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

April 2024

PREPARED FOR:

FLORIDA DEPARTMENT
OF TRANSPORTATION
District Five
DeLand, Florida 32720

SIGNATURE PAGE

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.

SECTION(S) / PAGE RANGE(S): All sections.

This item has been digitally signed and sealed by:

Michael A Holt

Digitally signed by Michael A Holt
Date: 2024.04.17 12:39:42 -04'00'

On the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Patel, Greene & Associates, LLC
12570 Telecom Drive
Temple Terrace, FL 33637
Michael A. Holt, P.E. No. 76111

TABLE OF CONTENTS

LIST OF TABLES

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
- Total 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 volumes for the 96-hour duration, 25-year return frequency must be less than the pre-development discharge volume per SJRWMD 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. requirements for closed basins. A rainfall depth of 10.8 inches is used in volumetric pond sizing calculations for 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.

The ponds are designed for full retention of the 100-year, 240-hour storm event, and will thus satisfy the requirements for attenuation of the design and controlling storms.

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 COST ESTIMATES

The cost estimates were prepared to estimate the costs that are unique to each alternative. These costs includes costs associated with pond construction and ROW cost. Refer to Section 5.3.4 for the individual pond alternatives construction cost estimates.

5.3.3 ROW COST ESTIMATES

The ROW cost is based on the current estimates as 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 F for minutes of pond siting 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. Due to the full containment of the 100-year 10-day volume with a dry retention pond, full treatment will be provided as required by WMD criteria. Recovery of the appropriate volumes during regulatory timeframes will be demonstrated during design, based on final geotechnical and survey data.

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 E. 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 Sheet Frontage
Potential for Impacts to Utilities	Low	Low	Low
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 ($thou.)	TBD	TBD	TBD
Proximity to Outfall (ft)	7419	7032	5485
Easement Requirements	Yes	Yes	Yes
No. of Impacted Parcels	2	1	1
Pond Costs ($thou.)	12,841	7,856	7,196
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
Potential for Impacts to Utilities	Low	Low	Low
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 ($thou.)	TBD	TBD	TBD
Proximity to Outfall (ft)	350	2591	1770
Easement Requirements	No	No	No
No. of Impacted Parcels	1	9	2
Pond Costs ($thou.)	5,227	5,766	7,302
Selection Ranking	3	2	1

5.3.4.3 BASIN 4

Basin 4 lies from Station 2263+94 to 2290+37. 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 8th 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 #16 531.

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
Potential for Impacts to Utilities	Low	Low	Low
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 ($thou.)	TBD	TBD	TBD
Proximity to Outfall (ft)	2193	1865	120
Easement Requirements	Yes	No	No
No. of Impacted Parcels	2	2	2
Pond Costs ($thou.)	6,569	2,755	2,560
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 E.

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
Potential for Impacts to Utilities	Low	Low	Low
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 ($thou.)	TBD	TBD	TBD
Proximity to Outfall (ft)	5802	680	291
Easement Requirements	Yes	No	No
No. of Impacted Parcels	2	1	1
Pond Costs ($thou.)	15,656	5,559	2,454
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 E.

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 E.

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 the 100 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
Potential for Impacts to Utilities	Low	Low	Low
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 ($thou.)	TBD	TBD	TBD
Proximity to Outfall (ft)	3145	3038	580
Easement Requirements	No	No	No
No. of Impacted Parcels	2	2	1
Pond Costs ($thou.)	3,744	3,733	1,535
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.

5.3.4.62 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
Potential for Impacts to Utilities	Medium	Low	Low
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 ($thou.)	TBD	TBD	TBD
Proximity to Outfall (ft)	336	1437	895
Easement Requirements	No	No	No
No. of Impacted Parcels	1	1	2
Pond Costs ($thou.)	3,870	6,350	6,883
Selection Ranking	2	1	3

5.3.4.7 BASIN 8

Basin 8 lies from Station 2363+14 to 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
Potential for Impacts to Utilities	Low
Archaeological Impacts	Low
Historical Impacts	Low
Contamination/Hazmat Impacts	Low
T&E Impacts	Low
Environmental Impacts (ac)	Low
Environmental Mitigation Costs ($thou.)	TBD
Proximity to Outfall (ft)	435
Easement Requirements	No
No. of Impacted Parcels	1
Pond Costs ($thou.)	3,720
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
Potential for Impacts to Utilities	Low
Archaeological Impacts	Low
Historical Impacts	Low
Contamination/Hazmat Impacts	Low
T&E Impacts	Low
Environmental Impacts (ac)	Low
Environmental Mitigation Costs ($thou.)	TBD
Proximity to Outfall (ft)	805
Easement Requirements	Yes
No. of Impacted Parcels	4
Pond Costs ($thou.)	3,810
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
Potential for Impacts to Utilities	Low
Archaeological Impacts	Low
Historical Impacts	Low
Contamination/Hazmat Impacts	Low
T&E Impacts	Low
Environmental Impacts (ac)	Low
Environmental Mitigation Costs ($thou.)	TBD
Proximity to Outfall (ft)	1965
Easement Requirements	Yes
No. of Impacted Parcels	9
Pond Costs ($thou.)	4,567
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.

5.3.4.102 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.

5.3.4.103 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
Potential for Impacts to Utilities	Low	Low	Medium
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 ($thou.)	TBD	TBD	TBD
Proximity to Outfall (ft)	2985	2087	5582
Easement Requirements	Yes	No	No
No. of Impacted Parcels	1	2	1
Pond Costs ($thou.)	5,277	10,242	9,286
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
Potential for Impacts to Utilities	Low
Archaeological Impacts	Low
Historical Impacts	Low
Contamination/Hazmat Impacts	Low
T&E Impacts	Low
Environmental Impacts (ac)	Low
Environmental Mitigation Costs ($thou.)	TBD
Proximity to Outfall (ft)	1002
Easement Requirements	Yes
No. of Impacted Parcels	1
Pond Costs ($thou.)	2,948
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
Potential for Impacts to Utilities	Low
Archaeological Impacts	Low
Historical Impacts	Low
Contamination/Hazmat Impacts	Low
T&E Impacts	Low
Environmental Impacts (ac)	Low
Environmental Mitigation Costs ($thou.)	TBD
Proximity to Outfall (ft)	1713
Easement Requirements	No
No. of Impacted Parcels	1
Pond Costs ($thou.)	13,504
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 run off 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
Potential for Impacts to Utilities	Low	Low	Low
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 ($thou.)	TBD	TBD	TBD
Proximity to Outfall (ft)	900	55	3399
Easement Requirements	No	No	No
No. of Impacted Parcels	1	1	2
Pond Costs ($thou.)	5,681	8,341	10,791
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 run off 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 80 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+82.11 to 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,
Potential for Impacts to Utilities	Low	Low
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 ($thou.)	TBD	TBD
Proximity to Outfall (ft)	43	848
Easement Requirements	No	Yes
No. of Impacted Parcels	6	2
Pond Costs ($thou.)	7,739	9,077
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

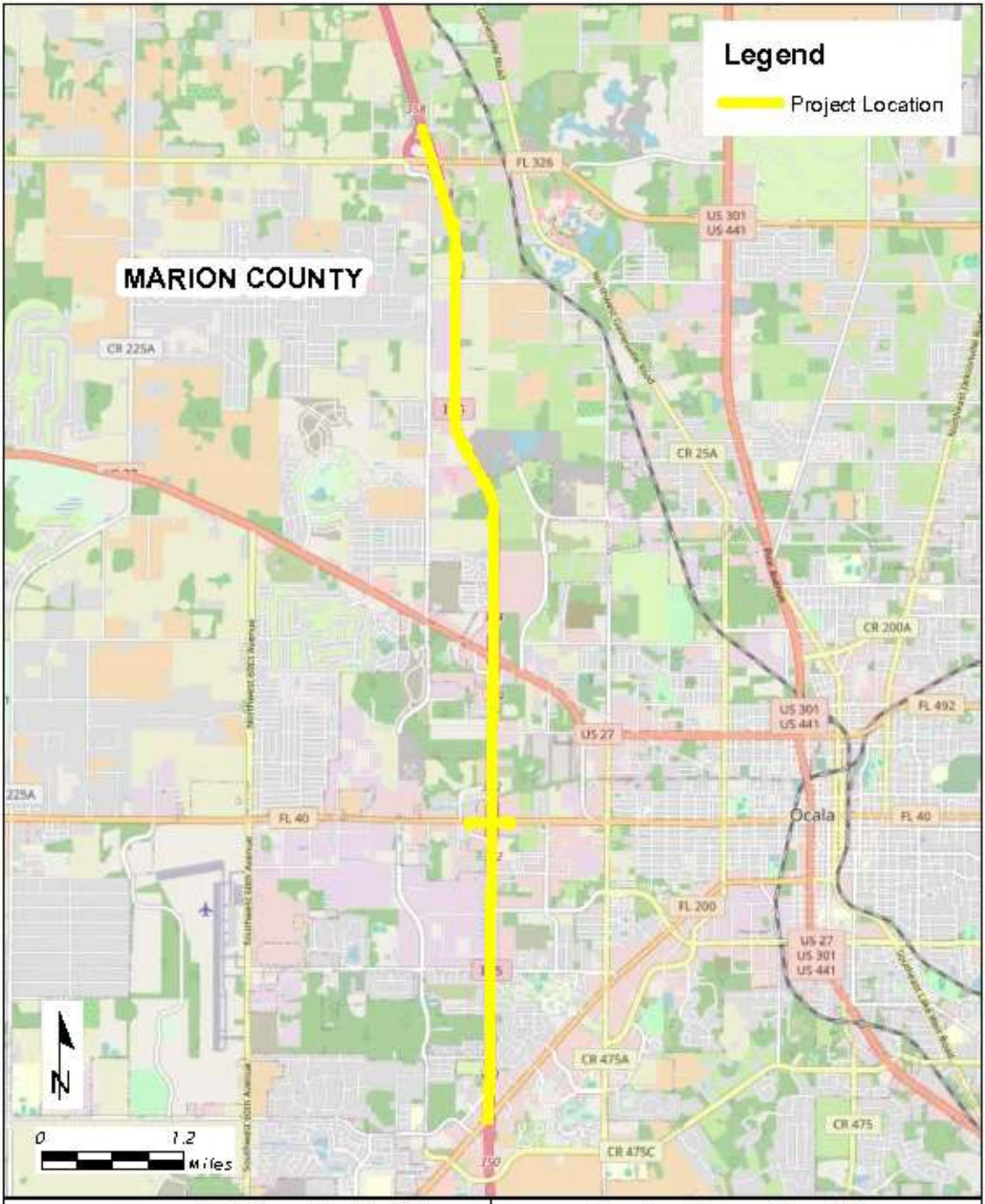
Appendix A	Exhibits
Appendix B	Typical Section
Appendix C	NRCS Soils Report
Appendix D	Preliminary Pond Sizing Calculations
Appendix E	Historic Drainage Maps and Permit Data
Appendix F	Correspondence
Appendix G	Review Comments and Responses

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
Exhibit 23	Pond Alternative B7- C

Appendix A

Exhibits

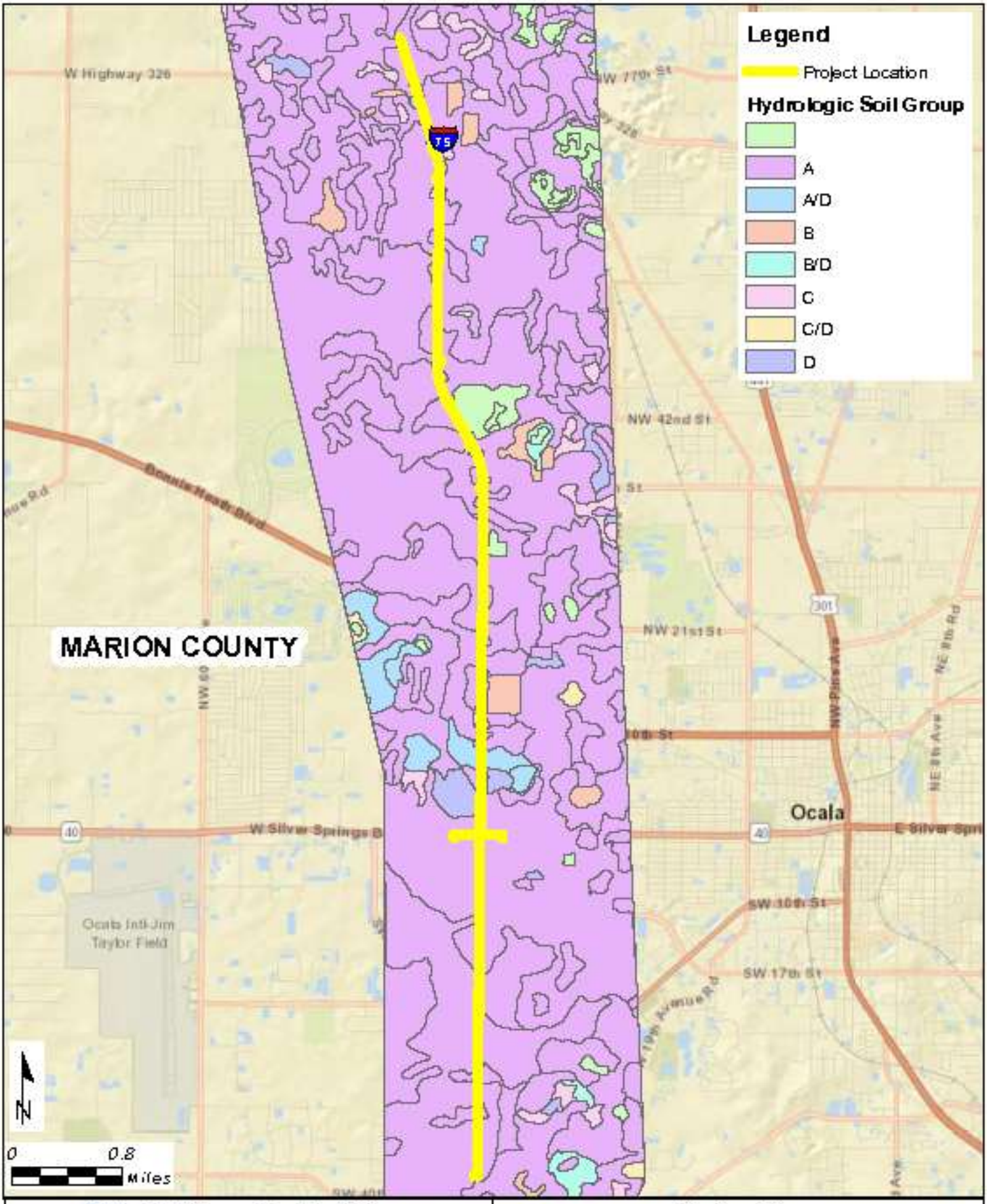


Patel, Greene & Associates, LLC
12570 Telecom Drive
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

Project Location Map

Auxiliary Lanes at I-75

FPID: 443624-1-22-01 | Exhibit 1 of 38 | Date: 1/23/2024

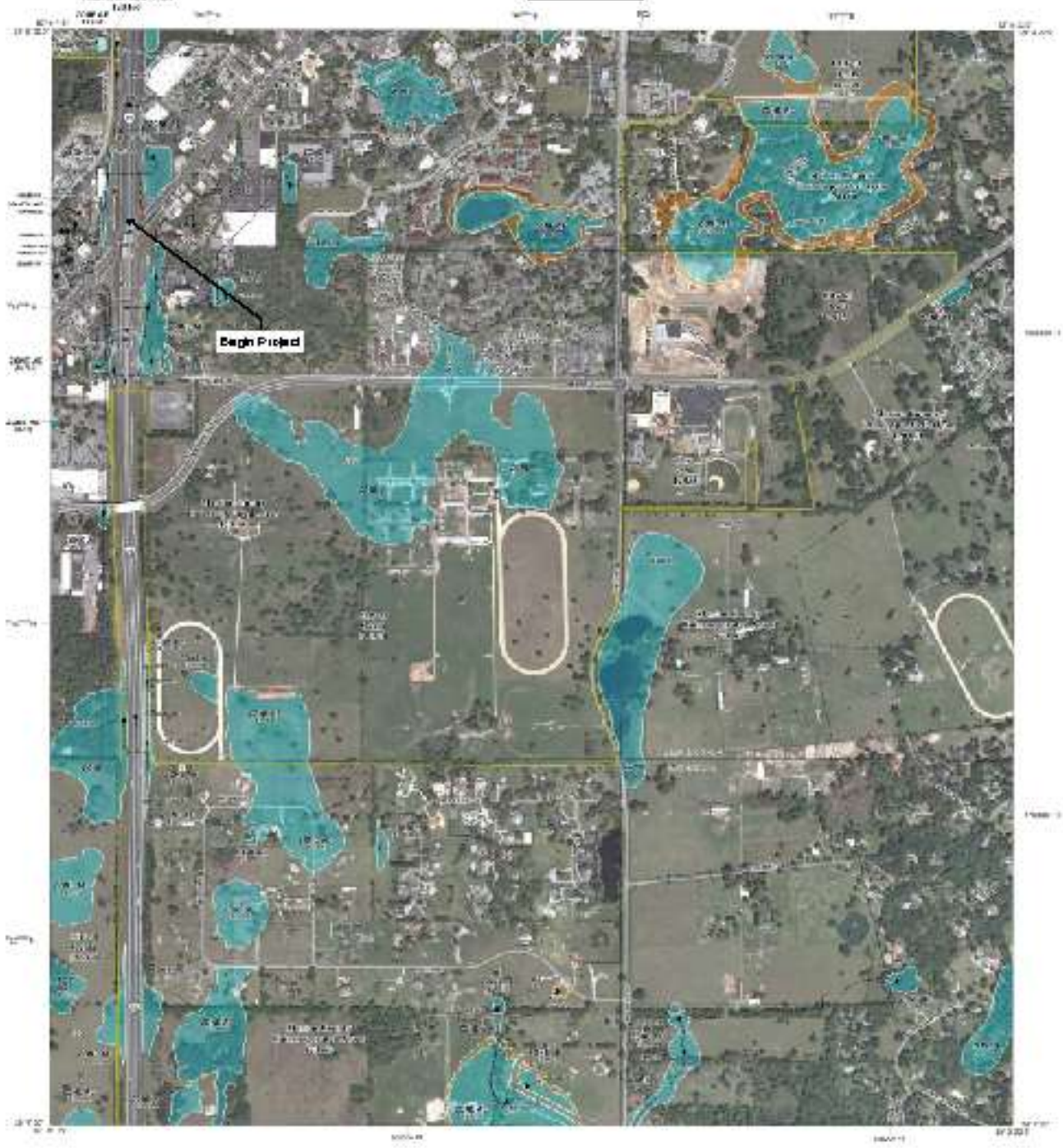


Patel, Greene & Associates, LLC
280 West Canton Avenue, Suite 400
Winter Park, FL 32789
Elizabeth M. Bartell, PE # 69125

Soils Map

Auxiliary Lanes at I-75

Exhibit 3A



FLOOD HAZARD INFORMATION

NOTES TO USERS

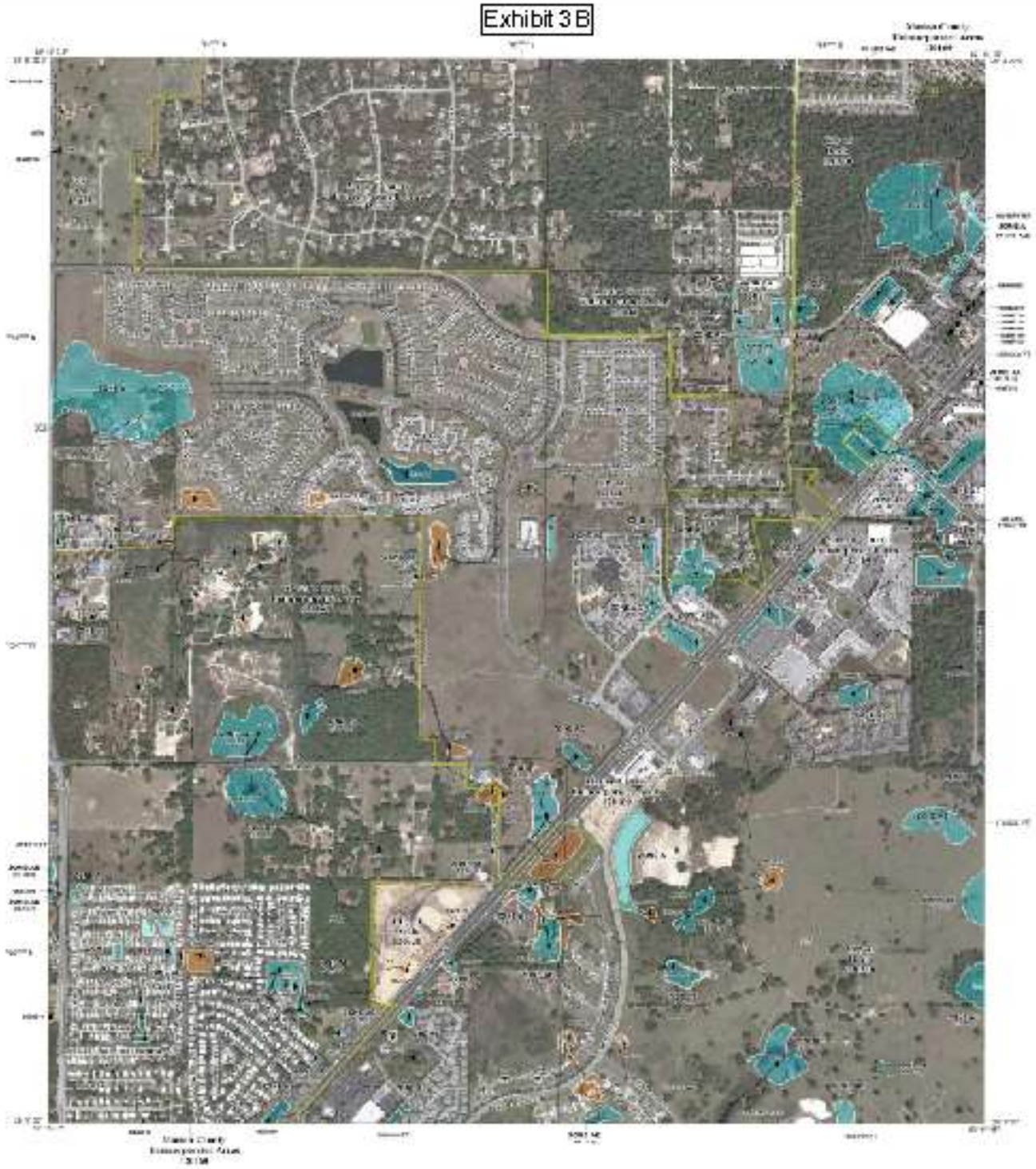
SCALE

PANEL LOCATION

FEMA

National Flood Insurance Program

Exhibit 3 B



FLOOD HAZARD INFORMATION

NOTES TO USERS

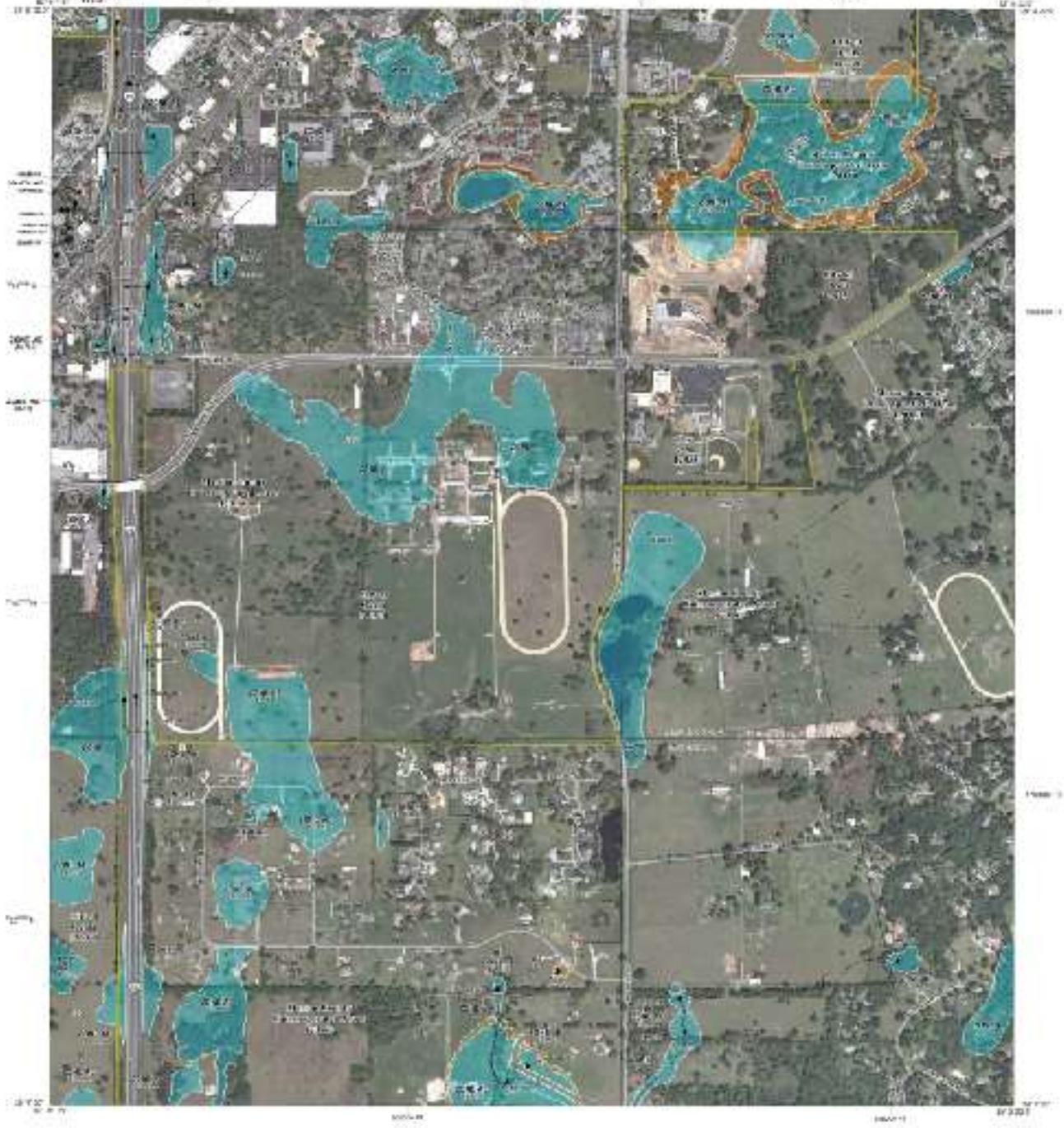
SCALE

PANEL LOCATION

FEMA

National Flood Insurance Program

Exhibit 3C



FLOOD HAZARD INFORMATION

NOTES TO USERS

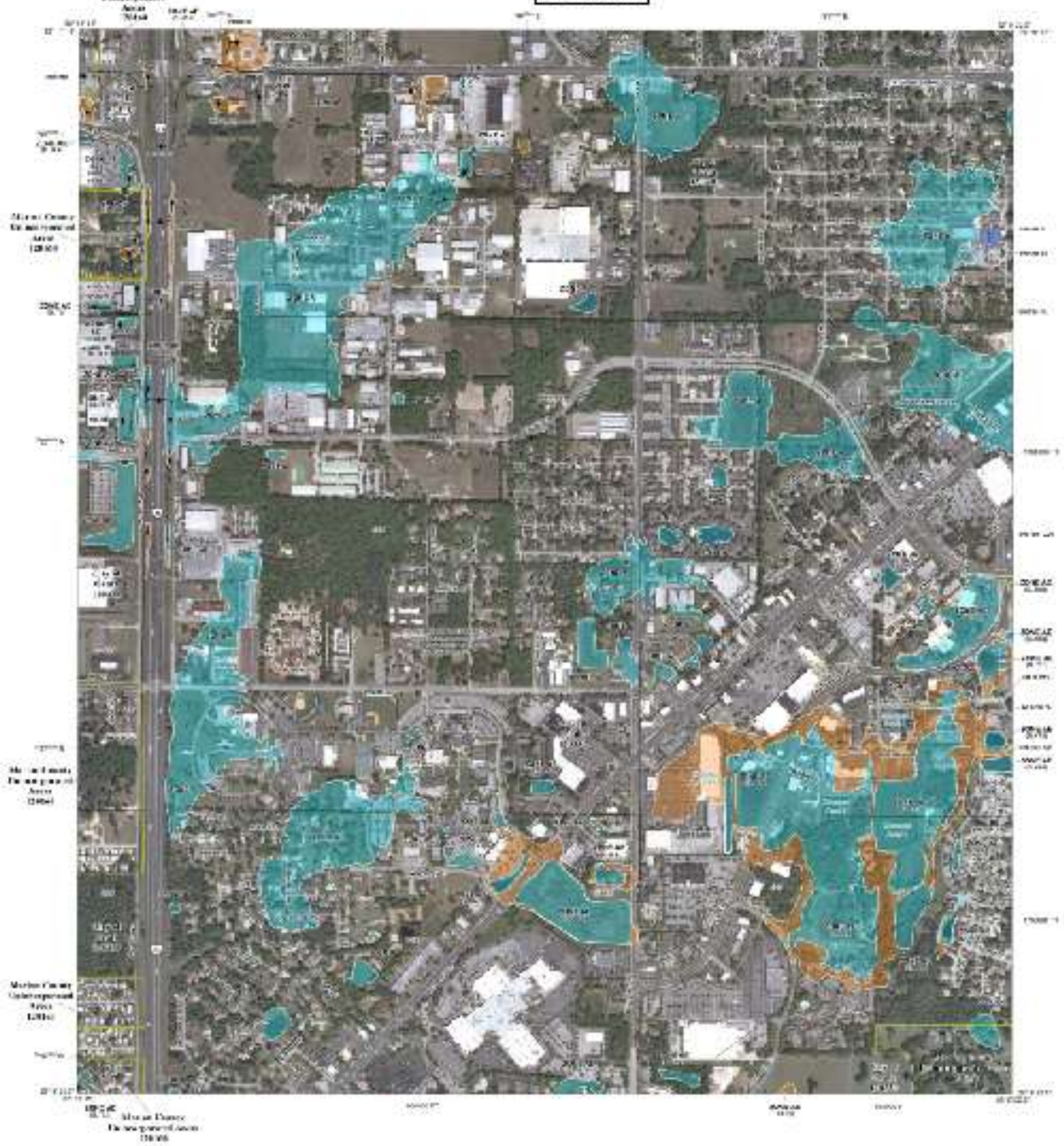
SCALE

PANEL LOCATION

FEMA

National Flood Insurance Program

Exhibit 3D



FLOOD HAZARD INFORMATION

NOTES TO USERS

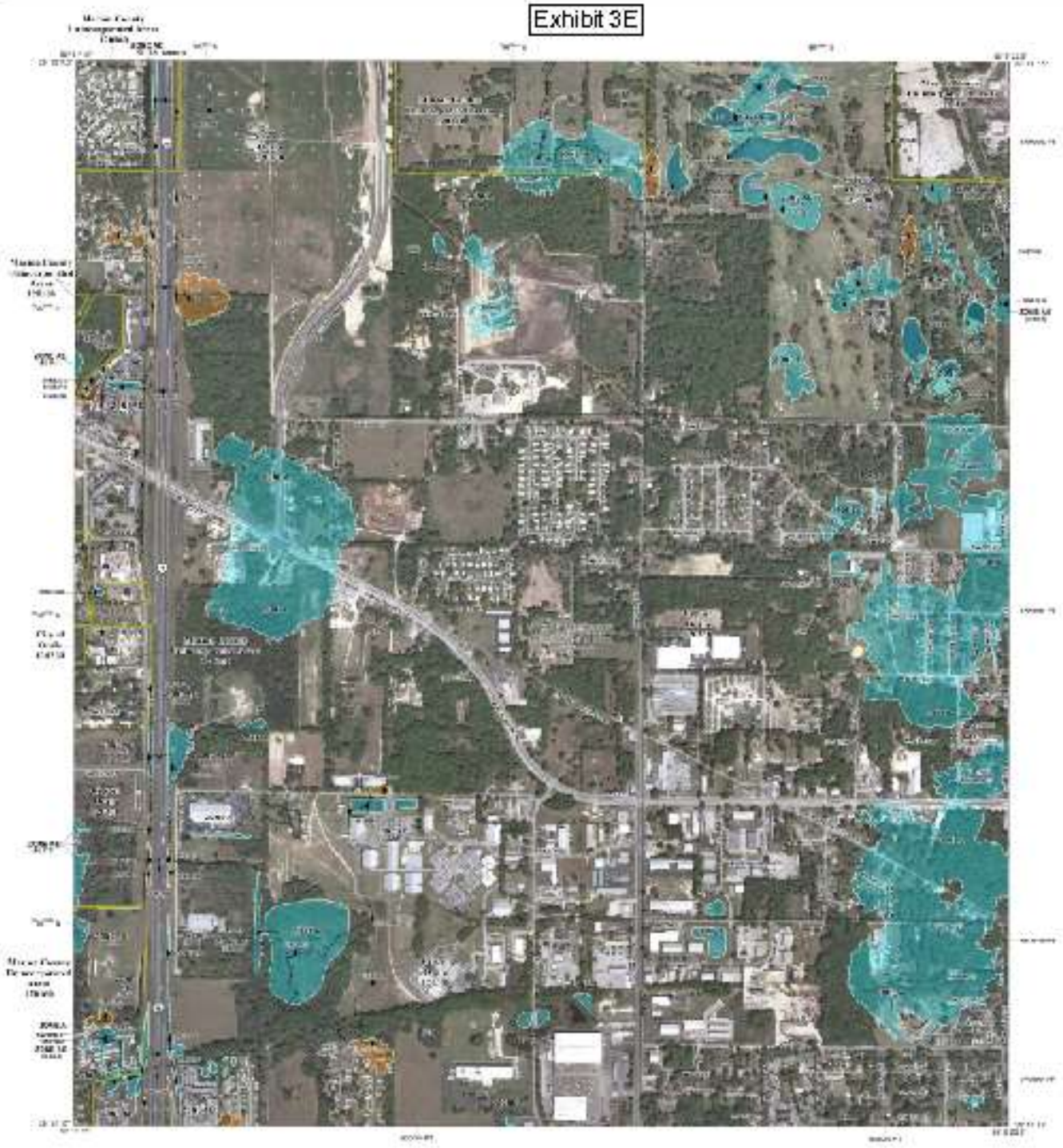
SCALE

PANEL LOCATION

FEMA

National Flood Insurance Program

Exhibit 3E



FLOOD HAZARD INFORMATION

NOTES TO USERS

SCALE

PANEL LOCATION

FEMA

National Flood Insurance Program

Exhibit 3F

FLOOD HAZARD INFORMATION

NOTES TO USERS

SCALE

PANEL LOCATION

FEMA

National Flood Insurance Program

Exhibit 3G

FLOOD HAZARD INFORMATION

NOTES TO USERS

SCALE

PANEL LOCATION

FEMA

National Flood Insurance Program

Exhibit 3H

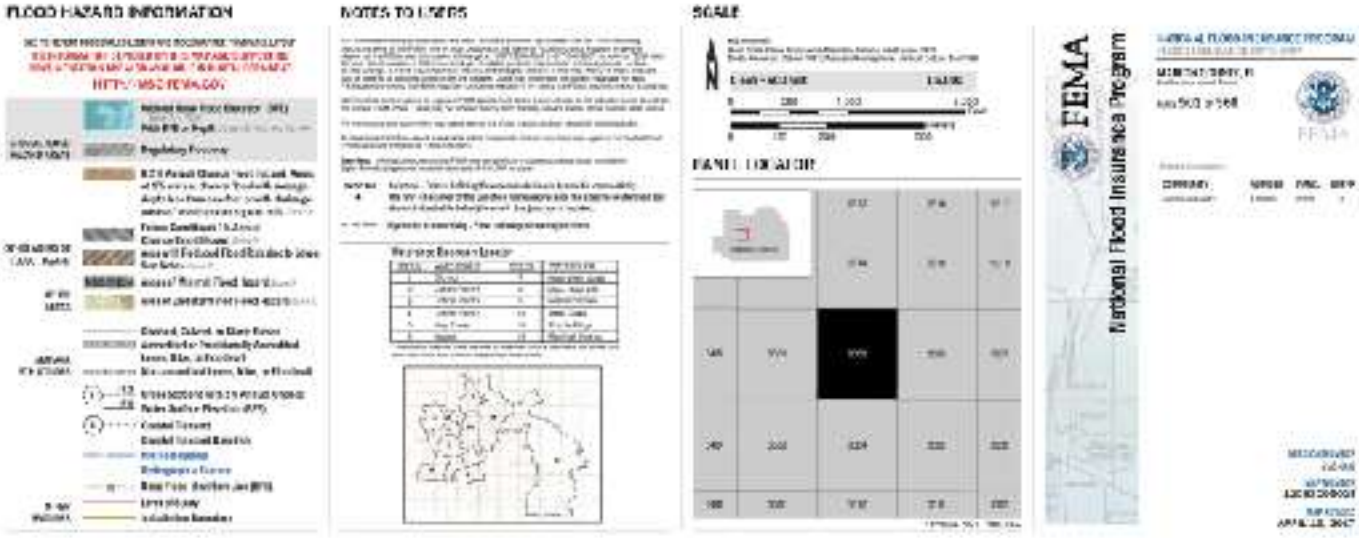
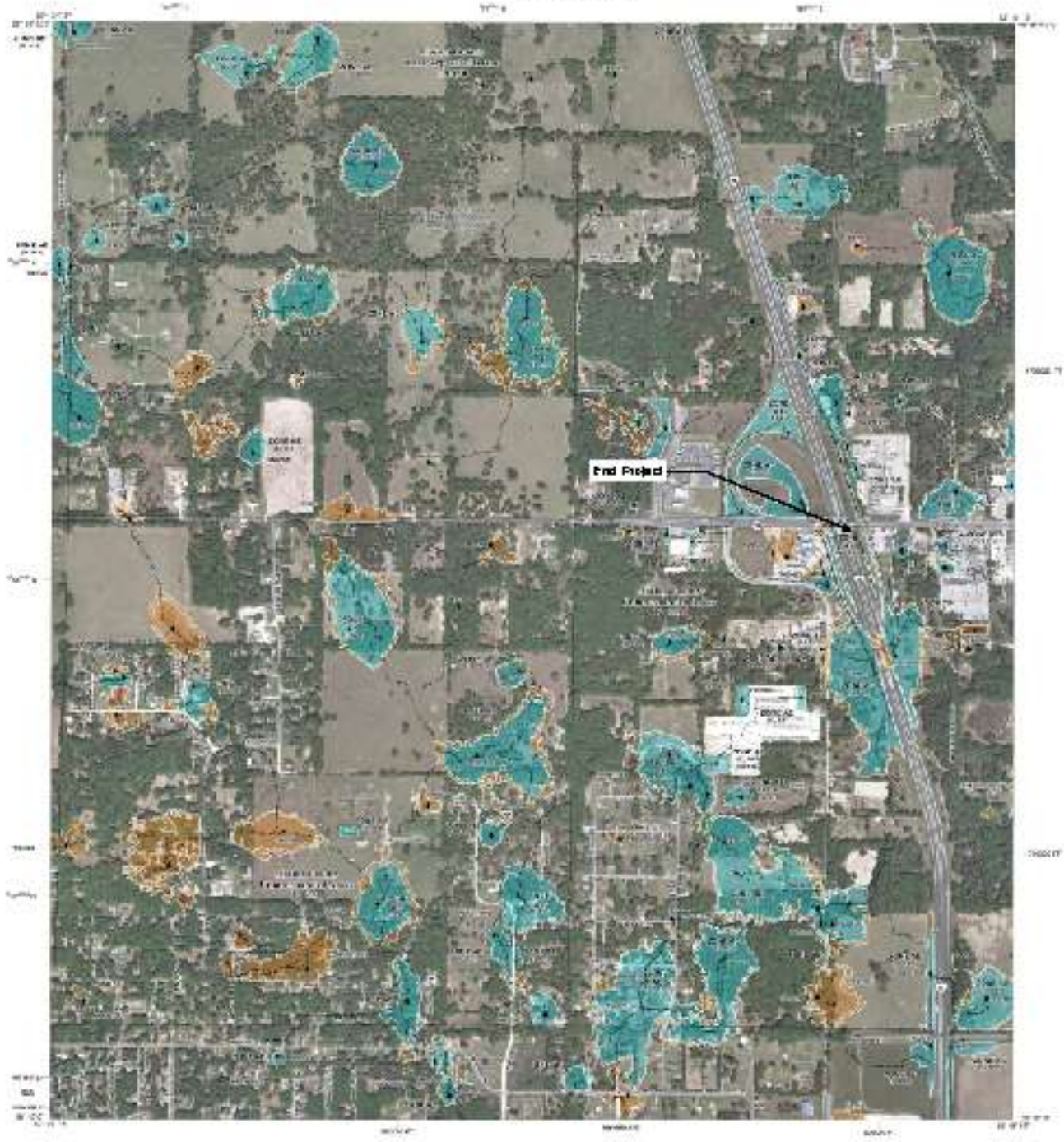

FLOOD HAZARD INFORMATION
NOTES TO USERS
SCALE
PANEL LOCATION
FEMA
National Flood Insurance Program

Exhibit 3I



FLOOD HAZARD INFORMATION

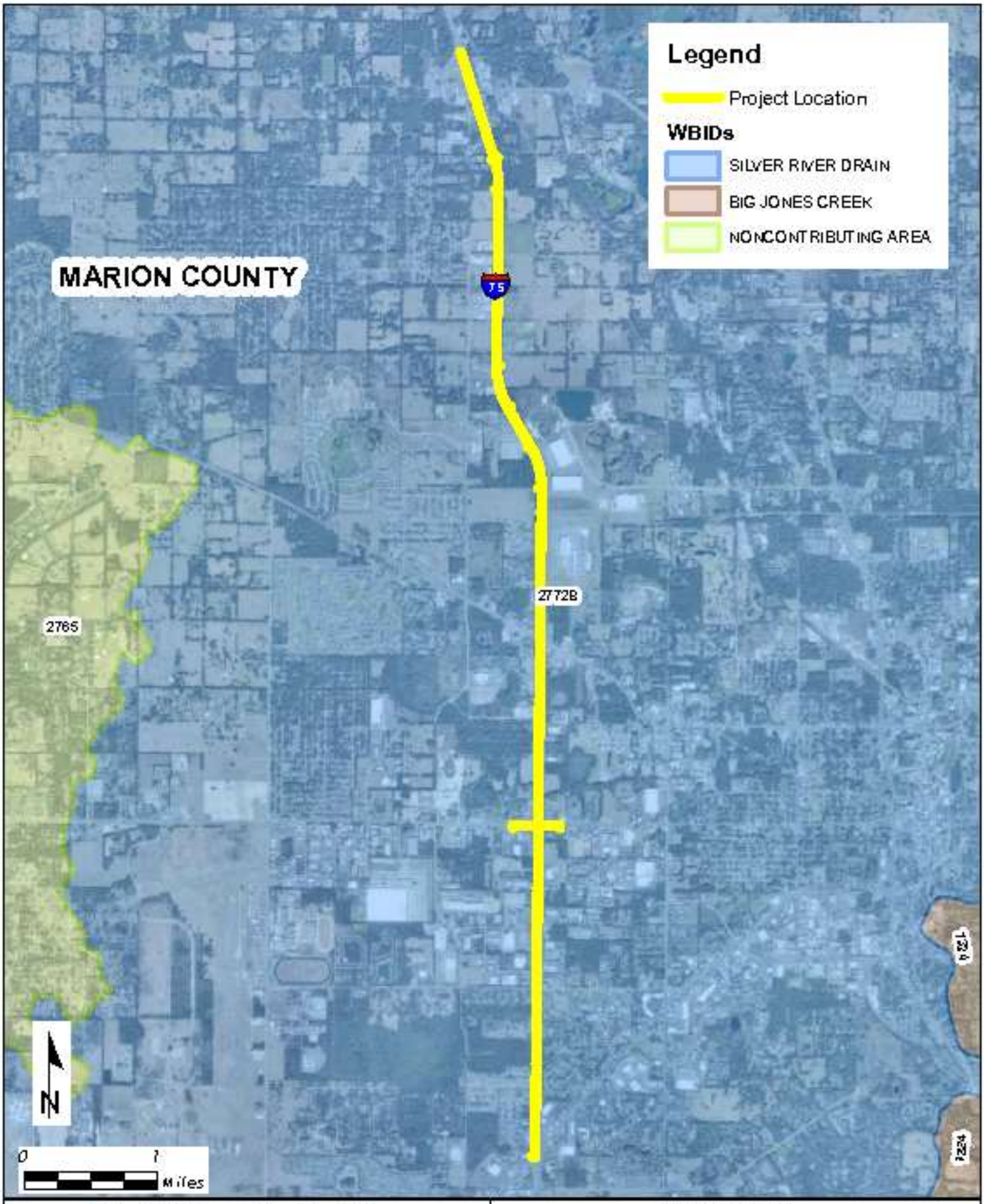
NOTES TO USERS

SCALE

PANEL LOCATOR

FEMA

National Flood Insurance Program

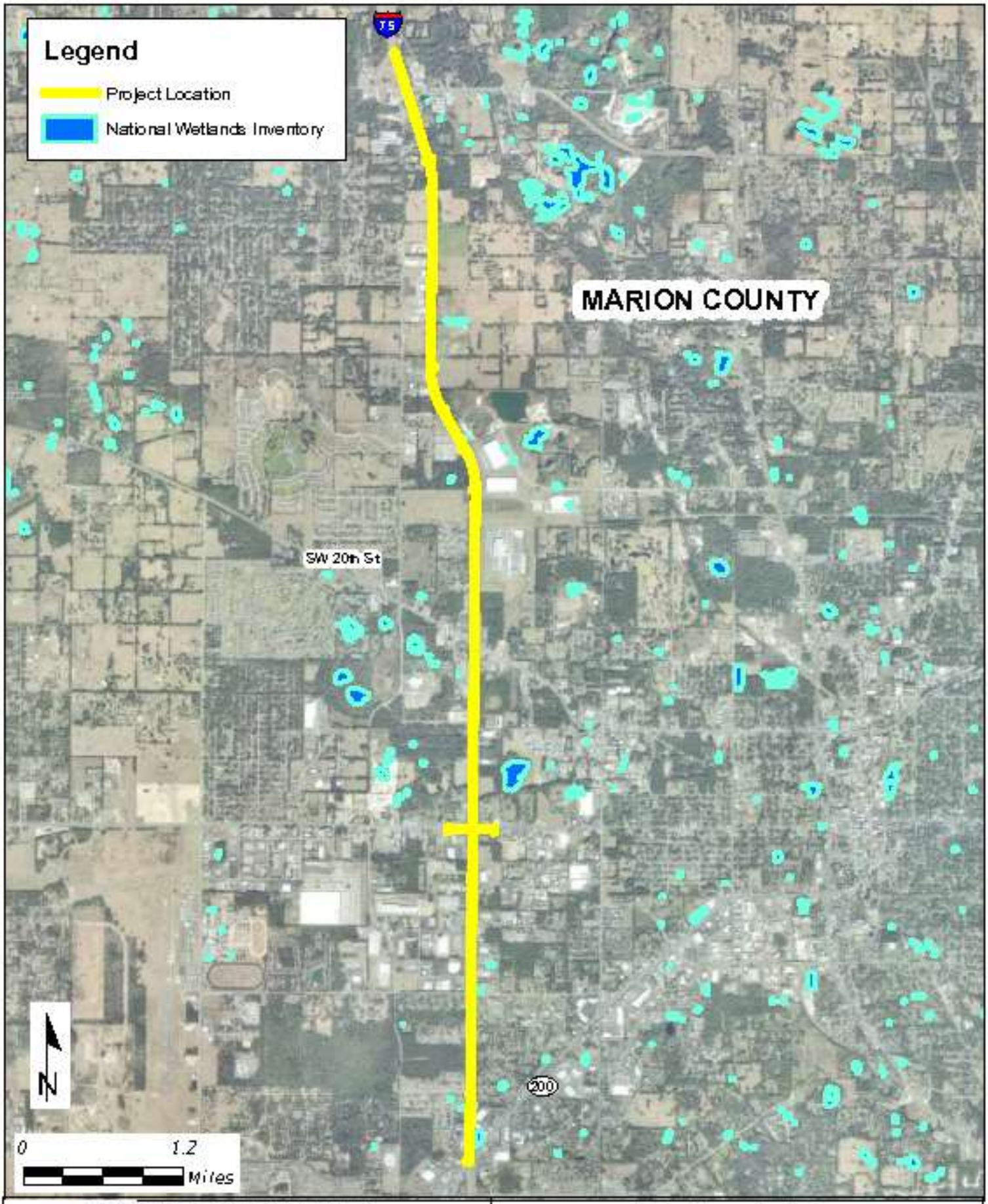


Patel, Greene & Associates, LLC
12570 Telecom Drive
Tampa Terrace, FL 33637
Michael A. Holt, PE # 76111

WBID Map

Auxiliary Lanes at I-75

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



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

Wetlands Map

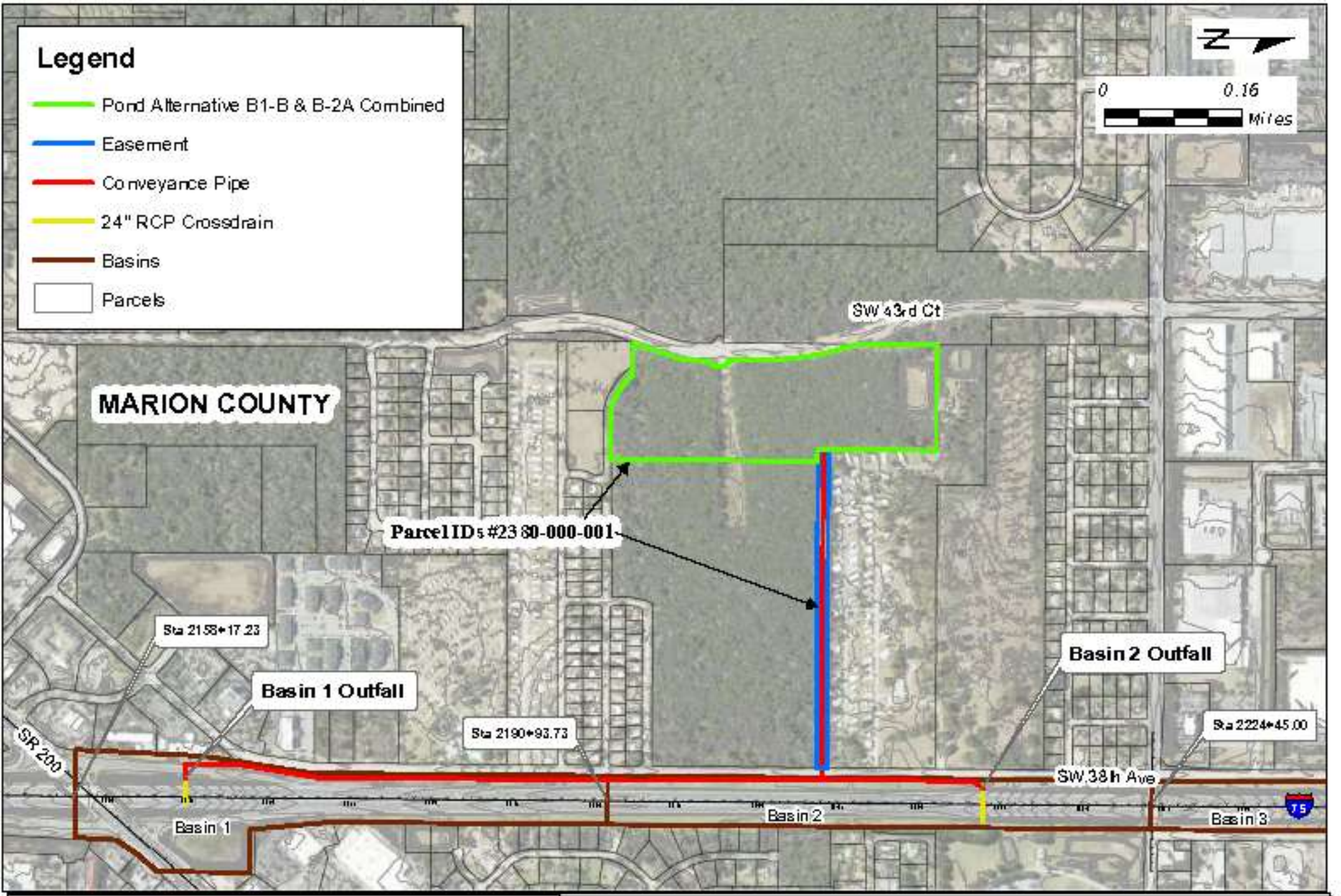
Auxiliary Lanes at I-75

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

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

Pond Alternative B1-A & B2-C Combined

Auxiliary Lanes at I-75

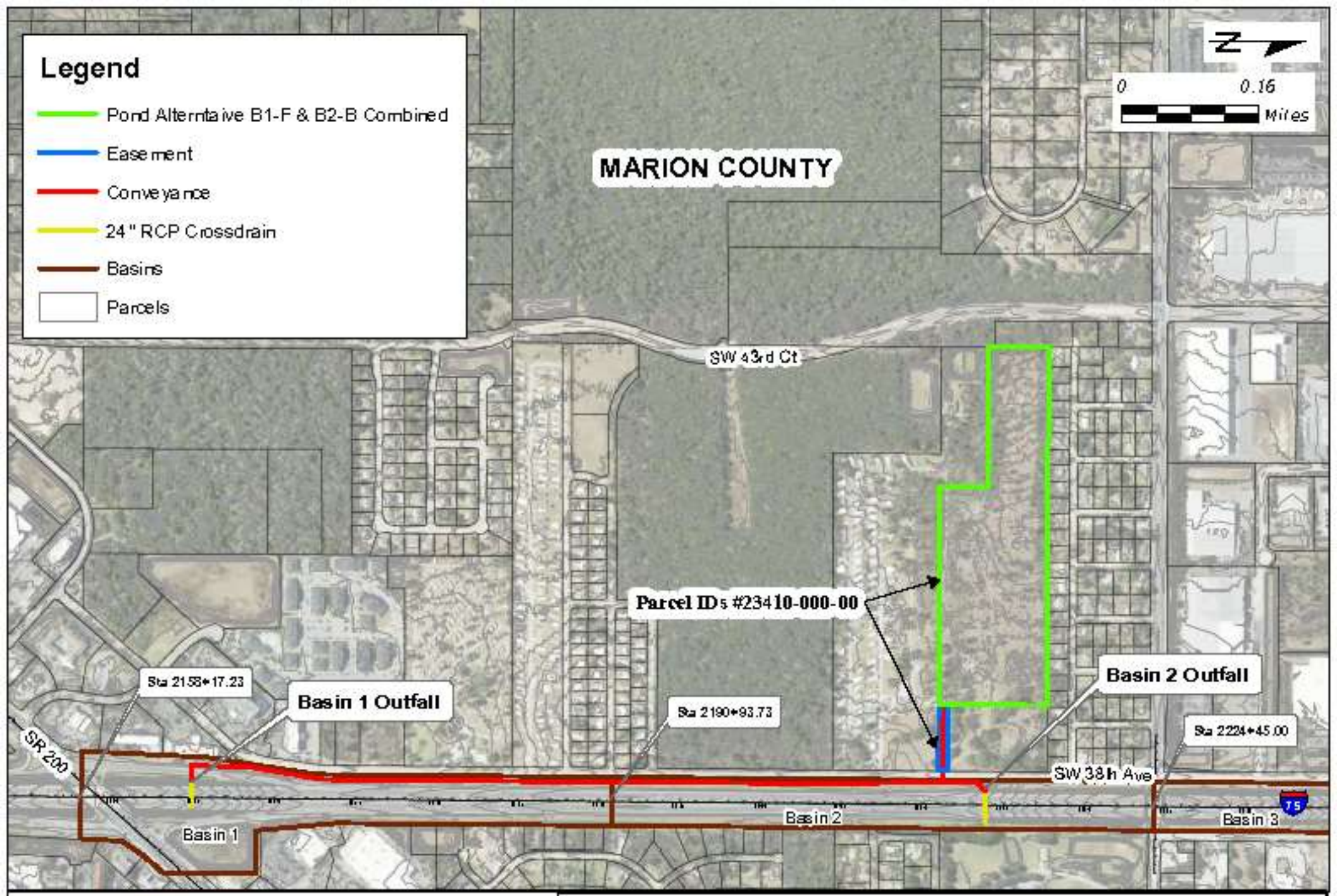


FDOT

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

Pond Alternative B1-B & B2-A Combined

Auxiliary Lanes at I-75

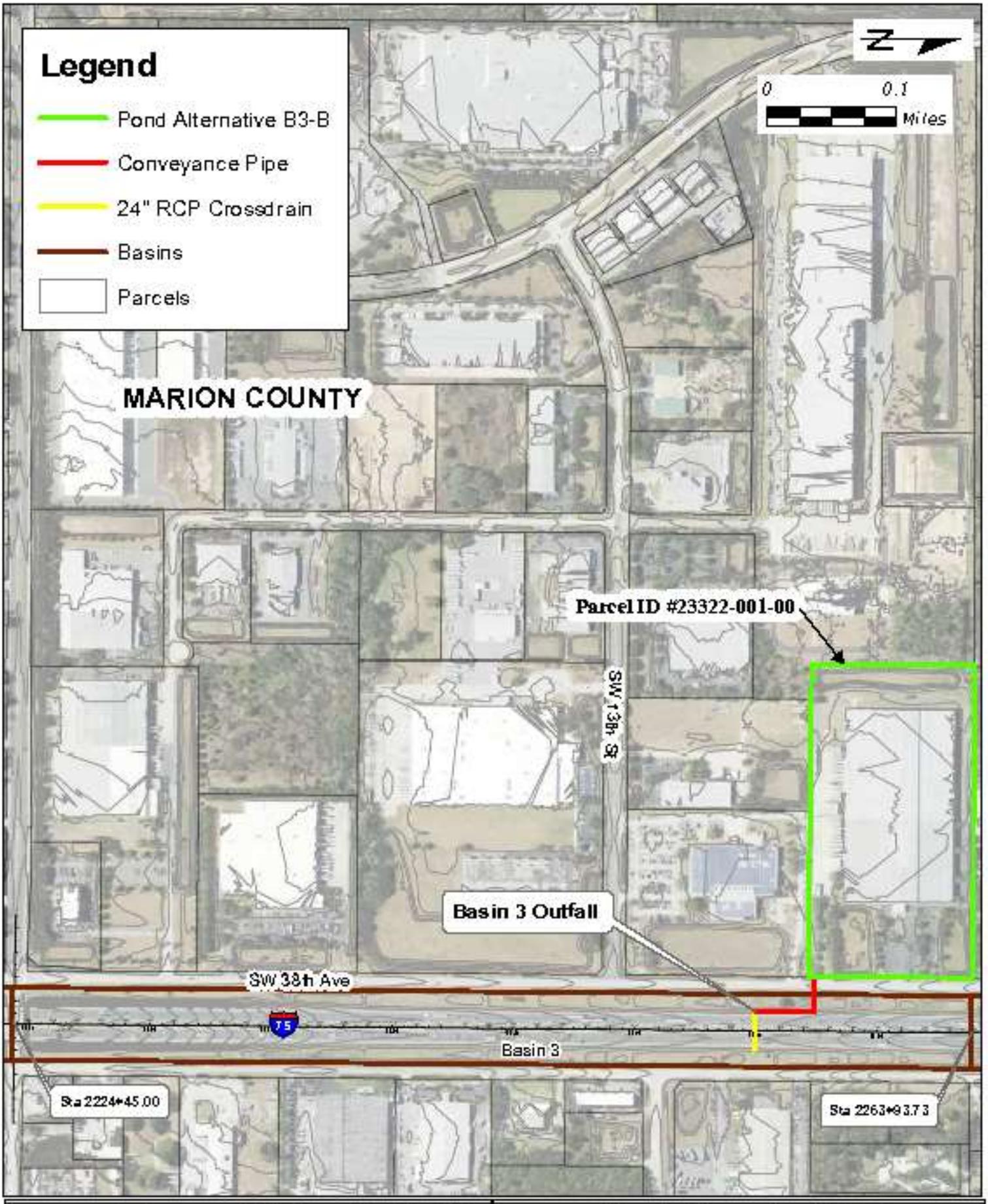


FDOT

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

Pond Alternative B1-F & B2-B Combined

Auxiliary Lanes at I-75



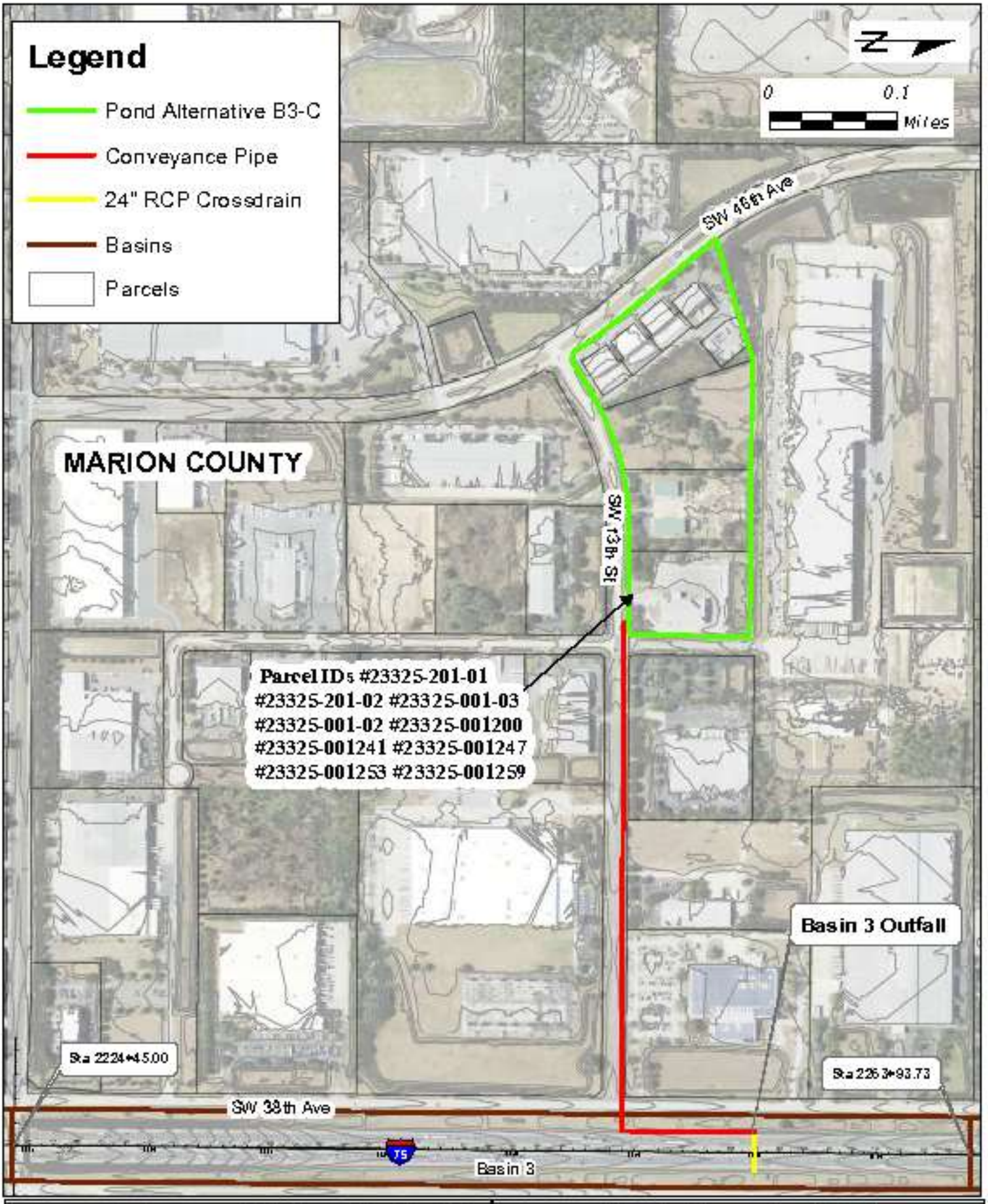
FDOT

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

Pond Alternative B3-B

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 9 of 36 | Date: 2/29/2024

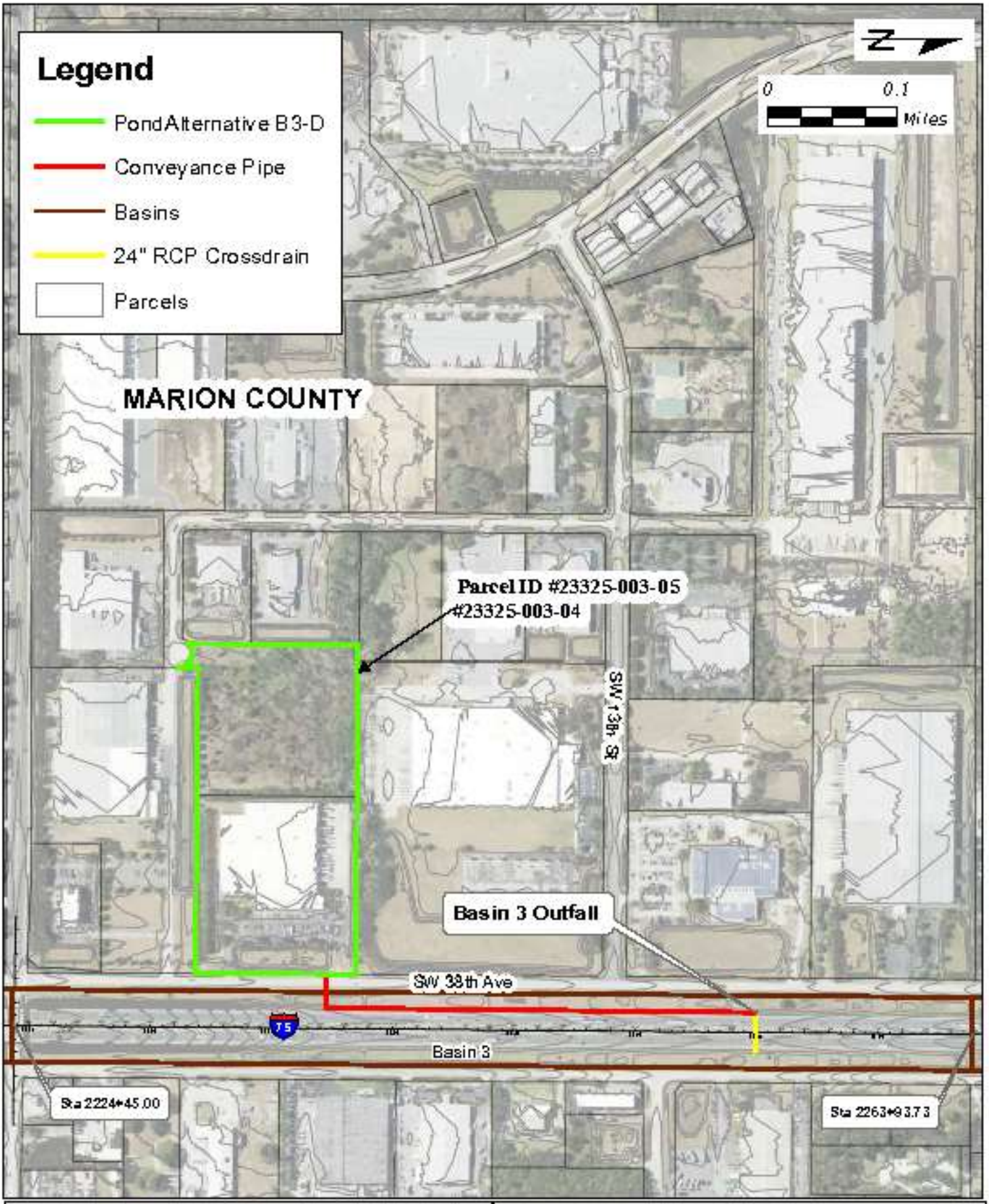


Patel, Greene & Associates, LLC
12570 Telecom Drive
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

Pond Alternative B3-C

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 10 of 36 | Date: 2/29/2024



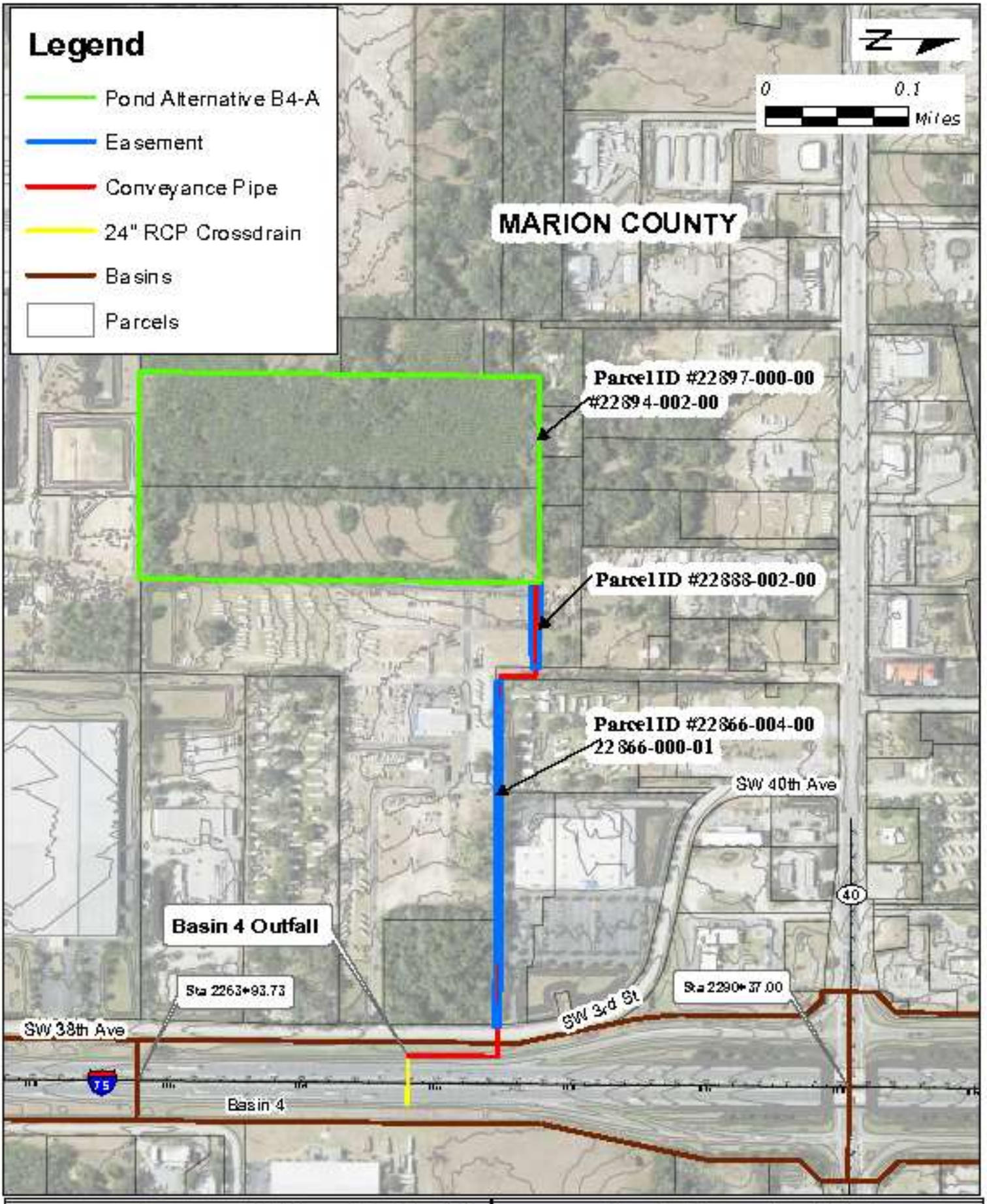
FDOT

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

Pond Alternative B3-D

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 11 of 36 | Date: 2/29/2024

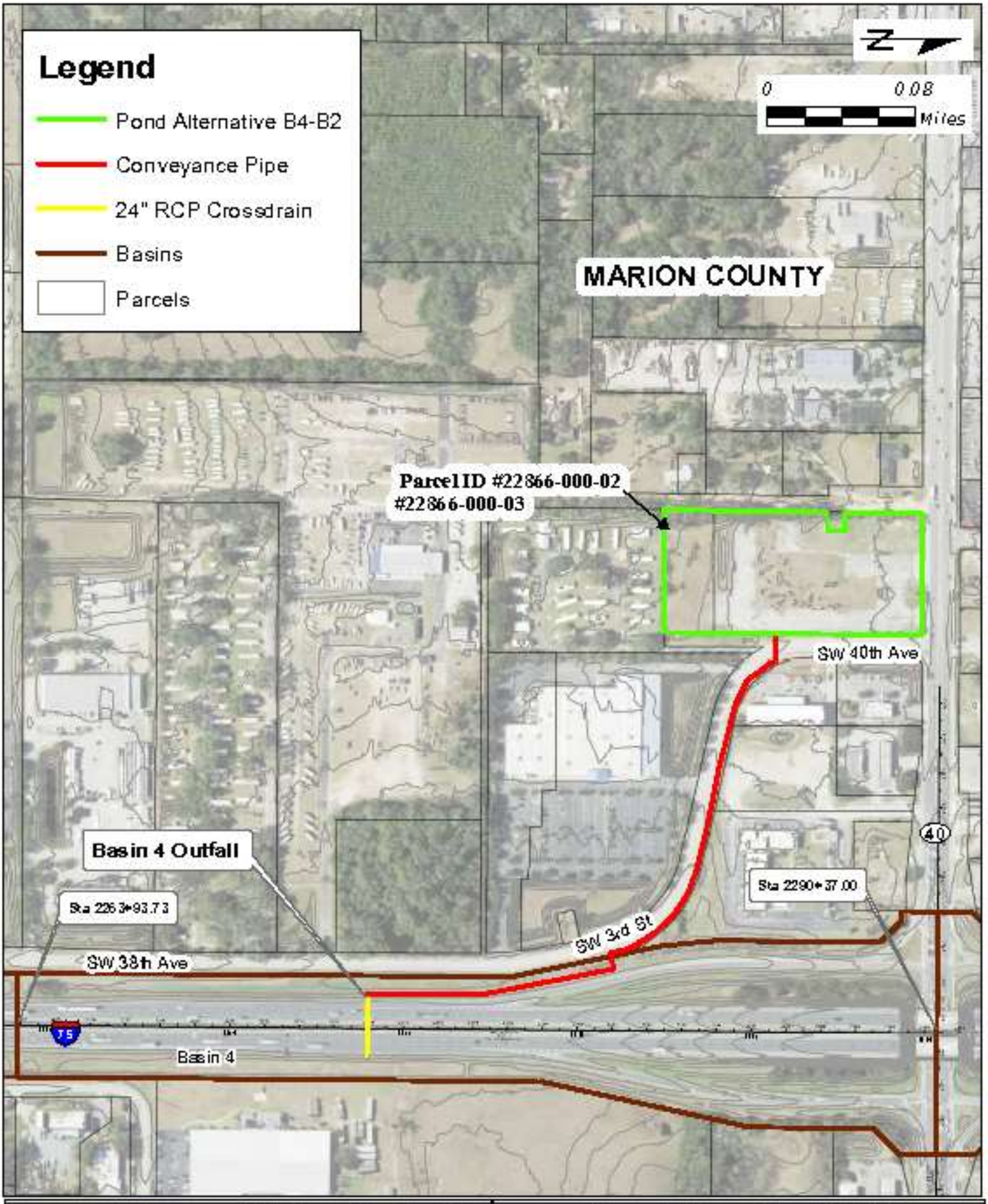


Patel, Greene & Associates, LLC
12570 Telecom Drive
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

Pond Alternative B4-A

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 12 of 36 | Date: 2/29/2024



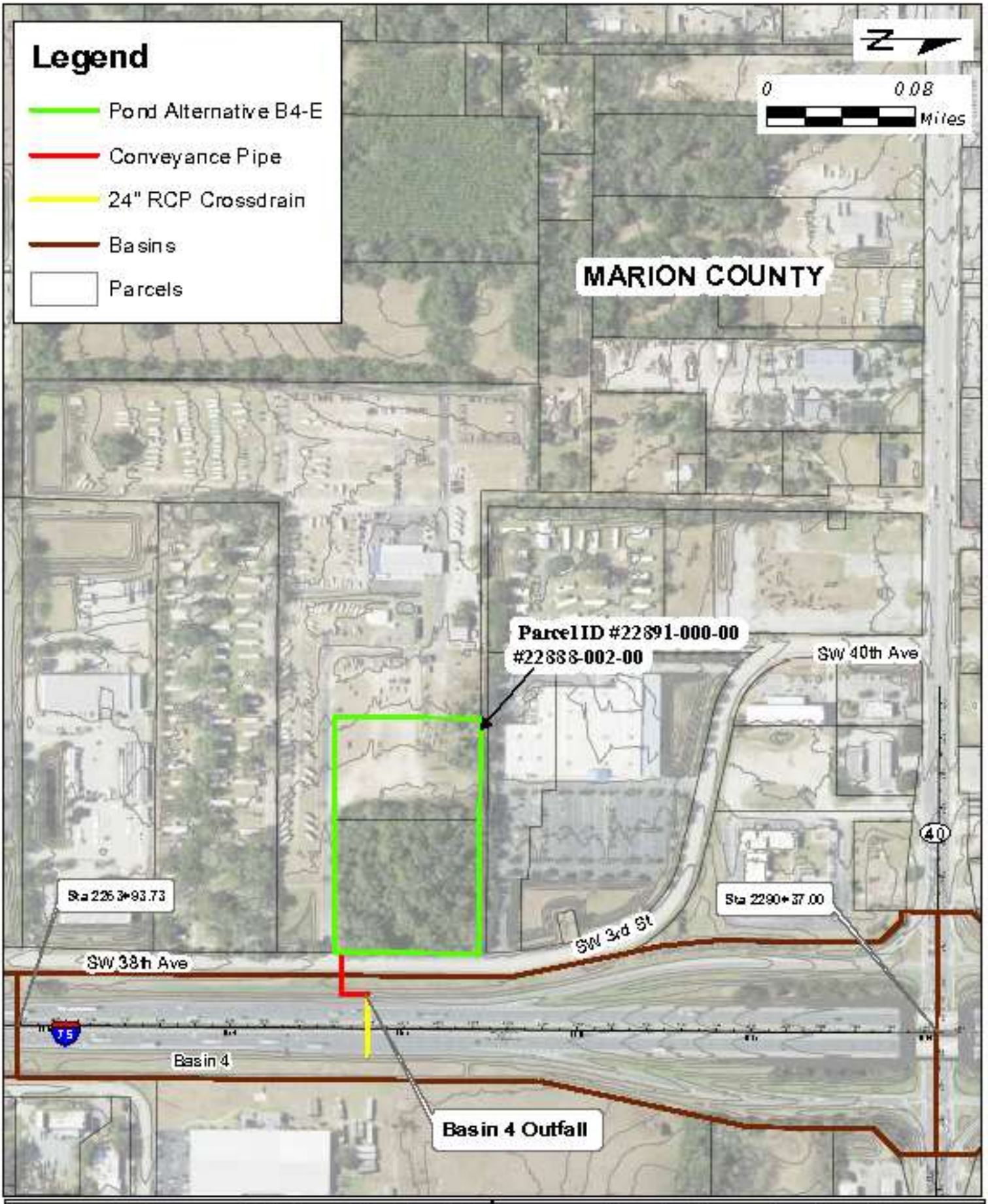
FDOT

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

Pond Alternative B4-B2

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 13 of 36 | Date: 2/29/2024



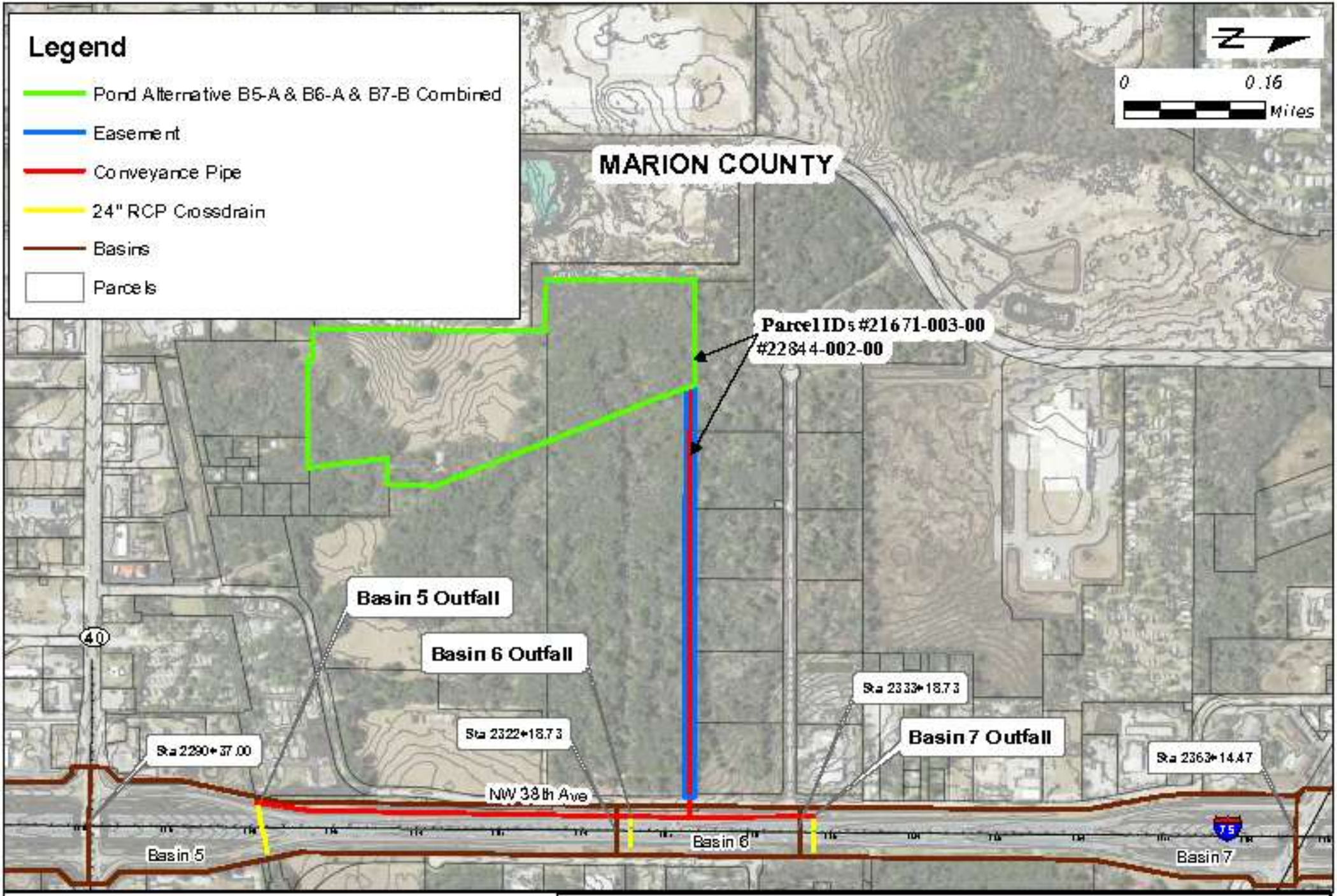
FDOT

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

Pond Alternative B4-E

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 14 of 36 | Date: 2/29/2024

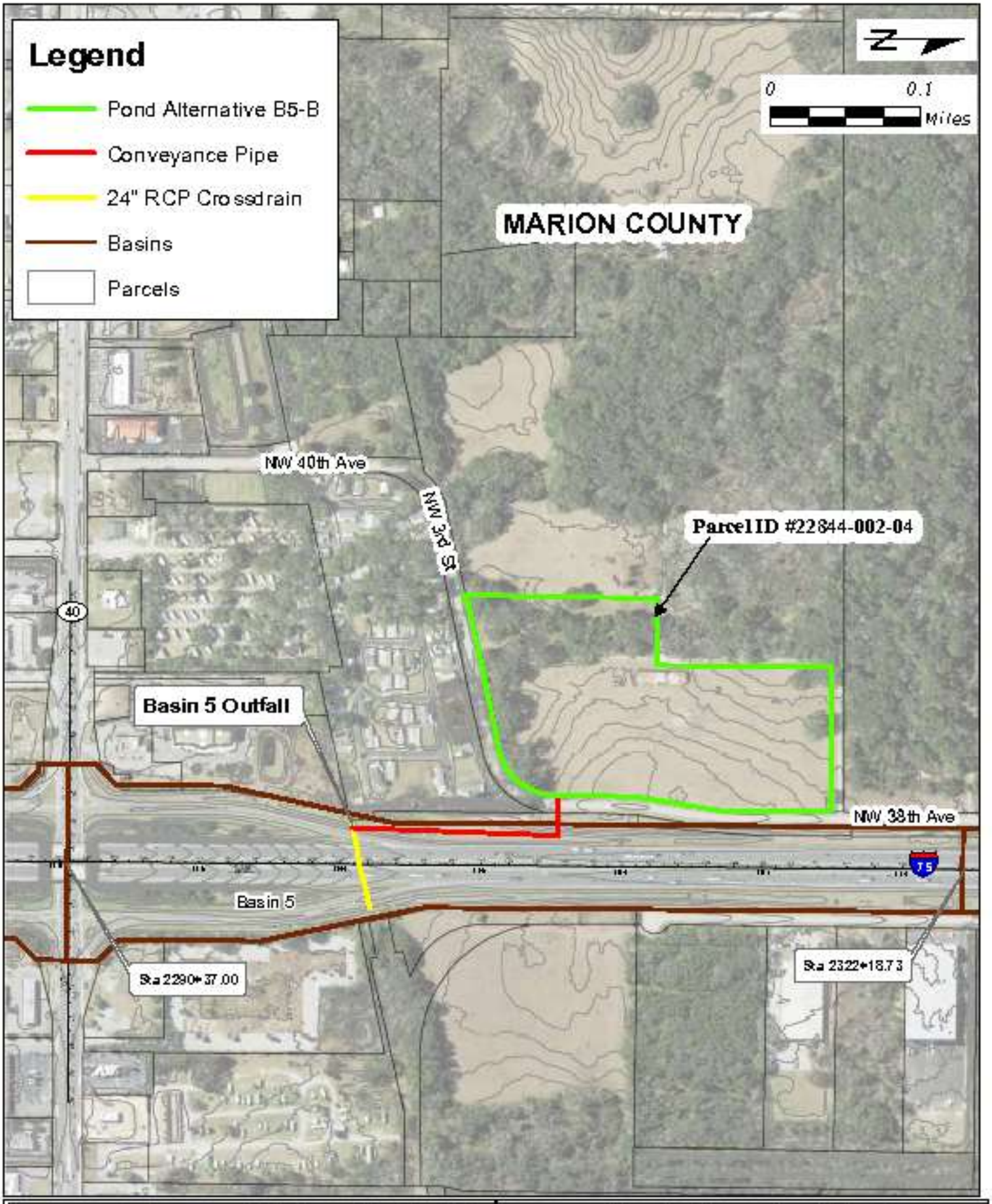


FDOT

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

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

Auxiliary Lanes at I-75



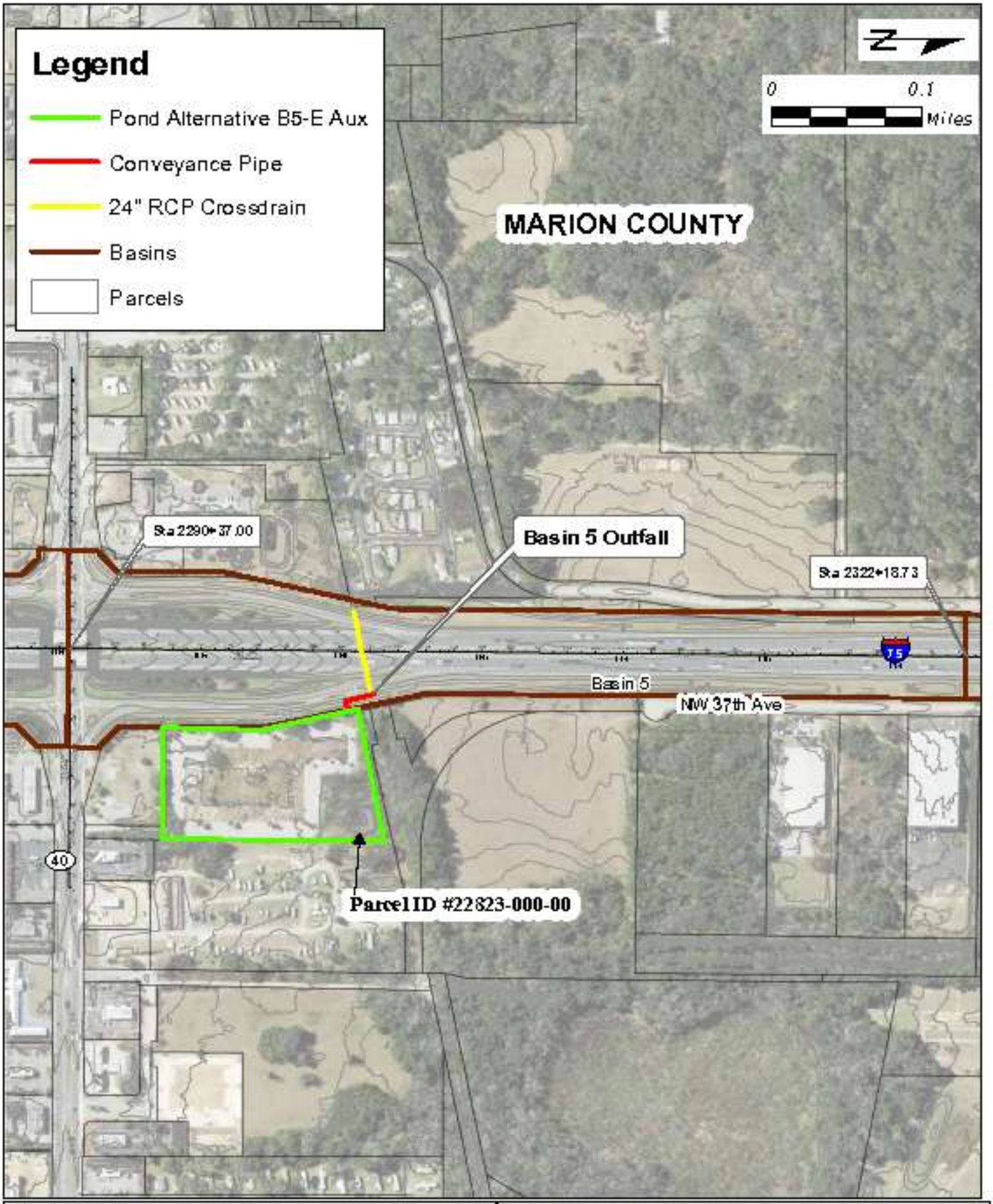
FDOT

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

Pond Alternative B5-B

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 16 of 36 | Date: 2/29/2024



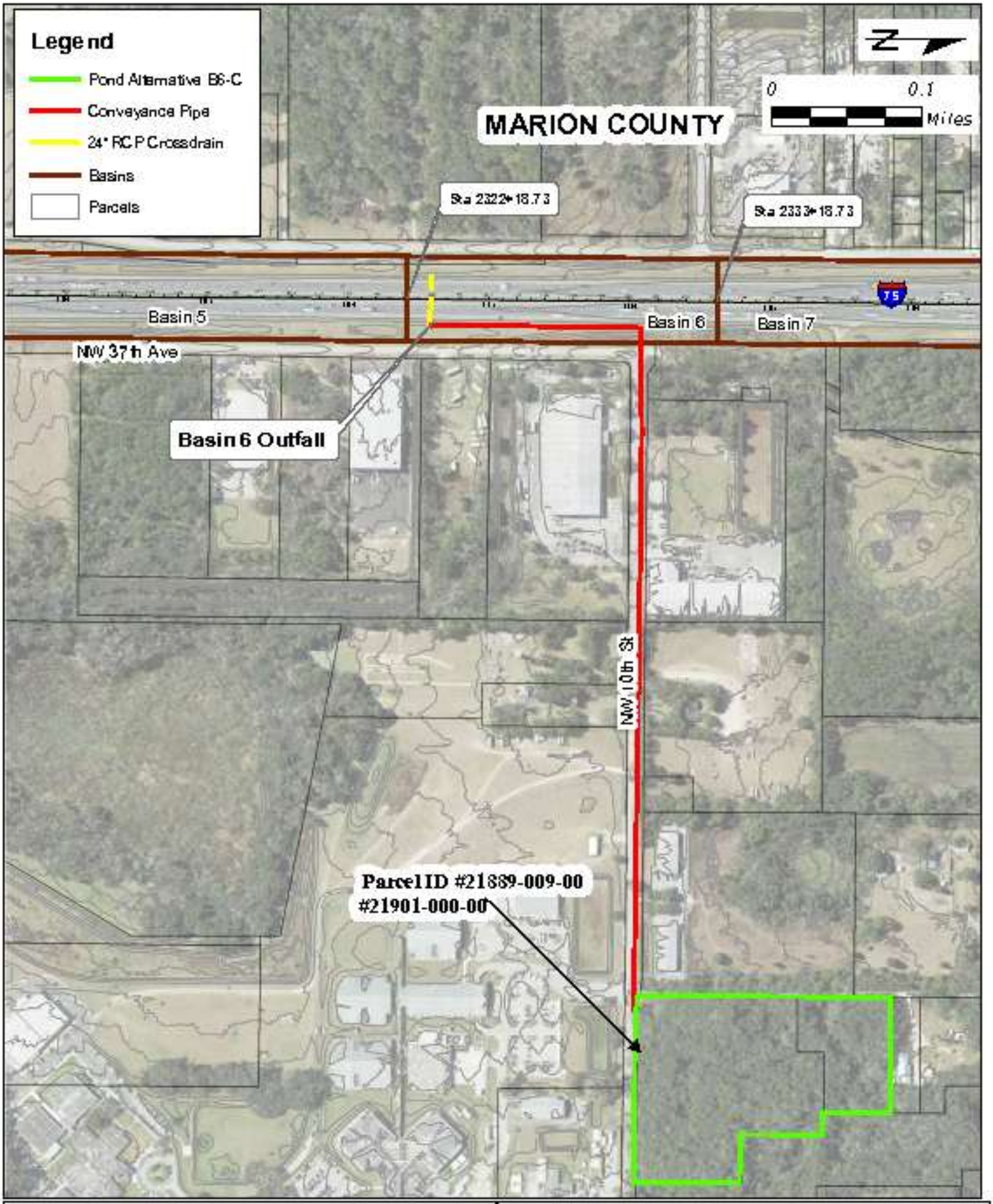
FDOT

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

Pond Alternative B5-E Aux

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 17 of 36 | Date: 2/29/2024



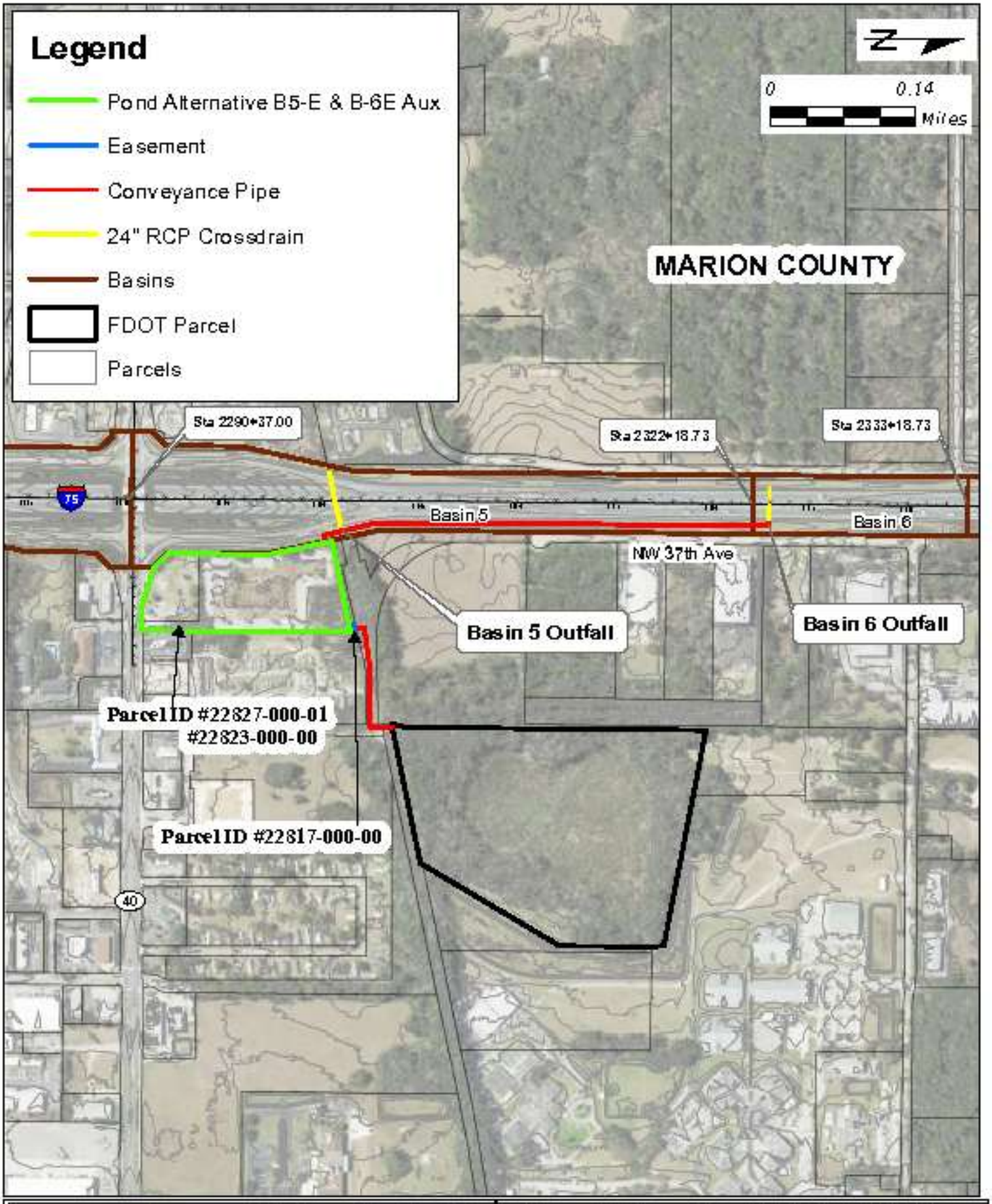
FDOT

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

Pond Alternative B6-C

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 18 of 36 | Date: 2/29/2024



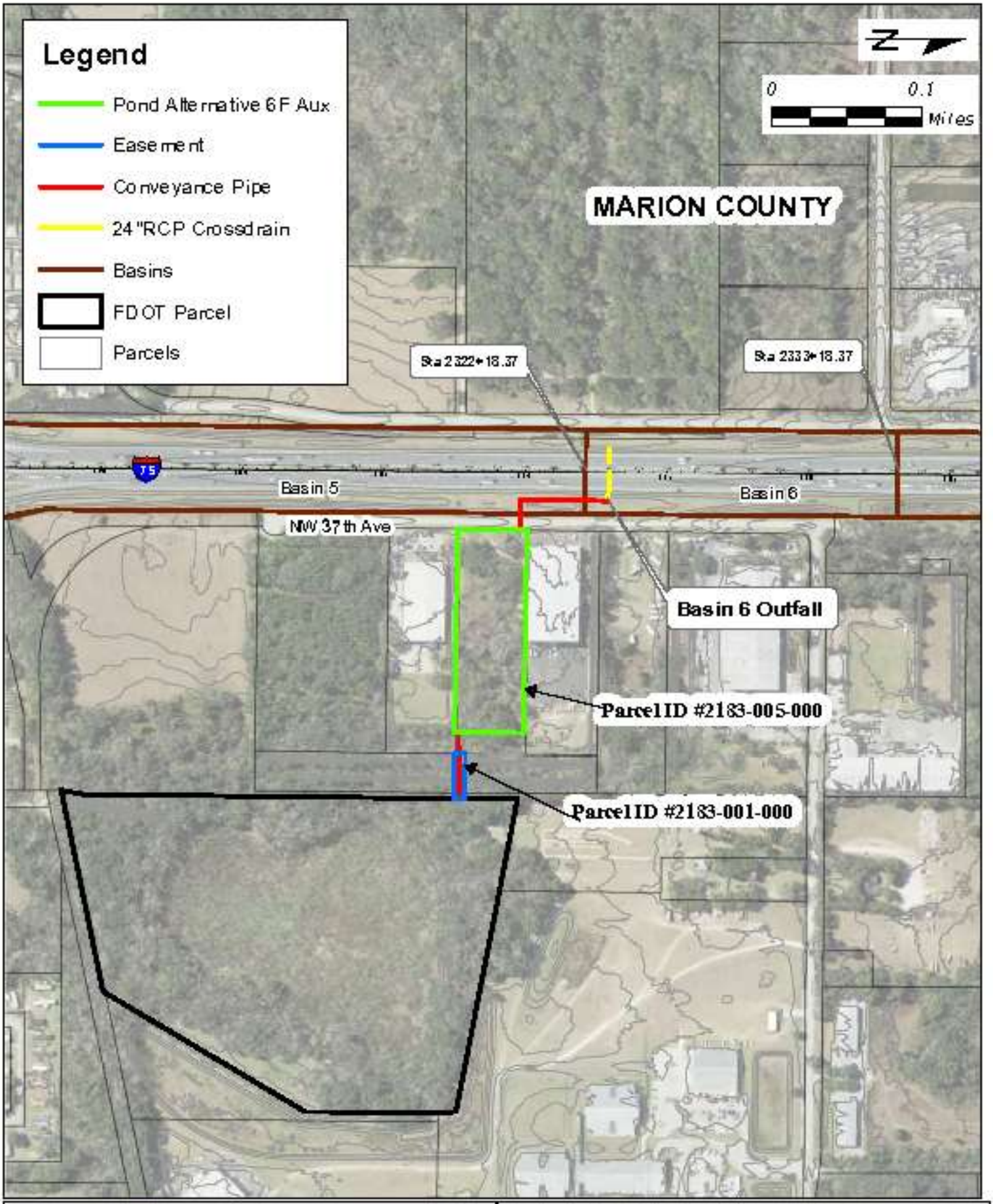
FDOT

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

Pond Alternative B5-E & B6-E Aux

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 19 of 36 | Date: 2/29/2024



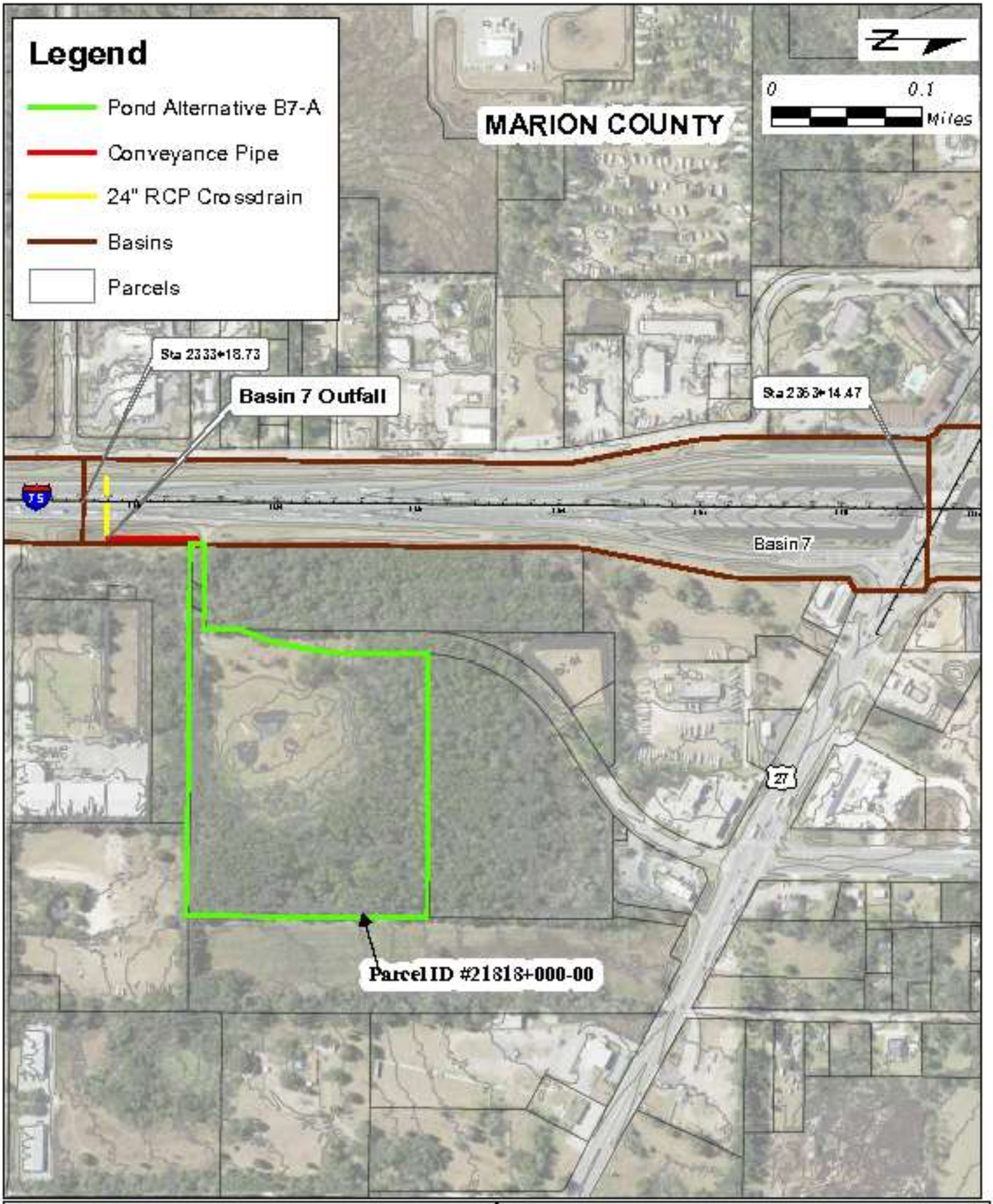
FDOT

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

Pond Alternative B6-F Aux

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 30 of 36 | Date: 2/29/2024



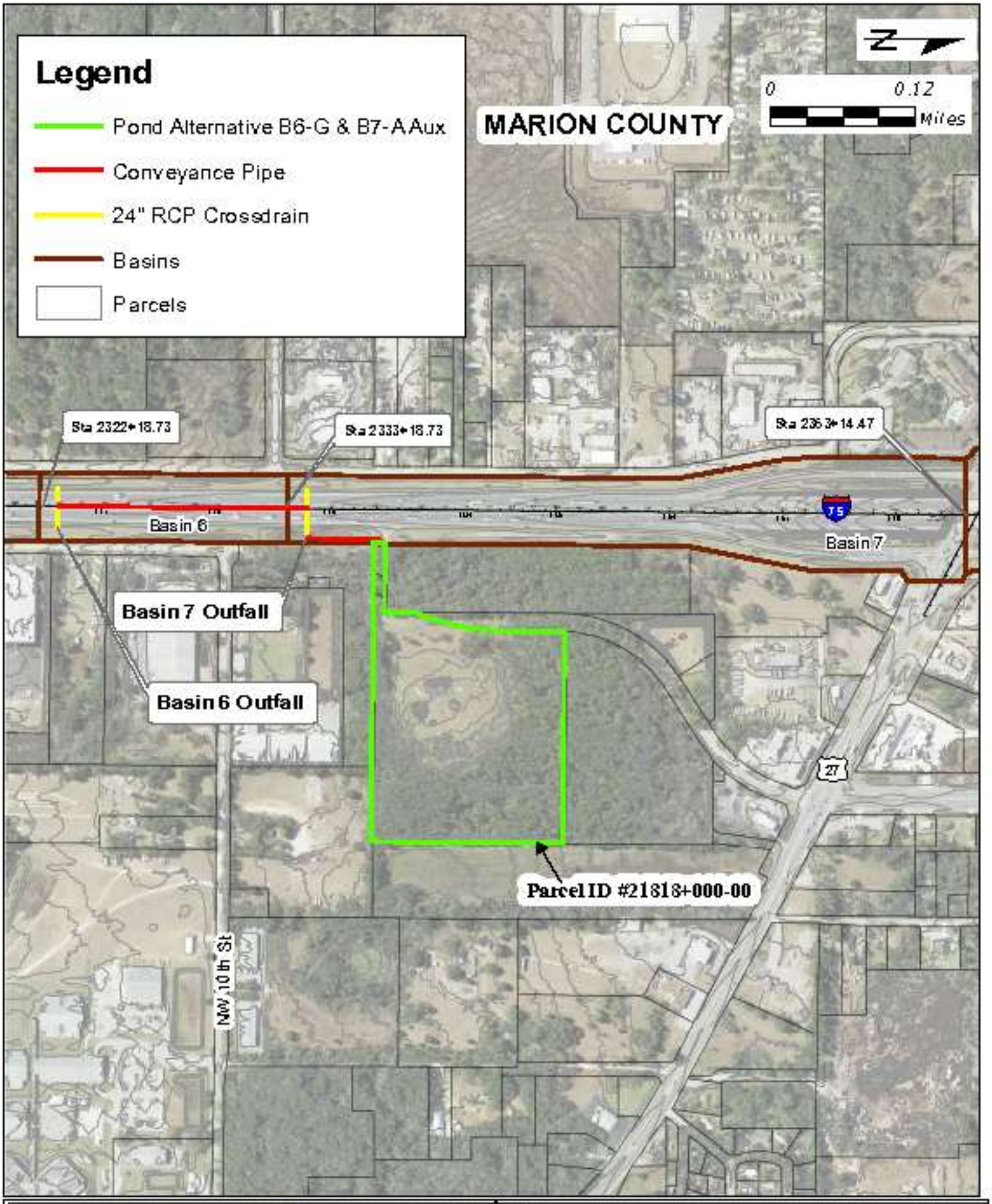
FDOT

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

Pond Alternative B7-A

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 21 of 36 | Date: 2/29/2024



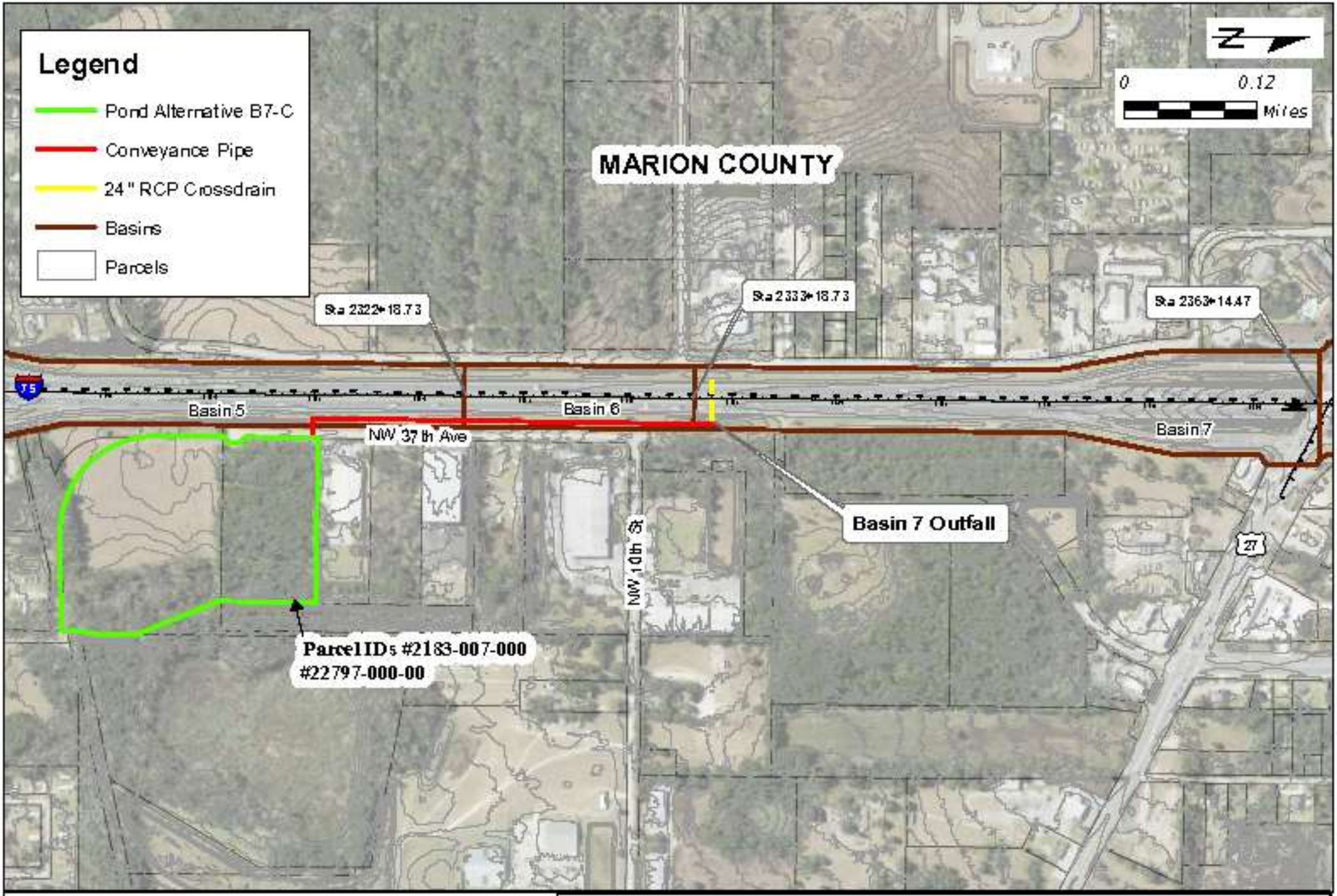
FDOT

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

Pond Alternative B6-G & B7-AAux

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 22 of 36 | Date: 2/29/2024

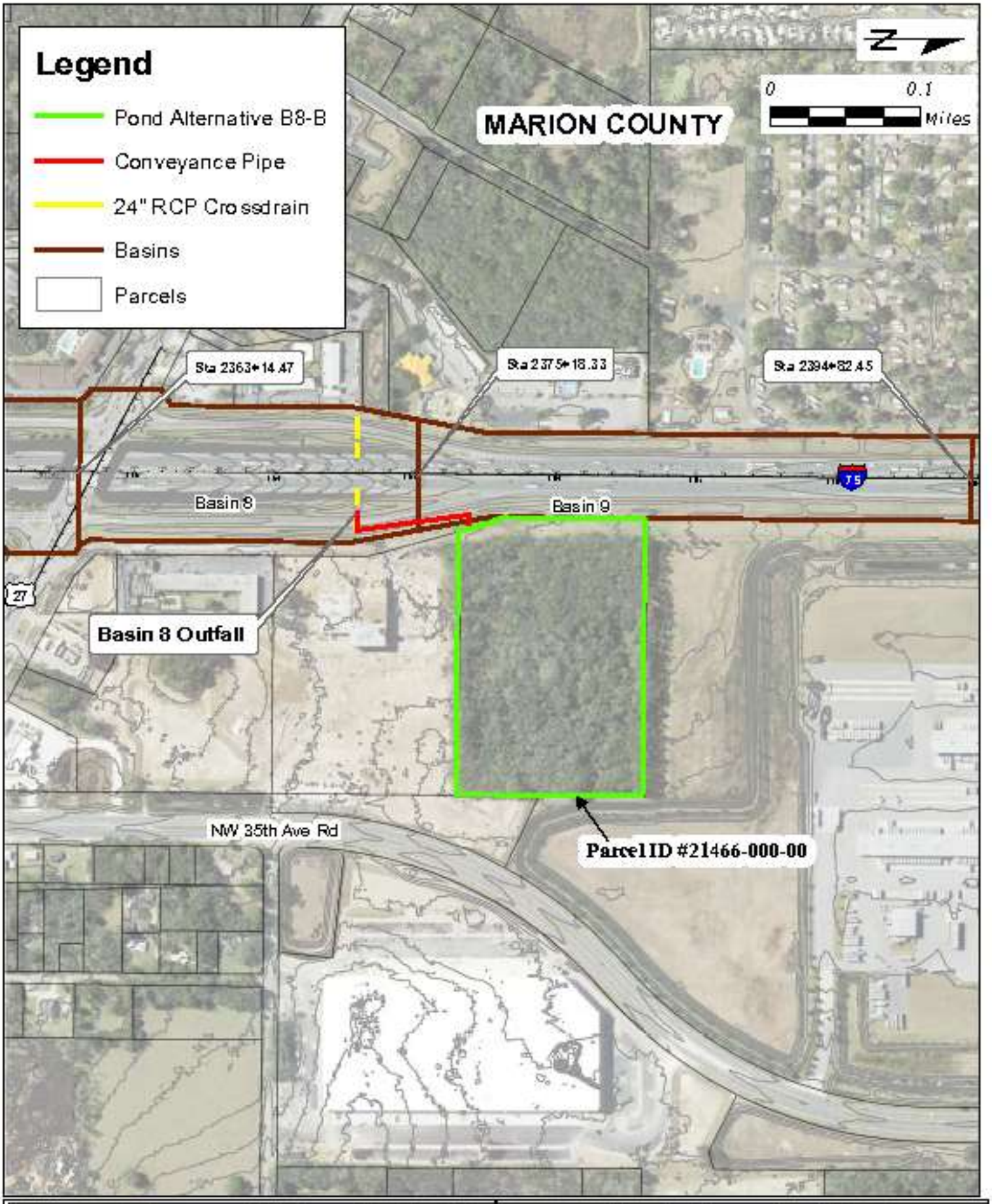


Patel, Greene & Associates, LLC
12570 Telecom Drive
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

Pond Alternative B7-C

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 23 of 36 | Date: 3/29/2024



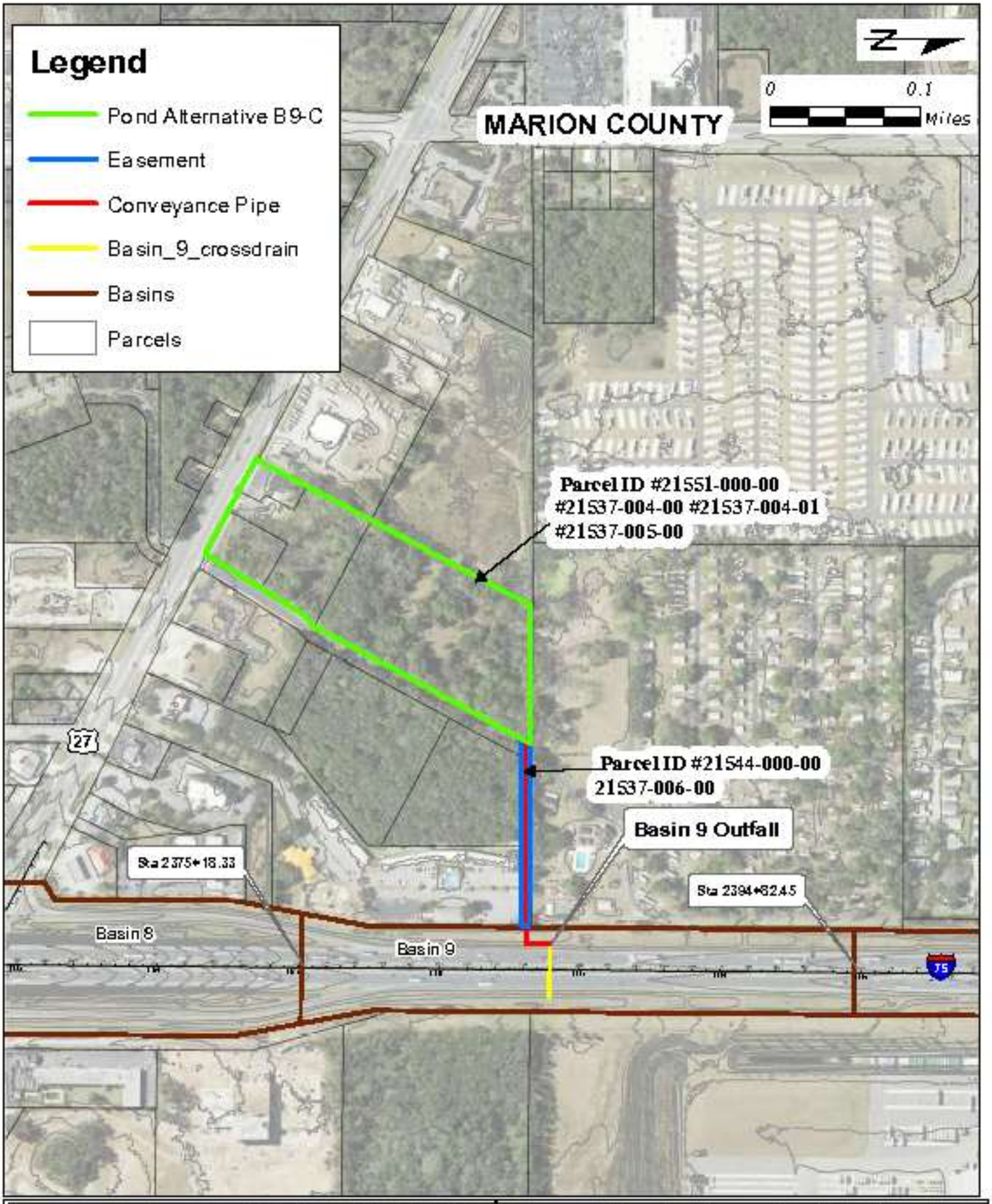
FDOT

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

Pond Alternative B8-B

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 24 of 36 | Date: 2/29/2024



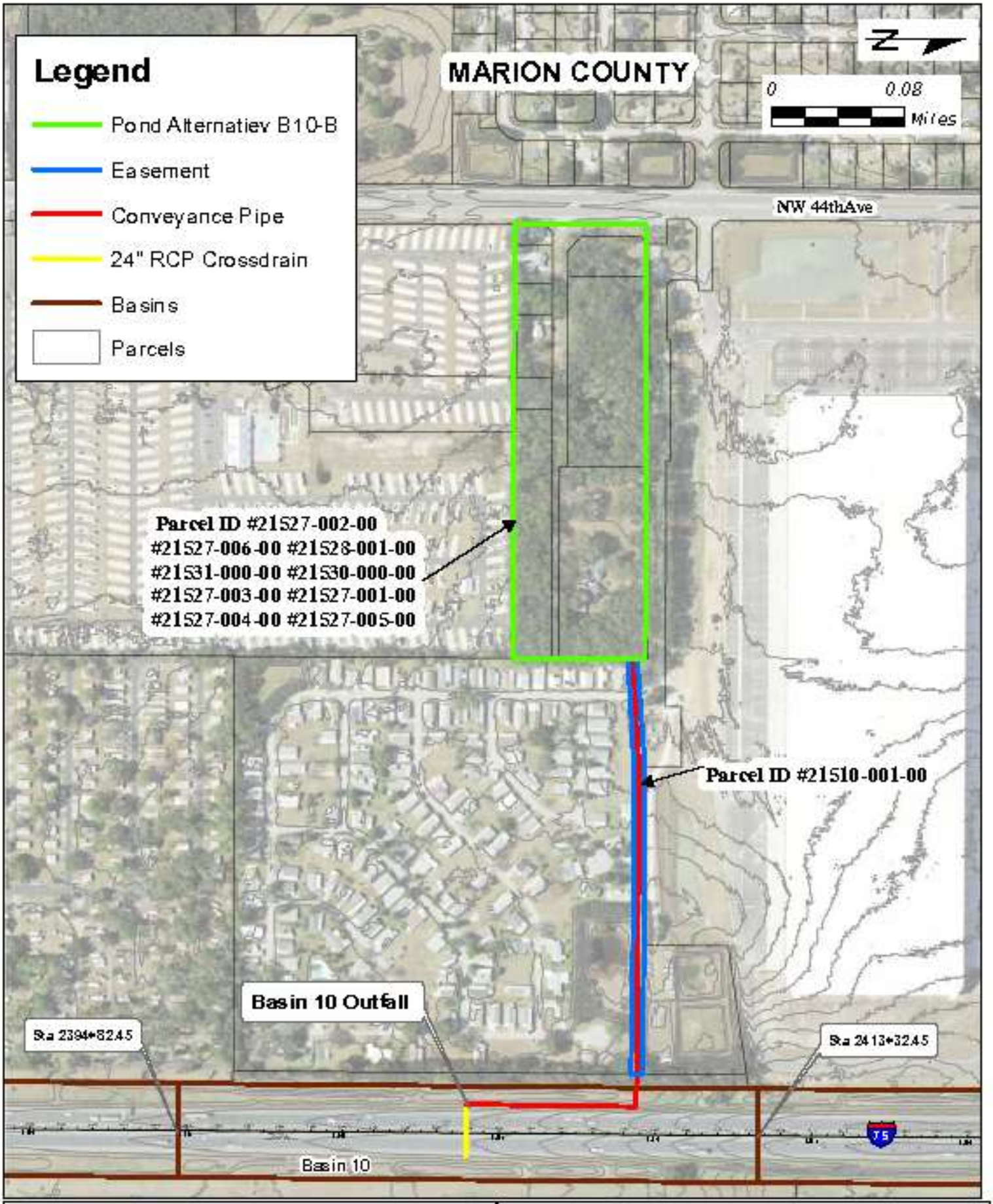
FDOT

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

Pond Alternative B9-C

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 25 of 36 | Date: 3/1/2024



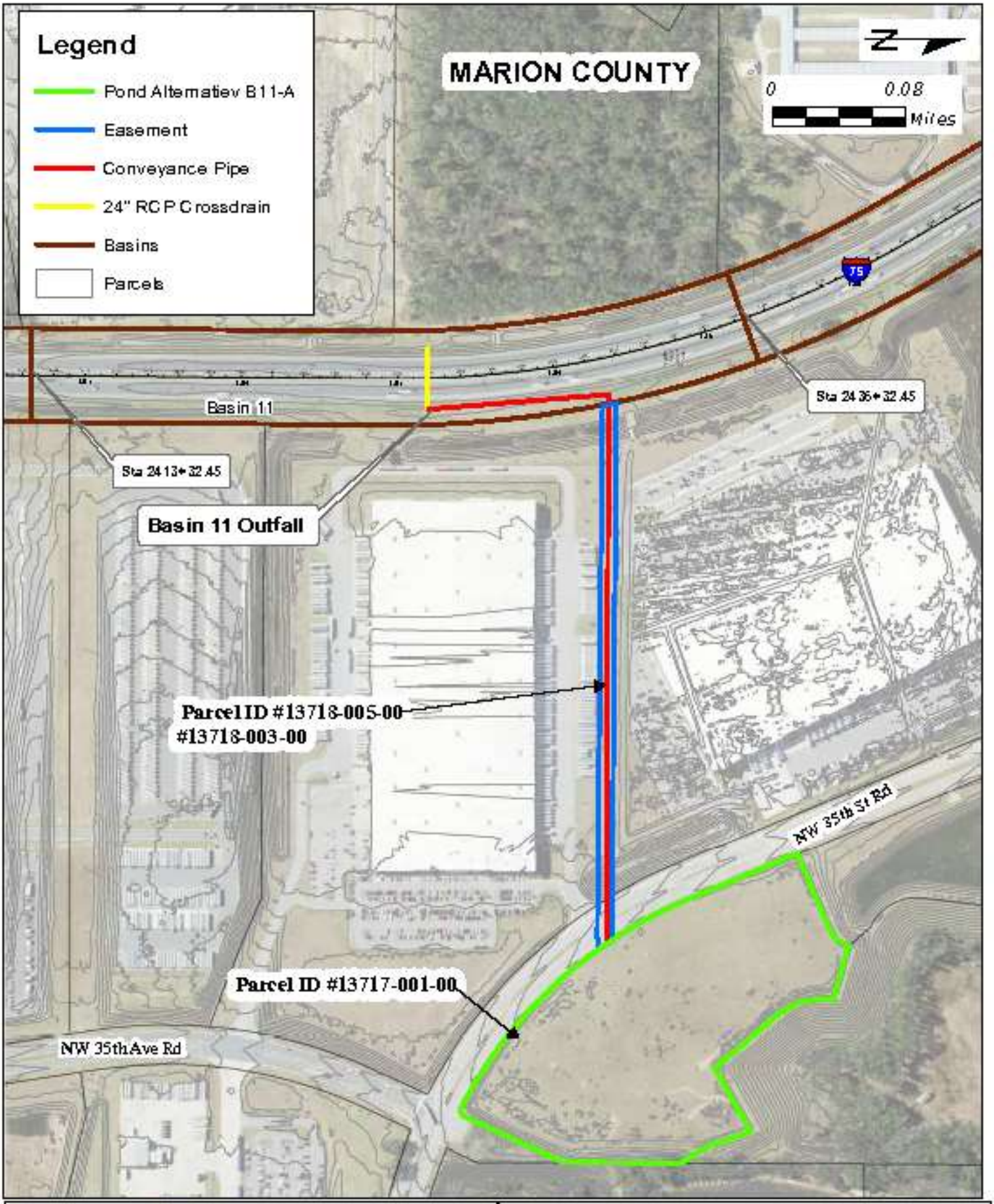
FDOT

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

Pond Alternative B10-B

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 26 of 36 | Date: 3/1/2024



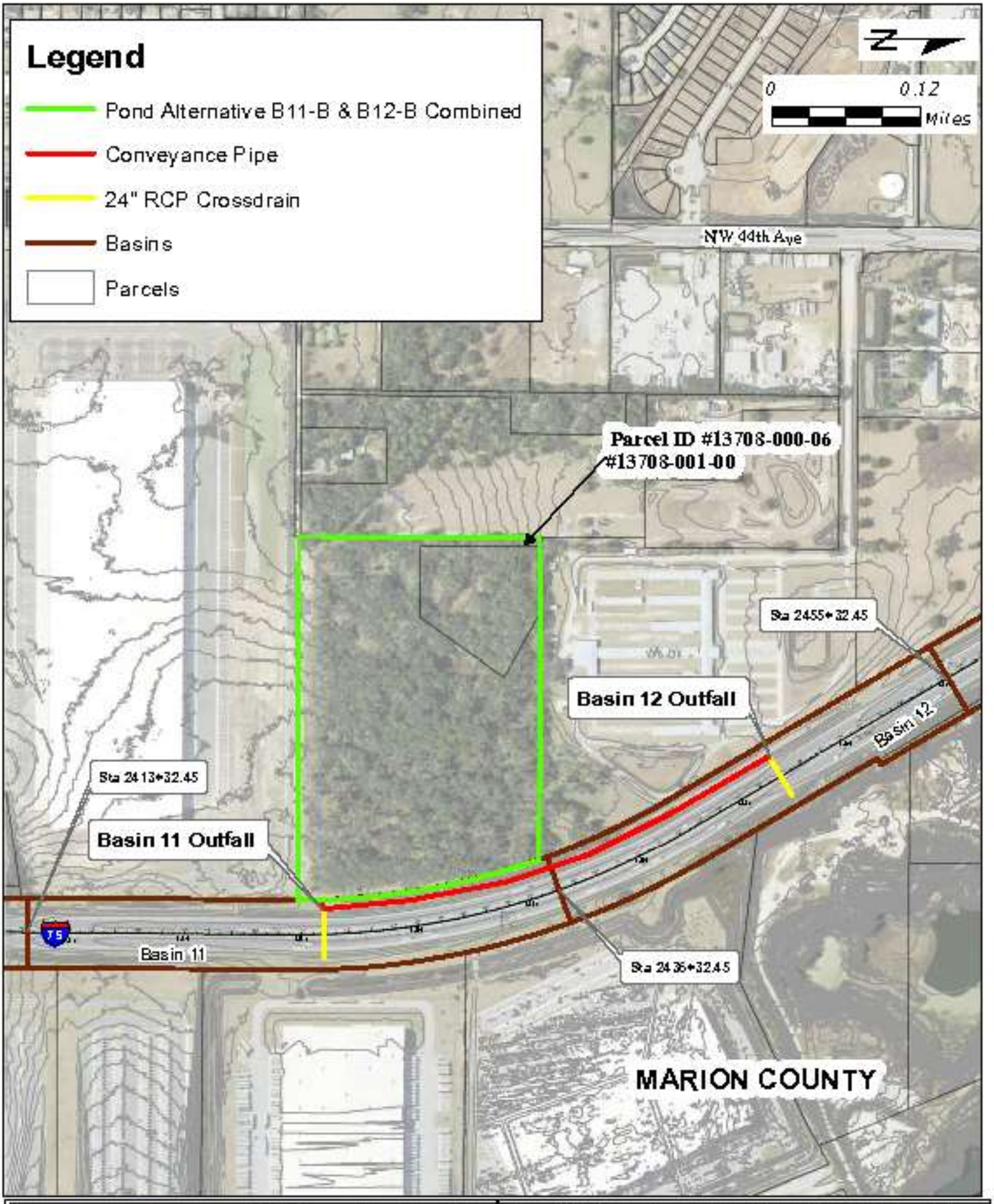
FDOT

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

Pond Alternative B11-A

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 27 of 36 | Date: 3/1/2024



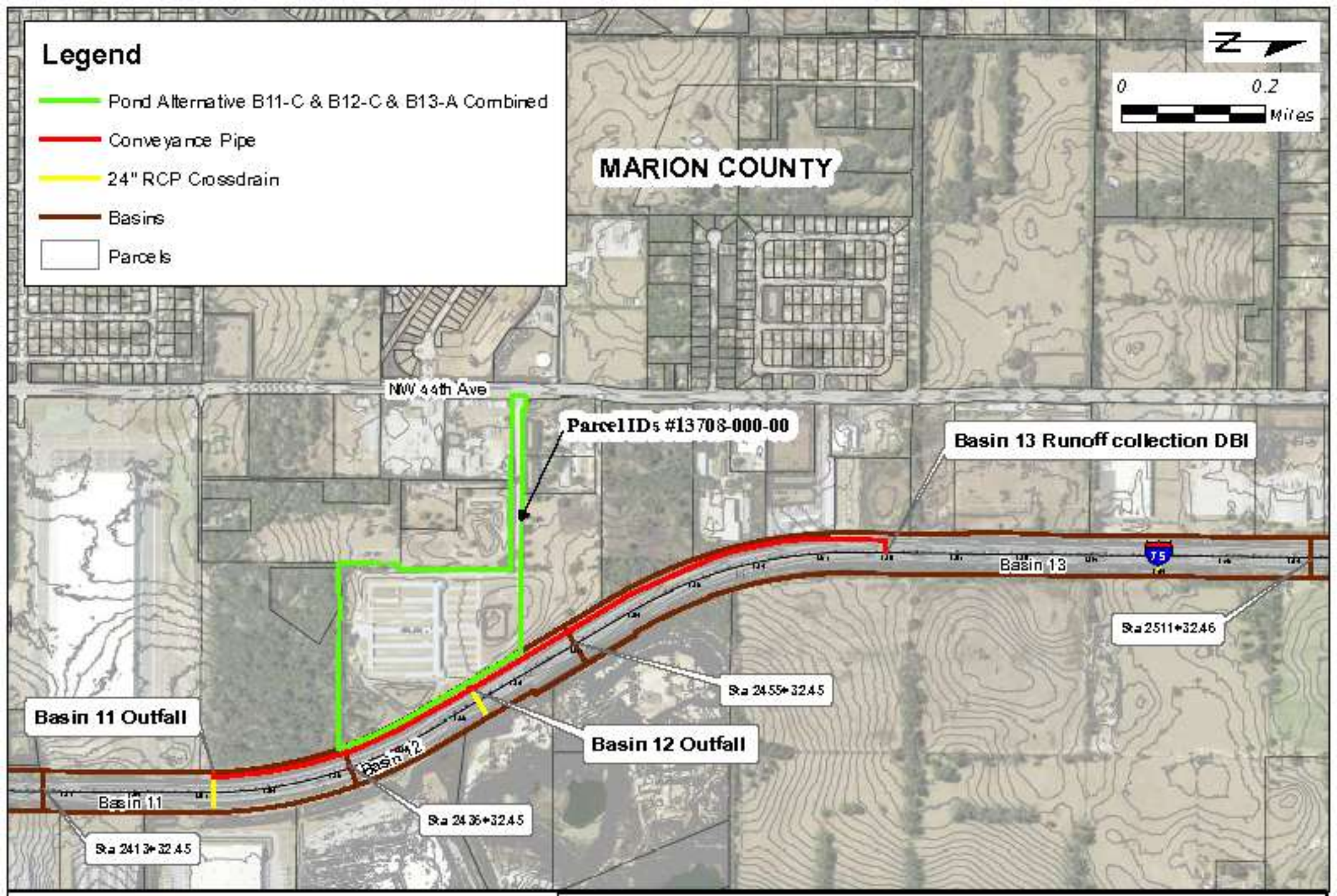
FDOT

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

Pond Alternative B11-B & B12-B Combined

Auxiliary Lanes at I-75

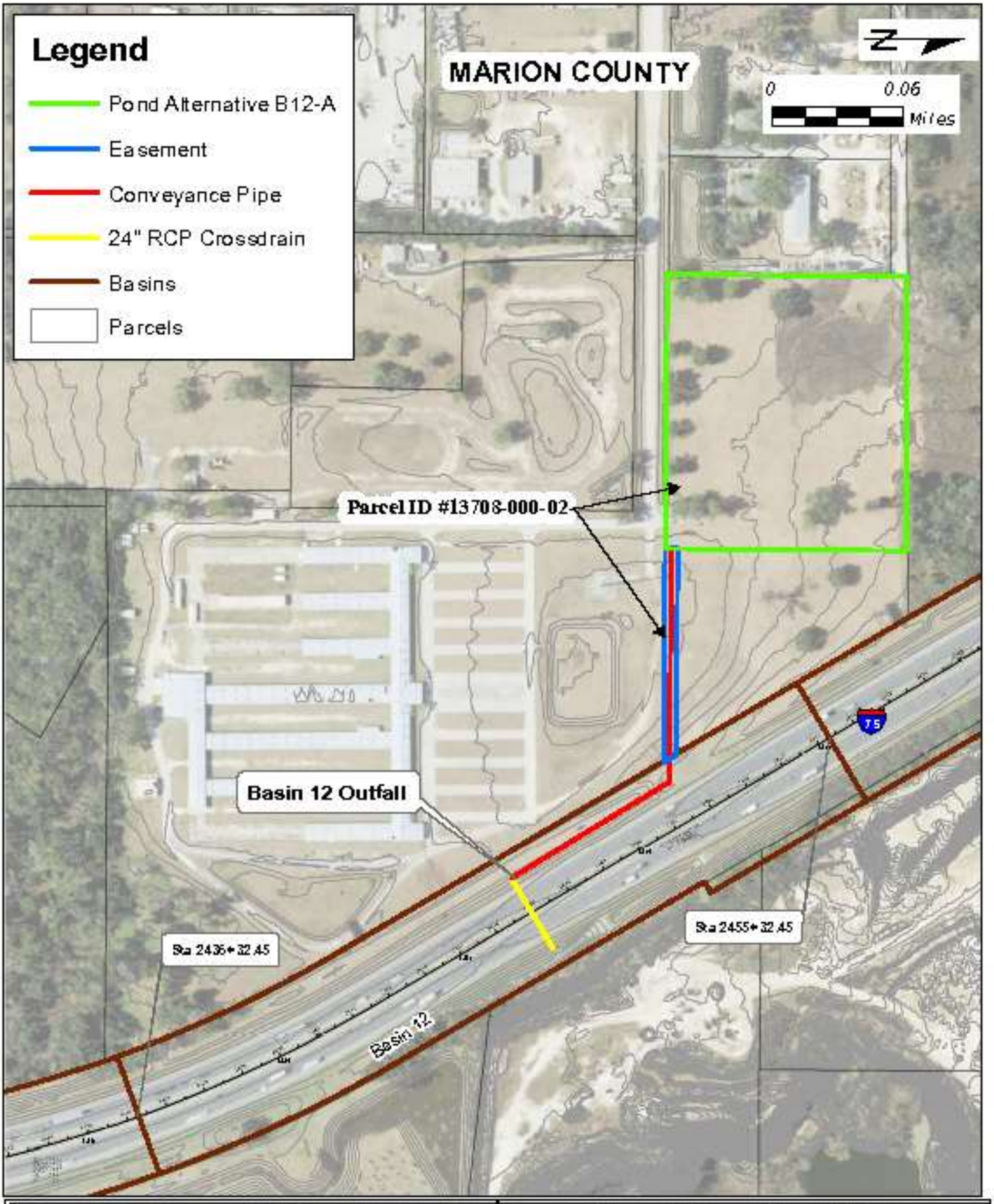
FPID: 452074-1-22-01 | Exhibit 28 of 36 | Date: 3/1/2024



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

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

Auxiliary Lanes at I-75



FDOT

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

Pond Alternative B12-A

Auxiliary Lanes at I-75

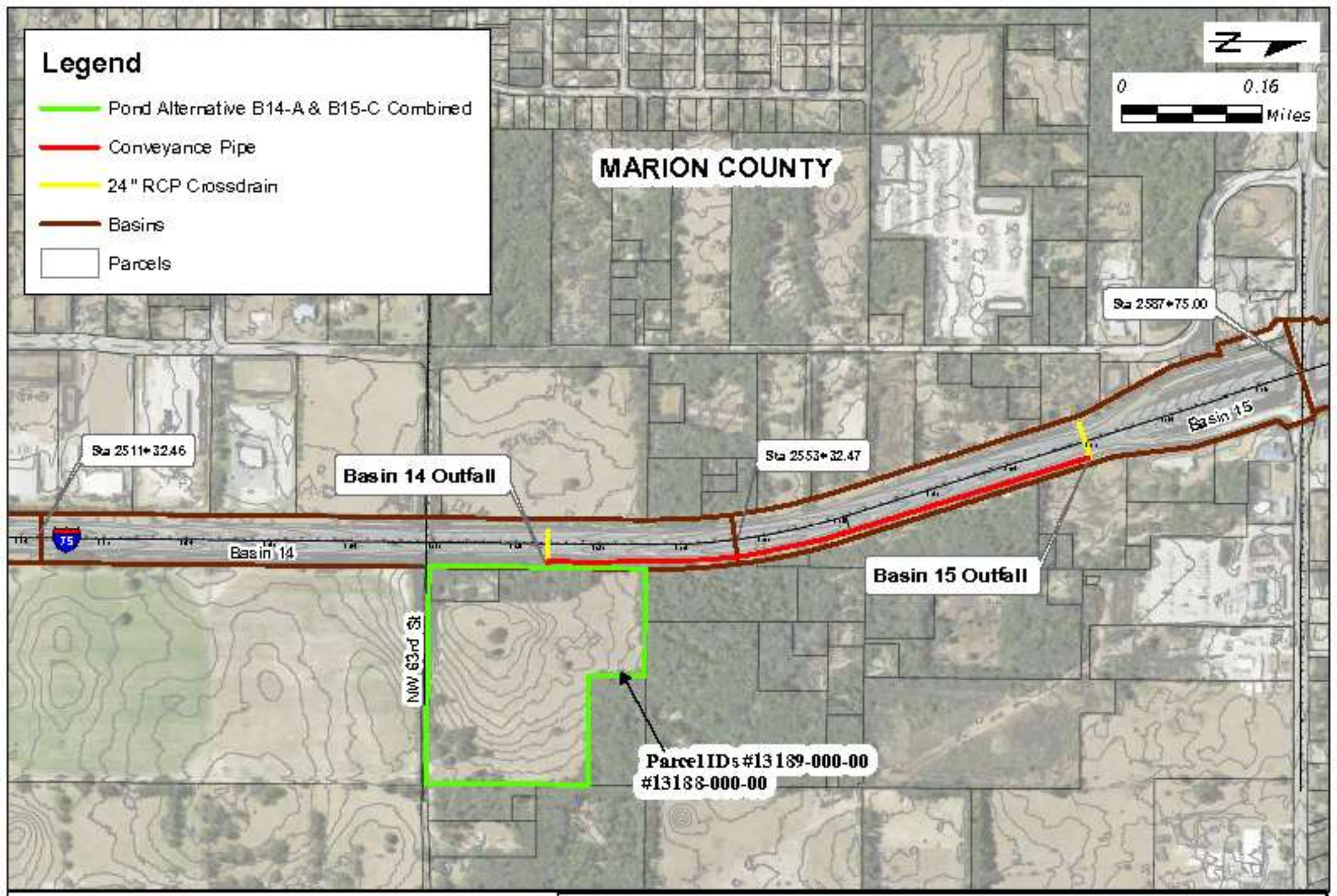
FPID: 452074-1-22-01 | Exhibit 30 of 36 | Date: 3/1/2024

FDOT

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

Pond Alternative B13-C

Auxiliary Lanes at I-75

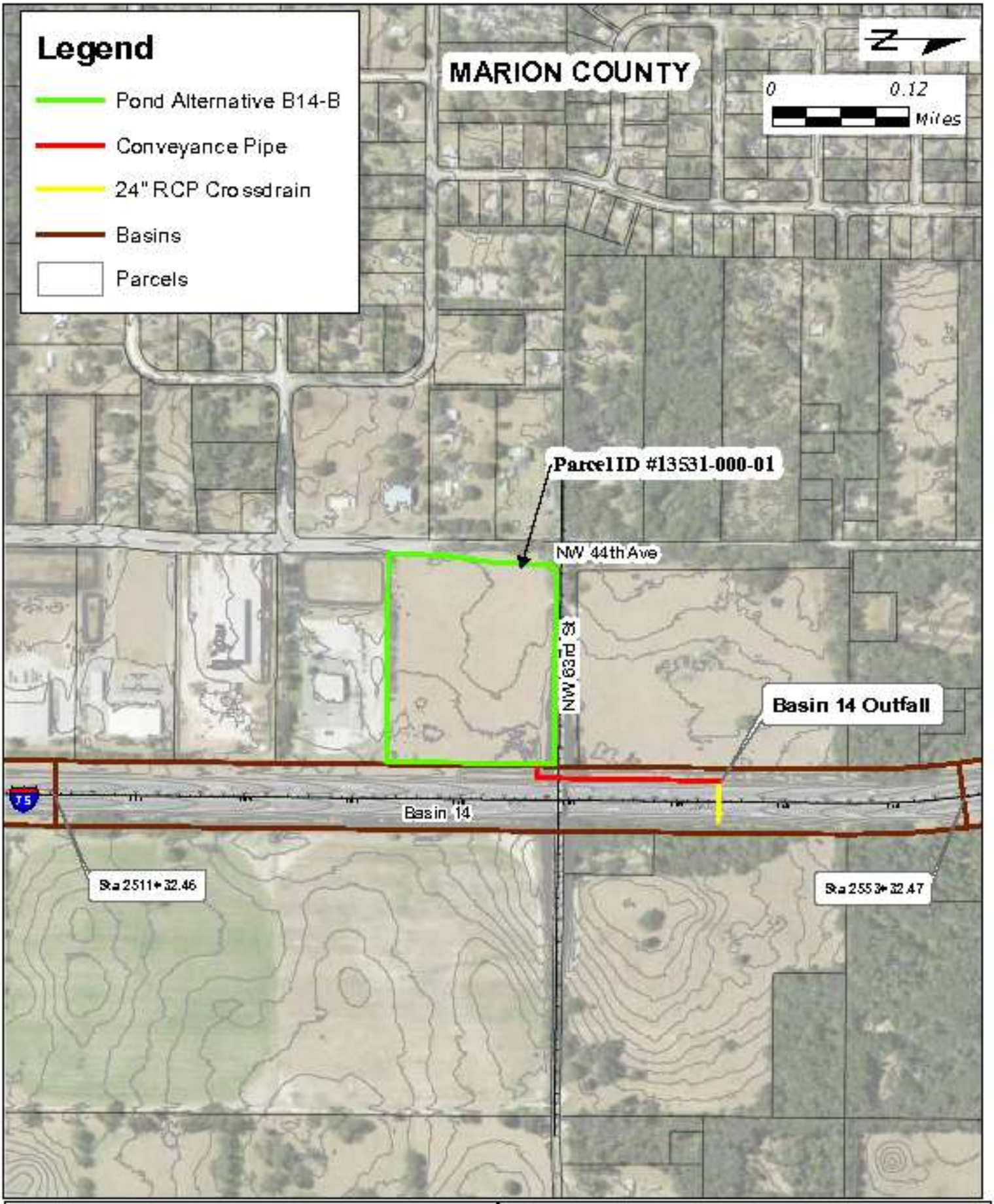


Patel, Greene & Associates, LLC
12570 Telecom Drive
Temple Terrace, FL 33637
Michael A. Holt, PE # 76111

Pond Alternative B14-A & B15-C Combined

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 3# of 36 | Date: 3/1/2024



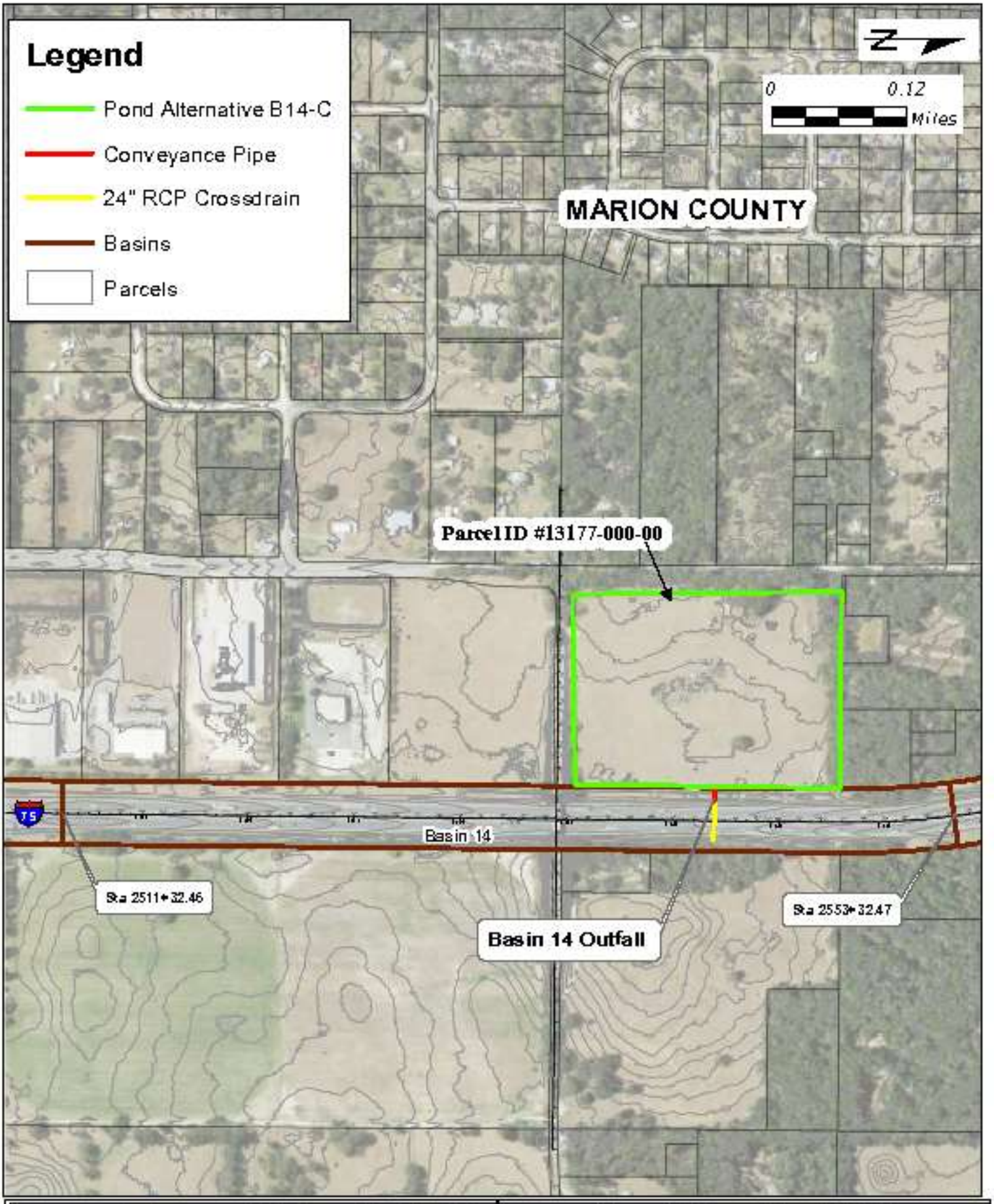
FDOT

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

Pond Alternative B14-B

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 32 of 36 | Date: 3/1/2024



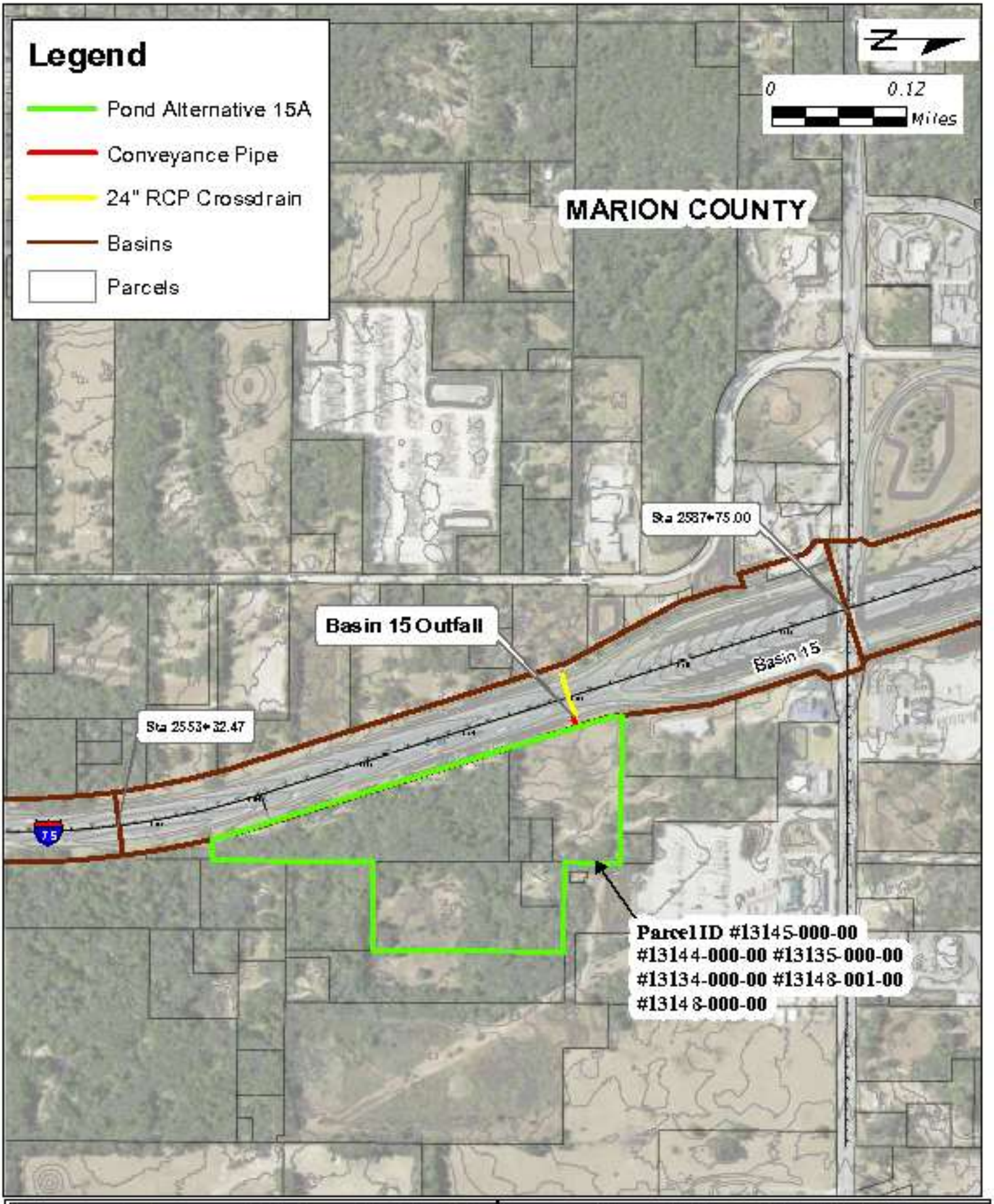
FDOT

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

Pond Alternative B14-C

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 33 of 36 | Date: 3/1/2024



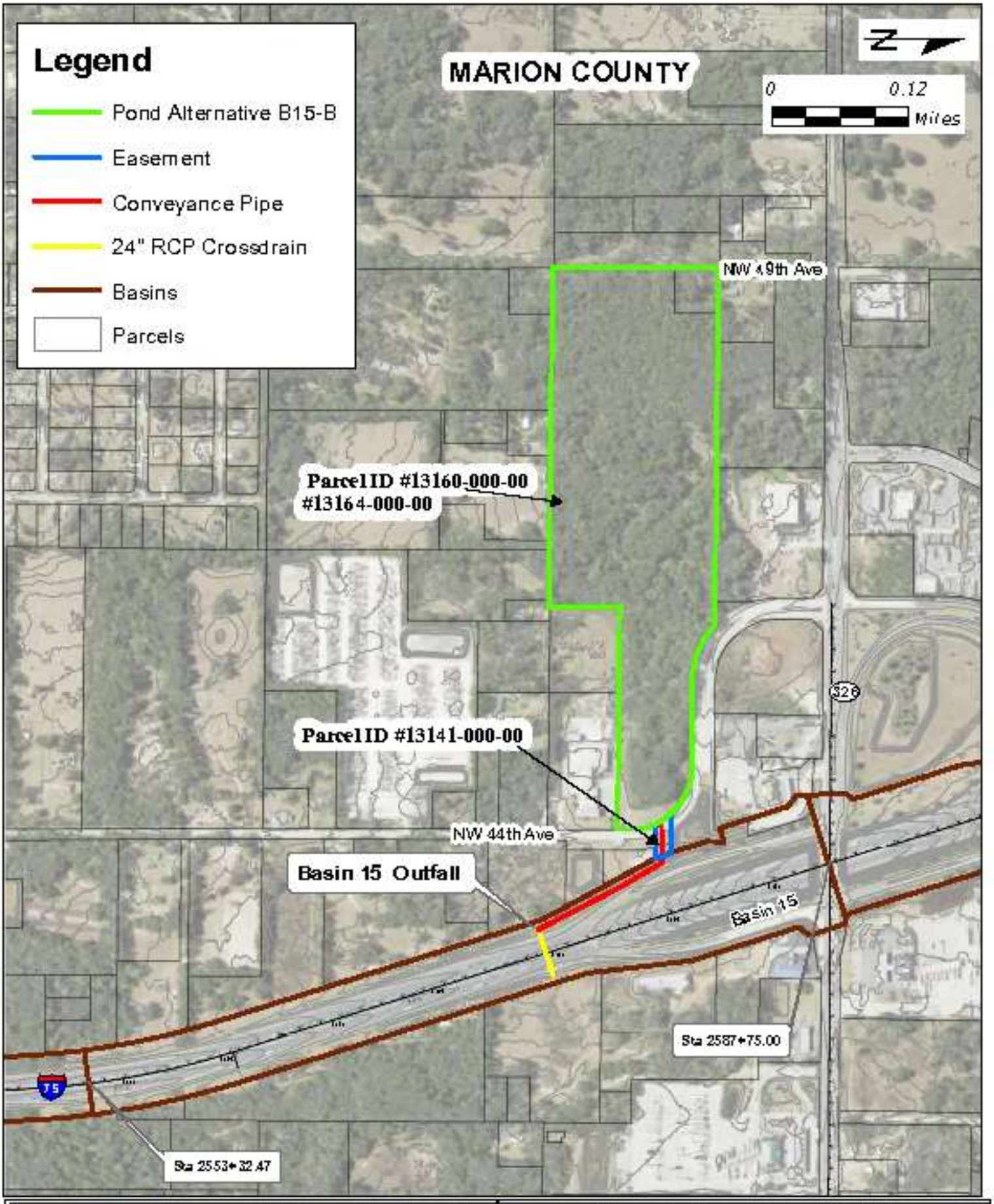
FDOT

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

Pond Alternative B15-A

Auxiliary Lanes at I-75

FPID: 452074-1-22-01 | Exhibit 35 of 36 | Date: 3/1/2024



FDOT

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: 452074-1-22-01 | Exhibit 36 of 36 | Date: 1/23/2024

Appendix B
Typical Section

PROPOSED I-75 TYPICAL SECTION

Existing Right of Way: 300 ft.

Appendix C

NRCS Soils Report

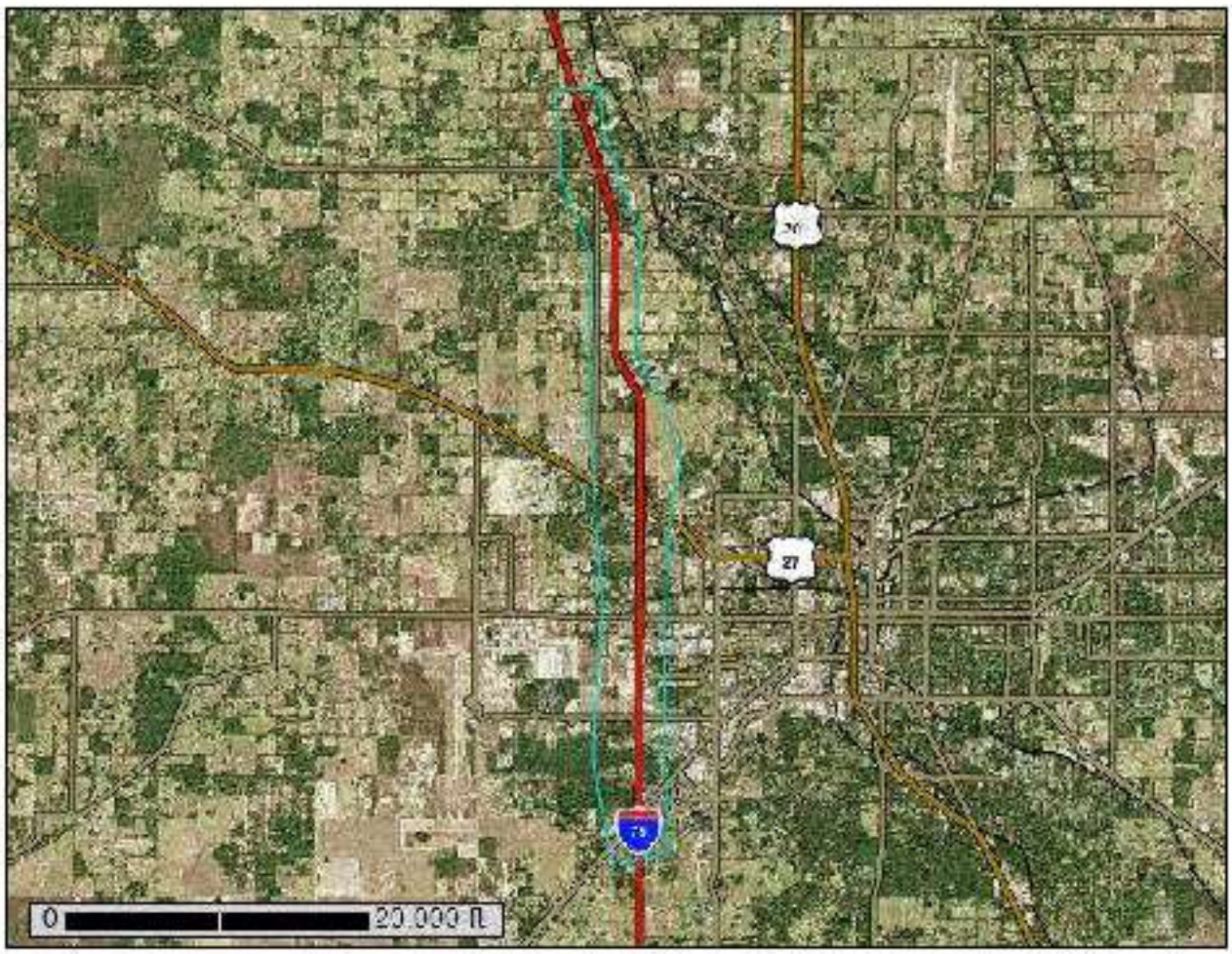
United States Department of Agriculture

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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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.

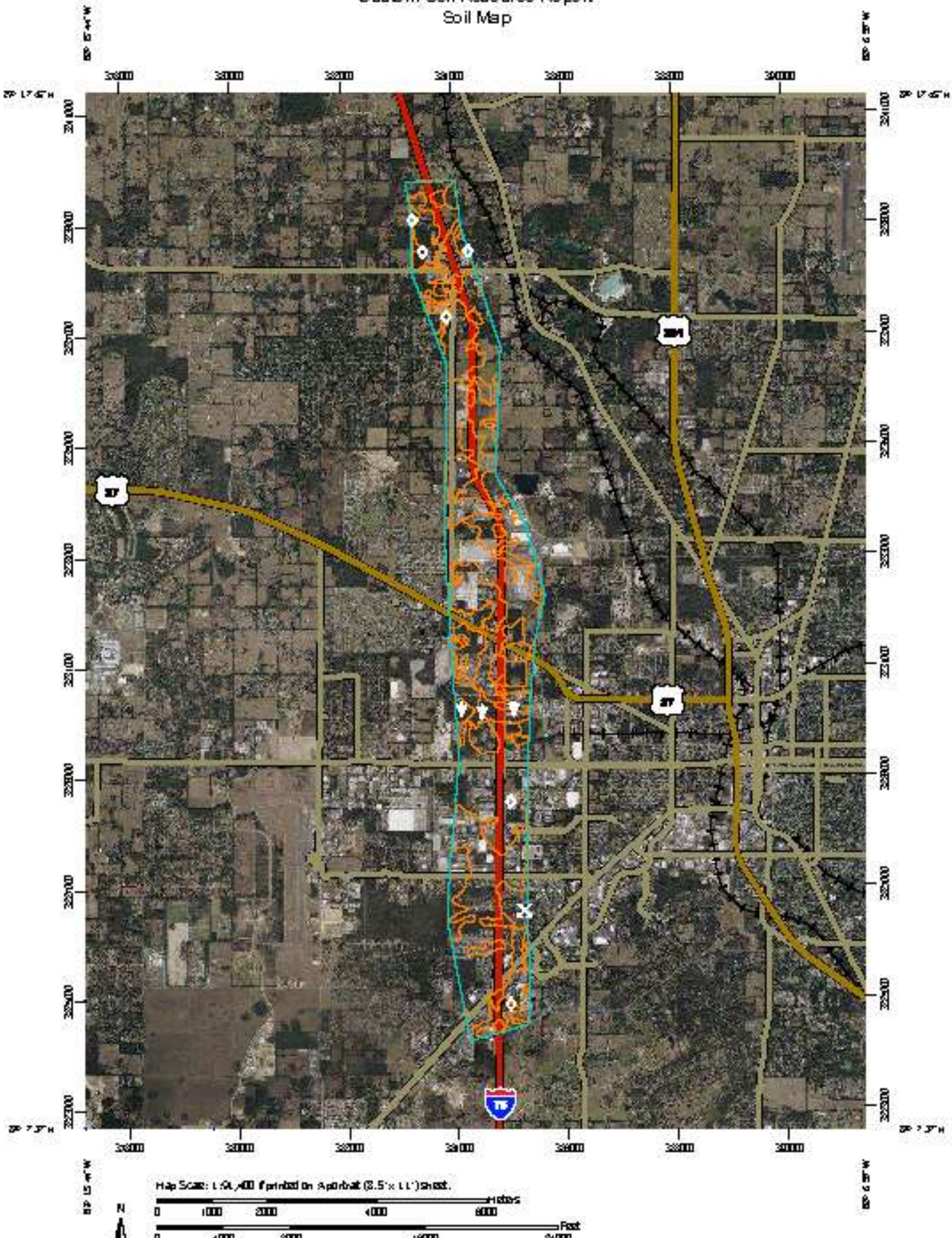
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree 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.


Map Scale: 1:9,400 if printed on A portrait (8.5" x 11") sheet.
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
N

MAP LEGEND

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 map unit.

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 map unit.

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 map unit.

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 map unit.

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 map unit.

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 map unit.

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

53—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 map unit.

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 map unit.

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 map unit.

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 map unit.

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 map unit.

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

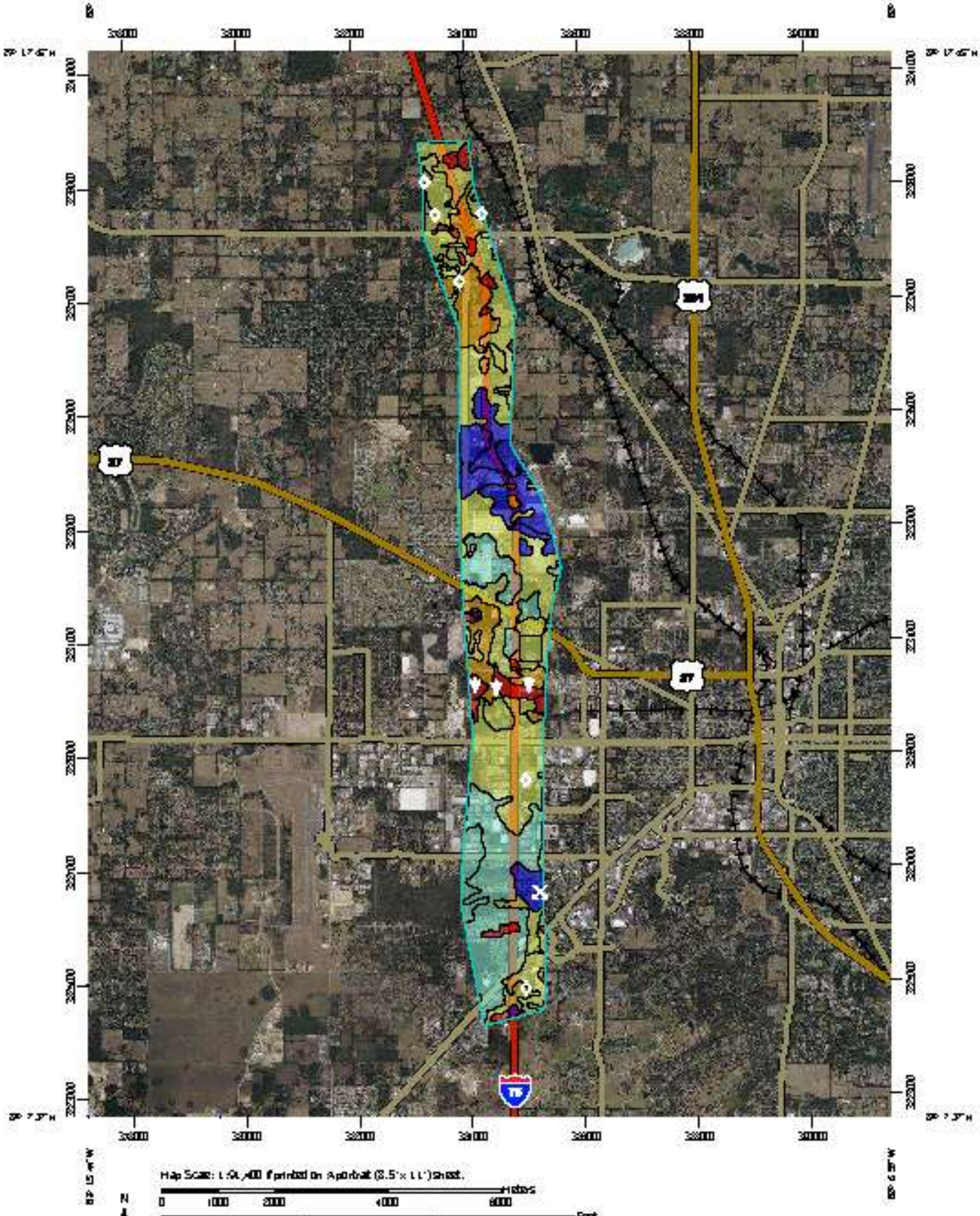
Water Features include ponding frequency, flooding frequency, and depth to water table.

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.

Map—Depth to Water Table



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	Udalfs-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

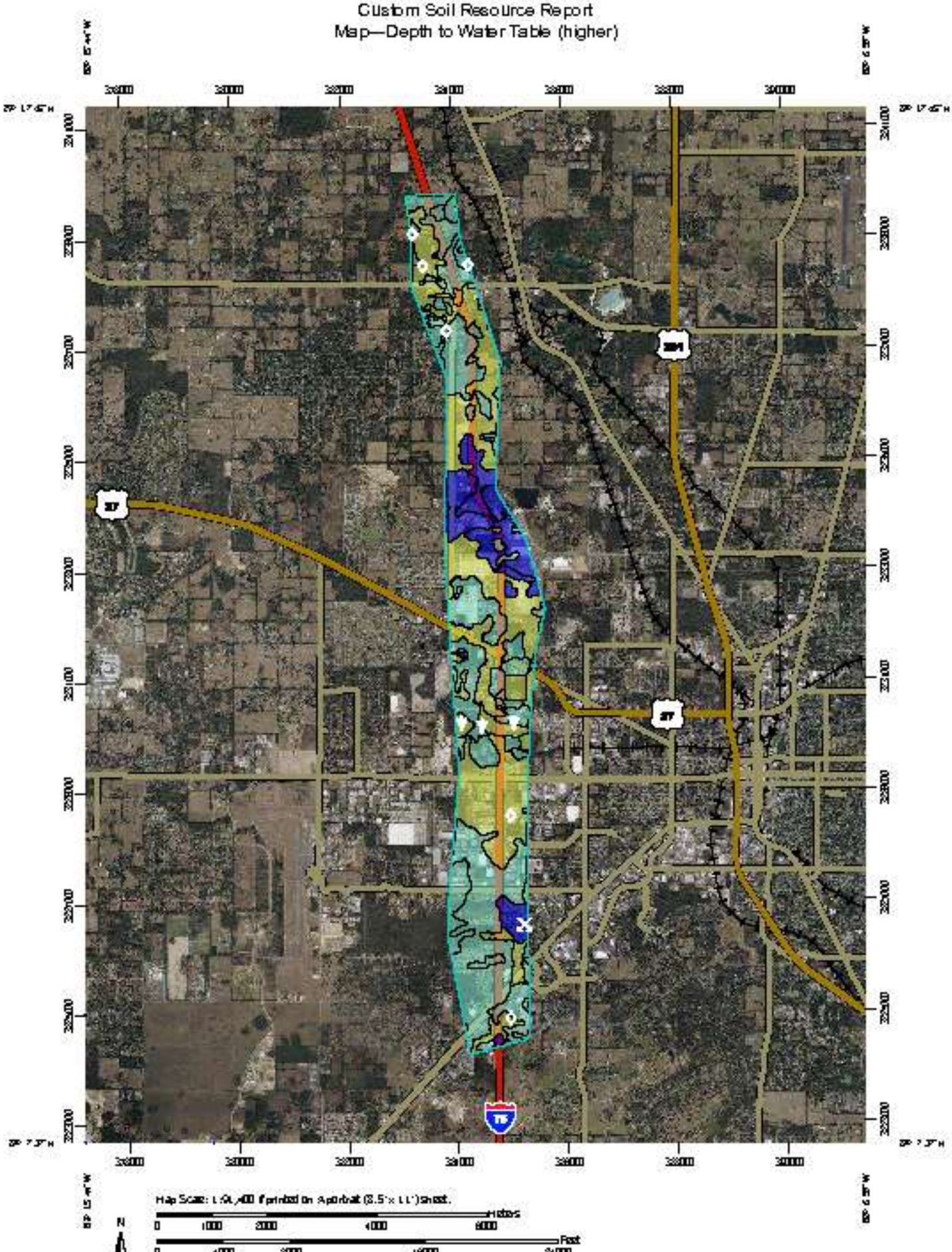
Ending Month: December

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.

Map—Depth to Water Table (higher)



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	Udalfs-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

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix D

Preliminary Pond Sizing Calculations

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/16/2023
Checked By: CC
Revised By: AV
Date: 2/29/2024

Subject: FPID 448624 2201 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 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/16/2023
Checked By: CC
Revised By: AV
Date: 2/29/2024

Subject: FPID 448624 2201 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	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)		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	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} = 4.62 in.
Pre-development runoff volume = 28.60 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	-	2.67 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	30.49 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	41.08 ac	-	98	54.28
Pond Outside of Berm	2.67 ac	-	100	3.60
-	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	30.49 ac	-	40	16.52
			CN_{post} =	74.3

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 3.45 in.
Q_{post} = 7.54 in.
Post-development runoff volume = 46.63 ac-ft

Attenuation volume required (Post-Pre) 18.03 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 24.02 ac-ft

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/16/2023
Checked By: CC
Revised By: AV
Date: 2/29/2024

Subject: FPID 448624[illegible] 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)	100yr
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} = 9.87 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	-	26.88 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	54.28
Pond Outside of Berm	26.88 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: 2/29/2024

Subject: FPID 448624 1 2201 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 (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LECP) = 78.50
Approx. hydraulic clearance from LECP = 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 elevation from adjacent pond Ronpond#2878*
Seasonal High Ground Water Elevation (SHGWT) = 57.88
SHGWT Check for Dry Retention Only OK
Tailwater Elevation (TW) = 68.98 — *TW elevation source: S:\SCS\Ponds\pond1\STA12+84+03.83)*

Treatment Volume Required (SJRWMD)
5.99 ac-ft
Attenuation Volume Required (SJRWMD)
18.03 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	68.00	28.58			
Inside Edge of Maintenance Berm	67.10	25.62	15.90	179.28	
Design High Water	66.50	25.28	127.08	168.88	Meets Atten Vol Req
Treatment Weir	61.50	24.45	86.25	86.25	
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: 3/29/2024

Subject: FPID 448624122O1 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 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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	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 Open Space
Percentage Basin (provide)	12%	65%	21%	2%	
CN	89	89	89	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:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 7.82 in.
Q_{pre} = 5.00 in.
Pre-development runoff volume = 25.50 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	-	5.69 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	14.42 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	41.08 ac	-	98	65.79
Pond Outside of Berm	5.69 ac	-	100	9.29
-	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
Open Space	14.42 ac	-	40	9.42
			CN_{post} =	84.5

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 1.88 in.
Q_{post} = 8.87 in.
Post-development runoff volume = 45.25 ac-ft

Attenuation volume required (Post-Pre) 19.75 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 25.74 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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	89	89	89	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	-	18.78 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	6.88 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	41.08 ac	-	98	65.79
Pond Outside of Berm	18.78 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	6.88 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

Designed By: AV
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 448624122O1 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 (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LEOP)=	73.50	
Approx. hydraulic clearance from LEOP =	1.00 ft	Standard hydraulic gradient assurance
Approx. Low Back of Berm Elevation @ Pond Site	72.00 ft	Lowest grung 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) =	68.98	TW elevation source: 24" Pipe (STA 22+43+430)

Treatment Volume Required (SJRWMD)
5.99 ac-ft
Attenuation Volume Required (SJRWMD)
19.75 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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	18.92	97.62	
Design High Water	70.50	13.78	65.41	88.70	Meets Atten Vol Req
Treatment Weir	65.50	12.89	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

Designed By: AV
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 2/29/2024

Subject: FPID 448624 1 2201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 1 & 2
SMF Name: B-1F & B-2B Combined

	Pre	Post
From Station	215+17	215+17
To Station	222+45	222+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 000 acft if and applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 2/29/2024

Subject: FPID 448624 1 2201 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	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	-	48.80 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 Open Space
Percentage Basin (provide)	22%	76%		2%	
CN	89	89	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	48.80 ac	-	40	28.72
			CN_{pre} =	56.4

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 7.78 in.
Q_{pre} = 5.04 in.
Pre-development runoff volume = 25.35 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	-	5.69 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	13.57 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	41.08 ac	-	98	66.72
Pond Outside of Berm	5.69 ac	-	100	9.48
-	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	13.57 ac	-	40	9.00
			CN_{post} =	85.1

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 1.74 in.
Q_{post} = 8.96 in.
Post-development runoff volume = 45.04 ac-ft

Attenuation volume required (Post-Pre) = 19.68 ac-ft
Total Pond Volume (25 Yr, 96 Hr) = 25.68 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 2/29/2024

Subject: FPID 448624 1 2201 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	89	89	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:

$$S = \frac{1000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 7.78 in.
Q_{pre} = 9.95 in.
Pre-development runoff volume = 50.01 ac-ft

Post-development Conditions

R/W Area	Pond Area	Total 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):

$$S = \frac{1000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 0.82 in.
Q_{post} = 15.65 in.
Post-development runoff volume = 78.70 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 2/29/2024

Subject: FPID 448624 1 2201 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 (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LEOP) =	78.50	
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 #8057
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	68.98	TW elevation source: 24" Pipe (STA 22+44.30)

Treatment Volume Required (SJRWMD)
5.99 ac-ft
Attenuation Volume Required (SJRWMD)
19.68 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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

Designed By: AV
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/28/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: B
SMF Name: B-SB

	Pre	Post
From Station	2224+45	2224+45
To Station	2268+94	2268+94
Basin Length	8948.70 ft	8948.70 ft
R/W to R/W Width	800.00 ft	800.00ft
Total Area	27.19 ac	27.19 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00ft	6	72.00 ft	
Shoulder	10.00ft	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	12.00ft	10	120.00 ft	
Shoulder	10.00ft	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	14.82 ac	27.19 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		357 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	14.82 ac	27.19 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		227 ac-ft		

Treatment Volume Required = Largest Treatment Volume	357 ac-ft
Treatment Volume from existing sources (treatment types must match)*	0.00 ac-ft
Total Treatment volume required	357 ac-ft

*referenced from Existing Treatment and Storage Summary 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: B
SMF Name: B-SB

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	14.86 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		100-Water	
Cover Description (choose)	Open, Good Cond (Grass >75%)	Open, Good Cond (Grass >75%)	-	Water	
HSG (choose)	A	A	-	A	Composite Open Space
Percentage Basin (provide)	67 %	31 %	0%	2%	
CN	89	89	0	100	41

	Area	HSG	CN	Weighted CN
Roadway	10.15 ac	-	98	28.94
-	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:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 8.21 in.
Q_{pre} = 4.88 in.
Pre-development runoff volume = 16.72 ac-ft

Post-development Conditions

R/W Area	Pond Area	
27.19 ac	14.86 ac	41.55 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	-	10.99 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	24.48 ac	-	98	57.74
Pond Outside of Berm	6.08 ac	-	100	14.64
-	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	10.99 ac	-	41	10.84
			CN_{post} =	88.2

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 2.02 in.
Q_{post} = 8.71 in.
Post-development runoff volume = 30.15 ac-ft

Attenuation volume required (Post-Pre) 13.43 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 17.00 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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
27.19 ac	14.86 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	89	89	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	14.86 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: 3/29/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: B
SMF Name: B-SB

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 (25 YR, 96 HR)

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	Approximate required hydraulic grade
Seasonal High Ground Water Elevation (SHGWT)=	57.40	From Permit (B2)
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	65.51	TW elevation source: 24" Pipe (STA 2233+ (B.1)

Treatment Volume Required (SJRWMD)
3.57 ac-ft
Attenuation Volume Required (SJRWMD)
13.43 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	66.50	14.86			
Inside Edge of Maintenance Berm	66.00	12.94	12.80	67.09	
Design High Water	65.00	12.67	86.79	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: 3/29/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: B
SMF Name: B-SC

	Pre	Post
From Station	2224+45	2224+45
To Station	2268+94	2268+94
Basin Length	8948.70 ft	8948.70 ft
R/W to R/W Width	800.00 ft	800.00ft
Total Area	27.19 ac	27.19 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00ft	6	72.00 ft	
Shoulder	10.00ft	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	12.00ft	10	120.00 ft	
Shoulder	10.00ft	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	14.82 ac	27.19 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		357 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	14.82 ac	27.19 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		227 ac-ft		

Treatment Volume Required = Largest Treatment Volume	357 ac-ft
Treatment Volume from existing sources (treatment types must match)*	0.00 ac-ft
Total Treatment volume required	357 ac-ft

*referenced from Existing Treatment and Storage Summary 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: S
SMF Name: S-SC

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	14.86 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)		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	28.94
-	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	20.98
			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} = 4.88 in.
Pre-development runoff volume = 16.72 ac-ft

Post-development Conditions

R/W Area	Pond Area	
27.19 ac	14.86 ac	41.55 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	-	11.96 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	24.48 ac	-	98	57.74
Pond Outside of Berm	5.11 ac	-	100	12.29
-	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
Open Space	11.96 ac	-	41	11.81
			CN_{post} =	81.8

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 2.22 in.
Q_{post} = 8.58 in.
Post-development runoff volume = 29.53 ac-ft

Attenuation volume required (Post-Pre) 12.80 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 16.37 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/28/2024

Subject: FPID 44862412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 8
SMF Name: B-SC

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	14.86 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	14.86 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: 3/29/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: B
SMF Name: B-SC

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 (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LEOP)=	65.50	
Approx. hydraulic clearance from LEOP =	1.00 ft	Standard hydraulic gradient assumption
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 2233+ (8.1f)

Treatment Volume Required (SJRWMD)
3.57 ac-ft
Attenuation Volume Required (SJRWMD)
12.80 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	64.00	14.86			
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: 3/28/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: B
SMF Name: B-SD

	Pre	Post
From Station	2224+45	2224+45
To Station	2268+94	2268+94
Basin Length	8948.70 ft	8948.70 ft
R/W to R/W Width	800.00 ft	800.00ft
Total Area	27.19 ac	27.19 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00ft	6	72.00 ft	
Shoulder	10.00ft	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	
			112.00ft	
		Impervious Area	10.15 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00ft	10	120.00 ft	
Shoulder	10.00ft	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	14.82 ac	27.19 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		357 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	14.82 ac	27.19 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		227 ac-ft		

Treatment Volume Required = Largest Treatment Volume	357 ac-ft
Treatment Volume from existing sources (treatment types must match)*	0.00 ac-ft
Total Treatment volume required	357 ac-ft

*referenced from Existing Treatment and Storage Summary 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: B
SMF Name: B-SD

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	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)		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	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:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 8.82 in.
Q_{pre} = 4.57 in.
Pre-development runoff volume = 18.16 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	-	5.90 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	17.27 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	24.48 ac	-	98	50.85
Pond Outside of Berm	5.90 ac	-	100	12.37
-	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	17.27 ac	-	41	14.85
			CN_{post} =	77.6

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 2.89 in.
Q_{post} = 7.97 in.
Post-development runoff volume = 31.65 ac-ft

Attenuation volume required (Post-Pre) 13.49 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 17.05 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 8
SMF Name: B-SD

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	89	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:

$$S = \frac{1000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 8.82 in.
Q_{pre} = 9.81 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	-	18.48 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	50.85
Pond Outside of Berm	18.48 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} =	98.1

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

$$S = \frac{1000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

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: 3/29/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: B
SMF Name: B-SD

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 (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LEOP)=	66.50	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic gradient assurance*
Approx. Low Back of Berm Elevation @ Pond Site	66.00 ft	*Set at 0.5 below LEOP EL*
Approx. Pond Bottom (dry) =	61.00	*5' above SH*
Seasonal High Ground Water Elevation (SHGWT)=	59.00	*Assumed 5' below lowest elevation on pond (Permit 20510)*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	65.51	*TW elevation above 24" Pipe (STA 2255+ (B.I.B)*

Treatment Volume Required (SJRWMD)
3.57 ac-ft
Attenuation Volume Required (SJRWMD)
13.49 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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	18.48	86.21	62.52	Meets Atten Vol Req
Treatment Weir	62.50	17.78	26.81	26.81	
Pond Bottom	61.00	17.80	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: 3/28/2024

Subject: FPID 44862412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 4
SMF Name: B-4A

	Pre	Post
From Station	2258+94	2258+94
To Station	2290+86	2290+86
Basin Length	2642.80 ft	2642.80 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	16.88 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.	16.88 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.	16.88 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 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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	18.85 ac	86.55 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		100-Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)	Open, Good Cond. (Grass >75%)	-	Water	
HSG (choose)	A	A	-	A	Composite Open Space
Percentage Basin (provide)	88%	10%	0%	2%	
CN	89	0	0	100	86

	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	-	86	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} = 10.98 in.
Q_{pre} = 8.80 in.
Pre-development runoff volume = 11.56 ac-ft

Post-development Conditions

R/W Area	Pond Area	
18.20 ac	18.85 ac	86.55 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	16.88 ac
Pond Outside of Berm	-	4.28 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	15.94 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	16.88 ac	-	98	48.92
Pond Outside of Berm	4.28 ac	-	100	11.58
-	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	15.94 ac	-	86	15.84
			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} = 4.02 in.
Q_{post} = 7.18 in.
Post-development runoff volume = 21.72 ac-ft

Attenuation volume required (Post-Pre) 10.15 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 12.54 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/28/2024

Subject: FPID 44862412201 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	18.85 ac	86.55 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	89	0	0	100	86

	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	-	86	29.57
			CN_{pre} =	47.8

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 10.56 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	18.85 ac	86.55 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	16.88 ac
Pond Outside of Berm	-	16.48 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	8.74 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	16.88 ac	-	98	48.92
Pond Outside of Berm	16.48 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	8.74 ac	-	86	8.71
			CN_{post} =	92.6

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

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

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: 3/28/2024

Subject: FPID 448624122O1 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 (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LEOP)=	71.15	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic grade line clearance*
Approx. Low Back of Berm Elevation @ Pond Site	64.00 ft	*Lowest ground elevation*
Approx. Pond Bottom (dry) =	59.50	*1' 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 22+00.00)*

Treatment Volume Required (SJRWMD)
2.39 ac-ft
Attenuation Volume Required (SJRWMD)
10.15 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	64.00	18.85			
Inside Edge of Maintenance Berm	62.50	16.75	16.59	64.50	
Design High Water	62.50	16.48	24.80	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: 2/29/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 4
SMF Name: B-4B2

	Pre	Post
From Station	2258+94	2258+94
To Station	2290+86	2290+86
Basin Length	2642.80 ft	2642.80 ft
R/W to R/W Width	800.00 ft	800.00 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	16.88 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.	16.88 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.	16.88 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 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 2/29/2024

Subject: FPID 44862412201 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	5.71 ac	28.91 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			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	89	0	0	100	40

	Area	HSG	CN	Weighted CN
Roadway	6.79 ac	-	98	27.88
-	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	17.12 ac	-	40	28.80
			CN_{pre} =	56.6

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 7.66 in.
Q_{pre} = 5.07 in.
Pre-development runoff volume = 10.11 ac-ft

Post-development Conditions

R/W Area	Pond Area	
18.20 ac	5.71 ac	28.91 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	16.88 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	-	2.54 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	16.88 ac	-	98	57.14
Pond Outside of Berm	4.99 ac	-	100	20.87
-	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	2.54 ac	-	40	4.27
			CN_{post} =	92.8

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 0.84 in.
Q_{post} = 9.86 in.
Post-development runoff volume = 19.64 ac-ft

Attenuation volume required (Post-Pre) 9.53 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 11.92 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 2/29/2024

Subject: FPID 44862412201 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	28.91 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	89	0	0	100	40

	Area	HSG	CN	Weighted CN
Roadway	6.79 ac	-	98	27.88
-	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	17.12 ac	-	40	28.80
			CN_{pre} =	56.6

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

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	28.91 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	16.88 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	16.88 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):

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 0.98 in.
Q_{post} = 15.58 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: 2/29/2024

Subject: FPID 448624122O1 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 (25 YR, 96 HR)

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	Aspen permit (B2)
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	69.00	TW elevation source: 2-30" Pipe (STA 22+00.00)

Treatment Volume Required (SJRWMD)
2.39 ac-ft
Attenuation Volume Required (SJRWMD)
9.53 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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	4.88	4.75	85.70	
Design High Water	60.50	4.67	25.54	80.95	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: 3/28/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 4
SMF Name: B-4E

	Pre	Post
From Station	2268+94	2268+94
To Station	2290+87	2290+87
Basin Length	2648.80 ft	2648.80 ft
R/W to R/W Width	800.00 ft	800.00 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	16.88 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.	16.88 ac	9.59 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.	16.88 ac	9.59 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 000 acft if and applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 3/28/2024

Subject: FPID 44862412201 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	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			100-Water	
Cover Description (choose)	Open, GoodCond (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	27.08
-	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	17.85 ac	-	40	29.12
			CN_{pre} =	56.2

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 7.81 in.
Q_{pre} = 5.01 in.
Pre-development runoff volume = 10.29 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	-	16.88 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	-	0.16 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	16.88 ac	-	98	65.12
Pond Outside of Berm	8.11 ac	-	100	82.91
-	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	0.16 ac	-	40	0.26
			CN_{post} =	98.3

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 0.17 in.
Q_{post} = 10.59 in.
Post-development runoff volume = 21.76 ac-ft

Attenuation volume required (Post-Pre) 11.48 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 13.86 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 3/28/2024

Subject: FPID 44862412201 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	89	0	0	100	40

	Area	*HSG*	*CN*	*Weighted CN*
Roadway	6.80 ac	-	98	27.08
-	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	17.85 ac	-	40	29.12
			CN_{pre} =	56.2

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

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	-	16.88 ac
Pond Outside of Berm	-	5.88 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	16.88 ac	-	98	65.12
Pond Outside of Berm	5.88 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):

$$S = \frac{1000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

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: 3/28/2024

Subject: FPID 448624122O1 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 (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LEOP)=	71.15	
Approx. hydraulic clearance from LEOP =	1.00 ft	*Standard hydraulic grade 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 33345*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	69.00	*TW elevation source: 2-30" Pipe (STA 274+00.00)*

Treatment Volume Required (SJR WMD)
239 ac-ft
Attenuation Volume Required (SJR WMD)
11.48 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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	87.71	
Design High Water	68.50	5.38	25.80	82.28	Meets Atten Vol Req
Treatment Weir	68.22	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: 2/28/2024

Subject: FPID 448624122O1 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+87	2290+87
To Station	2368+14	2368+14
Basin Length	7277.47 ft	7277.47 ft
R/W to R/W Width	800.00 ft	800.00 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 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 2/29/2024

Subject: FPID 44862412201 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	84.58 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, GoodCond (Grass >75%)	Open, GoodCond (Grass >75%)	Open, GoodCond (Grass >75%)	Water	
HSG (choose)	A	D	C	A	Composite Open Space
Percentage Basin (provide)	75%	15%	8%	2%	
CN	89	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} = 5.60 in.
Pre-development runoff volume = 39.54 ac-ft

Post-development Conditions

R/W Area	Pond Area	
50.12 ac	84.58 ac	84.70 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	45.11 ac
Pond Outside of Berm	-	8.89 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	85.70 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	45.11 ac	-	98	52.19
Pond Outside of Berm	8.89 ac	-	100	4.59
-	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	85.70 ac	-	50	20.98
			CN_{post} =	77.7

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 2.87 in.
Q_{post} = 7.99 in.
Post development runoff volume = 56.37 ac-ft

Attenuation volume required (Post-Pre) 16.83 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 23.41 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 2/29/2024

Subject: FPID 44862412201 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	84.58 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, GoodCond (Grass >75%)	Open, GoodCond (Grass >75%)	Open, GoodCond (Grass >75%)	Water	
HSG (choose)	A	D	C	A	Composite
Percentage Basin (provide)	75%	15%	8%	2%	Open Space
CN	89	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:

$$S = \frac{1000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

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	84.58 ac	84.70 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	45.11 ac
Pond Outside of Berm	-	31.98 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	31.98 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):

$$S = \frac{1000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

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: 2/28/2024

Subject: FPID 448624122O1 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 (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LEOP)= 57.86
Approx. hydraulic clearance from LEOP = 1.00 ft — Standard hydraulic grade line 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 pond number: S282.005
SHGWT Check for Dry Retention Only OK
Tailwater Elevation (TW) = 64.51 — 7 Harvelle source 24" Rcp (STA 220 (+19.03)

Treatment Volume Required (SJRWMD)
6.58 ac-ft
Attenuation Volume Required (SJRWMD)
16.83 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	56.00	84.58			
Inside Edge of Maintenance Berm	55.50	82.86	82.15	245.24	
Design High Water	54.50	81.98	169.17	218.09	Meets Atten Vol Req
Treatment Weir	49.00	29.59	48.92	48.92	
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: 2/28/2024

Subject: FPID 448524 1 2201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 5
SMF Name: B-5 B

	Pre	Post
From Station	2290+87	2290+87
To Station	2822+19	2822+19
Basin Length	8182.00 ft	8182.00 ft
R/W to R/W Width	800.00 ft	800.00 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 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 2/28/2024

Subject: FPID 44852412201 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	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	-	29.58 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, GoodCond (Grass >75%	Water	
HSG (choose)	A	D	D	A	Composite
Percentage Basin (provide)	74%	5%	16%	2%	Open
CN	89	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	29.58 ac	-	50	89.88
			CN_{pre} =	60.6

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 6.51 in.
Q_{pre} = 5.64 in.
Pre-development runoff volume = 17.72 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	-	8.40 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	14.59 ac

CN Calculations

	Area	HSG	CN	Weighted CN
Roadway	19.72 ac	-	98	51.25
Pond Outside of Berm	8.40 ac	-	100	9.08
-	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	14.59 ac	-	50	19.42
			CN_{post} =	79.7

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 2.55 in.
Q_{post} = 8.25 in.
Post-development runoff volume = 25.92 ac-ft

Attenuation volume required (Post-Pre) 8.21 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 11.08 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 2/28/2024

Subject: FPID 44852412201 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%	5%	16%	2%	Open
CN	89	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	89.88
			CN_{pre} =	60.6

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 6.51 in.
Q_{pre} = 10.78 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	-	8.97 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	8.97 ac	-	50	5.28
			CN_{post} =	92.7

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

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

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: 2/28/2024

Subject: FPID 4435241 2201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 5
SMF Name: B-5 B

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 (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LEOP)=	67.35	
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 +0.5*
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	64.51	*7 Year stage source 24" Pipe (STA 230 + 19.03)*

Treatment Volume Required (SJRWMD)
2.88 ac-ft
Attenuation Volume Required (SJRWMD)
8.21 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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	14.81	14.17	64.12	
Design High Water	60.50	14.02	80.17	49.95	Meets Atten Vol Req
Treatment Weir	58.80	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

Patel, Greene & Associates, LLC

Designed By: AV
Date: 1/18/2024
Checked By: MH
Revised By: AV
Date: 2/28/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 5
SMF Name: 5 E Aux

	Pre	Post
From Station	2290+87	2290+87
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 plus lane per side - GIS measured
Turn Lanes	LT	1	0.35 ac	1 plus 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	8.82 ac	0.64 ac	21.91 ac
Runoff Treatment (SJRWMD)	1.75 in.			
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	8.82 ac	0.64 ac	21.91 ac
Runoff Treatment (SJRWMD)	1.00 in.			
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 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 1/18/2024
Checked By: MH
Revised By: AV
Date: 2/28/2024

Subject: FPID 44802412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 5
SMF Name: 5E Aux

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	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			100 Water	
Cover Description (choose)	Open, Good Cond. (Grass >75%)			Water	
HSG (choose)	A			A	Composite
Percentage Basin (provide)	98%			2%	Open Space
CN	89			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} = 7.58 in.
Q_{pre} = 5.18 in.
Pre-development runoff volume = 12.02 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	-	8.74 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	15.55 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	8.82 ac	-	98	30.75
Pond Outside of Berm	8.74 ac	-	100	18.29
-	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
Open Space	15.55 ac	-	40	22.25
			CN_{post} =	66.8

NRCS 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} = 6.44 in.
Post-development runoff volume = 15.08 ac-ft

Attenuation volume required (Post-Pre) 3.06 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 16.91 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 1/18/2024
Checked By: MH
Revised By: AV
Date: 2/28/2024

Subject: FPID 44802412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 5
SMF Name: 5E Aux

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	-	19.98 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	89	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	19.98 ac	-	40	28.52
			CN_{pre} =	57.0

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 7.58 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	-	5.88 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	18.96 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	8.82 ac	-	98	80.75
Pond Outside of Berm	5.88 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	18.96 ac	-	40	19.98
			CN_{post} =	69.7

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

$$S = \frac{1000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 4.35 in.
Q_{post} = 12.82 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: 2/28/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 5
SMF Name: 5 E Aux

Total Pond Volume Required = Use Largest Total Pond Volume: 28.86 ac-ft

POND SIZE ESTIMATE PER SJRWMD (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LEOP) =	67.86	
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 7+30 (+9.00)*

Treatment Volume Required (SJR WMD)
1.83 ac-ft
Attenuation Volume Required (SJR WMD)
3.06 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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	84.82	
Design High Water	64.50	5.88	22.24	28.90	Meets Atten Vol Req
Treatment Weir	60.00	4.56	6.66	6.66	
Pond Bottom	58.50	4.82	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: 3/29/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 6
SMF Name: B-6C

	Pre	Post
From Station	2822+19	2822+19
To Station	2833+19	2833+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	2.32 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	8.99 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	8.99 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 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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	8.99 ac	16.57 ac

Total Area to be attenuated for (choose)	HSG (choose)	
Roadway	-	2.88 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space	-	18.74 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	2.88 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	18.74 ac	-	40	88.85
			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} = 4.18 in.
Pre-development runoff volume = 5.71 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	-	1.12 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	8.68 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	6.82 ac	-	98	40.84
Pond Outside of Berm	1.12 ac	-	100	6.75
-	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	8.68 ac	-	40	20.85
			CN_{post} =	68.0

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 4.70 in.
Q_{post} = 6.68 in.
Post-development runoff volume = 9.22 ac-ft

Attenuation volume required (Post-Pre) 3.52 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 4.51 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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	-	2.88 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	89	0	80	100	40

	Area	HSG	CN	Weighted CN
Roadway	2.88 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	40.84
Pond Outside of Berm	7.67 ac	-	100	46.25
-	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: 3/29/2024

Subject: FPID 448624122O1 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 (25 YR, 96 HR)

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 223+04NT)

Treatment Volume Required (SJRWMD)
0.99 ac-ft
Attenuation Volume Required (SJRWMD)
3.52 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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	29.88	
Design High Water	64.50	7.67	11.26	22.05	Meets Atten Vol Req
Treatment Weir	63.00	7.85	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: 3/28/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 5&6
SMF Name: 5E & 6E Aux

	Pre	Post
From Station	2290+87	2290+87
To Station	2333+19	2333+19
Basin Length	4231.70 ft	4231.70 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	1/2 a 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	1/2 a lane per side - GIS measured
Turn Lanes	LT	1	0.65 ac	1/2 a 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	12.25 ac	1.25 ac	29.49 ac
Runoff Treatment (SJRWMD)	1.75 in			
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	12.25 ac	1.25 ac	29.49 ac
Runoff Treatment (SJRWMD)	1.00 in			
Area to be Treated (choose)	Total R/W			
Treatment Volume		246 ac-ft		

Treatment Volume Required = Largest Treatment Volume	246 ac-ft
Treatment Volume from existing sources (treatment types must match)*	0.00 ac-ft
Total Treatment volume required	246 ac-ft

*referenced from Existing Treatment and Storage Summary 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 1/19/2024
Checked By: MH
Revised By: AV
Date: 3/28/2024

Subject: FPID 44862412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 5&6
SMF Name: 5E & 6E Aux

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	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			100-Water	
Cover Description (choose)	Open, Good Cond (Grass >75%)			Water	
HSG (choose)	A			A	Composite Open Space
Percentage Basin (provide)	98%			2%	
CN	39			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

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 7.48 in.
Q_{pre} = 5.18 in.
Pre-development runoff volume = 16.02 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	-	1.87 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	22.49 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	12.25 ac	-	98	82.85
Pond Outside of Berm	1.87 ac	-	100	8.70
-	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	22.49 ac	-	40	25.45
			CN_{post} =	61.5

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 6.26 in.
Q_{post} = 5.77 in.
Post-development runoff volume = 17.84 ac-ft

Attenuation volume required (Post-Pre) 1.82 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 4.28 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 1/19/2024
Checked By: MH
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 5&6
SMF Name: 5E & 6E Aux

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	89	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_{pe} =	57.4

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 7.48 in.
Q_{pre} = 10.18 in.
Pre-development runoff volume = 31.33 ac-ft

Post-development Conditions

R/W Area	Pond Area	Total 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	32.85
Pond Outside of Berm	7.02 ac	-	100	18.98
-	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	17.84 ac	-	40	19.88
			CN_{post} =	70.6

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

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

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: 3/28/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 5&6
SMF Name: 5E & 6E Aux

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 PER SJRWMD (25 YR, 96 HR)

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 223+04NB)*

Treatment Volume Required (SJRWMD)
2.46 ac-ft
Attenuation Volume Required (SJRWMD)
1.82 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	66.00	7.62			
Inside Edge of Maintenance Berm	65.50	7.23	7.18	45.75	
Design High Water	64.50	7.02	29.62	88.62	Meets Atten Vol Req
Treatment Weir	60.00	6.14	9.00	9.00	
Pond Bottom	58.50	5.85	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

Available area on 2 parcels = 8.97 (7.82+1.65)
Additional volume can be discharged to vacant site or FDOT parcel

Patel, Greene & Associates, LLC

Designed By: AV
Date: 1/19/2024
Checked By: MH
Revised By: AV
Date: 3/28/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 6
SMF Name: 6F Alt

	Pre	Post
From Station	2822+19	2822+19
To Station	2833+19	2833+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	2.88 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	1/2 a 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	2.88 ac	

Post-development Impervious Areas (choose)	Side	Number	Total Area	Notes
Turn Lanes	RT	1	0.30 ac	1/2 a lane per side - GIS measured
Turn Lanes	LT	1	0.30 ac	1/2 a lane per side - GIS measured
		Subtotal Impervious Area	0.61 ac	
		Total Impervious	8.48 ac	

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.75 in	8.48 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 (SJRWMD)	1.00 in	8.48 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 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 1/19/2024
Checked By: MH
Revised By: AV
Date: 3/28/2024

Subject: FPID 44862412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 6
SMF Name: 6F Alt

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	8.92 ac	11.50 ac

Total Area to be attenuated for (choose)	HSG (choose)	
Roadway	-	2.88 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)		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	2.88 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

NRCS 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} = 8.90 in.
Pre-development runoff volume = 8.53 ac-ft

Post-development Conditions

R/W Area	Pond Area	
7.58 ac	8.92 ac	11.50 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	8.48 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	-	6.87 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	8.48 ac	-	98	29.28
Pond Outside of Berm	1.20 ac	-	100	10.44
-	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
Open Space	6.87 ac	-	80	48.02
			CN_{post} =	87.7

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} = 9.28 in.
Post-development runoff volume = 8.89 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: 3/28/2024

Subject: FPID 44862412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 6
SMF Name: 6F Alt

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	8.92 ac	11.50 ac

Total Area to be attenuated for (choose)	HSG (choose)	
Roadway	-	2.58 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 Open Space
Percentage Basin (provide)	0%	98%	0%	2%	
CN	0	80	0	100	80

	Area	HSG	CN	Weighted CN
Roadway	2.58 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_{pe} =	84.7

NRCS 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	Total Area
7.58 ac	8.92 ac	11.50 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	3.48 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	-	4.88 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	3.48 ac	-	98	29.28
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	4.88 ac	-	80	33.80
			CN_{post} =	91.2

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} = 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: 3/28/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 6
SMF Name: 6F Alt

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 PER SJRWMD (25 YR, 96 HR)

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 223+04.42)	

Treatment Volume Required (SJRWMD)
0.63 ac-ft
Attenuation Volume Required (SJRWMD)
0.36 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	62.00	8.92			
Inside Edge of Maintenance Berm	61.50	8.87	8.81	15.13	
Design High Water	60.50	8.24	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: 3/29/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 7
SMF Name: B-7A

	Pre	Post
From Station	2888+19	2888+19
To Station	2868+14	2868+14
Basin Length	2955.80 ft	2955.80 ft
R/W to R/W Width	800.00 ft	800.00ft
Total Area	20.68 ac	20.68 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00ft	6	72.00 ft	
Shoulder	10.00ft	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	
			112.00ft	
		Impervious Area	7.70 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00ft	10	120.00 ft	
Shoulder	10.00ft	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	20.68 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		271 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	20.68 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		1.72 ac-ft		

Treatment Volume Required = Largest Treatment Volume	271 ac-ft
Treatment Volume from existing sources (treatment types must match)*	0.00 ac-ft
Total Treatment volume required	271 ac-ft

*referenced from Existing Treatment and Storage Summary 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 3/29/2024

Subject: FPID 448624122O1 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
20.68 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		Tavares	100-Water	
Cover Description (choose)	Open, Good Cond (Grass >75%)		Open, Good Cond (Grass >75%	Water	
HSG (choose)	B		A	A	Composite Open Space
Percentage Basin (provide)	98%		5%	2%	
CN	61		89	100	41

	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	-	41	31.05
			CN_{pre} =	54.8

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 8.24 in.
Q_{pre} = 4.82 in.
Pre-development runoff volume = 12.73 ac-ft

Post-development Conditions

R/W Area	Pond Area	
20.68 ac	11.09 ac	31.72 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	-	10.27 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	18.57 ac	-	98	57.37
Pond Outside of Berm	2.88 ac	-	100	9.07
-	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	10.27 ac	-	41	18.28
			CN_{post} =	79.7

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 2.54 in.
Q_{post} = 8.25 in.
Post-development runoff volume = 21.81 ac-ft

Attenuation volume required (Post-Pre) 9.08 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 11.78 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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
20.68 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)	98%	0%	5%	2%	Open Space
CN	61	0	89	100	61

	Area	HSG	CN	Weighted CN
Roadway	7.70 ac	-	98	28.79
-	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} = 4.84 in.
Q_{pre} = 12.88 in.
Pre-development runoff volume = 32.60 ac-ft

Post-development Conditions

R/W Area	Pond Area	
20.68 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	-	8.24 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	18.57 ac	-	98	57.87
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	8.24 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

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 3/29/2024

Subject: FPID 448624122O1 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 (25 YR, 96 HR)

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 233+012.6)

Treatment Volume Required (SJRWMD)
2.71 ac-ft
Attenuation Volume Required (SJRWMD)
9.08 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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	10.08	52.24	
Design High Water	66.50	9.91	28.67	42.21	Meets Atten Vol Req
Treatment Weir	65.50	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: 3/28/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 6&7
SMF Name: 6G &7A Aux

	Pre	Post
From Station	2822+19	2822+19
To Station	2863+14	2863+14
Basin Length	4095.77 ft	4095.77 ft
R/W to R/W Width	800.00 ft	800.00 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	10.58 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	1/2 a 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	10.58 ac	

Post-development Impervious Areas (choose)	Side	Number	Total Area	Notes
Turn Lanes	RT	1	0.58 ac	1/2 a lane per side - GIS measured
Turn Lanes	LT	1	0.58 ac	1/2 a 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 (SJRWMD)	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 (SJRWMD)	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 .000 acft if not applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 1/19/2024
Checked By: MH
Revised By: AV
Date: 3/28/2024

Subject: FPID 44862412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 6&7
SMF Name: 6G &7A Aux

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	18.81 ac	46.52 ac

Total Area to be attenuated for (choose)	HSG (choose)	
Roadway	-	10.58 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		Tavares	100-Water	
Cover Description (choose)	Open, Good Cond (Grass >75%)		Open, Good Cond (Grass >75%)	Water	
HSG (choose)	B		A	A	Composite Open Space
Percentage Basin (provide)	98%		5%	2%	
CN	61		80	100	68

	Area	HSG	CN	Weighted CN
Roadway	10.58 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	-	68	48.58
			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} = 7.05 in.
Pre-development runoff volume = 27.31 ac-ft

Post-development Conditions

R/W Area	Pond Area	
28.21 ac	18.81 ac	46.52 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	-	33.71 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	11.65 ac	-	98	24.54
Pond Outside of Berm	1.16 ac	-	100	2.49
-	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	33.71 ac	-	68	45.46
			CN_{post} =	72.5

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 3.79 in.
Q_{post} = 7.29 in.
Post-development runoff volume = 28.25 ac-ft

Attenuation volume required (Post-Pre) 0.94 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 3.29 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 1/19/2024
Checked By: MH
Revised By: AV
Date: 3/28/2024

Subject: FPID 44862412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 6&7
SMF Name: 6G &7A Aux

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	18.81 ac	46.52 ac

Total Area to be attenuated for (choose)	HSG (choose)	
Roadway	-	10.58 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)	98%	0%	5%	2%	Open Space
CN	61	0	80	100	68

	Area	HSG	CN	Weighted CN
Roadway	10.58 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	-	68	48.58
			CN_{pre} =	70.7

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

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	18.81 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	-	68	24.89
			CN_{post} =	85.0

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

$$S = \frac{1000}{CN} - 10$$
$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 1.76 in.
Q_{post} = 14.66 in.
Post-development runoff volume = 56.82 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 1/19/2024
Checked By: MH
Revised By: AV
Date: 3/28/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 6&7
SMF Name: 6G &7A Aux

Total Pond Volume Required = Use Largest Total Pond Volume: 56.82 ac-ft

POND SIZE ESTIMATE PER SJRWMD (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LECP)=	66.51	
Approx. hydraulic clearance from LECP =	1.00 ft	Standard hydraulic gradient clearance
Approx. Low Back of Berm Elevation @ Pond Site	68.00 ft	Lowest Ground elevation at edge
Approx. Pond Bottom (dry) =	62.00	Lowest road side elevation
Seasonal High Ground Water Elevation (SHGWT)=	60.00	2 below pond bottom
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	65.01	TW elevation source: 24" Pipe (STA 223+04.42)

Treatment Volume Required (SJRWMD)
2.35 ac-ft
Attenuation Volume Required (SJRWMD)
0.94 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	68.00	18.81			
Inside Edge of Maintenance Berm	66.50	17.10	16.94	78.78	
Design High Water	65.50	16.78	82.94	56.84	Meets Atten Vol Req
Treatment Weir	65.50	16.16	28.90	28.90	
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 size 19.86 ac

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 3/29/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 7
SMF Name: B-7 C

	Pre	Post
From Station	2888+19	2888+19
To Station	2858+14	2858+14
Basin Length	2935.80 ft	2935.80 ft
R/W to R/W Width	800.00 ft	800.00 ft
Total Area	20.68 ac	20.68 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	20.68 ac
Area to be Treated (choose)	Total Imp. Area			

Treatment Volume: 271 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	20.68 ac
Area to be Treated (choose)	Total R/W			

Treatment Volume: 1.72 ac-ft

Treatment Volume Required = Largest Treatment Volume	271 ac-ft
Treatment Volume from existing sources (treatment types must match)*	0.00 ac-ft
Total Treatment volume required	271 ac-ft

*referenced from Existing Treatment and Storage Summary 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 7
SMF Name: B-7 C

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
20.68 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	-	88.22 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 Open Space
Percentage Basin (provide)	15%	5%	78%	2%	
CN	89	89	80	100	41

	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	88.22 ac	-	41	88.22
			CN_{pre} =	51.7

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 9.33 in.
Q_{pre} = 4.37 in.
Pre-development runoff volume = 14.90 ac-ft

Post-development Conditions

R/W Area	Pond Area	
20.68 ac	20.29 ac	40.92 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	-	19.65 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	18.57 ac	-	98	44.47
Pond Outside of Berm	2.70 ac	-	100	6.59
-	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	19.65 ac	-	41	19.69
			CN_{post} =	70.8

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 4.18 in.
Q_{post} = 7.05 in.
Post-development runoff volume = 24.05 ac-ft

Attenuation volume required (Post-Pre) 9.15 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 11.85 ac-ft

Patel, Greene & Associates, LLC

Designed By: AV
Date: 11/15/2023
Checked By: MH
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 7
SMF Name: B-7 C

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} = 18.49 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} =	96.8

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} = 0.33 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: 3/29/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 7
SMF Name: B-7 C

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 (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LECP)=	70.81	
Approx. hydraulic clearance from LECP =	1.00 ft	Standard hydraulic gradient clearance
Approx. Low Back of Berm Elevation @ Pond Site	58.00 ft	Lowest elevation
Approx. Pond Bottom (dry) =	58.40	2' above SH
Seasonal High Ground Water Elevation (SHGWT)=	51.40	-6.5 ave per NRCS Soils data
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	66.91	TW elevation source: 24" Pipe (STA 233+012.6)

Treatment Volume Required (SJRWMD)
2.71 ac-ft
Attenuation Volume Required (SJRWMD)
9.15 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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	78.52	
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	58.40	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: 3/29/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: S
SMF Name: B-SB

	Pre	Post	
From Station	2368+14	2368+14	
To Station	2375+18	2375+18	
Basin Length	1204.00 ft	1204.00 ft	
R/W to R/W Width	800.00 ft	800.00 ft	
Total Area	18.40 ac	18.40 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	8.10 ac	
		Pre-Development Impervious Area	4.72 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			
Runoff Treatment (SJRWMD)	1.75 in	5.72 ac	0.94 ac	18.40 ac
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 .000 ac-ft if and applicable

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in	4.42 ac	0.94 ac	18.40 ac
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 .000 ac-ft if and applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44802412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: B
SMF Name: B-SB

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
18.40 ac	10.95 ac	24.85 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		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	89	89	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	82.82
			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} = 9.89 in.
Q_{pre} = 4.85 in.
Pre-development runoff volume = 8.82 ac-ft

Post-development Conditions

R/W Area	Pond Area	
18.40 ac	10.95 ac	24.85 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	-	17.51 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	5.72 ac	-	98	28.02
Pond Outside of Berm	1.12 ac	-	100	4.59
-	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	17.51 ac	-	40	28.92
			CN_{post} =	56.5

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 7.69 in.
Q_{post} = 5.06 in.
Post-development runoff volume = 10.27 ac-ft

Attenuation volume required (Post-Pre) 1.45 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 257 ac-ft

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: B
SMF Name: B-SB

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
18.40 ac	10.95 ac	24.85 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 Open Space
Percentage Basin (provide)	82%	10%	0%	2%	
CN	89	89	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	82.82
			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} = 9.89 in.
Q_{pre} = 8.99 in.
Pre-development runoff volume = 18.24 ac-ft

Post-development Conditions

R/W Area	Pond Area	
18.40 ac	10.95 ac	24.85 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	28.02
Pond Outside of Berm	9.48 ac	-	100	88.94
-	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} = 18.50 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: 3/29/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: B
SMF Name: B-SB

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 (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LECP)=	70.51	
Approx. hydraulic clearance from LECP =	1.00 ft	Standard hydraulic gradient clearance
Approx. Low Back of Berm Elevation @ Pond Site	64.00 ft	Lowest grading 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) =	67.81	TW elevation source: 24" Pipe (STA 2373+0088)

Treatment Volume Required (SJRWMD)
1.12 ac-ft
Attenuation Volume Required (SJRWMD)
1.45 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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	62.50	9.72	9.60	86.99	
Design High Water	62.50	9.48	18.96	27.59	Meets Atten Vol Req
Treatment Weir	61.00	9.18	18.44	18.44	
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: 3/29/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 9
SMF Name: B-9C

	Pre	Post
From Station	2875+18	2875+18
To Station	2894+82	2894+82
Basin Length	1964.45 ft	1964.45 ft
R/W to R/W Width	800.00 ft	800.00ft
Total Area	18.58 ac	18.58 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00ft	6	72.00 ft	
Shoulder	10.00ft	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	12.00ft	10	120.00 ft	
Shoulder	10.00ft	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	7.18 ac	18.58 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	7.18 ac	18.58 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 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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
18.58 ac	1.055 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	-	19.08 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 Open Space
Percentage Basin (provide)	59%	39%	0%	2%	
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	19.08 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} = 4.46 in.
Pre-development runoff volume = 8.94 ac-ft

Post-development Conditions

R/W Area	Pond Area	
18.58 ac	1.055 ac	24.08 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	-	9.45 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	12.18 ac	-	98	49.57
Pond Outside of Berm	2.45 ac	-	100	10.15
-	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	9.45 ac	-	40	15.79
			CN_{post} =	75.5

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 3.24 in.
Q_{post} = 7.69 in.
Post-development runoff volume = 15.44 ac-ft

Attenuation volume required (Post-Pre) = 6.49 ac-ft
Total Pond Volume (25 Yr, 96 Hr) = 8.27 ac-ft

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/28/2024

Subject: FPID 44862412201 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
18.58 ac	1.05 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	89	89	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	
18.58 ac	1.05 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

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/28/2024

Subject: FPID 448624122O1 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 (25 YR, 96 HR)

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)=	58.90	> 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 2334+00.03)

Treatment Volume Required (SJRWMD)
1.78 ac-ft
Attenuation Volume Required (SJRWMD)
6.49 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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	9.84	9.28	40.55	
Design High Water	59.50	9.11	18.68	81.82	Meets Atten Vol Req
Treatment Weir	57.40	8.68	12.69	12.69	
Pond Bottom	55.90	8.80	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: 3/29/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 10
SMF Name: B-10B

	Pre	Post
From Station	2894+82	2894+82
To Station	2913+32	2913+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 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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	12.88 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		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	32.52
			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} = 4.29 in.
Pre-development runoff volume = 8.97 ac-ft

Post-development Conditions

R/W Area	Pond Area	
12.74 ac	12.88 ac	25.07 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	-	10.69 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	11.47 ac	-	98	44.84
Pond Outside of Berm	2.91 ac	-	100	11.61
-	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
Open Space	10.69 ac	-	40	17.15
			CN_{post} =	73.6

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 3.59 in.
Q_{post} = 7.44 in.
Post-development runoff volume = 15.54 ac-ft

Attenuation volume required (Post-Pre) 6.57 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 8.24 ac-ft

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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	89	89	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} = 9.58 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	-	2.88 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	2.88 ac	-	40	4.54
			CN_{post} =	92.8

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} = 0.88 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: 3/29/2024

Subject: FPID 448624122O1 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 (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LECP)=	74.50	
Approx. hydraulic clearance from LECP =	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) =	65.85	2' above SHW
Seasonal High Ground Water Elevation (SHGWT)=	68.85	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+04.03)

Treatment Volume Required (SJRWMD)
1.67 ac-ft
Attenuation Volume Required (SJRWMD)
6.57 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	70.00	12.38			
Inside Edge of Maintenance Berm	69.50	11.02	10.90	48.60	
Design High Water	68.50	10.77	17.48	82.70	Meets Atten Vol Req
Treatment Weir	66.85	10.36	15.26	15.26	
Pond Bottom	65.85	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: 3/28/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 11
SMF Name: B-11A

	Pre	Post
From Station	241+82	241+82
To Station	248+82	248+82
Basin Length	2800.45 ft	2800.45 ft
R/W to R/W Width	800.00 ft	800.00 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	2.84 ac	15.84 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		208 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	2.84 ac	15.84 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		1.32 ac-ft		

Treatment Volume Required = Largest Treatment Volume	208 ac-ft
Treatment Volume from existing sources (treatment types must match)*	0.00 ac-ft
Total Treatment volume required	208 ac-ft

*referenced from Existing Treatment and Storage Summary 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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	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 Open Space
Percentage Basin (provide)	55%	33%	10%	2%	
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} = 8.76 in.
Q_{pre} = 7.81 in.
Pre-development runoff volume = 17.00 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	-	14.25 ac
Pond Outside of Berm	-	2.08 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	11.61 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	14.25 ac	-	98	50.09
Pond Outside of Berm	2.08 ac	-	100	7.26
-	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	11.61 ac	-	66	27.41
			CN_{post} =	84.8

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 1.80 in.
Q_{post} = 8.91 in.
Post-development runoff volume = 20.71 ac-ft

Attenuation volume required (Post-Pre) 3.71 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 5.79 ac-ft

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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	89	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} = 8.76 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	-	14.25 ac
Pond Outside of Berm	-	10.88 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	14.25 ac	-	98	50.09
Pond Outside of Berm	10.88 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: 3/29/2024

Subject: FPID 448624122O1 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 (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LECP)=	85.41	
Approx. hydraulic clearance from LECP =	1.00 ft	Standard hydraulic gradient clearance
Approx. Low Back of Berm Elevation @ Pond Site	83.00 ft	
Approx. Pond Bottom (dry) =	75.27	Adjusted pond bottom elevation per geotech, appears to be based on in-situ soil conditions
Seasonal High Ground Water Elevation (SHGWT)=	60.00	SHWG per Geotech Report (ERP # 132125-7
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	82.61	TW elevation source: 24" Pipe (STA 2429+01.19)

Treatment Volume Required (SJRWMD)
2.08 ac-ft
Attenuation Volume Required (SJRWMD)
3.71 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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	10.55	68.02	
Design High Water	81.50	10.88	42.61	57.06	Meets Atten Vol Req
Treatment Weir	77.27	9.81	14.45	14.45	
Pond Bottom	75.27	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: 3/28/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 11 & 12
SMF Name: B-11B & B-12B Combined

	Pre	Post
From Station	2418+82	2418+82
To Station	2455+82	2455+82
Basin Length	4200.00 ft	4200.00 ft
R/W to R/W Width	800.00 ft	800.00ft
Total Area	28.98 ac	28.98 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00ft	6	72.00 ft	
Shoulder	10.00ft	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	
			112.00ft	
		Impervious Area	10.80 ac	Calculated for Basin 12

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00ft	10	120.00 ft	
Shoulder	10.00ft	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	25.08 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	25.08 ac	15.28 ac	28.98 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		380 ac-ft		

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in	25.08 ac	15.28 ac	28.98 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		241 ac-ft		

Treatment Volume Required = Largest Treatment Volume	380 ac-ft
Treatment Volume from existing sources (treatment types must match)*	0.00 ac-ft
Total Treatment volume required	380 ac-ft

*referenced from Existing Treatment and Storage Summary 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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)
28.98 ac	8.251 ac	28.98 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	-	18.18 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 Open Space
Percentage Basin (provide)	10%	78%	10%	2%	
CN	89	89	89	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	18.18 ac	-	40	25.21
			CN_{pre} =	61.8

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

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	
28.98 ac	8.251 ac	28.98 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	26.08 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	26.08 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:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

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: 3/29/2024

Subject: FPID 44862412201 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)
28.98 ac	8.251 ac	28.98 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	-	18.18 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	89	89	89	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	18.18 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} = 10.35 in.
Pre-development runoff volume = 26.41 ac-ft

Post-development Conditions

R/W Area	Pond Area	
28.98 ac	8.251 ac	28.98 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	26.08 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	26.08 ac	-	98	88.18
Pond - Design High Water	29.94 ac	-	100	108.49
-	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	-87.59
			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} = -8.51 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: 3/29/2024

Subject: FPID 448624122O1 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 (25 YR, 96 HR)

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) =	68.78	2' above SHWT
Seasonal High Ground Water Elevation (SHGWT)=	61.78	NRCS Soil Survey Depth to Water Table
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	60.16	TW elevation source: 24" Pipe (STA 2447+02.80)

Treatment Volume Required (SJRWMD)
3.80 ac-ft
Attenuation Volume Required (SJRWMD)
12.28 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	67.00	82.51			
Inside Edge of Maintenance Berm	66.50	80.86	80.15	82.49	
Design High Water	65.50	29.94	26.88	52.84	Meets Atten Vol Req
Treatment Weir	64.62	29.57	26.01	26.01	
Pond Bottom	68.78	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: 2/28/2024

Subject: FPID 448624 1 2201 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+82	2413+82
To Station	2480+00	2480+00
Basin Length	6667.55 ft	6667.55 ft
R/W to R/W Width	800.00 ft	800.00 ft
Total Area	48.26 ac	48.26 ac

Additional interchange area accomodated (to be confirmed with BCC)
2.84 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	
			112.00ft	
		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	
			270.00ft	
		Impervious Area	41.88 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	41.88 ac	24.18 ac	45.92 ac
Runoff Treatment (SJRWMD)	1.75 in.			
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	41.88 ac	24.18 ac	45.92 ac
Runoff Treatment (SJRWMD)	1.00 in.			
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 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: MH
Date: 2/28/2024

Subject: FPID 448624 1 2201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 11 & 12 &18
SMF Name: B-11C & B-12C & B-18A 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	22.89 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%)	en, 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	34.91
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 = 235.1 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	-	41.88 ac
Pond - Design High Water	-	4.89 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	41.88 ac	-	98	85.36
Pond - Design High Water	4.89 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	2.28
			CN_{post} =	96.2

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: 2/28/2024

Subject: FPID 448624 2201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 11 & 12 &18
SMF Name: B-11C & B-12C & B-18A 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%)	en, Good Cond (Grass >75	Water	
HSG (choose)	A	A	D	A	Composite
Percentage Basin (provide)	78%	15%	5%	2%	Open Space
CN	89	89	80	100	42

	Area	HSG	CN	Weighted CN
Roadway	17.14 ac	-	98	34.91
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	-	41.88 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	-	-18.81 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	41.88 ac	-	98	85.98
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	-18.81 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: 2/28/2024

Subject: FPID 448624 1 2201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 11 & 12 &18
SMF Name: B-11C & B-12C & B-18A 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 (25 YR, 96 HR)

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 SHWT
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) =	60.16	TW elevation source 24" Pipe (STA 2447+00.50)

Treatment Volume Required (SJRWMD)
6.03 ac-ft
Attenuation Volume Required (SJRWMD)
17.60 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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	94.84	
Design High Water	65.50	20.74	48.80	73.42	Meets Atten Vol Req
Treatment Weir	63.85	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: 3/28/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 12
SMF Name: B-12A

	Pre	Post
From Station	2486+82	2486+82
To Station	2455+82	2455+82
Basin Length	1900.00 ft	1900.00 ft
R/W to R/W Width	800.00 ft	800.00ft
Total Area	18.09 ac	18.09 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00ft	6	72.00 ft	
Shoulder	10.00ft	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	
			112.00ft	
		Impervious Area	4.89 ac	

Post-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00ft	10	120.00 ft	
Shoulder	10.00ft	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	18.09 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	18.09 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 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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
18.09 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)			Hague	100-Water	
Cover Description (choose)			Open, Good Cond (Grass >75%	Water	
HSG (choose)			A	A	Composite Open Space
Percentage Basin (provide)			98%	2%	
CN	0	0	39	100	40

	Area	HSG	CN	Weighted CN
Roadway	4.89 ac	-	98	28.17
-	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} =	58.9

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 8.56 in.
Q_{pre} = 4.68 in.
Pre-development runoff volume = 8.07 ac-ft

Post-development Conditions

R/W Area	Pond Area	
18.09 ac	7.59 ac	20.68 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	-	7.11 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	11.78 ac	-	98	55.82
Pond Outside of Berm	1.79 ac	-	100	8.68
-	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	7.11 ac	-	40	18.82
			CN_{post} =	78.8

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 2.77 in.
Q_{post} = 8.07 in.
Post-development runoff volume = 13.90 ac-ft

Attenuation volume required (Post-Pre) 5.84 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 7.55 ac-ft

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/28/2024

Subject: FPID 44862412201 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
18.09 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	89	100	40

	Area	HSG	CN	Weighted CN
Roadway	4.89 ac	-	98	28.17
-	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	80.71
			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} = 8.56 in.
Q_{pre} = 9.45 in.
Pre-development runoff volume = 16.29 ac-ft

Post-development Conditions

R/W Area	Pond Area	
18.09 ac	7.59 ac	20.68 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	11.78 ac
Pond Outside of Berm	-	6.88 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	6.88 ac	-	100	80.84
-	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: 3/29/2024

Subject: FPID 448624122O1 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 (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LEOP)=	85.58	
Approx. hydraulic clearance from LEOP =	1.00 ft	Standard hydraulic gradient clearance
Approx. Low Back of Berm Elevation @ Pond Site	82.00 ft	Lowest grading elevation
Approx. Pond Bottom (dry) =	77.00	2' above SHW
Seasonal High Ground Water Elevation (SHGWT)=	75.00	Average of 3 SHW components (GIS Interface (2.3 ds
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	80.16	TW elevation across 24" Pipe (STA 2441+0280)

Treatment Volume Required (SJRWMD)
1.72 ac-ft
Attenuation Volume Required (SJRWMD)
5.84 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	82.00	7.59			
Inside Edge of Maintenance Berm	82.50	6.57	6.48	32.27	
Design High Water	81.50	6.88	13.28	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: 2/29/2024

Subject: FPID 448624 1 2201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 1B
SMF Name: B-1BC

	Pre	Post	
From Station	2455+82	2455+82	Additional interchange area as measured in CAD (PERVIOUS)
To Station	2511+82	2511+82	7.54 ac
Basin Length	5600.00 ft	5600.00 ft	
R/W to R/W Width	800.00 ft	800.00 ft	Additional Lanes for interchange
Total Area	47.11 ac	47.11 ac	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	85.72 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	85.72 ac	21.82 ac	47.11 ac
Runoff Treatment (SJRWMD)	1.75 in.			
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	85.72 ac	21.82 ac	47.11 ac
Runoff Treatment (SJRWMD)	1.00 in.			
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 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 2/29/2024

Subject: FPID 448624 1 2201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 1S
SMF Name: B-1SC

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	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)	78%	20%	5%	2%	Open Space
CN	89	89	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} = 4.88 in.
Pre-development runoff volume = 31.53 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	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	51.67 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	35.72 ac	-	98	40.06
Pond Outside of Berm	0.00 ac	-	100	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	51.67 ac	-	42	24.99
			CN_{post} =	65.1

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 5.37 in.
Q_{post} = 6.25 in.
Post-development runoff volume = 45.62 ac-ft

Attenuation volume required (Post-Pre) 14.09 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 19.30 ac-ft

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 2/29/2024

Subject: FPID 448624 1 2201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 1B
SMF Name: B-1BC

ATTENUATION CALCULATIONS (100 Yr, 240 Hr)

Will attenuation be necessary? (choose)	Yes
Zone (choose)	Zone 7
Frequency (choose)	100yr
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)	78%	20%	5%	2%	Open Space
CN	89	89	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	35.80
			CN_{pre} =	51.5

NRCS Method for Attenuation Volume:

$$S=\frac{1000}{CN}-10$$
$$Q=\frac{(P-0.2S)^2}{P+0.8S}$$

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	-	55.72 ac
Pond Outside of Berm	-	33.01 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	18.66 ac

CN Calculations

	Area	HSG	CN	Weighted CN
Roadway	55.72 ac	-	98	40.06
Pond Outside of Berm	33.01 ac	-	100	48.49
-	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	18.66 ac	-	42	6.61
			CN_{post} =	90.2

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

$$S=\frac{1000}{CN}-10$$
$$Q=\frac{(P-0.2S)^2}{P+0.8S}$$

S_{post} = 1.09 in.
Q_{post} = 15.85 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: 2/29/2024

Subject: FPID 448624 1 2201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 1B
SMF Name: B-1BC

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 (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LECP) =	67.97	
Approx. hydraulic clearance from LECP =	1.00 ft	Standard hydraulic grade of 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+03.00)

Treatment Volume Required (SJRWMD)
5.21 ac-ft
Attenuation Volume Required (SJRWMD)
14.09 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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	37.80	55.48	55.48	
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: 2/28/2024

Subject: FPID 448624 1 2201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 14
SMF Name: B-14B

	Pre	Post
From Station	2511+82	2511+82
To Station	2553+82	2553+82
Basin Length	4200.01 ft	4200.01 ft
R/W to R/W Width	300.00 ft	300.00 ft
Total Area	28.98 ac	28.98 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	26.08 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.	26.08 ac	15.28 ac	28.98 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.	26.08 ac	15.28 ac	28.98 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 000 acft if and applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 2/28/2024

Subject: FPID 44862412201 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
28.98 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	-	84.90 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	89		89	100	40

	Area	HSG	CN	Weighted CN
Roadway	10.80 ac	-	98	28.16
-	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	84.90 ac	-	40	80.72
			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} = 8.56 in.
Q_{pre} = 4.68 in.
Pre-development runoff volume = 17.82 ac-ft

Post-development Conditions

R/W Area	Pond Area	
28.98 ac	16.77 ac	45.70 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	26.08 ac
Pond Outside of Berm	-	10.87 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	9.80 ac

CN Calculations

	Area	HSG	CN	Weighted CN
Roadway	26.08 ac	-	98	55.82
Pond Outside of Berm	10.87 ac	-	100	22.68
-	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	9.80 ac	-	40	8.19
			CN_{post} =	86.7

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 1.54 in.
Q_{post} = 9.15 in.
Post-development runoff volume = 34.86 ac-ft

Attenuation volume required (Post-Pre) 17.04 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 20.84 ac-ft

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 2/28/2024

Subject: FPID 44862412201 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
28.98 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	-	84.90 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	89	0	89	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	84.90 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	
28.98 ac	16.77 ac	45.70 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	26.08 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	-	4.78 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	26.08 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	4.78 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: 2/28/2024

Subject: FPID 448624 1 2201 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 (25 YR, 96 HR)

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 @67. Used 64 to avoid issues with HGL*
Approx. Pond Bottom (dry) = 59.50
Seasonal High Ground Water Elevation (SHGWT)= 57.50 — *Revit 11287.001 Test boring 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 (SJRWMD)
3.80 ac-ft
Attenuation Volume Required (SJRWMD)
17.04 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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	62.50	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: 3/28/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 14
SMF Name: B-14C

	Pre	Post
From Station	2511+82	2511+82
To Station	2553+82	2553+82
Basin Length	4200.00 ft	4200.00 ft
R/W to R/W Width	300.00 ft	300.00ft
Total Area	28.98 ac	28.98 ac

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00ft	6	72.00 ft	
Shoulder	10.00ft	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	12.00ft	10	120.00 ft	
Shoulder	10.00ft	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	25.08 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	25.08 ac	15.28 ac	28.98 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		380 ac-ft		

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in	25.08 ac	15.28 ac	28.98 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		241 ac-ft		

Treatment Volume Required = Largest Treatment Volume	380 ac-ft
Treatment Volume from existing sources (treatment types must match)*	0.00 ac-ft
Total Treatment volume required	380 ac-ft

*referenced from Existing Treatment and Storage Summary 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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
28.56 ac	25.85 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		Sparr	100-Water	
Cover Description (choose)	Open, Good Cond (Grass >75%)		Open, Good Cond (Grass >75%)	Water	
HSG (choose)	C		A	A	Composite Open Space
Percentage Basin (provide)	10%		88%	2%	
CN	74		89	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} = 4.77 in.
Pre-development runoff volume = 21.59 ac-ft

Post-development Conditions

R/W Area	Pond Area	
28.56 ac	25.85 ac	54.28 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	26.08 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	-	21.88 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	26.08 ac	-	98	47.00
Pond Outside of Berm	6.42 ac	-	100	11.83
-	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	21.88 ac	-	44	17.58
			CN_{post} =	76.4

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 3.09 in.
Q_{post} = 7.31 in.
Post-development runoff volume = 35.34 ac-ft

Attenuation volume required (Post-Pre) 13.76 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 17.55 ac-ft

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/28/2024

Subject: FPID 44862412201 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
28.98 ac	25.85 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	89	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	
28.98 ac	25.85 ac	54.28 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	26.08 ac
Pond Outside of Berm	-	28.08 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	26.08 ac	-	98	47.00
Pond Outside of Berm	28.08 ac	-	100	42.58
-	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	5.17 ac	-	44	4.16
			CN_{post} =	98.7

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: 3/29/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 14
SMF Name: B-14C

Total Pond Volume (100 Yr, 240 Hr) 71.56 ac-ft

Total Pond Volume Required = Use Largest Total Pond Volume **71.56 ac-ft**

POND SIZE ESTIMATE PER SJRWMD (25 YR, 96 HR)

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) =	59.82	
Seasonal High Ground Water Elevation (SHGWT)=	57.82	Average of reported SSHW values for Parcels 34812.000 and 34812.001 (+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 (SJRWMD)
3.80 ac-ft
Attenuation Volume Required (SJRWMD)
13.76 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	64.00	25.85			
Inside Edge of Maintenance Berm	63.50	23.45	23.27	94.83	
Design High Water	62.50	23.05	23.27	71.56	Meets Atten Vol Req
Treatment Weir	60.82	22.47	23.80	23.80	
Pond Bottom	59.82	21.98	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

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 14 & 15
SMF Name: B-14A & B-15C Combined

	Pre	Post
From Station	2511+82	2511+82
To Station	2587+75	2587+75
Basin Length	7642.55 ft	7642.55 ft
R/W to R/W Width	800.00 ft	800.00ft
Total Area	52.68 ac	52.68 ac

OFFSITE 59.76

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00ft	6	72.00 ft	
Shoulder	10.00ft	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	12.00ft	10	120.00 ft	
Shoulder	10.00ft	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	47.87 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	47.87 ac	27.72 ac	52.68 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	47.87 ac	27.72 ac	52.68 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 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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)
52.68 ac	26.60 ac	112.89 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	-	82.98 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 Open Space
Percentage Basin (provide)	78%	5%	15%	2%	
CN	89	74	89	100	42

	Area	HSG	CN	Weighted CN
Roadway	19.65 ac	-	98	17.18
Wood - Grass comb., Fair Cond.	59.76 ac	D	82	48.60
-	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	82.98 ac	-	42	12.82
			CN_{pre} =	78.1

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 8.69 in.
Q_{pre} = 7.86 in.
Pre-development runoff volume = 68.96 ac-ft

Post-development Conditions

R/W Area	Pond Area	
52.68 ac	26.60 ac	112.89 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	47.87 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	47.87 ac	-	98	41.80
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:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

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: 3/29/2024

Subject: FPID 44862412201 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)
52.68 ac	26.60 ac	112.89 ac

Total Area to be attenuated for (choose)	HSG (choose)	
Roadway	-	19.65 ac
Woods - Grass comb., Fair cond.		88.16 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	89	74	89	100	42

	Area	HSG	CN	Weighted CN
Roadway	19.65 ac	-	98	17.18
Woods - Grass comb., Fair cond.	88.16 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} =	68.6

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 5.78 in.
Q_{pre} = 11.27 in.
Pre-development runoff volume = 105.60 ac-ft

Post-development Conditions

R/W Area	Pond Area	
52.68 ac	26.60 ac	112.89 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	47.87 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	47.87 ac	-	98	41.80
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: 3/28/2024

Subject: FPID 448624122O1 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 (25 YR, 96 HR)

Approx. low edge of shoulder elevation (LEOP)=	62.51	
Approx. hydraulic clearance from LEOP =	1.00 ft	Standard hydraulic gradient assumed
Approx. Low Back of Berm Elevation @ Pond Site	62.00 ft	Elevation adjusted to ROW
Approx. Pond Bottom (dry) =	55.00	7' above SHW
Seasonal High Ground Water Elevation (SHGWT)=	58.00	Estimated 1' below lowest elevation of dry depressions area
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	57.11	TW elevation across 36" Pipe (STA 513+62 Rt)

Treatment Volume Required (SJRWMD)
6.91 ac-ft
Attenuation Volume Required (SJRWMD)
18.03 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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	152.88	
Design High Water	60.50	24.28	94.18	127.91	Meets Atten Vol Req
Treatment Weir	56.50	22.79	88.78	88.78	
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: 3/29/2024

Subject: FPID 448624 2201 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 15
SMF Name: B15-A

	Pre	Post	
From Station	2553+82	2553+82	
To Station	2587+75	2587+75	
Basin Length	3448.00 ft	3448.00 ft	
R/W to R/W Width	800.00 ft	800.00 ft	OFFSITE
Total Area	28.71 ac	28.71 ac	326

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	21.84 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	21.84 ac	12.49 ac	28.71 ac
Runoff Treatment (SJRWMD)	1.75 in			
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	21.84 ac	12.49 ac	28.71 ac
Runoff Treatment (SJRWMD)	1.00 in			
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 000 acft if and applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: CC
Revised By: AV
Date: 3/29/2024

Subject: FPID 44860412201 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)
28.71 ac	22.84 ac	56.81 ac

Total Area to be attenuated for (choose)	HSG (choose)	
Roadway	-	8.85 ac
Wood - Grass comb., Fair Cond.	D	82.60 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 Open Space
Percentage Basin (provide)	72%	5%	15%	2%	
CN	89	61	74	100	47

	Area	HSG	CN	Weighted CN
Roadway	8.85 ac	-	98	15.40
Wood - Grass comb., Fair Cond.	82.60 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:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

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	
28.71 ac	22.84 ac	56.81 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	21.84 ac
Pond - Design High Water	-	8.27 ac
Wood - Grass comb., Fair Cond.	-	29.88 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
-	-	0.00 ac
Open Space Composite	-	2.87 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	21.84 ac	-	98	37.14
Pond - Design High Water	8.27 ac	-	100	5.81
Wood - Grass comb., Fair Cond.	29.88 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	2.87 ac	-	47	1.96
			CN_{post} =	87.6

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

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: 3/29/2024

Subject: FPID 44866412201 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)
28.71 ac	22.84 ac	56.81 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	-	87.70 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	89	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	87.70 ac	-	47	31.18
			CN_{pre} =	60.8

NRCS Method for Attenuation Volume:

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 6.45 in.
Q_{pre} = 1.0.77 in.
Pre-development runoff volume = 50.55 ac-ft

Post-development Conditions

R/W Area	Pond Area	
28.71 ac	22.84 ac	56.81 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	21.84 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	21.84 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

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

$$S = \frac{1000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

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: 3/29/2024

Subject: FPID 448624 1 2201 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 (25 YR, 96 HR)

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	~ 85 below LSOS (NRCS soils Map)
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	57.11	TW elevation source: 36" Pipe (STA 25+12.84)

Treatment Volume Required (SJR WMD)
3.11 ac-ft
Attenuation Volume Required (SJR WMD)
7.62 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

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: 3/28/2024

Subject: FPID 448624122O1 I-75 Master Plan
Description: Pond Sizing Calculations
Basin: 15
SMF Name: B15-B

	Pre	Post	
From Station	2558+82	2558+82	
To Station	2587+75	2587+75	
Basin Length	8448.00 ft	8448.00 ft	
R/W to R/W Width	800.00 ft	800.00ft	OFFSITE
Total Area	28.71 ac	28.71 ac	0

Pre-development Impervious Areas (choose)	Width	Number	Total Width	Notes
Travel Lanes	12.00ft	6	72.00 ft	
Shoulder	10.00ft	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	12.00ft	10	120.00 ft	
Shoulder	10.00ft	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	21.84 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	21.84 ac	12.49 ac	28.71 ac
Area to be Treated (choose)	Total Imp. Area			
Treatment Volume		311 ac-ft		

TREATMENT CALCULATIONS

		Total Imp. Area	Add'l Imp	Total R/W
Treatment Type (choose)	Dry Retention			
Runoff Treatment (SJRWMD)	1.00 in	21.84 ac	12.49 ac	28.71 ac
Area to be Treated (choose)	Total R/W			
Treatment Volume		1.98 ac-ft		

Treatment Volume Required = Largest Treatment Volume	311 ac-ft
Treatment Volume from existing sources (treatment types must match)*	0.00 ac-ft
Total Treatment volume required	311 ac-ft

*referenced from Existing Treatment and Storage Summary 000 ac-ft if not applicable

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: AV
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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)
28.71 ac	26.86 ac	28.71 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)	78%	10%	15%	2%	Open Space
CN	89	61	89	100	42

	Area	HSG	CN	Weighted CN
Roadway	8.85 ac	-	98	26.58
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} =	68.2

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{pre} = 5.88 in.
Q_{pre} = 6.00 in.
Pre-development runoff volume = 11.86 ac-ft

Post-development Conditions

R/W Area	Pond Area	
28.71 ac	26.86 ac	50.66 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	21.84 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	-	24.57 ac

CN Calculations	Area	HSG	CN	Weighted CN
Roadway	21.84 ac	-	98	41.28
Pond - Design High Water	4.75 ac	-	100	9.37
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	24.57 ac	-	42	20.58
			CN_{post} =	71.2

NRCS Method for Attenuation Volume:

$$S = \frac{1,000}{CN} - 10$$

$$Q = \frac{(P - 0.2S)^2}{P + 0.8S}$$

S_{post} = 4.04 in.
Q_{post} = 7.12 in.
Post-development runoff volume = 30.04 ac-ft

Attenuation volume required (Post-Pre) 18.18 ac-ft
Total Pond Volume (25 Yr, 96 Hr) 21.29 ac-ft

Patel, Greene & Associates, LLC

Designed By: MH
Date: 11/15/2023
Checked By: AV
Revised By: AV
Date: 3/29/2024

Subject: FPID 44862412201 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)
28.71 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)	75%	10%	15%	2%	Open Space
CN	89	61	89	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	
28.71 ac	26.95 ac	50.66 ac

Total Area to be attenuated for	HSG (choose)	
Roadway	-	21.84 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	21.84 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	8.94
			CN_{post} =	98.8

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} = 15.88 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: 3/29/2024

Subject: FPID 448624122O1 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 (25 YR, 96 HR)

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	> 0.5' below USDA/NRCS soils Map
SHGWT Check for Dry Retention Only	OK	
Tailwater Elevation (TW) =	57.11	TW elevation source: 36" Pipe (STA 513+02.84)

Treatment Volume Required (SJRWMD)
3.11 ac-ft
Attenuation Volume Required (SJRWMD)
18.18 ac-ft

Stage-Area Table 100 Yr, 240 Hr (Controlling Storm for Pond Volume)

Pond Components	Stage (ft)	Area (ac)	Delta Storage (ac-ft)	Sum Storage (ac-ft)	Check
Outside Edge of Maintenance Berm	64.00	26.35			
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	22.49	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

Historic Drainage Maps and Permit Data

State Project No.

36210-3442

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED

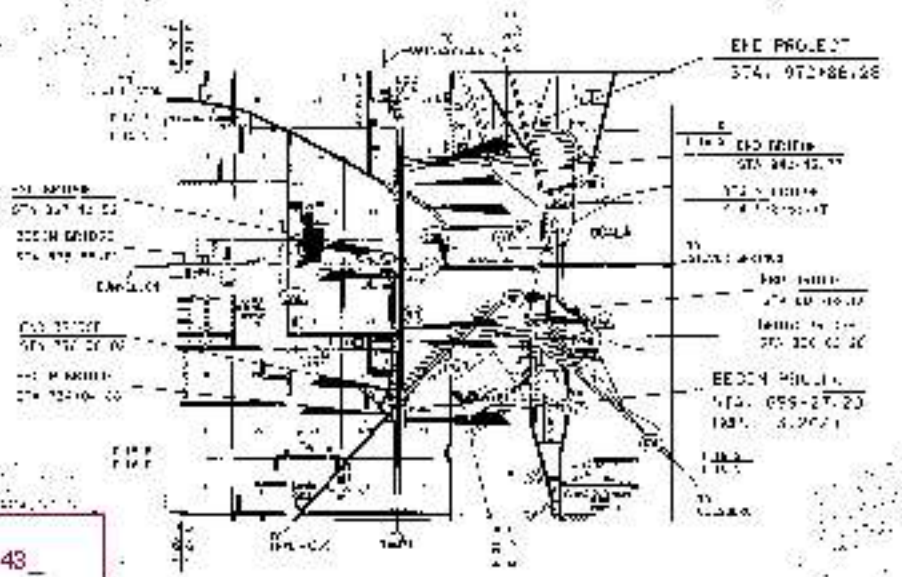
STATE HIGHWAY

STATE PROJ NO. 36210-3442 (FINAL PLANS)

MARION COUNTY

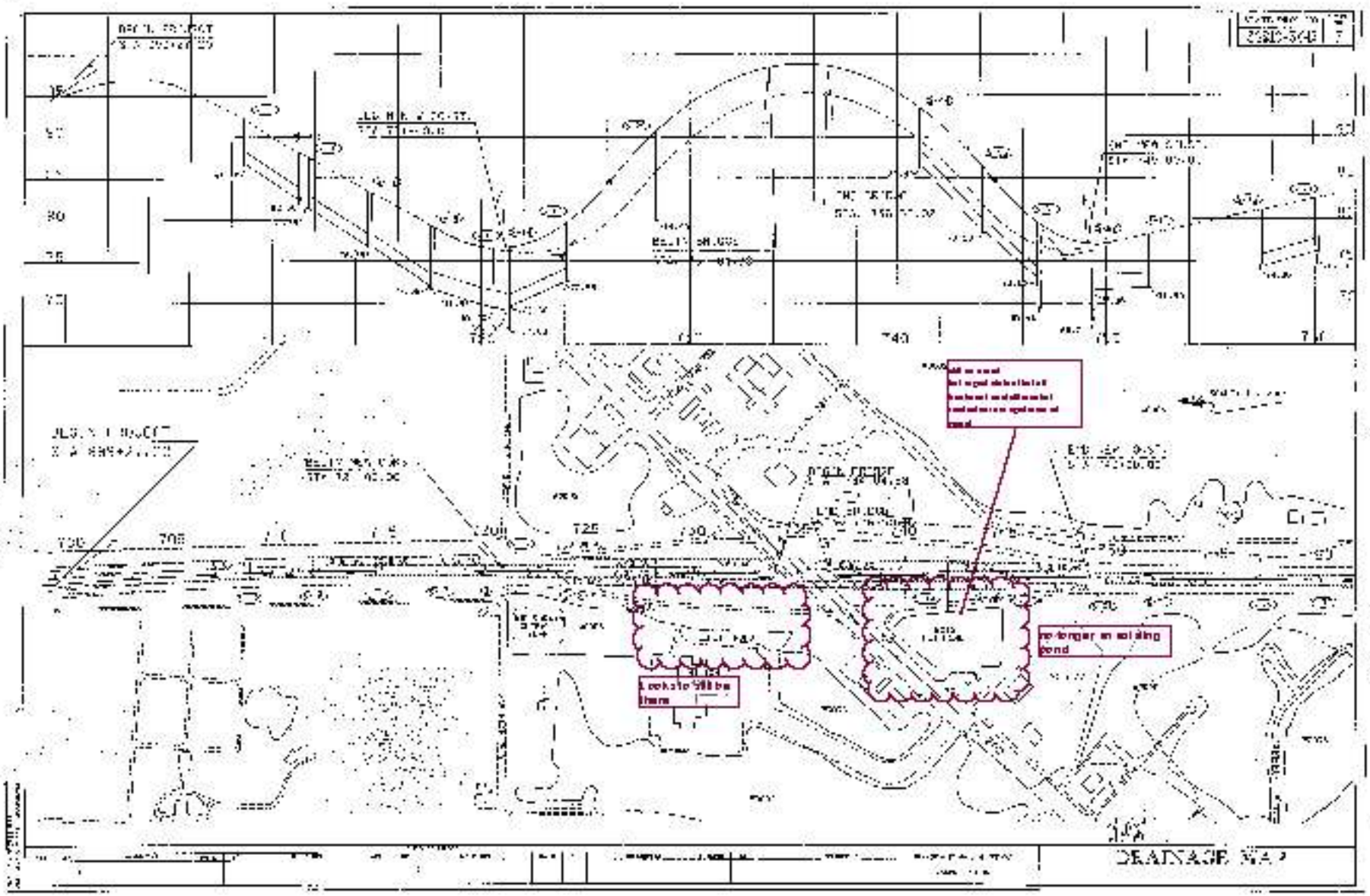
STATE ROAD NO. 93 (I-75)

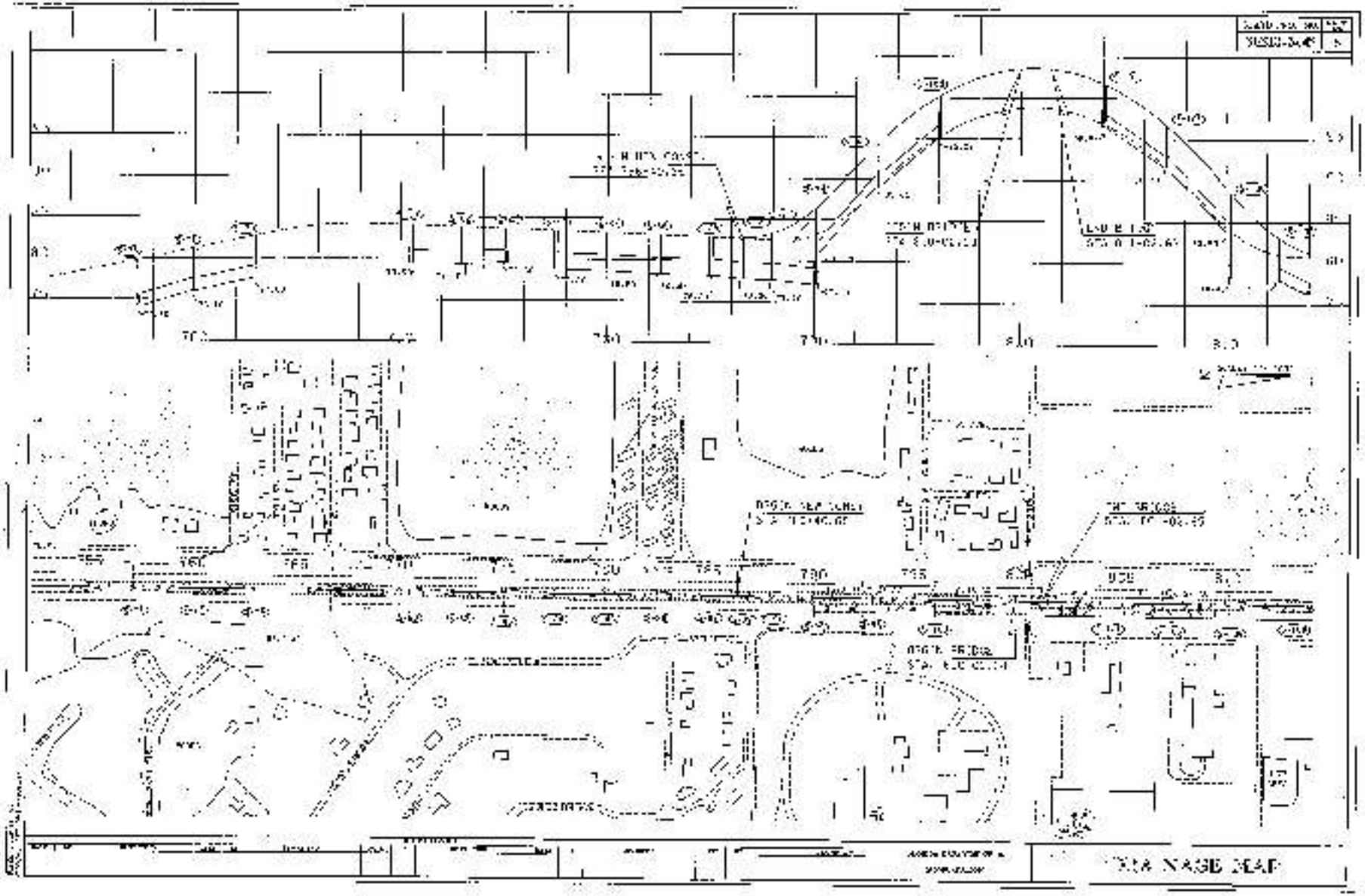
INDEX OF ROADWAY PLANS

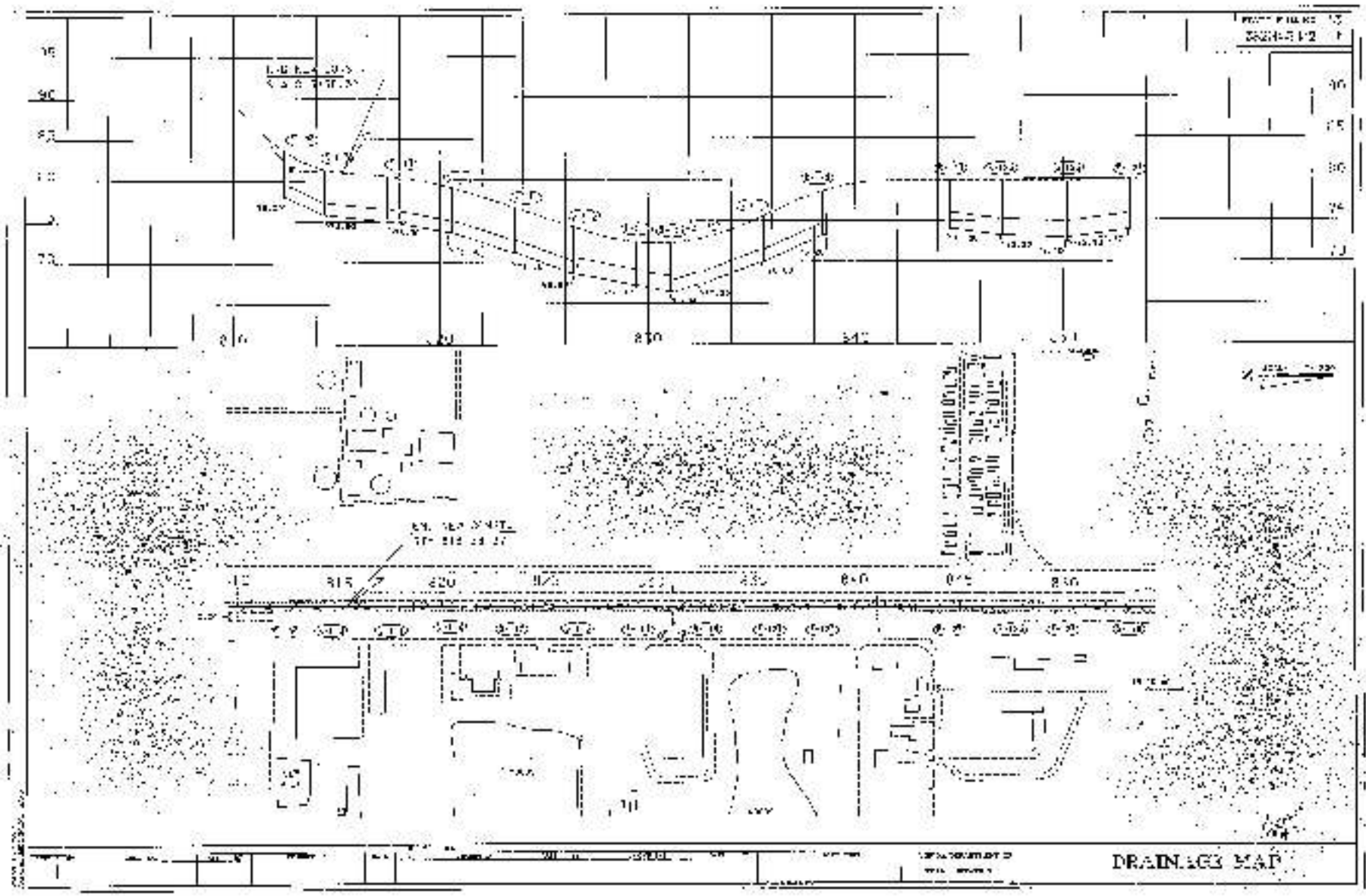


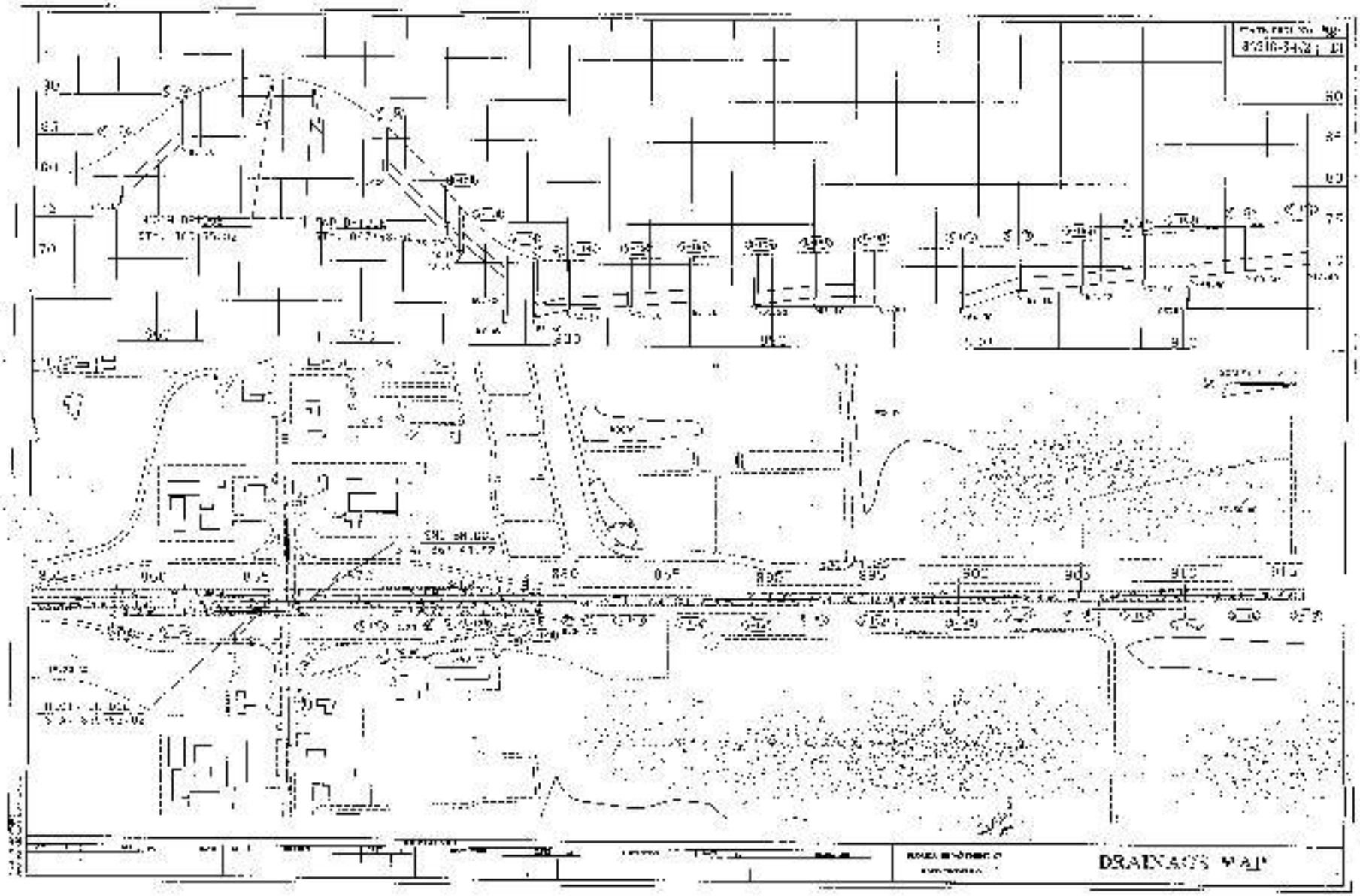
LENGTH OF PROJECT

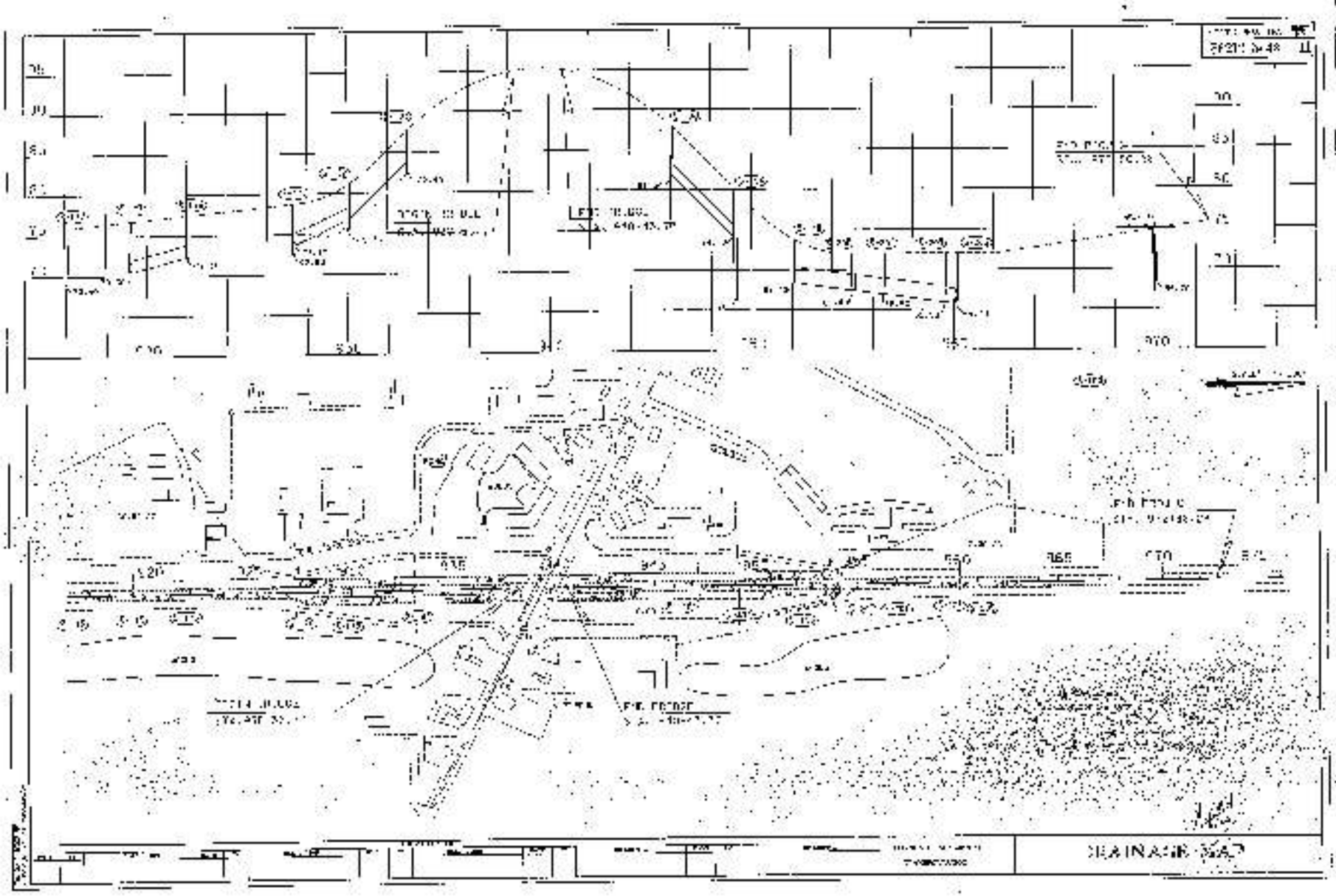
Marion_MP13.262 TO MP18.443_
FPID-242379-1_
FPN-36210-3442_
SR 93(I-75) from 0.6 MI S SR 200 TO 0.6 MI N SR 500 US27

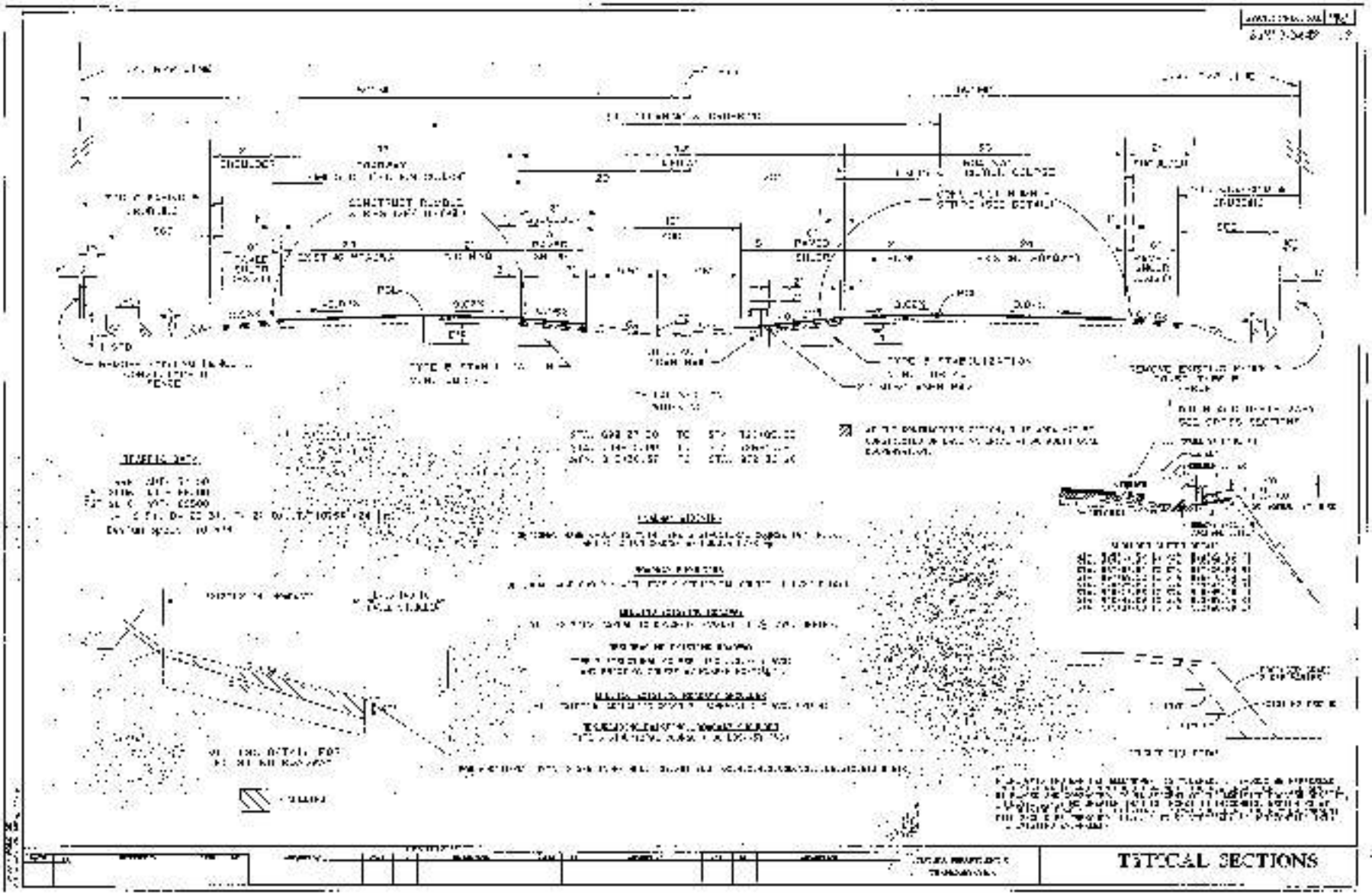

no longer an existing pond
DRAINAGE MAP



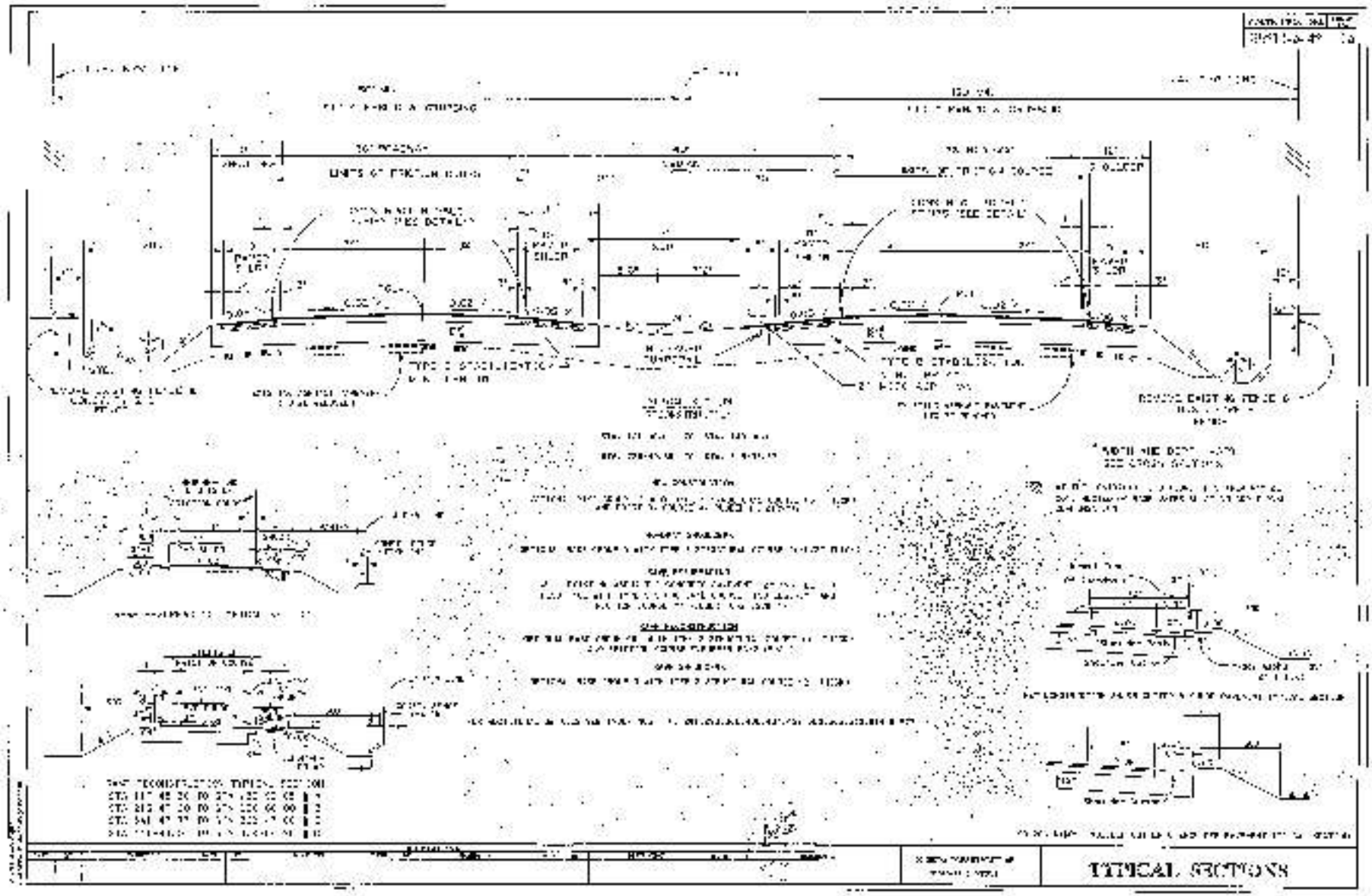

DRAINAGE MAP


DRAINAGE MAP

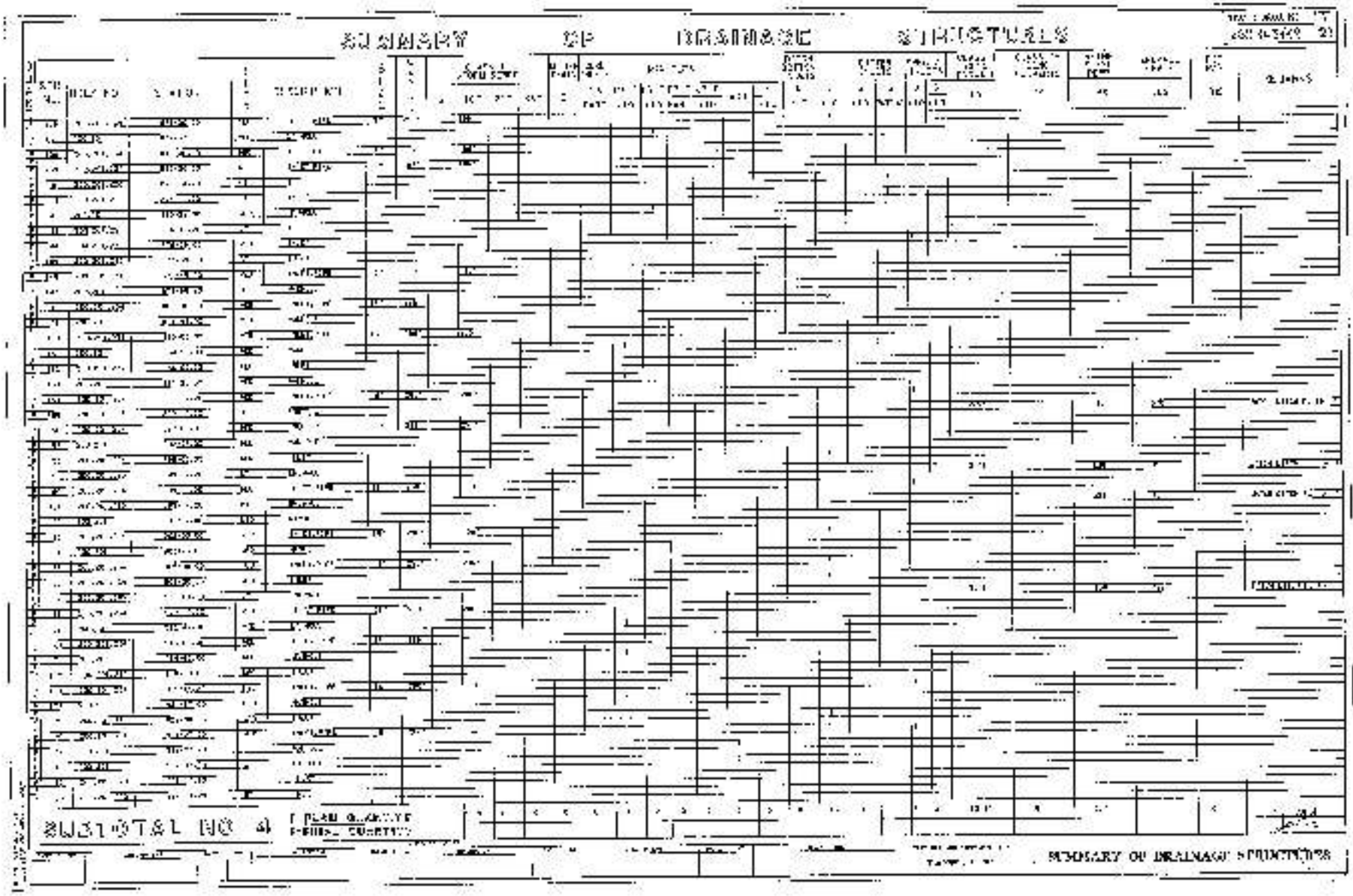

DRAINAGE MAP

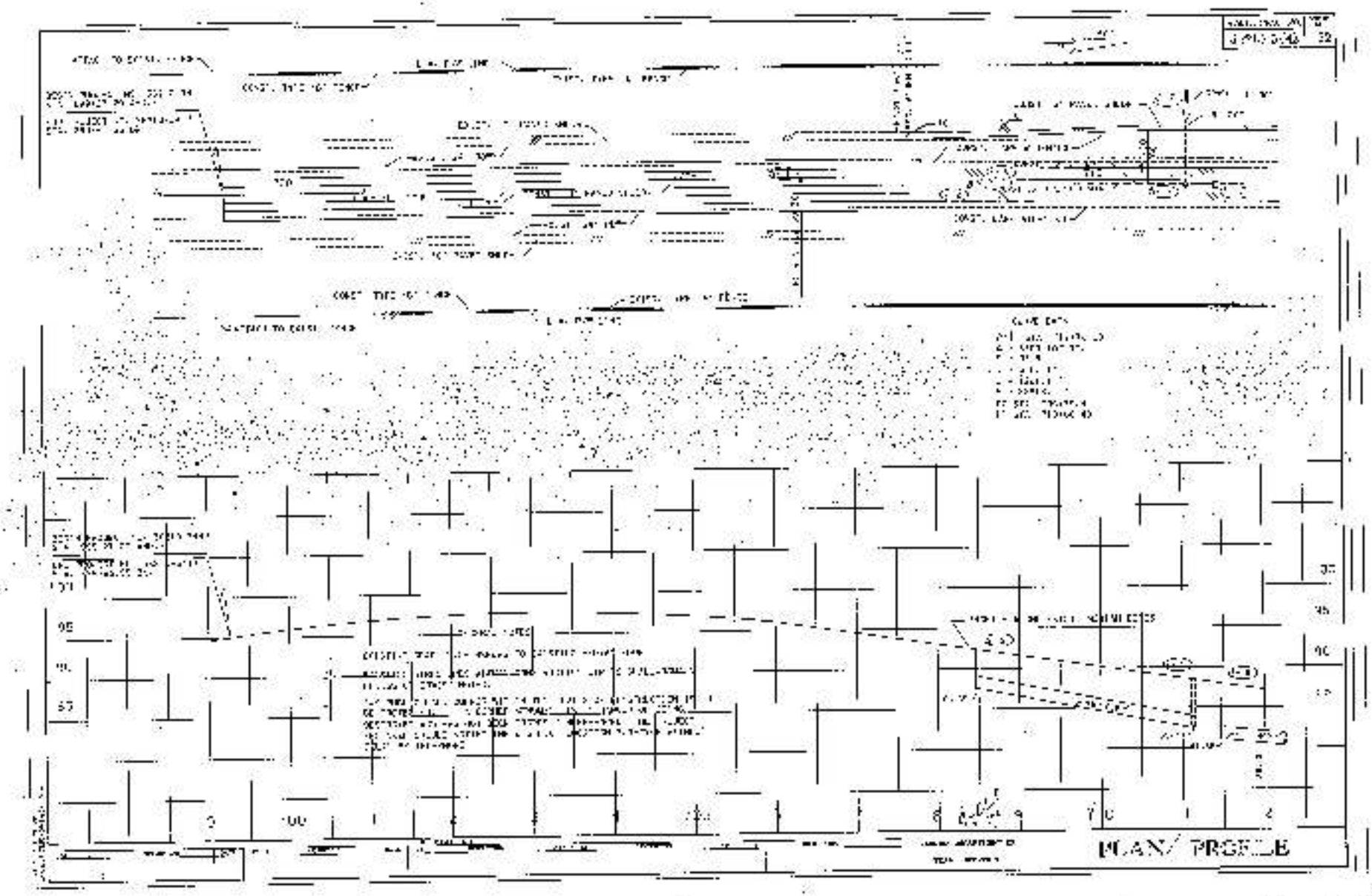


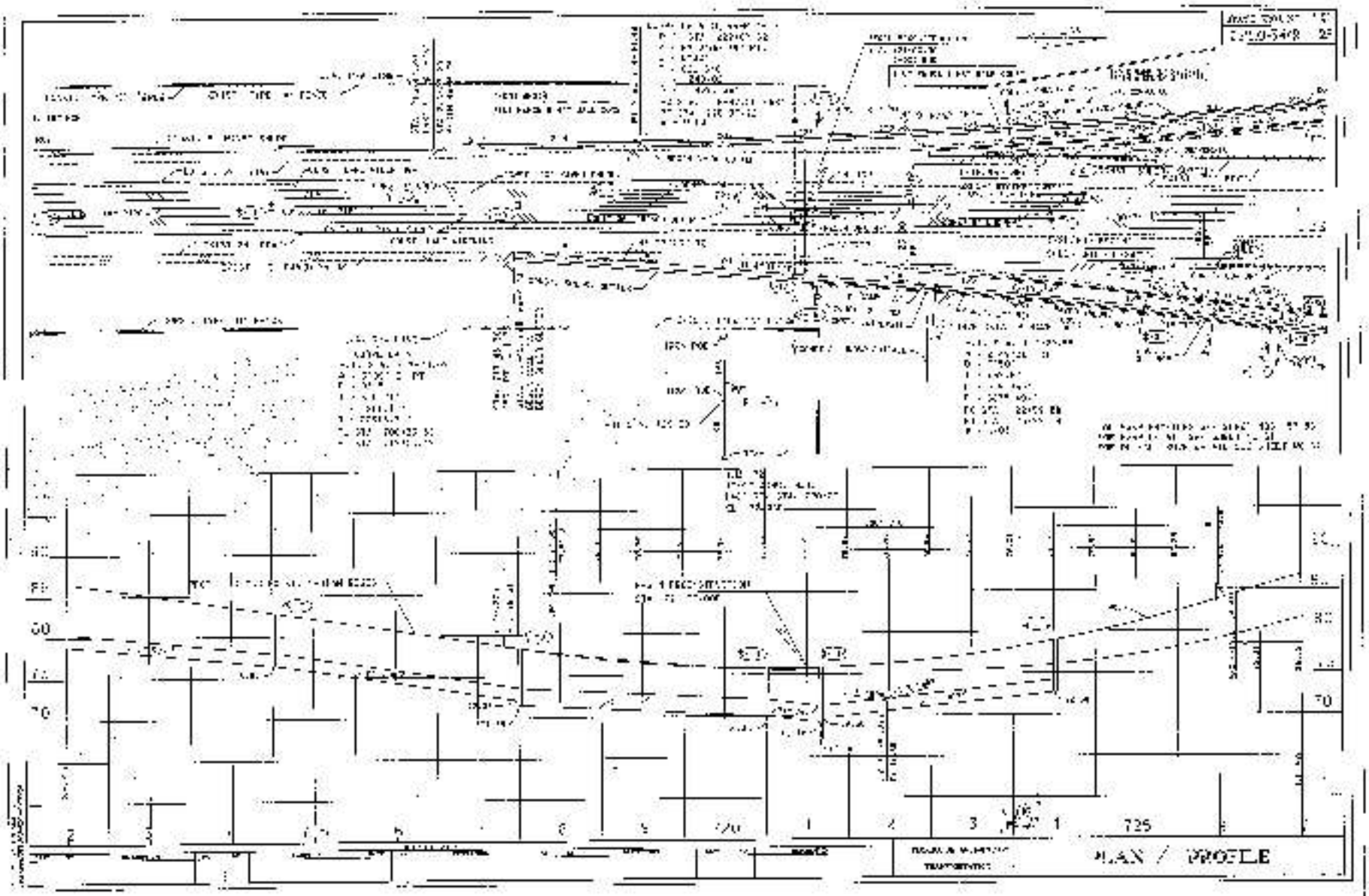
TYPICAL SECTIONS

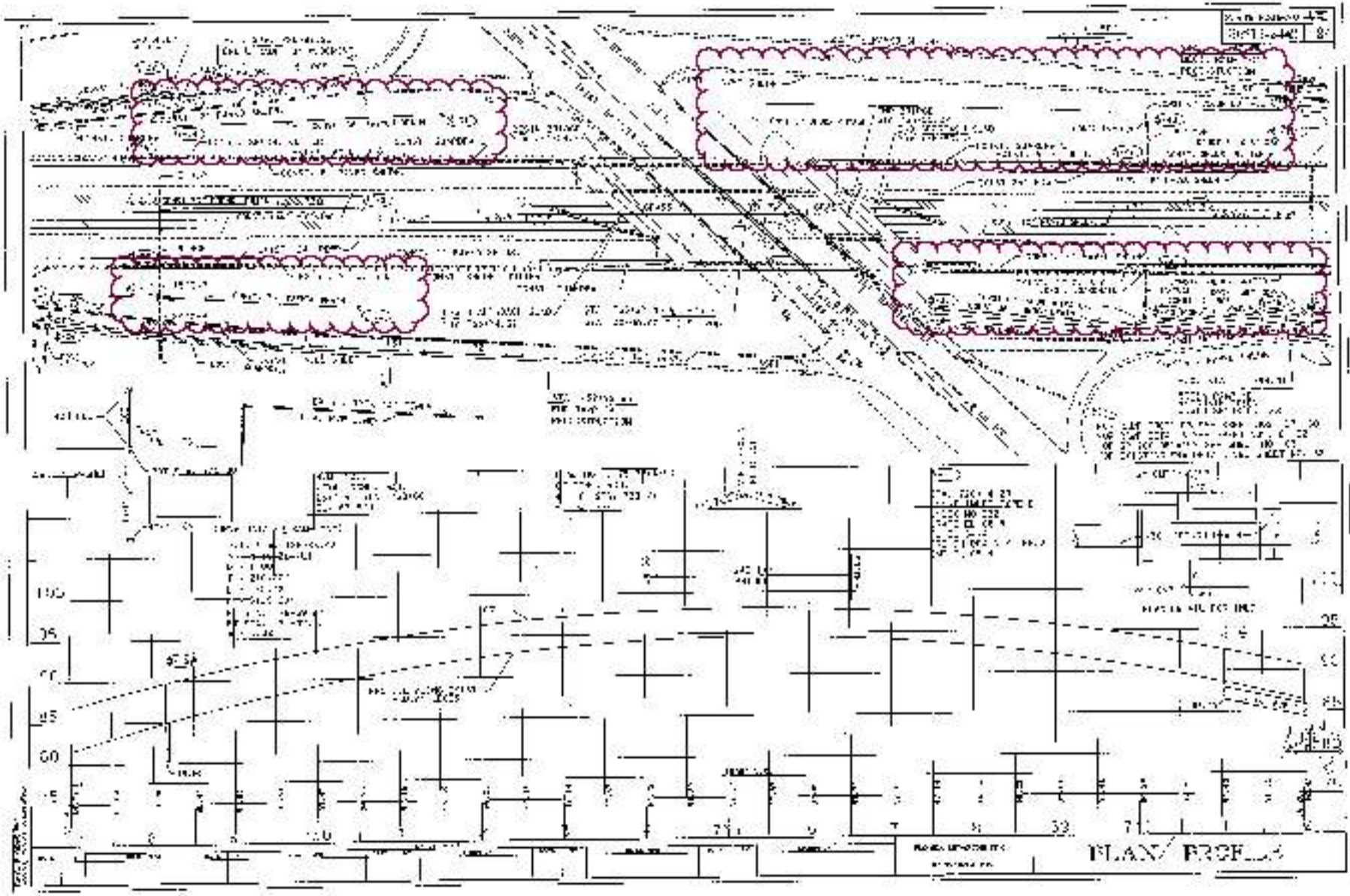


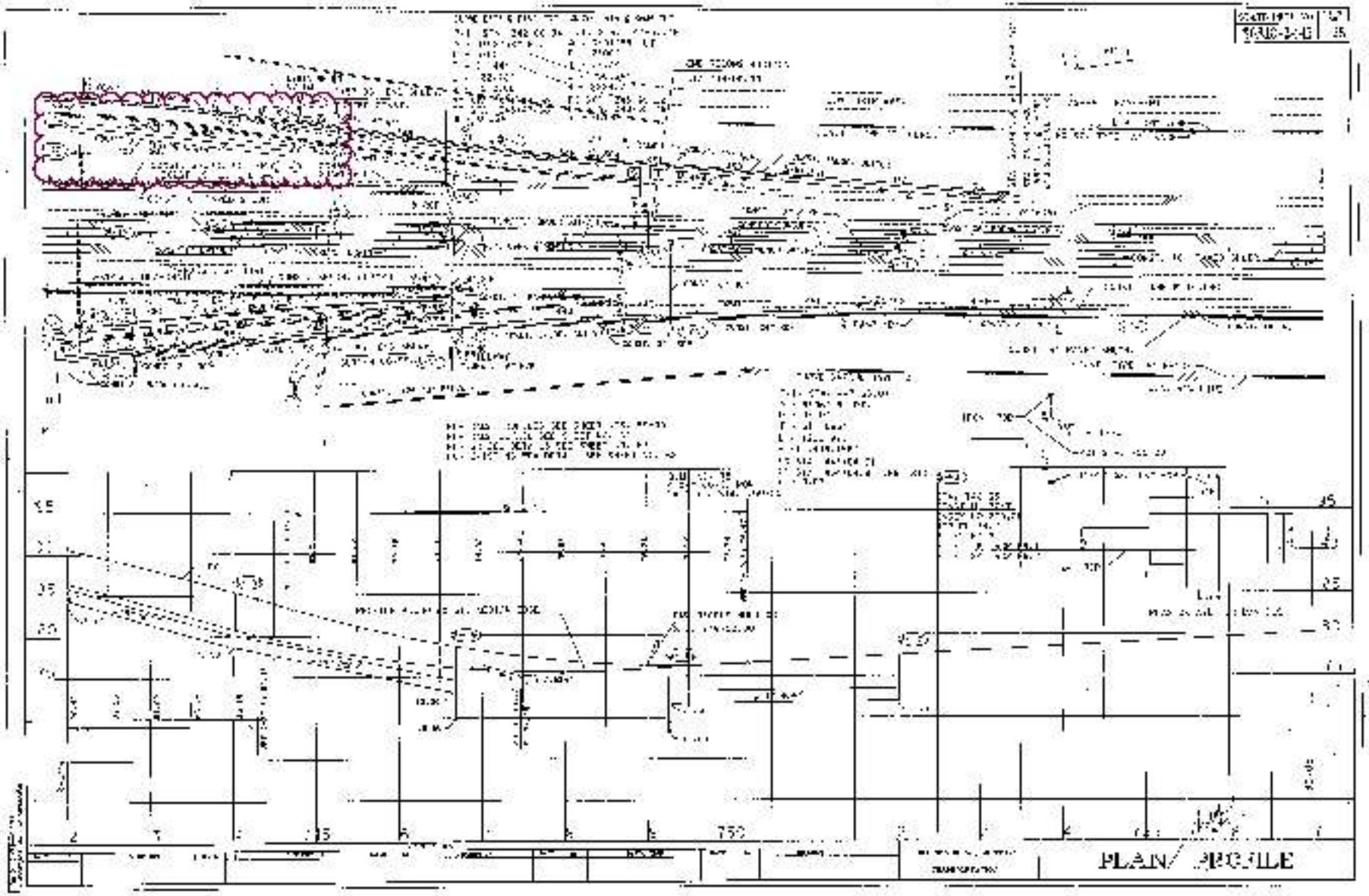
TYPICAL SECTIONS

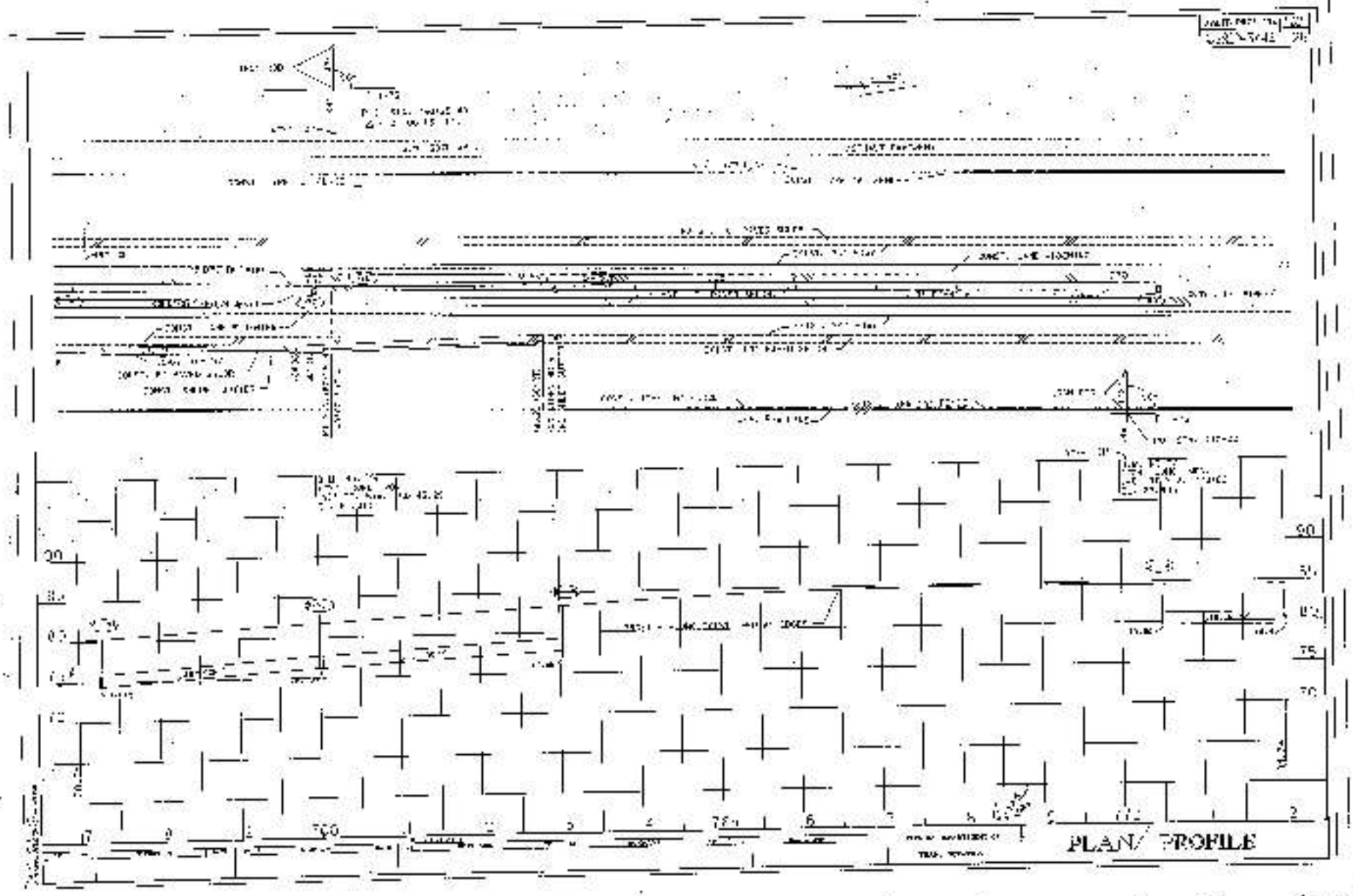

SUMMARY OF DRAINAGE STRUCTURES

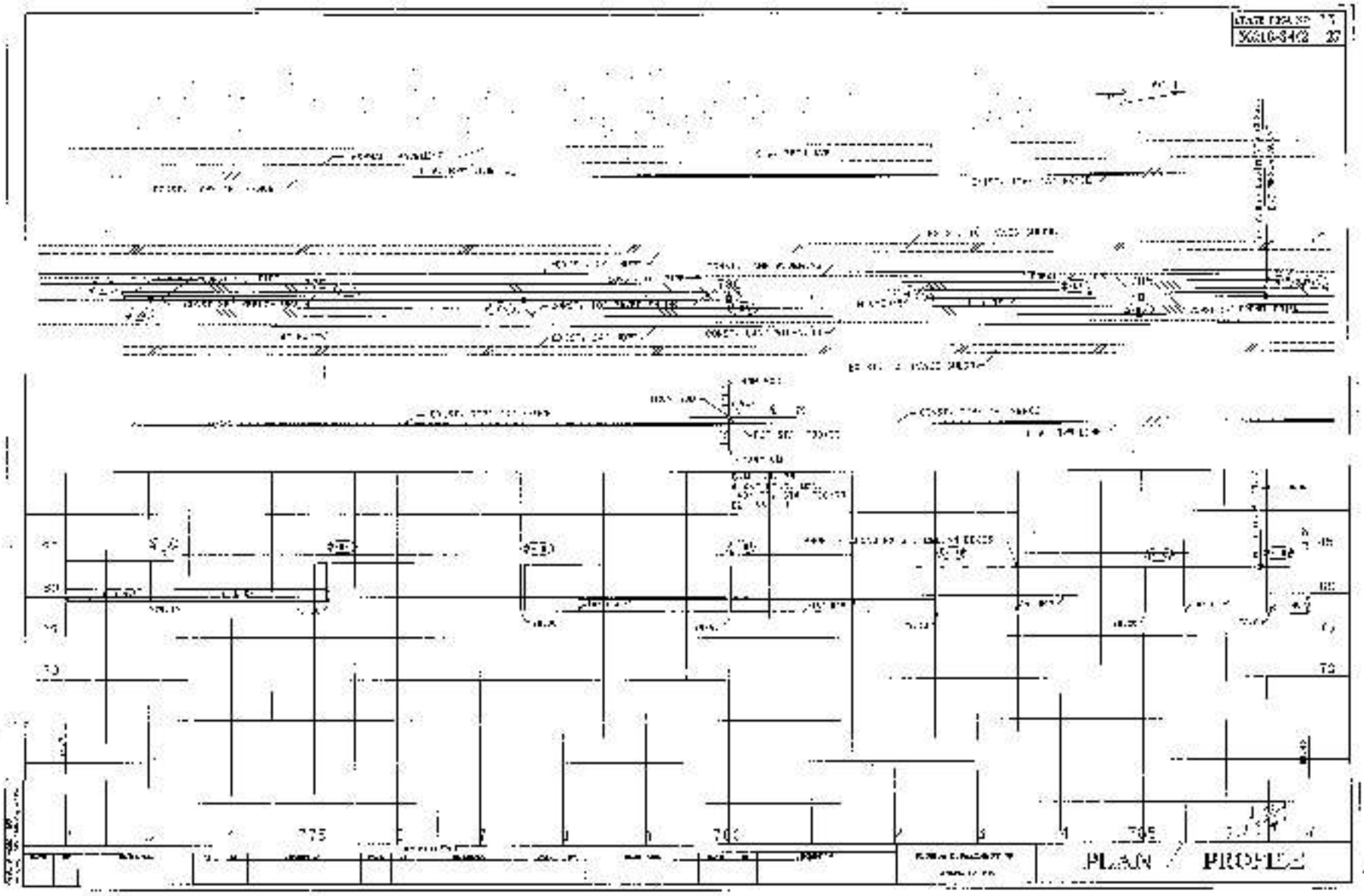

PLAN / PROFILE

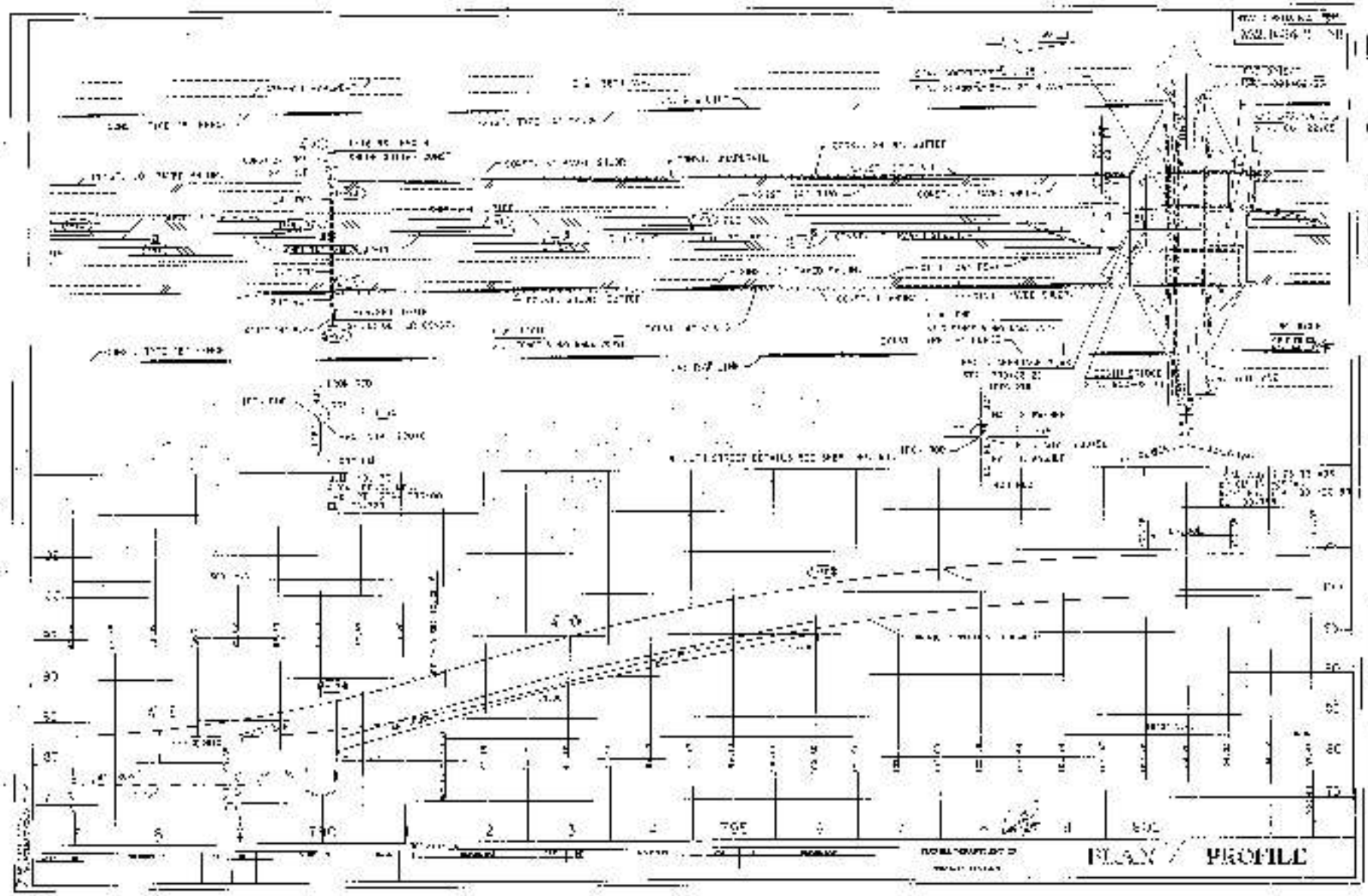

PLAN / PROFILE

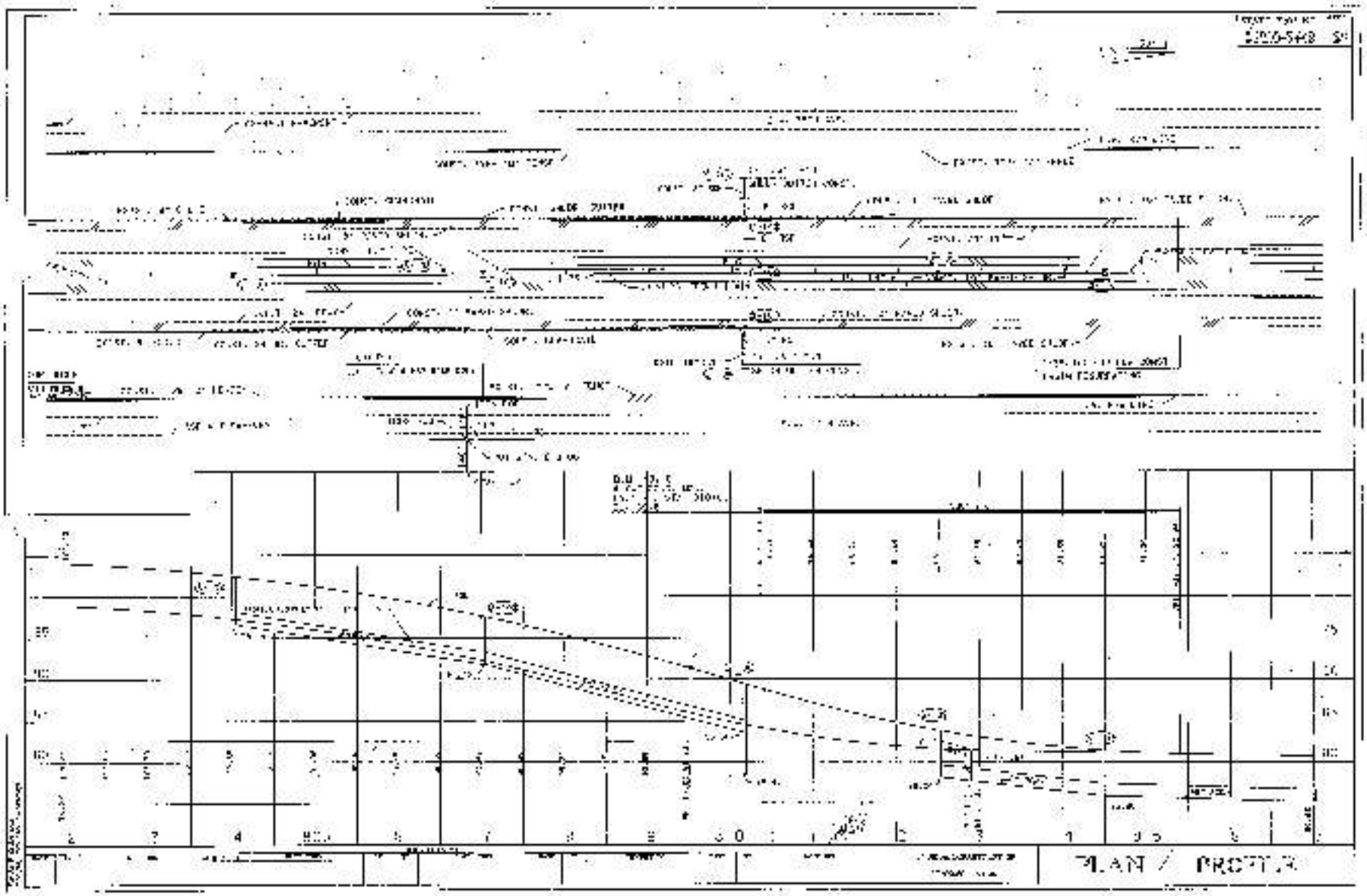

PLAN / PROFILE

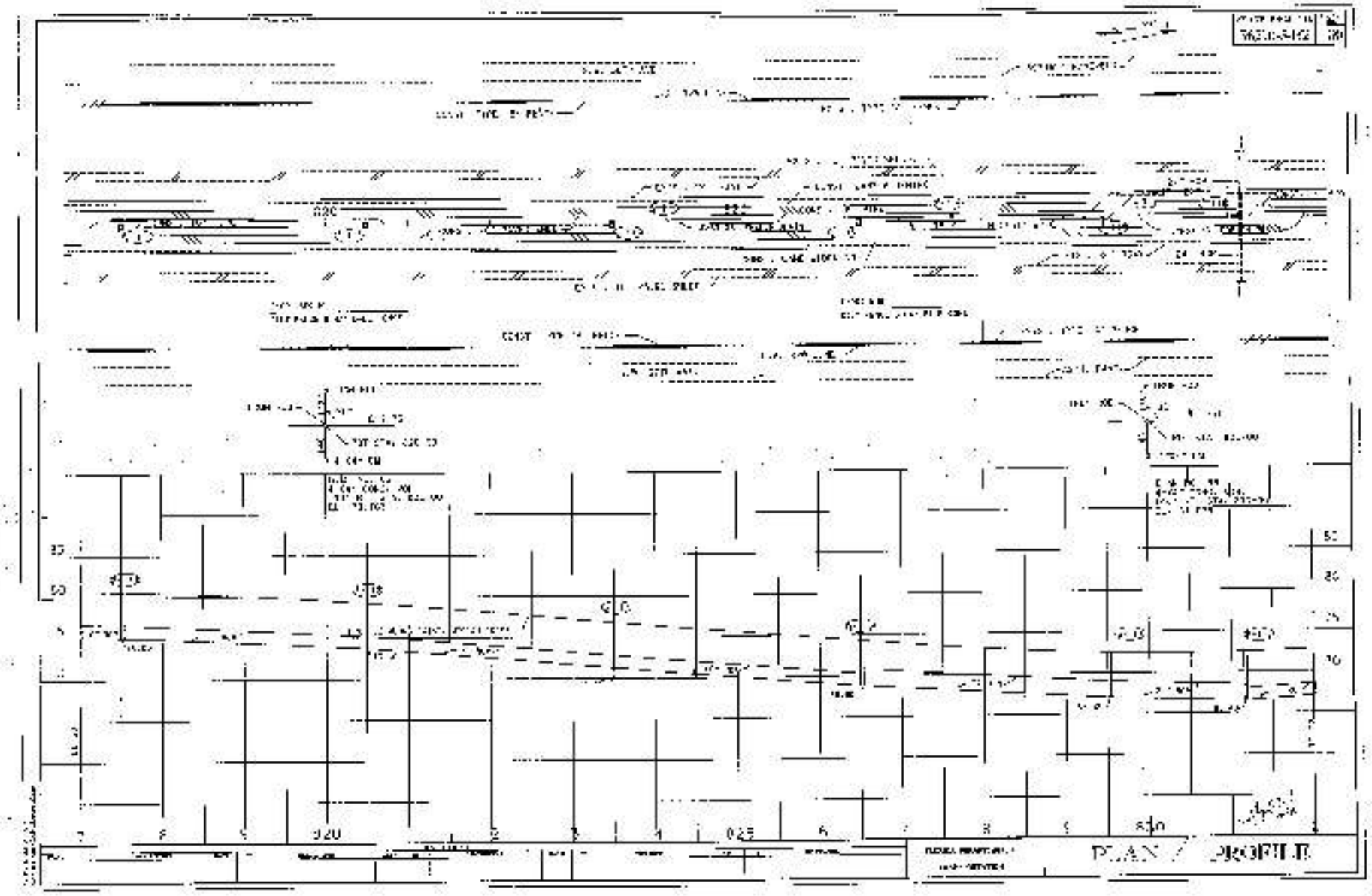

PLAN/ PROFILE

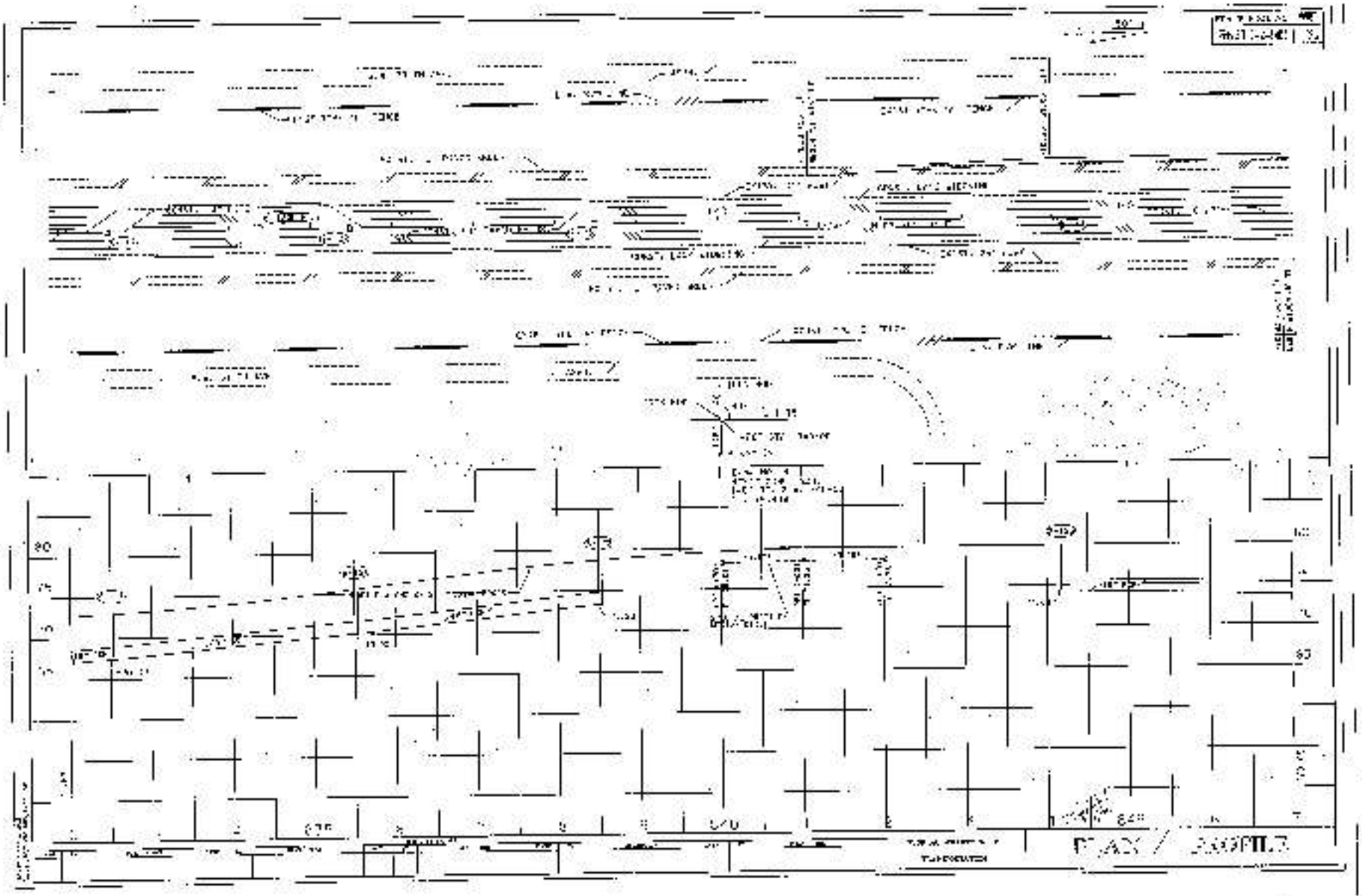

PLAN/ PROFILE

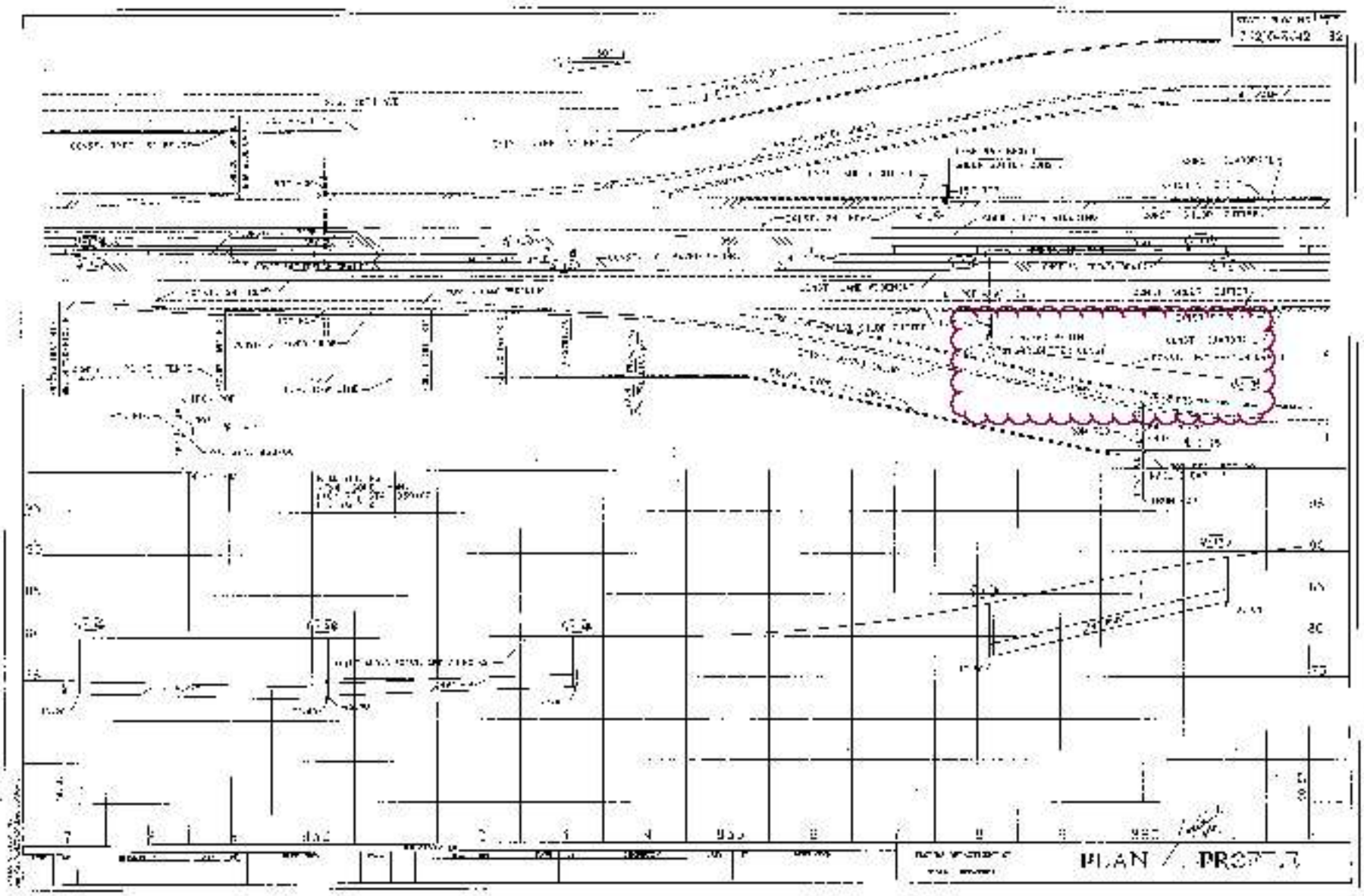

PLAN / PROFILE

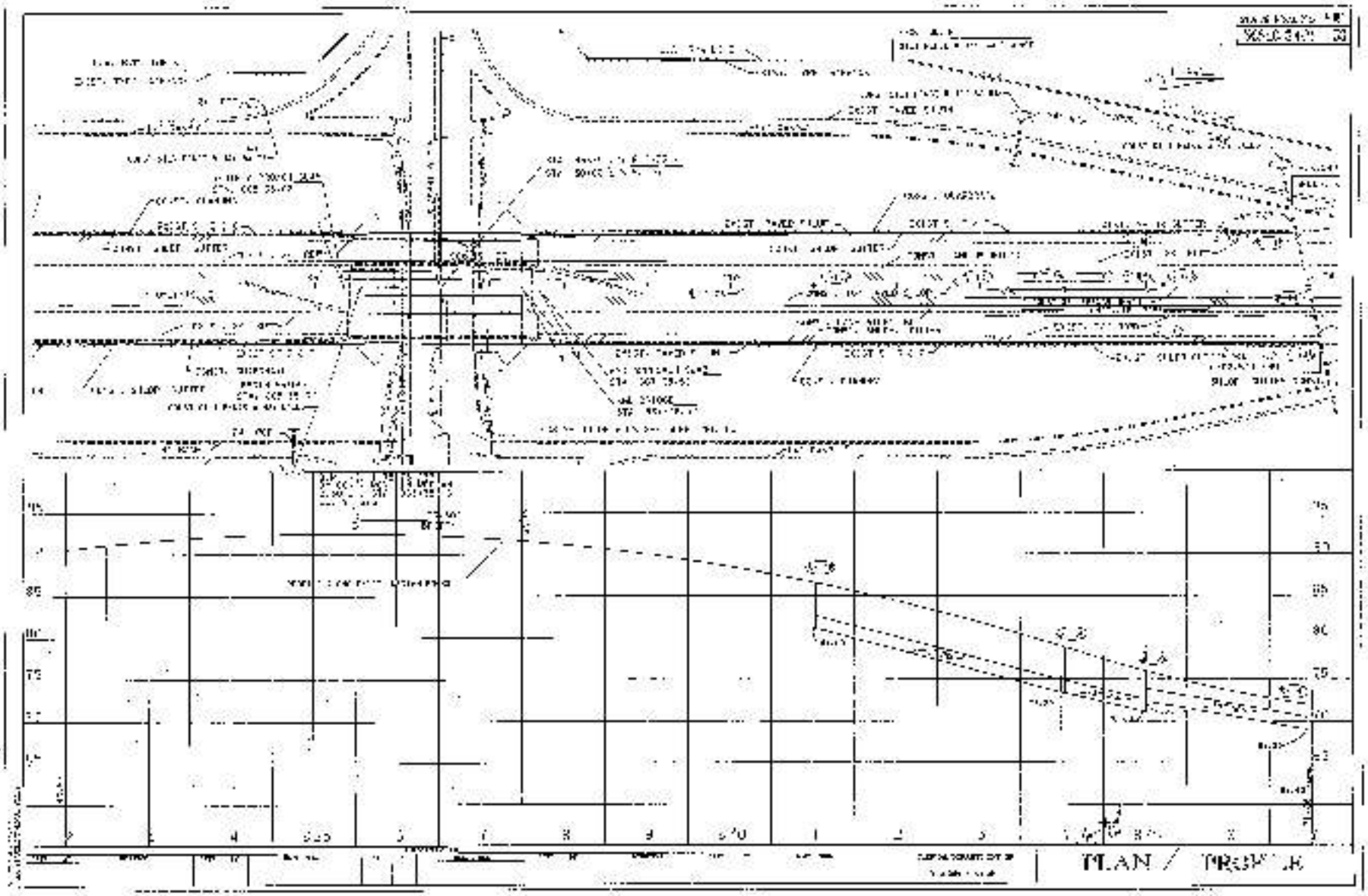

PLAN / PROFILE

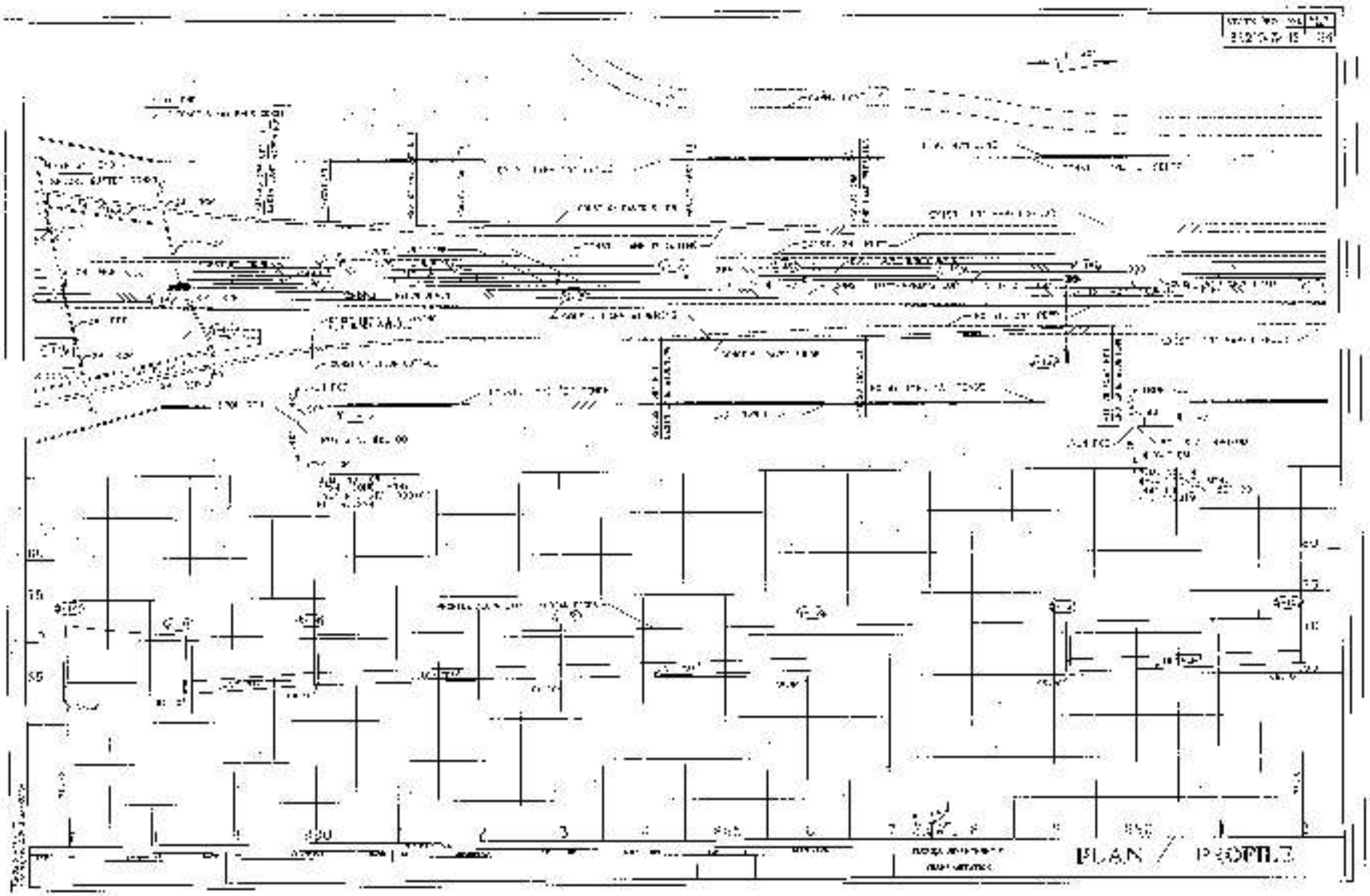

PLAN / PROFILE

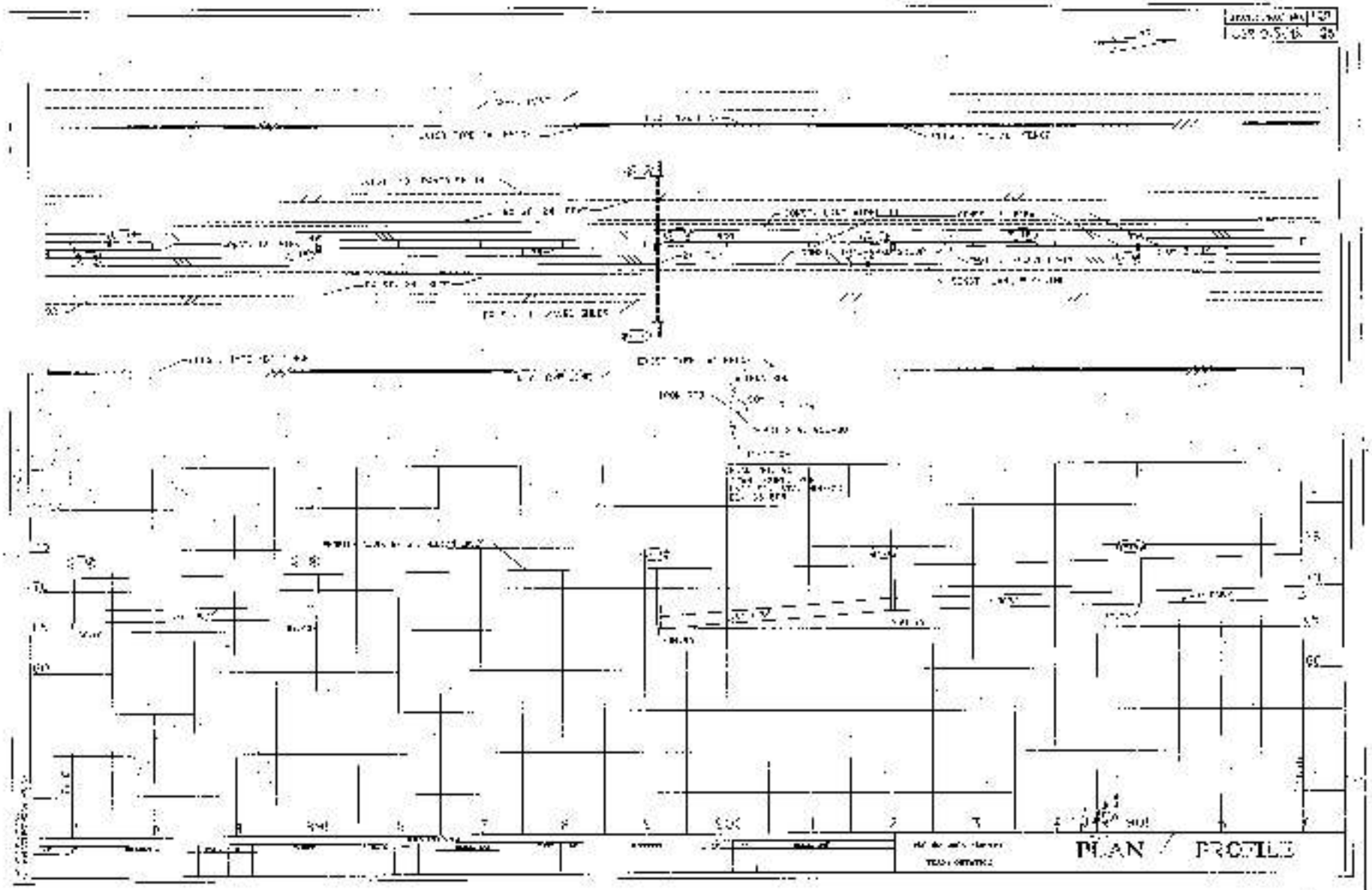

PLAN / PROFILE

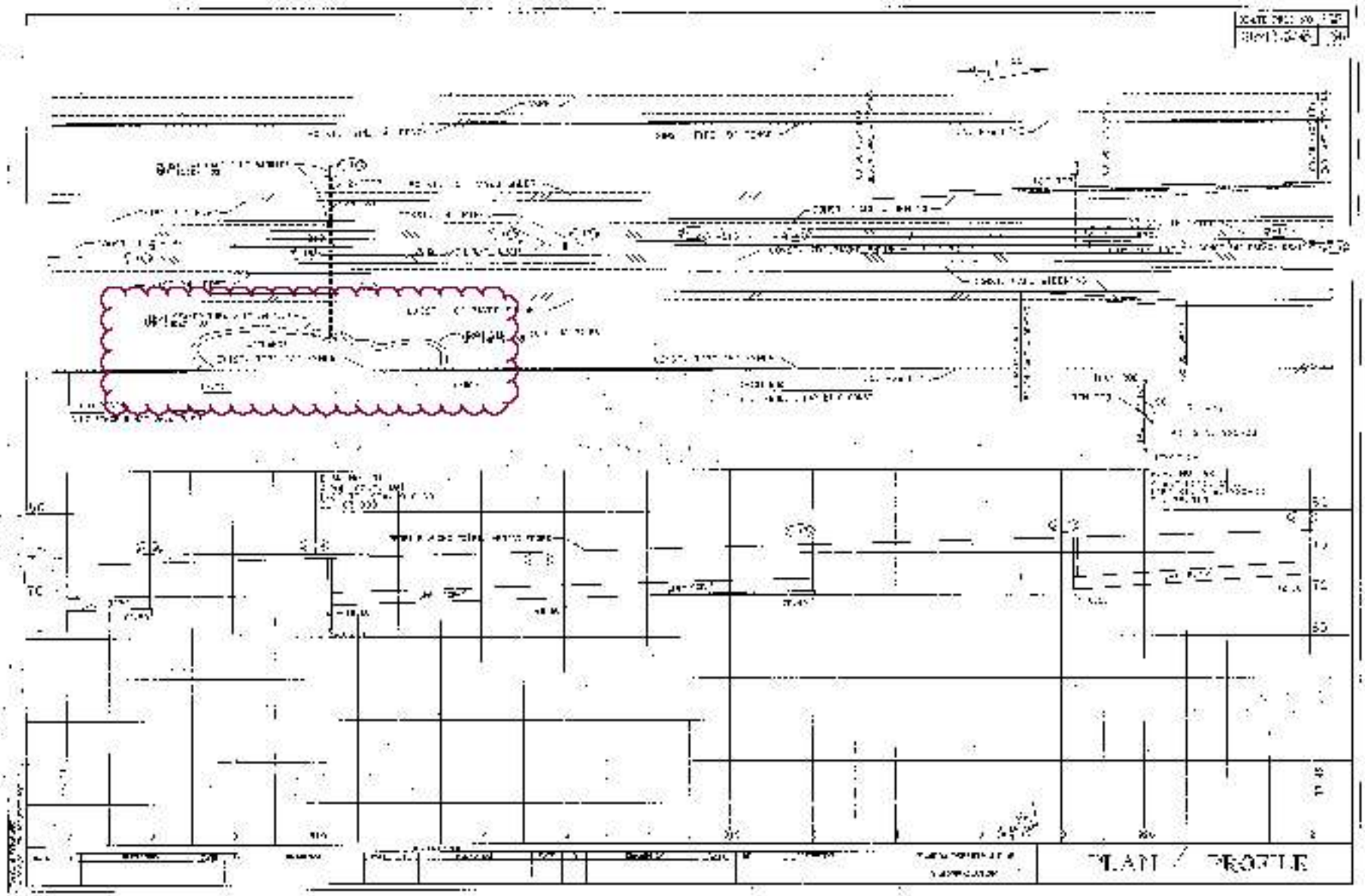


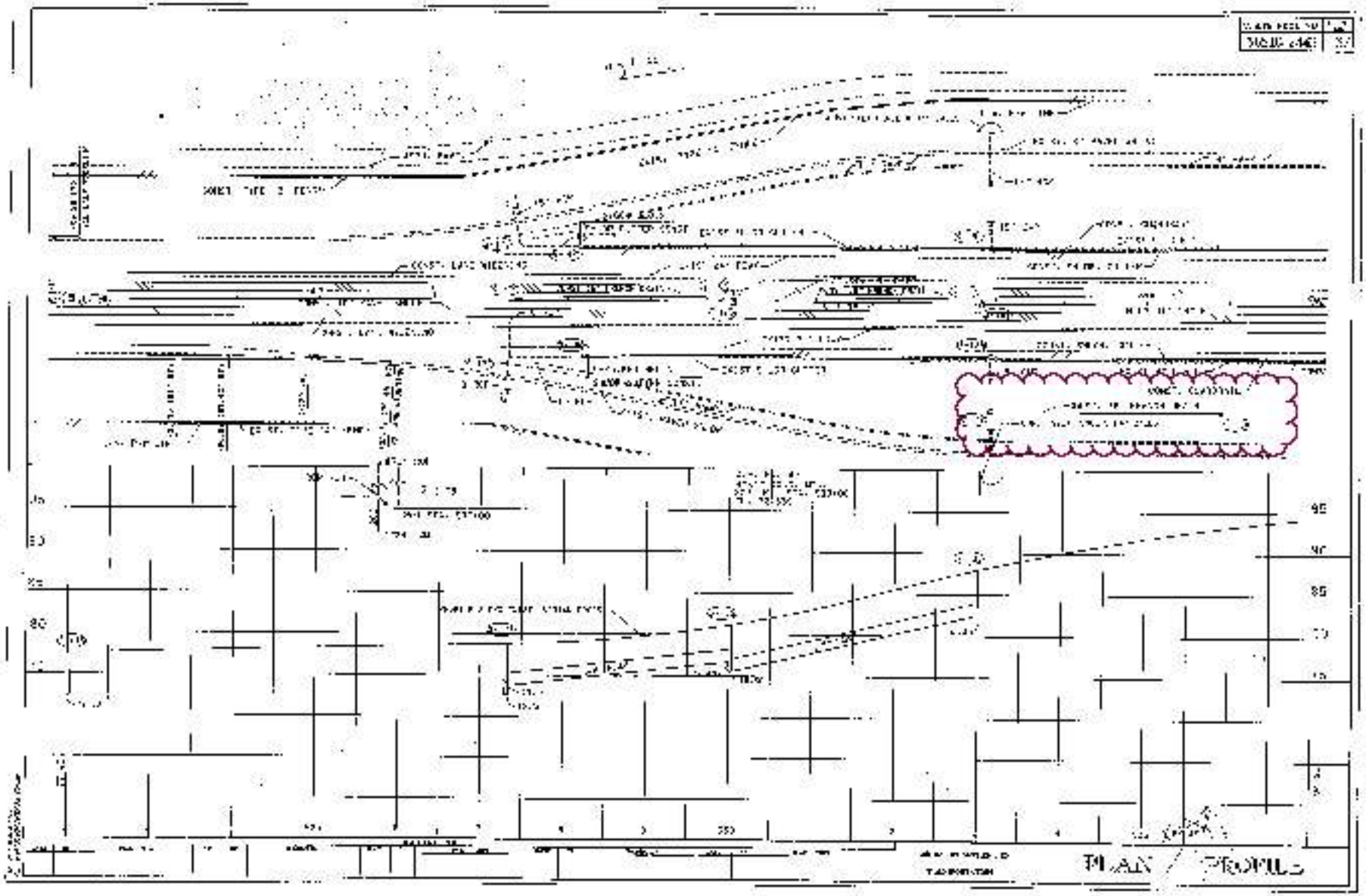

PLAN / PROFILE

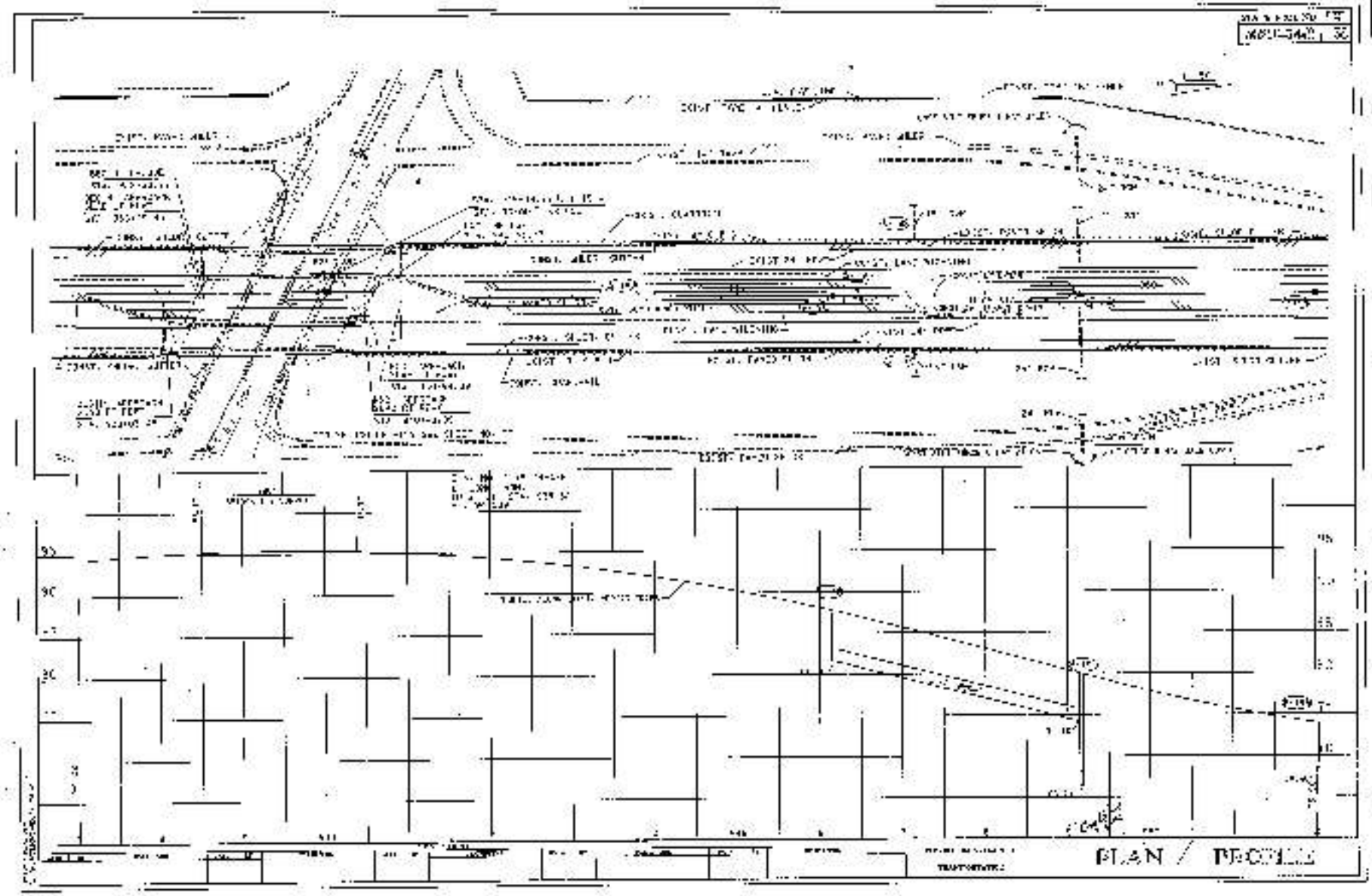


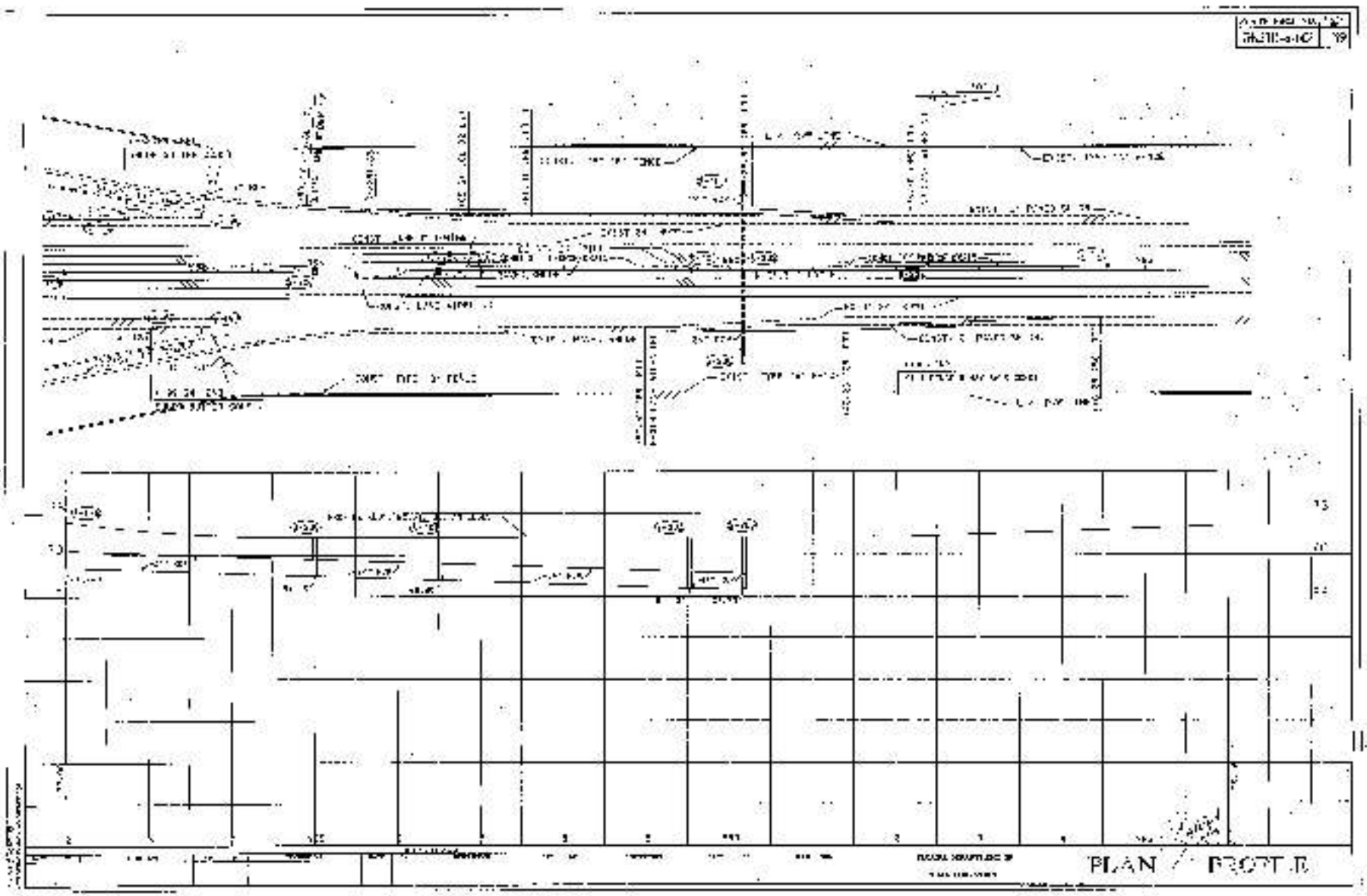

PLAN / PROFILE

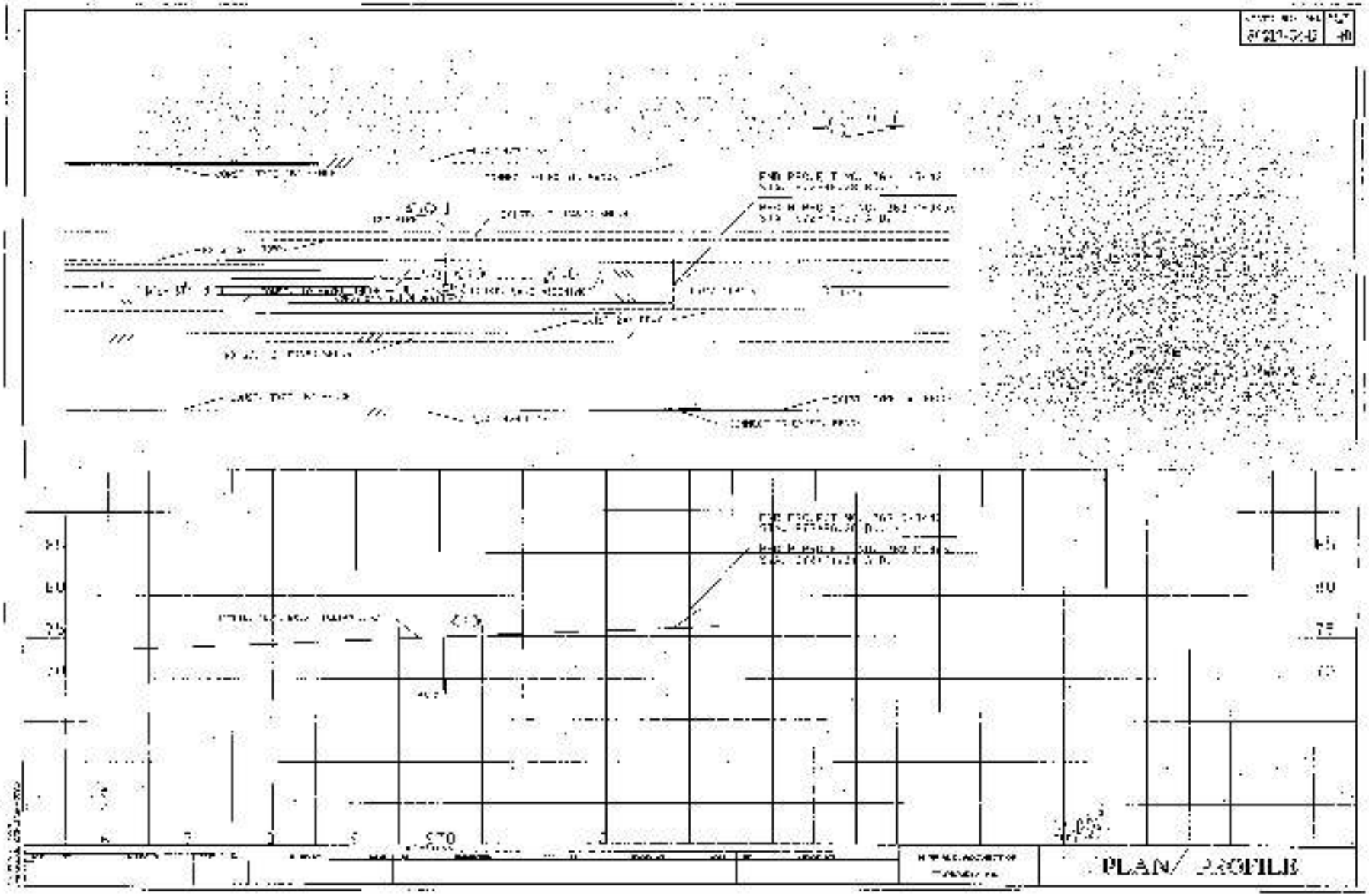

PLAN / PROFILE

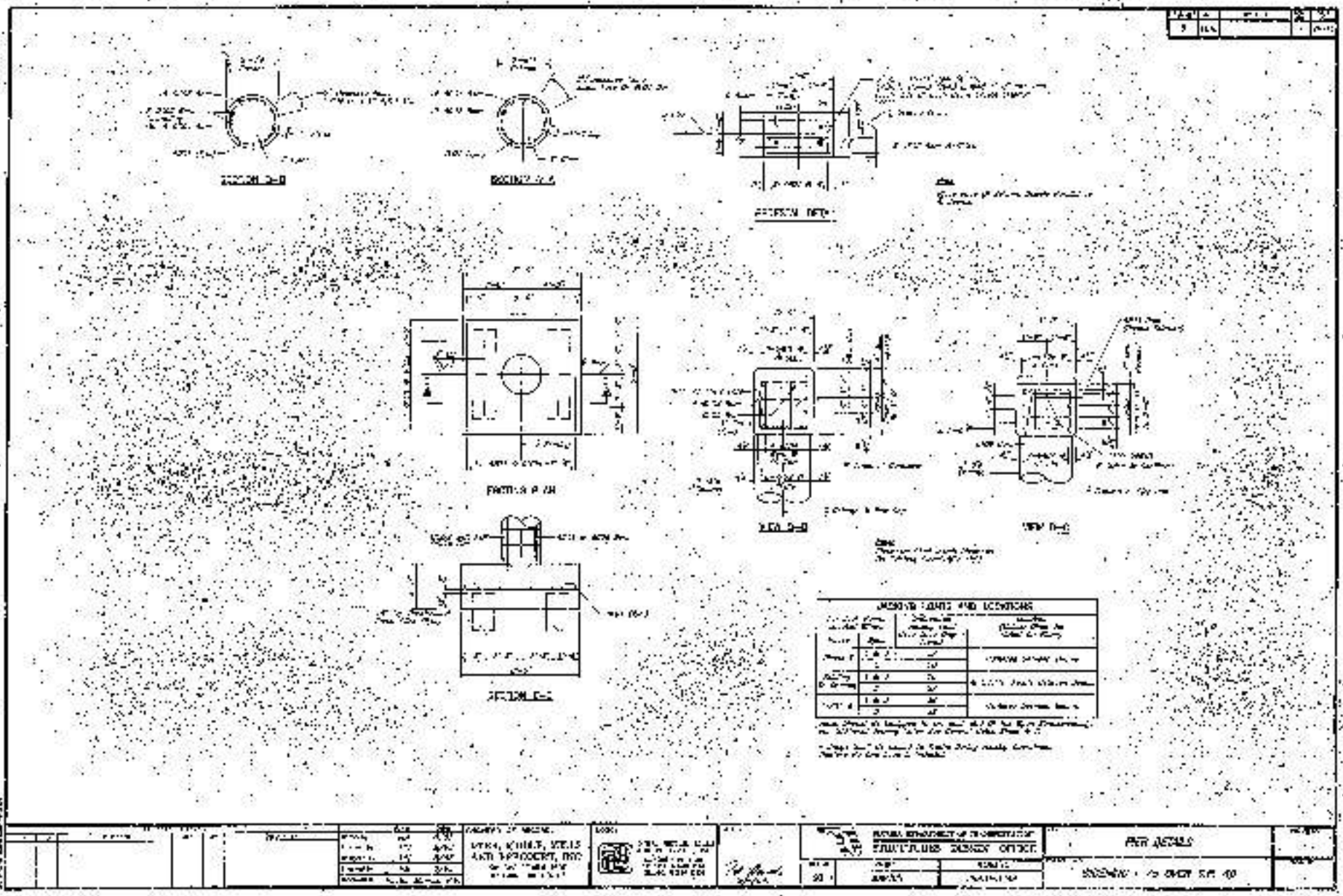

PLAN / PROFILE

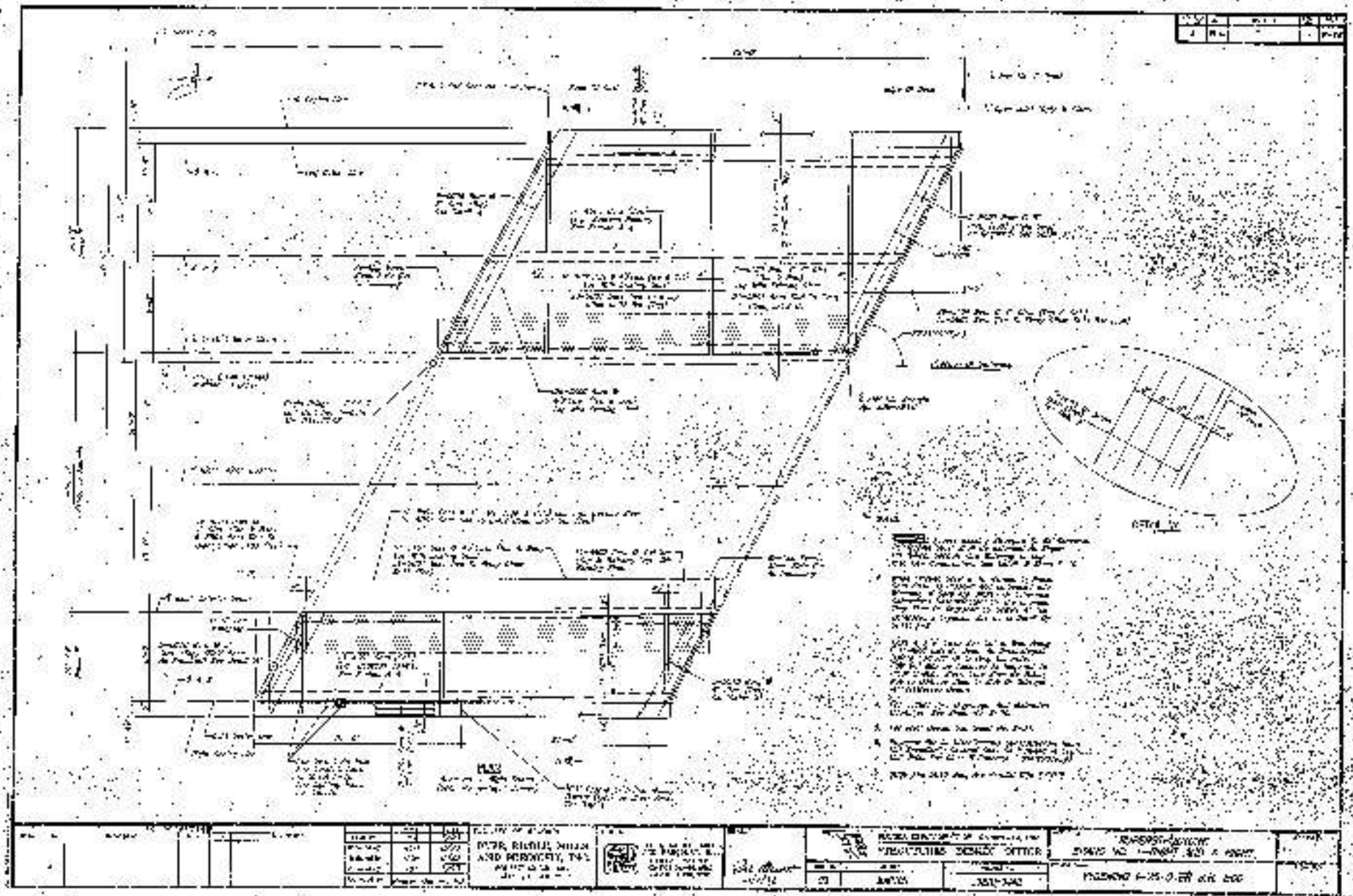

PLAN / PROFILE


PLAN / PROFILE


PLAN / PROFILE


PLAN / PROFILE





State Project No.

36210-3439

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

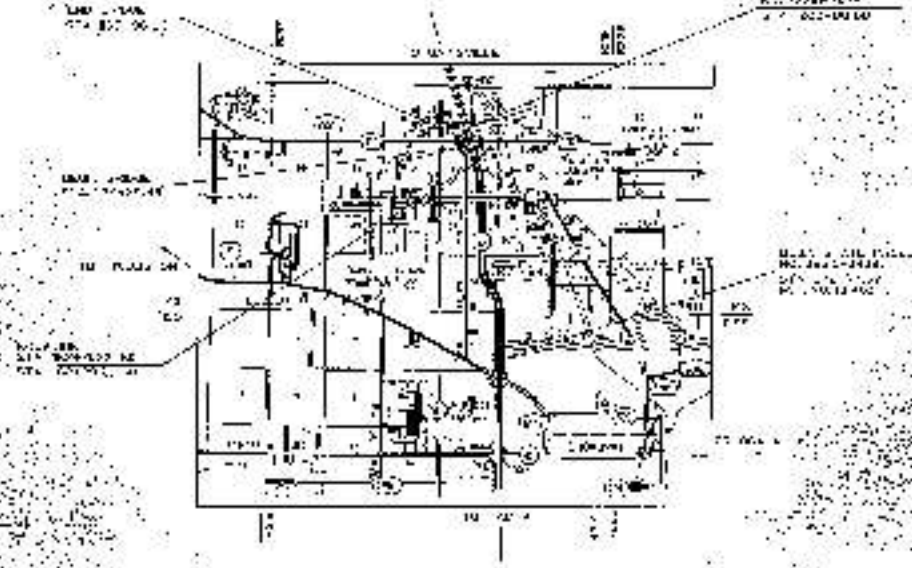
PLANS OF PROPOSED

STATE HIGHWAY

STATE PROJECT NO. 36210-3439 (FEDERAL FUNDS)

MARION COUNTY

I-75 (SR93) FROM SR 500 TO CR 326

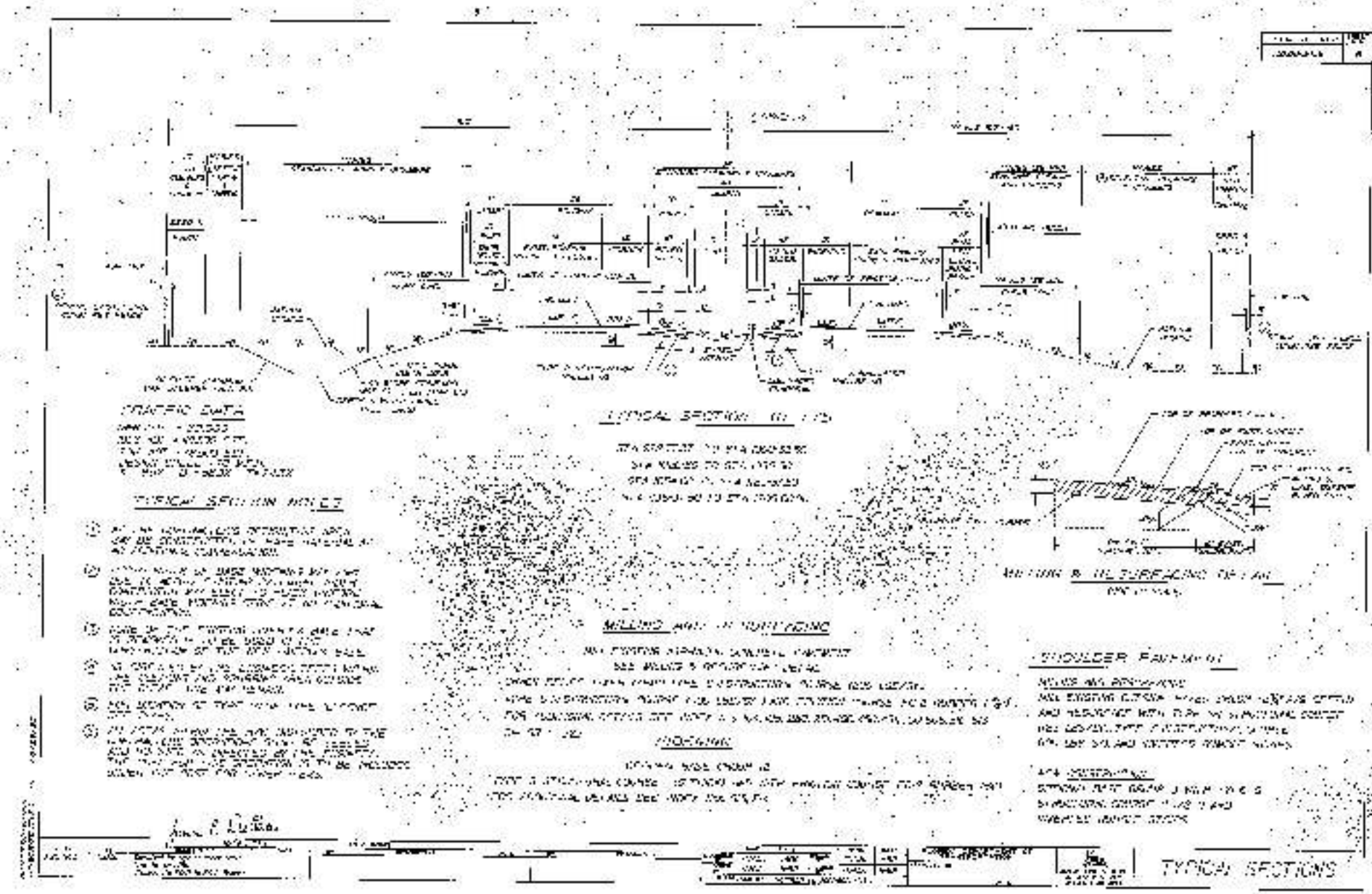


INDEX OF ROADWAY PLANS

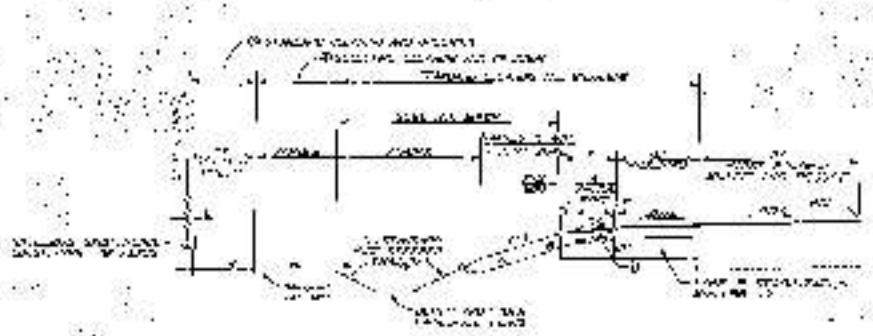
SHEET NO.	DESCRIPTION
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	

REVISIONS

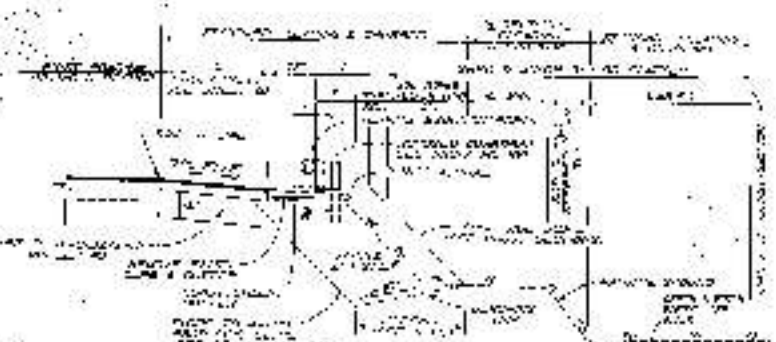
Marion_MP18.463.0 TO MP22.555_
FPID-242376-1_
FPN-36210-3439_
SR 93(I-75) from 0.6 MI N SR 500 US27
TO 0.6 MI NORTH CR 326



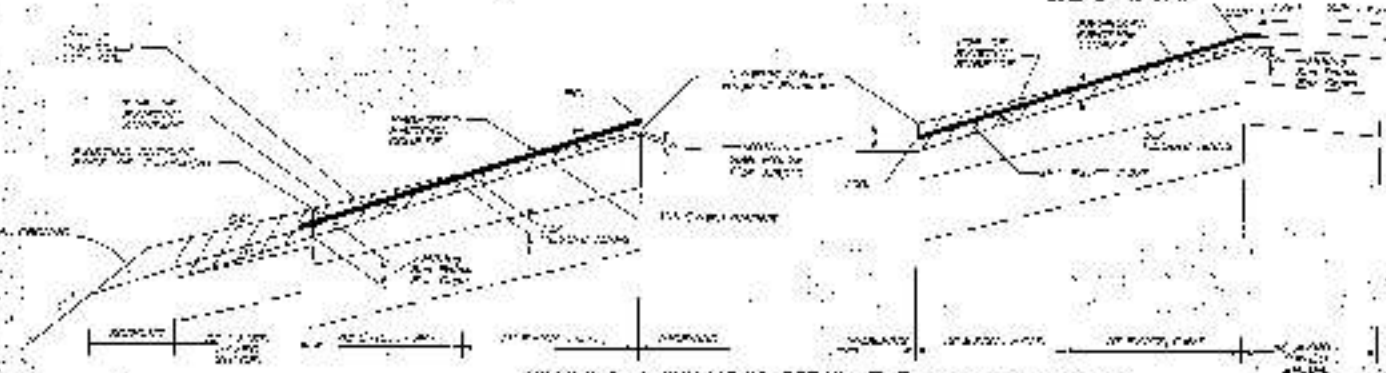
TYPICAL SECTIONS

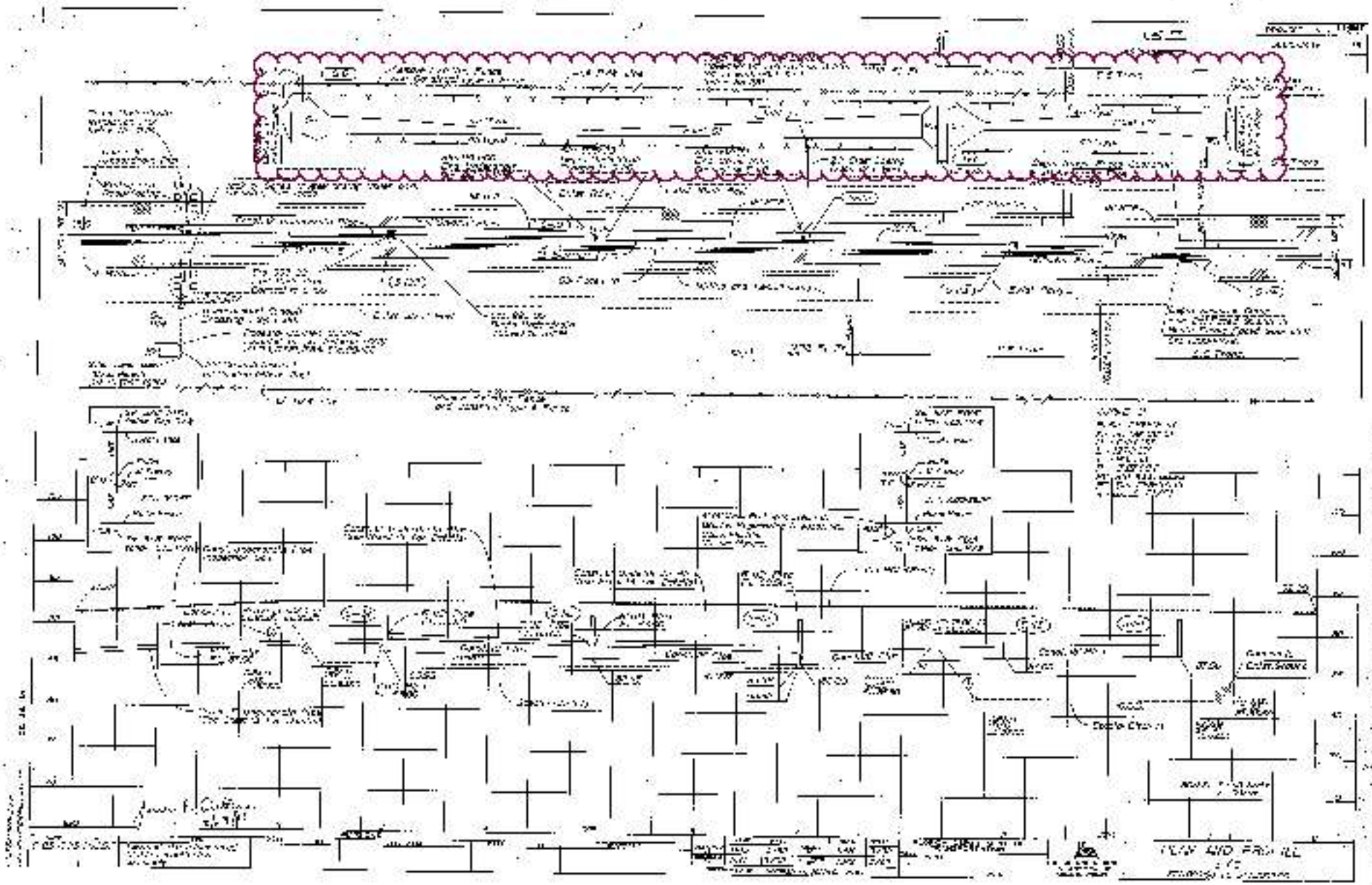


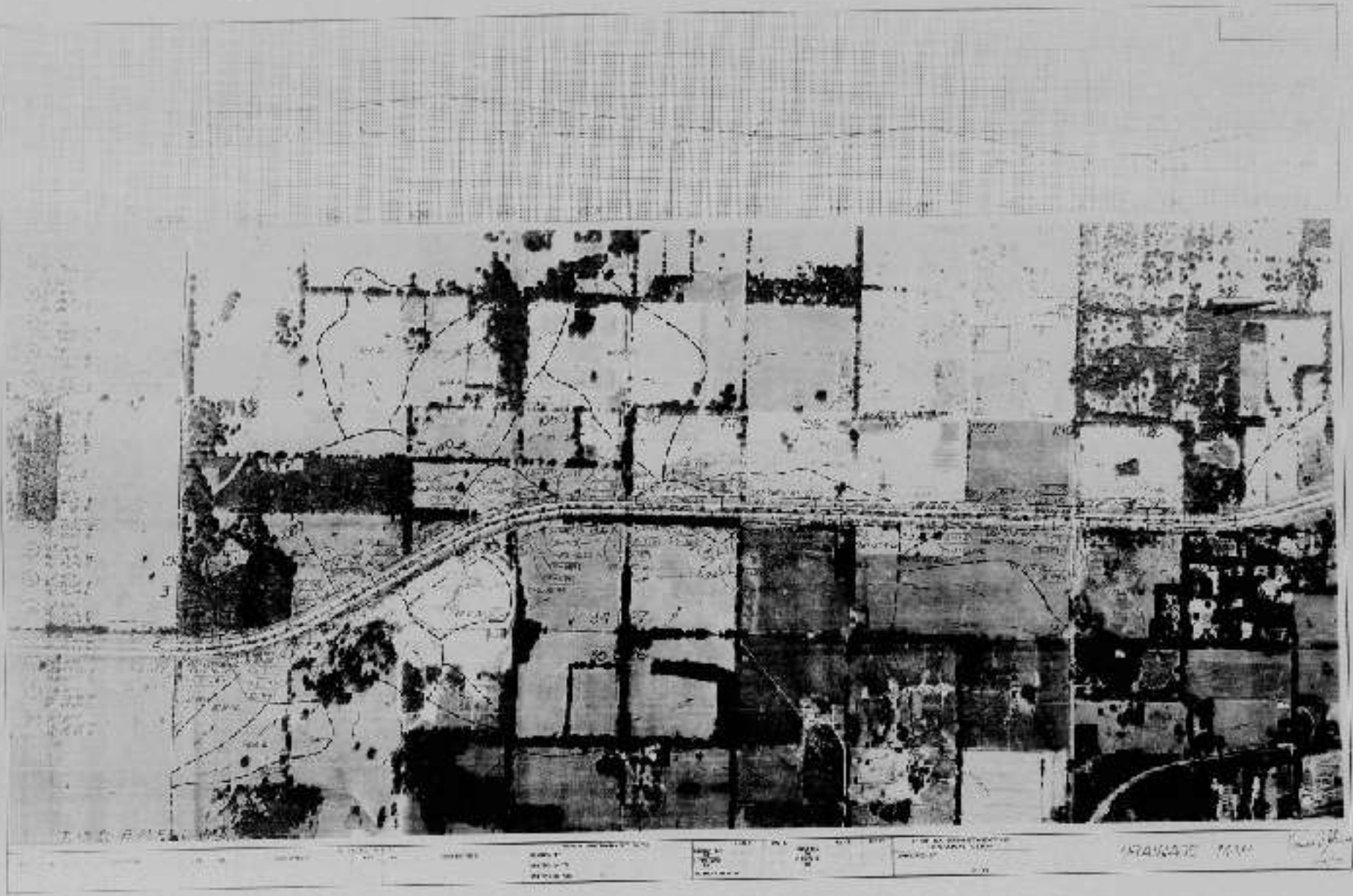
TYPICAL HALF SECTION

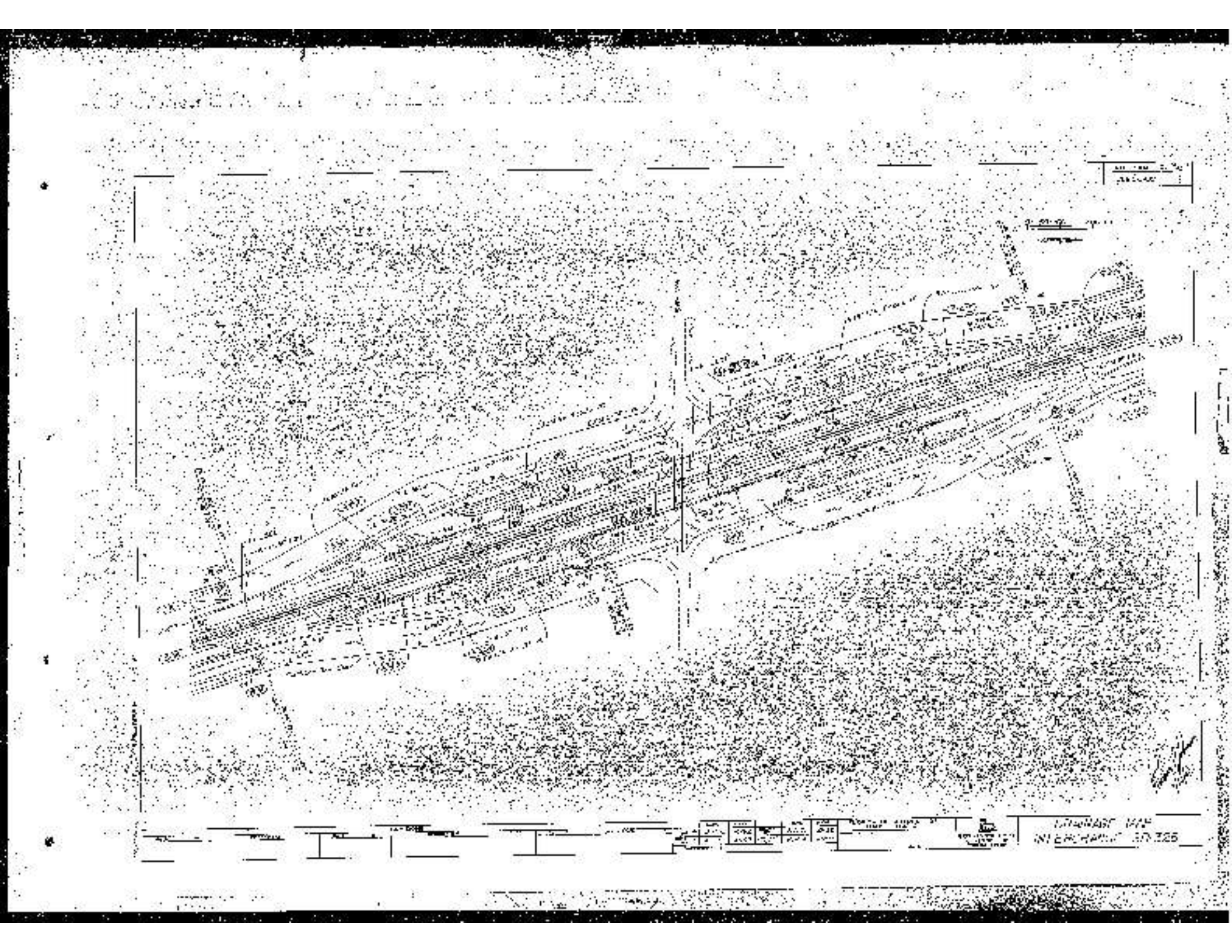


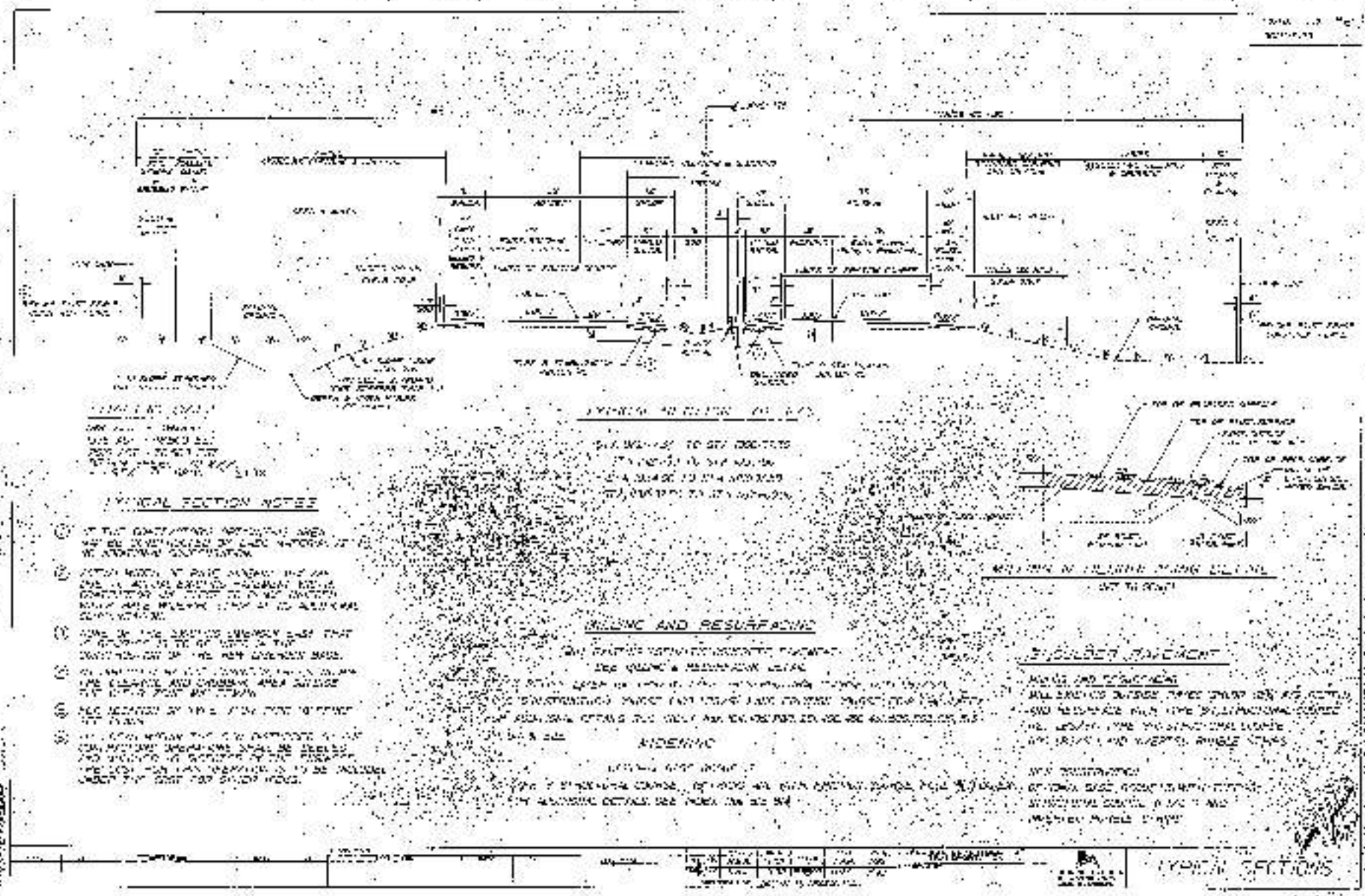
TYPICAL HALF SECTION









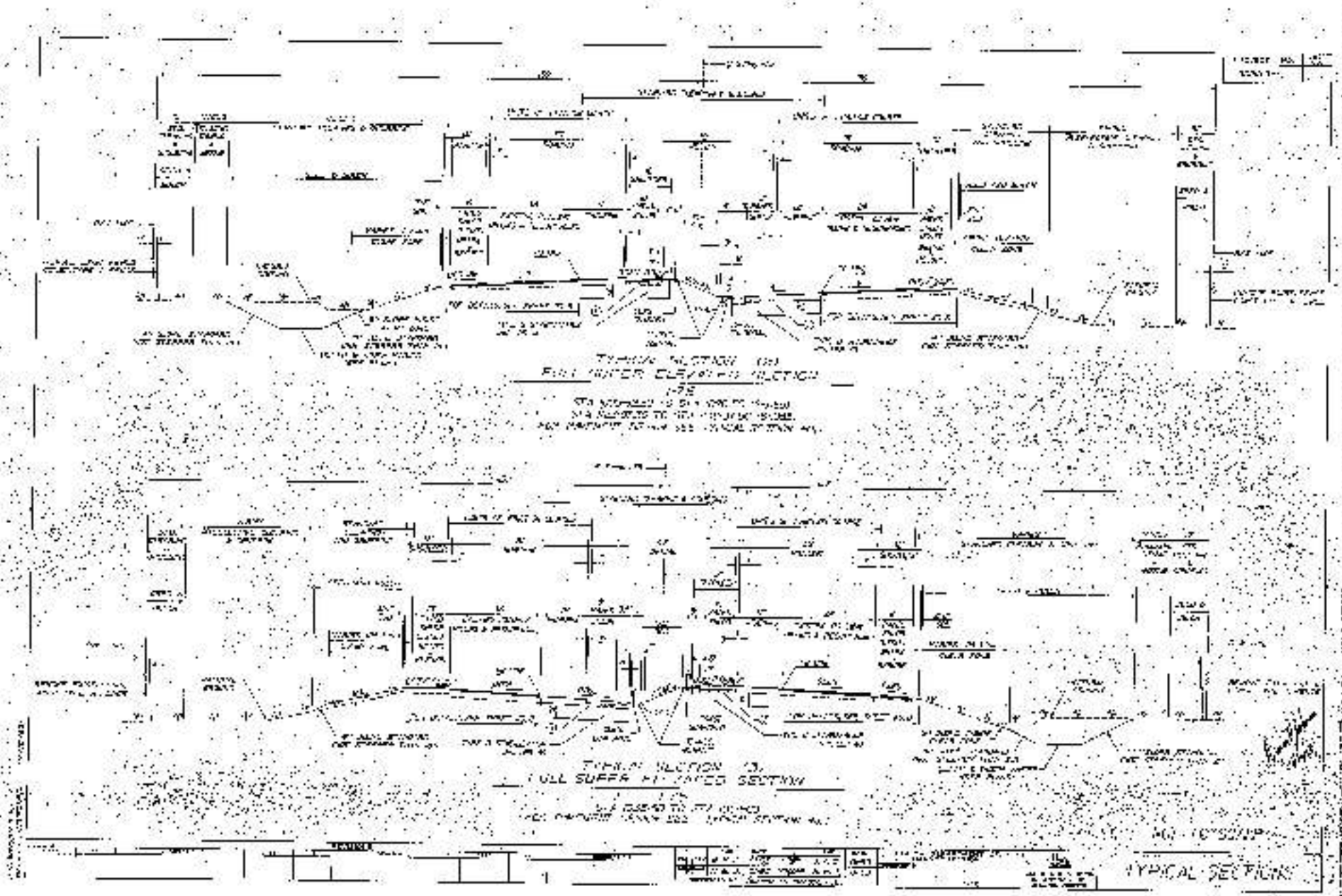


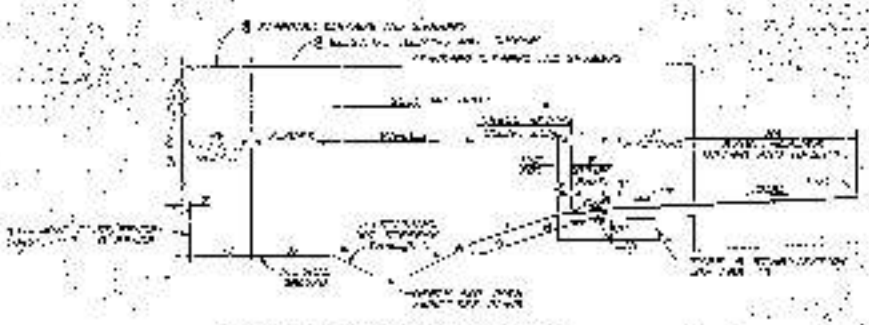
TYPICAL SECTION NOTES

MILLING AND RESURFACING

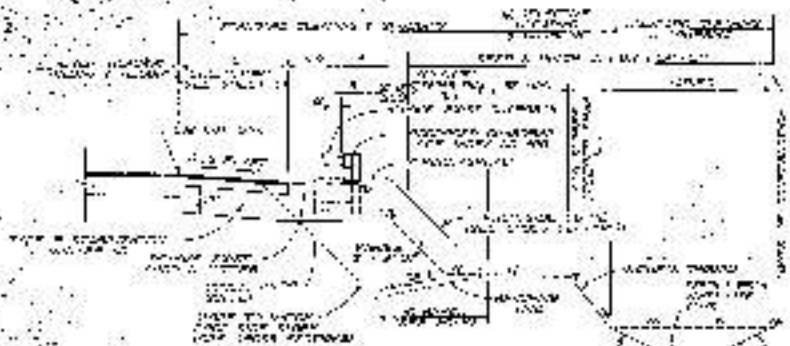
SIDEWALK

TYPICAL SECTIONS

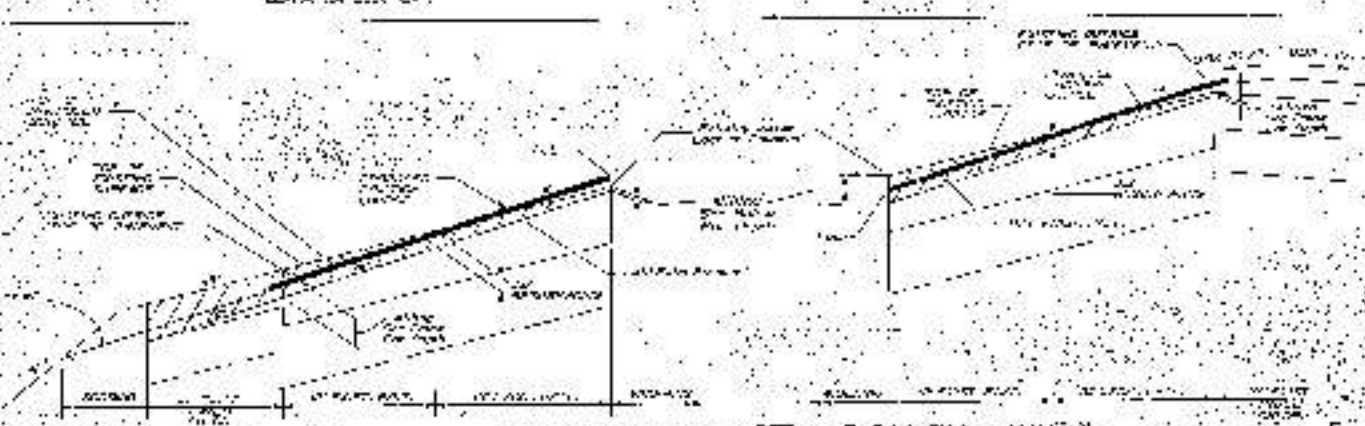

TYPICAL SECTION (2)
FULL WATER CLEARANCE SECTION
TYPICAL SECTION (3)
FULL SUFFA FLANGED SECTION
TYPICAL SECTION

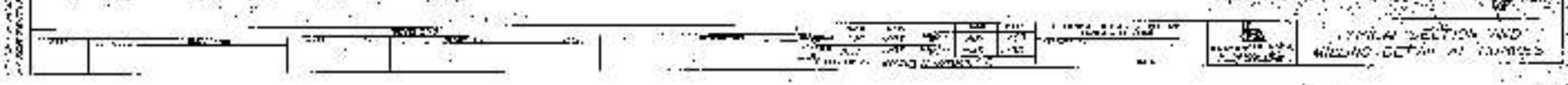


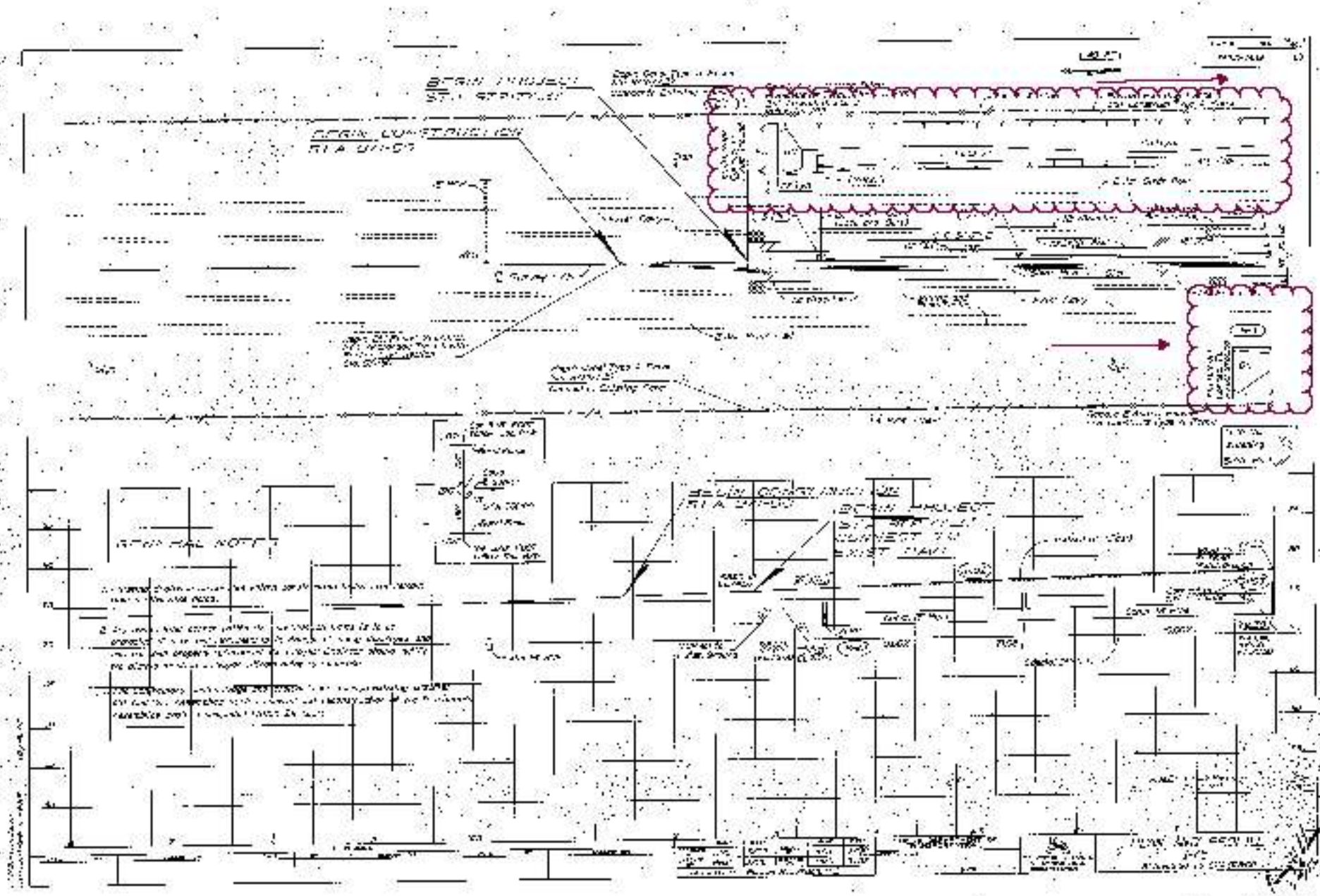
TYPICAL HALF-SECTION

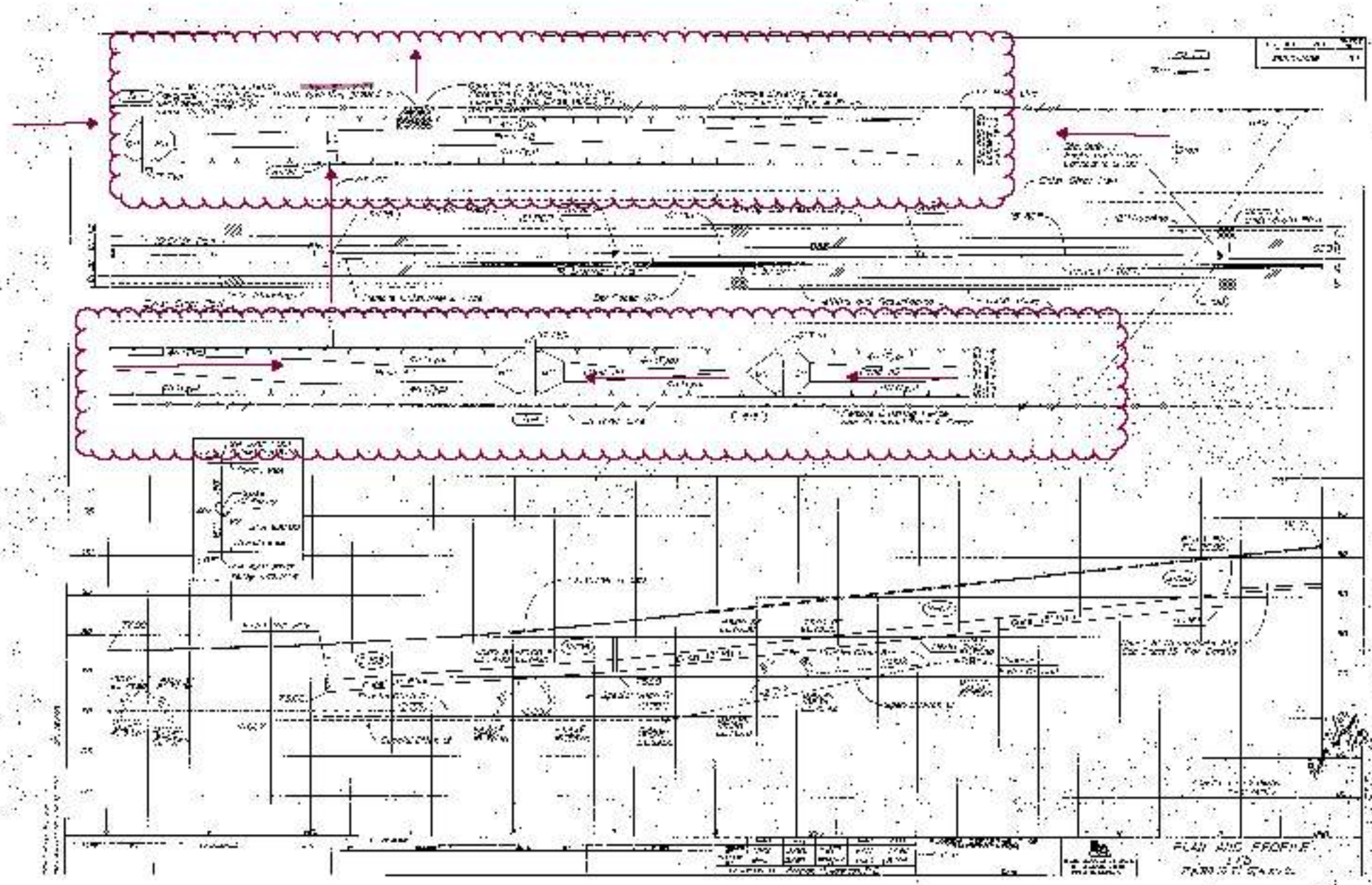


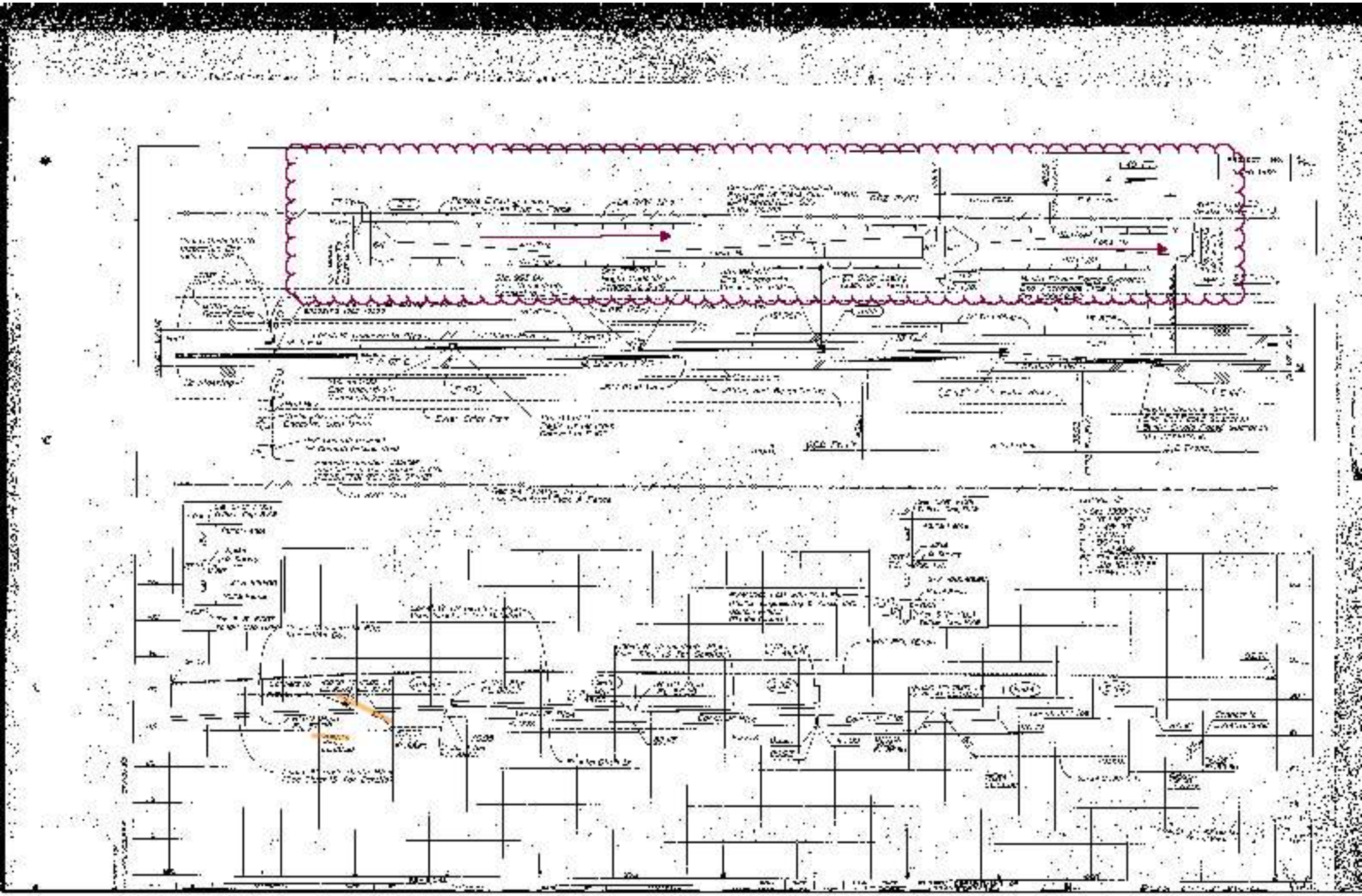
TYPICAL HALF-SECTION

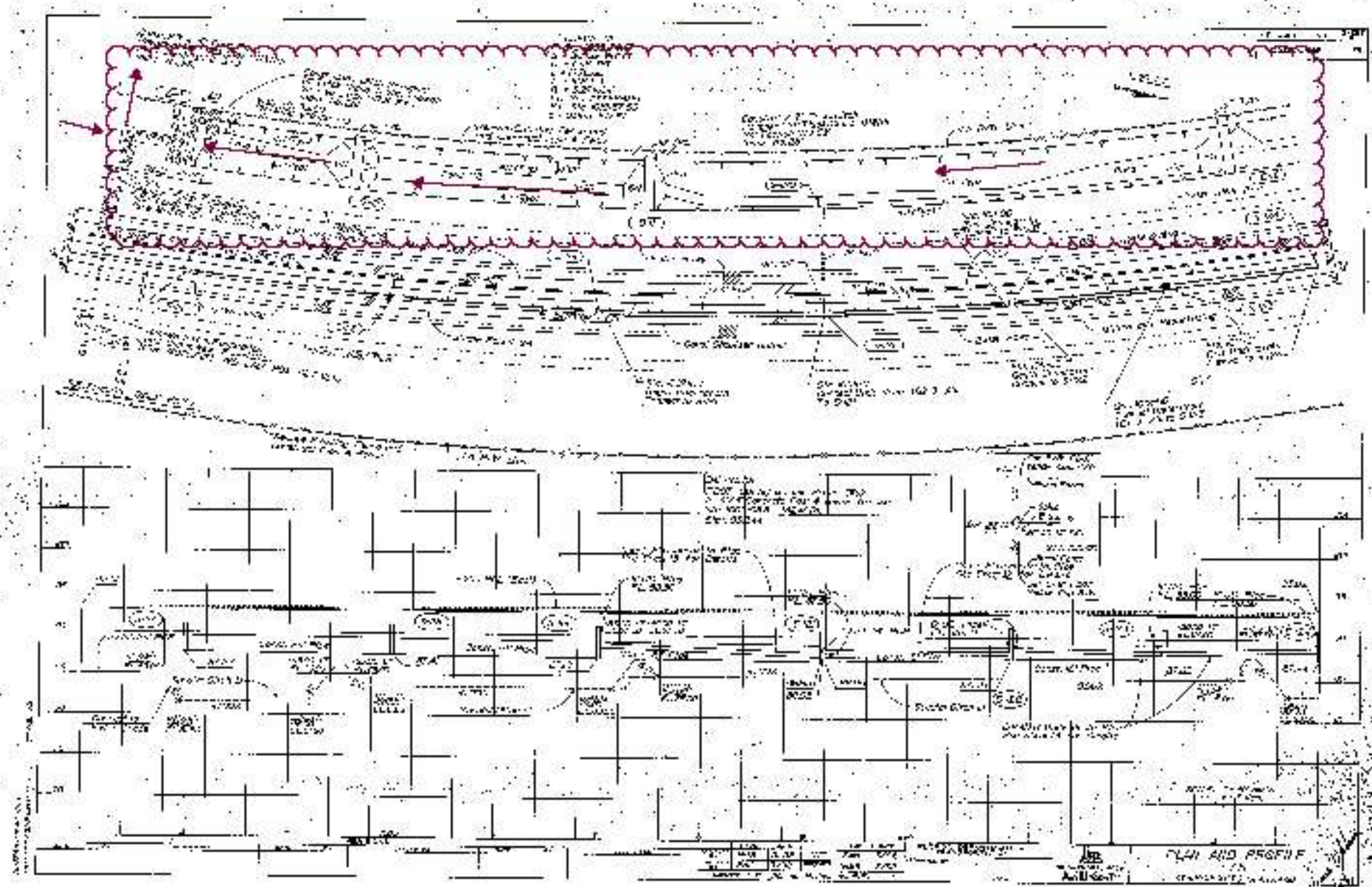


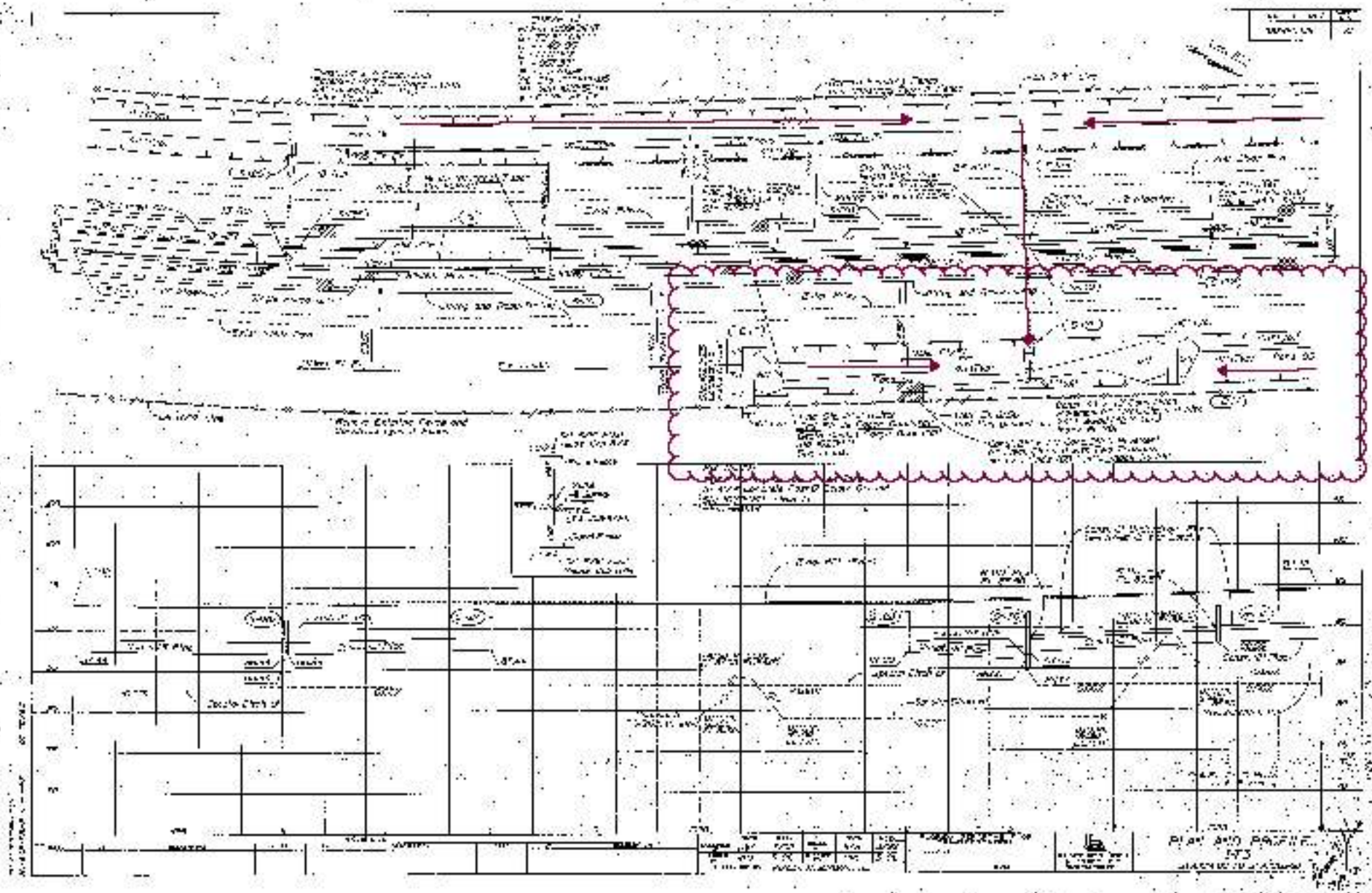


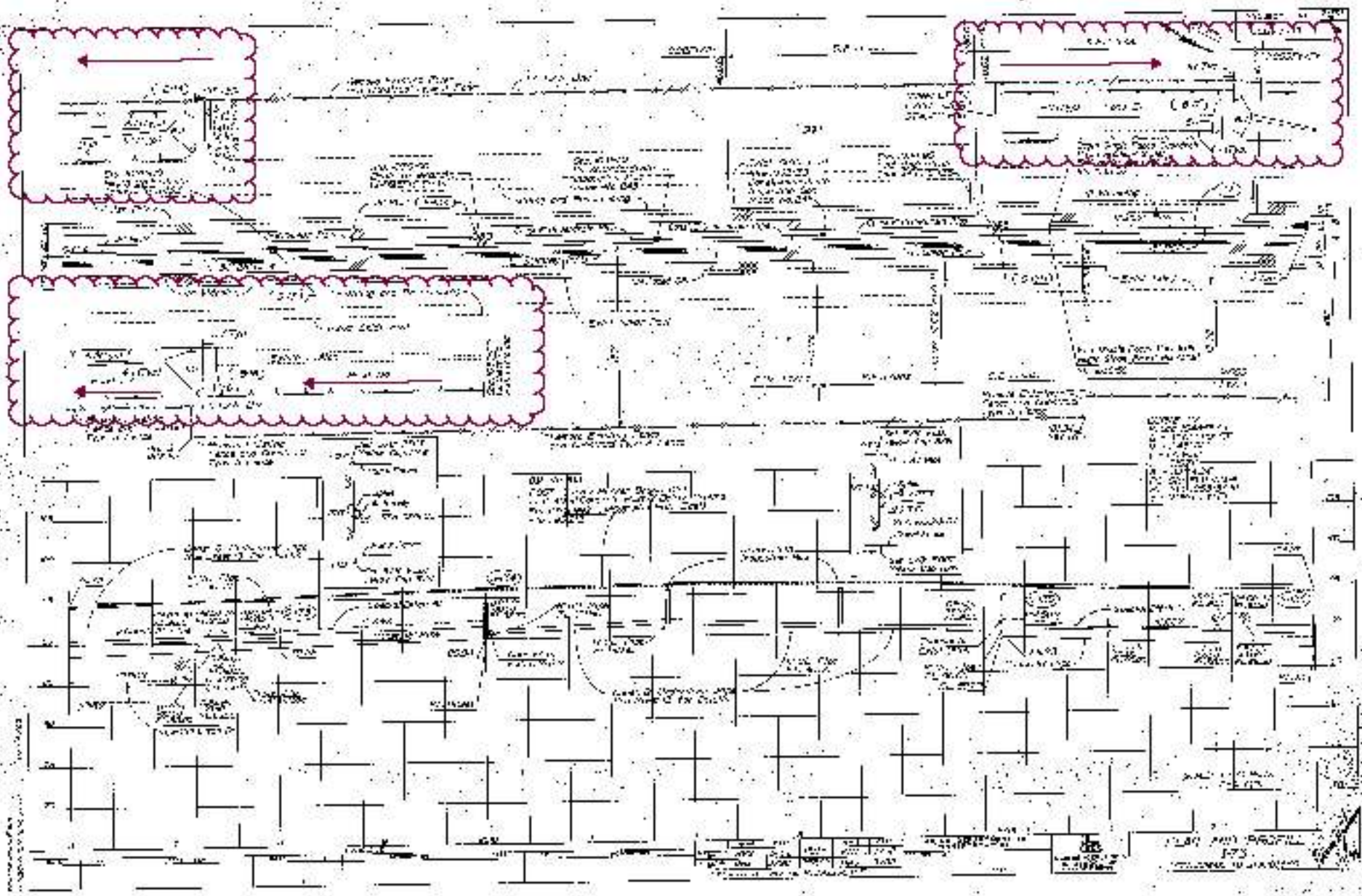


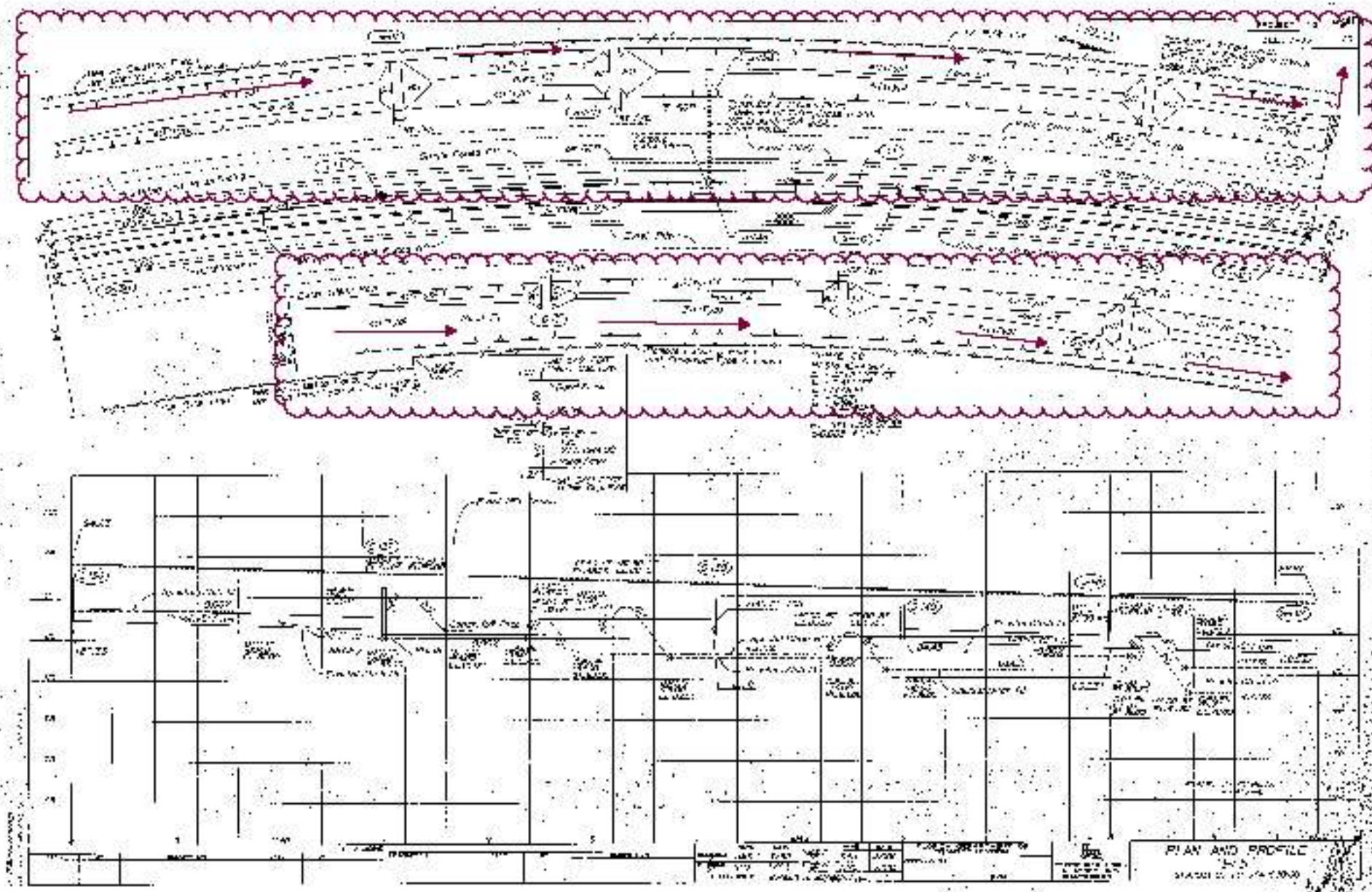


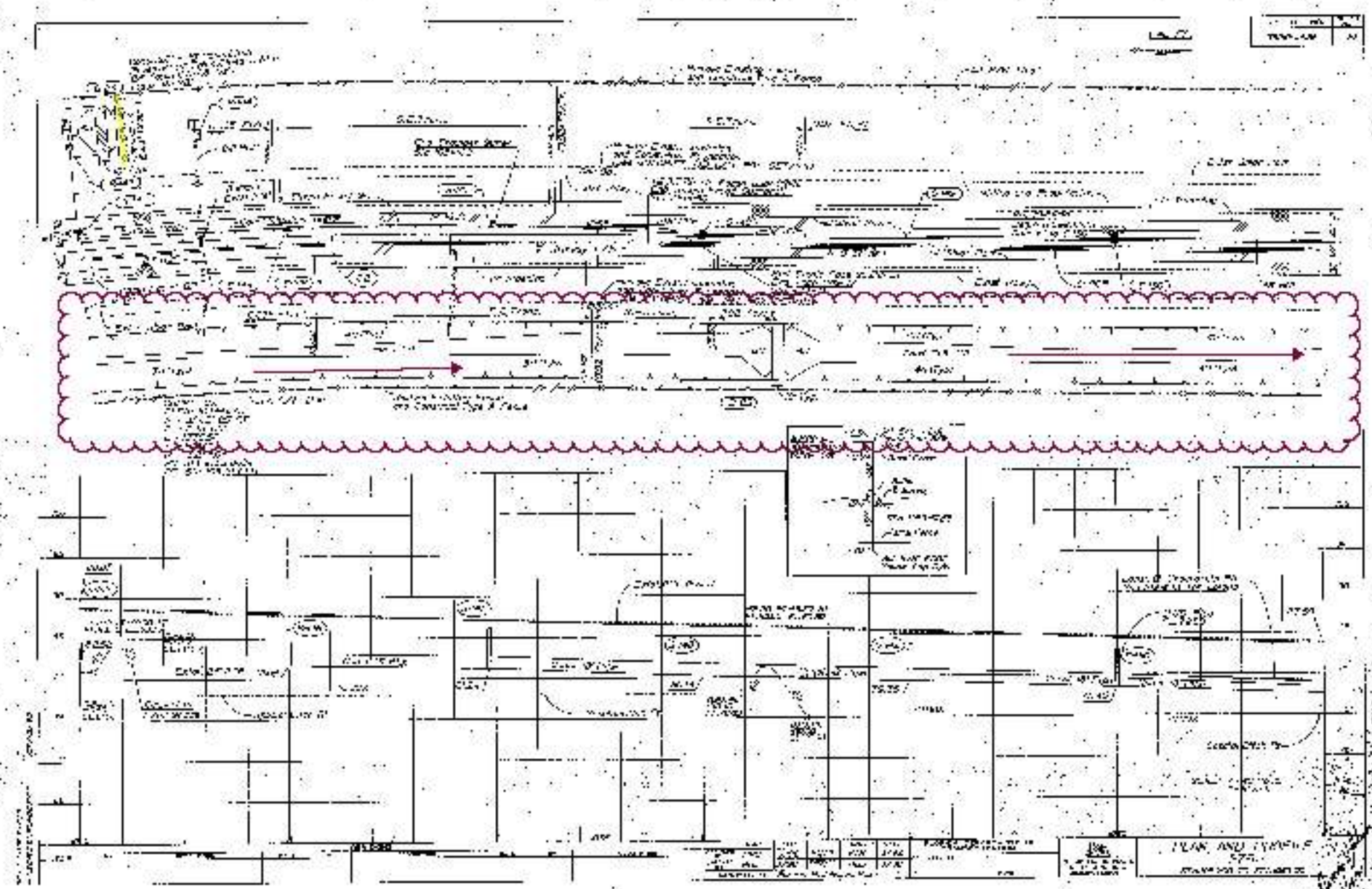


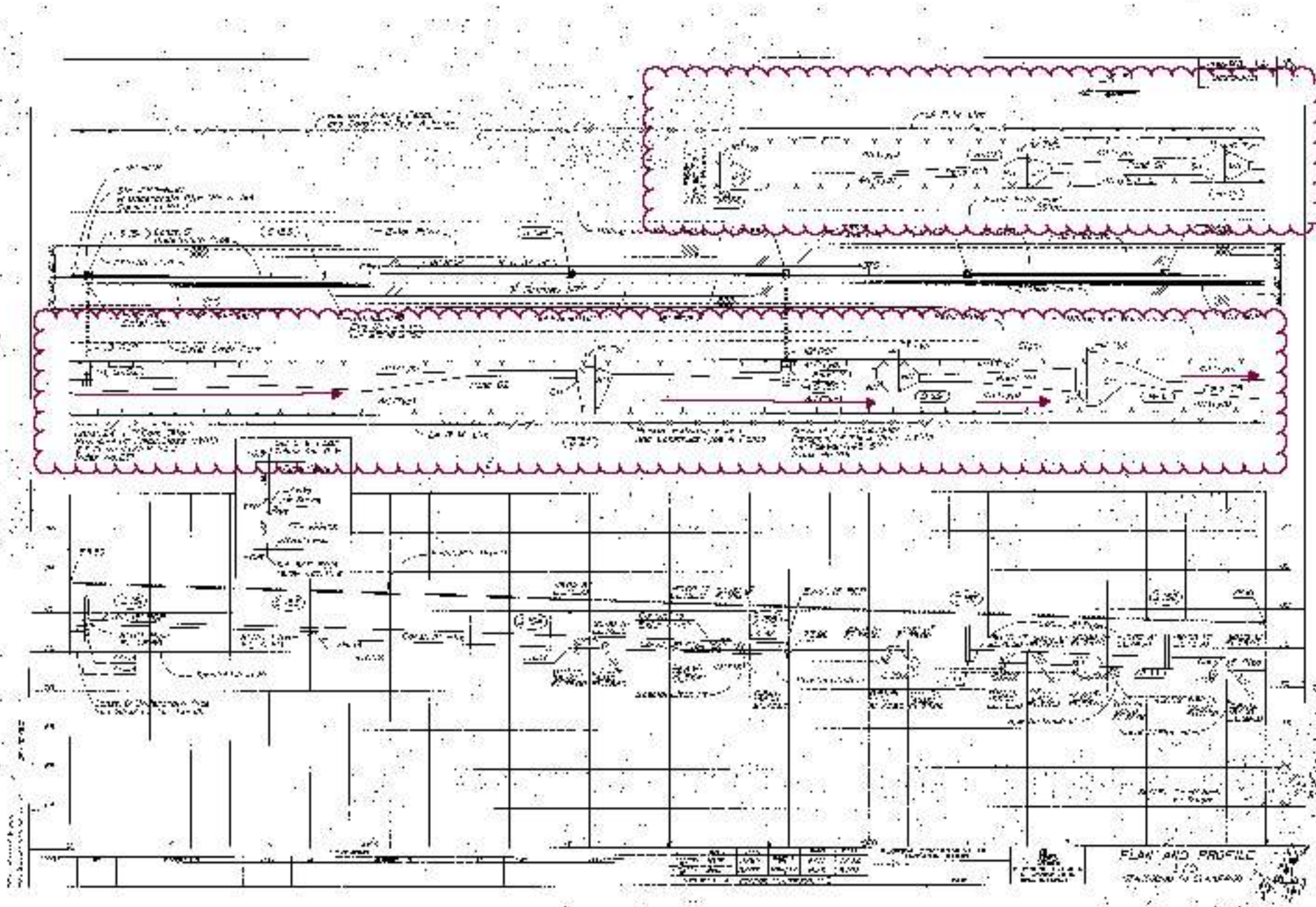

PLAN AND PROFILE

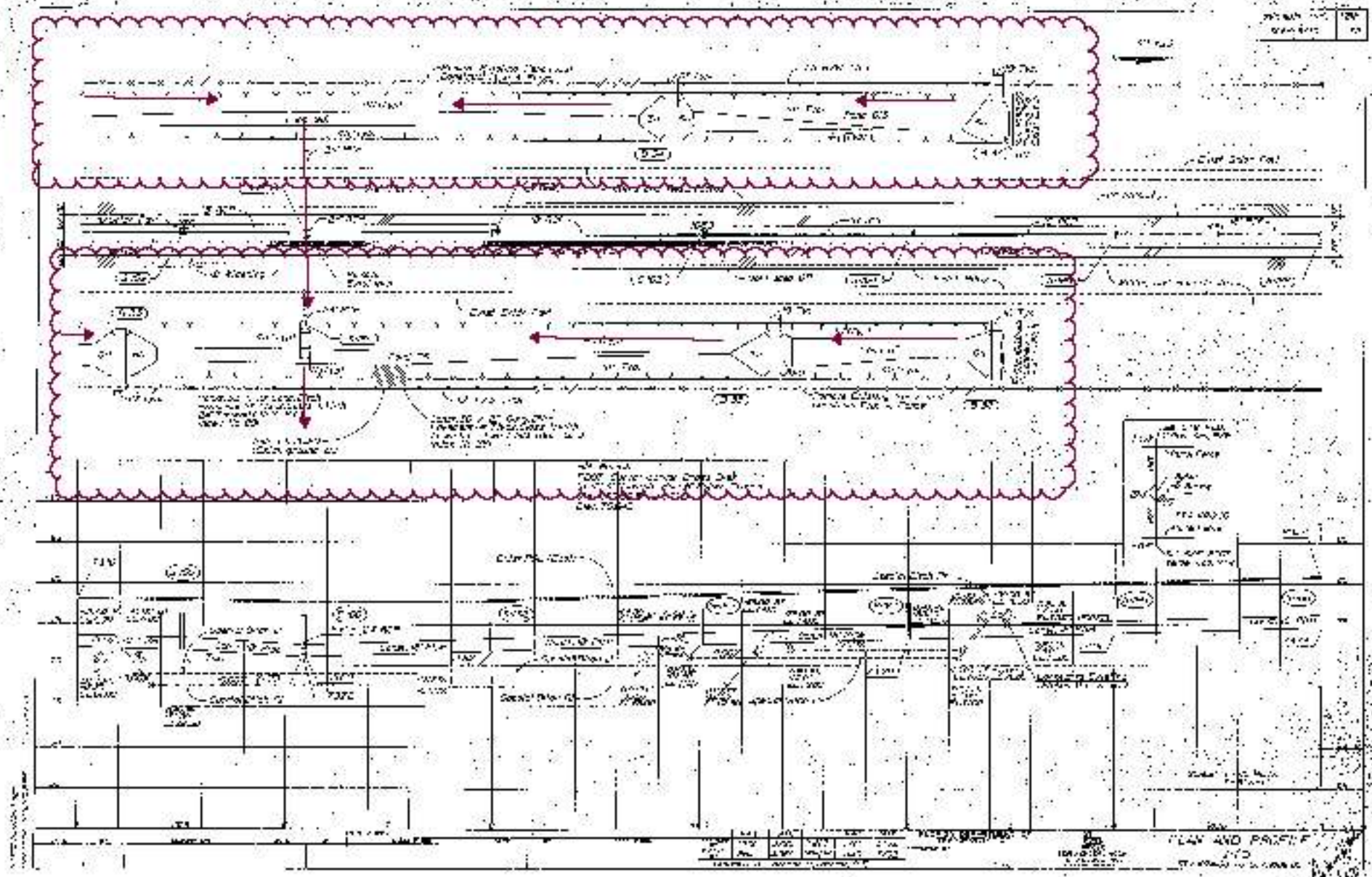


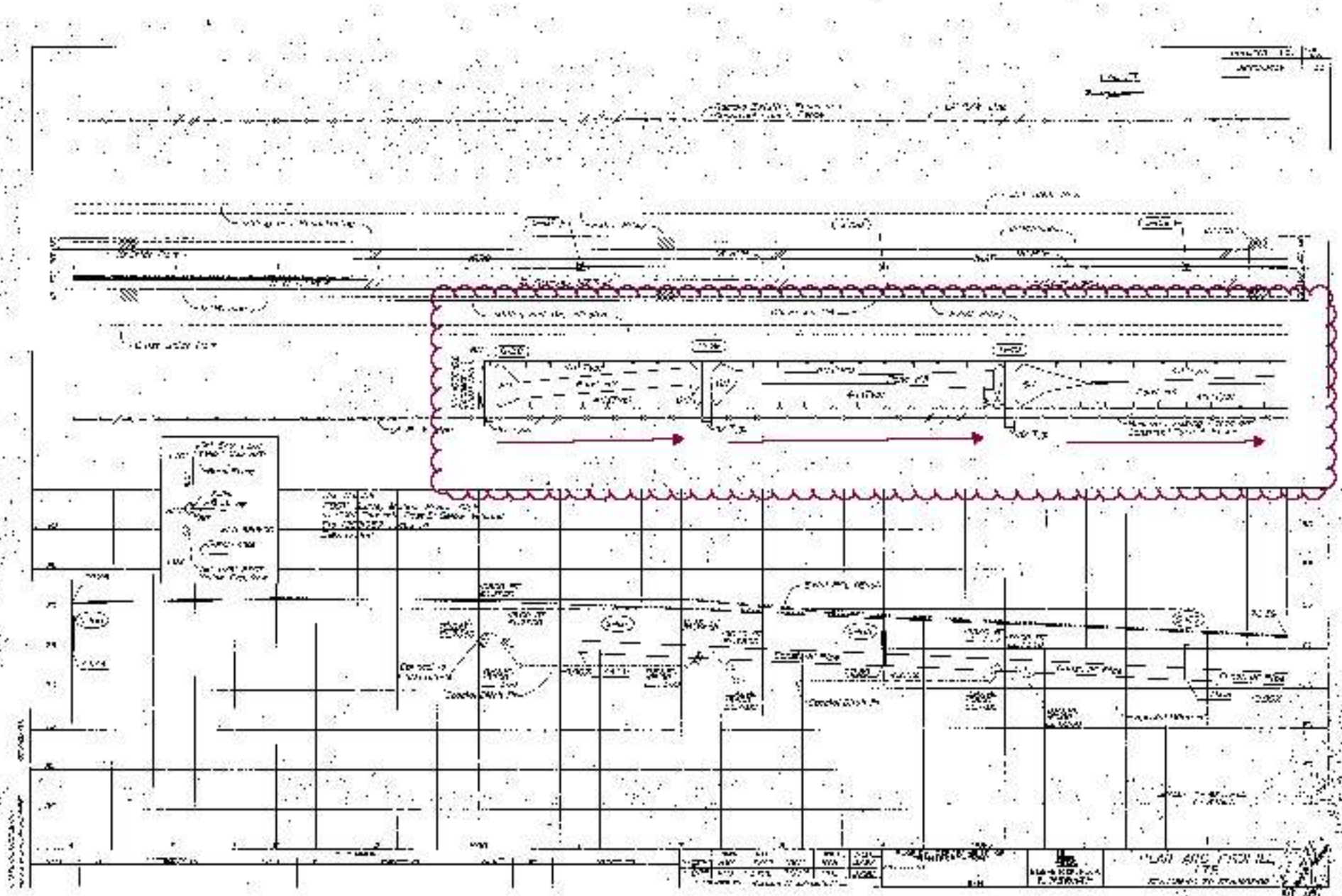


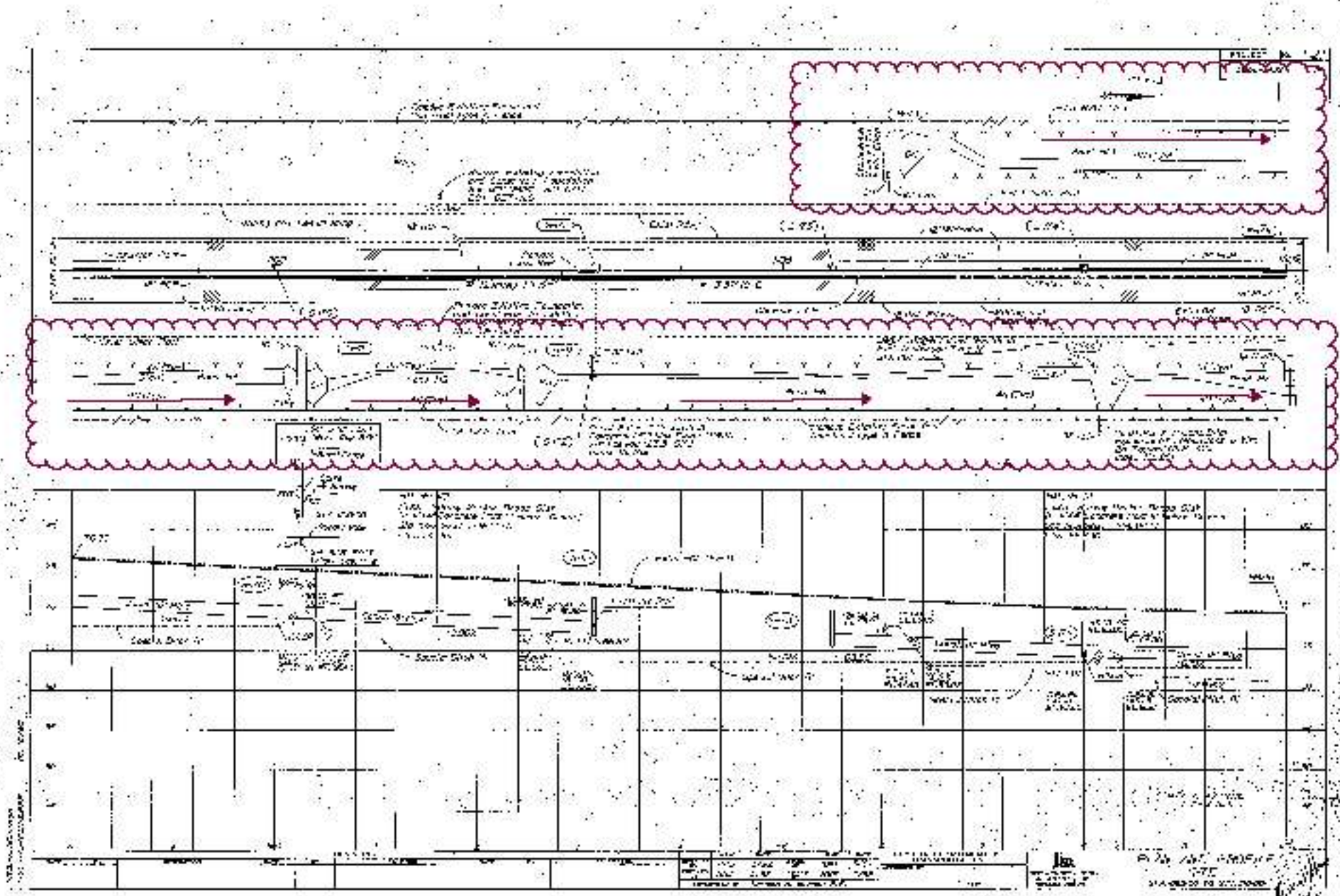

PLAN AND PROFILE

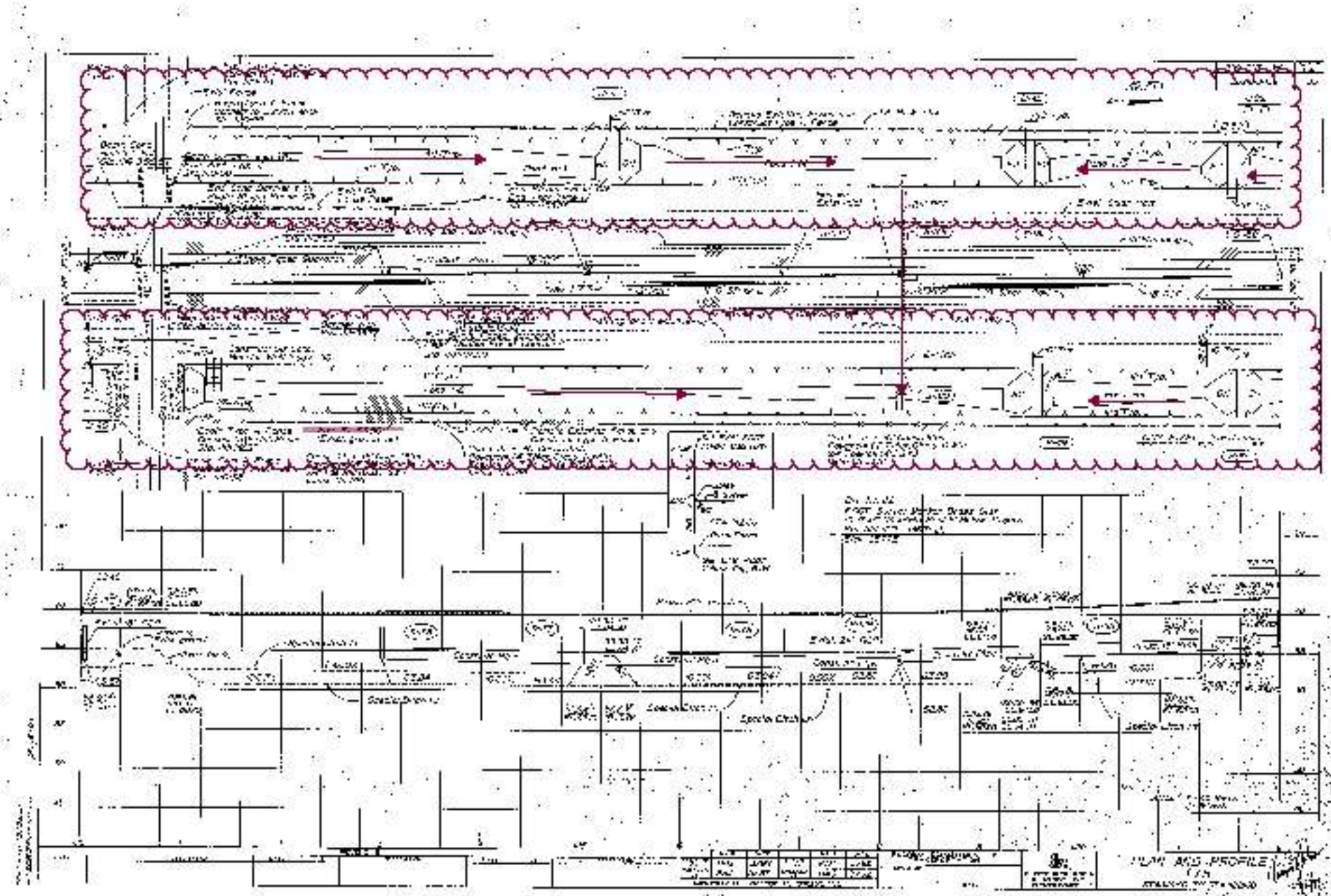


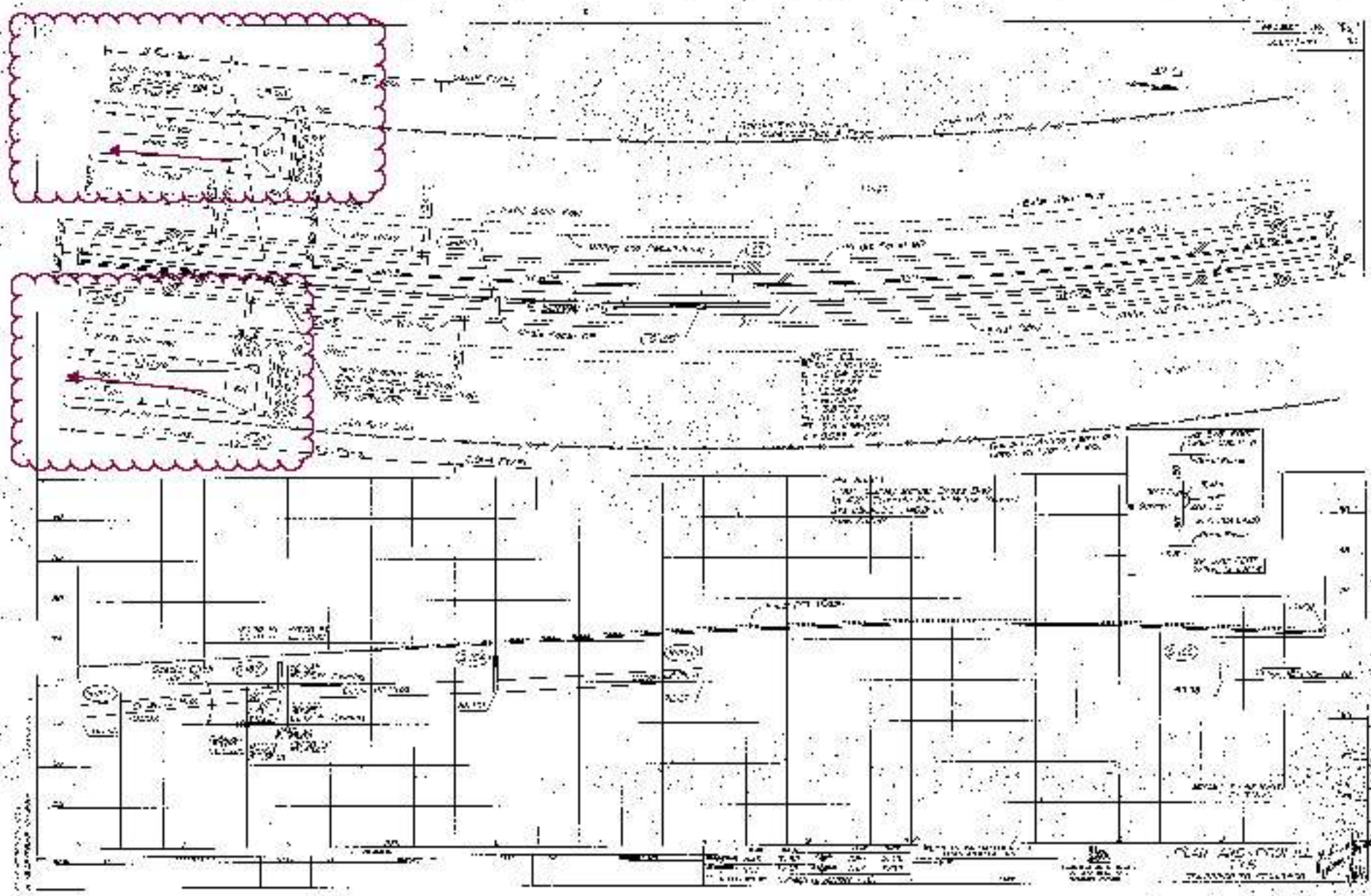

PLAN AND PROFILE

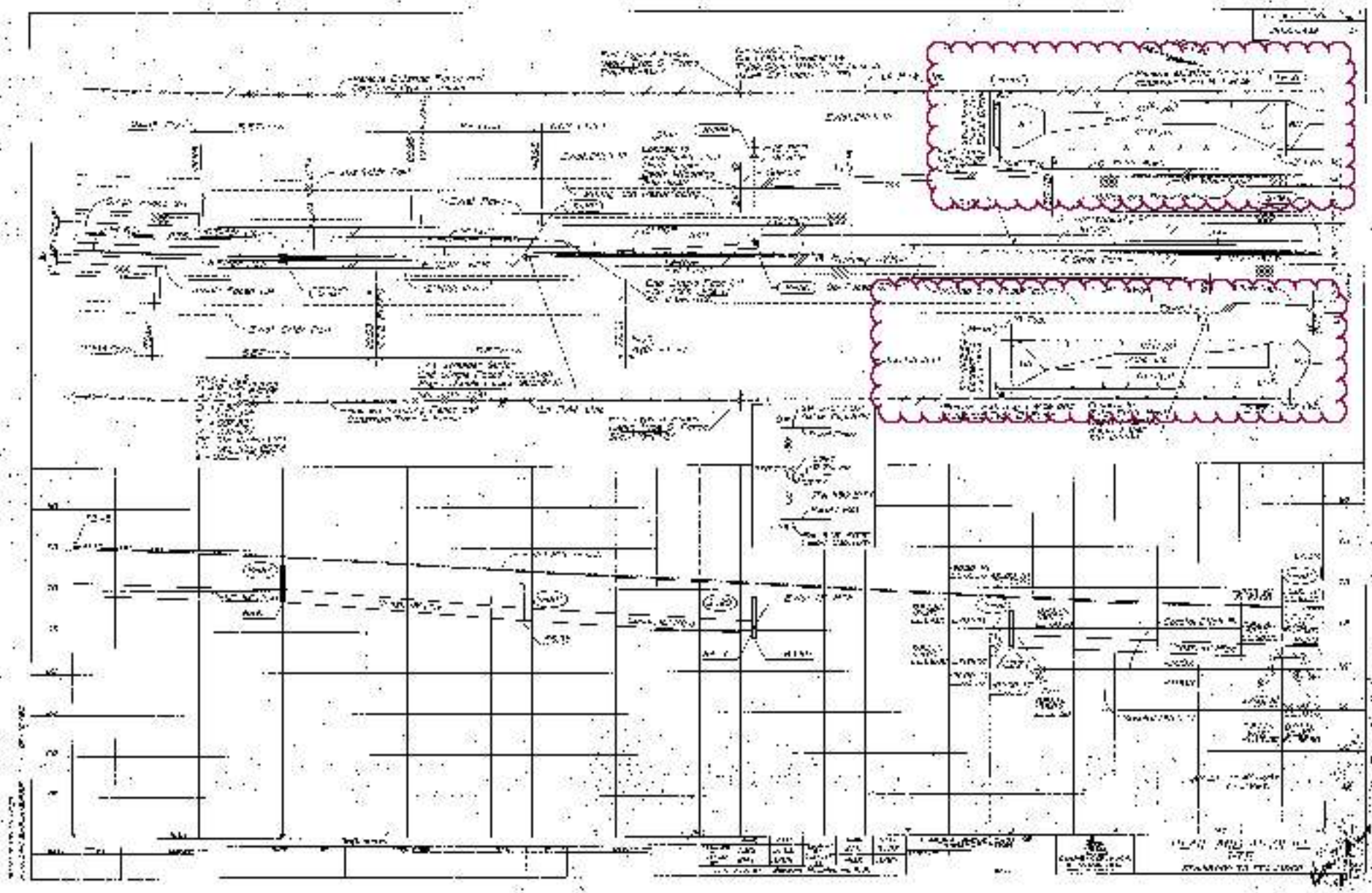

PLAN AND PROFILE

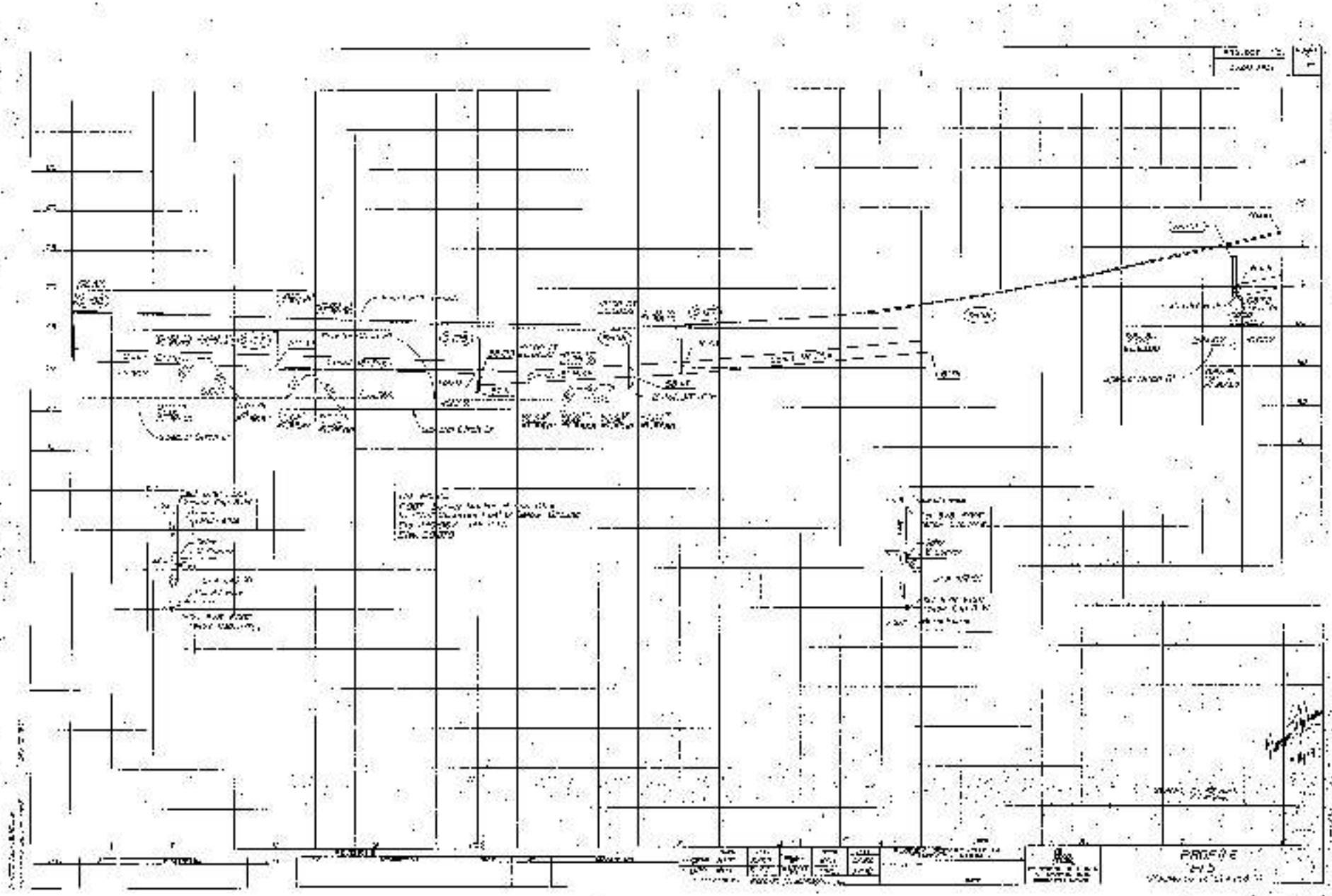


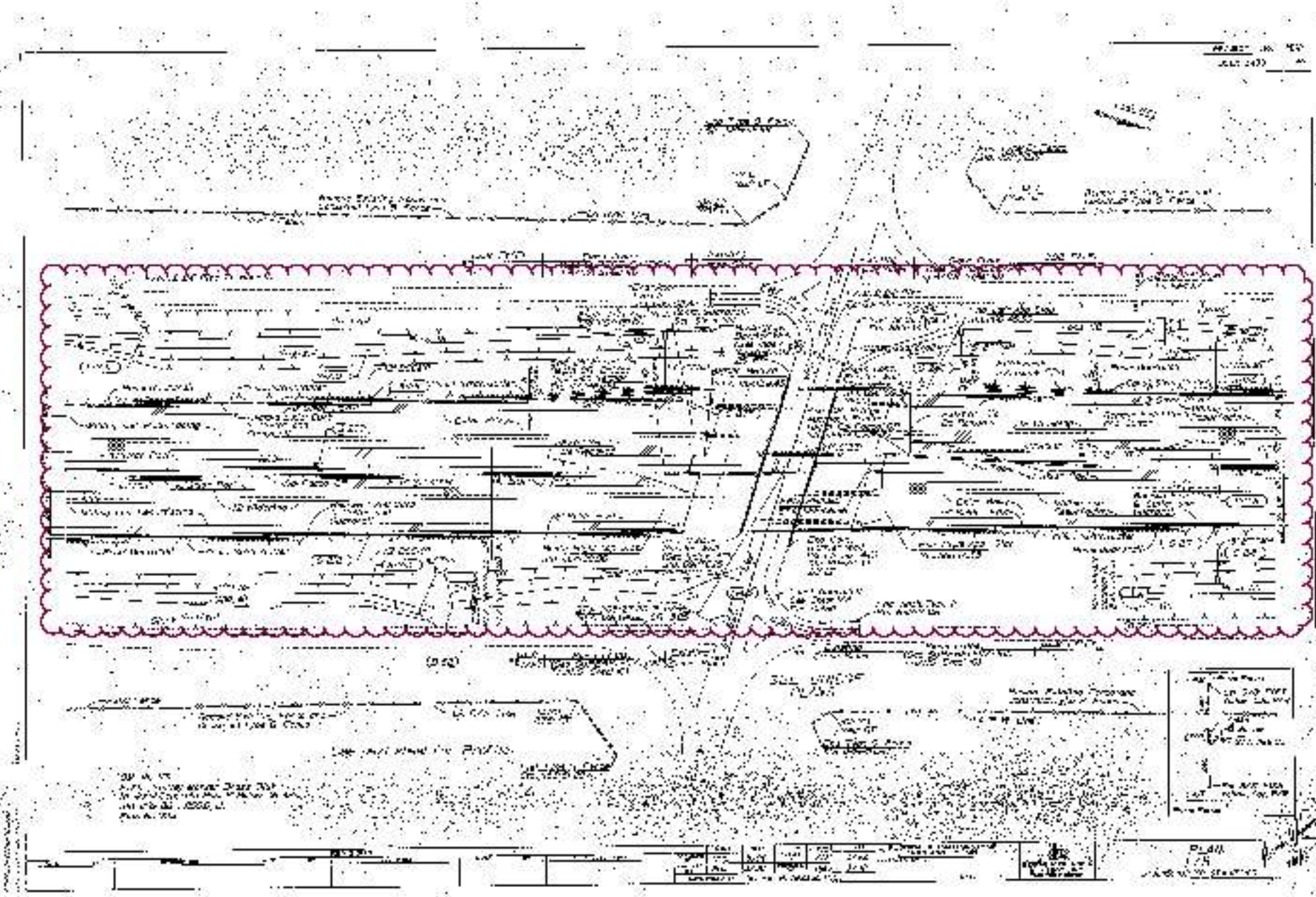


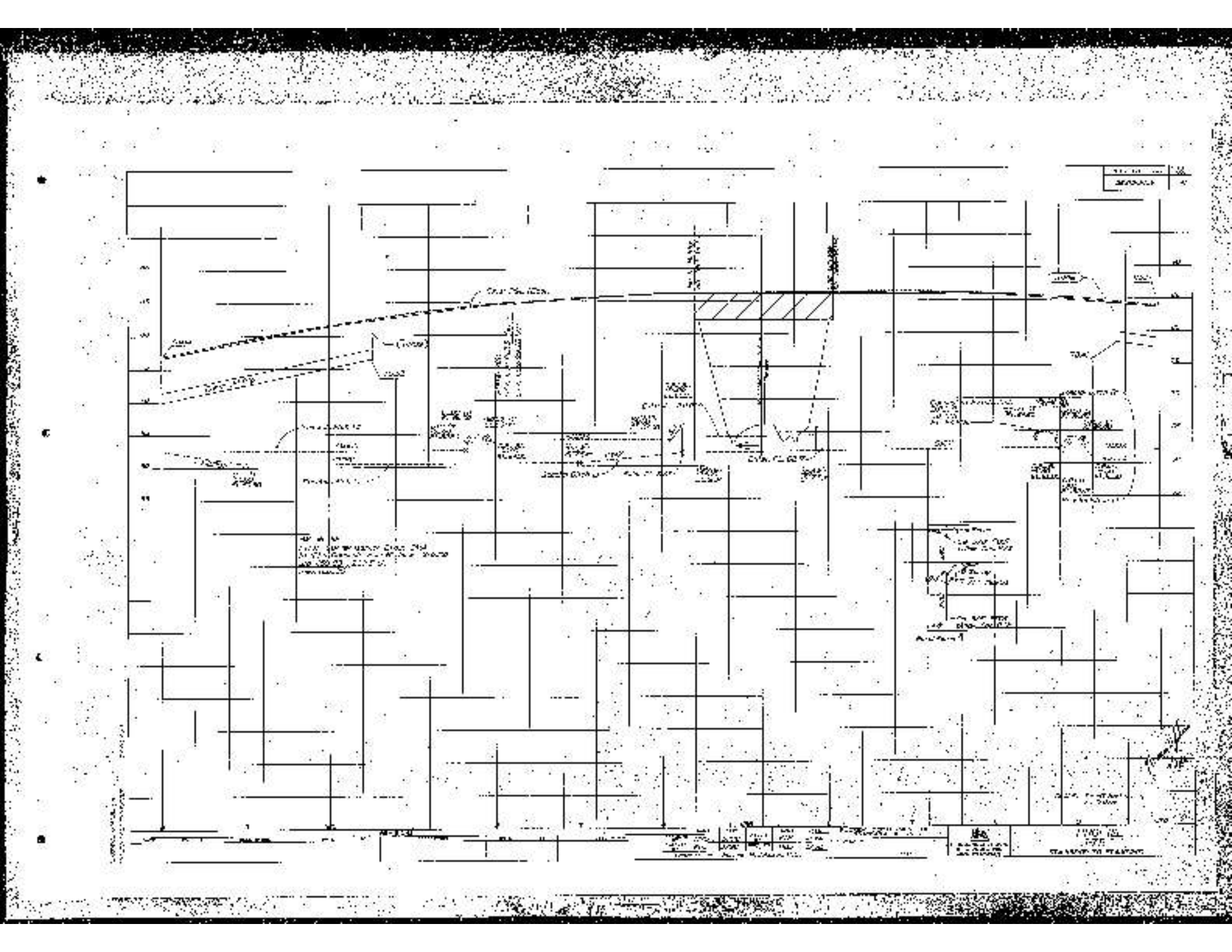


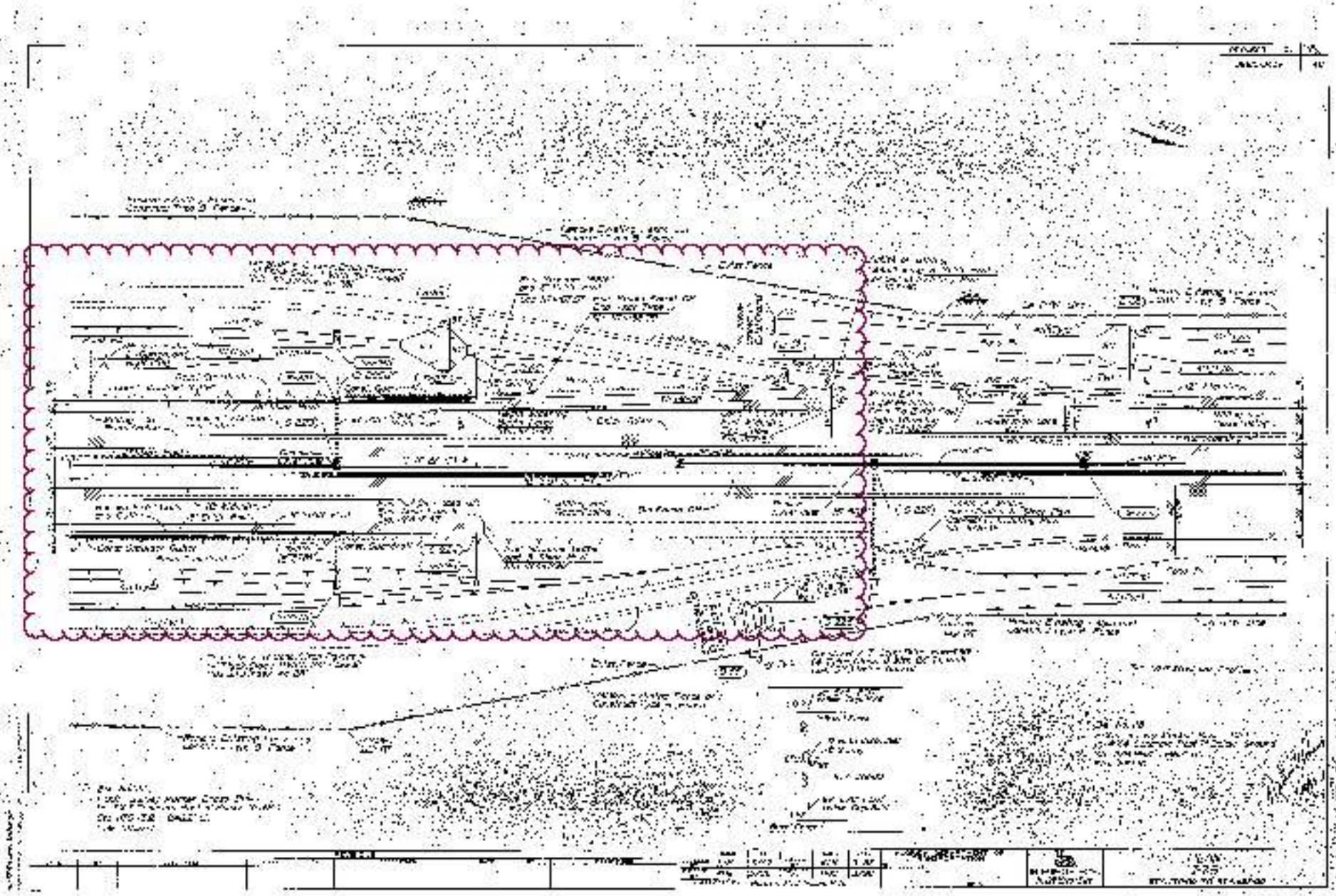


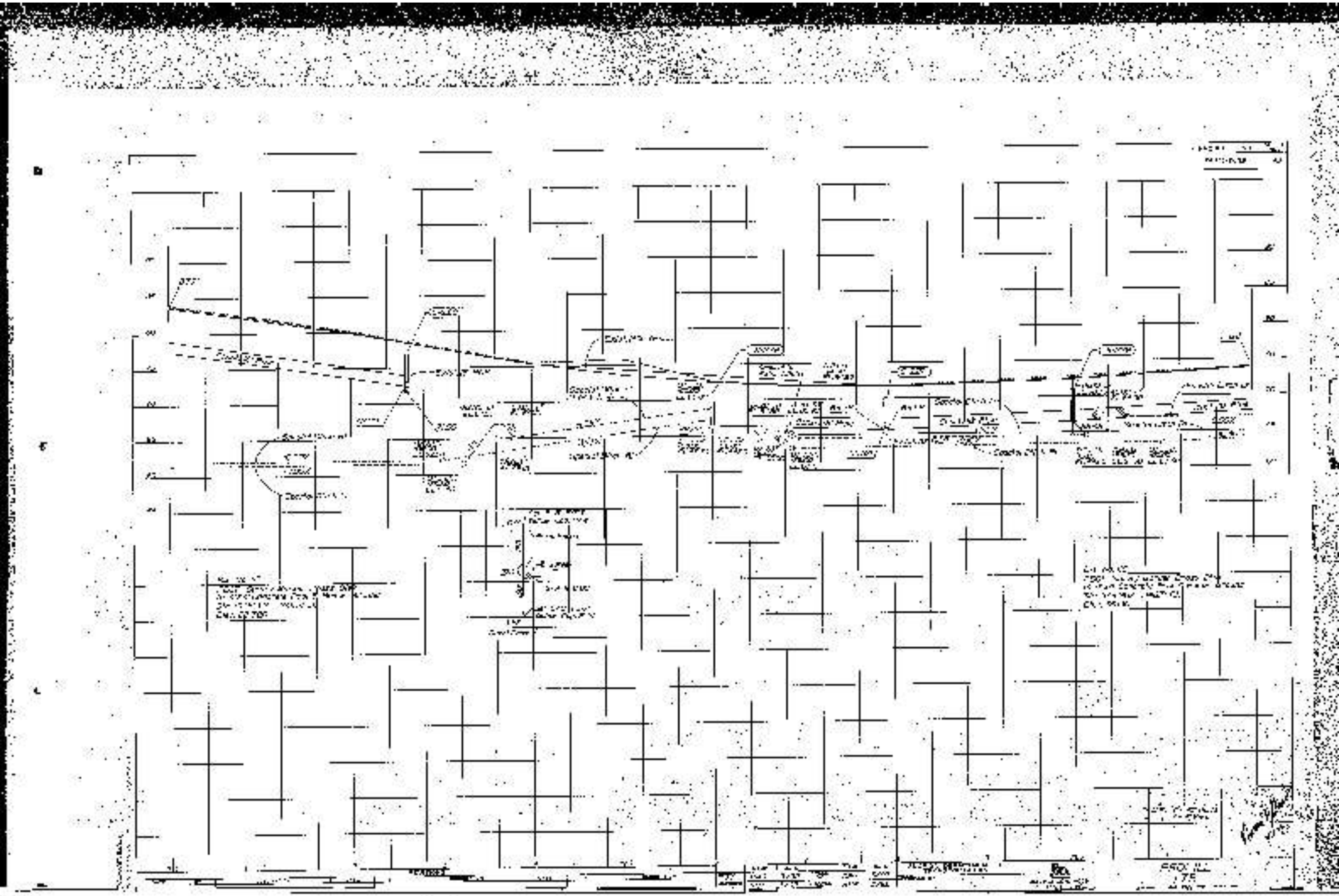


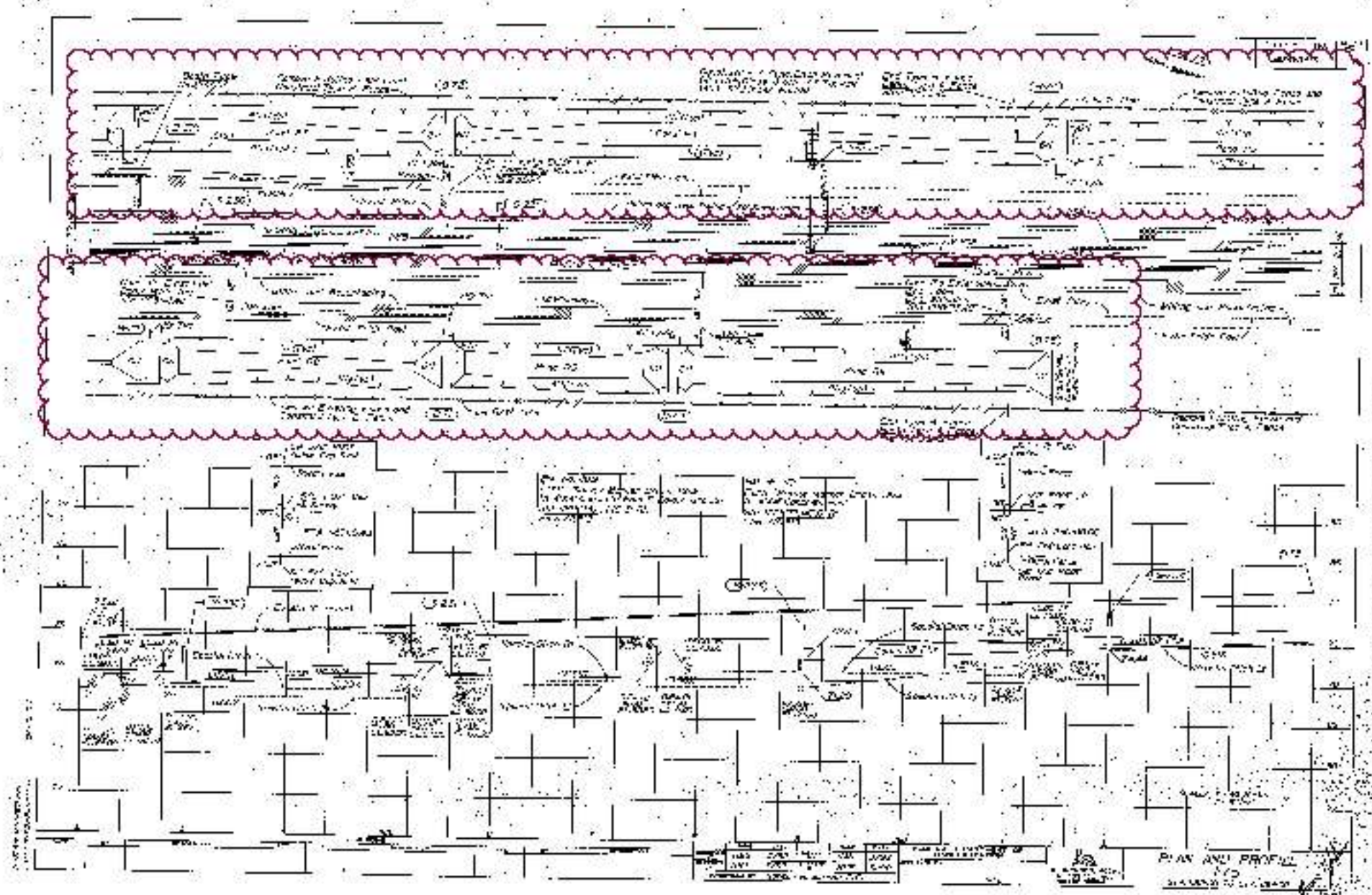


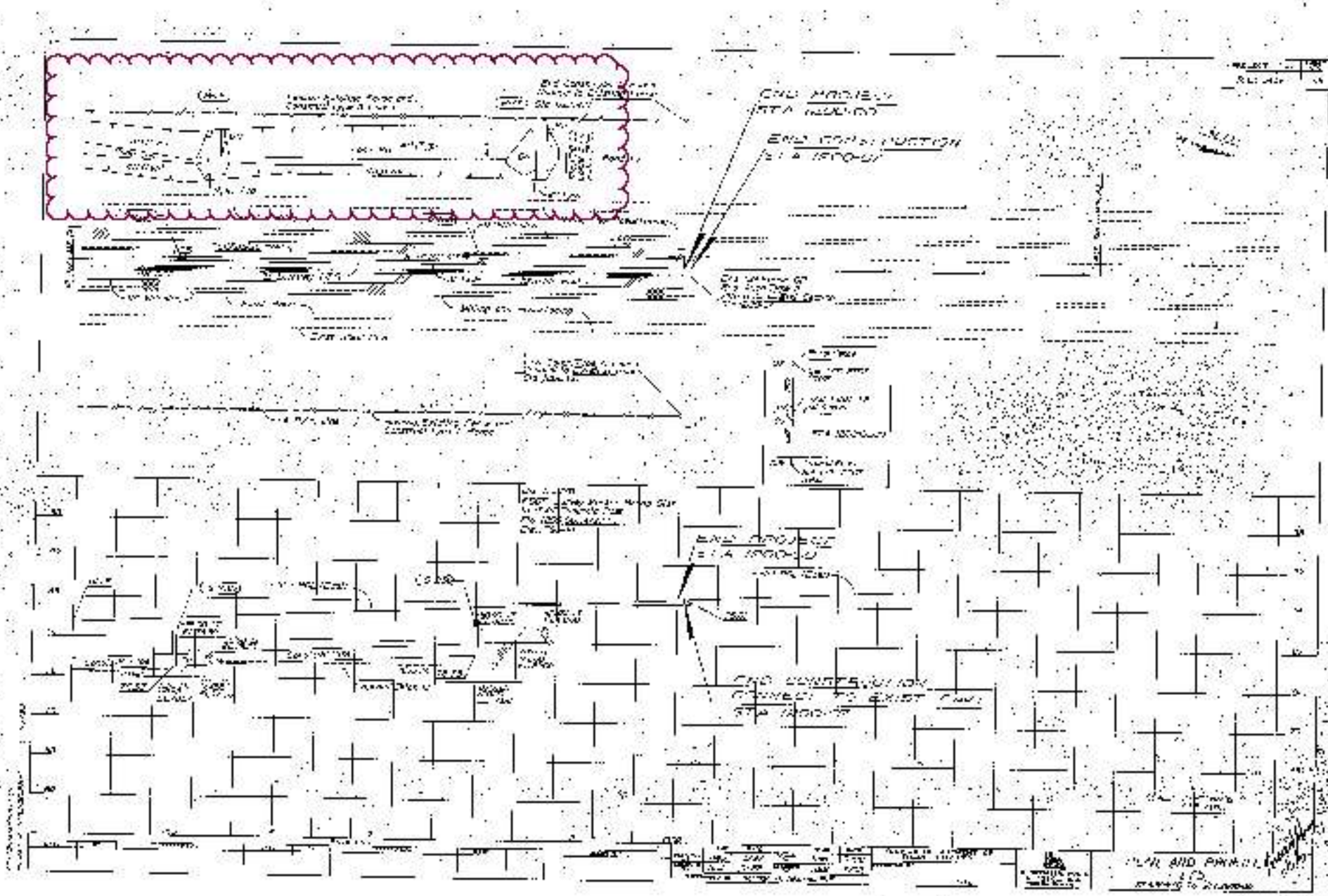


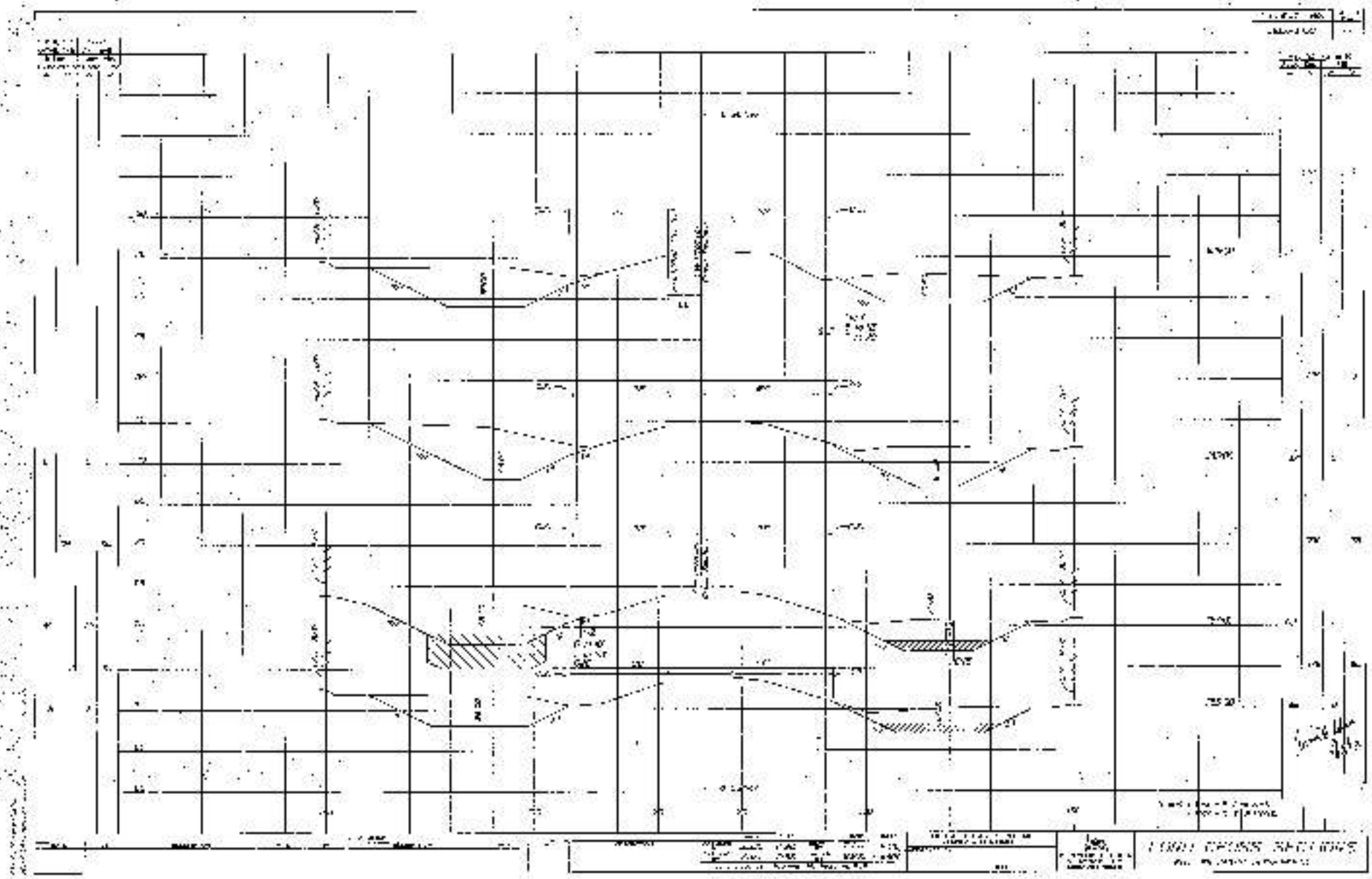







PLAN AND PROFILE





Appendix F
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.

Patel, Greene & Associates, LLC | 12570 Telecom Drive, Temple Terrace, FL 33637 | 813.978.3100 | patelgreene.com

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.

Patel, Greene & Associates, LLC | 12570 Telecom Drive, Temple Terrace, FL 33637 | 813.978.3100 | patelgreene.com

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.

Patel, Greene & Associates, LLC | 12570 Telecom Drive, Temple Terrace, FL 33637 | 813.978.3100 | patelgreene.com

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.

AGENDA

Project:	I-75 Auxiliary Lane PD&E Study (FPID: 443624-5)
Subject:	Environmental Look Around
Date:	December 15, 2023
Location:	Microsoft Teams Meeting
Attendees:	David Graeber – FDOT Project Manager North Project
	Steven Waterston – HDR Project Manager
	Micheal Holt – PGA, North Project Drainage Lead
	Steven Schnell – HDR
	Stephen Browning – FDOT Project Manager South Project
	Scott Golden – Volkert Project Manager
	John Palm – Volkert Deputy Project Manager
	Miranda Glass – Volkert, South Project Drainage Lead
	Ferrell Hickson – FDOT District Drainage Engineer
	Efren Riveria – FDOT Drainage
	Gregory Lesick – FDOT Environmental Permitting
	Casey Lyon – FDOT Environmental Manager
	Jennifer Fengren Cappelleti – FDOT Environmental Permitting
	Chris Kuzlo – Chief Professional Engineer, SWFWMD
	Albert A Gagne – SWFWMD
	Michelle Reiber – SJRWMD
	Adele Mills – FDEP
	Laurie Dolan – Environmental Specialist, FDEP Cross Florida Greenway
	Mary Jensen – Marion County, Transportation Engineer
	Doug Hinton – Marion County, Deputy County Engineer
	Tracy Straub – Marion County
	Bradley Arnold – Sumter County, County Administrator
	Matthew Tadlock – Sumter County
	Thomas McLendon – Mott MacDonald, South Project Drainage Sub
	Arthur Hooks – Volkert
	Aayushi Vagadia – PGA

1. **Attendee Introductions**

2. **Project Presentation (provided via attachment)—Stephen Browning, Michael Holt, Miranda Glass**

    - **ELA Purpose**
        - Discussed purpose of this ELA is to look for opportunities for joint stormwater management projects with agencies, stakeholders, or ongoing adjacent projects.
    - **Project Introduction**
        - Project Development and Environment (PD&E) Study for proposed operational improvements to the I-75 corridor in Marion County.
        - Includes construction of auxiliary lanes between interchanges for an eight-mile segment of I-75 between S.R. 200 and S.R. 326.
        - 22 miles from South of S.R. 44 to S.R. 200
    - **Existing Drainage Conditions (breakdown by Sumter vs. Marion)**
        - Primarily closed basins.
        - Primarily closed collection/conveyance systems.
        - Treatment within the R/W via linear treatment swales and/or in-field ponds at the interchanges.
    - **Proposed Drainage Conditions (breakdown by Sumter vs. Marion)**
        - Maintain the existing drainage patterns, crossdrains, and outfall locations as much as possible.
        - Provide treatment volume for the proposed additional impervious, not all ROW area.
        - Three pond alternatives within each basin.
        - North Project - Alternatives designed for full containment of the 100 year/10 day storm volume.
        - South Project - Alternatives designed for volume attenuation of the 100 year/10 day storm volume.
        - Dry ponds preferred where feasible in all basins.
    - **Related Projects (breakdown by Sumter vs. Marion)**
        - Marion Oaks Manor
        - NW 49th/35th Street
        - SW 49th Avenue (Marion Oaks Trail to SW 95th)
        - N 44th Avenue (SR 40 to NW 11th Street)
        - NW 35th Street to SR 326
        - SW 44th Avenue (SR 200 to W 20th and SW 20th to SR 40)
        - 49th Street Interchange
    - **Opportunities for Joint or Regional Stormwater Management Facilities (breakdown by Sumter vs. Marion)**

- Identified known City of Ocala ponds along SW 42nd St for consideration of available volume or expansion/retrofit potential
- Requested information regarding potential developments or Future Capital Improvements planned

3. **Open Discussion (referencing attached Google Earth kmz)**
   - **Brad Arnold**
     - Historic Community of Royal – not recognized boundary in County's comprehensive plan/nor regulatory boundary – do not have to curtail design to
     - Ponds South of SR 42. Property is zoned industrial, and County is reaching out to owners (Werner Trucking) regarding joint ponds
   - **Tracy Straub**
     - Joint Pond (approaching 42nd and SR 200) as parallel County 49th project has identified ponds in this area, particularly around Basin 31, Alternatives A & B.

- New roadway right-of-way will clip pond (road is platted) Coordinate w/ Engineers. County discussing right-of-way with property owners. Have parcel sketches in hand (have ROW from Cul-de-sac to south already secured). Also parcels to north is new multifamily development in final stages of design. Parcel to south is to be commercial development. Need further coordination with County/FDOT/Stakeholders. FDOT ROW will reach back out to County. County to share alignment with FDOT.

- Water retention planned for similar locations to the two identified pond alternatives

- **Michael Holt**
  - SJRWMD boundary covers much of the area along I-75. Which agency is lead?
- **Michelle Reiber**
  - Stated SJWMD has historically permitted much of this area. Which agency has largest amount will typically be lead. Will discuss further with FDOT and Agencies. An interagency agreement will need to be completed to allow for review of one agency for the other agency.
- **Matthew Tadlock**
  - No comment
- **Ferrell/Casey**
  - ELA meeting to do better method/ways to coordinate. Please let us know of any big developments coming. Let us know of any environmental projects coming or on shelf. FDOT can assist build/combine with this project
- **Tracy Straub**
  - Marion Flyover at south end of County being expedited. Have had discussion with consultant to facilitate sooner
  - CR 484, constrained intersection, Needs to be widened under interchange. Would like to work that into this project
  - CR 66 intersection with 49th Avenue already designed. Geometry/bridge elevation is a concern. Need further coordination with team due to tight transition
  - 49th at north end of project, County wants to partner with FDOT to expedite jobs so timing works
- **Ferrell Hickson/Casey Lyon**
  - Any project is acceptable, not just stormwater. Anything to improve water quality. Just completed septic to sewer.
- **Miranda Glass**
  - Closed basins- attenuation volumes are biggest driver for ponds. If no pond is preference by property owner, we would like to consider that option even if there's a way to provide treatment prior to letting the water go. In south, there's a large potential to work with large parcel owners. Need to have one-on-one meetings to have deeper discussion.
- **Stephen Browning/ Casey Lyon**
  - Have done similar to no ponds on Ocala National Forest. Did vegetated buffers and showed flooding would not occur in forest. They did accept the water and was permitted through SJRWMD. Do not want ponds on greenway.
- **Miranda Glass**

- In areas of TIFF, considering treatment in R/W for interim project and controlling discharge via spreader swales
- For ultimate with 90% impervious in R/W, any biotreatment (BAM) or in ROW options during interim would be impacted but would still allow to keep greenway in naturally existing conditions

- **Laurie Doyle**
  - Mickey Thomason (not on call) but wants to preserve greenway as much as possible
  - Wants to continue further discussion for greenway absorbing all discharge
- **Scott Golden**
  - Goal is to reach resolution with sound/good options to environment. Also not flooding or while minimizing impacts to greenspace. Ponds are worse case scenario. Stephen Browning concurs
- **Adell Mills**
  - Why two ponds to northern end (Basin 21, Alternatives B & C)? Why come in so far away from interstate?

- **Miranda Glass**
  - Due to lack of elevation/groundwater/soil profiles and not impacting roadway hydraulics
- **Casey Lyon**
  - Each basin has three alternatives.
- **Miranda Glass/ Scott Golden**
  - Do have opportunity in this area to work with existing R/W. Pond sizes assume R/W not used, but analysis is ongoing. The ponds are worst case

scenario based on desktop analysis. As data is provided, design will modify as needed. Final design should be one pond and not all three alternatives.
    - Keyhole area (Currently Basin 19, Alternative D) does not accommodate ultimate. Considering pond in FDOT section area to help.
    - Most of the natural low storage areas within the TIITF are fully contained within the TIITF, which avoids potential for downstream impacts from a "no pond" option.
    - Two lows in basin 16/17. Will try to have one pond and discharge to two low areas (minimize impact floodplain)
- **Ferrell Hickson/ Casey Lyon**
    - Let water go into natural lows and not remove trees. Keep natural habitat. No downstream impacts.
    - Prefer line easement. No restriction to property owner if DEP will accept it. Will model to show no impacts/flooding that will kill vegetation/trees.
    - Easements takes time to get through R/W. They have to go to ARC. Consultant to complete calcs to present to WMD
    - Line easements on our property do not go to ARC
- **Adell Mills ?**
    - Would prefer a "no pond" option if possible
- **Brad Arnold ?**
    - CR 475/ CR 466 design roundabout design is at 90%. In work program (LAP) already
- **Ferrell Hickson**
    - Consider all options via alternative projects
    - Money for septic to sewer – could free up funds for Cities to do more with their funds
    - Treatment Plant Retrofit
- **Tracy Straub**
    - Any new development project in/adjacent the corridor. Projects do not have to be just roadway, drainage, or treatment projects. Sumter going to go back and discuss with utilities department possible projects
- **Stephen Browning**
    - Please expedite any needs or concerns as the schedule means need to know ASAP

4. **Action Items**
    - Provide slides of alternatives and kmz to group
    - FDOT ROW will reach back out to Marion County. County to share alignment with FDOT

- Further coordination with FDOT and Agencies needed to determine lead review agency. An interagency agreement will need to be completed to allow for review of one agency for the other agency.
- Produce stormwater model that details stormwater discharge in area of greenway will not kill vegetation/trees via flooding.
- Further discussion with greenway regarding discharge of treated water to forest. Preserve as much greenway as possible.
- Work with owners/FDEP for line easements for stormwater discharge corridor
- Counties to have further discussions for projects to bring to FDOT for coordination (does not just have to be drainage projects).
- Include Melissa Parsons and Tanya McHale in future meeting to represent SJRWMD.
    - mparsons@sjrwmd.com
    - tmchale@sjrwmd.com


S.R. 326
NW 49th St.
I-75 North from S.R. 200 to S.R. 326
S.R. 40
S.R. 200
I-75 South from Florida's Turnpike to S.R. 200
S.R. 44
OCALA
BELLEVIEW
WILDWOOD
COMMUNITY OF ROYAL
SUMTER CO.
INVERNESS
75
441
301
326
500
27
40
25
492
464
35
200
41
44

Appendix G

Review Comments and Responses

Submittal Report

Financial Project:	452074-1	Submittal Type:	OTHER
Submittal Phase:	PD&E	Submittal Staff Type:	CONSULTANT
Received Date:	2/14/2024	Response Due Date:	3/1/2024
Grace Period:	0	District:	FIFTH
Status:	OPEN	Create Date:	2/14/2024
Create User Id:	KNAPRGD	Last Update:	2/14/2024
		Last Update User Id:	KNAPRGD

Description:

I75 Improvements PDE (North) PSR Draft 1

Threads:

Name	Assignment	Due Date	Status	Comments
David Graeber	IN-HOUSE PROJECT MANAGER	2/23/2024	ACTIVE	0

Name	Assignment	Due Date	Status	Comments
DAVID VERLANDER	REVIEWER	2/23/2024	ACTIVE	8

No	Status	Current Holder	Reference	Categories
1	COMMENTS SUBMITTED FOR	Steve Schnell		DRAINAGE

Created By	Created On	Version	Delegate For	Response
DAVID VERLANDER	2/23/2024	1		

Please add "Potential for Impacts to Utilities" to Pond Alternatives matrices per FDOT DM 5.5.1.b.viii — Agreed.

No	Status	Current Holder	Reference	Categories
2	COMMENTS SUBMITTED FOR	Steve Schnell	Page 15	DRAINAGE

Created By	Created On	Version	Delegate For	Response
DAVID VERLANDER	2/23/2024	1		

Correct spelling of pond "sitting" in Ch 5.3.4 — Agreed.

No	Status	Current Holder	Reference	Categories
3	COMMENTS SUBMITTED FOR	Steve Schnell	Pages 79-108	DRAINAGE

Created By	Created On	Version	Delegate For	Response
DAVID VERLANDER	2/23/2024	1		

Recommend adding the alignment stationing and contours to the Pond Alternative maps so that basin limits and pond sizing calculations can easily be identified across the report. — Agreed.

No	Status	Current Holder	Reference	Categories
4	COMMENTS SUBMITTED FOR	Steve Schnell	Appendix D	DIGITAL DELIVERY

Created By	Created On	Version	Delegate For	Response
DAVID VERLANDER	2/23/2024	1		

Consider adding a note clarifying the controlling pond volume in the attenuation calculations (25 year vs. 100 year). — Agreed.

No	Status	Current Holder	Reference	Categories
5	COMMENTS SUBMITTED FOR	Steve Schnell	Appendix D	DRAINAGE

Created By	Created On	Version	Delegate For	Response
DAVID VERLANDER	2/23/2024	1		

Revise pond sizes in the the 25yr-96hr attenation calculations to match the pond size shown in the 100yr-10day attenuation calculations. — Agreed.

No	Status	Current Holder	Reference	Categories
6	COMMENTS SUBMITTED FOR	Steve Schnell		DRAINAGE
	Created By	Created On	Version	Delegate For
	DAVID VERLANDER	2/23/2024	1	

Consider Updating the rainfall amounts to reference NOAA Atlas 14 data as FDOT IDF curves have been archived in the 2024 FDOT Drainage Manual.

Response

This PD&E predates the final changes, and NOAA Atlas 14 rainfall will be used to finalized the ponds during the design process.

No	Status	Current Holder	Reference	Categories
7	COMMENTS SUBMITTED FOR	Steve Schnell		DRAINAGE
	Created By	Created On	Version	Delegate For
	DAVID VERLANDER	2/23/2024	1	

Consider Updating the "Water Quality" Sections throughout Chapter 5.3.4 to further clarify how the 100yr-10day storm volume meets SJRWMD water quality requirements.

Response

Descriptive text was added in Section 5.3.4 (Basin Pond Alternatives) explaining the treatment approach

No	Status	Current Holder	Reference	Categories
8	COMMENTS SUBMITTED FOR	Steve Schnell		DRAINAGE
	Created By	Created On	Version	Delegate For
	DAVID VERLANDER	2/23/2024	1	

The Basin 4 station limits in Ch 5.3.4.3 do not align with the Pond Sizing Calculations in Appendix D.

Response

Calc sheet was updated to reflect correct ending station.

Name	Assignment	Due Date	Status	Comments
Efren Rivera	LEAD REVIEWER	2/23/2024	ACTIVE	0
Name	Assignment	Due Date	Status	Comments
Ferrell Hokson	LEAD REVIEWER	2/23/2024	ACTIVE	0
Name	Assignment	Due Date	Status	Comments
James Tew	REVIEWER	2/23/2024	ACTIVE	0*
Name	Assignment	Due Date	Status	Comments
Jeffrey Glenn	REVIEWER	2/23/2024	ACTIVE	0*
Name	Assignment	Due Date	Status	Comments
Jennifer Formgren Cappellet	REVIEWER	2/23/2024	ACTIVE	0*
Name	Assignment	Due Date	Status	Comments
Kyle Howard	LEAD REVIEWER	2/23/2024	ACTIVE	0*
Name	Assignment	Due Date	Status	Comments
Paul Sobert	REVIEWER	2/23/2024	ACTIVE	0*
Name	Assignment	Due Date	Status	Comments
Steve Schnell	CONSULTANT PROJECT MANAGER	3/1/2024	ACTIVE	0