also understands that the current re-introduction of this project may prompt different comprehensive plan consistency responses than those submitted in previous reviews. The roadway configurations identified in the polygon remain consistent with the Collier County adopted Growth Management/Comprehensive Plan. However, if any other alignments are identified within the polygon, those alignments would be considered inconsistent with the Comprehensive Plan at this time. Under this circumstance, the project should not be advanced into the Florida Department of Transportations' Five Year Work Program until the comprehensive plan is amended to reflect the proposed new roadway alignment. If needed, staff will make a determination of the consistency of the proposed roadway with the respective comprehensive plan and also determine if the comprehensive plan needs to be amended to include the roadway on an adopted future transportation map.

Comments on Effects to Resources:

see above

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 3 Moderate assigned 02/19/2008 by Lauren Brooks, FDOT District 1

Coordination Document: No Selection

Direct Effects

Identified Resources and Level of Importance:

Collier County Growth Management Plan

Project Study Area 100-Foot Buffer:

Collier Village Planned Unit Development

Arrowhead Planned Unit Development

Comments on Effects to Resources:

As shown in the table below, the predominant existing land use within the project study area 100-foot buffer is agricultural (87.1%). Designated public/semi-public land composes about 6.3% while residential, institutional, recreation, retail/office, industrial and vacant land uses comprise smaller portions of the buffer area. Two Planned Unit Developments (PUDs) are also located within the project study area 100-foot buffer.

Existing Land Use (Project Study Area 100-foot buffer):

Acreage Not Zone for Agriculture: 375.6 acres (1.8%)

Agricultural: 18,300.0 acres (87.1%)

Industrial: 2.1 acres (0.01%)

Institutional: 55.0 acres (0.3%)

Other: 0.8 acres (0.00%)

Parcels with No Values: 374.0 acres (1.8%)

Public/Semi-Public: 1,324.4 acres (6.3%)

Recreation: 0.9 acres (0.00%)

Residential: 444.0 acres (2.1%)

Retail/Office: 3.7 acres (0.02%)

ROW: 31.1 acres (0.2%)

Vacant Residential: 35.3 acres (0.2%)

Vacant Nonresidential: 51.0 acres (0.2%)

Land within the project study area 500-foot buffer is designated under the following generalized future land use categories. Approximately 67.7% of this area is designated as agricultural. The other three land use designations located in the buffer include industrial (0.01%), preserve (8.6%), and single family (23.7%).

Future Land Use (Project Study Area 500-foot buffer):

Agriculture: 15,789.5 acres (67.7%)
Industrial: 1.5 acres (0.01%)
Preserve: 2,005.0 acres (8.6%)
Single Family: 5,528.1 acres (23.7%)

It should be noted that the Ave Maria Development of Regional Impact (DRI) was approved in spring 2005. The DRI is located approximately five miles west of SR 29, north of Oil Well Road and west of Camp Keais Road. At buildout in 2016, this development is projected to contain 11,000 residential units, approximately 700,000 square feet of retail space, a 6,000 student Roman Catholic university, and 510,000 square feet of office space.

Despite the approved DRI and two PUDs, it is anticipated that much of the area will retain its rural character over the comprehensive planning period considering the large tracts of agricultural land present within the project area.

Comprehensive Plan Consistency:

This project is consistent with the adopted Collier County Growth Management Plan.

Immokalee is currently designated as a Community Redevelopment Area and a Florida Main Street, two special programs with the primary objective of community revitalization through urban design, economic restructuring, and related programs. As such, it appears that the project will moderately affect land use.

Recommendation:

During the Project Development phase, the FDOT D1 will coordinate with the Collier County MPO to solicit community opinion on potential project effects to land use predominantly in the Immokalee urban core. As more detailed project information becomes available, it is recommended that further assessment of land use impacts be conducted.

Additional Comments (optional):

CLC Commitments and Recommendations:

Mobility

Project Effects

Coordinator Summary Degree of Effect: 1 *Enhanced* assigned 04/18/2008 by FDOT District 1

Comments:

The FDOT District 1 commented that SR 29 serves an important intrastate freight corridor of Florida's Emerging Strategic Intermodal System (SIS), as well as part of the evacuation route network established by the Florida Division of Emergency Management. Currently, undesignated bicycle lanes and discontinuous sidewalks exist along the SR 29 project corridor. In addition, a Collier Area Transit (CAT) system route is established on SR 29 between Oil Well Road and downtown Immokalee. The FDOT District 1 also noted that a large number of residents (approximately 529 households) within the project study area do not have vehicles; individuals (and groups) are frequently seen walking along roadways without sidewalks. The FDOT District 1 indicated that the intent of the project is to improve corridor access and relieve traffic congestion in anticipation of the future growth to occur within Collier County, thereby enhancing overall mobility (including freight movement) and safety. In addition, the project will work to address/achieve other community goals including: improving traffic circulation, providing an interconnected sidewalk system, and enhancing public transportation. The FDOT District 1 additionally noted that the expansion of SR 29 from Oil Well Road and SR 82 is identified as a needs project within the County MPO 2030 Long Range Transportation Plan and is consistent with the adopted Collier County Growth Management Plan.

The FHWA stated that the Project Description Report indicates that accidents along SR 29 are double the state average for similar roadway facilities. The FHWA commented that safety should be a primary factor in terms of selecting viable project alternatives; the location and design of the proposed alternatives should be assessed in terms of how future accidents might be reduced. Coordination Document: PD&E Support Document As Per PD&E Manual.

Based on the foregoing, a Summary DOE of Enhanced has been assigned to the Mobility issue.

Commitments and Responses: During the Project Development phase, the FDOT District 1 will conduct public outreach in coordination with the Collier County MPO to solicit community opinion on mobility needs along the corridor. In order to accommodate the needs of the large transportation disadvantaged population within the project area, bicycle and pedestrian facilities will be included as part of the roadway capacity improvement. Other alternative transportation options and enhancements will also be considered.

Degree of Effect: 1 *Enhanced* assigned 02/19/2008 by Lauren Brooks, FDOT District 1

Coordination Document: No Selection

Direct Effects

Identified Resources and Level of Importance:

Collier County MPO 2030 Long Range Transportation Plan

Project Study Area 100-Foot Buffer:

Greenways Ecological Priority Linkages (Critical)

OGT: Multi-Use Trails Priorities (Medium)
of Housing Units with No Vehicle Available: 529

Comments on Effects to Resources:

The expansion of SR 29 from Oil Well Road and SR 82 is identified as a needs project within the Collier County Metropolitan Planning Organization (MPO) 2030 Long Range Transportation Plan (LRTP) and is consistent with the adopted Collier County Growth Management Plan. This capacity improvement is intended to accommodate travel demand generated by population and employment growth, as well as approved development in the project study area.

Serving as part of the evacuation route network established by the Florida Division of Emergency Management and connecting to other major arterials designated on the state evacuation route network (SR 82 and SR 80), the SR 29 improvement is anticipated to enhance emergency evacuation capacity and traffic circulation leading to improved evacuation and response times. Designated by Collier County as a primary evacuation route, this facility is critical in evacuating residents of Everglades City/Chokoloskee and Naples as it serves as the only north-south route in eastern Collier County.

In addition, SR 29 is part of the Florida Strategic Intermodal System (SIS) and serves as a key intrastate freight corridor. The SR 29 capacity enhancement will improve the circulation of goods and provide access to local agricultural and ranching operations, as well as to freight activity centers located in central Florida and the populated coastal areas.

Undesignated bicycle lanes are present on both sides along the entire segment of SR 29 from Oil Well Road to SR 82. Discontinuous sidewalks exist along this same section. Per policies of the Collier County Metropolitan Planning Organization 2030 LRTP, all roadway improvements are to include bicycle and pedestrian components either by inclusion of sidewalks and bike lanes or multi-use pathways, depending on the characteristics of the roadway. According to the Collier County Metropolitan Planning Organization 2030 LRTP and the Collier County Pathways Plan, pedestrian facilities are to be included on this section of SR 29 from SR 29-A to SR 82 as part of the proposed widening.

SR 29 from Oil Well Road to downtown Immokalee currently serves as a Collier Area Transit (CAT) System route. While transit service enhancements are planned for the future (connecting SR 29 service to Lee County), the proposed improvements are not anticipated to affect traffic on this section of SR 29.

Recommendation:

During the Project Development phase, the FDOT D1 will coordinate with the Collier County MPO to solicit community opinion and preferences, targeting input from the transportation disadvantaged population, regarding mobility options along the SR 29 corridor. The public outreach will provide opportunity for all mobility related issues and concerns to be discussed. Bicycle and pedestrian facilities will be included as part of the roadway capacity improvement to maintain consistency with Collier County local government plans.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: **3** *Moderate* assigned 02/20/2008 by BSB Murthy, Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

Safety
The Project Description Report indicates accidents along SR 29 that are double the state average for similar roadway facilities. Project alternatives should specifically include safety as a primary consideration, including the identification of the high number of past accidents in the area, and how project alternatives, through location and design, might reduce the number of future accidents.

Comments on Effects to Resources:

Project Alternatives and accidental rates

Additional Comments (optional):

CLC Commitments and Recommendations:

Relocation

Project Effects

Coordinator Summary Degree of Effect: **3** *Moderate* assigned 04/18/2008 by FDOT District 1

Comments:

The FDOT District 1 commented that while residential, commercial, industrial, and institutional land uses (including a handful of community features) exist within the project study area (predominantly in Immokalee), most of the area is likely to retain its rural character over the comprehensive planning period considering the large presence of agricultural land within the vicinity of the project. The FDOT District 1 stated that the ETDM screening of this project will help to locate those potential alignments that have the least impacts on community features. All potential alignments will be within the limits of the polygon visible on the Environmental Screening Tool. These defined alignments will be available for review during the agency scoping process being conducted as part of this project. As such, actual right-of-way needs have not yet been determined.

Based on the foregoing, a Summary DOE of Moderate has been assigned to the Relocation issue.

Commitments and Responses: During the Project Development phase, relocation impacts will be assessed further as more detailed and finalized project information regarding route and right-of-way needs becomes available.

Degree of Effect: **3** *Moderate* assigned 02/19/2008 by Lauren Brooks, FDOT District 1

Coordination Document: No Selection

Direct Effects

Identified Resources and Level of Importance:

South Immokalee Neighborhood (Front Porch Community)
Collier Village Planned Unit Development
Arrowhead Planned Unit Development
Community Centers (1)
Government Buildings (1)
Law Enforcement Facilities (1)
Social Service Facilities (2)

Comments on Effects to Resources:

The ETDM screening of this project will help to locate the study area in which all potential alternatives will be located. All potential alternatives will be within the limits of the polygon visible on the EST. Thus, the right-of-way for the potential alternatives located in the polygon will vary.

To determine potential relocation impacts, the types and numbers of parcels within the project study area 100-foot buffer were examined. While the land use in the 100-foot buffer is largely agricultural, it also includes one large tract of public land, as well as a number of residential parcels.

Existing Land Use (Project Study Area 100-foot buffer):

Acreage Not Zone for Agriculture: 375.6 acres (1.8%)
Agricultural: 18,300.0 acres (87.1%)
Industrial: 2.1 acres (0.01%)
Institutional: 55.0 acres (0.3%)
Other: 0.8 acres (0.00%)
Parcels with No Values: 374.0 acres (1.8%)
Public/Semi-Public: 1,324.4 acres (6.3%)
Recreation: 0.9 acres (0.00%)
Residential: 444.0 acres (2.1%)
Retail/Office: 3.7 acres (0.02%)
ROW: 31.1 acres (0.2%)
Vacant Residential: 35.3 acres (0.2%)
Vacant Nonresidential: 51.0 acres (0.2%)

While a handful of community features exist within the project study area 100-foot buffer, it is anticipated that much of the area will retain its rural character over the comprehensive planning period considering the large tracts of agricultural land present within the project area. As such, there is potential for moderate relocation impacts to occur.

Recommendation:

The ETDM screening will help to locate all potential alignments that have the least impacts to community features. As more detailed and finalized project information regarding route and right-of-way needs becomes available, it is recommended that further assessment of relocation effects be conducted.

Additional Comments (optional):

CLC Commitments and Recommendations:

Social

Project Effects

Coordinator Summary Degree of Effect: 3 *Moderate* assigned 04/18/2008 by FDOT District 1

Comments:

The FDCA noted that the three previously screened project alignments are consistent with the adopted Collier County Growth Management Plan. The FDCA stated that if other alignments are identified within the polygon (as part of the current screening process), they will not be considered consistent with the comprehensive plan at this time. Under this circumstance, the project should not be advanced into the FDOT's Work Program until the comprehensive plan is amended to reflect the proposed new roadway alignment. The FDCA also commented that the SR 29 alternative which bypasses the Immokalee Community Redevelopment Area could have possible adverse effects on redevelopment planning efforts in the area by moving traffic away from the downtown businesses.

The FDOT District 1 commented that while a number of community features exist within the project study area (predominantly in Immokalee), the area is anticipated to retain its rural character over the comprehensive planning period due to the large presence of agricultural land. The FDOT District 1 noted, however, that this project involves the study of an alternative route that bypasses downtown Immokalee; in moving traffic away from the Immokalee Community Redevelopment Area, adverse effects on community cohesion and redevelopment planning efforts in the area could potentially occur.

According to the EST GIS analysis results, the population groups of the project area that dramatically exceeded the countywide averages included: Hispanics, African Americans, Other races, and individuals under age 18. The elderly population (over age 65) of the project study area and the median family income were considerably lower than the presented countywide figures. The percentage of households without a vehicle reported for the study area was comparable to the county percentage. The EST also reported 42 census blocks with a minority population greater than 40% (2000 population total of 7,549 individuals). Of the 42 census blocks, the FDOT District 1 indicated that fourteen contained a minority population of 100%, a number contained over 100 persons, a handful contained over 500 persons, and one consisted of 724 persons with a minority population of 92%. In addition, the FDOT District 1 reported the presence of Native American Lands (Immokalee Tribe) within the project study area.

The FDOT District 1 stated that it will be important to maintain the identity of the community. During the Project Development phase, project impacts on

community features and cohesion will be avoided or minimized the greatest extent practicable.

The FHWA commented that the proposed project is located in areas with high percentages of minority populations (including Hispanic, Native American, and African American communities), non-English speaking populations, people with disabilities, and a large number of households with no vehicle available. The FHWA stated that future project phases should include public involvement activities specific to these populations. The public involvement activities should specifically address the issues associated with the construction of a Strategic Intermodal System (SIS) facility (that meets SIS standards - high speed, limited access, etc.) through this small community and how the community's character will be maintained. Coordination Document: PD&E Support Document As Per PD&E Manual.

Based on the foregoing, a Summary DOE of Moderate has been assigned to the Social issue.

Commitments and Responses: During the Project Development phase, the FDOT District 1 will coordinate with the Collier County MPO to conduct bilingual public outreach to solicit community opinion on potential project effects in order to identify and respond to the needs and concerns of the community, especially as they relate to the elderly, young, and transportation disadvantaged populations. Alternative transportation services and facilities will be considered during the Project Development phase. In addition, as more detailed project information on route and right-of-way needs becomes available, social effects will be assessed with greater accuracy.

Degree of Effect: 3 *Moderate* assigned 02/20/2008 by BSB Murthy, Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects

Identified Resources and Level of Importance:

The proposed project is located in areas with high percentages of minority populations (including Hispanic, Native American and African American communities), non-English speaking populations, people with disabilities, and a large number of people with no vehicle available for their use. Future project phases should include public involvement activities specific to these populations. Public involvement activities and alternatives analysis should specifically address the issues associated with the possibility of building a facility that meets SIS standards (high speed, limited access) through this small community.

Comments on Effects to Resources:

Public Involvement Activities

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 3 *Moderate* assigned 02/19/2008 by Lauren Brooks, FDOT District 1

Coordination Document: No Selection

Direct Effects

Identified Resources and Level of Importance:

Project Study Area 100-Foot Buffer:
South Immokalee Neighborhood (Front Porch Community)
Collier Village Planned Unit Development
Arrowhead Planned Unit Development
Immokalee Native American Land
Lake Trafford Impoundment Public Land
Corkscrew Regional Ecosystem Watershed Florida Forever BOT Project
Field Survey Project Boundaries (15)
Florida Site File Historic Standing Structures (1)
Florida Site File Archaeological or Historic Sites (1)
Resource Groups (1)
Tony Rosbough Memorial Baseball Field
Community Centers (1)
Government Buildings (1)
Law Enforcement Facilities (1)
Social Service Facilities (2)
Railroad Line (12,130 linear feet)
Greenway Ecological Priority Linkage (Critical)
OGT: Multi-Use Trails Priorities (Medium)
Solid Waste Facilities (2)
Water Treatment Facilities (3)
Groundwater Monitoring Wells (2)

Comments on Effects to Resources:

While a handful of community features exist within the project study area 100-foot buffer, it is anticipated that much of the area will retain its rural character over the comprehensive planning period considering the large tracts of agricultural land present within the project area. It will, however, be important to maintain the identity of the community during the Project Development phase. As such, there is potential for the identified community features to be impacted by the proposed project, as well as for effects on social cohesion.

As shown in the table below, the demographics in the project study area quarter-mile buffer vary considerably from countywide statistics. Hispanics represent 66.4% of the total population in the project area, which is dramatically higher than the countywide percentage of 16.7%. African-Americans represent 14.5% of the total population within the project study area buffer while only 3.9% of the total Collier County population is African American. Persons in the study area composing the "Other" race category represent 33.0% of the project area population. Of the total Collier County population, the "Other" race category comprises 6.1%.

White: 52.5% (Quarter-Mile Buffer); 73.3% (Collier County)
African-American: 14.5% (Quarter-Mile Buffer); 3.9% (Collier County)
"Other": 33.0% (Quarter-Mile Buffer); 6.1% (Collier County)
Hispanic: 66.4% (Quarter-Mile Buffer); 16.7% (Collier County)
Age 65+: 4.3% (Quarter-Mile Buffer); 24.5% (Collier County)
Under age 18: 35.4% (Quarter-Mile Buffer); 21.9% (Collier County)
HH w/o car: 4.1% (Quarter-Mile Buffer); 4.9% (Collier County)
Med. Family Income: \$30,318 (Quarter-Mile Buffer); \$54,816 (Collier County)
Source: EST and US Census Bureau

The project study area quarter-mile buffer additionally contains a fairly large population of younger residents (35.4%). The buffer area also contains a lower median family income (a difference of \$ 24,498) compared to that of the county.

Minority Population Greater than 40%

The EST reported 42 census blocks (totaling 7,549 people in 2000) with a minority population greater than 40% within the project study area quarter-mile buffer. Fourteen of the 42 census blocks are comprised of 100% minority population. While a number of the 42 census blocks contain over 100 people, a handful are comprised of over 500 people; one consists of 724 people with a 92% minority population. Based upon the demographic information presented, environmental justice issues may surface.

Due to the presence of community focal points, as well as census blocks containing a minority population greater than 40% within the project area, it appears that the project will moderately affect community character and social cohesion.

Recommendation:

During the Project Development phase, the FDOT D1 will coordinate with the Collier County MPO to solicit community opinion on potential project effects in order to address community needs and concerns, especially as they relate to the transportation disadvantaged population. As more detailed project information becomes available, it is recommended that further assessment of relocation effects be conducted.

Additional Comments (optional):

CLC Commitments and Recommendations:

Degree of Effect: 3 *Moderate* assigned 02/19/2008 by Gary Donaldson, FL Department of Community Affairs

Coordination Document: No Selection

Direct Effects

Identified Resources and Level of Importance:

The Department concurs with FDOT findings that the State Road 29 alignment which would bypass the Immokalee Community Redevelopment Area could have possible adverse effects on redevelopment planning efforts in the area. The Department also understands that the current re-introduction of this project may prompt different comprehensive plan consistency responses than those submitted in previous reviews. The roadway configurations identified in the polygon remain consistent with the Collier County adopted Growth Management/Comprehensive Plan. However, if any other alignments are identified within the polygon, those alignments would be considered inconsistent with the Comprehensive Plan at this time. Under this circumstance, the project should not be advanced into the Florida Department of Transportation's Five Year Work Program until the comprehensive plan is amended to reflect the proposed new roadway alignment. If needed, staff will make a determination of the consistency of the proposed roadway with the respective comprehensive plan and also determine if the comprehensive plan needs to be amended to include the roadway on an adopted future transportation map.

Comments on Effects to Resources:

see above

Additional Comments (optional):

CLC Commitments and Recommendations:

ETAT Reviews and Coordinator Summary: Secondary and Cumulative

Secondary and Cumulative Effects

Project Effects

Coordinator Summary Degree of Effect: 4 *Substantial* assigned 04/18/2008 by FDOT District 1

Comments:

The FDOS stated that significant historic properties have previously been identified within the project area. Secondary and cumulative project effects on all significant properties found within the project area should be considered.

The FHWA provided the following comments regarding Secondary and Cumulative Effects:

Wetlands - Coordination should take place with the appropriate environmental agencies regarding potential project impacts on wetlands, particularly wetlands located in the southern half of the project area. The proposed project should be located and designed in a manner to avoid or minimize impacts on wetlands.

Community/Social Issues - The proposed project is located in areas with high percentages of minority populations (including Hispanic, Native American, and African American communities), non-English speaking populations, people with disabilities, and a large number of households with no vehicle available. Future project phases should include public involvement activities specific to these populations. The public involvement activities should specifically address the issues associated with the construction of a Strategic Intermodal System (SIS) facility (that meets SIS standards - high speed,

limited access, etc.) through this small community and how the community's character will be maintained.

Wildlife - The project study area is located within primary and secondary panther habitat zones. Alternatives proposed in areas currently undeveloped (i.e. new roadways) will have more impacts on panther habitat than would alternatives following existing roadway alignments. Use of existing alignments may allow for the placement of new wildlife crossings (where they do not exist today) in areas where there is need to provide safe connections for wildlife. Black bear road kill occurrences have also been identified within the project area. Coordination is needed with the appropriate agencies to address potential impacts to the panther and other wildlife species (including how to minimize wildlife road kills), as well as to determine the use, location, and design of wildlife crossings.

Coordination Document: PD&E Support Document As Per PD&E Manual.

Commitments and Responses: None.

Degree of Effect: **4** *Substantial* assigned 02/20/2008 by Sherry Anderson, FL Department of State

Coordination Document: No Selection

At-Risk Resource: Archaeological and Historic Resources

Comments on Effects: Significant historic properties have previously been identified within the 200 foot buffer of this project corridor. Secondary and cumulative effects should be considered for all significant properties found within the project's area of potential effect.

Recommended Avoidance, Minimization, and Mitigation Measures: None found.

Recommended Actions to Improve At-Risk Resources: None found.

Degree of Effect: **3** *Moderate* assigned 02/20/2008 by BSB Murthy, Federal Highway Administration

Coordination Document: PD&E Support Document As Per PD&E Manual

At-Risk Resource: Community

Comments on Effects: Community/Social Issues

The proposed project is located in areas with high percentages of minority populations (including Hispanic, Native American and African American communities), non-English speaking populations, people with disabilities, and a large number of people with no vehicle available for their use. Future project phases should include public involvement activities specific to these populations. Public involvement activities and alternatives analysis should specifically address the issues associated with the possibility of building a facility that meets SIS standards (high speed, limited access) through this small community.

Recommended Avoidance, Minimization, and Mitigation Measures: Public Involvement Activities

Recommended Actions to Improve At-Risk Resources: Alternative Analysis

At-Risk Resource: Wildlife and Habitat

Comments on Effects: Wildlife

a) Panther Habitat - The project is located in primary and secondary panther zones.

Alternatives which introduce a roadway into a new location in a currently undeveloped area more internal to the panther zones, appears to have more of an impact to the panther habitat than would alternatives following existing roadway alignments. Using existing alignments would also allow wildlife crossings to be located in existing locations that have a need for safe wildlife connectivity.

b. Black Bear The GIS analysis tool indicates black bear road kills in this area of SR 29. Coordination is needed with the agencies to determine how to minimize wildlife road kills, such as the appropriate use, location and design of wildlife crossings. Please consider the likely increase in project costs to address these needs.

Recommended Avoidance, Minimization, and Mitigation Measures: Please coordinate with the appropriate agencies concerning potential impacts to the panther and other wildlife species.

Recommended Actions to Improve At-Risk Resources: Use of existing alignments may allow for new wildlife crossings in areas of demonstrated need where they do not exist today.

TNC Resource Conservation Areas the GIS analysis tool identifies priority ecological resource conservation areas within the polygon which may be affected by various alternatives.

At-Risk Resource: Wetlands

Comments on Effects: There are wetlands, particularly in the southern half of the proposed project. Potential impacts to wetland areas should be coordinated with the appropriate agencies, and the proposed project should be located and designed in a manner to avoid or minimize these impacts.

Recommended Avoidance, Minimization, and Mitigation Measures: Minimize Impacts

Recommended Actions to Improve At-Risk Resources: None found.

Eliminated Alternatives

There are no eliminated alternatives for this project.

Project Scope

General Project Recommendations

Date	Description
07/09/2007	The District will coordinate with the Collier County MPO to conduct public outreach to solicit community opinion on mobility needs along the corridor. In order to accommodate the needs of the large transportation disadvantaged population within the project area, transportation alternatives will be considered during Project Development.

Anticipated Permits

Permit	Type	Conditions	Review Org	Review Date
Environmental Resource Permit	Water		FDOT District 1	04/18/08

Anticipated Technical Studies

Technical Study Name	Type	Conditions	Review Org	Review Date
4 (f) Determination	Other		FDOT District 1	07/09/2007
Contamination Screening Evaluation Report	ENVIRONMENTAL		FDOT District 1	03/19/2007
Wetlands Evaluation Report	ENVIRONMENTAL		FDOT District 1	03/19/2007
Farmlands Assessment	Other		FDOT District 1	03/19/2007
WQIE	Other		FDOT District 1	03/19/2007
Cultural Resource Assessment	ENVIRONMENTAL		FDOT District 1	03/19/2007
Endangered Species Biological Assessment	ENVIRONMENTAL		FDOT District 1	03/19/2007
Bicycle and Pedestrian Plan	Other		FDOT District 1	03/19/2007
Floodplains Assessment	Other		FDOT District 1	03/19/2007

Class of Action

Class of Action Determination

Class of Action	Other Actions	Lead Agency	Cooperating Agencies	Participating Agencies
Environmental Impact Statement	None	Federal Highway Administration	No Cooperating Agencies have been identified.	No Participating Agencies have been identified.

Class of Action Signatures

Name	Agency	Review Status	Date	ETDM Role
Gwen G. Pipkin	FDOT District 1	ACCEPTED	07/17/2007	FDOT ETDM Coordinator

Comments:

Of the 21 issues examined, six received a DOE of Substantial including Farmlands, Wetlands, Wildlife and Habitat, Historic and Archaeological Sites, Relocation, and Social.

USDA-NRCS considers any row crop, citrus, and similar cropland to be unique farmland in south Florida. The EST-GIS analysis identified 5,384 acres of citrus, 211 acres of row crops, and 56 acres of fallow cropland/other groves within the 100-foot buffer. The FDEP, USACOE, and USFWS noted an abundance of wetlands within the 100-foot buffer including 2,507.73 acres of Palustrine wetlands. The USFWS indicated the potential for the following protected species to occur in or near the project site: Wood stork, Bald eagle, Florida panther, Florida scrub jay, and Eastern indigo snake. The project is located within the core foraging area of five wood stork colonies and near a Bald eagle nest. To date, 31 previously recorded cultural resources have been identified in the project area, including four potentially historic cemeteries; there is also potential for Seminole sites as well as unrecorded archaeological sites to be present. In addition, Downtown Immokalee is a potential historic district. Relocation effects are anticipated to be substantial as the core area of Immokalee consists of many small parcels with buildings located close to the right-of-way. Finally, there is high potential for community cohesion to be impacted by the project. The community has a high minority population including 71 percent Hispanics as well as African-Americans and Native Americans. Many important community focal points (e.g., religious, healthcare, and educational facilities, etc.) and recreational amenities may potentially be affected as they are located within the 100-foot project buffer.

Based on the number of issues to receive Substantial DOEs from members of the ETAT, the Department recommends an Environmental Impact Statement (EIS) as the appropriate Class of Action for this project.

Cathy Kendall	Federal Highway Administration	ACCEPTED	07/27/2007	Lead Agency ETAT Member
---------------	--------------------------------	----------	------------	-------------------------

Comments:

Although the project initially received a "dispute resolution" from 2 agencies based on their concern with the lines depicting the alternatives during the ETDM screening, the district worked with these agencies and rescreened the project using a polygon approach to indicate a broader area that can encompass all reasonable and feasible alternatives for the project that will be studied in the environmental document.

Name	Agency	Review Status	Date	ETDM Role
------	--------	---------------	------	-----------

Regarding consistency with local plans, the district recognizes the need to resolve the current inconsistency, and in a 7/29/07 e-mail to FHWA, noted, "The issue of LRTP consistency has been discussed with the County, and the issue will be resolved during the next plan update, which will occur within the lifetime of the PD&E project".

In recognition of the coordination of the district with the agencies on the issues raised in the ETDM screening reviews to ensure that these issues will be addressed in the environmental document, FHWA hereby accepts the Summary Report and the proposed Class of Action as an EIS.

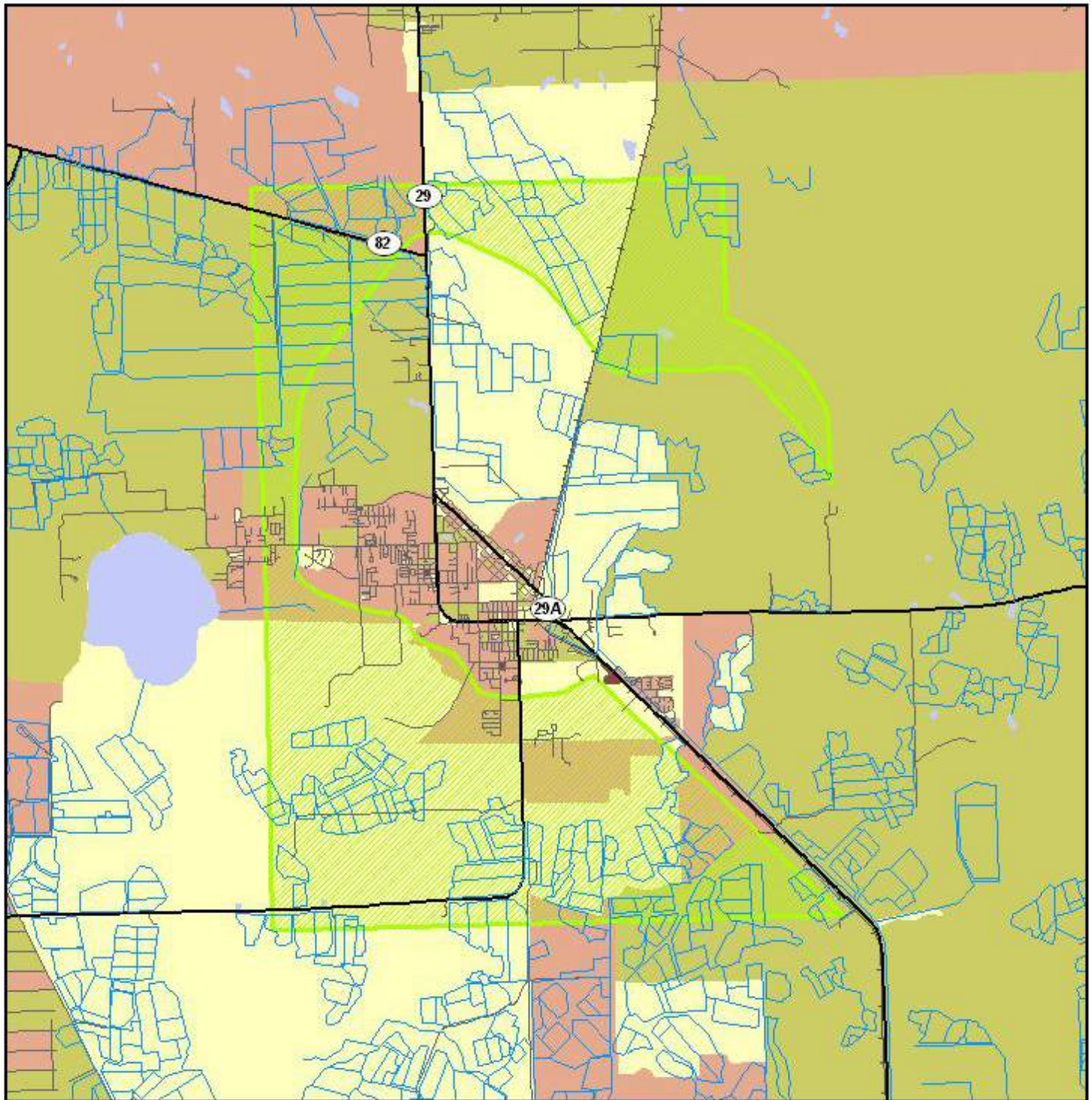
Dispute Resolution Activity Log

Action Date	Issue	Attachment(s)	Action
10/29/2008	Wildlife and Habitat	ETDM Dispute Resolution Process - SR 29 Project Information Package	Outreach and coordination activities were initiated by FDOT District 1 to resolve the SR 29 dispute issued by USFWS.

Hardcopy Maps: Alternative #5

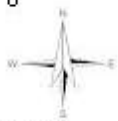
3752 SR 29 Add Lanes, Alternative #5

Oil Well Road to SR 82 (polygon)



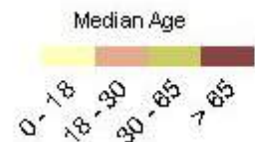
Population Age Distribution Map

0 4 Miles

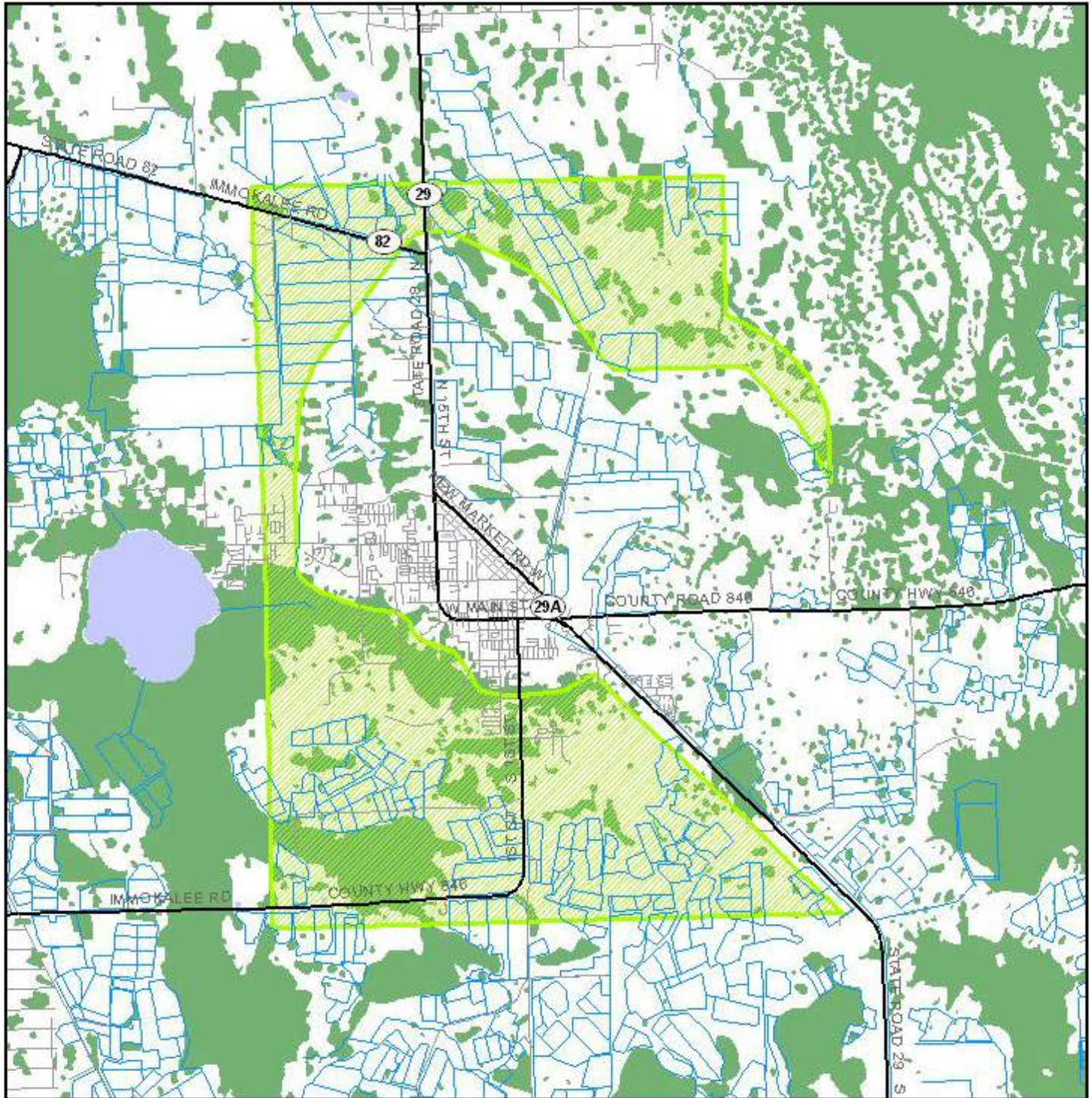


Data Sources:
 US Geological Survey
 FL Department of Transportation
 Geographic Data Technology, Inc.
 US Census Bureau

- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body



3752 SR 29 Add Lanes, Alternative #5 Oil Well Road to SR 82 (polygon)



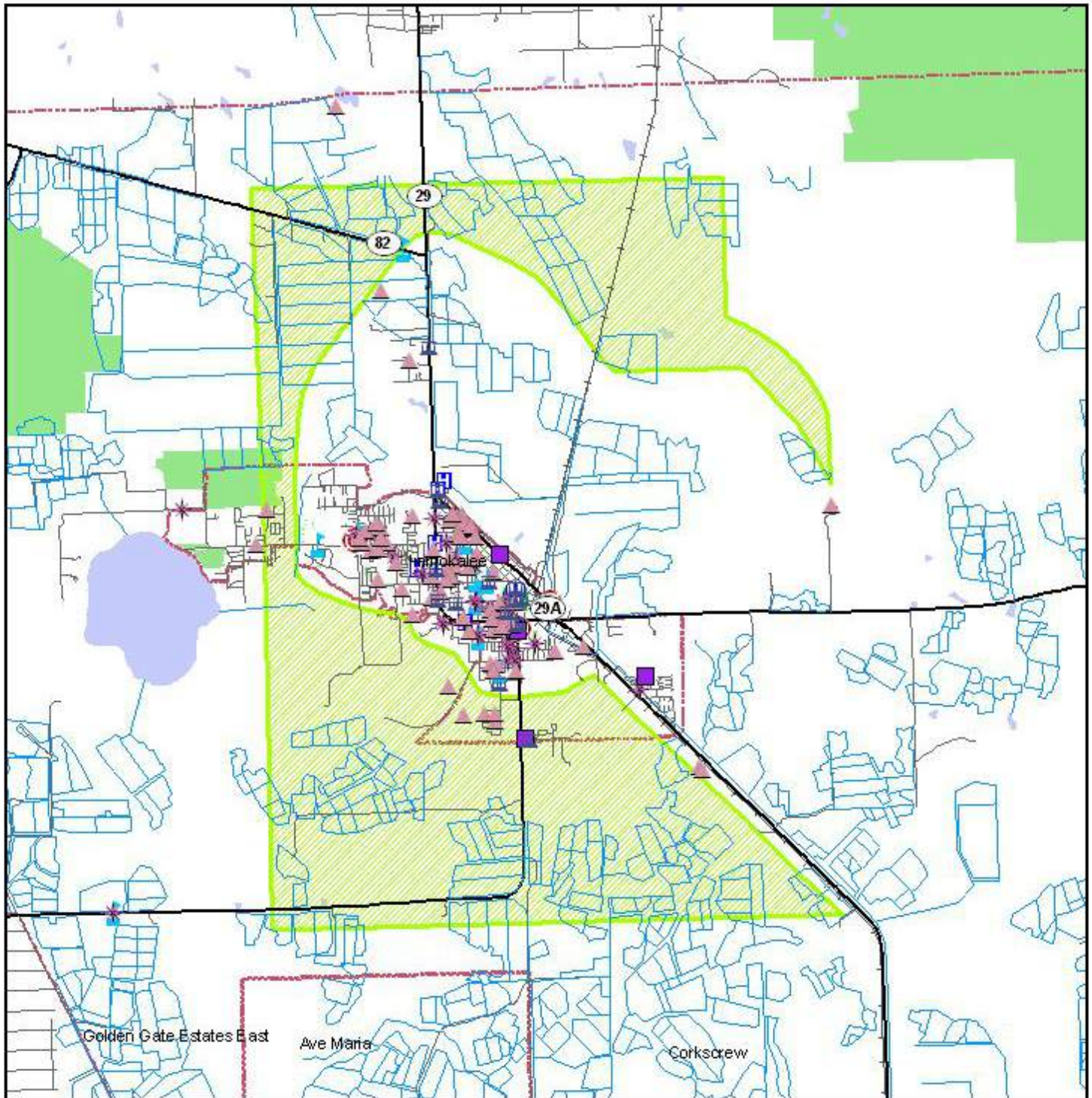
Coastal and Marine Resource Map



Data Sources: Geographic Data Technology, Inc.; US Geological Survey; Florida Marine Research Institute; Florida Department of Transportation; Florida Department of Environmental Protection; National Oceanic and Atmospheric Association; Florida Water Management Districts

3752 SR 29 Add Lanes, Alternative #5

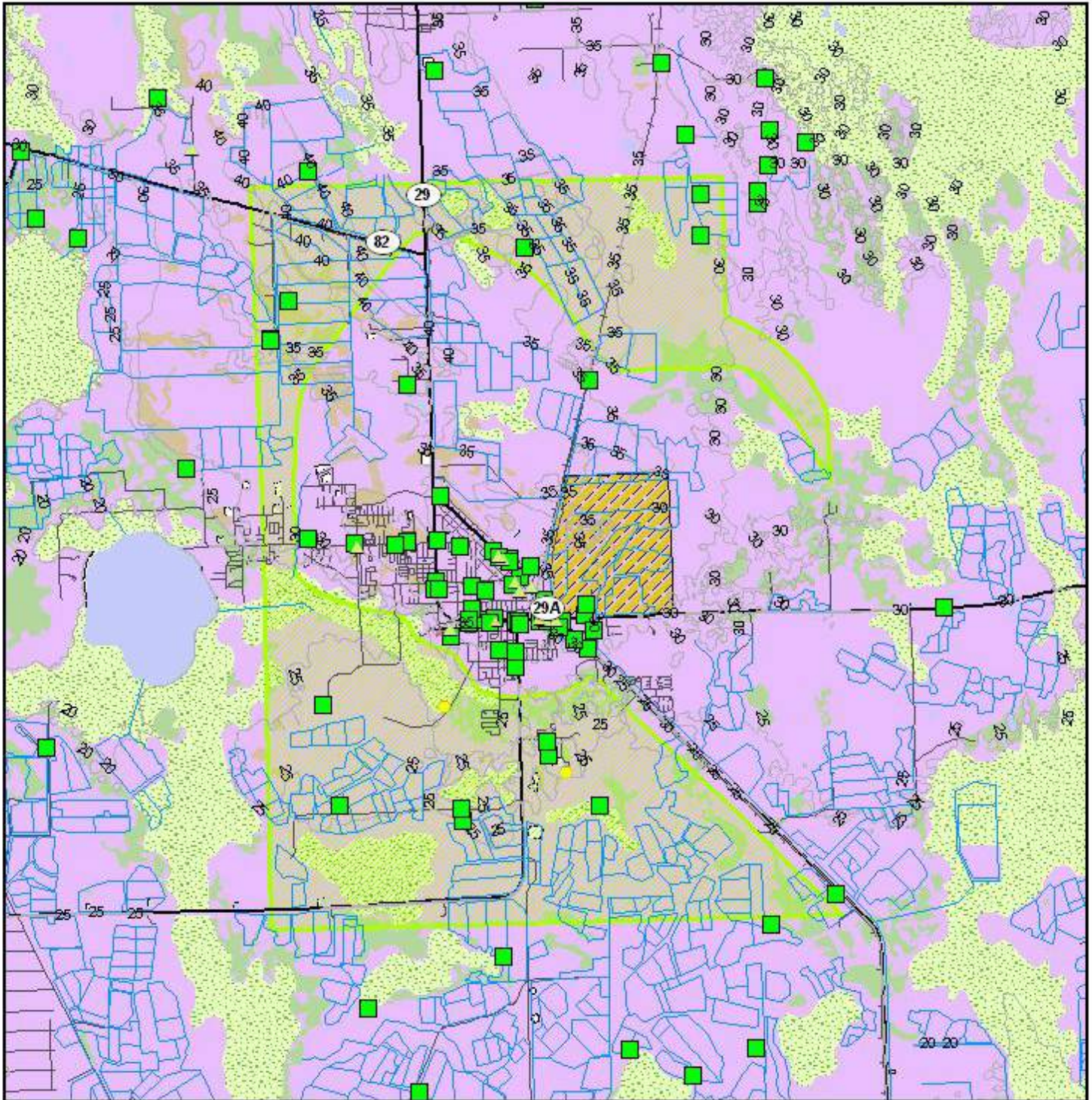
Oil Well Road to SR 82 (polygon)



- | | | | | | |
|---|-----------|---------------------------|------------------|------------------------|---------------------------------|
| 0 | 2.5 Miles | ETDM Alternative Point | Cemetery | Fire Station | Major Road |
| | | ETDM Alternative Terminus | Social Service | Health Care | Local Road or Trail |
| | | ETDM Alternative Segment | Community Center | School | Railroad |
| | | ETDM Alternative Polygon | Law Enforcement | Park | Community Boundary |
| | | Government | Place of Worship | River, Stream or Canal | Water Body |
| | | Civic Center | Cultural Center | Recreational Trail | Conservation or Recreation Area |

Data Sources: US Geological Survey, FL Department of Transportation; Geographic Data Technology, Inc.; FL Property Appraisers; FL Natural Areas Inventory

3752 SR 29 Add Lanes, Alternative #5 Oil Well Road to SR 82 (polygon)



Potential Contamination Assessment Map

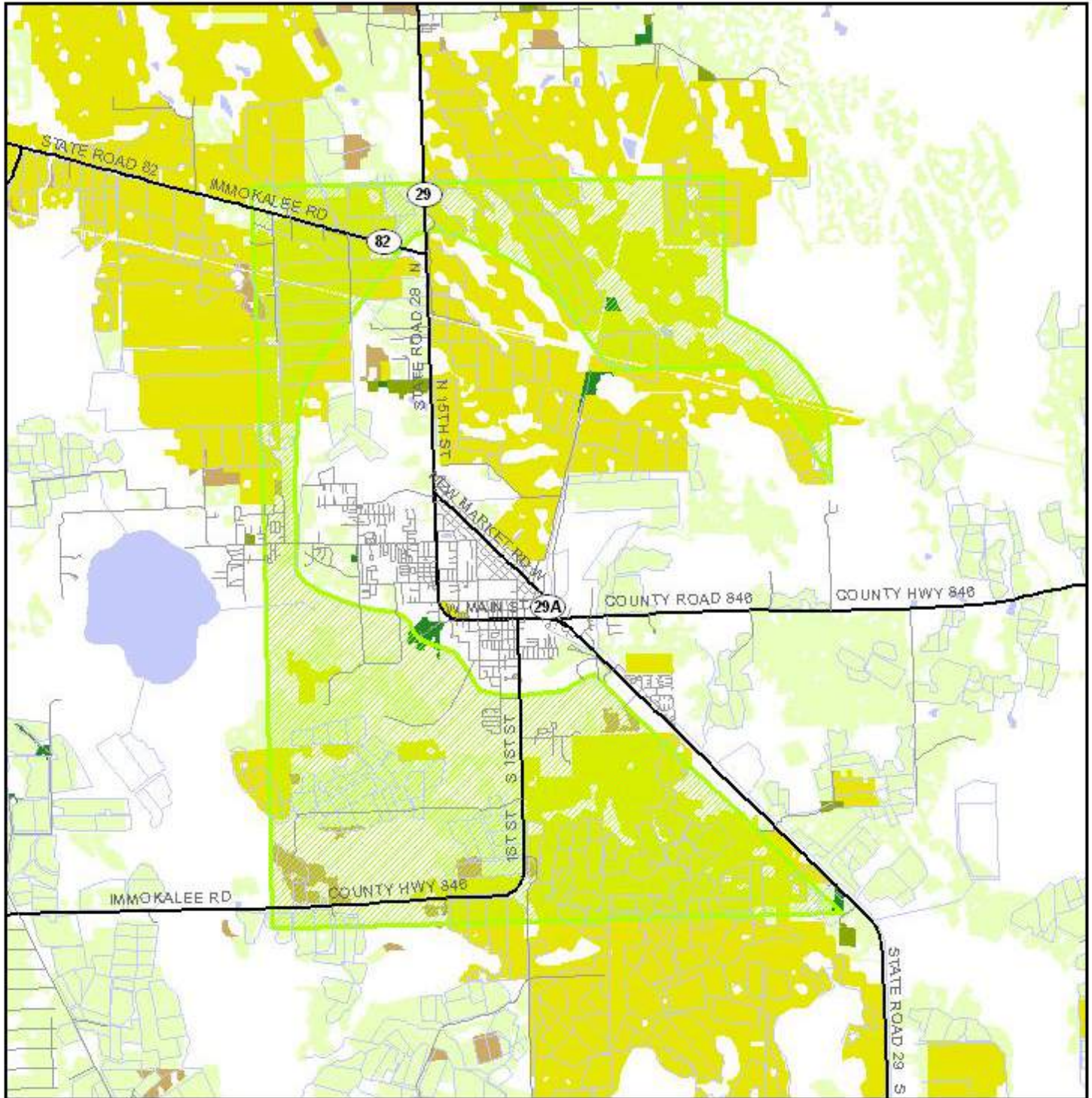


- | | | | | |
|---------------------------|--------------------------|-------------------------|-----------------|-----------------------|
| ETDM Alternative Point | Railroad | NPL Remediation Site | FDEP Tanks | Soil Drainage |
| ETDM Alternative Terminus | River, Stream or Canal | Hazardous Material Site | Brownfield Area | Excellent to Well |
| ETDM Alternative Segment | Toxic Release Inventory | Power Plant | 5 FT Contour | Well to Moderate Well |
| ETDM Alternative Polygon | Dry Cleaning Facility | Superfund Site | Water Body | Moderate Well to Poor |
| Major Road | Gasoline Service Station | Nuclear Site | Swamp/Marsh | Poor to Very Poor |
| Local Road or Trail | Solid Waste Facility | | Unclassified | |

Data Sources:

Geographic Data Technology, Inc.; US Geological Survey; FL Department of Transportation; FL Department of Environmental Protection; FL Water Management Districts; US Environmental Protection Agency; Natural Resource Conservation Service

3752 SR 29 Add Lanes, Alternative #5 Oil Well Road to SR 82 (polygon)



Farmlands Resource Map

0 2.5 Miles

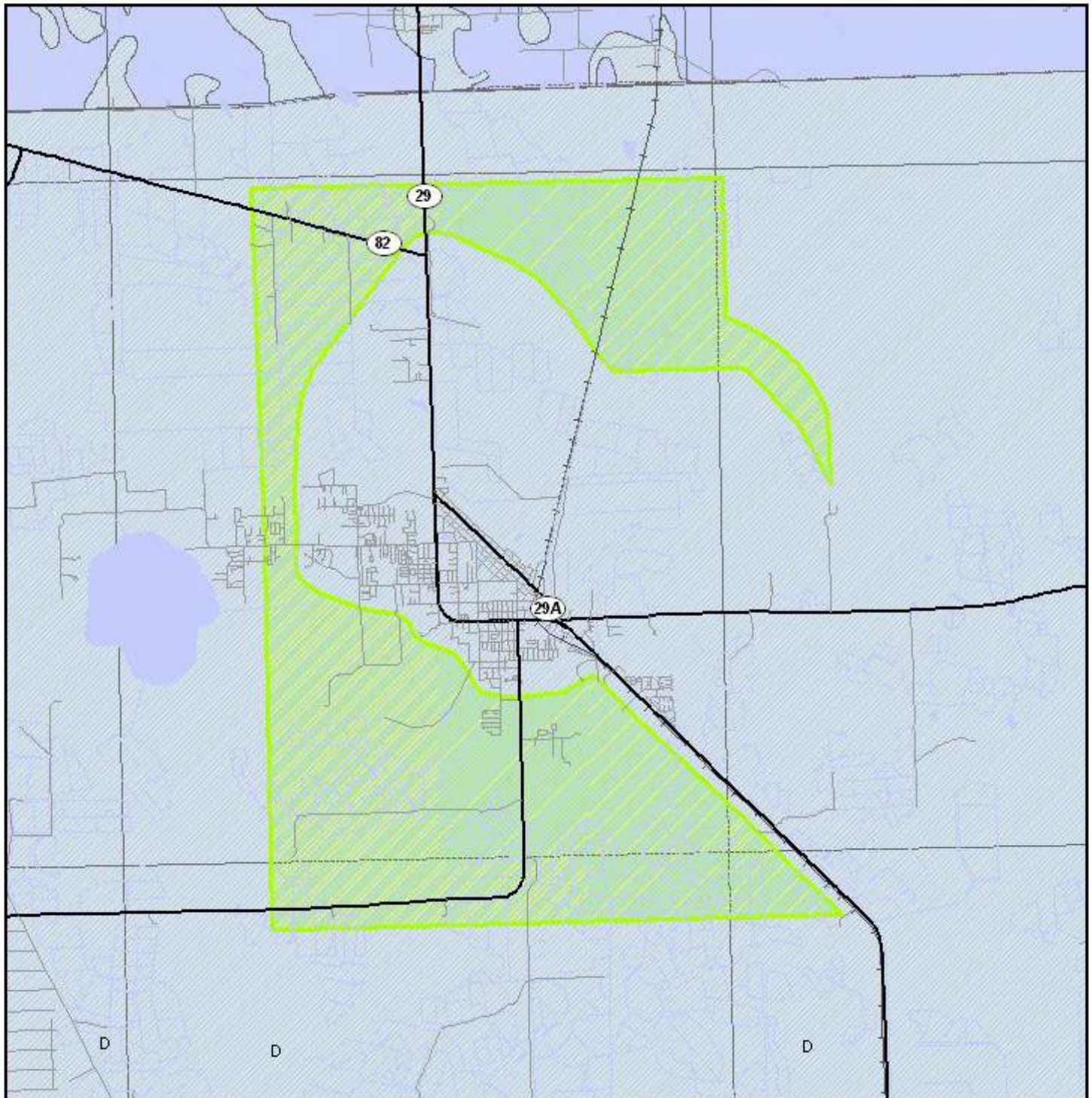


- | | | |
|-----------------------------|------------------------|-----------------------|
| ● ETDM Alternative Point | — Major Road | ■ Feeding Operations |
| ● ETDM Alternative Terminus | — Local Road or Trail | ■ Nurseries/Vineyards |
| — ETDM Alternative Segment | ■ Water Body | ■ Specialty Farms |
| ■ ETDM Alternative Polygon | ■ Prime Farmland Soils | ■ Tree Crops |
| — River, Stream or Canal | ■ Cropland/Pastureland | ■ Rural Open Lands |

Data Sources: Geographic Data Technology, Inc., Florida Water Management Districts, US Geological Survey, Natural Resources Conservation Services

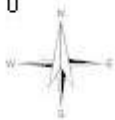
3752 SR 29 Add Lanes, Alternative #5

Oil Well Road to SR 82 (polygon)



Floodplain Resource Map

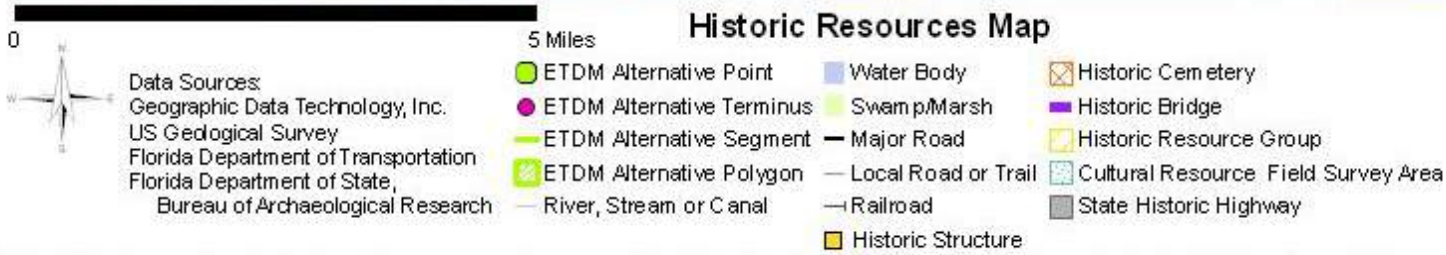
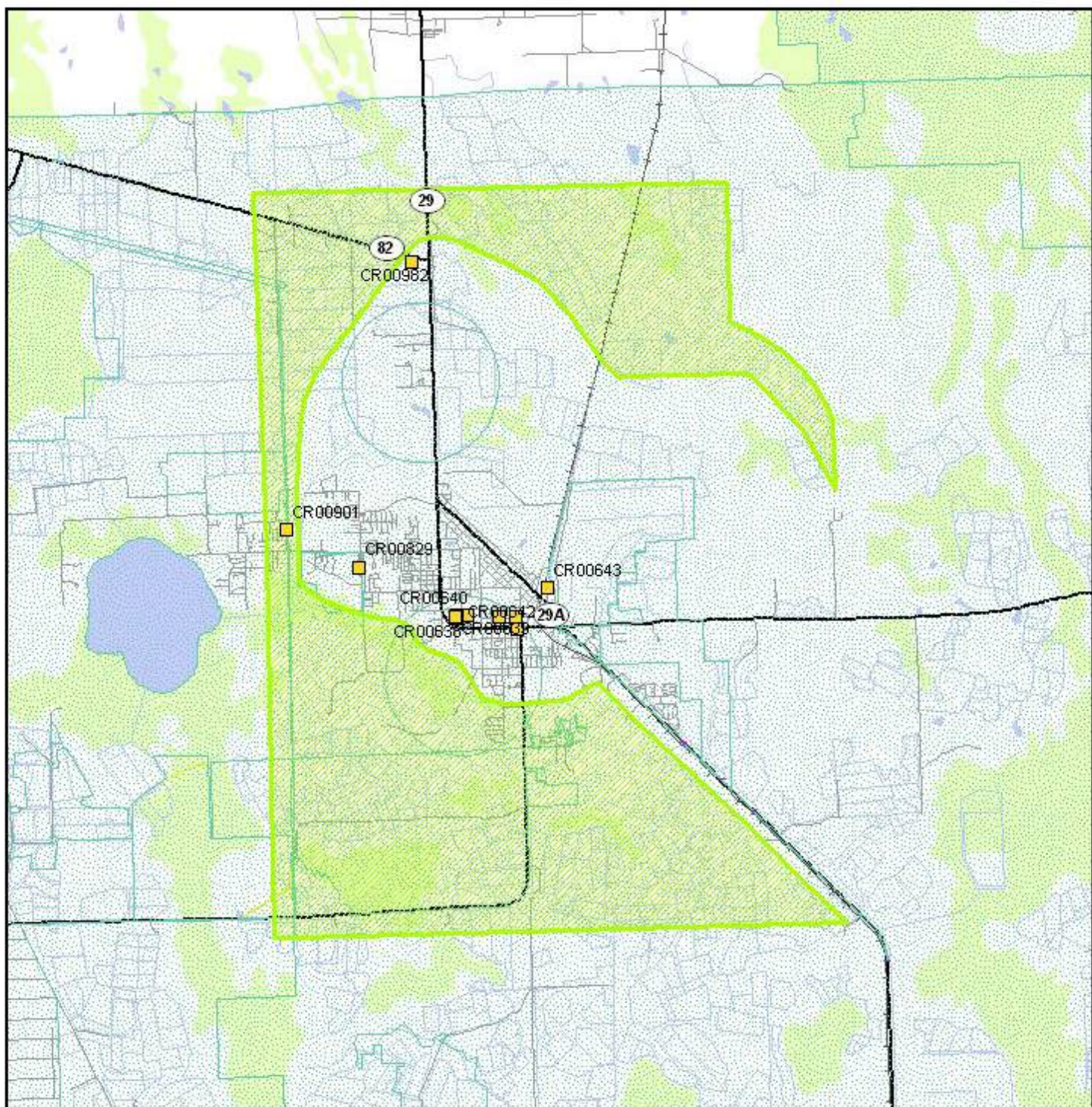
0 2 Miles



Data Sources:
 Geographic Data Technology, Inc.
 US Geological Survey
 Federal Emergency Management Agency

- | | | |
|----------------------------|------------------------|-----------------------------------|
| ETD M Alternative Point | Major Road | City Limits |
| ETD M Alternative Terminus | Local Road or Trail | County Boundaries |
| ETD M Alternative Segment | Railroad | Inside Special Flood Hazard Area |
| ETD M Alternative Polygon | River, Stream or Canal | Outside Special Flood Hazard Area |
| | Water Body | |

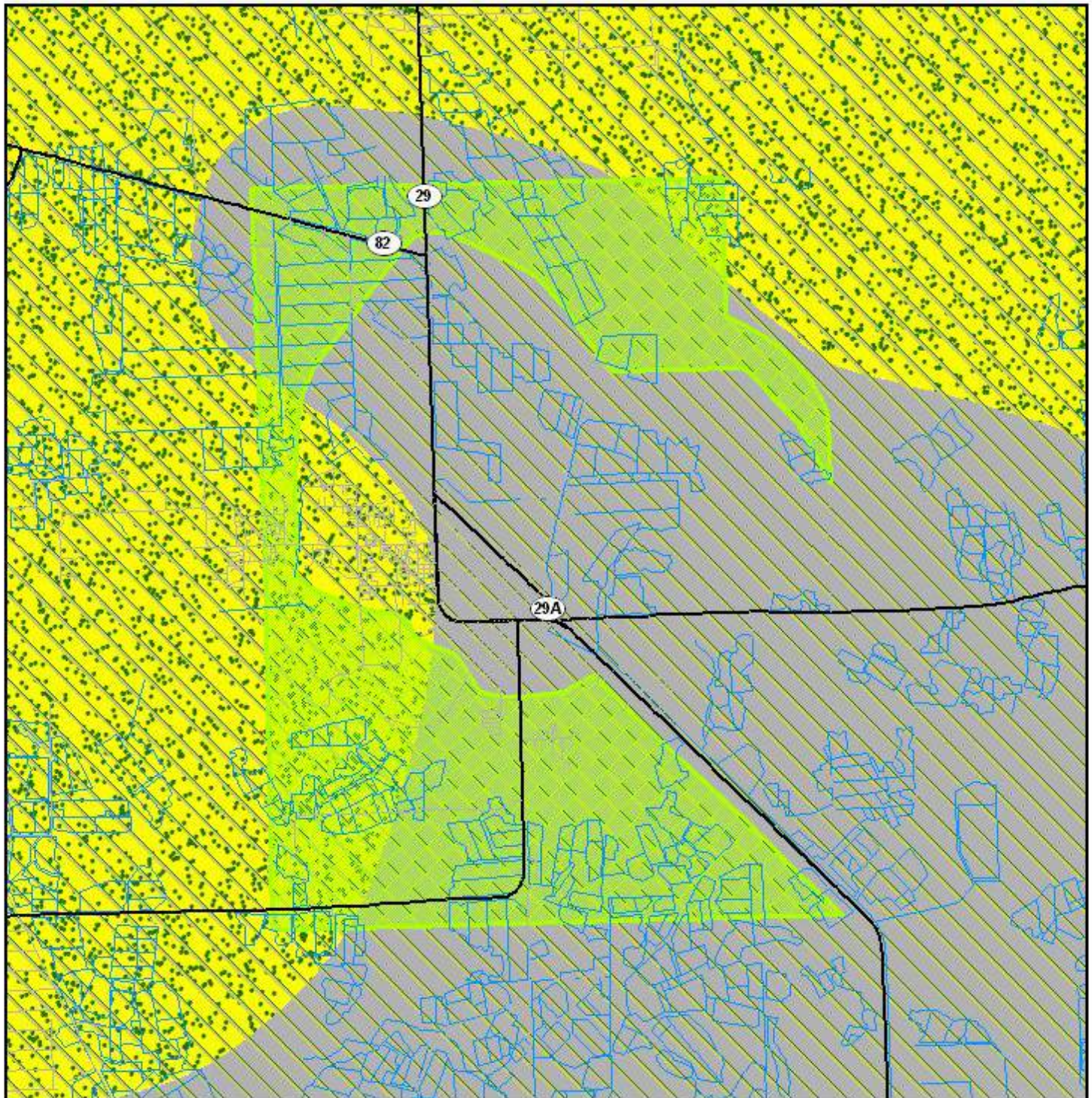
3752 SR 29 Add Lanes, Alternative #5 Oil Well Road to SR 82 (polygon)



Note: Historic properties depicted on this map represent resources listed in the Florida Master Site File excluding archeological site locations, which, pursuant to Chapter 267.135, Florida Statutes, may be exempt from public record (Chapter 119.07, Florida Statutes). Absence of features on the map does not necessarily indicate an absence of resources in the project vicinity.

3752 SR 29 Add Lanes, Alternative #5

Oil Well Road to SR 82 (polygon)



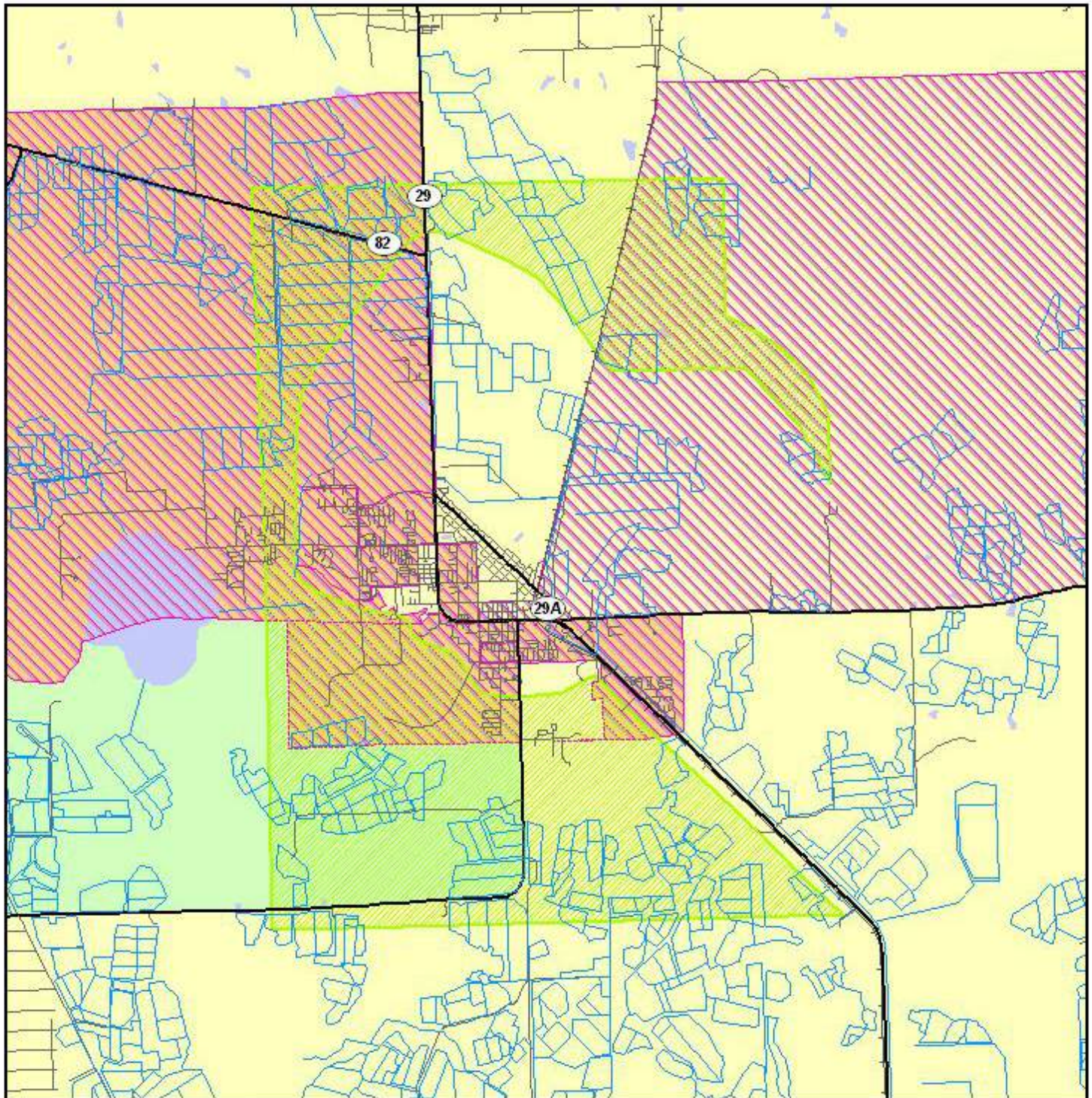
Hydrogeology Resource Map

- | | | |
|--|---|---|
| <p>0 2.5 Miles</p> <p> ■ ETD M Alternative Point
 ● ETD M Alternative Terminus
 — ETD M Alternative Segment
 ■ ETD M Alternative Polygon </p> | <p> — Major Road
 — Local Road or Trail
 — River, Stream or Canal
 ■ Other Water Body
 ■ Swamp/Marsh </p> | <p> Recharge Areas of the Floridan Aquifer
 Discharge 1 TO 5
 Discharge > 5
 Discharge < 1
 Recharge 1 TO 10
 Recharge > 10
 Recharge < 1 </p> |
| | | <p> Geological Epoch
 ■ Eocene
 ■ Holocene
 ■ Miocene
 ■ Miocene/Pliocene
 ■ Oligocene </p> |
| | | <p> ■ Oligocene/Miocene
 ■ Pleistocene
 ■ Pleistocene & Holocene
 ■ Pliocene
 ■ Pliocene/Pleistocene </p> |

Data Sources: Geographic Data Technology, Inc.; US Geological Survey; Florida Department of Transportation; South West Florida Water Management District; Florida Geological Survey

3752 SR 29 Add Lanes, Alternative #5

Oil Well Road to SR 82 (polygon)



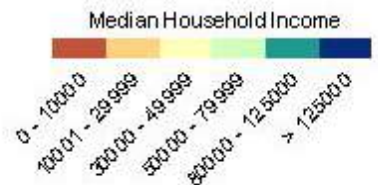
0 3 Miles



Data Sources:
 US Geological Survey
 FL Department of Transportation
 Geographic Data Technology, Inc.
 US Census Bureau

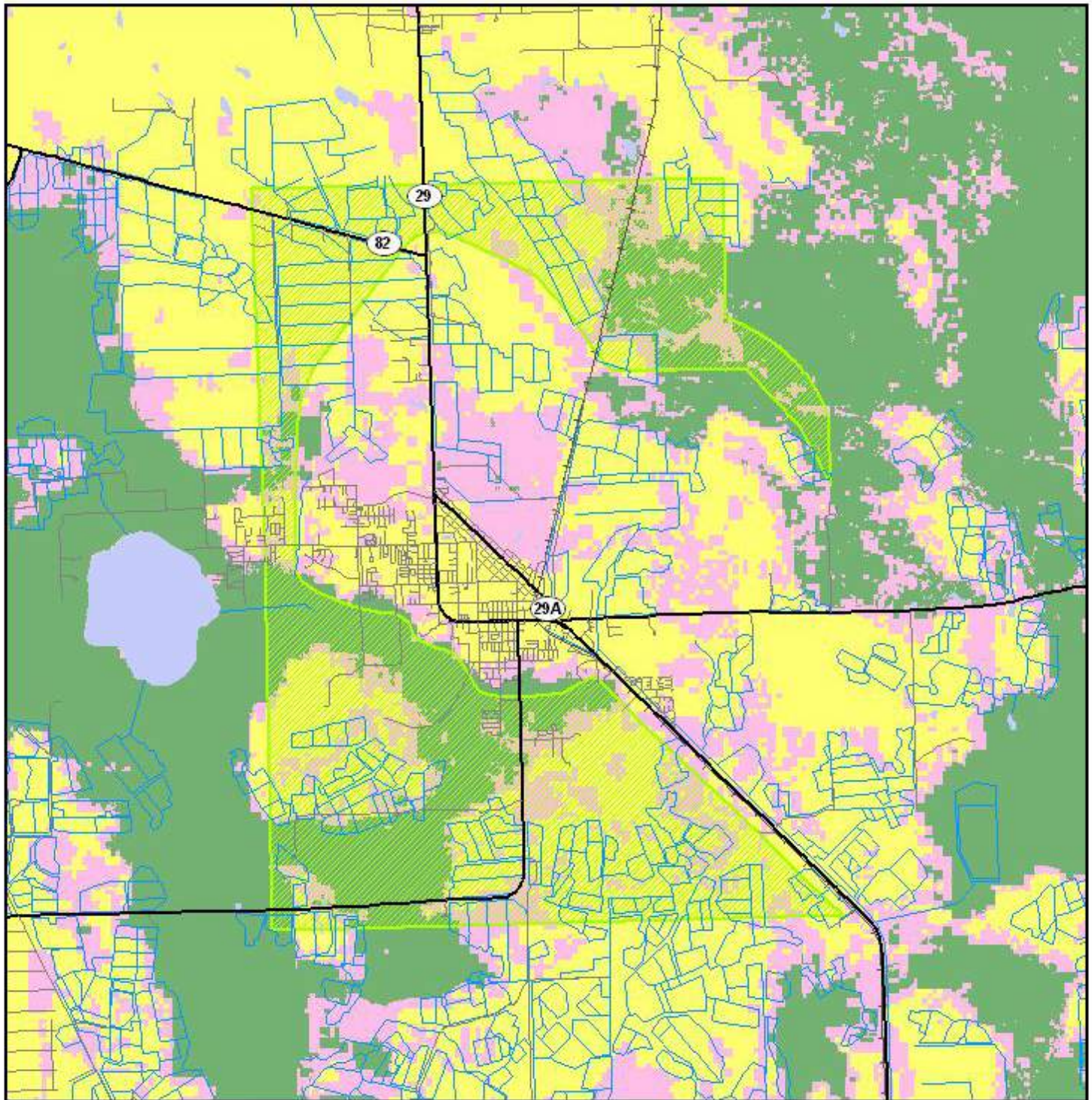
- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- > 20% Below Poverty
- Water Body

Income Distribution Map



3752 SR 29 Add Lanes, Alternative #5

Oil Well Road to SR 82 (polygon)



Integrated Wildlife Habitat Ranking System Map

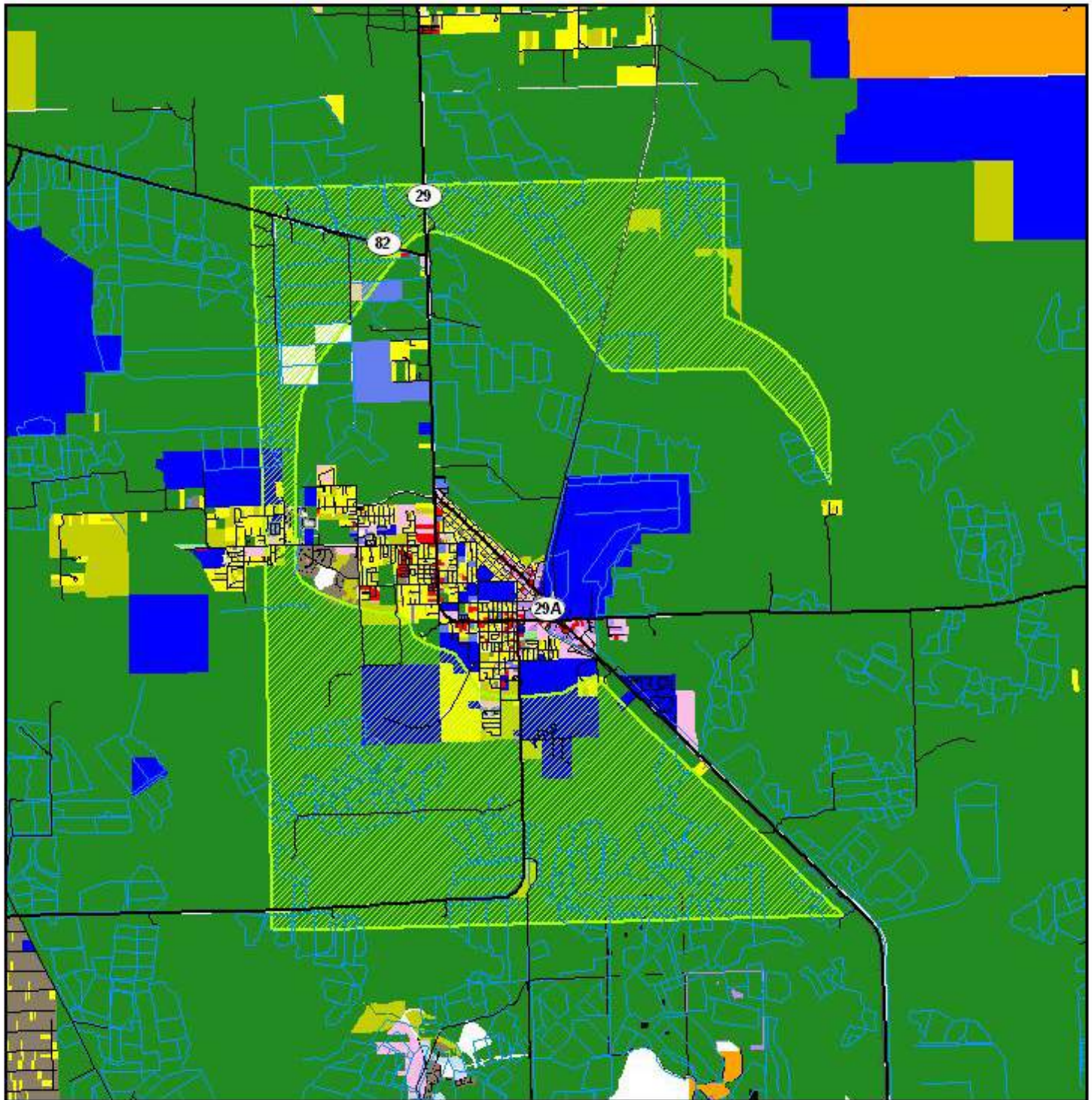


Data Sources:
 Geographic Data Technology, Inc.
 US Geological Survey
 Florida Department of Transportation
 Florida Fish & Wildlife Conservation Commission

- | | | |
|---------------------------|------------------------|------------------------|
| ETDM Alternative Point | Major Road | Low Habitat Quality |
| ETDM Alternative Terminus | Local Road or Trail | Medium Habitat Quality |
| ETDM Alternative Segment | Railroad | High Habitat Quality |
| ETDM Alternative Polygon | River, Stream or Canal | Water Body |

3752 SR 29 Add Lanes, Alternative #5

Oil Well Road to SR 82 (polygon)



0 0.9 Miles



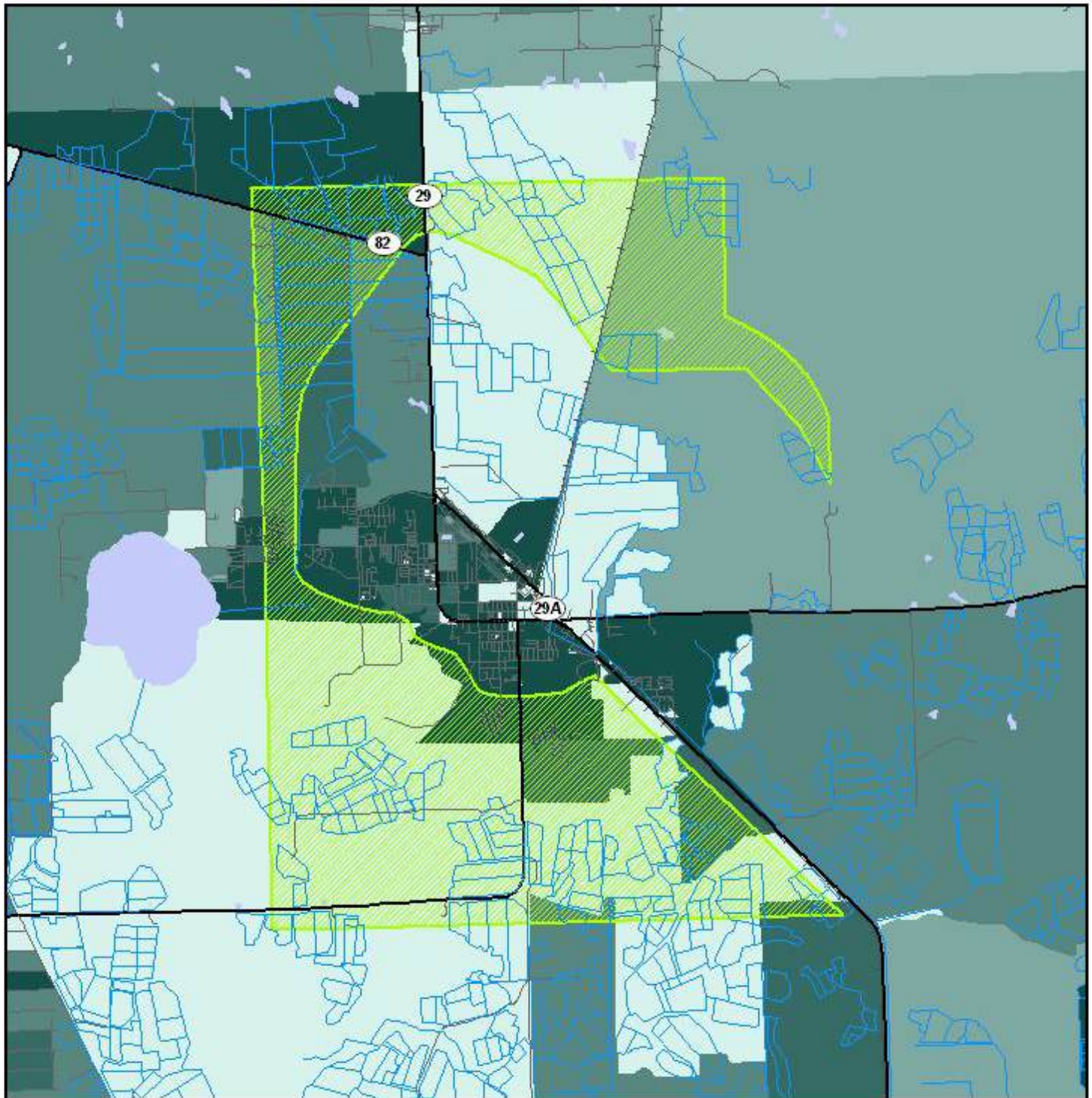
Data Sources:
 Geographic Data Technology, Inc.
 US Geological Survey
 Florida Department of Revenue
 Florida Department of Transportation
 Florida County Property Appraiser Offices

- | | | | |
|---------------------------|------------------------|-------------------------|-------------------------|
| ETDM Alternative Point | Railroad | Open (Not Agricultural) | Retail/Office |
| ETDM Alternative Terminus | River, Stream or Canal | Other | Vacant (Residential) |
| ETDM Alternative Segment | Agricultural | Public | Vacant (Nonresidential) |
| ETDM Alternative Polygon | Industrial | Right-of-Way | Water |
| Major Road | Institutional | Recreational | No Data |
| Local Road or Trail | Mining | Residential | |

Land Use Map

3752 SR 29 Add Lanes, Alternative #5

Oil Well Road to SR 82 (polygon)



0 0.9 Miles

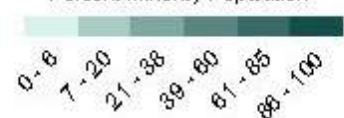


Data Sources:
 US Geological Survey
 FL Department of Transportation
 Geographic Data Technology, Inc.
 US Census Bureau

Minority Population Distribution Map

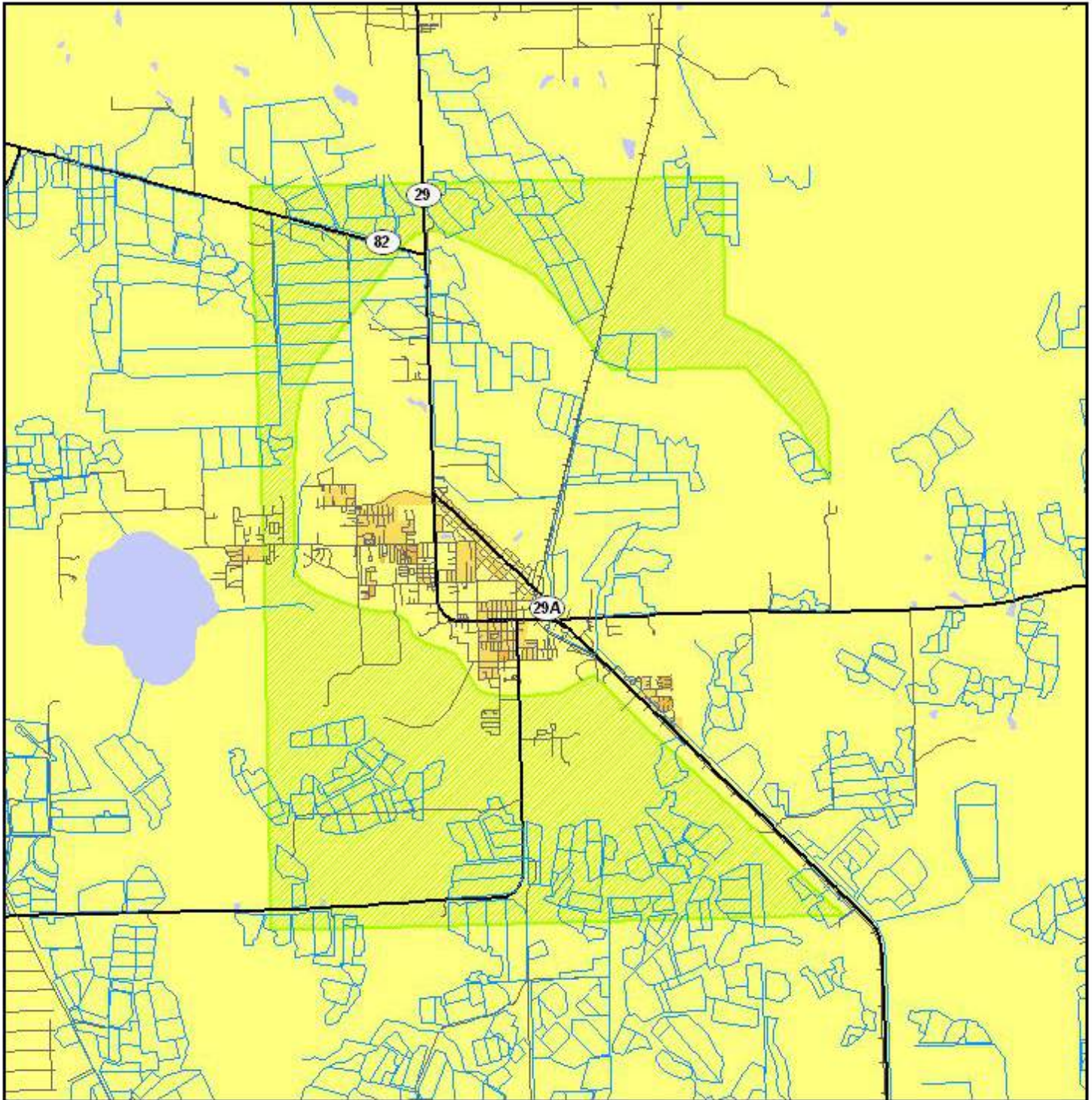
- ETDM Alternative Point
- ETDM Alternative Terminus
- ETDM Alternative Segment
- ETDM Alternative Polygon
- Major Road
- Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body

Percent Minority Population



3752 SR 29 Add Lanes, Alternative #5

Oil Well Road to SR 82 (polygon)



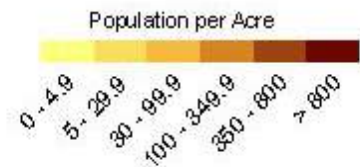
0 0.9 Miles



Data Sources:
 US Geological Survey
 FL Department of Transportation
 Geographic Data Technology, Inc.
 US Census Bureau

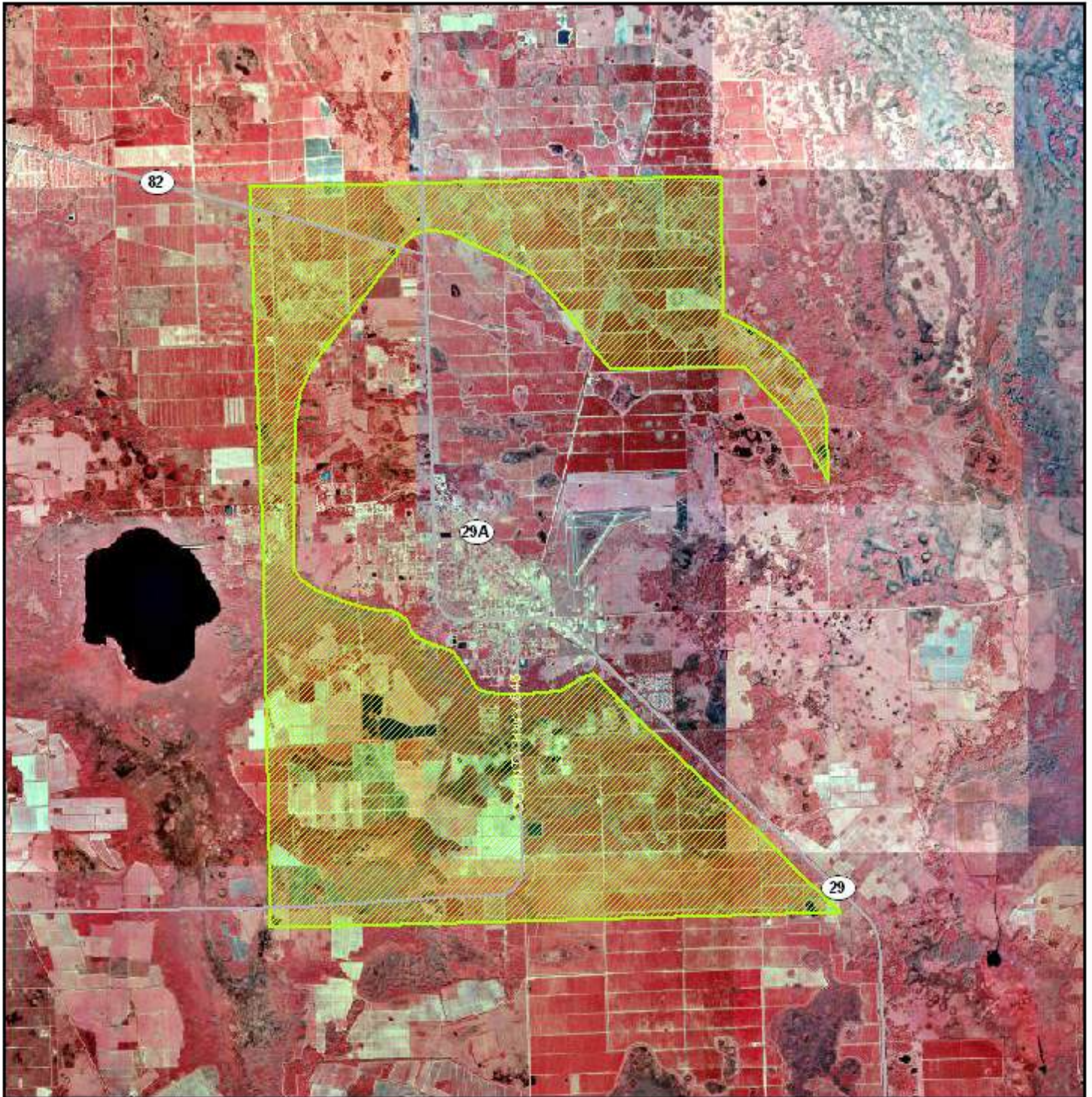
Population Density Map

- ETDM Alternative Point
- ETDM Alternative Terminus
- ▬ ETDM Alternative Segment
- ▨ ETDM Alternative Polygon
- Major Road
- - - Local Road or Trail
- Railroad
- River, Stream or Canal
- Water Body



3752 SR 29 Add Lanes, Alternative #5

Oil Well Road to SR 82 (polygon)



Project Aerial Map

0 3 Miles

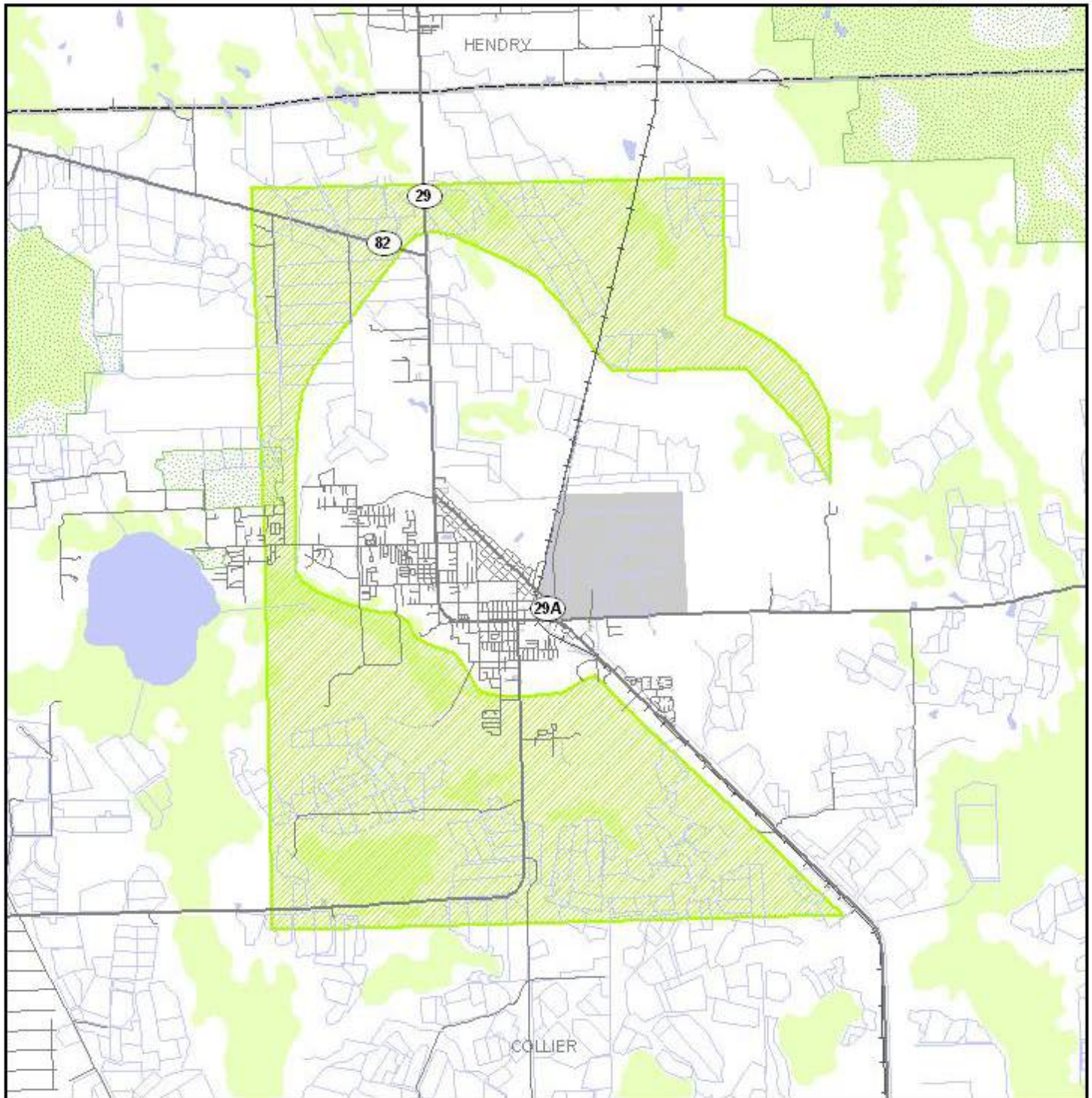


Data Sources:
 Highways - Geographic Data Technology, Inc.
 Digital Orthophotograph - US Geological Survey

- ETDM Alternative Point
- ETDM Alternative Terminus
- ▨ ETDM Alternative Segment
- ▨ ETDM Alternative Polygon
- Primary and Limited Access Highway
- Secondary, Unlimited Access Highway
- Other Highway Feature

3752 SR 29 Add Lanes, Alternative #5

Oil Well Road to SR 82 (polygon)



Project Location Map

0 2 Miles

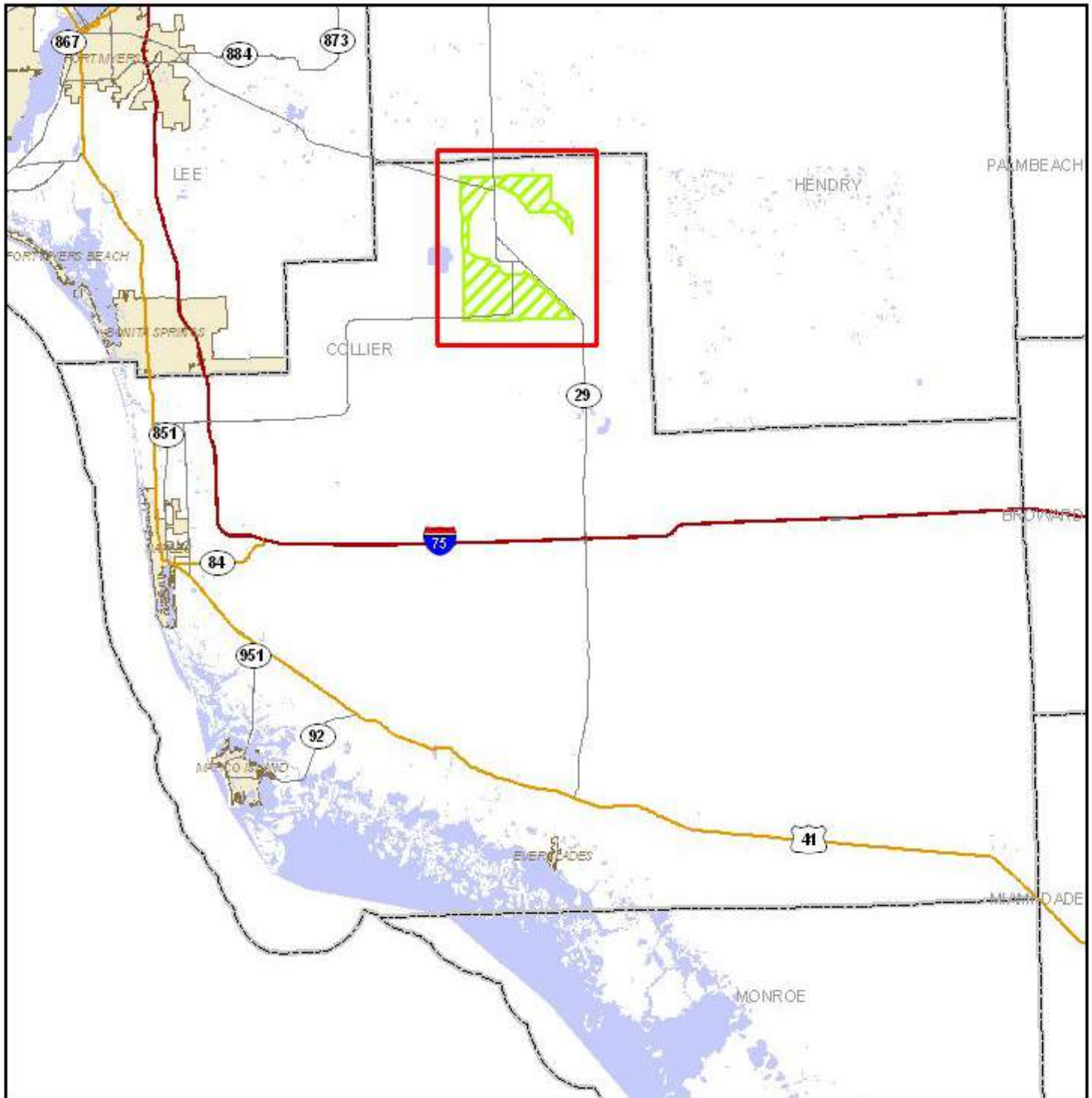


Data Sources:
 Geographic Data Technology, Inc.
 US Geological Survey
 US Census Bureau
 County Property Appraisers
 Florida Natural Areas Inventory

- | | | |
|---------------------------|-------------------------------------|-------------------|
| ETDM Alternative Point | Managed Conservation Lands | Toll Road |
| ETDM Alternative Terminus | Primary and Limited Access Highway | Railroad |
| ETDM Alternative Segment | Secondary, Unlimited Access Highway | Airport |
| ETDM Alternative Polygon | Connecting Road | City Limits |
| River, Stream or Canal | Local Road or Trail | County Boundaries |
| Water Body | Other Roadway Feature | |
| Swamp/Marsh | | |

3752 SR 29 Add Lanes, Alternative #5

Oil Well Road to SR 82 (polygon)



County Location Map

0 20 Miles

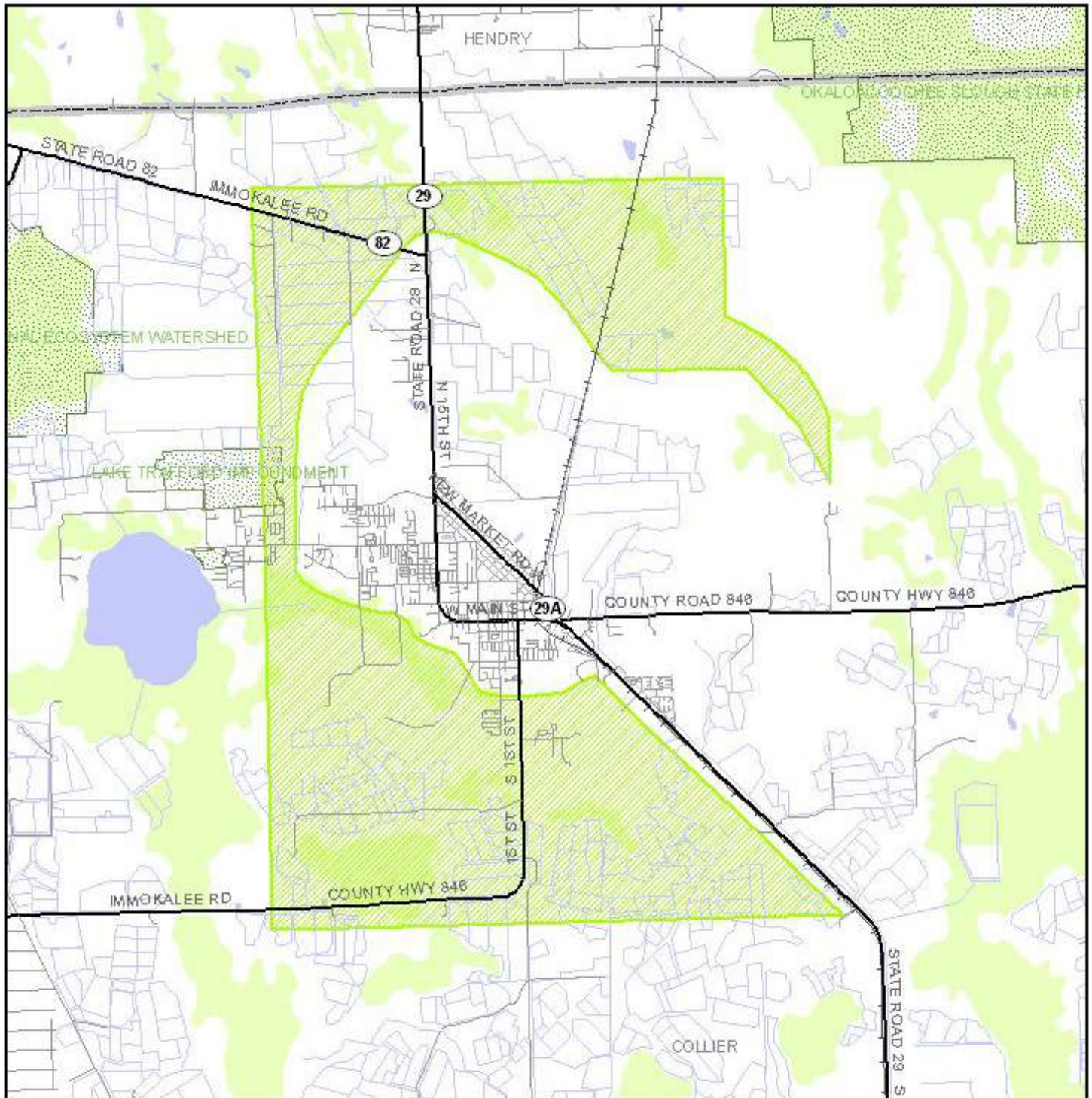


Data Sources:
 Geographic Data Technology, Inc.
 US Geological Survey
 US Census Bureau
 County Property Appraisers

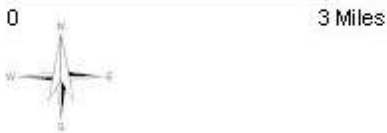
- | | |
|---|---|
| ● ETDM Alternative Point | ■ Water Body |
| — ETDM Alternative Segment | City Limit |
| ■ ETDM Alternative Polygon | County Boundary |
| — Primary and Limited Access Highway | Project Extent |
| — Secondary, Unlimited Access Highway | |
| — Other Highway Feature | |

3752 SR 29 Add Lanes, Alternative #5

Oil Well Road to SR 82 (polygon)



Conservation and Recreation Area Map

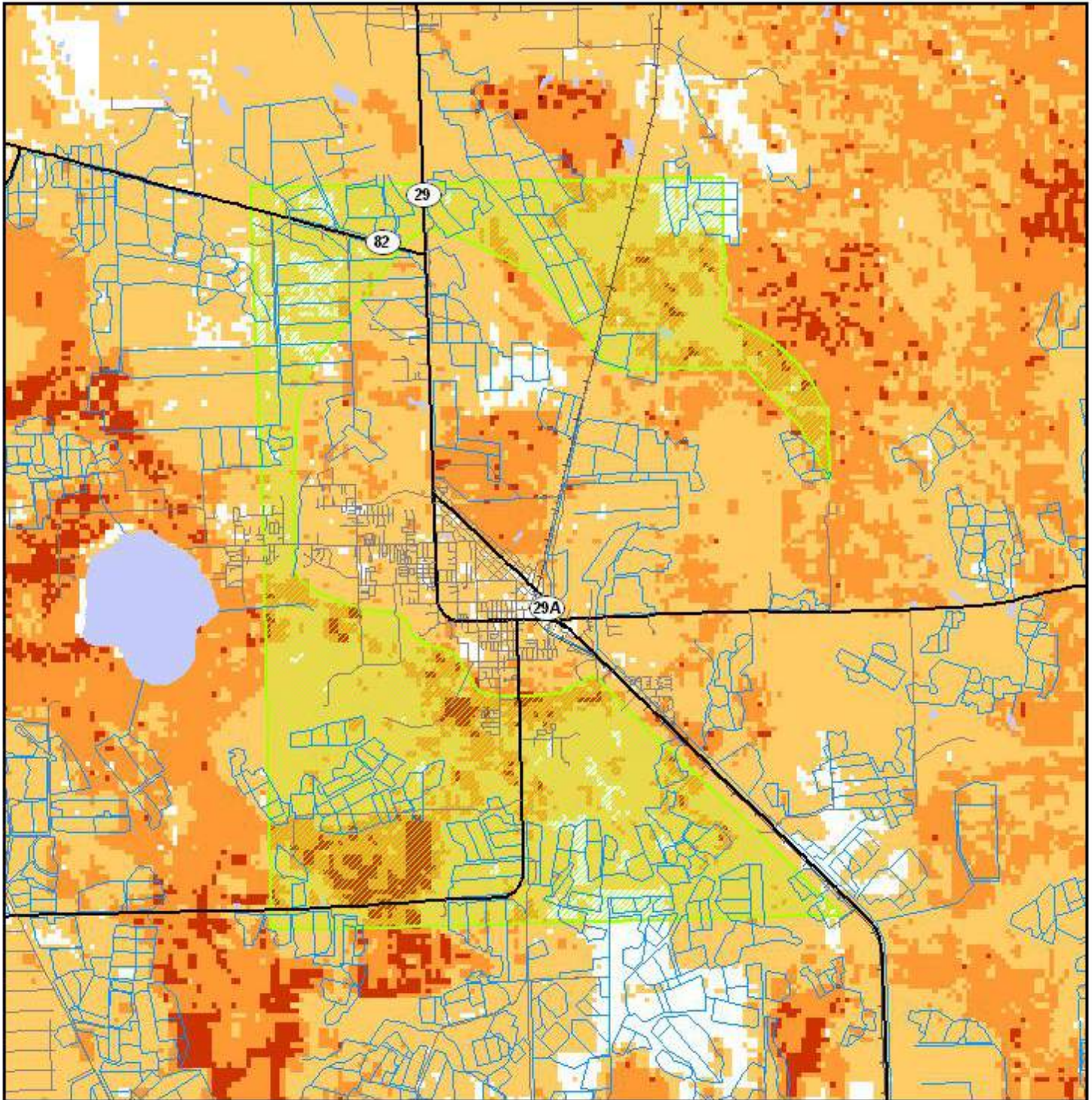


Data Sources:
 Geographic Data Technology, Inc.
 US Geological Survey
 Florida Natural Areas Inventory

- | | | |
|---------------------------|------------------------|---------------------------------|
| ETDM Alternative Point | River, Stream or Canal | Conservation or Recreation Area |
| ETDM Alternative Segment | Water Body | Major Road |
| ETDM Alternative Polygon | Swamp/Marsh | Local Road or Trail |
| ETDM Alternative Terminus | | Railroad |
| | | County Boundary |

3752 SR 29 Add Lanes, Alternative #5

Oil Well Road to SR 82 (polygon)



Species Potential Habitat Model Map

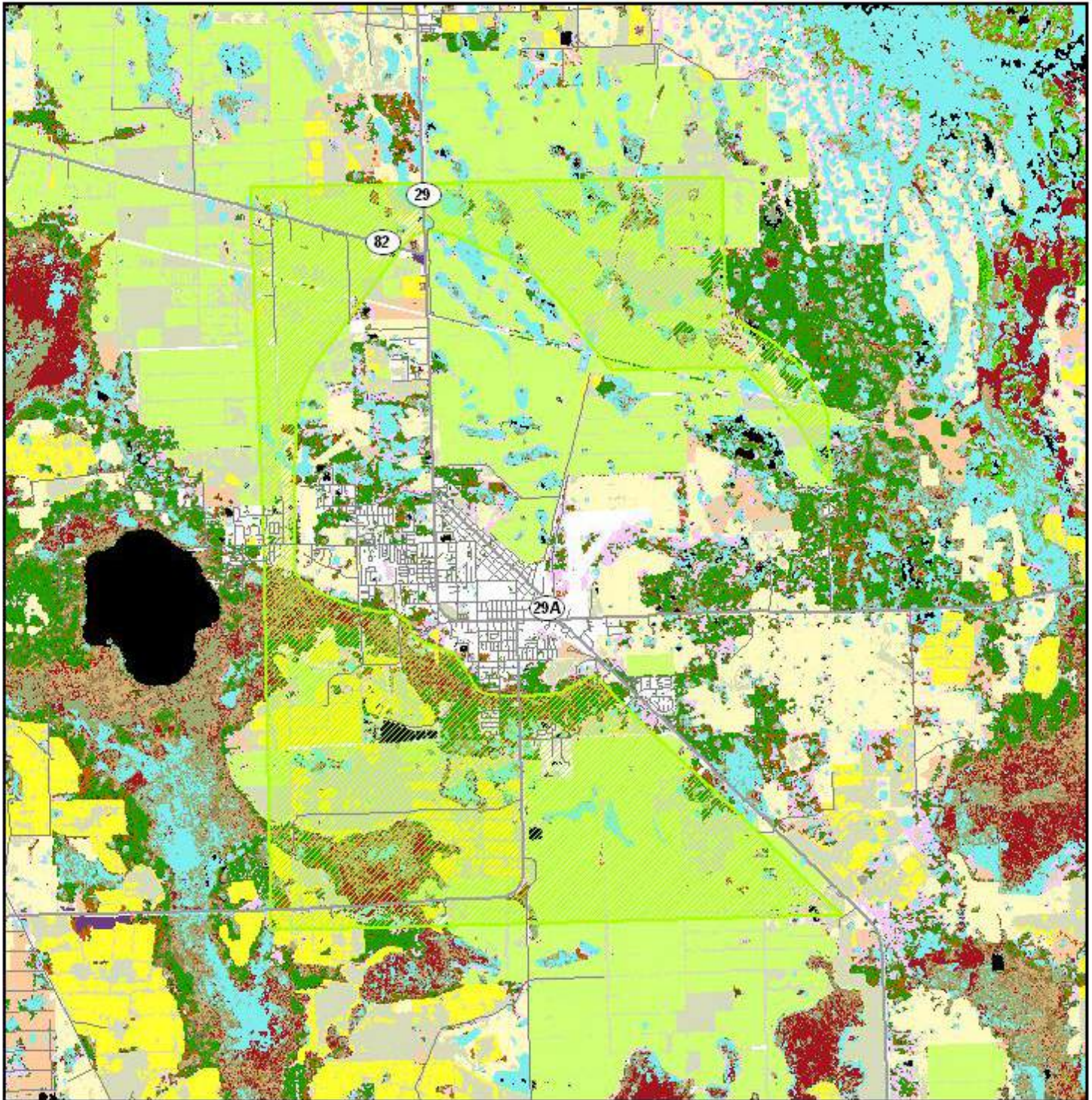
0 2.5 Miles



Data Sources:
 Geographic Data Technology, Inc.
 US Geological Survey
 Florida Department of Transportation
 Florida Fish & Wildlife Conservation Commission

- | | | |
|---------------------------|------------------------|--|
| ETDM Alternative Point | Major Road | Water Body |
| ETDM Alternative Terminus | Local Road or Trail | Potential Habitat for Focal Species |
| ETDM Alternative Segment | Railroad | 1 - 6 Species |
| ETDM Alternative Polygon | River, Stream or Canal | 7 - 12 Species |
| | | 13 - 18 Species |
| | | > 18 Species |

3752 SR 29 Add Lanes, Alternative #5 Oil Well Road to SR 82 (polygon)



0 3 Miles Vegetation and Land Cover Map

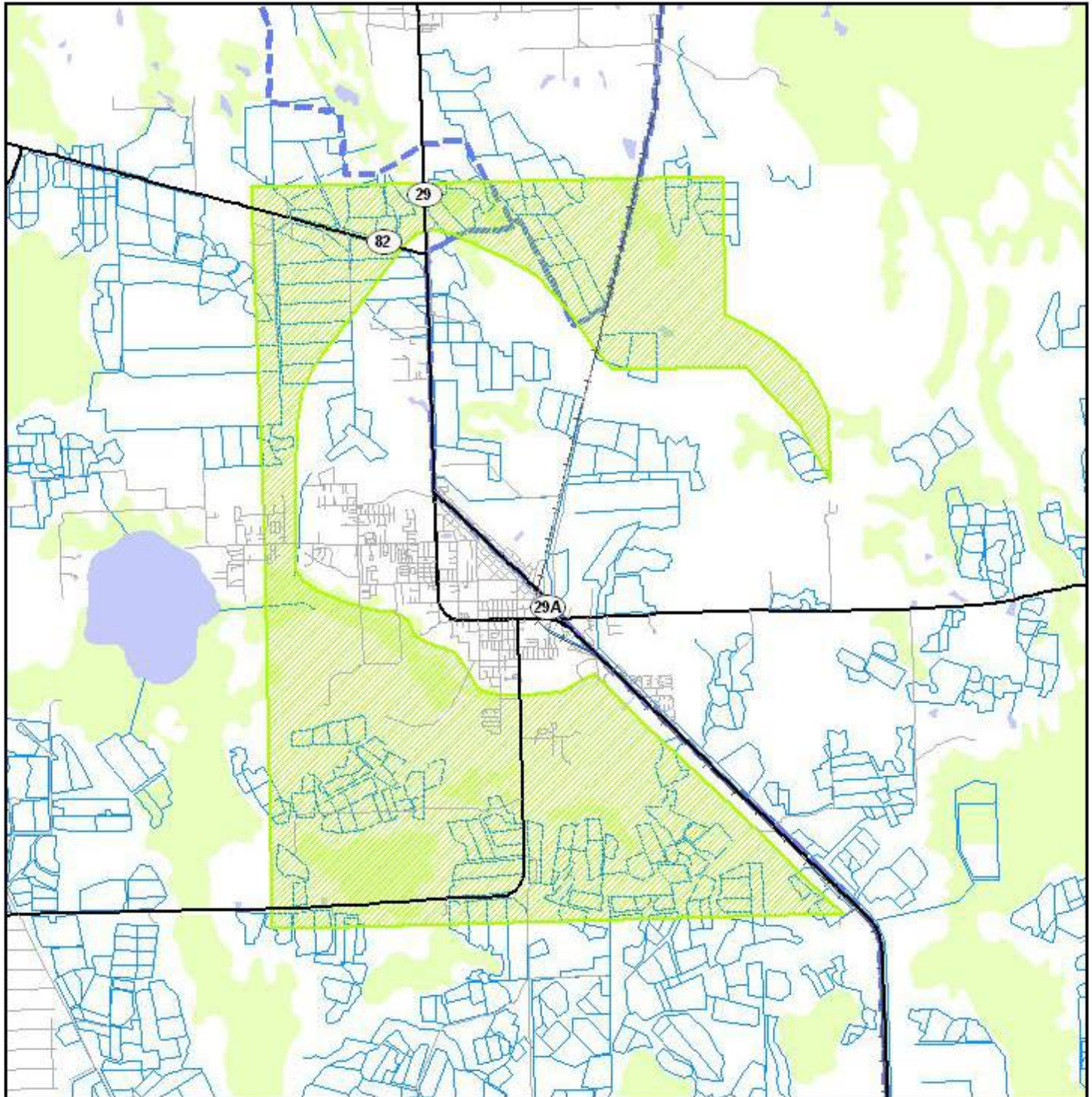
- | | | | | | | |
|--|---|---|---|--|--|--|
| <ul style="list-style-type: none"> ▬ ETDMA Alternative Polygon ▬ ETDMA Alternative Segment ● ETDMA Alternative Terminus ● ETDMA Alternative Point — Major Road — Local Road or Trail | <ul style="list-style-type: none"> ■ Not Classified ■ Coastal Strand ■ Sand/Beach ■ Xeric Oak Scrub ■ Sand Pine Scrub ■ Sandhill ■ Dry Prairie ■ Mixed Hardwood-pine Forest | <ul style="list-style-type: none"> ■ Hardwood Hammocks and Forests ■ Pinelands ■ Cabbage Palm-live Oak Hammock ■ Tropical Hardwood Hammock ■ Freshwater Marsh and Wet Prairie ■ Sawgrass Marsh ■ Cattail Marsh ■ Shrub Swamp | <ul style="list-style-type: none"> ■ Bay Swamp ■ Cypress Swamp ■ Cypress/Pine/Cabbage Palm ■ Mixed Wetland Forest ■ Hardwood Swamp ■ Hydric Hammock ■ Bottomland Hardwood Forest ■ Salt Marsh | <ul style="list-style-type: none"> ■ Mangrove Swamp ■ Scrub Mangrove ■ Tidal Flats ■ Open Water ■ Shrub and Brushland ■ Grassland ■ Bare Soil/Clearcut ■ Improved Pasture | <ul style="list-style-type: none"> ■ Unimproved Pasture ■ Sugarcane ■ Citrus ■ Row and Field Crops ■ Other Agriculture ■ Exotic Plants ■ Australian Pine ■ Melaleuca | <ul style="list-style-type: none"> ■ Brazilian Pepper ■ High Impact Urban ■ Low Impact Urban ■ Extractive |
|--|---|---|---|--|--|--|

Data Sources:
Geographic Data Technology, Inc.; Florida Department of Transportation; Florida Fish and Wildlife Conservation Commission



3752 SR 29 Add Lanes, Alternative #5

Oil Well Road to SR 82 (polygon)



0 3 Miles

Water Resources Map

- | | | | |
|---------------------------|---------------------|---------------------------|------------------------|
| ETDM Alternative Point | Major Road | 1st Magnitude Spring | Surface Water Class I |
| ETDM Alternative Terminus | Local Road or Trail | River, Stream or Canal | Surface Water Class II |
| ETDM Alternative Segment | Railroad | Navigable Water Way | Other Water Body |
| ETDM Alternative Polygon | | Drainage Basin | Swamp/Marsh |
| | | Outstanding Florida Water | |

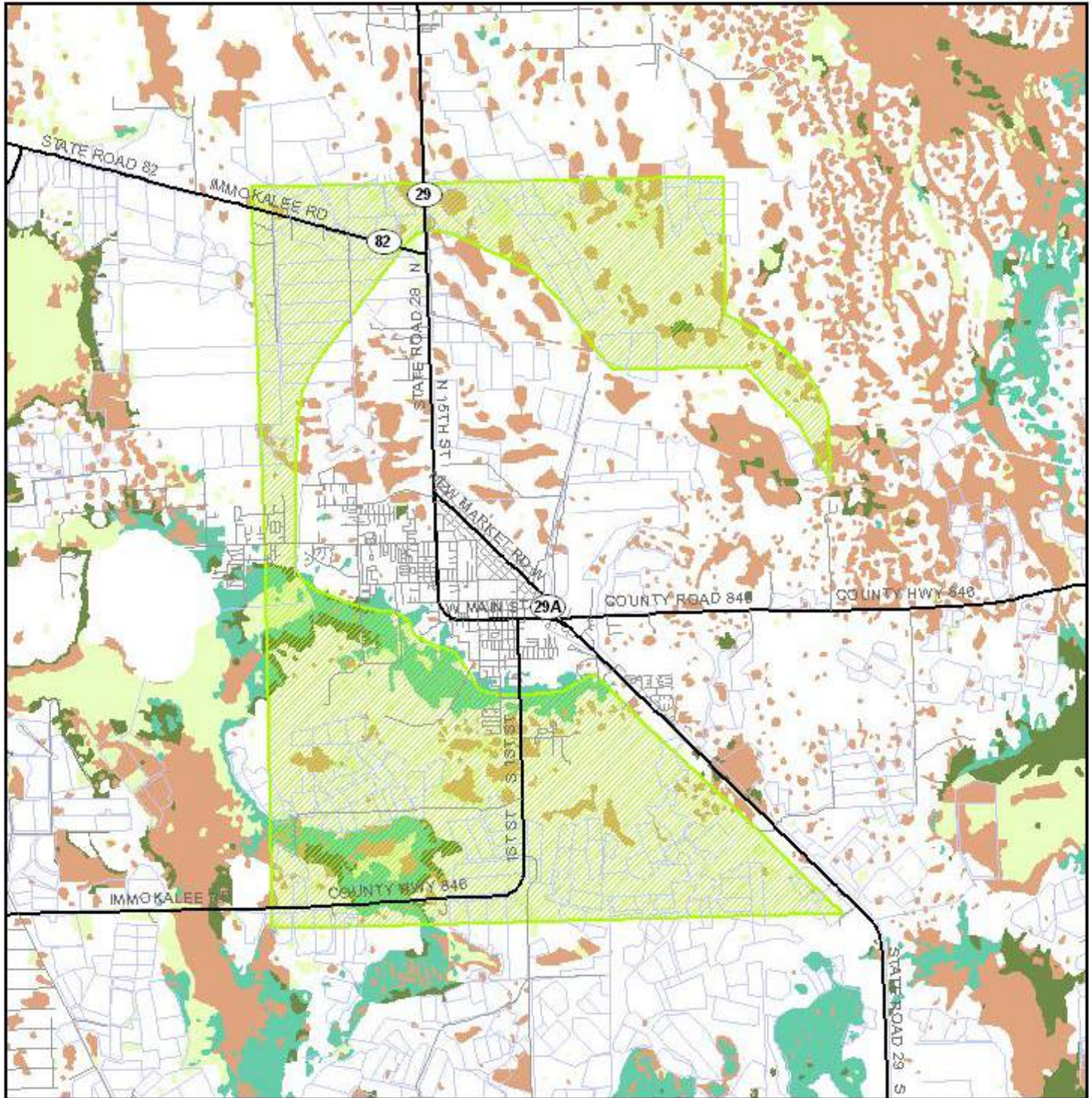
Data Sources:

Geographic Data Technology, Inc.
US Geological Survey

Florida Department of Transportation
Florida Department of Environmental Protection

Florida Geological Survey
US Bureau of Transportation Statistics

3752 SR 29 Add Lanes, Alternative #5 Oil Well Road to SR 82 (polygon)



Wetland Resource Map

0 1 Miles



- | | | |
|---------------------------|---------------------------|--------------------------------|
| ETDM Alternative Polygon | River, Stream or Canal | Vegetated Non-forested Wetland |
| ETDM Alternative Segment | Water Body | Non-vegetated Wetland |
| ETDM Alternative Terminus | Wetland Hardwood Forest | Cut Over Wetland |
| ETDM Alternative Point | Wetland Coniferous Forest | Wetland Scrub Shrub |
| Major Road | Wetland Forested Mixed | |
| Local Road or Trail | | |

Data Sources: Geographic Data Technology, Inc.; Florida Water Management Districts; US Geological Survey

Appendices

PED Comments

Advance Notification Comments

There are no comments for this project.

GIS Analyses

Since there are so many GIS Analyses available for Project #3752 - SR 29 Add Lanes, they have not been included in this ETDM Summary Report. GIS Analyses, however, are always available for this project on the Public ETDM Website. Please click on the link below (or copy this link into your Web Browser) in order to view detailed GIS tabular information for this project:

<http://etdmpub.fla-etat.org/est/index.jsp?tpID=3752&startPageName=GIS%20Analysis%20Results>

Special Note: Please be sure that when the GIS Analysis Results page loads, the **Summary Report Re-Published 2/03/2009 Milestone** is selected. GIS Analyses snapshots have been taken for Project #3752 at various points throughout the project's life-cycle, so it is important that you view the correct snapshot.

Project Attachments

Note: Attachments are not included in this Summary Report, but can be accessed by clicking on the links below:

Date	Type	Size	Link / Description
12/10/2008	Ancillary Project Documentation	407 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=5771 Cooperating Agency Request and Following Correspondence
07/11/2008	Form SF-424: Application for Federal Assistance	388 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=4131 Form SF-424: Application for Federal Assistance
12/18/2007	Ancillary Project Documentation	191 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=2401 Project Location
08/22/2005	Ancillary Project Documentation	194 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=80 Immokalee Area Master Plan Future Land Use Map
08/22/2005	Ancillary Project Documentation	398 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=126 Panter Least Cost Dispersal Pathways
08/22/2005	Ancillary Project Documentation	458 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=145 Panther Telemetry Locations - SR 29
08/22/2005	Ancillary Project Documentation	374 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=144 Panther Vehicle Kills - SR 29
08/22/2005	Ancillary Project Documentation	329 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=143 Panther Home Ranges Map
08/22/2005	Ancillary Project Documentation	352 KB	http://etdmpub.fla-etat.org/est/servlet/blobViewer?blobID=113 Collier County Rural Lands Stewardship Plan Overlay Map

Degree of Effect Legend

Color Code	Meaning	ETAT	Public Involvement
N/A	Not Applicable / No Involvement	There is no presence of the issue in relationship to the project, or the issue is irrelevant in relationship to the proposed transportation action.	
0	None (after 12/5/2005)	The issue is present, but the project will have no impact on the issue; project has no adverse effect on ETAT resources; permit issuance or consultation involves routine interaction with the agency. The <i>None</i> degree of effect is new as of 12/5/2005.	No community opposition to the planned project. No adverse effect on the community.
1	Enhanced	Project has positive effect on the ETAT resource or can reverse a previous adverse effect leading to environmental improvement.	Affected community supports the proposed project. Project has positive effect.
2	Minimal	Project has little adverse effect on ETAT resources. Permit issuance or consultation involves routine interaction with the agency. Low cost options are available to address concerns.	Minimum community opposition to the planned project. Minimum adverse effect on the community.

2	Minimal to None (assigned prior to 12/5/2005)	Project has little adverse effect on ETAT resources. Permit issuance or consultation involves routine interaction with the agency. Low cost options are available to address concerns.	Minimum community opposition to the planned project. Minimum adverse effect on the community.
3	Moderate	Agency resources are affected by the proposed project, but avoidance and minimization options are available and can be addressed during development with a moderated amount of agency involvement and moderate cost impact.	Project has adverse effect on elements of the affected community. Public Involvement is needed to seek alternatives more acceptable to the community. Moderate community interaction will be required during project development.
4	Substantial	The project has substantial adverse effects but ETAT understands the project need and will be able to seek avoidance and minimization or mitigation options during project development. Substantial interaction will be required during project development and permitting.	Project has substantial adverse effects on the community and faces substantial community opposition. Intensive community interaction with focused Public Involvement will be required during project development to address community concerns.
5	Potential Dispute (Planning Screen)	Project may not conform to agency statutory requirements and may not be permitted. Project modification or evaluation of alternatives is required before advancing to the LRTP Programming Screen.	Community strongly opposes the project. Project is not in conformity with local comprehensive plan and has severe negative impact on the affected community.
5	Dispute Resolution (Programming Screen)	Project does not conform to agency statutory requirements and will not be permitted. Dispute resolution is required before the project proceeds to programming.	Community strongly opposes the project. Project is not in conformity with local comprehensive plan and has severe negative impact on the affected community.
	No ETAT Consensus	ETAT members from different agencies assigned a different degree of effect to this project, and the ETDM coordinator has not assigned a summary degree of effect.	
	No ETAT Reviews	No ETAT members have reviewed the corresponding issue for this project, and the ETDM coordinator has not assigned a summary degree of effect.	