DRAFT POND SITING REPORT

I-75 Project Development and Environment (PD&E) Study From North of SR 200 to South of SR 326

FPID 452074-1-22-01 | Marion County, FL

February 2024

PREPARED FOR:

FDOT

FLORIDA DEPARTMENT OF TRANSPORTATION
District Five
DeLand, Florida 32720

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PROJECT: Project Development and Environment (PD&E) Studies I-75 (SR 93) From SR 200 to SR 326

PROJECT NUMBER: FPID 452074-1-22-01

SCOPE OF RESPONSIBILITY: Analysis and identification of potential pond sites and right-of-way requirements using a volumetric approach to sizing.

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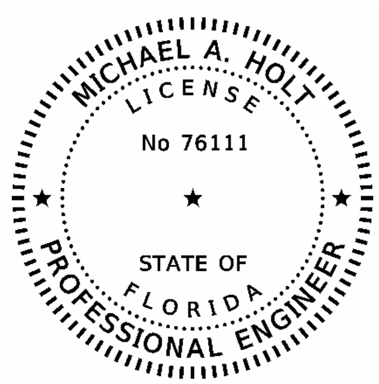

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1.0 EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study for proposed operational improvements to the I-75 corridor in the City of Ocala and Marion County, Florida. These interim improvements were identified as part of Phase 1 of a master planning effort for the I-75 corridor between Florida's Turnpike and County Road 234. The operational improvements being evaluated by this PD&E Study include construction of auxiliary lanes between interchanges for an eight-mile segment of I-75 between S.R. 200 and S.R. 326. Within the study limits, I-75 is an urban principal arterial interstate that runs in a north and south direction with a posted speed of 70 miles per hour. I-75 is part of the Florida Intrastate Highway System, the Florida Strategic Intermodal System (SIS), and is designated by the Florida Department of Emergency Management as a critical link evacuation route. Within the study limits, I-75 is a six-lane limited access facility situated within approximately 300 feet of right-of-way. No transit facilities, frontage roads, or managed lanes are currently provided. See Figure 1 below for the project limits.

Figure 1- Project Limits

The project site lies within the Ocklawaha Watershed. In the existing condition, runoff from the inside lanes and shoulder flows to the median, where it is conveyed via median ditches and closed conveyance systems to a median drain which outfalls to the roadside swales. Runoff from the outside lanes and shoulders sheet flows into the adjacent roadside swales on the east and west sides of the roadway. Runoff conveys through the permitted roadside ditch block and swale systems to the existing cross drains within the project limits. Additionally, to safeguard the roadway base, underdrains are currently in place within portions of the median to effectively draw down the groundwater. 15 basins were identified within the limits of the project. These basins are all considered to be land locked.

Due to the presence of Sensitive Karst Area (SKA), dry retention ponds are the selected method of stormwater management for the project. Existing drainage patterns will be maintained as much as possible in the proposed condition. Volumetric pond sizing calculations have been performed for the 25 year – 96 hour event (SJRWMD) and the 100 year – 10 day event. The calculations assume full containment of the controlling storm (typically the 100 year) or as stated in Section 5.3.4, and are provided in Appendix D. While the proposed condition impervious tables show 10 lanes (the conceptual ultimate condition for the I-75 Masterplan conducted under separate FPID), the FDOT has requested that ponds be conservatively sized to accommodate a “full build-out” condition of 90% ROW impervious; thus, a buffer has been added to bring the calculated pavement width to 270 ft. Within the majority of the corridor, ponds are sized for full containment of the 100 year volume associated with runoff calculated for this amount of impervious surface within the corridor. Based on coordination with the FDOT, basins with limited options may include options that would serve only the interim condition associated with the construction of the auxiliary lanes. These exceptions are noted in the pond alternatives discussed in Section 5.3.4 of this report. Historical permits for the corridor were reviewed to estimate seasonal high groundwater (SHGW) on selected parcels where possible. Where permit data was not available, or was not near enough to provide relevant data, SHGW values used in the volumetric calculations were estimated from LiDAR contours associated with the selected parcels and the estimated depth to water table shown in the NRCS soils data unless otherwise noted in the calculations.

This report presents the methodology and analysis results associated with the review of potential pond sites within the project corridor, and the selection of the preferred pond alternative for each basin. Details of each pond alternative, and the factors considered in the selection are provided in Section 5.3.4 of this report. Table ES-1 below provides a summary of preferred pond alternatives for each basin.

Table ES 1 – Preferred Pond Alternatives

Basins	Recommended Alternative
Basin 1 & 2	B1-B & B2-A Combined
Basin 3	B3-D
Basin 4	B4-B2
Basin 5	B5-E
Basin 6 & 7	B6-G & B7-A Combined
Basin 8	B8-B
Basin 9	B9-C
Basin 10	B10-B
Basin 11 &12 &13	B11-C, B12-C & B13-A Combined
Basin 14 &15	B14-A & B15-C Combined

2.0 GENERAL INFORMATION

2.1 INTRODUCTION

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study for proposed operational improvements to the I-75 corridor in the City of Ocala and Marion County, Florida. These interim improvements were identified as part of Phase 1 of a master planning effort for the I-75 corridor between Florida's Turnpike and County Road 234. The operational improvements being evaluated by this PD&E Study include construction of auxiliary lanes between interchanges for an eight-mile segment of I-75 between S.R. 200 and S.R. 326. Within the study limits, I-75 is an urban principal arterial interstate that runs in a north and south direction with a posted speed of 70 miles per hour. I-75 is part of the Florida Intrastate Highway System, the Florida Strategic Intermodal System (SIS), and is designated by the Florida Department of Emergency Management as a critical link evacuation route. Within the study limits, I-75 is a six-lane limited access facility situated within approximately 300 feet of right-of-way. No transit facilities, frontage roads, or managed lanes are currently provided.

The chief objective of this Pond Siting Report (PSR) is to document viable alternatives for pond sites within the project alignment. The report encompasses several key aspects, including an examination of existing drainage conditions and an estimation of the required volume to mitigate stormwater impacts in alignment with the interstate master plan ultimate build-out. Moreover, it involves the identification of the necessary treatment volume and storage volume required to fully retain the 100 year – 10 day runoff volume in each basin. Based on coordination with the FDOT, basins with limited options may include options that would serve only the interim condition associated with the construction of the auxiliary lanes. These options are noted in the pond alternatives discussed in Section 5.3.4 of this report. The evaluation of pond sizing relies on volumetric calculations and does not utilize stormwater routing models. The report provides supporting documentation, including pond sizing calculations, project basin map exhibits, and estimations of roadway encroachment on Zone A and Zone AE floodplains, along with corresponding compensation provisions throughout the project limits as part of the floodplain analysis. Additionally, the project entails a comprehensive understanding of the existing conditions, verification of data acquired through desktop research, and the collection of additional information crucial for comprehending the project area. Furthermore, it includes the identification of physical and environmental constraints and the resolution of constructability concerns.

The Pond alternatives were selected based on the following characteristics:

- Hydrology
- Hydraulics
- Potential hazardous materials contamination
- Potential wetland impacts and mitigation costs
- Potential impacts to threatened and endangered species
- Potential impacts to culturally significant property
- Potential social impacts
- Land use characteristics
- Construction costs
- ROW availability.

All elevations presented are in the North American Vertical Datum of 1988 (NAVD 88).

2.2 PROJECT LOCATION

This project is located in Marion County, Florida. The project is located within the Sections, Townships and Ranges listed in Table 1. Please refer to Exhibit -1 in Appendix A for the project location map.

Table 1 – Project Section, Township, Range

Section	Township	Range
26,23,14,11,2	15 South	21 East
35,34,27,22,15	14 South	21 East

2.3 TYPICAL SECTIONS

Within the project limits in the existing condition, the I-75 limited access ROW is typically 300 feet wide, but can vary from 300 feet to 330 feet, per the as-built plans. It consists of six 12-ft travel lanes, a 10-ft paved/2-ft unpaved inside shoulder in each direction, separated by a 13-ft grassed median with a 5-foot double faced guardrail, and a 10-ft paved/2-ft unpaved outside shoulder in each direction. In the proposed condition, the typical section, as shown in Appendix B, consists of eight 12-ft travel lanes by widening to the outside for the addition of auxiliary lanes in both the northbound and southbound direction.

Per the current masterplan concept, I-75 in the “ultimate” condition will consist of ten 12-ft travel lanes, with 10-ft paved/ 2-ft unpaved inside and outside shoulders. However, at the request of the Department, pond sizing for this project has been established with the assumption of a fully built-out ROW with 90% impervious (270 foot width) coverage. This assumes that existing linear treatment swales are fully impacted, with no remaining volume for treatment, attenuation, or volume storage.

2.4 SOILS CHARACTERISTICS

The soils within the project limits as well as their hydrologic soils group classification are listed in Table 2. Based on a review of the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soil Survey of Marion County, Florida, the project limits consist of soils ranging from well drained to somewhat poorly drained. The Soil Survey indicates that there are twenty-five (25) mapped soil units within the project limits. Refer to Exhibit -2 for the NRCS Soils Map and to Appendix C for the NRCS Pond Soils Report.

Table 2 – NRCS Soils Information for Project Section

Map unit symbol	Soil Name	Hydrologic Soil Group	Depth to Water Table (ft.)
2	Adamsville sand, 0 to 5 % slopes	A	0.3 - 4.8
7	Udalfic Arents, 0 to 5 % slopes	A	0 - 3.0
9	Arredondo sand, 0 to 5 % slopes	A	0 - 1.9
11	Pedro-Arredondo complex, 0 to 5 % slopes	D	3.2 - 3.7
13	Astatula sand, 0 to 5 % slopes	A	0 - 4.8
17	Blichton sand, 2 to 5 % slopes	C/D	0.5 - 3.7
22	Candler sand, 0 to 5 % slopes	A	4.8 - 4.9
35	Gainesville loamy sand, 0 to 5 % slopes	A	> 6.6
37	Hague sand, 2 to 5 % slopes	A	> 6.6

Map unit symbol	Soil Name	Hydrologic Soil Group	Depth to Water Table (ft.)
38	Hague sand, 5 to 8 % slopes	A	> 6.6
40	Holopaw sand, frequently ponded, 0 to 1 % slopes	A/D	0.0 - 4.0
43	Kanapaha-Kanapaha, wet, fine sand, 0 to 5 % slopes	A/D	0.5 - 1.9
44	Kendrick loamy sand, 0 to 5 % slopes	A	3.1 - 3.7
45	Kendrick loamy sand, 5 to 8 % slopes	B	0 - 3.7
46	Lochloosa fine sand, 0 to 5 % slopes	A	1.9 - 3.7
47	Lochloosa fine sand, 5 to 8 % slopes	B	1.0 - 3.7
50	Micanopy fine sand, 2 to 5 % slopes	C	0.5 - 3.7
57	Pits	NA	> 6.6
58	Placid sand, depressional	A/D	0.3 - 2.5
65	Sparr fine sand, 0 to 5 % slopes	A	1.0 - 3.5
69	Tavares sand, 0 to 5 % slopes	A	2.8 - 4.8
74	Wacahoota gravelly sand, gravelly subsoil variant, 2 to 5 % slopes	B/D	0.5 - 1.2
77	Zuber loamy sand, 2 to 5 % slopes	C	0.5 - 3.7
79	Udorthents, excavated	B	0 - 3.0
99	Water	NA	> 6.6

2.5 FLOODPLAIN INFORMATION

The project limits are located within the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panels listed in Table 3 below. The project traverses' various sections of the 100-year base floodplain designated as Zone AE, 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. The proposed widening results in fill being placed within the FEMA floodplains. At locations where the roadway widening results in encroachment into the floodplain, the required compensation area is provided for each basin. Refer to Exhibit - 3 for the FEMA exhibit. Few of these locations correspond to existing linear treatment swales, and as noted in Section 2.3 of this report, they are assumed to be fully impacted in the stormwater management facility sizing, with all required runoff volume and treatment volume accommodated.

Table 3 – FEMA FIRM Panels

FEMA Map Number	County	Map Revision Date
12083C0314E	Marion	4/19/2017
12083C0502E	Marion	4/19/2017
12083C0506E	Marion	4/19/2017
12083C0508E	Marion	4/19/2017
12083C0516E	Marion	4/19/2017
12083C0518E	Marion	4/19/2017

3.0 DRAINAGE REFERENCE AND RESOURCE INFORMATION

3.1 RUNOFF CURVE NUMBERS

Runoff curve numbers (CN) were obtained from the FDOT Design Guide, Table B-7, which prescribes recommended CN values based on land use and hydrologic soil group (HSG) from the NRCS soil survey. Where soils with dual classifications (i.e., A/D, B/D) are encountered, HSG D is used in determining a CN value. Since ground cover is good throughout the study area, 'Open Spaces, Good Condition' was chosen for the Land Use Description. Composite CN calculations are performed for each pond alternative, within the preliminary pond sizing calculations in Appendix D.

3.2 RAINFALL INTENSITY DATA

A rainfall depth of 10.80 inches is used for the 25-year, 96-hour storm event and a rainfall depth of 16.6 inches is used for the 100-year, 240-hour storm event. Refer to Appendix D for the preliminary pond sizing calculations.

3.3 RESOURCES FOR ANALYSIS

The resources used for this PSR included the following:

- FDOT Drainage Manual, 2023
- FDOT Drainage Design Guide, 2023
- NRCS Soil Survey for Marion County (websoilsurvey.nrcs.usda.gov)
- LiDAR Contours (floridagio.gov)
- As-built Plans
- SJRWMD ERP Applicant's Handbook, Volume II (2018)
- SJRWMD ePermitting
- SWFWMD ePermitting
- FEMA Flood Map Service Center
- FDOT Project Development and Environmental Manual (2019)
- FDEP Map Direct

4.0 EXISTING DRAINAGE CHARACTERISTICS

4.1 EXISTING DRAINAGE CONDITIONS

The project site lies within the Ocklawaha Watershed. In the existing condition, runoff from the inside lanes and shoulder flows to the median, where it is conveyed via median ditches and closed conveyance systems to a median drain which outfalls to the roadside swales. Runoff from the outside lanes and shoulders sheet flows into the adjacent roadside swales on the east and west sides of the roadway. Runoff conveys through the permitted roadside ditch block and swale systems to the existing cross drains within the project limits. Additionally, to safeguard the roadway base, underdrains are currently in place within portions of the median to effectively draw down the groundwater.

The project encompasses various permits within its defined limits, and Table 4 provides a summary of these permits. The stormwater management plan involves multiple permitted facilities, such as retention/detention ditch systems with ditch blocks, infield ponds, and off-site ponds. Notably, the design of the retention/detention ditch systems ensures a capacity beyond the mandated volume for effective water retention. In accordance with the existing roadway profile and cross drains, the project is subdivided into fifteen drainage basins.

Table 4 – Permits Within Project Limits

WMD	Permit No	Basin Within Permit Limits
SJRWMD	19680-2	N/A (ITS Installation)
SJRWMD	19680-3	N/A (ITS Installation)
SJRWMD	19680-4	4-5
SJRWMD	19683-2	1
SJRWMD	19683-3	1
SJRWMD	26796-1	16
SJRWMD	26683-1	7-8

The project area is located within the Ocklawaha Watershed and lies within the Silver River Drain (WBID 2772B). This watershed is not included on the FDEP Statewide Comprehensive Verified List of Impaired Waters. While there is a Best Management Action Plan (BMAP) for Silver Springs, there are no direct discharges within the project limits; thus, there are no supplementary treatment measures anticipated for the project.

The project area is located within the Sensitive Karst Area (SKA). All basins have been designed with dry ponds, adhering to the guidelines specified by the Water Management District (WMD). Analysis of historical and permit data indicates the predominance of deep groundwater conditions along most of the corridor; however, geotechnical field exploration will be key for the project to ensure ponds are designed to accommodate any isolated areas of shallow limestone.

5.0 PROPOSED DRAINAGE DESIGN

5.1 STORMWATER MANAGEMENT DESIGN APPROACH

Due to the presence of Sensitive Karst Area (SKA), dry retention ponds are the selected method of stormwater management for the project. Existing drainage patterns will be maintained as much as possible in the proposed condition. Volumetric pond sizing calculations have been performed for the 25 year – 96 hour event (SJRWMD) and the 100 year – 10 day event. The calculations assume full containment of the controlling storm (typically the 100 year) or as stated in Section 5.3.4, and are provided in Appendix D. While the proposed condition impervious tables show 10 lanes (the conceptual ultimate condition for the I-75 Masterplan conducted under separate FPID), the FDOT has requested that ponds be conservatively sized to accommodate a "full build-out" condition of 90% ROW impervious, thus a buffer has been added to bring the calculated pavement width to 270 ft. Ponds are sized for full containment of the 100 year volume associated with runoff calculated for this amount of impervious surface within the corridor.

5.2 DRAINAGE DESIGN CRITERIA

5.2.1 PRESUMPTIVE WATER QUALITY

The project lies within the jurisdiction of the Southwest Florida Water Management District (SWFWMD) and St. John's River Water Management District (SJRWMD). I-75 forms the boundary between the two water management districts, with west of I-75 falling under the jurisdiction of SWFWMD and east of I-75 falling under the jurisdiction of SJRWMD. The 2022 PD&E Drainage Technical Memorandum prepared by Patel, Greene & Associates (PGA) sized the ponds based on SJRWMD criteria because the entire project corridor for the I-75 Master Plan was originally permitted by SJRWMD and other permits for projects along I-75 within this corridor were also processed by SJRWMD. Hence, the Environmental Resource Permit Applicant's Handbook (AH) Volume II for SJRWMD and the FDOT Stormwater Management Facility Handbook are the primary guides used for the analysis presented in this PSR. The SJRWMD criteria for the design of dry retention ponds for on-line systems requires the treatment volume to be the greater of 1.0 inch of runoff over the drainage area or 1.75 inches of runoff times the percentage of imperiousness. Refer to Appendix D for the treatment volume calculations, which are included with the pond sizing calculations.

5.2.2 IMPAIRED WATERBODY RULE

Chapter 62-303, F.A.C describes impaired water bodies. Water bodies that have been assessed and determined to be impaired by the FDEP due to pollutant discharges are included on the "Verified List" adopted by FDEP Secretarial Order. WBID 2772B is not nutrient impaired and therefore, net improvement is not required.

5.2.3 WATER QUANTITY

The off-site discharge rates are computed using the 96-hour duration, 25-year return frequency and the 240-hour, 100-year return frequency. The 96-hour duration, 25-year return frequency is based on SJRWMD closed basin criteria. The 240-hour, 100-year return frequency is the controlling event to meet the critical duration criteria associated with Chapter 14-86, F.A.C. A rainfall depth of 10.8 inches is used in pond sizing calculations, based on the 96-hour duration, 25-year return frequency and a rainfall depth of 16.6 inches is used in the pond sizing calculations for the 240-hour, 100-year return frequency. Since a part of the project site falls within the Ocklawaha River Hydrologic Basin, ponds will demonstrate attenuation for the 10-year/24-hour storm during the design and permitting phase.

5.2.4 FLOODPLAIN COMPENSATION

The project traverses the 100-year base floodplain designated as Zone AE, 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. Refer to Appendix A for FEMA FIRM maps. Floodplain impacts and required compensation have been calculated, and the methodology and results of this analysis are presented in the Location Hydraulics Report presented under separate cover.

5.3 SMF EVALUATIONS AND RECOMMENDATIONS

This section presents the evaluation results for each basin. All pond alternatives presented in this PSR are hydraulically and cost feasible and are located on separate parcels, each with a unique property owner, where feasible.

Section 5.3.4 discusses each basin in detail. Each section has a summary table that includes general data about each pond alternative, including location, elevation data, soils, potential environmental impacts, and costs. Therefore, these aspects are not discussed in detail in each section narrative. Instead, items that were found to be unique in the basin analysis are discussed in the narrative. The preliminary pond sizing calculations and pond alternative maps provide additional details regarding the pond siting and sizing analysis.

5.3.1 ENVIRONMENTAL ANALYSES

Environmental analyses were performed for each pond alternative, including archaeological and historical investigations, preliminary contamination screenings, evaluation of potential impacts to threatened and endangered species, and estimates of potential wetland impacts.

Each alternative is given a high, medium, low, or "none" impact level for archaeological, historical, contamination, and threatened and endangered species. It should be noted that the Cultural Resource Assessment Survey (CRAS), the Contamination Screening Evaluation Report (CSER) and the Wetland and Species Technical Memorandum are currently pending, and the Pond Siting Report will be updated once these documents are finalized.

5.3.2 CONSTRUCTION COST ESTIMATES

Construction cost estimates were prepared to estimate the costs that are unique to each alternative. These costs include items such as fencing, sod, inflow/outfall pipes, any additional costs associated with deeper or upsized pipes, and the earthwork required to construct the pond. Any potential savings in imported embankment provided by surplus pond excavation is included for each offsite pond, as applicable. The unit costs used for the construction cost were based on the latest FDOT moving area average unit costs for Area 6 (Marion County). Refer to Appendix E for the pond alternatives construction cost estimates.

5.3.3 ROW COST ESTIMATES

The ROW cost is not included in the current estimates and will be provided by FDOT.

5.3.4 BASIN POND ALTERNATIVES

This project involves the addition of auxiliary lanes to I-75/S.R. 93 from north of S.R. 200 to S.R 326 for approximately eight miles and is divided into fifteen basins. All basins are closed and based on the characteristics of the areas adjacent to the corridor, the FDOT has decided to size ponds for the full containment of the 100 year – 10 day storm or as stated in Section 5.3.4. See Appendix G for minutes of pond sitting meeting with FDOT. This section contains a summary of general data about each pond alternative. Three alternatives for most basins are discussed (Alternative A, Alternative B and Alternative C). Due to the nature of the corridor and adjacent development, in coordination with the FDOT some basins may only have one alternative, or two alternatives. Discussion of the evaluation of alternatives in each basin, including location, elevation data, soils, potential environmental impacts, and costs. Items that were found to be unique in the basin analysis can be found in the below sections. All pond alternatives presented in this PSR are hydraulically and cost feasible. Where possible, sites have been selected on single parcels, or adjacent parcels with a sole property owner. Based on the selected "design storm" and runoff containment, the pond sizes in some basins require the use of multiple parcels. The preliminary pond sizing calculations (Appendix D) and pond alternative maps (Appendix A) provide additional details regarding the pond siting and sizing analysis.

5.3.4.1 BASIN 1 & 2 COMBINED

Basin 1 (beginning just north of SR 200) lies from Station 2158+17 to Station 2190+93+45. Basin 2 continues to Station 2224+45. The three options for this area are all combined options, sized for a total combined basin area of 45.65 acres. A summary of the alternatives is provided in Table 5. Pond Alternative B1-B and B2-A Combined is identified as the preferred alternative for these 2 basins.

5.3.4.1.1 ALTERNATIVE B1-A & B2-C COMBINED

Alternative B1-A and B2-C is located west of I-75 and is sized to provide the appropriate volume for the combined area of Basins 1 & 2. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drains and conveyed to the selected pond. This pond option requires the acquisition of two vacant parcels and will require an easement through a third vacant parcel. Local agency coordination will also be required to accommodate an easement along SW 40th Street.

Treatment Method

Pond Alternative B1-A & B2-C is located on Candler Sand, 0 to 5 percent slopes with HSG A and a SHGWT depth of approximately 145 cm. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B1-A & B2-C is located near a depressional floodplain area and an existing permitted pond. The ESHW value in the volumetric calculations is based on field observations of the existing pond and permitted/as-built conditions (ERP #27678). Relevant excerpts from the permit are included in Appendix F. Based on the presence of the adjacent features, this pond was determined to have a substantial risk of recovery problems, and the sizing of the pond was performed with the assumption that “double-stacking” of the design event would be required. As a conservative design, in the absence of a drawdown/recovery model, it was assumed that the pond would only draw down one foot of the first storm, and that “recovered” volume was included in the provided volume. It was also assumed that the freeboard for the second storm was 6” to allow for an additional factor of safety. The resultant calculations demonstrate that the pond size as proposed can contain the second 100 year – 10 day storm without overtopping.

Water Quality

Pond B1-A & B2-C will provide treatment for Basins 1 and 2. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basins 1 & 2 are closed basins.

Water Quantity

Pond B1-A & B2-C will meet the pre/post requirements, due to the retention of the full 100 year – 10-day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.1.2 ALTERNATIVE B1-B & B2-A COMBINED

Alternative B1-B and B2-A is the preferred option for these two basins and is sized to provide the appropriate volume for the combined area of Basins1 & 2. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drains and conveyed to the selected pond. This pond option requires a partial acquisition of one vacant parcel. This parcel is west of I-75 and based on elevation data it was determined that the optimal location for this pond was at the western edge adjacent to SW 43rd Court. An easement is proposed along the northern edge of this parcel. Local agency coordination will also be required to accommodate an easement for the crossing of SW 38th Avenue.

Treatment Method

Pond Alternative B1-B and B2-A is located on Astatula and Candler sands, 0 to 5 percent slopes with HSG A and a SHGWT depth of approximately 145 cm. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B1-B & B2-A is located coincident with an existing permitted pond. The proposed pond bottom elevation and ESHW value in the volumetric calculations is based on field observations of the existing pond and LiDAR contours. Based on the presence of the existing pond, this alternative proposes to incorporate the footprint of the existing pond and operate as a joint use option with the local maintaining agency.

Water Quality

Pond B1-B and B2-A will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basins 1 & 2 are closed basins.

Water Quantity

Pond B1-B & B2-A will meet the pre/post requirements, due to the retention of the full 100 year – 10 day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.1.3 ALTERNATIVE B1-F & B2-B COMBINED

Alternative B1-F and B2-B is located west of I-75 and is sized to provide the appropriate volume for the combined area of Basins1 & 2. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drains and conveyed to the selected pond. This pond option requires a partial acquisition of one parcel. This parcel is west of I-75 and based on elevation data it was determined that the optimal location for this pond was at the western edge adjacent to SW 43rd Court. An easement is proposed along the southern edge of this parcel. Local agency coordination will also be required to accommodate an easement for the crossing of SW 38th Avenue. As of the date of this report, the parcel is vacant, however there is a permit for a 2-phase development, and the parcel is currently being cleared for construction of the first phase.

Treatment Method

Pond Alternative B1-F & B2-B is located on Astatula and Candler sands, 0 to 5 percent slopes with HSG A and a SHGWT depth of approximately 145 cm. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B1-F & B2-B is located on a parcel which was permitted in October 2023 after initial site selection was performed. The proposed pond bottom elevation and ESHW value in the volumetric calculations are based on permitted conditions.

Water Quality

Pond B1-F & B2-B will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basins 1 & 2 are closed basins.

Water Quantity

Pond B1-F & B2-B will meet the pre/post requirements, due to the retention of the full 100 year – 10 day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

Table 5 – Basins 1 & 2 Pond Alternatives

	Alternative A (Pond B1-A & B2-C Combined)	Alternative B (Pond B1-B & B2-A Combined)	Alternative C (Pond B1-F & B2-B Combined)
Treatment Method	Dry Retention	Dry Retention	Dry Retention
Pond Area (ROW needed, in ac)	28.63	15.54	14.69
Pond Location (Approx. Sta.)	Sta.2158+17.20 to Sta.2174+52.89	Sta.2190+79.32 to Sta.2210+83.04	Sta.2211+01.11 to Sta 2217+70.35
Estimated Ground Elevation (ft)	68-90	71-90	68-88
Proposed LEOP Elevation (ft)	73.50	73.50	73.50
Estimated SHGWT/Control Elevation (ft)	57.83	62	62
Treatment Depth (ft)	8	8	8
Soils at the pond site	Candler sand	Astatula sand, Candler sand, and Arredondo sand	Astatula sand, and Candler sand
HSG	A	A	A
Land Use	Commercial No Frontage	Non-Classified and Drainage Water Ret Area	Commercial Street Frontage
Archaeological Impacts	Low	Low	Low
Historical Impacts	Low	Low	Low
Contamination/Hazmat Impacts	Low	Low	Low
T&E Impacts	Low	Low	Low
Environmental Impacts (ac)	Low	Low	Low
Environmental Mitigation Costs ($thou.)	TBD	TBD	TBD
Proximity to Outfall (ft)	7419	7032	5485
Construction Costs ($thou.)	$6,545	$4,347	$3,896
Easement Requirements	Yes	Yes	Yes
No. of Impacted Parcels	2	1	1
ROW Costs ($thou.)	TBD	TBD	TBD
Total Costs ($thou.)	TBD	TBD	TBD
Selection Ranking	2	1	3

5.3.4.2 BASIN 3

Basin 3 lies from Station 2224+45 to 2263+94. The three options for this area include a mix of vacant and occupied commercial properties, with two alternatives requiring the acquisition of multiple parcels. A summary of the alternatives is provided in Table 6. Pond Alternative B3-D is identified as the preferred alternative for this basin.

5.3.4.2.1 ALTERNATIVE B3-B

Alternative B3-B is located west of I-75 and is sized to provide the appropriate volume for Basin 3. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drain and conveyed to the selected pond. This pond option requires acquisition of one parcel currently occupied by National Parts Depot. Local agency coordination will also be required to accommodate an easement for the crossing of SW 38th Avenue. Representatives of the business attended the public information meeting held on December 13th and advised that they were strongly opposed to the acquisition and would hire legal representation to fight the acquisition if their parcel were selected.

Treatment Method

Pond Alternative B3-B is located on Arredondo and Candler sands, 0 to 5 percent slopes with HSG A and a SHGWT depth of approximately 60 cm to 145 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B3-B is located on a parcel with permitted ponds which visually are functioning well in current conditions. The proposed pond bottom elevation and ESHW value in the volumetric calculations are based on permitted conditions.

Water Quality

Pond B3-B will provide storage volume for the full 100 year – 10-day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 3 is a closed basin.

Water Quantity

Pond B3-B will meet the pre/post requirements, due to the retention of the full 100 year – 10 day storm volume.

Environmental Analyses

Based on the nature of the corridor, the presence of existing commercial use, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.2.2 ALTERNATIVE B3-C

Alternative B3-C is located west of I-75 and is sized to provide the appropriate volume for Basin 3. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drain and conveyed to the selected pond. This pond option requires acquisition of one vacant parcel and eight commercial parcels are currently occupied by various businesses. Local agency coordination will be required to accommodate an easement for the crossing of SW 38th Avenue, and an inflow pipe along SW 13 Street.

Treatment Method

Pond Alternative B3-C is located on Candler sand, 0 to 5 percent slopes with HSG A and a SHGWT depth of approximately 145 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High-Water Estimation and Pond Sizing considerations

Pond Alternative B3-C includes a parcel with an existing pond which visually is functioning well in current conditions. The proposed pond bottom elevation and ESHW value in the volumetric calculations are based on existing conditions.

Water Quality

Pond B3-C will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 3 is a closed basin.

Water Quantity

Pond B3-C will meet the pre/post requirements, due to the retention of the full 100 year – 10 day storm volume.

Environmental Analyses

Based on the nature of the corridor, the presence of existing commercial use, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.2.3 ALTERNATIVE B3-D

Alternative B3-D is located west of I-75 and is the preferred site for this basin. This alternative is sized to provide the appropriate volume for Basin 3. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drain and conveyed to the selected pond. This pond option requires acquisition of one vacant parcel and one commercial parcel currently occupied by Carquest Auto Parts. Local agency coordination will be required to accommodate an easement for the crossing of SW 38th Avenue.

Treatment Method

Pond Alternative B3-D is located on Candler sand, 0 to 5 percent slopes with HSG A and a SHGWT depth of approximately 145 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B3-D includes a parcel with an existing pond which visually is functioning well in current conditions. The proposed pond bottom elevation and ESHW value in the volumetric calculations is based on existing conditions.

Water Quality

Pond B3-D will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 3 is a closed basin.

Water Quantity

Pond B3-D will meet the pre/post requirements, due to the retention of the full 100 year – 10 day storm volume.

Environmental Analyses

Based on the nature of the corridor, the presence of existing commercial use, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

Table 6 – Basin 3 Pond Alternatives

	Alternative A (Pond B3-B)	Alternative B (Pond B3-C)	Alternative C (Pond B3-D)
Treatment Method	Dry Retention	Dry Retention	Dry Retention
Pond Area (ROW needed, in ac)	14.4	14.4	20.46
Pond Location (Sta. / Offset)	Sta.2257+18.65 to Sta.2263+99.50	Sta. 2249+48.65to Sta.2254+50.36	Sta.2231+89.44 to Sta 2238+48.45
Estimated Ground Elevation (ft)	58-76	64-72	70-84
Proposed LEOP Elevation (ft)	66.50	66.50	66.50
Estimated SHGWT/Control Elevation (ft)	57.40	56	59
Treatment Depth (ft)	6	6	5
Soils at the pond site	Arredondo sand & Candler sand	Candler sand	Candler sand
HSG	A	A	A
Land Use	Industrial street	Industrial	Industrial
Archaeological Impacts	Low	Low	Low
Historical Impacts	Low	Low	Low
Contamination/Hazmat Impacts	Low	Low	Low
T&E Impacts	Low	Low	Low
Environmental Impacts (ac)	Low	Low	Low
Environmental Mitigation Costs ($thou.)	TBD	TBD	TBD
Proximity to Outfall (ft)	350	2591	1770
Construction Costs ($thou.)	$2,189	$2,670	$2,993
Easement Requirements	No	No	No
No. of Impacted Parcels	1	9	2
ROW Costs ($thou.)	TBD	TBD	TBD
Total Costs ($thou.)	TBD	TBD	TBD
Selection Ranking	3	2	1

5.3.4.3 BASIN 4

Basin 4 lies from Station 2263+94 to 2290+36. The three options for this area include a mix of vacant and occupied commercial properties, all requiring the acquisition of multiple parcels. A summary of the alternatives is provided in Table 7. Pond Alternative B4-B2 is identified as the preferred alternative for this basin.

5.3.4.3.1 ALTERNATIVE B4-A

Alternative B4-A is located west of I-75 and is sized to provide the appropriate volume for Basin 4. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drain and conveyed to the selected pond. This pond option requires acquisition of two vacant parcels. There is a platted public ROW, but it is not sufficient for the required width to construct the outfall; therefore, easements will be required along three adjacent parcels. Local agency coordination will be required to accommodate an easement for the crossing of SW 38th Avenue, as well as construction within the platted public ROW designated as SW 5th Street.

Treatment Method

Pond Alternative B4-A is located on Arredondo and Candler sands, 0 to 5 percent slopes with HSG A and a SHGWT depth of approximately 60 cm to 145 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B4-A includes two parcels which are currently vacant. The proposed pond bottom elevation and ESHW value in the volumetric calculations are based on NRCS soils data.

Water Quality

Pond B4-A will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 4 is a closed basin.

Water Quantity

Pond B4-A will meet the pre/post requirements, due to the retention of the full 100 year – 10 day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.3.2 ALTERNATIVE B4-B2

Alternative B4-B2 is located west of I-75 and is sized to provide the appropriate volume for Basin 4. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drain and conveyed to the selected pond. This pond option requires acquisition of two vacant parcels. An inflow pipe is proposed along the southern side of SR 40.

Treatment Method

Pond Alternative B4-B2 is located on Arredondo sand, 0 to 5 percent slopes with HSG A and a SHGWT depth of approximately 60 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B4-B2 includes an adjacent parcel with an existing pond which visually is functioning well in current conditions. The proposed pond bottom elevation and ESHW value in the volumetric calculations are based on permitted conditions as reflected in ERP #16531.

Water Quality

Pond B4-B2 will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 4 is a closed basin.

Water Quantity

Pond B4-B2 will meet the pre/post requirements, due to the retention of the full 100 year – 10 day storm volume.

Environmental Analyses

Based on the nature of the corridor, the evidence of prior commercial use, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.3.3 ALTERNATIVE B4-E

Alternative B4-E is located west of I-75 and is sized to provide the appropriate volume for Basin 3. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drain and conveyed to the selected pond. This pond option requires acquisition of one vacant parcel and a portion of one commercial parcel currently occupied by ADESA. Local agency coordination will be required to accommodate an easement for the crossing of SW 38th Avenue.

Treatment Method

Pond Alternative B4-E is located on Arredondo sand, 0 to 5 percent slopes with HSG A and a SHGWT depth of approximately 60 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B4-E includes an adjacent parcel with an existing pond which visually is functioning well in current conditions. The proposed pond bottom elevation and ESHW value in the volumetric calculations are based on permitted conditions as reflected in ERP #33343.

Water Quality

Pond B4-E will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 4 is a closed basin.

Water Quantity

Pond B4-E will meet the pre/post requirements, due to the retention of the full 100 year – 10 day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

Table 7 – Basin 4 Pond Alternatives

	Alternative A (Pond B4-A)	Alternative B (Pond B4-B2)	Alternative C (Pond B4-E)
Treatment Method	Dry Retention	Dry Retention	Dry Retention
Pond Area (ROW needed, in ac)	18.35	5.7	6.45
Pond Location (Sta. / Offset)	Sta.2263+76.94 to Sta.2278+62.94	Sta. 2282+34.63to Sta.2289+75.47	Sta.2273+02.21 to Sta 2277+17.77
Estimated Ground Elevation (ft)	62-90	62-76	70-78
Proposed LEOP Elevation (ft)	71.15	71.15	71.15
Estimated SHGWT/Control Elevation (ft)	57.50	50.90	59.72
Treatment Depth (ft)	4.5	9.1	8.28
Soils at the pond site	Arredondo sand, Candler sand	Arredondo sand	Arredondo sand
HSG	A	A	A
Land Use	Agricultural	Commercial	Commercial & Industrial
Archaeological Impacts	Low	Low	Low
Historical Impacts	Low	Low	Low
Contamination/Hazmat Impacts	Low	Low	Low
T&E Impacts	Low	Low	Low
Environmental Impacts (ac)	Low	Low	Low
Environmental Mitigation Costs ($thou.)	TBD	TBD	TBD
Proximity to Outfall (ft)	2193	1865	120
Construction Costs ($thou.)	$2,700	$1,479	$1,167
Easement Requirements	Yes	No	No
No. of Impacted Parcels	2	2	2
ROW Costs ($thou.)	TBD	TBD	TBD
Total Costs ($thou.)	TBD	TBD	TBD
Selection Ranking	3	1	2

5.3.4.4 BASIN 5

Basin 5 lies from Station 2290+37 to 2322+19. Owing to Medium to High Archaeological and Historical Impacts identified across majority of the feasible alternatives within the basin, coupled with the limited availability of other viable alternatives, FDOT had directed the exploration of multiple alternatives. This exploration is aimed at addressing both ultimate condition retention and retention specifically designed for the runoff from Auxiliary lanes. The alternatives for this basin encompass an ultimate condition combined pond option for Basins 5, 6, and 7, an ultimate condition alternative specific to Basin 5, an auxiliary lanes retention exclusively for Basin 5, as well as an auxiliary lanes retention tailored for the combined Basins 5 and 6 (Refer to section 5.3.4.5.2). The alternatives for this area include a mix of vacant Agricultural, Industrial, and commercial properties, with two alternatives requiring the acquisition of multiple parcels. A summary of the alternatives is provided in Table 8. Pond Alternative B5-E is identified as the preferred alternative for this basin.

5.3.4.4.1 ALTERNATIVE B5-A & B6-A & B7-B COMBINED

Alternative B5-A & B6-A & B7-B Combined is located west of I-75 and is sized to provide the appropriate volume for Basins 5, 6, and 7. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drains and conveyed to the selected pond. This pond option requires partial acquisition of two vacant parcels and easement on one of the parcels. Local agency coordination will be required to accommodate an easement for the crossing of NW 38th Avenue.

Treatment Method

Pond Alternative B5-A & B6-A & B7-B Combined is located on Zuber loamy sand, Kanapaha-Kanapaha, wet, fine sand, & Arredondo sand, Pedro-Arredondo complex, and Sparr fine sand. The HSG varies, with a mix of A, A/D, D, and C soils. The estimated SHGWT depth varies widely per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B5-A & B6-A & B7-B Combined falls within the limits of prior (expired) permits which included the subject parcels. The proposed pond bottom elevation and ESHW value in the volumetric calculations are based on existing conditions as described in ERP #35368.005.

Water Quality

Pond B5-A & B6-A & B7-B Combined will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basins 5, 6, & 7 are closed basins.

Water Quantity

Pond B5-A & B6-A & B7-B Combined will meet the pre/post requirements, due to the retention of the full 100 year – 10 day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for contamination, and threatened and endangered species for this alternative are anticipated to be low. Preliminary review indicates a medium risk level for the area associated with the required easement for archaeological/historical impacts. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.4.2 ALTERNATIVE B5-B

Alternative B5-B is situated to the west of I-75 and has been designed to accommodate the necessary volume for Basin 5. The primary drainage patterns of the mainline are preserved to the greatest possible extent, ensuring effective water management. Runoff from the area will be collected at the cross drain and then conveyed to the designated pond. Implementation of this pond option necessitates the acquisition of one vacant agricultural parcel, which includes a dilapidated building. Coordination with local agencies will be essential to facilitate the acquisition of an easement for the crossing of NW 38th Avenue. This parcel was also explored as an alternative for Basin 6 (originally 6D), and would be suitable, but based on the risk level assigned for historical/archeological impacts, other alternatives were explored, and that option is not discussed in detail in this narrative.

Treatment Method

Pond Alternative B5-B is located on Kanapaha-Kanapaha, wet, fine sand & Arredondo sand & Pedro-Arredondo complex, 0 to 5 percent slopes. The HSG varies, with a mix of A, A/D and D soils. The estimated SHGWT depth is >200 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B5-B incorporates a currently vacant parcel. The proposed pond's bottom elevation and ESHW value in the volumetric calculations are derived from NRCS soils data.

Water Quality

Pond B5-B will provide storage volume for the full 100 year – 10-day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 5 is a closed basin.

Water Quantity

Pond B5-B will meet the pre/post requirements, due to the retention of the full 100 year – 10-day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for contamination, and threatened and endangered species for this alternative are anticipated to be low. Preliminary review indicates a medium risk level for the area associated with the required easement for archaeological/historical impacts. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.4.3 ALTERNATIVE B5-E

Alternative B5-E is situated to the north of SR 40, adjacent to the eastern ROW of I-75. Owing to Medium to High Archaeological and Historical Impacts identified across majority of the feasible alternatives within this basin, coupled with the limited availability of other viable alternatives, FDOT had directed the exploration of multiple alternatives. This alternative is focused on retention specifically designed for the runoff from auxiliary lanes. Mainline drainage patterns were maintained to the greatest possible extent and runoff will be collected at the cross drain and conveyed to the selected pond. This pond option requires acquisition of one currently vacant parcel. Local agency coordination will be crucial to verify any utility conflicts and easement requirements.

Treatment Method

Pond Alternative B5-E is located on Arredondo sand, 0 to 5 percent slopes with HSG A and a SHGWT depth >200 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B5-E integrates a currently vacant parcel. The contiguous property features a series of existing ponds, visually observed to be in effective operation under current conditions. The ESHW value in the volumetric calculations was based on the existing ponds and permitted/as-built conditions (ERP #167751.2). Relevant excerpts from the permit are included in Appendix F.

Water Quality

Pond B5-E will provide storage volume for 100 year – 10-day storm for the proposed Auxiliary lanes only. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 5 is a closed basin.

Water Quantity

Pond B5-E will meet the pre/post requirements. The pond size calculations provide an estimate of the storage volume that is necessary to contain the calculated runoff volume from the auxiliary lanes.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

Table 8 – Basin 5 Pond Alternatives

	Alternative A (Pond B5-A & B6-A & B7-B Combined)	Alternative B (Pond B5-B)	Alternative C (Pond B5-E)
Treatment Method	Dry Retention	Dry Retention	Dry Retention
Pond Area (ROW needed, in ac)	34.58	15.83	6.20
Pond Location (Sta. / Offset)	Sta. 2303+24.94 to Sta.2326+46.10	Sta. 2304+32.22 to Sta.2317+47.26	Sta. 2293+78.41 to Sta.2301+67.64
Estimated Ground Elevation (ft)	56-80	60-74	62-70
Proposed LEOP Elevation (ft)	67.36	67.36	67.36
Estimated SHGWT/Control Elevation (ft)	45.50	54.80	56.5
Treatment Depth (ft)	8.5	5.2	7.5
Soils at the pond site	Zuber loamy sand & Kanapaha-Kanapaha, wet, fine sand & Arredondo sand & Pedro-Arredondo complex& Sparr fine sand	Kanapaha-Kanapaha, wet, fine sand & Arredondo sand & Pedro-Arredondo complex	Arredondo sand
HSG	A & D & A/D &C	A & D & A/D	A
Land Use	Agricultural & Non-Classified & Industrial &Private ROW	Agricultural & Leasehold	Commercial
Archaeological Impacts	Medium (easement only)	Medium	Low
Historical Impacts	Medium (easement only)	Medium	Low
Contamination/Hazmat Impacts	Low	Low	Low
T&E Impacts	Low	Low	Low
Environmental Impacts (ac)	Low	Low	Low
Environmental Mitigation Costs ($thou.)	TBD	TBD	TBD
Proximity to Outfall (ft)	5802	680	291
Construction Costs ($thou.)	$8,025	$2,245	$1,125
Easement Requirements	Yes	No	No
No. of Impacted Parcels	2	1	1
ROW Costs ($thou.)	TBD	TBD	TBD
Total Costs ($thou.)	TBD	TBD	TBD
Selection Ranking	3	2	1

5.3.4.5 BASIN 6

Basin 6 lies from Station 2322+19 to 2333+19. Owing to Medium to High Archaeological and Historical Impacts identified across majority of the feasible alternatives within the basin, coupled with the limited availability of other viable alternatives, FDOT had directed the exploration of multiple alternatives. This exploration is aimed at addressing both ultimate condition retention and retention specifically designed for the runoff from Auxiliary lanes. The alternatives for this basin encompass an ultimate condition combined pond option for Basins 5, 6, and 7 (Refer to Section 5.3.4.4.1), an ultimate condition alternative specific to Basin 6, an auxiliary lanes retention exclusively for Basin 6, an auxiliary lanes retention designed for the combined Basins 5 and 6, as well as an auxiliary lanes retention option tailored for the combined Basins 6 and 7. The options for this area include a mix of vacant commercial, and industrial properties, with two alternatives requiring the acquisition of multiple parcels. A summary of the alternatives is provided in Table 9. Pond Alternative B6-G and 7-A Combined is identified as the preferred alternative for this basin and is discussed in more detail in Section 5.3.4.6.2 of this narrative.

5.3.4.5.1 ALTERNATIVE B6-C

Alternative B6-C is situated on the north side of NW 10th Street, opposite the Juvenile Justice Department building, to the east of I-75. The pond is sized to accommodate the necessary volume for Basin 6 runoff while preserving existing drainage patterns to the greatest possible extent. Runoff will be collected at cross drain and conveyed to the designated pond through a new conveyance pipe along NW 10th Street. The implementation of this pond option necessitates the acquisition of two vacant parcels owned by the same owner. Successful execution will depend on local agency coordination to secure an easement for the crossing of NW 37th Avenue and NW 10th St.

Treatment Method

Pond Alternative B6-C is located on Arredondo sand, 0 to 5 percent slopes with HSG A and a SHGWT depth >200 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High-Water Estimation and Pond Sizing considerations

Pond Alternative B6-C incorporates a currently vacant parcel. The proposed pond's bottom elevation and ESHW value in the volumetric calculations are derived from NRCS soils data.

Water Quality

Pond B6-C will provide storage volume for the full 100 year – 10-day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 6 is a closed basin.

Water Quantity

Pond B6-C will meet the pre/post requirements, due to the retention of the full 100 year – 10-day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.5.2 ALTERNATIVE B5-E & B6-E COMBINED

Alternative B5-E & B6-E is located on the north of SR 40, adjacent to the eastern ROW of I-75. Owing to Medium to High Archaeological and Historical Impacts identified across the majority of the feasible alternatives within this basin, this alternative is focused on retention specifically designed for the runoff from auxiliary lanes. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drain and conveyed to the selected pond. The pond will accommodate attenuation volume and the overflow volume will be directed to the FDOT parcel. This pond option requires acquisition of two vacant parcels. Local agency coordination will be crucial to verify any utility conflicts and easement requirements.

Treatment Method

Pond Alternative B5-E & B6-E is located on Arredondo sand, 0 to 5 percent slopes with HSG A and a SHGWT depth >200 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B5-E & B6-E integrates a currently vacant parcel. The contiguous property features a series of existing ponds, visually observed to be in effective operation under current conditions. The ESHW value in the volumetric calculations was based on the existing ponds and permitted/as-built conditions (ERP #167751.2). Relevant excerpts from the permit are included in Appendix F.

Water Quality

Pond B5-E & B6-E will provide storage volume for 100 year – 10-day storm for the proposed auxiliary lanes only. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basins 5 and 6 are closed basins. Based on field observations, ESHW was 50 ft and the100 year flood plain elevation estimated at 52 ft.

Water Quantity

Pond B5-E & B6-E will meet the pre/post requirements. The pond size calculations in Appendix D provide an estimate of the storage volume that is necessary to contain the calculated runoff volume from the auxiliary lanes.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.5.3 ALTERNATIVE B6-F

Alternative B6-F is located on the east of NW 37th Avenue, along the eastern ROW of I-75. Based on the potential for Medium to High Archaeological and Historical impacts identified in preliminary review of several of the feasible alternatives within this basin, this alternative was developed as an alternative to serve the construction of the Auxiliary lanes only and will not serve the ultimate condition. Due to the elevations across this parcel relative to the mainline, and an existing floodplain on the eastern edge of the parcel, this alternative is designed to retain attenuation volume for the 100 year/10 day storm event. Additional runoff will be directed to an FDOT parcel located to the east. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drain and conveyed to the selected pond. This pond option requires acquisition of one vacant parcel. Local agency coordination will be crucial to verify any utility conflicts. The City of Ocala owns a narrow strip of land adjacent to the eastern boundary of the pond site, therefore coordination with the City is required for an easement to provide an outfall to the FDOT parcel.

Treatment Method

Pond Alternative B6-F is located on Kanapaha-Kanapaha, wet, fine sand, 0 to 5 percent slopes with HSG A/D and a SHGWT depth between 25 to 50 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B6-F integrates a currently vacant parcel. The properties on both north and south feature a series of existing ponds, visually observed to be in effective operation under current conditions. The ESHW value in the volumetric calculations was based on the existing ponds and permitted/as-built conditions (ERP #43545.1 and ERP# 170377.1). Relevant excerpts from the permit are included in Appendix F.

Water Quality

Pond B6-F will provide retention of the attenuation volume for the proposed Auxiliary lanes only. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 6 is a closed basin. Based on field observations, ESHW was 50 ft and the100 year flood plain elevation estimated at 52 ft.

Water Quantity

Pond B6-F will need additional runoff to be directed to the adjacent FDOT parcel to meet the pre/post requirements. The pond size calculations in Appendix D provide an estimate of the storage volume that is necessary to contain the calculated runoff volume from the attenuation volume of the auxiliary lanes.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

Table 9 – Basin 6 Pond Alternatives

	Alternative A (Pond B6-C)	Alternative B (Pond B5-E & B6-E Combined)	Alternative C (Pond B6-F)
Treatment Method	Dry Retention	Dry Retention	Dry Retention
Pond Area (ROW needed, in ac)	8.99	7.62	3.92
Pond Location (Sta. / Offset)	Sta.2330+65.27 to Sta.2339+68.75	Sta.2290+96.36 to Sta.2301+67.64	Sta.2317+69.89 to Sta.2320+15.02
Estimated Ground Elevation (ft)	68-80	62-70	62-68
Proposed LEOP Elevation (ft)	66.51	66.51	66.51
Estimated SHGWT/Control Elevation (ft)	59.50	56.5	54.4
Treatment Depth (ft)	3.8	7.5	5.5
Soils at the pond site	Arredondo sand	Arredondo sand	Kanapaha-Kanapaha, wet, fine sand
HSG	A	A	A/D
Land Use	Commercial	Commercial	Industrial
Archaeological Impacts	Low	Low	Low
Historical Impacts	Low	Low	Low
Contamination/Hazmat Impacts	Low	Low	Low
T&E Impacts	Low	Low	Low
Environmental Impacts (ac)	Low	Low	Low
Environmental Mitigation Costs ($thou.)	TBD	TBD	TBD
Proximity to Outfall (ft)	3145	3038	580
Construction Costs ($thou.)	$1,794	$2,022	$696
Easement Requirements	No	No	No
No. of Impacted Parcels	2	2	1
ROW Costs ($thou.)	TBD	TBD	TBD
Total Costs ($thou.)	TBD	TBD	TBD
Selection Ranking	2	4	3

5.3.4.6 BASIN 7

Basin 7 lies from Station 2333+19 to 2363+14. Owing to Medium to High Archaeological and Historical Impacts identified for a few of the feasible alternatives within the basin, coupled with the limited availability of other viable alternatives, FDOT had directed the exploration of multiple alternatives. This exploration is aimed at addressing both ultimate condition retention and retention specifically designed for the runoff from auxiliary lanes. The alternatives for this basin encompass an ultimate condition alternative designed as a combined pond for Basins 5, 6 and 7 (refer to Section 5.3.4.4.1). an ultimate condition alternative specific to Basin 7, as well as an auxiliary lanes retention option tailored for the combined Basins 6 and 7. The options for this area include a mix of vacant commercial and industrial properties, with one alternative requiring the acquisition of multiple parcels. A summary of the alternatives is provided in Table 10. Pond Alternative B6-G and 7-A Combined is identified as the preferred alternative for this basin, as well as Basin 6.

5.3.4.6.1 ALTERNATIVE B7-A

Alternative B7-A is situated to the east of I-75, adjacent to the ROW. Designed to accommodate the necessary volume for Basin 7, this alternative ensures the preservation of mainline drainage patterns to the greatest possible extent. Runoff will be efficiently collected at the cross drain and conveyed to the designated pond. This pond alternative is located on a vacant parcel and does not require any acquisition, as it is owned by FDOT. However, the parcel currently contains heaps of asphalt millings, requiring removal. Local agency coordination will be crucial to verify any utility conflicts.

Treatment Method

Pond Alternative B7-A is located on Udorthents and Tavares sand, 0 to 5 percent slopes. The HSG varies, with a mix of A and B soils with a SHGWT depth approximately 50cm to 100 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High-Water Estimation and Pond Sizing considerations

Pond Alternative B7-A encompasses parcel with an existing floodplain. The proposed pond's bottom elevation was determined based on the lowest existing floodplain elevation. The ESHW was assumed to be 2 feet below the pond bottom value, a parameter validated by the NRCS soils data.

Water Quality

Pond B7-A will provide storage volume for the full 100 year – 10-day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 7 is a closed basin.

Water Quantity

Pond B7-A was designed to meet both pre and post requirements by retaining the full 100-year – 10-day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.6.2 ALTERNATIVE B6-G & B7-A COMBINED

Alternative B6-G & B7-A is situated to the east of I-75, adjacent to the ROW. This alternative was specifically designed to accommodate the volume for only the auxiliary lanes for Basins 6 & 7. The implementation of this alternative involves significant modifications to the mainline drainage patterns. In the existing condition, Basin 6 drains towards the south and discharges at Basin 6 Outfall at Sta. 2323+06.08. The proposed changes entail replacing the Basin 6 outfall with a DBI and connecting it to the Ex S-160 with a 24" Reinforced Concrete Pipe (RCP). Additionally, the flow for EX DBI's S-160 to S-166 is reversed, directing it north through 18" RCP's. Furthermore, EX DBI S-166 will be connected to EX S-168 with a 24" RCP, diverting the flow north, ultimately conveying runoff to Basin 7 outfall and then directing it towards the designated pond. This pond alternative is located on a vacant parcel and does not require any acquisition, as it is owned by FDOT. However, the parcel currently contains heaps of asphalt millings, requiring removal. Local agency coordination will be crucial to verify any utility conflicts.

Treatment Method

Pond Alternative B6-G & B7-A is located on Udorthents and Tavares sand, 0 to 5 percent slopes. The HSG varies, with a mix of A and B soils with a SHGWT depth approximately 50cm to 100 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High-Water Estimation and Pond Sizing considerations

Pond Alternative B6-G & B7-A encompasses parcel with an existing floodplain. The proposed pond's bottom elevation was determined based on the lowest existing floodplain elevation. The ESHW was assumed to be 2 feet below the pond bottom value, a parameter validated by the NRCS soils data.

Water Quality

Pond B6-G & B7-A will provide storage volume for 100 year – 10-day storm for the proposed auxiliary lanes only. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basins 6 & 7 are closed basins.

Water Quantity

Pond B6-G & B7-A will meet the pre/post requirements.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.6.3 ALTERNATIVE B7-C

Alternative B7-C is located on the east of NW 37th Avenue, along the eastern ROW of I-75. Designed to accommodate the necessary volume for Basin 7, this alternative ensures the preservation of mainline drainage patterns to the greatest possible extent. Runoff will be collected at the cross drains and conveyed to the designated pond. This pond alternative is located on two vacant parcels and will require acquisition of an Industrial and an Agricultural parcel. However, a Medium to High risk for archaeological and historical Impacts was identified for this alternative; thus, this pond location was not selected as a preferred option. The larger of the two parcels was also originally explored and would be useable as a Basin 5 pond alternative (originally 5D), but additional alternatives were explored based on the risk of historical/archeological impacts; thus, that alternative was not discussed in detail. Local agency coordination will be crucial to verify any utility conflicts.

Treatment Method

Pond Alternative B7-C is located on Arredondo sand & Sparr fine sand & Pedro-Arredondo complex, 0 to 5 percent slopes. The HSG varies, with a mix of A and D soils with a SHGWT depth approximately 50cm to >200 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High-Water Estimation and Pond Sizing considerations

Pond Alternative B7-C incorporates two currently vacant parcels. The proposed pond's bottom elevation and ESHW value in the volumetric calculations are derived from NRCS soils data.

Water Quality

Pond B7-C will provide storage volume for the full 100 year – 10-day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 7 is a closed basin.

Water Quantity

Pond B7-C was designed to meet both pre and post requirements by retaining the full 100-year – 10-day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for contamination, and threatened and endangered species for this alternative are anticipated to be low. Preliminary review indicates a medium to high risk level for both the parcel for archaeological/historical impacts. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

Table 10 – Basin 7 Pond Alternatives

	Alternative A (Pond B7-A)	Alternative B (Pond B6-G & B7-A Combined)	Alternative C (Pond B7-C)
Treatment Method	Dry Retention	Dry Retention	Dry Retention
Pond Area (ROW needed, in ac)	11.09	18.31	20.29
Pond Location (Sta. / Offset)	Sta.2337+01.34 to Sta.2345+49.27	Sta.2337+01.34 to Sta.2345+49.27	Sta. 2302+90.81 to Sta.2315+21.16
Estimated Ground Elevation (ft)	66-86	66-86	58-74
Proposed LEOP Elevation (ft)	70.81	70.81	70.81
Estimated SHGWT/Control Elevation (ft)	60	60	51.40
Treatment Depth (ft)	6	6	4.6
Soils at the pond site	Udorthents, Tavares sand,	Udorthents, Tavares sand,	Arredondo sand & Sparr fine sand & Pedro-Arredondo complex
HSG	A & B	A & B	A & D
Land Use	Drainage Water Ret Area	Drainage Water Ret Area	Industrial & Agricultural
Archaeological Impacts	Low	Low	Medium to High
Historical Impacts	Low	Low	Medium to High
Contamination/Hazmat Impacts	Low	Low	Low
T&E Impacts	Low	Low	Low
Environmental Impacts (ac)	Low	Low	Low
Environmental Mitigation Costs ($thou.)	TBD	TBD	TBD
Proximity to Outfall (ft)	336	1437	895
Construction Costs ($thou.)	$1,547	$2,519	$2,652
Easement Requirements	No	No	No
No. of Impacted Parcels	1	1	2
ROW Costs ($thou.)	TBD	TBD	TBD
Total Costs ($thou.)	TBD	TBD	TBD
Selection Ranking	2	1	3

5.3.4.7 BASIN 8

Basin 8 lies from Station 2363+14to 2375+18. Based on coordination with FDOT, only one alternative was evaluated for this basin. The alternative for this area includes vacant commercial property and requires the acquisition of single parcels. A summary of the alternative is provided in Table 11. Pond Alternative B8-B is identified as the preferred alternative for this basin.

5.3.4.7.1 ALTERNATIVE B8-B

Alternative B8-B is located to the east of I-75, adjacent to the ROW. Designed to accommodate the necessary volume for Basin 8, this alternative ensures the preservation of mainline drainage patterns to the greatest possible extent. Runoff will be collected at the cross drain and conveyed to the designated pond. Successful execution of this pond alternative hinges on crucial local agency coordination to verify and address any utility conflicts. This pond alternative requires acquisition of one vacant wooded commercial parcel.

Treatment Method

Pond Alternative B8-B is located on Arredondo sand & Candler sand, 0 to 5 percent slopes with HSG A and a SHGWT depth >200 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High-Water Estimation and Pond Sizing considerations

Pond Alternative B8-B is situated on a parcel adjacent to UF Health, which is presently under construction. The determination of the proposed pond bottom elevation and ESHW value in the volumetric calculations was based on a thorough review of existing UF Health permits and NRCS soils data.

Water Quality

Pond B8-B will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 8 is a closed basin.

Water Quantity

Pond B8-B will meet the pre/post requirements, due to the retention of the full 100 year – 10-day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

Table 11 – Basin 8 Pond Alternatives

	Alternative A (Pond B8-B)
Treatment Method	Dry Retention
Pond Area (ROW needed, in ac)	10.95
Pond Location (Sta. / Offset)	Sta.2376+63.91 to Sta.2383+25.71
Estimated Ground Elevation (ft)	66-70
Proposed LEOP Elevation (ft)	70.51
Estimated SHGWT/Control Elevation (ft)	57.50
Treatment Depth (ft)	4.4
Soils at the pond site	Arredondo sand & Candler sand
HSG	A
Land Use	Commercial
Archaeological Impacts	Low
Historical Impacts	Low
Contamination/Hazmat Impacts	Low
T&E Impacts	Low
Environmental Impacts (ac)	Low
Environmental Mitigation Costs ($thou.)	TBD
Proximity to Outfall (ft)	435
Construction Costs ($thou.)	$1,438
Easement Requirements	No
No. of Impacted Parcels	1
ROW Costs ($thou.)	TBD
Total Costs ($thou.)	TBD
Selection Ranking	1

5.3.4.8 BASIN 9

Basin 9 lies from Station 2375+18 to 2394+82. Based on coordination with FDOT, only one alternative was evaluated for this basin. The alternative for this area includes a mix of vacant and occupied commercial properties requiring the acquisition of multiple parcels. A summary of the alternative is provided in Table 12. Pond Alternative B9-C is identified as the preferred alternative for this basin.

5.3.4.8.1 ALTERNATIVE B9-C

Alternative B9-C is located west of I-75, adjacent to the US 27 ROW. It is sized to provide the appropriate volume for Basin 9. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drain and conveyed to the selected pond via easement through two privately owned parcels and a private roadway. This pond option requires acquisition of three vacant parcels and one commercial parcel currently occupied by Phoenix 2 Internet café. Local agency coordination will be required to verify and address any utility conflicts.

Treatment Method

Pond Alternative B9-C is located on Arredondo sand & Candler sand, 0 to 5 percent slopes with HSG A and a SHGWT depth > 200 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B9-C incorporates a currently vacant parcel, and no existing permits were found for the commercial property. The proposed pond's bottom elevation and ESHW value in the volumetric calculations are derived from NRCS soils data.

Water Quality

Pond B9-C will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 9 is a closed basin.

Water Quantity

Pond B9-C will meet the pre/post requirements, due to the retention of the full 100 year – 10 day storm volume.

Environmental Analyses

Based on the nature of the corridor, the presence of existing commercial use, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

Table 12 – Basin 9 Pond Alternatives

	Alternative A (Pond B9-C)
Treatment Method	Dry Retention
Pond Area (ROW needed, in ac)	10.55
Pond Location (Sta. / Offset)	Sta. 2371+54.35 to Sta.2383+18.02
Estimated Ground Elevation (ft)	62-74
Proposed LEOP Elevation (ft)	66.41
Estimated SHGWT/Control Elevation (ft)	53.9
Treatment Depth (ft)	5
Soils at the pond site	Arredondo sand & Candler sand
HSG	A
Land Use	Commercial
Archaeological Impacts	Low
Historical Impacts	Low
Contamination/Hazmat Impacts	Low
T&E Impacts	Low
Environmental Impacts (ac)	Low
Environmental Mitigation Costs ($thou.)	TBD
Proximity to Outfall (ft)	805
Construction Costs ($thou.)	$1,578
Easement Requirements	Yes
No. of Impacted Parcels	4
ROW Costs ($thou.)	TBD
Total Costs ($thou.)	TBD
Selection Ranking	1

5.3.4.9 BASIN 10

Basin 10 lies from Station 2394+82.to 2413+32. Based on coordination with FDOT, only one alternative was evaluated for this basin. The alternative for this area includes a mix of vacant and occupied residential properties and requires the acquisition of multiple parcels. A summary of the alternative is provided in Table 13. Pond Alternative B10-B is identified as the preferred alternative for this basin.

5.3.4.9.1 ALTERNATIVE B10-B

Alternative B10-B is positioned west of I-75, adjacent to the east ROW of NW 44th Ave. It is sized to accommodate the necessary volume for Basin 10 and ensures the preservation of mainline drainage patterns to the greatest possible extent. Runoff will be collected at the cross drain and conveyed to the selected pond via an easement on the north side of a private property adjacent to the western I-75 ROW. However, the implementation of this pond option requires the acquisition of NW 30th Pl and nine residential parcels, including four currently vacant lots. Successful execution will rely on local agency coordination to verify and address any utility conflicts associated with this acquisition.

Treatment Method

Pond Alternative B10-B is located on Candler sand & Arredondo sand, 0 to 5 percent slopes with HSG A and a SHGWT depth > 200 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B10-B incorporates a mix of vacant and occupied residential parcels, and no existing permits were located during desktop review. The proposed pond's bottom elevation and ESHW value in the volumetric calculations are derived from NRCS soils data.

Water Quality

Pond B10-B will provide storage volume for the full 100 year – 10-day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 10 is a closed basin.

Water Quantity

Pond B10-B will meet the pre/post requirements, due to the retention of the full 100 year – 10-day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

Table 13 – Basin 10 Pond Alternatives

	Alternative A (Pond B10-B)
Treatment Method	Dry Retention
Pond Area (ROW needed, in ac)	12.33
Pond Location (Sta. / Offset)	Sta. 2405+12.20 to Sta.2409+50.62
Estimated Ground Elevation (ft)	70-78
Proposed LEOP Elevation (ft)	74.50
Estimated SHGWT/Control Elevation (ft)	63.35
Treatment Depth (ft)	4.5
Soils at the pond site	Candler sand & Arredondo sand
HSG	A
Land Use	Residential
Archaeological Impacts	Low
Historical Impacts	Low
Contamination/Hazmat Impacts	Low
T&E Impacts	Low
Environmental Impacts (ac)	Low
Environmental Mitigation Costs ($thou.)	TBD
Proximity to Outfall (ft)	1965
Construction Costs ($thou.)	$1,962
Easement Requirements	Yes
No. of Impacted Parcels	9
ROW Costs ($thou.)	TBD
Total Costs ($thou.)	TBD
Selection Ranking	1

5.3.4.10 BASIN 11

Basin 11 lies from Station 2413+32 to 2436+32. One of the alternatives for this basin is designed as a combined pond for Basins 11 and 12 while another alternative is designed as a combined pond for Basin 11, 12 and 13. The three options for this area include a mix of vacant and occupied commercial as well as agricultural properties, with one alternative requiring the acquisition of multiple parcels. A summary of the alternatives is provided in Table 14. Pond Alternative B11-C, B12-C, and B13-A Combined is identified as the preferred alternative for this basin, as well as basins 12 & 13.

5.3.4.10.1 ALTERNATIVE B11-A

Alternative B11-A is situated east of I-75, adjacent to the east ROW of NW 35th St Rd, and is appropriately sized to meet the volumetric requirements for Basin 11. Mainline drainage patterns are maintained to the greatest possible extent with runoff collected at the cross drain and conveyed to the designated pond through a dedicated easement on the north side of a commercial property adjacent to the eastern I-75 ROW. The implementation of this pond option necessitates the acquisition of one vacant parcel. As of the date of this report, the parcel remains vacant; however, it is important to note that a permit for the development of a distribution facility on the parcel has been issued. Local agency coordination will be required to address any utility conflicts and to accommodate an easement for the crossing of NW 35th St Rd.

Treatment Method

Pond Alternative B11-A is located on Wacahoota gravelly sand, gravelly subsoil variant, 5 to 8 percent slope & Lochloosa fine sand 5 to 8 percent slopes & Hague sand, 2 to 5 percent slopes. The HSG varies, with a mix of A, B & B/D soils. The SHGWT varies between a depth of approximately 25 to 150 cm per NRCS soils data. According to a review of the geotechnical report from permit 133185, no water was encountered as low as Elevation 40'. Additionally, recovery calculations indicated that the water table is at an elevation of 47.50.' However, the seasonal high of the adjacent wetland, as shown in the geotechnical bore map, is approximately at elevation +/- 60'. Also, during a field visit, it was observed that the adjacent pond, designed to be a dry pond, had standing water. In a meeting with Marion County, they noted that the pond was observed to recover well at times but appeared not to recover as well at other times. Given the inconsistencies in values reported in historical documents, as well as observed on-site conditions, it is assumed that Pond B11-A site will be a dry retention pond, with the pond bottom elevation set no lower than that of the adjacent pond.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B11-A is situated adjacent to a wetland and an existing pond. The existing pond was observed to recover well at times but appeared not to recover as well at other times. The proposed pond bottom elevation and ESHW value in the volumetric calculations are based on elevations of the adjacent pond.

Water Quality

Pond B11-A will provide storage volume for the full 100 year – 10-day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 11 is a closed basin.

Water Quantity

Pond B11-A will meet the pre/post requirements, due to the retention of the full 100 year – 10 day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.10.2 ALTERNATIVE B11-B & B12-B COMBINED

Alternative B11-B & B12-B combined is located adjacent to the western ROW of I-75 and northern ROW of NW 35th St and is sized to provide the appropriate volume for the combined area of Basins 11 & 12. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drains and conveyed to the selected pond. This pond option requires acquisition of two wooded vacant parcels. Successful execution will rely on local agency coordination to verify and address any utility conflicts associated with this acquisition.

Treatment Method

Pond B11-B & B12-B Combined is located on Hague sand 2 to 5 percent slopes & Sparr fine sand & Arredondo sand, 0 to 5 percent slopes with HSG A and a SHGWT depth >200 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High-Water Estimation and Pond Sizing considerations

Pond B11-B & B12-B Combined includes a currently vacant parcel; however, permit review indicates that the parcel is designated for a future phase of development for the adjacent warehouse. During a field visit, it was observed that the pond on the adjacent warehouse property, designed to be a dry pond, had standing water. The proposed pond's bottom elevation and ESHW value in the volumetric calculations are derived from NRCS soils data.

Water Quality

Pond B11-B & B12-B Combined will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basins 11 and 12 are closed basins.

Water Quantity

Pond B11-B & B12-B Combined will meet the pre/post requirements, due to the retention of the full 100 year – 10 day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.10.3 ALTERNATIVE B11-C & B12-C & B13-A COMBINED

Pond B11-C & B12-C & B13-A Combined is situated adjacent to the western ROW of I-75, with property access through NW 44th Ave. It is designed to accommodate the requisite volume for the collective area encompassing Basins 11, 12, and portions of Basin 13. Mainline drainage patterns will be maintained to the greatest possible extent. The entire basin runoff linked to Basins 11 and 12 will be collected at the cross drains and conveyed to the designated pond. Runoff from the southern section of the new 49th street interchange, slated for construction in Basin 13, will be directed towards the proposed pond. Simultaneously, equivalent runoff from the auxiliary lanes will be compensated in the 49th street interchange pond, planned for construction adjacent to the eastern ROW of I-75. The pond option requires the acquisition of one commercial parcel currently occupied by a Flea Market. Following a field visit and coordination with the team, it was determined that the flea market is for sale. Also, located at the northwest corner of the property, the existing cell phone tower will remain on-site with no modifications to its current access. The proposed pond will be implemented with requisite offsite and grading enhancements in the vicinity of the tower. The successful execution of this acquisition relies on local agency coordination to verify and address any utility conflicts.

Treatment Method

Pond B11-C & B12-C & B13-A Combined is located on Hague sand & Blichton sand, 2 to 5 percent slopes and Gainesville loamy sand, 0 to 5 percent slopes. The HSG varies, with a mix of A & C/D soils with a SHGWT depth >200 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond B11-C & B12-C & B13-A Combined is on a parcel with two existing ponds which visually appear to be functioning well in current conditions. The proposed pond bottom elevation and ESHW value in the volumetric calculations are based NRCS soils data.

Water Quality

Pond B11-C & B12-C & B13-A Combined will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basins 11, 12 and 13 are closed basins.

Water Quantity

Pond B11-C & B12-C & B13-A Combined will meet the pre/post requirements, due to the retention of the full 100 year – 10-day storm volume.

Environmental Analyses

Based on the nature of the corridor, the presence of existing commercial buildings, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

Table 14 – Basin 11 Pond Alternatives

	Alternative A (Pond B11-A)	Alternative B (Pond B11-B & B12—B Combined)	Alternative C (Pond B11-C & B12-C & B13-A Combined)
Treatment Method	Dry Retention	Dry Retention	Dry Retention
Pond Area (ROW needed, in ac)	12.06	32.51	22.89
Pond Location (Sta. / Offset)	Sta. 2427+41.20 to Sta.2440+35.65	Sta. 2424+84.70 to Sta.2435+38.19	Sta.2435+38.19 to Sta 2450+75.01
Estimated Ground Elevation (ft)	94-106	68-92	74-88
Proposed LEOP Elevation (ft)	86.41	62.51	62.51
Estimated SHGWT/Control Elevation (ft)	60	61.73	59.85
Treatment Depth (ft)	7.13	3.27	5.15
Soils at the pond site	Wacahoota gravelly sand, gravelly subsoil variant & Lochloosa fine sand & Hague sand	Sparr fine sand & Hague sand & Arredondo sand	Gainesville loamy sand & Hague sand & Blichton sand,
HSG	A & B & B/D	A	A & C/D
Land Use	Grazing Land	Agricultural & Mobile Home Residential & Private ROW & Industrial	Commercial
Archaeological Impacts	Low	Low	Low
Historical Impacts	Low	Low	Low
Contamination/Hazmat Impacts	Low	Low	Low
T&E Impacts	Low	Low	Low
Environmental Impacts (ac)	Low	Low	Low
Environmental Mitigation Costs ($thou.)	TBD	TBD	TBD
Proximity to Outfall (ft)	2985	2087	5582
Construction Costs ($thou.)	$2,647	$3,552	$4,352
Easement Requirements	Yes	No	No
No. of Impacted Parcels	1	2	1
ROW Costs ($thou.)	TBD	TBD	TBD
Total Costs ($thou.)	TBD	TBD	TBD
Selection Ranking	3	2	1

5.3.4.11 BASIN 12

Basin 12 lies from Station 2436+32 to 2455+32. One of the alternatives for this basin is designed as a combined pond for Basins 11 and 12 (refer to Section 5.3.4.10.2) while another alternative is designed as a combined pond for Basins 11, 12 and 13 (refer to Section 5.3.4.10.3). The three options for this area include a mix of vacant and occupied commercial as well as agricultural properties, with one alternative requiring the acquisition of multiple parcels. A summary of the alternative is provided in Table 15. Pond Alternative B11-C, B12-C, and B13-A Combined is identified as the preferred alternative for this basin, as well as basins 11 & 13.

5.3.4.11.1 ALTERNATIVE B12-A

Alternative B12-A is sized to provide the appropriate volume for the area of Basin 12. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drains and conveyed to the selected pond. This pond option requires a partial acquisition of one vacant parcel. This parcel is situated adjacent to the western ROW of I-75 and based on elevation data it was determined that the optimal location for this pond was at the western edge of the property. An easement is proposed along the southern edge of this parcel. The successful execution of this acquisition relies on local agency coordination to verify and address any utility conflicts.

Treatment Method

Pond Alternative B12-A is located on Hague sand, 2 to 5 percent slopes with HSG A and a SHGWT depth >200 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B12-A incorporates a currently vacant parcel but has an adjacent parcel to the south featuring existing ponds and permitted plans. The estimation of the proposed pond's bottom elevation and ESHW value in the volumetric calculations was derived from an average of three Seasonal High Water Elevation (SHWE) values documented in permit 16983, specifically extracted from test holes 1, 2, and 3.

Water Quality

Pond B12-A will provide storage volume for the full 100 year – 10-day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 12 is a closed basin.

Water Quantity

Pond B12-A will meet the pre/post requirements, due to the retention of the full 100 year – 10-day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

Table 15 – Basin 12 Pond Alternatives

	Alternative A (Pond B12-A)
Treatment Method	Dry Retention
Pond Area (ROW needed, in ac)	7.59
Pond Location (Sta. / Offset)	Sta.2450+62.46 to Sta.2457+44.71
Estimated Ground Elevation (ft)	84-96
Proposed LEOP Elevation (ft)	86.53
Estimated SHGWT/Control Elevation (ft)	75
Treatment Depth (ft)	6
Soils at the pond site	Hague sand
HSG	A
Land Use	Cropland & Billboard
Archaeological Impacts	Low
Historical Impacts	Low
Contamination/Hazmat Impacts	Low
T&E Impacts	Low
Environmental Impacts (ac)	Low
Environmental Mitigation Costs ($thou.)	TBD
Proximity to Outfall (ft)	1002
Construction Costs ($thou.)	$1,324
Easement Requirements	Yes
No. of Impacted Parcels	1
ROW Costs ($thou.)	TBD
Total Costs ($thou.)	TBD
Selection Ranking	3

5.3.4.12 BASIN 13

Basin 13 lies from Station 2455+32 to 2511+32. Based on coordination with FDOT, only two alternatives were evaluated for this basin. One of the alternatives for this basin is designed as a combined pond for Basin 11, 12 and 13 (refer to Section 5.3.4.10.3). The two options for this area include a mix of occupied commercial as well as vacant agricultural properties. A summary of the alternative is provided in Table 16. Pond Alternative B11-C, B12-C, and B13-A Combined is identified as the preferred alternative for this basin, as well as basins 11 & 12.

5.3.4.12.1 ALTERNATIVE B13-C

Pond B13-C is designed to provide the necessary volume for the area of Basin 13. Mainline drainage patterns are maintained to the greatest possible extent, ensuring optimal runoff collection at the cross drains and conveyance to the designated pond. This pond alternative entails a partial acquisition of a large ranch located adjacent to the eastern ROW of I-75. Following coordination with FDOT and the team overseeing the 49th street Interchange project, considering parcel elevations and land availability adjacent to the ROW, it was determined that the most suitable location for this pond is at the northern corner adjacent to NW 63rd Street. The successful execution of this acquisition relies on precise local agency coordination to verify and address any utility conflicts.

Treatment Method

Pond Alternative B13-C site has a variety of soils including Sparr fine sand, Arredondo sand, Kendrick loamy sand & Kanapaha-Kanapaha, wet, fine sand, 0 to 5 percent slopes. The HSG varies, with a mix of A & A/D soils with a SHGWT depth >200 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B13-C is situated on a vacant parcel with an existing floodplain located on the north corner. The pond's location is strategically determined to facilitate storage for the existing floodplain and accommodate additional offsite runoff. The proposed pond's bottom elevation and ESHW value in the volumetric calculations were based NRCS soils data.

Water Quality

Pond B13-C will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 13 is a closed basin.

Water Quantity

Pond B13-C will meet the pre/post requirements, due to the retention of the full 100 year – 10 day storm volume.

Environmental Analyses

Based on the nature of the corridor and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

Table 16 – Basin 13 Pond Alternatives

	Alternative A (Pond B13-C)
Treatment Method	Dry Retention
Pond Area (ROW needed, in ac)	40.28
Pond Location (Sta. / Offset)	Sta.2516+61.20 to Sta.2533+84.00
Estimated Ground Elevation (ft)	64-80
Proposed LEOP Elevation (ft)	67.97
Estimated SHGWT/Control Elevation (ft)	60.50
Treatment Depth (ft)	4.5
Soils at the pond site	Sparr fine sand & Arredondo sand & Kendrick loamy sand & Kanapaha-Kanapaha, wet, fine sand,
HSG	A & A/D
Land Use	Agricultural & Vacant Residential
Archaeological Impacts	Low
Historical Impacts	Low
Contamination/Hazmat Impacts	Low
T&E Impacts	Low
Environmental Impacts (ac)	Low
Environmental Mitigation Costs ($thou.)	TBD
Proximity to Outfall (ft)	1713
Construction Costs ($thou.)	$5,123
Easement Requirements	No
No. of Impacted Parcels	1
ROW Costs ($thou.)	TBD
Total Costs ($thou.)	TBD
Selection Ranking	2

5.3.4.13 BASIN 14

Basin 14 lies from Station 2511+32 to 2553+32. One alternative for this basin is designed as a combined pond for Basins 14 and 15. The three alternatives for this area include a mix of vacant Agricultural and residential properties, with one alternative requiring the acquisition of multiple parcels. A summary of the alternatives is provided in Table 17. Pond Alternative B14-A and B15-C Combined is identified as the preferred alternative for this basin, as well as basin 15.

5.3.4.13.1 ALTERNATIVE B14-B

Alternative B14-B is situated at the western corner of NW 63rd Street and I-75. Initially, the pond site encompassed a two-parcel acquisition designed to furnish the requisite volume for Basin 14. Subsequently, FDOT issued instructions to exclude the commercial site on the south, rendering this alternative unsuitable for accommodating runoff from Basin 14.

Treatment Method

Pond Alternative B14-B is located on Sparr fine sand & Arredondo sand, 0 to 5 percent slopes with HSG A and a SHGWT depth of approximately 50 to 100 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B14-B incorporates a currently vacant parcel but has an adjacent parcel to the west featuring existing ponds and permitted plans. The estimation of the proposed pond's bottom elevation and ESHW value in the volumetric calculations was derived from the test hole average of SHWE values documented in permit 17867.

Water Quality

The reconfigured Pond B14-B will not provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 14 is a closed basin.

Water Quantity

Pond B14-B will not meet the pre/post requirements, due to the partial retention of the 100 year – 10 day storm volume. T

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.13.2 ALTERNATIVE B14-C

Alternative B14-C is located at the northwest corner of NW 63rd Street and I-75 and is sized to provide the appropriate volume for Basin 14. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drain and conveyed to the selected pond. This pond option requires acquisition of one vacant parcel. The successful execution of this acquisition relies on precise local agency coordination to verify and address any utility conflicts.

Treatment Method

Pond Alternative B14-C is located on Sparr fine sand & Micanopy fine sand, 0 to 5 percent slopes. The HSG varies, with a mix of A & C soils with a SHGWT depth approximately between 50 to 100 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B14-C incorporates a currently vacant parcel and has permitted plans. The pond's proposed bottom elevation and ESHW value in the volumetric assessments was derived from the average SHWE values documented in permits 34678.000 and 34678.001, incorporating an additional one foot for conservative design.

Water Quality

Pond B14-C will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 14 is a closed basin.

Water Quantity

Pond B14-C will meet the pre/post requirements, due to the retention of the full 100 year – 10 day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.13.3 ALTERNATIVE B14-A & B15-C COMBINED

Alternative B14-A & B15-C Combined is situated on the Northeastern corner of NW 63rd Street and I-75, designed to provide the requisite volume for the collective area encompassing Basins 14 and 15. Mainline drainage patterns are maintained to the greatest possible extent, ensuring optimal runoff collection at the cross drains and effective conveyance to the designated pond. This pond option necessitates the acquisition of two parcels located at a natural low point, one being a residential property and the other vacant. The successful execution of this acquisition relies on precise local agency coordination to verify and address any utility conflicts.

Treatment Method

Pond Alternative B14-A & B15-C Combined is located on Sparr fine sand, Arredondo sand & Micanopy fine sand, 0 to 5 percent slopes. The HSG varies, with a mix of A & C soils. The SHGWT depth varies between 50 to >200 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B14-A & B15-C Combined encompasses a site positioned at a natural low, observed to be visually dry at the bottom of the depression during site evaluation. The proposed pond's bottom elevation and ESHW value in the volumetric calculations is approximated to be one foot below the lowest elevation of the dry depressional area.

Water Quality

Pond B14-A & B15-C Combined will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basins 14 and 15 are closed basins.

Water Quantity

Pond B14-A & B15-C COMBINED will meet the pre/post requirements, due to the retention of the full 100 year – 10 day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

Table 17 – Basin 14 Pond Alternatives

	Alternative A (Pond B14-B)	Alternative B (Pond B14-C)	Alternative C (Pond B14-A & B15-C Combined)
Treatment Method	Dry Retention	Dry Retention	Dry Retention
Pond Area (ROW needed, in ac)	16.77	25.35	26.60
Pond Location (Sta. / Offset)	Sta.2526+60.89 to Sta.2534+39.72	Sta.2535+44.93 to Sta.2547+90.63	Sta. 2534+81.68 to Sta 2547+92.45
Estimated Ground Elevation (ft)	70-66	58-72	54-82
Proposed LEOP Elevation (ft)	67.97	67.97	62.51
Estimated SHGWT/Control Elevation (ft)	57.50	57.32	53
Treatment Depth (ft)	4.5	4	6
Soils at the pond site	Sparr fine sand & Arredondo sand	Sparr fine sand & Micanopy fine sand	Sparr fine sand & Arredondo sand & Micanopy fine sand
HSG	A	A & C	A & C
Land Use	Agricultural	Grazing Land & Billboard	Mobile home residential
Archaeological Impacts	Low	Low	Low
Historical Impacts	Low	Low	Low
Contamination/Hazmat Impacts	Low	Low	Low
T&E Impacts	Low	Low	Low
Environmental Impacts (ac)	Low	Low	Low
Environmental Mitigation Costs ($thou.)	TBD	TBD	TBD
Proximity to Outfall (ft)	900	55	3399
Construction Costs ($thou.)	$2,182	$3,077	$5,058
Easement Requirements	No	No	No
No. of Impacted Parcels	1	1	2
ROW Costs ($thou.)	TBD	TBD	TBD
Total Costs ($thou.)	TBD	TBD	TBD
Selection Ranking	3	2	1

5.3.4.14 BASIN 15

Basin 15 lies from Station 2553+32 to 2587+75. One alternative for this basin is designed as a combined pond for Basins 14 and 15 (refer to section 5.3.4.13.3). The three alternatives for this area include a mix of vacant, agricultural and residential properties, with two alternatives requiring the acquisition of multiple parcels. A summary of the alternatives is provided in Table 18. Pond Alternative B14-A and B15-C Combined is identified as the preferred alternative for this basin, as well as basin 14.

5.3.4.14.1 ALTERNATIVE B15-A

Alternative B15-A is located adjacent to the eastern ROW of I-75 south of SR 326 and is sized to provide the appropriate volume for Basin 15. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drain and conveyed to the selected pond. This pond option mandates the acquisition of five vacant parcels and a partial acquisition of a vacant parcel. Three of the parcels are currently available for sale. Local agency coordination will be required to verify and address any utility conflicts.

Treatment Method

Pond Alternative B15-A is located on Arredondo sand, Udorthents, excavated, Micanopy fine sand, 0 to 5 percent slopes. The HSG varies, with a mix of A, B & C soils. The SHGWT depth varies between 50 to >200 cm per the NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B15-A incorporates currently vacant parcels with no permitted plans. The proposed pond bottom elevation and ESHW value in the volumetric calculations is based on existing conditions.

Water Quality

Pond B15-A will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 15 is a closed basin.

Water Quantity

Pond B15-A will meet the pre/post requirements, due to the retention of the full 100 year – 10 day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

5.3.4.14.2 ALTERNATIVE B15-B

Alternative B15-B is located west of I-75 adjacent to NW 44th Ave ROW. The pond is sized to provide the appropriate volume for Basin 15. Mainline drainage patterns are maintained to the greatest possible extent and runoff will be collected at the cross drain and conveyed to the selected pond via easement through a private parcel. This pond option requires acquisition of one vacant parcel. Local agency coordination will be required to verify and address any utility conflicts and to accommodate an easement for the crossing of NW 44th Avenue.

Treatment Method

Pond Alternative B15-B is located on Lochloosa fine sand, Arredondo sand and Udorthents, excavated, 0 to 5 percent slopes. The HSG varies, with a mix of A, & C soils. The SHGWT depth varies between 50 to >200 cm per NRCS soils data. A dry retention pond is proposed for this pond alternative.

Seasonal High Water Estimation and Pond Sizing considerations

Pond Alternative B15-B incorporates a currently vacant parcel and has no permitted plans. The proposed pond bottom elevation and ESHW value in the volumetric calculations is based on existing conditions.

Water Quality

Pond B15-B will provide storage volume for the full 100 year – 10 day storm. The basin falls within WBID 2772B which is not nutrient impaired and therefore, net improvement is not required.

Outfall/Tailwater

Basin 15 is a closed basin.

Water Quantity

Pond B15-B will meet the pre/post requirements, due to the retention of the full 100 year – 10-day storm volume.

Environmental Analyses

Based on the nature of the corridor, and preliminary desktop review, the impact level for archaeological, historical, contamination, and threatened and endangered species for this alternative are anticipated to be low. Selected pond sites are under review and specific information from the associated reports will be included in the next project phase.

Table 18 – Basin 15 Pond Alternatives

	Alternative A (Pond B15-A)	Alternative B (Pond B15-B)
Treatment Method	Dry Retention	Dry Retention
Pond Area (ROW needed, in ac)	22.84	26.95
Pond Location (Sta. / Offset)	Sta. 2557+82.11to Sta.2576+67.54	Sta. 2577+37.96 to Sta.2581+98.24
Estimated Ground Elevation (ft)	58-74	58-74
Proposed LEOP Elevation (ft)	62.51	62.51
Estimated SHGWT/Control Elevation (ft)	54	57.5
Treatment Depth (ft)	5	4.5
Soils at the pond site	Arredondo sand, Udorthents, excavated, Micanopy fine sand	Lochloosa fine sand, Arredondo sand, Udorthents, excavated
HSG	A, B, & C	A & B
Land Use	Commercial, Industrial, Mobile home residential, non-classified and Private ROW	Commercial,
Archaeological Impacts	Low	Low
Historical Impacts	Low	Low
Contamination/Hazmat Impacts	Low	Low
T&E Impacts	Low	Low
Environmental Impacts (ac)	Low	Low
Environmental Mitigation Costs ($thou.)	TBD	TBD
Proximity to Outfall (ft)	43	848
Construction Costs ($thou.)	$2,980	$3,468
Easement Requirements	No	Yes
No. of Impacted Parcels	6	2
ROW Costs ($thou.)	TBD	TBD
Total Costs ($thou.)	TBD	TBD
Selection Ranking	2	3

6.0 CONCLUSION

Pond alternatives for each basin were analyzed for the ultimate condition except as noted below. Based on preliminary review, there are multiple parcels within Basins 5 through 7 that risk historical/archeological impacts. Alternatives were developed for both the ultimate and auxiliary lanes only scenarios. It should be noted that the alternatives discussed in Section 5.3.4 are all viable based on the assumptions noted and would be suitable if it were determined during design that historical/archeological impacts were negligible in the noted basins. Table 19 below summarizes the recommended alternatives with the required ROW acquisition.

Table 19 – Preferred Pond Alternatives

Basins	Recommended Alternative	Right of Way Requirements	General Remark
Basins 1 & 2	Pond B1-B & B2-A Combined	31.5	Ultimate Condition
Basin 3	Pond B3-D	20.59	Ultimate Condition
Basin 4	Pond B4-B2	4.86	Ultimate Condition
Basin 5	Pond B5-E	7.32	Auxiliary Lanes Only
Basins 6 & 7	Pond B6-G & B7-A Combined	19.36	Auxiliary Lanes Only
Basin 8	Pond B8-B	15	Ultimate Condition
Basin 9	Pond B9-C	11.88	Ultimate Condition
Basin 10	Pond B10-B	14.5	Ultimate Condition
Basins 11 &12 &13	Pond B11-C, B12-C & B13-A Combined	33.21	Ultimate Condition
Basins 14 &15	Pond B14-A & B15-C Combined	35	Ultimate Condition

APPENDICES

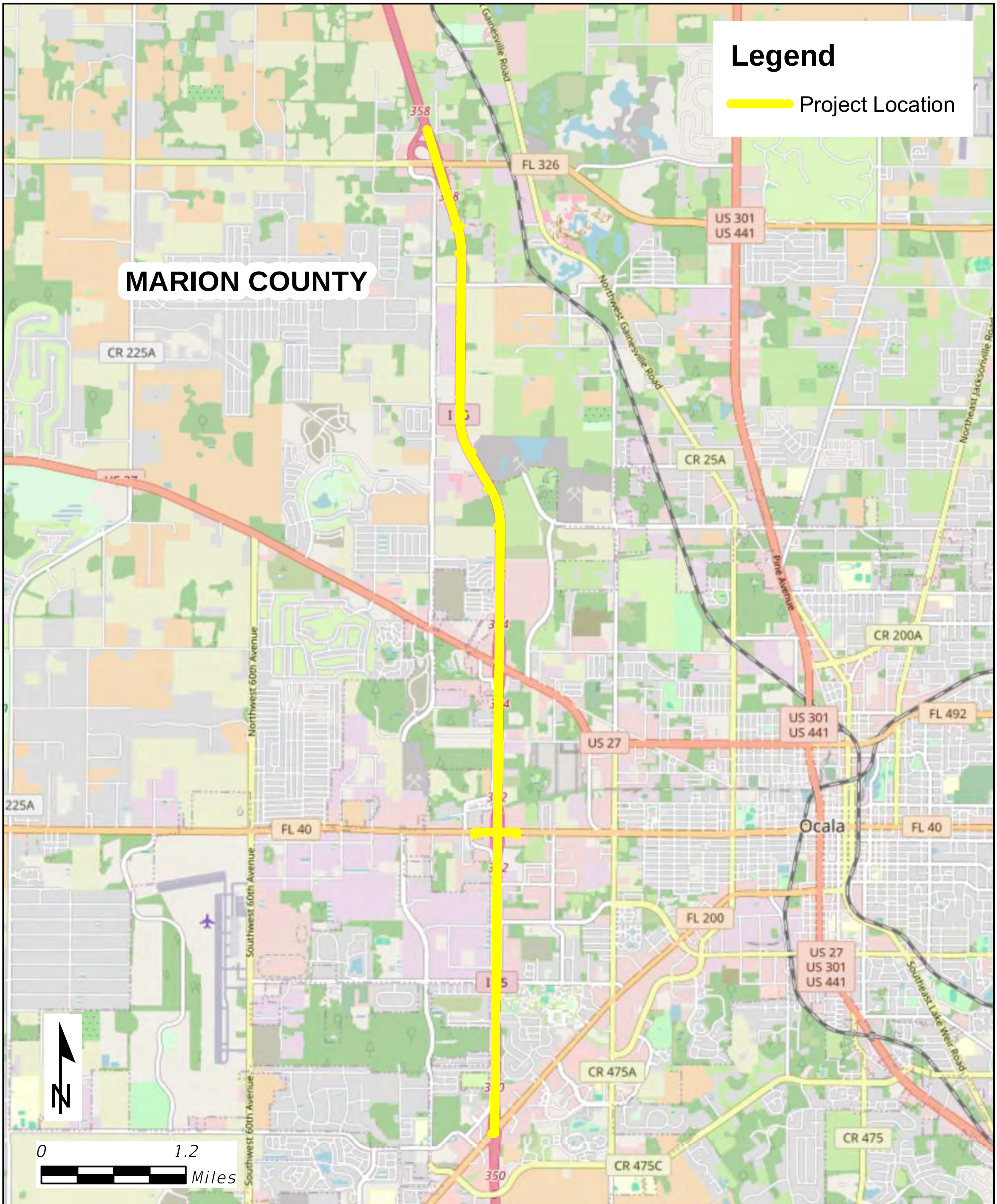
Appendix A	Exhibits
Appendix B	Typical Section
Appendix C	NRCS Soils Report
Appendix D	Preliminary Pond Sizing Calculations
Appendix E	Estimated Pond Costs
Appendix F	Historic Drainage Maps and Permit Data
Appendix G	Correspondence
Appendix H	Review Comments and Responses

EXHIBITS

Exhibit 1	Project Location Map
Exhibit 2	NRCS Soils Map
Exhibit 3A-3I	FEMA FIRMettes
Exhibit 4	WBID Map
Exhibit 5	Wetlands Map
Exhibit 6	Pond Alternative B1-A & B2-C Combined
Exhibit 7	Pond Alternative B1-B & B2-A Combined
Exhibit 8	Pond Alternative B1-F & B2-B Combined
Exhibit 9	Pond Alternative B3- B
Exhibit 10	Pond Alternative B3- C
Exhibit 11	Pond Alternative B3- D
Exhibit 12	Pond Alternative B4- A
Exhibit 13	Pond Alternative B4- B2
Exhibit 14	Pond Alternative B4- E
Exhibit 15	Pond Alternative B5-A &B6-A & B7-B Combined
Exhibit 16	Pond Alternative B5- B
Exhibit 17	Pond Alternative B5- E
Exhibit 18	Pond Alternative B6- C
Exhibit 19	Pond Alternative B5-E & B6-E Combined
Exhibit 20	Pond Alternative B6- F
Exhibit 21	Pond Alternative B7- A
Exhibit 22	Pond Alternative B6- G & B7-A Combined

Appendix A

Exhibits

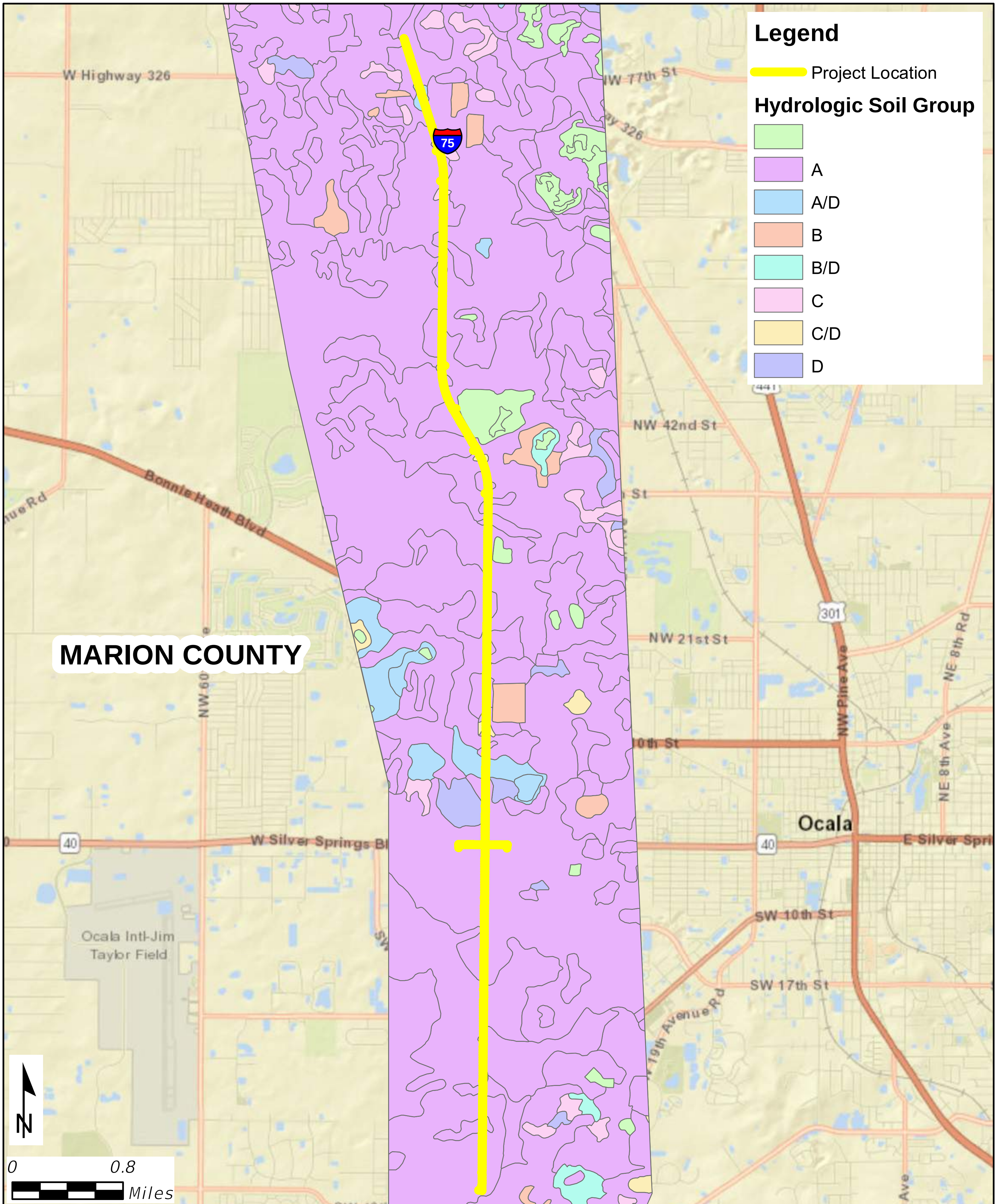


Patel, Greene & Associates, LLC
12570 Telecom Drive
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

Project Location Map

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 1 of 36 | Date: 1/23/2024



Patel, Greene & Associates, LLC
280 West Canton Avenue, Suite 400
Winter Park, FL 32789
Elizabeth M. Bartell, PE # 69125

Soils Map

Auxiliary Lanes at I-75

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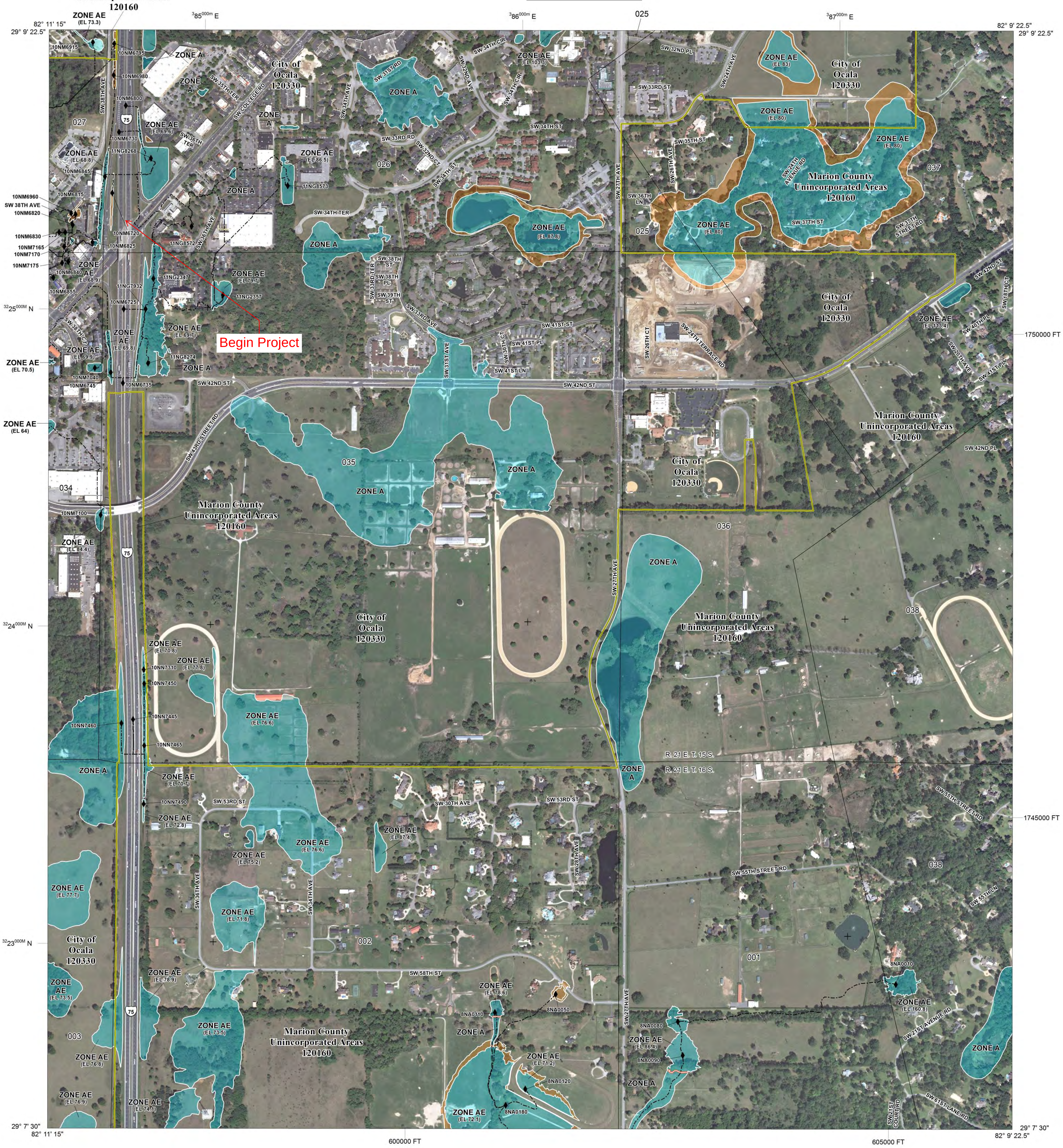
Exhibit 3A



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*

OTHER AREAS

- NO SCREEN Areas of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Accredited or Provisionally Accredited Levee, Dike, or Floodwall
- Non-accredited Levee, Dike, or Floodwall

OTHER FEATURES

- E 18.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
- 8 Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates refer to 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.

Base Map information shown on this FIRM was derived from multiple sources and was provided in digital format using source material at a scale of 1:24,000 or larger.

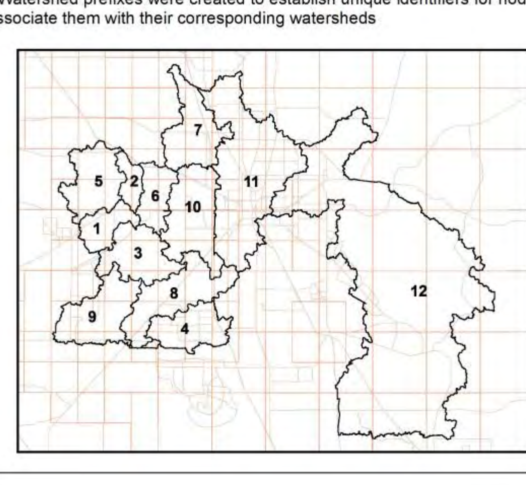
1NE0100 ♦ **Junction - Points defining flow accumulation or hydraulic connectivity. The first character of the Junction name represents the specific watershed (as shown in the table below) in which the junction is located.**

Hydraulic Connectivity - Flow pathway between junctions

Watershed Boundary Locator

PREFIX	WATERSHED	PREFIX	WATERSHED
1	Blichton	7	North West Ocala
2	Cotton Plant 1	8	State Road 200
3	Cotton Plant 2	9	Withlacoochee
4	Cotton Plant 3	10	West Ocala
5	Hog Prarie	11	Florida Ridge
6	Martel	12	Marshall Swamp

* Watershed prefixes were created to establish unique identifiers for nodes and associate them with their corresponding watersheds



SCALE

N

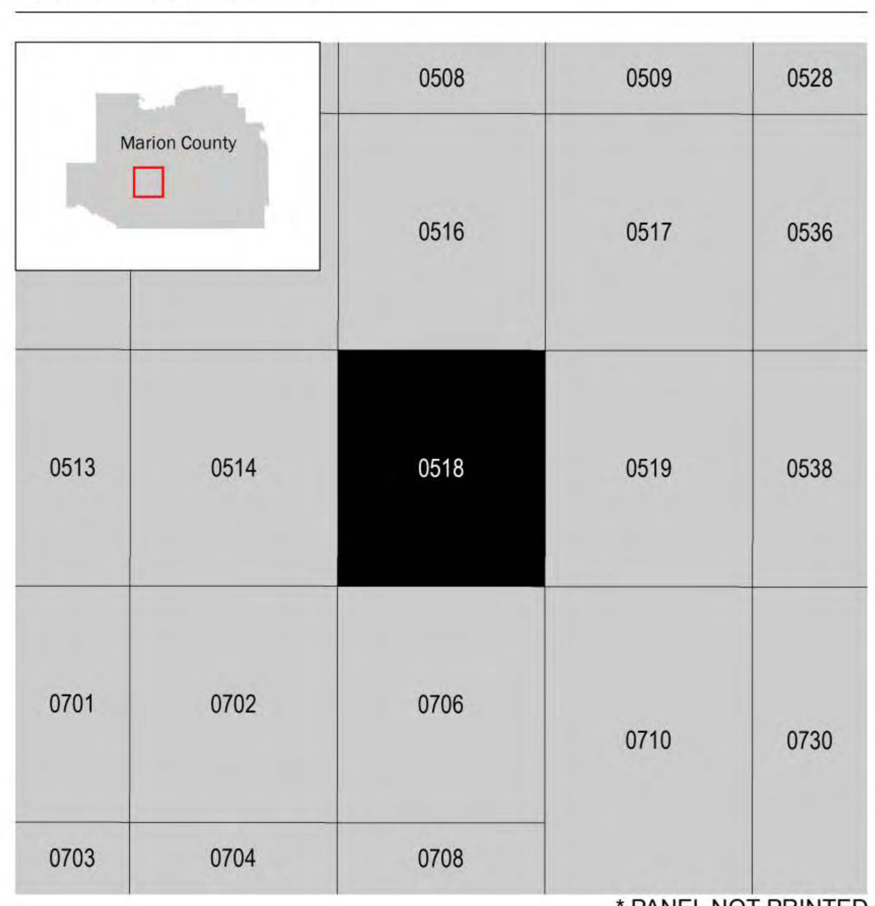
Map Projection:
Harn State Plane Transverse Mercator, Florida West Zone 0902;
North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD88

1 inch = 500 feet	1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



* PANEL NOT PRINTED

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

MARION COUNTY, FL
And Incorporated Areas

PANEL **518** OF **960**

FEMA

Panel Contains:

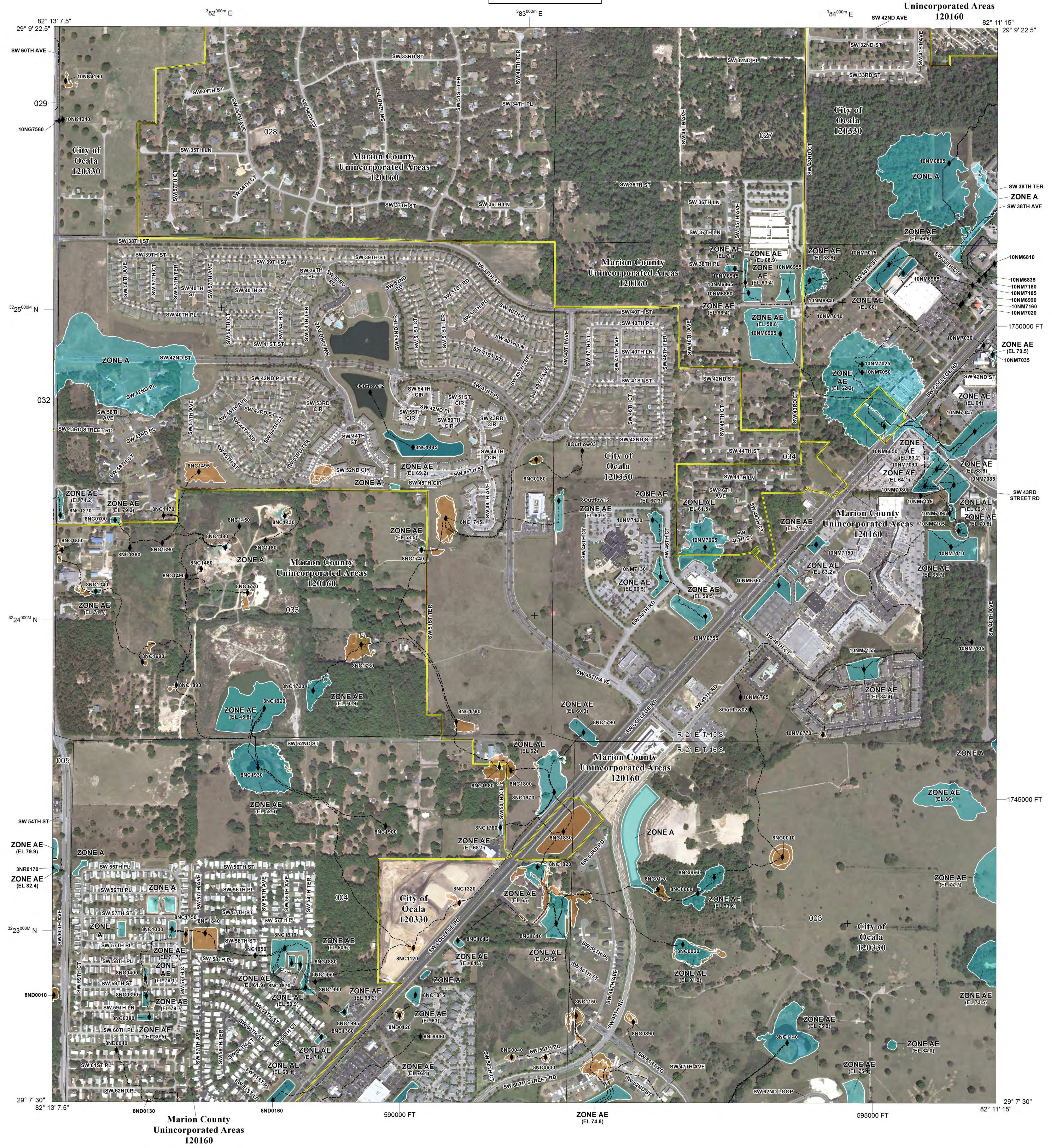
COMMUNITY	NUMBER	PANEL	SUFFIX
OCALA, CITY OF	120330	0518	E
MARION COUNTY	120160	0518	E

VERSION NUMBER
2.3.3.2

MAP NUMBER
12083C0518E

MAP REVISED
APRIL 19, 2017

Exhibit 3B



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) *Zone A,V, A99*
	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee See Notes *Zone X*
OTHER AREAS	NO SCREEN Areas of Minimal Flood Hazard *Zone X*
	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Accredited or Provisionally Accredited Levee, Dike, or Floodwall
	Non-accredited Levee, Dike, or Floodwall
OTHER FEATURES	E 18.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	8 Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary

NOTES TO USERS

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Hydraulic Connectivity - Flow pathway between junctions

Watershed Boundary Locator

PREFIX	WATERSHED	PREFIX	WATERSHED
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3	Cotton Plant 2	9	Withlacoochee
4	Cotton Plant 3	10	West Ocala
5	Hog Prarie	11	Florida Ridge
6	Martel	12	Marshall Swamp

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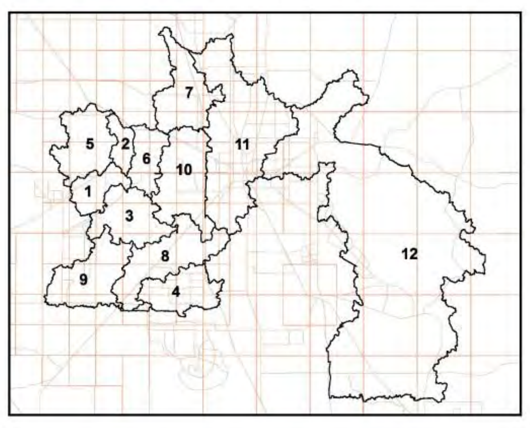


SCALE

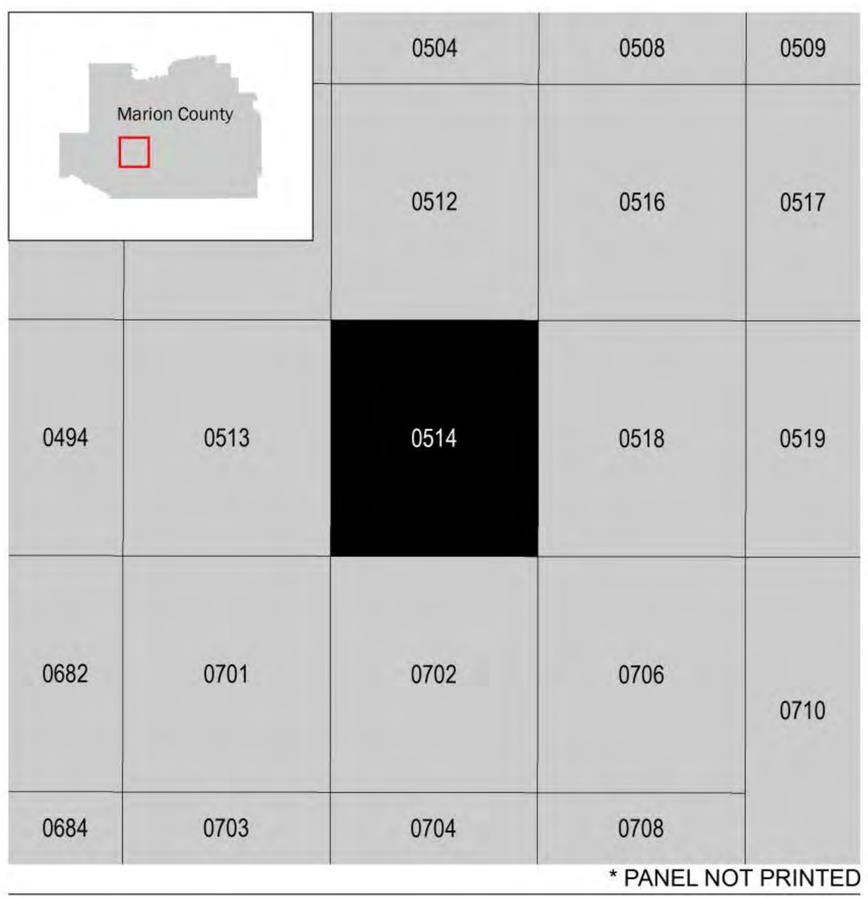
Map Projection:
Harn State Plane Transverse Mercator, Florida West Zone 0902;
North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD88

1 inch = 500 feet **1:6,000**

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



* PANEL NOT PRINTED

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

MARION COUNTY, FL
And Incorporated Areas

PANEL **514** OF **960**

Panel Contains:

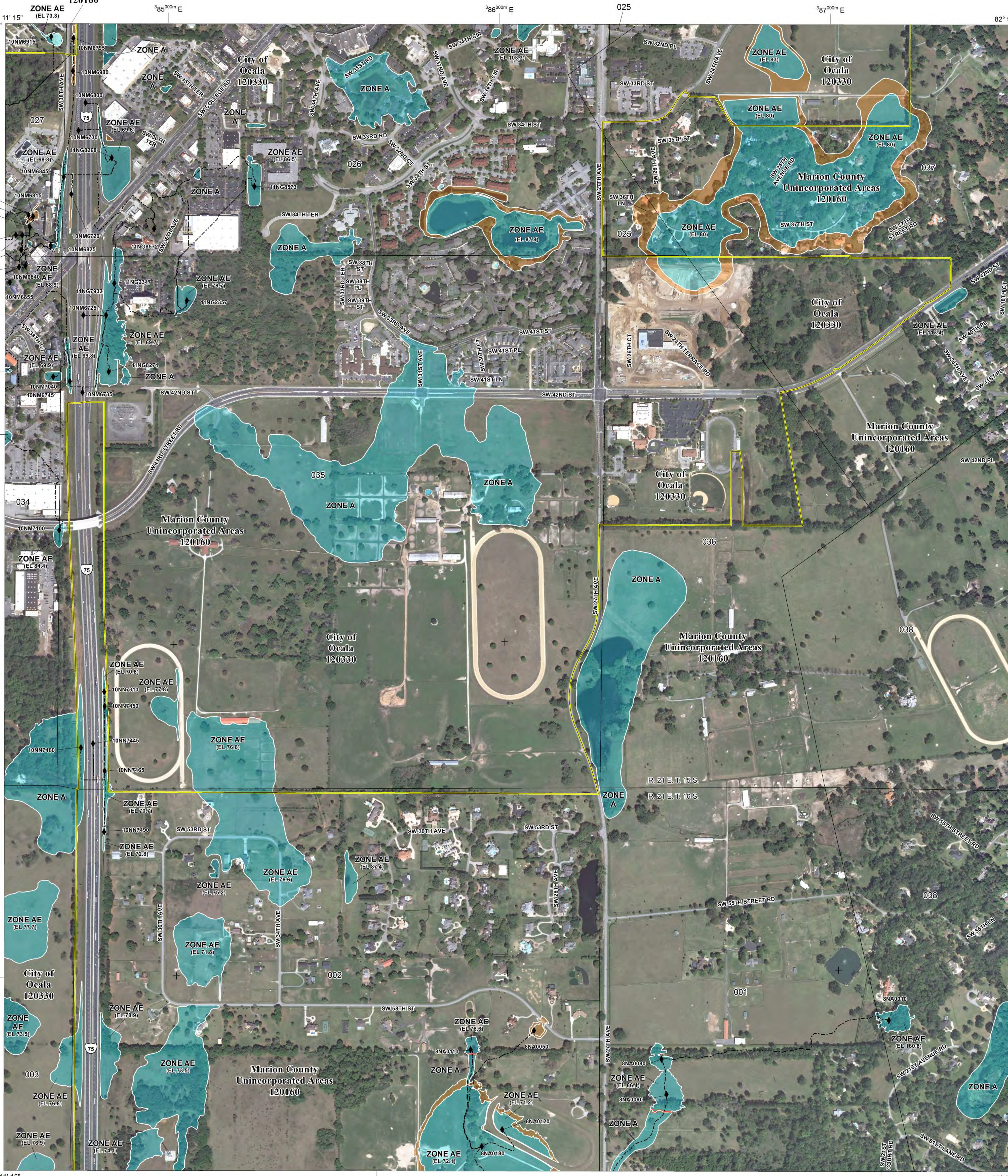
COMMUNITY	NUMBER	PANEL	SUFFIX
OCALA, CITY OF	120330	0514	E
MARION COUNTY	120160	0514	E

VERSION NUMBER
2.3.3.2

MAP NUMBER
12083C0514E

MAP REVISED
APRIL 19, 2017

Exhibit 3C



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) *Zone A, V, A99*
	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee See Notes *Zone X*
OTHER AREAS	NO SCREEN Areas of Minimal Flood Hazard *Zone X*
	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Accredited or Provisionally Accredited Levee, Dike, or Floodwall
	Non-accredited Levee, Dike, or Floodwall
	E 18.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	8 Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
OTHER FEATURES	Limit of Study
	Jurisdiction Boundary

NOTES TO USERS

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6	Martel	12	Marshall Swamp

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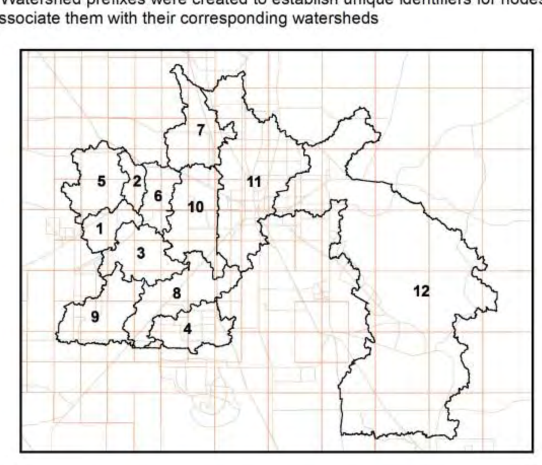


SCALE

Map Projection:
Harn State Plane Transverse Mercator, Florida West Zone 0902;
North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD88

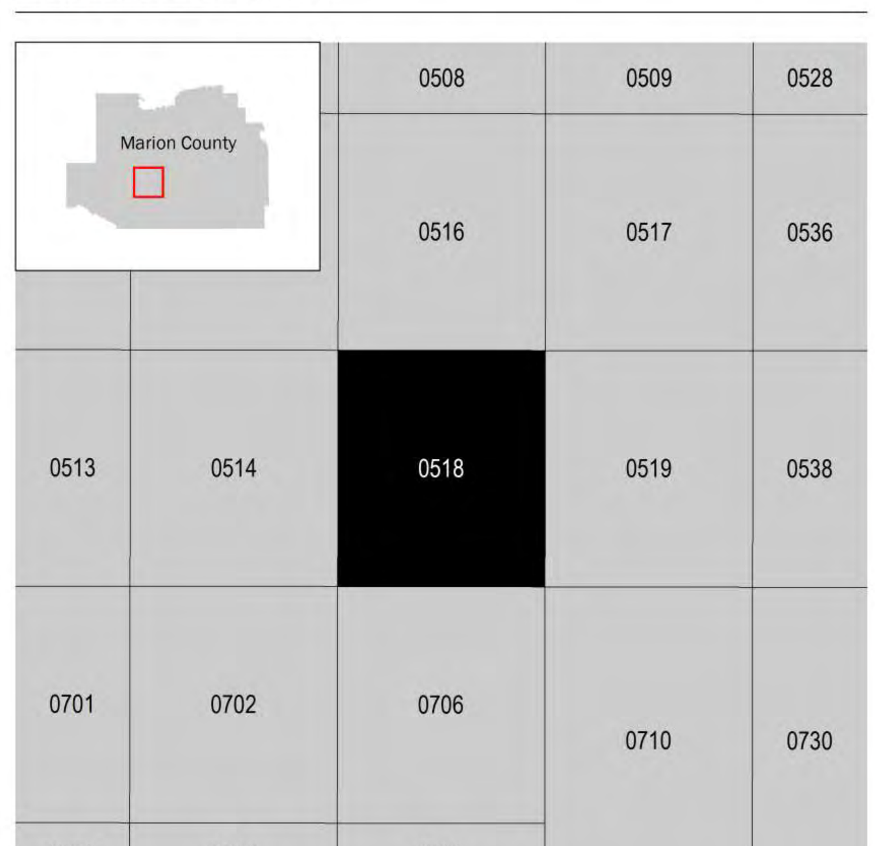
N

1 inch = 500 feet | 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



* PANEL NOT PRINTED

FEMA
National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

MARION COUNTY, FL
And Incorporated Areas

PANEL **518** OF **960**

FEMA

Panel Contains:

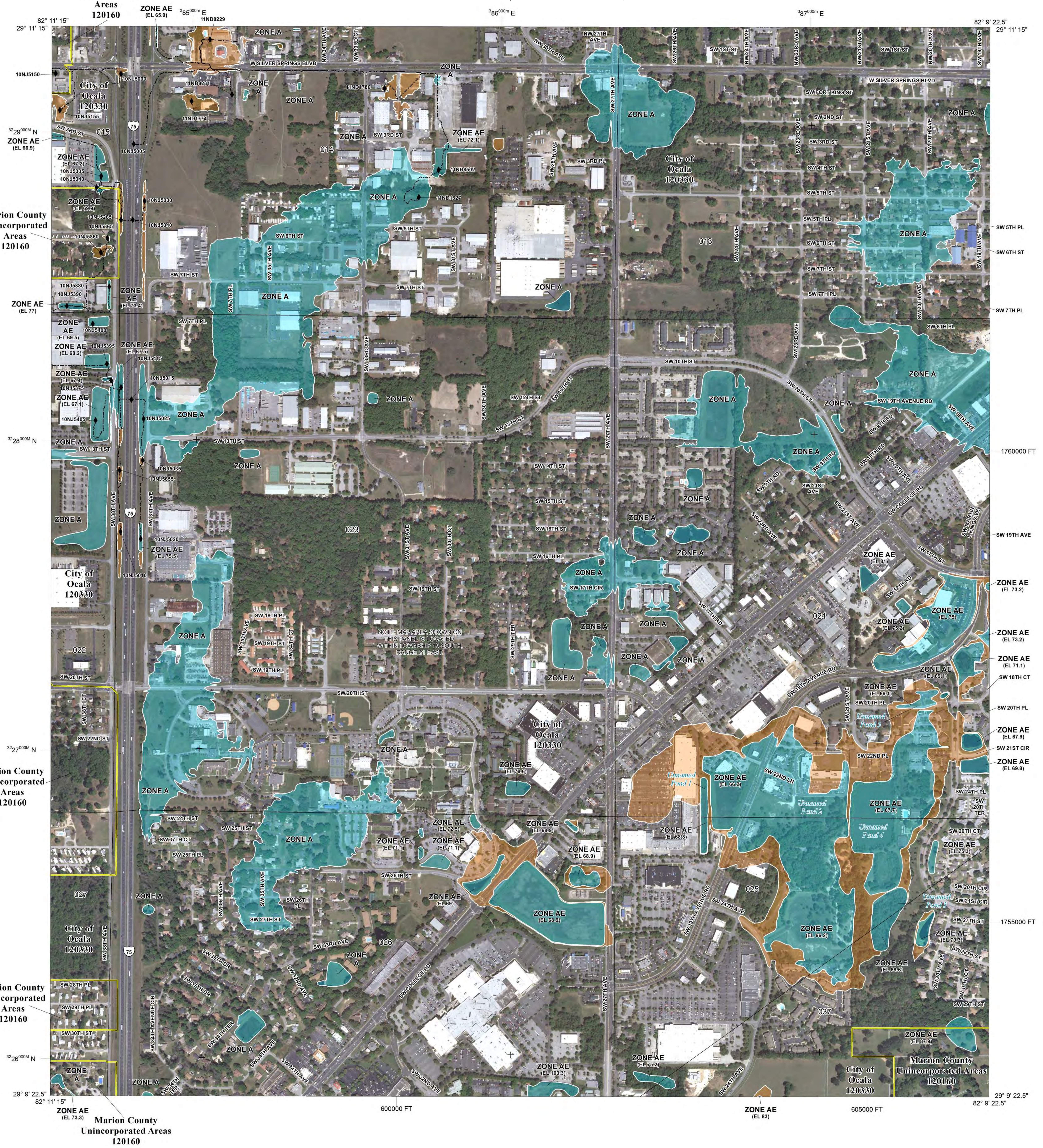
COMMUNITY	NUMBER	PANEL	SUFFIX
OCALA, CITY OF	120330	0518	E
MARION COUNTY	120160	0518	E

VERSION NUMBER
2.3.3.2

MAP NUMBER
12083C0518E

MAP REVISED
APRIL 19, 2017

Exhibit 3D



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) *Zone A,V, A99* With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee See Notes *Zone X*
OTHER AREAS	NO SCREEN Areas of Minimal Flood Hazard *Zone X*
	Area of Undetermined Flood Hazard *Zone D*
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	Accredited or Provisionally Accredited Levee, Dike, or Floodwall
	Non-accredited Levee, Dike, or Floodwall
	E 18.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	8 Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
	Limit of Study
OTHER FEATURES	Jurisdiction Boundary

NOTES TO USERS

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Hydraulic Connectivity - Flow pathway between junctions

Watershed Boundary Locator

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5	Hog Prarie	11	Florida Ridge
6	Martel	12	Marshall Swamp

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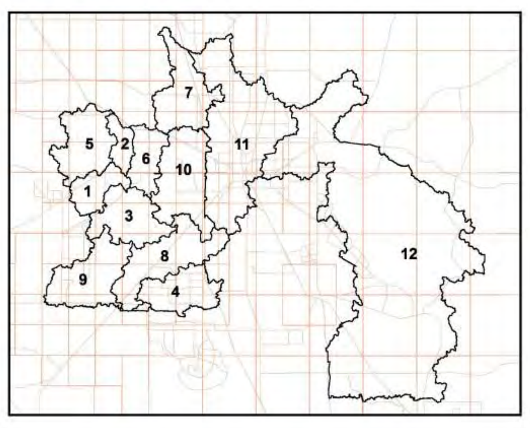


SCALE

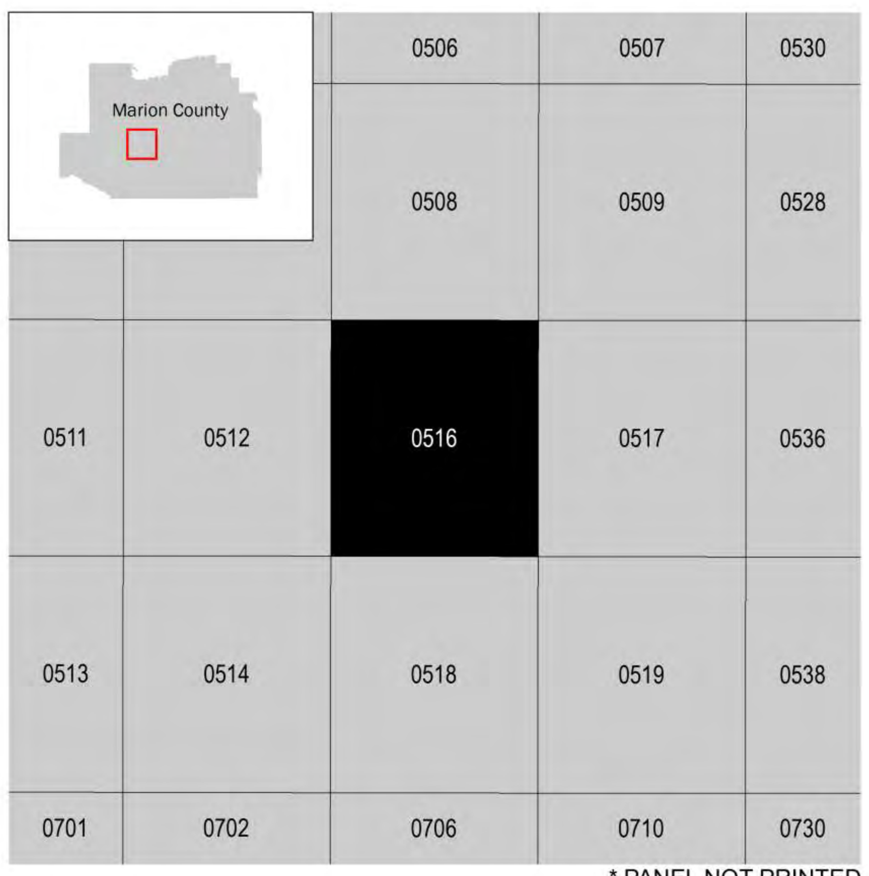
Map Projection:
Harn State Plane Transverse Mercator, Florida West Zone 0902; North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD88

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



* PANEL NOT PRINTED

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

MARION COUNTY, FL
And Incorporated Areas

PANEL **516** OF **960**

Panel Contains:

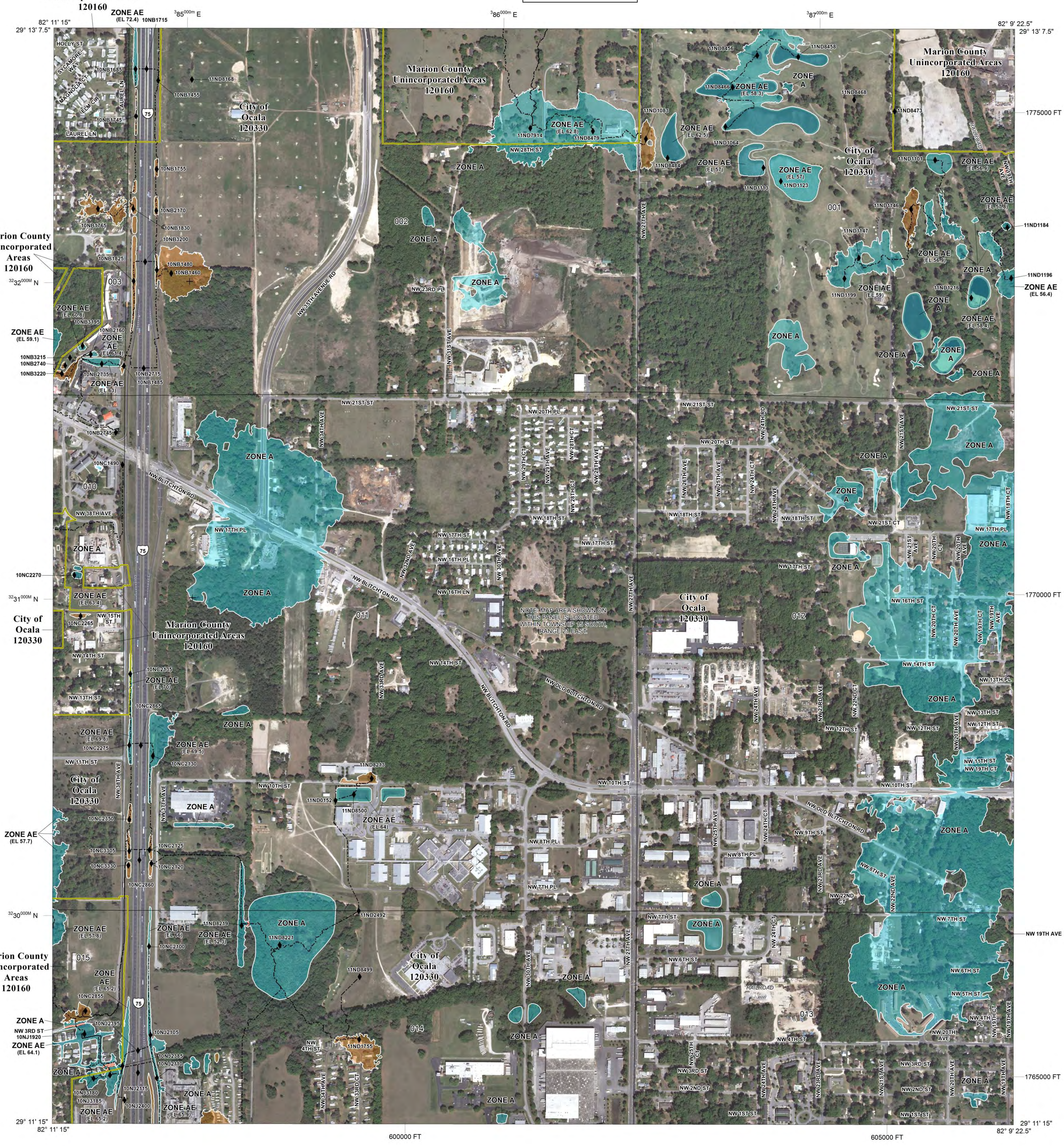
COMMUNITY	NUMBER	PANEL	SUFFIX
OCALA, CITY OF	120330	0516	E
MARION COUNTY	120160	0516	E

VERSION NUMBER
2.3.3.2

MAP NUMBER
12083C0516E

MAP REVISED
APRIL 19, 2017

Exhibit 3E



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

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HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A,V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*

OTHER AREAS
- NO SCREEN Areas of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Accredited or Provisionally Accredited Levee, Dike, or Floodwall
- Non-accredited Levee, Dike, or Floodwall

OTHER FEATURES
- E 18.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
- 8 Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

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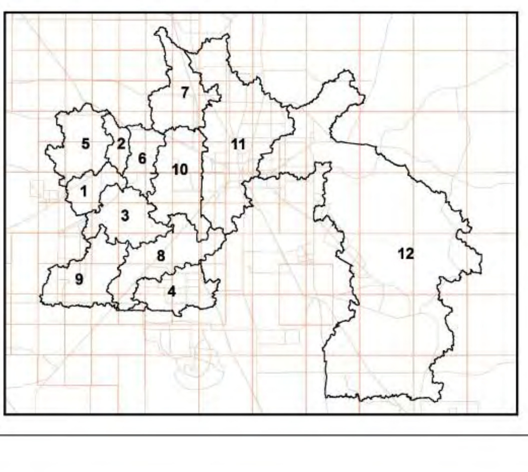


SCALE

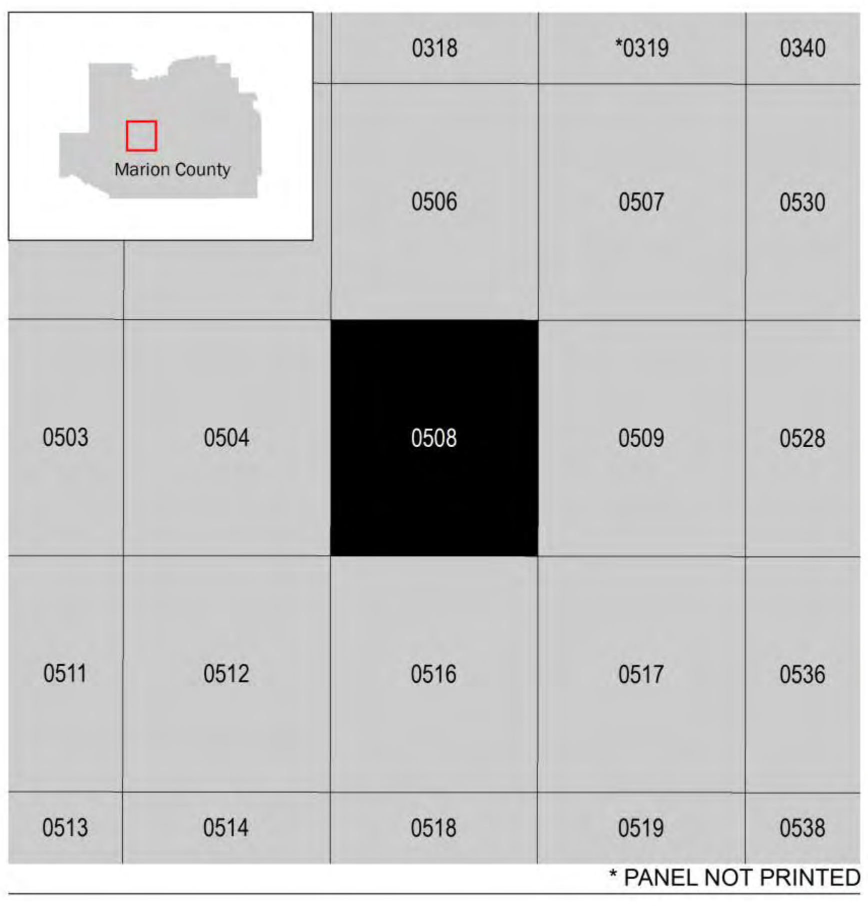
Map Projection:
Harn State Plane Transverse Mercator, Florida West Zone 0902;
North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD88

1 inch = 500 feet **1:6,000**

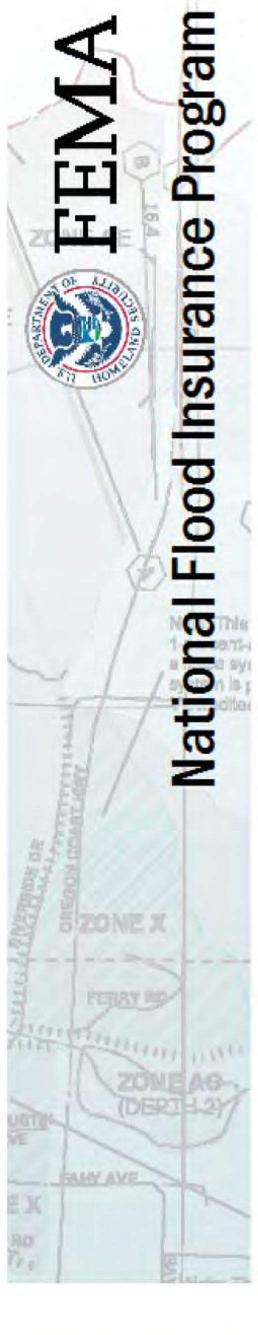
0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



* PANEL NOT PRINTED



NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

MARION COUNTY, FL
And Incorporated Areas

PANEL **508** OF **960**

FEMA

Panel Contains:

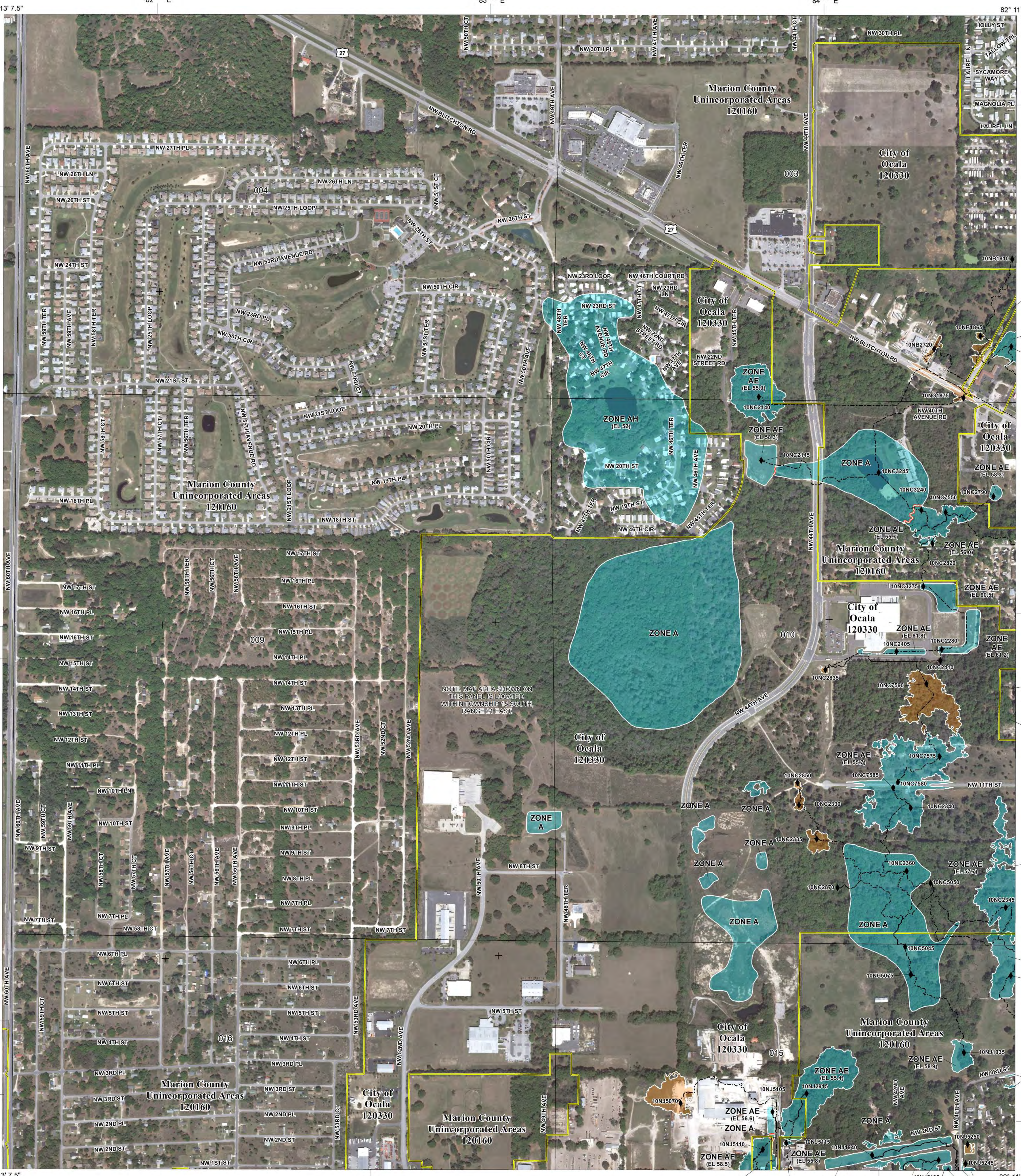
COMMUNITY	NUMBER	PANEL	SUFFIX
OCALA, CITY OF	120330	0508	E
MARION COUNTY	120160	0508	E

VERSION NUMBER
2.3.3.2

MAP NUMBER
12083C0508E

MAP REVISED
APRIL 19, 2017

Exhibit 3F



FLOOD HAZARD INFORMATION

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	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee See Notes *Zone X*
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	Area of Undetermined Flood Hazard *Zone D*
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	E 18.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	8 Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
OTHER FEATURES	Limit of Study
	Jurisdiction Boundary

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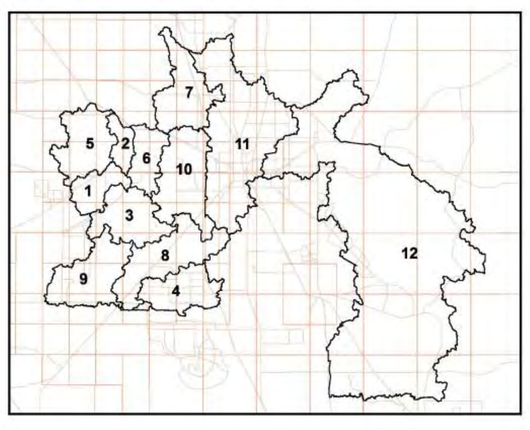


SCALE

Map Projection:
Harn State Plane Transverse Mercator, Florida West Zone 0902;
North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD88

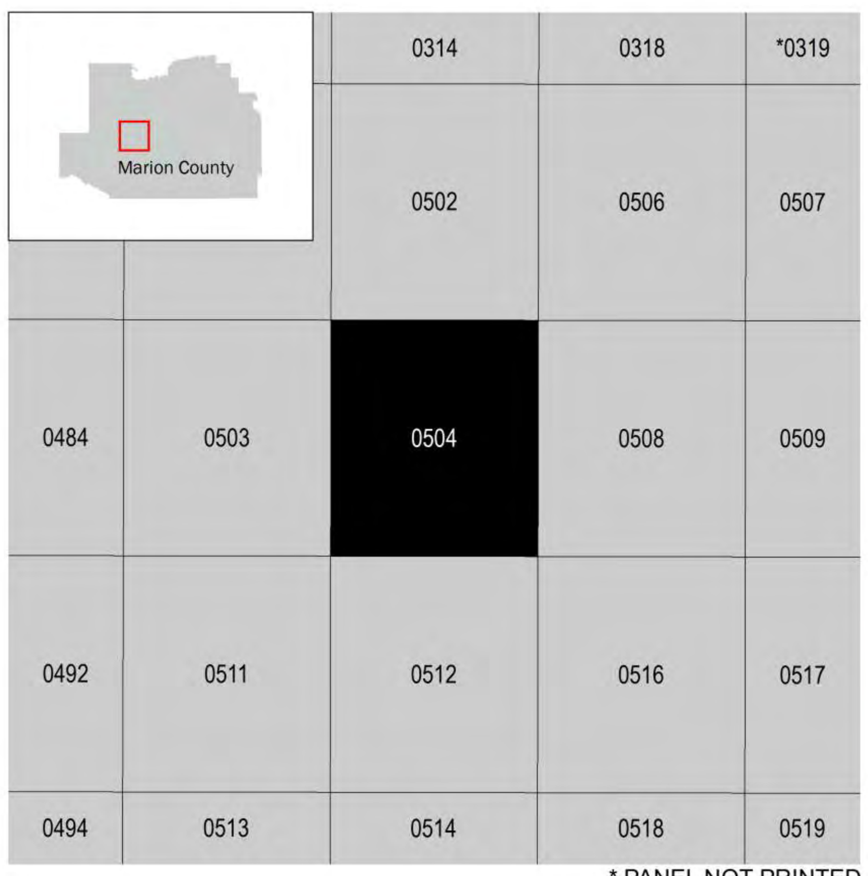
N

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



* PANEL NOT PRINTED

FEMA National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

MARION COUNTY, FL
And Incorporated Areas

PANEL 504 OF 960

FEMA

Panel Contains:

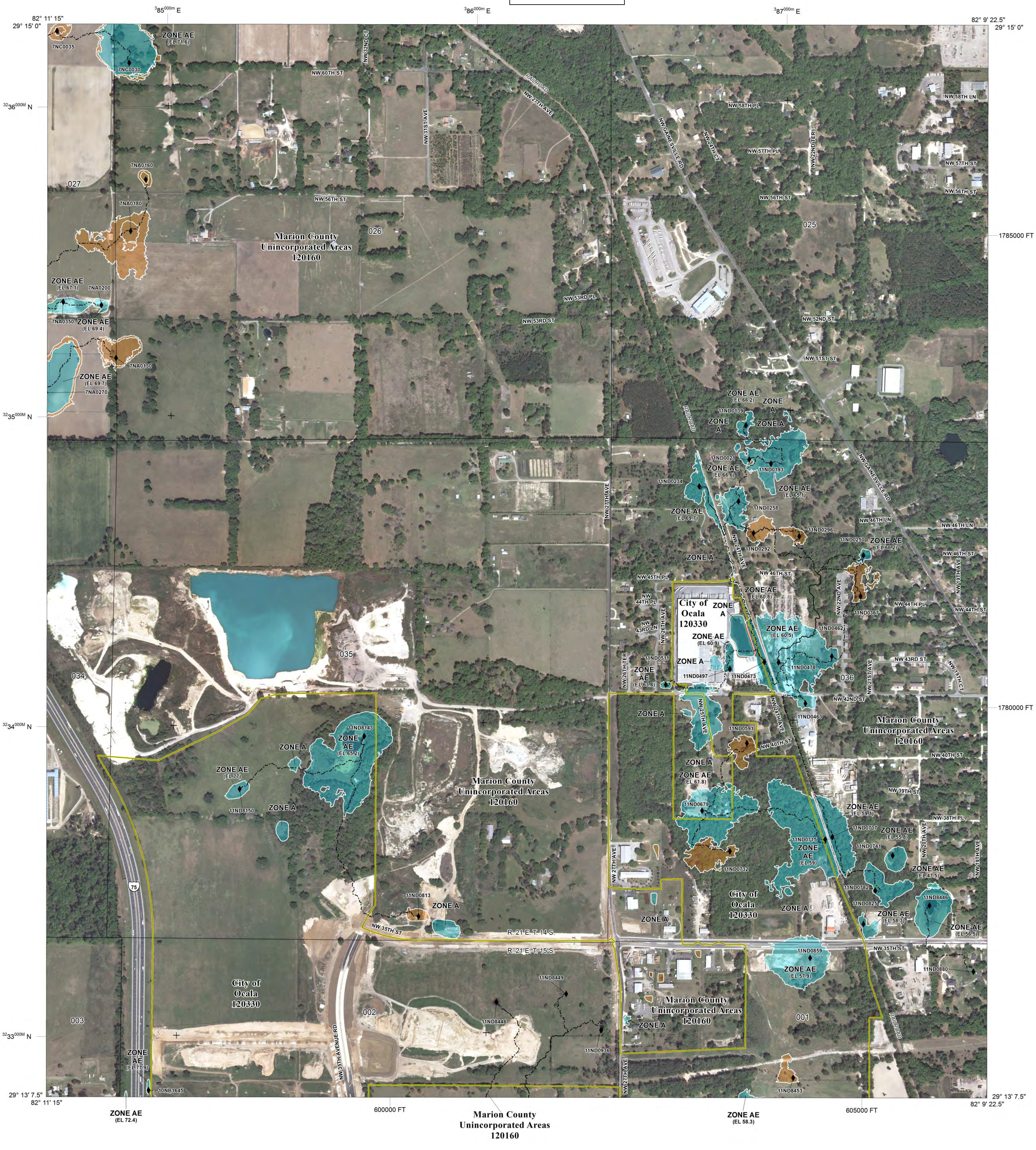
COMMUNITY	NUMBER	PANEL	SUFFIX
OCALA, CITY OF	120330	0504	E
MARION COUNTY	120160	0504	E

VERSION NUMBER
2.3.3.2

MAP NUMBER
12083C0504E

MAP REVISED
APRIL 19, 2017

Exhibit 3G



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*

NO SCREEN Areas of Minimal Flood Hazard *Zone X*

OTHER AREAS
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Accredited or Provisionally Accredited Levee, Dike, or Floodwall
- Non-accredited Levee, Dike, or Floodwall

OTHER FEATURES
- E 18.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
- 8 Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

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For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

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Base Map information shown on this FIRM was derived from multiple sources and was provided in digital format using source material at a scale of 1:24,000 or larger.

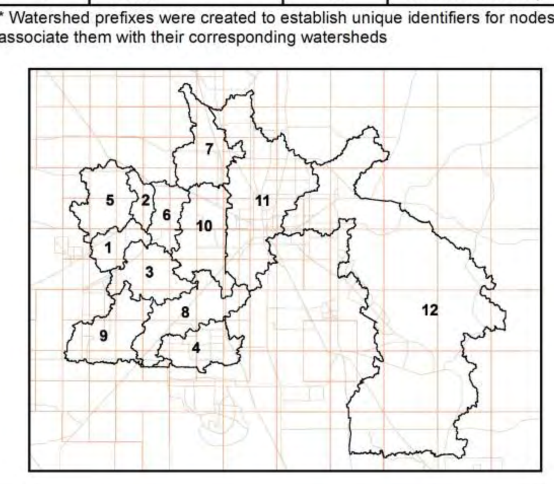
1NE0100 ♦ Junction - Points defining flow accumulation or hydraulic connectivity. The first character of the Junction name represents the specific watershed (as shown in the table below) in which the junction is located.

Hydraulic Connectivity - Flow pathway between junctions

Watershed Boundary Locator

PREFIX	WATERSHED	PREFIX	WATERSHED
1	Blichton	7	North West Ocala
2	Cotton Plant 1	8	State Road 200
3	Cotton Plant 2	9	Withlacoochee
4	Cotton Plant 3	10	West Ocala
5	Hog Prarie	11	Florida Ridge
6	Martel	12	Marshall Swamp

* Watershed prefixes were created to establish unique identifiers for nodes and associate them with their corresponding watersheds



SCALE

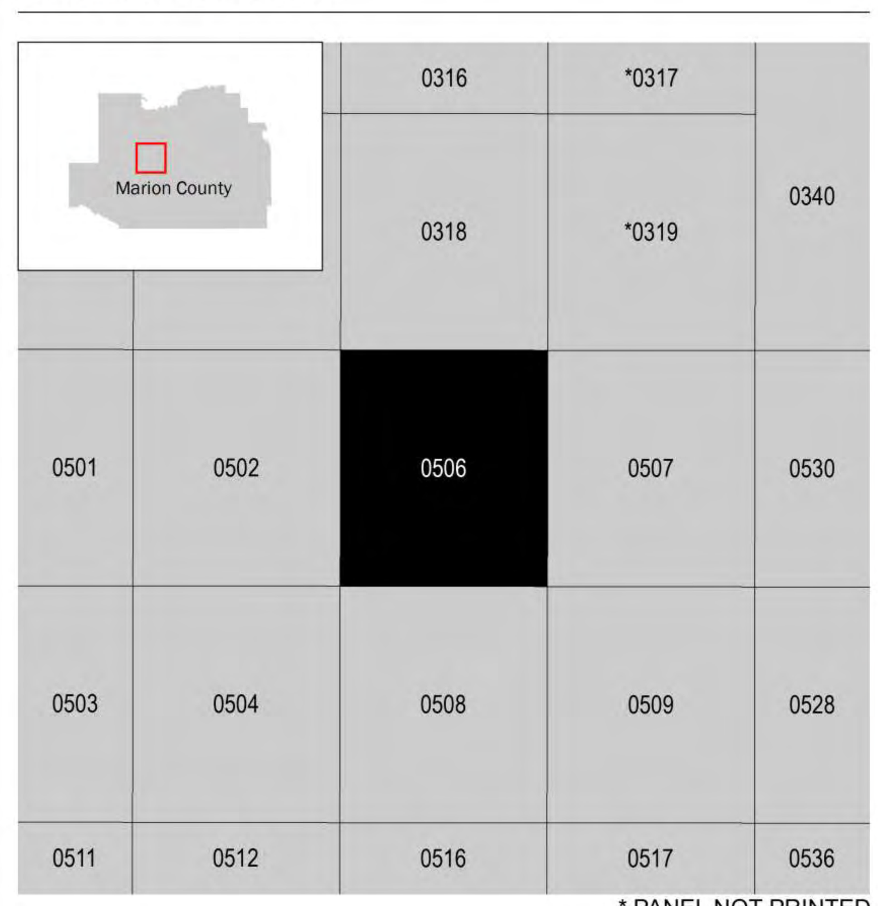
Map Projection:
Harn State Plane Transverse Mercator, Florida West Zone 0902;
North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD88

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



* PANEL NOT PRINTED

FEMA
National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

MARION COUNTY, FL
And Incorporated Areas

PANEL **506** OF **960**

FEMA

Panel Contains:

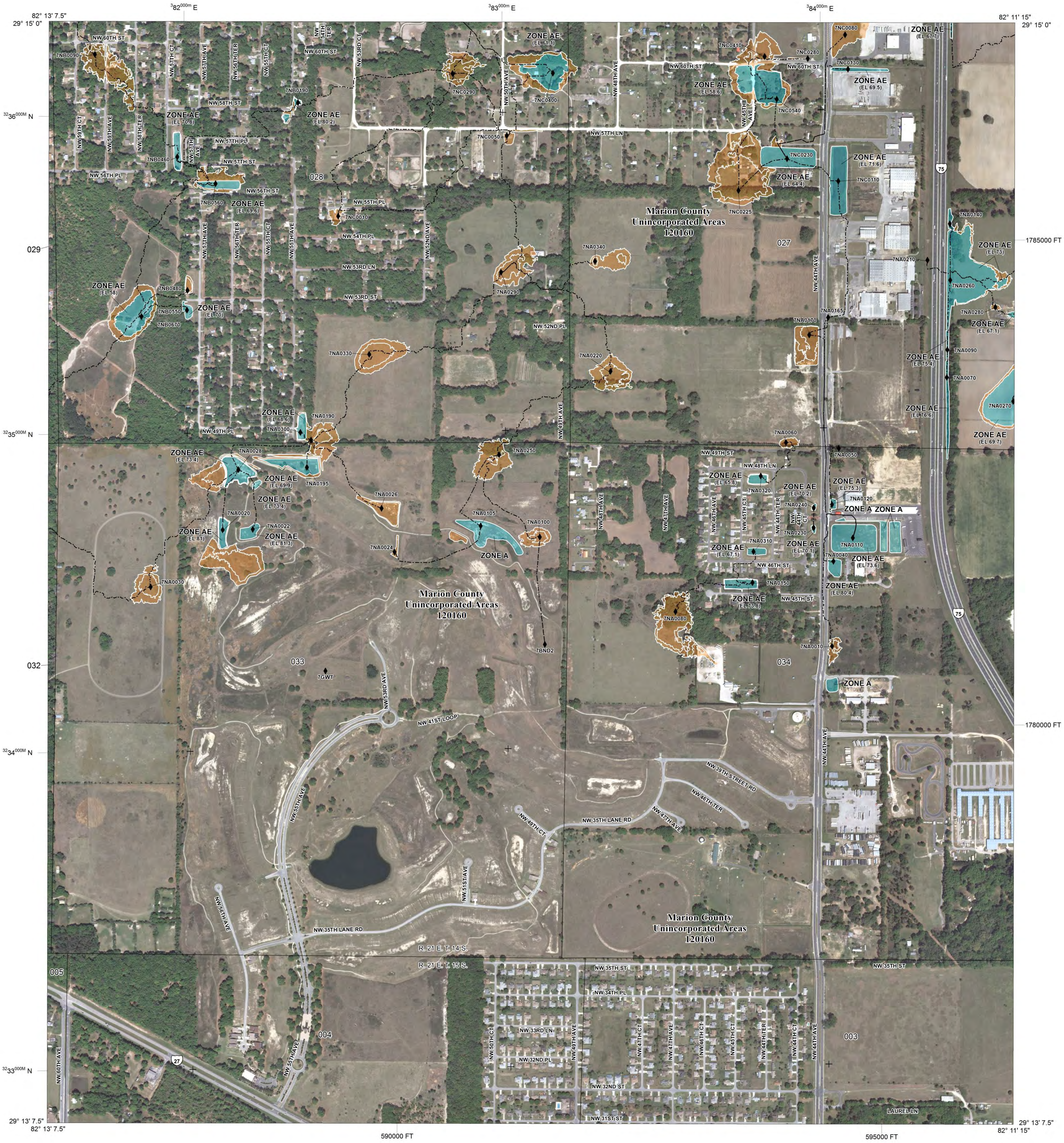
COMMUNITY	NUMBER	PANEL	SUFFIX
OCALA, CITY OF	120330	0506	E
MARION COUNTY	120160	0506	E

VERSION NUMBER
2.3.3.2

MAP NUMBER
12083C0506E

MAP REVISED
APRIL 19, 2017

Exhibit 3H



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

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HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) *Zone A,V, A99* With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee See Notes *Zone X*
OTHER AREAS	NO SCREEN Areas of Minimal Flood Hazard *Zone X*
	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Accredited or Provisionally Accredited Levee, Dike, or Floodwall
	Non-accredited Levee, Dike, or Floodwall
	E 18.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	8 Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
OTHER FEATURES	Limit of Study
	Jurisdiction Boundary

NOTES TO USERS

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Hydraulic Connectivity - Flow pathway between junctions

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PREFIX	WATERSHED	PREFIX	WATERSHED
1	Blichton	7	North West Ocala
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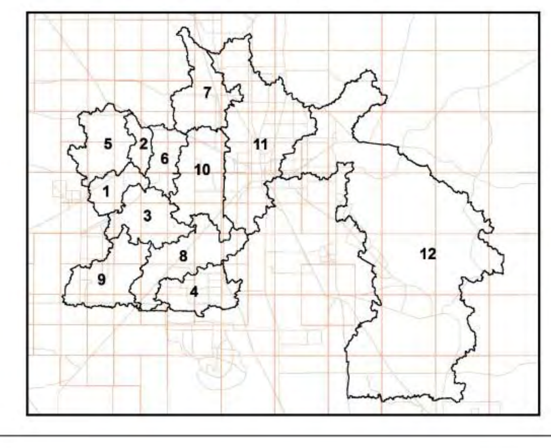
5	Hog Prarie	11	Florida Ridge
6	Martel	12	Marshall Swamp

* Watershed prefixes were created to establish unique identifiers for nodes and associate them with their corresponding watersheds



SCALE

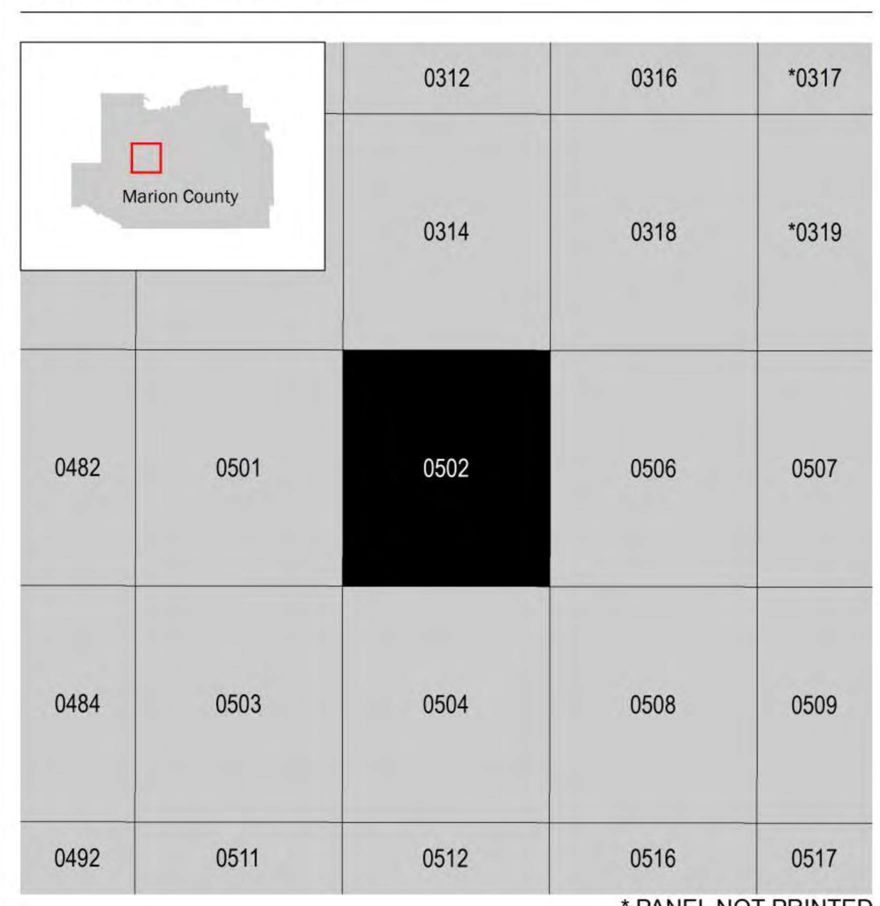
Map Projection:
Harn State Plane Transverse Mercator, Florida West Zone 0902;
North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD88

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



* PANEL NOT PRINTED

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

MARION COUNTY, FL
And Incorporated Areas

PANEL **502** OF **960**

Panel Contains:

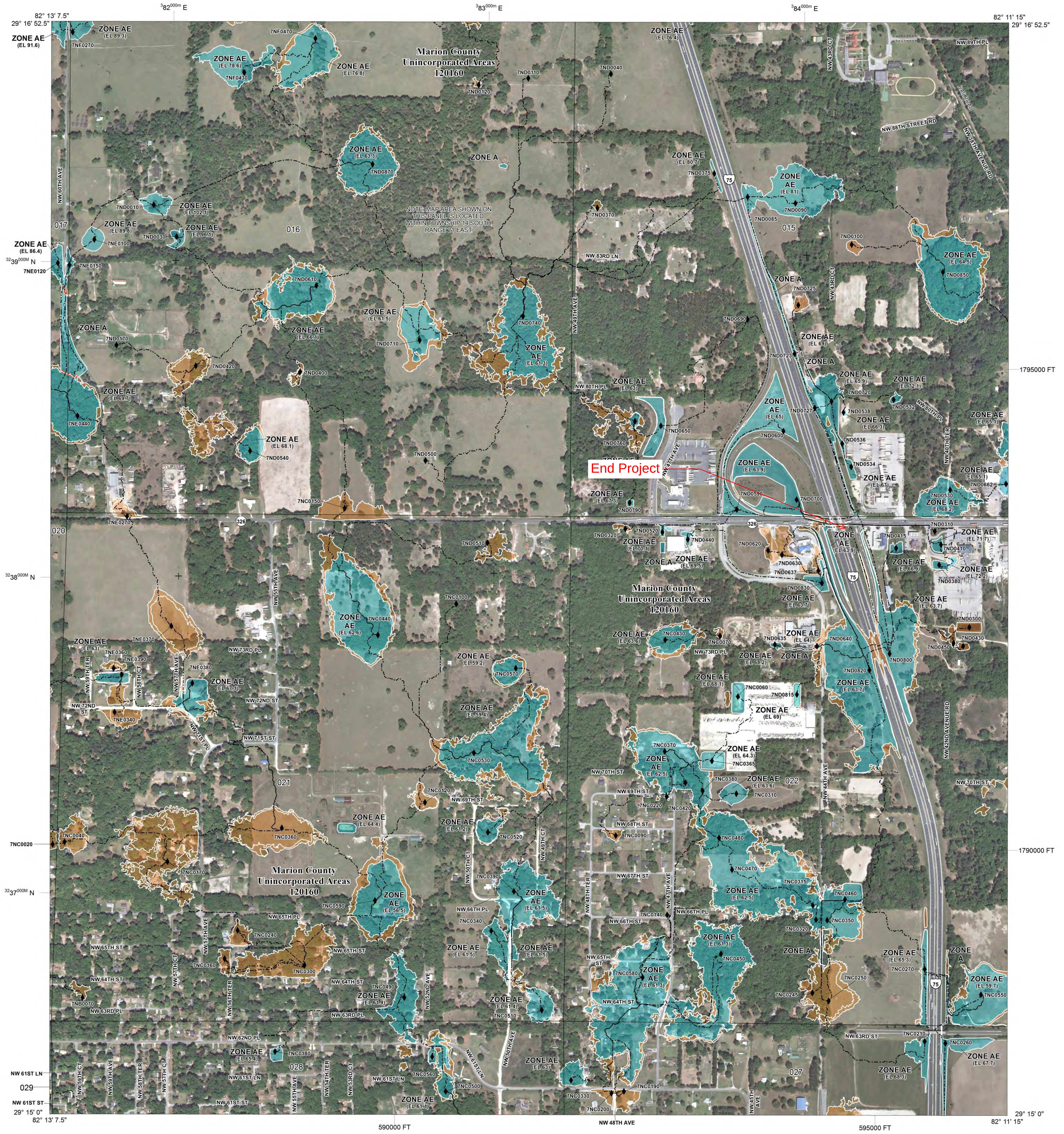
COMMUNITY	NUMBER	PANEL	SUFFIX
MARION COUNTY	120160	0502	E

VERSION NUMBER
2.3.3.2

MAP NUMBER
12083C0502E

MAP REVISED
APRIL 19, 2017

Exhibit 3I



FLOOD HAZARD INFORMATION

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	Accredited or Provisionally Accredited Levee, Dike, or Floodwall
	Non-accredited Levee, Dike, or Floodwall
OTHER FEATURES	(E) 18.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	(8) Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary

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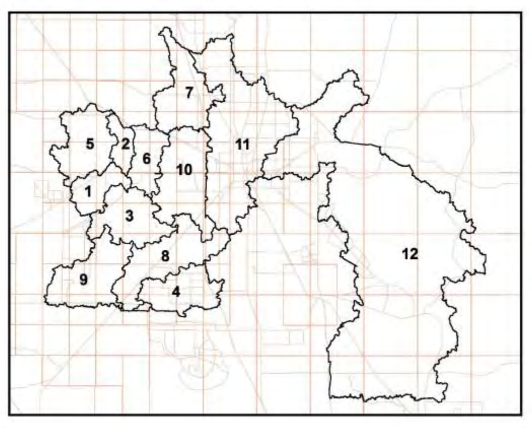


SCALE

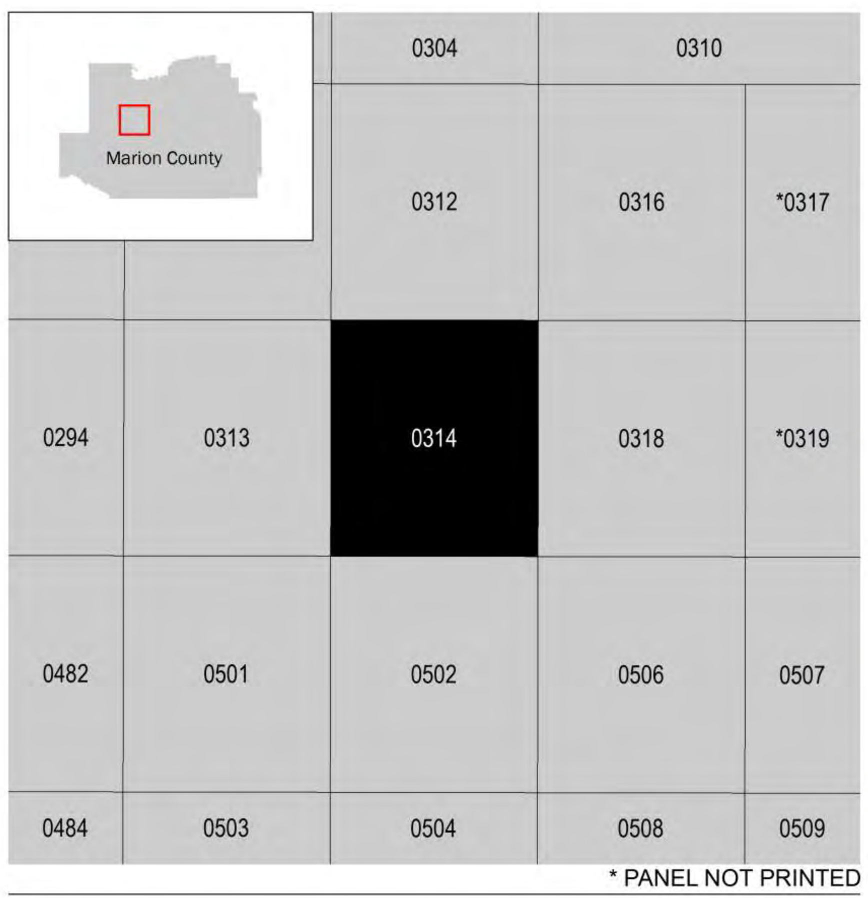
Map Projection:
Harn State Plane Transverse Mercator, Florida West Zone 0902;
North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD88

1 inch = 500 feet **1:6,000**

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



* PANEL NOT PRINTED

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

MARION COUNTY, FL
And Incorporated Areas

PANEL **314** OF **960**

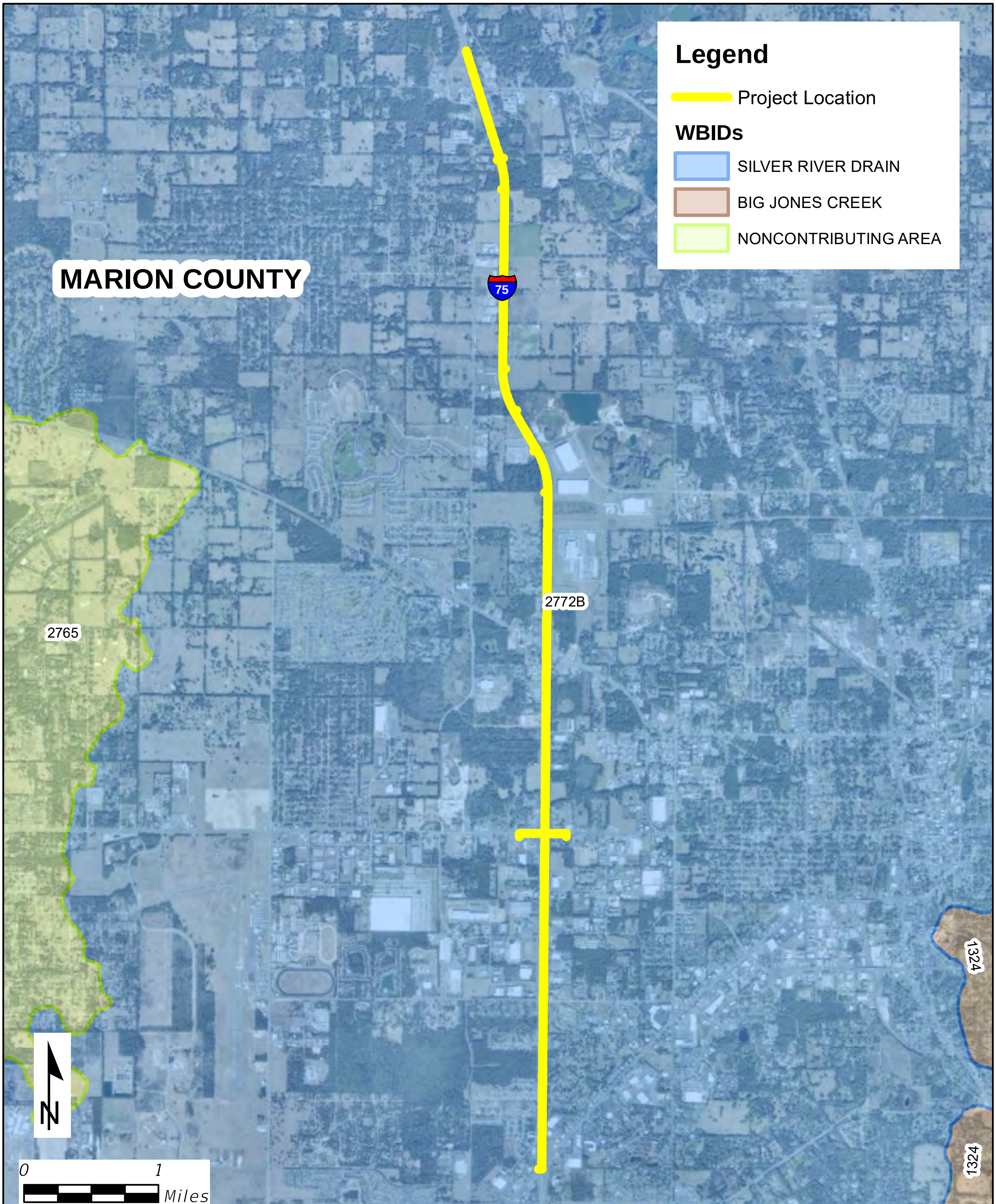
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARION COUNTY	120160	0314	E

VERSION NUMBER
2.3.3.2

MAP NUMBER
12083C0314E

MAP REVISED
APRIL 19, 2017



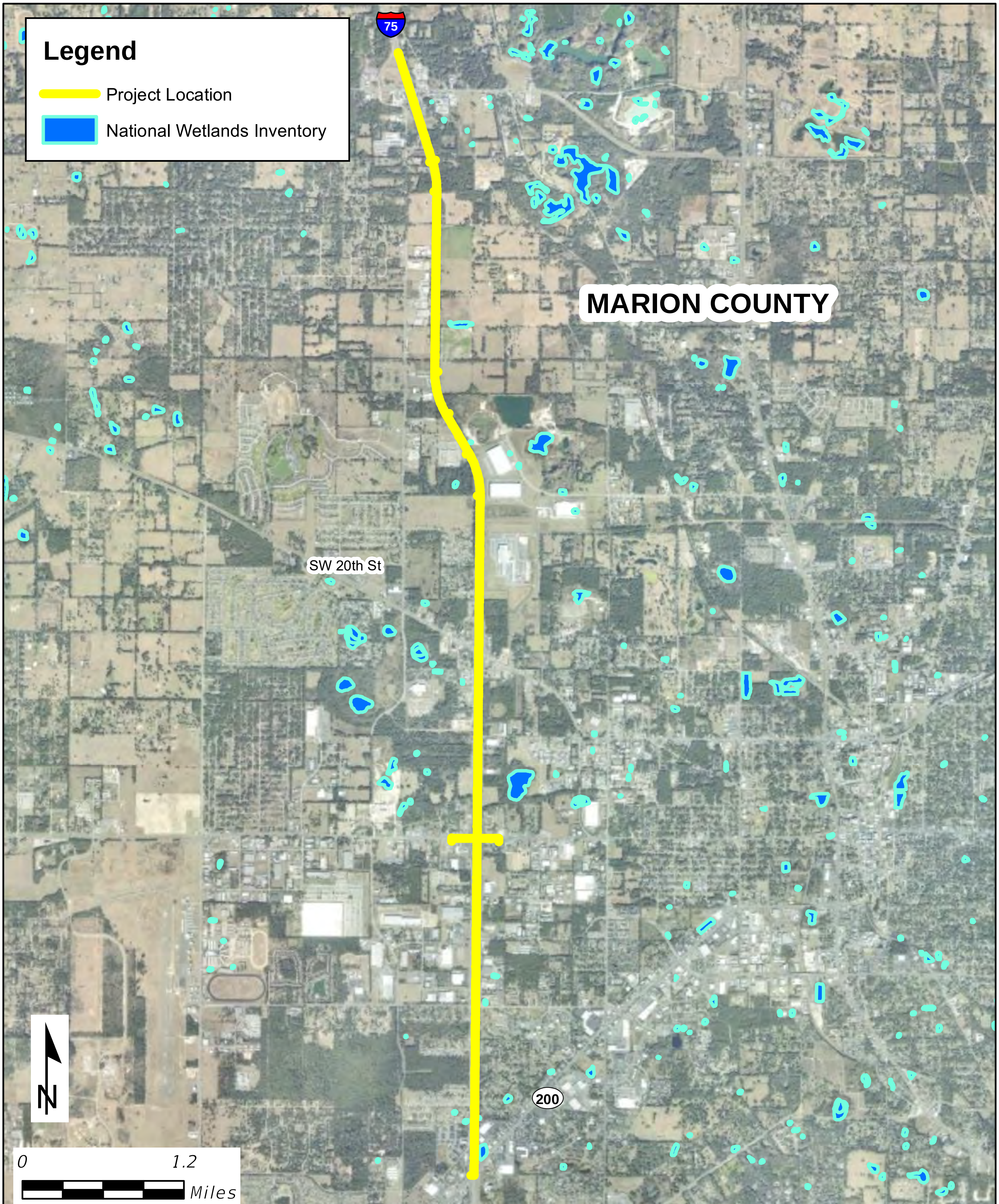
FDOT

Patel, Greene & Associates, LLC
12570 Telecom Drive
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

WBID Map

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 4 of 36 | Date: 1/31/2024



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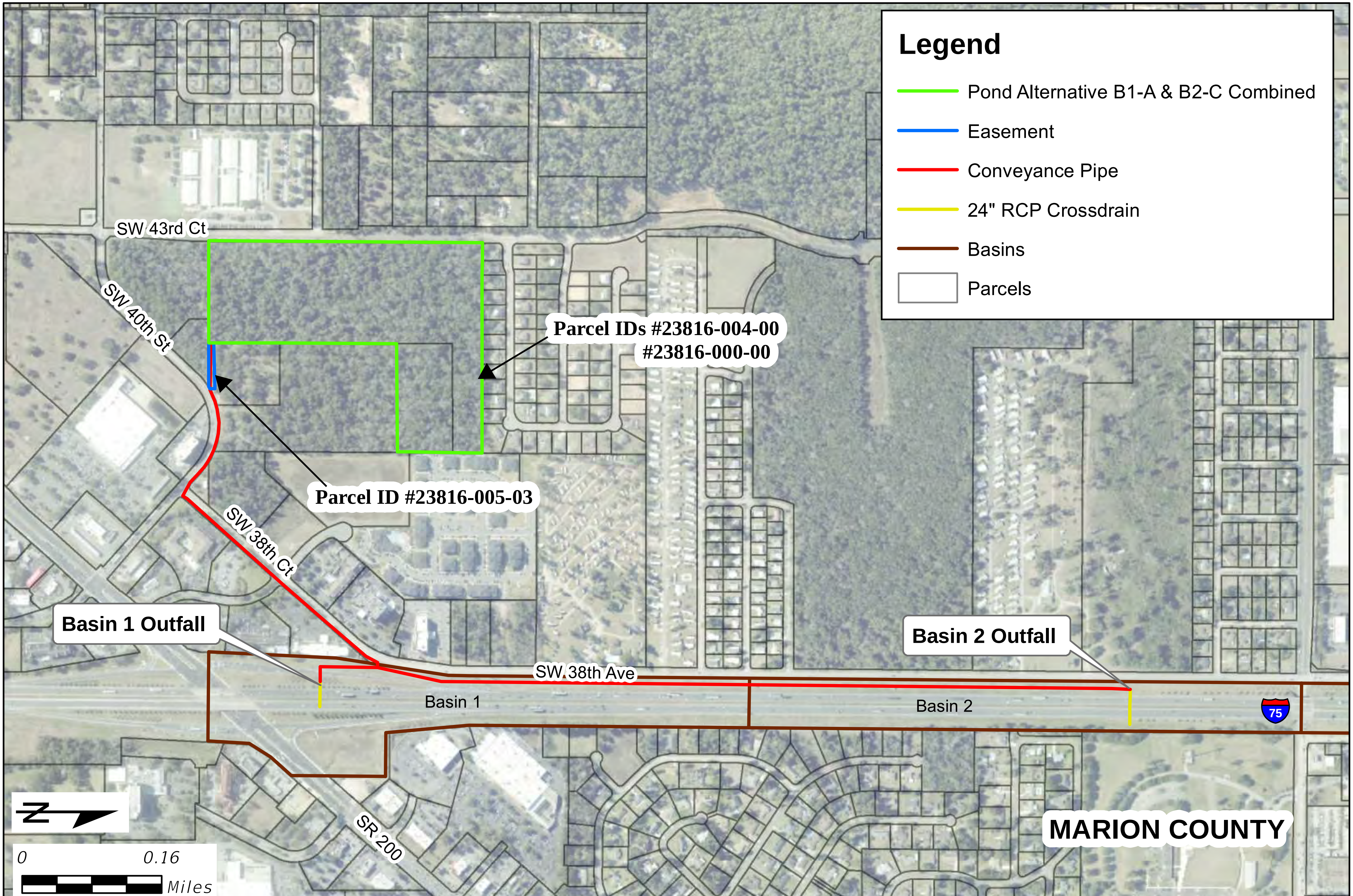
Michael A. Holt, PE # 76111

Wetlands Map

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 5 of 36 | Date: 1/31/2024



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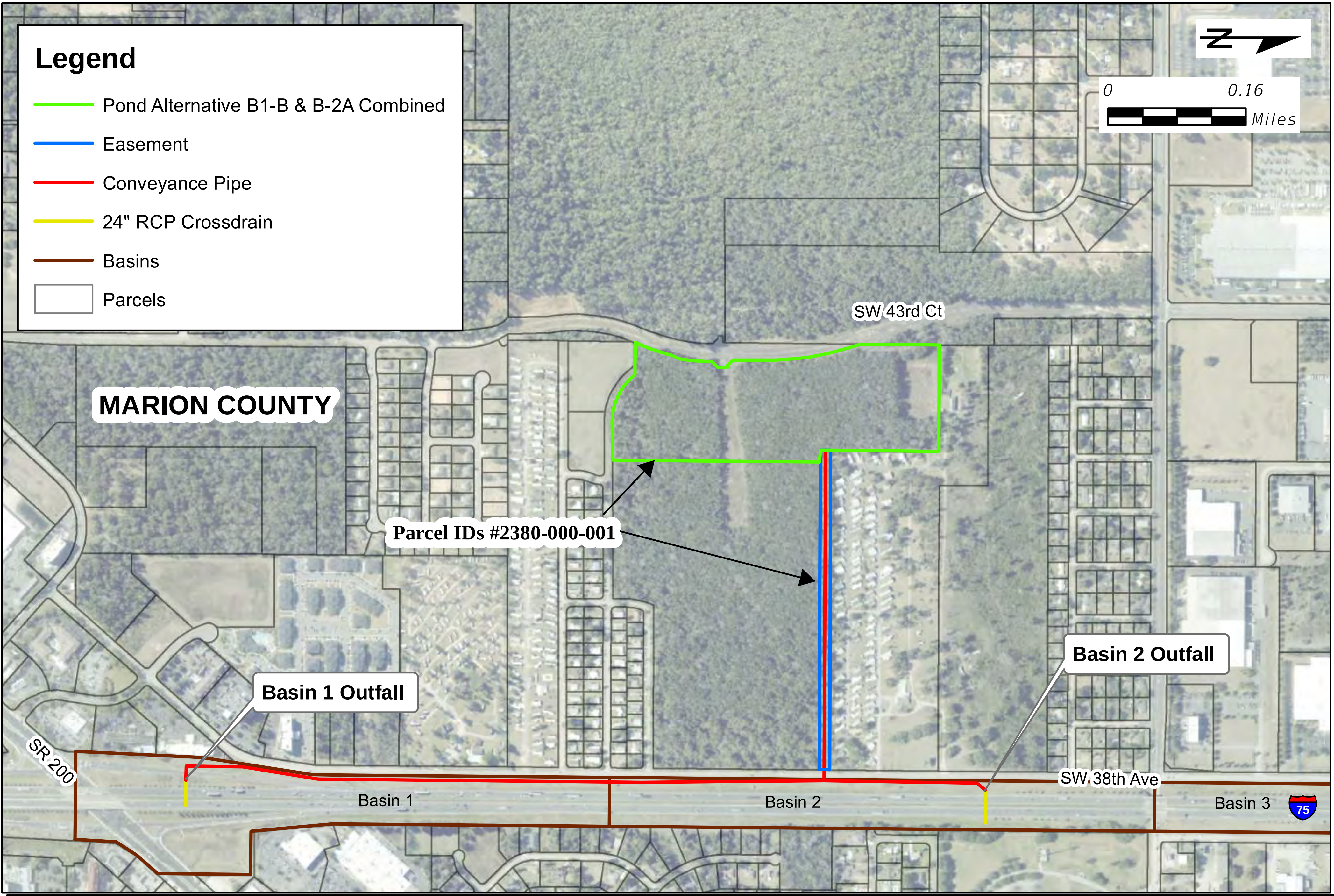
12570 Telecom Drive
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

Pond Alternative B1-A & B2-C Combined

Auxiliary Lanes at I-75



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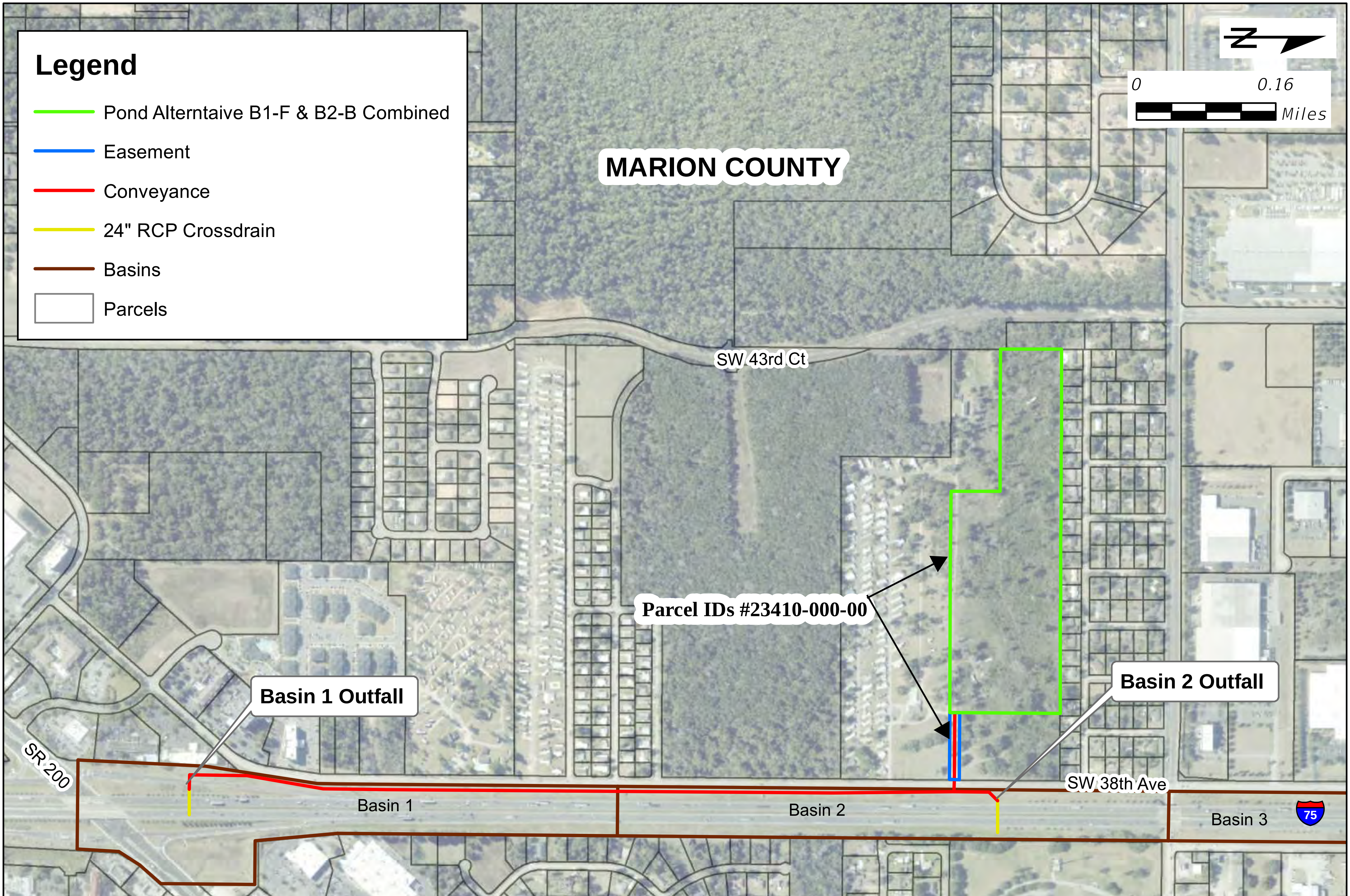
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

Pond Alternative B1-B & B2-A Combined

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 *Exhibit 7 of 36* *Date: 1/31/2024*



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Michael A. Holt, PE # 76111

Pond Alternative B1-F & B2-B Combined

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 8 of 36 | Date: 1/31/2024

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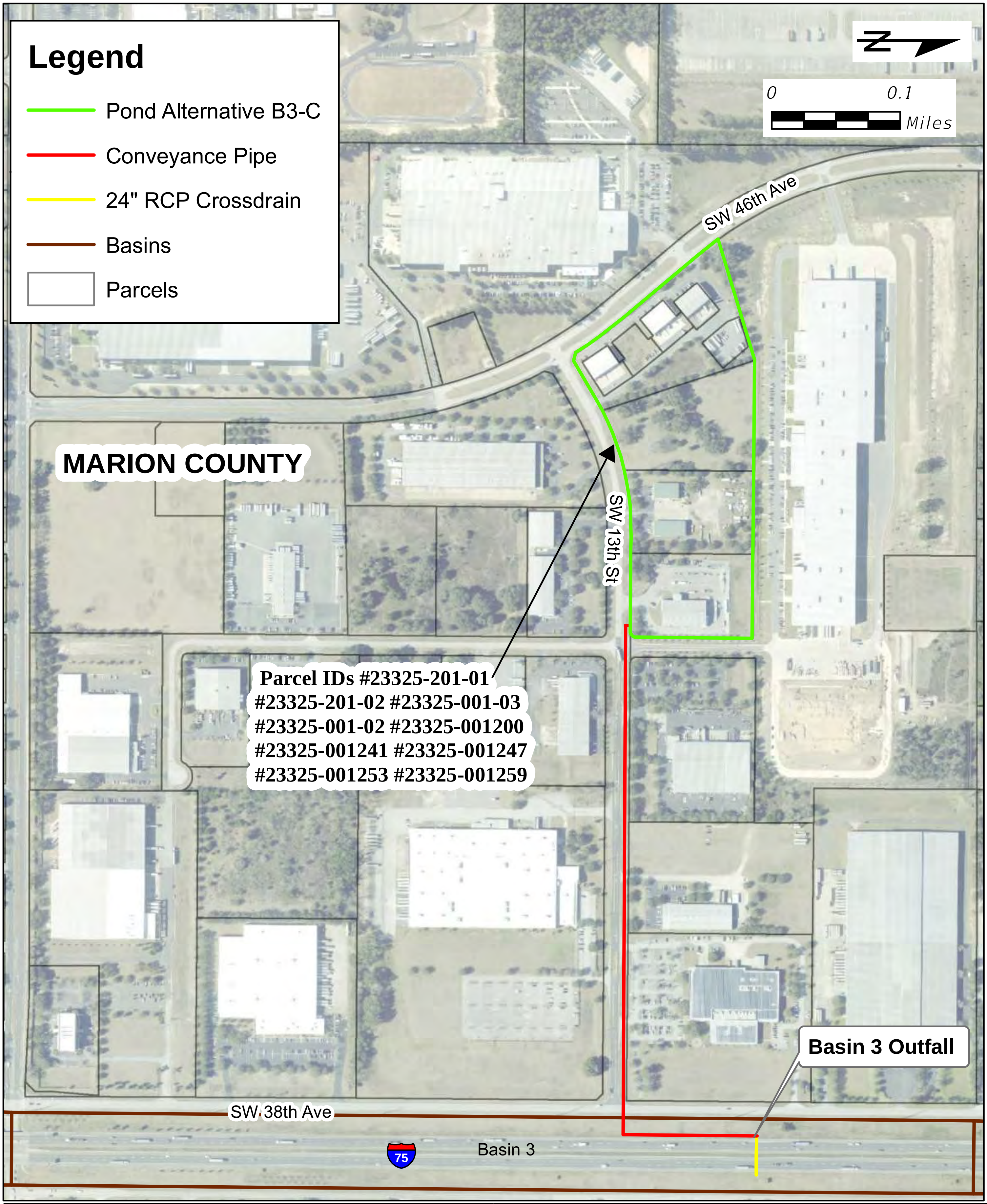
Michael A. Holt, PE # 76111

Pond Alternative B3-B

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 9 of 36 | Date: 1/31/2024



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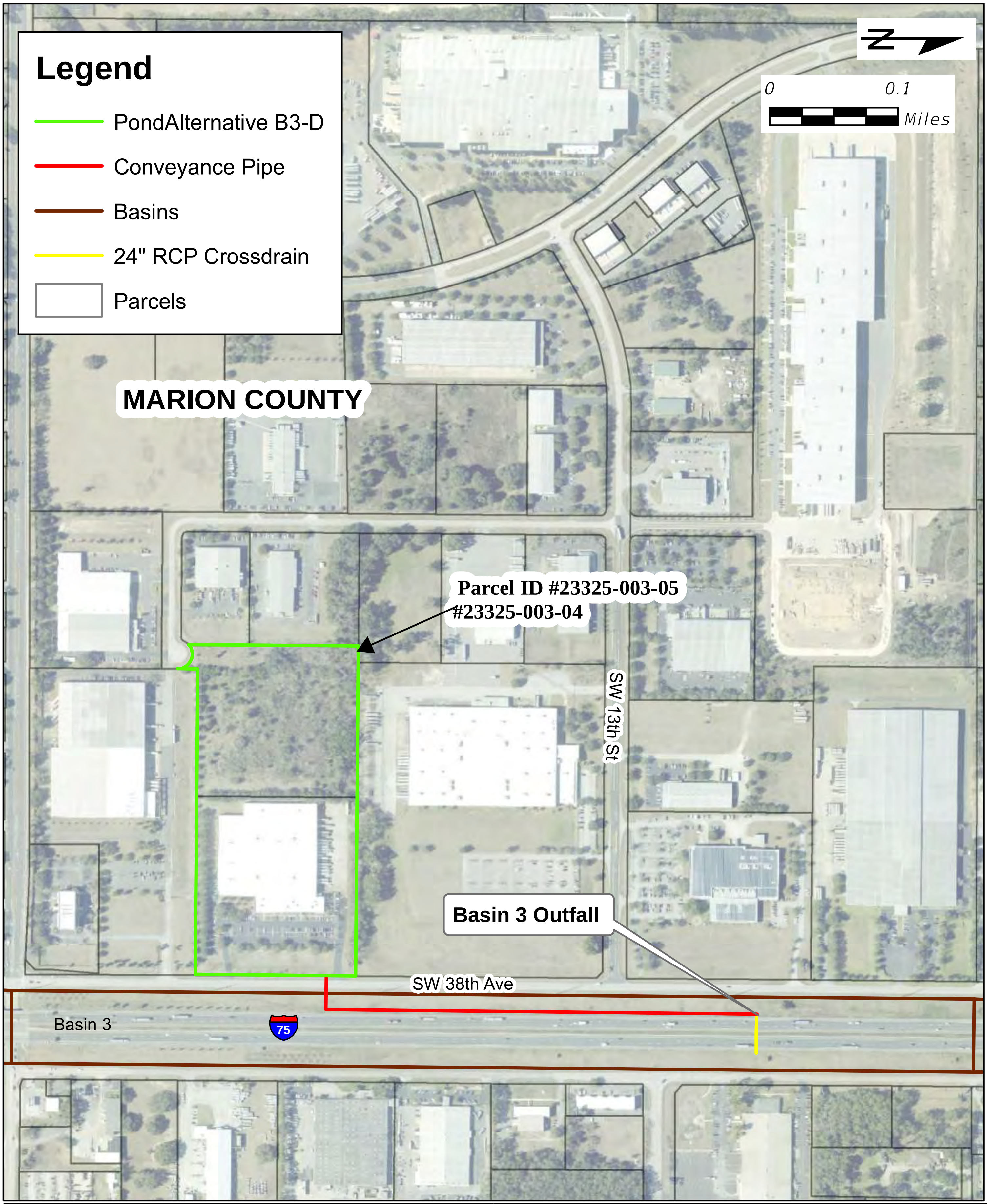
Pond Alternative B3-C

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 10 of 36 | Date: 1/31/2024



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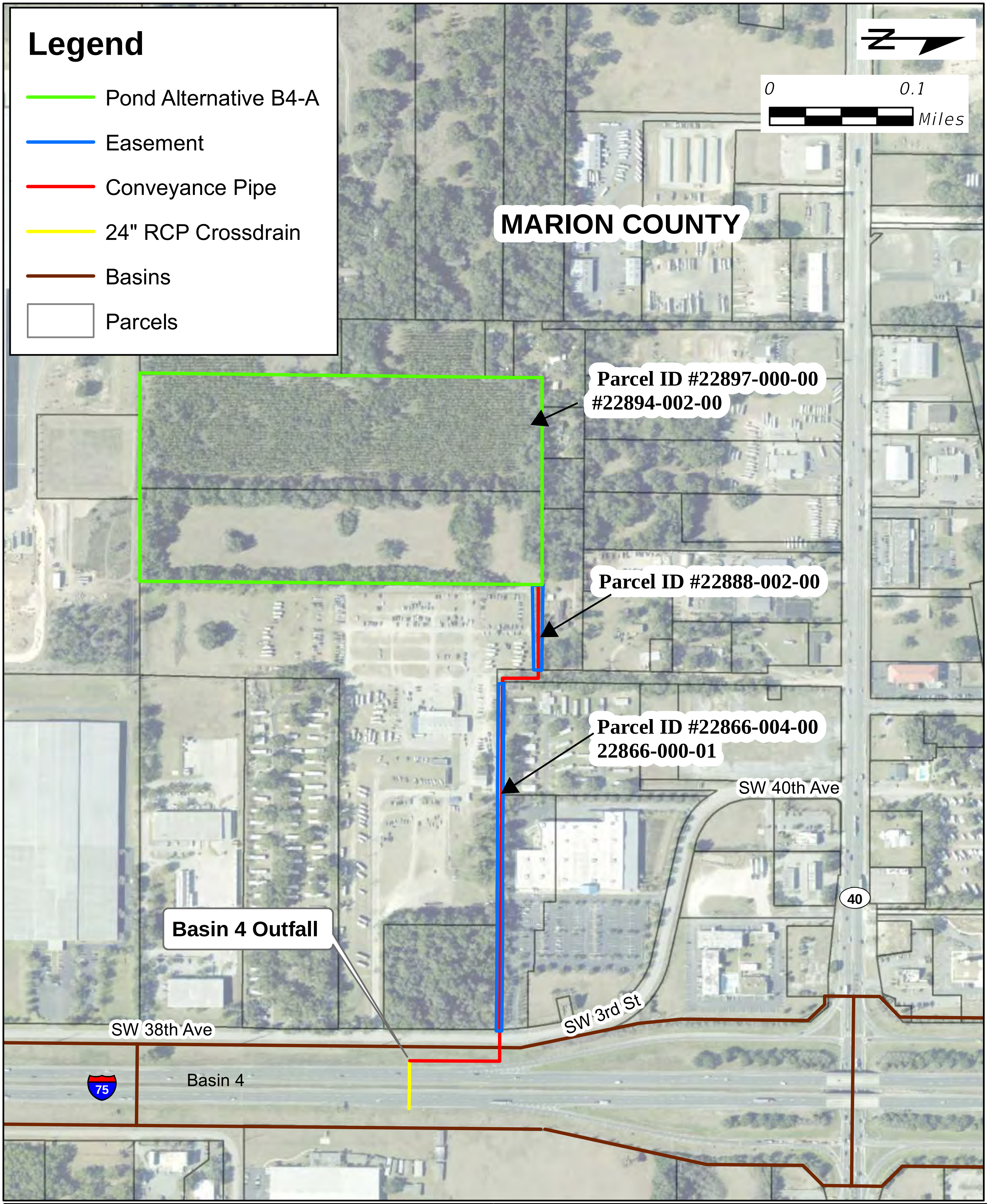
Pond Alternative B3-D

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 *Exhibit 11 of 36* *Date: 1/31/2024*



FDOT

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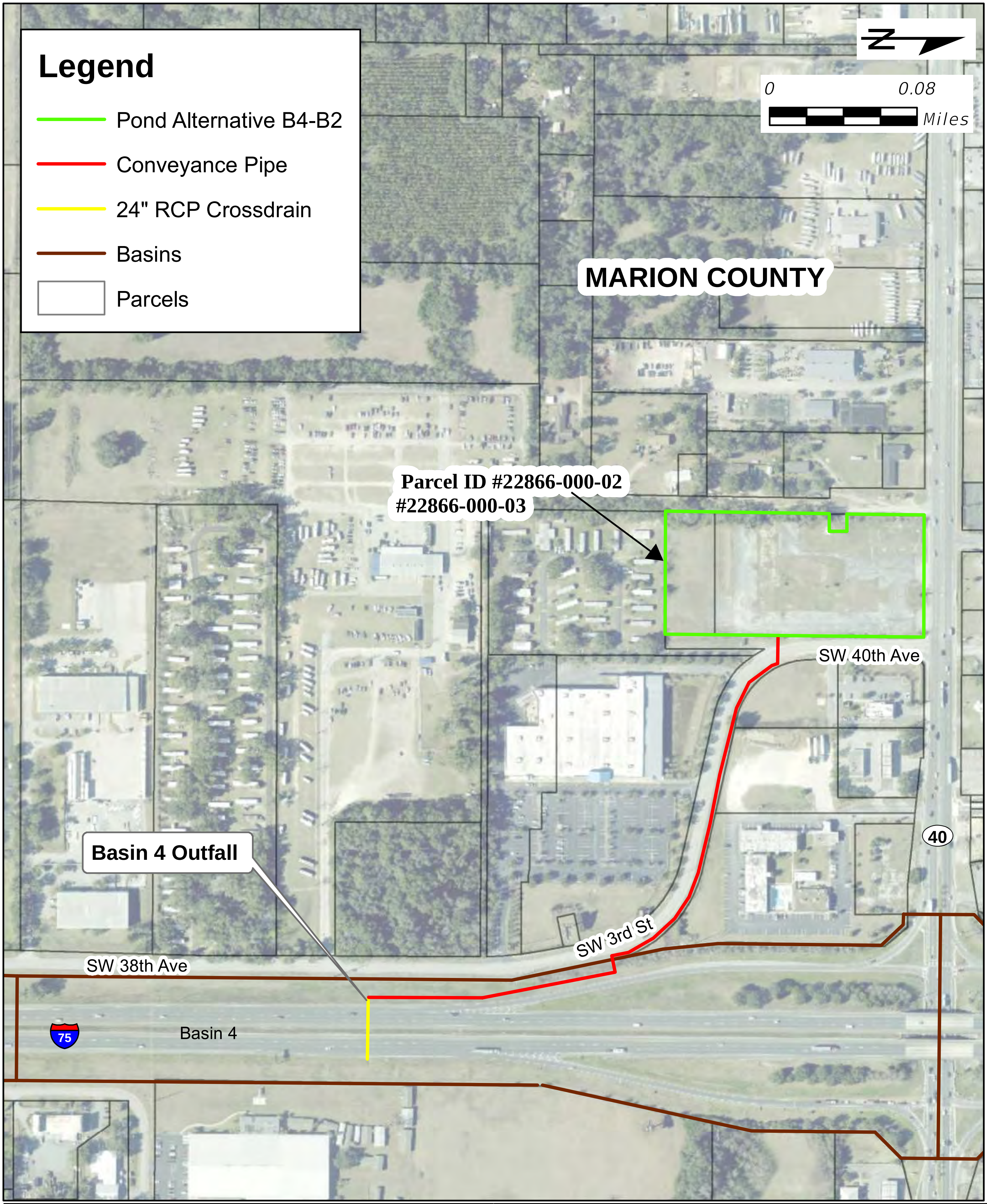
Pond Alternative B4-A

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 12 of 36 | Date: 1/31/2024



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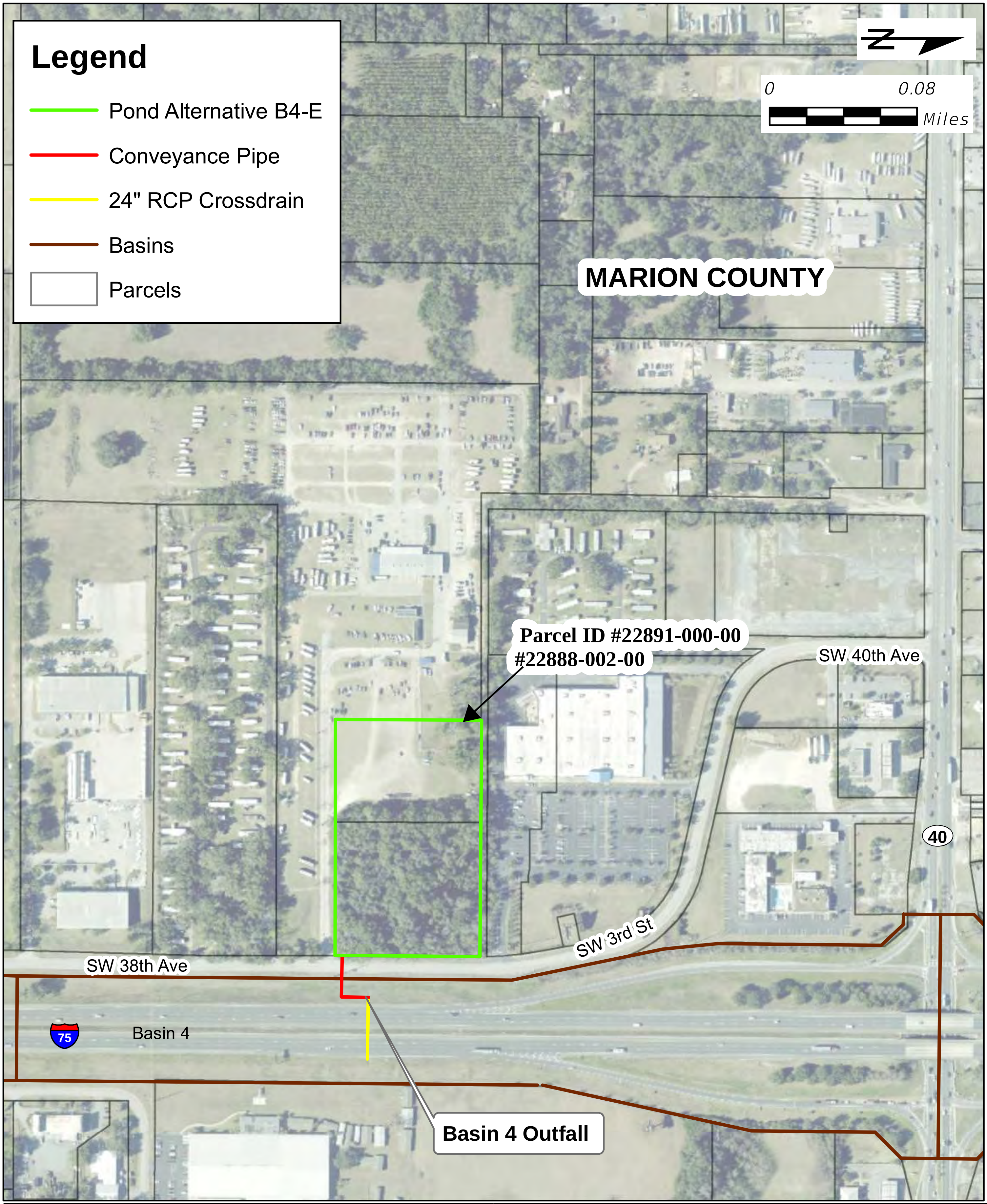
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

Pond Alternative B4-B2

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 13 of 36 | Date: 1/31/2024



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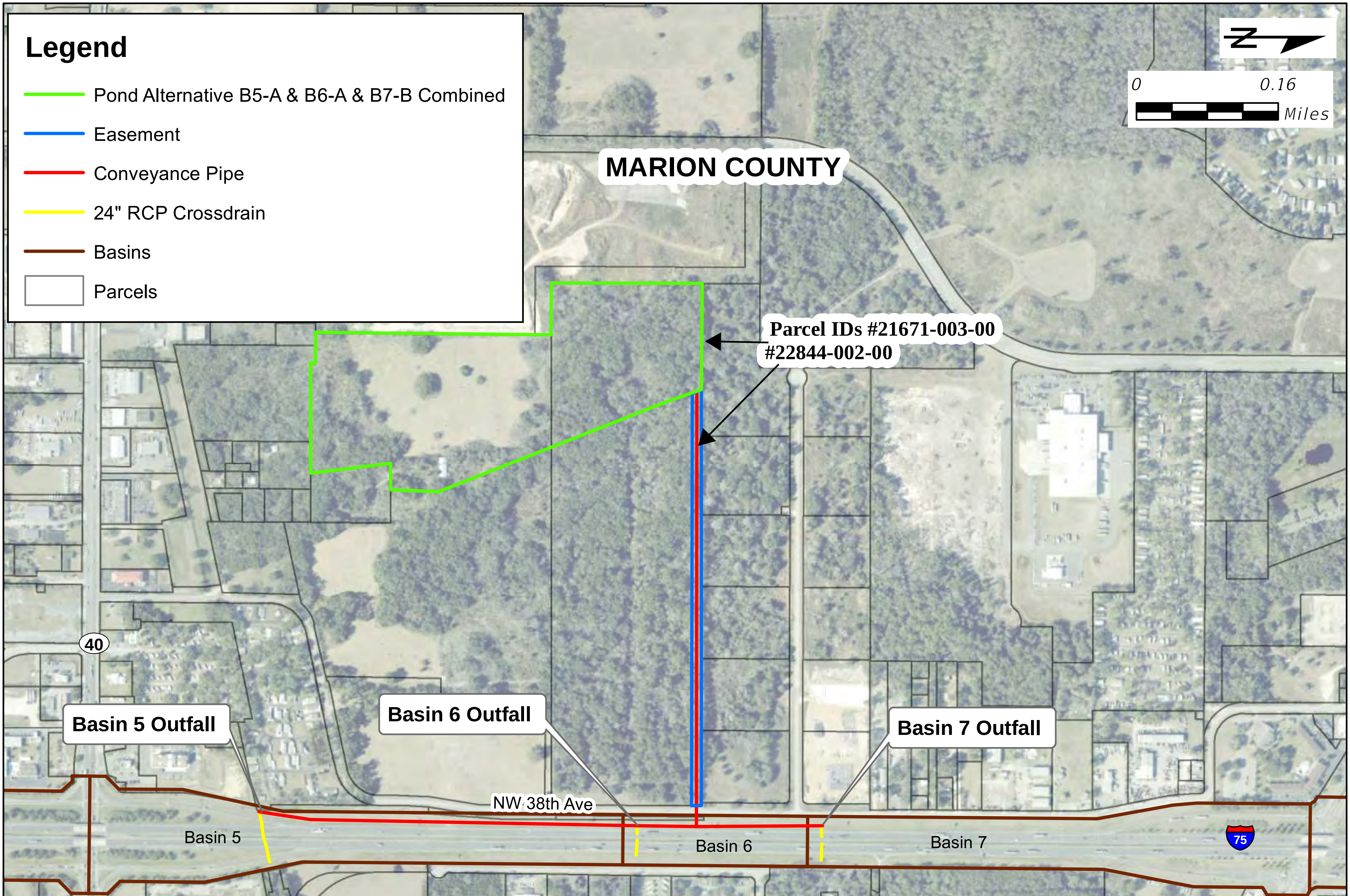
Michael A. Holt, PE # 76111

Pond Alternative B4-E

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 14 of 36 | Date: 1/31/2024



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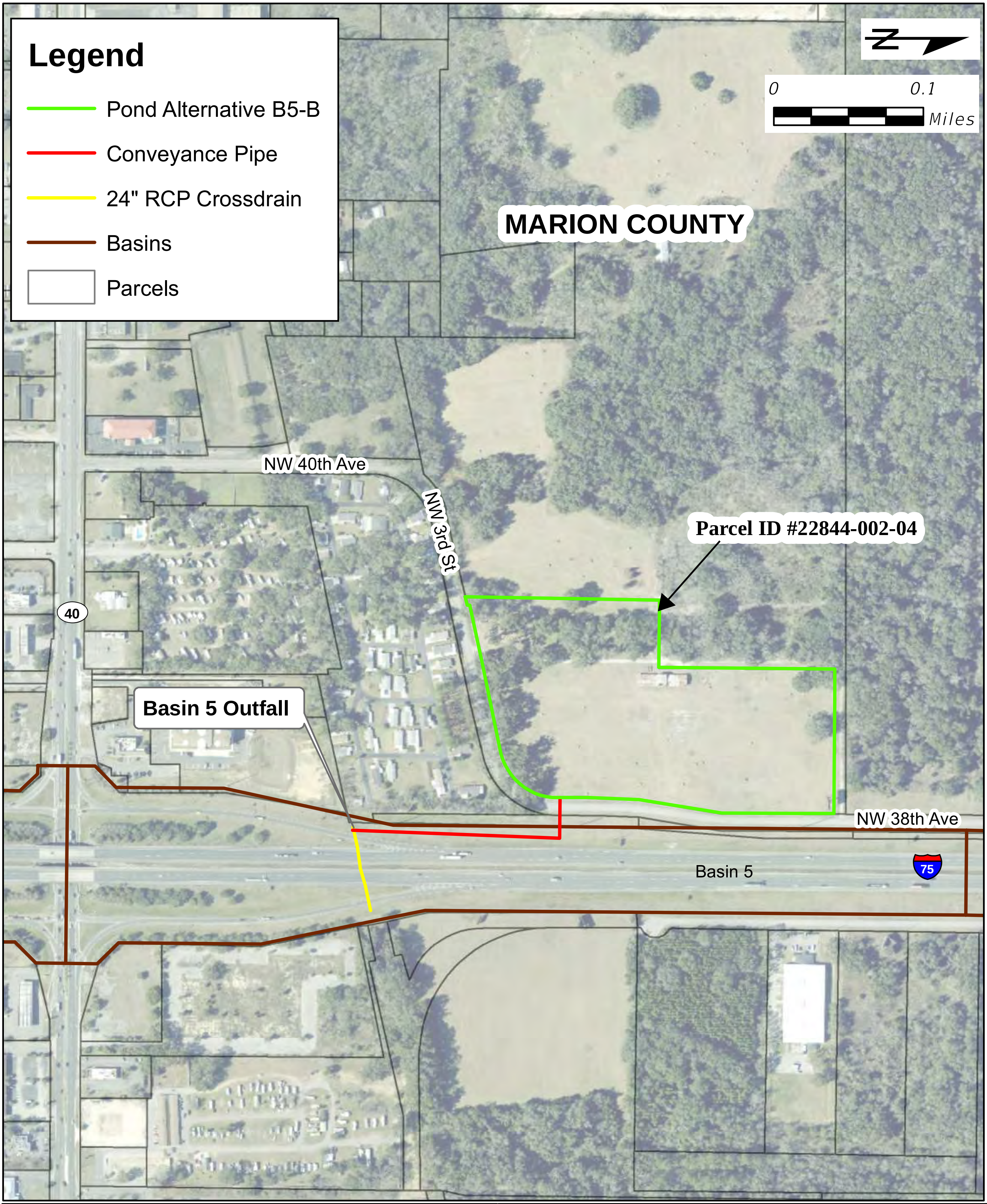
Michael A. Holt, PE # 76111

Pond Alternative B5-A & B6-A & B7-B Combined

Auxiliary Lanes at I-75

FPID: 443624-1-22-01

Date: 1/31/2024



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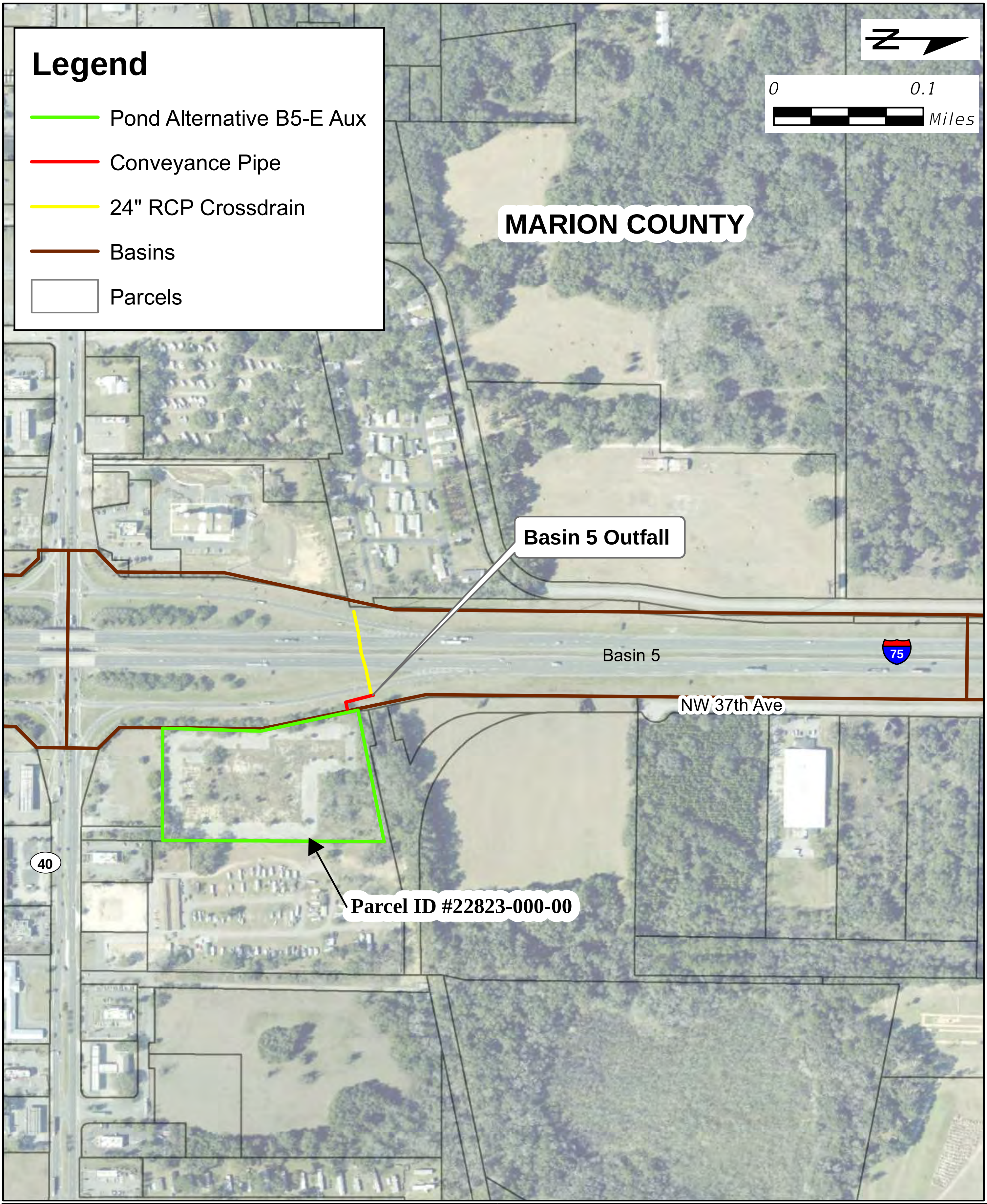
Pond Alternative B5-B

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 16 of 36 | Date: 1/31/2024



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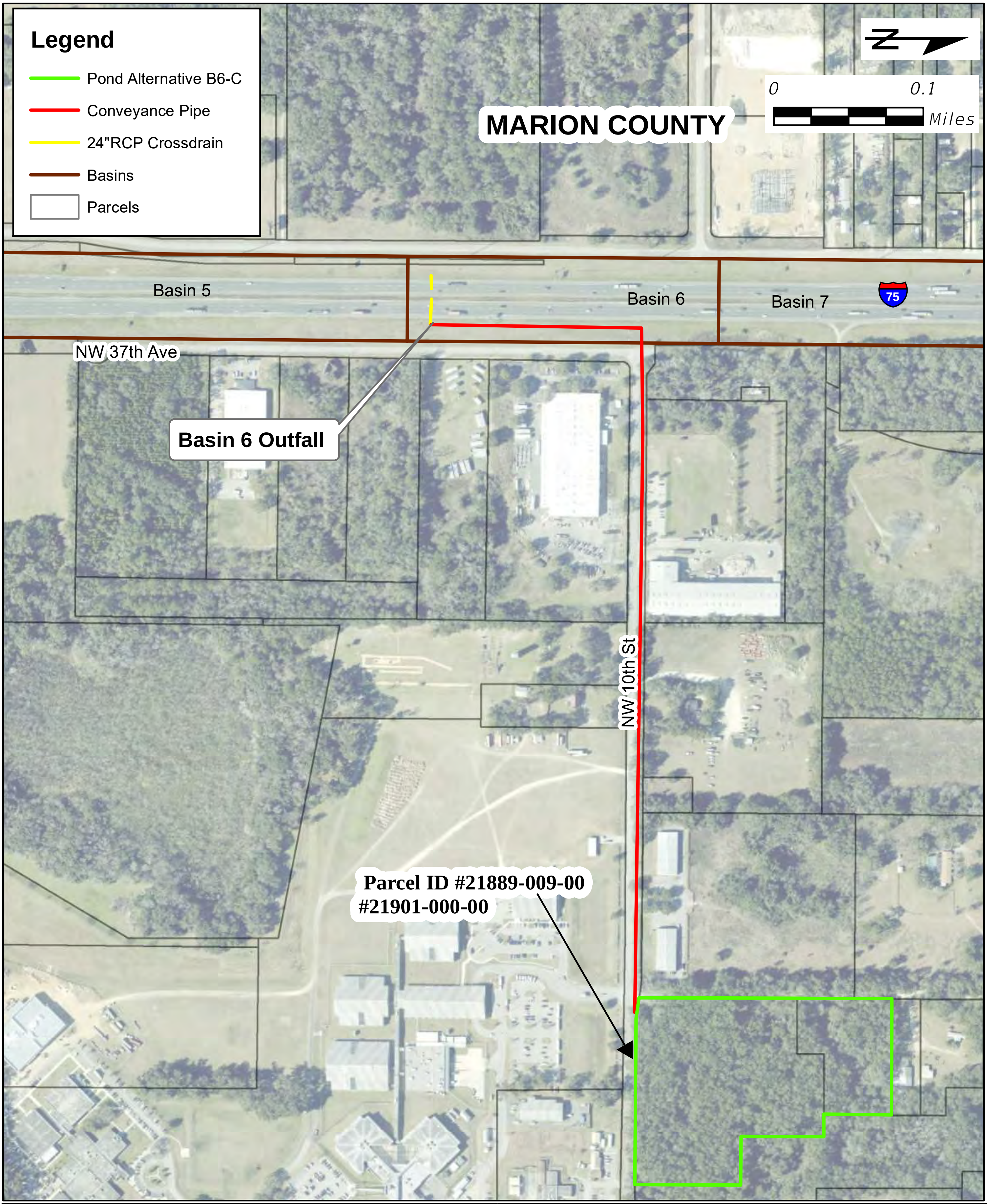
Pond Alternative B5-E

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 17 of 36 | Date: 1/31/2024



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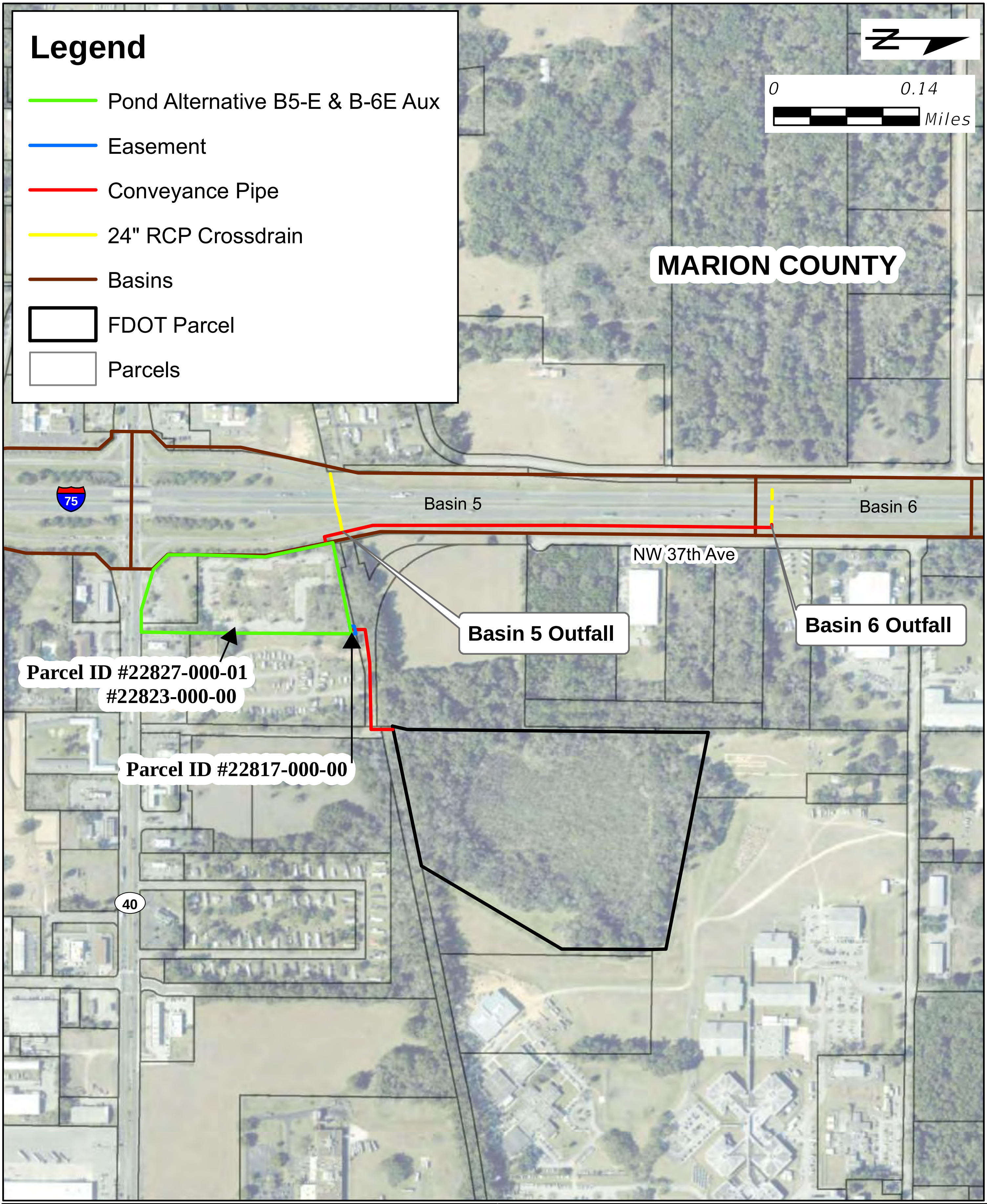
Pond Alternative B6-C

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 18 of 36 | Date: 1/31/2024



FDOT

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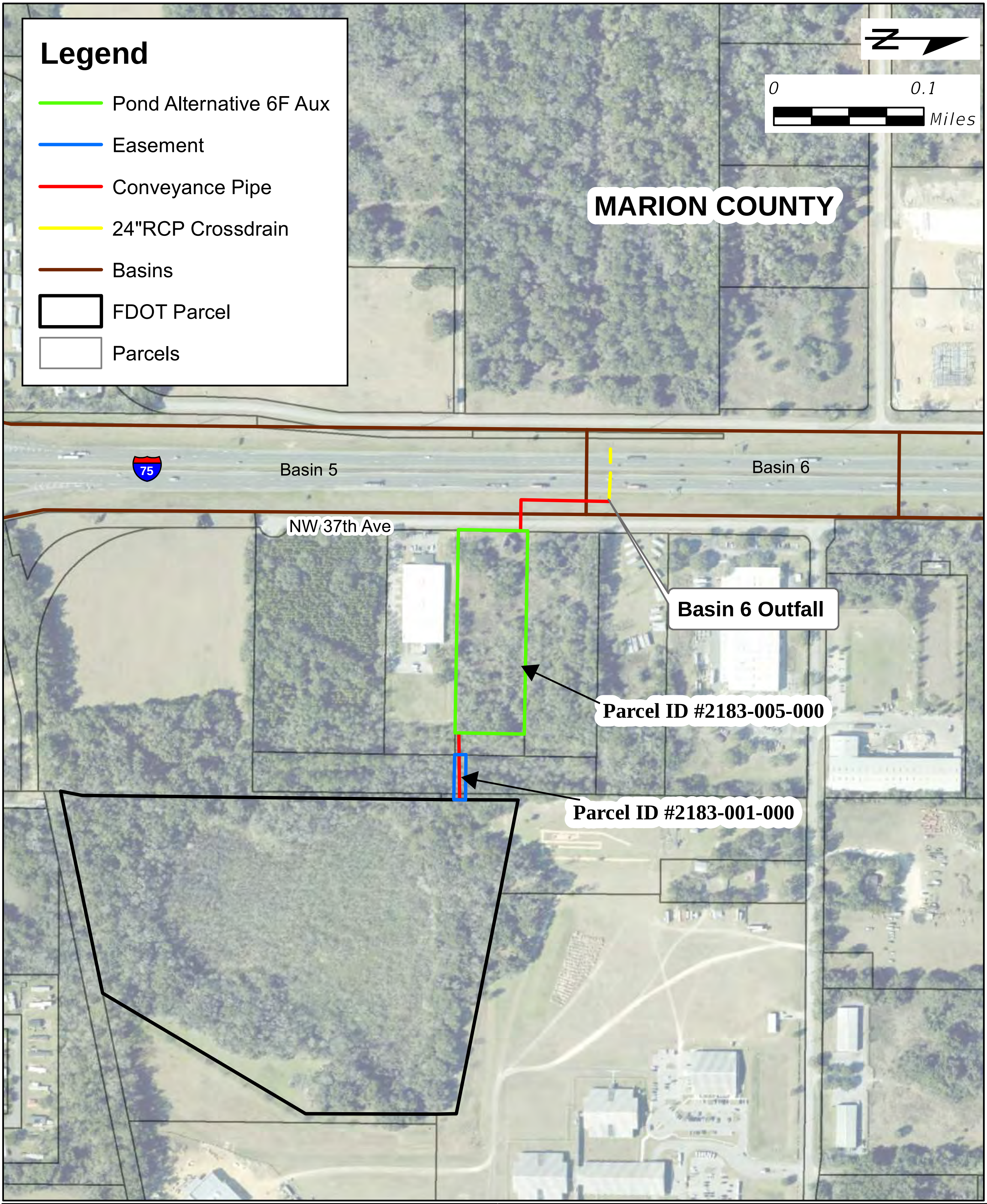
12570 Telecom Drive
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

Pond Alternative B5-E & B6-E Combined

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 19 of 36 | Date: 1/31/2024



FDOT

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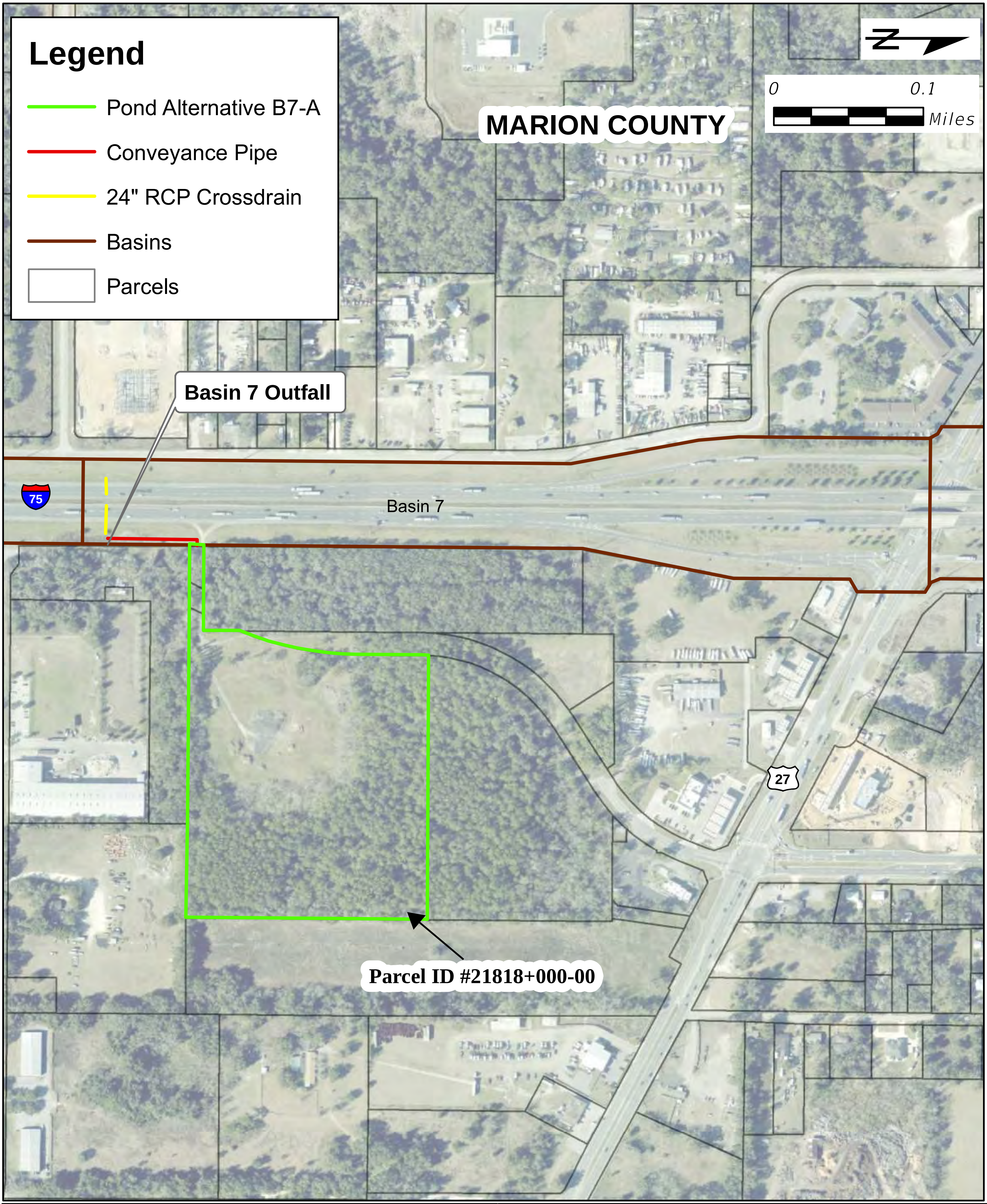
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

Pond Alternative B6-F

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 20 of 36 | Date: 1/31/2024



FDOT

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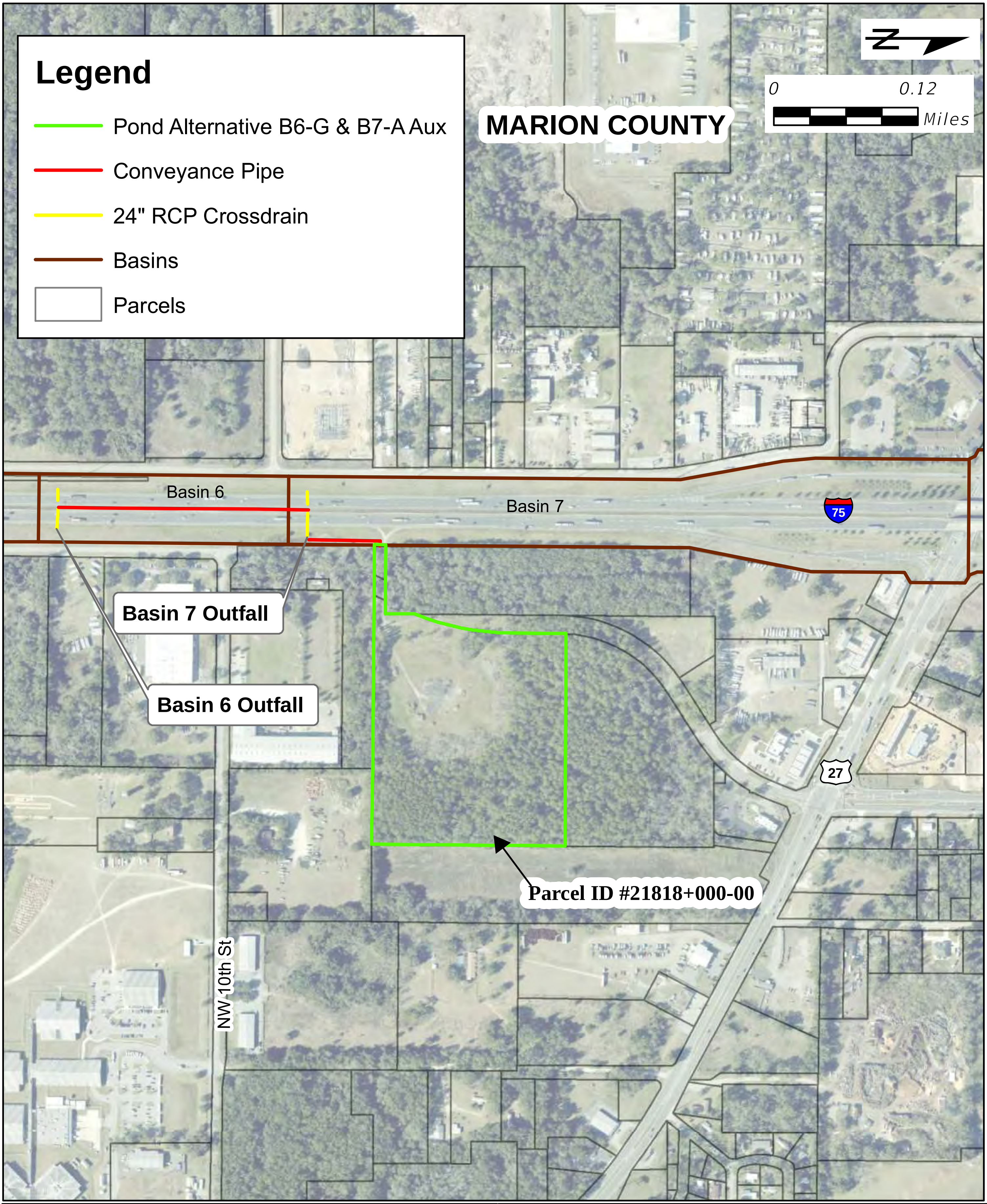
12570 Telecom Drive
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

Pond Alternative B7-A

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 21 of 36 | Date: 1/31/2024



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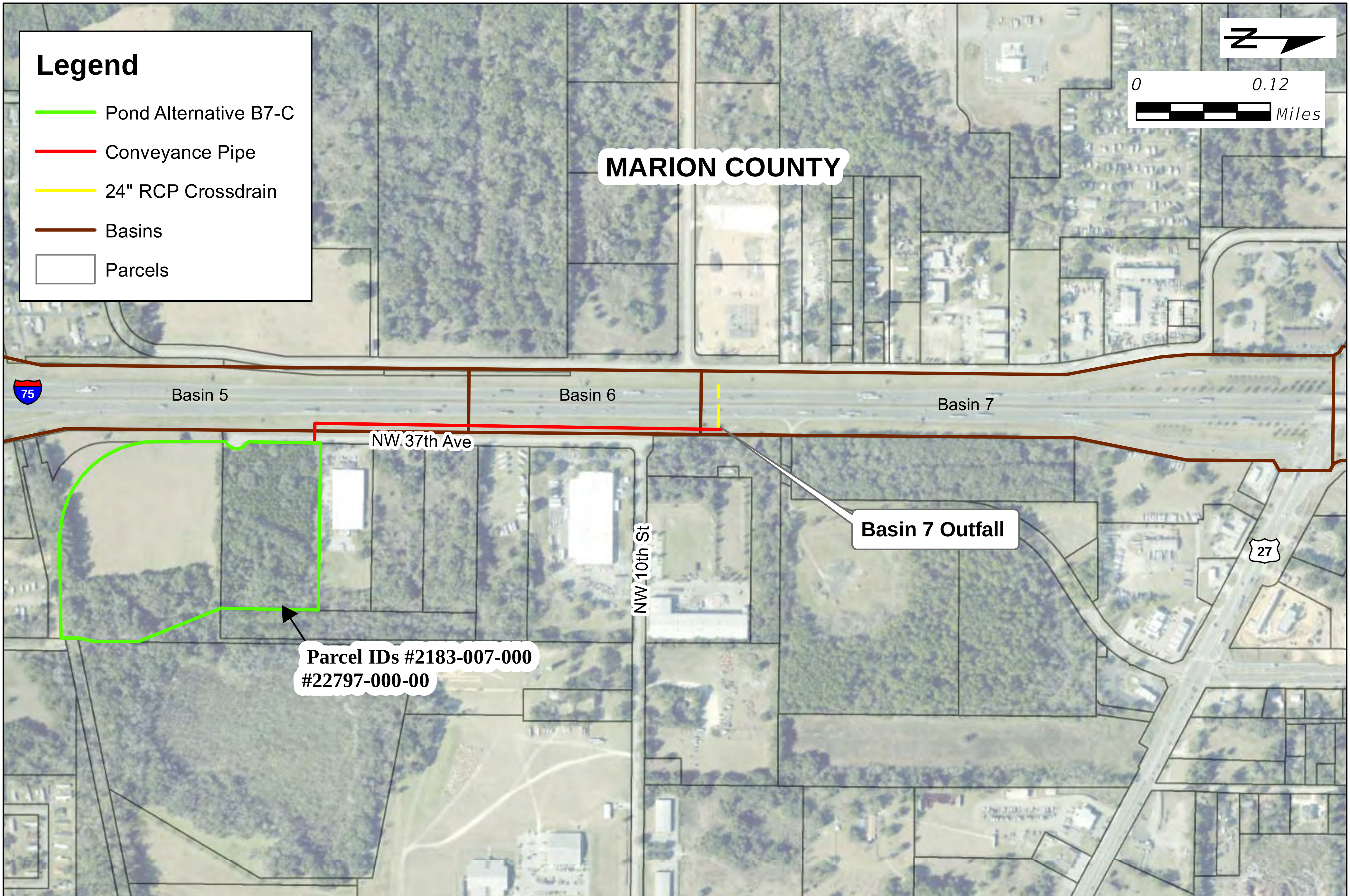
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

Pond Alternative B6-G & B7-A Combined

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 22 of 36 | Date: 1/31/2024



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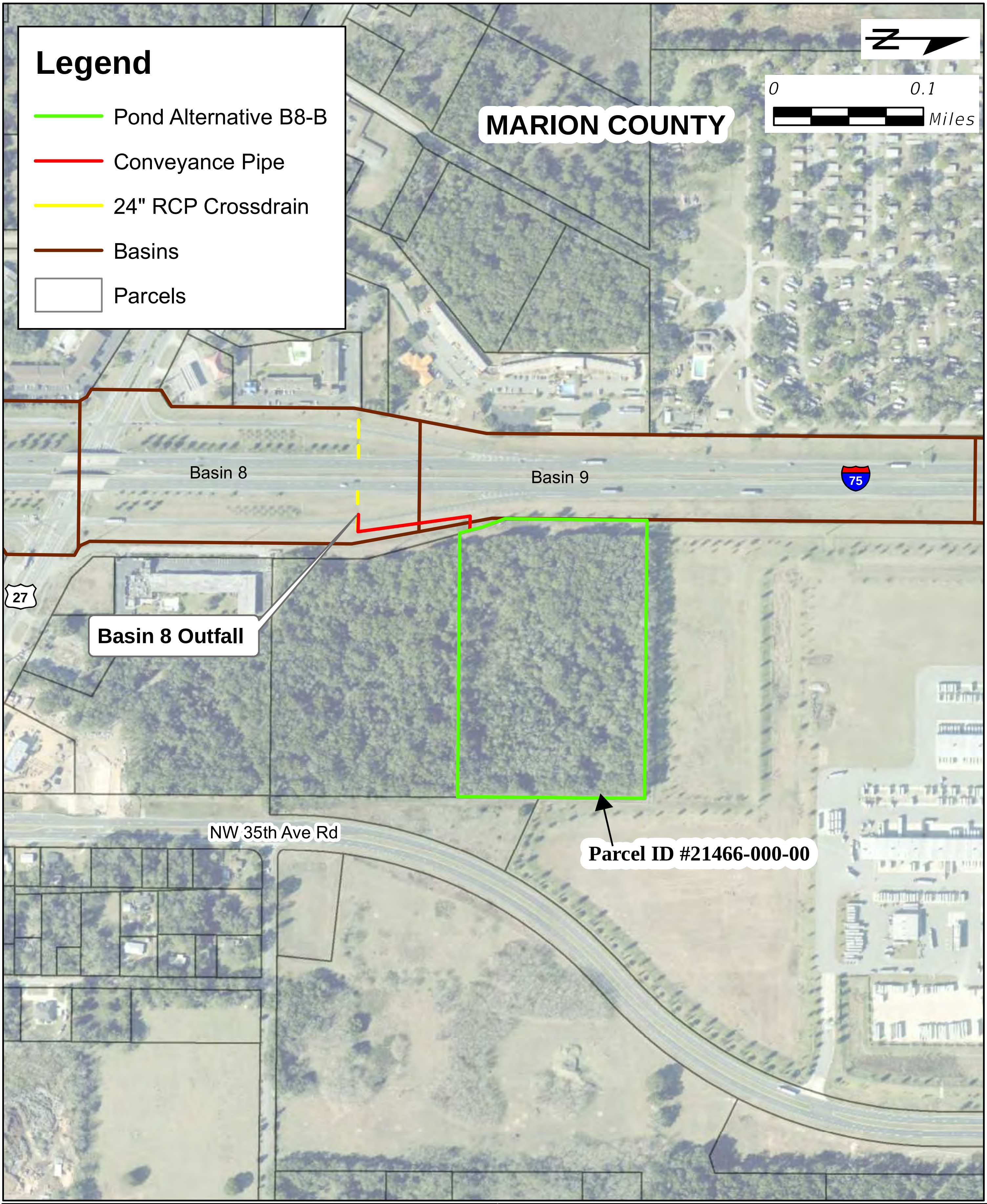
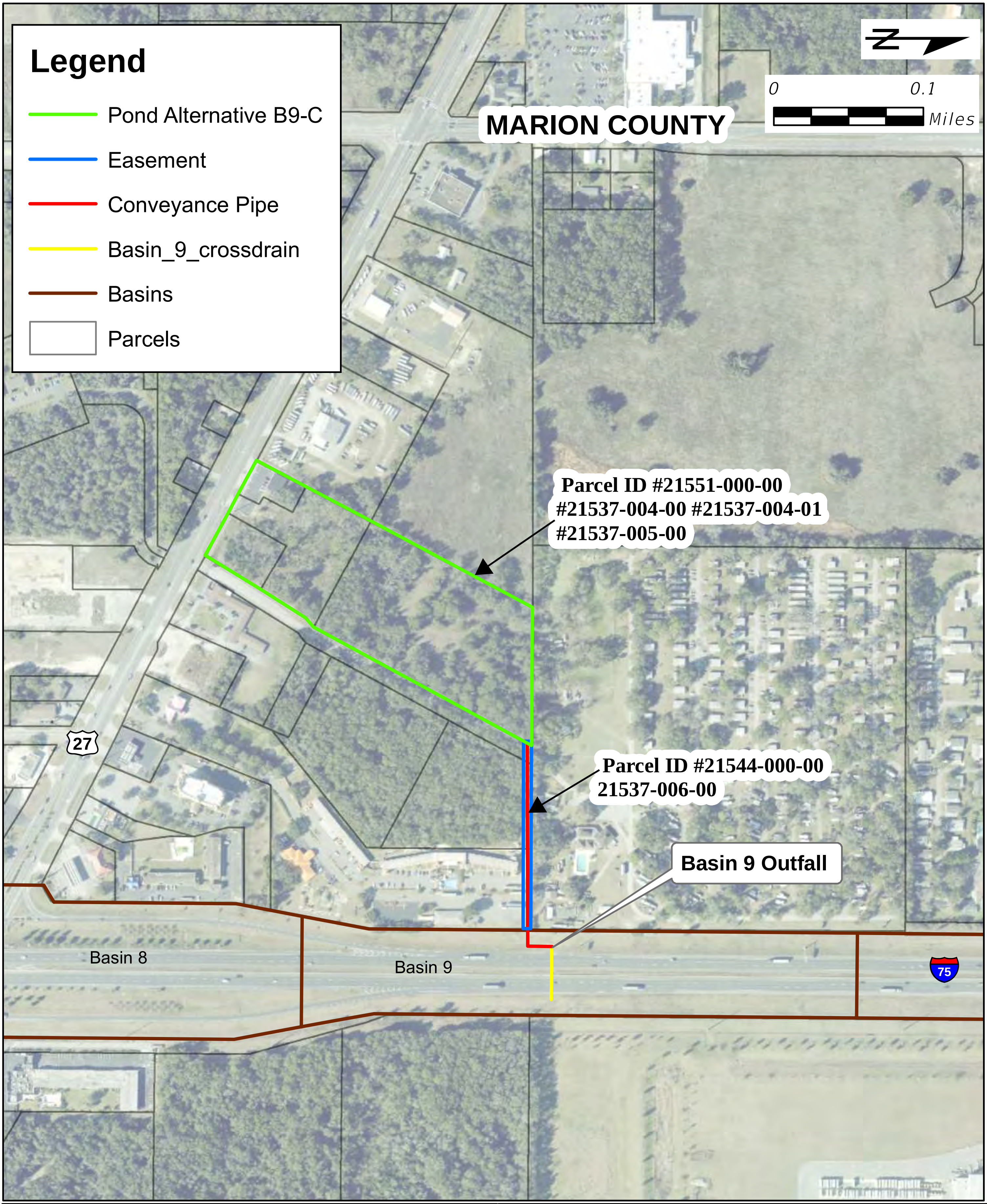
Pond Alternative B7-C

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 23 of 36 | Date: 1/31/2024



Legend
Pond Alternative B8-B
Conveyance Pipe
24" RCP Crossdrain
Basins
Parcels
MARION COUNTY
0
0.1
Miles
Basin 8
Basin 9
75
27
Basin 8 Outfall
NW 35th Ave Rd
Parcel ID #21466-000-00



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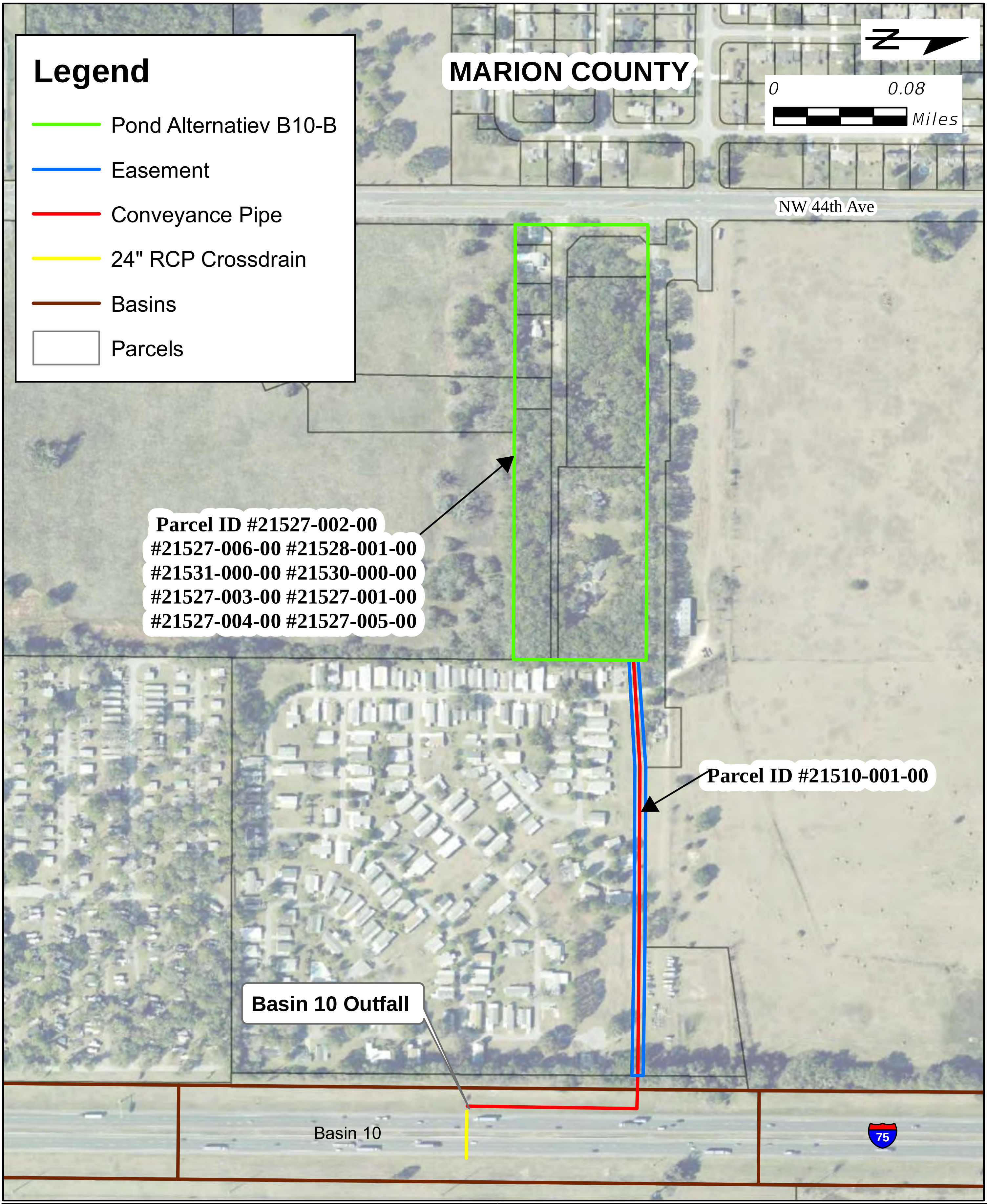
12570 Telecom Drive
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

Pond Alternative B9-C

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 25 of 36 | Date: 1/31/2024



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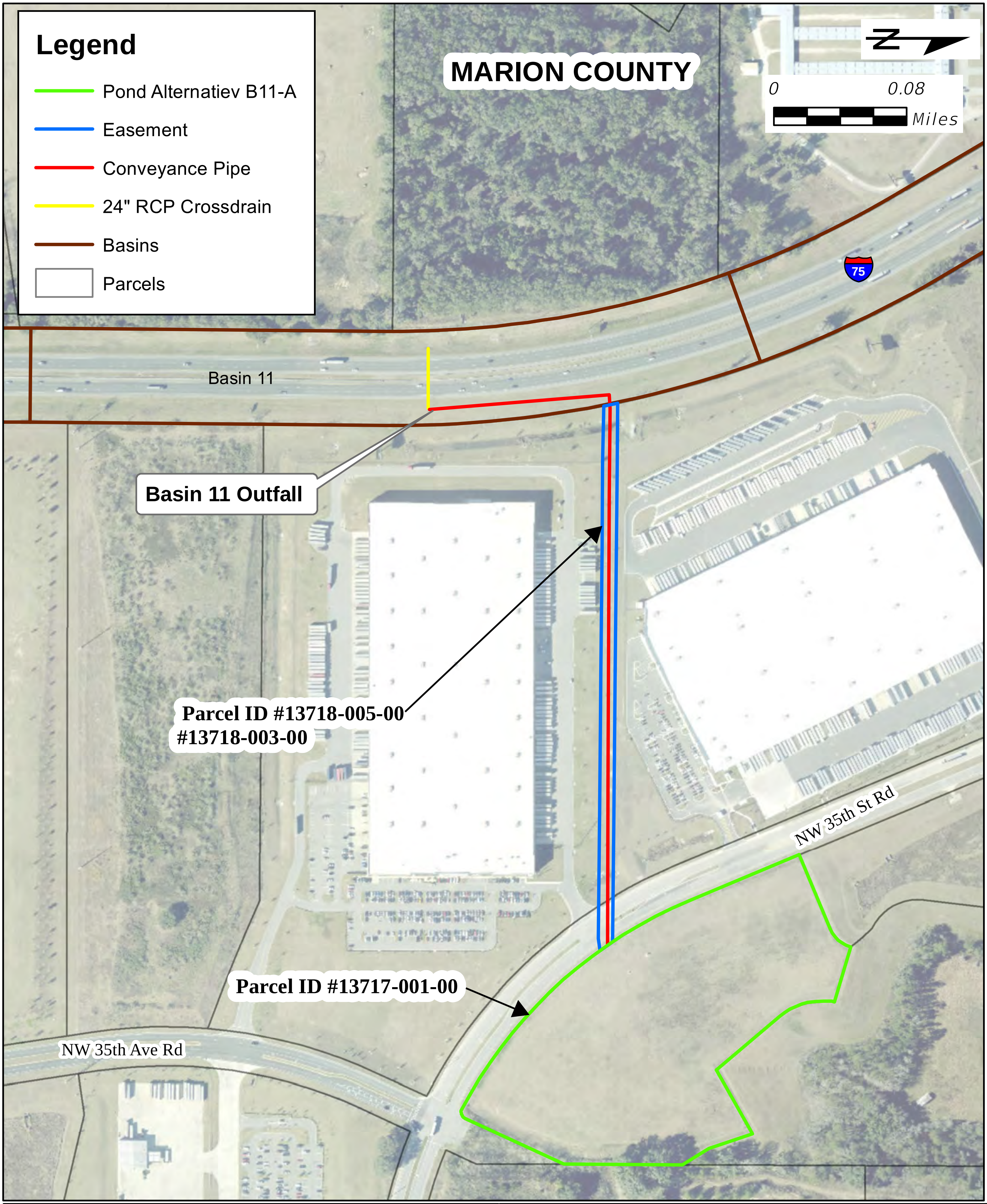
Pond Alternative B10-B

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 *Exhibit 26 of 36* *Date: 1/31/2024*



FDOT

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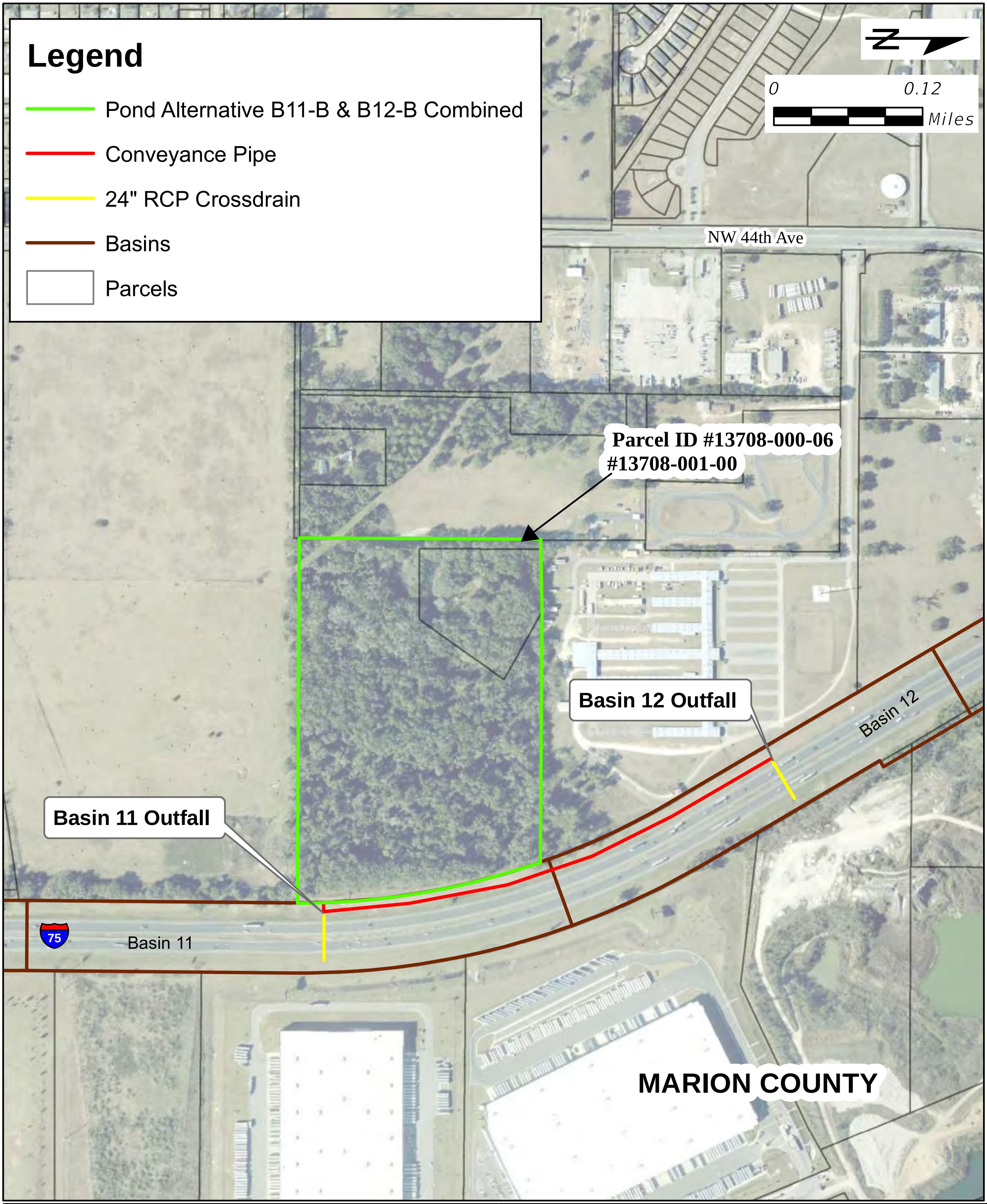
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

Pond Alternative B11-A

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 27 of 36 | Date: 2/6/2024



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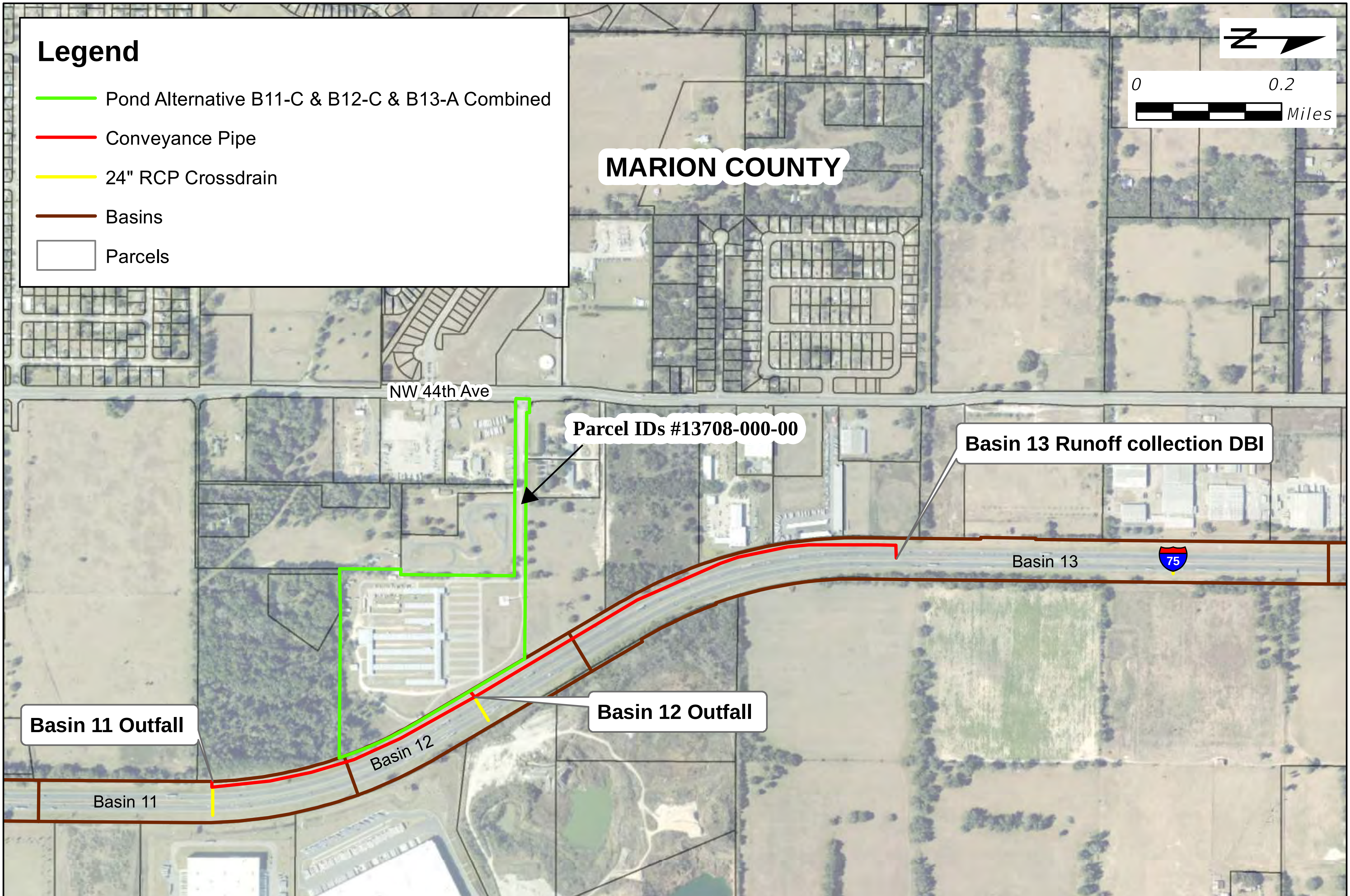
Michael A. Holt, PE # 76111

Pond Alternative B11-B & B12-B Combined

Auxiliary Lanes at I-75



FDOT

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Michael A. Holt, PE # 76111

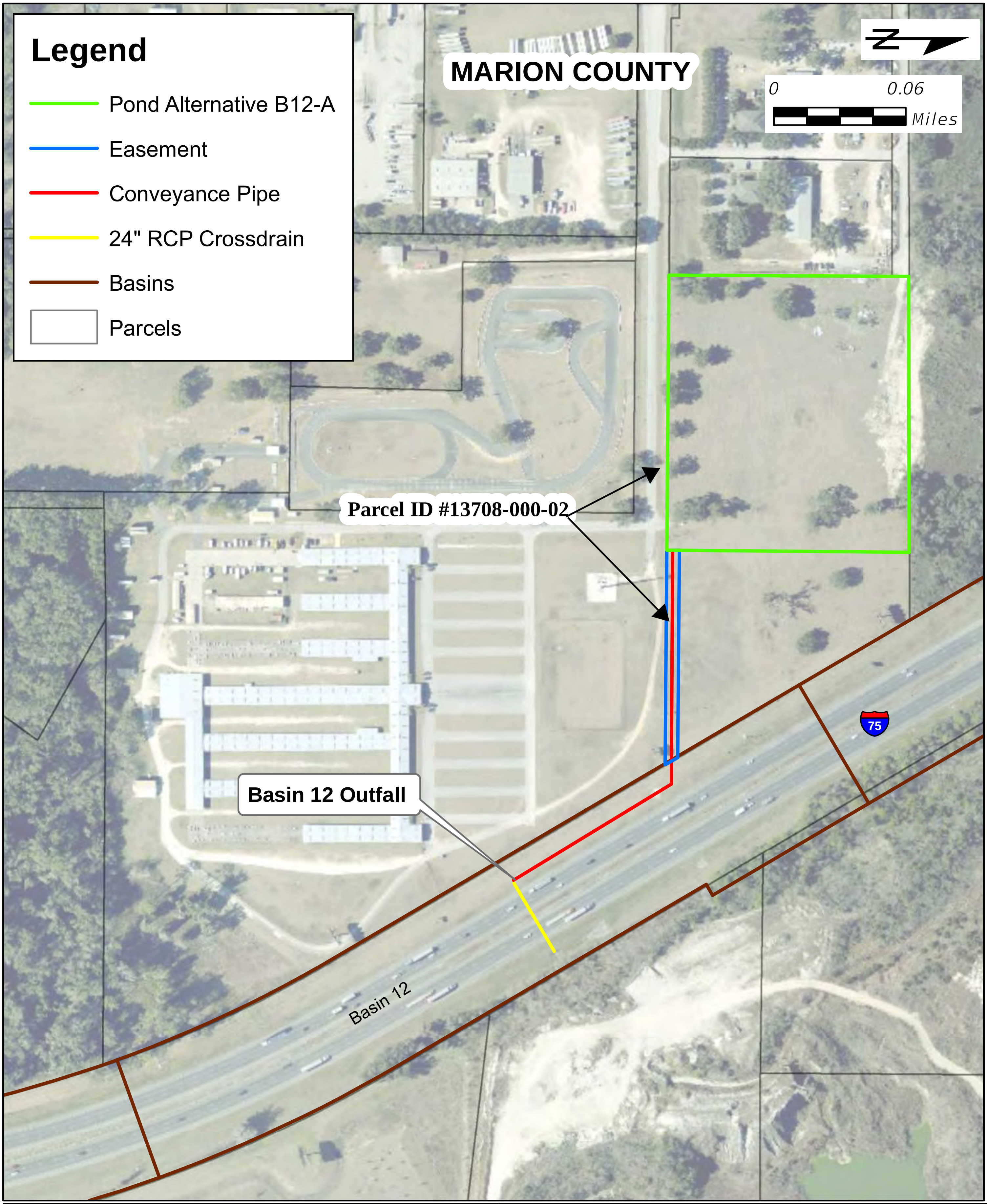
Pond Alternative B11-C & B12-C & B13-A Combined

Auxiliary Lanes at I-75

FPID: 443624-1-22-01

Exhibit 29 of 36

Date: 1/31/2024



FDOT

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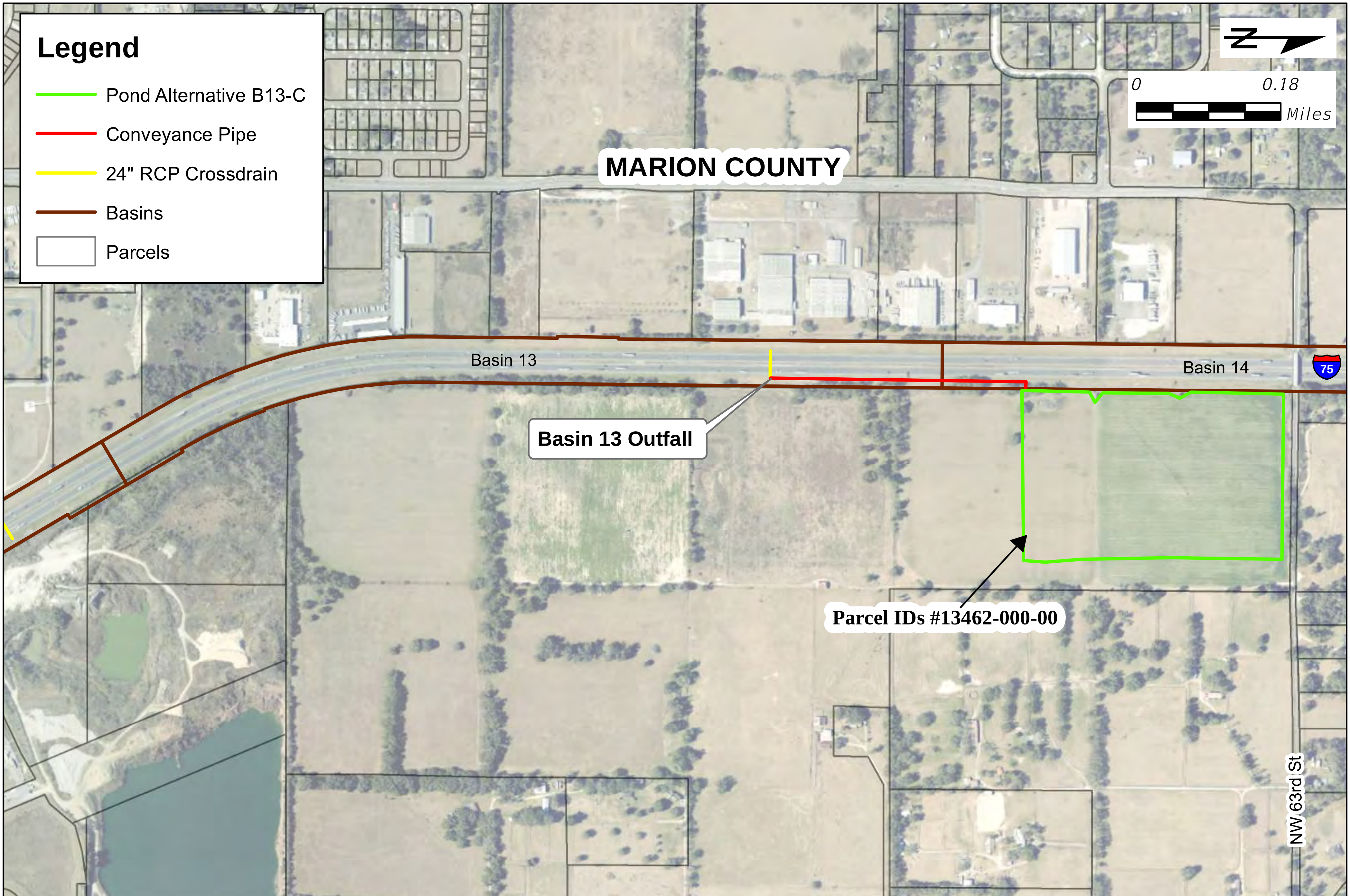
Pond Alternative B12-A

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 30 of 36 | Date: 1/31/2024



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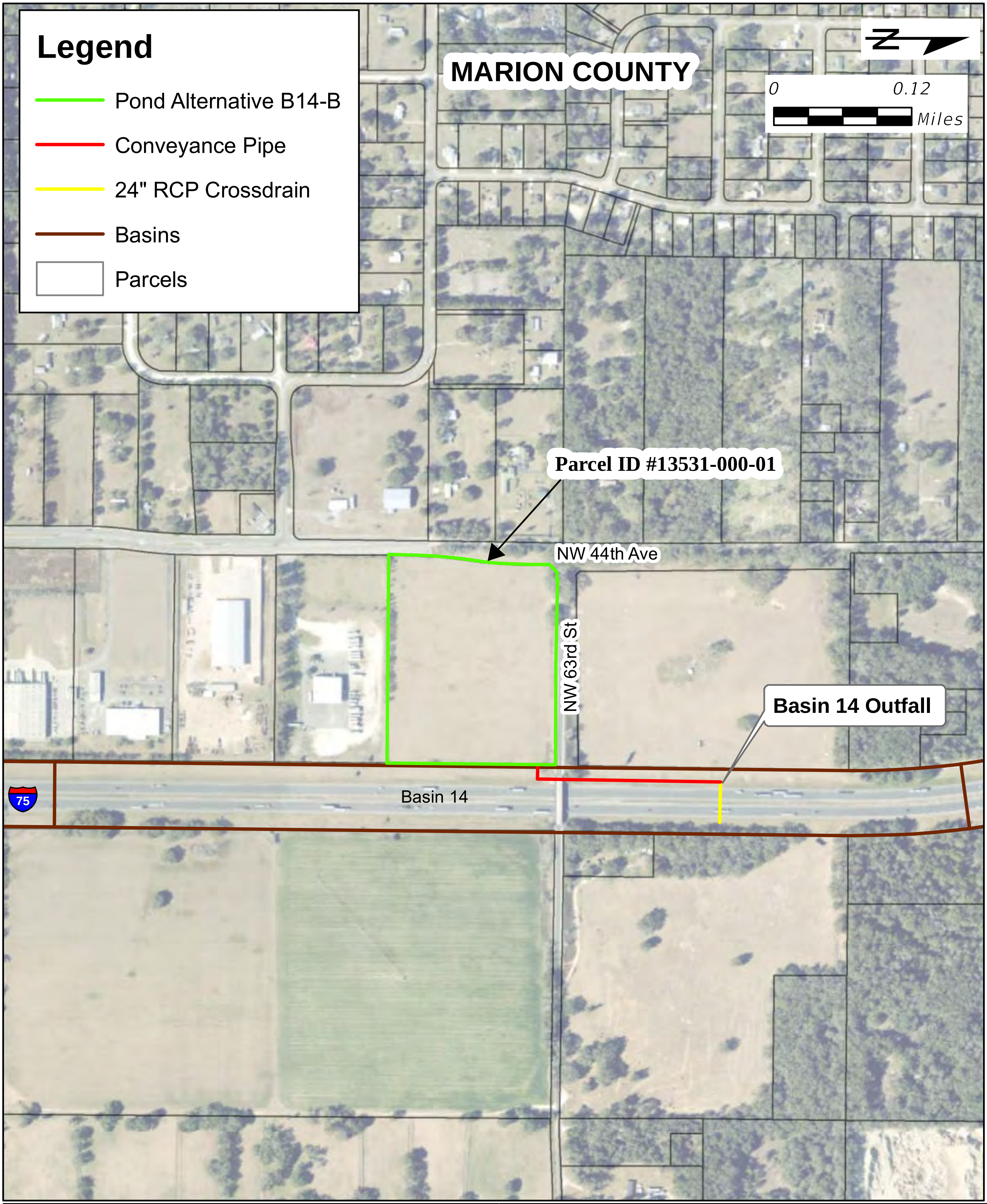
Pond Alternative B13-C

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 Exhibit 31 of 36 Date: 1/31/2024



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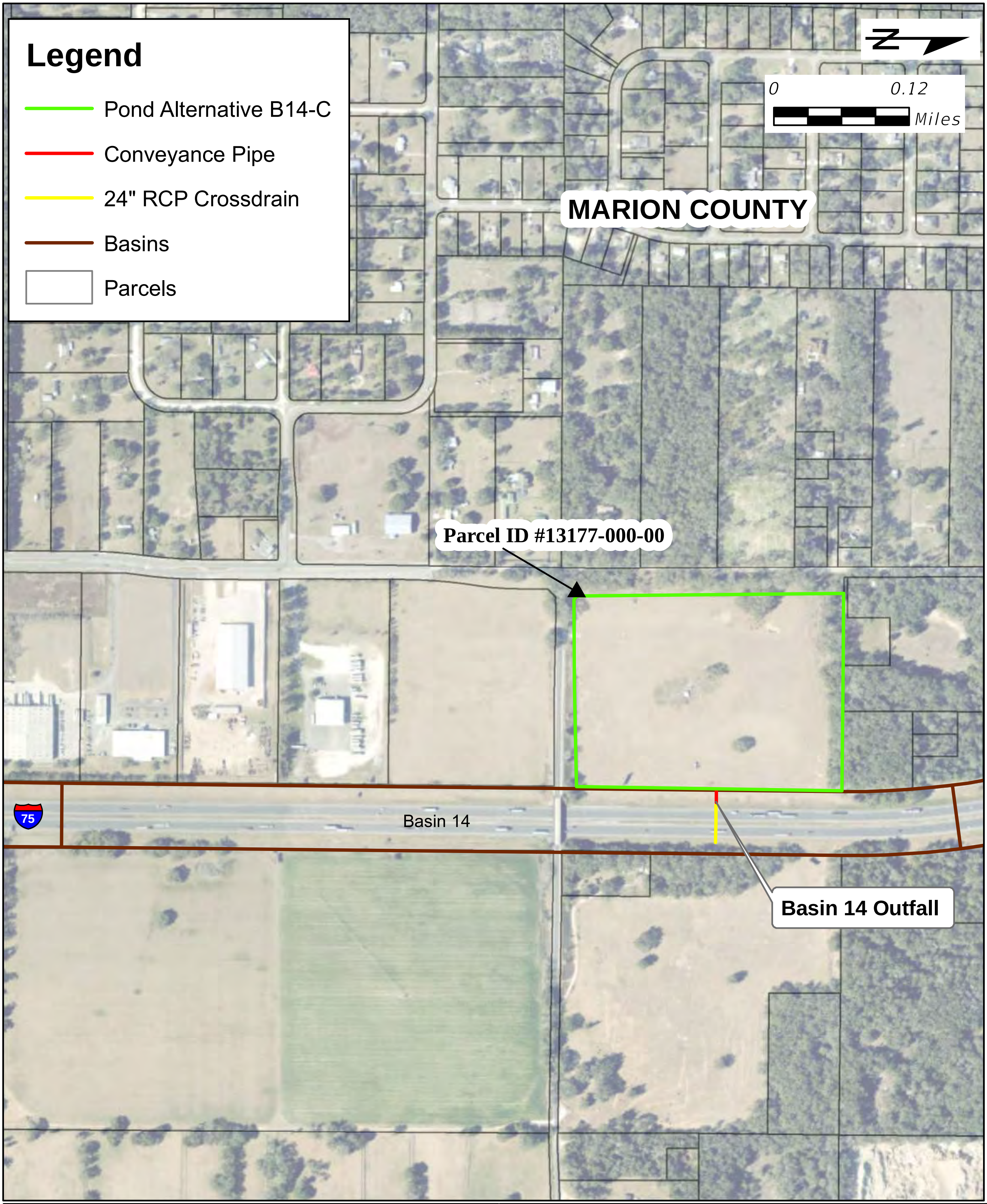
Pond Alternative B14-B

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 Exhibit 32 of 36 Date: 1/31/2024



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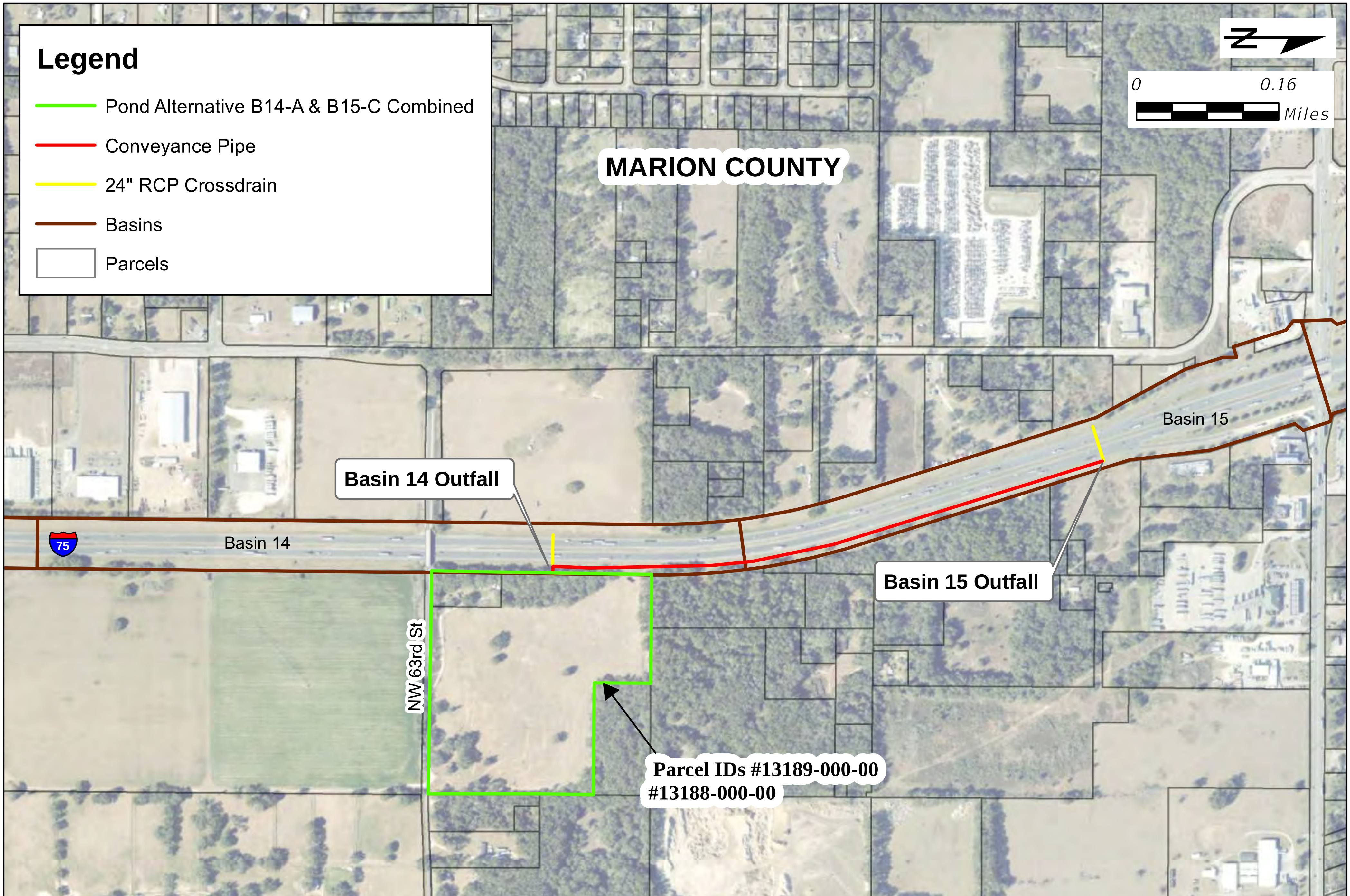
Michael A. Holt, PE # 76111

Pond Alternative B14-C

Auxiliary Lanes at I-75

FPID: 443624-1-22-01	*Exhibit 33 of 36*	*Date: 1/31/2024*



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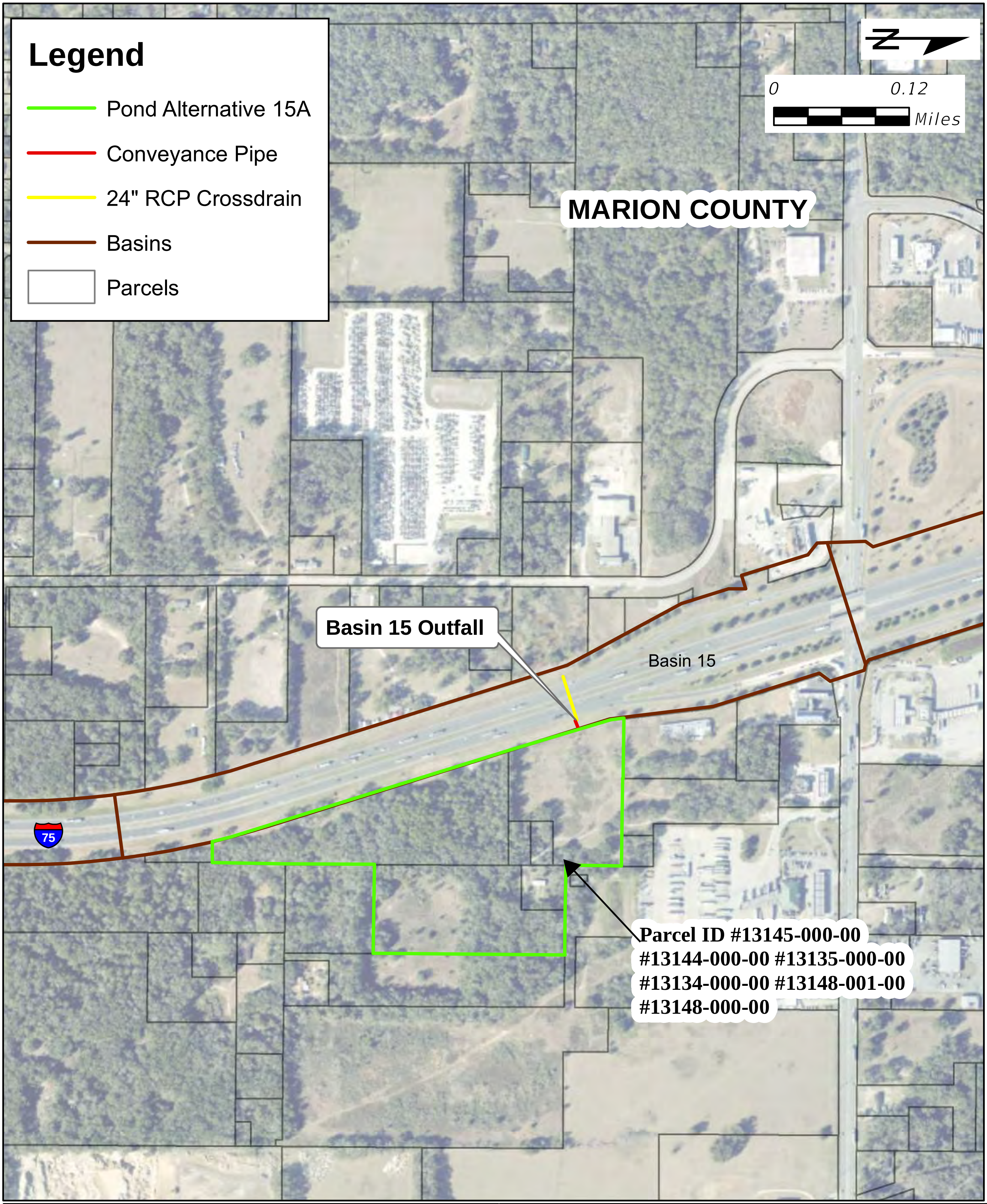
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

Pond Alternative B14-A & B15-C Combined

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 *Exhibit 34 of 36* *Date: 1/31/2024*



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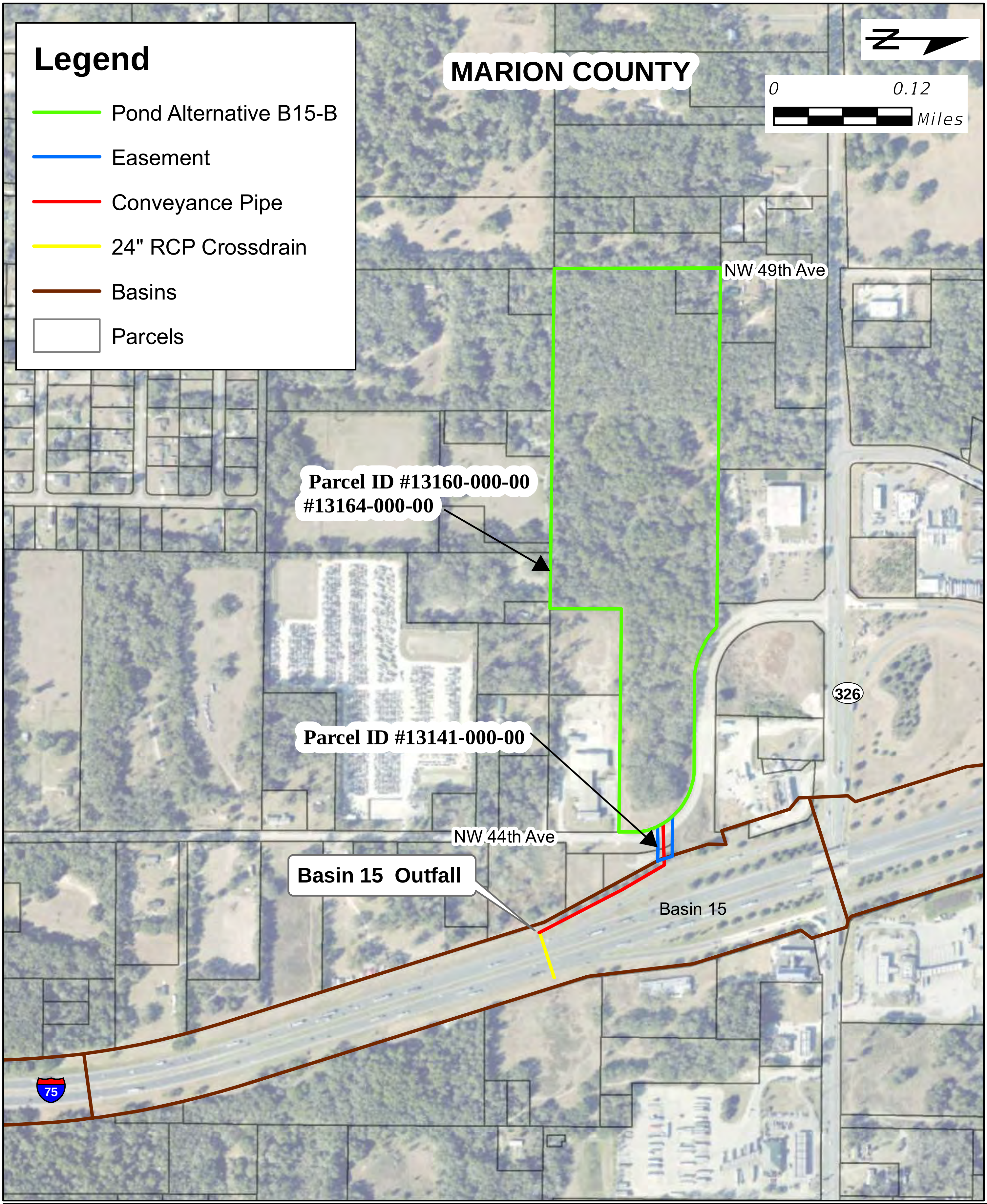
Michael A. Holt, PE # 76111

Pond Alternative B15-A

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 35 of 36 | Date: 1/31/2024



Patel, Greene & Associates, LLC
12570 Telecom Drive
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

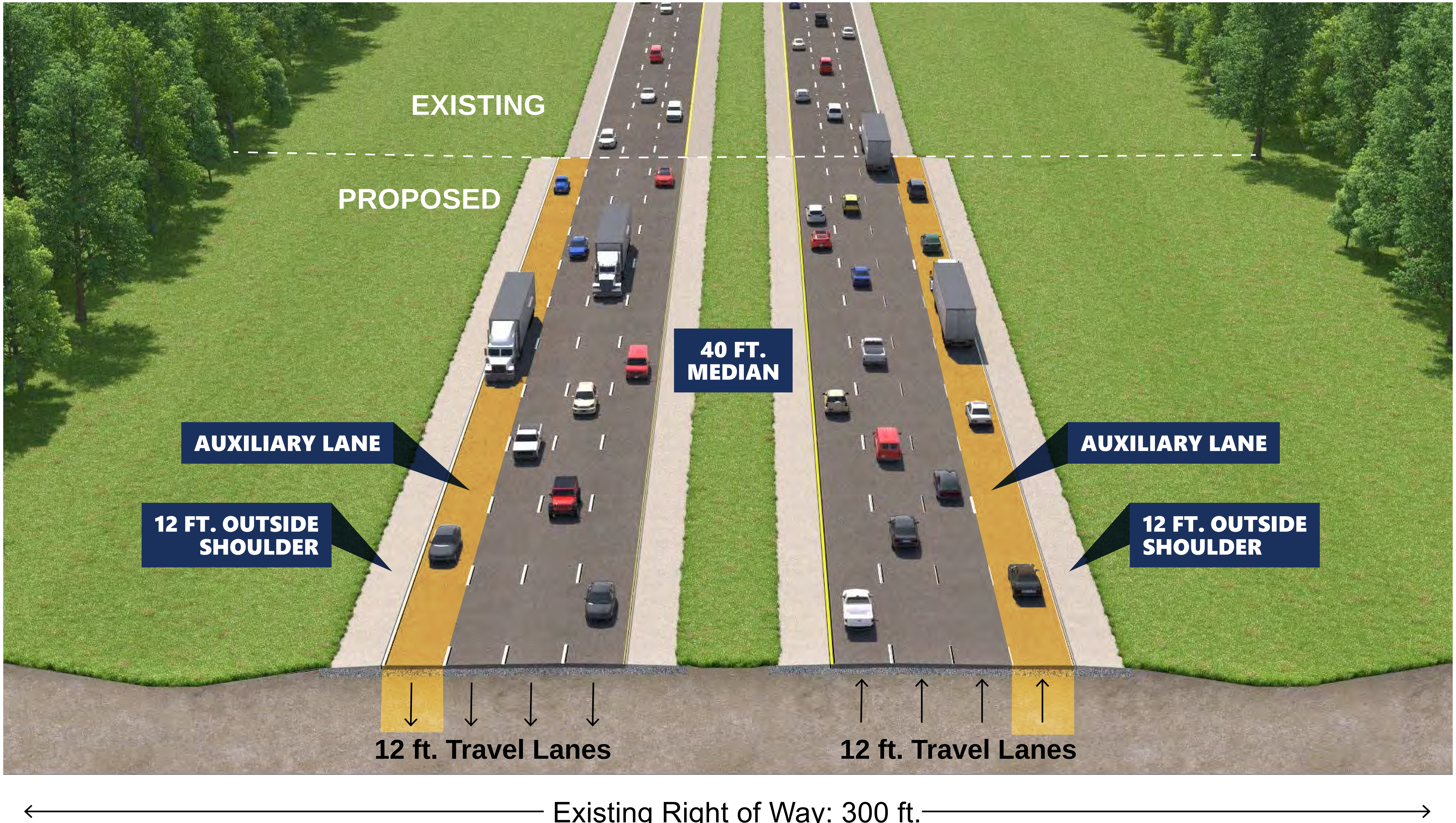
Pond Alternative B15-B

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 Exhibit 36 of 36 Date: 1/23/2024

Appendix B
Typical Section

PROPOSED I-75 TYPICAL SECTION



Appendix C

NRCS Soils Report

United States Department of Agriculture

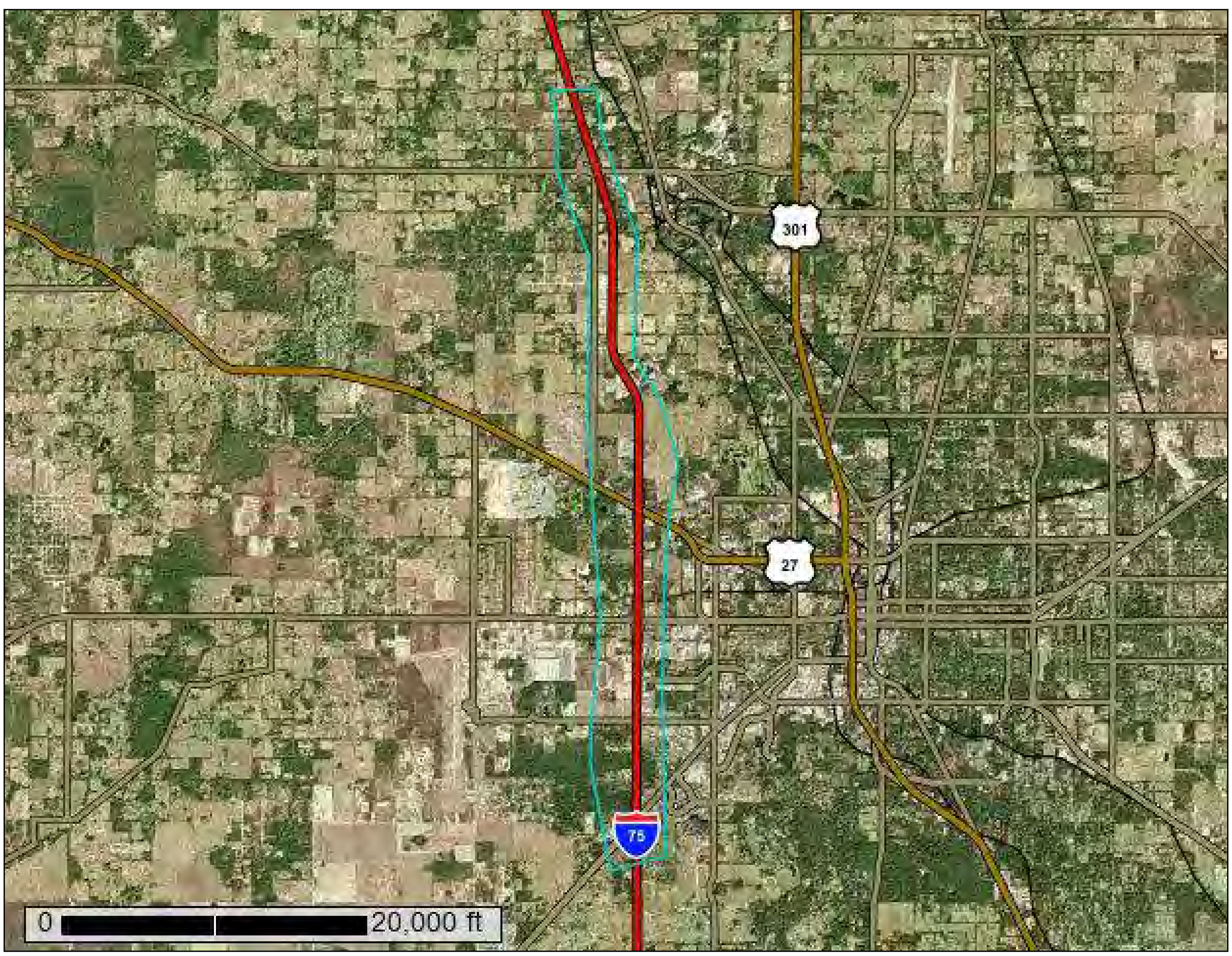
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Marion County Area, Florida



July 24, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

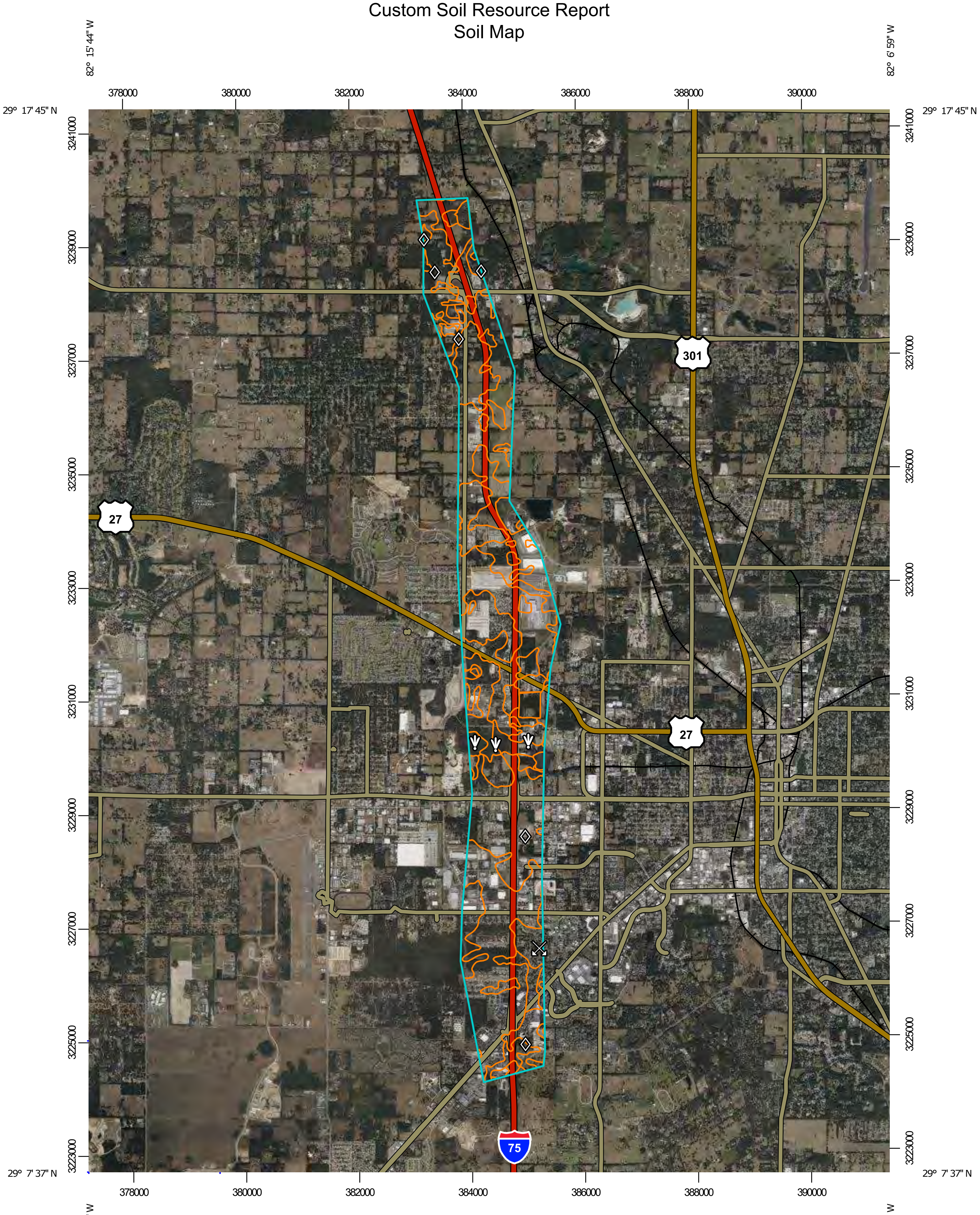
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:91,400 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0, 1000, 2000, 4000, 6000

Feet: 0, 4000, 8000, 16000, 24000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Survey Areas

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Marion County Area, Florida
Survey Area Data: Version 20, Sep 1, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 9, 2022—Feb 10, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2	Adamsville sand, 0 to 5 percent slopes	23.7	0.5%
7	Udalfic Arents, 0 to 5 percent slopes	1.4	0.0%
9	Arredondo sand, 0 to 5 percent slopes	1,770.1	36.8%
11	Pedro-Arredondo complex, 0 to 5 percent slopes	77.7	1.6%
13	Astatula sand, 0 to 5 percent slopes	110.2	2.3%
17	Blichton sand, 2 to 5 percent slopes	18.5	0.4%
22	Candler sand, 0 to 5 percent slopes	1,003.5	20.9%
35	Gainesville loamy sand, 0 to 5 percent slopes	229.2	4.8%
37	Hague sand, 2 to 5 percent slopes	309.3	6.4%
38	Hague sand, 5 to 8 percent slopes	20.4	0.4%
40	Holopaw sand, frequently ponded, 0 to 1 percent slopes	0.5	0.0%
43	Kanapaha-Kanapaha, wet, fine sand, 0 to 5 percent slopes	112.1	2.3%
44	Kendrick loamy sand, 0 to 5 percent slopes	285.1	5.9%
45	Kendrick loamy sand, 5 to 8 percent slopes	6.5	0.1%
46	Lochloosa fine sand, 0 to 5 percent slopes	64.2	1.3%
47	Lochloosa fine sand, 5 to 8 percent slopes	9.7	0.2%
50	Micanopy fine sand, 2 to 5 percent slopes	52.3	1.1%
57	Pits	58.3	1.2%
58	Placid sand, depressional	11.6	0.2%
65	Sparr fine sand, 0 to 5 percent slopes	495.1	10.3%
69	Tavares sand, 0 to 5 percent slopes	54.9	1.1%
74	Wacahoota gravelly sand, gravelly subsoil variant, 2 to 5 percent slopes	2.5	0.1%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
77	Zuber loamy sand, 2 to 5 percent slopes	32.5	0.7%
79	Udorthents, excavated	55.7	1.2%
99	Water	5.9	0.1%
Totals for Area of Interest		**4,811.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Marion County Area, Florida

2—Adamsville sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1vhdd
Elevation: 20 to 150 feet
Mean annual precipitation: 46 to 54 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 276 to 306 days
Farmland classification: Not prime farmland

Map Unit Composition

Adamsville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Adamsville

Setting

Landform: Knolls on marine terraces, rises on marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 6 inches: sand
C - 6 to 80 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A
Forage suitability group: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)
Hydric soil rating: No

Minor Components

Pomona, non-hydric

Percent of map unit: 4 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)
Hydric soil rating: No

Pompano

Percent of map unit: 4 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)
Hydric soil rating: Yes

Candler

Percent of map unit: 4 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Tavares

Percent of map unit: 3 percent
Landform: Flats on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on rises, knolls, and ridges of mesic uplands (G154XB121FL)
Hydric soil rating: No

7—Udalfic Arents, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1vhdl
Elevation: 30 to 200 feet
Mean annual precipitation: 46 to 54 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 276 to 306 days

Farmland classification: Not prime farmland

Map Unit Composition

Udalfic arents and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udalfic Arents

Setting

Landform: Marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Altered marine deposits

Typical profile

C - 0 to 33 inches: sandy clay loam
AEb - 33 to 65 inches: fine sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (0.57 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Forage suitability group: Forage suitability group not assigned (G154XB999FL)
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: No

Minor Components

Udorthents

Percent of map unit: 15 percent
Landform: Marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: No

9—Arredondo sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2ttlt
Elevation: 40 to 150 feet
Mean annual precipitation: 46 to 54 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 276 to 306 days
Farmland classification: Not prime farmland

Map Unit Composition

Arredondo and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arredondo

Setting

Landform: Hills on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 7 inches: sand
E - 7 to 65 inches: sand
Bt1 - 65 to 70 inches: loamy sand
Bt2 - 70 to 80 inches: fine sandy loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A

Forage suitability group: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Minor Components

Candler

Percent of map unit: 7 percent
Landform: Ridges on marine terraces, knolls on marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Interfluve, side slope, tread
Down-slope shape: Convex
Across-slope shape: Convex
Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL), Longleaf Pine-Turkey Oak Hills (R155XY002FL), Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Gainesville

Percent of map unit: 7 percent
Landform: Ridges on marine terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Sparr

Percent of map unit: 4 percent
Landform: Knolls on marine terraces, rises on marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Interfluve, tread, rise
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Other vegetative classification: Upland Hardwood Hammock (R154XY008FL), Sandy soils on rises and knolls of mesic uplands (G154XB131FL)
Hydric soil rating: No

Sinkhole

Percent of map unit: 1 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

Rock outcrop

Percent of map unit: 1 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex

Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

11—Pedro-Arredondo complex, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1vhdp
Elevation: 20 to 160 feet
Mean annual precipitation: 46 to 54 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 276 to 306 days
Farmland classification: Not prime farmland

Map Unit Composition

Pedro and similar soils: 50 percent
Arredondo and similar soils: 39 percent
Minor components: 11 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pedro

Setting

Landform: Knolls on marine terraces, rises on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits over limestone

Typical profile

A - 0 to 5 inches: fine sand
E - 5 to 13 inches: fine sand
Bt - 13 to 16 inches: sandy clay loam
2Cr - 16 to 25 inches: weathered bedrock
2R - 25 to 29 inches: unweathered bedrock

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: 6 to 20 inches to paralithic bedrock; 10 to 30 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0

Available water supply, 0 to 60 inches: Very low (about 1.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D
Forage suitability group: Shallow or moderately deep, sandy or loamy soils on rises and ridges of mesic uplands (G154XB521FL)
Other vegetative classification: Shallow or moderately deep, sandy or loamy soils on rises and ridges of mesic uplands (G154XB521FL)
Hydric soil rating: No

Description of Arredondo

Setting

Landform: Ridges on marine terraces, hills on marine terraces
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 7 inches: sand
E - 7 to 65 inches: sand
Bt1 - 65 to 70 inches: loamy sand
Bt2 - 70 to 80 inches: fine sandy loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Forage suitability group: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Minor Components

Lochloosa

Percent of map unit: 4 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve

Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on rises and knolls of mesic uplands (G154XB231FL)
Hydric soil rating: No

Candler

Percent of map unit: 4 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Sparr

Percent of map unit: 3 percent
Landform: Flats on marine terraces, rises on marine terraces
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)
Hydric soil rating: No

13—Astatula sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2r8gx
Elevation: 20 to 190 feet
Mean annual precipitation: 46 to 54 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 276 to 320 days
Farmland classification: Not prime farmland

Map Unit Composition

Astatula and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Astatula

Setting

Landform: Hills on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex

Parent material: Eolian or sandy marine deposits

Typical profile

A - 0 to 3 inches: sand
C - 3 to 80 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 to 50.02 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Forage suitability group: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Other vegetative classification: Sand Pine Scrub (R154XY001FL), Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Minor Components

Tavares

Percent of map unit: 5 percent
Landform: Flats on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on rises, knolls, and ridges of mesic uplands (G155XB121FL), Longleaf Pine-Turkey Oak Hills (R154XY002FL)
Hydric soil rating: No

Candler, very deep loamy substratum

Percent of map unit: 5 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL), Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

17—Blichton sand, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1vhdv
Elevation: 30 to 160 feet
Mean annual precipitation: 46 to 70 inches
Mean annual air temperature: 68 to 81 degrees F
Frost-free period: 276 to 365 days
Farmland classification: Farmland of local importance

Map Unit Composition

Blichton, non-hydric, and similar soils: 75 percent
Blichton, hydric, and similar soils: 10 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blichton, Non-hydric

Setting

Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 5 inches: sand
E - 5 to 26 inches: sand
Btg - 26 to 30 inches: sandy loam
Btg - 30 to 77 inches: sandy clay loam
Cg - 77 to 80 inches: stratified sandy loam to sandy clay loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 1.98 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D

Forage suitability group: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Other vegetative classification: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Hydric soil rating: No

Description of Blichton, Hydric

Setting

Landform: Ridges on marine terraces
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 5 inches: sand
E - 5 to 26 inches: sand
Btg - 26 to 30 inches: sandy loam
Btg - 30 to 77 inches: sandy clay loam
Cg - 77 to 80 inches: stratified sandy loam to sandy clay loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 1.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Forage suitability group: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Other vegetative classification: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Hydric soil rating: Yes

Minor Components

Flemington

Percent of map unit: 4 percent
Landform: Seeps on hillslopes on marine terraces
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Convex, concave
Across-slope shape: Concave, linear
Other vegetative classification: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Hydric soil rating: Yes

Kanapaha, non-hydric

Percent of map unit: 3 percent
Landform: Rises on marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)
Hydric soil rating: No

Sparr

Percent of map unit: 3 percent
Landform: Flats on marine terraces, rises on marine terraces
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)
Hydric soil rating: No

Lochloosa

Percent of map unit: 3 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on rises and knolls of mesic uplands (G154XB231FL)
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

Sinkhole

Percent of map unit: 1 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

22—Candler sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2t3z1
Elevation: 10 to 260 feet
Mean annual precipitation: 47 to 56 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 280 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Candler and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Candler

Setting

Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, interfluve, tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Eolian deposits and/or sandy and loamy marine deposits

Typical profile

A - 0 to 6 inches: sand
E - 6 to 63 inches: sand
E and Bt - 63 to 80 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A

Forage suitability group: Sandy soils on ridges and dunes of xeric uplands (G155XB111FL), Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL), Sandy soils on ridges and dunes of xeric uplands (G155XB111FL), Longleaf Pine-Turkey Oak Hills (R155XY002FL), Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Minor Components

Millhopper

Percent of map unit: 5 percent
Landform: Ridges on marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL), Sandy soils on rises, knolls, and ridges of mesic uplands (G154XB121FL)
Hydric soil rating: No

Tavares

Percent of map unit: 5 percent
Landform: Ridges on marine terraces
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave, convex
Across-slope shape: Linear
Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL), Sandy soils on rises, knolls, and ridges of mesic uplands (G154XB121FL)
Hydric soil rating: No

35—Gainesville loamy sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1vhff
Elevation: 40 to 150 feet
Mean annual precipitation: 46 to 54 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 276 to 306 days
Farmland classification: Farmland of local importance

Map Unit Composition

Gainesville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gainesville

Setting

Landform: Ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 5 inches: loamy sand
C - 5 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Forage suitability group: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Minor Components

Hague

Percent of map unit: 4 percent
Landform: Hills on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on knolls and ridges of mesic uplands (G154XB211FL)
Hydric soil rating: No

Arredondo

Percent of map unit: 4 percent
Landform: Ridges on marine terraces, hills on marine terraces
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex

Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Kendrick

Percent of map unit: 4 percent
Landform: Ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on knolls and ridges of mesic uplands (G154XB211FL)
Hydric soil rating: No

Zuber

Percent of map unit: 3 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Loamy and clayey soils on knolls and ridges of mesic uplands (G154XB311FL)
Hydric soil rating: No

37—Hague sand, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1vhfh
Elevation: 40 to 150 feet
Mean annual precipitation: 46 to 70 inches
Mean annual air temperature: 68 to 81 degrees F
Frost-free period: 276 to 365 days
Farmland classification: Farmland of local importance

Map Unit Composition

Hague and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hague

Setting

Landform: Hills on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 8 inches: sand
E - 8 to 24 inches: sand

Bt - 24 to 49 inches: sandy clay loam
BC - 49 to 74 inches: loamy sand
C - 74 to 80 inches: loamy sand

Properties and qualities
Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Forage suitability group: Forage suitability group not assigned (G154XB999FL)
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: No

Minor Components

Gainesville
Percent of map unit: 4 percent
Landform: Ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Arredondo
Percent of map unit: 4 percent
Landform: Ridges on marine terraces, hills on marine terraces
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Kendrick
Percent of map unit: 3 percent
Landform: Ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on knolls and ridges of mesic uplands (G154XB211FL)

Hydric soil rating: No

Zuber

Percent of map unit: 3 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Loamy and clayey soils on knolls and ridges of mesic uplands (G154XB311FL)
Hydric soil rating: No

Sinkhole

Percent of map unit: 1 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

38—Hague sand, 5 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1vhfj
Elevation: 40 to 150 feet
Mean annual precipitation: 46 to 70 inches
Mean annual air temperature: 68 to 81 degrees F
Frost-free period: 276 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Hague and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hague

Setting

Landform: Ridges on marine terraces, hills on marine terraces
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 8 inches: sand
E - 8 to 24 inches: sand
Bt - 24 to 49 inches: sandy clay loam
BC - 49 to 74 inches: loamy sand

C - 74 to 80 inches: loamy sand

Properties and qualities

Slope: 5 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Forage suitability group: Sandy over loamy soils on knolls and ridges of mesic uplands (G154XB211FL)
Other vegetative classification: Sandy over loamy soils on knolls and ridges of mesic uplands (G154XB211FL)
Hydric soil rating: No

Minor Components

Gainesville

Percent of map unit: 5 percent
Landform: Hills on marine terraces
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Zuber

Percent of map unit: 4 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Loamy and clayey soils on ridges and side slopes of mesic uplands (G154XB312FL)
Hydric soil rating: No

Kendrick

Percent of map unit: 4 percent
Landform: Ridges on marine terraces
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on knolls and ridges of mesic uplands (G154XB211FL)
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

Sinkhole

Percent of map unit: 1 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

40—Holopaw sand, frequently ponded, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2x9gc
Elevation: 0 to 190 feet
Mean annual precipitation: 46 to 54 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 300 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Holopaw and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Holopaw

Setting

Landform: Depressions on marine terraces, flats on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Concave
Across-slope shape: Concave, linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 5 inches: sand
Eg - 5 to 59 inches: sand
Btg - 59 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Forage suitability group: Sandy soils on stream terraces, flood plains, or in depressions (G154XB145FL)
Other vegetative classification: Freshwater Marshes and Ponds (R154XY010FL), Sandy soils on stream terraces, flood plains, or in depressions (G154XB145FL)
Hydric soil rating: Yes

Minor Components

Pomona

Percent of map unit: 7 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: South Florida Flatwoods (R155XY003FL), Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: No

Anclote

Percent of map unit: 5 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Linear, concave
Other vegetative classification: Freshwater Marshes and Ponds (R155XY010FL), Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL)
Hydric soil rating: Yes

Paisley

Percent of map unit: 3 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave

Other vegetative classification: Loamy and clayey soils on flats of hydric or mesic lowlands (G154XB341FL)
Hydric soil rating: Yes

43—Kanapaha-Kanapaha, wet, fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2w4h0
Elevation: 30 to 150 feet
Mean annual precipitation: 46 to 54 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 276 to 306 days
Farmland classification: Farmland of local importance

Map Unit Composition

Kanapaha and similar soils: 75 percent
Kanapaha, wet, and similar soils: 10 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kanapaha

Setting

Landform: Rises on marine terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 7 inches: fine sand
E - 7 to 48 inches: fine sand
Btg1 - 48 to 55 inches: fine sandy loam
Btg2 - 55 to 70 inches: sandy clay
BCg - 70 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)
Hydric soil rating: No

Description of Kanapaha, Wet

Setting

Landform: Sloughs on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 7 inches: fine sand
E - 7 to 48 inches: fine sand
Btg1 - 48 to 55 inches: fine sandy loam
Btg2 - 55 to 70 inches: sandy clay
BCg - 70 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)
Hydric soil rating: Yes

Minor Components

Arredondo

Percent of map unit: 5 percent
Landform: Ridges on marine terraces, hills on marine terraces
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Interfluve, side slope, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL), Longleaf Pine-Turkey Oak Hills (R154XY002FL)
Hydric soil rating: No

Blichton

Percent of map unit: 5 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Other vegetative classification: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Hydric soil rating: No

Sparr

Percent of map unit: 5 percent
Landform: Seeps on marine terraces, knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Concave, convex
Other vegetative classification: Upland Hardwood Hammock (R154XY008FL), Sandy soils on rises and knolls of mesic uplands (G154XB131FL)
Hydric soil rating: No

44—Kendrick loamy sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2y7n2
Elevation: 30 to 300 feet
Mean annual precipitation: 44 to 56 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 300 to 365 days
Farmland classification: Farmland of local importance

Map Unit Composition

Kendrick and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kendrick

Setting

Landform: Ridges, knolls, fluviomarine terraces

Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy marine deposits over loamy marine deposits

Typical profile

A - 0 to 7 inches: loamy sand
E - 7 to 28 inches: fine sand
Bt - 28 to 73 inches: sandy clay loam
BC - 73 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Forage suitability group: Sandy over loamy soils on knolls and ridges of mesic uplands (G154XB211FL)
Other vegetative classification: Sandy over loamy soils on knolls and ridges of mesic uplands (G154XB211FL), Upland Hardwood Hammock (R154XY008FL)
Hydric soil rating: No

Minor Components

Arredondo

Percent of map unit: 5 percent
Landform: Ridges on fluviomarine terraces, hills on fluviomarine terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Gainesville

Percent of map unit: 5 percent
Landform: Ridges on fluviomarine terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear

Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Lochloosa

Percent of map unit: 5 percent
Landform: Knolls on fluviomarine terraces, ridges on fluviomarine terraces
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Upland Hardwood Hammock (R154XY008FL), Sandy over loamy soils on rises and knolls of mesic uplands (G154XB231FL)
Hydric soil rating: No

45—Kendrick loamy sand, 5 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1vhfr
Elevation: 40 to 160 feet
Mean annual precipitation: 46 to 70 inches
Mean annual air temperature: 68 to 81 degrees F
Frost-free period: 276 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Kendrick and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kendrick

Setting

Landform: Ridges on marine terraces
Landform position (three-dimensional): Side slope, interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy marine deposits

Typical profile

A - 0 to 7 inches: loamy sand
E - 7 to 26 inches: loamy sand
Bt1 - 26 to 45 inches: sandy clay loam
Bt2 - 45 to 79 inches: sandy clay loam
C - 79 to 80 inches: sandy clay loam

Properties and qualities

Slope: 5 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Forage suitability group: Sandy over loamy soils on knolls and ridges of mesic uplands (G154XB211FL)
Other vegetative classification: Sandy over loamy soils on knolls and ridges of mesic uplands (G154XB211FL)
Hydric soil rating: No

Minor Components

Hague

Percent of map unit: 5 percent
Landform: Ridges on marine terraces, hills on marine terraces
Landform position (three-dimensional): Side slope, interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on knolls and ridges of mesic uplands (G154XB211FL)
Hydric soil rating: No

Arredondo

Percent of map unit: 5 percent
Landform: Ridges on marine terraces, hills on marine terraces
Landform position (three-dimensional): Side slope, interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Lochloosa

Percent of map unit: 4 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Side slope, interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on rises and knolls of mesic uplands (G154XB231FL)
Hydric soil rating: No

Zuber

Percent of map unit: 4 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Side slope, interfluve
Down-slope shape: Convex
Across-slope shape: Linear

Other vegetative classification: Loamy and clayey soils on ridges and side slopes of mesic uplands (G154XB312FL)
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

Sinkhole

Percent of map unit: 1 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

46—Lochloosa fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2v17k
Elevation: 10 to 210 feet
Mean annual precipitation: 44 to 56 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 300 to 365 days
Farmland classification: Farmland of local importance

Map Unit Composition

Lochloosa and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lochloosa

Setting

Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 5 inches: fine sand

E - 5 to 25 inches: fine sand
Bt - 25 to 30 inches: sandy clay loam
Btg - 30 to 52 inches: sandy clay
Cg - 52 to 74 inches: sandy clay loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 15 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Forage suitability group: Sandy over loamy soils on rises and knolls of mesic uplands (G154XB231FL)
Other vegetative classification: Upland Hardwood Hammock (R154XY008FL), Sandy over loamy soils on rises and knolls of mesic uplands (G154XB231FL)
Hydric soil rating: No

Minor Components

Kendrick

Percent of map unit: 7 percent
Landform: Ridges on marine terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on knolls and ridges of mesic uplands (G154XB211FL)
Hydric soil rating: No

Broward

Percent of map unit: 2 percent
Landform: Rises on marine terraces, flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Shallow or moderately deep, sandy or loamy soils on rises and ridges of mesic uplands (G154XB521FL), Cabbage Palm Flatwoods (R154XY005FL)
Hydric soil rating: No

Micanopy

Percent of map unit: 1 percent
Landform: Rises on marine terraces
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Loamy and clayey soils on flats and rises of mesic lowlands (G154XB331FL)
Hydric soil rating: No

47—Lochloosa fine sand, 5 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1vhft
Elevation: 30 to 160 feet
Mean annual precipitation: 46 to 70 inches
Mean annual air temperature: 68 to 81 degrees F
Frost-free period: 276 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Lochloosa and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lochloosa

Setting

Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 5 inches: fine sand
E - 5 to 28 inches: fine sand
Bt - 28 to 32 inches: fine sandy loam
Btg - 32 to 57 inches: sandy clay loam
BCg - 57 to 69 inches: sandy clay
Cg - 69 to 75 inches: sandy clay loam

Properties and qualities

Slope: 5 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 30 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Forage suitability group: Sandy over loamy soils on rises and knolls of mesic uplands (G154XB231FL)
Other vegetative classification: Sandy over loamy soils on rises and knolls of mesic uplands (G154XB231FL)
Hydric soil rating: No

Minor Components

Blichton, non-hydric

Percent of map unit: 5 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Hydric soil rating: No

Kendrick

Percent of map unit: 5 percent
Landform: Ridges on marine terraces
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on knolls and ridges of mesic uplands (G154XB211FL)
Hydric soil rating: No

Micanopy

Percent of map unit: 4 percent
Landform: Ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Loamy and clayey soils on rises, knolls, and ridges of mesic uplands (G154XB322FL)
Hydric soil rating: No

Sparr

Percent of map unit: 4 percent
Landform: Hillslopes on marine terraces, seeps on marine terraces
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Linear
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent

Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

Sinkhole

Percent of map unit: 1 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

50—Micanopy fine sand, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1vhfx
Elevation: 30 to 160 feet
Mean annual precipitation: 46 to 70 inches
Mean annual air temperature: 68 to 81 degrees F
Frost-free period: 276 to 365 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Micanopy and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Micanopy

Setting

Landform: Rises on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and clayey marine deposits; sandy and clayey marine deposits

Typical profile

A - 0 to 5 inches: fine sand
E - 5 to 15 inches: fine sand
Bt1 - 15 to 20 inches: sandy clay loam
Bt2 - 20 to 26 inches: sandy clay
Btg - 26 to 57 inches: sandy clay
BCg - 57 to 68 inches: sandy clay

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Forage suitability group: Loamy and clayey soils on flats and rises of mesic lowlands (G154XB331FL)
Other vegetative classification: Loamy and clayey soils on flats and rises of mesic lowlands (G154XB331FL)
Hydric soil rating: No

Minor Components

Zuber

Percent of map unit: 6 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Loamy and clayey soils on knolls and ridges of mesic uplands (G154XB311FL)
Hydric soil rating: No

Lochloosa

Percent of map unit: 6 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on rises and knolls of mesic uplands (G154XB231FL)
Hydric soil rating: No

Flemington

Percent of map unit: 6 percent
Landform: Seeps on hillslopes on marine terraces
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Convex, concave
Across-slope shape: Concave, linear
Other vegetative classification: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Hydric soil rating: Yes

Sinkhole

Percent of map unit: 1 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

Rock outcrop

Percent of map unit: 1 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

57—Pits

Map Unit Composition

Borrow pits: 40 percent
Mine pits: 35 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Borrow Pits

Setting

Landform: Marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Altered marine deposits

Interpretive groups

Land capability classification (irrigated): None specified
Forage suitability group: Forage suitability group not assigned (G154XB999FL)
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

Description of Mine Pits

Setting

Landform: Marine terraces
Landform position (three-dimensional): Interfluve, dip
Down-slope shape: Linear

Across-slope shape: Linear
Parent material: Altered marine deposits

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Forage suitability group: Forage suitability group not assigned (G154XB999FL)
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

Minor Components

Aquents
Percent of map unit: 25 percent
Landform: Depressions on marine terraces
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Yes

58—Placid sand, depressional

Map Unit Setting
National map unit symbol: 1vhg3
Elevation: 10 to 120 feet
Mean annual precipitation: 46 to 54 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 276 to 306 days
Farmland classification: Not prime farmland

Map Unit Composition
Placid, depressional, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Placid, Depressional

Setting
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy marine deposits

Typical profile
A - 0 to 19 inches: fine sand
Cg - 19 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Forage suitability group: Sandy soils on stream terraces, flood plains, or in depressions (G154XB145FL)
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G154XB145FL)
Hydric soil rating: Yes

Minor Components

Pomona, hydric

Percent of map unit: 7 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)
Hydric soil rating: Yes

Adamsville

Percent of map unit: 7 percent
Landform: Knolls on marine terraces, rises on marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)
Hydric soil rating: No

Pompano, depressional

Percent of map unit: 6 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G154XB145FL)
Hydric soil rating: Yes

65—Sparr fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1vhqq
Elevation: 30 to 150 feet
Mean annual precipitation: 46 to 54 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 276 to 306 days
Farmland classification: Not prime farmland

Map Unit Composition

Sparr and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sparr

Setting

Landform: Flats on marine terraces, rises on marine terraces
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 8 inches: fine sand
E - 8 to 48 inches: fine sand
Bt - 48 to 56 inches: sandy loam
Btg - 56 to 72 inches: sandy clay
BCg - 72 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 18 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A

Forage suitability group: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)
Hydric soil rating: No

Minor Components

Blichton, non-hydric

Percent of map unit: 4 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Side slope, interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Hydric soil rating: No

Arredondo

Percent of map unit: 4 percent
Landform: Ridges on marine terraces, hills on marine terraces
Landform position (three-dimensional): Side slope, interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Apopka

Percent of map unit: 4 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Side slope, interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Jumper

Percent of map unit: 3 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on rises and knolls of mesic uplands (G154XB231FL)
Hydric soil rating: No

69—Tavares sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2v173
Elevation: 0 to 180 feet
Mean annual precipitation: 44 to 56 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 300 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Tavares and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tavares

Setting

Landform: Knolls on marine terraces, ridges on marine terraces, flats on marine terraces
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Eolian or sandy marine deposits

Typical profile

A - 0 to 7 inches: sand
C - 7 to 80 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 50.02 in/hr)
Depth to water table: About 42 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Forage suitability group: Sandy soils on rises, knolls, and ridges of mesic uplands (G154XB121FL)

Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL), Sandy soils on rises, knolls, and ridges of mesic uplands (G154XB121FL)
Hydric soil rating: No

Minor Components

Apopka

Percent of map unit: 6 percent
Landform: Ridges on marine terraces, knolls on marine terraces
Landform position (two-dimensional): Summit, shoulder, footslope
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Longleaf Pine-Turkey Oak Hills (R154XY002FL), Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Candler

Percent of map unit: 4 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, interfluve, tread
Down-slope shape: Convex
Across-slope shape: Convex
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G155XB111FL), Longleaf Pine-Turkey Oak Hills (R154XY002FL), Longleaf Pine-Turkey Oak Hills (R155XY002FL), Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Adamsville

Percent of map unit: 3 percent
Landform: Knolls on flatwoods, rises on flatwoods
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve, talf, rise
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Upland Hardwood Hammock (R154XY008FL), Upland Hardwood Hammock (R155XY008FL)
Hydric soil rating: No

Zolfo

Percent of map unit: 2 percent
Landform: Flats on marine terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)
Hydric soil rating: No

74—Wacahoota gravelly sand, gravelly subsoil variant, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1vhr2
Elevation: 30 to 130 feet
Mean annual precipitation: 46 to 70 inches
Mean annual air temperature: 68 to 81 degrees F
Frost-free period: 276 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Wacahoota variant, non-hydric, and similar soils: 60 percent
Wacahoota variant, hydric, and similar soils: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wacahoota Variant, Non-hydric

Setting

Landform: Ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 5 inches: gravelly sand
E - 5 to 31 inches: gravelly sand
Btg1 - 31 to 36 inches: gravelly sandy loam
Btg2 - 36 to 72 inches: gravelly sandy clay loam
Cg - 72 to 78 inches: sandy clay loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 12 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: B/D
Forage suitability group: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Other vegetative classification: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Hydric soil rating: No

Description of Wacahoota Variant, Hydric

Setting

Landform: Seeps on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Side slope, interfluve
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 5 inches: gravelly sand
E - 5 to 31 inches: gravelly sand
Btg1 - 31 to 36 inches: gravelly sandy loam
Btg2 - 36 to 72 inches: gravelly sandy clay loam
Cg - 72 to 78 inches: sandy clay loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Forage suitability group: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Other vegetative classification: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Hydric soil rating: Yes

Minor Components

Kanapaha, non-hydric

Percent of map unit: 9 percent
Landform: Rises on marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)

Hydric soil rating: No

Fellowship, non-hydric

Percent of map unit: 9 percent
Landform: Hills on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Concave
Other vegetative classification: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Hydric soil rating: No

Sinkhole

Percent of map unit: 1 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

Rock outcrop

Percent of map unit: 1 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

77—Zuber loamy sand, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1vhr5
Elevation: 30 to 160 feet
Mean annual precipitation: 46 to 70 inches
Mean annual air temperature: 68 to 81 degrees F
Frost-free period: 276 to 365 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Zuber and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Zuber

Setting

Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy and clayey marine deposits

Typical profile

A - 0 to 7 inches: loamy sand
E - 7 to 15 inches: loamy sand
Bt1 - 15 to 20 inches: sandy clay loam
Bt2 - 20 to 70 inches: sandy clay
BC - 70 to 80 inches: clay

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Forage suitability group: Loamy and clayey soils on knolls and ridges of mesic uplands (G154XB311FL)
Other vegetative classification: Loamy and clayey soils on knolls and ridges of mesic uplands (G154XB311FL)
Hydric soil rating: No

Minor Components

Kendrick

Percent of map unit: 4 percent
Landform: Ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on knolls and ridges of mesic uplands (G154XB211FL)
Hydric soil rating: No

Flemington

Percent of map unit: 4 percent
Landform: Seeps on hillslopes on marine terraces
Landform position (three-dimensional): Side slope, base slope

Down-slope shape: Convex, concave
Across-slope shape: Concave, linear
Other vegetative classification: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Hydric soil rating: Yes

Hague

Percent of map unit: 4 percent
Landform: Ridges on marine terraces, hills on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on knolls and ridges of mesic uplands (G154XB211FL)
Hydric soil rating: No

Lochloosa

Percent of map unit: 3 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on rises and knolls of mesic uplands (G154XB231FL)
Hydric soil rating: No

Micanopy

Percent of map unit: 3 percent
Landform: Rises on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Loamy and clayey soils on flats and rises of mesic lowlands (G154XB331FL)
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

Sinkhole

Percent of map unit: 1 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

79—Udorthents, excavated

Map Unit Setting

National map unit symbol: 1vknb
Elevation: 40 to 200 feet
Mean annual precipitation: 46 to 54 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 276 to 306 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Landform: Marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Altered marine deposits

Typical profile

C1 - 0 to 48 inches: variable
C2 - 48 to 50 inches: fine sand
R - 50 to 54 inches: weathered bedrock

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: 40 to 72 inches to paralithic bedrock
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 5.95 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Forage suitability group: Forage suitability group not assigned (G154XB999FL)
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: No

99—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified
Forage suitability group: Forage suitability group not assigned (G154XB999FL)
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Water Features

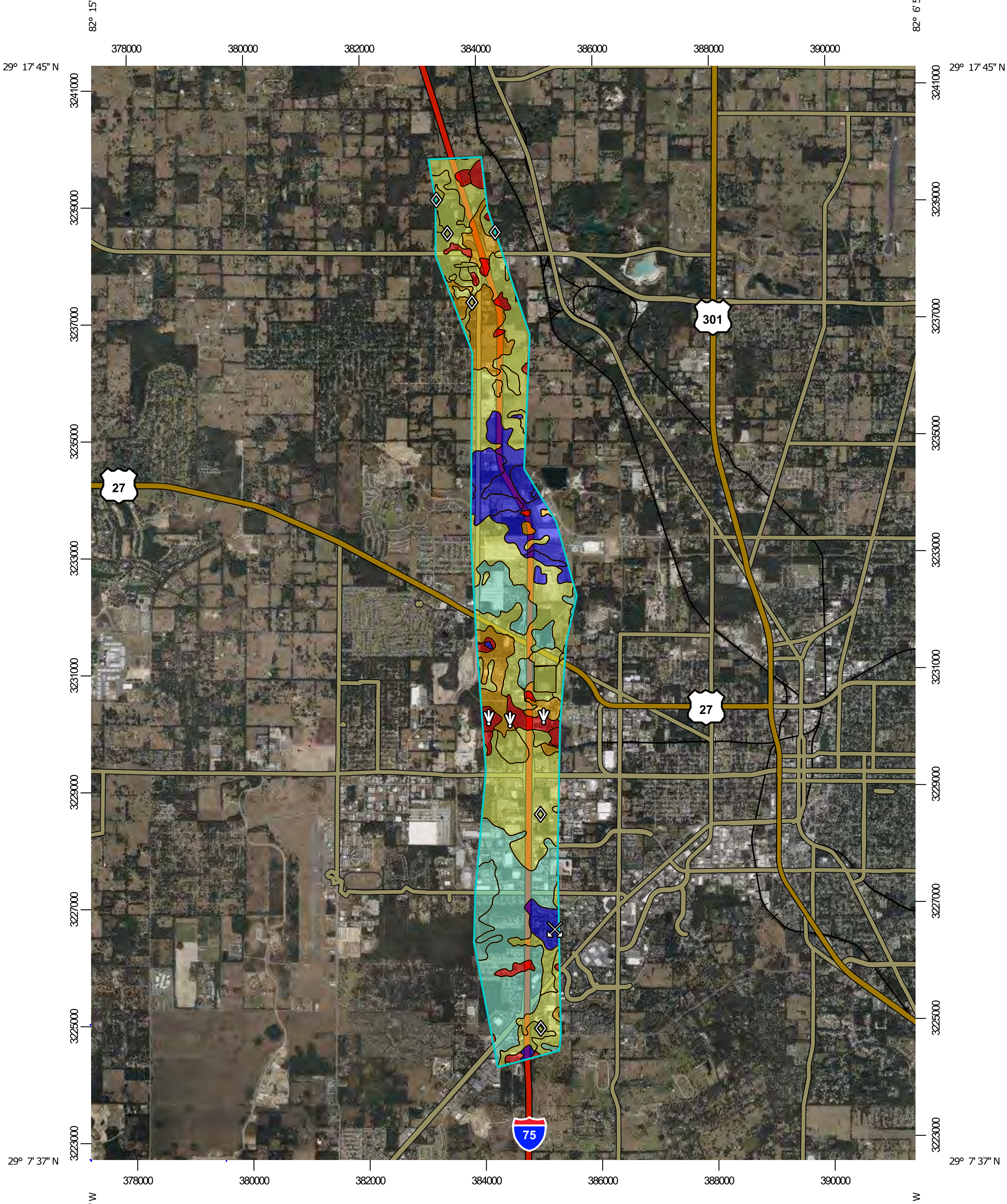
Water Features include ponding frequency, flooding frequency, and depth to water table.

Depth to Water Table

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report
Map—Depth to Water Table



Map Scale: 1:91,400 if printed on A portrait (8.5" x 11") sheet.

Meters: 0, 1000, 2000, 4000, 6000

N

Feet: 0, 4000, 8000, 16000, 24000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Survey Areas
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Soil Rating Polygons
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Lines
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Points
- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Marion County Area, Florida
Survey Area Data: Version 20, Sep 1, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 9, 2022—Feb 10, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
2	Adamsville sand, 0 to 5 percent slopes	8	23.7	0.5%
7	Udalfic Arents, 0 to 5 percent slopes	92	1.4	0.0%
9	Arredondo sand, 0 to 5 percent slopes	59	1,770.1	36.8%
11	Pedro-Arredondo complex, 0 to 5 percent slopes	99	77.7	1.6%
13	Astatula sand, 0 to 5 percent slopes	145	110.2	2.3%
17	Blichton sand, 2 to 5 percent slopes	15	18.5	0.4%
22	Candler sand, 0 to 5 percent slopes	145	1,003.5	20.9%
35	Gainesville loamy sand, 0 to 5 percent slopes	>200	229.2	4.8%
37	Hague sand, 2 to 5 percent slopes	>200	309.3	6.4%
38	Hague sand, 5 to 8 percent slopes	>200	20.4	0.4%
40	Holopaw sand, frequently ponded, 0 to 1 percent slopes	0	0.5	0.0%
43	Kanapaha-Kanapaha, wet, fine sand, 0 to 5 percent slopes	15	112.1	2.3%
44	Kendrick loamy sand, 0 to 5 percent slopes	95	285.1	5.9%
45	Kendrick loamy sand, 5 to 8 percent slopes	114	6.5	0.1%
46	Lochloosa fine sand, 0 to 5 percent slopes	59	64.2	1.3%
47	Lochloosa fine sand, 5 to 8 percent slopes	31	9.7	0.2%
50	Micanopy fine sand, 2 to 5 percent slopes	15	52.3	1.1%
57	Pits	>200	58.3	1.2%
58	Placid sand, depressional	8	11.6	0.2%
65	Sparr fine sand, 0 to 5 percent slopes	31	495.1	10.3%
69	Tavares sand, 0 to 5 percent slopes	84	54.9	1.1%

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
74	Wacahoota gravelly sand, gravelly subsoil variant, 2 to 5 percent slopes	15	2.5	0.1%
77	Zuber loamy sand, 2 to 5 percent slopes	15	32.5	0.7%
79	Udorthents, excavated	92	55.7	1.2%
99	Water	>200	5.9	0.1%
Totals for Area of Interest			**4,811.1**	**100.0%**

Rating Options—Depth to Water Table

Units of Measure: centimeters

Aggregation Method: Minimum or Maximum

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Beginning Month: January

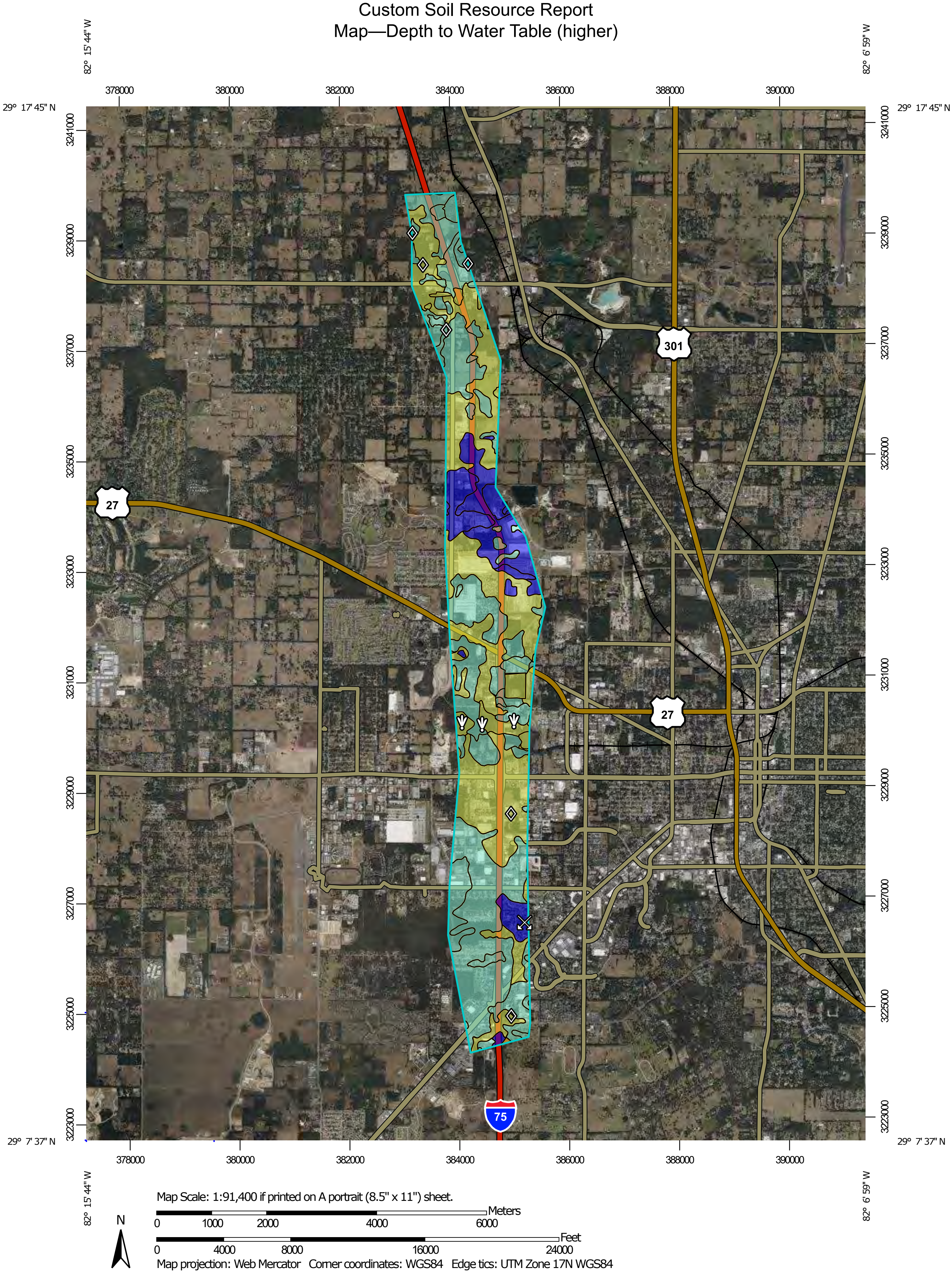
Ending Month: December

Depth to Water Table (higher)

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report
Map—Depth to Water Table (higher)



Map Scale: 1:91,400 if printed on A portrait (8.5" x 11") sheet.

0 1000 2000 4000 6000 Meters

0 4000 8000 16000 24000 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Survey Areas

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Soil Rating Polygons

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Soil Rating Lines

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Soil Rating Points

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Marion County Area, Florida
Survey Area Data: Version 20, Sep 1, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 9, 2022—Feb 10, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Depth to Water Table (higher)

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
2	Adamsville sand, 0 to 5 percent slopes	145	23.7	0.5%
7	Udalfic Arents, 0 to 5 percent slopes	92	1.4	0.0%
9	Arredondo sand, 0 to 5 percent slopes	59	1,770.1	36.8%
11	Pedro-Arredondo complex, 0 to 5 percent slopes	114	77.7	1.6%
13	Astatula sand, 0 to 5 percent slopes	145	110.2	2.3%
17	Blichton sand, 2 to 5 percent slopes	114	18.5	0.4%
22	Candler sand, 0 to 5 percent slopes	150	1,003.5	20.9%
35	Gainesville loamy sand, 0 to 5 percent slopes	>200	229.2	4.8%
37	Hague sand, 2 to 5 percent slopes	>200	309.3	6.4%
38	Hague sand, 5 to 8 percent slopes	>200	20.4	0.4%
40	Holopaw sand, frequently ponded, 0 to 1 percent slopes	122	0.5	0.0%
43	Kanapaha-Kanapaha, wet, fine sand, 0 to 5 percent slopes	59	112.1	2.3%
44	Kendrick loamy sand, 0 to 5 percent slopes	114	285.1	5.9%
45	Kendrick loamy sand, 5 to 8 percent slopes	114	6.5	0.1%
46	Lochloosa fine sand, 0 to 5 percent slopes	114	64.2	1.3%
47	Lochloosa fine sand, 5 to 8 percent slopes	114	9.7	0.2%
50	Micanopy fine sand, 2 to 5 percent slopes	114	52.3	1.1%
57	Pits	>200	58.3	1.2%
58	Placid sand, depressional	76	11.6	0.2%
65	Sparr fine sand, 0 to 5 percent slopes	107	495.1	10.3%
69	Tavares sand, 0 to 5 percent slopes	145	54.9	1.1%

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
74	Wacahoota gravelly sand, gravelly subsoil variant, 2 to 5 percent slopes	38	2.5	0.1%
77	Zuber loamy sand, 2 to 5 percent slopes	114	32.5	0.7%
79	Udorthents, excavated	92	55.7	1.2%
99	Water	>200	5.9	0.1%
Totals for Area of Interest			**4,811.1**	**100.0%**

Rating Options—Depth to Water Table (higher)

Units of Measure: centimeters

Aggregation Method: Minimum or Maximum

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: No

Beginning Month: January

Ending Month: December

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Appendix D

Preliminary Pond Sizing Calculations

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/16/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	1 & 2
SMF Name:	B1-A & B2-C Combined

	Pre	***Post***
From Station	2158+17	2158+17
To Station	2224+45	2224+45
Basin Length	6627.77 ft	6627.77 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	45.65 ac	45.65 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	17.04 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	41.08 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	41.08 ac	24.04 ac	45.65 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **5.99 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	41.08 ac	24.04 ac	45.65 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **3.80 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**5.99 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**5.99 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/16/2023
Checked By: CC
Revised By: AV
Date: 2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 1 & 2
SMF Name: B1-A & B2-C Combined

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	45.65 ac	3.47 ac	49.12 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		17.04 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		32.08 ac

CN Calculations

Soil Types (provide)		Candler		100-Water	
Cover Description (choose)		Open, Good Cond. (Grass >75%)	-	Water	
HSG (choose)		A	-	A	*Composite*
Percentage Basin (provide)		98%	0%	2%	*Open*
CN	0	39	0	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	17.04 ac	-	98	34.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	32.08 ac	-	40	26.27
			CN_{pre} =	60.3

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 6.59 in.
Q_{pre} = 5.59 in.
Pre-development runoff volume = **22.89 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	45.65 ac	3.47 ac	49.12 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		41.08 ac
Pond Outside of Berm	-		2.67 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		5.37 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	41.08 ac	-	98	81.96
Pond Outside of Berm	2.67 ac	-	100	5.43
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	5.37 ac	-	40	4.40
			CN_{post} =	91.8

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 0.89 in.
Q_{post} = 9.80 in.
Post-development runoff volume = **40.10 ac-ft**

Attenuation volume required (Post-Pre) **17.21 ac-ft**
Total Pond Volume (25 Yr, 96 Hr) **23.20 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/16/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	1 & 2
SMF Name:	B1-A & B2-C Combined

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	45.65 ac	28.59 ac	74.24 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		17.04 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		57.20 ac

CN Calculations

Soil Types (provide)	0	Candler	0	100-Water	
Cover Description (choose)	0	Open, Good Cond. (Grass >75%)	-	Water	
HSG (choose)	0	A	-	A	*Composite*
Percentage Basin (provide)	0%	98%	0%	2%	*Open*
CN	0	39	0	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	17.04 ac	-	98	22.49
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	57.20 ac	-	40	30.99
			CN_{pre} =	53.5

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	8.70 in.
Q_{pre} =	9.37 in.
Pre-development runoff volume =	**57.99 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	45.65 ac	28.59 ac	74.24 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		41.08 ac
Pond Outside of Berm	-		26.38 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		6.78 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	41.08 ac	-	98	54.23
Pond Outside of Berm	26.38 ac	-	100	35.54
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	6.78 ac	-	40	3.67
			CN_{post} =	93.4

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	0.70 in.
Q_{post} =	15.79 in.
Post-development runoff volume =	**97.66 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/16/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 1 & 2
SMF Name: B1-A & B2-C Combined

Total Pond Volume (100 Yr, 240 Hr) **97.66 ac-ft**

Double stack storm assumes 1' drawdown from first storm and 6" freeboard provided

Double stack 2nd storm	+	**97.66 ac-ft**
Volume provided by drawdown of 1'	-	**38.61 ac-ft**
Volume provided within 6" freeboard	-	**18.20 ac-ft**
Total Pond Volume Required after first storm drawdown	=	**138.52 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	73.50	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. low back of berm elevation @ Pond Site=	68.00 ft	
Approx. Pond Bottom (dry) =	60.00	*Pond bottom Contour elevatons from adjacent pond*
Seasonal High Ground Water Elevation (SHGWT)=	57.83	*From permit 27678*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	68.93	*TW elevation source: 3x3 CBC/retention pond (STA 2164+93.63)*

Treatment Volume Required
5.99 ac-ft
Attenuation Volume Required
17.21 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	68.00	28.63			
Inside Edge of Maintenance Berm	67.10	26.62	15.90	179.23	
Design High Water	66.50	26.38	127.08	163.33	Meets Atten Vol Req
Treatment Weir	61.50	24.45	36.25	36.25	
Pond Bottom	60.00	23.88	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 1 & 2
SMF Name: B-1B & B-2A Combined

	Pre	***Post***
From Station	2158+17	2158+17
To Station	2224+45	2224+45
Basin Length	6627.77 ft	6627.77 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	45.65 ac	45.65 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	17.04 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	41.08 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	41.08 ac	24.04 ac	45.65 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		**5.99 ac-ft**		

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	41.08 ac	24.04 ac	45.65 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		**3.80 ac-ft**		

Treatment Volume Required = Largest Treatment Volume	**5.99 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**5.99 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	1 & 2
SMF Name:	B-1B & B-2A Combined

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	45.65 ac	6.55 ac	52.20 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		17.04 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		35.16 ac

CN Calculations

Soil Types (provide)	Astatula	Candler	Arredondo	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	A	A	A	A	*Composite*
Percentage Basin (provide)	12%	65%	21%	2%	*Open Space*
CN	39	39	39	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	17.04 ac	-	98	31.99
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	35.16 ac	-	40	26.91
			CN_{pre} =	58.9

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	6.98 in.
Q_{pre} =	5.40 in.
Pre-development runoff volume =	**23.48 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	45.65 ac	6.55 ac	52.20 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		41.08 ac
Pond Outside of Berm	-		5.69 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		5.43 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	41.08 ac	-	98	77.12
Pond Outside of Berm	5.69 ac	-	100	10.90
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	5.43 ac	-	40	4.16
			CN_{post} =	92.2

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	0.85 in.
Q_{post} =	9.84 in.
Post-development runoff volume =	**42.82 ac-ft**

Attenuation volume required (Post-Pre)	**19.34 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**25.33 ac-ft**

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Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	1 & 2
SMF Name:	B-1B & B-2A Combined

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	45.65 ac	15.54 ac	61.19 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		17.04 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		44.15 ac

CN Calculations

Soil Types (provide)	Astatula	Candler	Arredondo	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	A	A	A	A	*Composite*
Percentage Basin (provide)	12%	65%	21%	2%	*Open Space*
CN	39	39	39	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	17.04 ac	-	98	27.29
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	44.15 ac	-	40	28.82
			CN_{pre} =	56.1

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	7.82 in.
Q_{pre} =	9.89 in.
Pre-development runoff volume =	**50.44 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	45.65 ac	15.54 ac	61.19 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		41.08 ac
Pond Outside of Berm	-		13.78 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		6.33 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	41.08 ac	-	98	65.79
Pond Outside of Berm	13.78 ac	-	100	22.51
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	6.33 ac	-	40	4.14
			CN_{post} =	92.4

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	0.82 in.
Q_{post} =	15.66 in.
Post-development runoff volume =	**79.84 ac-ft**

Patel, Greene & Associates, LLC

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Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 1 & 2
SMF Name: B-1B & B-2A Combined

Total Pond Volume (100 Yr, 240 Hr) **79.84 ac-ft**

Additional flood plain volume on parcel **3.82 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **83.66 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	73.50	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	72.00 ft	*Lowest groung EL*
Approx. Pond Bottom (dry) =	64.00	*'Existing Pond bottom Contour*
Seasonal High Ground Water Elevation (SHGWT)=	62.00	*2' below pond bottom*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	68.93	*TW elevation source: 24" Pipe (STA 2213+44.30)*

Treatment Volume Required
5.99 ac-ft
Attenuation Volume Required
19.34 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* (ac-ft)	*Sum Storage* (ac-ft)	*Check*
Outside Edge of Maintenance Berm	72.00	15.54			
Inside Edge of Maintenance Berm	71.50	14.06	13.92	97.62	
Design High Water	70.50	13.78	65.41	83.70	Meets Atten Vol Req
Treatment Weir	65.50	12.39	18.28	18.28	
Pond Bottom	64.00	11.99	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

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Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 1 & 2
SMF Name: B-1F & B-2B Combined

	Pre	***Post***
From Station	2158+17	2158+17
To Station	2224+45	2224+45
Basin Length	6627.77 ft	6627.77 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	45.65 ac	45.65 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	17.04 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	41.08 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	41.08 ac	24.04 ac	45.65 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **5.99 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	41.08 ac	24.04 ac	45.65 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **3.80 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**5.99 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**5.99 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

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Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 1 & 2
SMF Name: B-1F & B-2B Combined

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	45.65 ac	6.55 ac	52.20 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		17.04 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		35.16 ac

CN Calculations

Soil Types (provide)	Astatula	Candler		100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	Open, Good Cond. (Grass >75%)		Water	
HSG (choose)	A	A		A	*Composite*
Percentage Basin (provide)	22%	76%		2%	*Open Space*
CN	39	39	0	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	17.04 ac	-	98	31.99
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	35.16 ac	-	40	26.96
			CN_{pre} =	59.0

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	6.96 in.
Q_{pre} =	5.41 in.
Pre-development runoff volume =	**23.52 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	45.65 ac	6.55 ac	52.20 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		41.08 ac
Pond Outside of Berm	-		5.69 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		5.43 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	41.08 ac	-	98	77.12
Pond Outside of Berm	5.69 ac	-	100	10.90
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	5.43 ac	-	40	4.17
			CN_{post} =	92.2

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	0.85 in.
Q_{post} =	9.85 in.
Post-development runoff volume =	**42.83 ac-ft**

Attenuation volume required (Post-Pre)	**19.31 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**25.30 ac-ft**

Patel, Greene & Associates, LLC

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Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	1 & 2
SMF Name:	B-1F & B-2B Combined

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	45.65 ac	14.69 ac	60.34 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		17.04 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		43.30 ac

CN Calculations

Soil Types (provide)	Astatula	Candler	0	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	Open, Good Cond. (Grass >75%	0	Water	
HSG (choose)	A	A	0	A	*Composite*
Percentage Basin (provide)	22%	76%	0%	2%	*Open Space*
CN	39	39	0	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	17.04 ac	-	98	27.68
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	43.30 ac	-	40	28.72
			CN_{pre} =	56.4

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	7.73 in.
Q_{pre} =	9.95 in.
Pre-development runoff volume =	**50.01 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	45.65 ac	14.69 ac	60.34 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		41.08 ac
Pond Outside of Berm	-		12.98 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		6.28 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	41.08 ac	-	98	66.72
Pond Outside of Berm	12.98 ac	-	100	21.52
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	6.28 ac	-	40	4.16
			CN_{post} =	92.4

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	0.82 in.
Q_{post} =	15.65 in.
Post-development runoff volume =	**78.70 ac-ft**

Patel, Greene & Associates, LLC

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Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 1 & 2
SMF Name: B-1F & B-2B Combined

Total Pond Volume (100 Yr, 240 Hr) **78.70 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **78.70 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	73.50	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	72.00 ft	*Lower Ground Elevation*
Approx. Pond Bottom (dry) =	64.00	*2' above SHW*
Seasonal High Ground Water Elevation (SHGWT)=	62.00	*From Permit 46957*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	68.93	*TW elevation source: 24" Pipe (STA 2213+44.30)*

Treatment Volume Required
5.99 ac-ft
Attenuation Volume Required
19.31 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* *(ac)*	*Delta Storage* *(ac-ft)*	*Sum Storage* *(ac-ft)*	*Check*
Outside Edge of Maintenance Berm	72.00	14.69			
Inside Edge of Maintenance Berm	71.50	13.26	13.12	91.85	
Design High Water	70.50	12.98	61.56	78.73	Meets Atten Vol Req
Treatment Weir	65.50	11.64	17.17	17.17	
Pond Bottom	64.00	11.25	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

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Date:	11/15/2023
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Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	3
SMF Name:	B-3B

	Pre	***Post***
From Station	2224+45	2224+45
To Station	2263+94	2263+94
Basin Length	3948.70 ft	3948.70 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	27.19 ac	27.19 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	10.15 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	24.48 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	24.48 ac	14.32 ac	27.19 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		**3.57 ac-ft**		

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	24.48 ac	14.32 ac	27.19 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		**2.27 ac-ft**		

Treatment Volume Required = Largest Treatment Volume	**3.57 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**3.57 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

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Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	3
SMF Name:	B-3B

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	27.19 ac	6.96 ac	34.15 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		10.15 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		24.00 ac

CN Calculations

Soil Types (provide)	Arredondo	Candler		100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	-	Water	
HSG (choose)	A	A	-	A	*Composite*
Percentage Basin (provide)	67%	31%	0%	2%	*Open Space*
CN	39	39	0	100	41

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	10.15 ac	-	98	29.13
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	24.00 ac	-	41	28.81
			CN_{pre} =	57.9

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	7.26 in.
Q_{pre} =	5.26 in.
Pre-development runoff volume =	**14.98 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	27.19 ac	6.96 ac	34.15 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		24.48 ac
Pond Outside of Berm	-		6.08 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		3.59 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	24.48 ac	-	98	70.25
Pond Outside of Berm	6.08 ac	-	100	17.82
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	3.59 ac	-	41	4.31
			CN_{post} =	92.4

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	0.83 in.
Q_{post} =	9.87 in.
Post-development runoff volume =	**28.08 ac-ft**

Attenuation volume required (Post-Pre)	**13.11 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**16.68 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	3
SMF Name:	B-3B

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	27.19 ac	14.36 ac	41.55 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		10.15 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		31.40 ac

CN Calculations

Soil Types (provide)	Arredondo	Candler	0	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%)	-	Water	
HSG (choose)	A	A	-	A	*Composite*
Percentage Basin (provide)	67%	31%	0%	2%	*Open Space*
CN	39	39	0	100	41

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	10.15 ac	-	98	23.94
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	31.40 ac	-	41	30.98
			CN_{pre} =	54.9

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	8.21 in.
Q_{pre} =	9.66 in.
Pre-development runoff volume =	**33.44 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	27.19 ac	14.36 ac	41.55 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		24.48 ac
Pond Outside of Berm	-		12.67 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		4.40 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	24.48 ac	-	98	57.74
Pond Outside of Berm	12.67 ac	-	100	30.48
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	4.40 ac	-	41	4.35
			CN_{post} =	92.6

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	0.80 in.
Q_{post} =	15.67 in.
Post-development runoff volume =	**54.27 ac-ft**

Designed By:	AV
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 3
SMF Name: B-3B

Total Pond Volume (100 Yr, 240 Hr) **54.27 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **54.27 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)= 66.50
Approx. hydraulic clearance from LEOP = 1.00 ft *Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site 66.50 ft
Approx. Pond Bottom (dry) = 60.50 *As per rerequired hydraulic grade*
Seasonal High Ground Water Elevation (SHGWT)= 57.40 *From Permit 16297*
SHGWT Check for Dry Retention Only OK
Tailwater Elevation (TW) = 65.51 *TW elevation source: 24" Pipe (STA 2255+16.16)*

Treatment Volume Required
3.57 ac-ft
Attenuation Volume Required
13.11 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* (ac-ft)	*Sum Storage* (ac-ft)	*Check*
Outside Edge of Maintenance Berm	66.50	14.36			
Inside Edge of Maintenance Berm	66.00	12.94	12.80	67.09	
Design High Water	65.00	12.67	36.79	54.28	Meets Atten Vol Req
Treatment Weir	62.00	11.86	17.50	17.50	
Pond Bottom	60.50	11.47	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	3
SMF Name:	B-3C

	Pre	***Post***
From Station	2224+45	2224+45
To Station	2263+94	2263+94
Basin Length	3948.70 ft	3948.70 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	27.19 ac	27.19 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	10.15 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	24.48 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	24.48 ac	14.32 ac	27.19 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		**3.57 ac-ft**		

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	24.48 ac	14.32 ac	27.19 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		**2.27 ac-ft**		

Treatment Volume Required = Largest Treatment Volume	**3.57 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**3.57 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

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Date:	11/15/2023
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Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	3
SMF Name:	B-3C

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	27.19 ac	6.01 ac	33.20 ac
Total Area to be attenuated for (choose)	HSG (choose)		
Roadway	-		10.15 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		23.05 ac

CN Calculations

Soil Types (provide)		Candler		100-Water	
Cover Description (choose)		Open, Good Cond. (Grass >75%)	-	Water	
HSG (choose)		A	-	A	Composite
Percentage Basin (provide)		98%	0%	2%	Open Space
CN	0	39	0	100	41

	Area	HSG	CN	Weighted CN
Roadway	10.15 ac	-	98	29.96
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	23.05 ac	-	41	28.47
			CN_{pre} =	58.4

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	7.12 in.
Q_{pre} =	5.33 in.
Pre-development runoff volume =	**14.75 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	27.19 ac	6.01 ac	33.20 ac
Total Area to be attenuated for	HSG (choose)		
Roadway	-		24.48 ac
Pond Outside of Berm	-		5.11 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		3.61 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	24.48 ac	-	98	72.26
Pond Outside of Berm	5.11 ac	-	100	15.38
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	3.61 ac	-	41	4.46
			CN_{post} =	92.1

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	0.86 in.
Q_{post} =	9.84 in.
Post-development runoff volume =	**27.21 ac-ft**

Attenuation volume required (Post-Pre)	**12.46 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**16.03 ac-ft**

Designed By:	AV
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	3
SMF Name:	B-3C

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	27.19 ac	14.36 ac	41.55 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		10.15 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		31.40 ac

CN Calculations

Soil Types (provide)	0	Candler	0	100-Water	
Cover Description (choose)	0	Open, Good Cond. (Grass >75%)	-	Water	
HSG (choose)	0	A	-	A	*Composite*
Percentage Basin (provide)	0%	98%	0%	2%	*Open Space*
CN	0	39	0	100	41

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	10.15 ac	-	98	23.94
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	31.40 ac	-	41	30.98
			CN_{pre} =	54.9

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	8.21 in.
Q_{pre} =	9.66 in.
Pre-development runoff volume =	**33.44 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	27.19 ac	14.36 ac	41.55 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		24.48 ac
Pond Outside of Berm	-		12.67 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		4.40 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	24.48 ac	-	98	57.74
Pond Outside of Berm	12.67 ac	-	100	30.48
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	4.40 ac	-	41	4.35
			CN_{post} =	92.6

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	0.80 in.
Q_{post} =	15.67 in.
Post-development runoff volume =	**54.27 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 3
SMF Name: B-3C

Total Pond Volume (100 Yr, 240 Hr) **54.27 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **54.27 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	66.50	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	64.00 ft	*Lowest ground Elevation*
Approx. Pond Bottom (dry) =	58.00	*'Existing Pond bottom Contour*
Seasonal High Ground Water Elevation (SHGWT)=	56.00	*2' below pond bottom*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	65.51	*TW elevation source: 24" Pipe (STA 2255+16.16)*

Treatment Volume Required
3.57 ac-ft
Attenuation Volume Required
12.46 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* *(ac)*	*Delta Storage* *(ac-ft)*	*Sum Storage* *(ac-ft)*	*Check*
Outside Edge of Maintenance Berm	64.00	14.36			
Inside Edge of Maintenance Berm	63.50	12.94	12.80	67.09	
Design High Water	62.50	12.67	36.79	54.28	Meets Atten Vol Req
Treatment Weir	59.50	11.86	17.50	17.50	
Pond Bottom	58.00	11.47	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	1/11/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	3
SMF Name:	B-3D

	Pre	***Post***
From Station	2224+45	2224+45
To Station	2263+94	2263+94
Basin Length	3948.70 ft	3948.70 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	27.19 ac	27.19 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	10.15 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	24.48 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	24.48 ac	14.32 ac	27.19 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **3.57 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	24.48 ac	14.32 ac	27.19 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **2.27 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**3.57 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**3.57 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	1/11/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	3
SMF Name:	B-3D

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	27.19 ac	6.96 ac	34.15 ac
Total Area to be attenuated for (choose)	HSG (choose)		
Roadway	-		10.15 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		24.00 ac

CN Calculations

Soil Types (provide)		Candler		100-Water	
Cover Description (choose)		Open, Good Cond. (Grass >75%)	-	Water	
HSG (choose)		A	-	A	*Composite*
Percentage Basin (provide)		98%	0%	2%	*Open Space*
CN	0	39	0	100	41

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	10.15 ac	-	98	29.13
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	24.00 ac	-	41	28.81
			CN_{pre} =	57.9

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	7.26 in.
Q_{pre} =	5.26 in.
Pre-development runoff volume =	**14.98 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	27.19 ac	6.96 ac	34.15 ac
Total Area to be attenuated for	HSG (choose)		
Roadway	-		24.48 ac
Pond Outside of Berm	-		5.90 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		3.77 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	24.48 ac	-	98	70.25
Pond Outside of Berm	5.90 ac	-	100	17.27
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	3.77 ac	-	41	4.53
			CN_{post} =	92.0

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	0.86 in.
Q_{post} =	9.83 in.
Post-development runoff volume =	**27.97 ac-ft**

Attenuation volume required (Post-Pre)	**12.99 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**16.56 ac-ft**

Designed By:	AV
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	1/11/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	3
SMF Name:	B-3D

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	27.19 ac	20.46 ac	47.65 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		10.15 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		37.50 ac

CN Calculations

Soil Types (provide)	0	Candler	0	100-Water	
Cover Description (choose)	0	Open, Good Cond. (Grass >75%)	-	Water	
HSG (choose)	0	A	-	A	*Composite*
Percentage Basin (provide)	0%	98%	0%	2%	*Open Space*
CN	0	39	0	100	41

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	10.15 ac	-	98	20.88
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	37.50 ac	-	41	32.27
			CN_{pre} =	53.1

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 8.82 in.
Q_{pre} = 9.31 in.
Pre-development runoff volume = **36.95 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	27.19 ac	20.46 ac	47.65 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		24.48 ac
Pond Outside of Berm	-		18.43 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		4.74 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	24.48 ac	-	98	50.35
Pond Outside of Berm	18.43 ac	-	100	38.68
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	4.74 ac	-	41	4.08
			CN_{post} =	93.1

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 0.74 in.
Q_{post} = 15.74 in.
Post-development runoff volume = **62.51 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	1/11/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 3
SMF Name: B-3D

Total Pond Volume (100 Yr, 240 Hr) **62.51 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **62.51 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	66.50	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	66.00 ft	*Set at 0.5' below LEOP EL*
Approx. Pond Bottom (dry) =	61.00	*2' above SH*
Seasonal High Ground Water Elevation (SHGWT)=	59.00	*Assumed 15' below lowest elevation on parcel (Permit 20519)*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	65.51	*TW elevation source: 24" Pipe (STA 2255+16.16)*

Treatment Volume Required
3.57 ac-ft
Attenuation Volume Required
12.99 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	66.00	20.46			
Inside Edge of Maintenance Berm	65.50	18.76	18.60	81.12	
Design High Water	64.50	18.43	36.21	62.52	Meets Atten Vol Req
Treatment Weir	62.50	17.78	26.31	26.31	
Pond Bottom	61.00	17.30	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	4
SMF Name:	B-4A

	Pre	***Post***
From Station	2263+94	2263+94
To Station	2290+36	2290+36
Basin Length	2642.30 ft	2642.30 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	18.20 ac	18.20 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	6.79 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	16.38 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	16.38 ac	9.58 ac	18.20 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **2.39 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	16.38 ac	9.58 ac	18.20 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **1.52 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**2.39 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**2.39 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	4
SMF Name:	B-4A

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	18.20 ac	5.23 ac	23.43 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		6.79 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		16.64 ac

CN Calculations

Soil Types (provide)	Arredondo	Candler		100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	Open, Good Cond. (Grass >75%	-	Water	
HSG (choose)	A	A	-	A	*Composite*
Percentage Basin (provide)	88%	10%	0%	2%	*Open Space*
CN	39	0	0	100	36

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	6.79 ac	-	98	28.40
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	16.64 ac	-	36	25.79
			CN_{pre} =	54.2

NRCS Method for Attenuation Volume:

$$S=\frac{1{,}000}{CN}-10$$
$$Q=\frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	8.45 in.
Q_{pre} =	4.73 in.
Pre-development runoff volume =	**9.23 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	18.20 ac	5.23 ac	23.43 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		16.38 ac
Pond Outside of Berm	-		4.23 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		2.82 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	16.38 ac	-	98	68.51
Pond Outside of Berm	4.23 ac	-	100	18.07
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	2.82 ac	-	36	4.37
			CN_{post} =	90.9

NRCS Method for Attenuation Volume:

$$S=\frac{1{,}000}{CN}-10$$
$$Q=\frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	1.00 in.
Q_{post} =	9.69 in.
Post-development runoff volume =	**18.92 ac-ft**

Attenuation volume required (Post-Pre)	**9.70 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**12.08 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 4
SMF Name: B-4A

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	18.20 ac	18.35 ac	36.55 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		6.79 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		29.76 ac

CN Calculations

Soil Types (provide)	Arredondo	Candler	0	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	Open, Good Cond. (Grass >75%	-	Water	
HSG (choose)	A	A	-	A	*Composite*
Percentage Basin (provide)	88%	10%	0%	2%	*Open Space*
CN	39	0	0	100	36

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	6.79 ac	-	98	18.21
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	29.76 ac	-	36	29.57
			CN_{pre} =	47.8

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} = 10.93 in.
Q_{pre} = 8.20 in.
Pre-development runoff volume = **24.97 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	18.20 ac	18.35 ac	36.55 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		16.38 ac
Pond Outside of Berm	-		16.43 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		3.74 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	16.38 ac	-	98	43.92
Pond Outside of Berm	16.43 ac	-	100	44.96
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	3.74 ac	-	36	3.71
			CN_{post} =	92.6

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} = 0.80 in.
Q_{post} = 15.68 in.
Post-development runoff volume = **47.75 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 4
SMF Name: B-4A

Total Pond Volume (100 Yr, 240 Hr) **47.75 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **47.75 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	71.15	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	64.00 ft	*Lowest ground elevation*
Approx. Pond Bottom (dry) =	59.50	*2' above SH*
Seasonal High Ground Water Elevation (SHGWT)=	57.50	*6.5' Below LEOP (NRCS Soils Map)*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	69.00	*TW elevation source: 2-30" Pipe (STA 2274+00.05)*

Treatment Volume Required
2.39 ac-ft
Attenuation Volume Required
9.70 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* (ac-ft)	*Sum Storage* (ac-ft)	*Check*
Outside Edge of Maintenance Berm	64.00	18.35			
Inside Edge of Maintenance Berm	63.50	16.75	16.59	64.50	
Design High Water	62.50	16.43	24.30	47.91	Meets Atten Vol Req
Treatment Weir	61.00	15.97	23.61	23.61	
Pond Bottom	59.50	15.51	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	4
SMF Name:	B-4B2

	Pre	***Post***
From Station	2263+94	2263+94
To Station	2290+36	2290+36
Basin Length	2642.30 ft	2642.30 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	18.20 ac	18.20 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	6.79 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	16.38 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	16.38 ac	9.58 ac	18.20 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **2.39 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	16.38 ac	9.58 ac	18.20 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **1.52 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**2.39 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**2.39 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 4
SMF Name: B-4B2

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	18.20 ac	5.23 ac	23.43 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		6.79 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		16.64 ac

CN Calculations

Soil Types (provide)	Arredondo			100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	-	-	Water	
HSG (choose)	A	-	-	A	*Composite*
Percentage Basin (provide)	98%	0%	0%	2%	*Open Space*
CN	39	0	0	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	6.79 ac	-	98	28.40
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	16.64 ac	-	40	28.56
			CN_{pre} =	57.0

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 7.55 in.
Q_{pre} = 5.12 in.
Pre-development runoff volume = **10.00 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	18.20 ac	5.23 ac	23.43 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		16.38 ac
Pond Outside of Berm	-		4.99 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		2.06 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	16.38 ac	-	98	68.51
Pond Outside of Berm	4.99 ac	-	100	21.30
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	2.06 ac	-	40	3.54
			CN_{post} =	93.3

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 0.71 in.
Q_{post} = 9.99 in.
Post-development runoff volume = **19.50 ac-ft**

Attenuation volume required (Post-Pre) **9.50 ac-ft**
Total Pond Volume (25 Yr, 96 Hr) **11.89 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	4
SMF Name:	B-4B2

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	18.20 ac	5.71 ac	23.91 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		6.79 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		17.12 ac

CN Calculations

Soil Types (provide)	Arredondo	0	0	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	-	-	Water	
HSG (choose)	A	-	-	A	*Composite*
Percentage Basin (provide)	98%	0%	0%	2%	*Open Space*
CN	39	0	0	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	6.79 ac	-	98	27.83
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	17.12 ac	-	40	28.80
			CN_{pre} =	56.6

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	7.66 in.
Q_{pre} =	9.99 in.
Pre-development runoff volume =	**19.91 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	18.20 ac	5.71 ac	23.91 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		16.38 ac
Pond Outside of Berm	-		4.67 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		2.86 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	16.38 ac	-	98	67.14
Pond Outside of Berm	4.67 ac	-	100	19.51
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	2.86 ac	-	40	4.82
			CN_{post} =	91.5

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1,000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	0.93 in.
Q_{post} =	15.53 in.
Post-development runoff volume =	**30.95 ac-ft**

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 4
SMF Name: B-4B2

Total Pond Volume (100 Yr, 240 Hr) 30.95 ac-ft

Total Pond Volume Required = Use Largest Total Pond Volume **30.95 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	71.15	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	62.00 ft	*Lowest ground elevation*
Approx. Pond Bottom (dry) =	52.90	*2' above SH*
Seasonal High Ground Water Elevation (SHGWT)=	50.90	*As per permit 16531*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	69.00	*TW elevation source: 2-30" Pipe (STA 2274+00.05)*

Treatment Volume Required
2.39 ac-ft
Attenuation Volume Required
9.50 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* (ac-ft)	*Sum Storage* (ac-ft)	*Check*
Outside Edge of Maintenance Berm	62.00	5.71			
Inside Edge of Maintenance Berm	61.50	4.83	4.75	35.70	
Design High Water	60.50	4.67	25.54	30.95	Meets Atten Vol Req
Treatment Weir	54.40	3.71	5.40	5.40	
Pond Bottom	52.90	3.49	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	4
SMF Name:	B-4E

	Pre	***Post***
From Station	2263+94	2263+94
To Station	2290+37	2290+37
Basin Length	2643.30 ft	2643.30 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	18.20 ac	18.20 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	6.80 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	16.38 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention	16.38 ac	9.59 ac	18.20 ac
Runoff Treatment (SJRWMD)	1.75 in.			
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **2.39 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention	16.38 ac	9.59 ac	18.20 ac
Runoff Treatment (SJRWMD)	1.00 in.			
Area to be Treated (choose)	Total R/W			

Treatment Volume **1.52 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**2.39 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**2.39 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	4
SMF Name:	B-4E

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	18.20 ac	8.49 ac	26.69 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		6.80 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		19.89 ac

CN Calculations

Soil Types (provide)	Arredondo			100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	-	-	Water	
HSG (choose)	A	-	-	A	*Composite*
Percentage Basin (provide)	98%	0%	0%	2%	*Open Space*
CN	39	0	0	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	6.80 ac	-	98	24.97
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	19.89 ac	-	40	29.97
			CN_{pre} =	54.9

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	8.20 in.
Q_{pre} =	4.83 in.
Pre-development runoff volume =	**10.75 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	18.20 ac	8.49 ac	26.69 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		16.38 ac
Pond Outside of Berm	-		8.11 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		2.20 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	16.38 ac	-	98	60.14
Pond Outside of Berm	8.11 ac	-	100	30.39
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	2.20 ac	-	40	3.31
			CN_{post} =	93.8

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	0.66 in.
Q_{post} =	10.05 in.
Post-development runoff volume =	**22.36 ac-ft**

Attenuation volume required (Post-Pre)	**11.61 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**14.00 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 4
SMF Name: B-4E

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	18.20 ac	6.45 ac	24.65 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		6.80 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		17.85 ac

CN Calculations

Soil Types (provide)	Arredondo	0	0	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	-	-	Water	
HSG (choose)	A	-	-	A	*Composite*
Percentage Basin (provide)	98%	0%	0%	2%	*Open Space*
CN	39	0	0	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	6.80 ac	-	98	27.03
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	17.85 ac	-	40	29.12
			CN_{pre} =	56.2

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	7.81 in.
Q_{pre} =	9.90 in.
Pre-development runoff volume =	**20.34 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	18.20 ac	6.45 ac	24.65 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		16.38 ac
Pond Outside of Berm	-		5.33 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		2.94 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	16.38 ac	-	98	65.12
Pond Outside of Berm	5.33 ac	-	100	21.64
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	2.94 ac	-	40	4.79
			CN_{post} =	91.6

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	0.92 in.
Q_{post} =	15.54 in.
Post-development runoff volume =	**31.93 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	4
SMF Name:	B-4E

Total Pond Volume (100 Yr, 240 Hr) **31.93 ac-ft**

Additional flood plain volume on parcel **0.34 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **32.27 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	71.15	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	70.00 ft	*Lower Ground Elevation*
Approx. Pond Bottom (dry) =	61.72	*2' above SHW*
Seasonal High Ground Water Elevation (SHGWT)=	59.72	*From Permit 33343*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	69.00	*TW elevation source: 2-30" Pipe (STA 2274+00.05)*

Treatment Volume Required
2.39 ac-ft
Attenuation Volume Required
11.61 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* *(ac)*	*Delta Storage* *(ac-ft)*	*Sum Storage* *(ac-ft)*	*Check*
Outside Edge of Maintenance Berm	70.00	6.45			
Inside Edge of Maintenance Berm	69.50	5.51	5.42	37.71	
Design High Water	68.50	5.33	25.80	32.28	Meets Atten Vol Req
Treatment Weir	63.22	4.44	6.48	6.48	
Pond Bottom	61.72	4.20	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 1/11/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 5 & 6 & 7
SMF Name: B-5A , B-6A & B-7B Combined

	Pre	***Post***
From Station	2290+37	2290+37
To Station	2363+14	2363+14
Basin Length	7277.47 ft	7277.47 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	50.12 ac	50.12 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	18.71 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	45.11 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	45.11 ac	26.40 ac	50.12 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **6.58 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	45.11 ac	26.40 ac	50.12 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **4.18 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**6.58 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**6.58 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	1/11/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 5 & 6 & 7
SMF Name: B-5A , B-6A & B-7B Combined

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	50.12 ac	4.27 ac	54.39 ac
Total Area to be attenuated for (choose)	HSG (choose)		
Roadway	-		18.71 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		35.68 ac

CN Calculations

Soil Types (provide)	Arredondo	Pedro-Arredondo	Zuber	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%)	Water	
HSG (choose)	A	D	C	A	*Composite*
Percentage Basin (provide)	75%	15%	8%	2%	*Open Space*
CN	39	80	80	100	50

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	18.71 ac	-	98	33.71
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	35.68 ac	-	50	32.57
			CN_{pre} =	66.3

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	5.09 in.
Q_{pre} =	6.44 in.
Pre-development runoff volume =	**29.17 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	50.12 ac	4.27 ac	54.39 ac
Total Area to be attenuated for	HSG (choose)		
Roadway	-		45.11 ac
Pond Outside of Berm	-		3.89 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		5.39 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	45.11 ac	-	98	81.28
Pond Outside of Berm	3.89 ac	-	100	7.15
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	5.39 ac	-	50	4.92
			CN_{post} =	93.3

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	0.71 in.
Q_{post} =	9.99 in.
Post-development runoff volume =	**45.28 ac-ft**

Attenuation volume required (Post-Pre)	**16.11 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**22.69 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	1/11/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	5 & 6 & 7
SMF Name:	B-5A , B-6A & B-7B Combined

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	50.12 ac	34.58 ac	84.70 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		18.71 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		65.99 ac

CN Calculations

Soil Types (provide)	Arredondo	Pedro-Arredondo	Zuber	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%)	Water	
HSG (choose)	A	D	C	A	*Composite*
Percentage Basin (provide)	75%	15%	8%	2%	*Open Space*
CN	39	80	80	100	50

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	18.71 ac	-	98	21.65
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	65.99 ac	-	50	38.68
			CN_{pre} =	60.3

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	6.58 in.
Q_{pre} =	10.69 in.
Pre-development runoff volume =	**75.43 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	50.12 ac	34.58 ac	84.70 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		45.11 ac
Pond Outside of Berm	-		31.93 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		7.66 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	45.11 ac	-	98	52.19
Pond Outside of Berm	31.93 ac	-	100	37.70
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	7.66 ac	-	50	4.49
			CN_{post} =	94.4

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	0.60 in.
Q_{post} =	15.91 in.
Post-development runoff volume =	**112.27 ac-ft**

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 1/11/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 5 & 6 & 7
SMF Name: B-5A , B-6A & B-7B Combined

Total Pond Volume (100 Yr, 240 Hr) **112.27 ac-ft**

Additional flood plain volume **100.75 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **213.02 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)= 67.36
Approx. hydraulic clearance from LEOP = 1.00 ft *Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site 56.00 ft
Approx. Pond Bottom (dry) = 47.50 *2' above SHW*
Seasonal High Ground Water Elevation (SHGWT)= 45.50 *Based on geotech report permit number : 35368.005*
SHGWT Check for Dry Retention Only OK
Tailwater Elevation (TW) = 64.51 *TW elevation source: 24" Pipe (STA 2301+19.05)*

Treatment Volume Required
6.58 ac-ft
Attenuation Volume Required
16.11 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* (ac-ft)	*Sum Storage* (ac-ft)	*Check*
Outside Edge of Maintenance Berm	56.00	34.58			
Inside Edge of Maintenance Berm	55.50	32.36	32.15	245.24	
Design High Water	54.50	31.93	169.17	213.09	Meets Atten Vol Req
Treatment Weir	49.00	29.59	43.92	43.92	
Pond Bottom	47.50	28.97	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	5
SMF Name:	B-5B

	Pre	***Post***
From Station	2290+37	2290+37
To Station	2322+19	2322+19
Basin Length	3182.00 ft	3182.00 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	21.91 ac	21.91 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	8.18 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	19.72 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	19.72 ac	11.54 ac	21.91 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		**2.88 ac-ft**		

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	19.72 ac	11.54 ac	21.91 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		**1.83 ac-ft**		

Treatment Volume Required = Largest Treatment Volume	**2.88 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**2.88 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	5
SMF Name:	B-5B

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	21.91 ac	4.27 ac	26.18 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		8.18 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		18.00 ac

CN Calculations

Soil Types (provide)	Arredondo	Pedro-Arredondo	Kanapaha-Kanapaha	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	Open, Good Cond. (Grass >75%)	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	A	D	D	A	*Composite*
Percentage Basin (provide)	74%	8%	16%	2%	*Open Space*
CN	39	80	80	100	50

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	8.18 ac	-	98	30.62
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	18.00 ac	-	50	34.53
			CN_{pre} =	65.1

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 5.35 in.
Q_{pre} = 6.28 in.
Pre-development runoff volume = **13.70 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	21.91 ac	4.27 ac	26.18 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		19.72 ac
Pond Outside of Berm	-		3.40 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		3.06 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	19.72 ac	-	98	73.82
Pond Outside of Berm	3.40 ac	-	100	13.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	3.06 ac	-	50	5.86
			CN_{post} =	92.7

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 0.79 in.
Q_{post} = 9.91 in.
Post-development runoff volume = **21.61 ac-ft**

Attenuation volume required (Post-Pre)	**7.92 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**10.79 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	5
SMF Name:	B-5B

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	21.91 ac	15.80 ac	37.71 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		8.18 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		29.53 ac

CN Calculations

Soil Types (provide)	Arredondo	Pedro-Arredondo	Kanapaha-Kanapaha	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	Open, Good Cond. (Grass >75%)	pen, Good Cond. (Grass >75%	Water	
HSG (choose)	A	D	D	A	*Composite*
Percentage Basin (provide)	74%	8%	16%	2%	*Open Space*
CN	39	80	80	100	50

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	8.18 ac	-	98	21.26
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	29.53 ac	-	50	39.33
			CN_{pre} =	60.6

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	6.51 in.
Q_{pre} =	10.73 in.
Pre-development runoff volume =	**33.73 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	21.91 ac	15.80 ac	37.71 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		19.72 ac
Pond Outside of Berm	-		14.02 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		3.97 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	19.72 ac	-	98	51.25
Pond Outside of Berm	14.02 ac	-	100	37.19
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	3.97 ac	-	50	5.28
			CN_{post} =	93.7

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	0.67 in.
Q_{post} =	15.82 in.
Post-development runoff volume =	**49.72 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 5
SMF Name: B-5B

Total Pond Volume (100 Yr, 240 Hr) **49.72 ac-ft**

Additional flood plain volume **0.21 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **49.93 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	67.36	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	62.00 ft	*Lowest ground elevation*
Approx. Pond Bottom (dry) =	56.80	*2' above SH*
Seasonal High Ground Water Elevation (SHGWT)=	54.80	*NRCS Soils Map >6.5'*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	64.51	*TW elevation source: 24" Pipe (STA 2301+19.05)*

Treatment Volume Required
2.88 ac-ft
Attenuation Volume Required
7.92 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* *(ac)*	*Delta Storage* *(ac-ft)*	*Sum Storage* *(ac-ft)*	*Check*
Outside Edge of Maintenance Berm	62.00	15.80			
Inside Edge of Maintenance Berm	61.50	14.31	14.17	64.12	
Design High Water	60.50	14.02	30.17	49.95	Meets Atten Vol Req
Treatment Weir	58.30	13.40	19.79	19.79	
Pond Bottom	56.80	12.98	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Designed By:	AV
Date:	1/18/2024
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 5
SMF Name: 5E

	Pre	***Post***
From Station	2290+37	2290+37
To Station	2322+19	2322+19
Basin Length	3182.00 ft	3182.00 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	21.91 ac	21.91 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	8.18 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	8.18 ac	

Post-development Impervious Areas (choose)	Side	Number	Total Area	Notes
Turn Lanes	RT	1	0.29 ac	1 Aux lane per side - GIS measured
Turn Lanes	LT	1	0.35 ac	1 Aux lane per side - GIS measured
		Subtotal Impervious Area	0.64 ac	
		Total Impervious	8.82 ac	

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	8.82 ac	0.64 ac	21.91 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		**1.29 ac-ft**		

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	8.82 ac	0.64 ac	21.91 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		**1.83 ac-ft**		

Treatment Volume Required = Largest Treatment Volume	**1.83 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**1.83 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	1/18/2024
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	5
SMF Name:	5E

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	21.91 ac	1.33 ac	23.24 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		8.18 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		15.06 ac

CN Calculations

Soil Types (provide)	Arredondo			100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)			Water	
HSG (choose)	A			A	*Composite*
Percentage Basin (provide)	98%			2%	*Open Space*
CN	39			100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	8.18 ac	-	98	34.49
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	15.06 ac	-	40	26.06
			CN_{pre} =	60.6

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	6.51 in.
Q_{pre} =	5.63 in.
Pre-development runoff volume =	**10.91 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	21.91 ac	1.33 ac	23.24 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		8.82 ac
Pond Outside of Berm	-		3.74 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		10.68 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	8.82 ac	-	98	37.19
Pond Outside of Berm	3.74 ac	-	100	16.08
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	10.68 ac	-	40	18.49
			CN_{post} =	71.8

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	3.94 in.
Q_{post} =	7.19 in.
Post-development runoff volume =	**13.92 ac-ft**

Attenuation volume required (Post-Pre)	**3.01 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**15.75 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	1/18/2024
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	5
SMF Name:	5E

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	21.91 ac	6.20 ac	28.11 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		8.18 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		19.93 ac

CN Calculations

Soil Types (provide)	Arredondo	0	0	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	0	0	Water	
HSG (choose)	A	0	0	A	*Composite*
Percentage Basin (provide)	98%	0%	0%	2%	*Open Space*
CN	39	0	0	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	8.18 ac	-	98	28.52
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	19.93 ac	-	40	28.52
			CN_{pre} =	57.0

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	7.53 in.
Q_{pre} =	10.07 in.
Pre-development runoff volume =	**23.58 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	21.91 ac	6.20 ac	28.11 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		8.82 ac
Pond Outside of Berm	-		5.33 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		13.96 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	8.82 ac	-	98	30.75
Pond Outside of Berm	5.33 ac	-	100	18.95
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	13.96 ac	-	40	19.98
			CN_{post} =	69.7

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	4.35 in.
Q_{post} =	12.32 in.
Post-development runoff volume =	**28.86 ac-ft**

Total Pond Volume (100 Yr, 240 Hr) **28.86 ac-ft**

Patel, Greene & Associates, LLC

Designed By: AV
Date: 1/18/2024
Checked By: MH
Revised By: AV
Date: 2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 5
SMF Name: 5E

Total Pond Volume Required = Use Largest Total Pond Volume **28.86 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)= 67.36
Approx. hydraulic clearance from LEOP = 1.00 ft *Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site 66.00 ft
Approx. Pond Bottom (dry) = 58.50
Seasonal High Ground Water Elevation (SHGWT)= 56.50 *NRCS Soil Survey Depth to Water Table*
SHGWT Check for Dry Retention Only OK
Tailwater Elevation (TW) = 64.51 *TW elevation source: 24" Pipe (STA 2301+19.05)*

Treatment Volume Required
1.83 ac-ft
Attenuation Volume Required
3.01 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	66.00	6.20			
Inside Edge of Maintenance Berm	65.50	5.50	5.42	34.32	
Design High Water	64.50	5.33	22.24	28.90	Meets Atten Vol Req
Treatment Weir	60.00	4.56	6.66	6.66	
Pond Bottom	58.50	4.32	0.00		

Pond Characteristics
15-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Available area on 1 parcels = 6.99.

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 6
SMF Name: B-6C

	Pre	***Post***
From Station	2322+19	2322+19
To Station	2333+19	2333+19
Basin Length	1100.00 ft	1100.00 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	7.58 ac	7.58 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	2.83 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	6.82 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	6.82 ac	3.99 ac	7.58 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **0.99 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	6.82 ac	3.99 ac	7.58 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **0.63 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**0.99 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**0.99 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	6
SMF Name:	B-6C

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	7.58 ac	1.32 ac	8.90 ac
Total Area to be attenuated for (choose)	HSG (choose)		
Roadway	-		2.83 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		6.07 ac

CN Calculations

Soil Types (provide)	Arredondo			100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)			Water	
HSG (choose)	A			A	Composite
Percentage Basin (provide)	98%			2%	Open Space
CN	39	0	80	100	40

	Area	HSG	CN	Weighted CN
Roadway	2.83 ac	-	98	31.16
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	6.07 ac	-	40	27.43
			CN_{pre} =	58.6

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	7.07 in.
Q_{pre} =	5.35 in.
Pre-development runoff volume =	**3.97 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	7.58 ac	1.32 ac	8.90 ac
Total Area to be attenuated for	HSG (choose)		
Roadway	-		6.82 ac
Pond Outside of Berm	-		1.12 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		0.96 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	6.82 ac	-	98	75.10
Pond Outside of Berm	1.12 ac	-	100	12.57
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	0.96 ac	-	40	4.35
			CN_{post} =	92.0

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	0.87 in.
Q_{post} =	9.82 in.
Post-development runoff volume =	**7.29 ac-ft**

Attenuation volume required (Post-Pre)	**3.31 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**4.31 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	6
SMF Name:	B-6C

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	7.58 ac	8.99 ac	16.57 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		2.83 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		13.74 ac

CN Calculations

Soil Types (provide)	Arredondo	0	0	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	0	0	Water	
HSG (choose)	A	0	0	A	*Composite*
Percentage Basin (provide)	98%	0%	0%	2%	*Open Space*
CN	39	0	80	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	2.83 ac	-	98	16.74
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	13.74 ac	-	40	33.35
			CN_{pre} =	50.1

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	9.96 in.
Q_{pre} =	8.68 in.
Pre-development runoff volume =	**11.99 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	7.58 ac	8.99 ac	16.57 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		6.82 ac
Pond Outside of Berm	-		7.67 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		2.08 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	6.82 ac	-	98	40.34
Pond Outside of Berm	7.67 ac	-	100	46.26
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	2.08 ac	-	40	5.06
			CN_{post} =	91.7

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	0.91 in.
Q_{post} =	15.56 in.
Post-development runoff volume =	**21.48 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 6
SMF Name: B-6C

Total Pond Volume (100 Yr, 240 Hr) **21.48 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **21.48 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	66.51	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	66.00 ft	*Lowest Ground elevation*
Approx. Pond Bottom (dry) =	61.50	*2' above SH*
Seasonal High Ground Water Elevation (SHGWT)=	59.50	*NRCS Soil Survey Depth to Water Table*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	66.01	*TW elevation source: 24" Pipe (STA 2323+04.42)*

Treatment Volume Required
0.99 ac-ft
Attenuation Volume Required
3.31 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	66.00	8.99			
Inside Edge of Maintenance Berm	65.50	7.88	7.77	29.83	
Design High Water	64.50	7.67	11.26	22.05	Meets Atten Vol Req
Treatment Weir	63.00	7.35	10.79	10.79	
Pond Bottom	61.50	7.04	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	1/19/2024
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	5&6
SMF Name:	5E & 6E Combined

	Pre	***Post***
From Station	2290+37	2290+37
To Station	2333+19	2333+19
Basin Length	4281.70 ft	4281.70 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	29.49 ac	29.49 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	11.01 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	1 Aux lane per side
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	11.01 ac	

Post-development Impervious Areas (choose)	Side	Number	Total Area	Notes
Turn Lanes	RT	1	0.59 ac	1 Aux lane per side - GIS measured
Turn Lanes	LT	1	0.65 ac	1 Aux lane per side - GIS measured
		Subtotal Impervious Area	1.25 ac	
		Total Impervious	12.25 ac	

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment	1.75 in.	12.25 ac	1.25 ac	29.49 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **1.79 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment	1.00 in.	12.25 ac	1.25 ac	29.49 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **2.46 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**2.46 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**2.46 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	1/19/2024
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	5&6
SMF Name:	5E & 6E Combined

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	29.49 ac	0.70 ac	30.19 ac
Total Area to be attenuated for (choose)	HSG (choose)		
Roadway	-		11.01 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		19.18 ac

CN Calculations

Soil Types (provide)	Arredondo			100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)			Water	
HSG (choose)	A			A	Composite
Percentage Basin (provide)	98%			2%	Open Space
CN	39			100	40

	Area	HSG	CN	Weighted CN
Roadway	11.01 ac	-	98	35.74
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	19.18 ac	-	40	25.55
			CN_{pre} =	61.3

SCS Method for Attenuation Volume:

$$S=\frac{1{,}000}{CN}-10$$
$$Q=\frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	6.32 in.
Q_{pre} =	5.74 in.
Pre-development runoff volume =	**14.43 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	29.49 ac	0.70 ac	30.19 ac
Total Area to be attenuated for	HSG (choose)		
Roadway	-		12.25 ac
Pond Outside of Berm	-		1.37 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		16.57 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	12.25 ac	-	98	39.76
Pond Outside of Berm	1.37 ac	-	100	4.55
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	16.57 ac	-	40	22.07
			CN_{post} =	66.4

SCS Method for Attenuation Volume:

$$S=\frac{1{,}000}{CN}-10$$
$$Q=\frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	5.06 in.
Q_{post} =	6.45 in.
Post-development runoff volume =	**16.23 ac-ft**

Attenuation volume required (Post-Pre)	**1.79 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**4.25 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	1/19/2024
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 5&6
SMF Name: 5E & 6E Combined

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	29.49 ac	7.62 ac	37.11 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		11.01 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		26.10 ac

CN Calculations

Soil Types (provide)	Arredondo	0	0	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	0	0	Water	
HSG (choose)	A	0	0	A	*Composite*
Percentage Basin (provide)	98%	0%	0%	2%	*Open Space*
CN	39	0	0	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	11.01 ac	-	98	29.08
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	26.10 ac	-	40	28.29
			CN_{pre} =	57.4

SCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 7.43 in.
Q_{pre} = 10.13 in.
Pre-development runoff volume = **31.33 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	29.49 ac	7.62 ac	37.11 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		12.25 ac
Pond Outside of Berm	-		7.02 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		17.84 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	12.25 ac	-	98	32.35
Pond Outside of Berm	7.02 ac	-	100	18.93
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	17.84 ac	-	40	19.33
			CN_{post} =	70.6

SCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 4.16 in.
Q_{post} = 12.47 in.
Post-development runoff volume = **38.58 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	1/19/2024
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 5&6
SMF Name: 5E & 6E Combined

Total Pond Volume (100 Yr, 240 Hr) **38.58 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **38.58 ac-ft**

POND SIZE ESTIMATE

Approx. low edge of shoulder elevation (LEOP)=	66.51	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	66.00 ft	
Approx. Pond Bottom (dry) =	58.50	
Seasonal High Ground Water Elevation (SHGWT)=	56.50	*NRCS Soil Survey Depth>6.5'*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	66.01	*TW elevation source: 24" Pipe (STA 2323+04.42)*

Treatment Volume Required
2.46 ac-ft
Attenuation Volume Required
1.79 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* *(ac-ft)*	*Sum Storage* *(ac-ft)*	*Check*
Outside Edge of Maintenace Berm	66.00	7.62			
Inside Edge of Maintenance Berm	65.50	7.23	7.13	45.75	
Design High Water	64.50	7.02	29.62	38.62	Meets Atten Vol Req
Treatment Weir	60.00	6.14	9.00	9.00	
Pond Bottom	58.50	5.86	0.00		

Pond Characteristics
15-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Available area on 2 parcels = 8.97 (7.32+1.65)
Additional volume can be disharged to vacant site or FDOT parcel

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	1/19/2024
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 6
SMF Name: 6F

	Pre	***Post***
From Station	2322+19	2322+19
To Station	2333+19	2333+19
Basin Length	1100.00 ft	1100.00 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	7.58 ac	7.58 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	2.83 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	1 Aux lane per side
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	2.83 ac	

Post-development Impervious Areas (choose)	Side	Number	Total Area	Notes
Turn Lanes	RT	1	0.30 ac	1 Aux lane per side - GIS measured
Turn Lanes	LT	1	0.30 ac	1 Aux lane per side - GIS measured
		Subtotal Impervious Area	0.61 ac	
		Total Impervious	3.43 ac	

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment	1.75 in.	3.43 ac	0.61 ac	7.58 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **0.50 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment	1.00 in.	3.43 ac	0.61 ac	7.58 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **0.63 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**0.63 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**0.63 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	1/19/2024
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	6
SMF Name:	6F

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	7.58 ac	0.70 ac	8.28 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		2.83 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		5.45 ac

CN Calculations

Soil Types (provide)		Kanapaha-Kanapaha		100-Water	
Cover Description (choose)		Open, Good Cond. (Grass >75%)		Water	
HSG (choose)		D		A	*Composite*
Percentage Basin (provide)		98%		2%	*Open Space*
CN		80		100	80

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	2.83 ac	-	98	33.50
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	5.45 ac	-	80	52.92
			CN_{pre} =	86.4

SCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	1.57 in.
Q_{pre} =	9.12 in.
Pre-development runoff volume =	**6.29 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	7.58 ac	0.70 ac	8.28 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		3.43 ac
Pond Outside of Berm	-		1.20 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		3.65 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	3.43 ac	-	98	40.60
Pond Outside of Berm	1.20 ac	-	100	14.50
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	3.65 ac	-	80	35.43
			CN_{post} =	90.5

SCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	1.05 in.
Q_{post} =	9.64 in.
Post-development runoff volume =	**6.65 ac-ft**

Attenuation volume required (Post-Pre)	**0.36 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**0.99 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	1/19/2024
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 6
SMF Name: 6F

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	7.58 ac	3.92 ac	11.50 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		2.83 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		8.67 ac

CN Calculations

Soil Types (provide)	0	Kanapaha-Kanapaha	0	100-Water	
Cover Description (choose)	0	Open, Good Cond. (Grass >75%)	0	Water	
HSG (choose)	0	D	0	A	*Composite*
Percentage Basin (provide)	0%	98%	0%	2%	*Open Space*
CN	0	80	0	100	80

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	2.83 ac	-	98	24.12
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	8.67 ac	-	80	60.61
			CN_{pre} =	84.7

SCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 1.80 in.
Q_{pre} = 14.62 in.
Pre-development runoff volume = **14.01 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	7.58 ac	3.92 ac	11.50 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		3.43 ac
Pond Outside of Berm	-		3.24 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		4.83 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	3.43 ac	-	98	29.23
Pond Outside of Berm	3.24 ac	-	100	28.14
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	4.83 ac	-	80	33.80
			CN_{post} =	91.2

SCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 0.97 in.
Q_{post} = 15.49 in.
Post-development runoff volume = **14.85 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	1/19/2024
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 6
SMF Name: 6F

Total Pond Volume (100 Yr, 240 Hr) **14.85 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **14.85 ac-ft**

POND SIZE ESTIMATE

Approx. low edge of shoulder elevation (LEOP)=	66.51	*5.5*
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	62.00 ft	
Approx. Pond Bottom (dry) =	56.50	
Seasonal High Ground Water Elevation (SHGWT)=	54.50	*NRCS Soil Survey Depth>6.5'*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	66.01	*TW elevation source: 24" Pipe (STA 2323+04.42)*

Treatment Volume Required
0.63 ac-ft
Attenuation Volume Required
0.36 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* *(ac-ft)*	*Sum Storage* *(ac-ft)*	*Check*
Outside Edge of Maintenace Berm	62.00	3.92			
Inside Edge of Maintenance Berm	61.50	3.37	3.31	15.18	
Design High Water	60.50	3.24	7.67	11.88	Does Not Meet Requirements
Treatment Weir	58.00	2.90	4.21	4.21	
Pond Bottom	56.50	2.71	0.00		

Pond Characteristics
15-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Excess volume to be discharged to adjacent FDOT parcel.

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	7
SMF Name:	B-7A

	Pre	***Post***
From Station	2333+19	2333+19
To Station	2363+14	2363+14
Basin Length	2995.30 ft	2995.30 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	20.63 ac	20.63 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	7.70 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	18.57 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	18.57 ac	10.86 ac	20.63 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		**2.71 ac-ft**		

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	18.57 ac	10.86 ac	20.63 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		**1.72 ac-ft**		

Treatment Volume Required = Largest Treatment Volume	**2.71 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**2.71 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 7
SMF Name: B-7A

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	20.63 ac	3.71 ac	24.34 ac
Total Area to be attenuated for (choose)	HSG (choose)		
Roadway	-		7.70 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		16.64 ac

CN Calculations

Soil Types (provide)	Udorthents		Tavares	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)		Open, Good Cond. (Grass >75%	Water	
HSG (choose)	B		A	A	Composite
Percentage Basin (provide)	93%		5%	2%	Open Space
CN	61		39	100	41

	Area	HSG	CN	Weighted CN
Roadway	7.70 ac	-	98	31.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	16.64 ac	-	41	28.03
			CN_{pre} =	59.0

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	6.94 in.
Q_{pre} =	5.42 in.
Pre-development runoff volume =	**10.99 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	20.63 ac	3.71 ac	24.34 ac
Total Area to be attenuated for	HSG (choose)		
Roadway	-		18.57 ac
Pond Outside of Berm	-		2.88 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		2.89 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	18.57 ac	-	98	74.77
Pond Outside of Berm	2.88 ac	-	100	11.82
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	2.89 ac	-	41	4.87
			CN_{post} =	91.5

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	0.93 in.
Q_{post} =	9.76 in.
Post-development runoff volume =	**19.79 ac-ft**

Attenuation volume required (Post-Pre)	**8.80 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**11.51 ac-ft**

Patel, Greene & Associates, LLC

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Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	7
SMF Name:	B-7A

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	20.63 ac	11.09 ac	31.72 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		7.70 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		24.02 ac

CN Calculations

Soil Types (provide)	Udorthents	0	Tavares	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	0	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	B	0	A	A	*Composite*
Percentage Basin (provide)	93%	0%	5%	2%	*Open Space*
CN	61	0	39	100	61

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	7.70 ac	-	98	23.79
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	24.02 ac	-	61	45.95
			CN_{pre} =	69.7

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	4.34 in.
Q_{pre} =	12.33 in.
Pre-development runoff volume =	**32.60 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	20.63 ac	11.09 ac	31.72 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		18.57 ac
Pond Outside of Berm	-		9.91 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		3.24 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	18.57 ac	-	98	57.37
Pond Outside of Berm	9.91 ac	-	100	31.24
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	3.24 ac	-	61	6.20
			CN_{post} =	94.8

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	0.55 in.
Q_{post} =	15.96 in.
Post-development runoff volume =	**42.19 ac-ft**

Patel, Greene & Associates, LLC

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Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 7
SMF Name: B-7A

Total Pond Volume (100 Yr, 240 Hr) **42.19 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **42.19 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	70.81	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	68.00 ft	*lowest ground elevation*
Approx. Pond Bottom (dry) =	62.00	*lowest flood plain elevation*
Seasonal High Ground Water Elevation (SHGWT)=	60.00	*2' below pond bottom*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	66.91	*TW elevation source: 24" Pipe (STA 2334+07.26)*

Treatment Volume Required
2.71 ac-ft
Attenuation Volume Required
8.80 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* (ac-ft)	*Sum Storage* (ac-ft)	*Check*
Outside Edge of Maintenance Berm	68.00	11.09			
Inside Edge of Maintenance Berm	67.50	10.15	10.03	52.24	
Design High Water	66.50	9.91	28.67	42.21	Meets Atten Vol Req
Treatment Weir	63.50	9.20	13.54	13.54	
Pond Bottom	62.00	8.85	0.00		

Pond Characteristics
15-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	1/19/2024
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	6&7
SMF Name:	6G &7A Combined

	Pre	***Post***
From Station	2322+19	2322+19
To Station	2363+14	2363+14
Basin Length	4095.77 ft	4095.77 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	28.21 ac	28.21 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	10.53 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	1 Aux lane per side
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	10.53 ac	

Post-development Impervious Areas (choose)	Side	Number	Total Area	Notes
Turn Lanes	RT	1	0.58 ac	1 Aux lane per side - GIS measured
Turn Lanes	LT	1	0.53 ac	1 Aux lane per side - GIS measured
		Subtotal Impervious Area	1.12 ac	
		Total Impervious	11.65 ac	

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment	1.75 in.	11.65 ac	1.12 ac	28.21 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		**1.70 ac-ft**		

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment	1.00 in.	11.65 ac	1.12 ac	28.21 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		**2.35 ac-ft**		

Treatment Volume Required = Largest Treatment Volume	**2.35 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**2.35 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

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Date:	1/19/2024
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Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	6&7
SMF Name:	6G &7A Combined

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	28.21 ac	0.70 ac	28.91 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		10.53 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		18.38 ac

CN Calculations

Soil Types (provide)	Udorthents		Tavares	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)		Open, Good Cond. (Grass >75%	Water	
HSG (choose)	B		A	A	*Composite*
Percentage Basin (provide)	93%		5%	2%	*Open Space*
CN	61		80	100	63

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	10.53 ac	-	98	35.69
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	18.38 ac	-	63	39.88
			CN_{pre} =	75.6

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	3.23 in.
Q_{pre} =	7.70 in.
Pre-development runoff volume =	**18.56 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	28.21 ac	0.70 ac	28.91 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		11.65 ac
Pond Outside of Berm	-		1.16 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		16.10 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	11.65 ac	-	98	39.49
Pond Outside of Berm	1.16 ac	-	100	4.01
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	16.10 ac	-	63	34.94
			CN_{post} =	78.4

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	2.75 in.
Q_{post} =	8.08 in.
Post-development runoff volume =	**19.47 ac-ft**

Attenuation volume required (Post-Pre)	**0.92 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**3.27 ac-ft**

Patel, Greene & Associates, LLC

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Date:	1/19/2024
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	6&7
SMF Name:	6G &7A Combined

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	28.21 ac	18.31 ac	46.52 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		10.53 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		35.99 ac

CN Calculations

Soil Types (provide)	Udorthents	0	Tavares	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	0	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	B	0	A	A	*Composite*
Percentage Basin (provide)	93%	0%	5%	2%	*Open Space*
CN	61	0	80	100	63

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	10.53 ac	-	98	22.18
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	35.99 ac	-	63	48.53
			CN_{pre} =	70.7

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	4.14 in.
Q_{pre} =	12.49 in.
Pre-development runoff volume =	**48.43 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	28.21 ac	18.31 ac	46.52 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		11.65 ac
Pond Outside of Berm	-		16.78 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		18.09 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	11.65 ac	-	98	24.54
Pond Outside of Berm	16.78 ac	-	100	36.08
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	18.09 ac	-	63	24.39
			CN_{post} =	85.0

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	1.76 in.
Q_{post} =	14.66 in.
Post-development runoff volume =	**56.82 ac-ft**

Patel, Greene & Associates, LLC

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Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 6&7
SMF Name: 6G &7A Combined

Total Pond Volume Required = Use Largest Total Pond Volume **56.82 ac-ft**

POND SIZE ESTIMATE

Approx. low edge of shoulder elevation (LEOP)=	66.51	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	68.00 ft	*Lowest Ground elevation at edges*
Approx. Pond Bottom (dry) =	62.00	*Lowest flood plain elevation*
Seasonal High Ground Water Elevation (SHGWT)=	60.00	*2' below pond bottom*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	66.01	*TW elevation source: 24" Pipe (STA 2323+04.42)*

Treatment Volume Required
2.35 ac-ft
Attenuation Volume Required
0.92 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage (ac-ft)*	*Sum Storage (ac-ft)*	*Check*
Outside Edge of Maintenance Berm	68.00	18.31			
Inside Edge of Maintenance Berm	66.50	17.10	16.94	73.78	
Design High Water	65.50	16.78	32.94	56.84	Meets Atten Vol Req
Treatment Weir	63.50	16.16	23.90	23.90	
Pond Bottom	62.00	15.70	0.00		

Pond Characteristics
15-foot Maintenance Berm at 1:10 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

FDOT parcel size19.36 ac

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	7
SMF Name:	B-7C

	Pre	***Post***
From Station	2333+19	2333+19
To Station	2363+14	2363+14
Basin Length	2995.30 ft	2995.30 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	20.63 ac	20.63 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	7.70 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	18.57 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	18.57 ac	10.86 ac	20.63 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		**2.71 ac-ft**		

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	18.57 ac	10.86 ac	20.63 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		**1.72 ac-ft**		

Treatment Volume Required = Largest Treatment Volume	**2.71 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**2.71 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	7
SMF Name:	B-7C

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	20.63 ac	3.71 ac	24.34 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		7.70 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		16.64 ac

CN Calculations

Soil Types (provide)	Arredondo	Sparr	Pedro-Arredondo	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	A	A	D	A	*Composite*
Percentage Basin (provide)	15%	5%	78%	2%	*Open Space*
CN	39	39	80	100	41

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	7.70 ac	-	98	31.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	16.64 ac	-	41	28.03
			CN_{pre} =	59.0

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	6.94 in.
Q_{pre} =	5.42 in.
Pre-development runoff volume =	**10.99 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	20.63 ac	3.71 ac	24.34 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		18.57 ac
Pond Outside of Berm	-		2.70 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		3.07 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	18.57 ac	-	98	74.77
Pond Outside of Berm	2.70 ac	-	100	11.08
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	3.07 ac	-	41	5.18
			CN_{post} =	91.0

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	0.99 in.
Q_{post} =	9.70 in.
Post-development runoff volume =	**19.68 ac-ft**

Attenuation volume required (Post-Pre)	**8.69 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**11.40 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	7
SMF Name:	B-7C

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	20.63 ac	20.29 ac	40.92 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		7.70 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		33.22 ac

CN Calculations

Soil Types (provide)	Arredondo	Sparr	Pedro-Arredondo	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	A	A	D	A	*Composite*
Percentage Basin (provide)	15%	5%	78%	2%	*Open Space*
CN	39	39	80	100	72

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	7.70 ac	-	98	18.44
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	33.22 ac	-	72	58.61
			CN_{pre} =	77.1

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} = 2.98 in.
Q_{pre} = 13.49 in.
Pre-development runoff volume = **46.01 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	20.63 ac	20.29 ac	40.92 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		18.57 ac
Pond Outside of Berm	-		18.27 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		4.08 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	18.57 ac	-	98	44.47
Pond Outside of Berm	18.27 ac	-	100	44.65
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	4.08 ac	-	72	7.20
			CN_{post} =	96.3

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} = 0.38 in.
Q_{post} = 16.15 in.
Post-development runoff volume = **55.07 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	AV
Date:	11/15/2023
Checked By:	MH
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 7
SMF Name: B-7C

Total Pond Volume (100 Yr, 240 Hr) **55.07 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **55.07 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	70.81	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	58.00 ft	*Lowest elevation*
Approx. Pond Bottom (dry) =	53.40	*2' above SH*
Seasonal High Ground Water Elevation (SHGWT)=	51.40	*>6.5' as per NRCS Sils data*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	66.91	*TW elevation source: 24" Pipe (STA 2334+07.26)*

Treatment Volume Required
2.71 ac-ft
Attenuation Volume Required
8.69 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* (ac-ft)	*Sum Storage* (ac-ft)	*Check*
Outside Edge of Maintenance Berm	58.00	20.29			
Inside Edge of Maintenance Berm	57.50	18.60	18.44	73.52	
Design High Water	56.50	18.27	28.82	55.08	Meets Atten Vol Req
Treatment Weir	54.90	17.75	26.26	26.26	
Pond Bottom	53.40	17.27	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 8
SMF Name: B-8B

	Pre	***Post***	
From Station	2363+14	2363+14	
To Station	2375+18	2375+18	
Basin Length	1204.00 ft	1204.00 ft	
R/W to R/W Width	300.00 ft	300.00 ft	
Total Area	13.40 ac	13.40 ac	*Interchange sub-basin area measured in CADD*

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	3.10 ac	
		Pre-Development Impervious Area	4.78 ac	*Area measured in CADD*

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			160.00 ft	
		Impervious Area	4.42 ac	
		Post-Development Impervious Area	5.72 ac	*Area measured in CADD*

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention	5.72 ac	0.94 ac	13.40 ac
Runoff Treatment (SJRWMD)	1.75 in.			
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume	**0.83 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**0.83 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention	4.42 ac	0.94 ac	13.40 ac
Runoff Treatment (SJRWMD)	1.00 in.			
Area to be Treated (choose)	Total R/W			

Treatment Volume	**1.12 ac-ft**
Treatment Volume Required = Largest Treatment Volume	**1.12 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**1.12 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 8
SMF Name: B-8B

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	13.40 ac	0.96 ac	14.36 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		4.78 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		9.58 ac

CN Calculations

Soil Types (provide)	Arredondo	Candler		100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	-	Water	
HSG (choose)	A	A	-	A	*Composite*
Percentage Basin (provide)	88%	10%	0%	2%	*Open Space*
CN	39	39	0	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	4.78 ac	-	98	32.62
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	9.58 ac	-	40	26.83
			CN_{pre} =	59.5

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} = 6.82 in.
Q_{pre} = 5.48 in.
Pre-development runoff volume = **6.55 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	13.40 ac	0.96 ac	14.36 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		5.72 ac
Pond Outside of Berm	-		1.12 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		7.52 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	5.72 ac	-	98	39.04
Pond Outside of Berm	1.12 ac	-	100	7.79
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	7.52 ac	-	40	21.07
			CN_{post} =	67.9

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} = 4.73 in.
Q_{post} = 6.66 in.
Post-development runoff volume = **7.97 ac-ft**

Attenuation volume required (Post-Pre) **1.41 ac-ft**
Total Pond Volume (25 Yr, 96 Hr) **2.53 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	8
SMF Name:	B-8B

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	13.40 ac	10.95 ac	24.35 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		4.78 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		19.57 ac

CN Calculations

Soil Types (provide)	Arredondo	Candler	0	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	-	Water	
HSG (choose)	A	A	-	A	*Composite*
Percentage Basin (provide)	88%	10%	0%	2%	*Open Space*
CN	39	39	0	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	4.78 ac	-	98	19.24
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	19.57 ac	-	40	32.32
			CN_{pre} =	51.6

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	9.39 in.
Q_{pre} =	8.99 in.
Pre-development runoff volume =	**18.24 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	13.40 ac	10.95 ac	24.35 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		5.72 ac
Pond Outside of Berm	-		9.48 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		9.15 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	5.72 ac	-	98	23.02
Pond Outside of Berm	9.48 ac	-	100	38.94
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	9.15 ac	-	40	15.11
			CN_{post} =	77.1

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	2.98 in.
Q_{post} =	13.50 in.
Post-development runoff volume =	**27.39 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	8
SMF Name:	B-8B

Total Pond Volume (100 Yr, 240 Hr) **27.39 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **27.39 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	70.51	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	64.00 ft	*Lowest groung elevation*
Approx. Pond Bottom (dry) =	59.50	*2' above SHGW*
Seasonal High Ground Water Elevation (SHGWT)=	57.50	*NRCS Soil Survey Depth to Water Table*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	67.31	*TW elevation source: 24" Pipe (STA 2373+00.66)*

Treatment Volume Required
1.12 ac-ft
Attenuation Volume Required
1.41 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* *(ac)*	*Delta Storage* *(ac-ft)*	*Sum Storage* *(ac-ft)*	*Check*
Outside Edge of Maintenance Berm	64.00	10.95			
Inside Edge of Maintenance Berm	63.50	9.72	9.60	36.99	
Design High Water	62.50	9.48	13.96	27.39	Meets Atten Vol Req
Treatment Weir	61.00	9.13	13.44	13.44	
Pond Bottom	59.50	8.79	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	9
SMF Name:	B-9C

	Pre	***Post***
From Station	2375+18	2375+18
To Station	2394+82	2394+82
Basin Length	1964.45 ft	1964.45 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	13.53 ac	13.53 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	5.05 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	12.18 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	12.18 ac	7.13 ac	13.53 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **1.78 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	12.18 ac	7.13 ac	13.53 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **1.13 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**1.78 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**1.78 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 9
SMF Name: B-9C

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	13.53 ac	3.14 ac	16.67 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		5.05 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		11.62 ac

CN Calculations

Soil Types (provide)	Arredondo	Candler		100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%)	-	Water	
HSG (choose)	A	A	-	A	*Composite*
Percentage Basin (provide)	59%	39%	0%	2%	*Open Space*
CN	39	39	0	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	5.05 ac	-	98	29.69
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	11.62 ac	-	40	28.04
			CN_{pre} =	57.7

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	7.32 in.
Q_{pre} =	5.23 in.
Pre-development runoff volume =	**7.27 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	13.53 ac	3.14 ac	16.67 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		12.18 ac
Pond Outside of Berm	-		2.45 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		2.04 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	12.18 ac	-	98	71.60
Pond Outside of Berm	2.45 ac	-	100	14.67
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	2.04 ac	-	40	4.93
			CN_{post} =	91.2

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	0.96 in.
Q_{post} =	9.72 in.
Post-development runoff volume =	**13.51 ac-ft**

Attenuation volume required (Post-Pre)	**6.24 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**8.02 ac-ft**

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	9
SMF Name:	B-9C

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	13.53 ac	10.55 ac	24.08 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		5.05 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		19.03 ac

CN Calculations

Soil Types (provide)	Arredondo	Candler	0	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%)	-	Water	
HSG (choose)	A	A	-	A	*Composite*
Percentage Basin (provide)	59%	39%	0%	2%	*Open Space*
CN	39	39	0	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	5.05 ac	-	98	20.55
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	19.03 ac	-	40	31.79
			CN_{pre} =	52.3

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	9.11 in.
Q_{pre} =	9.14 in.
Pre-development runoff volume =	**18.35 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	13.53 ac	10.55 ac	24.08 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		12.18 ac
Pond Outside of Berm	-		9.11 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		2.79 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	12.18 ac	-	98	49.57
Pond Outside of Berm	9.11 ac	-	100	37.83
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	2.79 ac	-	40	4.66
			CN_{post} =	92.1

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	0.86 in.
Q_{post} =	15.61 in.
Post-development runoff volume =	**31.32 ac-ft**

Patel, Greene & Associates, LLC

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Date:	11/15/2023
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Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 9
SMF Name: B-9C

Total Pond Volume (100 Yr, 240 Hr) **31.32 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **31.32 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	66.41	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	61.00 ft	*Lowest Ground elevation*
Approx. Pond Bottom (dry) =	55.90	*2' above SHW*
Seasonal High Ground Water Elevation (SHGWT)=	53.90	*> 6.5' NRCS Soil Survey Depth to Water Table*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	65.81	*TW elevation source: 24" Pipe (STA 2384+06.03)*

Treatment Volume Required
1.78 ac-ft
Attenuation Volume Required
6.24 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* (ac-ft)	*Sum Storage* (ac-ft)	*Check*
Outside Edge of Maintenance Berm	61.00	10.55			
Inside Edge of Maintenance Berm	60.50	9.34	9.23	40.55	
Design High Water	59.50	9.11	18.63	31.32	Meets Atten Vol Req
Treatment Weir	57.40	8.63	12.69	12.69	
Pond Bottom	55.90	8.30	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	MH
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Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	10
SMF Name:	B-10B

	Pre	***Post***
From Station	2394+82	2394+82
To Station	2413+32	2413+32
Basin Length	1850.45 ft	1850.45 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	12.74 ac	12.74 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	4.76 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	11.47 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	11.47 ac	6.71 ac	12.74 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **1.67 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	11.47 ac	6.71 ac	12.74 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **1.06 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**1.67 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**1.67 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

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Date:	11/15/2023
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Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	10
SMF Name:	B-10B

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	12.74 ac	3.73 ac	16.47 ac
Total Area to be attenuated for (choose)	HSG (choose)		
Roadway	-		4.76 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		11.71 ac

CN Calculations

Soil Types (provide)	Arredondo	Candler		100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%)	-	Water	
HSG (choose)	A	A	-	A	Composite
Percentage Basin (provide)	23%	75%	0%	2%	Open Space
CN	39	39	0	100	40

	Area	HSG	CN	Weighted CN
Roadway	4.76 ac	-	98	28.32
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	11.71 ac	-	40	28.60
			CN_{pre} =	56.9

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	7.57 in.
Q_{pre} =	5.12 in.
Pre-development runoff volume =	**7.02 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	12.74 ac	3.73 ac	16.47 ac
Total Area to be attenuated for	HSG (choose)		
Roadway	-		11.47 ac
Pond Outside of Berm	-		2.91 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		2.09 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	11.47 ac	-	98	68.25
Pond Outside of Berm	2.91 ac	-	100	17.68
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	2.09 ac	-	40	5.10
			CN_{post} =	91.0

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	0.99 in.
Q_{post} =	9.70 in.
Post-development runoff volume =	**13.31 ac-ft**

Attenuation volume required (Post-Pre)	**6.29 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**7.97 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	10
SMF Name:	B-10B

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	12.74 ac	12.33 ac	25.07 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		4.76 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		20.31 ac

CN Calculations

Soil Types (provide)	Arredondo	Candler	0	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	-	Water	
HSG (choose)	A	A	-	A	*Composite*
Percentage Basin (provide)	23%	75%	0%	2%	*Open Space*
CN	39	39	0	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	4.76 ac	-	98	18.61
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	20.31 ac	-	40	32.58
			CN_{pre} =	51.2

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 9.53 in.
Q_{pre} = 8.91 in.
Pre-development runoff volume = **18.62 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	12.74 ac	12.33 ac	25.07 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		11.47 ac
Pond Outside of Berm	-		10.77 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		2.83 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	11.47 ac	-	98	44.84
Pond Outside of Berm	10.77 ac	-	100	42.96
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	2.83 ac	-	40	4.54
			CN_{post} =	92.3

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 0.83 in.
Q_{post} = 15.64 in.
Post-development runoff volume = **32.68 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 10
SMF Name: B-10B

Total Pond Volume (100 Yr, 240 Hr) **32.68 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **32.68 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	74.50	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	70.00 ft	*Lowest Ground elevation*
Approx. Pond Bottom (dry) =	65.35	*2' above SHW*
Seasonal High Ground Water Elevation (SHGWT)=	63.35	*NRCS Soil Survey Depth to Water Table*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	71.51	*TW elevation source: 24" Pipe (STA 2404+04.08)*

Treatment Volume Required
1.67 ac-ft
Attenuation Volume Required
6.29 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	70.00	12.33			
Inside Edge of Maintenance Berm	69.50	11.02	10.90	43.60	
Design High Water	68.50	10.77	17.43	32.70	Meets Atten Vol Req
Treatment Weir	66.85	10.36	15.26	15.26	
Pond Bottom	65.35	9.99	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	11
SMF Name:	B-11A

	Pre	***Post***
From Station	2413+32	2413+32
To Station	2436+32	2436+32
Basin Length	2300.45 ft	2300.45 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	15.84 ac	15.84 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	5.91 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	14.26 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	14.26 ac	8.34 ac	15.84 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **2.08 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	14.26 ac	8.34 ac	15.84 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **1.32 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**2.08 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**2.08 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	11
SMF Name:	B-11A

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	15.84 ac	2.72 ac	18.56 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		5.91 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		12.65 ac

CN Calculations

Soil Types (provide)	Lochloosa	Wacahoota	Hague	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	B	D	A	A	*Composite*
Percentage Basin (provide)	55%	33%	10%	2%	*Open Space*
CN	61	80	39	100	66

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	5.91 ac	-	98	31.21
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	12.65 ac	-	66	44.88
			CN_{pre} =	76.1

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	3.14 in.
Q_{pre} =	7.77 in.
Pre-development runoff volume =	**12.02 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	15.84 ac	2.72 ac	18.56 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		14.26 ac
Pond Outside of Berm	-		2.03 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		2.27 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	14.26 ac	-	98	75.30
Pond Outside of Berm	2.03 ac	-	100	10.91
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	2.27 ac	-	66	8.07
			CN_{post} =	94.3

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	0.61 in.
Q_{post} =	10.10 in.
Post-development runoff volume =	**15.63 ac-ft**

Attenuation volume required (Post-Pre)	**3.61 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**5.69 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	11
SMF Name:	B-11A

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	15.84 ac	12.06 ac	27.90 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		5.91 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		21.99 ac

CN Calculations

Soil Types (provide)	Lochloosa	Wacahoota	Hague	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	B	D	A	A	*Composite*
Percentage Basin (provide)	55%	33%	10%	2%	*Open Space*
CN	61	80	39	100	66

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	5.91 ac	-	98	20.76
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	21.99 ac	-	66	51.90
			CN_{pre} =	72.7

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	3.76 in.
Q_{pre} =	12.81 in.
Pre-development runoff volume =	**29.78 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	15.84 ac	12.06 ac	27.90 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		14.26 ac
Pond Outside of Berm	-		10.83 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		2.81 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	14.26 ac	-	98	50.09
Pond Outside of Berm	10.83 ac	-	100	38.81
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	2.81 ac	-	66	6.64
			CN_{post} =	95.5

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	0.47 in.
Q_{post} =	16.05 in.
Post-development runoff volume =	**37.32 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 11
SMF Name: B-11A

Total Pond Volume (100 Yr, 240 Hr) **37.32 ac-ft**

Double stack storm assumes 1' drawdown from first storm and 6" freeboard provided

Double stack 2nd storm **+** **37.32 ac-ft**

Volume provided by drawdown of 1' **-** **10.32 ac-ft**
Volume provided within 6" freeboard **-** **7.27 ac-ft**

Total Pond Volume Required after first storm drawdown **=** **57.05 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)= 86.41
Approx. hydraulic clearance from LEOP = 1.00 ft *Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site 83.00 ft
Approx. Pond Bottom (dry) = 75.87 *Adjacent pond bottom elevation (per geotech, appears to be based on in-situ soil conditions*
Seasonal High Ground Water Elevation (SHGWT)= 60.00 *SHWE per Geotech Report (ERP # 133185-7*
SHGWT Check for Dry Retention Only OK
Tailwater Elevation (TW) = 82.61 *TW elevation source: 24" Pipe (STA 2426+01.19)*

Treatment Volume Required
2.08 ac-ft
Attenuation Volume Required
3.61 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	83.00	12.06			
Inside Edge of Maintenance Berm	82.50	11.08	10.95	68.02	
Design High Water	81.50	10.83	42.61	57.06	Meets Atten Vol Req
Treatment Weir	77.37	9.81	14.45	14.45	
Pond Bottom	75.87	9.45	0.00		

Pond Characteristics
15-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 11 & 12
SMF Name: B-11B & B-12B Combined

	Pre	***Post***
From Station	2413+32	2413+32
To Station	2455+32	2455+32
Basin Length	4200.00 ft	4200.00 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	28.93 ac	28.93 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	10.80 ac	Calculated for Basin 12

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	26.03 ac	Calculated for Basin 12

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	26.03 ac	15.23 ac	28.93 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **3.80 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	26.03 ac	15.23 ac	28.93 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **2.41 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**3.80 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**3.80 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	11 & 12
SMF Name:	B-11B & B-12B Combined

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area (Incl. Offsite)
	28.93 ac	5.29 ac	28.93 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		10.80 ac
Wood - Grass comb., Fair Cond.	D		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		18.13 ac

CN Calculations

Soil Types (provide)	Arredondo	Hague	Sparr	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	A	A	A	A	*Composite*
Percentage Basin (provide)	10%	78%	10%	2%	*Open Space*
CN	39	39	39	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	10.80 ac	-	98	36.58
Wood - Grass comb., Fair Cond.	0.00 ac	D	82	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	18.13 ac	-	40	25.21
			CN_{pre} =	61.8

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	6.18 in.
Q_{pre} =	5.81 in.
Pre-development runoff volume =	**14.00 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	28.93 ac	5.29 ac	28.93 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		26.03 ac
Pond - Design High Water	-		4.19 ac
Wood - Grass comb., Fair Cond.	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		-1.29 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	26.03 ac	-	98	88.18
Pond - Design High Water	4.19 ac	-	100	14.48
Wood - Grass comb., Fair Cond.	0.00 ac	-	82	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	-1.29 ac	-	40	-1.79
			CN_{post} =	100.9

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	-0.09 in.
Q_{post} =	10.90 in.
Post-development runoff volume =	**26.29 ac-ft**

Attenuation volume required (Post-Pre)	**12.28 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**16.08 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	11 & 12
SMF Name:	B-11B & B-12B Combined

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area (Incl. Offsite)
	28.93 ac	32.51 ac	28.93 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		10.80 ac
Woods - Grass comb., Fair cond.	D		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		18.13 ac

CN Calculations

Soil Types (provide)	Arredondo	Hague	Sparr	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	A	A	A	A	*Composite*
Percentage Basin (provide)	10%	78%	10%	2%	*Open Space*
CN	39	39	39	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	10.80 ac	-	98	36.58
Woods - Grass comb., Fair cond.	0.00 ac	D	82	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	18.13 ac	-	40	25.21
			CN_{pre} =	61.8

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	6.18 in.
Q_{pre} =	10.95 in.
Pre-development runoff volume =	**26.41 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	28.93 ac	32.51 ac	28.93 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		26.03 ac
Pond - Design High Water	-		29.94 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		-27.04 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	26.03 ac	-	98	88.18
Pond - Design High Water	29.94 ac	-	100	103.49
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	-27.04 ac	-	40	-37.59
			CN_{post} =	154.1

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	-3.51 in.
Q_{post} =	21.70 in.
Post-development runoff volume =	**52.33 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 11 & 12
SMF Name: B-11B & B-12B Combined

Total Pond Volume (100 Yr, 240 Hr) **52.33 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **52.33 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	62.51	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	67.00 ft	*Lowest Ground elevation*
Approx. Pond Bottom (dry) =	63.73	*2' above SHWE*
Seasonal High Ground Water Elevation (SHGWT)=	61.73	*NRCS Soil Survey Depth to Water Table*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	80.16	*TW elevation source: 24" Pipe (STA 2447+02.60)*

Treatment Volume Required
3.80 ac-ft
Attenuation Volume Required
12.28 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	67.00	32.51			
Inside Edge of Maintenance Berm	66.50	30.36	30.15	82.49	
Design High Water	65.50	29.94	26.33	52.34	Meets Atten Vol Req
Treatment Weir	64.62	29.57	26.01	26.01	
Pond Bottom	63.73	29.20	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	MH
Date:	2/4/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 11 & 12 &13
SMF Name: B-11C & B-12C & B-13A Combined

	Pre	***Post***
From Station	2413+32	2413+32
To Station	2480+00	2480+00
Basin Length	6667.55 ft	6667.55 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	48.26 ac	48.26 ac

Additional interchange area accomodated (to be confirmed with BCC)
2.34 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	17.14 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	41.33 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	41.33 ac	24.18 ac	45.92 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **6.03 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	41.33 ac	24.18 ac	45.92 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **3.83 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**6.03 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**6.03 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	MH
Date:	2/4/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	11 & 12 &13
SMF Name:	3-11C & B-12C & B-13A Combined

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area (Incl. Offsite)
	48.26 ac	5.29 ac	48.26 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		17.14 ac
Wood - Grass comb., Fair Cond.	D		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		31.12 ac

CN Calculations

Soil Types (provide)	Gainesville	Hague	Blichton	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	Open, Good Cond. (Grass >75%)	pen, Good Cond. (Grass >75	Water	
HSG (choose)	A	A	D	A	*Composite*
Percentage Basin (provide)	78%	15%	5%	2%	*Open Space*
CN	39	39	80	100	42

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	17.14 ac	-	98	34.81
Wood - Grass comb., Fair Cond.	0.00 ac	D	82	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	31.12 ac	-	42	27.26
			CN_{pre} =	62.1

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	6.11 in.
Q_{pre} =	5.85 in.
Pre-development runoff volume =	**23.51 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	48.26 ac	5.29 ac	48.26 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		41.33 ac
Pond - Design High Water	-		4.39 ac
Wood - Grass comb., Fair Cond.	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		2.54 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	41.33 ac	-	98	83.93
Pond - Design High Water	4.39 ac	-	100	9.09
Wood - Grass comb., Fair Cond.	0.00 ac	-	82	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	2.54 ac	-	42	2.23
			CN_{post} =	95.2

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	0.50 in.
Q_{post} =	10.22 in.
Post-development runoff volume =	**41.12 ac-ft**

Attenuation volume required (Post-Pre)	**17.60 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**23.63 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	MH
Date:	2/4/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	11 & 12 &13
SMF Name:	3-11C & B-12C & B-13A Combined

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area (Incl. Offsite)
	48.26 ac	22.89 ac	48.26 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		17.14 ac
Woods - Grass comb., Fair cond.	D		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		31.12 ac

CN Calculations

Soil Types (provide)	Gainesville	Hague	Blichton	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	Open, Good Cond. (Grass >75%)	pen, Good Cond. (Grass >75	Water	
HSG (choose)	A	A	D	A	*Composite*
Percentage Basin (provide)	78%	15%	5%	2%	*Open Space*
CN	39	39	80	100	42

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	17.14 ac	-	98	34.81
Woods - Grass comb., Fair cond.	0.00 ac	D	82	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	31.12 ac	-	42	27.26
			CN_{pre} =	62.1

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 6.11 in.
Q_{pre} = 11.00 in.
Pre-development runoff volume = **44.25 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	48.26 ac	22.89 ac	48.26 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		41.33 ac
Pond - Design High Water	-		20.74 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		-13.81 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	41.33 ac	-	98	83.93
Pond - Design High Water	20.74 ac	-	100	42.98
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	-13.81 ac	-	42	-12.10
			CN_{post} =	114.8

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = -1.29 in.
Q_{post} = 18.26 in.
Post-development runoff volume = **73.42 ac-ft**

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: MH
Date: 2/4/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 11 & 12 &13
SMF Name: 3-11C & B-12C & B-13A Combined

Total Pond Volume (100 Yr, 240 Hr) **73.42 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **73.42 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)= 62.51
Approx. hydraulic clearance from LEOP = 1.00 ft *Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site 67.00 ft *Lowest Ground elevation*
Approx. Pond Bottom (dry) = 61.85 *2' above SHWE*
Seasonal High Ground Water Elevation (SHGWT)= 59.85 *NRCS Soil Survey Depth to Water Table > 6.5'*
SHGWT Check for Dry Retention Only OK
Tailwater Elevation (TW) = 80.16 *TW elevation source: 24" Pipe (STA 2447+02.60)*

Treatment Volume Required
6.03 ac-ft
Attenuation Volume Required
17.60 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* (ac-ft)	*Sum Storage* (ac-ft)	*Check*
Outside Edge of Maintenance Berm	67.00	22.89			
Inside Edge of Maintenance Berm	66.50	21.09	20.92	94.34	
Design High Water	65.50	20.74	43.80	73.42	Meets Atten Vol Req
Treatment Weir	63.35	20.00	29.62	29.62	
Pond Bottom	61.85	19.49	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	12
SMF Name:	B-12A

	Pre	***Post***
From Station	2436+32	2436+32
To Station	2455+32	2455+32
Basin Length	1900.00 ft	1900.00 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	13.09 ac	13.09 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	4.89 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	11.78 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	11.78 ac	6.89 ac	13.09 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **1.72 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	11.78 ac	6.89 ac	13.09 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **1.09 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**1.72 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**1.72 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	12
SMF Name:	B-12A

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	13.09 ac	4.08 ac	17.17 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		4.89 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		12.28 ac

CN Calculations

Soil Types (provide)			Hague	100-Water	
Cover Description (choose)			Open, Good Cond. (Grass >75%	Water	
HSG (choose)			A	A	*Composite*
Percentage Basin (provide)			98%	2%	*Open Space*
CN	0	0	39	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	4.89 ac	-	98	27.91
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	12.28 ac	-	40	28.77
			CN_{pre} =	56.7

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	7.64 in.
Q_{pre} =	5.08 in.
Pre-development runoff volume =	**7.27 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	13.09 ac	4.08 ac	17.17 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		11.78 ac
Pond Outside of Berm	-		1.79 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		3.60 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	11.78 ac	-	98	67.24
Pond Outside of Berm	1.79 ac	-	100	10.45
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	3.60 ac	-	40	8.42
			CN_{post} =	86.1

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	1.61 in.
Q_{post} =	9.08 in.
Post-development runoff volume =	**12.99 ac-ft**

Attenuation volume required (Post-Pre)	**5.72 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**7.44 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	12
SMF Name:	B-12A

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	13.09 ac	7.59 ac	20.68 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		4.89 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		15.79 ac

CN Calculations

Soil Types (provide)	0	0	Hague	100-Water	
Cover Description (choose)	0	0	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	0	0	A	A	*Composite*
Percentage Basin (provide)	0%	0%	98%	2%	*Open Space*
CN	0	0	39	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	4.89 ac	-	98	23.17
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	15.79 ac	-	40	30.71
			CN_{pre} =	53.9

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	8.56 in.
Q_{pre} =	9.45 in.
Pre-development runoff volume =	**16.29 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	13.09 ac	7.59 ac	20.68 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		11.78 ac
Pond Outside of Berm	-		6.38 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		2.52 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	11.78 ac	-	98	55.82
Pond Outside of Berm	6.38 ac	-	100	30.84
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	2.52 ac	-	40	4.91
			CN_{post} =	91.6

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	0.92 in.
Q_{post} =	15.54 in.
Post-development runoff volume =	**26.79 ac-ft**

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 12
SMF Name: B-12A

Total Pond Volume (100 Yr, 240 Hr) **26.79 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **26.79 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)= 86.53
Approx. hydraulic clearance from LEOP = 1.00 ft *Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site 83.00 ft *Lowest groung elevation*
Approx. Pond Bottom (dry) = 77.00 *2' above SHW*
Seasonal High Ground Water Elevation (SHGWT)= 75.00 *Average of 3 SHWE from permit 16983 test hole 1,2,3 data*
SHGWT Check for Dry Retention Only OK
Tailwater Elevation (TW) = 80.16 *TW elevation source: 24" Pipe (STA 2447+02.60)*

Treatment Volume Required
1.72 ac-ft
Attenuation Volume Required
5.72 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* (ac-ft)	*Sum Storage* (ac-ft)	*Check*
Outside Edge of Maintenance Berm	83.00	7.59			
Inside Edge of Maintenance Berm	82.50	6.57	6.48	33.27	
Design High Water	81.50	6.38	18.28	26.79	Meets Atten Vol Req
Treatment Weir	78.50	5.81	8.51	8.51	
Pond Bottom	77.00	5.54	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 13
SMF Name: B-13C

	Pre	*Post*
From Station	2455+32	2455+32
To Station	2511+32	2511+32
Basin Length	5600.00 ft	5600.00 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	47.11 ac	47.11 ac

Additional interchange area as measured in CAD (PERVIOUS)
7.54 ac

Additional Lanes for interchange
1.00 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	14.40 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	35.72 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	35.72 ac	21.32 ac	47.11 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **5.21 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	35.72 ac	21.32 ac	47.11 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **3.93 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**5.21 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**5.21 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 13
SMF Name: B-13C

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	47.11 ac	0.00 ac	47.11 ac
Total Area to be attenuated for (choose)	HSG (choose)		
Roadway	-		14.40 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		32.71 ac

CN Calculations

Soil Types (provide)	Arredondo	Kendrick loamy	Kanapaha-Kanapaha	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%)	Water	
HSG (choose)	A	A	D	A	*Composite*
Percentage Basin (provide)	73%	20%	5%	2%	*Open Space*
CN	39	39	80	100	42

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	14.40 ac	-	98	29.96
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	32.71 ac	-	42	29.35
			CN_{pre} =	59.3

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} = 6.86 in.
Q_{pre} = 5.46 in.
Pre-development runoff volume = **21.42 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	47.11 ac	0.00 ac	47.11 ac
Total Area to be attenuated for	HSG (choose)		
Roadway	-		35.72 ac
Pond Outside of Berm	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		11.39 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	35.72 ac	-	98	74.31
Pond Outside of Berm	0.00 ac	-	100	0.01
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	11.39 ac	-	42	10.22
			CN_{post} =	84.5

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} = 1.83 in.
Q_{post} = 8.88 in.
Post-development runoff volume = **34.85 ac-ft**

Attenuation volume required (Post-Pre) **13.43 ac-ft**
Total Pond Volume (25 Yr, 96 Hr) **18.64 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	13
SMF Name:	B-13C

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	47.11 ac	40.28 ac	87.39 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		14.40 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		72.99 ac

CN Calculations

Soil Types (provide)	Arredondo	Kendrick loamy	Kanapaha-Kanapaha	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%)	Water	
HSG (choose)	A	A	D	A	*Composite*
Percentage Basin (provide)	73%	20%	5%	2%	*Open Space*
CN	39	39	80	100	42

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	14.40 ac	-	98	16.15
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	72.99 ac	-	42	35.30
			CN_{pre} =	51.5

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$

$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} = 9.44 in.

Q_{pre} = 8.96 in.

Pre-development runoff volume = **65.28 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	47.11 ac	40.28 ac	87.39 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		35.72 ac
Pond Outside of Berm	-		38.01 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		13.66 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	35.72 ac	-	98	40.06
Pond Outside of Berm	38.01 ac	-	100	43.49
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	13.66 ac	-	42	6.61
			CN_{post} =	90.2

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$

$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} = 1.09 in.

Q_{post} = 15.36 in.

Post-development runoff volume = **111.84 ac-ft**

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 13
SMF Name: B-13C

Total Pond Volume (100 Yr, 240 Hr) **111.84 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **111.84 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)= 67.97
Approx. hydraulic clearance from LEOP = 1.00 ft *Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site 67.00 ft
Approx. Pond Bottom (dry) = 62.50
Seasonal High Ground Water Elevation (SHGWT)= 60.50 *NRCS Soil Survey Depth to Water Table*
SHGWT Check for Dry Retention Only OK
Tailwater Elevation (TW) = 62.61 *TW elevation source: 24" Pipe (STA 2500+03.90)*

Treatment Volume Required
5.21 ac-ft
Attenuation Volume Required
13.43 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* (ac-ft)	*Sum Storage* (ac-ft)	*Check*
Outside Edge of Maintenance Berm	67.00	40.28			
Inside Edge of Maintenance Berm	66.50	38.48	38.24	150.15	
Design High Water	65.50	38.01	56.48	111.90	Meets Atten Vol Req
Treatment Weir	64.00	37.30	55.43	55.43	
Pond Bottom	62.50	36.60	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	14
SMF Name:	B-14B

	Pre	***Post***
From Station	2511+32	2511+32
To Station	2553+32	2553+32
Basin Length	4200.01 ft	4200.01 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	28.93 ac	28.93 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	10.80 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	26.03 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	26.03 ac	15.23 ac	28.93 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		**3.80 ac-ft**		

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	26.03 ac	15.23 ac	28.93 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		**2.41 ac-ft**		

Treatment Volume Required = Largest Treatment Volume	**3.80 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**3.80 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	14
SMF Name:	B-14B

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	28.93 ac	12.00 ac	40.93 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		10.80 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		30.13 ac

CN Calculations

Soil Types (provide)	Arredondo		Sparr	100-Water	
Cover Description (choose)	pen, Good Cond. (Grass >75%)		Open, Good Cond. (Grass >75%	Water	
HSG (choose)	A		A	A	*Composite*
Percentage Basin (provide)	5%		93%	2%	*Open Space*
CN	39		39	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	10.80 ac	-	98	25.86
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	30.13 ac	-	40	29.61
			CN_{pre} =	55.5

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	8.03 in.
Q_{pre} =	4.91 in.
Pre-development runoff volume =	**16.74 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	28.93 ac	12.00 ac	40.93 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		26.03 ac
Pond Outside of Berm	-		10.37 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		4.53 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	26.03 ac	-	98	62.32
Pond Outside of Berm	10.37 ac	-	100	25.33
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	4.53 ac	-	40	4.45
			CN_{post} =	92.1

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	0.86 in.
Q_{post} =	9.84 in.
Post-development runoff volume =	**33.55 ac-ft**

Attenuation volume required (Post-Pre)	**16.81 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**20.60 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	14
SMF Name:	B-14B

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	28.93 ac	16.77 ac	45.70 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		10.80 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		34.90 ac

CN Calculations

Soil Types (provide)	Arredondo	0	Sparr	100-Water	
Cover Description (choose)	pen, Good Cond. (Grass >75'	0	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	A	0	A	A	*Composite*
Percentage Basin (provide)	5%	0%	93%	2%	*Open Space*
CN	39	0	39	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	10.80 ac	-	98	23.16
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	34.90 ac	-	40	30.72
			CN_{pre} =	53.9

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} = 8.56 in.
Q_{pre} = 9.45 in.
Pre-development runoff volume = **36.00 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	28.93 ac	16.77 ac	45.70 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		26.03 ac
Pond Outside of Berm	-		14.94 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		4.73 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	26.03 ac	-	98	55.82
Pond Outside of Berm	14.94 ac	-	100	32.69
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	4.73 ac	-	40	4.16
			CN_{post} =	92.7

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} = 0.79 in.
Q_{post} = 15.69 in.
Post-development runoff volume = **59.74 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 14
SMF Name: B-14B

Total Pond Volume (100 Yr, 240 Hr) **59.74 ac-ft**

Additional flood plain volume **2.81 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **62.55 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)= 67.97
Approx. hydraulic clearance from LEOP = 1.00 ft *Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site 64.00 ft *Lowest elevation in ROW @ 62' . Used 64' to avoide issues with HGL*
Approx. Pond Bottom (dry) = 59.50
Seasonal High Ground Water Elevation (SHGWT)= 57.50 *Permit 17867.001 Test hole average*
SHGWT Check for Dry Retention Only OK
Tailwater Elevation (TW) = 62.61 *TW elevation source: 24" Pipe (STA 2542+03.43)*

Treatment Volume Required
3.80 ac-ft
Attenuation Volume Required
16.81 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* (ac-ft)	*Sum Storage* (ac-ft)	*Check*
Outside Edge of Maintenance Berm	64.00	16.77			
Inside Edge of Maintenance Berm	63.50	15.24	15.09	58.60	
Design High Water	62.50	14.94	22.08	43.50	Does Not Meet Requirements
Treatment Weir	61.00	14.50	21.42	21.42	
Pond Bottom	59.50	14.07	0.00		

At the direction of the FDOT, this pond was constrained to a single parcel. There is sufficient volume for the regulatory requirement of design storm attenuation, but not for the requested full containment of the 100-year/10-day storm event runoff volume.

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	14
SMF Name:	B-14C

	Pre	***Post***
From Station	2511+32	2511+32
To Station	2553+32	2553+32
Basin Length	4200.00 ft	4200.00 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	28.93 ac	28.93 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	10.80 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	26.03 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	26.03 ac	15.23 ac	28.93 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **3.80 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	26.03 ac	15.23 ac	28.93 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **2.41 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**3.80 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**3.80 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	14
SMF Name:	B-14C

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	28.93 ac	7.60 ac	36.53 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		10.80 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		25.73 ac

CN Calculations

Soil Types (provide)	Micanopy		Sparr	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)		Open, Good Cond. (Grass >75%	Water	
HSG (choose)	C		A	A	*Composite*
Percentage Basin (provide)	10%		88%	2%	*Open Space*
CN	74		39	100	44

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	10.80 ac	-	98	28.97
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	25.73 ac	-	44	30.79
			CN_{pre} =	59.8

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} =	6.73 in.
Q_{pre} =	5.52 in.
Pre-development runoff volume =	**16.81 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	28.93 ac	7.60 ac	36.53 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		26.03 ac
Pond Outside of Berm	-		6.42 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		4.08 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	26.03 ac	-	98	69.83
Pond Outside of Berm	6.42 ac	-	100	17.58
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	4.08 ac	-	44	4.88
			CN_{post} =	92.3

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} =	0.84 in.
Q_{post} =	9.86 in.
Post-development runoff volume =	**30.01 ac-ft**

Attenuation volume required (Post-Pre)	**13.20 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**17.00 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	14
SMF Name:	B-14C

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area
	28.93 ac	25.35 ac	54.28 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		10.80 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		43.48 ac

CN Calculations

Soil Types (provide)	Micanopy	0	Sparr	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	0	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	C	0	A	A	*Composite*
Percentage Basin (provide)	10%	0%	88%	2%	*Open Space*
CN	74	0	39	100	44

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	10.80 ac	-	98	19.50
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	43.48 ac	-	44	35.02
			CN_{pre} =	54.5

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 8.34 in.

Q_{pre} = 9.58 in.

Pre-development runoff volume = **43.33 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	28.93 ac	25.35 ac	54.28 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		26.03 ac
Pond Outside of Berm	-		23.08 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		5.17 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	26.03 ac	-	98	47.00
Pond Outside of Berm	23.08 ac	-	100	42.53
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	5.17 ac	-	44	4.16
			CN_{post} =	93.7

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 0.67 in.

Q_{post} = 15.82 in.

Post-development runoff volume = **71.55 ac-ft**

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 14
SMF Name: B-14C

Total Pond Volume (100 Yr, 240 Hr) **71.55 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **71.55 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)= 67.97
Approx. hydraulic clearance from LEOP = 1.00 ft *Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site 64.00 ft
Approx. Pond Bottom (dry) = 59.32
Seasonal High Ground Water Elevation (SHGWT)= 57.32 *Average of reported ESHW values from Permits 34678.000 and 34678.001 (+ 1 foot for conservative design)*
SHGWT Check for Dry Retention Only OK
Tailwater Elevation (TW) = 62.61 *TW elevation source: 24" Pipe (STA 2542+03.43)*

Treatment Volume Required
3.80 ac-ft
Attenuation Volume Required
13.20 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	64.00	25.35			
Inside Edge of Maintenance Berm	63.50	23.45	23.27	94.83	
Design High Water	62.50	23.08	38.27	71.56	Meets Atten Vol Req
Treatment Weir	60.82	22.47	33.30	33.30	
Pond Bottom	59.32	21.93	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 14 & 15
SMF Name: B-14A & B-15C Combined

	Pre	***Post***		
From Station	2511+32	2511+32		
To Station	2587+75	2587+75		
Basin Length	7642.55 ft	7642.55 ft		
R/W to R/W Width	300.00 ft	300.00 ft	**OFFSITE**	
Total Area	52.63 ac	52.63 ac		**59.76**

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	19.65 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Ultimate Condition	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	47.37 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	47.37 ac	27.72 ac	52.63 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **6.91 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	47.37 ac	27.72 ac	52.63 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **4.39 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**6.91 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**6.91 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	14 & 15
SMF Name:	B-14A & B-15C Combined

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area (Incl. Offsite)
	52.63 ac	6.43 ac	112.39 ac
Total Area to be attenuated for (choose)	HSG (choose)		
Roadway	-		19.65 ac
Wood - Grass comb., Fair Cond.	D		59.76 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		32.98 ac

CN Calculations

Soil Types (provide)	Arredondo	Micanopy	Sparr	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	A	C	A	A	*Composite*
Percentage Basin (provide)	78%	5%	15%	2%	*Open Space*
CN	39	74	39	100	42

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	19.65 ac	-	98	17.13
Wood - Grass comb., Fair Cond.	59.76 ac	D	82	43.60
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	32.98 ac	-	42	12.32
			CN_{pre} =	73.1

NRCS Method for Attenuation Volume:

$$S=\frac{1{,}000}{CN}-10$$
$$Q=\frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} = 3.69 in.
Q_{pre} = 7.36 in.
Pre-development runoff volume = **68.96 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	52.63 ac	6.43 ac	112.39 ac
Total Area to be attenuated for	HSG (choose)		
Roadway	-		47.37 ac
Pond - Design High Water	-		5.50 ac
Wood - Grass comb., Fair Cond.	-		54.26 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		5.26 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	47.37 ac	-	98	41.30
Pond - Design High Water	5.50 ac	-	100	4.89
Wood - Grass comb., Fair Cond.	54.26 ac	-	82	39.59
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	5.26 ac	-	42	1.96
			CN_{post} =	87.8

NRCS Method for Attenuation Volume:

$$S=\frac{1{,}000}{CN}-10$$
$$Q=\frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} = 1.40 in.
Q_{post} = 9.29 in.
Post-development runoff volume = **86.99 ac-ft**

Attenuation volume required (Post-Pre) **18.03 ac-ft**
Total Pond Volume (25 Yr, 96 Hr) **24.94 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	14 & 15
SMF Name:	B-14A & B-15C Combined

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area (Incl. Offsite)
	52.63 ac	26.60 ac	112.39 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		19.65 ac
Woods - Grass comb., Fair cond.			33.16 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		59.58 ac

CN Calculations

Soil Types (provide)	Arredondo	Micanopy	Sparr	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	A	C	A	A	*Composite*
Percentage Basin (provide)	78%	5%	15%	2%	*Open Space*
CN	39	74	39	100	42

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	19.65 ac	-	98	17.13
Woods - Grass comb., Fair cond.	33.16 ac	D	82	24.19
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	59.58 ac	-	42	22.25
			CN_{pre} =	63.6

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	5.73 in.
Q_{pre} =	11.27 in.
Pre-development runoff volume =	**105.60 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	52.63 ac	26.60 ac	112.39 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		47.37 ac
Pond - Design High Water	-		24.28 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		40.74 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	47.37 ac	-	98	41.30
Pond - Design High Water	24.28 ac	-	100	21.60
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	40.74 ac	-	42	15.21
			CN_{post} =	78.1

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	2.80 in.
Q_{post} =	13.66 in.
Post-development runoff volume =	**127.89 ac-ft**

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 14 & 15
SMF Name: B-14A & B-15C Combined

Total Pond Volume (100 Yr, 240 Hr) **127.89 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **127.89 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)= 62.51
Approx. hydraulic clearance from LEOP = 1.00 ft *Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site 62.00 ft *Elevation adjacent to ROW*
Approx. Pond Bottom (dry) = 55.00 *2' above SHW*
Seasonal High Ground Water Elevation (SHGWT)= 53.00 *Estimated 1' below lowest elevation of dry depressional area*
SHGWT Check for Dry Retention Only OK
Tailwater Elevation (TW) = 57.11 *TW elevation source: 36" Pipe (STA 2573+92.64)*

Treatment Volume Required
6.91 ac-ft
Attenuation Volume Required
18.03 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* (ac-ft)	*Sum Storage* (ac-ft)	*Check*
Outside Edge of Maintenance Berm	62.00	26.60			
Inside Edge of Maintenance Berm	61.50	24.66	24.47	152.38	
Design High Water	60.50	24.28	94.13	127.91	Meets Atten Vol Req
Treatment Weir	56.50	22.79	33.78	33.78	
Pond Bottom	55.00	22.24	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 15
SMF Name: B15-A

	Pre	Post		
From Station	2553+32	2553+32		
To Station	2587+75	2587+75		
Basin Length	3443.00 ft	3443.00 ft		
R/W to R/W Width	300.00 ft	300.00 ft	**OFFSITE**	
Total Area	23.71 ac	23.71 ac		**32.6**

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	8.85 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Buffer	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width*
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	21.34 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l DCIA	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	21.34 ac	12.49 ac	23.71 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **3.11 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l DCIA	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	21.34 ac	12.49 ac	23.71 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **1.98 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**3.11 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**3.11 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	15
SMF Name:	B15-A

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area (Incl. Offsite)
	23.71 ac	4.16 ac	56.31 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		8.85 ac
Wood - Grass comb., Fair Cond.	D		32.60 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		14.86 ac

CN Calculations

Soil Types (provide)	Arredondo	Udorthents	Micanopy	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%)	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	A	B	C	A	*Composite*
Percentage Basin (provide)	78%	5%	15%	2%	*Open Space*
CN	39	61	74	100	47

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	8.85 ac	-	98	15.40
Wood - Grass comb., Fair Cond.	32.60 ac	D	82	47.47
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	14.86 ac	-	47	12.29
			CN_{pre} =	75.2

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} =	3.30 in.
Q_{pre} =	7.65 in.
Pre-development runoff volume =	**35.88 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	23.71 ac	4.16 ac	56.31 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		21.34 ac
Pond - Design High Water	-		3.27 ac
Wood - Grass comb., Fair Cond.	-		29.33 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		2.37 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	21.34 ac	-	98	37.14
Pond - Design High Water	3.27 ac	-	100	5.81
Wood - Grass comb., Fair Cond.	29.33 ac	-	82	42.71
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	2.37 ac	-	47	1.96
			CN_{post} =	87.6

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} =	1.41 in.
Q_{post} =	9.27 in.
Post-development runoff volume =	**43.51 ac-ft**

Attenuation volume required (Post-Pre)	**7.62 ac-ft**
Total Pond Volume (25 Yr, 96 Hr)	**10.73 ac-ft**

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 15
SMF Name: B15-A

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area (Incl. Offsite)
	23.71 ac	22.84 ac	56.31 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		8.85 ac
Woods - Grass comb., Fair cond.	D		9.76 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		37.70 ac

CN Calculations

Soil Types (provide)	Arredondo	Udorthents	Micanopy	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%)	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	A	B	C	A	*Composite*
Percentage Basin (provide)	78%	5%	15%	2%	*Open Space*
CN	39	61	74	100	47

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	8.85 ac	-	98	15.40
Woods - Grass comb., Fair cond.	9.76 ac	D	82	14.21
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	37.70 ac	-	47	31.18
			CN_{pre} =	60.8

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{pre} = 6.45 in.
Q_{pre} = 10.77 in.
Pre-development runoff volume = **50.55 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	23.71 ac	22.84 ac	56.31 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		21.34 ac
Pond - Design High Water	-		20.69 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		14.28 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	21.34 ac	-	98	37.14
Pond - Design High Water	20.69 ac	-	100	36.75
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	14.28 ac	-	47	11.81
			CN_{post} =	85.7

SCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} = 1.67 in.
Q_{post} = 14.75 in.
Post-development runoff volume = **69.22 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	CC
Revised By:	AV
Date:	2/2/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 15
SMF Name: B15-A

Total Pond Volume (100 Yr, 240 Hr) **69.22 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **69.22 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)=	62.51	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site	61.00 ft	*Lowest Ground Elevation*
Approx. Pond Bottom (dry) =	56.00	*2' above SHW*
Seasonal High Ground Water Elevation (SHGWT)=	54.00	*> 6.5' below LBOB (NRCS soils Map)*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	57.11	*TW elevation source: 36" Pipe (STA 2573+92.64)*

Treatment Volume Required
3.11 ac-ft
Attenuation Volume Required
7.62 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* (ac-ft)	*Sum Storage* (ac-ft)	*Check*
Outside Edge of Maintenance Berm	61.00	22.84			
Inside Edge of Maintenance Berm	60.50	21.04	20.87	91.17	
Design High Water	59.50	20.69	40.69	70.31	Meets Atten Vol Req
Treatment Weir	57.50	20.00	29.62	29.62	
Pond Bottom	56.00	19.49	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	AV
Revised By:	AV
Date:	1/13/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	15
SMF Name:	B15-B

	Pre	***Post***		
From Station	2553+32	2553+32		
To Station	2587+75	2587+75		
Basin Length	3443.00 ft	3443.00 ft		
R/W to R/W Width	300.00 ft	300.00 ft	**OFFSITE**	
Total Area	23.71 ac	23.71 ac		**0**

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	6	72.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			112.00 ft	
		Impervious Area	8.85 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00 ft	10	120.00 ft	
Shoulder	10.00 ft	4	40.00 ft	
Buffer	110.00 ft	1	110.00 ft	Impervious calculated as 90% of total R/W width
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
	0.00 ft	0	0.00 ft	
			270.00 ft	
		Impervious Area	21.34 ac	

*Impervious area is calculated as 90% of the R/W width per client request.

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in.	21.34 ac	12.49 ac	23.71 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume **3.11 ac-ft**

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in.	21.34 ac	12.49 ac	23.71 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume **1.98 ac-ft**

Treatment Volume Required = Largest Treatment Volume	**3.11 ac-ft**
Treatment Volume from existing sources (treatment types must match)*	**0.00 ac-ft**
Total Treatment volume required	**3.11 ac-ft**

*referenced from Existing Treatment and Storage Summary. 0.00 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	AV
Revised By:	AV
Date:	1/13/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 15
SMF Name: B15-B

ATTENUATION CALCULATIONS (25 Yr, 96 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	25-yr
Time (choose)	96-hr
Precipitation Depth	10.8 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area (Incl. Offsite)
	23.71 ac	5.76 ac	23.71 ac
Total Area to be attenuated for (choose)	HSG (choose)		
Roadway	-		8.85 ac
Wood - Grass comb., Fair Cond.	D		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		14.86 ac

CN Calculations

Soil Types (provide)	Arredondo	Udorthents	Lochloosa	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	A	B	A	A	Composite
Percentage Basin (provide)	73%	10%	15%	2%	Open Space
CN	39	61	39	100	42

	Area	HSG	CN	Weighted CN
Roadway	8.85 ac	-	98	36.58
Wood - Grass comb., Fair Cond.	0.00 ac	D	82	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	14.86 ac	-	42	26.59
			CN_{pre} =	63.2

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 5.83 in.
Q_{pre} = 6.00 in.
Pre-development runoff volume = **11.86 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	23.71 ac	5.76 ac	29.47 ac
Total Area to be attenuated for	HSG (choose)		
Roadway	-		21.34 ac
Pond - Design High Water	-		4.75 ac
Wood - Grass comb., Fair Cond.	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		3.38 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	21.34 ac	-	98	70.96
Pond - Design High Water	4.75 ac	-	100	16.11
Wood - Grass comb., Fair Cond.	0.00 ac	-	82	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	3.38 ac	-	42	4.87
			CN_{post} =	91.9

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 0.88 in.
Q_{post} = 9.82 in.
Post-development runoff volume = **24.10 ac-ft**

Attenuation volume required (Post-Pre) **12.25 ac-ft**
Total Pond Volume (25 Yr, 96 Hr) **15.36 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	AV
Revised By:	AV
Date:	1/13/2024

Subject:	FPID 44362412201 I-75 Master Plan
Description	Pond Sizing Calculations
Basin:	15
SMF Name:	B15-B

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100-yr
Time (choose)	240-hr
Precipitation Depth	16.6 in.

Pre-development Conditions

	R/W Area	Pond Area	Total Area (Incl. Offsite)
	23.71 ac	26.95 ac	50.66 ac
Total Area to be attenuated for (choose)	*HSG (choose)*		
Roadway	-		8.85 ac
Woods - Grass comb., Fair cond.	D		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space	-		41.81 ac

CN Calculations

Soil Types (provide)	Arredondo	Udorthents	Lochloosa	100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Open, Good Cond. (Grass >75%	Water	
HSG (choose)	A	B	A	A	*Composite*
Percentage Basin (provide)	73%	10%	15%	2%	*Open Space*
CN	39	61	39	100	42

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	8.85 ac	-	98	17.12
Woods - Grass comb., Fair cond.	0.00 ac	D	82	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	41.81 ac	-	42	35.01
			CN_{pre} =	52.1

NRCS Method for Attenuation Volume:

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 9.18 in.
Q_{pre} = 9.10 in.
Pre-development runoff volume = **38.43 ac-ft**

Post-development Conditions

	R/W Area	Pond Area	
	23.71 ac	26.95 ac	50.66 ac
Total Area to be attenuated for	*HSG (choose)*		
Roadway	-		21.34 ac
Pond - Design High Water	-		24.62 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
-	-		0.00 ac
Open Space Composite	-		4.70 ac

CN Calculations	*Area*	*HSG*	*CN*	*Weighted CN*
Roadway	21.34 ac	-	98	41.28
Pond - Design High Water	24.62 ac	-	100	48.59
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
-	0.00 ac	-	-	0.00
Open Space	4.70 ac	-	42	3.94
			CN_{post} =	93.8

NRCS Method for Attenuation Volume (100 yr, 240 hr):

$$S = \frac{1{,}000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 0.66 in.
Q_{post} = 15.83 in.
Post-development runoff volume = **66.85 ac-ft**

Patel, Greene & Associates, LLC

Designed By:	MH
Date:	11/15/2023
Checked By:	AV
Revised By:	AV
Date:	1/13/2024

Subject: FPID 44362412201 I-75 Master Plan
Description Pond Sizing Calculations
Basin: 15
SMF Name: B15-B

Total Pond Volume (100 Yr, 240 Hr) **66.85 ac-ft**

Additional Floodplain Volume on parcel **4.78 ac-ft**

Total Pond Volume Required = Use Largest Total Pond Volume **71.63 ac-ft**

POND SIZE ESTIMATE PER SJRWMD

Approx. low edge of shoulder elevation (LEOP)= 62.51
Approx. hydraulic clearance from LEOP = 1.00 ft *Standard hydraulic gradient clearance*
Approx. Low Back of Berm Elevation @ Pond Site 64.00 ft *Lowest Ground Elevation*
Approx. Pond Bottom (dry) = 59.50 *2' above SHW*
Seasonal High Ground Water Elevation (SHGWT)= 57.50 *> 6.5' below LBOB (NRCS soils Map)*
SHGWT Check for Dry Retention Only OK
Tailwater Elevation (TW) = 57.11 *TW elevation source: 36" Pipe (STA 2573+92.64)*

Treatment Volume Required
3.11 ac-ft
Attenuation Volume Required
12.25 ac-ft

Stage-Area Table 100 Yr, 240 Hr

Pond Components	*Stage* (ft)	*Area* (ac)	*Delta Storage* (ac-ft)	*Sum Storage* (ac-ft)	*Check*
Outside Edge of Maintenance Berm	64.00	26.95			
Inside Edge of Maintenance Berm	63.50	25.00	24.81	96.96	
Design High Water	62.50	24.62	36.50	72.15	Meets Atten Vol Req
Treatment Weir	61.00	24.05	35.65	35.65	
Pond Bottom	59.50	23.49	0.00		

Pond Characteristics
20-foot Maintenance Berm at 1:40 Slope
1:4 Slopes from Inside of Maintenance Berm to Pond Bottom
Treatment Type: Dry Retention

Appendix E

Estimated Pond Costs

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B1-A & B2-C COMBINED

Pond Size @ T.o.B. (Acres)	28.6
Pond Size @ D.H.W. (Acres)	26.4
Storage (Ac-Ft)	179.23
Outfall Length (LF)	7419

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	28.6	$ 26,612.00	$ 761,103.20
120-1	REGULAR EXCAVATION	CY	289158	$ 10.00	$ 2,891,577.33
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	7419	$ 137.00	$ 1,016,403.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	2	$ 5,440.00	$ 10,880.00
425-2-61	MANHOLES, P-8, <10'	EA	25	$ 9,914.00	$ 247,850.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	5856	$ 44.00	$ 257,664.00
570-1-2	PERFORMANCE TURF, SOD	SY	10648	$ 4.46	$ 47,490.08
				Subtotal:	**$ 5,235,388.61**
	Contingency	LS	1	25%	$ 1,308,847.15
				TOTAL:	**$ 6,544,235.76**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B1-B & B2-A COMBINED

Pond Size @ T.o.B. (Acres)	15.5
Pond Size @ D.H.W. (Acres)	13.8
Storage (Ac-Ft)	97.62
Outfall Length (LF)	7032

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	15.5	$ 26,612.00	$ 412,486.00
120-1	REGULAR EXCAVATION	CY	157494	$ 10.00	$ 1,574,936.00
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	7032	$ 137.00	$ 963,384.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	2	$ 5,440.00	$ 10,880.00
425-2-61	MANHOLES, P-8, <10'	EA	24	$ 9,914.00	$ 237,936.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	5426	$ 44.00	$ 238,744.00
570-1-2	PERFORMANCE TURF, SOD	SY	8228	$ 4.46	$ 36,696.88
				Subtotal:	**$ 3,477,483.88**
	Contingency	LS	1	25%	$ 869,370.97
				TOTAL:	**$ 4,346,854.85**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B1-F & B2-B COMBINED					
Pond Size @ T.o.B. (Acres)	14.7				
Pond Size @ D.H.W. (Acres)	12.98				
Storage (Ac-Ft)	91.85				
Outfall Length (LF)	5485				
Pay Item No.	**Description**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost**
110-1-1	CLEARING AND GRUBBING	AC	14.7	$ 26,612.00	$ 391,196.40
120-1	REGULAR EXCAVATION	CY	148185	$ 10.00	$ 1,481,846.67
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	5485	$ 137.00	$ 751,445.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	2	$ 5,440.00	$ 10,880.00
425-2-61	MANHOLES, P-8, <10'	EA	19	$ 9,914.00	$ 188,366.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	5754	$ 44.00	$ 253,176.00
570-1-2	PERFORMANCE TURF, SOD	SY	8325	$ 4.46	$ 37,128.61
				Subtotal:	**$ 3,116,459.67**
	Contingency	LS	1	25%	$ 779,114.92
				TOTAL:	**$ 3,895,574.59**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B3-B

Pond Size @ T.o.B. (Acres)	14.4
Pond Size @ D.H.W. (Acres)	12.7
Storage (Ac-Ft)	67.09
Outfall Length (LF)	350

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	14.4	$ 26,612.00	$ 383,212.80
120-1	REGULAR EXCAVATION	CY	108239	$ 10.00	$ 1,082,385.33
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	350	$ 137.00	$ 47,950.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	2	$ 9,914.00	$ 19,828.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	3931	$ 44.00	$ 172,964.00
570-1-2	PERFORMANCE TURF, SOD	SY	8228	$ 4.46	$ 36,696.88
				Subtotal:	**$ 1,750,898.01**
	Contingency	LS	1	25%	$ 437,724.50
				TOTAL:	**$ 2,188,622.51**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B3-C

Pond Size @ T.o.B. (Acres)	14.4
Pond Size @ D.H.W. (Acres)	12.7
Storage (Ac-Ft)	67.09
Outfall Length (LF)	2591

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	14.4	$ 26,612.00	$ 383,212.80
120-1	REGULAR EXCAVATION	CY	108239	$ 10.00	$ 1,082,385.33
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	2591	$ 137.00	$ 354,967.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	9	$ 9,914.00	$ 89,226.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	4125	$ 44.00	$ 181,500.00
570-1-2	PERFORMANCE TURF, SOD	SY	8228	$ 4.46	$ 36,696.88
				Subtotal:	**$ 2,135,849.01**
	Contingency	LS	1	25%	$ 533,962.25
				TOTAL:	**$ 2,669,811.26**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B3-D

Pond Size @ T.o.B. (Acres)	20.5
Pond Size @ D.H.W. (Acres)	18.4
Storage (Ac-Ft)	81.12
Outfall Length (LF)	1770

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	20.5	$ 26,612.00	$ 545,546.00
120-1	REGULAR EXCAVATION	CY	130874	$ 10.00	$ 1,308,736.00
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	1770	$ 137.00	$ 242,490.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	6	$ 9,914.00	$ 59,484.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	4190	$ 44.00	$ 184,360.00
570-1-2	PERFORMANCE TURF, SOD	SY	10164	$ 4.46	$ 45,331.44
				Subtotal:	**$ 2,393,808.44**
	Contingency	LS	1	25%	$ 598,452.11
				TOTAL:	**$ 2,992,260.55**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B4-A

Pond Size @ T.o.B. (Acres)	18.4
Pond Size @ D.H.W. (Acres)	16.4
Storage (Ac-Ft)	64.5
Outfall Length (LF)	2193

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	18.4	$ 26,612.00	$ 489,660.80
120-1	REGULAR EXCAVATION	CY	104060	$ 10.00	$ 1,040,600.00
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	2193	$ 137.00	$ 300,441.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	8	$ 9,914.00	$ 79,312.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	4505	$ 44.00	$ 198,220.00
570-1-2	PERFORMANCE TURF, SOD	SY	9680	$ 4.46	$ 43,172.80
				Subtotal:	**$ 2,159,267.60**
	Contingency	LS	1	25%	$ 539,816.90
				TOTAL:	**$ 2,699,084.50**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B4-B2

Pond Size @ T.o.B. (Acres)	5.7
Pond Size @ D.H.W. (Acres)	4.7
Storage (Ac-Ft)	35.7
Outfall Length (LF)	1865

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	5.7	$ 26,612.00	$ 151,688.40
120-1	REGULAR EXCAVATION	CY	57596	$ 10.00	$ 575,960.00
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	1865	$ 137.00	$ 255,505.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	7	$ 9,914.00	$ 69,398.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	2288	$ 44.00	$ 100,672.00
570-1-2	PERFORMANCE TURF, SOD	SY	4840	$ 4.46	$ 21,586.40
				Subtotal:	**$ 1,182,670.80**
	Contingency	LS	1	25%	$ 295,667.70
				TOTAL:	**$ 1,478,338.50**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	AV
Date:	1/30/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B4-E

Pond Size @ T.o.B. (Acres)	6.5
Pond Size @ D.H.W. (Acres)	5.5
Storage (Ac-Ft)	37.71
Outfall Length (LF)	120

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	6.5	$ 26,612.00	$ 172,978.00
120-1	REGULAR EXCAVATION	CY	60839	$ 10.00	$ 608,388.00
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	120	$ 137.00	$ 16,440.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	1	$ 9,914.00	$ 9,914.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	2187	$ 44.00	$ 96,228.00
570-1-2	PERFORMANCE TURF, SOD	SY	4840	$ 4.46	$ 21,586.40
				Subtotal:	**$ 933,395.40**
	Contingency	LS	1	25%	$ 233,348.85
				TOTAL:	**$ 1,166,744.25**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B5-A & B-6A & B7-B COMBINED					
Pond Size @ T.o.B. (Acres)	34.6				
Pond Size @ D.H.W. (Acres)	31.9				
Storage (Ac-Ft)	245.24				
Outfall Length (LF)	5802				
Pay Item No.	**Description**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost**
110-1-1	CLEARING AND GRUBBING	AC	34.6	$ 26,612.00	$ 920,775.20
120-1	REGULAR EXCAVATION	CY	395654	$ 10.00	$ 3,956,538.67
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	5802	$ 137.00	$ 794,874.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	3	$ 5,440.00	$ 16,320.00
425-2-61	MANHOLES, P-8, <10'	EA	20	$ 9,914.00	$ 198,280.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	10733	$ 44.00	$ 472,252.00
570-1-2	PERFORMANCE TURF, SOD	SY	13068	$ 4.46	$ 58,283.28
				Subtotal:	**$ 6,419,744.15**
	Contingency	LS	1	25%	$ 1,604,936.04
				TOTAL:	**$ 8,024,680.19**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B5-B

Pond Size @ T.o.B. (Acres)	15.8
Pond Size @ D.H.W. (Acres)	14
Storage (Ac-Ft)	64.12
Outfall Length (LF)	680

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	15.8	$ 26,612.00	$ 420,469.60
120-1	REGULAR EXCAVATION	CY	103447	$ 10.00	$ 1,034,469.33
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	680	$ 137.00	$ 93,160.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	3	$ 9,914.00	$ 29,742.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	3890	$ 44.00	$ 171,160.00
570-1-2	PERFORMANCE TURF, SOD	SY	8712	$ 4.46	$ 38,855.52
				Subtotal:	**$ 1,795,717.45**
	Contingency	LS	1	25%	$ 448,929.36
				TOTAL:	**$ 2,244,646.81**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	AV
Date:	2/2/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B5-E					
Pond Size @ T.o.B. (Acres)	6.2				
Pond Size @ D.H.W. (Acres)	5.3				
Storage (Ac-Ft)	34.32				
Outfall Length (LF)	291				
Pay Item No.	**Description**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost**
110-1-1	CLEARING AND GRUBBING	AC	6.2	$ 26,612.00	$ 164,994.40
120-1	REGULAR EXCAVATION	CY	55370	$ 10.00	$ 553,696.00
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	291	$ 137.00	$ 39,867.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	1	$ 9,914.00	$ 9,914.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	2353	$ 44.00	$ 103,532.00
570-1-2	PERFORMANCE TURF, SOD	SY	4356	$ 4.46	$ 19,427.76
				Subtotal:	**$ 899,292.16**
	Contingency	LS	1	25%	$ 224,823.04
				TOTAL:	**$ 1,124,115.20**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B6-C

Pond Size @ T.o.B. (Acres)	9
Pond Size @ D.H.W. (Acres)	7.67
Storage (Ac-Ft)	29.83
Outfall Length (LF)	3145

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	9.0	$ 26,612.00	$ 239,508.00
120-1	REGULAR EXCAVATION	CY	48126	$ 10.00	$ 481,257.33
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	3145	$ 137.00	$ 430,865.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	11	$ 9,914.00	$ 109,054.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	3128	$ 44.00	$ 137,632.00
570-1-2	PERFORMANCE TURF, SOD	SY	6437	$ 4.46	$ 28,709.91
				Subtotal:	**$ 1,434,887.25**
	Contingency	LS	1	25%	$ 358,721.81
				TOTAL:	**$ 1,793,609.06**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	AV
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B5-E & B6-E COMBINED					
Pond Size @ T.o.B. (Acres)	7.62				
Pond Size @ D.H.W. (Acres)	7.02				
Storage (Ac-Ft)	45.75				
Outfall Length (LF)	3038				
Pay Item No.	**Description**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost**
110-1-1	CLEARING AND GRUBBING	AC	7.6	$ 26,612.00	$ 202,783.44
120-1	REGULAR EXCAVATION	CY	73810	$ 10.00	$ 738,100.00
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	3038	$ 137.00	$ 416,206.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	2	$ 5,440.00	$ 10,880.00
425-2-61	MANHOLES, P-8, <10'	EA	11	$ 9,914.00	$ 109,054.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	2830	$ 44.00	$ 124,520.00
570-1-2	PERFORMANCE TURF, SOD	SY	2904	$ 4.46	$ 12,951.84
				Subtotal:	**$ 1,616,916.28**
	Contingency	LS	1	25%	$ 404,229.07
				TOTAL:	**$ 2,021,145.35**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B6-F					
Pond Size @ T.o.B. (Acres)	3.92				
Pond Size @ D.H.W. (Acres)	3.2				
Storage (Ac-Ft)	15.18				
Outfall Length (LF)	580				
Pay Item No.	**Description**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost**
110-1-1	CLEARING AND GRUBBING	AC	3.9	$ 26,612.00	$ 104,319.04
120-1	REGULAR EXCAVATION	CY	24490	$ 10.00	$ 244,904.00
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	580	$ 137.00	$ 79,460.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	2	$ 9,914.00	$ 19,828.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	1922	$ 44.00	$ 84,568.00
570-1-2	PERFORMANCE TURF, SOD	SY	3485	$ 4.46	$ 15,542.21
				Subtotal:	**$ 556,482.25**
	Contingency	LS	1	25%	$ 139,120.56
				TOTAL:	**$ 695,602.81**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B7-A					
Pond Size @ T.o.B. (Acres)	11.09				
Pond Size @ D.H.W. (Acres)	9.91				
Storage (Ac-Ft)	52.24				
Outfall Length (LF)	336				
Pay Item No.	**Description**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost**
110-1-1	CLEARING AND GRUBBING	AC	11.1	$ 26,612.00	$ 295,127.08
120-1	REGULAR EXCAVATION	CY	84281	$ 10.00	$ 842,805.33
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	336	$ 137.00	$ 46,032.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	2	$ 9,914.00	$ 19,828.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-1-2	PERFORMANCE TURF, SOD	SY	5711	$ 4.46	$ 25,471.95
				Subtotal:	**$ 1,237,125.37**
	Contingency	LS	1	25%	$ 309,281.34
				TOTAL:	**$ 1,546,406.71**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1. This alternative lies within an already fenced FDOT parcel, and fencing is therefore not required for this alternative.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MH
Date:	1/21/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B6-G & B7-A COMBINED					
Pond Size @ T.o.B. (Acres)	18.31				
Pond Size @ D.H.W. (Acres)	16.78				
Storage (Ac-Ft)	73.78				
Outfall Length (LF)	1437				
Pay Item No.	**Description**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost**
110-1-1	CLEARING AND GRUBBING	AC	18.3	$ 26,612.00	$ 487,265.72
120-1	REGULAR EXCAVATION	CY	119032	$ 10.00	$ 1,190,317.33
430-175-118	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 18" S/CD	LF	880	$ 121.00	$ 106,522.35
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	786	$ 137.00	$ 107,682.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	7	$ 5,440.00	$ 38,080.00
425-2-61	MANHOLES, P-8, <10'	EA	5	$ 9,914.00	$ 49,570.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-1-2	PERFORMANCE TURF, SOD	SY	7405	$ 4.46	$ 33,027.19
				Subtotal:	**$ 2,014,885.60**
	Contingency	LS	1	25%	$ 503,721.40
				TOTAL:	**$ 2,518,607.00**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1. This alternative lies within an already fenced FDOT parcel, and fencing is therefore not required for this alternative.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B7-C					
Pond Size @ T.o.B. (Acres)	20.3				
Pond Size @ D.H.W. (Acres)	18.27				
Storage (Ac-Ft)	73.52				
Outfall Length (LF)	895				
Pay Item No.	**Description**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost**
110-1-1	CLEARING AND GRUBBING	AC	20.3	$ 26,612.00	$ 540,223.60
120-1	REGULAR EXCAVATION	CY	118612	$ 10.00	$ 1,186,122.67
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	895	$ 137.00	$ 122,615.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	3	$ 9,914.00	$ 29,742.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	4345	$ 44.00	$ 191,180.00
570-1-2	PERFORMANCE TURF, SOD	SY	9825	$ 4.46	$ 43,820.39
				Subtotal:	**$ 2,121,564.66**
	Contingency	LS	1	25%	$ 530,391.16
				TOTAL:	**$ 2,651,955.82**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1. For missing pay items, unit cost for the next larger size of the same item was used.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B8-B

Pond Size @ T.o.B. (Acres)	10.95
Pond Size @ D.H.W. (Acres)	9.5
Storage (Ac-Ft)	36.99
Outfall Length (LF)	435

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	11.0	$ 26,612.00	$ 291,401.40
120-1	REGULAR EXCAVATION	CY	59677	$ 10.00	$ 596,772.00
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	435	$ 137.00	$ 59,595.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	2	$ 9,914.00	$ 19,828.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	3250	$ 44.00	$ 143,000.00
570-1-2	PERFORMANCE TURF, SOD	SY	7018	$ 4.46	$ 31,300.28
				Subtotal:	**$ 1,149,757.68**
	Contingency	LS	1	25%	$ 287,439.42
				TOTAL:	**$ 1,437,197.10**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
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Construction Cost Estimate
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Done by:	MAH
Date:	1/22/2024
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Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B9-C					
Pond Size @ T.o.B. (Acres)	10.6				
Pond Size @ D.H.W. (Acres)	9.11				
Storage (Ac-Ft)	40.55				
Outfall Length (LF)	805				
Pay Item No.	**Description**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost**
110-1-1	CLEARING AND GRUBBING	AC	10.6	$ 26,612.00	$ 282,087.20
120-1	REGULAR EXCAVATION	CY	65421	$ 10.00	$ 654,206.67
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	805	$ 137.00	$ 110,285.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	3	$ 9,914.00	$ 29,742.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	3313	$ 44.00	$ 145,772.00
570-1-2	PERFORMANCE TURF, SOD	SY	7212	$ 4.46	$ 32,163.74
				Subtotal:	**$ 1,262,117.60**
	Contingency	LS	1	25%	$ 315,529.40
				TOTAL:	**$ 1,577,647.00**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
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Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B10-B

Pond Size @ T.o.B. (Acres)	12.3
Pond Size @ D.H.W. (Acres)	10.8
Storage (Ac-Ft)	43.6
Outfall Length (LF)	1965

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	12.3	$ 26,612.00	$ 327,327.60
120-1	REGULAR EXCAVATION	CY	70341	$ 10.00	$ 703,413.33
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	1965	$ 137.00	$ 269,205.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	7	$ 9,914.00	$ 69,398.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	3620	$ 44.00	$ 159,280.00
570-1-2	PERFORMANCE TURF, SOD	SY	7260	$ 4.46	$ 32,379.60
				Subtotal:	**$ 1,568,864.53**
	Contingency	LS	1	25%	$ 392,216.13
				TOTAL:	**$ 1,961,080.66**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B11-A					
Pond Size @ T.o.B. (Acres)	12				
Pond Size @ D.H.W. (Acres)	10.8				
Storage (Ac-Ft)	68.02				
Outfall Length (LF)	2985				
Pay Item No.	**Description**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost**
110-1-1	CLEARING AND GRUBBING	AC	12.0	$ 26,612.00	$ 319,344.00
120-1	REGULAR EXCAVATION	CY	109739	$ 10.00	$ 1,097,389.33
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	2985	$ 137.00	$ 408,945.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	10	$ 9,914.00	$ 99,140.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	3601	$ 44.00	$ 158,444.00
570-1-2	PERFORMANCE TURF, SOD	SY	5808	$ 4.46	$ 25,903.68
				Subtotal:	**$ 2,117,027.01**
	Contingency	LS	1	25%	$ 529,256.75
				TOTAL:	**$ 2,646,283.76**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B11-B & B12-B COMBINED

Pond Size @ T.o.B. (Acres)	32.5
Pond Size @ D.H.W. (Acres)	29.9
Storage (Ac-Ft)	82.49
Outfall Length (LF)	2087

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	32.5	$ 26,612.00	$ 864,890.00
120-1	REGULAR EXCAVATION	CY	133084	$ 10.00	$ 1,330,838.67
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	2087	$ 137.00	$ 285,919.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	2	$ 5,440.00	$ 10,880.00
425-2-61	MANHOLES, P-8, <10'	EA	7	$ 9,914.00	$ 69,398.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	5025	$ 44.00	$ 221,100.00
570-1-2	PERFORMANCE TURF, SOD	SY	12584	$ 4.46	$ 56,124.64
				Subtotal:	**$ 2,841,571.31**
	Contingency	LS	1	25%	$ 710,392.83
				TOTAL:	**$ 3,551,964.14**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	AV
Date:	1/121/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/4/2024

POND ALTERNATIVE B11-C & B12-C & B13-A COMBINED					
Pond Size @ T.o.B. (Acres)	22.89				
Pond Size @ D.H.W. (Acres)	20.7				
Storage (Ac-Ft)	94.32				
Outfall Length (LF)	5582				
Pay Item No.	**Description**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost**
110-1-1	CLEARING AND GRUBBING	AC	22.9	$ 26,612.00	$ 609,148.68
120-1	REGULAR EXCAVATION	CY	152170	$ 10.00	$ 1,521,696.00
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	5582	$ 137.00	$ 764,734.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	3	$ 5,440.00	$ 16,320.00
425-2-61	MANHOLES, P-8, <10'	EA	19	$ 9,914.00	$ 188,366.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	7533	$ 44.00	$ 331,452.00
570-1-2	PERFORMANCE TURF, SOD	SY	10600	$ 4.46	$ 47,274.22
				Subtotal:	**$ 3,481,411.90**
	Contingency	LS	1	25%	$ 870,352.97
				TOTAL:	**$ 4,351,764.87**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B12-A

Pond Size @ T.o.B. (Acres)	7.6
Pond Size @ D.H.W. (Acres)	6.4
Storage (Ac-Ft)	33.27
Outfall Length (LF)	1002

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	7.6	$ 26,612.00	$ 202,251.20
120-1	REGULAR EXCAVATION	CY	53676	$ 10.00	$ 536,756.00
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	1002	$ 137.00	$ 137,274.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	4	$ 9,914.00	$ 39,656.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	2483	$ 44.00	$ 109,252.00
570-1-2	PERFORMANCE TURF, SOD	SY	5808	$ 4.46	$ 25,903.68
				Subtotal:	**$ 1,058,953.88**
	Contingency	LS	1	25%	$ 264,738.47
				TOTAL:	**$ 1,323,692.35**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B13-C					
Pond Size @ T.o.B. (Acres)	40.3				
Pond Size @ D.H.W. (Acres)	38.01				
Storage (Ac-Ft)	150.15				
Outfall Length (LF)	1713				
Pay Item No.	**Description**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost**
110-1-1	CLEARING AND GRUBBING	AC	40.3	$ 26,612.00	$ 1,072,463.60
120-1	REGULAR EXCAVATION	CY	242242	$ 10.00	$ 2,422,420.00
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	1713	$ 137.00	$ 234,681.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	6	$ 9,914.00	$ 59,484.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	5723	$ 44.00	$ 251,812.00
570-1-2	PERFORMANCE TURF, SOD	SY	11084	$ 4.46	$ 49,432.86
				Subtotal:	**$ 4,098,154.46**
	Contingency	LS	1	25%	$ 1,024,538.61
				TOTAL:	**$ 5,122,693.07**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B14-B					
Pond Size @ T.o.B. (Acres)	16.8				
Pond Size @ D.H.W. (Acres)	14.9				
Storage (Ac-Ft)	58.6				
Outfall Length (LF)	900				
Pay Item No.	**Description**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost**
110-1-1	CLEARING AND GRUBBING	AC	16.8	$ 26,612.00	$ 447,081.60
120-1	REGULAR EXCAVATION	CY	94541	$ 10.00	$ 945,413.33
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	900	$ 137.00	$ 123,300.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	3	$ 9,914.00	$ 29,742.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	3426	$ 44.00	$ 150,744.00
570-1-2	PERFORMANCE TURF, SOD	SY	9196	$ 4.46	$ 41,014.16
				Subtotal:	**$ 1,745,156.09**
	Contingency	LS	1	25%	$ 436,289.02
				TOTAL:	**$ 2,181,445.11**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	AV
Date:	1/30/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B14-C					
Pond Size @ T.o.B. (Acres)	25.4				
Pond Size @ D.H.W. (Acres)	23.08				
Storage (Ac-Ft)	94.83				
Outfall Length (LF)	55				
Pay Item No.	**Description**	**Unit**	**Quantity**	**Unit Cost[1]**	**Total Cost**
110-1-1	CLEARING AND GRUBBING	AC	25.4	$ 26,612.00	$ 675,944.80
120-1	REGULAR EXCAVATION	CY	152992	$ 10.00	$ 1,529,924.00
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	55	$ 137.00	$ 7,535.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	4323	$ 44.00	$ 190,212.00
570-1-2	PERFORMANCE TURF, SOD	SY	11229	$ 4.46	$ 50,080.45
				Subtotal:	**$ 2,461,557.25**
	Contingency	LS	1	25%	$ 615,389.31
				TOTAL:	**$ 3,076,946.56**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B14-A & B15-C COMBINED

Pond Size @ T.o.B. (Acres)	26.6
Pond Size @ D.H.W. (Acres)	24.28
Storage (Ac-Ft)	152.38
Outfall Length (LF)	3399

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	26.6	$ 26,612.00	$ 707,879.20
120-1	REGULAR EXCAVATION	CY	245840	$ 10.00	$ 2,458,397.33
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	3399	$ 137.00	$ 465,663.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	2	$ 5,440.00	$ 10,880.00
425-2-61	MANHOLES, P-8, <10'	EA	12	$ 9,914.00	$ 118,968.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	5268	$ 44.00	$ 231,792.00
570-1-2	PERFORMANCE TURF, SOD	SY	11229	$ 4.46	$ 50,080.45
				Subtotal:	**$ 4,046,080.98**
	Contingency	LS	1	25%	$ 1,011,520.25
				TOTAL:	**$ 5,057,601.23**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	AV
Date:	1/30/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B15-A

Pond Size @ T.o.B. (Acres)	22.84
Pond Size @ D.H.W. (Acres)	20.7
Storage (Ac-Ft)	91.17
Outfall Length (LF)	43

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	22.8	$ 26,612.00	$ 607,818.08
120-1	REGULAR EXCAVATION	CY	147088	$ 10.00	$ 1,470,876.00
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	43	$ 137.00	$ 5,891.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	5568	$ 44.00	$ 244,992.00
570-1-2	PERFORMANCE TURF, SOD	SY	10358	$ 4.46	$ 46,194.90
				Subtotal:	**$ 2,383,632.98**
	Contingency	LS	1	25%	$ 595,908.24
				TOTAL:	**$ 2,979,541.22**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

I-75 Auxiliary Lanes from SR 200 to SR 326 PD&E (FPID 443624-1-22-01)
Pond Siting Report
Construction Cost Estimate
Prepared by: Patel, Greene, and Associates

Done by:	MAH
Date:	1/22/2024
Checked by:	CC
Date:	1/27/2024
Updated by:	AV
Date:	2/2/2024

POND ALTERNATIVE B15-B

Pond Size @ T.o.B. (Acres)	26.95
Pond Size @ D.H.W. (Acres)	24.6
Storage (Ac-Ft)	96.96
Outfall Length (LF)	848

Pay Item No.	Description	Unit	Quantity	Unit Cost[1]	Total Cost
110-1-1	CLEARING AND GRUBBING	AC	27.0	$ 26,612.00	$ 717,193.40
120-1	REGULAR EXCAVATION	CY	156429	$ 10.00	$ 1,564,288.00
430-175-124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	LF	848	$ 137.00	$ 116,176.00
425-1-521	INLETS, DT BOT, TYPE C, <10'	EA	1	$ 5,440.00	$ 5,440.00
425-2-61	MANHOLES, P-8, <10'	EA	3	$ 9,914.00	$ 29,742.00
430-982-129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	1	$ 2,421.00	$ 2,421.00
570-10-22	FENCING, TYPE B, 5.1-6.0', STANDARD	LF	6543	$ 44.00	$ 287,892.00
570-1-2	PERFORMANCE TURF, SOD	SY	11374	$ 4.46	$ 50,728.04
				Subtotal:	**$ 2,773,880.44**
	Contingency	LS	1	25%	$ 693,470.11
				TOTAL:	**$ 3,467,350.55**

[1]Unit prices are from the latest FDOT 12-month moving area average unit costs (Area 6 - Marion County), rounded up to the nearest $1.

Appendix F

Historic Drainage Maps and
Permit Data

State Project No.

36210-3442

W.P.I. NO.5146285

FISCAL YEAR	SHEET NO.
94	1

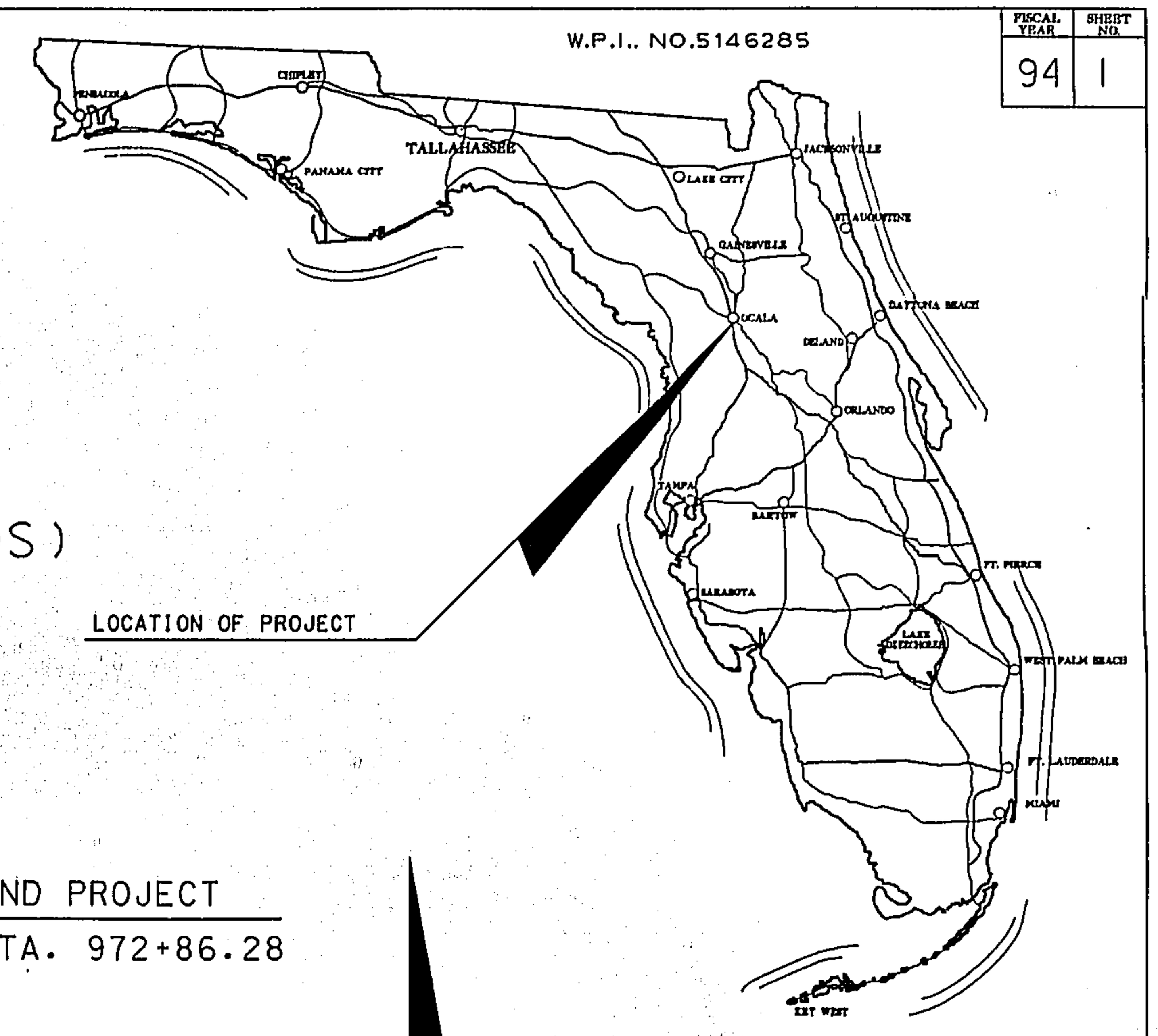
THIS CONTRACT PLAN SET INCLUDES:

ROADWAY PLANS
SIGNING AND PAVEMENT MARKING PLANS
LIGHTING PLANS
STRUCTURE PLANS

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY

STATE PROJ. NO. 36210-3442 (FEDERAL FUNDS)
MARION COUNTY
STATE ROAD NO. 93 (I-75)

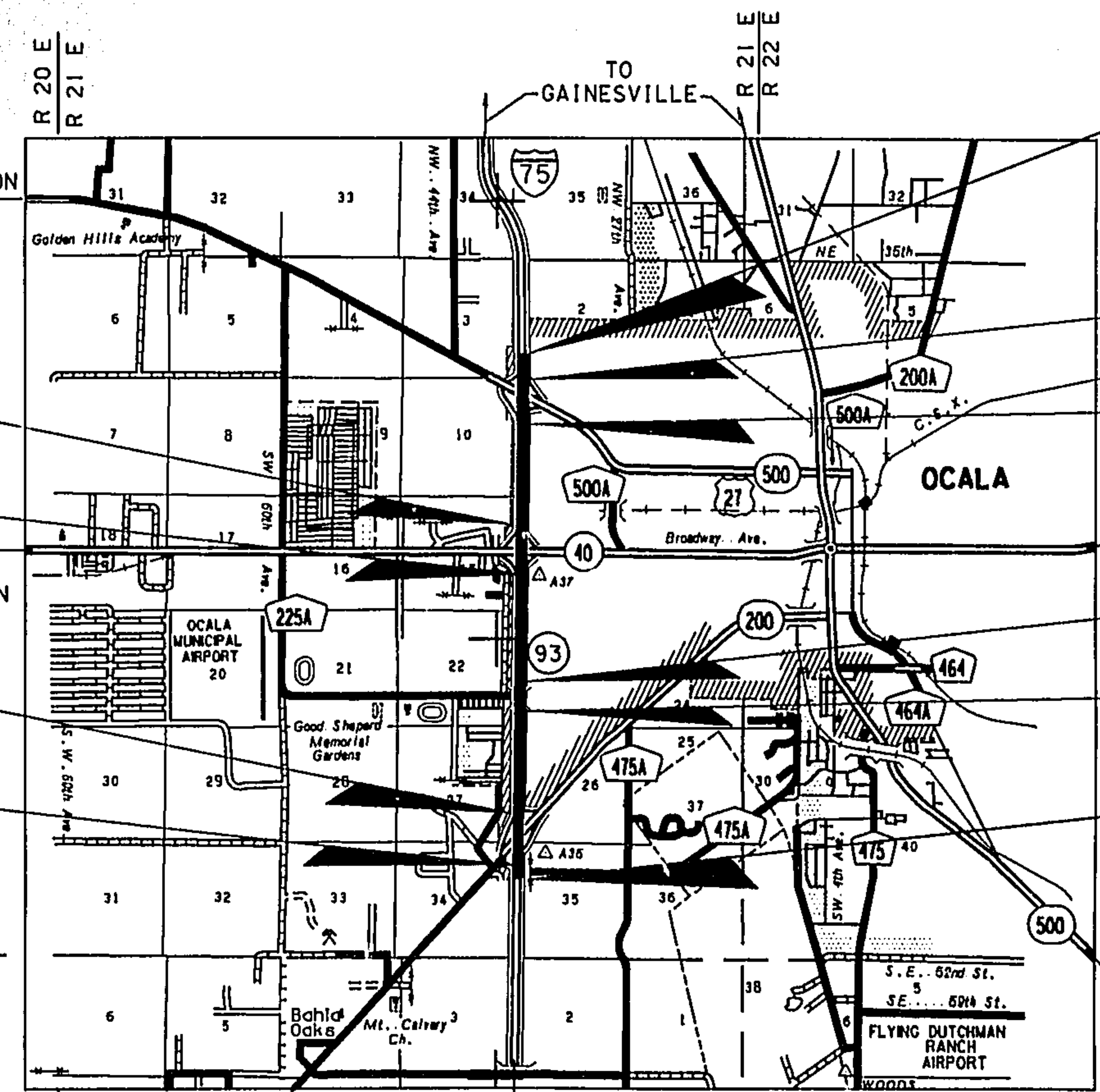


LOCATION OF PROJECT

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT SET OF PLANS

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2	BOX CULVERT DATA SHEET
3-6	SUMMARY OF PAY ITEMS
7-11	DRAINAGE MAPS
12-14	TYPICAL SECTIONS
15-16	SUMMARY OF QUANTITIES
17-21	SUMMARY OF DRAINAGE STRUCTURES
22-40	PLAN AND PROFILE
41-56	DITCH PROFILES
57-60	RAMP PROFILES
61-62	TERMINAL RAMP DETAILS
63-66	INTERSECTION DETAILS
67-68	RETENTION POND DETAILS
69	ROADWAY SOIL SURVEY
70	SPT BORINGS FOR SHEET PILING
71-78	RETENTION AREA CROSS SECTIONS
79-90	DRAINAGE DETAILS
91-92	GUARDRAIL DETAILS
93	RUMBLE STRIP DETAIL
94	SPT BORINGS FOR RETAINING WALL
95	INDEX 800
96	INDEX 812
97	RETAINING WALL DETAIL
98-149	CROSS SECTIONS
150-195	TRAFFIC CONTROL PLANS
196-202	APPROACH SLABS
203-206	UTILITY ADJUSTMENTS



THIS PROJECT TO BE LET WITH STATE PROJECT NO. 36210-6442 (UTILITY PLANS).

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, ROADWAY AND TRAFFIC DESIGN STANDARDS (BOOKLET DATED JANUARY, 1992).

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, DATED 1991 AND SUPPLEMENTS THERETO IF NOTED IN THE SPECIAL PROVISIONS FOR THIS PROJECT.

Marion_MP13.262 TO MP18.443_
FPID-242379-1_
FPN-36210-3442_
SR 93(I-75) from 0.6 MI S SR 200 TO 0.6 MI N SR 500 US27

LENGTH OF PROJECT

	LINEAR FT.	MILES
ROADWAY	26630.07	5.043
BRIDGES	729.01	0.138
NET LENGTH OF PROJ.	27359.08	5.181
EXCEPTIONS	0.00	0.000
GROSS LENGTH OF PROJ.	27359.08	5.181

REVISIONS

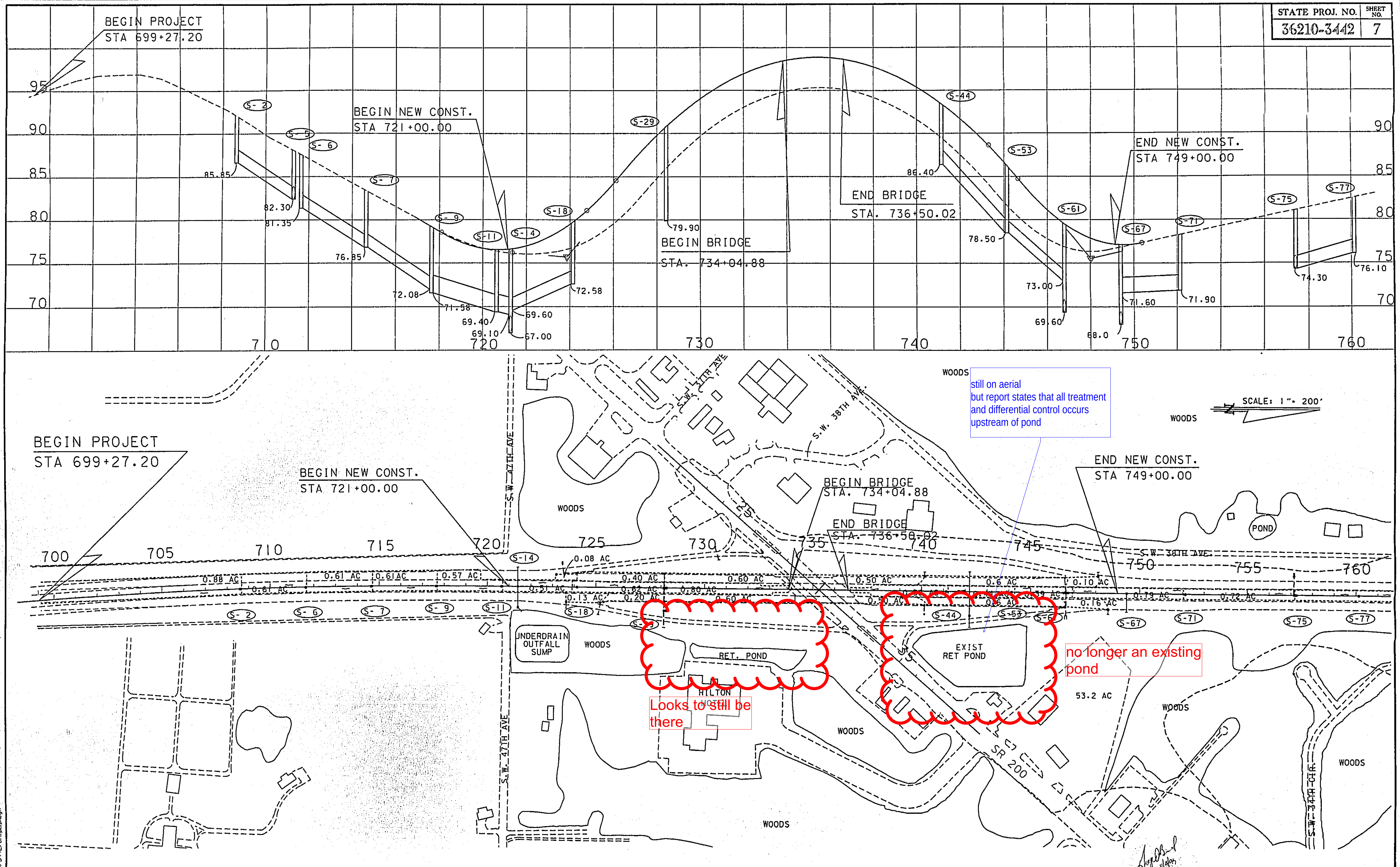
DATE	BY	DESCRIPTION

ROADWAY PLANS APPROVED BY: GEORGE A. BORCHIK, P.E.
DATE: OCT. 8, 1993
P.E. NO.: 40053

Thu Oct 14 09:30:12 1993
/usr/proj/36210/3442/keyshrd.dgn

DESIGNED BY: WADE McCRAY
PROJECT MANAGER: GEORGE A. BORCHIK, P.E.

STATE PROJ. NO.	SHEET NO.
36210-3442	7



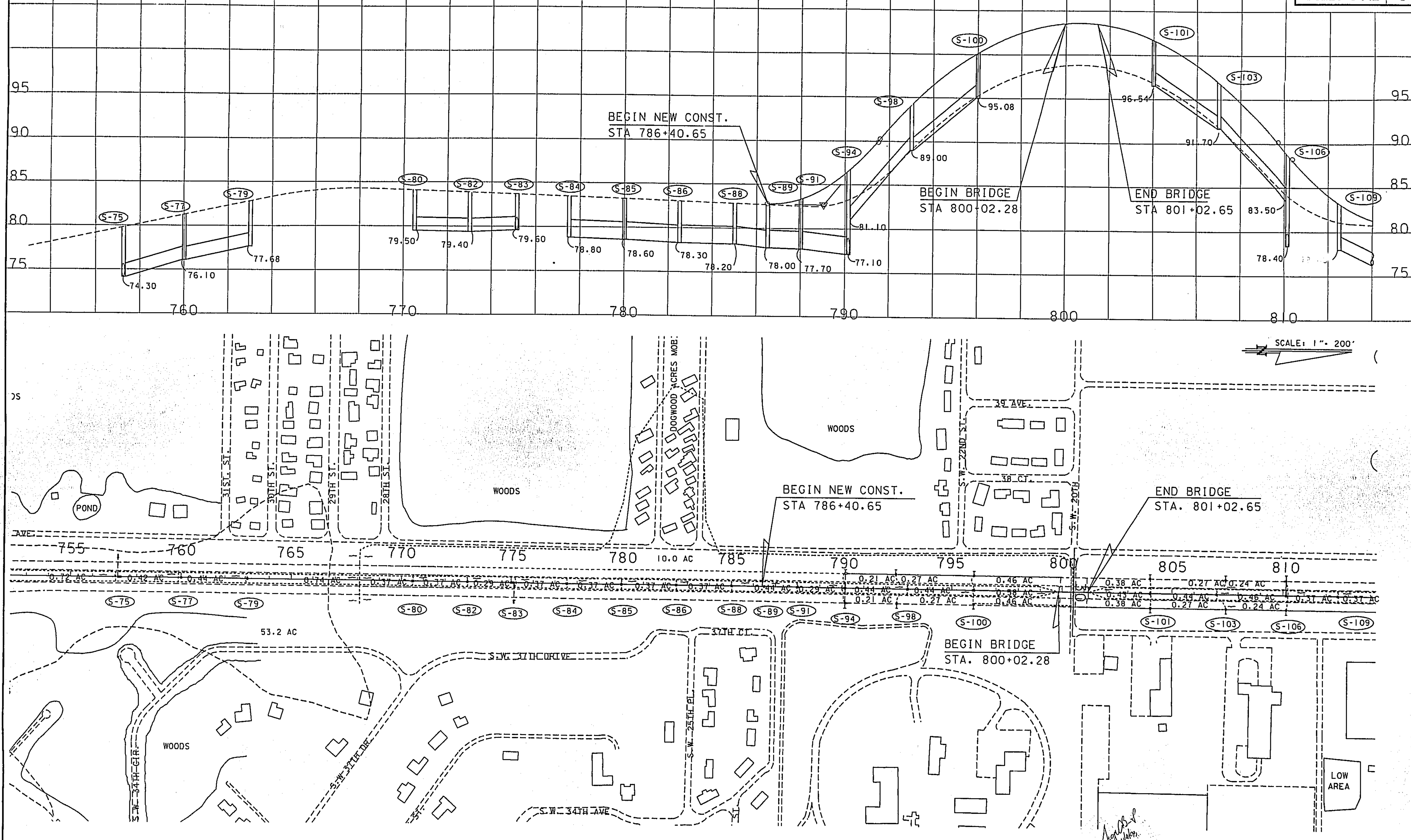
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

FLORIDA DEPARTMENT OF TRANSPORTATION

DRAINAGE MAP

STATE PROJ. NO.	SHEET NO.
36210-3442	8

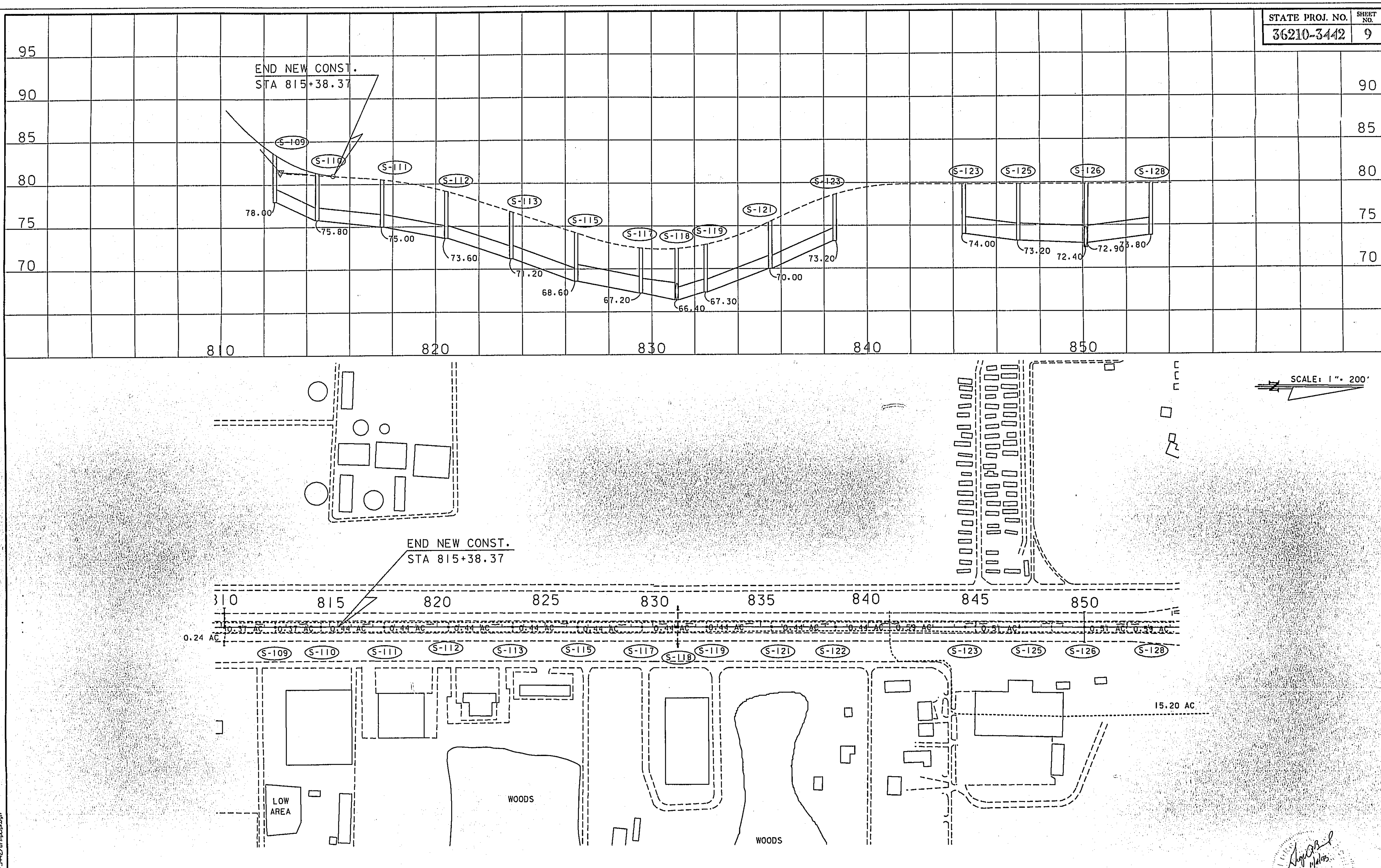


REVISIONS														
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

DRAINAGE MAP

STATE PROJ. NO.	SHEET NO.
36210-3442	9



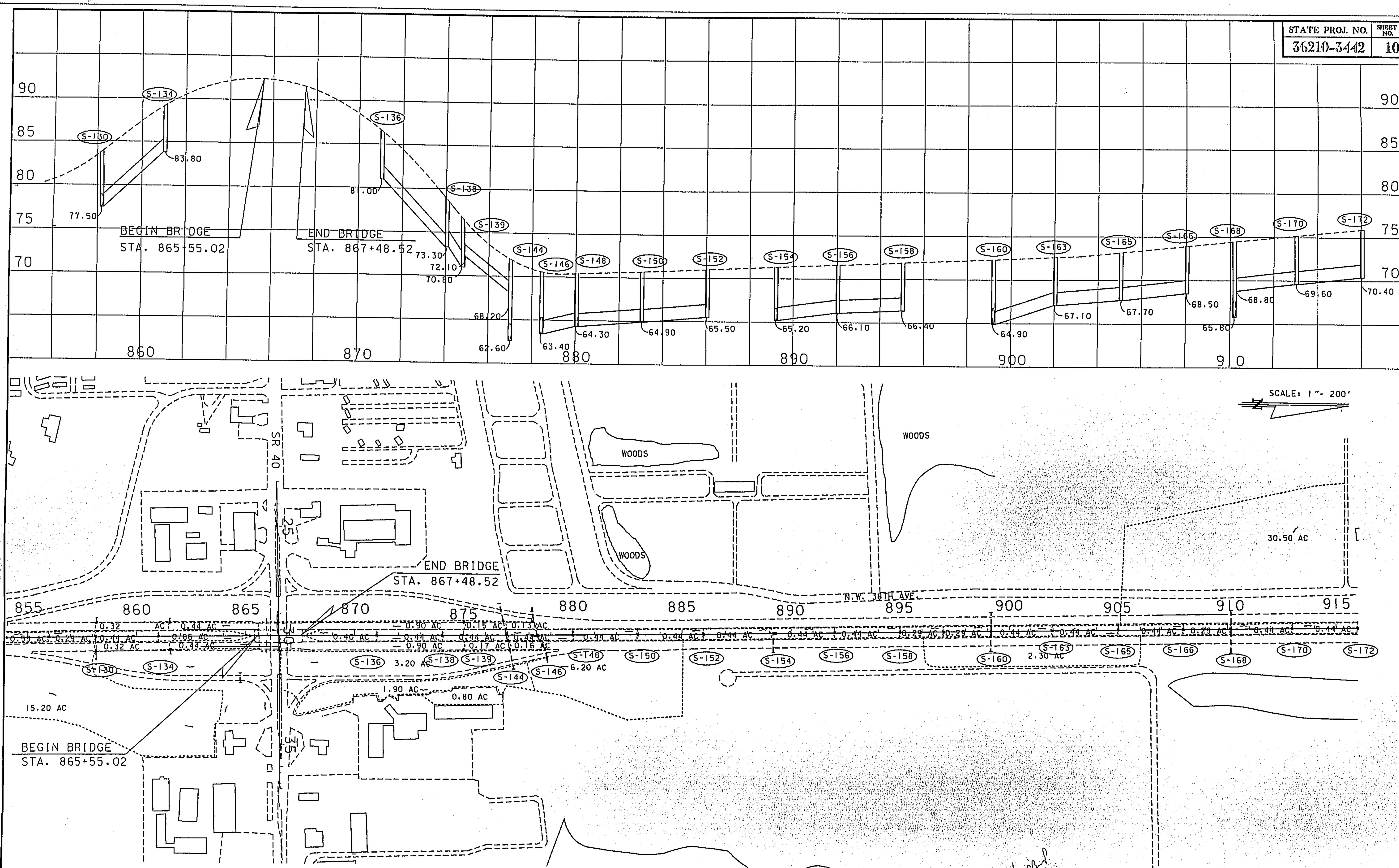
REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

DRAINAGE MAP

STATE PROJ. NO.	SHEET NO.
36210-3442	10



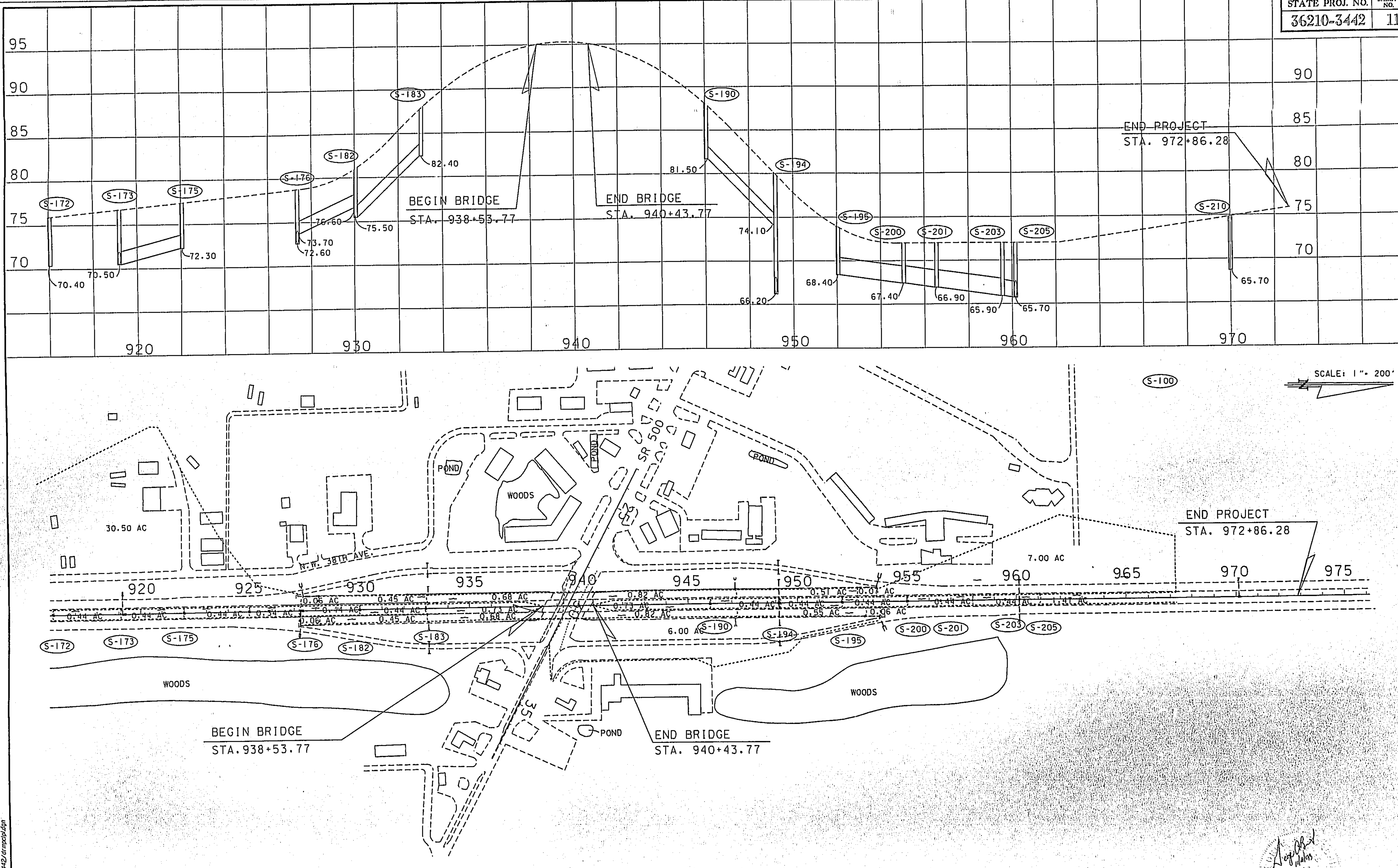
REVISIONS														
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

DRAINAGE MAP

Fri Oct 8 14:26:01 1993
/usr/pro1/36210/3442/drmpcipl.dgn

STATE PROJ. NO.	SHEET NO.
36210-3442	11

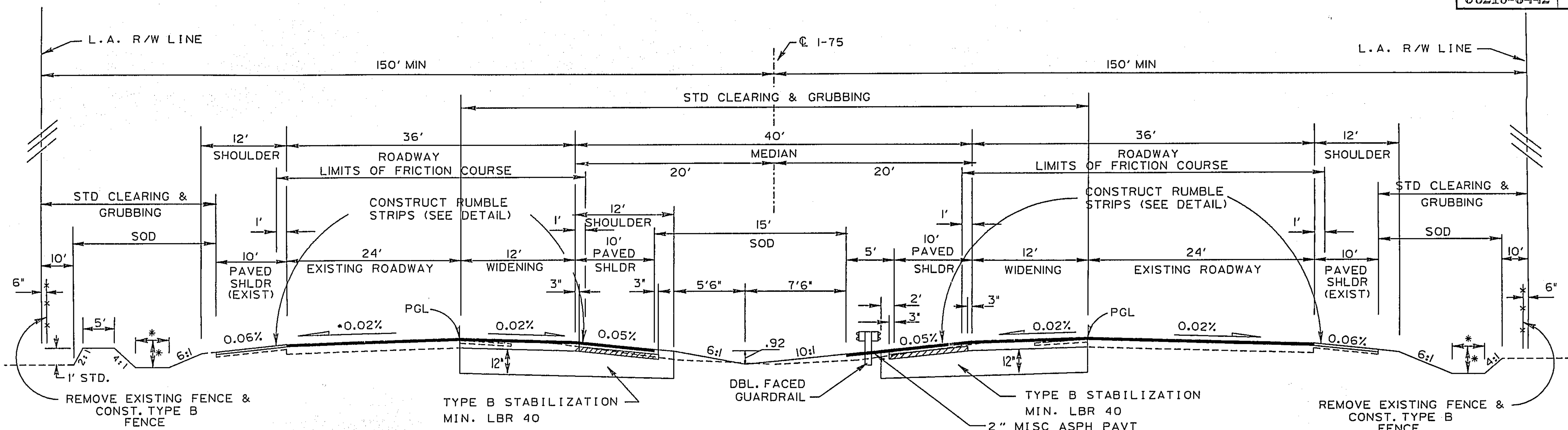


REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

DRAINAGE MAP

STATE PROJ. NO.	SHEET NO.
36210-3442	12



TYPICAL SECTION
WIDENING

* WIDTH AND DEPTH VARY SEE CROSS SECTIONS

STA. 699+27.20 TO STA. 721+00.00
STA. 749+00.00 TO STA. 786+40.65
STA. 815+38.37 TO STA. 972+86.28

▨ AT THE CONTRACTOR'S OPTION, THIS AREA MAY BE CONSTRUCTED OF BASE MATERIAL AT NO ADDITIONAL COMPENSATION.

TRAFFIC DATA

1996 ADT- 52100
EST 2006 ADT- 66300
EST 2016 ADT- 80500
K- 10.5%, D- 62.3%, T- 21.0%, T- 10.5% (24 Hr)
Design Speed: 70 MPH

ROADWAY WIDENING

OPTIONAL BASE GROUP 12 WITH TYPE S STRUCTURAL COURSE (6" THICK) AND FRICTION COURSE W/ RUBBER FC-2(5/8").

ROADWAY SHOULDERS

OPTIONAL BASE GROUP 3 WITH TYPE S STRUCTURAL COURSE (1-1/2" THICK)

MILLING EXISTING ROADWAY

MILL EXISTING ASPHALTIC CONCRETE PAVEMENT (1 1/2" AVG. DEPTH).

RESURFACING EXISTING ROADWAY

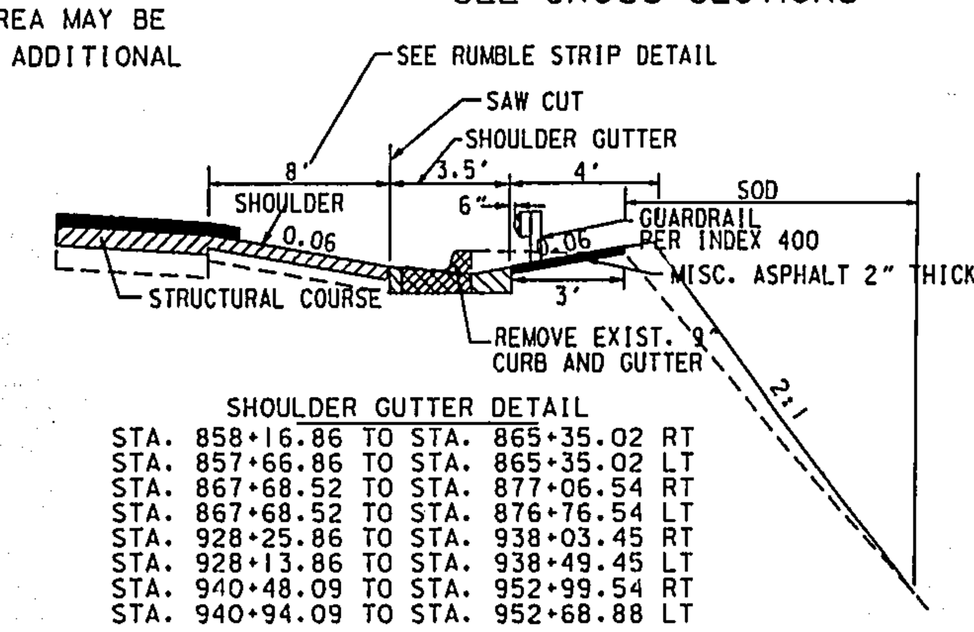
TYPE S STRUCTURAL COURSE (150 LBS./S.Y AVG) AND FRICTION COURSE W/ RUBBER FC-2(5/8").

MILLING EXISTING ROADAWY SHOULDER

MILL EXISTING ASPHALTIC CONCRETE PAVEMENT (1" AVG. DEPTH)

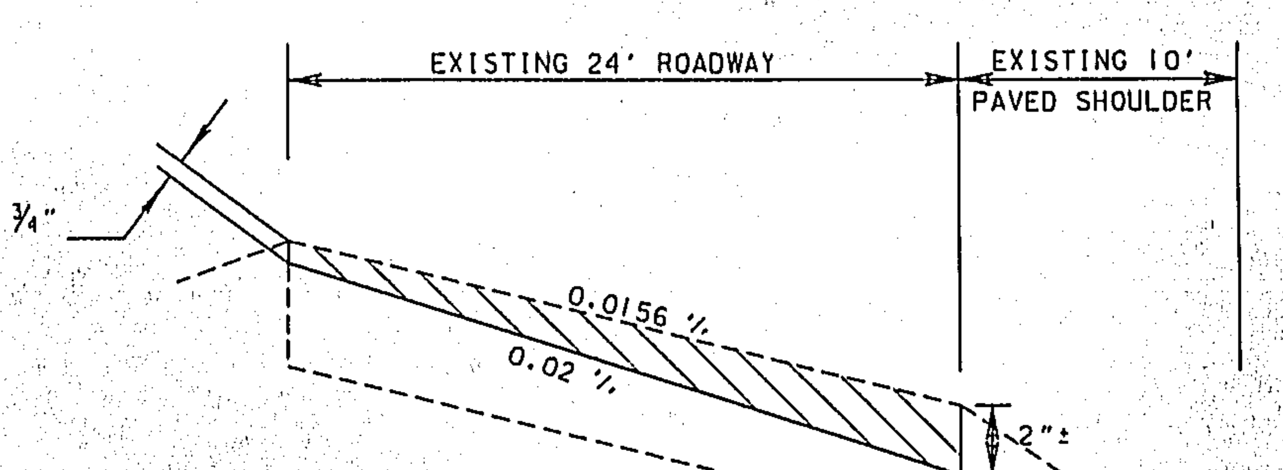
RESURFACING EXISTING ROADWAY SHOULDER

TYPE S STRUCTURAL COURSE (100 LBS./SY AVG)



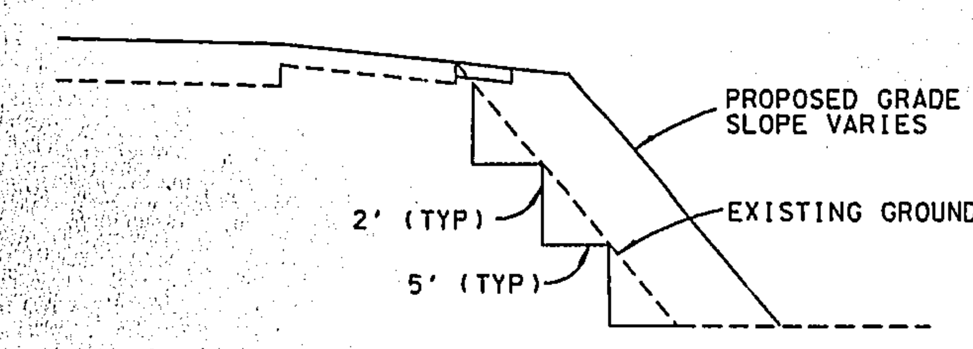
SHOULDER GUTTER DETAIL

STA. 858+16.86 TO STA. 865+35.02 RT
STA. 857+66.86 TO STA. 865+35.02 LT
STA. 867+68.52 TO STA. 877+06.54 RT
STA. 867+68.52 TO STA. 876+76.54 LT
STA. 928+25.86 TO STA. 938+03.45 RT
STA. 928+13.86 TO STA. 938+49.45 LT
STA. 940+48.09 TO STA. 952+99.54 RT
STA. 940+94.09 TO STA. 952+68.88 LT



MILLING DETAIL FOR EXISTING ROADWAY

▧ - MILLING



BENCHED FILL DETAIL

FOR ADDITIONAL DETAILS SEE INDEX NOS. 105,281,300,400,450,452,500,505,506,510,513 & 514

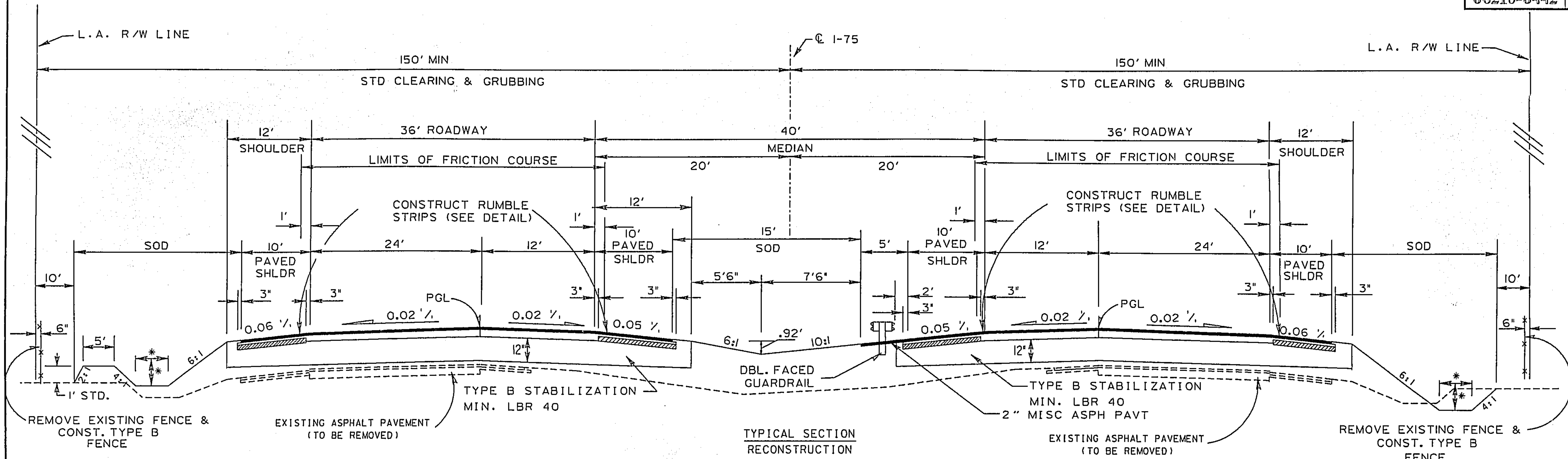
WHERE EXISTING EARTHEN EMBANKMENT IS WIDENED, IT SHOULD BE PERFORMED IN A SYSTEMATIC AND CONTROLLED MANNER. THE NEW EMBANKMENT FILL SHOULD BE PLACED AND COMPACTED, TO 95 PERCENT OF THE MODIFIED PROCTOR DENSITY, IN LEVEL LIFTS NO GREATER THAN 12 INCHES IN THICKNESS. BEGINNING AT THE OUTSIDE EDGE OF THE EXISTING ROADWAY SHOULDER, THE NEW EMBANKMENT FILL SHOULD BE "BENCHED" (I.e. 2 TO 3' VERTICAL: 5' HORIZONTAL) INTO THE EXISTING EMBANKMENT.

REVISIONS														
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

STATE PROJ. NO.	SHEET NO.
36210-3442	13



TYPICAL SECTION
RECONSTRUCTION

STA. 721+00.00 TO STA. 749+00.00

STA. 786+40.65 TO STA. 815+38.37

* WIDTH AND DEPTH VARY SEE CROSS SECTIONS

AT THE CONTRACTOR'S OPTION, THIS AREA MAY BE CONSTRUCTED OF BASE MATERIAL AT NO ADDITIONAL COMPENSATION.

NEW CONSTRUCTION

OPTIONAL BASE GROUP 12 WITH TYPE S STRUCTURAL COURSE (6" THICK) AND FRICTION COURSE W/ RUBBER FC-2(5/8").

ROADWAY SHOULDERS

OPTIONAL BASE GROUP 3 WITH TYPE S STRUCTURAL COURSE (1-1/2" THICK)

RAMP RESURFACING

MILL EXISTING ASPHALTIC CONCRETE PAVEMENT (2" AVG. DEPTH) RESURFACE WITH TYPE S STRUCTURAL COURSE (150 LBS./SY) AND FRICTION COURSE W/ RUBBER FC-2 (5/8 ")

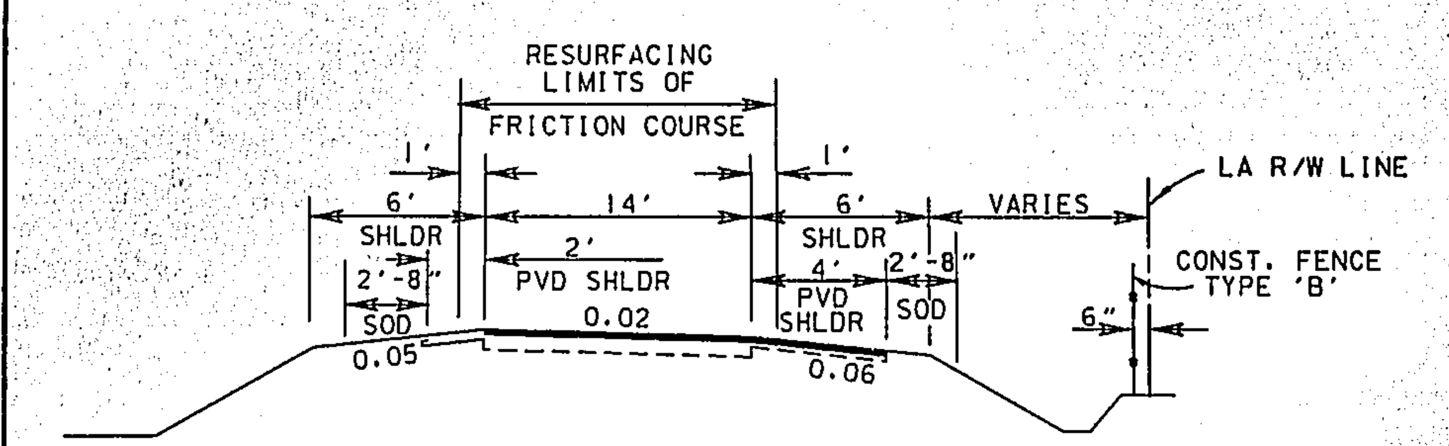
RAMP RECONSTRUCTION

OPTIONAL BASE GROUP 09 WITH TYPE S STRUCTURAL COURSE (4" THICK) AND FRICTION COURSE W/RUBBER FC-2 (5/8")

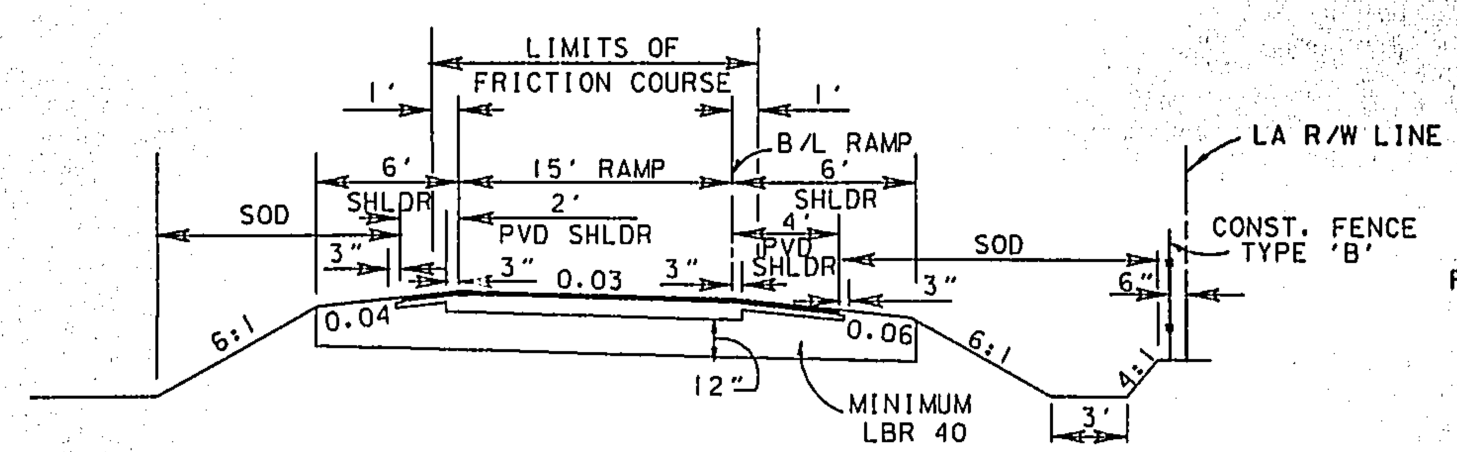
RAMP SHOULDERS

OPTIONAL BASE GROUP 3 WITH TYPE S STRUCTURAL COURSE (2" THICK)

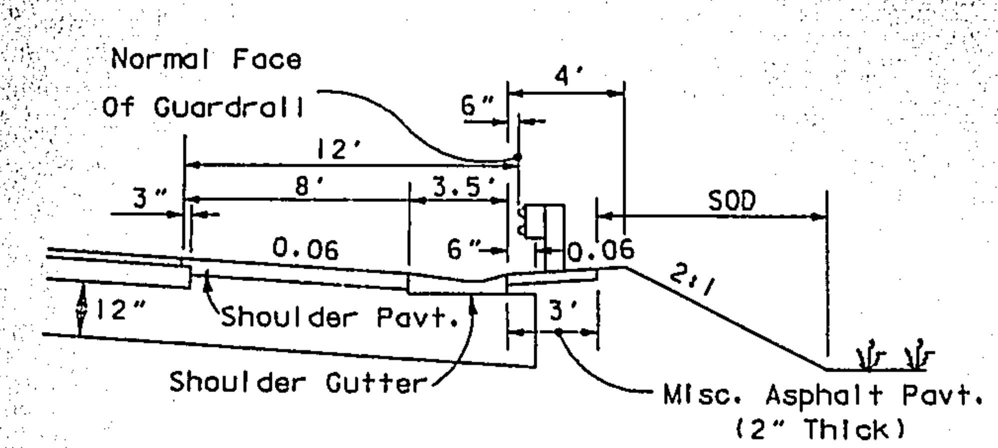
FOR ADDITIONAL DETAILS SEE INDEX NOS. 105,281,290,300,400,431,452,500,505,513,514 & 525



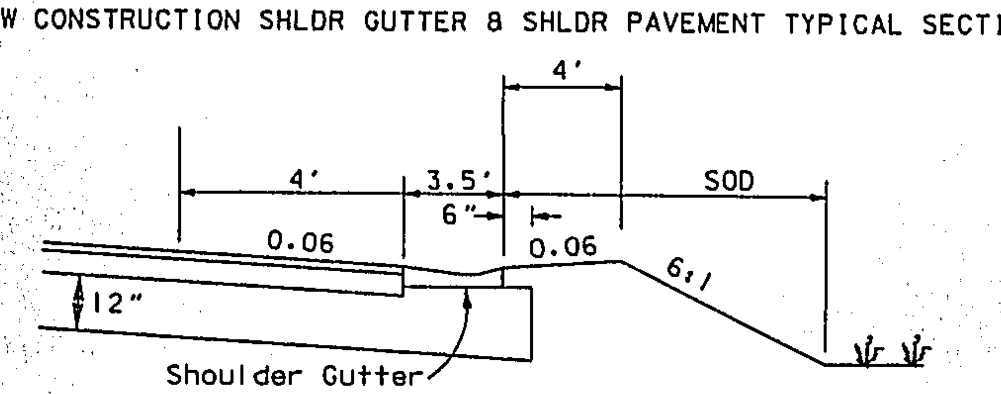
RAMP RESURFACING TYPICAL SECTION



RAMP RECONSTRUCTION TYPICAL SECTION
STA 117+45.36 TO STA 132+92.65 ℄ A
STA 216+47.20 TO STA 226+00.00 ℄ B
STA 341+47.73 TO STA 353+47.68 ℄ C
STA 441+84.01 TO STA 454+04.98 ℄ D



NEW CONSTRUCTION SHLDR GUTTER & SHLDR PAVEMENT TYPICAL SECTION



SR 200 RAMPS SHOULDER GUTTER & SHOULDER PAVEMENT TYPICAL SECTION

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

STATE PROJ. NO.	SHEET NO.
36210-3442	20

SUMMARY OF DRAINAGE STRUCTURES

QUANT.	STR. NO.	INDEX NO.	STATION	SIDE	DESCRIPTION	SIZE	LENGTH	CLASS II STORM SEWER 15"	CLASS II STORM SEWER 18"	CLASS II STORM SEWER 24"	CLASS II STORM SEWER 36"	GUTTER DRAIN 15"	CURB INLETS P-6 PART	MANHOLES P7-T ‹10	MANHOLES P7-T ›10	MANHOLES P7-T PART	MANHOLES J7-T ‹10	MANHOLES ADJ	DITCH BOTTOM INLETS E ‹10	DITCH BOTTOM INLETS G ‹10	DITCH BOTTOM INLETS J ‹10	GUTTER INLETS S ‹10	GUTTER INLETS S PARTIAL	SPECIAL INLETS J ›10	SPECIAL INLETS S ‹10	CLASS I CONC ENDWALL CY	CLASS IV CONC CULVERTS CY	REINF STEEL RDWY LBS	ENDWALL GRATE LBS	RIP RAP TNS	REMARKS
P / F	136	200,201,234	871+00.00	MED	INLET,PIPE	18"	296'		296'												1										
P / F	137	200,201	872+67.00	MED	MANHOLE										1																
P / F	138	200,201,234	874+00.00	MED	INLET,PIPE	18"	96'		96'												1										
P / F	139	200,201,234	875+00.00	MED	INLET,PIPE	18"	186'		186'															1							
P / F	140	200,201,220	875+14.20	LT	INLET																		1								
P / F	141	200,201,220	875+14.20	RT	INLET																		1								
P / F	142	200,201	875+22.00	MED	MANHOLE										1																
P / F	143	200,201,220	876+79.20	LT	INLET																		1								
P / F	144	200,201,234	876+95.00	MED	INLET																			1							
P / F	145	200,201,220	877+09.20	RT	INLET																		1								
P / F	146	200,201,234	878+35.00	MED	INLET,PIPE	18"	159'		159'															1							
P / F	147	200,201	878+69.20	RT	MANHOLE													1													
P / F	148	200,201,234	880+00.00	MED	INLET,PIPE	18"	296'		296'												1										
P / F	149	200,201	881+48.00	MED	MANHOLE									1																	
P / F	150	200,201,234	883+00.00	MED	INLET,PIPE	18"	296'		296'												1										
P / F	151	200,201	884+56.00	MED	MANHOLE									1																	
P / F	152	200,201,234	886+00.00	MED	INLET																1										
P / F	153	200,201	887+56.00	MED	MANHOLE									1																	
P / F	154	200,201,234	889+14.20	MED	INLET,PIPE	18"	280'		280'															1							
P / F	155	200,201,295	889+14.20	RT	ENDWALL																					2.53		173	370		MATCH DITCH FL (6:1)
P / F	156	200,201,234	892+00.00	MED	INLET,PIPE	18"	296'		296'												1										
P / F	157	200,201	892+48.00	MED	MANHOLE									1																	
P / F	158	200,201,234	895+00.00	MED	INLET																1										
P / F	159	200,201,295	899+14.20	LT	ENDWALL																					3.48		238	499		MATCH DITCH FL (6:1)
P / F	160	200,201,234	899+14.20	MED	INLET,PIPE	18"	280'		280'															1							
P / F	161	200,201,295	899+14.20	RT	ENDWALL																					3.48		238	499		MATCH DITCH FL (6:1)
P / F	162	200,201	901+47.00	MED	MANHOLE									1																	
P / F	163	200,201,234	902+00.00	MED	INLET,PIPE	18"	296'		296'												1										
P / F	164	200,201	903+75.00	MED	MANHOLE									1																	
P / F	165	200,201,234	905+00.00	MED	INLET,PIPE	18"	296'		296'												1										
P / F	166	200,201,234	908+00.00	MED	INLET																1										
P / F	167	200,201,295	910+14.20	LT	ENDWALL																					3.48		238	499		MATCH DITCH FL (6:1)
P / F	168	200,201,234	910+14.20	MED	INLET,PIPE	18"	280'		280'															1							
P / F	169	200,201	912+47.00	MED	MANHOLE									1																	
P / F	170	200,201,234	913+00.00	MED	INLET,PIPE	18"	296'		296'												1										
P / F	171	200,201	914+67.00	MED	MANHOLE									1																	
P / F	172	200,201,234	916+00.00	MED	INLET																1										
P / F	173	200,201,234	919+14.20	MED	INLET,PIPE	18"	280'		280'															1							
P / F	174	200,201	921+87.00	MED	MANHOLE									1																	
P / F	175	200,201,234	922+00.00	MED	INLET																1										
P / F	176	200,201,234	927+27.20	MED	INLET,PIPE	18"	266'		266'															1							
P / F	177	200,201	927+27.20	RT	MANHOLE													1													
P / F	178	200,201	927+33.20	LT	MANHOLE													1													
P / F	179	200,201,220	928+14.20	LT	INLET																		1								
P / F	180	200,201,220	928+14.20	RT	INLET																		1								
SUBTOTAL NO 4					P=PLAN QUANTITY			0	3899'	0	0	0	0	9	2	0	0	3	0	0	13	0	6	8	0	12.97	0	887	1867	0	
					F=FINAL QUANTITY																										

REVISIONS

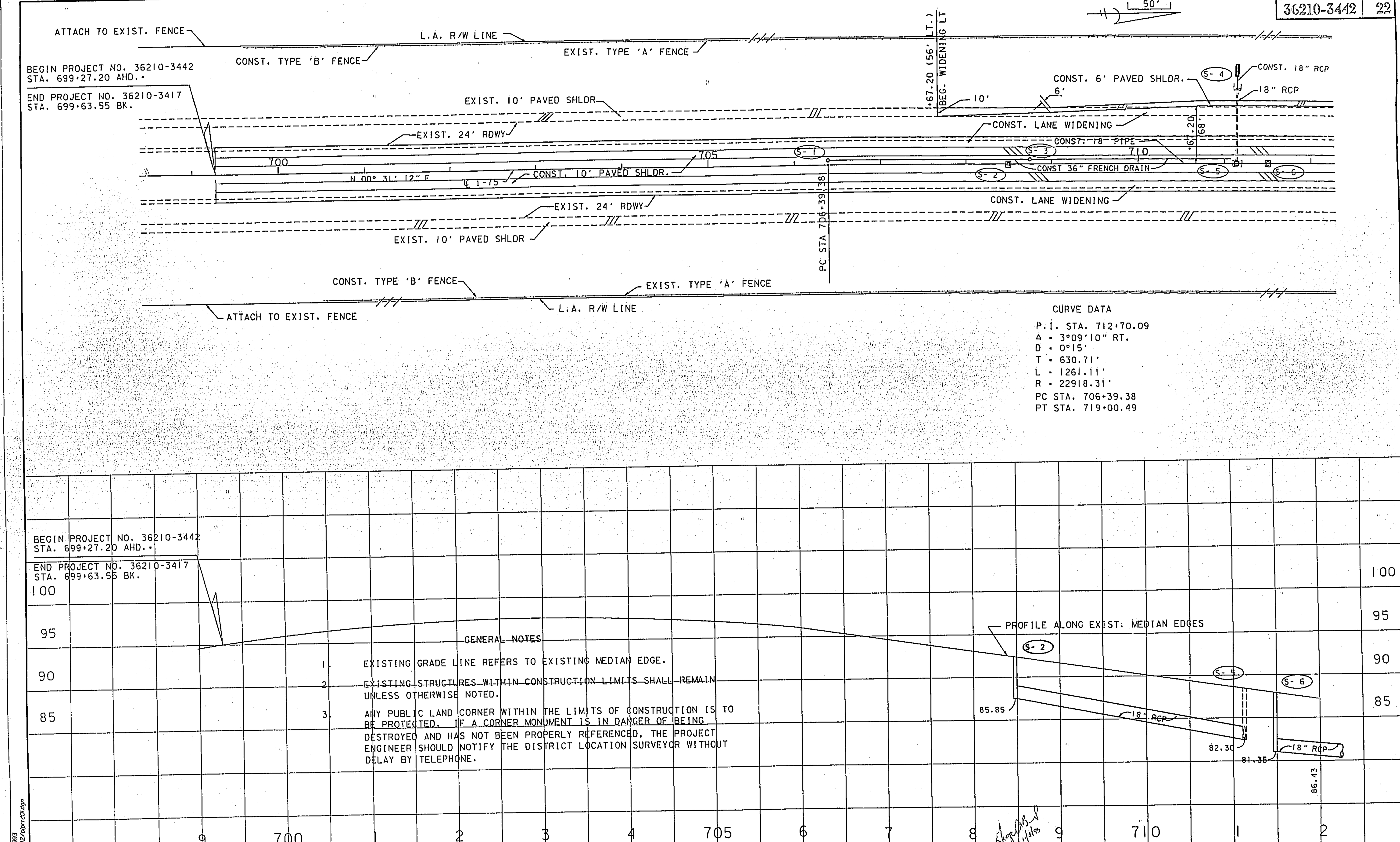
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

SUMMARY OF DRAINAGE STRUCTURES

Wed Oct 6 09:06:22 1993
/usr/proj/36210/3442/sumdrd01.dgn

STATE PROJ. NO.	SHEET NO.
36210-3442	22



GENERAL NOTES

1. EXISTING GRADE LINE REFERS TO EXISTING MEDIAN EDGE.
2. ~~EXISTING STRUCTURES WITHIN CONSTRUCTION LIMITS SHALL REMAIN~~ UNLESS OTHERWISE NOTED.
3. ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE PROJECT ENGINEER SHOULD NOTIFY THE DISTRICT LOCATION SURVEYOR WITHOUT DELAY BY TELEPHONE.

REVISIONS

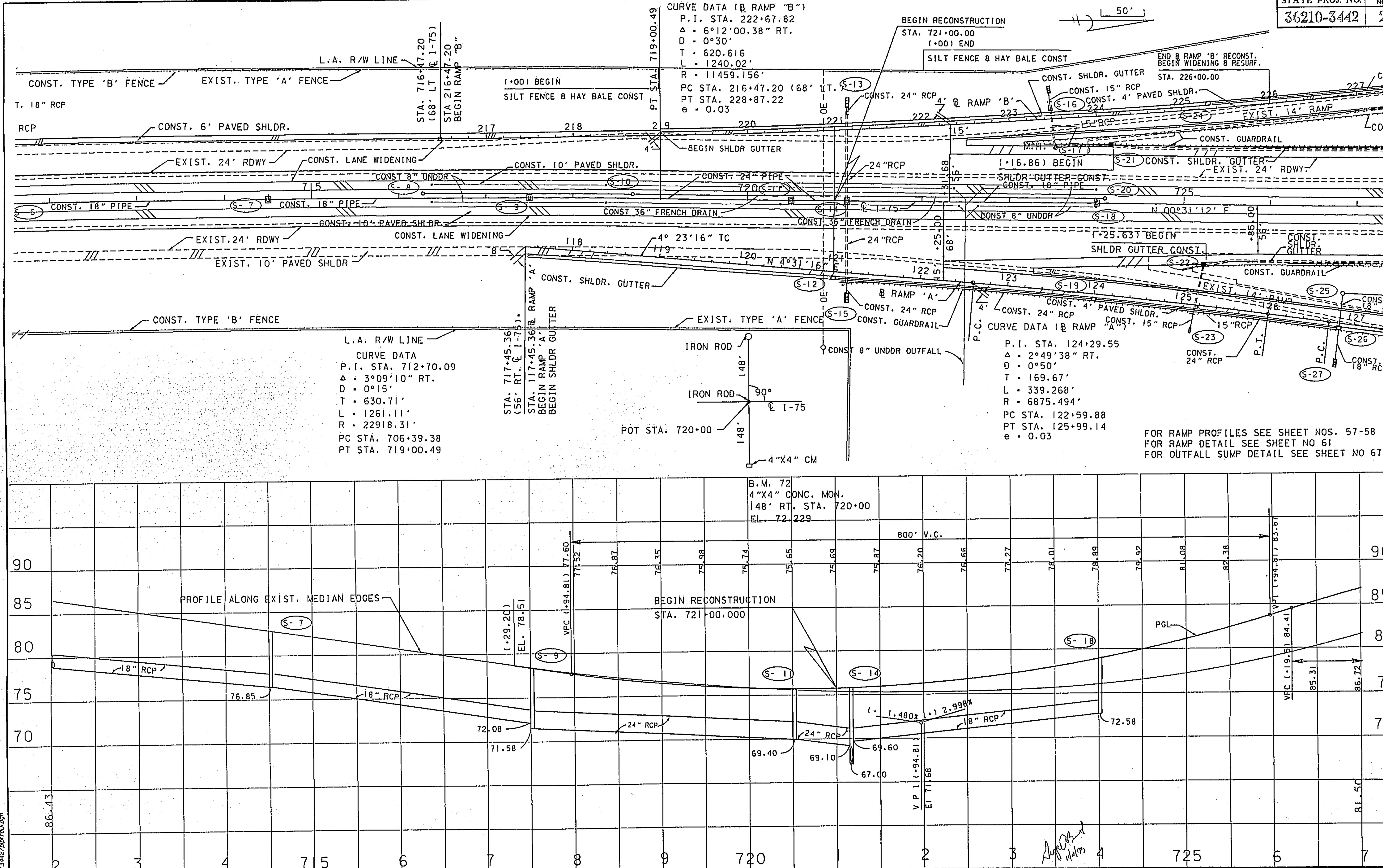
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN/ PROFILE

Tue Oct 5 10:36:55 1993
/usr/proj/36210/3442/pp/rer02.dgn

STATE PROJ. NO.	SHEET NO.
36210-3442	23

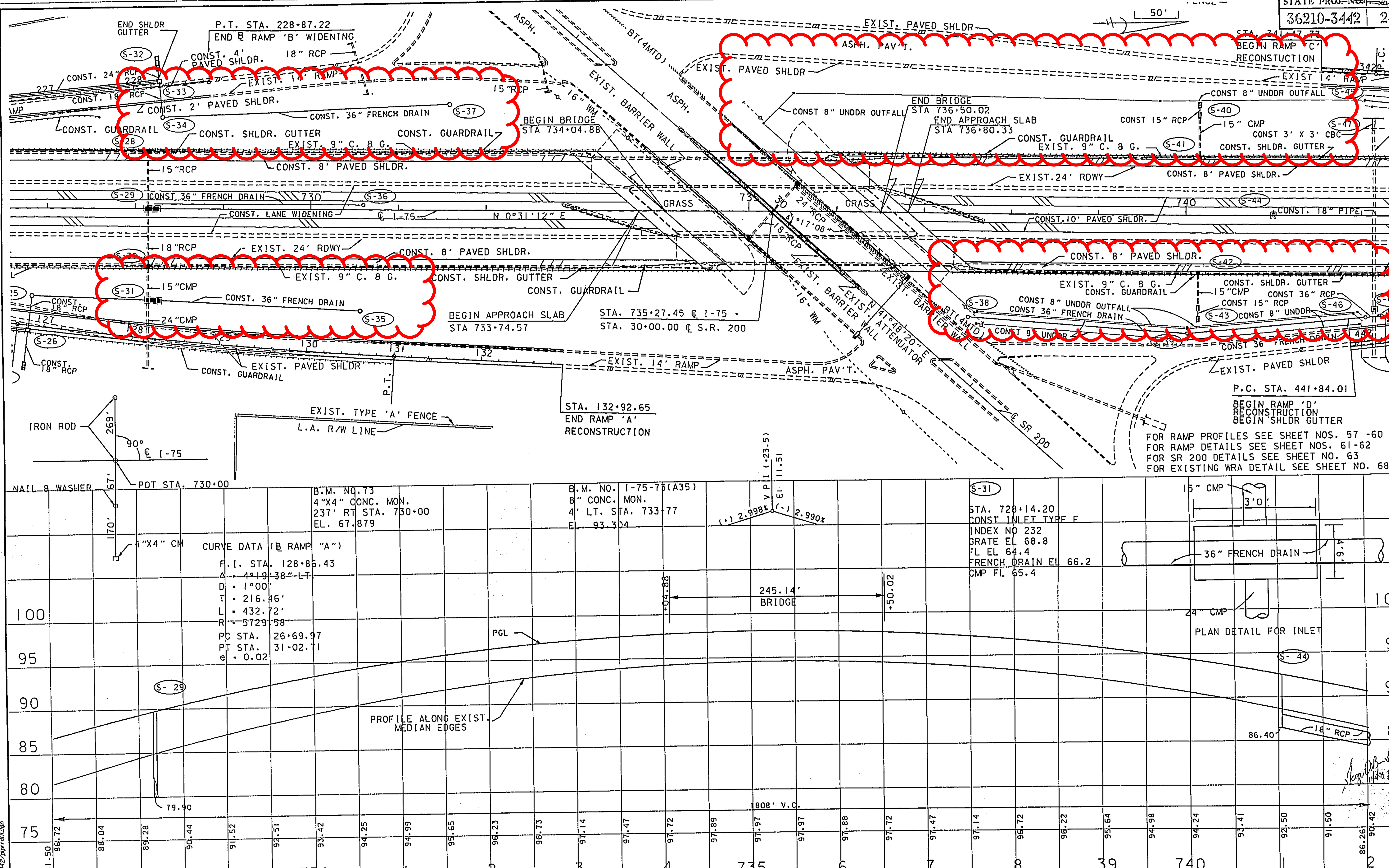


REVISIONS														
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN / PROFILE

STATE PROJ. NO.	SHEET NO.
36210-3442	24



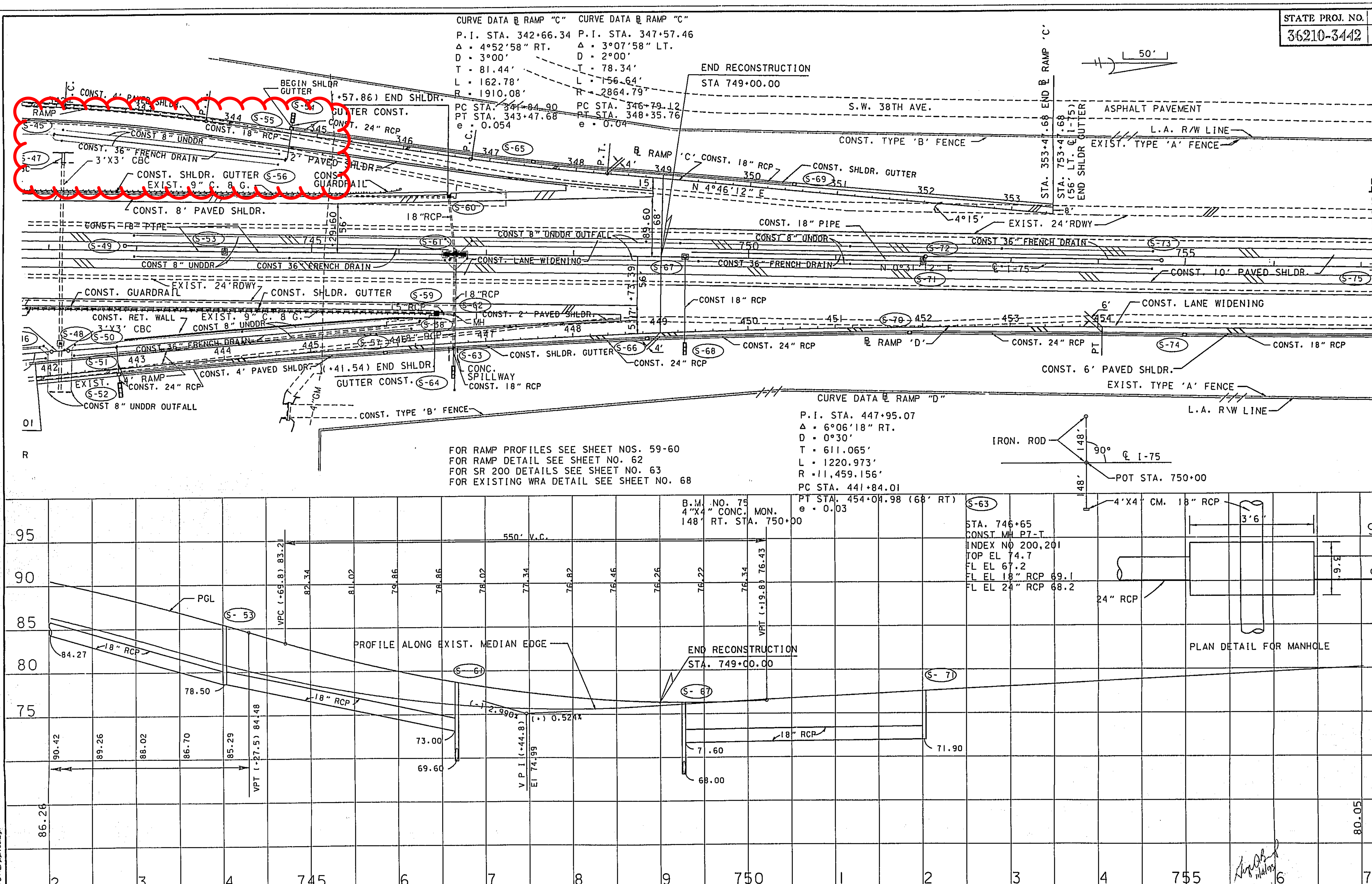
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN/ PROFILE

STATE PROJ. NO.	SHEET NO.
36210-3442	25



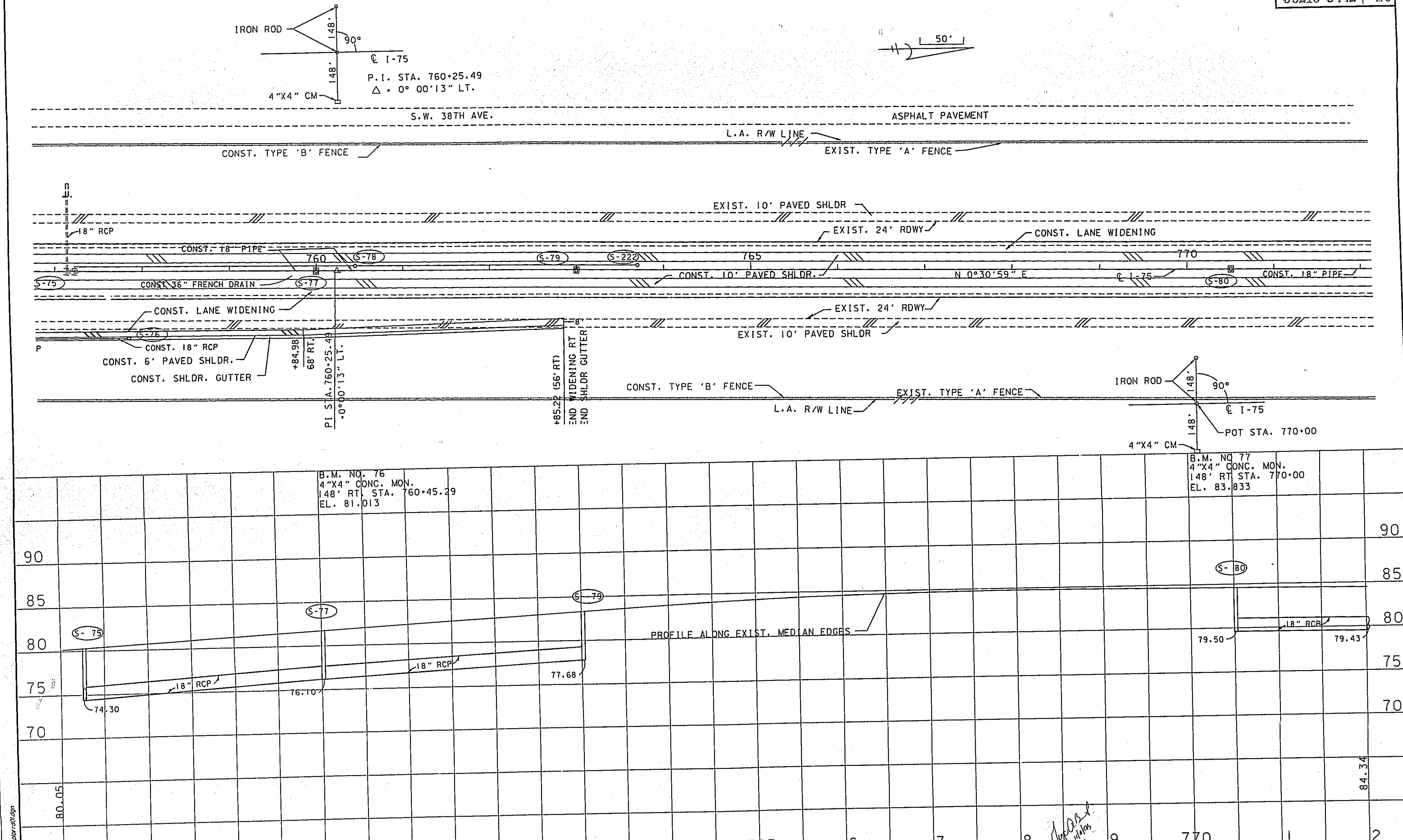
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN/ PROFILE

STATE PROJ. NO.	SHEET NO.
36210-3442	26



REVISIONS														
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN/ PROFILE

Tue Oct 5 10:24:41 1993
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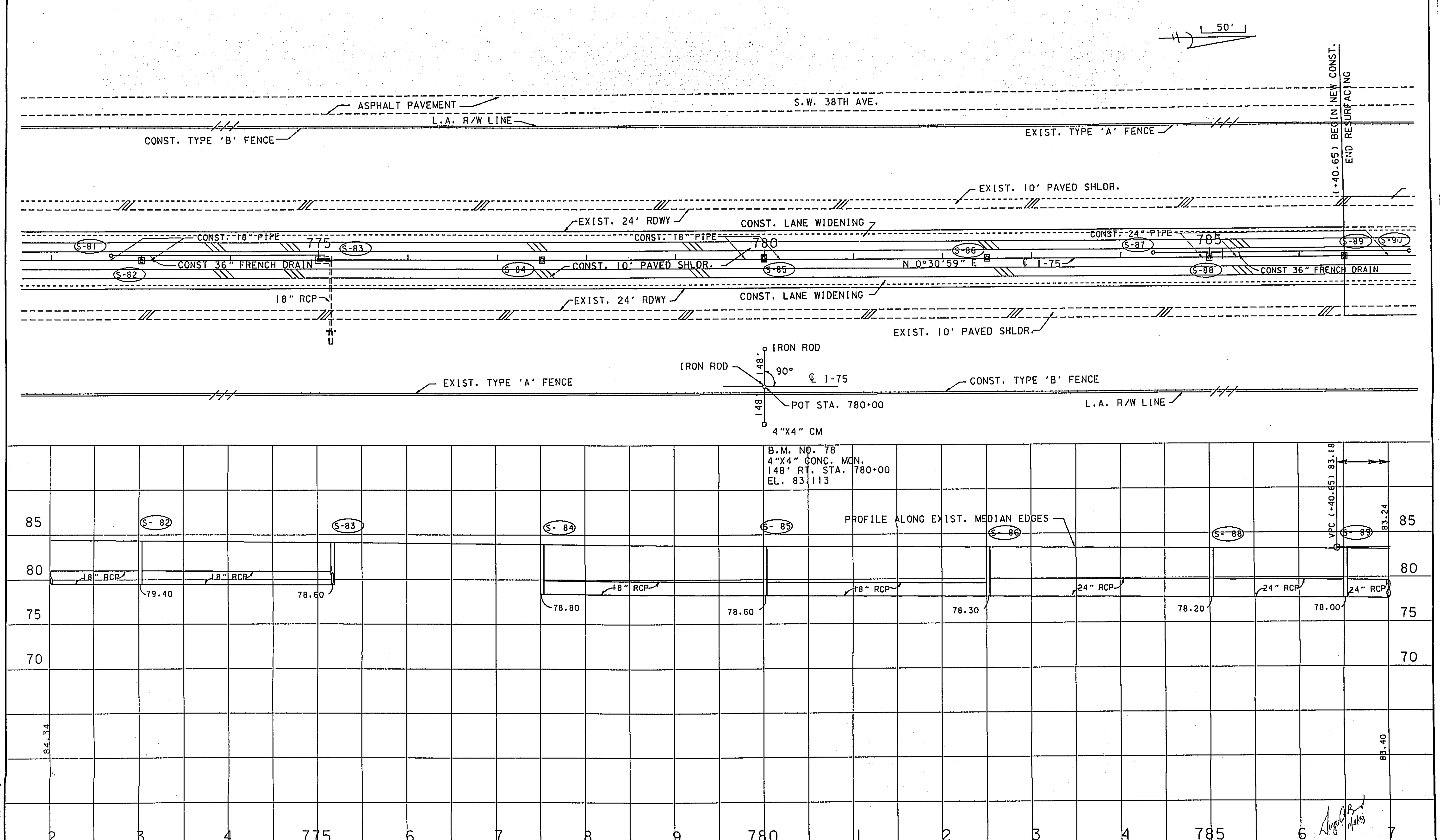
STATE PROJ. NO.	SHEET NO.
36210-3442	27



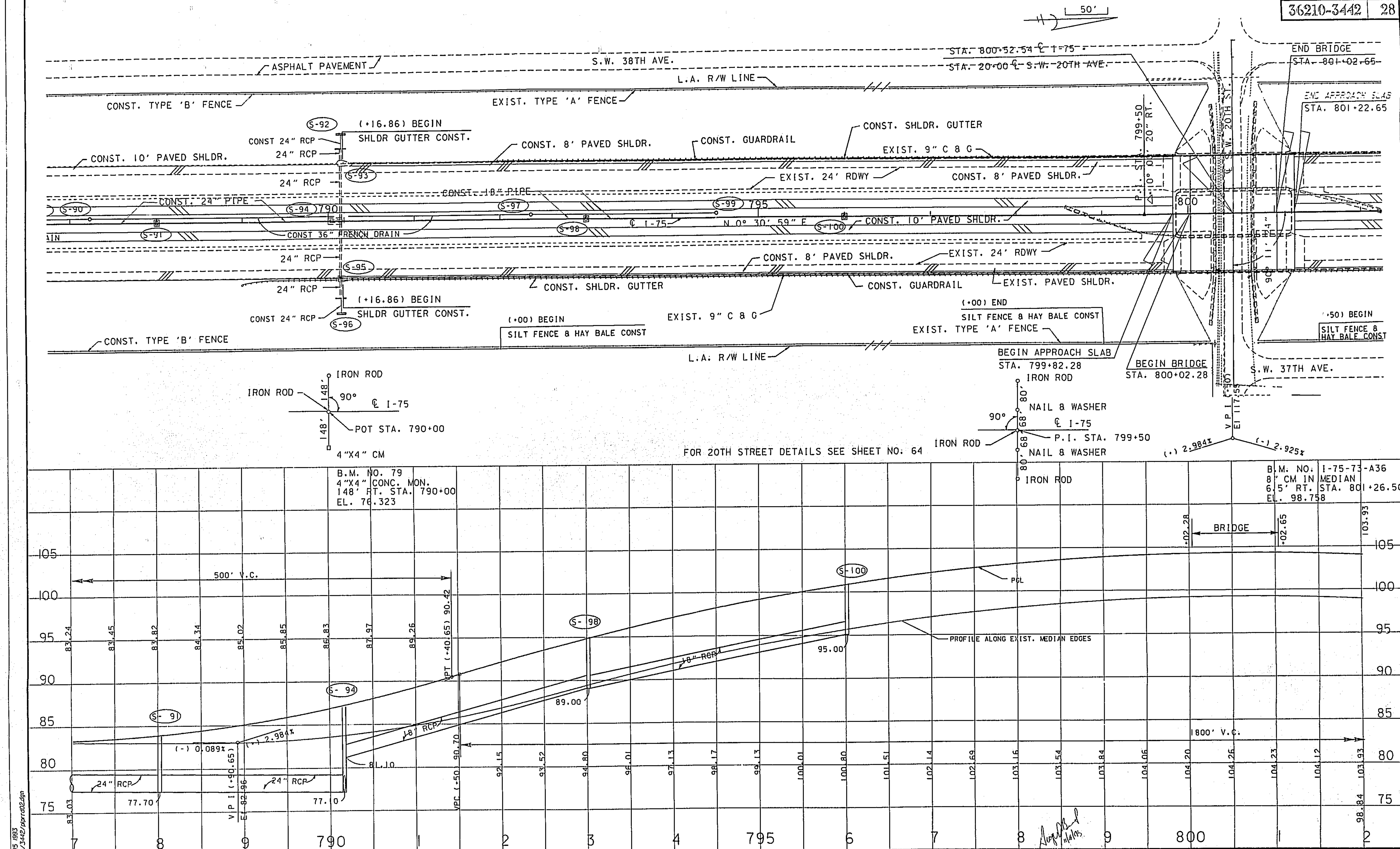
REVISIONS														
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN / PROFILE

Fri Oct 8 14:06:24 1993
/usr/pro/j36210/3442/pprro02.dgn

STATE PROJ. NO.	SHEET NO.
36210-3442	28



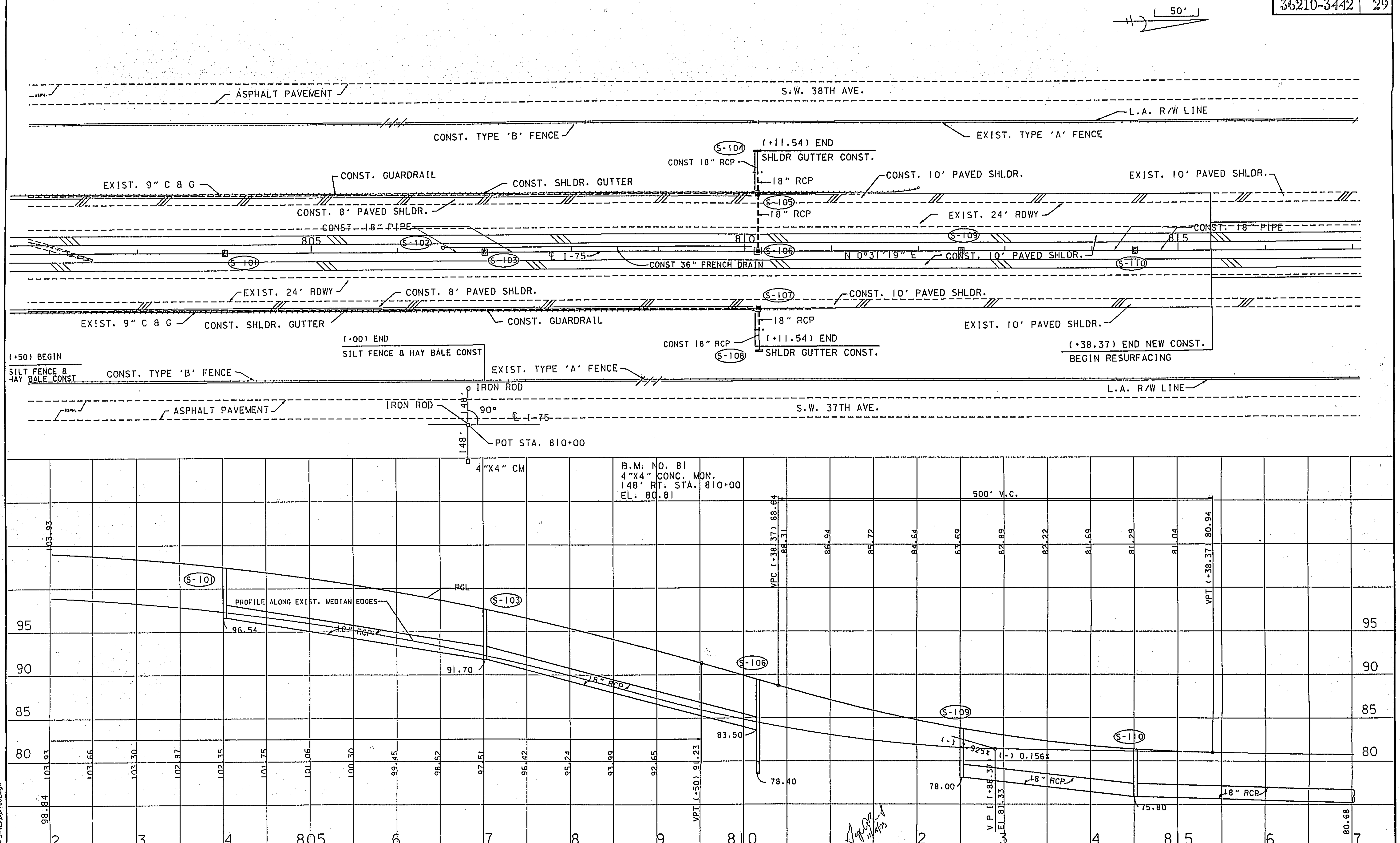
REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN / PROFILE

Tue Oct 5 10:43:45 1993 /usr/proj/36210/3442/plan/pro02.dgn

STATE PROJ. NO.	SHEET NO.
36210-3442	29



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN / PROFILE

Tue Oct 5 10:43:16 1993
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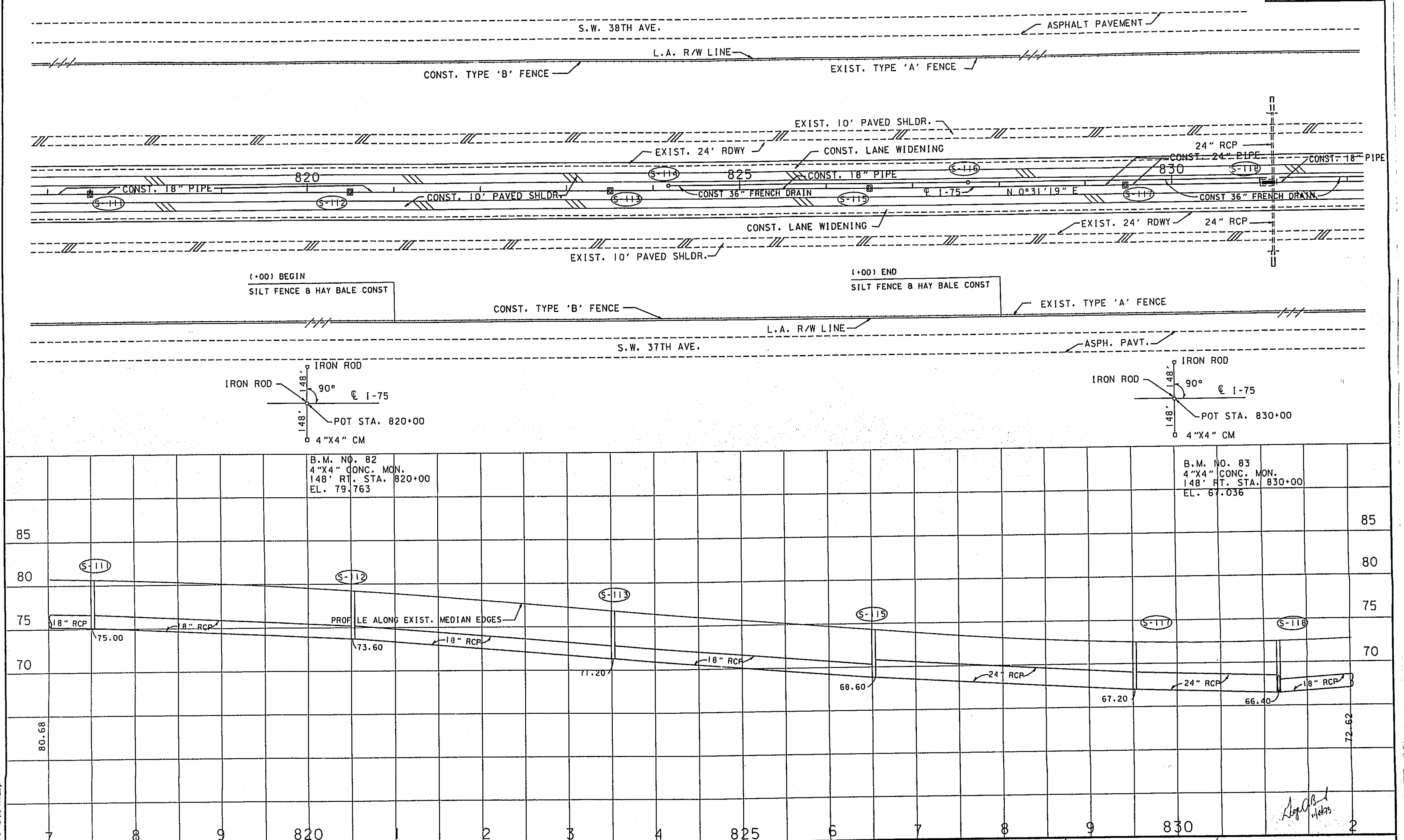
STATE PROJ. NO.	SHEET NO.
36210-3442	30



REVISIONS

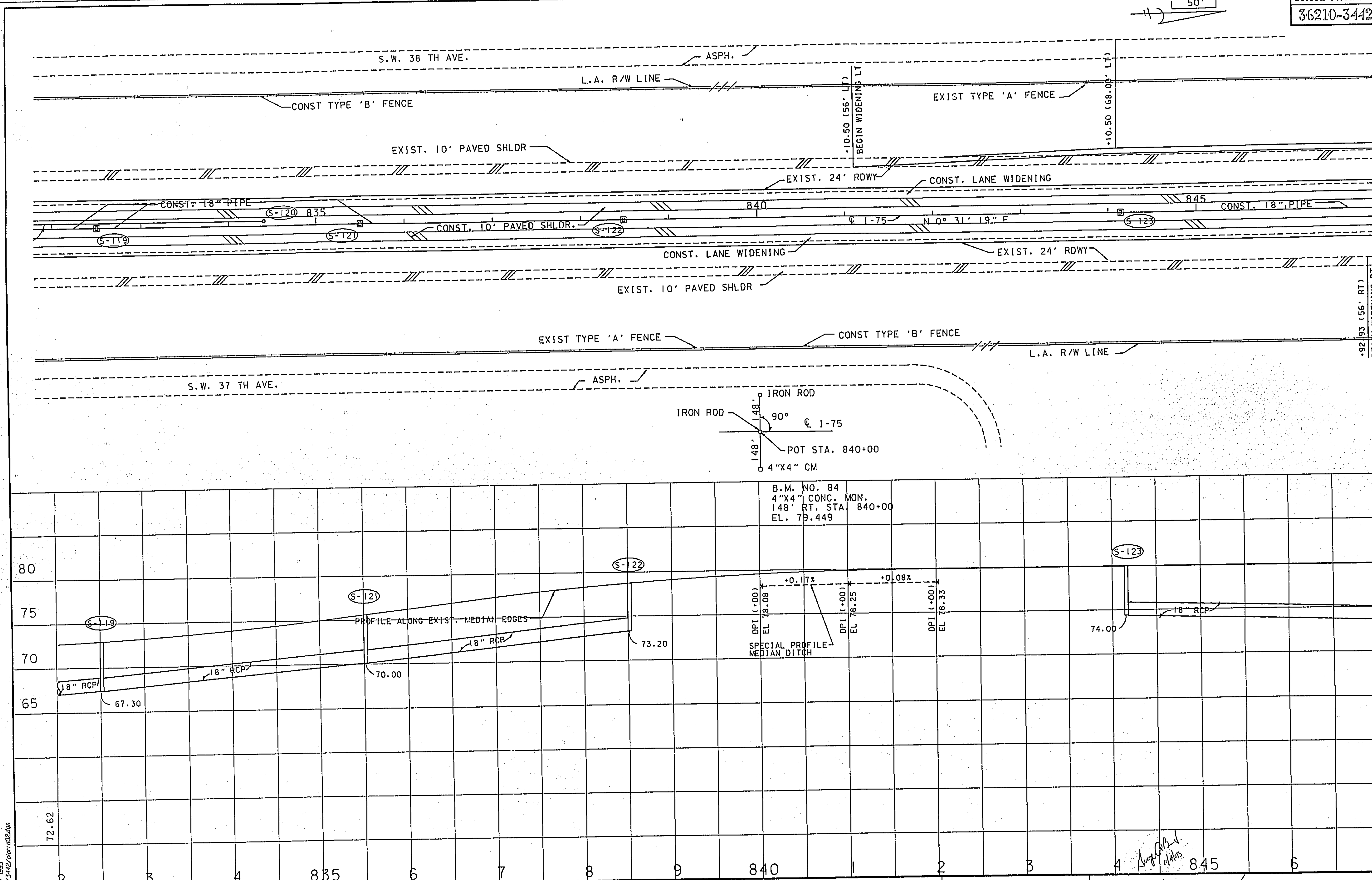
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN / PROFILE

Fri Oct 8 14:26:13 1993 /usr/proj/36210/3442/plprro02.dgn

STATE PROJ. NO.	SHEET NO.
36210-3442	31



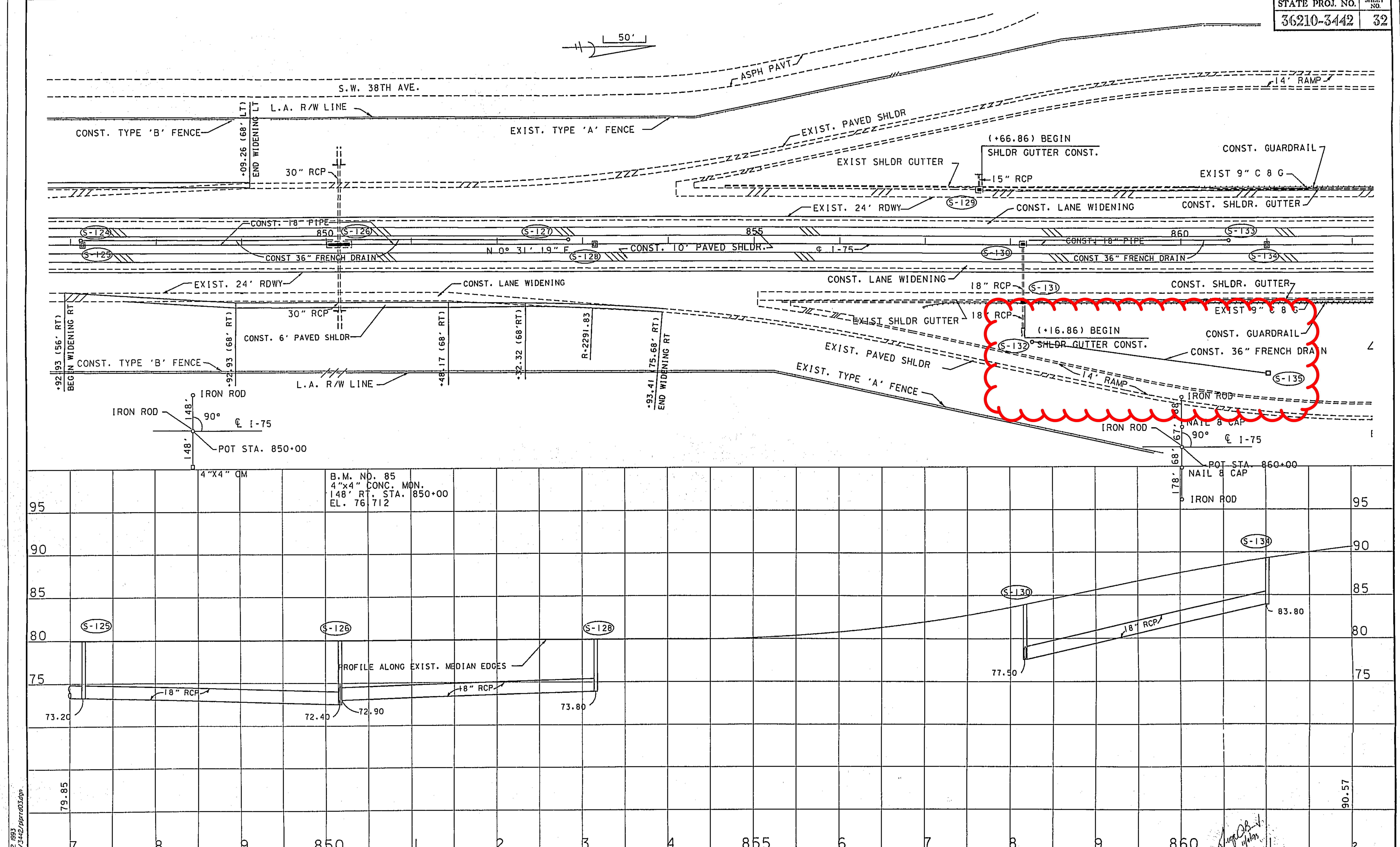
REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN / PROFILE

STATE PROJ. NO.	SHEET NO.
36210-3442	32



REVISIONS														
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN / PROFILE

Tue Oct 5 10:02 1993
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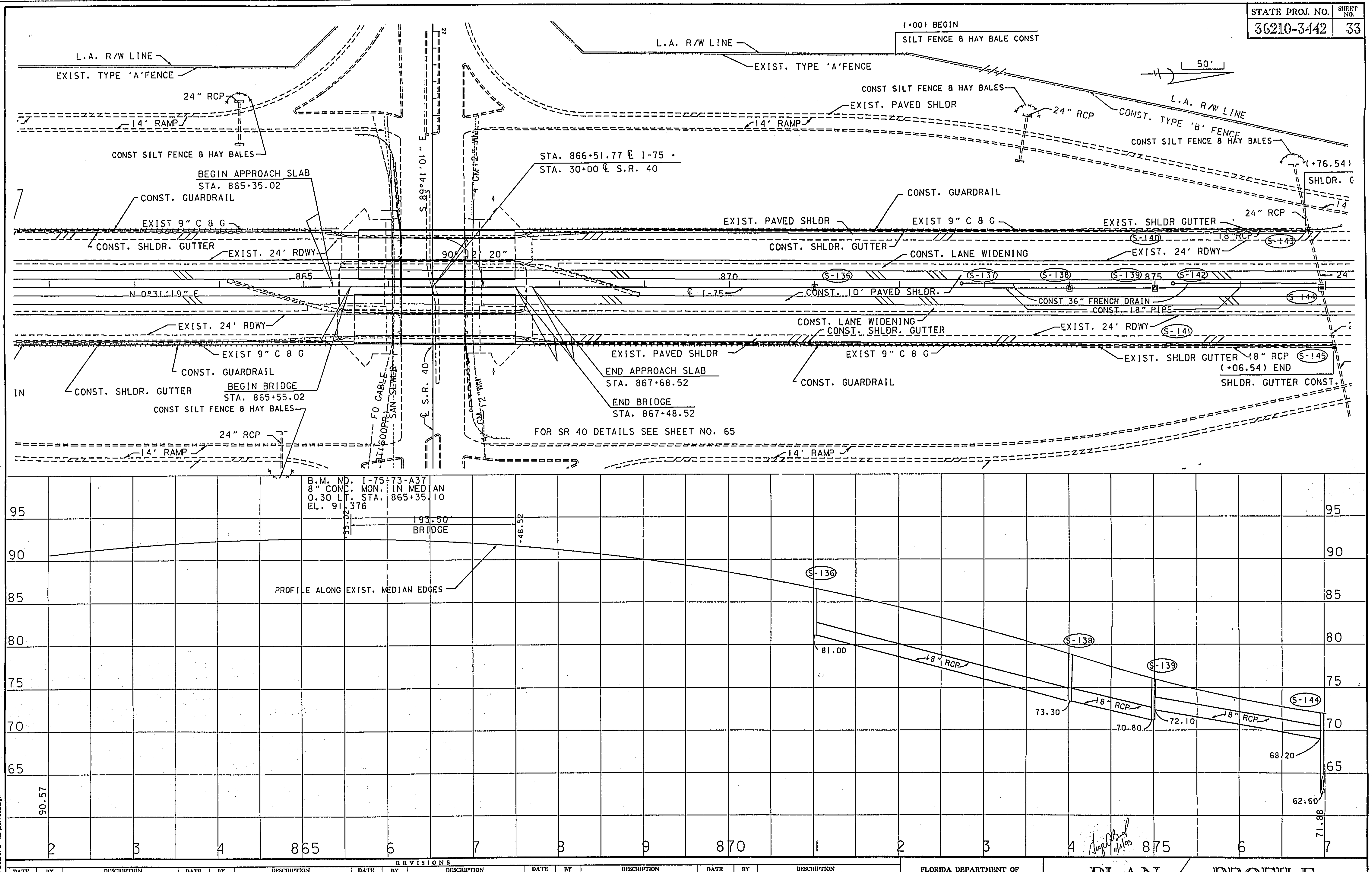
STATE PROJ. NO.	SHEET NO.
36210-3442	33



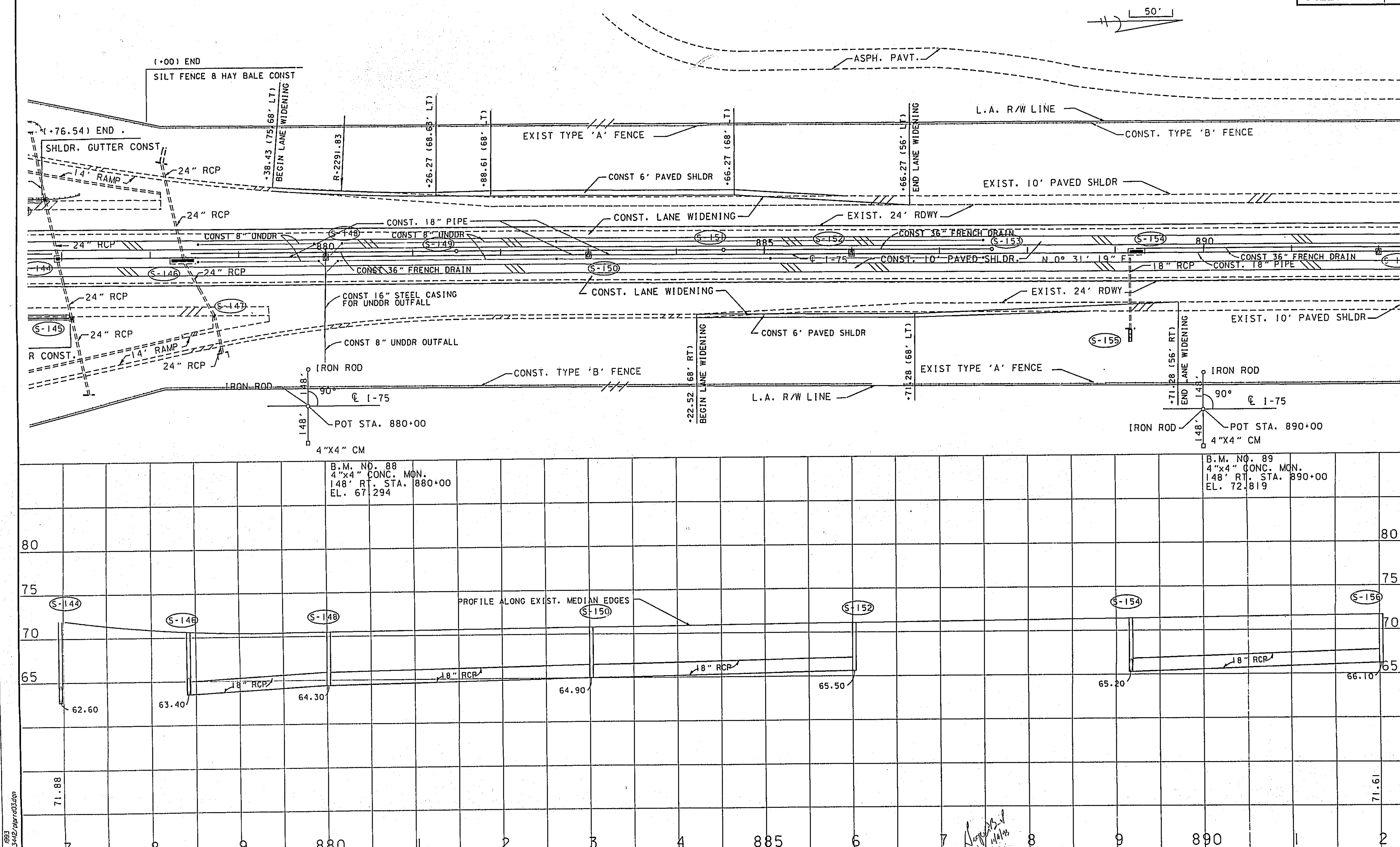
REVISIONS														
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN / PROFILE

Tue Oct 5 14:02:22 1993
/usr/pro/36210/3442/pprrr03.dgn

STATE PROJ. NO.	SHEET NO.
36210-3442	34

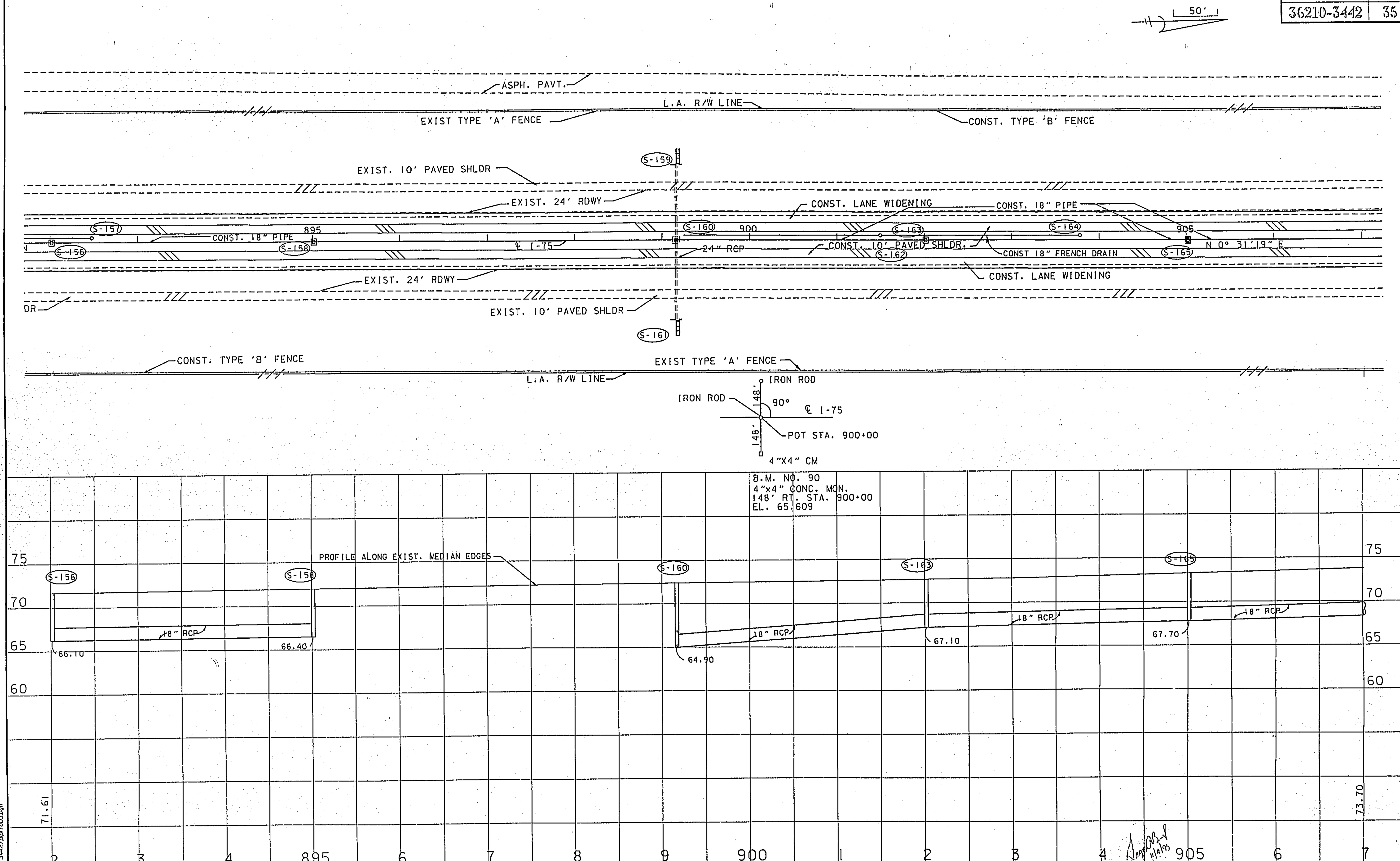


REVISIONS														
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN / PROFILE

STATE PROJ. NO.	SHEET NO.
36210-3442	35



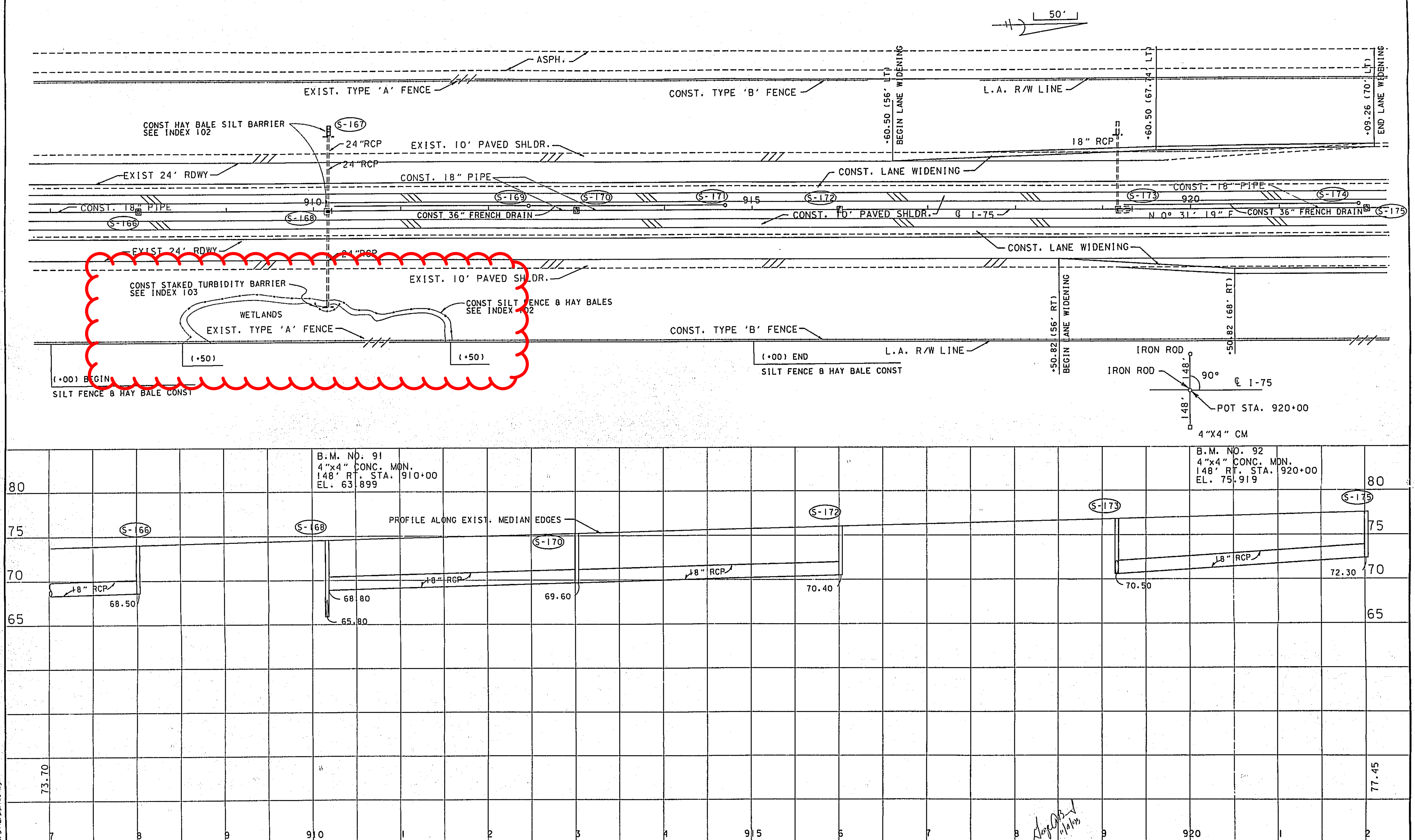
REVISIONS														
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN / PROFILE

Tue Oct 5 11:04:24 1993
/usr/proj/36210/3442/pprof03.dgn

STATE PROJ. NO.	SHEET NO.
36210-3442	36



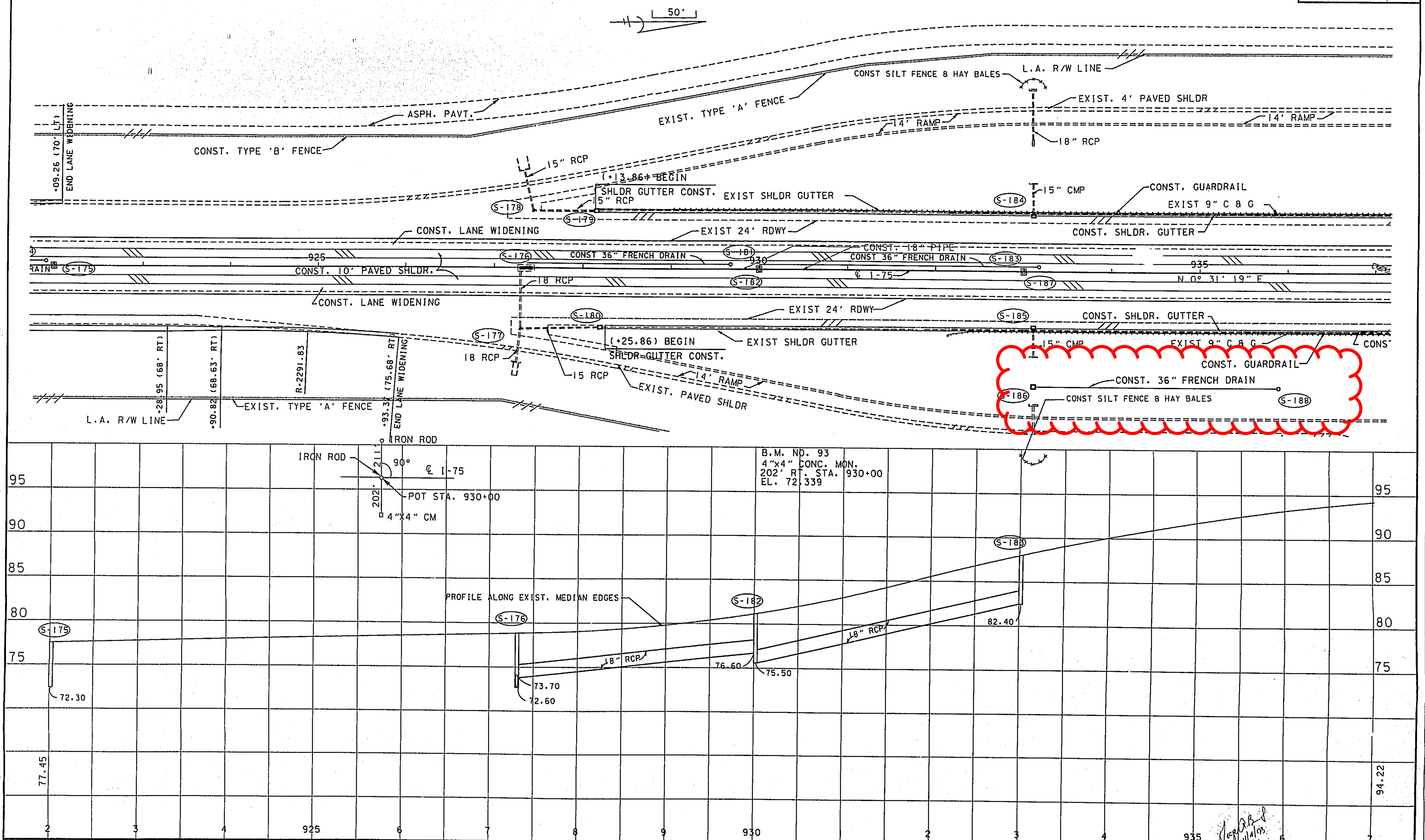
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN / PROFILE

STATE PROJ. NO.	SHEET NO.
36210-3442	37



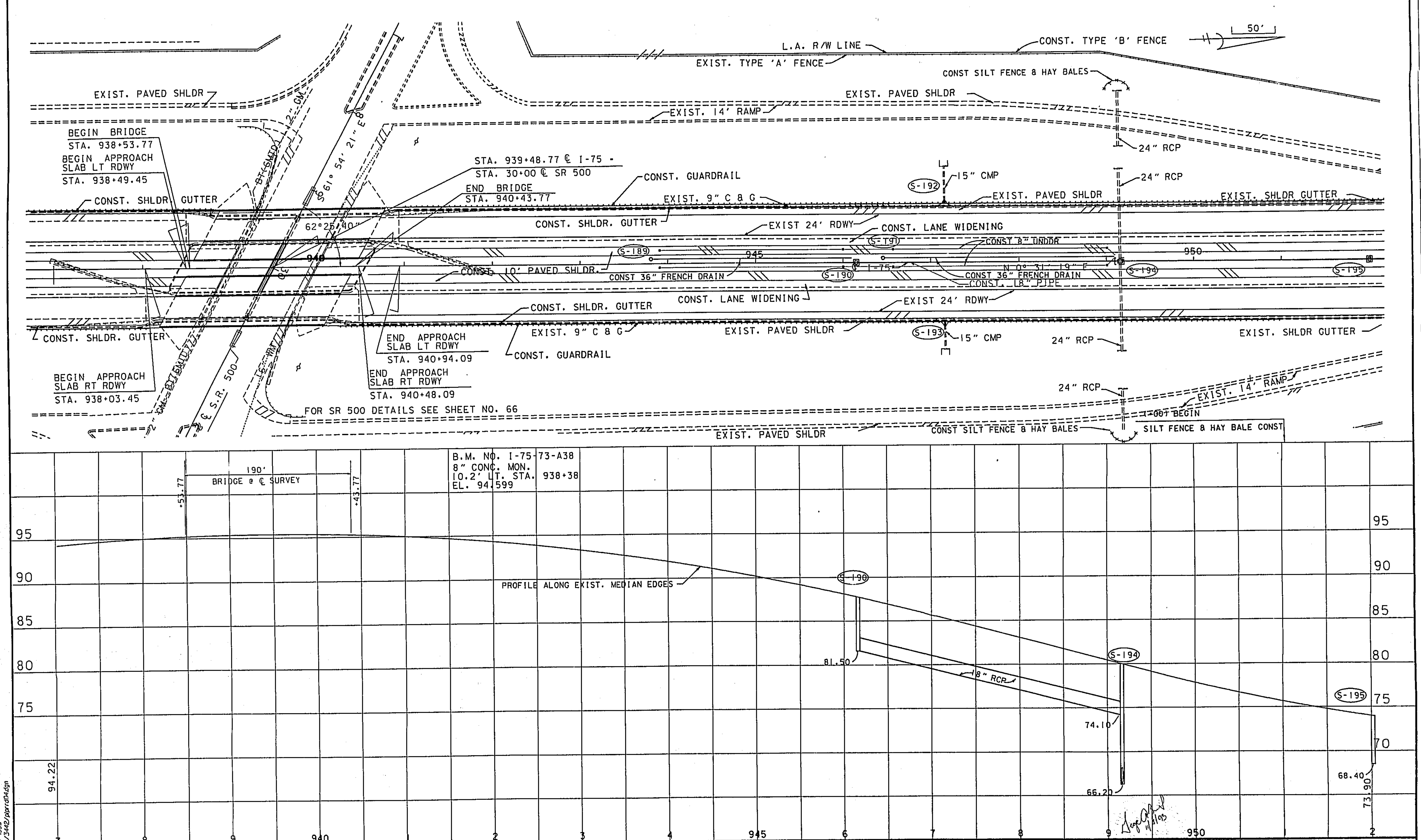
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN / PROFILE

STATE PROJ. NO.	SHEET NO.
36210-3442	38



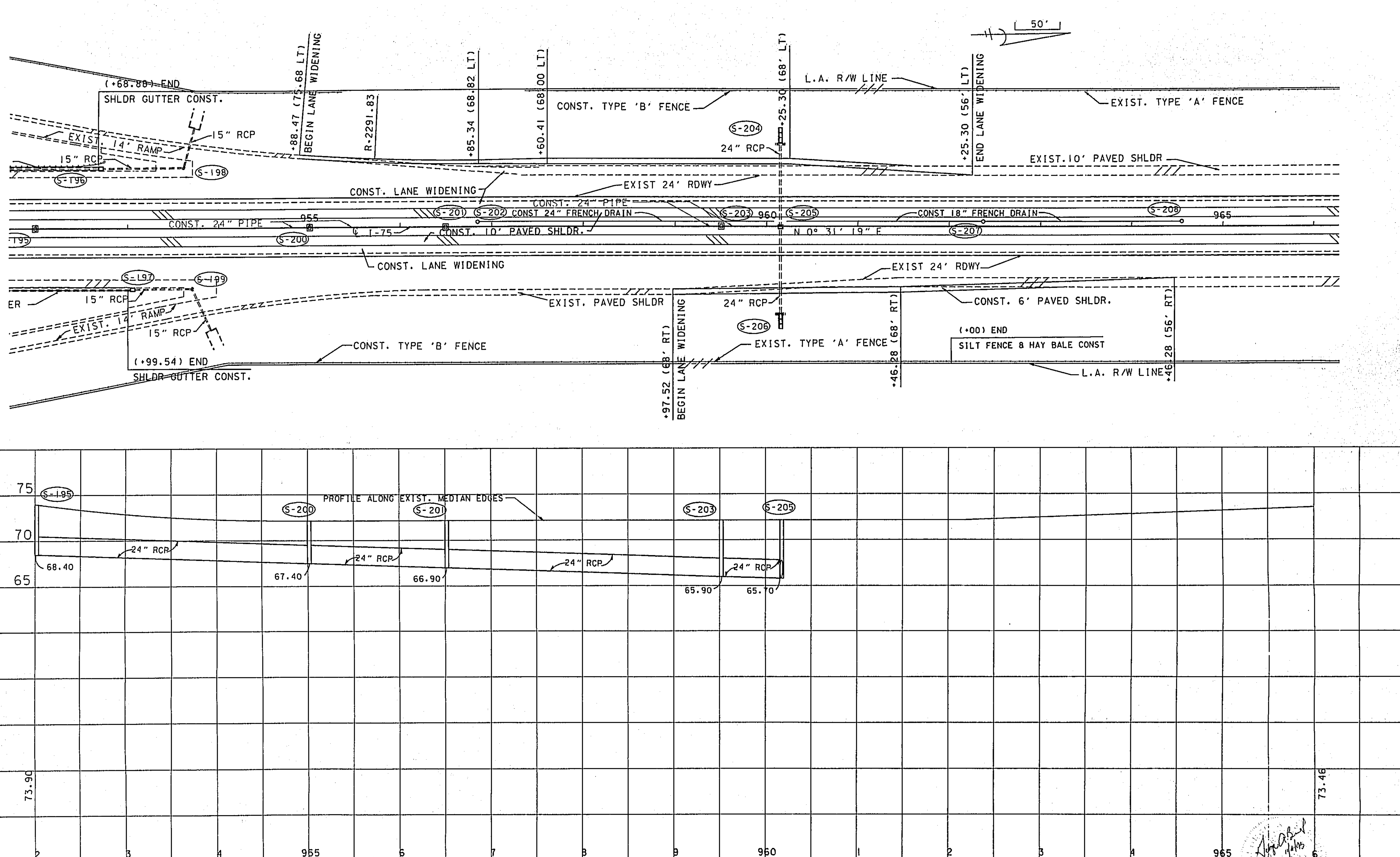
REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN / PROFILE

Tue Oct 5 1993
/usr/proj/36210/3442/pprof04.dgn

STATE PROJ. NO.	SHEET NO.
36210-3442	39



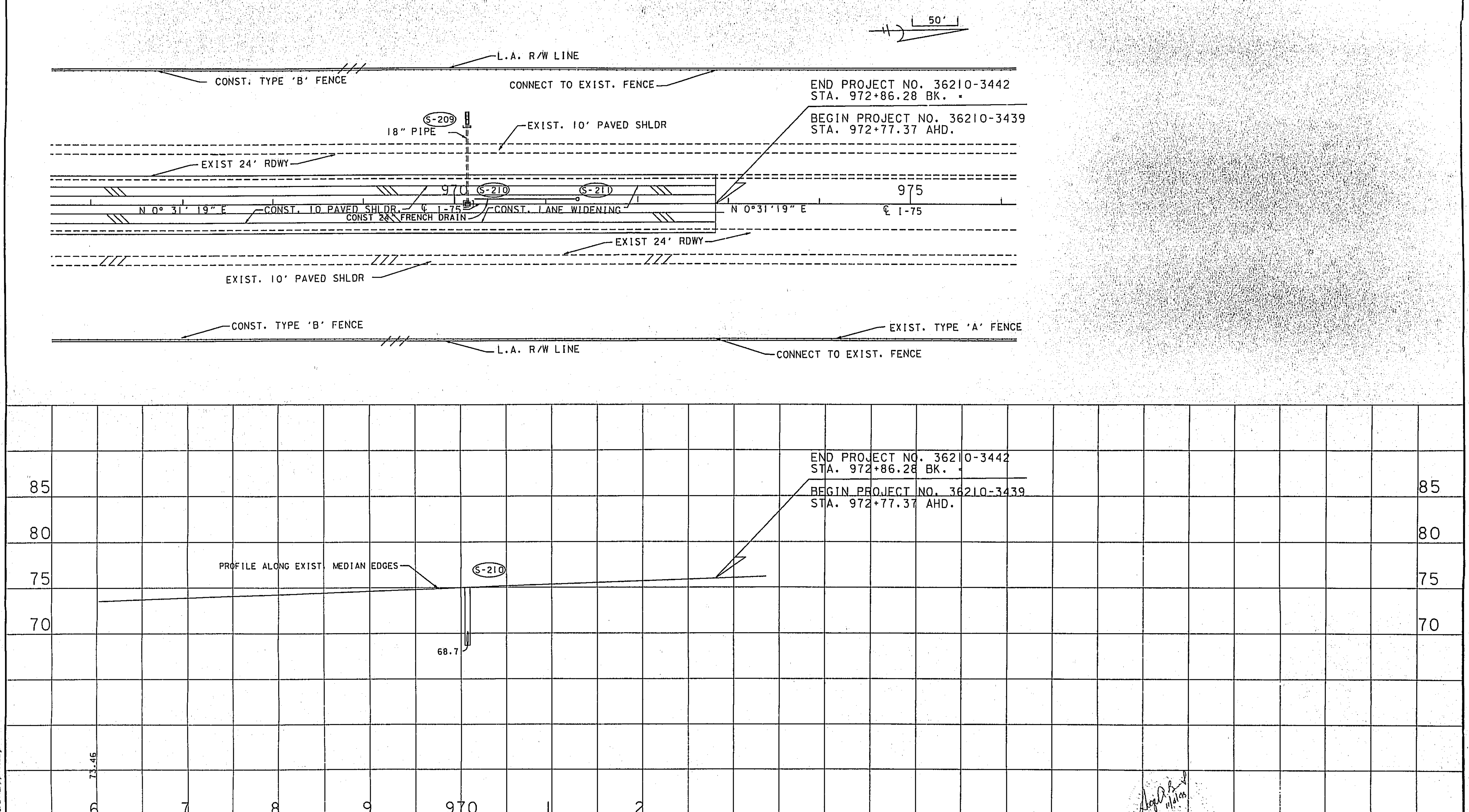
REVISIONS														
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN / PROFILE

Tue Oct 5 1993 /usr/proj/36210/3442/pprof04dgn

STATE PROJ. NO.	SHEET NO.
36210-3442	40



Tue Oct 5 11:51:41 1993 /usr/proj/36210/3442/plprof05.dgn

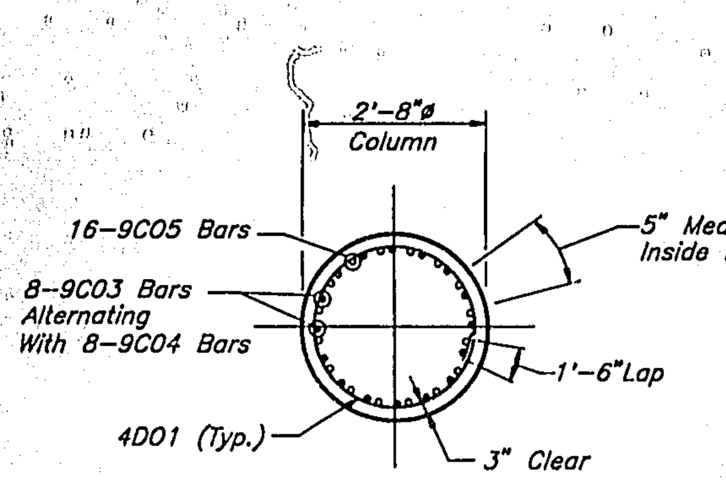
REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

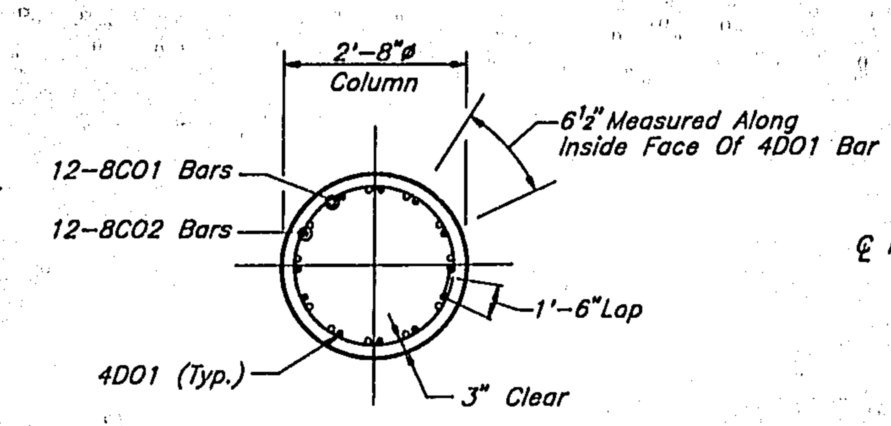
FLORIDA DEPARTMENT OF TRANSPORTATION

PLAN/ PROFILE

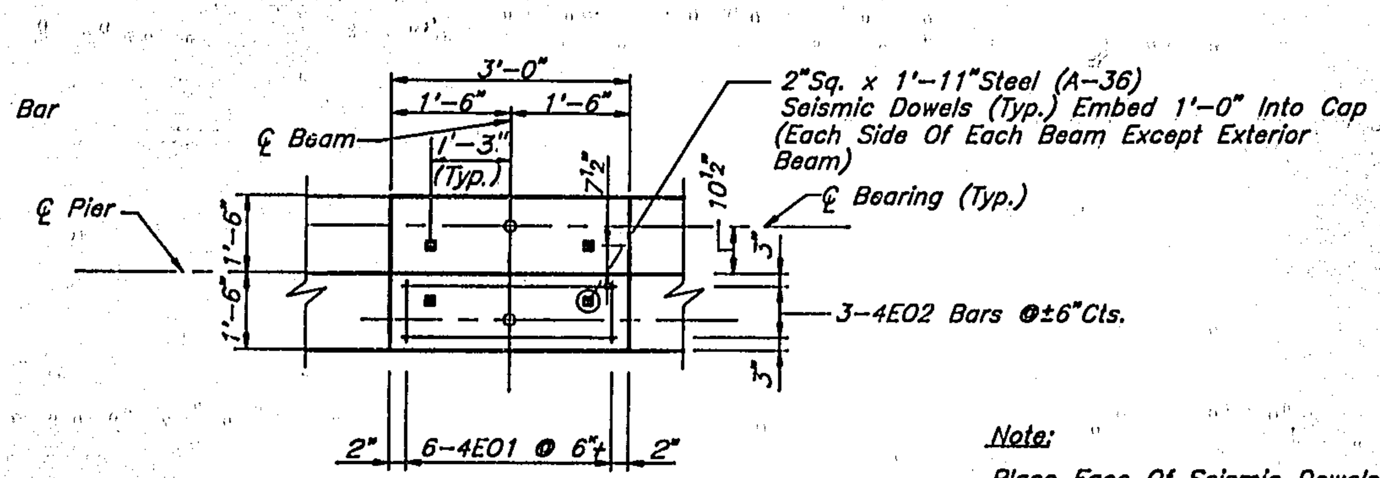
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			D-11



SECTION B-B

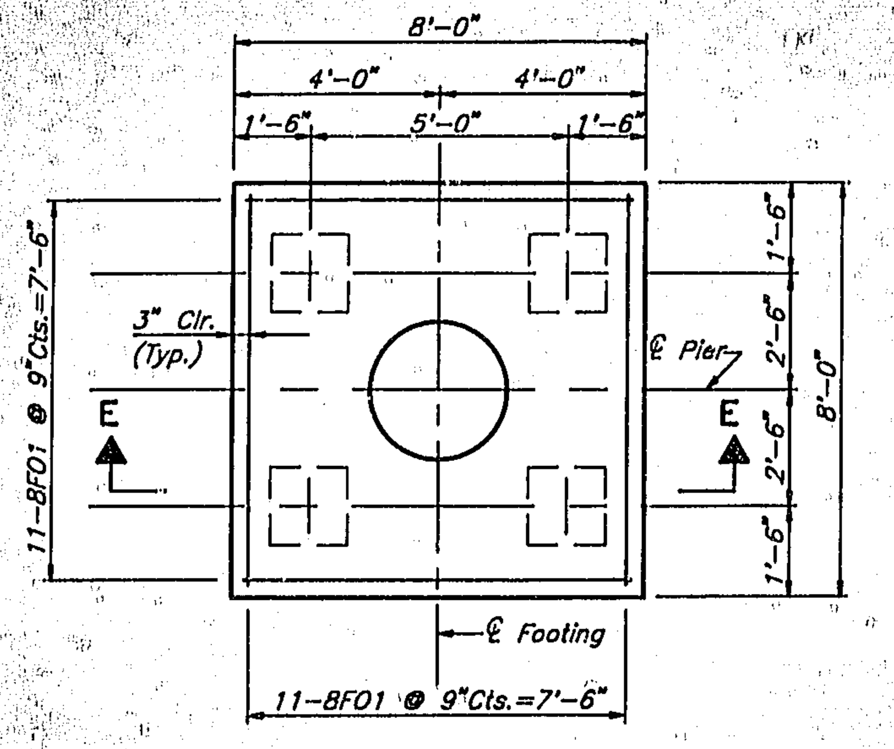


SECTION A-A

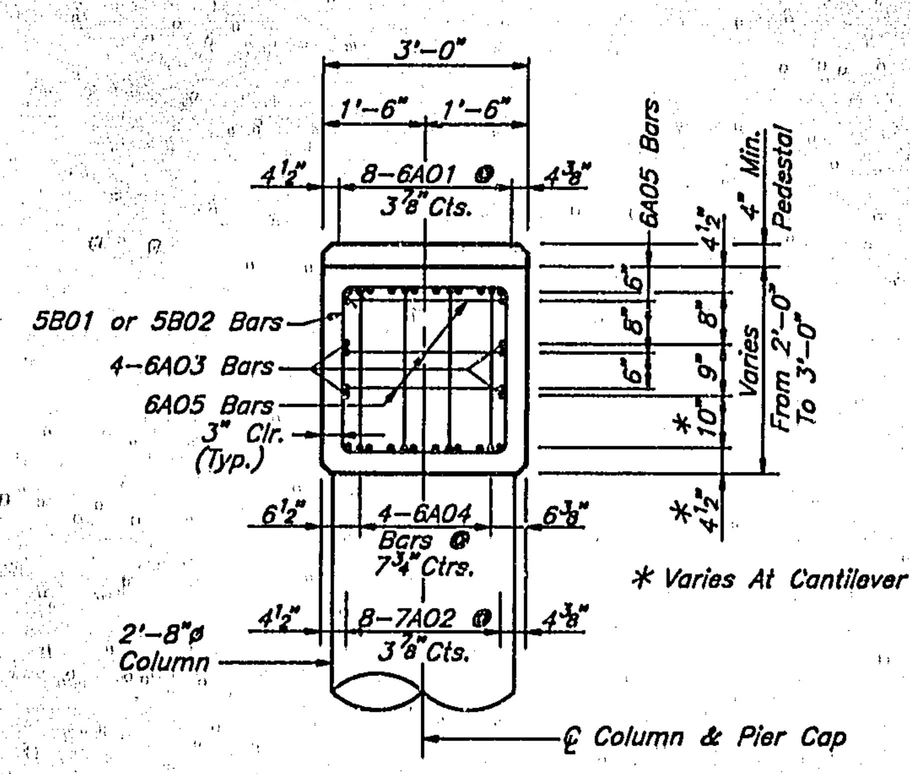


PEDESTAL DETAIL

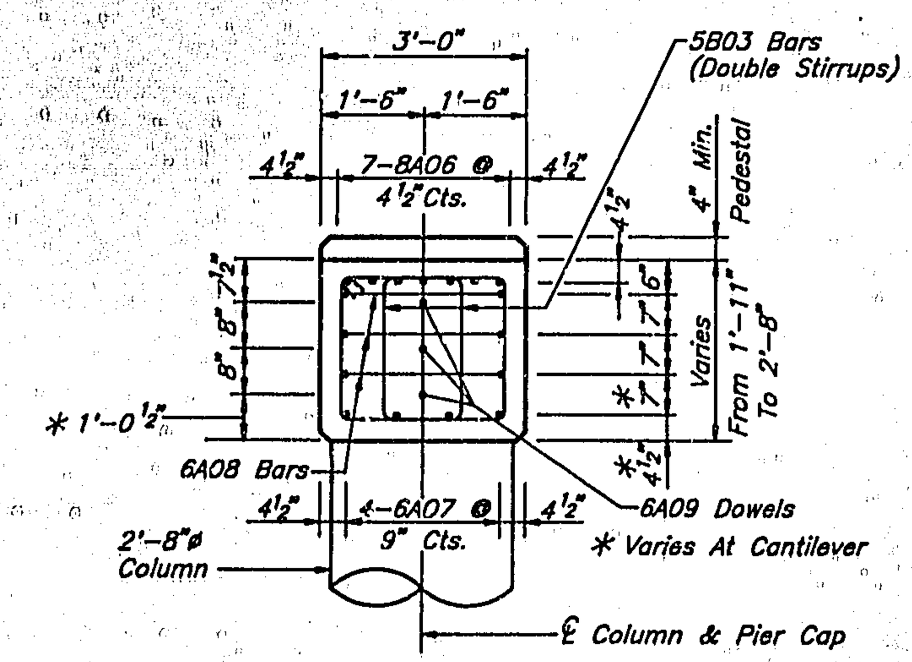
Note:
Place Face Of Seismic Dowels Parallel To ℄ Beams.



FOOTING PLAN

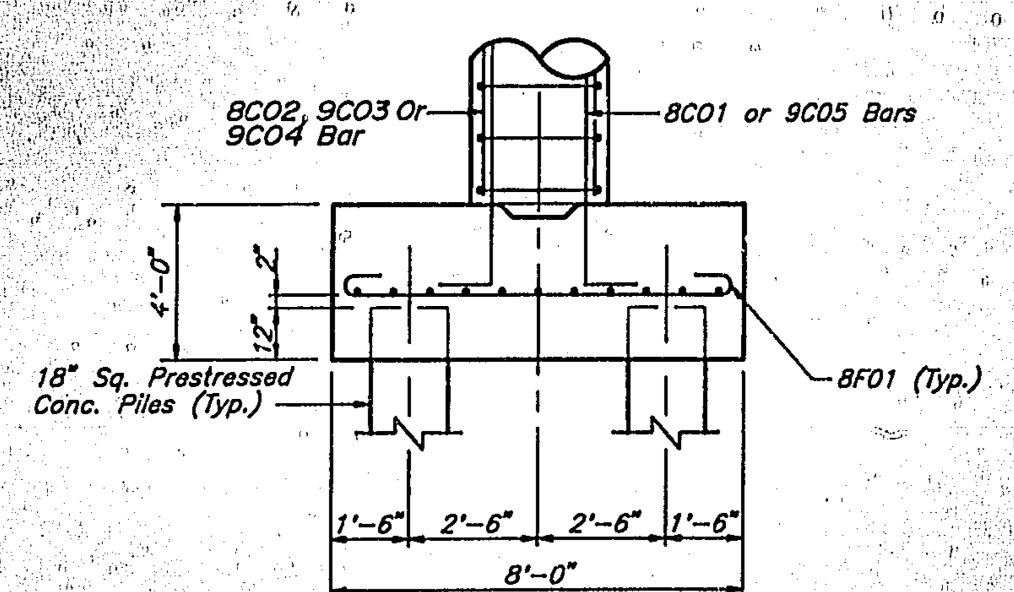


VIEW C-C



VIEW D-D

Note:
Chamfers Shall Match Chamfers On Existing Piers(1⅛"x 1⅛").



SECTION E-E

JACKING LOADS AND LOCATIONS

For Jack Points Located Within: Phase	Span	Unfactored Jacking Load Dead Load Only * (Tons)	Location (Unless Otherwise Noted On Plans)
Phase I	1 & 3	37	Centered Between Beams
	2	50	
Existing To Remain	1 & 3	16	At Quarter Points Between Beams
	2	27	
Phase II	1 & 3	38	Centered Between Beams
	2	52	

Jacks Should Be Equipped To Lift Each End Of The Span Simultaneously.
For Additional Jacking Notes See General Notes Sheet A-2.

* Bridge Shall Be Closed To Traffic During Jacking Operations, Therfore No Live Load Is Included.

REVISIONS Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	JLA	8/93
Checked by	MN	8/93
Designed by	MN	8/93
Checked by	PM	8/93
Approved by	Peeter Mannik, P.E.	

ENGINEER OF RECORD:
DYER, RIDDLE, MILLS AND PRECOURT, INC.
1505 EAST COLONIAL DRIVE
ORLANDO, FLORIDA 32803

LOGO:
DYER, RIDDLE, MILLS AND PRECOURT, INC.
ENGINEERS - SURVEYORS
1505 EAST COLONIAL DRIVE
ORLANDO, FLORIDA 32803

SEAL:
Peet Mannik
6/7/93

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
93	MARION	36210-3442

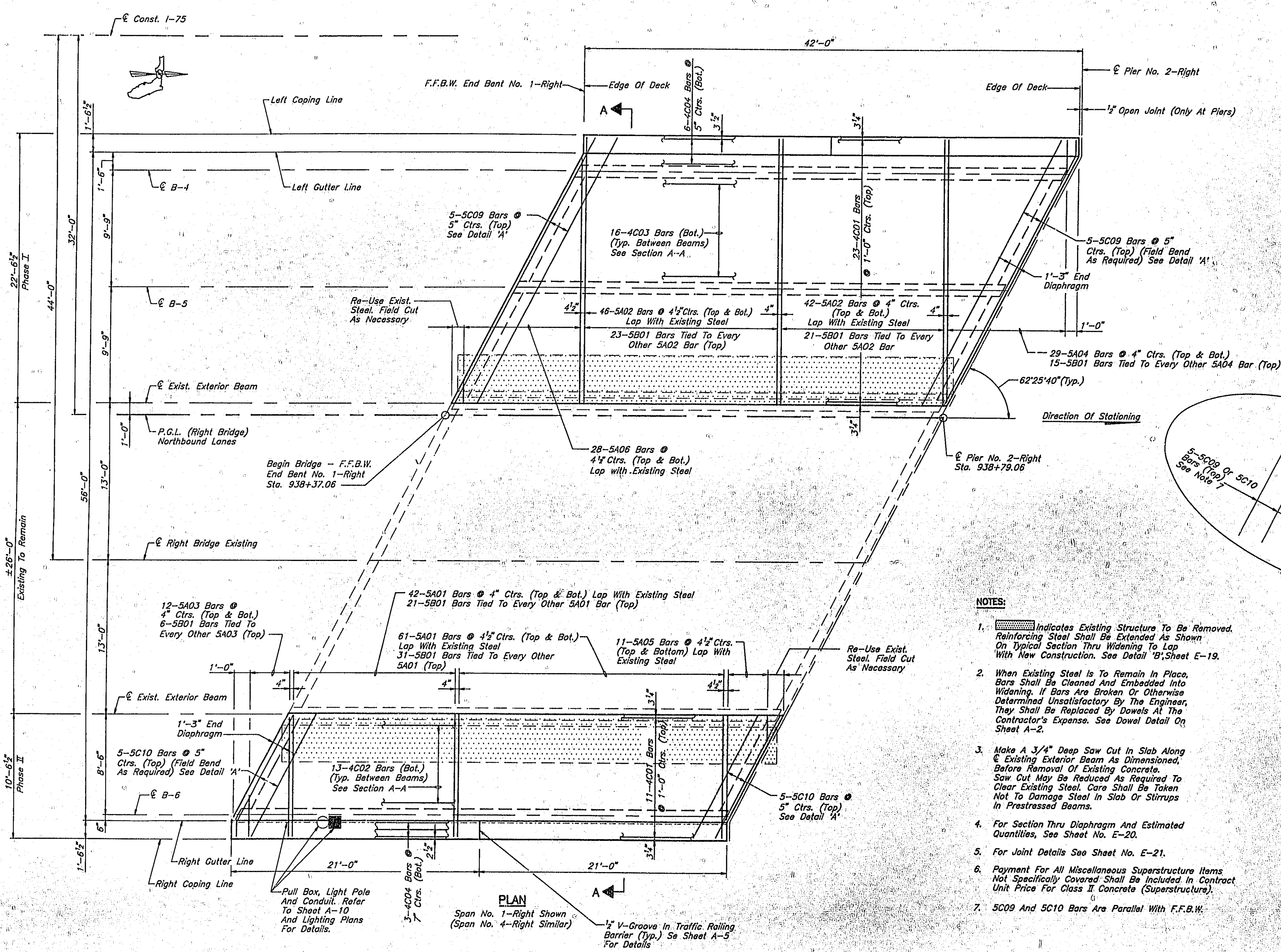
SHEET TITLE: PIER DETAILS

PROJECT NAME: WIDENING I-75 OVER S.R. 40

Drawing No.

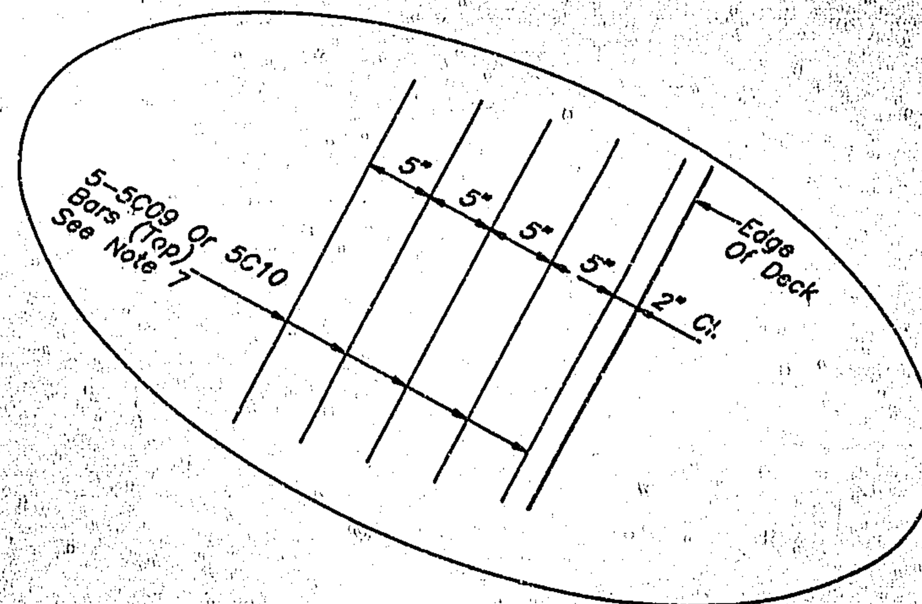
Index No.

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			E-16



PLAN

Span No. 1-Right Shown
(Span No. 4-Right Similar)



DETAIL 'A'

NOTES:

1. [hatched] Indicates Existing Structure To Be Removed. Reinforcing Steel Shall Be Extended As Shown On Typical Section Thru Widening To Lap With New Construction. See Detail 'B', Sheet E-19.
2. When Existing Steel Is To Remain In Place, Bars Shall Be Cleaned And Embedded Into Widening. If Bars Are Broken Or Otherwise Determined Unsatisfactory By The Engineer, They Shall Be Replaced By Dowels At The Contractor's Expense. See Dowel Detail On Sheet A-2.
3. Make A 3/4" Deep Saw Cut In Slab Along ℄ Existing Exterior Beam As Dimensioned, Before Removal Of Existing Concrete. Saw Cut May Be Reduced As Required To Clear Existing Steel. Care Shall Be Taken Not To Damage Steel In Slab Or Stirrups In Prestressed Beams.
4. For Section Thru Diaphragm And Estimated Quantities, See Sheet No. E-20.
5. For Joint Details See Sheet No. E-21.
6. Payment For All Miscellaneous Superstructure Items Not Specifically Covered Shall Be Included In Contract Unit Price For Class II Concrete (Superstructure).
7. 5C09 And 5C10 Bars Are Parallel With F.F.B.W.

REVISIONS					
Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	JLA	8/93
Checked by	KCH	8/93
Designed by	KCH	8/93
Checked by	PM	8/93
Approved by	Peeter Mannik, P.E.	

ENGINEER OF RECORD:
DYER, RIDDLE, MILLS AND PRECOURT, INC.
1505 EAST COLONIAL DRIVE
ORLANDO, FLORIDA 32803

LOGO:
DYER, RIDDLE, MILLS AND PRECOURT, INC.
ENGINEERS - SURVEYORS
1505 EAST COLONIAL DRIVE
ORLANDO, FLORIDA 32803

SEAL:
Peeter Mannik
6/7/93

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
93	MARION	36210-3442

SHEET TITLE: SUPERSTRUCTURE SPANS NO. 1-RIGHT AND 4-RIGHT

PROJECT NAME: WIDENING I-75 OVER S.R. 500

Drawing No.

Index No.

State Project No.

36210-3439

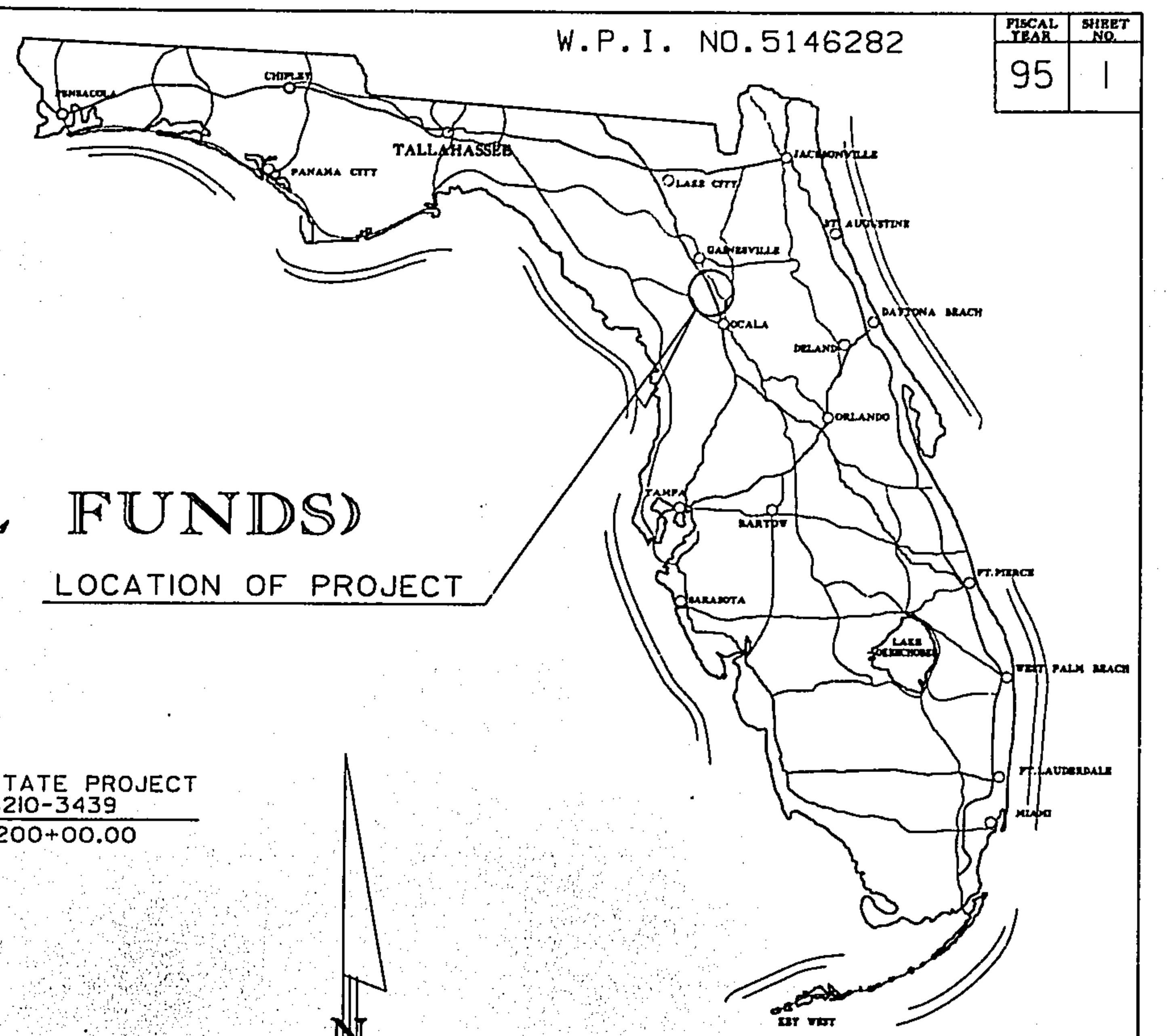
W.P.I. NO.5146282

FISCAL YEAR	SHEET NO.
95	1

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY

STATE PROJECT NO. 36210-3439 (FEDERAL FUNDS)
MARION COUNTY
I-75 FROM SR 500 TO CR 326



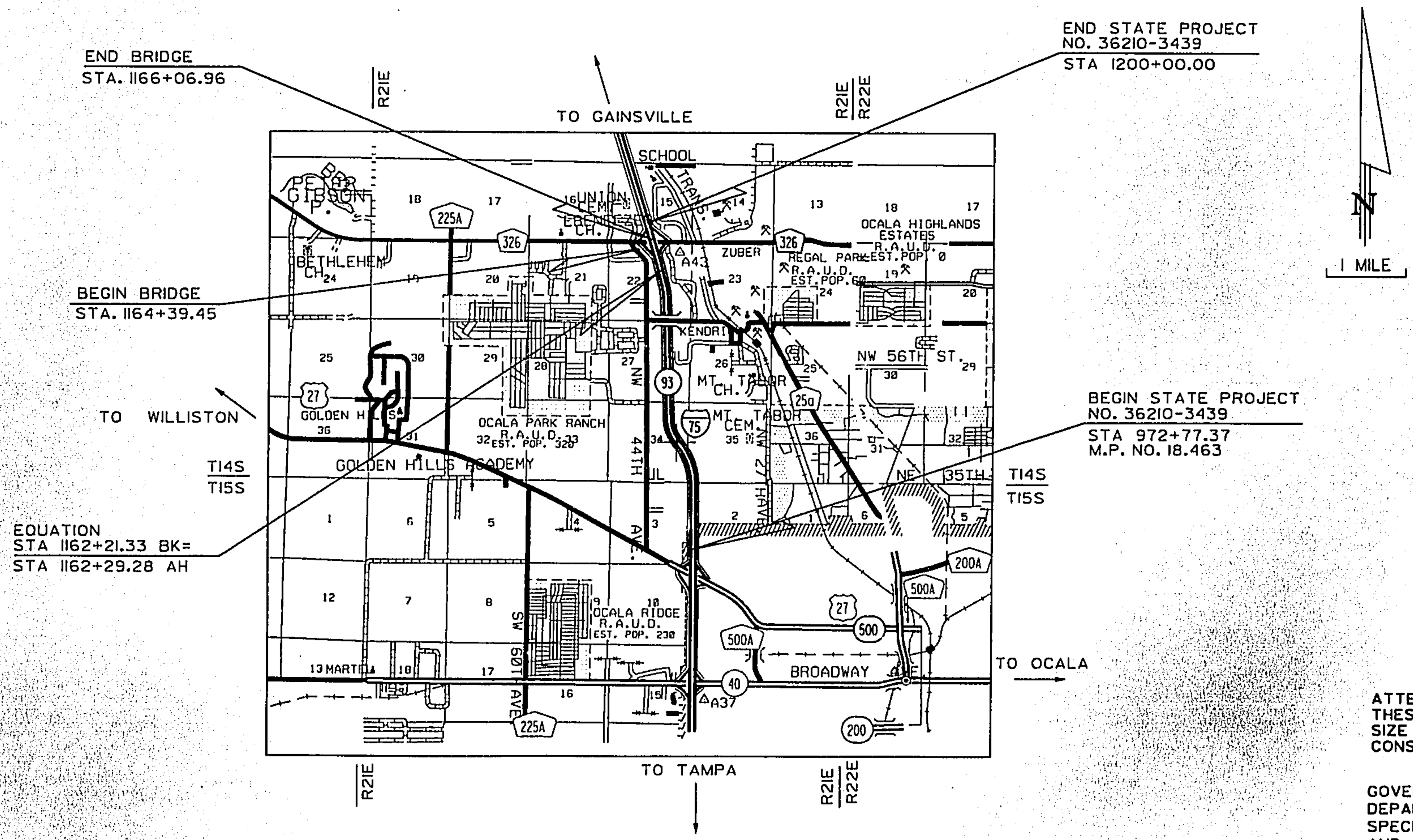
LOCATION OF PROJECT

THIS CONTRACT PLAN SET INCLUDES

ROADWAY PLANS
SUMMARY OF PAY ITEMS (4 SHEETS)
SIGNING AND PAVEMENT MARKING PLANS
STRUCTURE PLANS

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT SET OF PLANS

INDEX OF ROADWAY PLANS



THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS (BOOKLET DATED JANUARY, 1992).

08/26/93

REVISIONS

LENGTH OF PROJECT	LIN. FT.	MILES
ROADWAY	22,547.17	4.270
BRIDGES	167.51	0.032
NET LENGTH OF PROJECT	22,714.68	4.302
EXCEPTIONS	0.00	0.000
GROSS LENGTH OF PROJECT	22,714.68	4.302

REVISIONS

DATE	BY	DESCRIPTION
8-25-93	H.M.S.	*Changed the summary of pay item sheets from (0 sheets) to (4 sheets)*

ROADWAY PLANS
ENGINEER OF RECORD

Norman H. Johnson, P.E.
BEISWENGER, HOCH & ASSOCIATES, INC.
P.O. Box 160336
Altamonte Springs, Florida
32716-0336

PLANS PREPARED BY

BEISWENGER, HOCH & ASSOCIATES, INC.
CONSULTING ENGINEERS
ALTAMONTE SPRINGS, FLORIDA

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS DATED 1991 AND SUPPLEMENTS THERETO IF NOTED IN THE SPECIAL PROVISIONS FOR THIS PROJECT.

ROADWAY PLANS APPROVED BY: NORMAN H. JOHNSON

DATE:

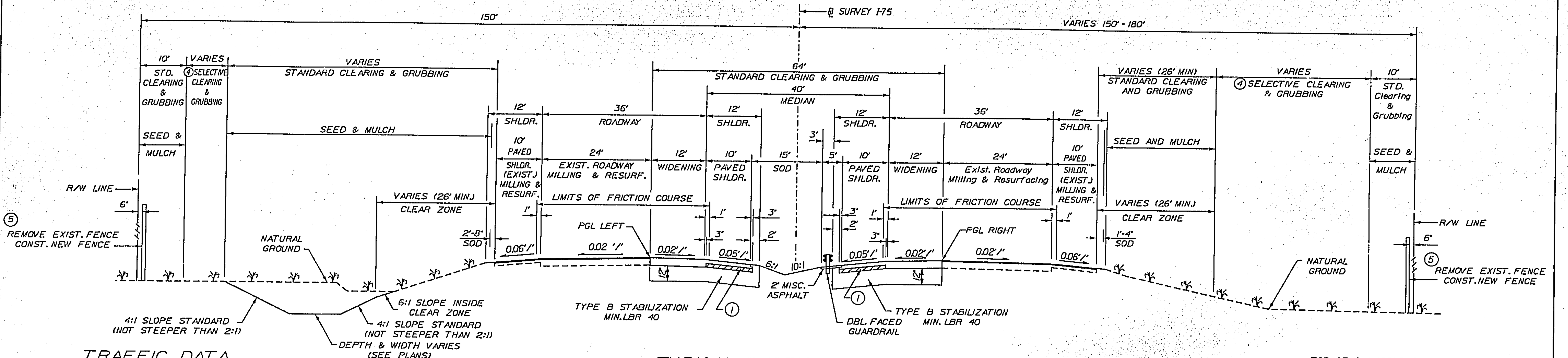
P. E. NO.: 42611

James R. Dellen
8/27/93

F. D. O. T. PROJECT MANAGER: GEORGE J. PAPPAS, P.E.

Marion_MP18.463.0 TO MP22.555_
FPID-242376-1_
FPN-36210-3439_
SR 93(I-75) from 0.6 MI N SR 500 US27
TO 0.6 MI NORTH CR 326

PROJECT NO.	SHEET NO.
36210-3439	6

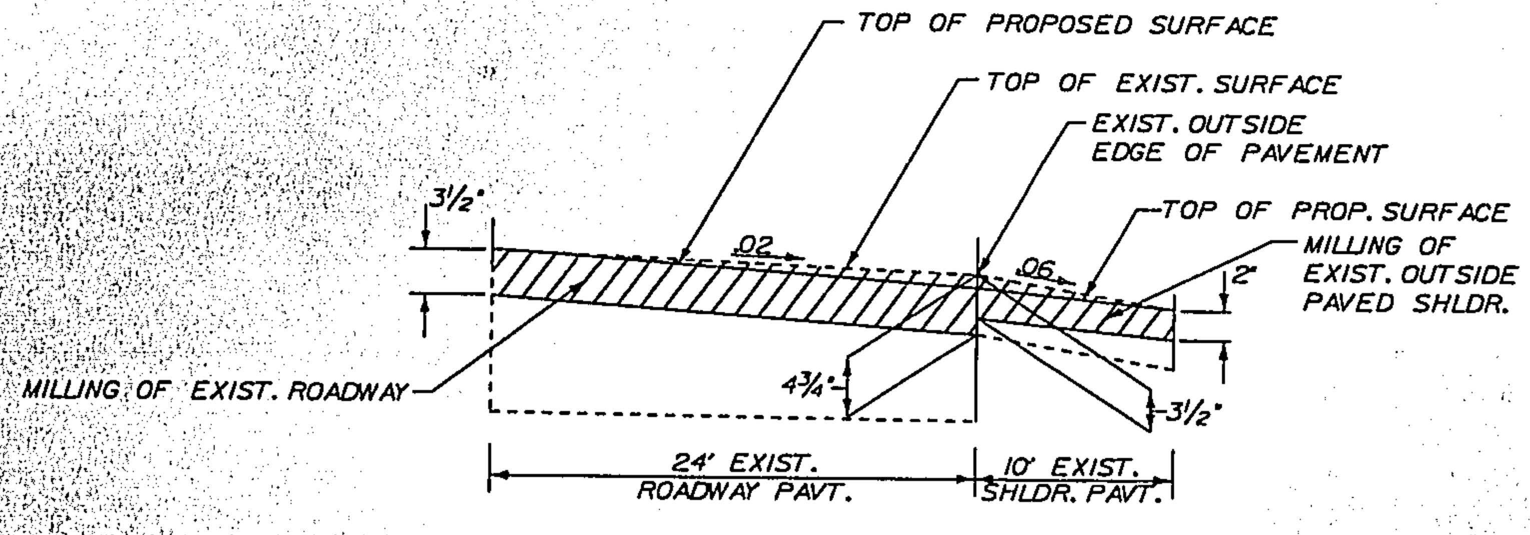


TRAFFIC DATA

1991 ADT = 39,000
1996 ADT = 48,500 EST.
2016 ADT = 78,500 EST.
DESIGN SPEED = 70 M.P.H.
K = 9.5% D = 58.0% T = 24.3%

TYPICAL SECTION (1) I-75

STA 972+77.37 TO STA 1000+62.50
STA 1020+50 TO STA 1035+50
STA 1054+00 TO STA 1123+87.50
STA 1138+37.50 TO STA 1200+00.00



MILLING & RESURFACING DETAIL

(NOT TO SCALE)

TYPICAL SECTION NOTES

1. AT THE CONTRACTOR'S OPTION, THIS AREA MAY BE CONSTRUCTED OF BASE MATERIAL AT NO ADDITIONAL COMPENSATION.
2. ACTUAL WIDTH OF BASE WIDENING MAY VARY DUE TO ACTUAL EXISTING PAVEMENT WIDTH. CONTRACTOR MAY ELECT TO PLACE UNIFORM WIDTH BASE WIDENING STRIP AT NO ADDITIONAL COMPENSATION.
3. NONE OF THE EXISTING LIMEROCK BASE THAT IS REMOVED IS TO BE USED IN THE CONSTRUCTION OF THE NEW LIMEROCK BASE.
4. AS DIRECTED BY THE ENGINEER, TREES WITHIN THE CLEARING AND GRUBBING AREA OUTSIDE THE CLEAR ZONE MAY REMAIN.
5. FOR LOCATION OF TYPE "A" OR TYPE "B" FENCE SEE PLANS.
6. ALL AREAS WITHIN THE R/W DISTURBED BY THE CONTRACTORS OPERATIONS SHALL BE SEEDED AND MULCHED AS DIRECTED BY THE ENGINEER. THE COST FOR THIS OPERATION IS TO BE INCLUDED UNDER THE COST FOR OTHER ITEMS.

MILLING AND RESURFACING

MILL EXISTING ASPHALTIC CONCRETE PAVEMENT
SEE MILLING & RESURFACING DETAIL

CRACK RELIEF LAYER (ARMI), TYPE S-II STRUCTURAL COURSE (200 LBS/SY), TYPE S-III STRUCTURAL COURSE (100 LBS/SY) AND FRICTION COURSE FC-2 RUBBER (5/8")
FOR ADDITIONAL DETAILS SEE INDEX Nos. 104, 105, 280, 281, 400, 450, 451, 500, 505, 510, 513, 514, 517 & 525.

WIDENING

OPTIONAL BASE GROUP 12
TYPE S STRUCTURAL COURSE (6" THICK) AND WITH FRICTION COURSE FC-2 RUBBER (5/8")
FOR ADDITIONAL DETAILS SEE INDEX Nos. 513, 514

SHOULDER PAVEMENT

MILLING AND RESURFACING
MILL EXISTING OUTSIDE PAVED SHLDR (2¾" AVG DEPTH) AND RESURFACE WITH TYPE S-I STRUCTURAL COURSE (125 LBS/SY), TYPE S-III STRUCTURAL COURSE (100 LBS/SY), AND INVERTED RUMBLE STRIPS

NEW CONSTRUCTION
OPTIONAL BASE GROUP 3 WITH TYPE S STRUCTURAL COURSE (1 1/2 ") AND INVERTED RUMBLE STRIPS

h:\I75\typsect.dgn
H:\SCR\I75\NTYP02.PRF 08/26/93

James R. Wellen
8/27/93

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
8-25-1993	H.M.S.	Specified the type of crack relief layer to be ARMI. Changed the FC-2 to FC-2 Rubber						

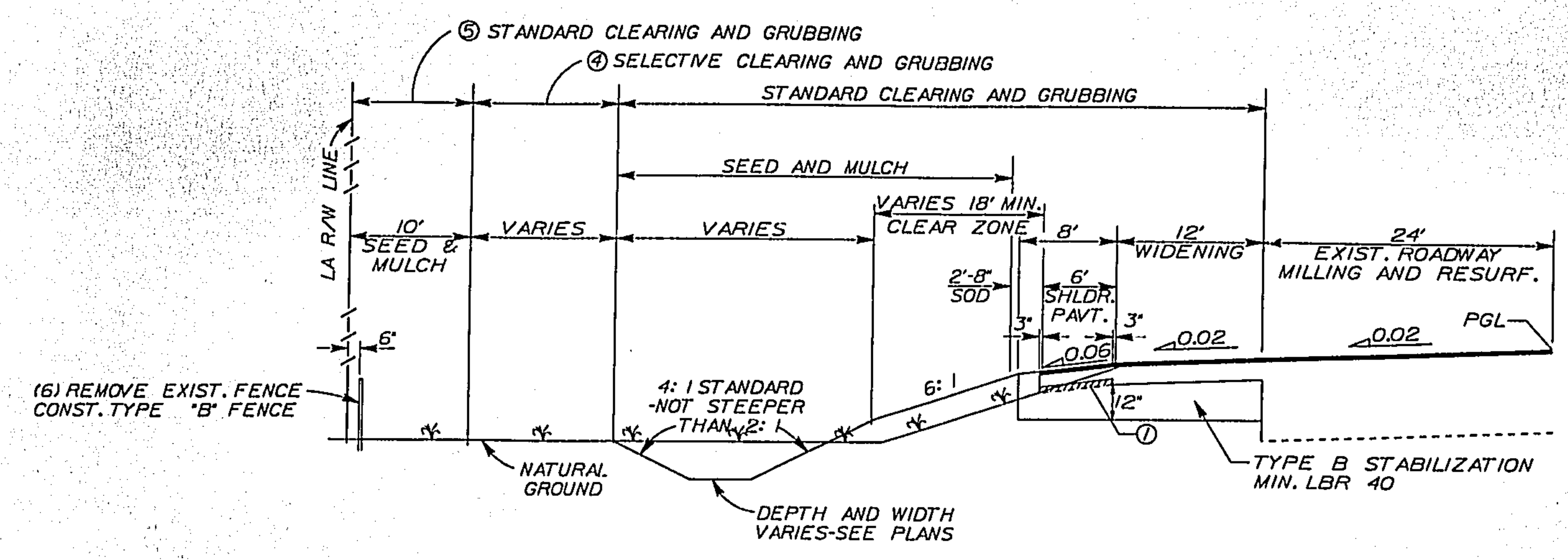
	NAME	DATE		NAME	DATE
DESIGNED BY	H.M.S.	1-92	DRAWN BY	T.A.H.	1-92
CHECKED BY	N.H.J.	11-92	CHECKED BY	H.M.S.	11-92
SUPERVISED BY	Norman H. Johnson, P.E.				

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS

TYPICAL SECTIONS

PROJECT NO.	SHEET NO.
36210-3439	8

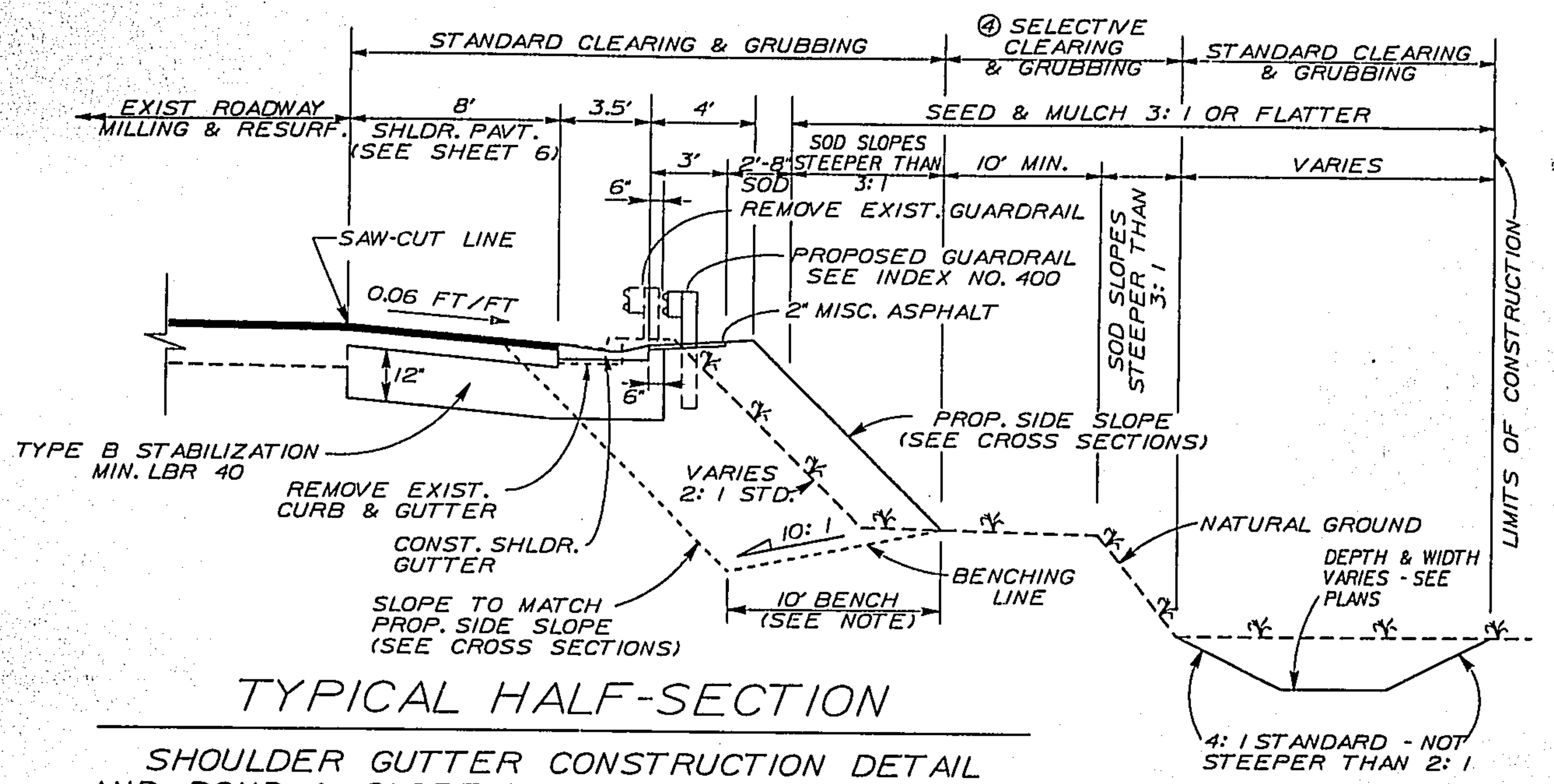


TYPICAL HALF-SECTION

AUXILIARY LANE WIDENING AND POND DETAIL

FOR PAVT DESIGN SEE TYPICAL SECTION NO. 1

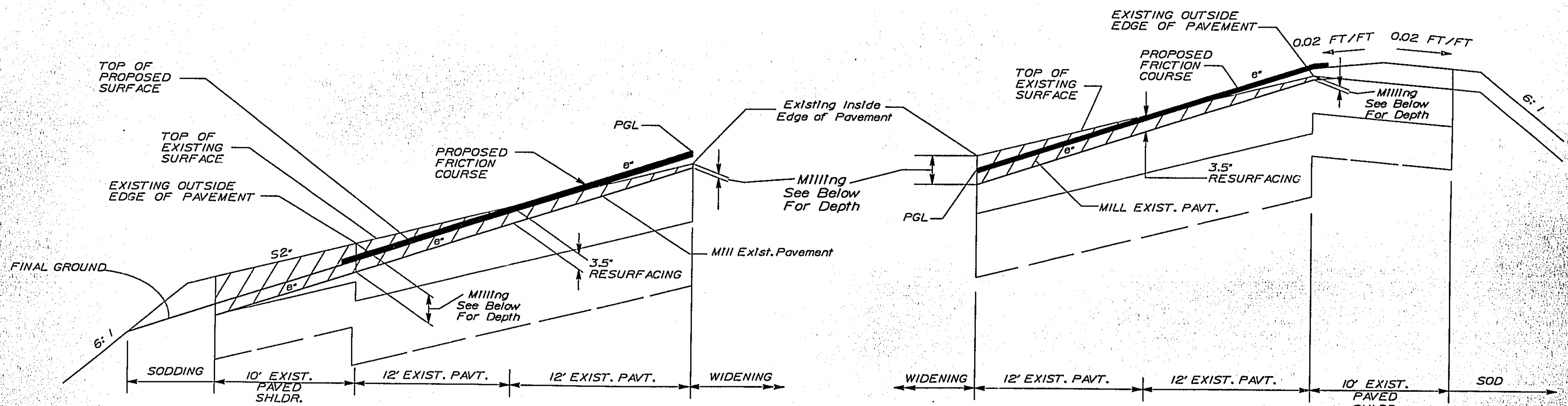
NOTE: WHEN NEW EMBANKMENT IS TO BE PLACED AND COMPACTED ON EXISTING EMBANKMENT, THE EXISTING SLOPES THAT ARE STEEPER THAN 3: 1, WHEN MEASURED AT RIGHT ANGLES TO THE ROADWAY, SHALL BE CONTINUOUSLY BENCHED OVER THOSE AREAS AND THE PROPOSED EMBANKMENT CONSTRUCTED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. BENCHING (10' PROPOSED WIDTH) SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL AND SHALL BE OF SUFFICIENT WIDTH TO PERMIT OPERATION OF PLACEMENT AND COMPACTION EQUIPMENT.



TYPICAL HALF-SECTION

SHOULDER GUTTER CONSTRUCTION DETAIL AND POND & SLOPE TREATMENT IN HIGH FILLS

Sta. 1155+92.35 - 1164+29.09
Sta. 1166+45.59 - 1174+07.67

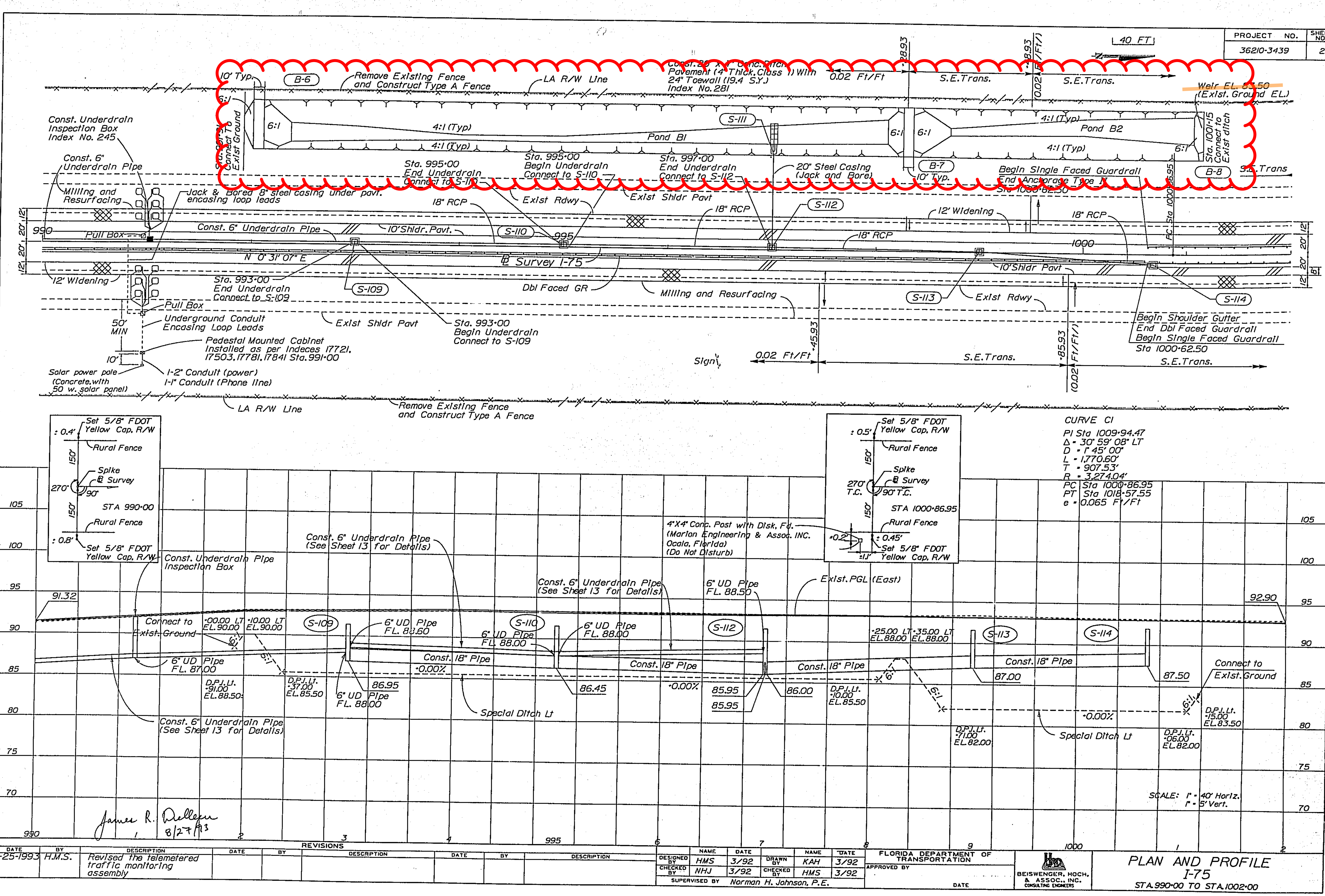


MILLING & RESURFACING DETAIL AT FULL SUPERELEVATION

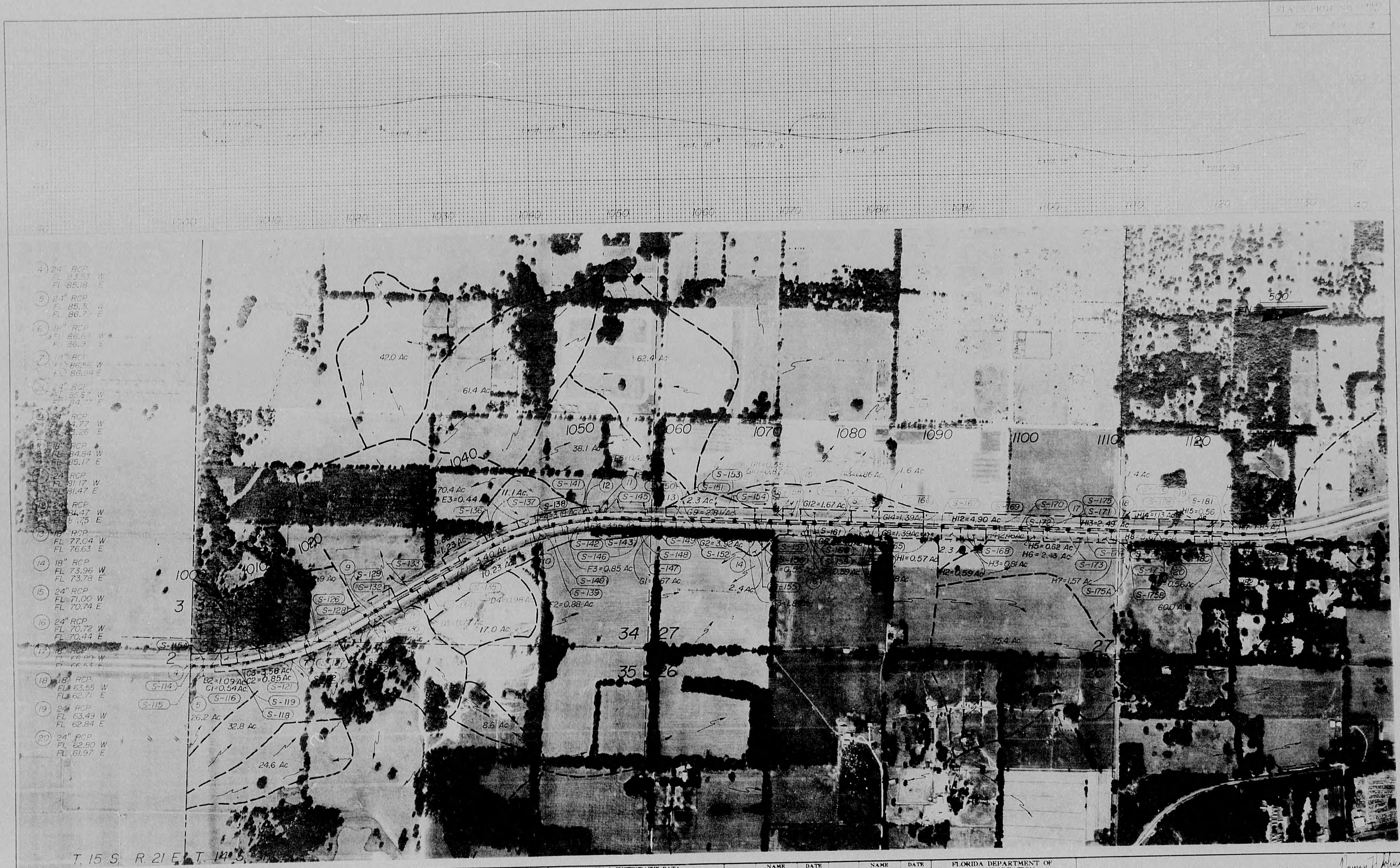
STA. 1002+55.93 TO STA. 1016+88.57 (D=1°45' LT. e=0.065'/' S2=0.065'/' Milling (Low Side = 5.66", High Side = 1.34")
STA. 1037+13.02 TO STA. 1052+25.57 (D=1°45' LT. e=0.065'/' S2=0.065'/' Milling (Low Side = 5.66", High Side = 1.34")
STA. 1125+34.99 TO STA. 1135+18.95 (D=1°30' LT. e=0.055'/' S2=0.060'/') Milling (Low Side = 5.37", High Side = 1.63")

08/26/93

03.PRF



PROJECT NO. 36210-3439
SHEET NO. 25
40 FT
Remove Existing Fence and Construct Type A Fence
LA R/W Line
Const. 8" x 4' Conc. Ditch Pavement (4" Thick, Class 1) With 24" Toewall (19.4 S.Y.) Index No. 281
0.02 Ft/Ft
S.E.Trans.
Weir EL. 83.50 (Exist. Ground EL.)
Pond B1
Pond B2
4:1 (Typ)
6:1
10' Typ.
B-6
B-7
B-8
S-111
Sta. 1001+15 Connect to Exist ditch
Const. Underdrain Inspection Box Index No. 245
Const. 6" Underdrain Pipe
Milling and Resurfacing
Jack & Bored 8" steel casing under pavt. encasing loop leads
Sta. 995+00 End Underdrain Connect to S-111
Sta. 995+00 Begin Underdrain Connect to S-110
Sta. 997+00 End Underdrain Connect to S-112
20" Steel Casing (Jack and Bore)
Begin Single Faced Guardrail End Anchorage Type II Sta 1000+82.50
Exist Rdwy
Exist Shldr Pavt
18" RCP
S-112
12' Widening
Pull Box
Const. 6" Underdrain Pipe
10' Shldr. Pavt.
S-110
N 0° 31' 07" E
Survey I-75
1000
10' Shldr Pavt
Sta. 993+00 End Underdrain Connect to S-109
S-109
Dbl Faced GR
Milling and Resurfacing
S-113
Exist Rdwy
S-114
Underground Conduit Encasing Loop Leads
50' MIN
Exist Shldr Pavt
Sta. 993+00 Begin Underdrain Connect to S-109
Begin Shoulder Gutter
End Dbl Faced Guardrail
Begin Single Faced Guardrail
Sta 1000+62.50
Pedestal Mounted Cabinet Installed as per Indeces 17721, 17503, 17781, 17841 Sta. 991+00
Solar power pole (Concrete, with 50 w. solar panel)
1-2" Conduit (power)
1-1" Conduit (Phone line)
Sign
0.02 Ft/Ft
S.E.Trans.
LA R/W Line
Remove Existing Fence and Construct Type A Fence
Set 5/8" FDOT Yellow Cap, R/W
Rural Fence
Spike
Survey
STA 990+00
STA 1000+86.95
4"X4" Conc. Post with Disk, Fd. (Marion Engineering & Assoc. INC. Ocala, Florida) (Do Not Disturb)
CURVE C1
PI Sta 1009+94.47
Δ = 30° 59' 08" LT
D = 1° 45' 00"
L = 1,770.60'
T = 907.53'
R = 3,274.04'
PC Sta 1000+86.95
PT Sta 1018+57.55
e = 0.065 Ft/Ft
Const. 6" Underdrain Pipe (See Sheet 13 for Details)
Const. Underdrain Pipe Inspection Box
Connect to Exist. Ground
Exist. PGL (East)
6" UD Pipe FL. 88.50
6" UD Pipe FL. 88.60
6" UD Pipe FL. 88.00
6" UD Pipe FL. 87.00
Const. 18" Pipe
-0.00%
Special Ditch Lt
Connect to Exist. Ground
SCALE: 1" = 40' Horiz. 1" = 5' Vert.
91.32
92.90
86.95
86.45
85.95
86.00
87.00
87.50
8-25-1993 H.M.S. Revised the telemetered traffic monitoring assembly
REVISIONS
DESIGNED BY HMS 3/92
DRAWN BY KAH 3/92
CHECKED BY NHJ 3/92
CHECKED BY HMS 3/92
SUPERVISED BY Norman H. Johnson, P.E.
FLORIDA DEPARTMENT OF TRANSPORTATION
BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS
PLAN AND PROFILE
I-75
STA 990+00 TO STA 1002+00
h:\75n\sht13.dgn
H:\SCR\75NPLN03.PRF
08/26/93



REVISIONS						AERIAL PHOTOGRAPHY DATA		NAME	DATE		NAME	DATE	FLORIDA DEPARTMENT OF TRANSPORTATION
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	FLOWN BY	DESIGNED BY			DRAWN BY			APPROVED BY
						PHOTO DATE	CHECKED BY			CHECKED BY			
						PHOTO ID. NO.	SUPERVISED BY						DATE

DRAINAGE MAP

7/16/93

STATE PROJ. NO. | SHEET NO. 4

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

AERIAL PHOTOGRAPHY DATA
FLOWN BY F.D.O.T.
PHOTO DATE 4-25-89
PHOTO ID. NO. P.D. - 3810-11-19

	NAME	DATE		NAME	DATE
DESIGNED BY	M.M.K.	11-92	DRAWN BY	L.A.F.	11-92
CHECKED BY	K.J.L.	11-92	CHECKED BY	M.M.K.	11-92

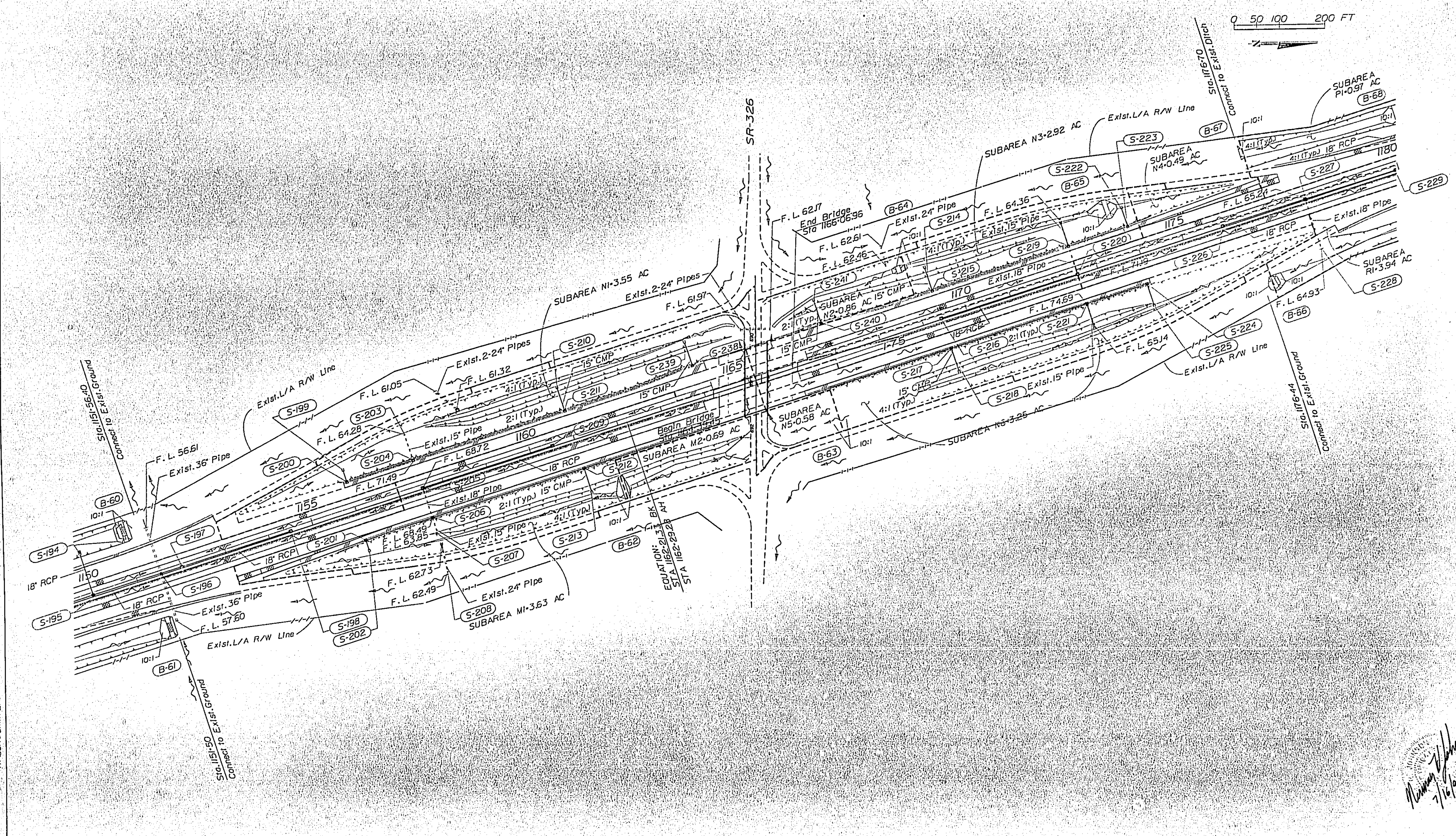
SUPERVISED BY Norman H. Johnson, P.E.

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

DRAINAGE MAP

Norman H. Johnson
2/16/93

STATE PROJ. NO.	SHEET NO.
36210-3439	5



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7/16/93

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY	M. M. K.	10/92	DRAWN BY	J. A. C.	10/92
CHECKED BY	K. J. L.	10/92	CHECKED BY	M. M. K.	10/92
SUPERVISED BY					

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY

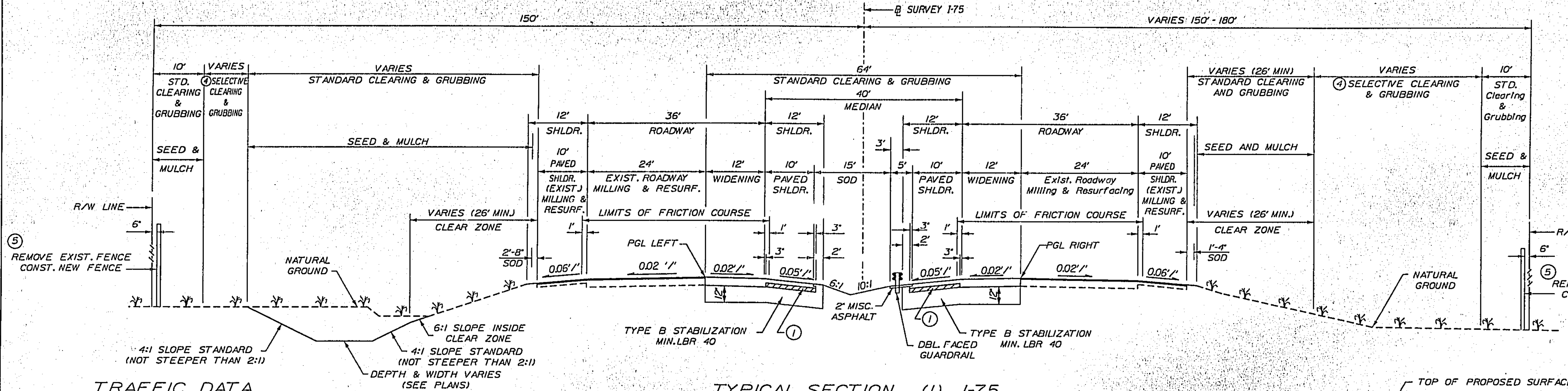
DATE

BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS

DRAINAGE MAP INTERCHANGE SR-326

H:\I75N\inter.dgn

PROJECT NO.	SHEET NO.
36210-3439	6



TYPICAL SECTION (1) I-75

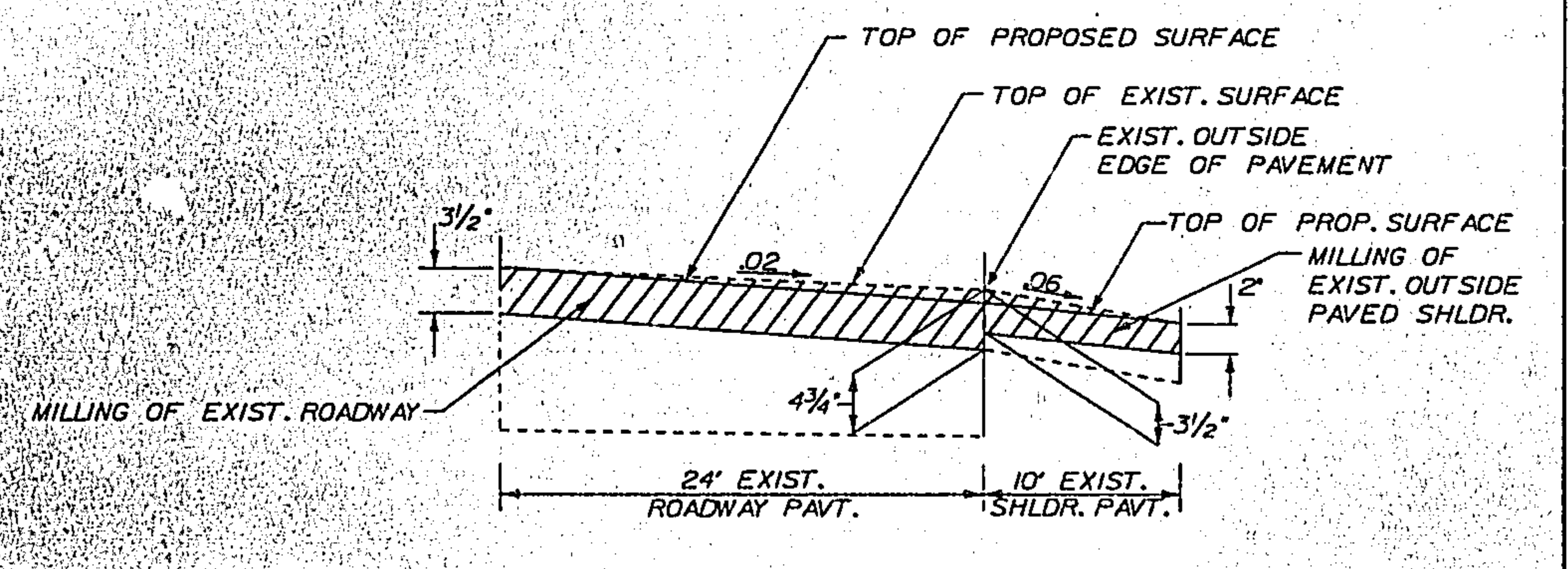
STA 972+77.37 TO STA 1000+62.50
STA 1020+50 TO STA 1035+50
STA 1054+00 TO STA 1123+87.50
STA 1138+37.50 TO STA 1200+00.00

TRAFFIC DATA

1991 ADT = 39,000
1996 ADT = 48,500 EST.
2016 ADT = 78,500 EST.
DESIGN SPEED = 70 M.P.H.
K = 9.5% D = 58.0% T= 24.3%

TYPICAL SECTION NOTES

1. AT THE CONTRACTOR'S OPTION, THIS AREA MAY BE CONSTRUCTED OF BASE MATERIAL AT NO ADDITIONAL COMPENSATION.
2. ACTUAL WIDTH OF BASE WIDENING MAY VARY DUE TO ACTUAL EXISTING PAVEMENT WIDTH. CONTRACTOR MAY ELECT TO PLACE UNIFORM WIDTH BASE WIDENING STRIP AT NO ADDITIONAL COMPENSATION.
3. NONE OF THE EXISTING LIMEROCK BASE THAT IS REMOVED IS TO BE USED IN THE CONSTRUCTION OF THE NEW LIMEROCK BASE.
4. AS DIRECTED BY THE ENGINEER, TREES WITHIN THE CLEARING AND GRUBBING AREA OUTSIDE THE CLEAR ZONE MAY REMAIN.
5. FOR LOCATION OF TYPE "A" OR TYPE "B" FENCE SEE PLANS.
6. ALL AREAS WITHIN THE R/W DISTURBED BY THE CONTRACTORS OPERATIONS SHALL BE SEEDED AND MULCHED AS DIRECTED BY THE ENGINEER. THE COST FOR THIS OPERATION IS TO BE INCLUDED UNDER THE COST FOR OTHER ITEMS.



MILLING & RESURFACING DETAIL

(NOT TO SCALE)

MILLING AND RESURFACING

MILL EXISTING ASPHALTIC CONCRETE PAVEMENT
SEE MILLING & RESURFACING DETAIL

CRACK RELIEF LAYER (50 LBS/SY), TYPE S-II STRUCTURAL COURSE (200 LBS/SY), TYPE S-III STRUCTURAL COURSE (100 LBS/SY) AND FRICTION COURSE FC-2 (5/8") LATEX FOR ADDITIONAL DETAILS SEE INDEX Nos. 104, 105, 280, 281, 400, 450, 451, 500, 505, 510, 513 514, 517 & 525.

WIDENING

OPTIONAL BASE GROUP 12
TYPE S STRUCTURAL COURSE (6" THICK) AND WITH FRICTION COURSE FC-2 (5/8") LATEX FOR ADDITIONAL DETAILS SEE INDEX Nos. 513, 514

SHOULDER PAVEMENT

MILLING AND RESURFACING

MILL EXISTING OUTSIDE PAVED SHLDR (2¾" AVG DEPTH) AND RESURFACE WITH TYPE S-I STRUCTURAL COURSE (125 LBS/SY), TYPE S-III STRUCTURAL COURSE (100 LBS/SY), AND INVERTED RUMBLE STRIPS

NEW CONSTRUCTION

OPTIONAL BASE GROUP 3 WITH TYPE S STRUCTURAL COURSE (1 1/2 ") AND INVERTED RUMBLE STRIPS

h:\75\typsect.dgn
H:\SCRY5NTYP02.PRF 07/15/93

	NAME	DATE		NAME	DATE
DESIGNED BY	H.M.S.	1-92	DRAWN BY	T.A.H.	1-92
CHECKED BY	N.H.J.	11-92	CHECKED BY	H.M.S.	11-92
SUPERVISED BY	Norman H. Johnson, P.E.				

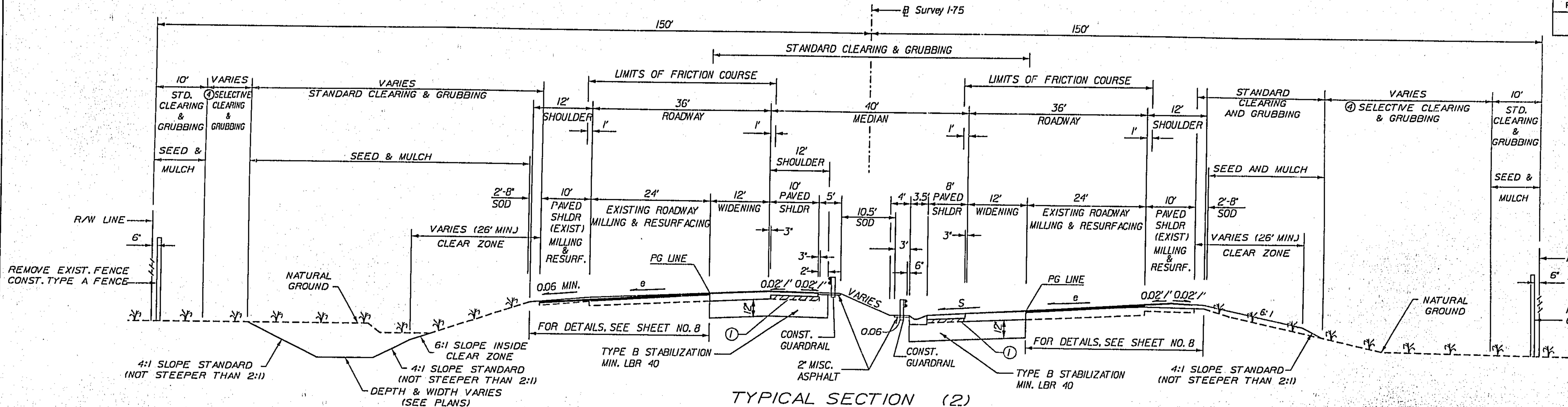
REVISIONS: DATE | BY | DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY — DATE

BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS

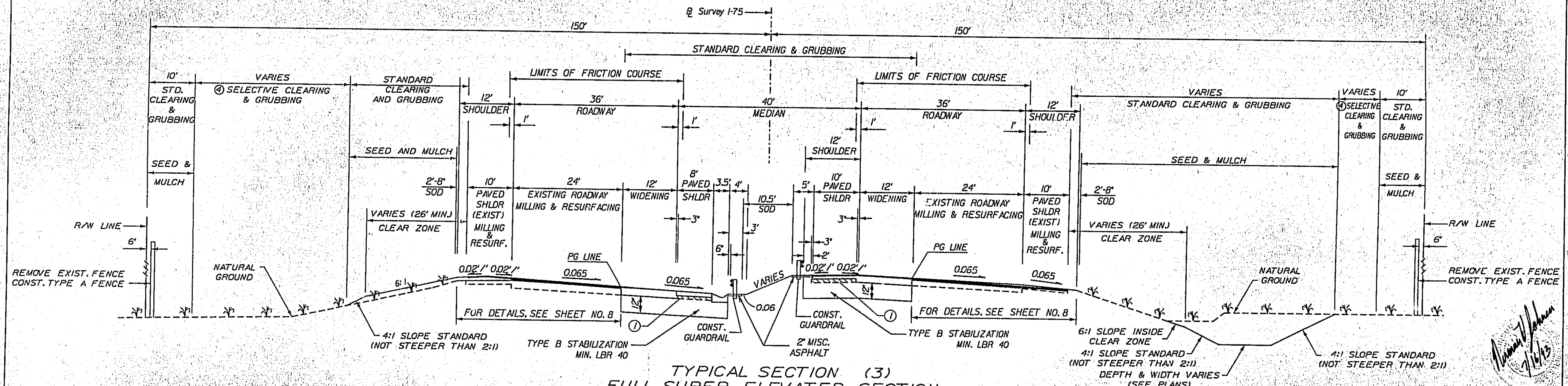
TYPICAL SECTIONS

PROJECT NO.	SHEET NO.
36210-3439	7



TYPICAL SECTION (2)
FULL SUPER ELEVATED SECTION

I-75
STA 1000+62.50 TO STA 1020+50 (S=.065)
STA 1123+87.50 TO STA 1138+37.50 (S=.055)
FOR PAVEMENT DESIGN SEE TYPICAL SECTION NO. 1



TYPICAL SECTION (3)
FULL SUPER ELEVATED SECTION

I-75
STA 1035+50 TO STA 1054+00
FOR PAVEMENT DESIGN SEE TYPICAL SECTION No. 1

NOT TO SCALE

h:\l75\ntypsect.dgn
H:\SCR\75NTYPOLPRF 07/15/93

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY	N. H. J.	01-93	DRAWN BY	J. A. C.	01-93
CHECKED BY	H. M. S.	01-93	CHECKED BY	N. H. J.	01-93
SUPERVISED BY	Norman H. Johnson, P.E.				

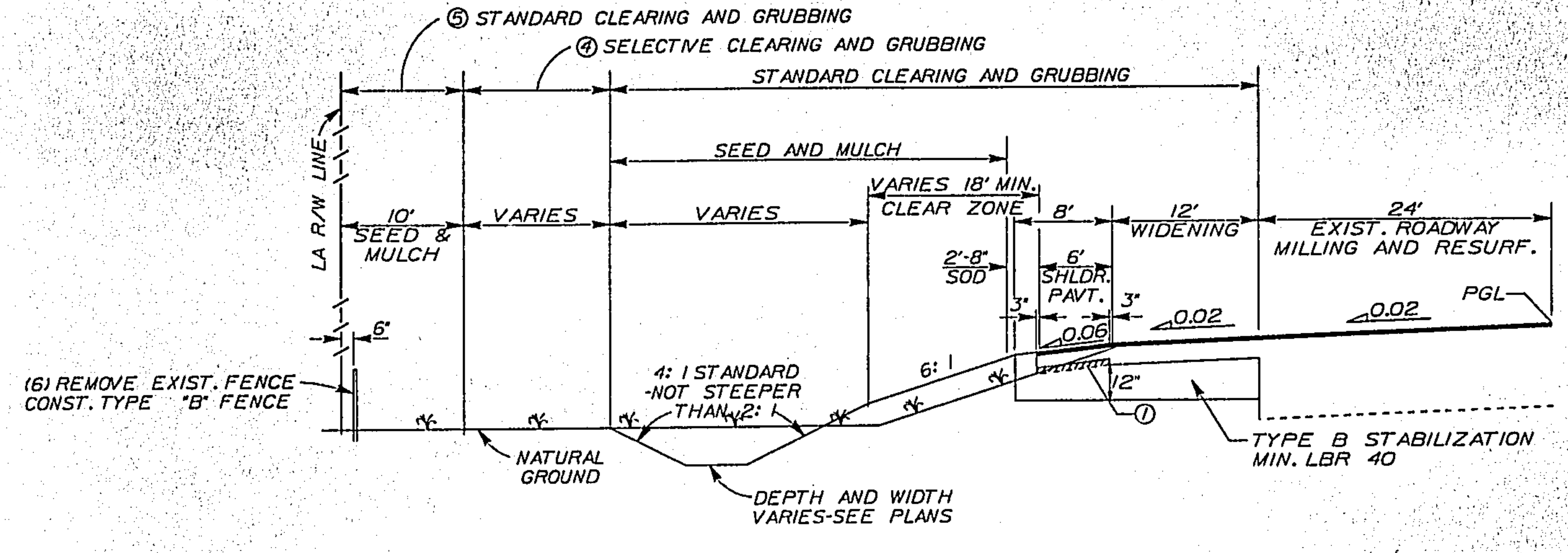
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS

TYPICAL SECTIONS

Norman H. Johnson 7/16/93

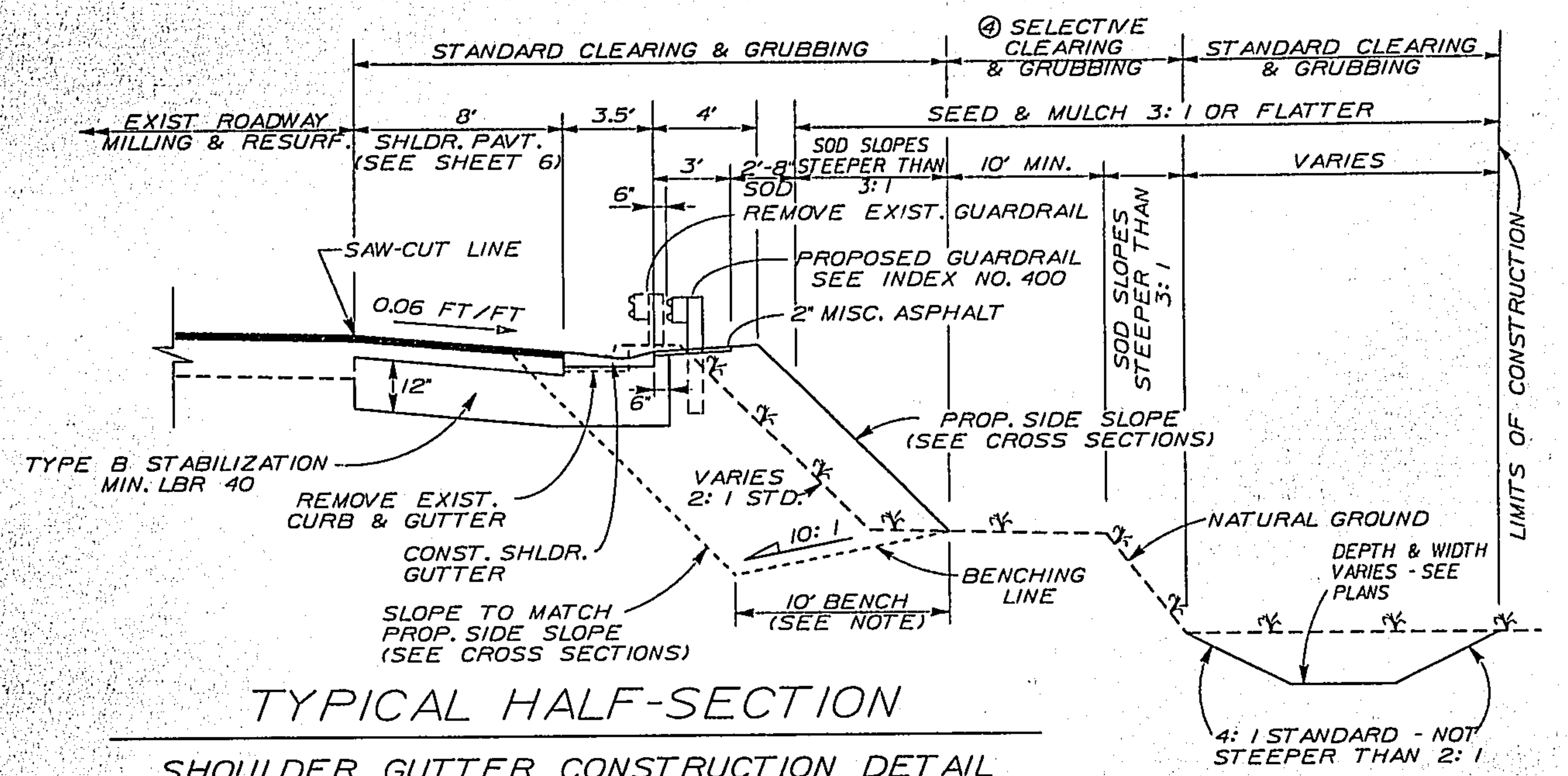
PROJECT NO.	SHEET NO.
75200-3419	8



TYPICAL HALF-SECTION

AUXILIARY LANE WIDENING AND POND DETAIL

FOR PAVT DESIGN SEE TYPICAL SECTION NO. 1

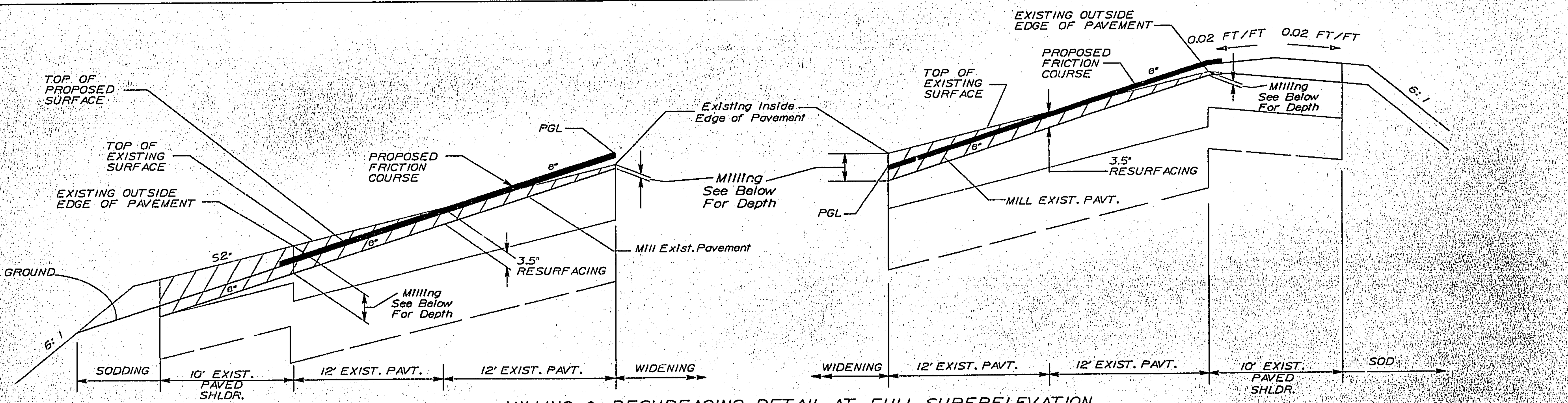


TYPICAL HALF-SECTION

SHOULDER GUTTER CONSTRUCTION DETAIL AND POND & SLOPE TREATMENT IN HIGH FILLS

Sta. 1155+92.35 - 1164+29.09
Sta. 1166+45.59 - 1174+07.67

NOTE: WHEN NEW EMBANKMENT IS TO BE PLACED AND COMPACTED ON EXISTING EMBANKMENT, THE EXISTING SLOPES THAT ARE STEEPER THAN 3: 1, WHEN MEASURED AT RIGHT ANGLES TO THE ROADWAY, SHALL BE CONTINUOUSLY BENCHED OVER THOSE AREAS AND THE PROPOSED EMBANKMENT CONSTRUCTED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. BENCHING (10' PROPOSED WIDTH) SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL AND SHALL BE OF SUFFICIENT WIDTH TO PERMIT OPERATION OF PLACEMENT AND COMPACTION EQUIPMENT.



MILLING & RESURFACING DETAIL AT FULL SUPERELEVATION

STA. 1002+55.93 TO STA. 1016+88.57 (D=1°45' LT. e=0.065'/' S2=0.065'/') Milling (Low Side = 5.66", High Side = 1.34")
STA. 1037+13.02 TO STA. 1052+25.57 (D=1°45' LT. e=0.065'/' S2=0.065'/') Milling (Low Side = 5.66", High Side = 1.34")
STA. 1125+34.99 TO STA. 1135+18.95 (D=1°30' LT. e=0.055'/' S2=0.060'/') Milling (Low Side = 5.37", High Side = 1.63")

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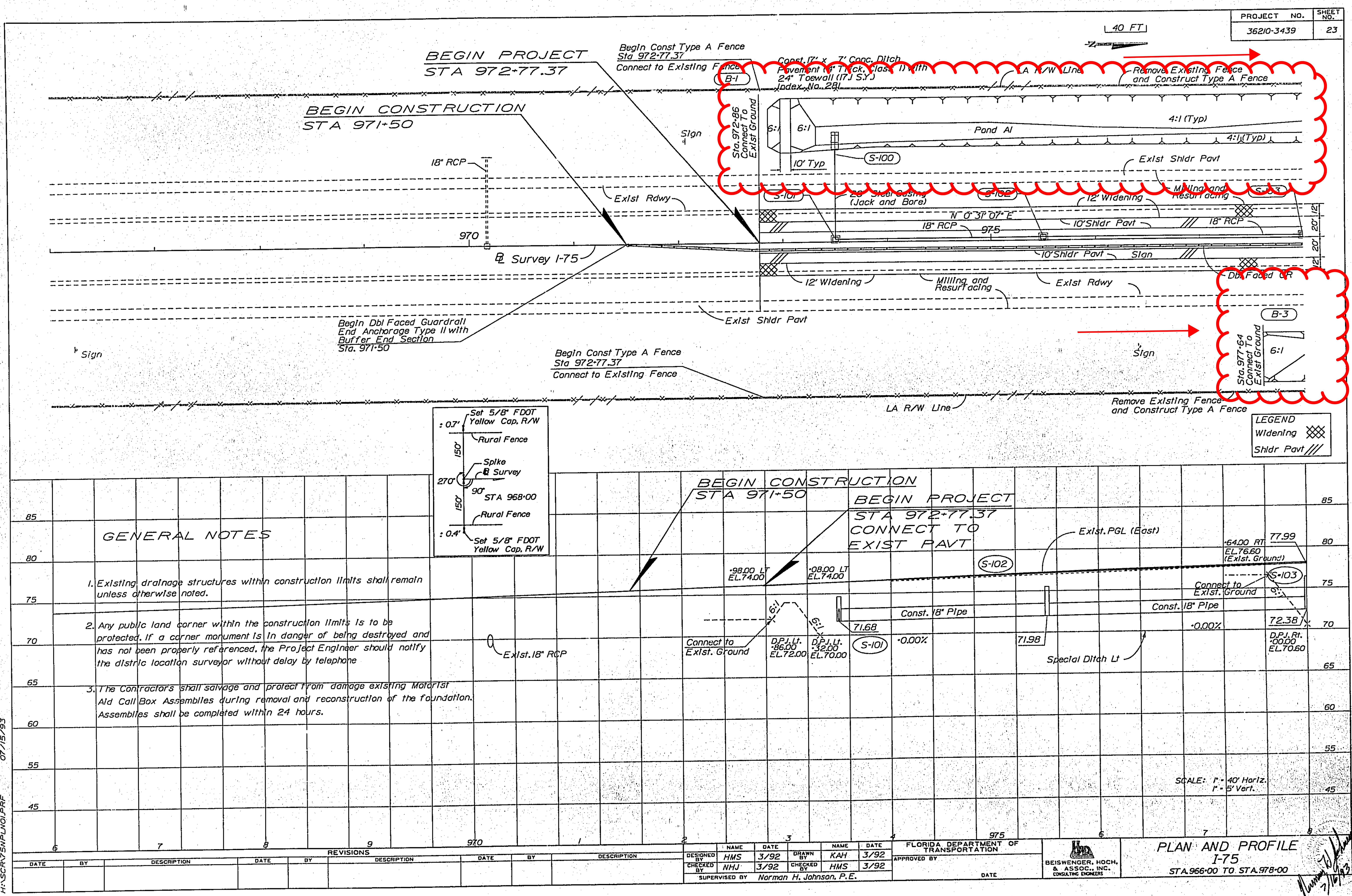
REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY	HMS	1/93	DRAWN BY	ALW	1/93
CHECKED BY	NHJ	1/93	CHECKED BY	HMS	1/93
SUPERVISED BY	Norman H. Johnson, P.E.				

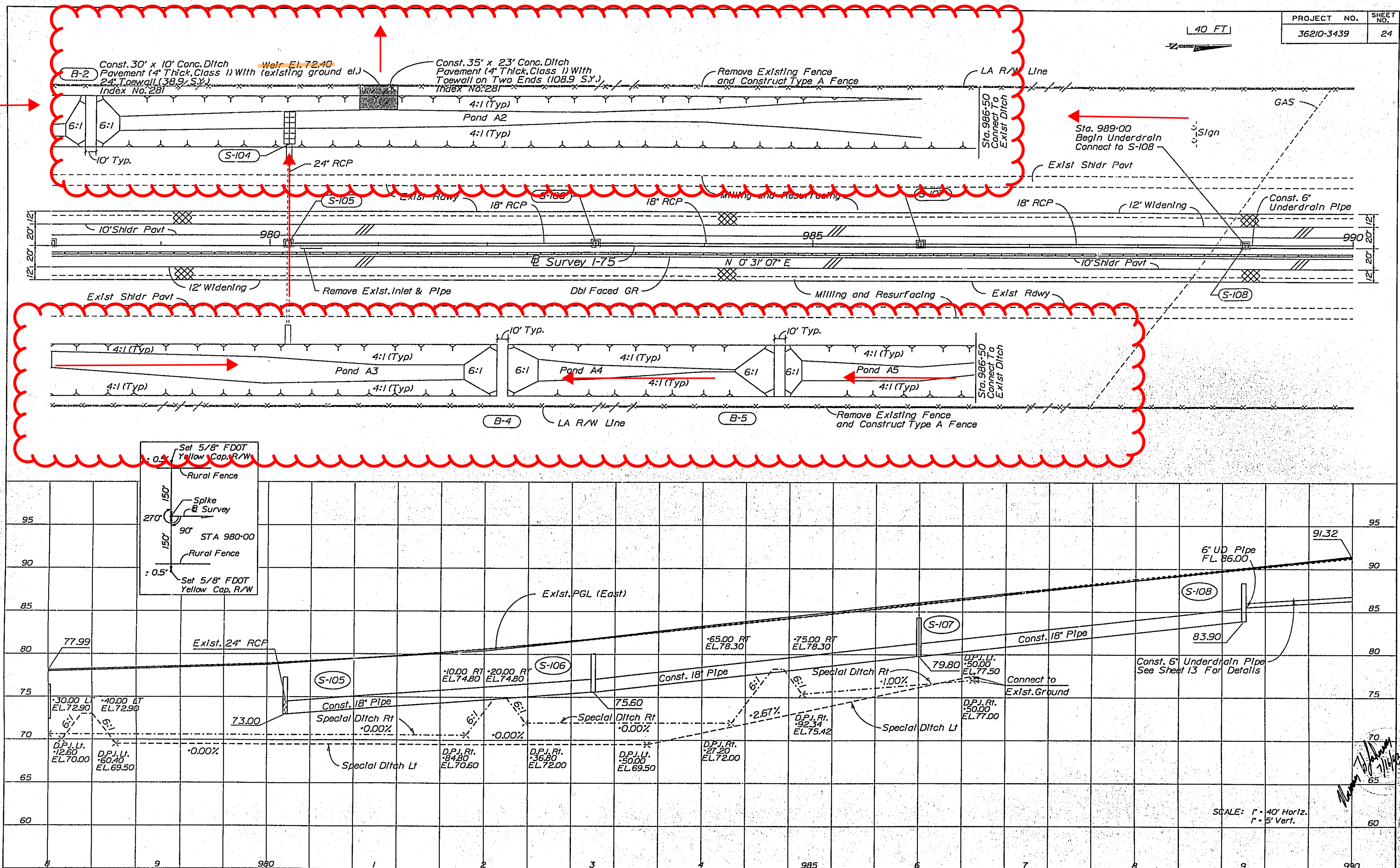
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS

TYPICAL SECTION AND MILLING DETAIL AT CURVES



PROJECT NO. 36210-3439
SHEET NO. 23
40 FT
BEGIN PROJECT
STA 972+77.37
BEGIN CONSTRUCTION
STA 971+50
Begin Const Type A Fence
Sta 972+77.37
Connect to Existing Fence
B-1
Const. 17' x 7' Conc. Ditch Pavement (4" Thick, Class I) with 24" Toewall (17 S.Y.)
Index No. 281
LA R/W Line
Remove Existing Fence and Construct Type A Fence
Sta. 972+86 Connect To Exist Ground
6:1
Pond A1
4:1 (Typ)
S-100
10' Typ
Exist Shldr Pavt
S-101
24" Steel Casing (Jack and Bore)
S-102
12' Widening
Milling and Resurfacing
S-103
N 0°31'07" E
18" RCP
975
10' Shldr Pavt
Sign
Exist Rdwy
970
℄ Survey I-75
12' Widening
Dbl Faced GR
B-3
Begin Dbl Faced Guardrail End Anchorage Type II with Buffer End Section
Sta. 971+50
Sta. 977+64 Connect To Exist Ground
Begin Const Type A Fence
Sta 972+77.37
Connect to Existing Fence
LA R/W Line
Remove Existing Fence and Construct Type A Fence
LEGEND
Widening
Shldr Pavt
Set 5/8" FDOT Yellow Cap, R/W
Rural Fence
Spike
℄ Survey
STA 968+00
Rural Fence
Set 5/8" FDOT Yellow Cap, R/W
GENERAL NOTES
1. Existing drainage structures within construction limits shall remain unless otherwise noted.
2. Any public land corner within the construction limits is to be protected. If a corner monument is in danger of being destroyed and has not been properly referenced, the Project Engineer should notify the district location surveyor without delay by telephone.
3. The Contractors shall salvage and protect from damage existing Motorist Aid Call Box Assemblies during removal and reconstruction of the foundation. Assemblies shall be completed within 24 hours.
BEGIN CONSTRUCTION
STA 971+50
BEGIN PROJECT
STA 972+77.37
CONNECT TO EXIST PAVT
+98.00 LT EL.74.00
+08.00 LT EL.74.00
Exist. PGL (East)
+64.00 RT EL.76.60 (Exist. Ground)
77.99
S-102
S-103
Connect to Exist. Ground
Const. 18" Pipe
71.68
71.98
72.38
-0.00%
D.P.I.Lt. +86.00 EL.72.00
D.P.I.Lt. +32.00 EL.70.00
D.P.I.Rt. +00.00 EL.70.60
S-101
Exist. 18" RCP
Special Ditch Lt
SCALE: 1" = 40' Horiz. 1" = 5' Vert.
REVISIONS
DATE BY DESCRIPTION
DESIGNED BY HMS 3/92
CHECKED BY NHJ 3/92
DRAWN BY KAH 3/92
CHECKED BY HMS 3/92
SUPERVISED BY Norman H. Johnson, P.E.
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE
BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS
PLAN AND PROFILE
I-75
STA 966+00 TO STA 978+00
07/15/93
h:\75n\smtt3.dgn
H:\SCRV\SNPLN01.PRF



REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY	HMS	3/92	DRAWN BY	KAH	3/92
CHECKED BY	NHJ	3/92	CHECKED BY	HMS	3/92
SUPERVISED BY	Norman H. Johnson, P.E.				

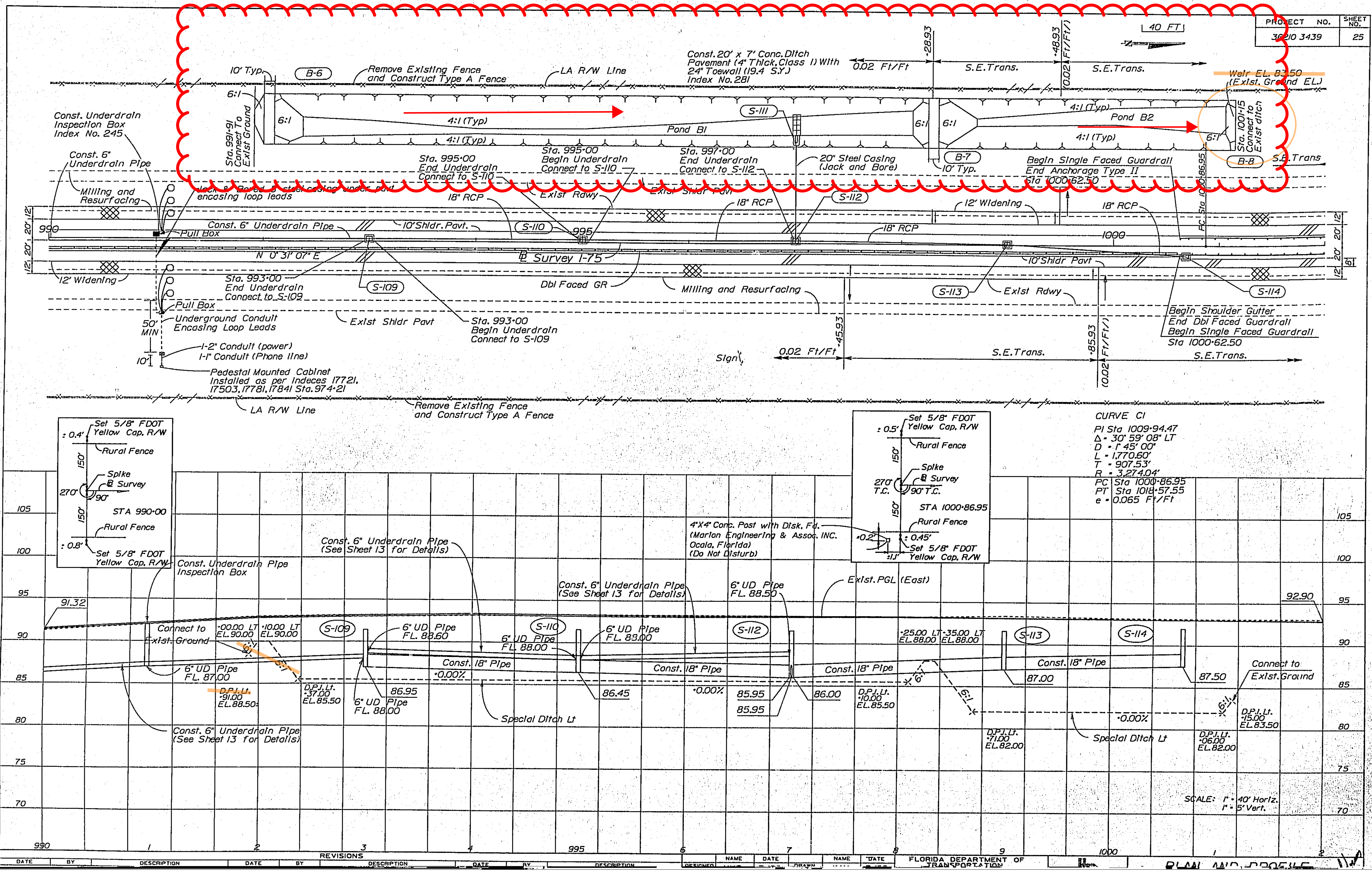
FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY

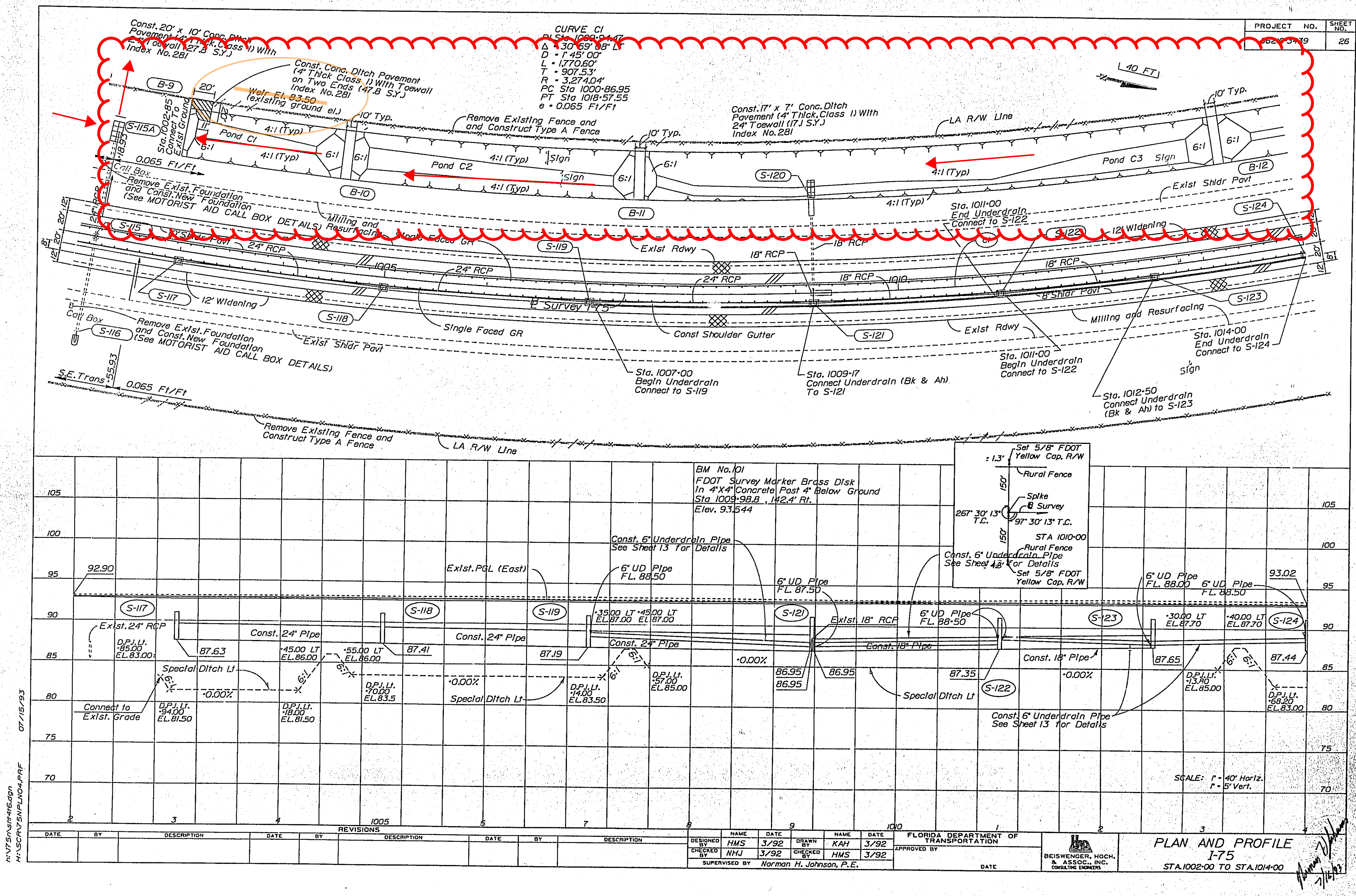
DATE

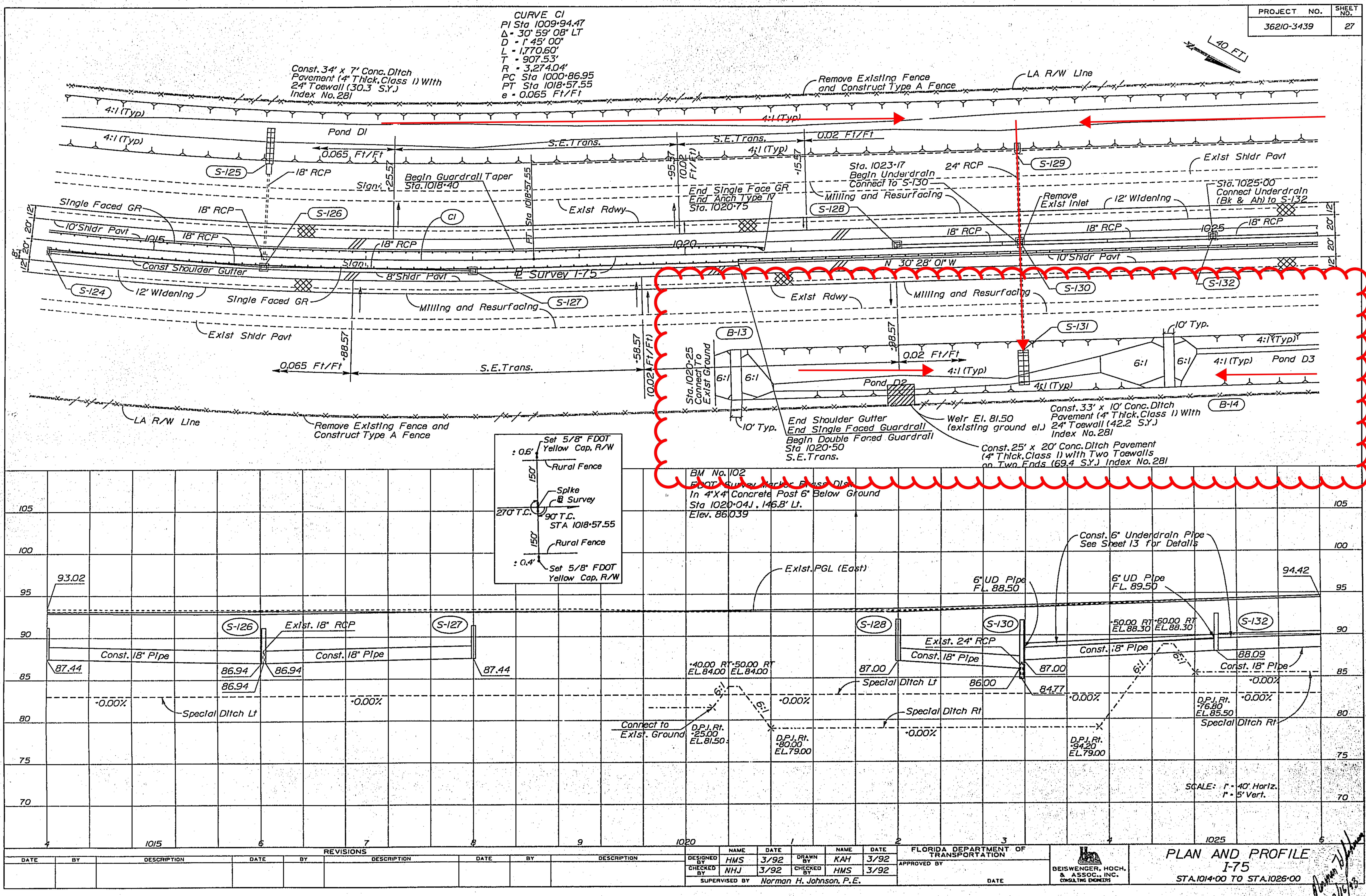
BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS

PLAN AND PROFILE
I-75
STA. 978+00 TO STA. 990+00



PROJECT NO. 36210 3439
SHEET NO. 25
40 FT
10' Typ.
B-6
Remove Existing Fence and Construct Type A Fence
LA R/W Line
Const. 20' x 7' Conc. Ditch Pavement (4" Thick, Class I) With 24" Toewall (19.4 S.Y.) Index No. 281
0.02 Ft/Ft
S.E.Trans.
Weir EL. 83.50 (Exist. Ground EL.)
6:1
4:1 (Typ)
Pond B1
Pond B2
S-111
Sta. 991+91 Connect To Exist Ground
Sta. 1001+15 Connect to Exist ditch
Const. Underdrain Inspection Box Index No. 245
Const. 6" Underdrain Pipe
Milling and Resurfacing
Sta. 995+00 End Underdrain Connect to S-110
Sta. 995+00 Begin Underdrain Connect to S-110
Sta. 997+00 End Underdrain Connect to S-112
20" Steel Casing (Jack and Bore)
B-7
10' Typ.
Begin Single Faced Guardrail End Anchorage Type II Sta 1000+62.50
B-8
S.E.Trans
Jack & Bored 2" steel casing under pavt encasing loop leads
18" RCP
Exist Rdwy
Exist Shldr Pavt
S-112
12' Widening
Const. 6" Underdrain Pipe
10' Shldr. Pavt.
S-110
995
Pull Box
990
N 0° 31' 07" E
Survey I-75
1000
10' Shldr Pavt
12' Widening
Sta. 993+00 End Underdrain Connect to S-109
S-109
Dbl Faced GR
Milling and Resurfacing
S-113
Exist Rdwy
S-114
Pull Box
Underground Conduit Encasing Loop Leads
50' MIN
10'
1-2" Conduit (power)
1-1" Conduit (Phone line)
Pedestal Mounted Cabinet Installed as per Indeces 17721, 17503, 17781, 17841 Sta. 974+21
Exist Shldr Pavt
Sta. 993+00 Begin Underdrain Connect to S-109
Sign
0.02 Ft/Ft
S.E.Trans.
Begin Shoulder Gutter
End Dbl Faced Guardrail
Begin Single Faced Guardrail
Sta 1000+62.50
Remove Existing Fence and Construct Type A Fence
LA R/W Line
Set 5/8" FDOT Yellow Cap, R/W
Rural Fence
Spike
Survey
STA 990+00
STA 1000+86.95
T.C.
CURVE C1
PI Sta 1009+94.47
Δ = 30° 59' 08" LT
D = 1° 45' 00"
L = 1,770.60'
T = 907.53'
R = 3,274.04'
PC Sta 1000+86.95
PT Sta 1018+57.55
e = 0.065 Ft/Ft
4"X4" Conc. Post with Disk, Fd. (Marion Engineering & Assoc. INC. Ocala, Florida) (Do Not Disturb)
Const. 6" Underdrain Pipe (See Sheet 13 for Details)
Const. Underdrain Pipe Inspection Box
Exist. PGL (East)
6" UD Pipe FL. 88.50
91.32
92.90
Connect to Exist. Ground
6" UD Pipe FL. 87.00
6" UD Pipe FL. 88.60
6" UD Pipe FL. 88.00
6" UD Pipe FL. 89.00
D.P.I. Lt. +91.00 EL. 88.50
D.P.I. Lt. +37.00 EL. 85.50
D.P.I. Lt. +10.00 EL. 85.50
D.P.I. Lt. +71.00 EL. 82.00
D.P.I. Lt. +06.00 EL. 82.00
D.P.I. Lt. +15.00 EL. 83.50
Const. 18" Pipe
-0.00%
86.95
86.45
85.95
86.00
87.00
87.50
Special Ditch Lt
Const. 6" Underdrain Pipe (See Sheet 13 for Details)
+25.00 LT +35.00 LT EL. 88.00 EL. 88.00
SCALE: 1" = 40' Horiz. 1" = 5' Vert.
105
100
95
90
85
80
75
70
07/15/93
REVISIONS
DATE
BY
DESCRIPTION
DESIGNED
DRAWN
NAME
FLORIDA DEPARTMENT OF TRANSPORTATION
PLAN AND PROFILE


PROJECT NO.
SHEET NO.
26
CURVE C1
Δ = 30° 59' 08" LT
D = 1° 45' 00"
L = 1,770.60'
T = 907.53'
R = 3,274.04'
PC Sta 1000+86.95
PT Sta 1018+57.55
e = 0.065 Ft/Ft
Const. 20' x 10' Conc. Ditch Pavement (4" Thick Class I) With Toewall (27.8 S.Y.) Index No. 281
Const. Conc. Ditch Pavement (4" Thick Class I) With Toewall on Two Ends (47.8 S.Y.) Index No. 281
Weir El. 83.50 (existing ground el.)
Const. 17' x 7' Conc. Ditch Pavement (4" Thick, Class I) With 24" Toewall (17.1 S.Y.) Index No. 281
Remove Existing Fence and Construct Type A Fence
LA R/W Line
Pond C1
Pond C2
Pond C3
4:1 (Typ)
6:1
10' Typ.
Sign
B-9
B-10
B-11
B-12
S-115A
S-115
S-116
S-117
S-118
S-119
S-120
S-121
S-122
S-123
S-124
Sta. 1002+85 Connect To Exist Ground
0.065 Ft/Ft
Call Box
Remove Exist. Foundation and Const. New Foundation (See MOTORIST AID CALL BOX DETAILS)
Milling and Resurfacing
Single Faced GR
Exist Rdwy
Exist Shldr Pavt
8' Shldr Pavt
12' Widening
24" RCP
18" RCP
Survey I-75
Const Shoulder Gutter
Sta. 1007+00 Begin Underdrain Connect to S-119
Sta. 1009+17 Connect Underdrain (Bk & Ah) To S-121
Sta. 1011+00 Begin Underdrain Connect to S-122
Sta. 1011+00 End Underdrain Connect to S-122
Sta. 1012+50 Connect Underdrain (Bk & Ah) to S-123
Sta. 1014+00 End Underdrain Connect to S-124
S.E. Trans. 55.93
40 FT
BM No. 101
FDOT Survey Marker Brass Disk In 4"X4" Concrete Post 4" Below Ground
Sta 1009+98.8, 142.4' Rt.
Elev. 93.544
Set 5/8" FDOT Yellow Cap, R/W
Rural Fence
Spike
Survey
267° 30' 13" T.C.
97° 30' 13" T.C.
STA 1010+00
150'
Const. 6" Underdrain Pipe See Sheet 13 for Details
6" UD Pipe FL. 88.50
6" UD Pipe FL. 87.50
6" UD Pipe FL. 88.50
6" UD Pipe FL. 88.00
6" UD Pipe FL. 88.50
Exist. PGL (East)
Exist. 24" RCP
Exist. 18" RCP
Const. 24" Pipe
Const. 18" Pipe
Special Ditch Lt
Connect to Exist. Grade
D.P.I. Lt. +85.00 EL. 83.00
D.P.I. Lt. +94.00 EL. 81.50
D.P.I. Lt. +18.00 EL. 81.50
D.P.I. Lt. +70.00 EL. 83.5
D.P.I. Lt. +14.00 EL. 83.50
D.P.I. Lt. +57.00 EL. 85.00
D.P.I. Lt. +13.80 EL. 85.00
D.P.I. Lt. +69.20 EL. 83.00
-0.00%
92.90
93.02
87.63
87.41
87.19
86.95
87.35
87.65
87.44
+45.00 LT EL. 86.00
+55.00 LT EL. 86.00
+35.00 LT EL. 87.00
+45.00 LT EL. 87.00
+30.00 LT EL. 87.70
+40.00 LT EL. 87.70
SCALE: 1" = 40' Horiz. 1" = 5' Vert.
1005
1010
REVISIONS
DATE BY DESCRIPTION
DESIGNED BY HMS 3/92
CHECKED BY NHJ 3/92
DRAWN BY KAH 3/92
CHECKED BY HMS 3/92
SUPERVISED BY Norman H. Johnson, P.E.
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS
PLAN AND PROFILE I-75
STA. 1002+00 TO STA. 1014+00
07/15/93



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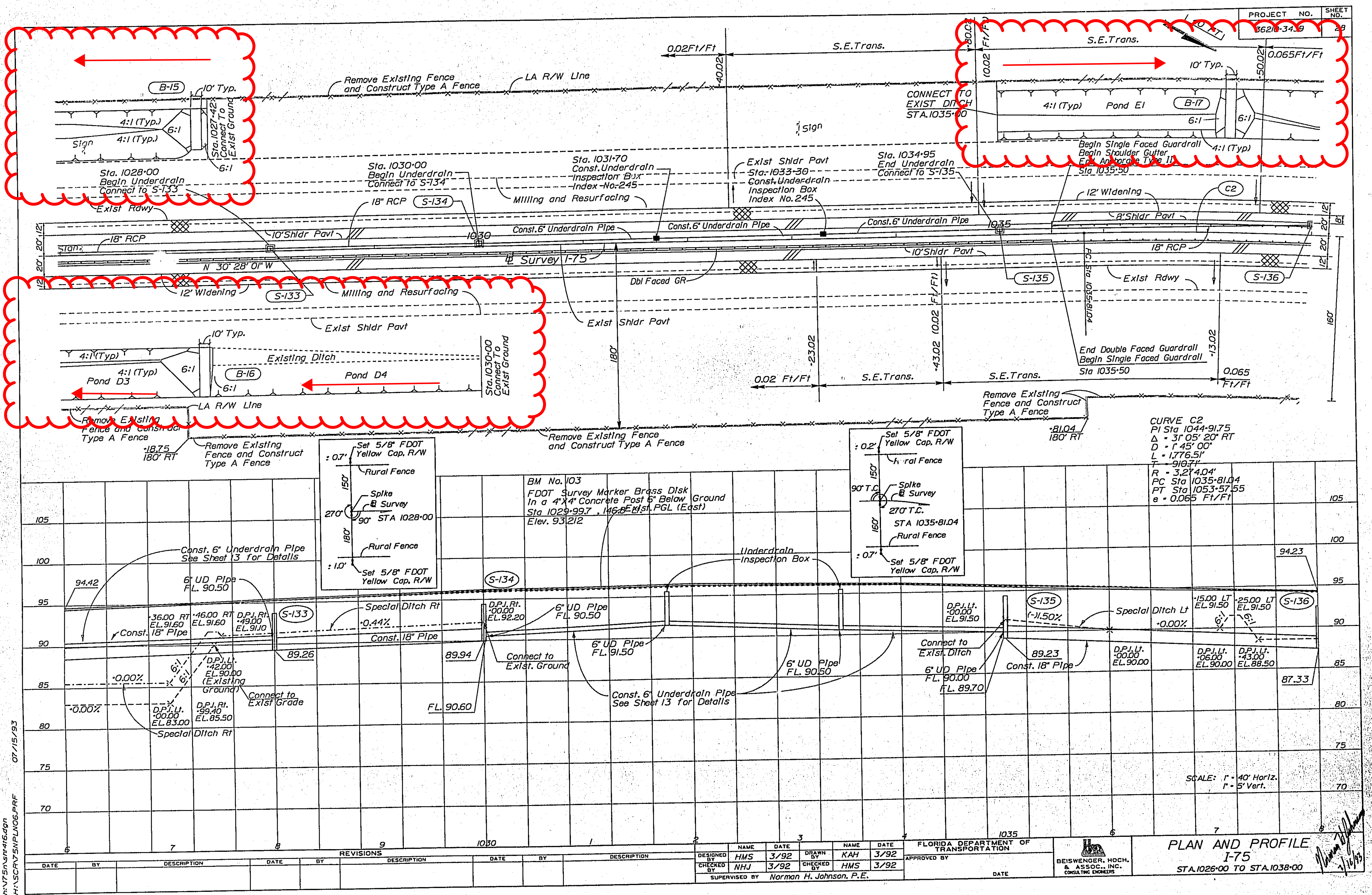
07/15/93


PROJECT NO.
SHEET NO.
S.E.Trans.
0.02Ft/Ft
0.065Ft/Ft
10' Typ.
Remove Existing Fence and Construct Type A Fence
LA R/W Line
CONNECT TO EXIST DITCH STA.1035+00
Sign
B-15
B-16
B-17
4:1 (Typ.)
6:1
Sta. 1027+42 Connect To Exist Ground
Sta. 1028+00 Begin Underdrain Connect to S-133
Sta. 1030+00 Begin Underdrain Connect to S-134
Sta. 1031+70 Const. Underdrain Inspection Box Index No. 245
Exist Shldr Pavt
Sta. 1033+30 Const. Underdrain Inspection Box Index No. 245
Sta. 1034+95 End Underdrain Connect to S-135
Begin Single Faced Guardrail
Begin Shoulder Gutter
End Anchorage Type II
Sta 1035+50
Pond E1
Pond D3
Pond D4
Exist Rdwy
18" RCP
10' Shldr Pavt
Const. 6" Underdrain Pipe
Survey I-75
N 30° 28' 01" W
12' Widening
8' Shldr Pavt
Milling and Resurfacing
Dbl Faced GR
Existing Ditch
Sta. 1030+00 Connect To Exist Ground
End Double Faced Guardrail
Begin Single Faced Guardrail
Sta 1035+50
S-133
S-134
S-135
S-136
C2
160'
180'
18.75 180' RT
81.04 180' RT
Set 5/8" FDOT Yellow Cap, R/W
Rural Fence
Spike Survey
STA 1028+00
STA 1035+81.04
BM No. 103
FDOT Survey Marker Brass Disk In a 4"X4" Concrete Post 6" Below Ground
Sta 1029+99.7, 146.6' Lt Exist. PGL (East)
Elev. 93.212
CURVE C2
PI Sta 1044+91.75
Δ = 31° 05' 20" RT
D = 1° 45' 00"
L = 1,776.51'
T = 910.71'
R = 3,274.04'
PC Sta 1035+81.04
PT Sta 1053+57.55
e = 0.065 Ft/Ft
Const. 6" Underdrain Pipe See Sheet 13 for Details
6" UD Pipe FL. 90.50
Special Ditch Rt
Special Ditch Lt
Underdrain Inspection Box
Connect to Exist. Ground
Connect to Exist. Ditch
Connect to Exist Grade
Const. 18" Pipe
-0.44%
-0.00%
(-)1.50%
94.42
94.23
89.26
89.94
89.23
87.33
FL. 90.60
FL. 89.70
SCALE: 1" = 40' Horiz. 1" = 5' Vert.
REVISIONS
DATE BY DESCRIPTION
DESIGNED BY HMS 3/92
CHECKED BY NHJ 3/92
DRAWN BY KAH 3/92
CHECKED BY HMS 3/92
SUPERVISED BY Norman H. Johnson, P.E.
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE
BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS
PLAN AND PROFILE
I-75
STA.1026+00 TO STA.1038+00
07/15/93
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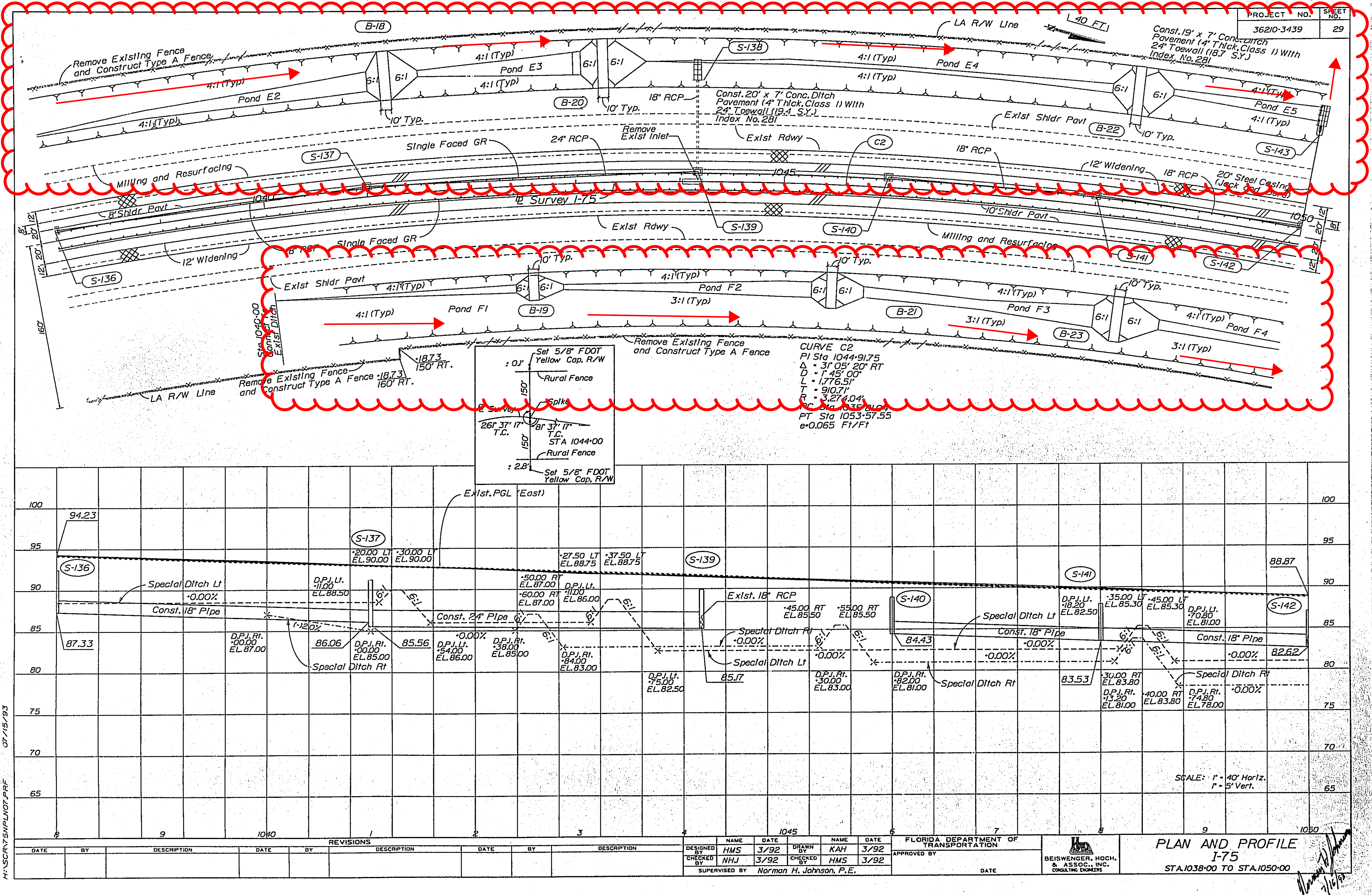
PROJECT NO. 36210-3439
SHEET NO. 29
Remove Existing Fence and Construct Type A Fence
Pond E2
Pond E3
Pond E4
Pond E5
4:1 (Typ)
6:1
10' Typ.
18" RCP
24" RCP
Const. 20' x 7' Conc. Ditch Pavement (4" Thick, Class I) With 24" Toewall (19.4 S.Y.) Index No. 281
Const. 19' x 7' Conc. Ditch Pavement (4" Thick, Class I) With 24" Toewall (18.7 S.Y.) Index No. 281
LA R/W Line
40 FT
Remove Exist Inlet
Exist Rdwy
Exist Shldr Pavt
Single Faced GR
Milling and Resurfacing
12' Widening
20" Steel Casing (Jack and Bore)
8' Shldr Pavt
10' Shldr Pavt
Survey I-75
Pond F1
Pond F2
Pond F3
Pond F4
3:1 (Typ)
Remove Existing Fence and Construct Type A Fence
Sta 1040+00 Const. Ditch Exist Ditch
18.73 150' RT.
18.73 160' RT.
Set 5/8" FDOT Yellow Cap, R/W
Rural Fence
Spike
261° 37' 17" T.C.
81° 37' 17" T.C.
STA 1044+00
CURVE C2
PI Sta 1044+91.75
Δ = 31° 05' 20" RT
D = 1° 45' 00"
L = 1,776.51'
T = 910.71'
R = 3,274.04'
PT Sta 1053+57.55
e=0.065 F1/F1
Exist. PGL (East)
Special Ditch Lt
Special Ditch Rt
Const. 18" Pipe
Const. 24" Pipe
Exist. 18" RCP
SCALE: 1" = 40' Horiz. 1" = 5' Vert.
REVISIONS
DATE BY DESCRIPTION
DESIGNED BY HMS 3/92
CHECKED BY NHJ 3/92
DRAWN BY KAH 3/92
CHECKED BY HMS 3/92
SUPERVISED BY Norman H. Johnson, P.E.
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS
PLAN AND PROFILE
I-75
STA. 1038+00 TO STA. 1050+00
07/15/93
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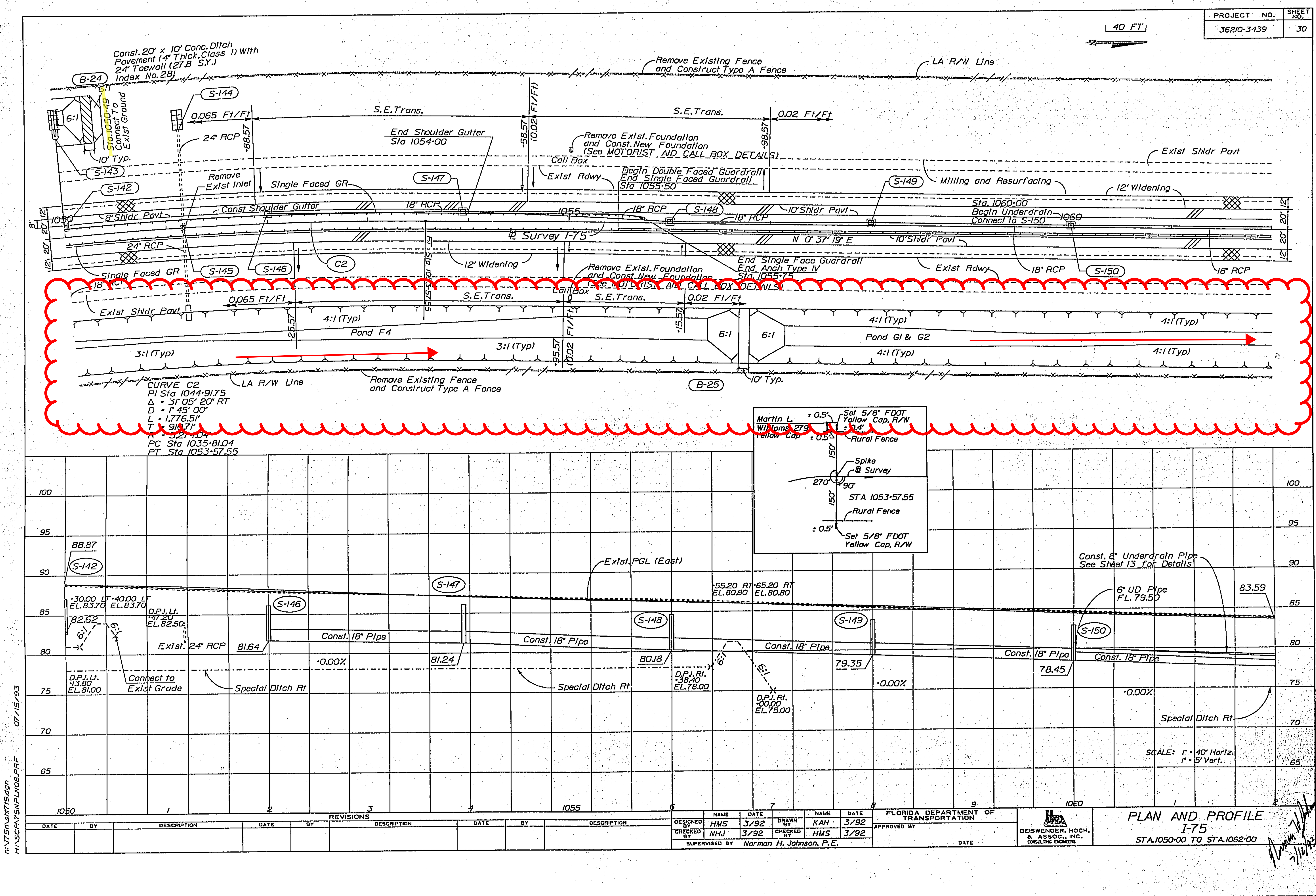

PROJECT NO. 36210-3439
SHEET NO. 30
40 FT
Const. 20' x 10' Conc. Ditch Pavement (4" Thick, Class I) With 24" Toewall (27.8 S.Y.) Index No. 281
B-24
Sta. 1050+49 Connect To Exist Ground
6:1
10' Typ.
S-144
S-143
S-142
0.065 Ft/Ft
24" RCP
S.E.Trans.
End Shoulder Gutter Sta 1054+00
Remove Existing Fence and Construct Type A Fence
LA R/W Line
0.02 Ft/Ft
Remove Exist. Foundation and Const. New Foundation (See MOTORIST AID CALL BOX DETAILS)
Call Box
Exist Rdwy
Exist Shldr Pavt
Begin Double Faced Guardrail End Single Faced Guardrail Sta 1055+50
Remove Exist Inlet
Single Faced GR
S-147
S-149
Milling and Resurfacing
12' Widening
Const Shoulder Gutter
18" RCP
S-148
10' Shldr Pavt
Sta. 1060+00 Begin Underdrain Connect to S-150
8' Shldr Pavt
Survey I-75
N 0° 37' 19" E
24" RCP
12' Widening
End Single Face Guardrail End Anch Type IV Sta 1055+75
Exist Rdwy
S-150
Single Faced GR
S-145
S-146
C2
Exist Shldr Pavt
Pond F4
4:1 (Typ)
3:1 (Typ)
Pond G1 & G2
LA R/W Line
Remove Existing Fence and Construct Type A Fence
B-25
CURVE C2
PI Sta 1044+91.75
Δ = 31° 05' 20" RT
D = 1° 45' 00"
L = 1,776.51'
T = 910.71'
PC Sta 1035+81.04
PT Sta 1053+57.55
Martin L. Williams 279 Yellow Cap
Set 5/8" FDOT Yellow Cap, R/W
Rural Fence
Spike
Survey
STA 1053+57.55
Exist. PGL (East)
Const. 6" Underdrain Pipe See Sheet 13 for Details
6" UD Pipe FL. 79.50
88.87
-30.00 LT -40.00 LT EL. 83.70 EL. 83.70
D.P.I. Lt. -47.20 EL. 82.50
82.62
Exist. 24" RCP
81.64
Const. 18" Pipe
-0.00%
81.24
80.18
79.35
78.45
83.59
-55.20 RT -65.20 RT EL. 80.80 EL. 80.80
D.P.I. Rt. -38.40 EL. 78.00
D.P.I. Rt. -00.00 EL. 75.00
D.P.I. Lt. -13.80 EL. 81.00
Connect to Exist Grade
Special Ditch Rt
SCALE: 1" = 40' Horiz. 1" = 5' Vert.
REVISIONS
DATE BY DESCRIPTION
DESIGNED BY HMS 3/92
CHECKED BY NHJ 3/92
DRAWN BY KAH 3/92
CHECKED BY HMS 3/92
SUPERVISED BY Norman H. Johnson, P.E.
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
GEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS
PLAN AND PROFILE
I-75
STA.1050+00 TO STA.1062+00
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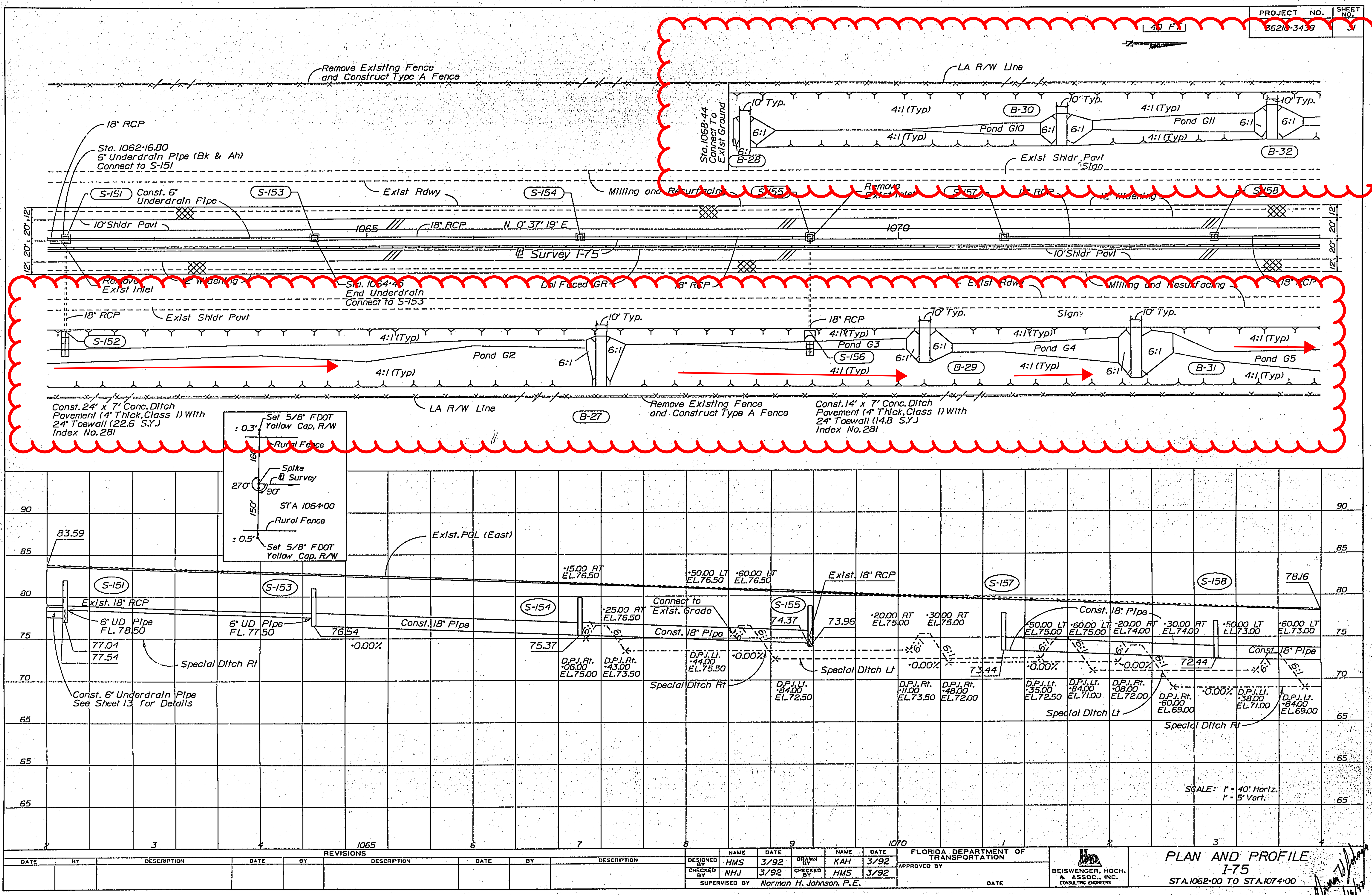
07/15/93



PROJECT NO.
SHEET NO.
36210-3439
40 FT
Remove Existing Fence and Construct Type A Fence
LA R/W Line
18" RCP
Sta. 1062+16.80
6" Underdrain Pipe (Bk & Ah)
Connect to S-151
Sta. 1068+44
Connect To
Exist Ground
10' Typ.
4:1 (Typ)
B-30
Pond G10
6:1
Pond G11
B-32
B-28
Exist Shldr Pavt
Sign
S-151
Const. 6" Underdrain Pipe
S-153
Exist Rdwy
S-154
Milling and Resurfacing
S-155
Remove Exist Inlet
S-157
18" RCP
12' Widening
S-158
10' Shldr Pavt
1065
N 0° 37' 19" E
1070
℄ Survey I-75
Remove Exist Inlet
12' Widening
Sta. 1064+46
End Underdrain
Connect To S-153
Dbl Faced GR
S-152
Pond G2
S-156
Pond G3
Pond G4
Pond G5
B-29
B-31
B-27
Const. 24' x 7' Conc. Ditch Pavement (4" Thick, Class I) With 24" Toewall (22.6 S.Y.)
Index No. 281
Set 5/8" FDOT Yellow Cap, R/W
Rural Fence
Spike
℄ Survey
STA 1064+00
Remove Existing Fence and Construct Type A Fence
Const. 14' x 7' Conc. Ditch Pavement (4" Thick, Class I) With 24" Toewall (14.8 S.Y.)
Index No. 281
Exist. PGL (East)
83.59
78.16
Exist. 18" RCP
6" UD Pipe FL. 78.50
6" UD Pipe FL. 77.50
77.04
77.54
76.54
-0.00%
Special Ditch Rt
Const. 6" Underdrain Pipe See Sheet 13 for Details
Const. 18" Pipe
75.37
+15.00 RT EL. 76.50
+25.00 RT EL. 76.50
D.P.I. Rt. +06.00 EL. 75.00
D.P.I. Rt. +43.00 EL. 73.50
+50.00 LT EL. 76.50
+60.00 LT EL. 76.50
Connect to Exist. Grade
D.P.I. Lt. +44.00 EL. 75.50
74.37
73.96
D.P.I. Rt. +84.00 EL. 72.50
Special Ditch Lt
+20.00 RT EL. 75.00
+30.00 RT EL. 75.00
D.P.I. Rt. +11.00 EL. 73.50
D.P.I. Rt. +48.00 EL. 72.00
73.44
+50.00 LT EL. 75.00
+60.00 LT EL. 75.00
D.P.I. Lt. +35.00 EL. 72.50
D.P.I. Lt. +84.00 EL. 71.00
+20.00 RT EL. 74.00
+30.00 RT EL. 74.00
D.P.I. Rt. +08.00 EL. 72.00
D.P.I. Rt. +60.00 EL. 69.00
72.44
+50.00 LT EL. 73.00
+60.00 LT EL. 73.00
D.P.I. Lt. +38.00 EL. 71.00
D.P.I. Lt. +84.00 EL. 69.00
SCALE: 1" = 40' Horiz. 1" = 5' Vert.
07/15/93
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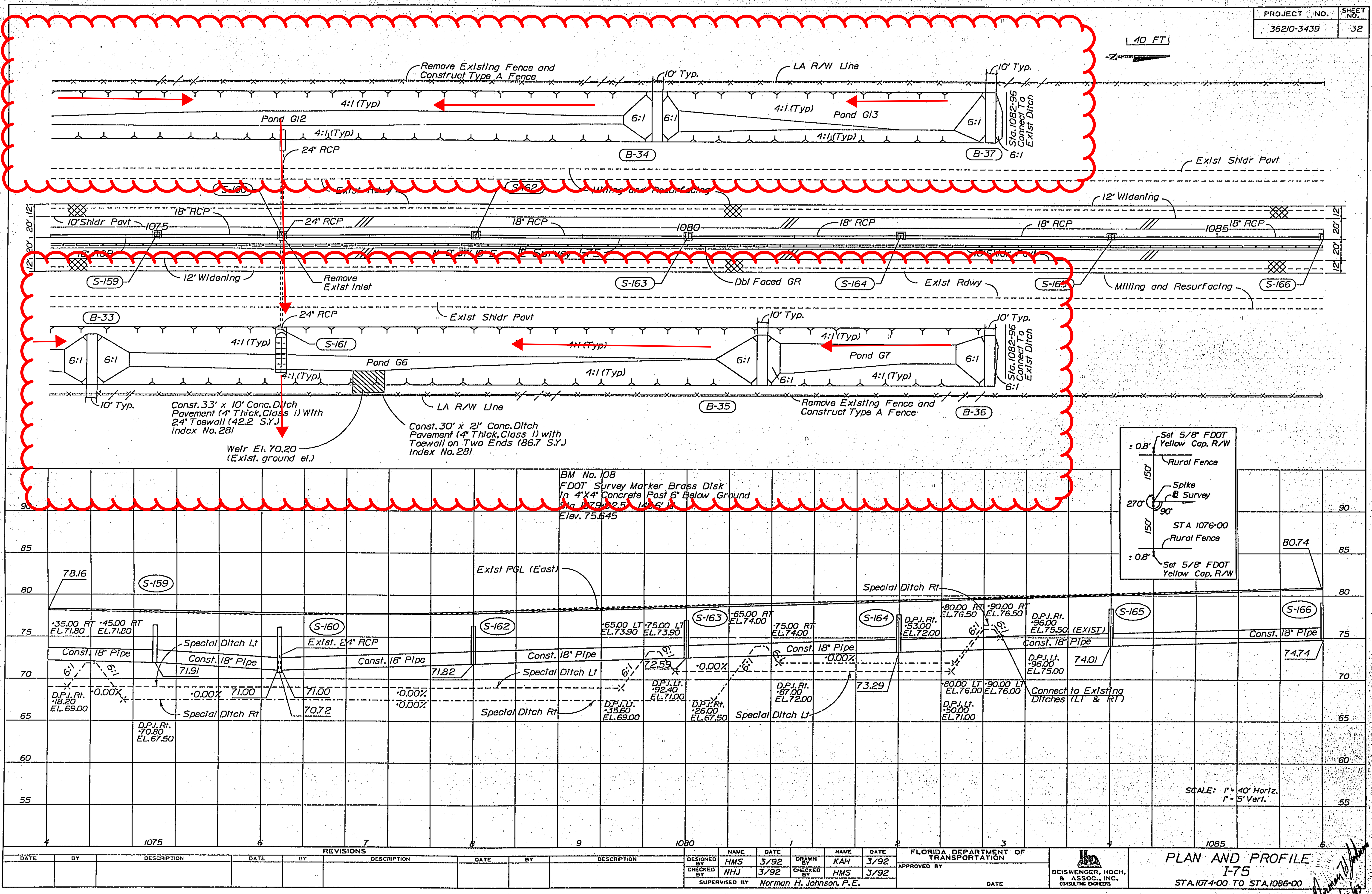
REVISIONS
DATE BY DESCRIPTION
DESIGNED BY HMS 3/92
CHECKED BY NHJ 3/92
DRAWN BY KAH 3/92
CHECKED BY HMS 3/92
SUPERVISED BY Norman H. Johnson, P.E.
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE
BEISWENGER, HOCH, & ASSOC., INC.
CONSULTING ENGINEERS
PLAN AND PROFILE
I-75
STA. 1062+00 TO STA. 1074+00


PROJECT NO. 36210-3439
SHEET NO. 32
40 FT
Remove Existing Fence and Construct Type A Fence
10' Typ.
LA R/W Line
4:1 (Typ)
Pond G12
6:1
Pond G13
24" RCP
B-34
B-37
Sta.1082+96 Connect To Exist Ditch
Exist Shldr Pavt
S-160
S-162
Exist Rdwy
Milling and Resurfacing
12' Widening
18" RCP
10' Shldr Pavt
1075
1080
1085
S-159
12' Widening
Remove Exist Inlet
S-163
Dbl Faced GR
S-164
Exist Rdwy
S-165
Milling and Resurfacing
S-166
B-33
S-161
Pond G6
Pond G7
B-35
B-36
Const. 33' x 10' Conc. Ditch Pavement (4" Thick, Class I) With 24" Toewall (42.2 S.Y.) Index No. 281
Weir El. 70.20 (Exist. ground el.)
Const. 30' x 21' Conc. Ditch Pavement (4" Thick, Class I) with Toewall on Two Ends (86.7 S.Y.) Index No. 281
Set 5/8" FDOT Yellow Cap, R/W
Rural Fence
Spike Survey
STA 1076+00
BM No. 108 FDOT Survey Marker Brass Disk In 4"X4" Concrete Post 6" Below Ground
Elev. 75.645
Exist PGL (East)
Special Ditch Rt
Special Ditch Lt
Const. 18" Pipe
Exist. 24" RCP
Connect to Existing Ditches (Lt & Rt)
SCALE: 1" = 40' Horiz. 1" = 5' Vert.
REVISIONS
DATE BY DESCRIPTION
DESIGNED BY HMS 3/92
CHECKED BY NHJ 3/92
DRAWN BY KAH 3/92
CHECKED BY HMS 3/92
SUPERVISED BY Norman H. Johnson, P.E.
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE
BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS
PLAN AND PROFILE
I-75
STA.1074+00 TO STA.1086+00
07/15/93
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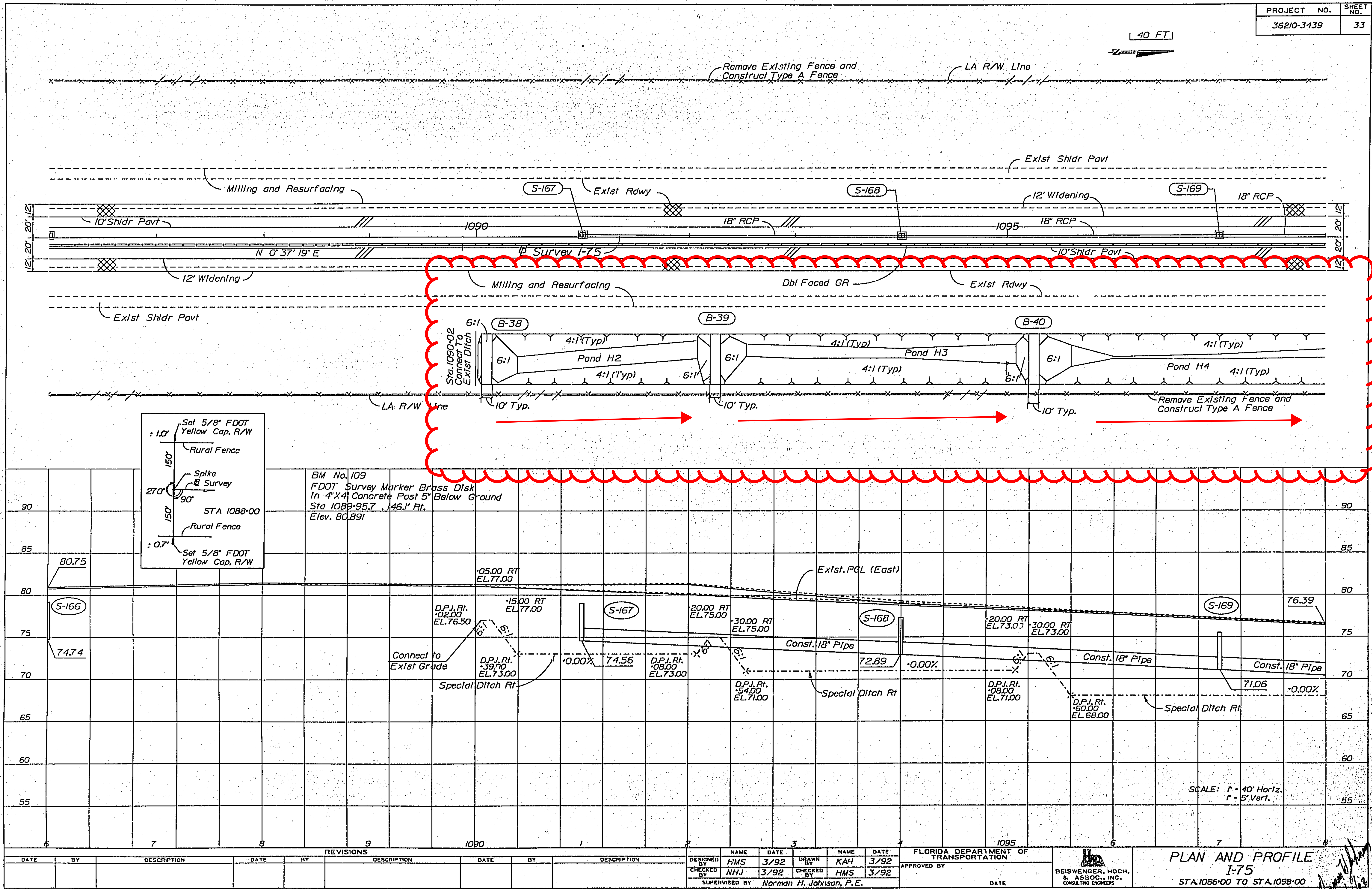

PROJECT NO. 36210-3439
SHEET NO. 33
40 FT
Remove Existing Fence and Construct Type A Fence
LA R/W Line
Exist Shldr Pavt
Milling and Resurfacing
S-167
Exist Rdwy
S-168
12' Widening
S-169
18" RCP
10' Shldr Pavt
1090
18" RCP
1095
18" RCP
N 0° 37' 19" E
Ⓑ Survey I-75
10' Shldr Pavt
12' Widening
Milling and Resurfacing
Dbl Faced GR
Exist Rdwy
Exist Shldr Pavt
B-38
B-39
B-40
Sta. 1090+02 Connect To Exist Ditch
6:1
4:1 (Typ)
Pond H2
Pond H3
Pond H4
LA R/W Line
10' Typ.
Remove Existing Fence and Construct Type A Fence
Set 5/8" FDOT Yellow Cap, R/W
Rural Fence
Spike
Ⓑ Survey
STA 1088+00
150'
270°
90°
BM No. 109
FDOT Survey Marker Brass Disk In 4"X4" Concrete Post 5" Below Ground
Sta 1089+95.7 , 146.1' Rt.
Elev. 80.891
80.75
74.74
S-166
+05.00 RT EL.77.00
+15.00 RT EL.77.00
D.P.I.Rt. +02.00 EL.76.50
D.P.I.Rt. +39.00 EL.73.00
Connect to Exist Grade
Special Ditch Rt
+0.00%
74.56
D.P.I.Rt. +08.00 EL.73.00
+20.00 RT EL.75.00
+30.00 RT EL.75.00
Const. 18" Pipe
D.P.I.Rt. +54.00 EL.71.00
72.89
Exist. PGL (East)
+20.00 RT EL.73.00
+30.00 RT EL.73.00
D.P.I.Rt. +08.00 EL.71.00
D.P.I.Rt. +60.00 EL.68.00
76.39
71.06
SCALE: 1" = 40' Horiz. 1" = 5' Vert.
90 85 80 75 70 65 60 55
6 7 8 9 1090 1 2 3 4 1095 6 7 8
07/15/93
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REVISIONS
DATE BY DESCRIPTION
DESIGNED BY HMS 3/92
CHECKED BY NHJ 3/92
DRAWN BY KAH 3/92
CHECKED BY HMS 3/92
SUPERVISED BY Norman H. Johnson, P.E.
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
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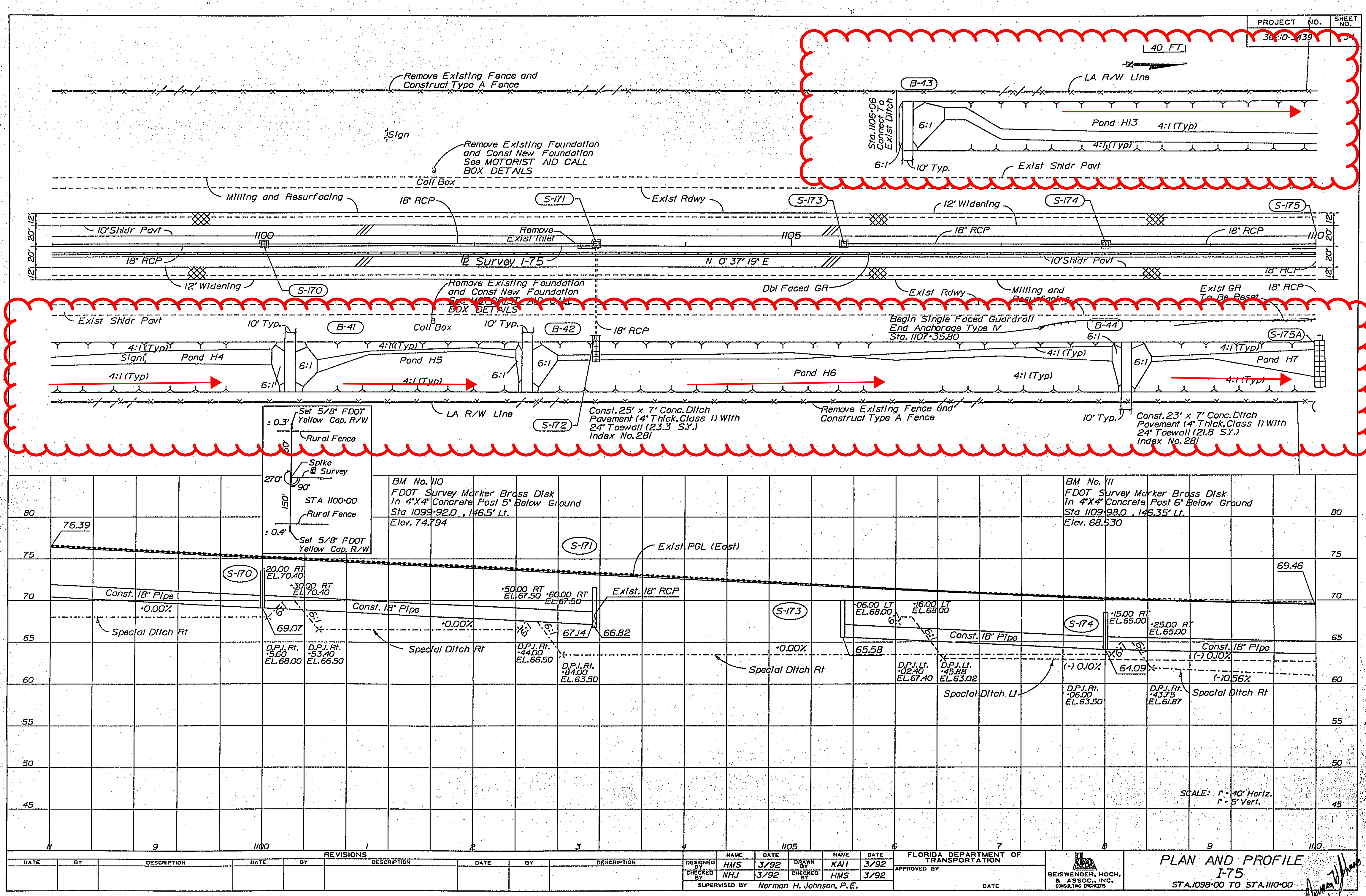
BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS
PLAN AND PROFILE
I-75
STA.1086+00 TO STA.1098+00



PROJECT NO.
SHEET NO.
40 FT
Remove Existing Fence and Construct Type A Fence
LA R/W Line
B-43
Sta.1106-06 Connect To Exist Ditch
6:1
Pond H13
4:1 (Typ)
10' Typ.
Exist Shldr Pavt
Sign
Remove Existing Foundation and Const New Foundation See MOTORIST AID CALL BOX DETAILS
Call Box
Milling and Resurfacing
18" RCP
S-171
Exist Rdwy
S-173
12' Widening
S-174
S-175
10' Shldr Pavt
1100
Remove Exist Inlet
1105
1110
Survey I-75
N 0°37' 19" E
12' Widening
S-170
Dbl Faced GR
Exist GR To Be Reset
Exist Shldr Pavt
10' Typ.
B-41
B-42
18" RCP
Begin Single Faced Guardrail End Anchorage Type IV Sta. 1107+35.80
B-44
S-175A
Pond H4
Pond H5
Pond H6
Pond H7
Set 5/8" FDOT Yellow Cap, R/W
Rural Fence
Spike Survey
STA 1100+00
Const. 25' x 7' Conc. Ditch Pavement (4" Thick, Class I) With 24" Toewall (23.3 S.Y.) Index No. 281
S-172
Remove Existing Fence and Construct Type A Fence
Const. 23' x 7' Conc. Ditch Pavement (4" Thick, Class I) With 24" Toewall (21.8 S.Y.) Index No. 281
BM No. 110 FDOT Survey Marker Brass Disk In 4"X4" Concrete Post 5" Below Ground Sta 1099+92.0, 146.5' Lt. Elev. 74.794
BM No. 111 FDOT Survey Marker Brass Disk In 4"X4" Concrete Post 6" Below Ground Sta 1109+98.0, 146.35' Lt. Elev. 68.530
76.39
Exist PGL (East)
69.46
Const. 18" Pipe
+0.00%
Special Ditch Rt
Exist. 18" RCP
D.P.I. Rt. +5.60 EL.68.00
D.P.I. Rt. +53.40 EL.66.50
D.P.I. Rt. +44.00 EL.66.50
D.P.I. Rt. +84.00 EL.63.50
69.07
67.14
66.82
65.58
64.09
D.P.I. Lt. +02.40 EL.67.40
D.P.I. Lt. +45.88 EL.63.02
Special Ditch Lt
(-) 0.10%
(-) 0.56%
D.P.I. Rt. +06.00 EL.63.50
D.P.I. Rt. +43.75 EL.61.87
SCALE: 1" = 40' Horiz. 1" = 5' Vert.
REVISIONS
DATE BY DESCRIPTION
DESIGNED BY HMS 3/92
DRAWN BY KAH 3/92
CHECKED BY NHJ 3/92
CHECKED BY HMS 3/92
SUPERVISED BY Norman H. Johnson, P.E.
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
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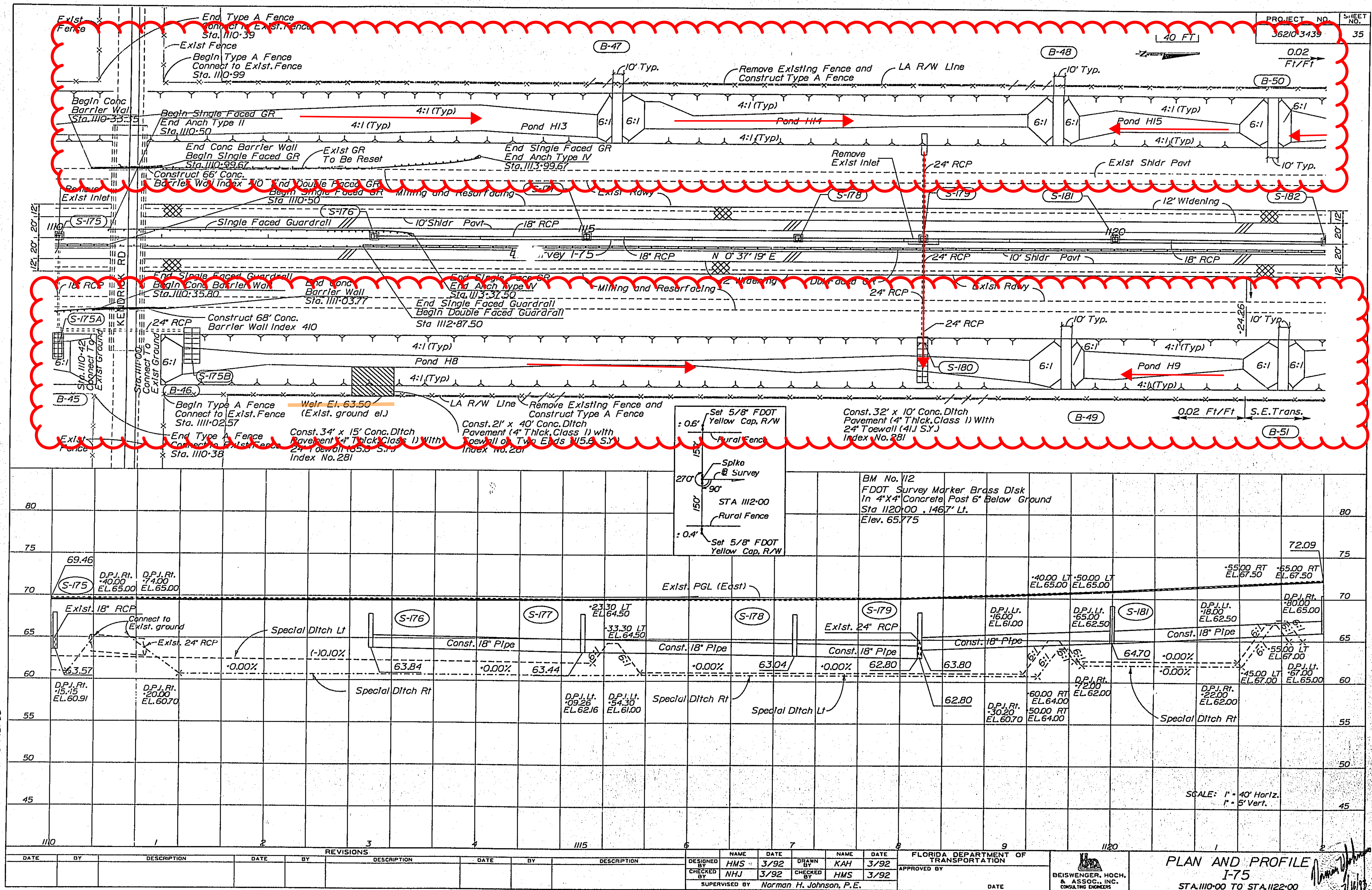
BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS
PLAN AND PROFILE
I-75
STA.1098+00 TO STA.1110+00
07/15/93


PROJECT NO. 36210-3439
SHEET NO. 35
End Type A Fence Connect to Exist. Fence Sta. 1110·39
Exist Fence
Begin Type A Fence Connect to Exist. Fence Sta. 1110·99
Begin Conc Barrier Wall Sta 1110·33.35
Begin Single Faced GR
End Anch Type II Sta. 1110·50
End Conc Barrier Wall
Begin Single Faced GR Sta. 1110·99.67
Exist GR To Be Reset
Construct 66' Conc. Barrier Wall Index 410
End Double Faced GR
Begin Single Faced GR Sta. 1110·50
Remove Exist Inlet
4:1 (Typ)
Pond H13
Pond H14
Pond H15
6:1
10' Typ.
End Single Faced GR
End Anch Type IV Sta. 1113·99.67
Remove Existing Fence and Construct Type A Fence
LA R/W Line
Remove Exist Inlet
24" RCP
Exist Shldr Pavt
40 FT
0.02 Ft/Ft
B-47
B-48
B-50
Milling and Resurfacing
Exist Rdwy
S-175
S-176
S-177
S-178
S-179
S-181
S-182
12' Widening
Single Faced Guardrail
10' Shldr Pavt
18" RCP
Survey I-75
N 0° 37' 19" E
KENDRICK RD
End Single Faced Guardrail
Begin Conc Barrier Wall Sta 1110·35.80
End Conc Barrier Wall Sta. 1111·03.77
End Single Face GR
End Anch Type IV Sta. 1113·37.50
End Single Faced Guardrail
Begin Double Faced Guardrail Sta 1112·87.50
S-175A
24" RCP
Construct 68' Conc. Barrier Wall Index 410
Pond H8
Pond H9
S-175B
S-180
B-46
B-45
B-49
B-51
Sta. 1110·42 Connect To Exist Ground
Sta. 1111·00 Connect To Exist Ground
Begin Type A Fence Connect to Exist. Fence Sta. 1111·02.57
End Type A Fence Connect to Exist Fence Sta. 1110·38
Weir El. 63.50 (Exist. ground el.)
Const. 34' x 15' Conc. Ditch Pavement (4" Thick, Class I) with 24" Toewall (65.3 S.Y.) Index No. 281
Const. 21' x 40' Conc. Ditch Pavement (4" Thick, Class I) with Toewall on Two Ends (115.8 S.Y.) Index No. 281
Const. 32' x 10' Conc. Ditch Pavement (4" Thick, Class I) with 24" Toewall (41.1 S.Y.) Index No. 281
0.02 Ft/Ft
S.E. Trans.
Set 5/8" FDOT Yellow Cap, R/W
Rural Fence
Spike Survey
STA 1112·00
BM No. 112
FDOT Survey Marker Brass Disk In 4"X4" Concrete Post 6" Below Ground
Sta 1120·00, 146.7' Lt.
Elev. 65.775
Exist. PGL (East)
Exist. 18" RCP
Connect to Exist. ground
Exist. 24" RCP
Special Ditch Lt
Special Ditch Rt
Const. 18" Pipe
Exist. 24" RCP
69.46
72.09
63.57
63.84
63.44
63.04
62.80
63.80
64.70
-0.00%
(-)0.10%
SCALE: 1" = 40' Horiz.
1" = 5' Vert.
REVISIONS
DATE
BY
DESCRIPTION
DESIGNED BY HMS 3/92
CHECKED BY NHJ 3/92
DRAWN BY KAH 3/92
CHECKED BY HMS 3/92
SUPERVISED BY Norman H. Johnson, P.E.
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE
BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS
PLAN AND PROFILE
I-75
STA 1110·00 TO STA 1122·00
07/15/93
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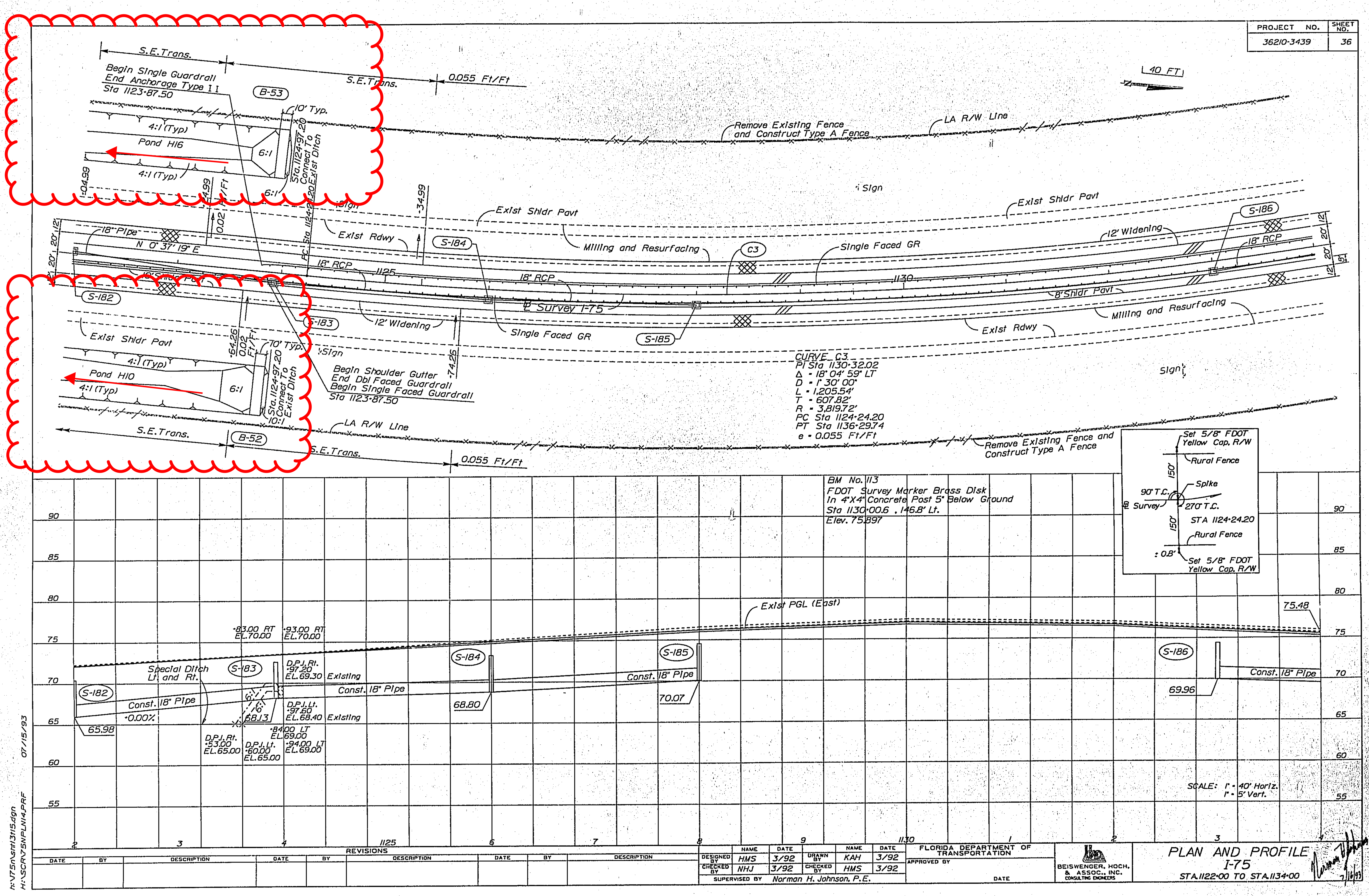
PROJECT NO. 36210-3439
SHEET NO. 36
40 FT
S.E.Trans.
Begin Single Guardrail
End Anchorage Type II
Sta 1123+87.50
B-53
S.E.Trans.
0.055 Ft/Ft
10' Typ.
4:1 (Typ)
Pond H16
6:1
4:1 (Typ)
Sta. 1124+97.20
Connect To
Exist Ditch
Remove Existing Fence
and Construct Type A Fence
LA R/W Line
Sign
Exist Shldr Pavt
Exist Rdwy
S-184
Milling and Resurfacing
C3
Single Faced GR
12' Widening
S-186
18" RCP
18" Pipe
N 0° 37' 19" E
18" RCP
1125
1130
18" RCP
8' Shldr Pavt
Survey I-75
S-182
S-183
12' Widening
Single Faced GR
S-185
Milling and Resurfacing
Exist Rdwy
Exist Shldr Pavt
4:1 (Typ)
Pond H10
4:1 (Typ)
6:1
70' Typ.
Sign
Begin Shoulder Gutter
End Dbl Faced Guardrail
Begin Single Faced Guardrail
Sta 1123+87.50
Sta. 1124+97.20
Connect To
Exist Ditch
10:1
LA R/W Line
S.E.Trans.
B-52
S.E.Trans.
0.055 Ft/Ft
CURVE C3
PI Sta 1130+32.02
Δ = 18° 04' 59" LT
D = 1° 30' 00"
L = 1,205.54'
T = 607.82'
R = 3,819.72'
PC Sta 1124+24.20
PT Sta 1136+29.74
e = 0.055 Ft/Ft
Sign
Remove Existing Fence and
Construct Type A Fence
Set 5/8" FDOT Yellow Cap, R/W
Rural Fence
Spike
90° T.C.
Survey
270° T.C.
STA 1124+24.20
Rural Fence
0.8'
Set 5/8" FDOT Yellow Cap, R/W
BM No. 113
FDOT Survey Marker Brass Disk
In 4"X4" Concrete Post 5" Below Ground
Sta 1130+00.6 , 146.8' Lt.
Elev. 75.897
Exist PGL (East)
75.48
+83.00 RT EL.70.00
+93.00 RT EL.70.00
S-184
S-185
S-186
Special Ditch Lt. and Rt.
S-183
D.P.I. Rt. +97.20 EL.69.30
Existing
Const. 18" Pipe
Const. 18" Pipe
Const. 18" Pipe
S-182
Const. 18" Pipe
+0.00%
65.98
68.13
D.P.I. Lt. +97.60 EL.68.40
Existing
68.80
70.07
69.96
D.P.I. Rt. +53.00 EL.65.00
D.P.I. Lt. +60.00 EL.65.00
+84.00 LT EL.69.00
+94.00 LT EL.69.00
SCALE: 1" = 40' Horiz. 1" = 5' Vert.
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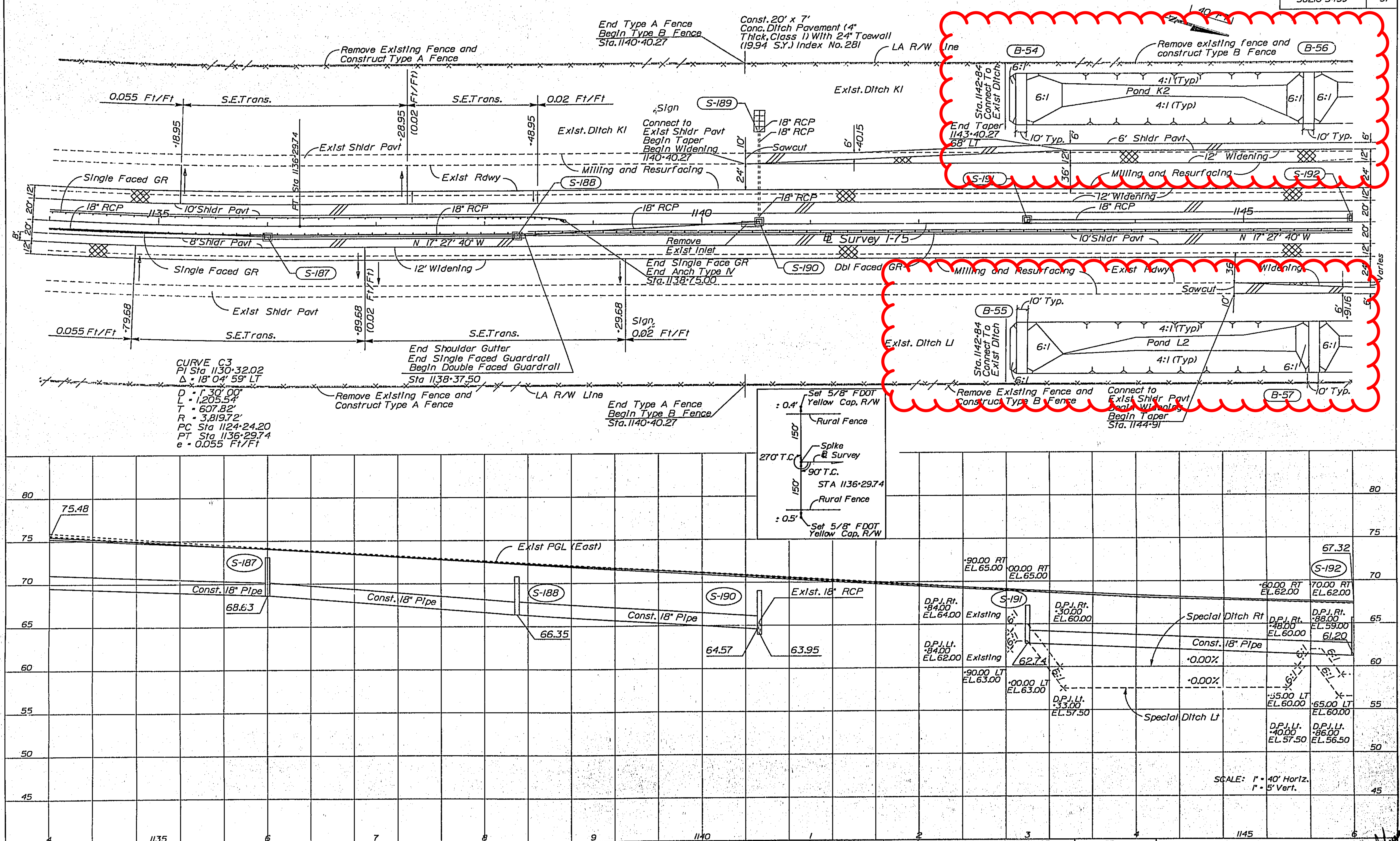
REVISIONS
DATE | BY | DESCRIPTION
DESIGNED BY HMS 3/92
DRAWN BY KAH 3/92
CHECKED BY NHJ 3/92
CHECKED BY HMS 3/92
SUPERVISED BY Norman H. Johnson, P.E.
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE
BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS
PLAN AND PROFILE
I-75
STA 1122+00 TO STA 1134+00

PROJECT NO.	SHEET NO.
36210-3439	37



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CHECKED BY	NHJ	3/92	CHECKED BY	HMS	3/92
SUPERVISED BY	Norman H. Johnson, P.E.				

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

BEISWENGER, HOCH, & ASSOC., INC.
CONSULTING ENGINEERS

PLAN AND PROFILE
I-75
STA.1134+00 TO STA.1146+00

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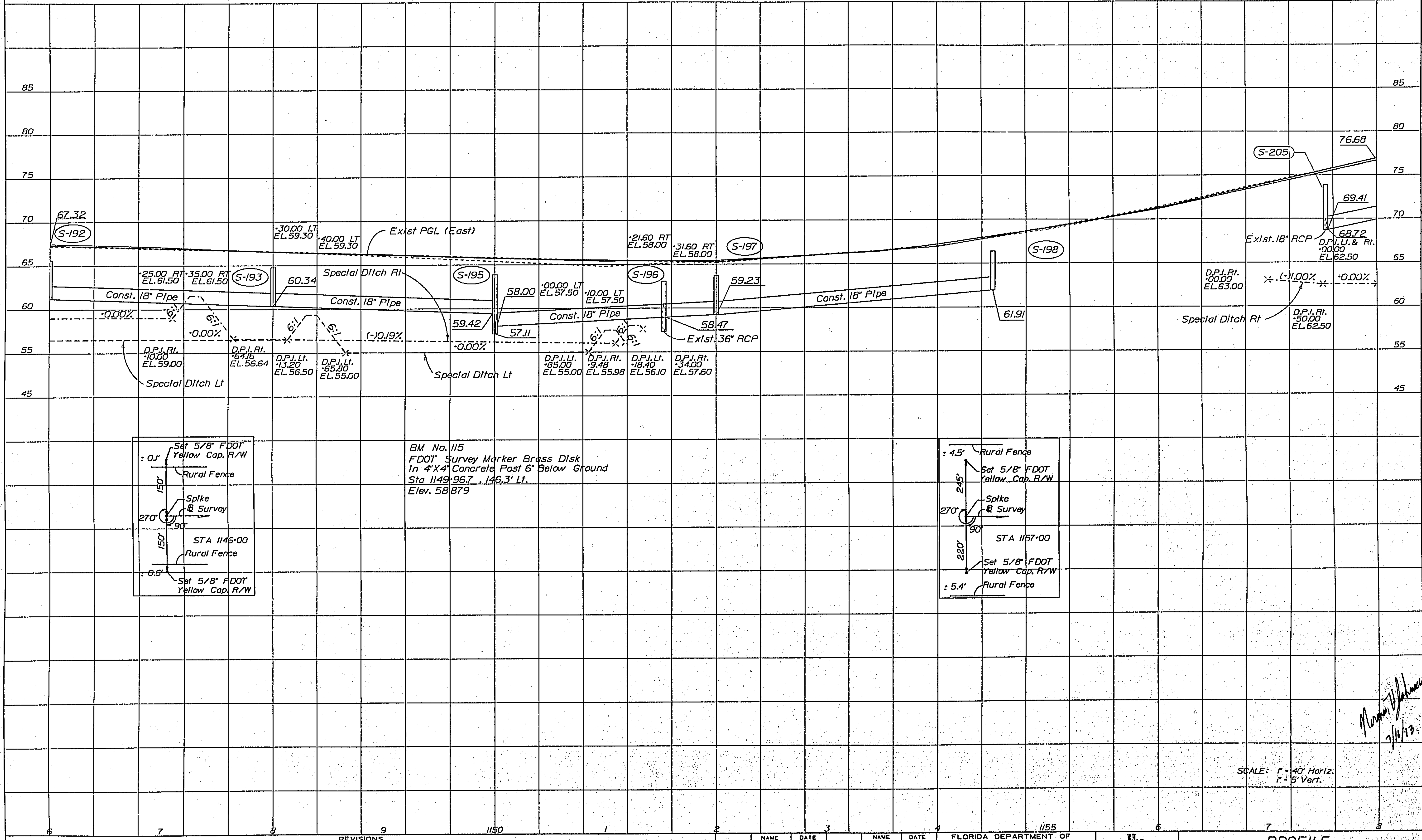
PROJECT NO.	SHEET NO.
36210-3439	39



Norman H. Johnson 7/16/93

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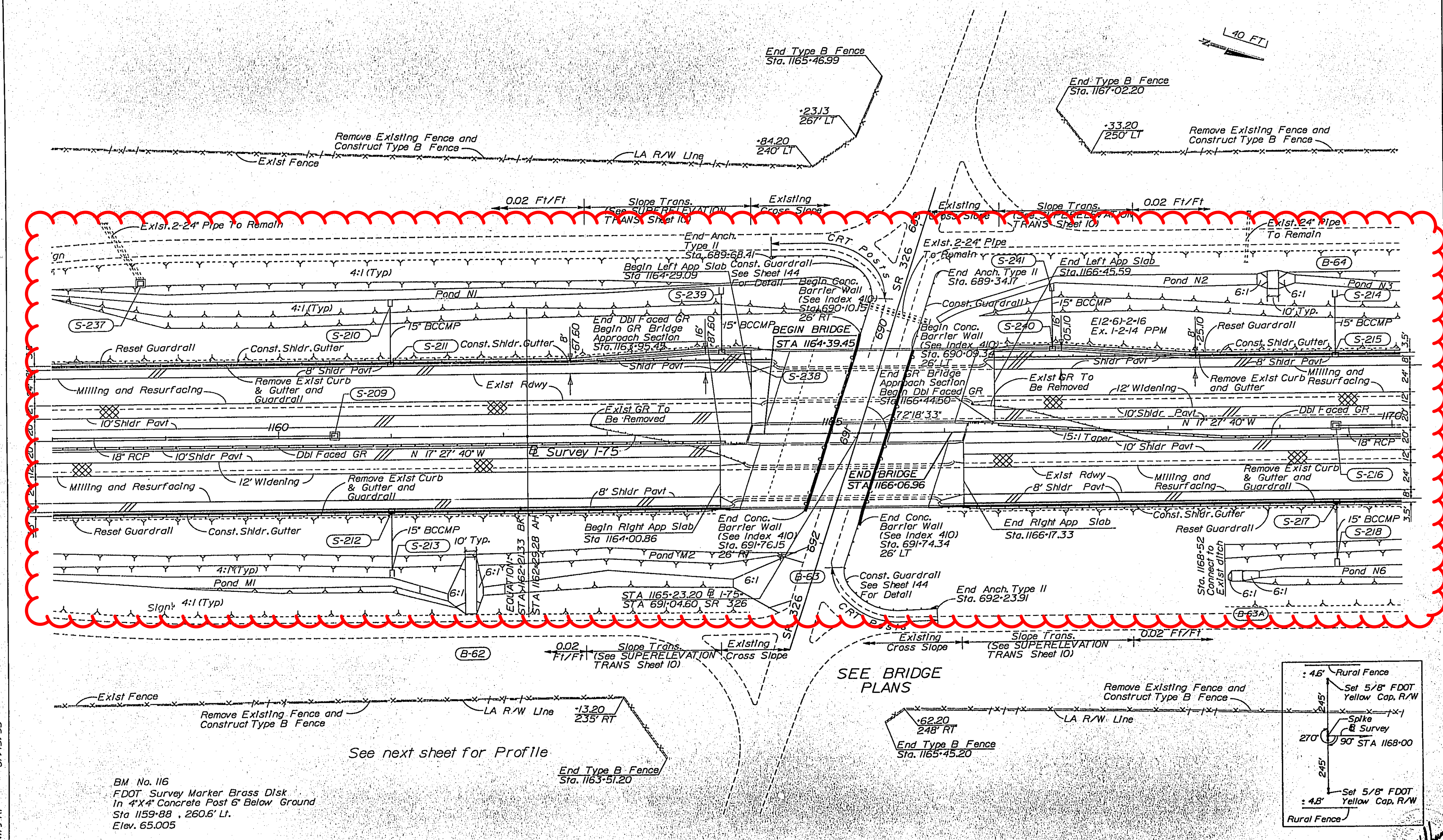
SUPERVISED BY	Norman H. Johnson, P.E.				

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

BEISWENGER, HOCH, & ASSOC., INC.
CONSULTING ENGINEERS

PROFILE
I-75
STA. 1146+00 TO STA. 1158+00

PROJECT NO.	SHEET NO.
36210-3439	10



BM No. 116
FDOT Survey Marker Brass Disk
In 4"X4" Concrete Post 6" Below Ground
Sta 1159+88 , 260.6' Lt.
Elev. 65.005

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY	HMS	3/92	DRAWN BY	KAH	3/92
CHECKED BY	NHJ	3/92	CHECKED BY	HMS	3/92
SUPERVISED BY	Norman H. Johnson, P.E.				

FLORIDA DEPARTMENT OF TRANSPORTATION

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DATE

BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS

PLAN
I-75
STA.1158+00 TO STA.1170+00

Norman H. Johnson 7/16/93

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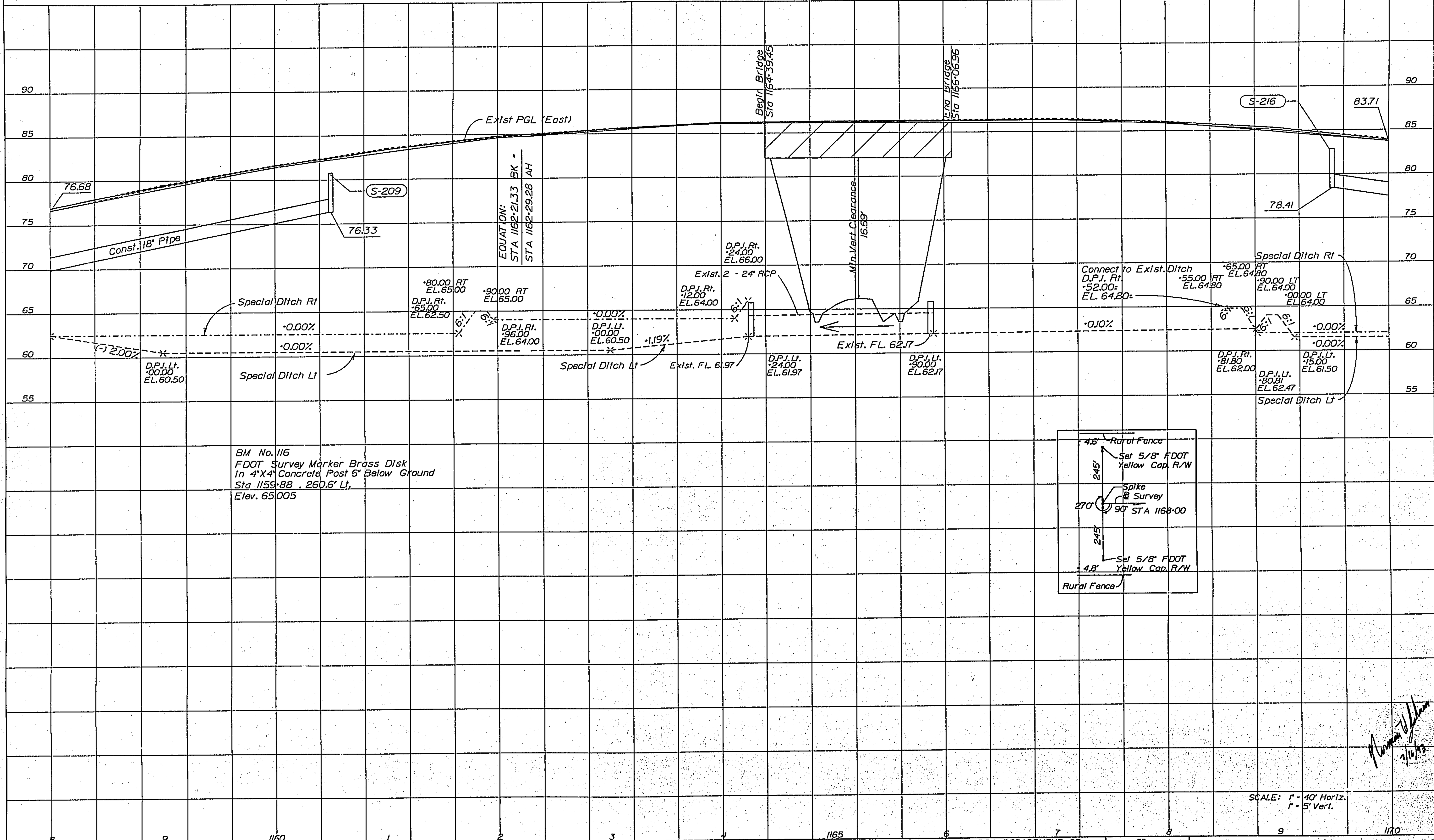
PROJECT NO.	SHEET NO.
36210-3439	41



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CHECKED BY	NHJ	3/92	CHECKED BY	HMS	3/92
SUPERVISED BY	Norman H. Johnson, P.E.				

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY

DATE

BEISWENGER, HOCH, & ASSOC., INC.
CONSULTING ENGINEERS

PROFILE
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STA.1158+00 TO STA.1170+00

PROJECT NO.	SHEET NO.
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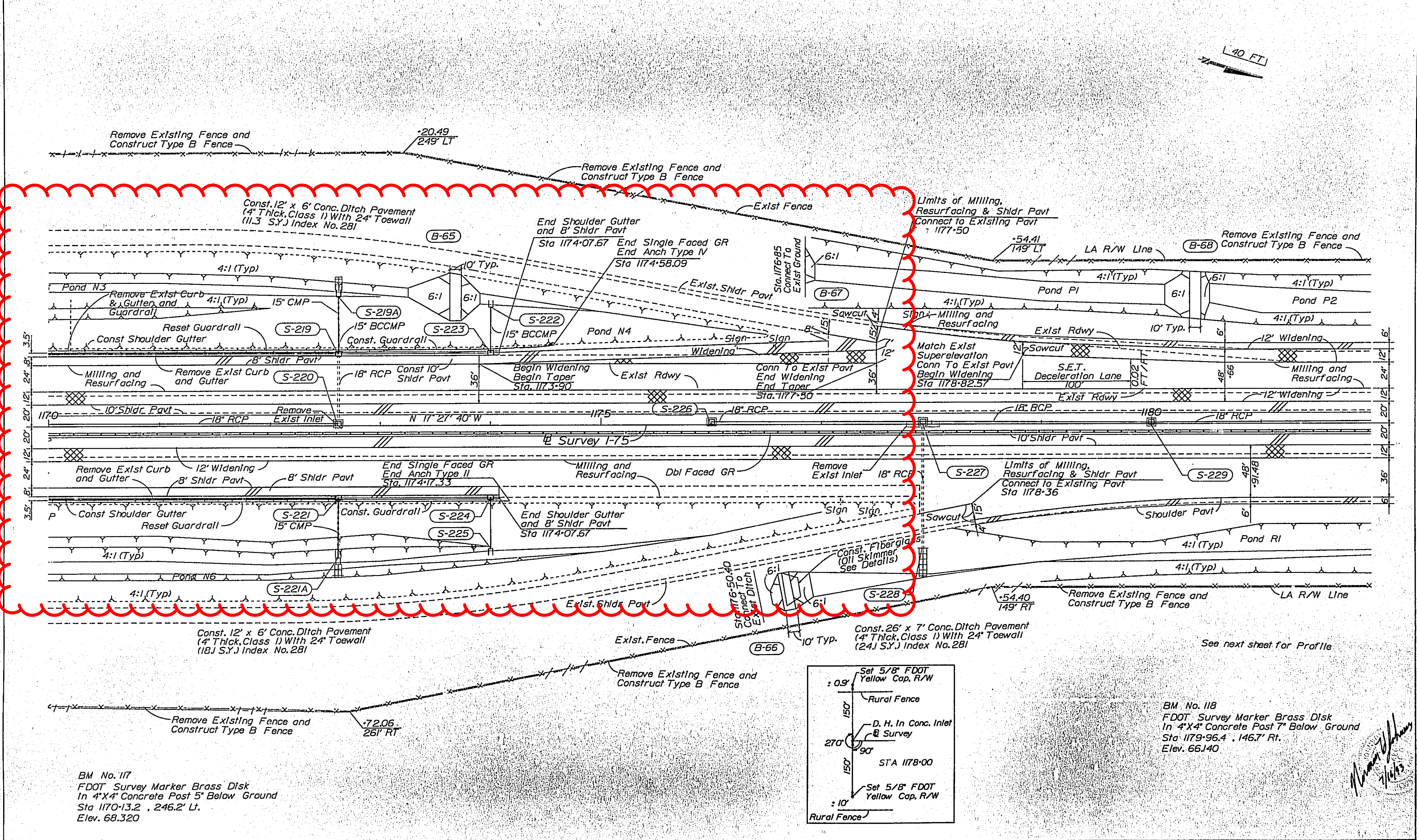

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DESIGNED BY	HMS	3/92	DRAWN BY	KAH	3/92
CHECKED BY	NHJ	3/92	CHECKED BY	HMS	3/92
SUPERVISED BY	Norman H. Johnson, P.E.				

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY

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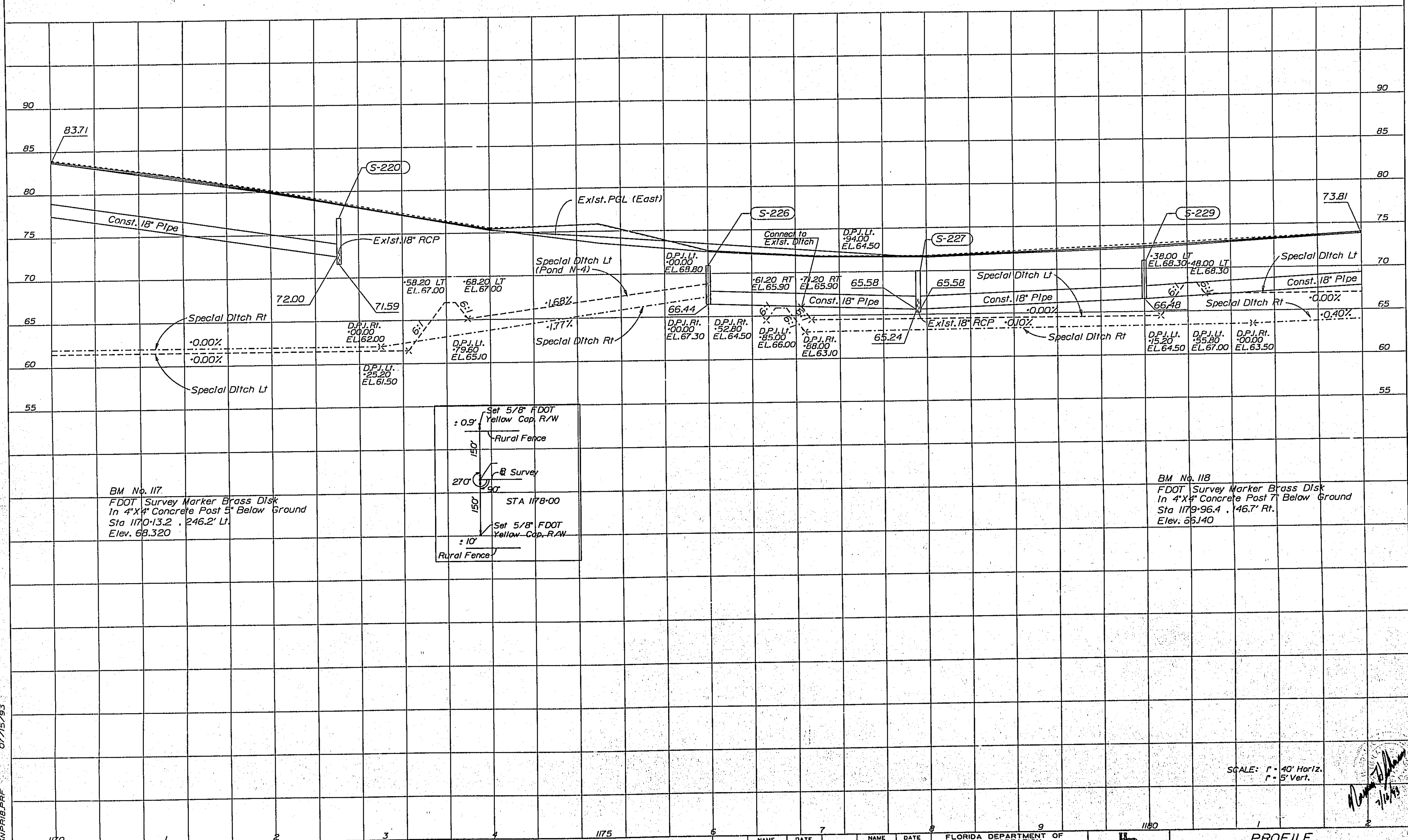
BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS

PLAN
I-75
STA.1170+00 TO STA.1182+00

PROJECT NO.	SHEET NO.
36210-3439	43



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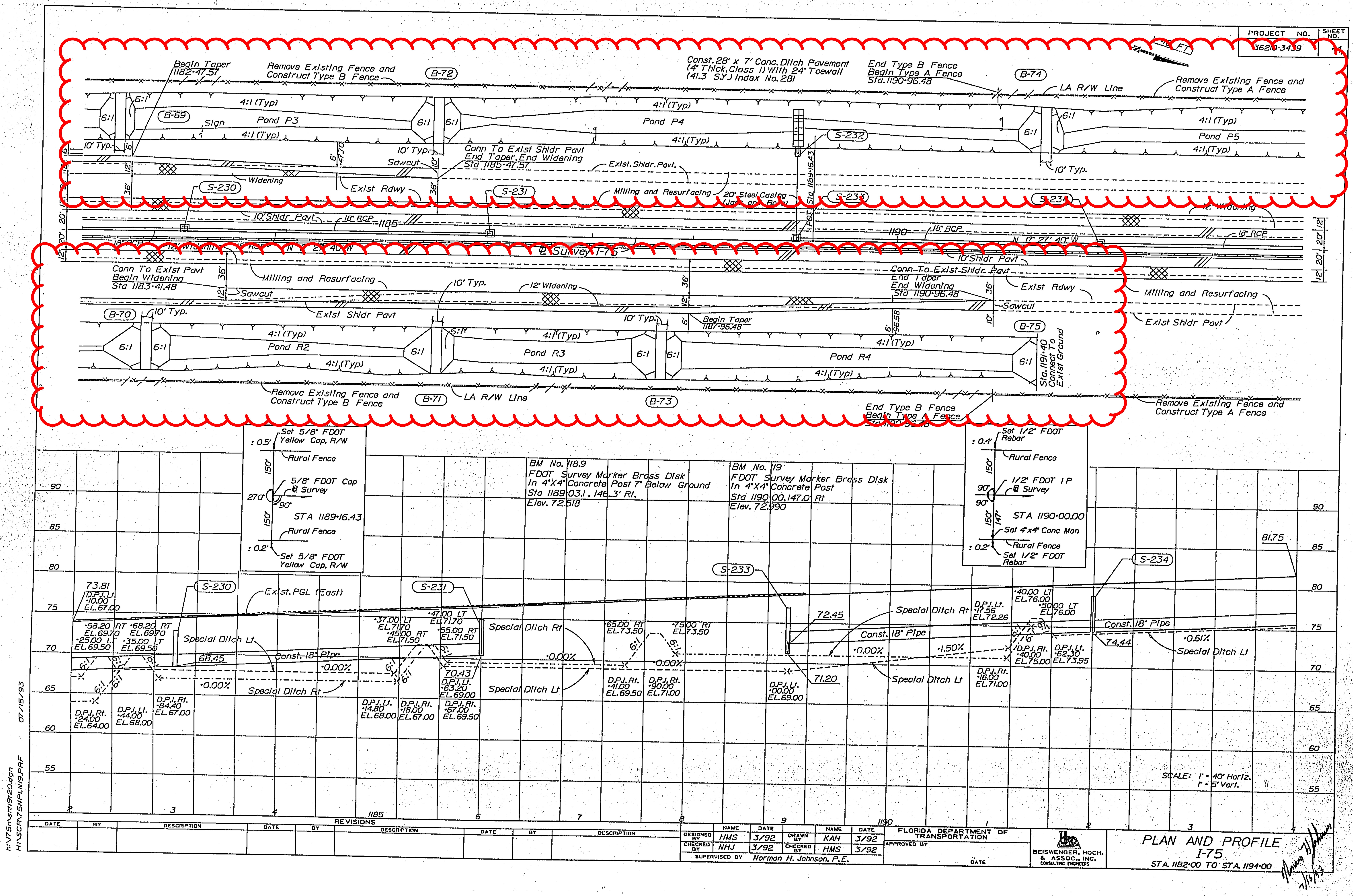
APPROVED BY

BEISWENGER, HOCH, & ASSOC., INC.

PROFILE
I-75



PROJECT NO.
SHEET NO.
36210-3439
Begin Taper 1182+47.57
Remove Existing Fence and Construct Type B Fence
B-72
Const. 28' x 7' Conc. Ditch Pavement (4" Thick, Class I) With 24" Toewall (41.3 S.Y.) Index No. 281
End Type B Fence Begin Type A Fence Sta. 1190+96.48
B-74
LA R/W Line
Remove Existing Fence and Construct Type A Fence
4:1 (Typ)
B-69
Sign
Pond P3
Pond P4
Pond P5
S-232
10' Typ.
Conn To Exist Shldr Pavt End Taper, End Widening Sta 1185+47.57
Sawcut
Exist. Shldr. Pavt.
Widening
Exist Rdwy
Milling and Resurfacing
20" Steel Casing (Jack and Bore)
Sta 1189+16.43
S-230
S-231
S-233
S-234
10' Shldr Pavt
18" RCP
1185
1190
N 17° 27' 40" W
Survey I-75
Conn To Exist Pavt Begin Widening Sta 1183+41.48
12' Widening
Conn To Exist Shldr Pavt End Taper End Widening Sta 1190+96.48
Exist Shldr Pavt
B-70
B-75
Begin Taper 1187+96.48
Pond R2
Pond R3
Pond R4
Sta. 1191+40 Connect To Exist Ground
B-71
B-73
End Type B Fence Begin Type A Fence Sta. 1190+96.48
Set 5/8" FDOT Yellow Cap, R/W
Rural Fence
5/8" FDOT Cap Survey
STA 1189+16.43
BM No. 118.9 FDOT Survey Marker Brass Disk In 4"X4" Concrete Post 7" Below Ground Sta 1189+03.1, 146.3' Rt. Elev. 72.518
BM No. 119 FDOT Survey Marker Brass Disk In 4"X4" Concrete Post Sta 1190+00, 147.0' Rt Elev. 72.990
Set 1/2" FDOT Rebar
1/2" FDOT IP Survey
STA 1190+00.00
Set 4"x4" Conc Mon
Set 1/2" FDOT Rebar
Exist. PGL (East)
Special Ditch Lt
Special Ditch Rt
Const. 18" Pipe
73.81
68.45
70.43
72.45
71.20
74.44
81.75
0.00%
-1.50%
-0.61%
SCALE: 1" = 40' Horiz. 1" = 5' Vert.
REVISIONS
DATE BY DESCRIPTION
DESIGNED BY HMS 3/92
CHECKED BY NHJ 3/92
DRAWN BY KAH 3/92
CHECKED BY HMS 3/92
SUPERVISED BY Norman H. Johnson, P.E.
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS
PLAN AND PROFILE
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STA. 1182+00 TO STA. 1194+00
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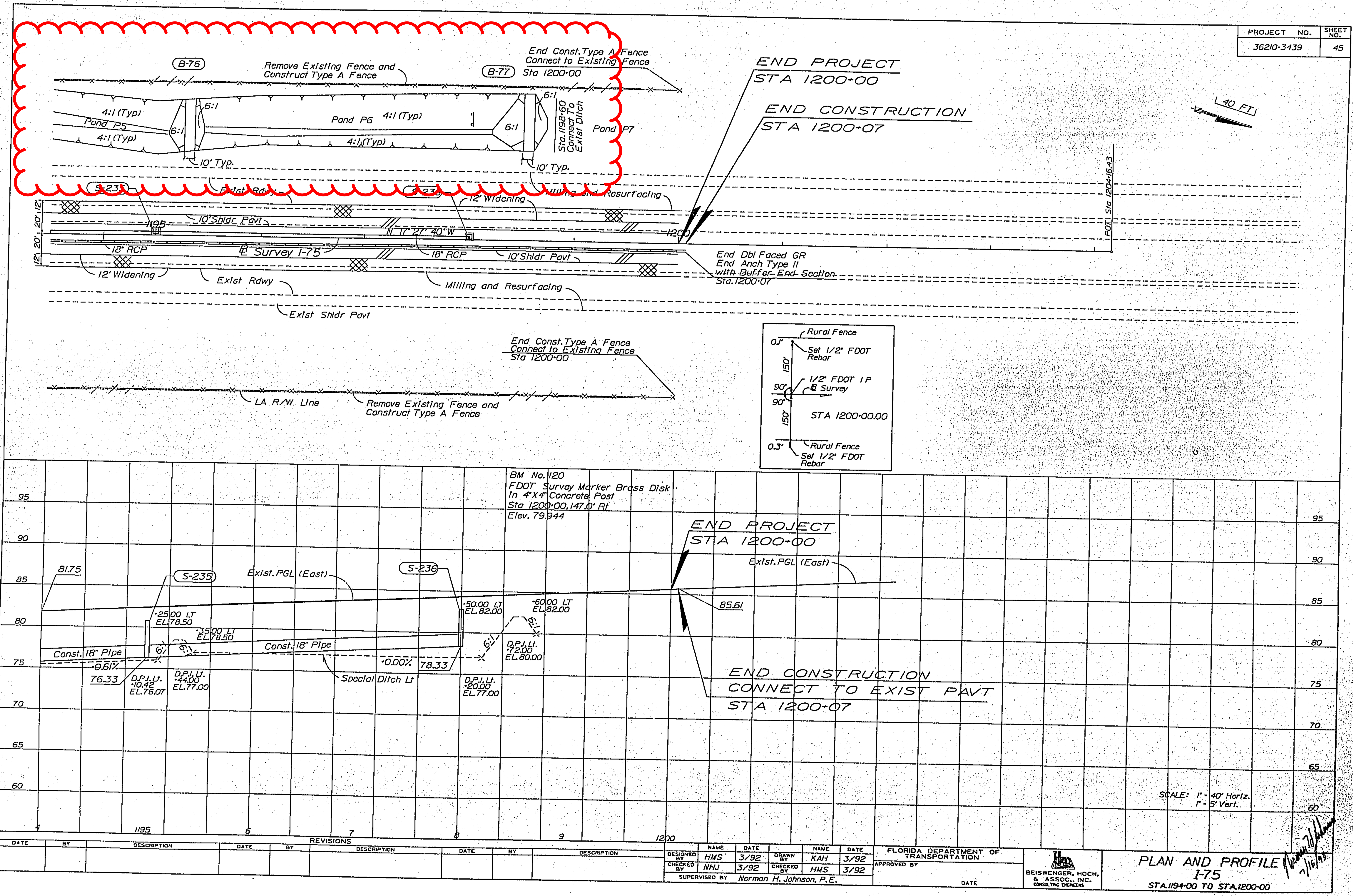
PROJECT NO. 36210-3439
SHEET NO. 45
END PROJECT
STA 1200+00
END CONSTRUCTION
STA 1200+07
40 FT
B-76
Remove Existing Fence and Construct Type A Fence
B-77
End Const. Type A Fence Connect to Existing Fence Sta 1200+00
4:1 (Typ)
Pond P5
6:1
Pond P6
Sta. 1198+50 Connect To Exist Ditch
Pond P7
10' Typ.
S-235
S-236
Exist Rdwy
12' Widening
Milling and Resurfacing
10' Shldr Pavt
1195
N 17°27'40" W
18" RCP
℄ Survey I-75
POT Sta 1204+16.43
End Dbl Faced GR End Anch Type II with Buffer End Section Sta. 1200+07
Exist Shldr Pavt
LA R/W Line
Rural Fence
Set 1/2" FDOT Rebar
1/2" FDOT IP
℄ Survey
STA 1200+00.00
BM No. 120
FDOT Survey Marker Brass Disk In 4"X4" Concrete Post
Sta 1200+00, 147.0' Rt
Elev. 79.944
Exist. PGL (East)
81.75
+25.00 LT EL. 78.50
+35.00 LT EL. 78.50
Const. 18" Pipe
0.61%
76.33
D.P.I. Lt. +10.42 EL. 76.07
D.P.I. Lt. +44.00 EL. 77.00
Special Ditch Lt
+0.00%
78.33
+50.00 LT EL. 82.00
+60.00 LT EL. 82.00
D.P.I. Lt. +20.00 EL. 77.00
D.P.I. Lt. +72.00 EL. 80.00
85.61
END CONSTRUCTION
CONNECT TO EXIST PAVT
STA 1200+07
SCALE: 1" = 40' Horiz. 1" = 5' Vert.
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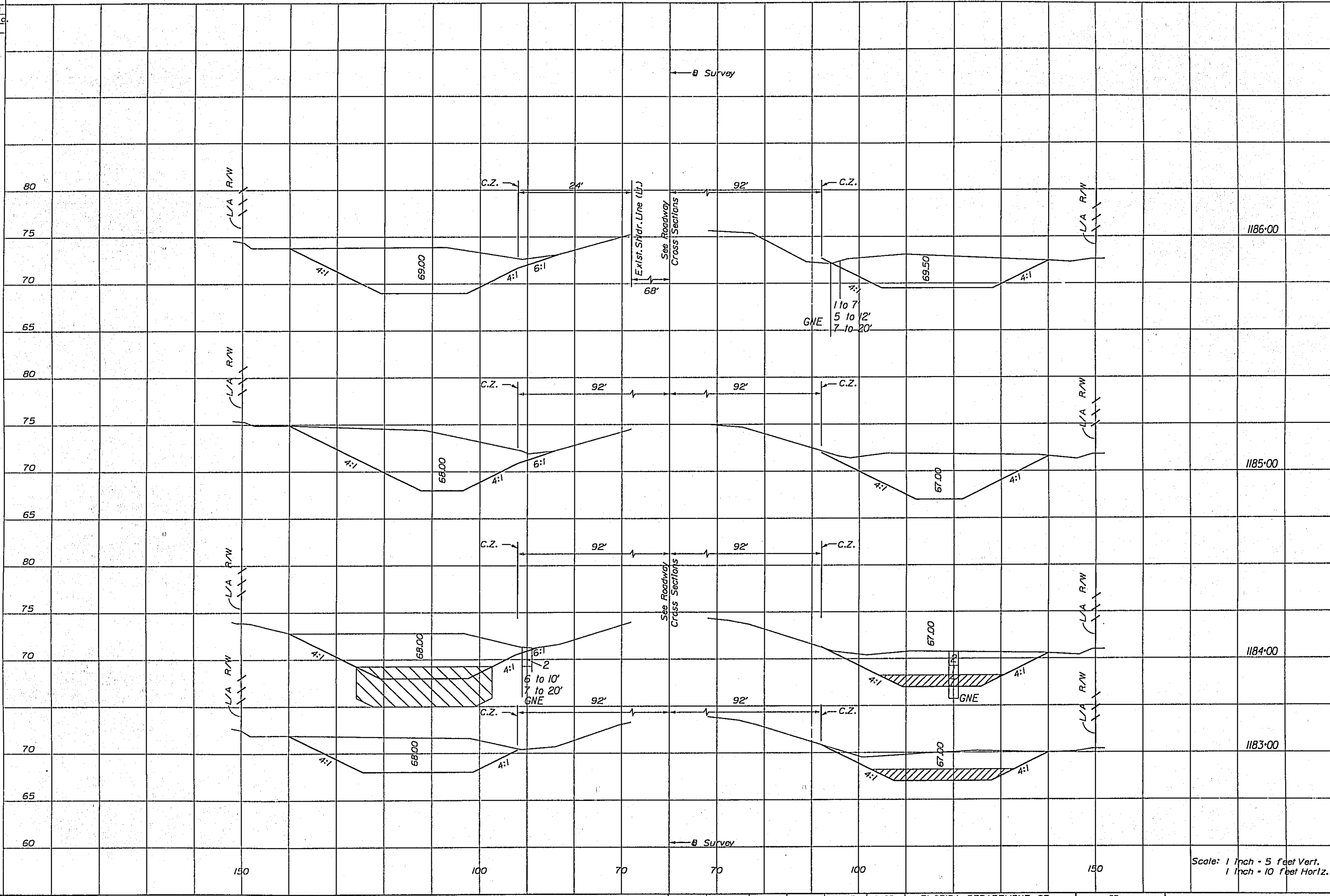
REVISIONS
DATE BY DESCRIPTION
DESIGNED BY HMS 3/92
CHECKED BY NHJ 3/92
DRAWN BY KAH 3/92
CHECKED BY HMS 3/92
SUPERVISED BY Norman H. Johnson, P.E.
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS
PLAN AND PROFILE
I-75
STA. 1194+00 TO STA. 1200+00

PROJECT NO.	SHEET NO.
36210-3439	117

A-2-6, A-4, A-7-6, A-6 Material Excavation A	V	A-2-6, A-4, A-6 Material Subsoil Exc. A	V
0		0	
	104		165
56		89	
	161		165
31		0	



A2, A3 Material Rdwy Exc. A	V	Fill A	V
	970		0
286		0	
	1124		0
321		0	
	1007		165
223		89	
	776		165
196		0	

Norman H. Johnson 7/16/93

07/15/93

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REVISIONS								
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	NAME	DATE		NAME	DATE
DESIGNED BY	M.M.K.	11-92	DRAWN BY	T.A.H.	11-92
CHECKED BY	K.J.L.	11-92	CHECKED BY	M.M.K.	11-92
SUPERVISED BY	Norman H. Johnson, P.E.				

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

BEISWENGER, HOCH, & ASSOC., INC. CONSULTING ENGINEERS

POND CROSS SECTIONS

From Sta. 1183+00 to Sta. 1186+00

Appendix G

Correspondence

Patel, Greene & Associates, LLC | 12570 Telecom Drive, Temple Terrace, FL 33637
813.978.3100 | patelgreene.com

MEETING MINUTES

DATE/TIME: September 24, 2023; 2:00pm – 4:00 pm

PROJECT: Project Development and Environment (PD&E) Studies I-75 (SR 93) From SR 200 to SR 326

LOCATION: TEAMS Meeting

ATTENDEES: Ferrell Hickson (FDOT Drainage), Efren Rivera (FDOT Drainage), David Graeber (I-75 North Section PM), Steven Waterson (I-75 South Section PM), Alex George (BCC Reviewer), Steven Schnell (HDR PM), Frank Fu (HDR Drainage), (Michael Holt (PGA), Carol Conner (PGA Drainage), Aayushi Vagadia (PGA Drainage).

The following notes reflect PGA's understanding of the discussions and decisions made at this meeting. If you have any questions, additions, or comments regarding elements contained in these minutes, please contact PGA. The minutes will be considered accurate unless written notice is received within five working days of the date issued.

The meeting was held for initial review and discussion of pond sites with FDOT and the team.

- David Graeber noted that pond sites are on the critical path in moving the project forward. We cannot afford the schedule to slip, so any delay should be communicated with the department immediately.

- Ferrell Hickson recommended that FDOT Right of Way (ROW) team be engaged ASAP to get insights in terms of best site location from an acquisition perspective. He advised that they be invited to future pond site alternative meetings.

- Michael Holt noted that the current scope of work has been siting with volumetric calculations only. The scope of effort will need to be adjusted when moving from PD& E to design/acquisition to provide appropriate analysis.

- During the master planning effort, PGA was initially scoped to size ponds and not site them. As the project moved forward into PD&E, the project transitioned to siting. Current efforts have focused on review of alternatives for an assumed 90% impervious, and more recently Aux Lane pond sizing.

- Carol Conner: The pond sitting was done without Geotech and Geotech will be a critical path to move forward.

- Basin 1&2 pond site discussion:

  - Ferrell suggested evaluating parcels behind the frontage parcels to see if they are hydraulically feasible, since frontage parcels typically have a higher unit cost. He suggested the empty parcel northeast of the interchange as an example for basin 1A.
  - Overall combined use pond for 1A and 1B is the best option of the current alternatives. Will need to confirm hydraulics are satisfied to make this preferred option.

- Basin 3 pond site discussion:

- 3-A pond option will need to be revised since the proposed site is partially constructed. The pond can be placed horizontally and moved west. PGA to explore this option.

➢ Basin 4 pond site discussion:

- It was suggested that a Basin 4 pond alternative to be considered might be the Mobile home park property located on the south side adjacent to the current 4A. This was presented as an example of where an existing business may present an option.

➢ When asked about FDOT experience with RV park acquisitions, Ferrell noted that the ROW team will be able to help provide information on site acquisition and past experiences.

➢ PGA clarified that all ponds are designed as closed basins with no outfalls; however, proximity to the existing outfall has been considered in case of a need for emergency discharge. The ponds are sized for the greater of the 25 year design storm or the 100-year attenuation (pre vs. post) volume as presented in the I-75 Masterplan Pond Siting Report.

➢ Ferrell advised that the pond should contain the full storm volume and noted that if recovery is not achieved with 100-year storm, back-to-back storms analysis is needed.

- PGA noted that they would review the calcs and update analysis to consider full volume instead of just the pre-post attenuation volume.

➢ Alex George also reminded the team that elevated berms should be avoided if at all possible, and that there will be additional considerations/requirements if this approach is deemed necessary.

➢ Basin 5&6 pond site discussion:

- Basin 5A and 6A pond sites are on the same parcel, therefore Ferrell Hickson suggested looking at 2 separate parcels. The general approach should be to site 1 pond on one parcel.
  - It was noted that if this parcel was selected as the preferred location, a larger joint pond would be examined.
- The adjacent vacant parcel to the south was mentioned as a potential Basin 5 alternative.
- Steven Schnell mentioned potential cultural artifacts present adjacent to the 5A and 6B pond sites. Will need to verify with Environmental team. Closer review of this area will be performed to see if there are "better" alternatives, including the option of simply shifting the sites westward into the parcel away from the know artifacts.
- Currently FDOT owns parcel on east side of basin 5. Looks like an old borrow pit or sink hole site (verify with historic I-75 plans). If not permitted, can be considered as an alternative pond site.
- Alternative 6C can be moved to the eastern boundary, check with ROW department.

➢ Basin 7 pond site discussion:

- There is an FDOT parcel east of the interstate near US 27. It is located on a localized ridge, which would entail deeper cut. This requires more area and presents additional risk in Karst areas. The parcel is adjacent to City of Ocala parcel, which is at the localized low. There is a possibility of working with the City, but this option has not been developed because the ELA process is on hold per the direction of the Department.

  - David Graeber advised that the team proceed with identifying potential ELA sites in the corridor for discussion internally ahead of agency contact.

➢ Basin 13 discussion:

- Basin 13 contains the portion of the corridor associated with and adjacent to the 49th Street Interchange.
- Analysis and review of the area presented in the PSR reveals that most of the preliminary pond options identified in the 49th Street PD&E were found to have unfavorable geotech or have already been acquired for commercial development. There are no "good" options near the mainline.
- The family that owns the ranch associated with the 49th Street Interchange was negotiating with Amazon and Amazon opted to locate their facilities elsewhere. There are now no active plans for developing this land.
- While not "off the table", any proposed sites on this parcel should be located to maximize developable remainder. A couple of low areas were discussed and will be reviewed in more detail.

➢ General Discussion items:

- Runoff is currently being treated through linear treatment systems. Median systems are typically conveyance only.
- Basins are currently divided according to existing outfalls and flow to existing cross drains. This exercise was done as a part of the I-75 master plan.
- Siting currently prioritizes vacant unpermitted parcels, then vacant parcels with permits. Commercial/Business parcels are prioritized ahead of residential neighborhoods. Large parcels are prioritized where possible to reduce the number of individual parcels/owners involved.
- Ferrell noted that consideration should be given to parcels "behind" frontage parcels if hydraulically feasible, as they typically have a lower cost per acre.
  - Offsite contribution areas should be evaluated for these areas.
- He also stated that consideration should be given to developed parcels if vacant parcels are already permitted, as negotiations are often complicated by discussions of "highest and best use" and the parcel may end up being as expensive or more expensive than an established business. He recommended consideration of having one developed parcel per basin to provide one site stable alternative.
- Ferrell noted that although current sizing is from a volumetric perspective, design analysis will need a large number of borings for risk management, especially on preferred sites.
  - Corridor history of I-75 retention swales demonstrates lots of clay and recovery issues, including the most recent investigative efforts associated with the 49th Street Interchange.
- Once refined according to the suggestions in the meeting, team should discuss pond site alternatives with R/W team (Michael McPhail) for best place to locate pond within selected parcels. Hydraulics should be taken into consideration when evaluating R/W suggestions.
- HDR is working with FDOT Geotech and the geotech firm to determine the desired target level of borings per acre to minimize risk during the design build process.
  - Current intent is to identify preferred sites and schedule these first.
  - Discussion is ongoing as to whether borings should be obtained at any (or all) of the secondary alternatives, and if so, to what extent.

- Discussion was held regarding the necessity of a "contingency" in the siting. While standard for a PD&E it is not typical for a design approach.
  - 90% impervious assumptions for a 300' R/W provides a 270' pavement width.
  - Widest "ultimate" footprint currently under review is 240' pavement width, therefore a "contingency" is built-in by default.
  - Design is performed with a factor of safety of 2.0 applied to the percolation rate as a conservative approach.
  - PGA will perform a "desktop review" to estimate the number of perceived high-risk basins that could end up with a stacked storm approach and/or a significantly larger pond footprint. The combined acreage of these ponds will be increased by 50% to account for these locations when scoping the number of geotech borings. This will provide a contingency, which will only be used if geotech ends up being performed in these larger footprints.
- PGA has identified floodplains which will be impacted within the corridor, but was primarily focused on the stormwater ponds for preliminary siting. Investigation of anticipated floodplain impacts is underway to begin review of FPC needs for the corridor.
- Current intent is to go design build with the Auxiliary Lanes project, and purchase R/W sized for the "ultimate condition" using the 90% impervious assumptions. Project should be let by 2025.
- Desktop review of pond site alternatives should be held until after R/W review.

ACTION ITEMS:

➢ David Graeber to set up a follow-up meeting with Drainage, and a preliminary meeting with R/W.

➢ PGA to revise assumptions/calculations and deliver pond sites updated according to discussion in the meeting by Sept 8, 2023.

- Basin 13 is the most challenging basin. It will be left until last and may lag behind the remaining basins.
- Basins 1 & 2 will be completed first and delivered as early as possible.

➢ PGA to begin siting Floodplain compensation ponds.

➢ PGA to coordinate with HDR regarding adjustments to scope of effort to ensure the design proceeds appropriately.

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MEETING MINUTES

DATE/TIME: September 12, 2023; 10:00am – 12:00 pm

PROJECT: Project Development and Environment (PD&E) Studies I-75 (SR 93) From SR 200 to SR 326

LOCATION: TEAMS Meeting

ATTENDEES: Ferrell Hickson (FDOT Drainage), Efren Rivera (FDOT Drainage), Stephen Browning (FDOT), David Graeber (I-75 North Section PM), Nick Truncone (FODT Right of Way), Kyle Howard (FDOT), Edward Northey (FDOT), Melissa Winsett (), Casey Lyon (), Alex George (BCC Reviewer), Steven Schnell (HDR PM), (Michael Holt (PGA Drainage), Aayushi Vagadia (PGA Drainage).

The following notes reflect PGA's understanding of the discussions and decisions made at this meeting. If you have any questions, additions, or comments regarding elements contained in these minutes, please contact PGA. The minutes will be considered accurate unless written notice is received within five working days of the date issued.

The meeting was held to continue the initial review and discussion of pond sites with FDOT and the team.

- The Right of Way (ROW) team recommended steering clear of pond sites with mobile home parks due to high individual relocation costs, provided there are better options available.

- FDOT recommended displaying any easement acquisitions related to a pond site.

- Nick Truncone clarified that in the event of a total parcel take, there will be no obligation to pay business damage costs.

- Nick Truncone suggested that for any pond site requiring a partial parcel take, a comprehensive justification should be provided, particularly when the take exceeds the calculated pond size.

- Basin 1 & 2 pond site discussion:
  - Ferrell suggested a modeling review will be needed for Basin 1 A pond site.
  - Pond 2-B needs to extend slightly to accommodate the driveway.

- Basin 5, 6, and 7 combined pond site discussion:
  - David Graeber suggested taking up the entire parcel where pond 5 and 6 combined pond is sited and to try to accommodate runoff from basin 7 within it. He also suggested the extra area west of the FDOT parcel be ditched and analyzed if this can be accommodated in pond 5 and 6 combined ponds.
  - It is preferred that all runoff from basins 5, 6, and 7 be routed to a combined large pond.
  - Need to coordinate with the City of Ocala to determine if the 3.75-acre City of Ocala-owned parcel adjacent to the FDOT-owned parcel on the east side of basin 5 can be used.

- Basin 7 pond site discussion:
  - The FDOT parcel east of the interstate near US 27, which is adjacent to the City of Ocala (City) parcel, was explored for a potential pond site. The city parcel has an existing flood plain and cannot

provide sufficient storage. Therefore, only the FDOT parcel was chosen to site the pond.
- Pond 7-B is sited on an RV resort and mobile home park site. The current pond site affects the mobile home park section of the property. Nick Truncone suggested taking half of the RV park instead of all the mobile home park. PGA explained that the decision was based on accommodating the existing lower elevation and taking half the RV park area will not leave enough room for grading and will leave an unusable parcel area.
- The team confirmed that a new roadway is set to be constructed on the south side of US 27. PGA can reach out to TERRA for the permitted plans.
- Pond 7C's shape to be modified once the new roadway plans are received.

➢ Basin 8, 9 & 10 discussion:
- Multiple small parcels will need to be acquired to provide sufficient storage.
- The team agreed on a joint-use pond for basins 8, 9, and 10.
- PGA to analyze if basin 11 runoff can also be accommodated in the combined 8, 9, and 10 pond.
- Additional alternatives were discussed, considering sitting ponds near lower parcel elevations and/or with significantly lower impact on the existing business in case of a partial take.

➢ Basin 11 and 12 discussions:
- Joint-use pond for basins 11 and 12 was discussed.
- For pond site 11-A, the possible easement acquisition sites were discussed, and the FDOT team mentioned that an easement on the mine site will be less valuable.
- The FDOT team also mentioned that Marion County is currently working on the remediation of the mine site.
- PGA to verify if any easement options are feasible through the site of the Amazon fulfillment center.
- PGA to analyze if basin 11 and 12 runoff can be accommodated in the basin 8, 9, 10 combined pond alternative.

➢ Basin 14 and 15 discussions:
- No suggestions were made for the proposed pond sites in basin 14.
- Due to sufficient vacant parcels present in basin 15, the FDOT team confirmed that no business parcel needs to be analyzed for a potential pond site alternative.

➢ General Discussion items:
- Ferrell Hickson emphasized that any alternatives with potential raised berms will need sheet piles and additional modeling to verify stability.
- A tide-down slope of 4:1 should be maintained.
- Regardless of combined-use ponds for multiple basins, 2 or 3 pond alternatives per basin are needed.

ACTION ITEMS:

➢ PGA to provide a list of preferred alternatives.

➢ PGA to provide a list of sites with Geotech priorities.

➢ PGA to update calculations and pond site locations to accommodate combined ponds for multiple basins.

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MEETING MINUTES

DATE/TIME: December 6, 2023; 4:00pm – 5:30 pm

PROJECT: I-75 (SR 93) From SR 200 to SR 326

LOCATION: Webex Meeting

ATTENDEES: Tracy Strub (Marion County), Jared Peltz (Marion County), Bill (?) (Marion County), Efren Rivera (FDOT Drainage), Kyle Howard, Mark Trebitz, David Graeber (I-75 North Section PM), Steven Schnell (HDR PM), Michael Holt (PGA), Aayushi Vagadia (PGA Drainage).

The following notes reflect PGA's understanding of the discussions and decisions made at this meeting. If you have any questions, additions, or comments regarding elements contained in these minutes, please contact PGA. The minutes will be considered accurate unless written notice is received within five working days of the date issued.

The meeting was held to review and discuss pond sites with Marion County and the team.

- David Graeber requested school bus rout info for NW 63rd Street and Jared Peltz from Marion County (County) can provide information.

- Basin 1,2,3 outside County jurisdiction. Tracy Strub suggested reaching out to the City of Ocala (City) for information.

- Basin 4:
    - Pond B4-B2: City possibly working with FDOT on taking this site for realigning 3rd street interchange on this parcel. Tracy Strub confirmed that the property owner has been contacted in the past for a possible intersection realignment project on the parcel. She also mentioned that the City planner has retired and talking to David (?) from the city will be helpful.
    - Pond B4-A and B4-E: No information available.
    - Tracy Strub suggested contacting the City for any additional information on basin 4.

- Basin 5 & 6:
    - Pond B5-A, B6-A & B7-B Combined: County not familiar with owner.
    - Pond B5-B & B6-B: Under City Jurisdiction.
    - Pond B5-C: FDOT owned parcel. City lift station on the south side of the property. County does not have information of the Stormwater pipe discharging to the parcel.
    - Pond B6-C: 2 parcels, both owned by a local attorney.
    - Pond B5-D: County not familiar with owner.

- Basin 7:
    - Pond B7-A: FDOT property. Not much information on NW 35th Avenue expansion.
    - Pond B7-C: County not familiar with owner.

- Basin 8 & 9 & 10:
  - Pond B8-A & B9-A Combined: Very old Sawmill. Multi-generational owned business. Probably unwilling to sell.
  - Pond B8-C &B9-C & B10-C: Multiparcel alternatives. Corner parcels on both pond sites owned by C L D Properties Ltd. Company owned by Mr. Brad Dinkins. The county mentioned that Mr. Dinkins owns multiple corner properties around the county. He is a willing seller but will be hard to negotiate with on the financial front.
  - Pond B8-B &B9-B & B10-A: City/County (?) interested in expanding on the parcel. There has been plenty of interest in the adjoining hotel property and the access road.
  - Pond B10-B: Multiple residential property. County not familiar with owner.

- Basin 11 & 12:
  - Pond B11-A: Poor Drainage conditions. Lot of rock underneath. No sink holes on site and any past sinkholes have been capped.
  - Pond B11-B & B12-B Combined: Parcel part of future expansion plans for the Florida Crossroads logistics center business. County mentioned that a gas main relocation was performed on the site and the parcel will come with a price. County can provide property owner contact information.
  - Pond B11-C & B12-C & B13-A Combined: Flee market Vacant. Some improvements have been made to adjacent property.
  - Basin B12-A: County does not have any information. Tracy Strub suggested I-75 interchange team can provide more information on the parcel.

- Basin 13 & 14 &15:
  - Pond B13- C: Baldwin ranch, probably not willing to sell.
  - Pond B14-A & B15-C Combined: Owned by a family of 2 brothers and a sister. The sister is the family spokesperson. Probably negotiating some development on the property.
  - Pond B13-B & B14-B: County not familiar with the owners.
  - Pond B14-C: Owner easy to talk with. Has tried a few development ideas in the past.
  - Pond 15-A: Title problems in the region. Few families live here. Multiple Land locked parcels. Great area to get if willing sellers. Could face public reception issues.
  - Pond B15-B: County not familiar with the owners.

- Basin 16:
  - Pond B16- A: County not familiar with owner.
  - Pond B16- B: Title problems in the region. Could face public reception issues.
  - Pond B16-C: Title problems in the region. (?)

ACTION ITEMS:

- County to provide contact information for Bus route, Parcel: 21889-009-00 & 21901-000-00 (Local lawyer), Mr. Brad Dinkins, Florida Crossroads logistics center business.
- David Graeber to set up a meeting with City to discuss pond site withing city jurisdiction.

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MEETING MINUTES

DATE/TIME: December 18, 2023; 1:00pm – 2:00 pm

PROJECT: Project Development and Environment (PD&E) Studies I-75 (SR 93) From SR 200 to SR 326

LOCATION: TEAMS Meeting

ATTENDEES: Steven Buck (FDOT PM), Ed Kestory (FDOT PM), Ferrell Hickson (FDOT Drainage), Joseph Fontanelli (FDOT Project Development), Edward Northey (FDOT), Gregory Lesick (FDOT Environmental Permitting), Jennifer Ferngren Cappelletti (FDOT Environmental Permitting), Mark Trebitz (FDOT PLEMO), Kyle Howard (FDOT), Craig Johnson (FDOT), Casey Lyon (FDOT), Deysai Roberson (FDOT), Nicole Belian (FDOT), Stephen Browning (I-75 South Section PM), David Graeber (I-75 North Section PM), Steven Waterson (I-75 North Section Design PM), Steven Schnell (HDR PM), Frank Fu (HDR Drainage), Michael Holt (PGA), Aayushi Vagadia (PGA Drainage).

The following notes reflect PGA's understanding of the discussions and decisions made at this meeting. If you have any questions, additions, or comments regarding elements contained in these minutes, please contact PGA. The minutes will be considered accurate unless written notice is received within five working days of the date issued.

The meeting was held to walk through the till date analysis of ultimate pond sites and get input on potentially preferred pond sites with FDOT and project team.

- David Graeber emphasized that the finalization of pond site alternatives for the Pond Siting Report (PSR) is currently underway, with the selection of the preferred alternative determined through today's discussion. He stressed the importance of moving forward with these sites, as they are scheduled for presentation at the public meeting in April 2024.

- David Graeber reiterated that the current pond siting is based on the best available information and further highlighted the team's commitment to ongoing refinement of these sites during the design phase, contingent upon the availability of geotechnical and other pertinent data.

- Ferrell Hickson inquired about the involvement of the Right of Way team in assessing the pond sites, and Michael Holt confirmed that multiple meetings were conducted with the ROW team. During these meetings, the ROW team provided valuable input, which was duly considered in the process of sitting in the ponds.

- Basin 1&2 pond site discussion:

  - Pond Alternative B1-A & B2-C Combined: The pond's location was determined using permit data obtained from the adjacent existing pond. The current pond site was carefully chosen to prevent encroachment into existing floodplains and to steer clear of lower elevations on the south side of the property. Pond alternative is a Multi parcel take.

  - Ferrell Hickson raised a question regarding the location choice of pond "B1-B & B-2A Combined" at the back of the property. In response, Michael Holt explained that the decision was made due to the higher elevation at the front of the parcel and unfavorable seasonal high conditions according to available NRCS data. Michael Holt further clarified that a seasonal high test has been requested for the front of the parcel. Depending on the results, if the seasonal high is found to be sufficiently deep, there is potential for considering a combined pond placement at the front of the parcel.

- Pond Alternative B1-F & B2-B Combined: The site holds a residential development permit, officially issued in September 2023. Presently, the site is undergoing clearing activities in anticipation of a phased development approach, planned to occur in two distinct phases.

- Pond Alternative B1-B & B2-A Combined is chosen as the preferred alternative.

➢ Basin 3 pond site discussion:

- Pond Alternative B3-B: Single parcel take. The team engaged in a significant discussion with the property owners during the public meeting on Wednesday, December 13th, 2023. The owners explicitly communicated that acquiring their property would not align with the project timeline, as they intend to pose legal challenges at every stage due to its crucial role as a prime hub for their business. Instead, they recommended exploring the possibility of targeting the CARQUEST auto parts site.

- Pond Alternative B3-C: This is a multi-parcel take. All parcels currently accommodate existing businesses, with established permits indicating favorable geotechnical conditions. During discussions, Ferrell sought clarification on the water conveyance to the pond and potential utility conflicts. Michael Holt noted that further investigation into utility conflicts is essential. He also mentioned the potential need for a Right-of-Way (ROW) easement in the absence of utility conflicts.

- Pond Alternative B3-D: A geotechnical study is currently underway. The geotechnical conditions in the adjacent parcel with an existing permit are highly favorable, and there is optimism that the vacant parcel will exhibit similar favorable geotechnical results. As of now, this option is the preferred alternative.

- Pond Alternative B3-D is chosen as the preferred alternative.

➢ Basin 4 pond site discussion:

- Pond Alternative B4-A: This alternative involves a multi-parcel take, with both parcels currently vacant. Limited geotechnical information is available as neither parcel holds permits. NRCS data indicates deeper groundwater levels. Notably, these parcels lack easy access and will require easements through multiple properties.

- Pond Alternative B4-B2: This alternative involves a single parcel take, supported by permit data indicating suitable Seasonal High (SH) conditions. Conveyance through SR 40 is planned, requiring a thorough analysis of easement utility conflicts. A complicating factor is the city's intention to realign SW 40th Avenue and construct an interchange near or on the property. Further coordination with the city is essential to comprehend their plans. Ferrell Hickson suggested that a joint-use pond could be considered by the city if they proceed with the interchange. Additionally, Steven Waterson raised a question regarding the small area excluded on the west side of the

Pond and It was clarified that this area is designated as a city easement.

- Pond Alternative B4-E: This pond involves a two-parcel take, with the first parcel being vacant and designated for a full take, while the second parcel is commercial property and will undergo a partial take. Permit data indicates favorable Seasonal High (SH) conditions. The project will require a very short easement for conveyance.

- David conveyed that Pond Alternative B4-B2 is selected as the preferred pond in the Pond Siting Report (PSR), and analysis will persist into the design phase as additional information becomes available from geotechnical studies and the city.

➢ Basin 5,6 & 7 pond site discussion:

  - Pond Alternative B5-A, B6-A & B7-B Combined: This alternative involves a combined pond on two parcels currently available for sale. The available geotechnical data has been thoroughly reviewed and considered while sitting in the pond. The current placement is at the back of the property due to cultural resource sites at the front, avoiding encroachment into existing floodplains and lower elevation areas. The easement location needs to be determined through discussions with the property owner. In the meeting, it was suggested that the best location for an easement is through the center of the property. Ferrell Hickson noted the typical placement of easements on the edge of the property and proposed exploring an easement through the interstate, avoiding it if possible. He also recommended verifying access to the property. Steven Schnell informed that there are two dirt road accesses in the front of the property, but archaeological sites have been detected there. After thorough discussion, it was suggested to show a pond shape for the pond alternative specific to basins 5 and 6, in addition to the current pond site.

  - Pond Alternative B5-B Or B6-D: This vacant parcel, featuring a dilapidated building, serves as a potential alternative for either Basin 5 or Basin 6. Steven Buck highlighted the confusion in the current naming convention, suggesting a correction to clearly reflect its nature as an either-or alternative and not as a combined alternative. The NRCS data indicates deep groundwater, but no permit information is currently available.

  - Pond Alternative B5-C: This alternative is deemed undesirable due to the presence of Karst conditions on the surface and existing surface water on-site.

  - Pond Alternative B5-D: This alternative involves a vacant parcel with a billboard on-site. Easement requirements will be contingent on utility conflicts, but no additional easements are currently required. The location is considered favorable due to its adjacency to the Interstate. NRCS data indicates deep groundwater levels. The pond will need to be contoured to avoid lower elevation and floodplain on the east side of the parcel.

  - Pond Alternative B6-C: This alternative involves a two-parcel property owned by the same person, with both parcels being vacant. NRCS data indicates a favorable Seasonal High (SH) depth. Easement is required, and additional utility conflict analysis will need to be conducted.

  - Pond Alternative B7-A: This alternative is located on an FDOT-owned parcel, and geotechnical studies are currently being conducted. Preliminary indications suggest favorable results. The team collectively agrees to designate it as the preferred alternative for basin 7. No additional easement is currently required, but a utility conflict analysis will need to be conducted.

- Pond Alternative B7-C: This alternative involves a two-parcel take, with both parcels currently vacant. The larger parcel is also being considered for a pond for basin 5. NRCS data indicates favorable Seasonal High (SH) conditions. A utility conflict analysis will need to be conducted.

- Pond Alternative B5-D identified as the preferred option for basin 5.

- Pond Alternative B6-D identified as the preferred option for basin 6.

- Pond Alternative B7-A identified as the preferred option for basin 7.

➢ Basin 8,9 & 10 pond site discussion:

- David Graeber briefed the team, highlighting the densely populated nature of the area. He informed them that extensive consideration was given to numerous alternatives, and a few were ruled out due to social and political concerns. David emphasized the limited availability of alternatives, cautioning the team that achieving three viable options for these basins might not be feasible.

- A brief discussion led by Steven Buck took place to explore the possibility of considering only auxiliary lane alternatives for these basins. However, it was deemed impractical as most aux lane ponds were either two-thirds or three-fourths the size of the ultimate condition pond. Consequently, the decision was made to adhere to the ultimate condition pond alternatives for these basins.

- The team deliberated on the limited alternatives available in basins 8, 9, and 10, noting that only three viable alternatives are present, with one site being considered for multiple basins. Ferrell Hickson raised a concern about the potential risk if one of the alternatives doesn't work out, leaving only two viable sites for three basins. To mitigate this risk and avoid potential schedule disruptions, it was decided that one pound will be assigned to each basin to ensure a more stable and manageable approach.

- Pond Alternative B8-B identified as the preferred option for basin 8.

- Pond Alternative B9-C identified as the preferred option for basin 9.

- Pond Alternative B10-B identified as the preferred option for basin 10.

➢ Basin 11,12 & 13 pond site discussion:

- Pond Alternative B11-C, B12-C and B13-A combined: This flea market site, presently for sale, is being considered as a combined pond for basins 11,12, and a compensatory pond for basin 13. Geotechnical work is currently underway on the site, and initial results indicate favorable conditions.
- Ferrell Hickson cautioned that while basin 13 is being compensated in the combined alternative, it is crucial to ensure that no additional volume is directed to the 49th street interchange pond.

- Ed Kestory suggested that Michael should reach out to The Matrix (?) team to gain insights into the Right-of-Way (ROW) requirements, as they are currently in the process of finalizing ROW acquisition for the 49th street pond.

- David Graeber affirmed that the team has been closely coordinating with Alex to gain a comprehensive understanding of the developments and activities related to the 49th street interchange pond.

- Pond Alternative B11-C, B12-C and B13-A identified as the preferred option for basin 11, 12 and 13.

➢ Basin 14 & 15 pond site discussion:

- Pond Alternative B14-A and B15-C combined: Michael Holt provided an overview, explaining that the site is at a natural low and is currently dry at the bottom of the depression. The surface conditions appear very promising. Frank Fu inquired about the deployment of geotechnical studies for the site, and Steven Schnell confirmed that geotechnical work will commence soon.

- Pond Alternative B14-A and B15-C identified as the preferred option for basin 14 and 15.

➢ General Discussion items:

- Basin 16 is part of the 326-interchange project and is not included in this project.

- Casey Lyon inquired whether the ultimate condition project would meet the criteria outlined in the recently proposed rule changes. Ferrel provided clarification, noting that the consideration of 100% volumetric retention and our current phase in the PD&E process should ensure that we encounter no issues in meeting the qualification requirements.

ACTION ITEMS:

➢ PGA to work on PSR.
➢ PGA to provide a list and KMZ of all preferred ponds selected during the meeting.
➢ HDR to schedule Geotech for preferred pond sites.

Appendix H

Review Comments and Responses