Final Pond Siting Report with Addendum

Florida Department of Transportation - District VII

County Line Road (C.R. 578)
Project Development and Environment Study
From U.S. 19 (S.R. 55) to U.S. 41 (S.R. 45)

Work Program Item Segment Number: 257298 1
Federal-Aid Program Number: 7822 001 S
Pasco and Hernando Counties, Florida

The proposed project involves improving County Line Road (C.R. 578) to a multi-lane facility from U.S. 19 (S.R. 55) to east of U.S. 41 (S.R. 45) in Pasco and Hernando Counties, a distance of approximately 12.0 miles (19.3 kilometers). The project includes a segment of roadway along a new alignment. This segment is referred to as the Ayers Road Extension and extends from the interchange of C.R. 578 and the Suncoast Parkway to east of U.S. 41, a distance of approximately 3.5 miles (5.6 kilometers).

January 2003
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Prepared by:

J. W. Dorzback & Assoc., Inc.
for URS Corporation Southern

January 2003
Revised June 2003

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Section 1.0
SUMMARY

The Florida Department of Transportation (FDOT) conducted a Project Development and Environment (PD&E) study for the roadway improvements recommended for County Line Road (C.R. 578) in Pasco and Hernando Counties. This report addresses the need for stormwater management facilities and includes an alternative analysis for selection of a preferred pond site alternative as well as potential floodplain compensation sites within the study area. The Preliminary Pond Siting Report provides stormwater management locations that are hydraulically functional and environmentally permittable based on the best information available.

The recommended project involves improving C.R. 578 from a primarily two-lane roadway to a multi-lane facility from the vicinity of U.S. 19 (S.R. 55) to the vicinity of U.S. 41 (S.R. 45), a distance of approximately 12.0 miles (mi) [19.3 kilometers (km)]. A segment of roadway on new alignment, referred to as the Ayers Road Extension, is being proposed from the C.R. 578/Suncoast Parkway interchange to the vicinity of U.S. 41 and Ayers Road (C.R. 576), a distance of approximately 3.5 mi (5.6 km). The Ayers Road Extension provides for a continuous travel route between U.S. 19 and C.R. 581 and it also would improve access to the Hernando County Airport with a new connection to the airport.

This recommended project will result in increases in the amount of stormwater runoff, pollutant loadings, and minor floodplain encroachments. These encroachments will require compensating storage of lost floodplain volume. The construction of stormwater management facilities providing attenuation and water quality treatment will also be required. The conceptual pond locations were analyzed and evaluated for Section 4(f) properties, cultural resources such as historic structures and archaeological sites; environmental impacts including wetlands, upland habitat, and protected species involvement; petroleum and hazardous materials contamination; economic factors including acquisition of right-of-way costs; hydrology (soil type and seasonal high water) and hydraulics. The preliminary pond sizes are based on required water quality treatment and attenuation volumes. This report locates, provides approximate size, and evaluates characteristics of each potential stormwater management site.

The project is divided into 24 drainage basins each containing two or more alternative pond site locations. The preferred preliminary pond site locations are listed in Table 1-1. The sizes provided are preliminary and may be revised in the final design phase of the project.

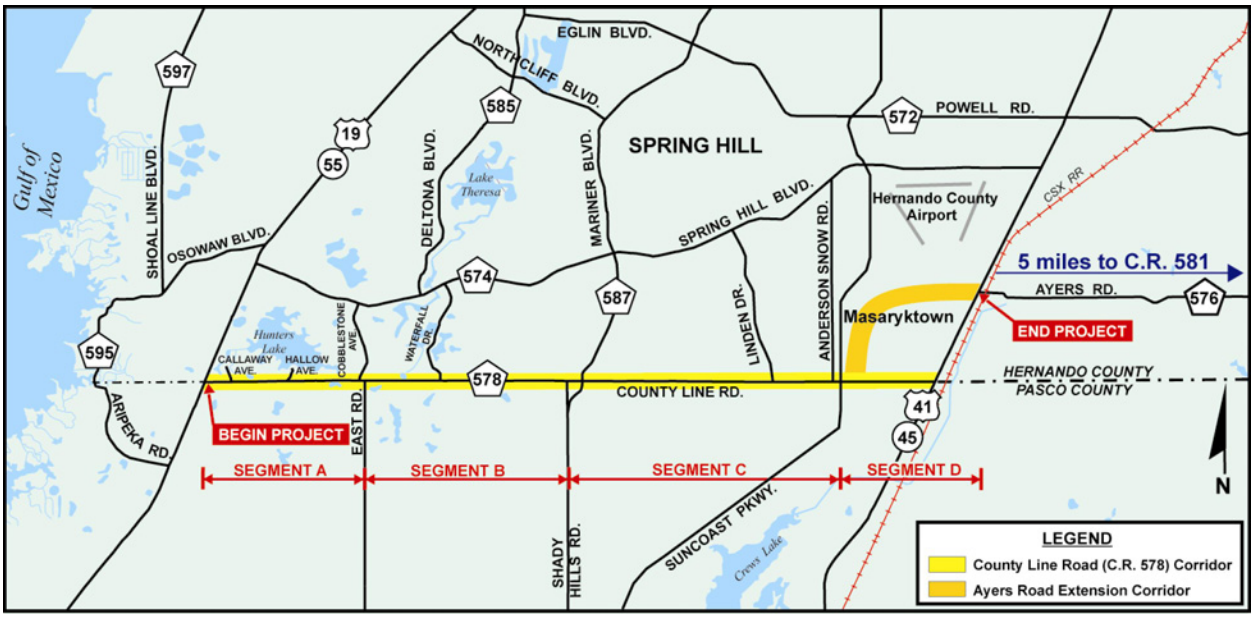
TABLE 1-1
PREFERRED PRELIMINARY POND AND FLOODPLAIN SITES

Pond Number	Location	Required Area (ac)	Available Area (ac)	Estimated Construction Costs	Estimated Right-of-Way Costs	Total Cost
1A	89+00 LT	0.85	0.93	$11,055.37	$15,000.00	$26,055.37
2B	103+00 RT	1.47	1.52	$24,963.91	$15,000.00	$39,963.91
3A	135+00 RT	1.75	1.81	$31,343.68	$503,800.00	$535,143.68
4B	167+00 RT	0.91	1.30	$13,061.39	$607,200.00	$620,261.39
5A	184+00 LT	2.12	2.26	$39,955.81	$357,500.00	$397,455.81
6B	239+00 RT	3.52	3.61	$73,997.15	$273,500.00	$347,497.15
7A	298+00 LT	2.21	2.26	$42,027.49	$483,600.00	$525,627.49
8A	338+00 LT	1.54	1.58	$26,652.59	$617,600.00	$644,252.59
9B	363+00 RT	0.97	1.95	$14,317.53	$856,800.00	$871,117.53
10A	371+50 LT	0.77	0.79	$10,380.35	$1,000,600.00	$1,010,980.35
11B	85+00 RT	4.26	4.30	$92,614.05	$1,755,100.00	$1,847,714.05
12A	102+00 RT	1.73	1.77	$30,907.11	$87,300.00	$118,207.11
13B	145+00 RT	1.29	1.31	$21,034.80	$302,600.00	$323,634.80
14B	167+00 RT	1.29	1.31	$21,034.80	$349,900.00	$370,934.80
15A	184+00 LT	2.17	2.22	$41,100.80	$103,900.00	$145,000.80
Ayers Road Extension - Alignment S-8						
16A	612+00 RT	1.74	2.34	$31,178.96	$15,000.00	$46,178.96
17A	646+00 RT	2.46	2.76	$48,073.78	$195,300.00	$243,373.78
18A	674+00 LT	2.08	2.21	$38,975.55	$61,200.00	$100,175.55
19A	712+00 RT	2.19	2.59	$27,825.32	$156,300.00	$184,125.32
20A	752+00 RT	3.02	3.49	$39,943.87	$179,000.00	$218,943.87
Ayers Road Extension - Alignment S-5						
21A	607+00 RT	2.02	2.16	$34,719.90	$15,000.00	$49,719.90
22B	676+00 RT	5.63	5.63	$127,768.09	$76,000.00	$203,768.09
23A	724+00 RT	2.15	2.87	$27,273.56	$82,800.00	$110,073.56
24A	752+00 RT	3.02	3.49	$39,943.87	$179,000.00	$218,943.87
Floodplain Mitigation Site						
1B	227+00 RT	1.12	1.25	$21,213.32	$239,700.00	$260,913.32

Section 2.0
INTRODUCTION

The Florida Department of Transportation (FDOT) in partnership with Pasco and Hernando Counties conducted a Project Development and Environment (PD&E) Study to evaluate capacity improvement alternatives for County Line Road (C.R. 578) in Pasco and Hernando Counties, as shown in Figure 2-1. The recommended project involves improving C.R. 578 from a primarily two-lane roadway to a multi-lane facility from the vicinity of U.S. 19 (S.R. 55) to the vicinity of U.S. 41 (S.R. 45), a distance of approximately 12.0 miles (mi) [19.3 kilometers (km)]. A segment of roadway on new alignment, referred to as the Ayers Road Extension, is being proposed from the C.R. 578/Suncoast Parkway interchange to the vicinity of U.S. 41 and Ayers Road (C.R. 576), a distance of approximately 3.5 mi (5.6 km). The Ayers Road Extension provides for a continuous travel route between U.S. 19 and C.R. 581 and it also would improve access to the Hernando County Airport with a new connection to the airport.

FIGURE 2-1
PROJECT LOCATION MAP



2.1 PURPOSE

The objective of the PD&E study is to provide documented environmental and engineering analyses that will assist the FDOT and the Federal Highway Administration (FHWA) in reaching a decision on the location and conceptual design for improvements to C.R. 578. This Study will also comply with the requirements of the National Environmental Policy Act (NEPA) and other Federal laws to qualify the recommended project for Federal-aid funding.

The Preliminary Pond Siting Report is part of the documentation needed to complete the PD&E study, and provides supporting data and calculations essential to identifying the most cost effective pond sites for the proposed roadway improvement alternatives. The Preliminary Pond Siting Report also identifies sites suitable for the mitigation of floodplain impacts.

2.2 PROJECT DESCRIPTION

The C.R. 578 corridor is an east/west facility with a functional classification of a major collector. The project is located within Sections 1 through 6 of Township 24 South, Range 17 East and Sections 1 through 6 of Township 24 South, Range 18 East in Pasco County, and Sections 31 through 36 of Township 23 South, Range 17 East; Sections 25, 26, 31 through 36 of Township 23 South, Range 18 East; and Section 30 of Township 23 South, Range 19 East in Hernando County.

C.R. 578 is currently a two-lane rural roadway from U.S. 19 to Callaway Avenue and from Hallow Avenue to U.S. 41. From the vicinity of Callaway Avenue to Hallow Avenue, C.R. 578 has been expanded to a four-lane divided suburban facility with an open drainage system. In addition, for 0.5 mi (0.8 km) west and east of the interchange at the Suncoast Parkway, C.R. 578 has been expanded to a four-lane divided facility. The existing posted speed limit along C.R. 578 ranges from 40 to 55 miles per hour (mph) (60 to 90 kilometers per hour (km/h)). The existing right-of-way (ROW) width ranges from 50 feet (ft) (15.24 meters (m)) to 170 ft (51.82 m) except at the Suncoast Parkway interchange where the ROW width is 254 ft (77.42 m).

Primary land uses along C.R. 578 include numerous residential subdivisions, individual residences, commercial development, the Spring Hill Regional Hospital, the Suncoast Elementary School, the Hernando County Airport, and numerous religious facilities.

Section 3.0
DESCRIPTION OF PROPOSED ACTION

The Preliminary Engineering Report documents the need for the project and presents the procedures used to develop and evaluate various improvement alternatives as they relate to the transportation facility. Engineering data and information was collected regarding the environmental characteristics of the area, which is essential to the alignment and analytical decision making process.

3.1 PROJECT TYPICAL SECTIONS AND ALTERNATIVES

To effectively develop and evaluate all viable improvement options, the following three-step process was applied:

Step One: Typical sections were developed in conjunction with the Department, Pasco County and Hernando County based on the design criteria and the traffic analysis.

Step Two: Alignments were developed for each segment based on the typical section developed in Step Two, and the assumption that additional ROW could be acquired on the south side, north side, or from both sides of the existing facility.

Step Three: The project was divided into four segments based on the existing land use patterns, and future construction segments.

Project segments were used in this study to effectively assess and compare the effects of each alignment. C.R. 578 was divided into the four study segments as follows due to existing land use patterns.

Segment A: U.S. 19 to East Road – A distance of 2.4 mi (3.9 km).

Segment B: East Road to Mariner Boulevard/Shady Hills Road – A distance of 3.2 mi (5.1 km).

Segment C: Mariner Boulevard/Shady Hills Road to Suncoast Parkway – A distance of 3.9 mi (6.3 km).

Segment D: Suncoast Parkway to U.S. 41 (Ayers Road Extension) – A distance of 3.5 mi (5.6 km).3.1.1 Proposed Typical Section

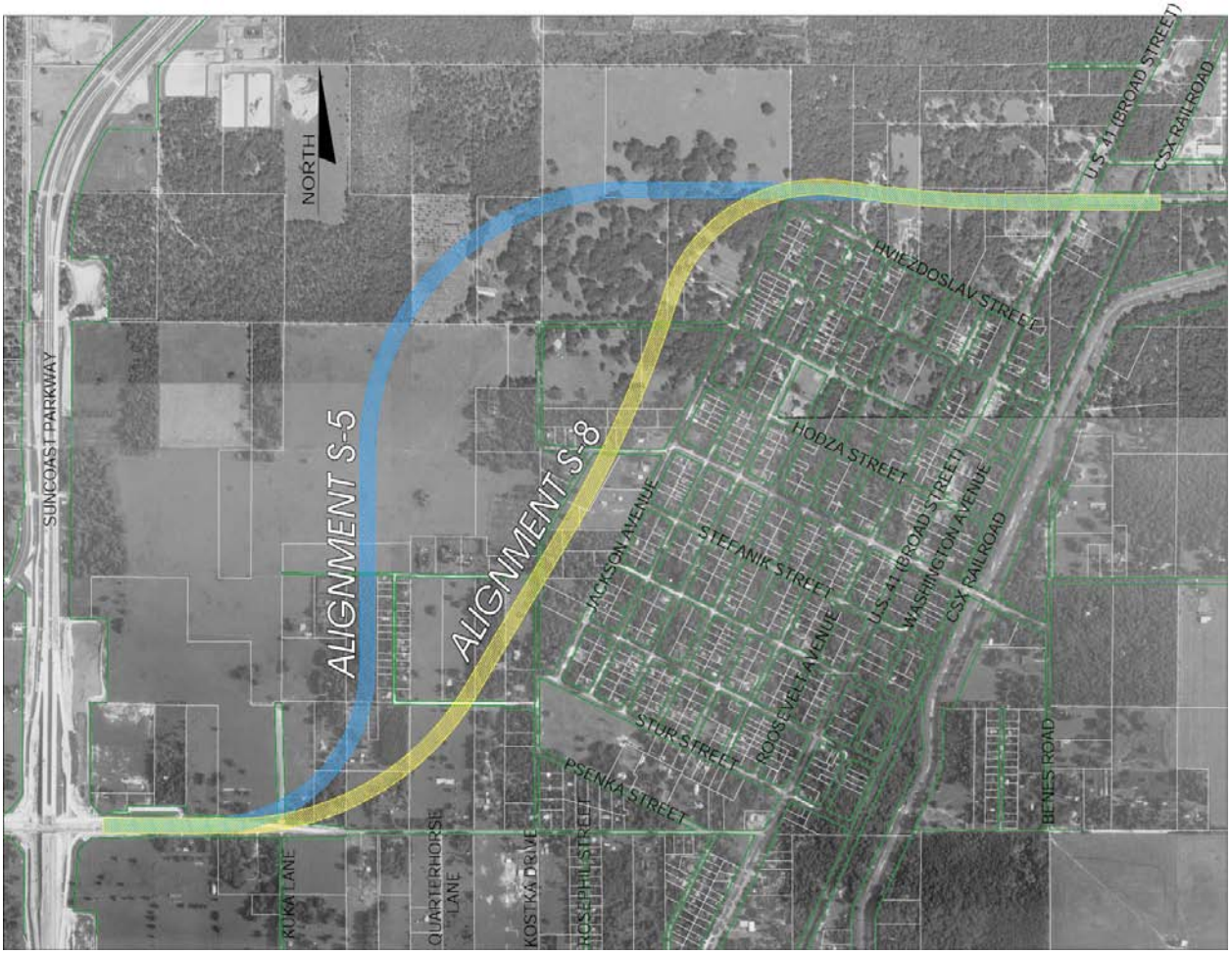
The recommended project involves improving C.R. 578 to a four-lane suburban facility from the vicinity of U.S. 19 to the vicinity of U.S. 41, a distance of approximately 12.0 mi (19.3 km). A segment of roadway on new alignment, referred to as the Ayers Road Extension, is also recommended from the C.R. 578/Suncoast Parkway interchange north then east to the vicinity of U.S. 41 and Ayers Road (C.R. 576). The recommended route extends northward through mostly undeveloped pasture then east for a distance of approximately 3.5 mi (5.6 km) terminating at the U.S. 41/Ayers Road intersection north of Masaryktown. Based on the design speed, level of service, and access requirements, the improved facility will be functionally classified as an arterial roadway.

The portion of the project from East Road to the Suncoast Parkway is included in the Pasco County Metropolitan Planning Organization's (MPO's) *2025 Long Range Transportation Plan (LRTP)* as a four-lane divided facility. The portion of the project from U.S. 19 to the Suncoast Parkway is included in the Hernando County MPO's *2025 LRTP* and is recommended to be improved to a four-lane divided facility.

The recommended new roadway alignment (S-5), the Ayers Road Extension, from the C.R. 578/Suncoast Parkway interchange to the vicinity of the U.S. 41/Ayers Road intersection, is also identified in the Hernando County *2025 LRTP* as a four-lane facility.

For the Ayers Road Extension, it was determined that because of the potentially adverse effects Alignment S-5 had on the Alexsuk Site (Site – 8HE426), further coordination with FHWA and SHPO was needed. Consequently, a new alignment, S-8, was developed. This alternative was developed in and effort to minimize or eliminate effects to the Alexsuk Site. Both alignments were presented at the Public Hearing. Alignment S-5 was the preferred alternative. The Ayers Road Extension will provide a continuous east-west travel route from U.S. 19 to west of I-75 and facilitate new access to the Hernando County Airport in accordance with the *Hernando County Airport Master Plan*. Both alignments are shown in Figure 3-1.

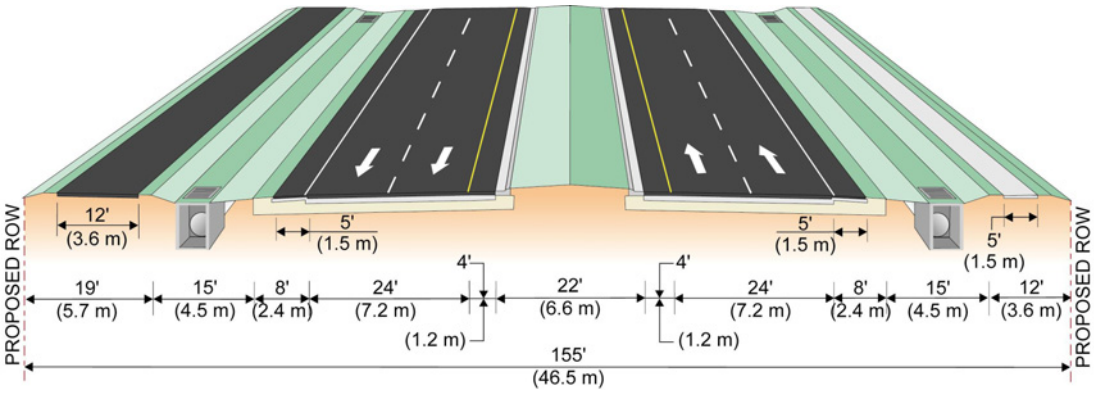
FIGURE 3-1
AYERS ROAD EXTENSION ALIGNMENTS



3.2 RECOMMENDATION

The typical section recommended in this study and approved by Pasco and Hernando Counties, is a four-lane divided suburban facility with a 30 ft (9.0 m) median of which 22 ft (6.6 m) is raised, two 12 ft (3.6 m) travel lanes in each direction, 8 ft (2.4 m) outside shoulders with 5 ft (1.5 m) of the shoulder paved, and 15 ft (4.5 m) drainage swales. A 12 ft (3.6 m) multi-use facility on the north side of the roadway and a 5 ft (1.5 m) sidewalk on the south side of the roadway are recommended. The recommended design speed for this typical section is 55 mph (90 km/h). See Figure 3-2.

FIGURE 3-2
SUBURBAN TYPICAL SECTION



Section 4.0
EXISTING DRAINAGE CONDITIONS

4.1 DESIGN INFORMATION SOURCES

The design information sources used in the preparation of the Pond Siting Report are as follows:

1. FDOT Drainage Manual, Volume 1 - Standards, 1997
2. FDOT Stormwater Management Facility Handbook, January 1999
3. FDOT Drainage Handbook for Cross Drains, August, 1996
4. Southwest Florida Water Management District (SWFWMD) Environmental Resource Permitting Information Manual, April, 1997
5. SWFWMD Aerials with contours
6. United States Department of Agriculture (USDA) Soil Survey of Pasco County, Florida, June 1982
7. USDA Soil Survey of Hernando County, Florida, July 1977
8. Federal Emergency Management Agency (FEMA) Map, Pasco County Community Panel Numbers 1200230 0020 C,1200230 0050 C, 1200230 0075 C and Hernando County Community Panel Numbers 1200110 0270 B, 1200110 0300 B, 1200110 0325 B
9. First Draft Preliminary Engineering Report County Line Road (C.R. 578)
10. C.R. 578 Project Aerials

4.2 GEOTECHNICAL DATA

The soils associated within the limits of the project can be categorized according to the USDA Soil Conservation Services (SCS) Soil Survey of Pasco and Hernando Counties. The soil survey map indicates that there are several mapping units along the project corridor as shown in Table 4-1.

In general, the surficial soils consist of poorly graded fine sands grading to silty and clayey fine sands as the roadway approaches Masaryktown.

TABLE 4-1
SUMMARY OF USDA SOIL SURVEY FOR PASCO AND HERNANDO COUNTIES

Pasco/Hernando Counties USDA Soil Series	Hydologic Soil Group	Seasonal High Groundwater Table		Soil Classifications		
		Depth meters (inches)	Duration (months)	Depth Meters (inches)	Unified	AASHTO
C.R. 578						
Candler (13, 14) Candler (14, 15)	A A	>1.8 (72)	–	0-2.0 (0-80)	SP, SP-SM	A-3
Paola (19) Paola (39)	A B/D	>1.8 (72)	–	0-2.0 (0-80)	SP	A-3
Millhopper (69) Masaryk (32)	A A	1.1-1.8 (42-72)	7	0-1.5 (0-60) 1.5-2.0 (60-80)	SP-SM, SM SM, SM-SC, SC	A-3, A-2-4 A-2-4, A4, A-2-6
Ayers Road Extension						
Kendrick (29)	D	>1.8 (72)	–	0-0.7 (0-28) 0.7-0.9 (28-34) 0.9-1.6 (34-63) 1.6-2.0 (63-80)	SP-SM SC, SM-SC SC SC, SM-SC	A-3, A-2-4 A-2-6, A-2-4 A-2-6, A-6 A-2-6, A-2-4
Nobleton (36)	A	0.5-1.1 (18-42)	4	0-0.8 (0-33) 0.8-0.95 (33-37) 0.95-1.5 (37-60) 1.5-2.0 (60-80)	SP-SM, SM SC SC, CL, CH SC	A-2-4 A-2-6, A-6 A-6, A-7 A-2-6, A-6

4.3 ENCROACHMENTS TO BASE FLOODPLAINS

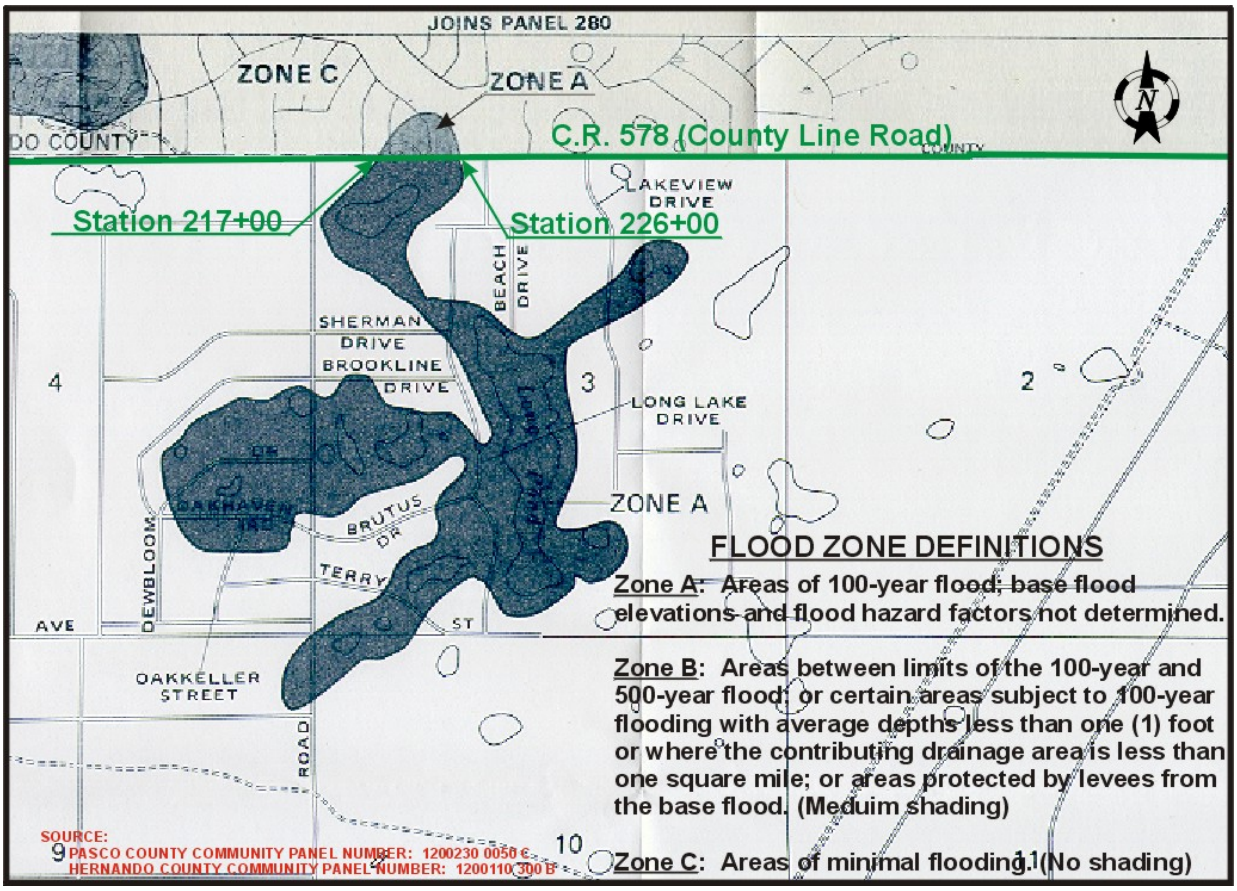
Examination of Flood Insurance Rate Maps (FIRMs) community panel numbers 120230-0020C, 120230-0050C, 120230-0075C, 120110-270B, 120110-300B, and 120110-325B indicate one relatively small portion of the C.R. 578 project limits encroach upon the 100-year Flood Zone.

The floodplain encroachment is located approximately 2.6 mi (4.2 km) east of U.S. 19 in Segment B as shown in Figure 4-1. Both the Pasco County FIRM (community panel 1200230 0050C) and Hernando County FIRM (community panel 1200110 300 B) show encroachment into Flood Zone A extending from west of Blaine Avenue (Station 217+00) eastward for a distance of approximately 900 ft (274.3 m). The encroachment ends at a point 300 ft (91.4 m) east of Clearwater Drive (station 226+00). The estimated floodplain volume displaced by the roadway improvements is approximately 1.12 ac-ft (0.14 hectare-meter).

Flood Zone A is defined as areas of the 100-year flood zone where the base flood elevations and flood hazard factors have not been determined. The proposed floodplain mitigation site is shown in Appendix B, Sheet 9.

The exact magnitude of any encroachment upon the 100-year floodplain will be made during final design. One-to-one volume compensation would have to be made for storage volume lost due to construction of the roadway embankment within the 100-year floodplain.

FIGURE 4-1
FLOODPLAIN LOCATION



There are no regulated floodways located within the project limits. The recommended roadway improvements should not support incompatible floodplain development since they are primarily level of service related and do not function as a new access to the area.

4.4 EXISTING DRAINAGE PATTERNS

The existing roadway drainage system within the project limits consists predominantly of roadside grass swales and ditches, with numerous driveway culverts and cross drains. The project is located within the Coastal Rivers Basin and exhibits hydrogeologic characteristics associated with the Karst topography. Sinkholes and other depressed areas are prevalent throughout the project limits providing vast amounts of natural surface storage within numerous closed basins. Shallow lakes are also present, many of which may be connected directly to the underlying confined aquifer.

Stormwater runoff for most of the eastern portion of the project located between U.S. 19 and Mariner Boulevard/Shady Hills Road, a distance of approximately 4.3 mi (6.9 km), drains north and outfalls into Hunters Lake. Within this segment, approximately 0.85 mi (1.37 km) of roadway was recently widened to four lanes. Stormwater management facilities (two retention ponds) have been provided on the south side of the roadway.

Stormwater runoff from the remainder of the project flows to closed basins and or sinkholes adjacent to the project corridor. Under normal conditions the closed basins are internally drained. However, during periods of high groundwater levels and extreme rainfall, excess runoff from some of these closed basins/depressional areas will flow overland following poorly defined shallow swales and ditches toward the Masaryktown canal.

4.5 EXISTING DRAINAGE STRUCTURES

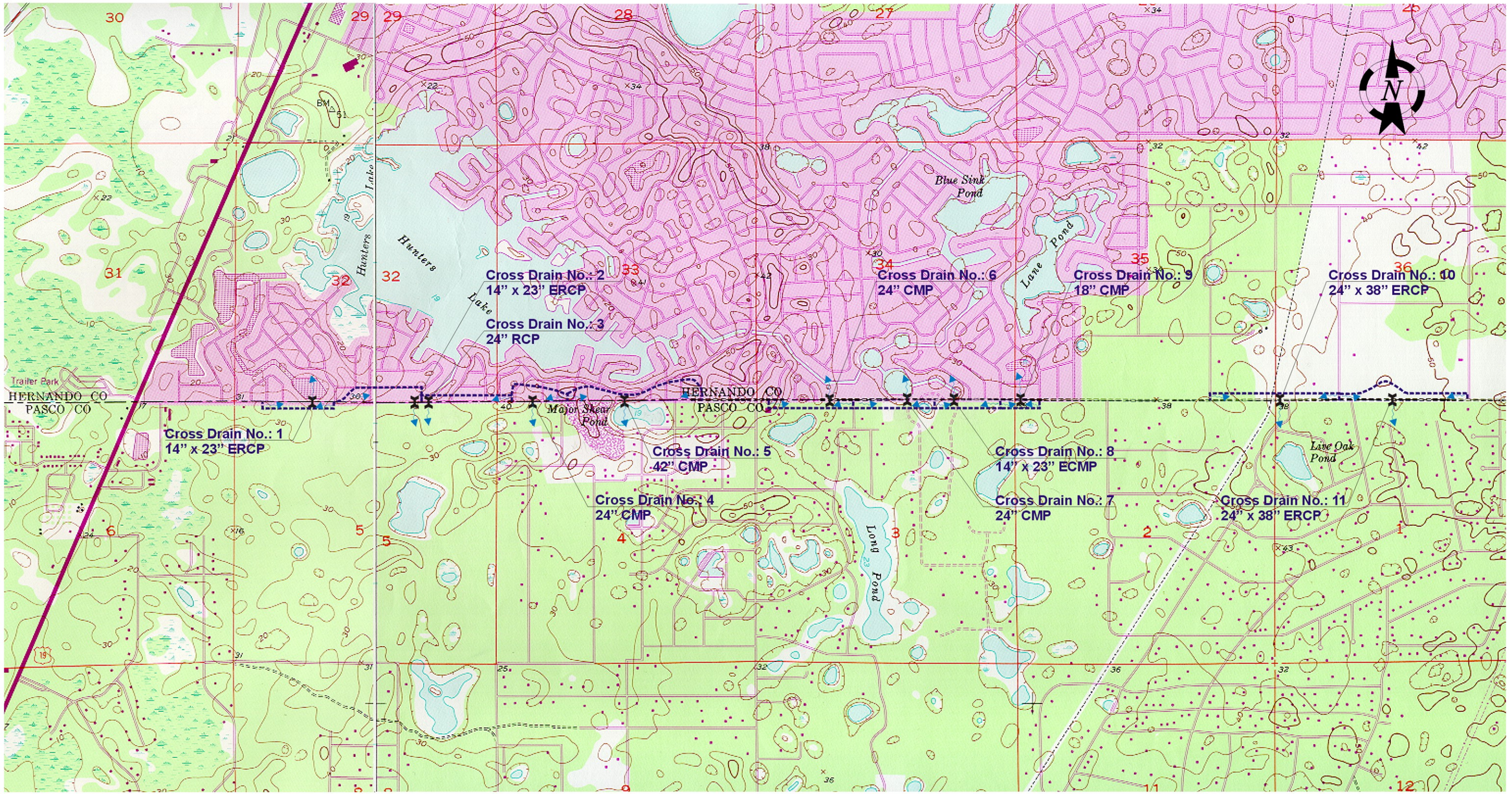
Nineteen existing cross drains were located along C.R. 578 as a result of field investigations and are illustrated in Figure 4-2. These structures ranged in size from (14 x 23 inches (in) (365 x 575 millimeters (mm)) elliptical reinforced concrete pipes (ERCP) to (42 in (1,050 mm) in diameter as shown in Table 4-2. Thirteen of the cross drains were reinforced concrete pipe (RCP) and the remaining six were corrugated metal pipe (CMP). Ditch bottom grate inlets were found on nine of the cross drains with the remainder having either straight concrete headwalls or mitered end sections. All of the accessible cross drains appeared to be in fair to good condition and functioning properly with the only a few exceptions. Minor maintenance-related problems such as pipeline obstructions (dirt and trash), erosion at the outlets, and one damaged end treatment were observed.

Cross drains 1 through 3, located within Segment A between Callaway and Hallow Avenues, have been extended to accommodate the existing four-lane divided section. Cross drain number 19 has also been extended as part of the widening performed where the Suncoast Parkway crosses C.R. 578. Modification of these structures is not anticipated as part of the proposed roadway improvements.

No existing cross drains were found within the proposed corridors of the Ayers Road Extension.

4.6 EXISTING DRAINAGE RELATED PROBLEMS

The Pasco County and Hernando County Public Works Departments were contacted concerning any historical flooding problems within and adjacent to the project limits. No drainage problems along the existing roadway were reported other than erosion along the roadway shoulders. The worst areas were reported to be west of Mariner Boulevard/Shady Hills Road where steep embankments were noted. These areas are adjacent to what appears to be old sinkholes or low-lying areas.



LEGEND

- Drainage Path
- Cross Drain
- Basin Boundary

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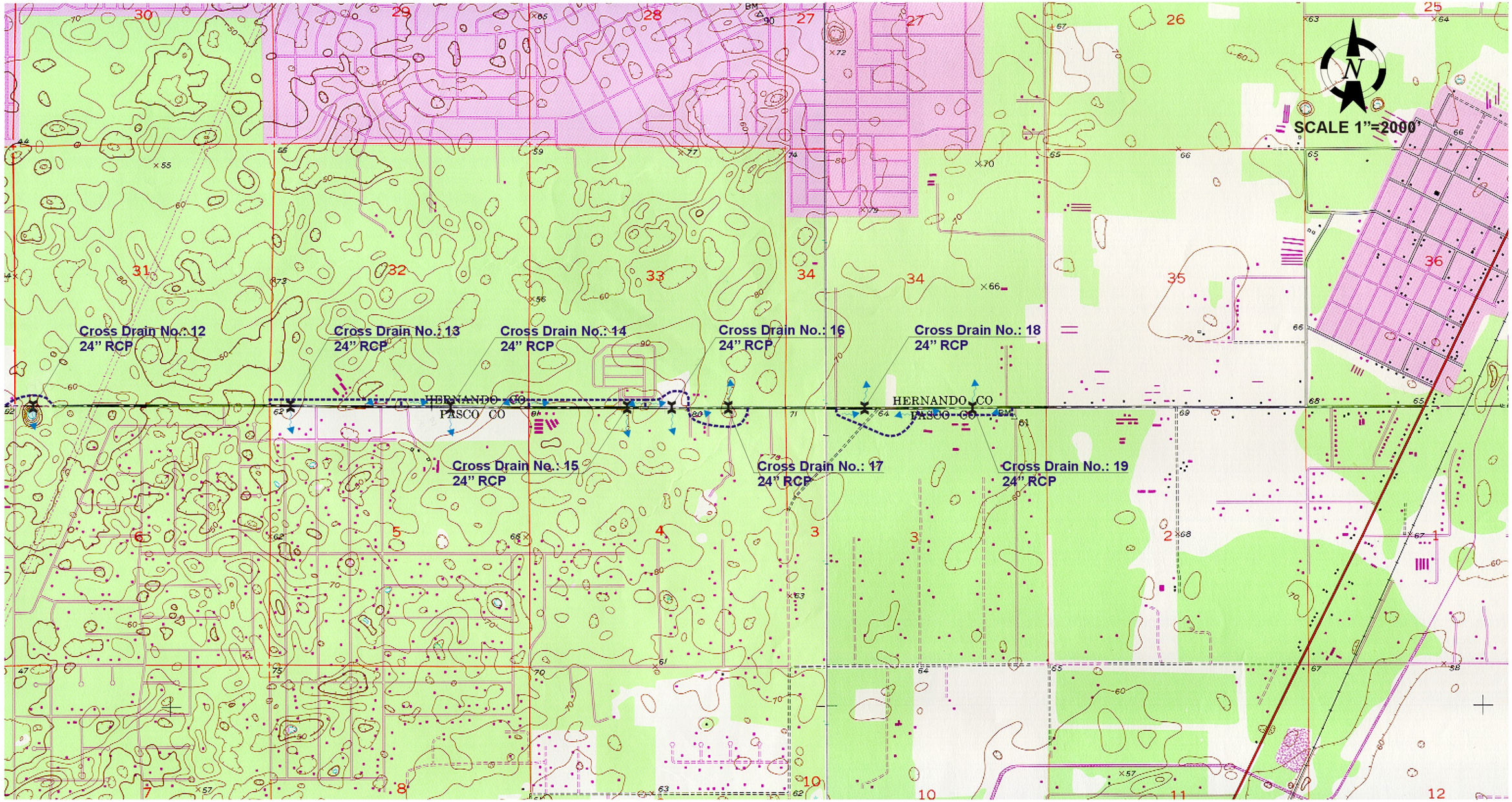
C.R. 578 (County Line Road) PD&E Study
From S.R. 55 (U.S. 19) to S.R. 45 (U.S. 41)

Existing Cross Drain Locations

Figure: 4-3



LEGEND

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Existing Cross Drain Locations

Figure: 4-3

TABLE 4-2
EXISTING CROSS DRAINS

Cross Drain No.	Location	Size and Material	Outfall
1	350 ft (106.7 m) West of Grand Club Drive	24 in (600 mm) ERCP	North to Hunters Lake from stormwater treatment pond
2	40 ft (12.2 m) West of Ruskin Avenue	24 in (600 mm) ERCP	Stormwater treatment pond
3	550 ft (167.6 m) East of Ruskin Avenue	24 in (600 mm) RCP	Stormwater treatment pond
4	80 ft (24.4 m) East of Parma Drive	24 in (600 mm) CMP w/grate inlets	South to low area
5	700 ft (213.4 m) West of Parkton Avenue	42 in (1,050 mm) CMP w/grate inlets	South to low area
6	200 ft (61.0 m) East of Clearwater Drive	24 in (600 mm) CMP w/grate inlets	North to Hunters Lake
7	270 ft (82.3 m) West of Truce Circle	24 in (600 mm) CMP w/grate inlets	North to Hunters Lake
8	285 ft (86.9 m) West of Randolph Drive	24 in (600 mm) CMP w/grate inlets	North to Hunters Lake
9	385 ft (117.4 m) West of Waterfall Drive	18 in (450 mm) CMP w/grate inlets	North to Retention Pond
10	1,115 ft (339.9 m) West of Peach Tree Drive	24 x 38 in (610 x 960 mm) ERCP w/headwalls	South to low area
11	1100 ft (335.3 m) East of Peach Tree Drive	24 x 38 in (610 x 960 mm) ERCP w/headwalls	South to low area
12	550 ft (167.6 m) West of Mariner Boulevard/Shady Hills Road	24 in (600 mm) RCP w/headwalls	South to low area/sink hole
13	540 ft (164.6 m) West of Drayton Street	24 in (600 mm) RCP w/mitered end sections	South to low area
14	1,140 ft (347.5 m) East of Alexson Street	24 in (600 mm) RCP w/headwalls	South to low area
15	1,205 ft (367.3 m) West of Linden Drive	24 in (600 mm) RCP w/headwalls	South to low area/sink hole
16	370 ft (112.8 m) West of Linden Drive	24 in (600 mm) RCP w/mitered end sections	South to low area
17	750 ft (228.6 m) East of Linden Drive	24 in (600 mm) RCP w/headwalls	North to low area
18	685 ft (208.8 m) East of Sparks Road	24 in (600 mm) RCP w/headwalls	North to low area
19	210 ft (64.0 m) West of Anderson Snow Road	24 in (600 mm) RCP w/headwalls	North to swale

Section 5.0
STORMWATER MANAGEMENT REQUIREMENT

5.1 WATER QUALITY REQUIREMENT

The water quality requirements, as defined in Chapter 40D.4 of the Florida Administrative Code (FAC) and the SWFWMD Permit Information Manual are used to quantify treatment volumes, wet detention, on-line, and off-line ponds.

Section 3.2.2.8 states that alterations to existing public roadways will be required to treat a volume equal to those specified in Section 3.2.2.2 and the contributing area according to the following options:

- For off-line and on-line treatment systems, including wet detention, which provide storage of the treatment volume off-line from the primary conveyance path of the flood discharges, the area of new pavement must be treated.
- For all other on-line treatment systems, including wet detention, the entire directly connected impervious area (DCIA) contributing to the system, including both on and off-site areas must be treated. Directly connected impervious areas consist of both new and existing pavement which is connected to the treatment system by pavement or pipe and convey untreated stormwater runoff.
- For on-line and off-line percolation systems, the treatment volume is calculated by applying 0.5 inches of runoff over the limits of the ROW.

Projects discharging directly into Outstanding Florida Waters (OFW) shall be required to provide treatment for a volume 50 percent more than required for the selected treatment system..

There are two jurisdictional criteria for determining water quantity volumes (attenuation). These are FDOT 14.86 and the SWFWMD 40D-4. The criteria selected to design the stormwater management ponds are the more stringent of the two.

5.1.1 FDOT 14.86 REQUIREMENTS

The FDOT requires a critical duration analysis defined as: “The duration of a specific storm event (i.e., 100-year storm) which creates the largest volume or highest rate of net stormwater runoff (post-development less pre-development runoff) for typical durations up through and including the 10-day duration event.” The critical duration is determined by comparing various durations of the specified storm and calculating the peak rate and volume of runoff for each. The duration resulting in the highest peak discharge rate is the “critical duration” storm for an open basin. Additionally, a Water Quality Impact Evaluation was performed in accordance with Part 2 Chapter 20 of the FDOT PD&E Manual and is shown in Appendix E.

5.1.2 SWFWMD CRITERIA

The SWFWMD Permit Information Manual states that allowable discharge is determined based on whether or not the project is located within an open or closed basin. An open basin is defined as a watershed, which has a positive outfall under gravity flow. A closed basin is defined as a watershed in which the runoff does not have a surface outfall up to and including the 100-year flood level. Drainage basins located east of Canby Circle (station 200+00) could be considered open. Drainage basins west of Canby Circle are predominately closed. The allowable discharge for an open basin is based on the historical discharge. The historical discharge is the peak rate at which runoff leaves a parcel of land by gravity under existing site conditions, or the legally allowable discharge at the time of permit application.

The off-site discharges for the existing and developed condition will be computed using the SWFWMD's 24-hour, 25-year rainfall maps and the Soil Conservation Services Type II Florida Modified 24-hour rainfall distribution with an antecedent moisture condition II. The historic or pre-developed discharge is determined by the 25-year/24-hour duration storm event. The pre-developed discharge runoff rate must be preserved in the post-developed condition. The peak runoff rate must be preserved (detained) within the stormwater pond(s), which discharges at no greater than the pre-developed rate. The resulting volume within the pond is the attenuation volume.

5.1.3 PASCO AND HERNANDO COUNTIES

Pasco and Hernando counties require stormwater treatment and attenuation in accordance with the SWFWMD criteria.

Section 6.0
POND SITING ANALYSIS

The proposed stormwater management system for C.R. 578 will utilize ponds to meet permitting requirements for stormwater runoff treatment and attenuation and compensate for encroachments upon the 100-year floodplain. Stormwater runoff will be conveyed to these ponds by the storm sewer system. Where possible, flows produced by large off-site areas should be kept separate from the roadway runoff thereby reducing the required pond sizes.

6.1 WATER QUALITY TREATMENT ALTERNATIVES

The following water quality treatment alternatives were considered as part of the pond siting analysis. Treatment methods most commonly used are dry detention, wet detention, and filtration. Soil type and the location of the Seasonal High Water Table (SHWT) generally control selection of the treatment method. Filtration was not considered due to high maintenance costs associated with these types of treatment alternatives.

6.2 POND SIZING CRITERIA

The storage volume (treatment and/or attenuation) typically dictates the surface area requirements of stormwater management facilities necessary to meet permit conditions. Additional factors including maintenance berms, side slopes, freeboard, etc., are all considered in the sizing of the potential pond sites. The pond size estimates include side slopes of 1:4 and a 20 ft maintenance berm at 1:8 or flatter.

6.3 SITE SELECTION CRITERIA

The selection of suitable sites for stormwater management facilities is based on criteria such as economic feasibility, hazardous materials, archaeological resources, land use and hydrologic characteristics. The following items were considered as part of the selection process:

1. Use of existing FDOT properties or other state or county owned lands.
2. Minimize the number of parcels (i.e., landowners affected).
3. Avoid splitting parcels, thus creating remnant pieces.
4. Avoid wetlands, archaeological sites, historic structures, and contaminated sites.
5. Consider joint use facilities and parcels identified by the FDOT ROW office.

6.4 CONCEPTUAL DESIGN OPTIONS

During the design phase, the proposed drainage system for this project will be designed, in accordance with the Department's drainage standards and procedures, to carry stormwater runoff away from the roadway in the natural flow directions of that particular basin. In most cases, this will require modifications to existing structures, such as culvert extensions, to correspond to the new roadway sections and clear zone requirements.

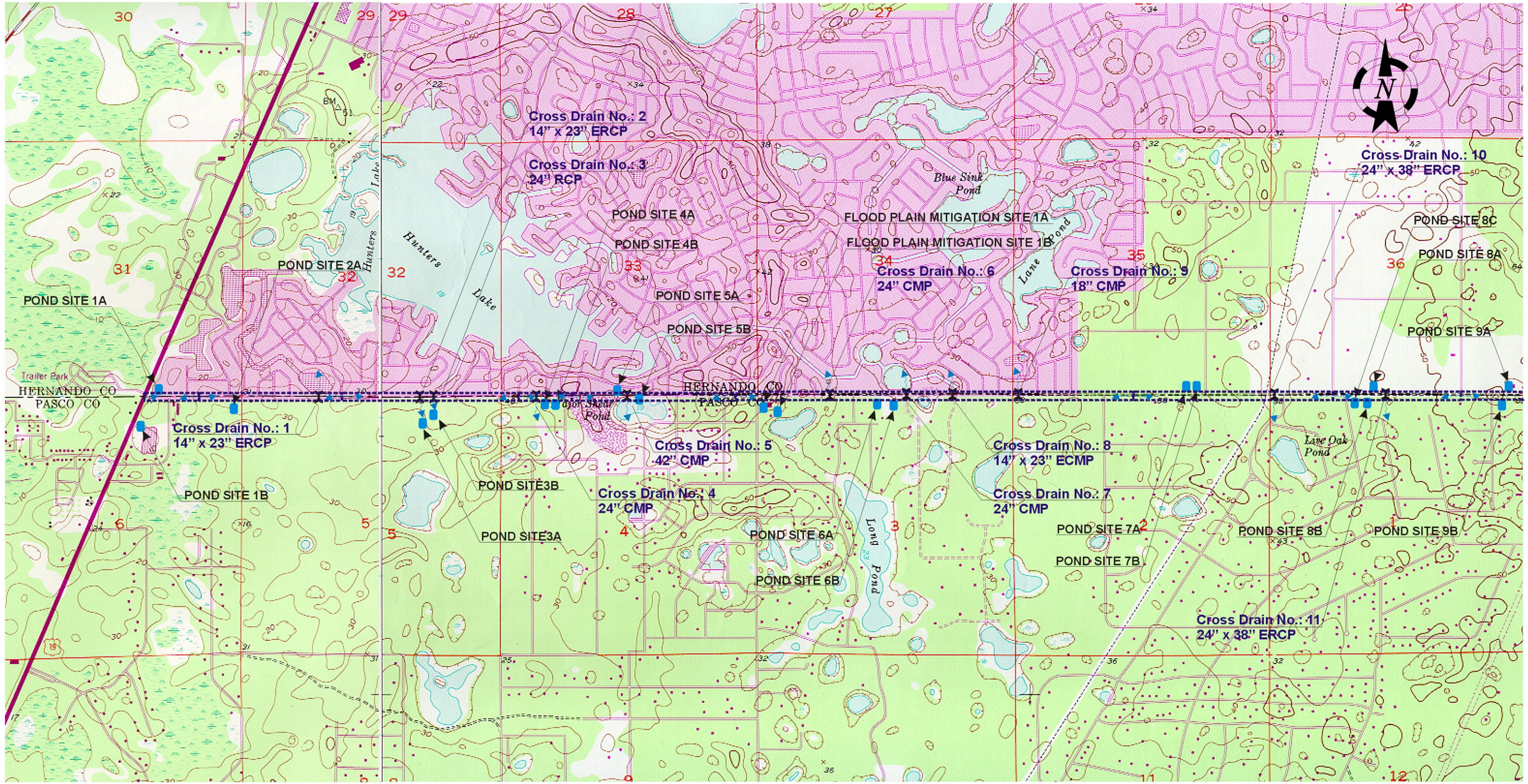
The proposed water quality treatment and maximum attenuation volumes summarized in Table 6-1 are based on a four-lane divided suburban typical section expandable to six lanes. Given the rapid development occurring within the project limits all proposed pond sites were determined based on a future 6-lane typical section. Treatment volumes are based on criteria established by the SWFWMD and provide for treatment of the entire roadway. Attenuation volumes have been estimated by calculating the difference in runoff volume between the post-developed and pre-developed conditions using the NRCS method for the 100-year, 24-hour storm event. Dry detention systems could be part of the proposed stormwater facilities depending upon actual SHWT determinations made in the field during the final design phase of the project however, all treatment volumes presented in this report are based on wet detention criteria. The alternative pond site locations are illustrated in Figure 6-1 followed by basin and pond site descriptions.

6.4.1 PRELIMINARY POND SITE NUMBERS 1A AND 1B

Basin number 1 extends from the U.S. 19 (station 85+00) to 390 ft east of Austin Avenue (station 96+50) and includes approximately 1,150 ft of roadway. The improvements within this basin would require a pond size of approximately 0.74 ac. The following pond sites were considered for basin number 1:

Pond Site 1A is located in the northeast quadrant of the U.S. 19/C.R. 578 intersection. This site will be acquired as part of the roadway widening resulting in three remnant parcels totaling 0.93 ac. The soil at pond site 1A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 1A has an available area of 0.93 ac.

Pond Site 1B is located on the east side of U.S. 19 approximately 700 ft south of C.R. 578. Located on this site is an existing stormwater management facility which could be modified in order to provide the required treatment and attenuation volumes.



LEGEND

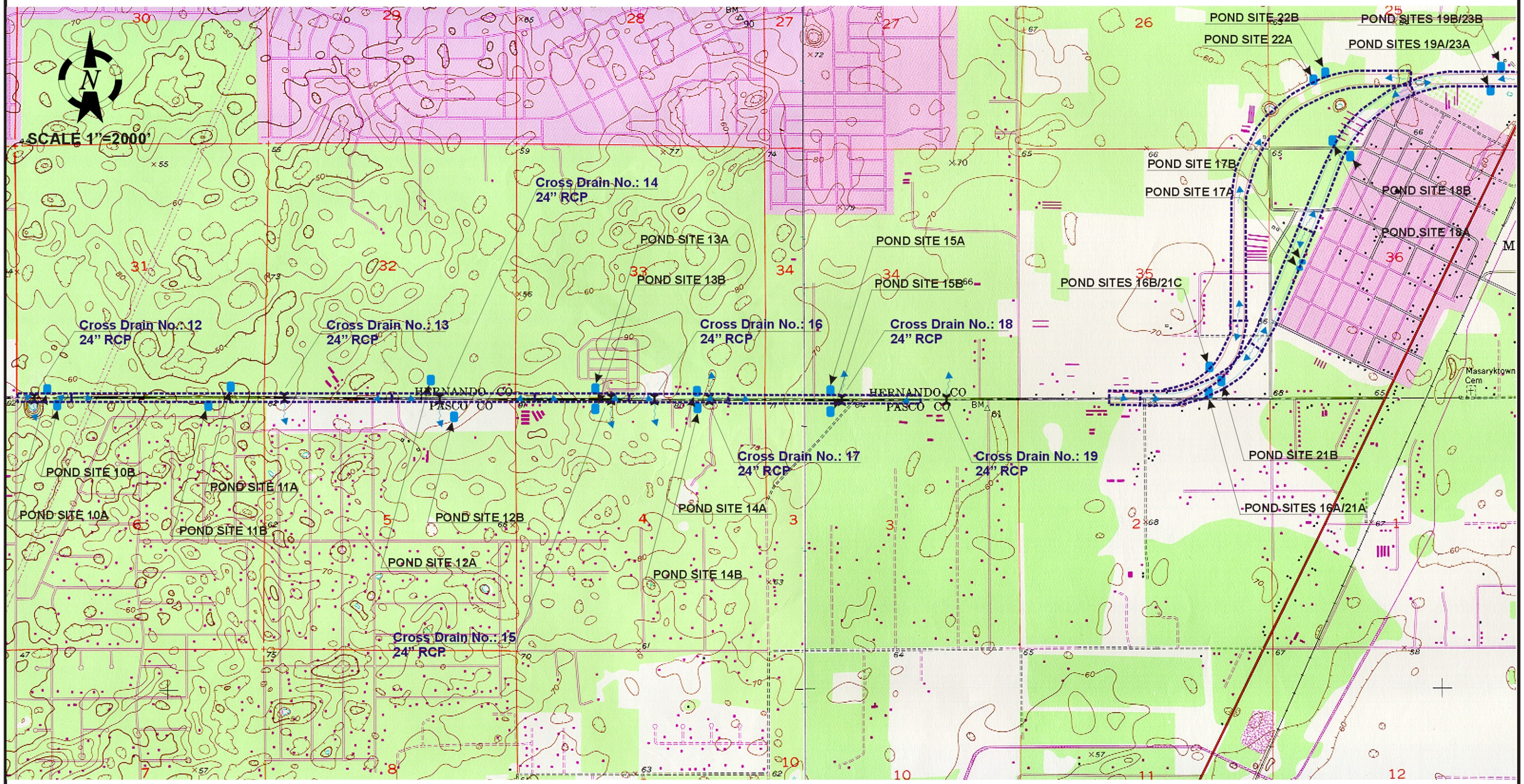
- Drainage Path
- Cross Drain
- Basin Boundary

J.M. Dorzback & Associates, Inc.
Tampa, Florida

C.R. 578 (County Line Road) PD&E Study
From S.R. 55 (U.S. 19) to S.R. 45 (U.S. 41)

Alternative Preliminary Pond Site Locations

Figure: 6-1



LEGEND

- Drainage Path
- Cross Drain
- Basin Boundary

J.M. Dorzback & Associates, Inc.
Tampa, Florida

C.R. 578 (County Line Road) PD&E Study
From S.R. 55 (U.S. 19) to S.R. 45 (U.S. 41)

Alternative Preliminary Pond Site Locations

Figure: 6-1

TABLE 6-1
ESTIMATED TREATMENT AND ATTENUATION VOLUMES

Basin Number	Increase in Travel Lane Area (ac)	Increase in Total Impervious Area (ac)	Treatment Volume (ac-ft)	Attenuation Volume (ac-ft)	Total Required Volume (ac-ft)
1	2.65	2.57	0.22	0.93	1.15
2	4.24	4.82	0.35	2.73	3.08
3	5.39	6.22	0.45	3.52	3.97
4	2.31	2.24	0.19	1.27	1.46
5	8.22	7.95	0.69	4.50	5.18
6	15.91	15.38	1.33	8.70	10.03
7	8.68	8.39	0.72	4.75	5.47
8	5.27	5.09	0.44	2.88	3.32
9	2.58	2.50	0.22	1.41	1.63
10	1.76	1.70	0.15	0.96	1.11
11	14.98	14.48	1.25	11.46	12.71
12	6.20	5.99	0.52	3.39	3.91
13	4.03	3.89	0.34	2.20	2.54
14	4.03	3.89	0.34	2.20	2.54
15	8.47	8.19	0.71	4.63	5.34
Ayers Road Extension - Alignment S-8					
16	5.06	6.24	0.42	3.53	3.95
17	8.10	9.99	0.67	5.65	6.33
18	6.45	7.95	0.54	4.50	5.04
19	5.79	7.13	0.48	2.35	2.84
20	8.90	8.61	0.74	3.46	4.21
Ayers Road Extension - Alignment S-5					
21	5.52	6.80	0.46	3.85	4.31
22	16.80	20.72	1.40	16.40	17.80
23	5.67	6.99	0.47	2.31	2.78
24	8.90	8.61	0.74	3.46	4.21

6.4.2 PRELIMINARY POND SITE NUMBERS 2A AND 2B

Basin number 2 extends from 390 ft east of Austin Avenue (station 96+50) to Dartmouth Avenue (station 124+50) and includes approximately 2,800 ft of roadway improvements. From station 110+50 to station 124+50 the existing roadway has a four-lane typical section. The improvements within this basin would require a pond size of approximately 1.51 ac. The following pond sites were considered for basin number 2:

Pond Site 2A is located on the south side of C.R. 578 between Dandelion Court and Callaway Avenue. This site requires the acquisition of a parcel that will be partially acquired as part of the recommended roadway improvements and the partial acquisition of a large undeveloped parcel. The soil at pond site 2A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 2A has an available area of 1.51 ac.

Pond Site 2B is located on the south side of C.R. 578 between Dandelion Court and Callaway Avenue. This site requires the partial acquisition of land, which is part of the Heritage Pines Development and has an available area of 1.52 ac. The soil at pond site 2B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 2B was eliminated from consideration due to the high cost of land acquisition, thus right-of-way cost data is not available for this preliminary pond site.

6.4.3 PRELIMINARY POND SITE NUMBERS 3A AND 3B

Basin number 3 extends from Dartmouth Avenue (station 124+50) to 225 ft east of Dawson Avenue (station 161+00) and includes approximately 3,650 ft of roadway improvements. From station 124+50 to station 144+00 the existing roadway has a 4-lane typical section. The improvements within this basin would require a pond size of approximately 1.81 ac. The following pond sites were considered for basin number 3:

Pond Site 3A is located on the south side of C.R. 578 approximately 325 ft east of Balboa Avenue. This site is currently undeveloped and is located on the west side of an existing dry treatment and attenuation facility. The soil at pond site 3A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 3A has an available area of 1.81 ac.

Pond Site 3B is located on the south side of C.R. 578 approximately 1,320 ft east of Balboa Avenue. This site is currently undeveloped and is located on the east side of an existing dry treatment and attenuation facility. The soil at pond site 3B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 3B has an available area of 1.81 ac.

6.4.4 PRELIMINARY POND SITE NUMBERS 4A AND 4B

Basin number 4 extends from to 225 ft east of Dawson Avenue (Station 161+00) to 190 ft east Darcoca Avenue (station 172+20 and includes approximately 1,120 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 0.92 ac. The following pond sites were considered for basin number 4:

Pond Site 4A is located on the south side of C.R. 578 approximately 130 ft east of Arcadia Avenue. This site is currently undeveloped and will be partially acquired as part of the recommended roadway improvements. The soil at pond site 4A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 4A has an available area of 0.95 ac.

Pond Site 4B is located on the south side of C.R. 578 approximately 450 ft east of Arcadia Avenue. This site is currently undeveloped and will be partially acquired as part of the recommended roadway improvements. The soil at pond site 4B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 4B has an available area of 1.30 ac.

6.4.5 PRELIMINARY POND SITE NUMBERS 5A AND 5B

Basin number 5 extends from 190 ft east Darcoca Avenue (station 172+20) to 665 ft east of Cobblestone Drive (station 212+00) and includes approximately 3,980 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 2.17 ac. The following pond sites were considered for basin number 5:

Pond Site 5A is located on the north side of C.R. 578 approximately 600 ft east of Paris Avenue. This site is currently undeveloped. The soil at pond site 5A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 5A has an available area of 2.66 ac.

Pond Site 5B is located on the south side of C.R. 578 approximately 700 ft east of Paris Avenue. This site consists of two undeveloped parcels, both of which will be partially acquired as part of the recommended roadway improvements. The soil at pond site 5B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 5B has an available area of 2.52 ac.

6.4.6 PRELIMINARY POND SITE NUMBERS 6A AND 6B

Basin number 6 extends from 665 ft east of Cobblestone Drive (station 212+00) to 710 ft east of Kelly Road (station 289+00) and includes approximately 7,700 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 3.61 ac. The following pond sites were considered for basin number 6:

Pond Site 6A is located on the south side of C.R. 578 east of Long Lake Road. This site consists of one undeveloped parcel that will be partially acquired as part of the recommended roadway improvements and the partial acquisition of two other parcels, one of which is developed. The soil at pond site 6A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 6A has an available area of 3.63 ac.

Pond Site 6B is located on the south side of C.R. 578 approximately 700 ft west of Lands Ford Drive. This site consists of one undeveloped parcel that will be partially acquired as part of the recommended roadway improvements and the partial acquisition of one other parcel, which is developed. The soil at pond site 6B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 6B has an available area of 3.61 ac.

6.4.7 PRELIMINARY POND SITE NUMBERS 7A AND 7B

Basin number 7 extends from 710 ft east of Kelly Road (station 289+00) to 185 ft east of Peach Tree Drive (station 331+00) and includes approximately 4,200 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 2.26 ac. The following pond sites were considered for basin number 7:

Pond Site 7A is located on the north side of C.R. 578 approximately 500 ft west of Suncoast Boulevard. This site consists of one undeveloped parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 7A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 7A has an available area of 2.98 ac.

Pond Site 7B is located on the north side of C.R. 578 approximately 170 ft west of Suncoast Boulevard. This site consists of one undeveloped parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 7B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 7B has an available area of 3.34 ac.

6.4.8 PRELIMINARY POND SITE NUMBERS 8A, 8B, AND 8C

Basin number 8 extends from 185 ft east of Peach Tree Drive (station 331+00) to 90 ft east of Spring Time Street (station 356+50) and includes approximately 2,550 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 1.58 ac. The following pond sites were considered for basin number 8:

Pond Site 8A is located on the north side of C.R. 578 approximately 900 ft east of Peach Tree Drive. This site consists of two undeveloped parcels that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 8A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 8A has an available area of 1.58 ac.

Pond Site 8B is located on the south side of C.R. 578 approximately 900 ft east of Peach Tree Drive. This site requires the partial acquisition of a large undeveloped parcel. The soil at pond site 8B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 8B has an available area of 1.98 ac.

Pond Site 8C is located on the south side of C.R. 578 approximately 500 ft east of Peach Tree Drive. This site requires the partial acquisition of a large undeveloped parcel. The soil at pond site 8C consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 8C has an available area of 2.22 ac.

6.4.9 PRELIMINARY POND SITE NUMBERS 9A AND 9B

Basin number 9 extends from 90 ft east of Spring Time Street (station 356+50) to Old Shady Hills Road (station 369+00) and includes approximately 1,250 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 0.99 ac. The following pond sites were considered for basin number 9:

Pond Site 9A is located on the north side of C.R. 578 approximately 200 ft east of Holden Drive. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 9A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 9A has an available area of 1.95 ac.

Pond Site 9B is located on the south side of C.R. 578 approximately 100 ft east of Holden Drive. This site consists of one undeveloped parcel. The soil at pond site 9B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 9B has an available area of 0.97 ac.

6.4.10 PRELIMINARY POND SITE NUMBERS 10A AND 10B

Basin number 10 extends from Old Shady Hills Road (station 369+00) to Shady Hills Road/Mariner Boulevard (station 377+50) and includes approximately 850 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 0.79 ac. The following pond sites were considered for basin number 10:

Pond Site 10A is located on the north side of C.R. 578 approximately 400 ft west of Shady Hills Road/Mariner Blvd. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 10A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 10A has an available area of 0.79 ac.

Pond Site 10B is located on the south side of C.R. 578 east of Shady Hills Road. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 10B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 10B has an available area of 0.79 ac.

6.4.11 PRELIMINARY POND SITE NUMBERS 11A AND 11B

Basin number 11 extends from Shady Hills Road/Mariner Boulevard (station 377+50) to 570 ft east of Alexson Street (station 450+00) and includes approximately 7,250 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 4.26 ac. The following pond sites were considered for basin number 11:

Pond Site 11A is located on the south side of C.R. 578 west of Runyon Drive. This site requires the partial acquisition of four undeveloped parcels, each of which will be partially acquired as part of the recommended roadway improvements. The soil at pond site 11A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 11A has an available area of 4.26 ac.

Pond Site 11B is located on the north side of C.R. 578 east of Runyon Drive. This site requires the partial acquisition of a large undeveloped parcel. The soil at pond site 11B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 11B has an available area of 4.30 ac.

6.4.12 PRELIMINARY POND SITE NUMBERS 12A AND 12B

Basin number 12 extends from 570 ft east of Alexson Street (station 450+00) to Preston Hollow Road (station 480+00) and includes approximately 3,000 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 1.77 ac. The following pond sites were considered for basin number 12:

Pond Site 12A is located on the north side of C.R. 578 approximately 1,140 ft east of Alexson Street. This site requires the partial acquisition of a large undeveloped parcel. The soil at pond site 12A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 12A has an available area of 1.77 ac.

Pond Site 12B is located on the south side of C.R. 578 approximately 1,520 ft east of Alexson Street. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 12B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 12B has an available area of 1.77 ac.

6.4.13 PRELIMINARY POND SITE NUMBERS 13A AND 13B

Basin number 13 extends from Preston Hollow Drive (station 480+00) to 725 ft east of Josies Drive (station 499+50) and includes approximately 1,950 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 1.31 ac. The following pond sites were considered for basin number 13:

Pond Site 13A is located on the north side of C.R. 578 approximately 1,100 ft east of Preston Hollow Drive. This site requires the partial acquisition of an undeveloped parcel. The soil at pond site 13A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 13A has an available area of 1.31 ac.

Pond Site 13B is located on the south side of C.R. 578 approximately 1,050 ft east of Preston Hollow Drive. This site requires the partial acquisition of a parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 13B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 13B has an available area of 1.31 ac.

6.4.14 PRELIMINARY POND SITE NUMBERS 14A AND 14B

Basin number 14 extends from 725 ft east of Josies Drive (station 499+50) to 835 ft east of Linden Drive (station 519+00) and includes approximately 1,950 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 1.31 ac. The following pond sites were considered for basin number 14:

Pond Site 14A is located on the north side of C.R. 578 approximately 560 ft east of Linden Drive. This site requires the acquisition of three undeveloped parcels two of which will be partially acquired as part of the recommended roadway improvements.

The soil at pond site 14A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 14A has an available area of 1.33 ac.

Pond Site 14B is located on the south side of C.R. 578 approximately 560 ft east of Linden Drive. This site requires the partial acquisition of a parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 14B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 14B has an available area of 1.31 ac.

6.4.15 PRELIMINARY POND SITE NUMBERS 15A AND 15B

Basin number 15 extends from 835 ft east of Linden Drive (station 519+00) to 1,365 ft east of Sparks Road (station 560+00) and includes approximately 4,100 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 2.22 ac. The following pond sites were considered for basin number 15:

Pond Site 15A is located on the north side of C.R. 578 approximately 500 ft east of Sparks Road. This site requires the partial acquisition of an undeveloped parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 15A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 15A has an available area of 2.22 ac.

Pond Site 15B is located on the north side of C.R. 578 approximately 500 ft east of Sparks Road. This site requires the partial acquisition of an undeveloped parcel. The soil at pond site 15B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 15B has an available area of 2.22 ac.

6.4.16 PRELIMINARY POND SITE NUMBERS 16A AND16B

Basin number 16 extends from the intersection of C.R. 578 and Kuka Lane (station 600+50) to station 625+00 and includes approximately 2,450 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 1.82 ac. The following pond sites were considered for basin number 16:

Pond Site 16A is located on the north side of C.R. 578 approximately 800 ft east of Kuka Lane. This site is a remnant parcel resulting from right-of-way acquisition for the recommended roadway improvements. The soil at pond site 16A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 16A has an available area of 2.34 ac.

Pond Site 16B is located on the north side of C.R. 578 approximately 500 ft east of Kuka Lane. This site requires the partial acquisition of a parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 16B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 16B has an available area of 2.23 ac.

6.4.17 PRELIMINARY POND SITE NUMBERS 17A AND 17B

Basin number 17 extends from station 625+00 to station 664+20 and includes approximately 3,920 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 2.58 ac. The following pond sites were considered for basin number 17:

Pond Site 17A is located on the east side of the recommended Ayers Road Extension at station 646+00. This site requires the acquisition of two parcels one of which will be partially acquired as part of the recommended roadway improvements. The soil at pond site 17A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 17A has an available area of 2.76 ac.

Pond Site 17B is located on the east side of the recommended Ayers Road Extension at station 646+00. This site requires the acquisition of one parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 17B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 17B has an available area of 2.84 ac.

6.4.18 PRELIMINARY POND SITE NUMBERS 18A AND 18B

Basin number 18 extends from station 664+20 to station 695+40 and includes approximately 3,120 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 2.18 ac. The following pond sites were considered for basin number 18:

Pond Site 18A is located on the west side of the recommended Ayers Road Extension at station 674+00. This site requires the partial acquisition of a large parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 18A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 18A has an available area of 2.21 ac.

Pond Site 18B is located on the east side of the recommended Ayers Road Extension at station 675+00. This site requires the partial acquisition of a large parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 18B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 18B has an available area of 2.18 ac.

6.4.19 PRELIMINARY POND SITE NUMBERS 19A AND 19B

Basin number 19 extends from station 695+40 to station 723+40 and includes approximately 2,800 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 2.59 ac. The following pond sites were considered for basin number 19:

Pond Site 19A is located on the south side of the recommended Ayers Road Extension at station 712+00. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 19A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 19A has an available area of 2.59 ac.

Pond Site 19B is located on the north side of the recommended Ayers Road Extension at station 717+00. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 19B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 19B has an available area of 2.59 ac.

6.4.20 PRELIMINARY POND SITE NUMBERS 20A AND 20B

Basin number 20 extends from the intersection of U.S. 41 (station 724+00) to the Project End (station 747+10) and includes approximately 4,310 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 3.47 ac. The following pond sites were considered for basin number 20:

Pond Site 20A is located on the south side of the recommended Ayers Road Extension at station 752+00. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 20A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 20A has an available area of 3.49 ac.

Pond Site 20B is located on the south side of the recommended Ayers Road Extension at station 742+00. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 19B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 20B has an available area of 3.50 ac.

6.4.21 PRELIMINARY POND SITE NUMBERS 21A, 21B, AND 21C

Basin number 21 extends from the intersection of C.R. 578 and Kuka Lane (station 600+00) to station 626+70 and includes approximately 2,670 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 1.94 ac. The following pond sites were considered for basin number 21:

Pond Site 21A is located on the north side of C.R. 578, east of Kuka Lane. This site is a remnant parcel resulting from right-of-way acquisition for the recommended roadway improvements. The soil at pond site 21A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 21A has an available area of 2.16 ac.

Pond Site 21B is located on the north side of C.R. 578 approximately 500 ft east of Kuka Lane. This site requires the partial acquisition of two parcels. Both will be acquired as part of the recommended roadway improvements. The soil at pond site 21B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 21B has an available area of 2.01 ac.

Pond Site 21C is located on the north side of C.R. 578, east of Kuka Lane. This site requires the partial acquisition of an undeveloped parcel that will be acquired as part of the recommended roadway improvements. The soil at pond site 21C consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 21C has an available area of 1.94 ac.

6.4.22 PRELIMINARY POND SITE NUMBERS 22A AND 22B

Basin number 22 extends from station 626+70 to station 708+00 and includes approximately 8,130 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 5.63 ac. The following pond sites were considered for basin number 22:

Pond Site 22A is located on the west side of the recommended Ayers Road Extension at station 670+00. This site requires the acquisition of a parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 22A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 22A has an available area of 5.63 ac.

Pond Site 22B is located on the west side of the recommended Ayers Road Extension at station 676+00. This site requires the acquisition of two parcels one of which will be partially acquired as part of the recommended roadway improvements. The soil at pond site 22B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 22B has an available area of 5.63 ac.

6.4.23 PRELIMINARY POND SITE NUMBERS 23A AND 23B

Basin number 23 extends from station 708+00 to station 735+45 and includes approximately 2,745 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 2.53 ac. The following pond sites were considered for basin number 23:

Pond Site 23A is located on the south side of the recommended Ayers Road Extension at Station 724+00. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 23A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 23A has an available area of 2.84 ac.

Pond Site 23B is located on the north side of the recommended Ayers Road Extension at station 727+00. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 23B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 23B has an available area of 2.87 ac.

6.4.24 PRELIMINARY POND SITE NUMBERS 24A AND 24B

Basin number 20 extends from the intersection of U.S. 41 (station 735+90) to the Project End (station 779+00) and includes approximately 4,310 ft of roadway improvements. The improvements within this basin would require a pond size of approximately 3.47 ac. The following pond sites were considered for basin number 24:

Pond Site 24A is located on the south side of the recommended Ayers Road Extension at station 752+00. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 24A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 24A has an available area of 3.49 ac.

Pond Site 24B is located on the south side of the recommended Ayers Road Extension at station 742+00. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the recommended roadway improvements. The soil at pond site 24B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 24B has an available area of 3.50 ac.

6.5 PREFERRED POND SITE ANALYSIS

The alternative pond sites were evaluated based on wetland encroachments, the location of hazardous materials sites, protected species involvement, and a cultural resource evaluation. These evaluation criteria combined with estimated right-of-way and construction costs were compared to determine the preferred preliminary pond site alternative within each basin. Table 6-2 contains the evaluation data used to select the preferred preliminary pond site locations. The preferred preliminary pond site alternative for each of the 24 drainage basins are shown in Table 1-1.

TABLE 6-2
PRELIMINARY POND SITE ALTERNATIVES EVALUATION MATRIX

Pond No.	Location	Required Area (ac)	Available Area (ac)	Wetland Involvement	Contamination	Protected Species	Estimated Construction Costs	Estimated ROW Costs	Total Cost
1A	89+00 LT	0.85	0.93	none	none	none	$11,055.37	$15,000.00	$26,055.37
1B	85+00 RT	0.85	0.74	none	none	none	$11,055.37	$570,200.00	$581,255.37
2A	102+00 RT	1.47	1.52	none	none	none	$24,963.91	$240,500.00	$265,463.91
2B	103+00 RT	1.47	1.52	none	none	none	$24,963.91	$15,000.00	$39,963.91
3A	135+00 RT	1.75	1.81	none	none	none	$31,343.68	$503,800.00	$535,143.68
3B	145+00 RT	1.75	1.81	none	none	none	$31,343.68	$622,300.00	$653,643.68
4A	163+00 RT	0.91	0.95	none	none	none	$13,061.39	$865,000.00	$878,061.39
4B	167+00 RT	0.91	1.30	none	none	none	$13,061.39	$607,200.00	$620,261.39
5A	184+00 LT	2.12	2.26	none	none	none	$39,955.81	$357,500.00	$397,455.81
5B	184+00 RT	2.12	2.52	yes	none	none	$39,955.81	$426,700.00	$466,655.81
6A	234+00 RT	3.52	3.63	none	none	none	$73,997.15	$1,676,900.00	$1,750,897.15
6B	239+00 RT	3.52	3.61	none	none	none	$73,997.15	$273,500.00	$347,497.15
7A	298+00 LT	2.21	2.26	none	none	none	$42,027.49	$483,600.00	$525,627.49
7B	301+00 LT	2.21	3.34	none	none	none	$42,027.49	$855,300.00	$897,327.49
8A	338+00 LT	1.54	1.58	none	none	none	$26,652.59	$617,600.00	$644,252.59
8B	338+00 RT	1.54	1.98	none	none	none	$26,652.59	$1,200,300.00	$1,226,952.59
8C	334+00 LT	1.54	2.22	none	none	none	$26,652.59	$2,738,200.00	$2,764,852.59
9A	364+00 LT	0.97	0.99	none	none	none	$14,317.53	$1,160,300.00	$1,174,617.53
9B	363+00 RT	0.97	1.95	none	none	none	$14,317.53	$856,800.00	$871,117.53
10A	371+50 LT	0.77	0.79	none	none	none	$10,380.35	$1,000,600.00	$1,010,980.35
10B	376+00 RT	0.77	0.79	none	none	none	$10,380.35	$1,236,500.00	$1,246,880.35
11A	89+00 LT	4.26	4.26	none	none	none	$92,614.05	$3,367,600.00	$3,460,214.05
11B	85+00 RT	4.26	4.30	none	none	none	$92,614.05	$1,755,100.00	$1,847,714.05
12A	102+00 RT	1.73	1.77	none	none	none	$30,907.11	$87,300.00	$118,207.11
12B	103+00 RT	1.73	1.77	none	none	none	$30,907.11	$192,200.00	$223,107.11
13A	135+00 RT	1.29	1.31	none	none	none	$21,034.80	$417,000.00	$438,034.80
13B	145+00 RT	1.29	1.31	none	none	none	$21,034.80	$302,600.00	$323,634.80
14A	163+00 RT	1.29	1.33	none	none	none	$21,034.80	$839,600.00	$860,634.80
14B	167+00 RT	1.29	1.31	none	none	none	$21,034.80	$349,900.00	$370,934.80
15A	184+00 LT	2.17	2.22	none	none	none	$41,100.80	$103,900.00	$145,000.80
15B	184+00 RT	2.17	2.22	none	none	none	$41,100.80	$208,900.00	$250,000.80

TABLE 6-2 (CONTINUED)
PRELIMINARY POND SITE ALTERNATIVES EVALUATION MATRIX

Pond No.	Location	Required Area (ac)	Available Area (ac)	Wetland Involvement	Contamination	Protected Species	Estimated Construction Costs	Estimated ROW Costs	Total Cost
Ayers Road Extension - Alignment S-8									
16A	612+00 RT	1.74	2.34	none	none	none	$31,178.96	$15,000.00	$46,178.96
16B	612+00 LT	1.74	2.23	none	none	none	$31,178.96	$184,000.00	$215,178.96
17A	646+00 RT	2.46	2.76	none	none	none	$48,073.78	$195,300.00	$243,373.78
17B	659+00 RT	2.46	2.84	none	none	none	$48,073.78	$253,000.00	$301,073.78
18A	674+00 LT	2.08	2.21	none	none	none	$38,975.55	$61,200.00	$100,175.55
18B	675+00 RT	2.08	2.18	none	none	none	$38,975.55	$71,100.00	$110,075.55
19A	712+00 RT	2.19	2.59	none	none	none	$27,825.32	$156,300.00	$184,125.32
19B	717+00 LT	2.19	2.59	none	none	none	$27,825.32	$270,900.00	$298,725.32
20A	752+00 RT	3.02	3.49	none	none	none	$39,943.87	$179,000.00	$218,943.87
20B	742+00 RT	3.02	3.50	none	none	none	$39,943.87	$507,400.00	$547,343.87
Ayers Road Extension - Alignment S-5									
21A	607+00 RT	1.85	2.16	none	none	none	$34,719.90	$15,000.00	$49,719.90
21B	611+00 LT	1.85	2.01	none	none	none	$34,719.90	$15,000.00	$49,719.90
21C	609+00 RT	1.85	2.01	none	none	none	$34,719.90	$165,000.00	$199,719.90
22A	670+00 RT	5.63	5.63	none	none	none	$127,768.09	$262,500.00	$390,268.09
22B	676+00 RT	5.63	5.63	none	none	none	$127,768.09	$76,000.00	$203,768.09
23A	724+00 RT	2.15	2.84	none	none	none	$27,273.56	$82,800.00	$110,073.56
23B	727+00 RT	2.15	2.87	none	none	none	$27,273.56	$352,200.00	$379,473.56
24A	752+00 RT	3.02	3.49	none	none	none	$39,943.87	$179,000.00	$218,943.87
24B	742+00 RT	3.02	3.50	none	none	none	$39,943.87	$507,400.00	$547,343.87
Floodplain Compensation Sites									
1A	212+00 RT	1.07	1.70	none	none	none	$21,213.32	$430,700.00	$451,913.32
1B	225+75 RT	1.07	1.25	none	none	none	$21,213.32	$239,700.00	$260,913.32

Alignment S-8 not selected; therefore ponds 16 – 20 are voided.

Floodplain Compensation Site 1A voided.

Section 7.0
REGULATORY AGENCY COORDINATION/REQUIRED PERMITS

7.1 LOCAL AGENCIES

Pasco and Hernando Counties are the local agencies with jurisdiction for the recommended improvements to C.R. 578. Coordination with these agencies will be required during preliminary and final design.

7.2 STATE AGENCIES

The state agencies involved in the permitting process for the C.R. 578 drainage system would be the Florida Department of Environmental Protection (FDEP) and SWFWMD. Permits would be required for all dredge and fill work within, or areas connected to, Waters of the State (Chapter 17-4.23, FAR). FDEP has delegated most dredge and fill permitting responsibility to SWFWMD in the form of an Environmental Resource Permit. Stormwater systems will be permitted through the SWFWMD, following Chapter 40D-4 FAC, which requires a stormwater management system that meets the District's criteria. The stormwater management systems should provide water quality treatment, peak discharge attenuation, and adequate drainage. The corridor lies adjacent to wetland areas that must be considered in the design of the stormwater system.

One-to-one volume compensation would have to be made for storage volume lost due to construction of the roadway embankment within the 100-year floodplain.

7.3 FEDERAL AGENCIES

The Federal agencies which may require permits for the recommended C.R. 578 improvements are the U.S. Army Corps of Engineers (COE), and the U.S. Environmental Protection Agency (USEPA). The COE would be involved in permitting dredge and fill activities in the waters of the United States. A National Pollutant Discharge Elimination System (NPDES) permit is administered by the FDEP for stormwater discharges into Waters of the United States.

Section 8.0
REFERENCES

1. *Florida Department of Transportation Drainage Manual, Volume 1; Florida Department of Transportation; 1997.*

2. *Stormwater Management Facility Handbook; Florida Department of Transportation; January 1999.*

3. *Drainage Handbook for Cross Drains; Florida Department of Transportation; August 1996.*

4. *HY8 Culvert Analysis Microcomputer Program and Applications Guide; United States Department of Transportation, Federal Highway Administration; May 1987.*

5. *Environmental Resource Permitting Information Manual; Southwest Florida Water Management District; April 1997.*

6. *SWFWMD Aerials with contours.*

7. *Soil Survey of Pasco County; United States Department of Agriculture; Florida; June 1982.*

8. *Soil Survey of Hernando County; United States Department of Agriculture; Florida; July 1977.*

9. *Federal Emergency Management Agency Map, Pasco County Community Panel Numbers 1200230 0020 C,1200230 0050 C, 1200230 0075 C and Hernando County Community Panel Numbers 1200110 0270 B, 1200110 0300 B, 1200110 0325 B.*

10. *First Draft Preliminary Engineering Report County Line Road (C.R. 578); URS Corporation Southern; December 2000.*

11. *Project Development and Environment Manual; Florida Department of Transportation; Tallahassee, Florida; August 1996.*

12. *Squirrel Prairie Watershed Management Plan; Southwest Florida Water Management District; May 1997.*

13. *The Pithlachascotee River Watershed Flood Plain Analysis;* Ghioto & Associates; January 1997.

APPENDIX A

SOIL SURVEY OF HERNANDO AND PASCO COUNTIES

TABLE 16.--SOIL AND WATER FEATURES

[Absence of an entry indicates the feature is not a concern. The symbol > means greater than]

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Subsidence	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Initial	Total
					Ft			In		In	In
Adamsville: 1	C	None	---	---	2.0-3.5	Apparent	Jun-Nov	>60	---	---	---
Anclote: 2	D	None	---	---	+2-1.0	Apparent	Jun-Dec	>60	---	---	---
Arents: *3: Arents part	C	None	---	---	3.5-5.0	Apparent	Jan-Dec	>60	---	5-10	15-25
Urban land part.											
Aripeka: 4	C	Occasional	Very brief	Jan-Dec	1.5-2.5	Apparent	Jul-Sep	23-40	Hard	---	---
*5: Aripeka part	C	None	---	---	1.5-2.5	Apparent	Jul-Sep	23-40	Hard	---	---
Okeelanta part	A/D	None	---	---	+1-0	Apparent	Jun-Jan	>60	---	4-8	16-30
Lauderhill part	A/D	None	---	---	+1-1.0	Apparent	Jun-Feb	20-40	Hard	4-8	16-36
Arredondo: 6, 7	A	None	---	---	>6.0	---	---	>60	---	---	---
Astatula: 8	A	None	---	---	>6.0	---	---	>60	---	---	---
Basinger: 9	A/D	None	---	---	0-1.0	Apparent	Jun-Nov	>60	---	---	---
10	A/D	None	---	---	+2-1.0	Apparent	Jan-Dec	>60	---	---	---
Blichton: 11, 12, 13	D	None	---	---	0-1.0	Apparent	Jun-Sep	>60	---	---	---
Candler: 14, 15	A	None	---	---	>5.0	---	---	>60	---	---	---
*16: Candler part	A	None	---	---	>6.0	---	---	>60	---	---	---
Urban land part.											
Delray: 17	A/D	None	---	---	+2-1.0	Apparent	Jun-Feb	>60	---	---	---
EauGallie: 18	B/D	None	---	---	0-1.0	Apparent	Jun-Feb	>60	---	---	---
Electra Variant: 19	C	None	---	---	2.0-3.5	Apparent	Jul-Oct	>60	---	---	---
Flemington: 20, 21, 22	D	None	---	---	0-2.5	Perched	Jun-Sep	>60	---	---	---
Floridana: 23	A/D	None	---	---	+2-1.0	Apparent	Jun-Feb	>60	---	---	---
*24: Floridana part	A/D	Frequent	Very long	Jun-Feb	0-1.0	Apparent	Jun-Feb	>60	---	---	---
Basinger part	A/D	Frequent	Very long	Jun-Feb	0-1.0	Apparent	Jun-Nov	>60	---	---	---

See footnote at end of table.

HERNANDO COUNTY

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Subsidence	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Initial	Total
					Ft			In		In	In
Apopka Variant: 25	A/D	None	---	---	+2-1.0	Apparent	Jun-Feb	>60	---	---	---
Basinger: 26	D	Frequent	Very long	Jan-Dec	+1-0.5	Apparent	Jan-Dec	23-40	Hard	---	---
Bradenton: 27	D	None	---	---	+2-1.0	Apparent	Jan-Dec	>60	---	---	---
Candler: 28	A/D	None	---	---	0-1.0	Apparent	Jul-Sep	>60	---	---	---
Candler: 29	A	None	---	---	>6.0	---	---	>60	---	---	---
Coochee: 30	D	Frequent	Very long	Jan-Dec	+1-0.5	Apparent	Jan-Dec	20-40	Hard	---	---
Eau: 31	A	None	---	---	>6.0	---	---	>60	---	---	---
Eaugallie: 32	A	None	---	---	3.5-6.0	Perched	Jun-Oct	>60	---	---	---
Eldred: 33, 34	C	None	---	---	1.5-2.5	Perched	Jul-Nov	>60	---	---	---
Felda: 35	A/D	None	---	---	0-1.0	Apparent	Jun-Feb	>60	---	---	---
Floridana: 36	C	None	---	---	1.5-3.5	Perched	Jul-Oct	>60	---	---	---
Okeelanta: 37: Okeelanta part	A/D	None	---	---	+1-0	Apparent	Jun-Jan	>60	---	4-8	16-30
Terra Ceia part	A/D	None	---	---	+1-1.0	Apparent	Jun-Apr	>60	Hard	4-8	50-60
Paisley: 38	D	Rare	---	---	0-1.0	Apparent	Jun-Nov	>60	---	---	---
Pomona: 39	A	None	---	---	>6.0	---	---	>60	---	---	---
Pompano: 40	B/D	Rare	Brief	Jul-Oct	0-1.0	Apparent	Jun-Nov	>60	---	---	---
Pits: 41											
42: Pits part.											
Dumps part.											
Pomello: 43	C	None	---	---	2.0-3.5	Apparent	Jul-Nov	>60	---	---	---
Pompano: 44	A/D	None	---	---	0-1.0	Apparent	Jun-Nov	>60	---	---	---
Quartzipsamments, shaped: 45	A	None	---	---	3.5-4.5	Apparent	Jan-Dec	>60	---	---	---
Samsula: 46	A/D	None	---	---	+2-1.0	Apparent	Jan-Dec	>60	---	4-8	30-36

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Subsidence	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Initial	Total
					Ft			In		In	In
Sparr: 47, 48	A	None	---	---	1.5-3.5	Perched	Jul-Oct	>60	---	---	---
Tavares: 49	A	None	---	---	3.5-6.0	Apparent	Jun-Dec	>60	---	---	---
Udalfic Arents: *50: Udalfic Arents part	C	None	---	---	3.5-5.0	Apparent	Jan-Dec	>60	---	---	---
Urban land part.											
Wabasso: 51	B/D	None	---	---	0-1.0	Apparent	Jun-Oct	>60	---	---	---
Wauchula: 52	B/D	None	---	---	0-1.0	Apparent	Jun-Feb	>60	---	---	---
Weekiwachee: 53	D	Frequent	Very long	Jan-Dec	+1-0.5	Apparent	Jan-Dec	40-51	Hard	---	---
*54: Weekiwachee part	D	Frequent	Very long	Jan-Dec	+1-0.5	Apparent	Jan-Dec	40-51	Hard	---	---
Homosassa part	D	Frequent	Very long	Jan-Dec	+1-0.5	Apparent	Jan-Dec	23-40	Hard	---	---
Williston: 55	C	None	---	---	>6.0	---	---	20-40	Ripable	---	---
Williston Variant: 56	C	None	---	---	>6.0	---	---	7-20	Ripable	---	---

*This mapping unit is made up of two or more dominant kinds of soil. See mapping unit description for the composition and behavior of the whole mapping unit.

TABLE 17.--SOIL AND WATER FEATURES

[The definitions of "flooding" and "water table" in the Glossary explain terms such as "rare," "brief," "apparent," and "perched." The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern]

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth*	Kind	Months	Depth	Hardness	Initial	Total	Uncoated steel	Concrete
					Ft			In		In	In		
1---------- Wauchula	B/D	None	---	---	0-1.0	Apparent	Jun-Feb	>60	---	---	---	High	High.
2---------- Pomona	B/D	None	---	---	0-1.0	Apparent	Jul-Sep	>60	---	---	---	High	High.
3---------- Pineda	B/D	Rare	---	---	0-1.0	Apparent	Jun-Nov	>60	---	---	---	High	Low.
4---------- Felda	B/D	None	---	---	0-1.0	Apparent	Jul-Mar	>60	---	---	---	High	Moderate.
5---------- Myakka	B/D	None	---	---	0-1.0	Apparent	Jun-Nov	>60	---	---	---	High	High.
6---------- Tavares	A	None	---	---	3.5-6.0	Apparent	Jun-Dec	>60	---	---	---	Low	High.
7---------- Sparr	C	None	---	---	1.5-3.5	Apparent	Jul-Oct	>60	---	---	---	Moderate	High.
8---------- Sellers	B/D	None	---	---	+2-0	Apparent	Jun-Mar	>60	---	---	---	High	High.
9---------- Ona	B/D	None	---	---	0-1.0	Apparent	Jun-Nov	>60	---	---	---	High	High.
10---------- Vero	B/D	None	---	---	0-1.0	Apparent	Jun-Oct	>60	---	---	---	Moderate	High.
11---------- Adamsville	C	None	---	---	2.0-3.5	Apparent	Jun-Nov	>60	---	---	---	Low	Moderate.
12---------- Astatula	A	None	---	---	>6.0	---	---	>60	---	---	---	Low	High.
13, 14---------- Candler	A	None	---	---	>6.0	---	---	>60	---	---	---	Low	High.
15**: Tavares---------- Urban land.	A	None	---	---	3.5-6.0	Apparent	Jun-Dec	>60	---	---	---	Low	High.
16---------- Zephyr	D	None	---	---	+2-1.0	Apparent	Jun-Feb	>60	---	2-4	>16	High	High.
17---------- Immokalee	B/D	None	---	---	0-1.0	Apparent	Jun-Nov	>60	---	---	---	High	High.

See footnotes at end of table.

TABLE 17.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth*	Kind	Months	Depth	Hardness	Initial	Total	Uncoated steel	Concrete
					Ft			In		In	In		
18--Electra Variant	C	None	---	---	2.0-3.5	Apparent	Jul-Oct	>60	---	---	---	Low	High.
19--Paola	A	None	---	---	>6.0	---	---	>60	---	---	---	Low	High.
20--Aripeka	C	Occasional	Very brief	Jan-Dec	1.5-2.5	Apparent	Jul-Sep	23-40	Hard	---	---	High	Low.
21--Smyrna	A/D	None	---	---	0-1.0	Apparent	Jul-Oct	>60	---	---	---	High	High.
22--Basinger	A/D	None	---	---	0-1.0	Apparent	Jun-Feb	>60	---	---	---	High	Moderate.
23--Basinger	B/D	None	---	---	+2-1.0	Apparent	Jun-Feb	>60	---	---	---	High	Moderate.
24**. Quartzipsamments													
25--Jonesville	B	None	---	---	>6.0	---	---	20-40	Soft	---	---	Low	Low.
26--Narcoossee	C	None	---	---	2.0-3.5	Apparent	Jun-Nov	>60	---	---	---	Moderate	High.
27--Anclote	D	None	---	---	+2-1.0	Apparent	Jun-Mar	>60	---	---	---	Moderate	Moderate.
28**. Pits													
29**--Lacoochee	D	Frequent	Very long	Jan-Dec	0-0.5	Apparent	Jan-Dec	20-40	Hard	---	---	High	Low.
30**: Okeelanta	A/D	None	---	---	+1-0	Apparent	Jun-Jan	>60	---	16-20	16-30	High	Moderate.
Terra Ceia	B/D	None	---	---	+1-1.0	Apparent	Jan-Dec	>60	---	16-20	50-60	Moderate	Moderate.
31**: Udalfic Arents.													
Urban land.													
32--Lake	A	None	---	---	>6.0	---	---	>60	---	---	---	Low	High.
34--Pompano	B/D	None	---	---	0-1.0	Apparent	Jun-Nov	>60	---	---	---	High	Moderate.
35--EauGallie	B/D	None	---	---	0-1.0	Apparent	Jun-Oct	>60	---	---	---	High	Moderate.

See footnotes at end of table.

TABLE 17.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth*	Kind	Months	Depth	Hardness	Initial	Total	Uncoated steel	Concrete
					Ft			In		In	In		
36**: Candler	A	None	---	---	>6.0	---	---	>60	---	---	---	Low	High.
Urban land.													
37**: Paola	A	None	---	---	>6.0	---	---	>60	---	---	---	Low	High.
Urban land.													
38**. Urban land													
39** Chobee	B/D	Frequent	Very long	Jun-Feb	0-1.0	Apparent	Jun-Feb	>60	---	---	---	Moderate	Low.
40 Paisley	D	Rare	---	---	0-1.0	Apparent	Jun-Nov	>60	---	---	---	High	Moderate.
41**: Pits.													
Dumps.													
42 Pomello	C	None	---	---	2.0-3.5	Apparent	Jul-Nov	>60	---	---	---	Low	High.
43, 44 Arredondo	A	None	---	---	>6.0	---	---	>60	---	---	---	Moderate	High.
45 Kendrick	A	None	---	---	>6.0	---	---	>60	---	---	---	Moderate	High.
46 Cassia	C	None	---	---	1.5-3.5	Apparent	Jul-Jan	>60	---	---	---	Moderate	High.
47 Weekiwachee	D	Frequent	Very long	Jan-Dec	0-0.5	Apparent	Jan-Dec	40-51	Hard	---	---	High	Low.
48 Lochloosa	C	None	---	---	2.5-5.0	Apparent	Jul-Oct	>60	---	---	---	High	High.
49, 50, 51 Blichton	D	None	---	---	0-1.0	Apparent	Jun-Sep	>60	---	---	---	High	High.
52 Samsula	B/D	None	---	---	+2-1.0	Apparent	Jan-Dec	>60	---	16-20	30-36	High	High.
53 Sparr	C	None	---	---	1.5-3.5	Apparent	Jul-Oct	>60	---	---	---	Moderate	High.
54 Flemington Variant	D	None	---	---	0-2.5	Perched	Jun-Sep	>60	---	---	---	High	High.

See footnotes at end of table.

TABLE 17.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth*	Kind	Months	Depth	Hardness	Initial	Total	Uncoated steel	Concrete
					Ft			In		In	In		
55---------- Homosassa	D	Frequent----	Very long	Jan-Dec	0-0.5	Apparent	Jan-Dec	23-40	Hard	---	---	High-----	Low.
56**: EauGallie--------	B/D	None--------	---	---	0-1.0	Apparent	Jun-Oct	>60	---	---	---	High-----	Moderate.
Urban land.													
57---------- Vero Variant	B/D	None--------	---	---	0-1.0	Apparent	Jun-Oct	40-80	Hard	---	---	Moderate	Moderate.
58---------- Tomoka	A/D	None--------	---	---	+1-0	Apparent	Jun-Apr	>60	---	---	24	High-----	High.
59---------- Newnan	C	None--------	---	---	1.5-2.5	Apparent	Aug-Feb	>60	---	---	---	Low------	High.
60**: Palmetto---------	D	None--------	---	---	+2-1.0	Apparent	Jun-Feb	>60	---	---	---	High-----	High.
Zephyr----------	D	None--------	---	---	+2-1.0	Apparent	Jun-Feb	>60	---	2-4	>16	High-----	High.
Sellers----------	B/D	None--------	---	---	+2-0	Apparent	Jun-Mar	>60	---	---	---	High-----	High.
61---------- Pompano	D	Frequent----	Brief-----	Jun-Nov	0-1.0	Apparent	Jun-Nov	>60	---	---	---	High-----	Moderate.
62---------- Kendrick	A	None--------	---	---	>6.0	---	---	>60	---	---	---	Moderate	High.
63---------- Delray	D	None--------	---	---	+2-1.0	Apparent	Jun-Dec	>60	---	---	---	Moderate	Low.
64---------- Nobleton	C	None--------	---	---	1.5-3.5	Perched	Jul-Oct	>60	---	---	---	High-----	High.
65---------- Gainesville	A	None--------	---	---	>6.0	---	---	>60	---	---	---	Low------	High.
66---------- Micanopy	C	None--------	---	---	1.5-2.5	Perched	Jul-Nov	>60	---	---	---	High-----	High.
67---------- Kanapaha	A/D	None--------	---	---	0-1.0	Apparent	Jul-Sep	>60	---	---	---	High-----	High.
68---------- Lake	A	None--------	---	---	>6.0	---	---	>60	---	---	---	Low------	High.
69---------- Millhopper	A	None--------	---	---	3.5-6.0	Perched	Aug-Feb	>60	---	---	---	Low------	Moderate.
70---------- Placid	B/D	None--------	---	---	0-1.0	Apparent	Jun-Mar	>60	---	---	---	High-----	High.

See footnotes at end of table.

TABLE 17.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock		Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth*	Kind	Months	Depth	Hardness	Initial	Total	Uncoated steel	Concrete
					Ft			In		In	In		
71**:													
Anclote	D	Frequent	Long	Jun-Nov	0-1.0	Apparent	Jun-Feb	>60	---	---	---	High	Moderate.
Tavares	A	Occasional	Long	Jul-Nov	3.5-6.0	Apparent	Jun-Dec	>60	---	---	---	Low	High.
Pomello	C	Occasional	Long	Jul-Nov	2.0-3.5	Apparent	Jun-Dec	>60	---	---	---	Low	High.
72---- Orlando	A	None	---	---	>6.0	---	---	>60	---	---	---	Low	High.
73---- Zolfo	C	None	---	---	2.0-3.5	Apparent	Jun-Nov	>60	---	---	---	Low	Moderate.
74---- Candler Variant	A	None	---	---	>6.0	---	---	>60	---	---	---	Low	High.
75**. Beaches													
76---- Bessie	D	Frequent	Very long	Jan-Dec	0-1.0	Apparent	Jan-Dec	>60	---	16-18	16-24	High	High.

* The plus sign preceding the range in depth indicates that the water table is above the surface of the soil. The first numeral in the range indicates how high the water is above the surface. The second numeral indicates the depth below the surface.

** See description of the map unit for composition and behavior characteristics of the map unit.

APPENDIX B

TREATMENT, ATTENUATION AND POND CALCULATIONS

COMPONENTS OF CONTRACT PLANS SET

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2	TYPICAL SECTIONS/LEGEND
3	PROJECT LAYOUT
4 - 28	ROADWAY PLAN SHEETS
4 - 20	ROADWAY PROFILE SHEETS
1 - 198	CROSS SECTION SHEETS

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

CONCEPT PLANS

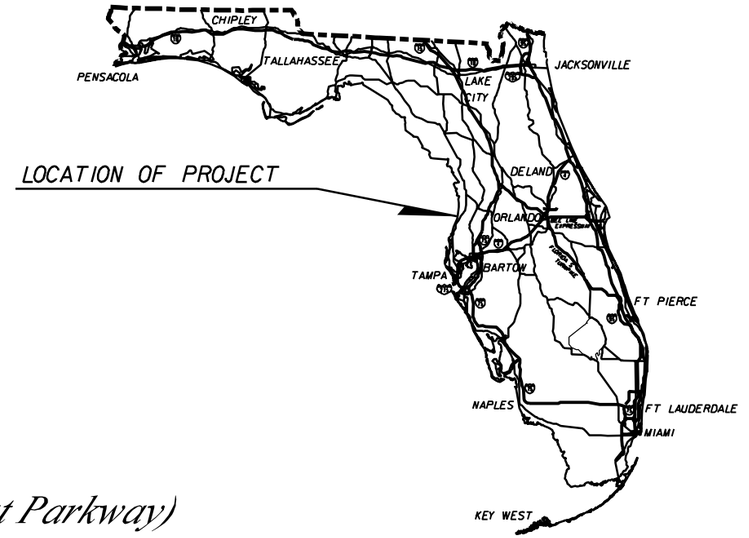
FINANCIAL PROJECT ID 257298 1 22 01

FEDERAL-AID PROGRAM NUMBER 7822 001 S

PASCO AND HERNANDO COUNTIES

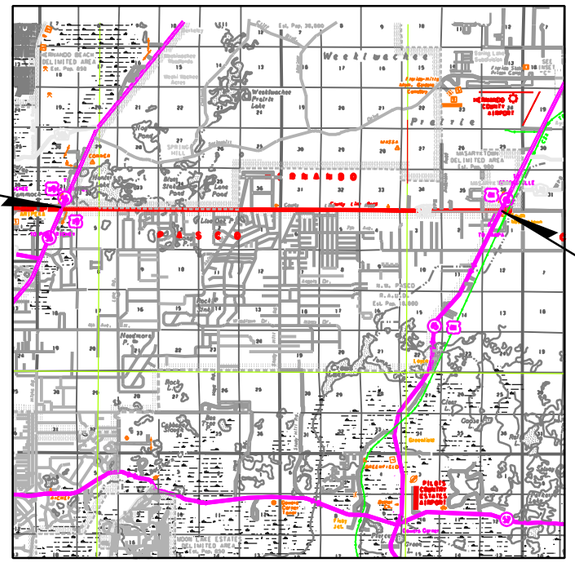
COUNTY ROAD NO. 578

From U.S. 19 (S.R. 55) to U.S. 41 (S.R. 45)



ALIGNMENT S-8 (C.R. 578 From U.S. 19 (S.R. 55) to Suncoast Parkway)
ALIGNMENT S-5 (Ayers Road Extension From Suncoast Parkway to U.S. 41 (S.R. 45))

BEGIN PROJECT
STA. 84+05.96



N

2 MILE

END PROJECT
STA. 721+84.90

PLANS PREPARED BY:

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
No. 00000002

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
ROADWAY AND TRAFFIC DESIGN STANDARDS
DATED JANUARY 2000, AND
STANDARDS SPECIFICATIONS FOR ROAD AND BRIDGE
CONSTRUCTION DATED 1999,
AS AMENDED BY CONTRACT DOCUMENTS.

LENGTH OF PROJECT		
	LIN. FT.	MILES
ROADWAY		
BRIDGES (W.B.)		
NET LENGTH OF PROJ.		
EXCEPTIONS		
GROSS LENGTH OF PROJ.		

FDOT PROJECT MANAGER : MIKE SEIFERT, PLS, PE

CONCEPT PLANS
ENGINEER OF RECORD: LISA D. HEIMBURG, P.E.

P.E. NO.: 47231

FISCAL YEAR	SHEET NO.
01	1

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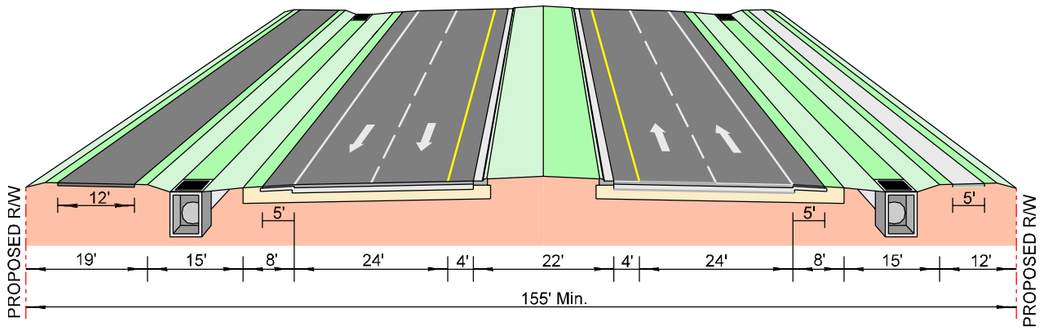


SUBURBAN TYPICAL SECTION
From U.S. 19 to U.S. 41 (S.R. 45)

LEGEND

- EXISTING RIGHT-OF-WAY
- EXISTING L/A RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- PROPERTY LINES
- PROPOSED EDGE OF PAVEMENT
- 50 — CENTERLINE OF CONSTRUCTION
- WETLAND BOUNDARY
- 25 — POTENTIAL CONTAMINATION SITE
- 18" — EXISTING CROSS DRAINS
- HIGH ARCHAEOLOGICAL PROBABILITY
- MODERATE ARCHAEOLOGICAL PROBABILITY
- PREVIOUSLY RECORDED ARCHAEOLOGICAL SITE
- RECOMMENDED POND SITE
- ALTERNATE POND SITE
- R — POTENTIAL RESIDENTIAL RELOCATION
- B — POTENTIAL BUSINESS RELOCATION
- I — POTENTIAL INSTITUTIONAL OR NON PROFIT

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
09/13/99		DATE OF FLIGHT			

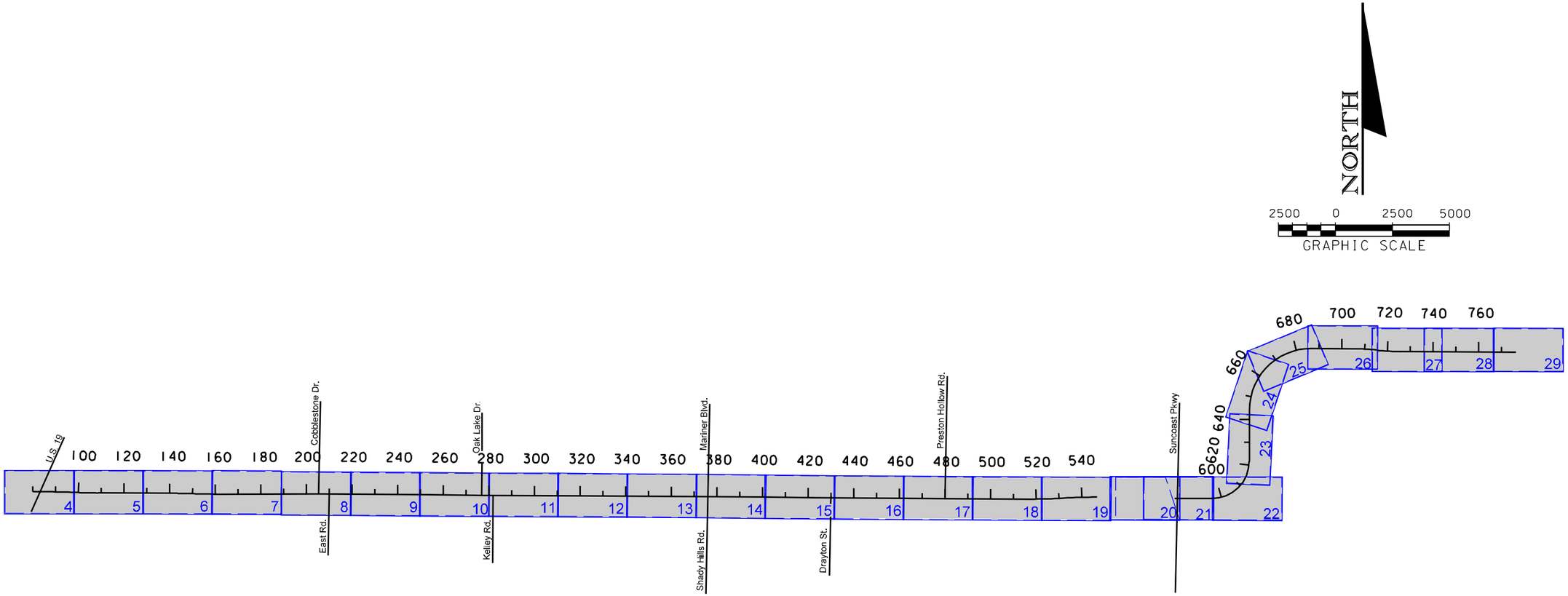
URS
URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
No. 00000002

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)

SHEET NO. 2



Note:
Segment A - U.S. 19 to East Road
Segment B - East Road to Mariner Boulevard
Segment C - Mariner Boulevard to Suncoast Parkway
Segment D - Suncoast Parkway to U.S. 41

PROJECT LAYOUT SHEETS

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
09/13/99		DATE OF FLIGHT			

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
No. 00000002

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)

SHEET NO. 3

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Preliminary Pond Site Numbers 1A and 1B

Description: Basin number 1 extends from the U.S. 19 (station 85+00) to 390 ft east of Austin Avenue (Station 96+50) and includes approximately 1,150 ft of roadway.

Roadway Segment: station 85+00 to station 96+50
Length: 1,150 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= {1,150(90) + 1,000(12)}/43560 = 2.65 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= {1,150(87) + 1,000(12)}/43560 = 2.57 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(2.65) = 0.22 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Pre-Development Weighted Curve Number = 61 *(combination residential/ commercial use)*

S_{pre} = (1000/61)-10 = 6.39 inches

$Q_{pre} = \frac{\{11.5-0.2(6.39)\}^2}{\{11.5 + 0.8(6.39)\}}$ = 6.92 inches

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}}$ = 11.26 inches

Runoff Depth = 11.26"-6.92" = 4.34"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)

Attenuation Volume = (4.34/12)(2.57) = 0.93 ac-ft

Total Required Pond Volume = 0.93 + 0.22 = 1.15 ac-ft

Preliminary Pond Site Numbers 1A and 1B

Pond Dimensions

SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

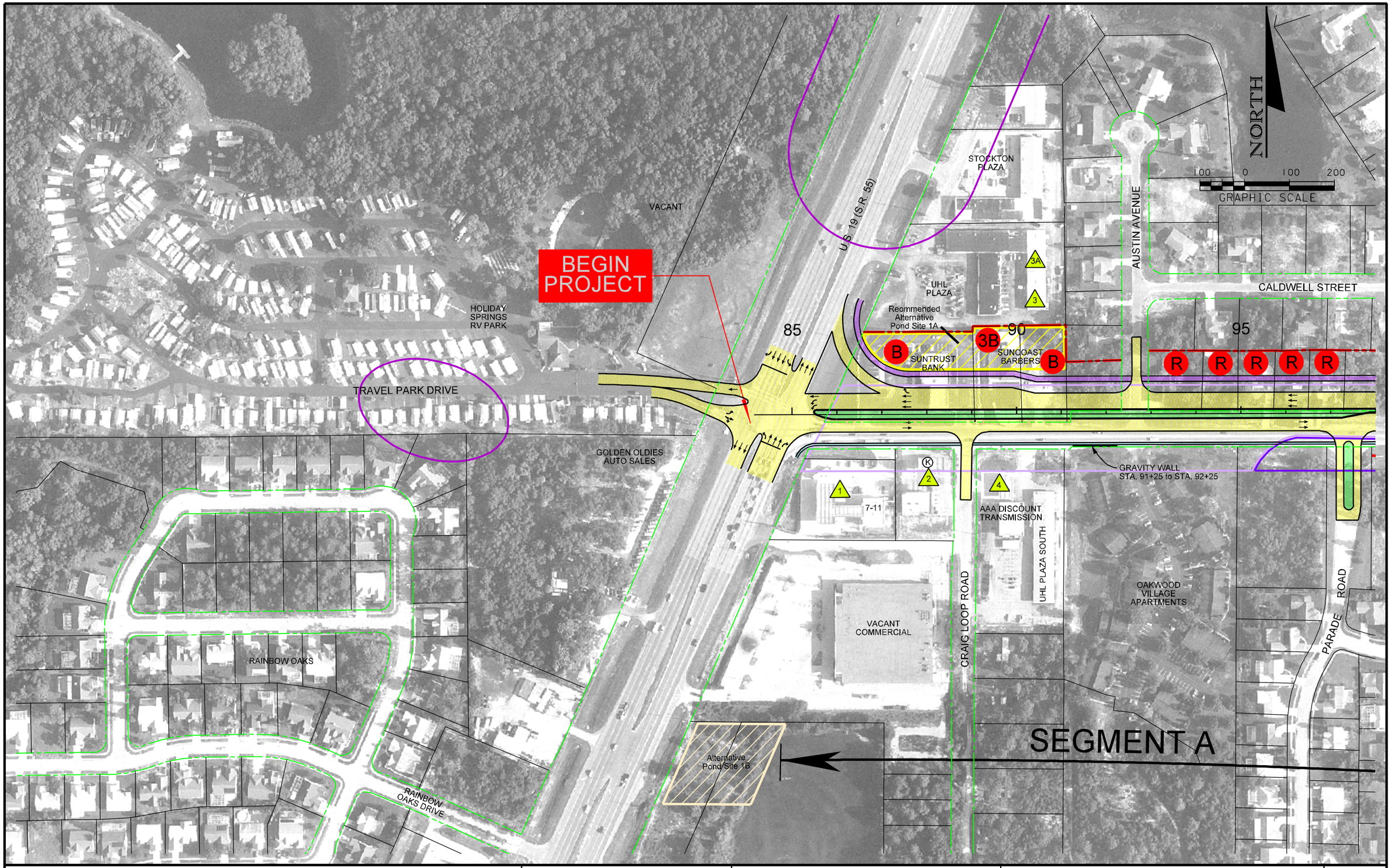
Dimension of square pond with vertical sides = $[(1.15/4)(43560)]^{1/2}$ = 112 ft x 112 ft

Dimension with side slope and berm = 192 ft x 192 ft

Total Area Required =$(192)^2/43560$ = 0.85 acres

Pond Site 1A is located in the northeast quadrant of the U.S. 19/C.R. 578 intersection. This site will be acquired as part of the roadway widening resulting in three remnant parcels totaling 0.93 acres. The soil at pond site 1A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 1A has an available area of 0.93 acres.

Pond Site 1B is located on the east side of U.S. 19 approximately 700 feet south of C.R. 578. Located on this site is an existing stormwater management facility which could be modified in order to provide the required treatment and attenuation volumes.



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
09/13/99		DATE OF FLIGHT			

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
No. 00000002

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

SHEET NO. 4

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Preliminary Pond Site Numbers 2A and 2B

Description: Basin number 2 extends from 390 ft east of Austin Avenue (Station 96+50) to Dartmouth Avenue (Station 124+50) and includes approximately 2,800 ft of roadway improvements. From station 110+50 to station 124+50 the existing roadway has a 4-lane typical section.

Roadway Segment: station 96+50 to station 124+50
Length: 1,400 feet (includes pavement widening only)

Additional Impervious Width added to existing 2-lane section (treatment): 90' (proposed 6-lane)
Additional Impervious Width added to existing 4-lane section (treatment): 90' (proposed 6-lane) - 48'(existing 4 lanes) = 42'
Additional Impervious Area (treatment)= {1,400(90) + 1,400(42)}/43560 = 4.24 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= {1,400(87) + 1,400(63)}/43560 = 4.82 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(4.24) = 0.35 ac-ft

Attenuation Volume

Storm Frequency: 100 year Hydrologic Soil Group: "A"
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Potential Abstraction (S) = (1000/CN) –10 Runoff Depth (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$

Pre-Development Weighted Curve Number = 49 *(grass - fair condition)*

S_{pre} = (1000/49)-10 = 10.41 inches

$Q_{pre} = \frac{\{11.5-0.2(10.41)\}^2}{\{11.5 + 0.8(10.41)\}} = 4.47$ inches

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}} = 11.26$ inches

Runoff Depth = 11.26"- 4.47" = 6.79"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)

Attenuation Volume = (6.79/12)(4.82) = 2.73 ac-ft

Total Required Pond Volume = 2.73 + 0.35 = 3.08 ac-ft

Preliminary Pond Site Numbers 2A and 2B

Pond Dimensions

SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

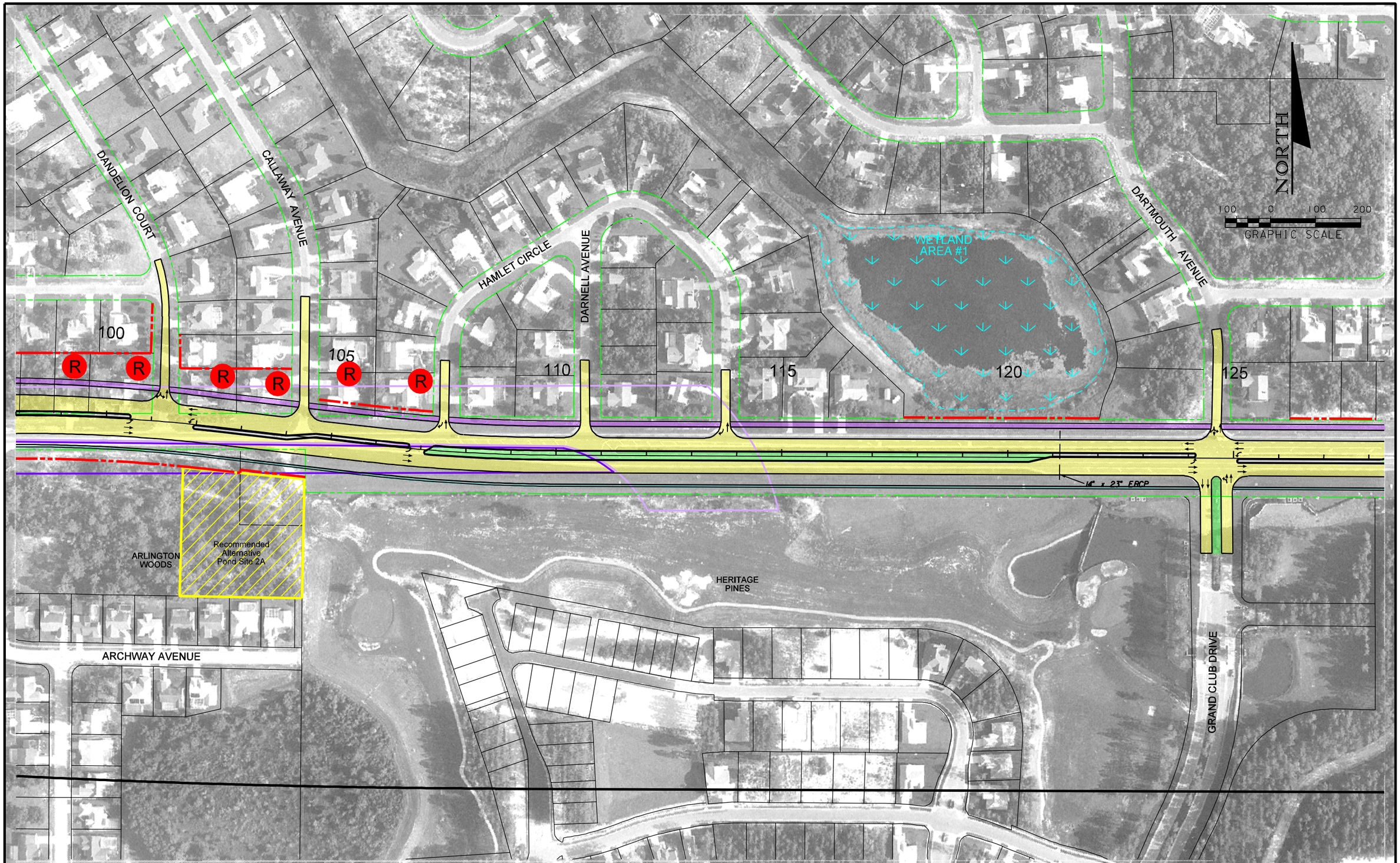
Dimension of square pond with vertical sides = $[(3.08/4.5)(43560)]^{1/2}$ = 173 ft x 173 ft

Dimension with side slope and berm = 253 ft x 253 ft

Total Area Required =$(253)^2/43560$ = 1.47 acres

Pond Site 2A is located on the south side of C.R. 578 between Dandelion Court and Callaway Avenue. This site requires the acquisition of a parcel that will be partially acquired as part of the proposed roadway improvements and the partial acquisition of a large undeveloped parcel. The soil at pond site 2A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 2A has an available area of 1.52 acres.

Pond Site 2B is located on the south side of C.R. 578 between Dandelion Court and Callaway Avenue. This site requires the partial acquisition of land, which is part of the Heritage Pines Development and has an available area of 1.52 ac. The soil at pond site 2B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 2B was eliminated from consideration due to the high cost of land acquisition, thus right-of-way cost data is not available for this preliminary pond site.



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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
09/13/99		DATE OF FLIGHT			

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
No. 00000002

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

SHEET NO. 5

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Preliminary Pond Site Numbers 3A and 3B

Description: Basin number 3 extends from Dartmouth Avenue (Station 124+50) to 225 east of Dawson Avenue (Station 161+00) and includes approximately 3,650 ft of roadway improvements. From station 124+50 to station 144+00 the existing roadway has a 4-lane typical section.

Roadway Segment: station 124+50 to station 161+00
Length: 3,650 feet (includes pavement widening only)

Additional Impervious Width added to existing 2-lane section (treatment): 90' (proposed 6-lane)
Additional Impervious Width added to existing 4-lane section (treatment): 90' (proposed 6-lane) - 48'(existing 4 lanes) = 42'
Additional Impervious Area (treatment)= {1,700(90) + 1,950(42)}/43560 = 5.39 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= {1,700(87) + 1,950(63)}/43560 = 6.22 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(5.39) = 0.45 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Pre-Development Weighted Curve Number = 49 *(grass - fair condition)*

S_{pre} = (1000/49)-10 = 10.41 inches

$Q_{pre} = \frac{\{11.5-0.2(10.41)\}^2}{\{11.5 + 0.8(10.41)\}}$ = 4.47 inches

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}}$ = 11.26 inches

Runoff Depth = 11.26"- 4.47" = 6.79"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)

Attenuation Volume = (6.79/12)(6.22) = 3.52 ac-ft

Total Required Pond Volume = 3.52 + 0.45 = 3.97 ac-ft

Preliminary Pond Site Numbers 3A and 3B

Pond Dimensions

SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

Dimension of square pond with vertical sides = $[(3.97/4.5)(43560)]^{1/2}$ = 196 ft x 196 ft

Dimension with side slope and berm = 276 ft x 276 ft

Total Area Required =$(276)^2/43560$ = 1.75 acres

Pond Site 3A is located on the south side of C.R. 578 approximately 900 feet east of Balboa Avenue. This site is currently undeveloped and is located on the south side of an existing dry treatment and attenuation facility. The soil at pond site 3A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 3A has an available area of 1.81 acres.

Pond Site 3B is located on the south side of C.R. 578 approximately 1,320 feet east of Balboa Avenue. This site is currently undeveloped and is located on the east side of an existing dry treatment and attenuation facility. The soil at pond site 3B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 3B has an available area of 1.81 acres.

PLANTER ROAD
BALBOA AVENUE
CACTUS CIRCLE
RUSKIN AVENUE
WETLAND AREA #2
HALLOW AVENUE
FOUNTAIN COURT
NORTH
100 0 100 200
GRAPHIC SCALE
130
135
140
145
150
155
18" RCP
24" RCP
24" RCP
VACANT
Alternative
Pond Site 3B
GRUBB
CONSTRUCTION
Recommended
Alternative
Pond Site 3A
5

SEGMENT A

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
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URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
No. 00000002

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

SHEET NO. 6

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Preliminary Pond Site Numbers 4A and 4B

Description: Basin number 4 extends from to 225 east of Dawson Avenue (Station 161+00) to 190 feet east Darcoca Avenue (Station 172+20 and includes approximately 1,120 ft of roadway improvements.

Roadway Segment: station 161+00 to station 172+20
Length: 1,120 feet (includes pavement widening only)

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 1,120(90)/43560 = 2.31 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= 1,120(87)/43560 = 2.24 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(2.31) = 0.19 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Pre-Development Weighted Curve Number = 49 *(grass - fair condition)*

S_{pre} = (1000/49)-10 = 10.41 inches

$Q_{pre} = \frac{\{11.5-0.2(10.41)\}^2}{\{11.5 + 0.8(10.41)\}} = 4.47$ inches

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}} = 11.26$ inches

Runoff Depth = 11.26"- 4.47" = 6.79"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)

Attenuation Volume = (6.79/12)(2.24) = 1.27 ac-ft

Total Required Pond Volume = 1.27 + 0.19 = 1.46 ac-ft

Preliminary Pond Site Numbers 4A and 4B

Pond Dimensions

SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

Dimension of square pond with vertical sides = $[(1.46/4.5)(43560)]^{1/2}$ = 119 ft x 119 ft

Dimension with side slope and berm = 199 ft x 199 ft

Total Area Required =$(199)^2/43560$ = 0.91 acres

Pond Site 4A is located on the south side of C.R. 578 approximately 130 feet east of Arcadia Avenue. This site is currently undeveloped and will be partially acquired as part of the proposed roadway improvements. The soil at pond site 4A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 4A has an available area of 0.95 acres.

Pond Site 4B is located on the south side of C.R. 578 approximately 450 feet east of Arcadia Avenue. This site is currently undeveloped and will be partially acquired as part of the proposed roadway improvements. The soil at pond site 4B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 4B has an available area of 1.30 acres.

Preliminary Pond Site Numbers 5A and 5B

Description: Basin number 5 extends from 190 feet east Darcoca Avenue (Station 172+20) to 665 feet east of Cobblestone Drive (Station 212+00) and includes approximately 3,980 ft of roadway improvements.

Roadway Segment: station 172+20 to station 212+00
Length: 3,980 feet (includes pavement widening only)

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 3,980(90)/43560 = 8.22 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= 3,980(87)/43560 = 7.95 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(8.22) = 0.69 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Pre-Development Weighted Curve Number = 49 *(grass - fair condition)*

S_{pre} = (1000/49)-10 = 10.41 inches

$Q_{pre} = \frac{\{11.5-0.2(10.41)\}^2}{\{11.5 + 0.8(10.41)\}} = 4.47$ inches

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}} = 11.26$ inches

Runoff Depth = 11.26"- 4.47" = 6.79"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)

Attenuation Volume = (6.79/12)(7.95) = 4.50 ac-ft

Total Required Pond Volume = 4.50 + 0.69 = 5.18 ac-ft

Preliminary Pond Site Numbers 5A and 5B

Pond Dimensions

SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

Dimension of square pond with vertical sides = $[(5.18/4.5)(43560)]^{1/2}$ = 224 ft x 224 ft

Dimension with side slope and berm = 304 ft x 304 ft

Total Area Required =$(304)^2/43560$ = 2.12 acres

Pond Site 5A is located on the north side of C.R. 578 approximately 600 feet east of Paris Avenue. This site is currently undeveloped. The soil at pond site 5A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. ft. Pond site 5A has an available area of 2.26 acres.

Pond Site 5B is located on the south side of C.R. 578 approximately 700 feet east of Paris Avenue. This site consists of two undeveloped parcels, both of which will be partially acquired as part of the proposed roadway improvements. The soil at pond site 5B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 5B has an available area of 2.52 acres.

NORTH

100 0 100 200

GRAPHIC SCALE

CLEARWATER DRIVE

DANSON AVENUE

ARCADIA AVENUE

PARMA LANE

OUTLOOK AVENUE

DARCOCA AVENUE

GALIANO COURT

PARIS AVENUE

ORANGE HILL DRIVE

TITUS ROAD

160 165 170 175 180 185

R R

24" RCP

42" CMP

WETLAND AREA #2

WETLAND AREA #3

Recommended Alternative Pond Site 5A

Alternative Pond Site 4A

Recommended Alternative Pond Site 4B

Alternative Pond Site 5B

VACANT

VACANT

COUNTY LINE INDUSTRIAL PARK

7

2B AUTO SALES

3B

6

DYNO PRECISION MACHINE/ A-1 TRANSMISSION

ROYAL RYDER MOTORCYCLES

FLORIDA FEEDERS/ MR. G'S FOODS

WISE AUTO SERVICE

SOLAR

CENTURY PLUMBING

REVISIONS					
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

SHEET NO. 7

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Preliminary Pond Site Numbers 6A and 6B

Description: Basin number 6 extends from 665 feet east of Cobblestone Drive (Station 212+00) to 710 feet east of Kelly Road (Station 289+00) and includes approximately 7,700 ft of roadway improvements.

Roadway Segment: station 212+00 to station 289+00
Length: 7,700 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 7,700(90)/43560 = 15.91 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= 7,700(87)/43560 = 15.38 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(15.91) = 1.33 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Pre-Development Weighted Curve Number = 49 *(grass - fair condition)*

S_{pre} = (1000/49)-10 = 10.41 inches

$Q_{pre} = \frac{\{11.5-0.2(10.41)\}^2}{\{11.5 + 0.8(10.41)\}} = 4.47$ inches

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}} = 11.26$ inches

Runoff Depth = 11.26"- 4.47" = 6.79"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)

Attenuation Volume = (6.79/12)(15.38) = 8.70 ac-ft

Total Required Pond Volume = 8.70 + 1.33 = 10.03 ac-ft

Preliminary Pond Site Numbers 6A and 6B

Pond Dimensions

SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

Dimension of square pond with vertical sides = $[(10.03/4.5)(43560)]^{1/2}$ = 312 ft x 312 ft

Dimension with side slope and berm = 392 ft x 392 ft

Total Area Required =$(392)^2/43560$ = 3.52 acres

Pond Site 6A is located on the south side of C.R. 578 east of Long Lake Road. This site consists of one undeveloped parcel that will be partially acquired as part of the proposed roadway improvements and the partial acquisition of two other parcels, one of which is developed. The soil at pond site 6A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 6A has an available area of 3.63 acres.

Pond Site 6B is located on the south side of C.R. 578 approximately 700 feet west of Lands Ford Drive. This site consists of one undeveloped parcel that will be partially acquired as part of the proposed roadway improvements and the partial acquisition of one other parcel, which is developed. The soil at pond site 6B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 6B has an available area of 3.61 acres.

CLEARWATER DRIVE

220

225

230

FARGO COURT

235

WETLAND AREA #4

240

245

TRUCE CIRCLE

NORTH

100 0 100 200

GRAPHIC SCALE

12" CMP

24" CMP

B

McCABES PLANT FARM

VACANT

Alternative Pond Site 6A

OAK LAKES

Recommended Alternative Pond Site 6B

LANDSTORD DRIVE

WETLAND AREA #7

"THE FATHERS HOUSE" CHURCH

Recommended Alternative Flood Plain Mitigation Site 1B

WETLAND AREA #5

LONG LAKE ROAD

MORROW LANE

REVISIONS					
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STATE OF FLORIDA
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C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

SHEET NO. 9

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Preliminary Pond Site Numbers 7A and 7B

Description: Basin number 7 extends from 710 feet east of Kelly Road (Station 289+00) to 185 feet east of Peach Tree Drive (Station 331+00) and includes approximately 4,200 ft of roadway improvements.

Roadway Segment: station 289+00 to station 331+00
Length: 4,200 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 4,200(90)/43560 = 8.68 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= 4,200(87)/43560 = 8.39 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(8.68) = 0.72 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Pre-Development Weighted Curve Number = 49 *(grass - fair condition)*

S_{pre} = (1000/49)-10 = 10.41 inches

$Q_{pre} = \frac{\{11.5-0.2(10.41)\}^2}{\{11.5 + 0.8(10.41)\}} = 4.47$ inches

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}} = 11.26$ inches

Runoff Depth = 11.26"- 4.47" = 6.79"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)

Attenuation Volume = (6.79/12)(8.39) = 4.75 ac-ft

Total Required Pond Volume = 4.75 + 0.72 = 5.47 ac-ft

Preliminary Pond Site Numbers 7A and 7B

Pond Dimensions

SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

Dimension of square pond with vertical sides = $[(5.47/4.5)(43560)]^{1/2}$ = 230 ft x 230 ft

Dimension with side slope and berm = 310 ft x 310 ft

Total Area Required =$(310)^2/43560$ = 2.21 acres

Pond Site 7A is located on the north side of C.R. 578 approximately 400 feet west of Suncoast Boulevard. This site consists of one undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 7A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 7A has an available area of 2.26 acres.

Pond Site 7B is located on the north side of C.R. 578 approximately 170 feet west of Suncoast Boulevard. This site consists of one undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 7B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 7B has an available area of 3.34 acres.

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COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

SHEET NO. 11

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Preliminary Pond Site Numbers 8A, 8B, and 8C

Description: Basin number 8 extends from 185 feet east of Peach Tree Drive (Station 331+00) to 90 feet east of Spring Time Street (Station 356+50) and includes approximately 2,550 feet of roadway improvements.

Roadway Segment: station 331+00 to station 356+50
Length: 2,550 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 2,550(90)/43560 = 5.27 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= 2,550(87)/43560 = 5.09 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(5.27) = 0.44 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Pre-Development Weighted Curve Number = 49 *(grass - fair condition)*

S_{pre} = (1000/49)-10 = 10.41 inches

$Q_{pre} = \frac{\{11.5-0.2(10.41)\}^2}{\{11.5 + 0.8(10.41)\}} = 4.47$ inches

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}} = 11.26$ inches

Runoff Depth = 11.26"- 4.47" = 6.79"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)
Attenuation Volume = (6.79/12)(5.09) = 2.88 ac-ft

Total Required Pond Volume = 2.88 + 0.44 = 3.32 ac-ft

Preliminary Pond Site Numbers 8A, 8B, and 8C

Pond Dimensions

SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

Dimension of square pond with vertical sides = $[(3.32/4.5)(43560)]^{1/2}$ = 179 ft x 179 ft

Dimension with side slope and berm = 259 ft x 259 ft

Total Area Required =$(259)^2/43560$ = 1.54 acres

Pond Site 8A is located on the north side of C.R. 578 approximately 900 feet east of Peach Tree Drive. This site consists of two undeveloped parcels that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 8A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 8A has an available area of 1.58 acres.

Pond Site 8B is located on the south side of C.R. 578 approximately 900 feet east of Peach Tree Drive. This site requires the partial acquisition of a large undeveloped parcel. The soil at pond site 8B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 8B has an available area of 1.98 acres.

Pond Site 8C is located on the south side of C.R. 578 approximately 500 feet east of Peach Tree Drive. This site requires the partial acquisition of a large undeveloped parcel. The soil at pond site 8C consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 8C has an available area of 2.22 acres.

NORTH

100 0 100 200

GRAPHIC SCALE

WINGS PLUS RESTAURANT

COUNTY LINE GOLF RANGE

COUNTY LINE MINI STORAGE

PEACH TREE DRIVE

Recommended Alternative Pond Site 8A

315 320 325 330 335 340

GERALD STEEVER PROFESSIONAL CENTER

12 GOODYEAR AUTO CENTER

ANIMAL CAMP (BOARDING, GROOMING)

COUNTY LINE ANIMAL HOSPITAL

FEED STORE

Alternative Pond Site 8C

MIKE'S AUTO BODY

13

Alternative Pond Site 8B

ACCESS MINI-STORAGE

JACKSON STREET

FURMAN DRIVE

SEGMENT B

REVISIONS					
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STATE OF FLORIDA
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COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

SHEET NO. 12

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Preliminary Pond Site Numbers 9A and 9B

Description: Basin number 9 extends from 90 feet east of Spring Time Street (Station 356+50) to Old Shady Hills Road (Station 369+00) and includes approximately 1,250 feet of roadway improvements.

Roadway Segment: station 356+50 to station 369+00
Length: 1,250 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 1,250(90)/43560 = 2.58 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= 1,250(87)/43560 = 2.50 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(2.58) = 0.22 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Pre-Development Weighted Curve Number = 49 *(grass - fair condition)*

S_{pre} = (1000/49)-10 = 10.41 inches

$Q_{pre} = \frac{\{11.5-0.2(10.41)\}^2}{\{11.5 + 0.8(10.41)\}} = 4.47$ inches

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}} = 11.26$ inches

Runoff Depth = 11.26"- 4.47" = 6.79"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)
Attenuation Volume = (6.79/12)(2.50) = 1.41 ac-ft

Total Required Pond Volume = 1.41 + 0.22 = 1.63 ac-ft

Preliminary Pond Site Numbers 9A and 9B

Pond Dimensions

SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

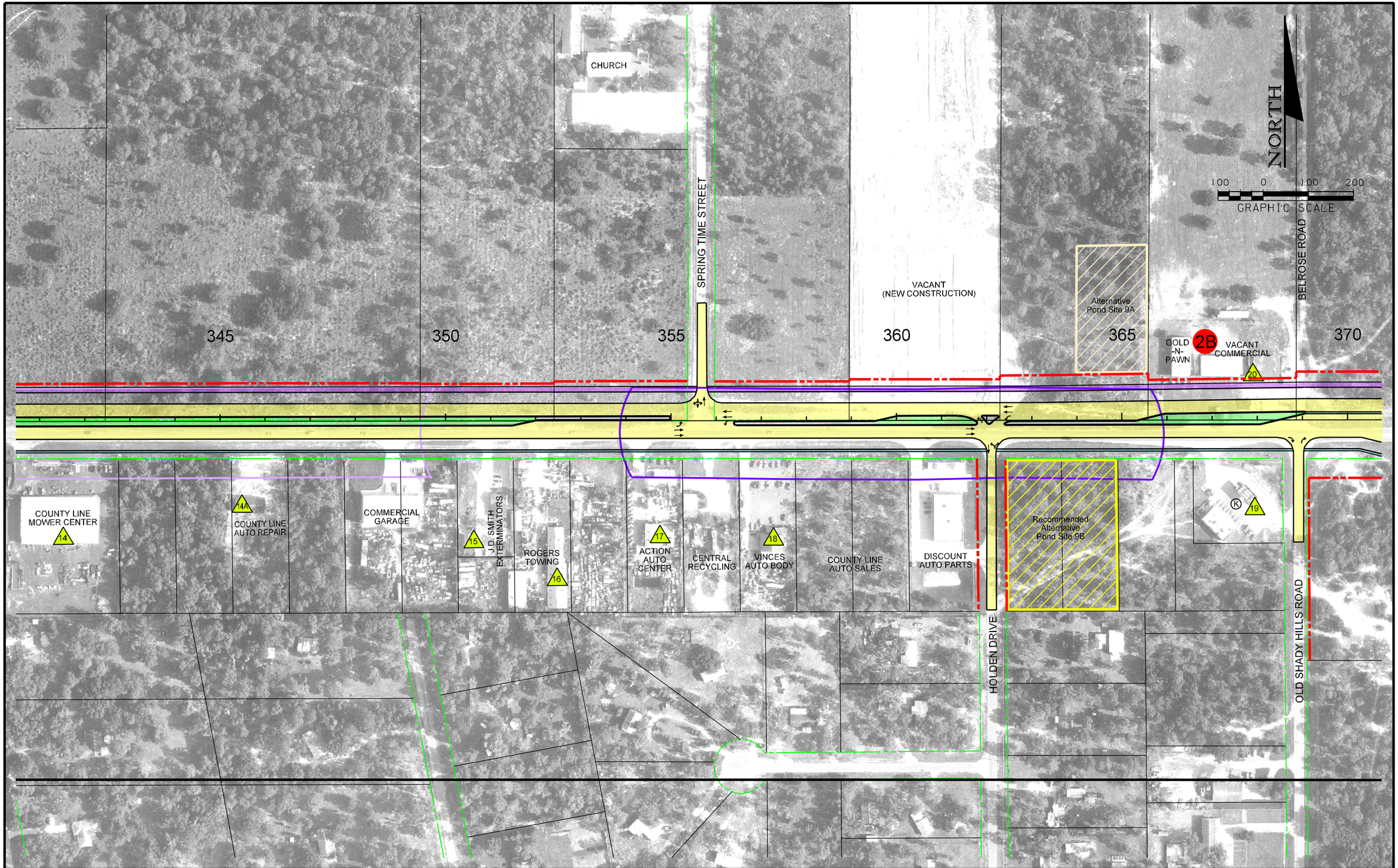
Dimension of square pond with vertical sides = $[(1.63/4.5)(43560)]^{1/2}$ = 126 ft x 126 ft

Dimension with side slope and berm = 206 ft x 206 ft

Total Area Required =$(206)^2/43560$ = 0.97 acre

Pond Site 9A is located on the north side of C.R. 578 approximately 250 feet east of Holden Drive. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 9A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 9A has an available area of 0.99 acres.

Pond Site 9B is located on the south side of C.R. 578 approximately 100 feet east of Holden Drive. This site consists of one undeveloped parcel. The soil at pond site 9B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 9B has an available area of 1.95 acres.



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
09/13/99		DATE OF FLIGHT			

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
No. 00000002

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

SHEET NO. 13

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Preliminary Pond Site Numbers 10A and 10B

Description: Basin number 10 extends from Old Shady Hills Road (Station 369+00) to Shady Hills Road/Mariner Blvd. (Station 377+50) and includes approximately 850 feet of roadway improvements.

Roadway Segment: station 369+00 to station 377+50
Length: 850 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 850(90)/43560 = 1.76 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= 850(87)/43560 = 1.70 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(1.76) = 0.15 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Pre-Development Weighted Curve Number = 49 *(grass - fair condition)*

S_{pre} = (1000/49)-10 = 10.41 inches

$Q_{pre} = \frac{\{11.5-0.2(10.41)\}^2}{\{11.5 + 0.8(10.41)\}}$ = 4.47 inches

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}}$ = 11.26 inches

Runoff Depth = 11.26"- 4.47" = 6.79"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)
Attenuation Volume = (6.79/12)(1.70) = 0.96 ac-ft

Total Required Pond Volume = 0.96 + 0.15 = 1.11 ac-ft

Preliminary Pond Site Numbers 10A and 10B

Pond Dimensions

SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

Dimension of square pond with vertical sides = $[(1.11/4.5)(43560)]^{1/2}$ = 104 ft x 104 ft

Dimension with side slope and berm = 184 ft x 184 ft

Total Area Required =$(184)^2/43560$ = 0.77 acres

Pond Site 10A is located on the north side of C.R. 578 approximately 400 feet west of Shady Hills Road/Mariner Blvd. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 10A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 10A has an available area of 0.79 acres.

Pond Site 10B is located on the south side of C.R. 578 east of Shady Hills Road. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 10B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 10B has an available area of 0.79 acres.

QUALITY DRIVE

PUBLIX AT SEVEN HILLS

MARINER BOULEVARD

MEDICAL BOULEVARD

NORTH

100 0 100 200

GRAPHIC SCALE

SUNCOAST ENTERTAINMENT & SKATING CENTER

SEVEN HILLS BUSINESS PARK

Recommended Alternative Pond Site 10A

375 380 385 390 395 400

3B

B

HESS

21 22 23 24

24" RCP

WETLAND AREA #9

Alternative Pond Site 10B

SHADY HILLS ROAD

HIGHLANDS 10 COUNTRY HILLS

MONTEVERDE DRIVE

LEMANS DRIVE

SEGMENT B

SEGMENT C

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STATE OF FLORIDA
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C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

SHEET NO. 14

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Preliminary Pond Site Numbers 11A and 11B

Description: Basin number 11 extends from Shady Hills Road/Mariner Blvd. (Station 377+50) to 570 feet east of Alexson Street (Station 450+00) and includes approximately 7,250 feet of roadway improvements.

Roadway Segment: station 377+50 to station 450+00
Length: 7,250 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 7,250(90)/43560 = 14.98 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= 7,250(87)/43560 = 14.48 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(14.98) = 1.25 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Post-Development Weighted Curve Number for Attenuation of Entire R/W

Total R/W Width = 155 ft
Impervious Width (Pavement, curb, gutter, and sidewalk) = 111 ft/ft of right-of-way
Pervious Width = 44 ft/ft of right-of-way

Description	Area (sq ft)	Land Use	Hyd. Soil Grp.	Runoff Coef.	Product
Project Impervious	111	Pavement	A	98	10878
Project Pervious	44	Grass	A	49	2156
Total Area	155				13034

C N = Product/Total Area = 13034/155 = 84

S = (1000/84)-10 = 1.90 inches

Runoff Depth (Q) = $\frac{\{11.5 - 0.2(1.90)\}^2}{\{11.5 + 0.8(1.90)\}}$ = 9.50 inches

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area) = (9.50/12)(14.48) = 11.46 ac-ft

Total Required Pond Volume = 11.46 + 1.25 = 12.71 ac-ft

Preliminary Pond Site Numbers 11A and 11B

Pond Dimensions

SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

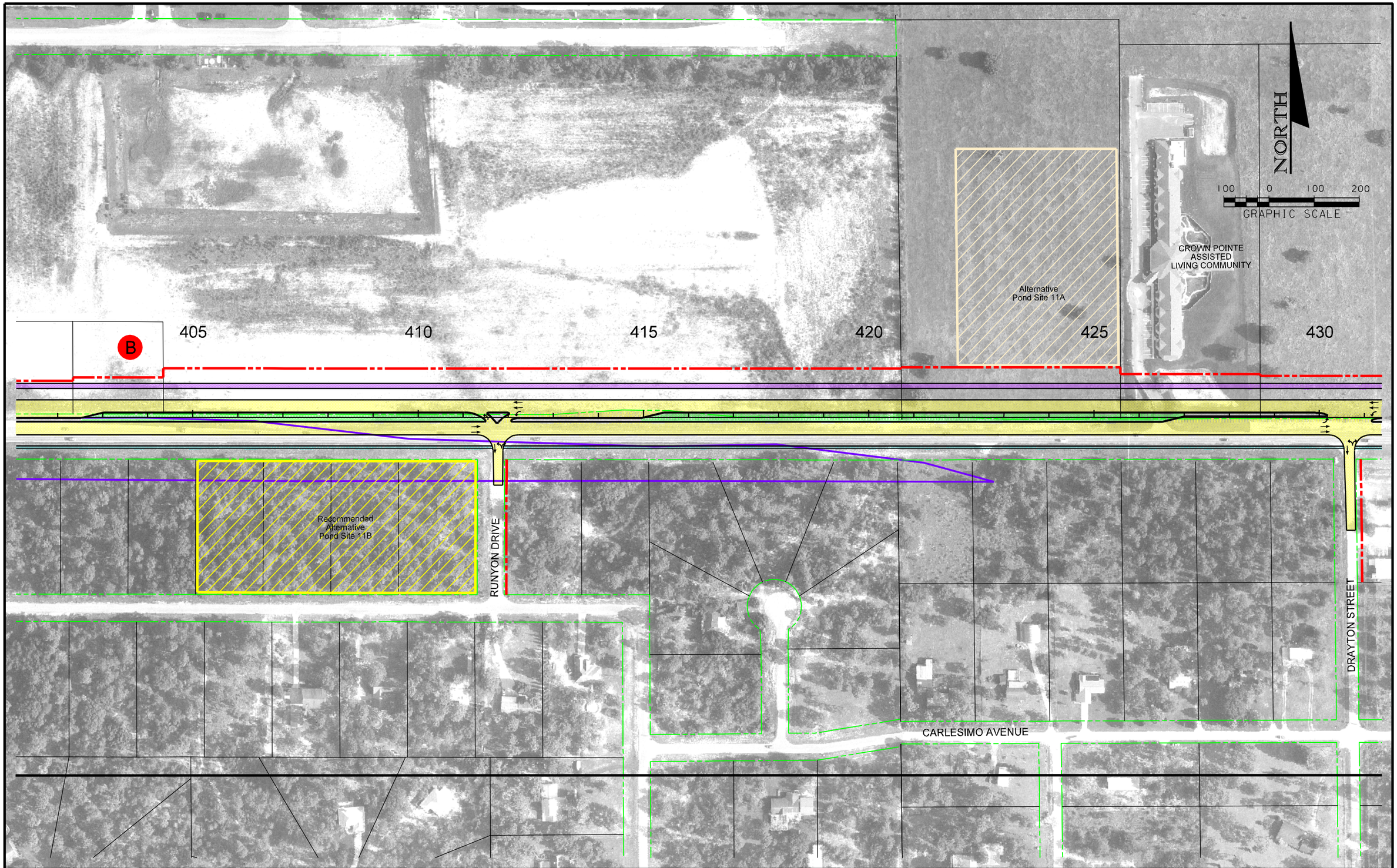
Dimension of square pond with vertical sides = $[(12.71/4.5)(43560)]^{1/2}$ = 351 ft x 351 ft

Dimension with side slope and berm = 431 ft x 431 ft

Total Area Required =$(431)^2/43560$ = 4.26 acres

Pond Site 11A is located on the north side of C.R. 578 approximately 1,200 feet east of Runyon Drive. This site requires the partial acquisition of a large undeveloped parcel. The soil at pond site 11A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 11A has an available area of 4.26 acres.

Pond Site 11B is located on the south side of C.R. 578 west of Runyon Drive. This site requires the partial acquisition of four undeveloped parcels, each of which will be partially acquired as part of the proposed roadway improvements. The soil at pond site 11B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 11B has an available area of 4.30 acres.



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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

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C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

SHEET NO. 15

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Preliminary Pond Site Numbers 12A and 12B

Description: Basin number 12 extends from 570 feet east of Alexson Street (Station 450+00) to Preston Hollow Road (Station 480+00) and includes approximately 3,000 feet of roadway improvements.

Roadway Segment: station 450+00 to station 480+00
Length: 3,000 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 3,000(90)/43560 = 6.20 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= 3,000(87)/43560 = 5.99 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(6.20) = 0.52 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Pre-Development Weighted Curve Number = 49 *(grass - fair condition)*

S_{pre} = (1000/49)-10 = 10.41 inches

$Q_{pre} = \frac{\{11.5-0.2(10.41)\}^2}{\{11.5 + 0.8(10.41)\}}$ = 4.47 inches

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}}$ = 11.26 inches

Runoff Depth = 11.26"- 4.47" = 6.79"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)
Attenuation Volume = (4.34/12)(5.99) = 3.39 ac-ft

Total Required Pond Volume = 3.39 + 0.52 = 3.91 ac-ft

Preliminary Pond Site Numbers 12A and 12B

Pond Dimensions

SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

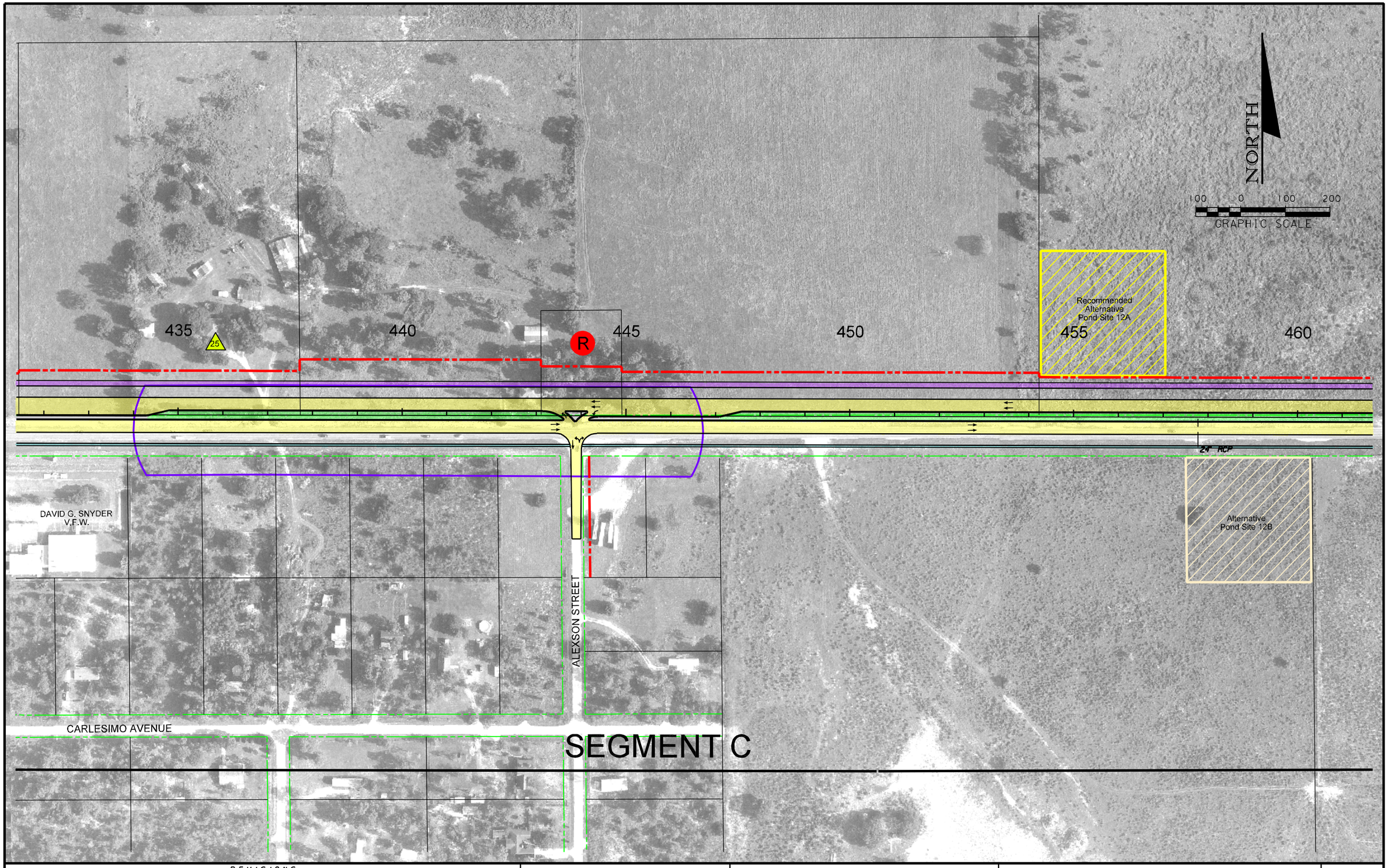
Dimension of square pond with vertical sides = $[(3.91/4.5)(43560)]^{1/2}$ = 194 ft x 194 ft

Dimension with side slope and berm = 274 ft x 274 ft

Total Area Required =$(274)^2/43560$ = 1.73 acre

Pond Site 12A is located on the north side of C.R. 578 approximately 1,140 feet east of Alexson Street. This site requires the partial acquisition of a large undeveloped parcel. The soil at pond site 12A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 12A has an available area of 1.77 acres.

Pond Site 12B is located on the south side of C.R. 578 approximately 1,520 feet east of Alexson Street. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 12B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 12B has an available area of 1.77 acres.



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STATE OF FLORIDA
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C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

SHEET NO. 16

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Preliminary Pond Site Numbers 13A and 13B

Description: Basin number 13 extends from Preston Hollow Drive (Station 480+00) to 725 feet east of Josies Drive (Station 499+50) and includes approximately 1,950 feet of roadway improvements.

Roadway Segment: station 480+00 to station 499+50
Length: 1,950 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 1,950(90)/43560 = 4.03 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= 1,950(87)/43560 = 3.89 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(4.03) = 0.34 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Pre-Development Weighted Curve Number = 49 *(grass - fair condition)*

S_{pre} = (1000/49)-10 = 10.41 inches

$Q_{pre} = \frac{\{11.5-0.2(10.41)\}^2}{\{11.5 + 0.8(10.41)\}}$ = 4.47 inches

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}}$ = 11.26 inches

Runoff Depth = 11.26"- 4.47" = 6.79"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)
Attenuation Volume = (6.79/12)(3.89) = 2.20 ac-ft

Total Required Pond Volume = 2.20 + 0.34 = 2.54 ac-ft

Preliminary Pond Site Numbers 13A and 13B

Pond Dimensions

SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

Dimension of square pond with vertical sides = $[(2.54/4.5)(43560)]^{1/2}$ = 157 ft x 157 ft

Dimension with side slope and berm = 237 ft x 237 ft

Total Area Required =$(237)^2/43560$ = 1.29 acre

Pond Site 13A is located on the north side of C.R. 578 approximately 1,100 feet east of Preston Hollow Drive. This site requires the partial acquisition of an undeveloped parcel. The soil at pond site 13A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 13A has an available area of 1.31 acres.

Pond Site 13B is located on the south side of C.R. 578 approximately 1,050 feet east of Preston Hollow Drive. This site requires the partial acquisition of a parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 13B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 13B has an available area of 1.31 acres.

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COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

SHEET NO. 17

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Preliminary Pond Site Numbers 14A and 14B

Description: Basin number 14 extends from 725 feet east of Josies Drive (Station 499+50) to 835 feet east of Linden Drive (Station 519+00) and includes approximately 1,950 feet of roadway improvements.

Roadway Segment: station 499+50 to station 519+00
Length: 1,950 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 1,950(90)/43560 = 4.03 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= 1,950(87)/43560 = 3.89 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(4.03) = 0.34 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Pre-Development Weighted Curve Number = 49 *(grass - fair condition)*

S_{pre} = (1000/49)-10 = 10.41 inches

$Q_{pre} = \frac{\{11.5-0.2(10.41)\}^2}{\{11.5 + 0.8(10.41)\}}$ = 4.47 inches

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}}$ = 11.26 inches

Runoff Depth = 11.26"- 4.47" = 6.79"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)
Attenuation Volume = (6.79/12)(3.89) = 2.20 ac-ft

Total Required Pond Volume = 2.20 + 0.34 = 2.54 ac-ft

Preliminary Pond Site Numbers 14A and 14B

Pond Dimensions

SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

Dimension of square pond with vertical sides = $[(2.54/4.5)(43560)]^{1/2}$ = 157 ft x 157 ft
Dimension with side slope and berm = 237 ft x 237 ft

Total Area Required =$(237)^2/43560$ = 1.29 acres

Pond Site 14A is located on the north side of C.R. 578 approximately 560 feet east of Linden Drive. This site requires the acquisition of three undeveloped parcels two of which will be partially acquired as part of the proposed roadway improvements. The soil at pond site 14A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 14A has an available area of 1.33 acres.

Pond Site 14B is located on the south side of C.R. 578 approximately 560 feet east of Linden Drive. This site requires the partial acquisition of a parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 14B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 14B has an available area of 1.31 acres.

JOSIES DRIVE

TOPICS RV COMMUNITY

PYTHIA PLACE

LINDEN DRIVE

LINDEN RETREAT

Alternative Pond Site 14A

495 500 505 510 515 520

NORTH

100 0 100 200

GRAPHIC SCALE

24" RCP

26

KEYS CONCRETE INDUSTRY

Recommended Alternative Pond Site 14B

LINUS SECURITY

SEGMENT C

REVISIONS					
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COUNTY LINE ROAD (C.R. 578)
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From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
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SHEET NO. 18

01/27/2003 10:18:12 AM g:\cr578\sheets\plans\alternative_s8_cr578\plans815.dgn

Preliminary Pond Site Numbers 15A and 15B

Description: Basin number 15 extends from 835 feet east of Linden Drive (Station 519+00) to 1,365 feet east of Sparks Road (Station 560+00) and includes approximately 4,100 feet of roadway improvements.

Roadway Segment: station 519+00 to station 560+00
Length: 4,100 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 4,100(90)/43560 = 8.47 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= 4,100(87)/43560 = 8.19 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(8.47) = 0.71 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Pre-Development Weighted Curve Number = 49 *(grass - fair condition)*

S_{pre} = (1000/49)-10 = 10.41 inches

$Q_{pre} = \frac{\{11.5-0.2(10.41)\}^2}{\{11.5 + 0.8(10.41)\}} = 4.47$ inches

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}} = 11.26$ inches

Runoff Depth = 11.26"- 4.47" = 6.79"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)
Attenuation Volume = (6.79/12)(8.19) =4.63 ac-ft

Total Required Pond Volume = 4.63 + 0.71 = 5.34 ac-ft

Preliminary Pond Site Numbers 15A and 15B

Pond Dimensions

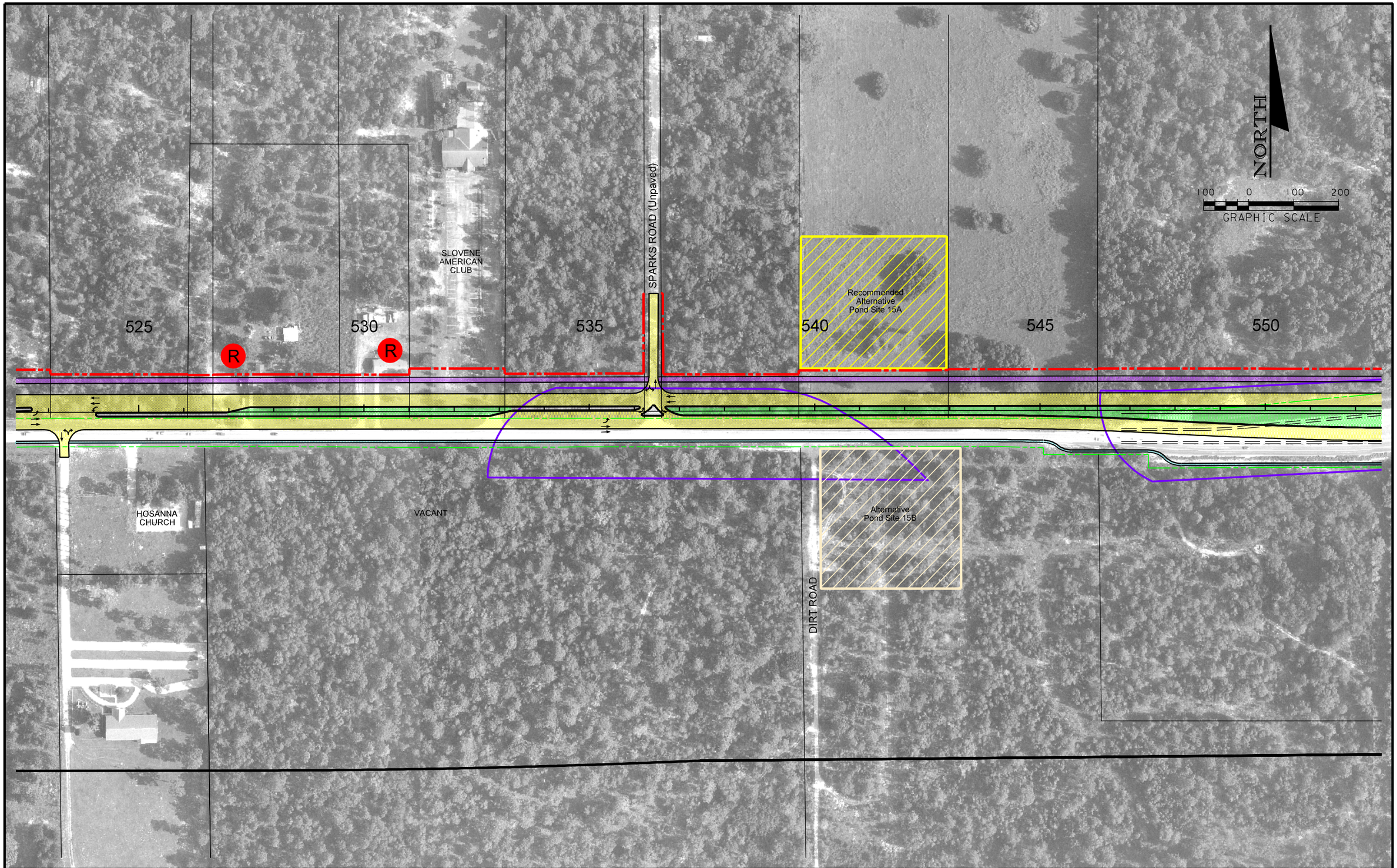
SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

Dimension of square pond with vertical sides = $[(5.34/4.5)(43560)]^{1/2}$ = 227 ft x 227 ft
Dimension with side slope and berm = 307 ft x 307 ft

Total Area Required =$(307)^2/43560$ = 2.17 acres

Pond Site 15A is located on the north side of C.R. 578 approximately 500 feet east of Sparks Road. This site requires the partial acquisition of an undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 15A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 15A has an available area of 2.22 acres.

Pond Site 15B is located on the north side of C.R. 578 approximately 500 feet east of Sparks Road. This site requires the partial acquisition of an undeveloped parcel. The soil at pond site 15B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 15B has an available area of 2.22 acres.



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SHEET NO. 19

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Preliminary Pond Site Number Numbers 21A, 21B, and 21C
Alignment S-5 (Ayers Road)

Description: Basin number 21 extends from the intersection of C.R. 578 and Kuka Lane (Station 600+00) to Station 626+70 and includes approximately 2,670 feet of roadway improvements.

Roadway Segment: station 600+00 to station 626+70
Length: 2,670 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 2,670(90)/43560 =5.52 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane)
Additional Impervious Area (attenuation)= 2,670(111)/43560 = 6.80 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(5.52) = 0.46 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Pre-Development Weighted Curve Number = 49 *(grass - fair condition)*

S_{pre} = (1000/49)-10 = 10.41 inches

$Q_{pre} = \frac{\{11.5-0.2(10.41)\}^2}{\{11.5 + 0.8(10.41)\}} = 4.47$ inches

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}} = 11.26$ inches

Runoff Depth = 11.26"- 4.47" = 6.79"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)
Attenuation Volume = (6.79/12)(6.80) = 3.85 ac-ft

Total Required Pond Volume = 3.85 + 0.46 = 4.31 ac-ft

Preliminary Pond Site Numbers 21A, 21B, and 21C
Alignment S-5 (Ayers Road)

Pond Dimensions

SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

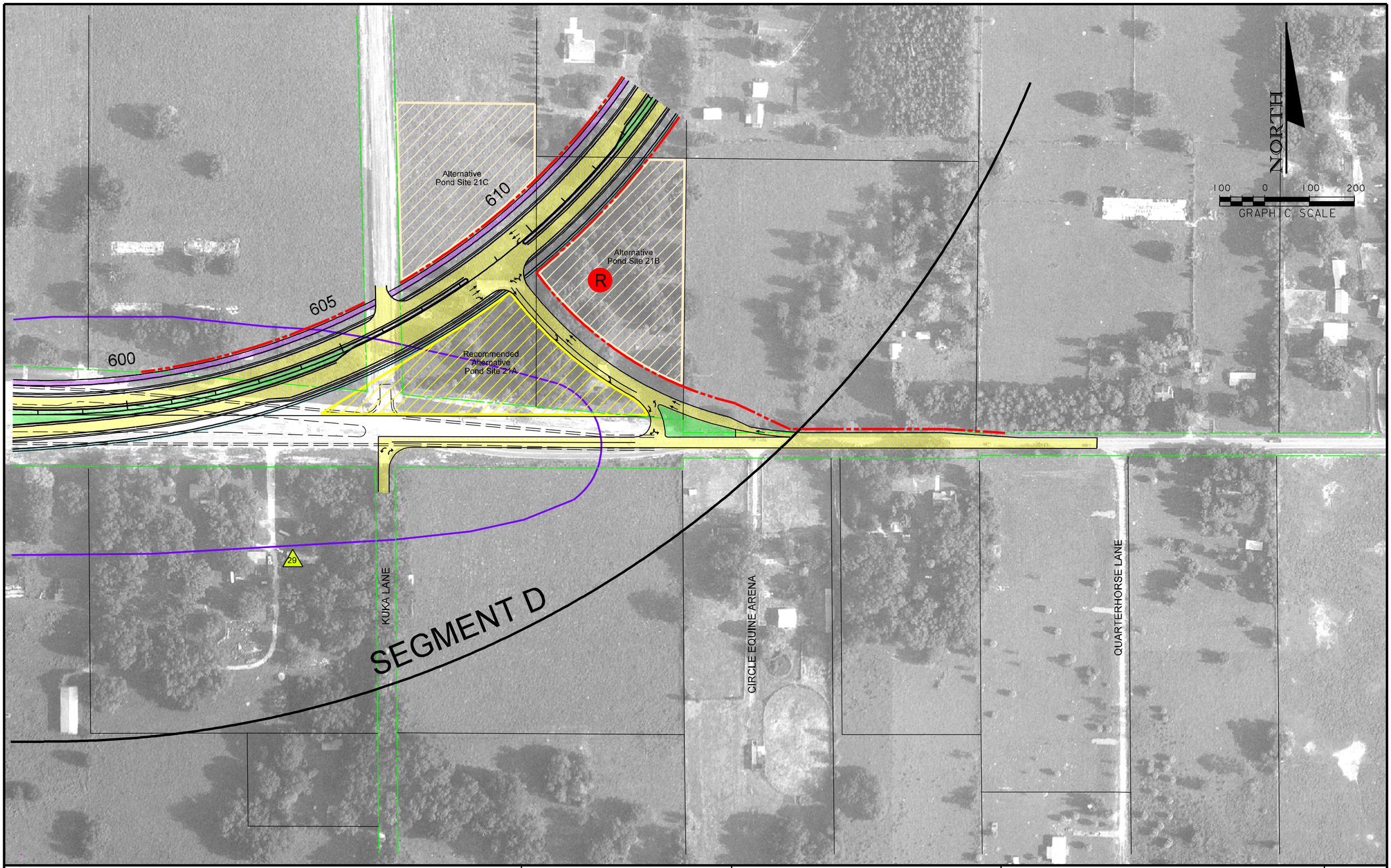
Dimension of square pond with vertical sides = $[(4.31/4.5)(43560)]^{1/2}$ = 204 ft x 204 ft
Dimension with side slope and berm = 284 ft x 284 ft

Total Area Required =$(284)^2/43560$ = 1.85 acres

Pond Site 21A is located on the north side of C.R. 578, east of Kuka Lane. This site is a remnant parcel resulting from right-of-way acquisition for the proposed roadway improvements. The soil at pond site 21A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 21A has an available area of 2.16 acres.

Pond Site 21B is located on the north side of C.R. 578 approximately 500 feet east of Kuka Lane. This site requires the partial acquisition of two parcels that will both be partially be acquired as part of the proposed roadway improvements. The soil at pond site 21B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 21B has an available area of 2.01 acres.

Pond Site 21C is located on the north side of C.R. 578, east of Kuka Lane. This site requires the partial acquisition of an undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 21C consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 21C has an available area of 2.01 acres.



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7650 West Courtney
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Tampa, FL 33607-1462
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-5 (AYERS ROAD)

SHEET NO. 22

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Preliminary Pond Site Numbers 22A and 22B
Alignment S-5 (Ayers Road)

Description: Basin number 22 extends from Station 626+70 to Station 708+00 and includes approximately 8,130 feet of roadway improvements.

Roadway Segment: station 626+70 to station 708+00
Length: 8,130 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 8,130(90)/43560 =16.80 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane)
Additional Impervious Area (attenuation)= 8,130(111)/43560 = 20.72 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(16.80) = 1.40 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Post-Development Weighted Curve Number for Attenuation of Entire R/W

Total R/W Width = 155 ft
Impervious Width (Pavement, curb, gutter, and sidewalk) = 111 ft/ft of right-of-way
Pervious Width = 44 ft/ft of right-of-way

Description	Area (sq ft)	Land Use	Hyd. Soil Grp.	Runoff Coef.	Product
Project Impervious	111	Pavement	A	98	10878
Project Pervious	44	Grass	A	49	2156
Total Area	155				13034

C N = Product/Total Area = 13034/155 = 84

S = (1000/84)-10 = 1.90 inches

Runoff Depth (Q) = $\frac{\{11.5 - 0.2(1.90)\}^2}{\{11.5 + 0.8(1.90)\}}$ = 9.50 inches

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area) = (9.50/12)(20.72) = 16.40 ac-ft

Total Required Pond Volume = 16.40 + 1.40 = 17.80 ac-ft

Preliminary Pond Site Numbers 22A and 22B
Alignment S-5 (Ayers Road)

Pond Dimensions

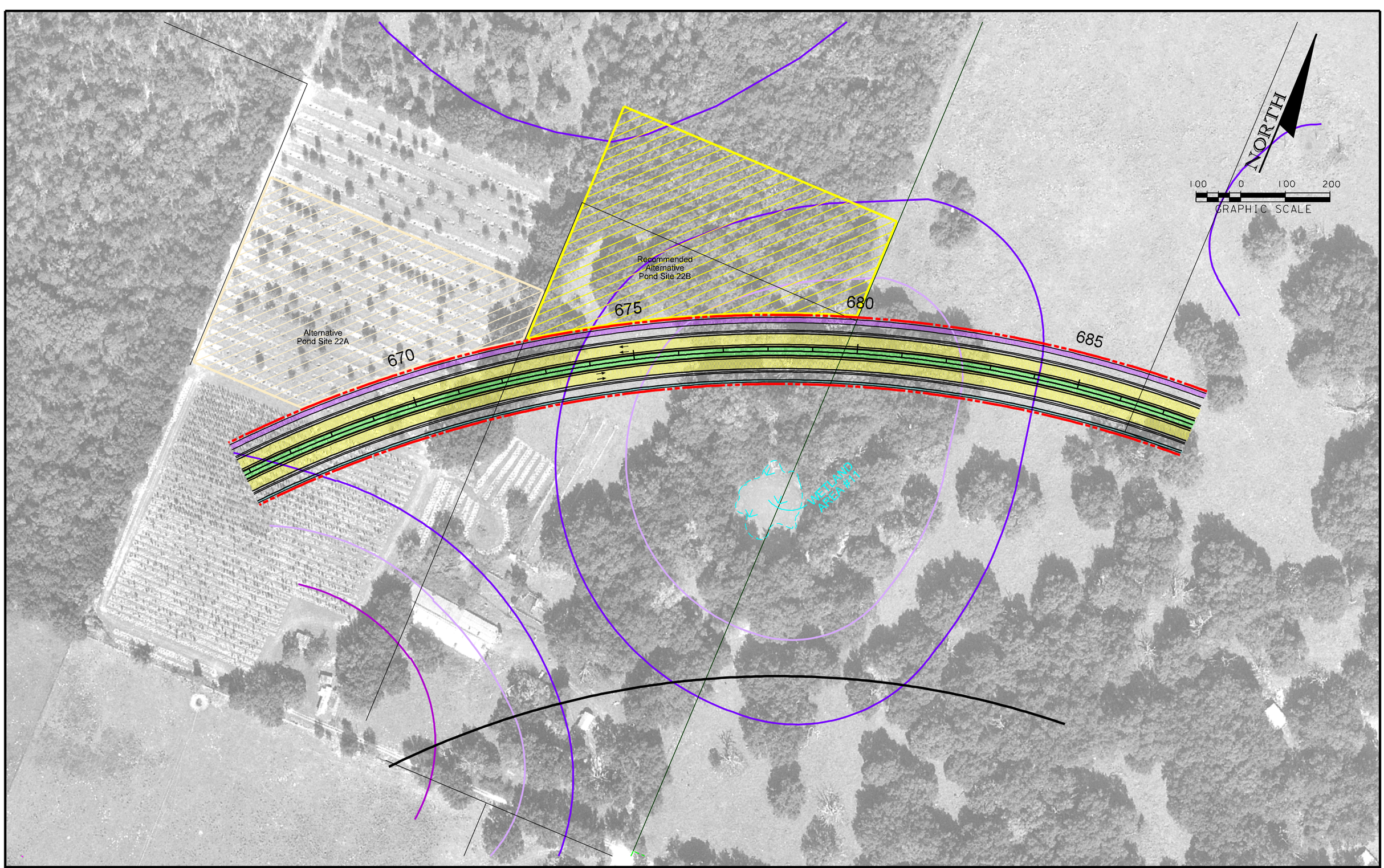
SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

Dimension of square pond with vertical sides = $[(17.80/4.5)(43560)]^{1/2}$ = 415 ft x 415 ft
Dimension with side slope and berm = 495 ft x 495 ft

Total Area Required =$(495)^2/43560$ = 5.63 acres

Pond Site 22A is located on the west side of the proposed Ayers Road extension at Station 670+00. This site requires the acquisition of a parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 22A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 22A has an available area of 5.63 acres.

Pond Site 22B is located on the west side of the proposed Ayers Road extension at Station 676+00. This site requires the acquisition of two parcels one of which will be partially acquired as part of the proposed roadway improvements. The soil at pond site 22B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 22B has an available area of 5.63 acres.



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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-5 (AYERS ROAD)

SHEET NO. 25

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Preliminary Pond Site Numbers 23A and 23B
Alignment S-5 (Ayers Road)

Description: Basin number 23 extends from Station 708+00 to Station 735+45 and includes approximately 2,745 feet of roadway improvements.

Roadway Segment: station 708+00 to station 735+45
Length: 2,745 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 2,745(90)/43560 = 5.67 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane)
Additional Impervious Area (attenuation)= 2,745(111/43560 = 6.99 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(5.67) = 0.47 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A & C"

Potential Abstraction (S) = (1000/CN) –10

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

Pre-Development Weighted Curve Number

Description	Area (ac)	Land Use	Hyd. Soil Grp.	Runoff Coef.	Product
Project Pervious	1.71	Woods	A	45	76.95
Project Pervious	5.28	Woods and Grass	C	76	401.28
Total Area	6.99				478.23

C N_{pre}= Product/Total Area = 478.23/6.99 = 68

S_{pre} = (1000/68)-10 = 4.71 inches

$Q_{pre} = \frac{\{11.5 - 0.2(4.71)\}^2}{\{11.5 + 0.8(4.71)\}}$ = 7.30 inches

Preliminary Pond Site Numbers 23A and 23B
Alignment S-5 (Ayers Road)

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}} = 11.26$ inches

Runoff Depth = 11.26"- 7.30" = 3.96"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)
Attenuation Volume = (3.96/12)(6.99) = 2.31 ac-ft

Total Required Pond Volume = 2.31 + 0.47 = 2.78 ac-ft

Pond Dimensions

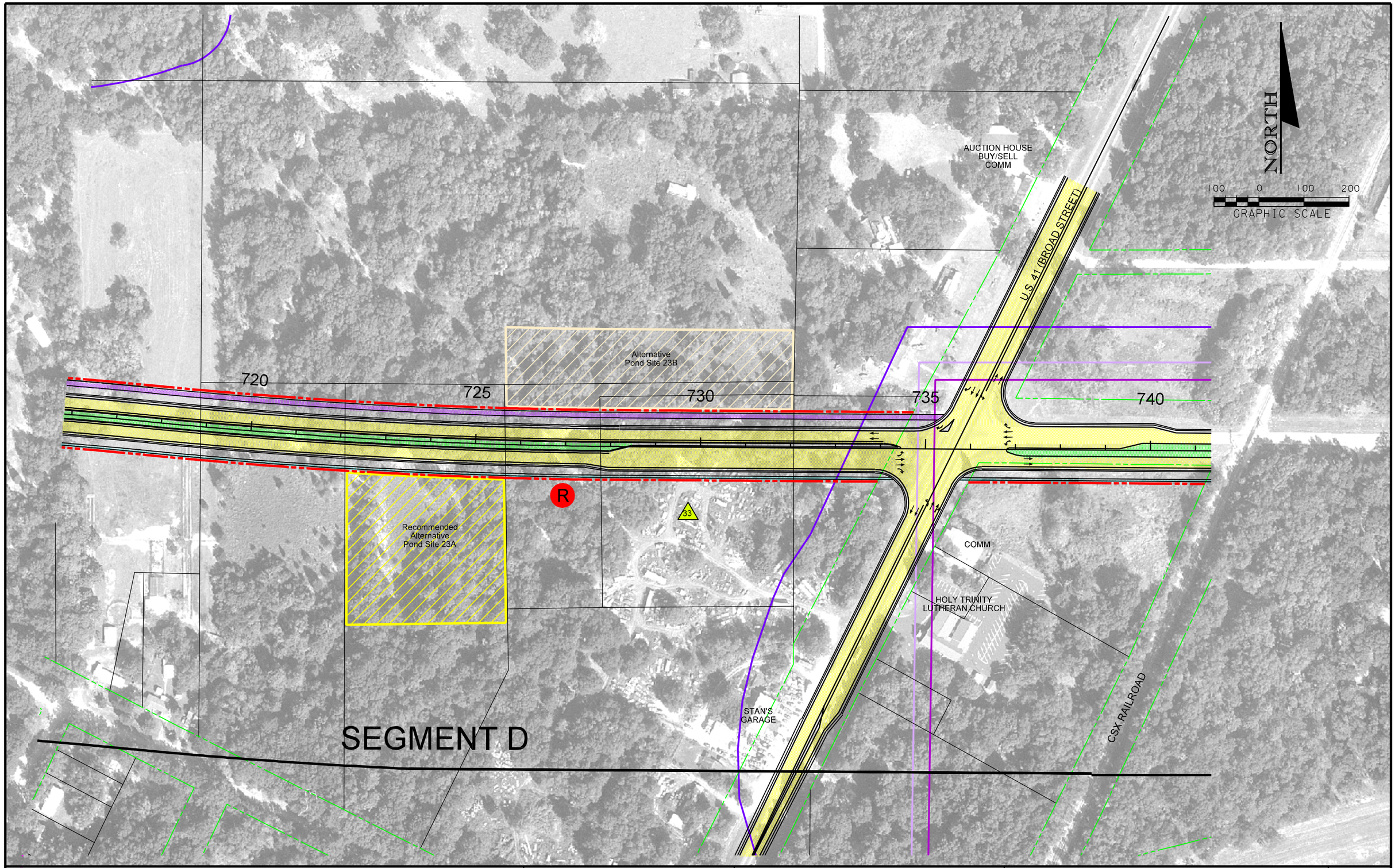
SHWT Depth = 1.5-2.5 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 60 ft to pond dimensions to accommodate side slopes and maintenance berm)

Dimension of square pond with vertical sides = $[(2.78/2.0)(43560)]^{1/2}$ = 246 ft x 246 ft
Dimension with side slope and berm = 306 ft x 306 ft

Total Area Required =$(306)^2/43560$ = 2.15 acres

Pond Site 23A is located on the south side of the proposed Ayers Road extension at Station 724+00. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 23A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 23A has an available area of 2.84 acres.

Pond Site 23B is located on the north side of the proposed Ayers Road extension at Station 727+00. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 23B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 23B has an available area of 2.87 acres.



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C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-5 (AYERS ROAD)

SHEET NO. 27

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Preliminary Pond Site Numbers 24A and 24B
Alignment S-5 (Ayers Road)

Description: Basin number 24 extends from the intersection of US 41 (Station 735+90) to the Project End (Station 779+00) and includes approximately 4,310 feet of roadway improvements.

Roadway Segment: station 735+90 to station 779+00
Length: 4,310 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 4,310(90)/43560 = 8.90 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= 4,310 (87)/43560 = 8.61 acres

Treatment Volume

Required Treatment Volume (wet) = (1.0/12)(8.90) = 0.74 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A & C"

Potential Abstraction (S) = (1000/CN) –10

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

Pre-Development Weighted Curve Number

Description	Area (ac)	Land Use	Hyd. Soil Grp.	Runoff Coef.	Product
Project Pervious	1.44	Woods	A	45	64.80
Project Pervious	7.17	Woods and Grass	C	76	544.92
Total Area	8.61				609.72

C N_{pre}= Product/Total Area = 609.72/8.61 = 71

S_{pre} = (1000/71)-10 = 4.08 inches

$Q_{pre} = \frac{\{11.5 - 0.2(4.08)\}^2}{\{11.5 + 0.8(4.08)\}} = 6.43$ inches

Preliminary Pond Site Numbers 24A and 24B
Alignment S-5 (Ayers Road)

Post-Development Weighted Curve Number = 98 *(pavement)*

S_{post} = (1000/98)-10 = 0.204 inches

$Q_{post} = \frac{\{11.5-0.2(0.204)\}^2}{\{11.5 + 0.8(0.204)\}} = 11.26$ inches

Runoff Depth = 11.26"- 6.43" = 4.83"

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area)
Attenuation Volume = (4.83/12)(8.61) = 3.46 ac-ft

Total Required Pond Volume = 3.46 + 0.74 = 4.21 ac-ft

Pond Dimensions

Water Depth = 1.5-2.5 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 60 ft to pond dimensions to accommodate side slopes and maintenance berm)

Dimension of square pond with vertical sides = $[(4.21/2.0)(43560)]^{1/2}$ = 303 ft x 303 ft
Dimension with side slope and berm = 363 ft x 363 ft

Total Area Required =$(363)^2/43560$ = 3.02 acres

Pond Site 24A is located on the south side of the proposed Ayers Road extension at Station 752+00. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 24A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 24A has an available area of 3.49 acres.

Pond Site 24B is located on the south side of the proposed Ayers Road extension at Station 742+00. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 24B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 24B has an available area of 3.50 acres.

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COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-5 (AYERS ROAD)

SHEET NO. 28

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APPENDIX C

CORRESPONDENCE

THIS SPACE IS FORMATTED TO FACILITATE AND GUIDE THE DIALOGUE DURING A PRE-APPLICATION MEETING AND PROVIDE NOTE TAKING SPACE. A SUPPLEMENTAL "PROMPT LIST" OF DISCUSSION ITEMS IS ATTACHED, WHICH SHOULD BE EXAMINED BY THE APPLICANT PARTIES PRIOR TO THE MEETING TO IDENTIFY TOPICS FOR DISCUSSION.

Southwest Florida Water Management District
Resource Regulation Division

ERP Pre-Application Meeting NOTES

FILE No.

Date: 7/24/02
Time: 3:30 COUNTY LINE ROAD
Project Name: JOHN DORZBACK (813) 971 6597
Attendees: LFH, LMH

County: HERNANDO, PASCO **S/T/R:** 1/24/18
Total Land acreage: 200 Acres ± **Project acreage:** 200 Acres ±

Prior Onsite/Offsite Permit activity:
EXISTING 2 LANE ROAD

Project Overview: (PROPOSED) SIX LANE (BUILD 4 LANE, STORMWATER FOR 6 LANES)
+ MYERS ROAD EXTENTION

Site Information Discussion: (Site Topography, SHW Levels, Flood plain Elevations, Conveyance and Storage, Tailwater Conditions, Adjacent Offsite Contributing Sources, Receiving Waterbody, Karst Formations, Existing Wells, Contaminated Sites / Coordination w/ FDEP, etc.)

•

Environmental Discussion: (Wetlands Onsite, Wetlands On Adjacent Properties, Site Visit, Delineation, Permanent/Temporary Impacts, SHWL, Wetland Hydrology, Drawdown Issues, Alternatives Analysis, Elimination/Reduction, Secondary and Cumulative Impacts, T&E species, Conservation Easements, Buffers, Mitigation Options, Mitigation Costs, OFW, Aquatic Preserve, etc.)

— NOT DISCUSSED OTHER THAN POSSIBLE
• — SEPARATE ENV. WORK ONSITE

Sovereign Lands Discussion: (Title Determination, Delegated Authority, Correct Form of Authorization, Content of Application, Assessment of Fees, Coordination with FDEP, etc.)

• NONE

Water Quantity Discussion: (Basin Description, Design Storm Event, Pre/Post Volume, Pre/Post Discharge, Local Requirements, Other) CLOSED & OPEN BASINS KARST TOPOGRAPHY
COMPENSATION FOR 100 YEAR ENCROACHMENT REQUIRED
•

Water Quality Discussion: (Type of Stormwater Treatment, Technical Characteristics, Non-presumptive Alternatives, Construction Phase Water Management and Erosion Control, Contaminated Sites, Ground Water Protection, etc.)

PARC & WET
•

Operation And Maintenance, Legal Information: (Ownership or Perpetual Control, Eminent Domain, Work on District Property, Inspections During Const., O&M Entity, System O&M Instructions, Homeowner Association Documents, Coastal Zone Requirements, Public Safety, etc.)

FDOT

•

Application Type And Fee Required: (40D-4.041Permits Required, 40D-1.607 Fee Schedule, etc.)

• STANDARD GENERAL -$1500, IF WETLAND IMPACTS INVOLVED I ARE

Other: (Future Pre-Application Meetings, Fast Track, Submittal Date, Construction Start Date, Required District Permits - WUP, WOD, Well Construction, etc.)

•

Disclosure: The District ERP pre-application meeting process is a service made available to the public to assist interested parties in preparing for submittal of a complete permit application. Information shared at pre-application meetings is superseded by the actual permit application submittal. District permit decisions are based upon information submitted during the application process and Rules in effect at the time the application is complete.

The following person was present and authored these ERP Pre-Application Meeting NOTES on behalf of the SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT:

LAB WMM

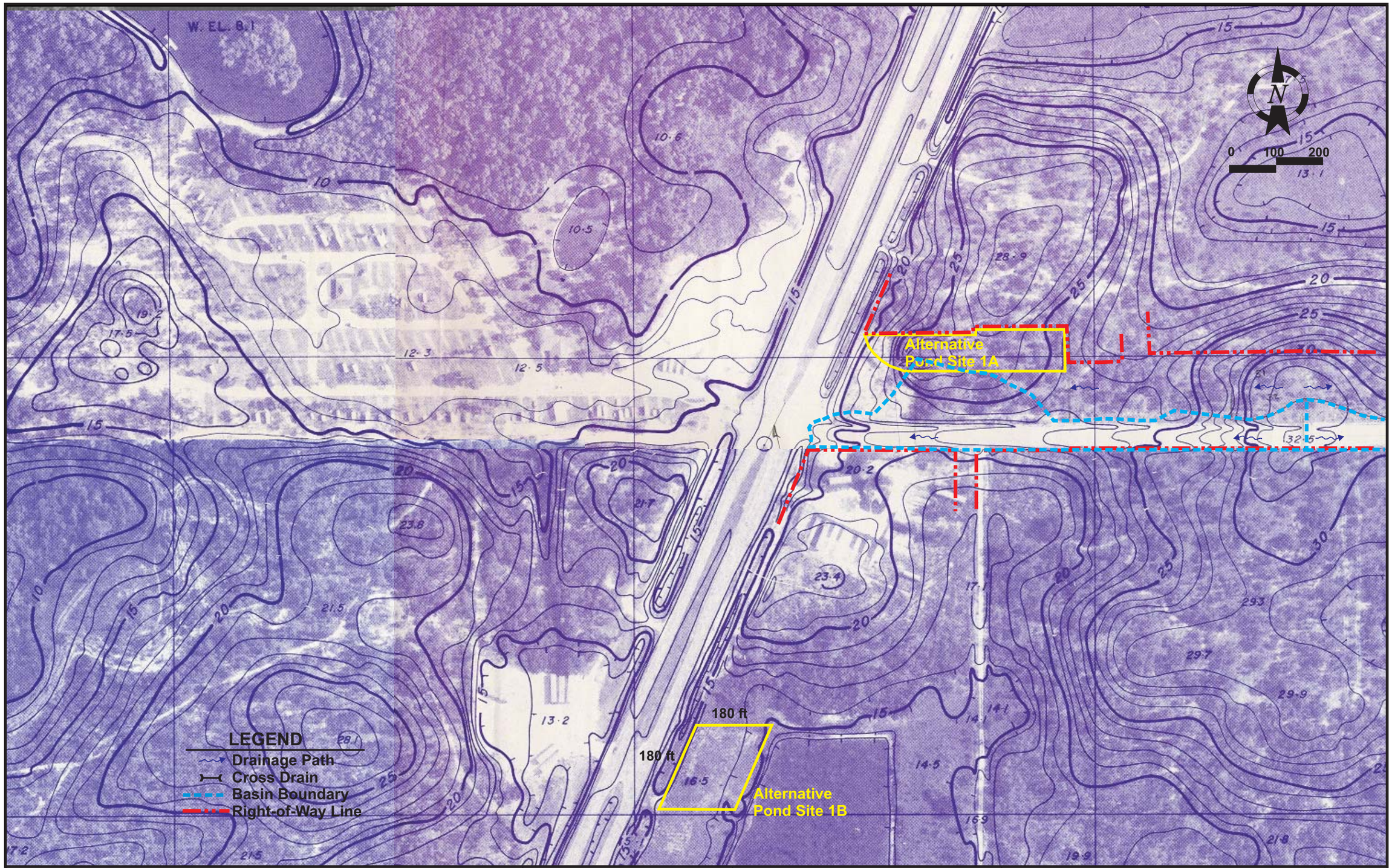
District Staff Representative **Name and Title**

7/24/02

Signed **Date**

APPENDIX D

CONTOUR MAPS



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C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

SHEET NO. 4

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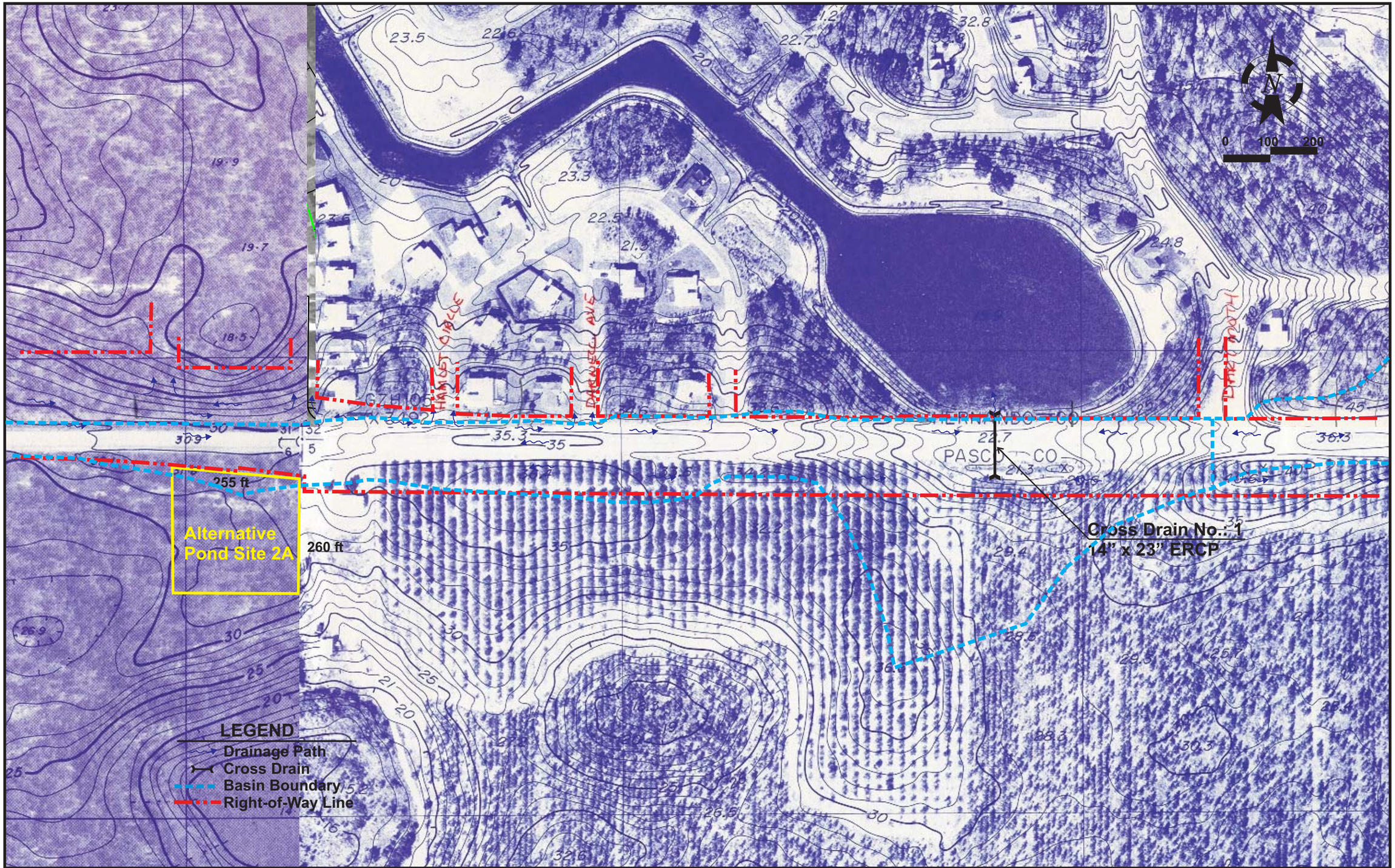

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ALIGNMENT S-8

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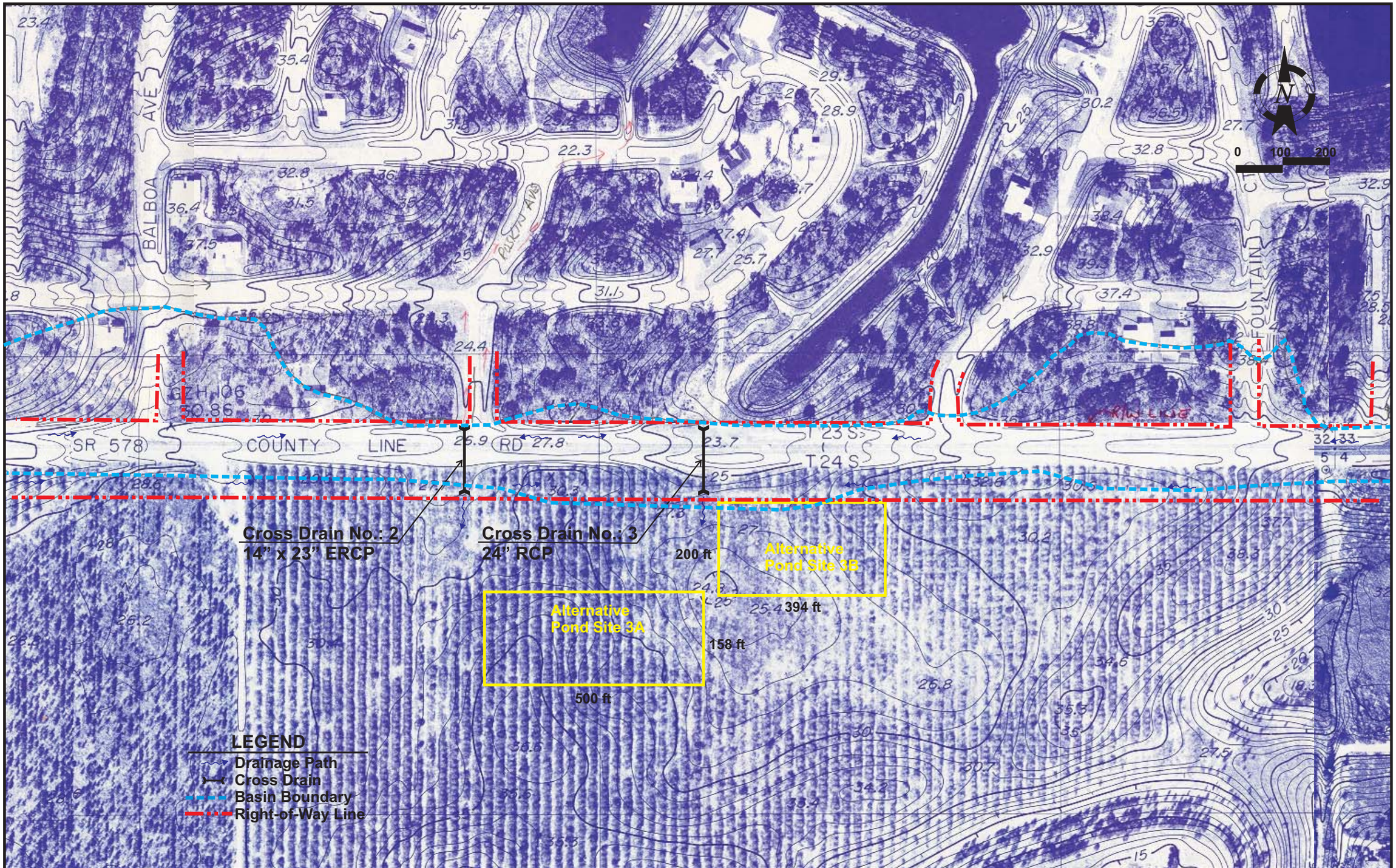

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COUNTY LINE ROAD (C.R. 578)
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From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

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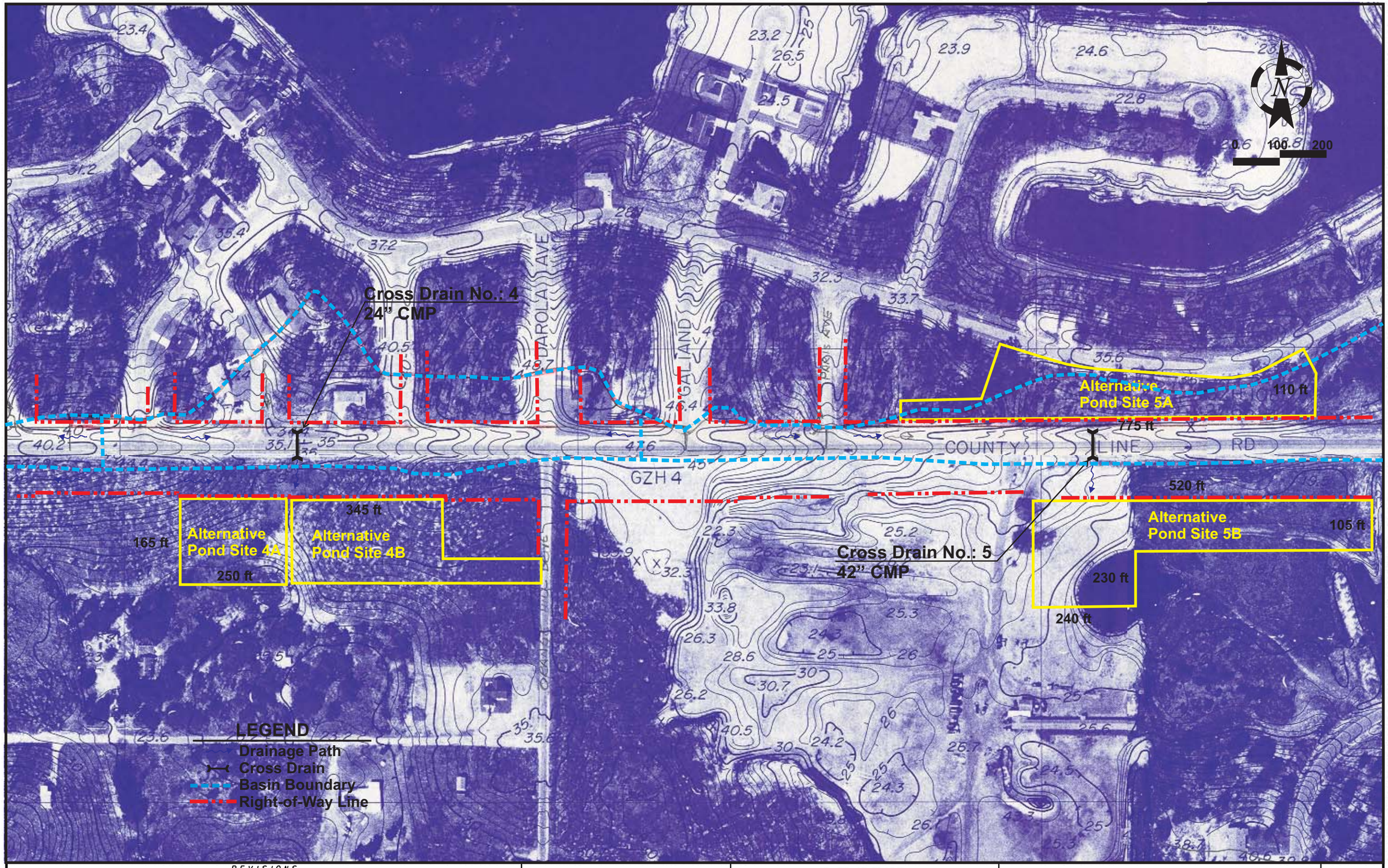

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COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

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COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

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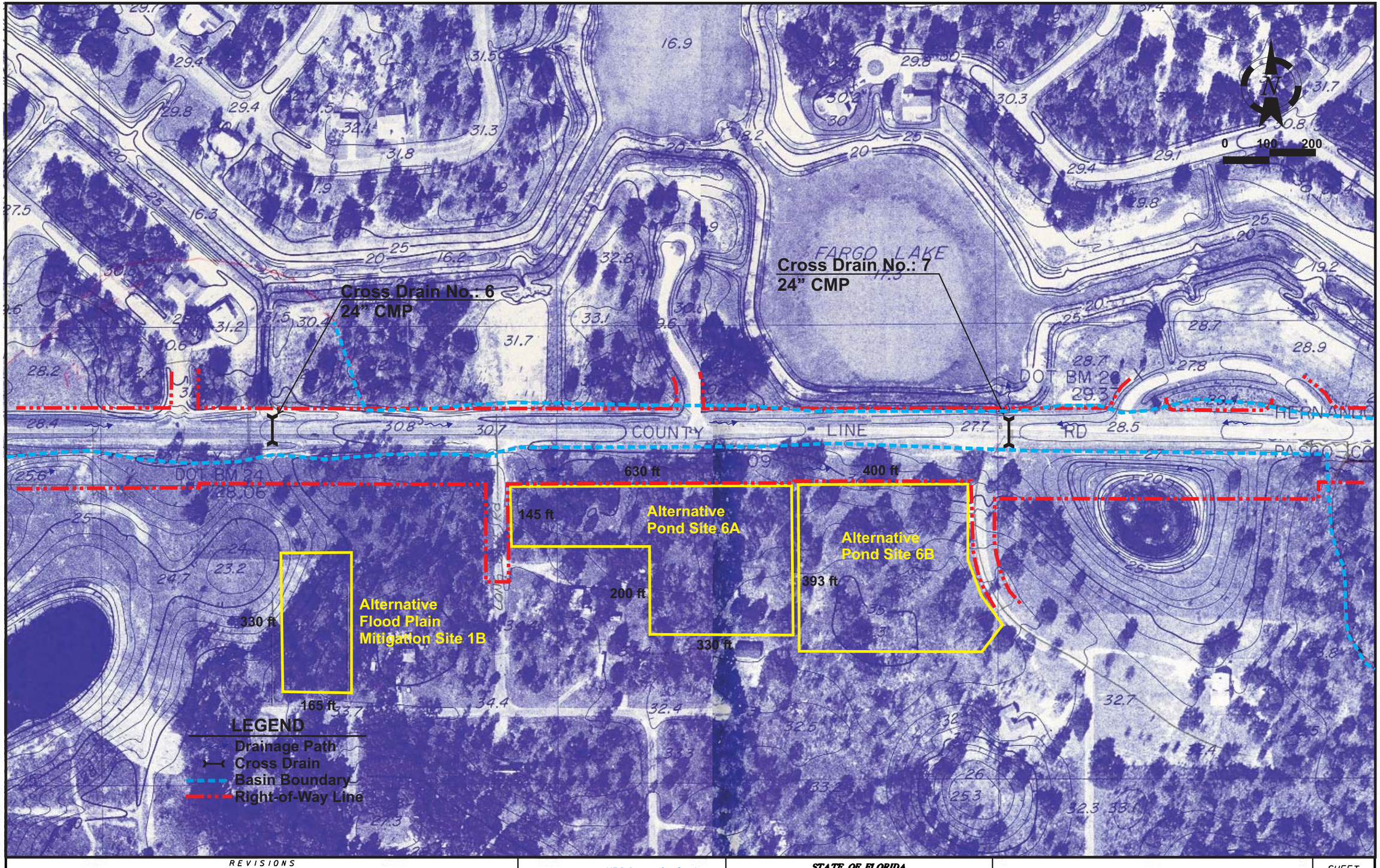

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
C.R.578	PASCO & HERNANDO	25729B 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

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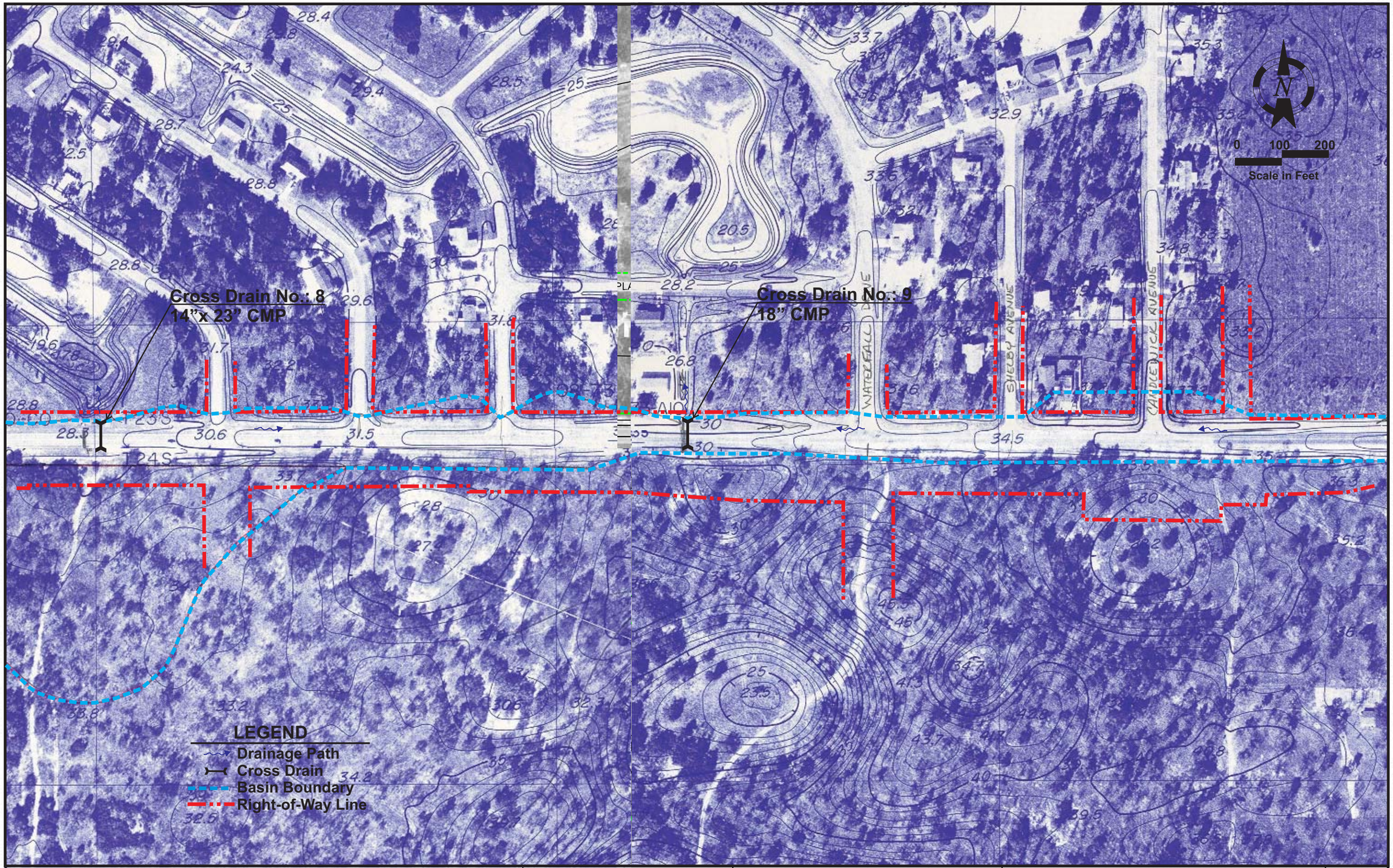

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DEPARTMENT OF TRANSPORTATION

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C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

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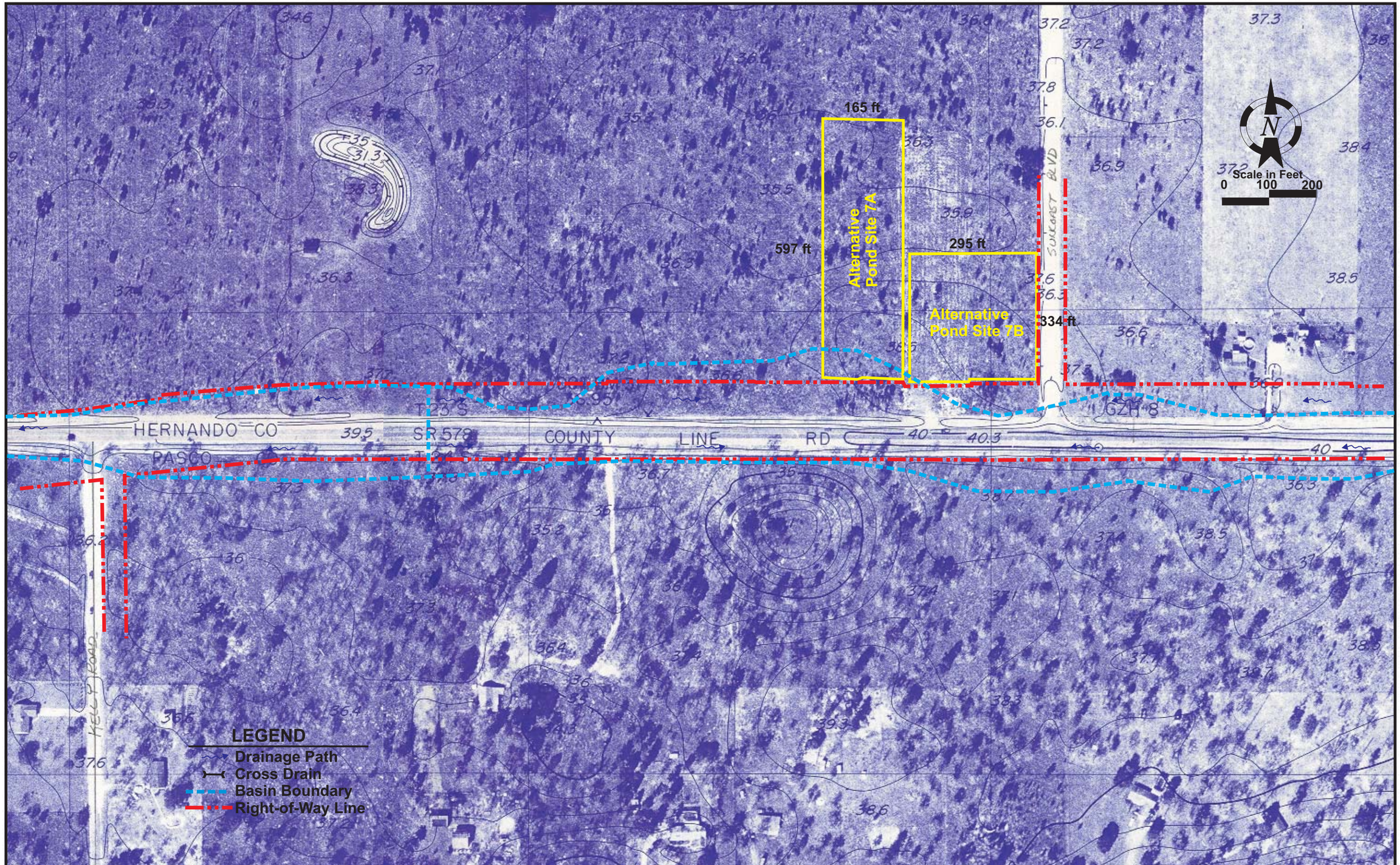

REVISIONS					
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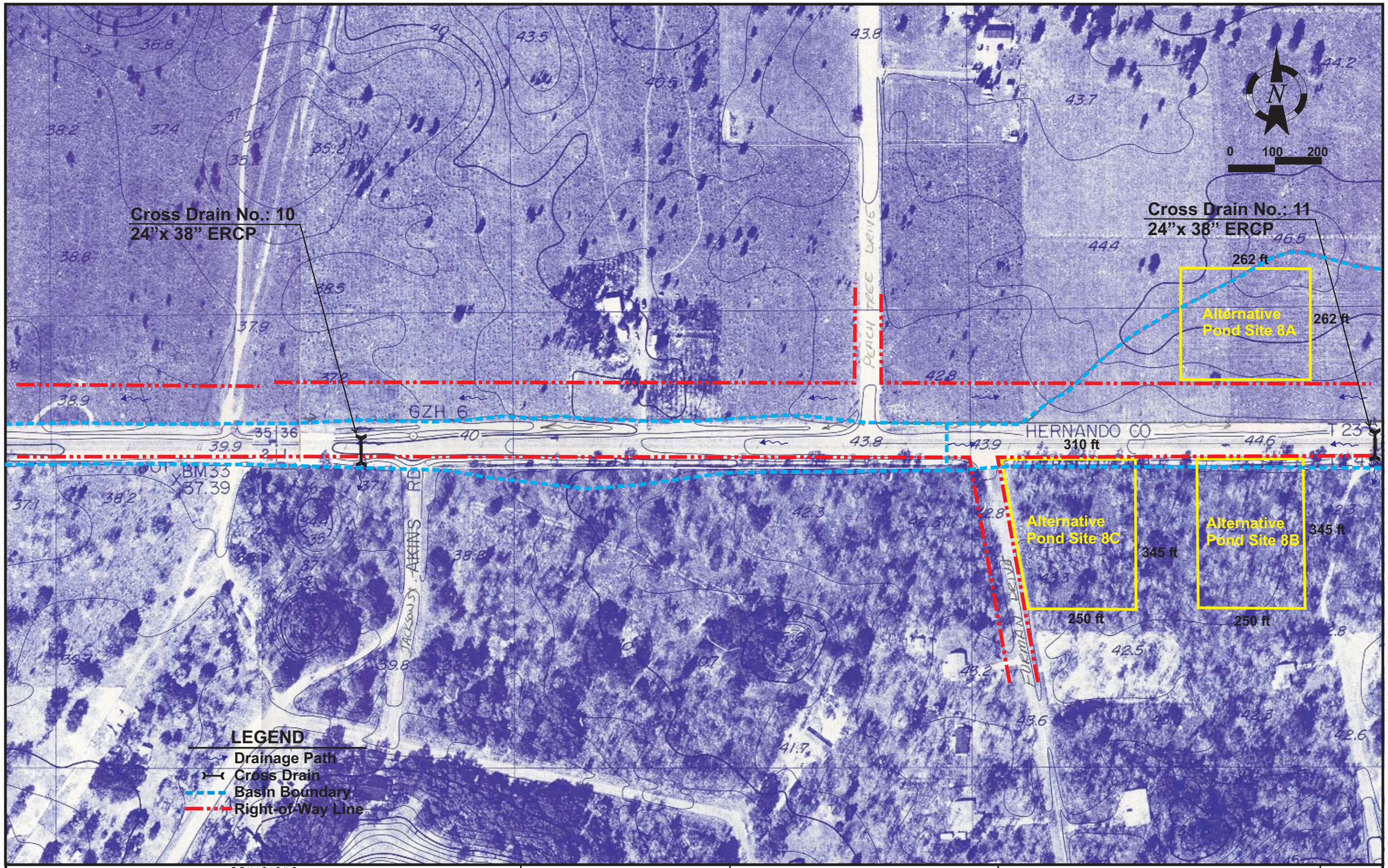

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ALIGNMENT S-8

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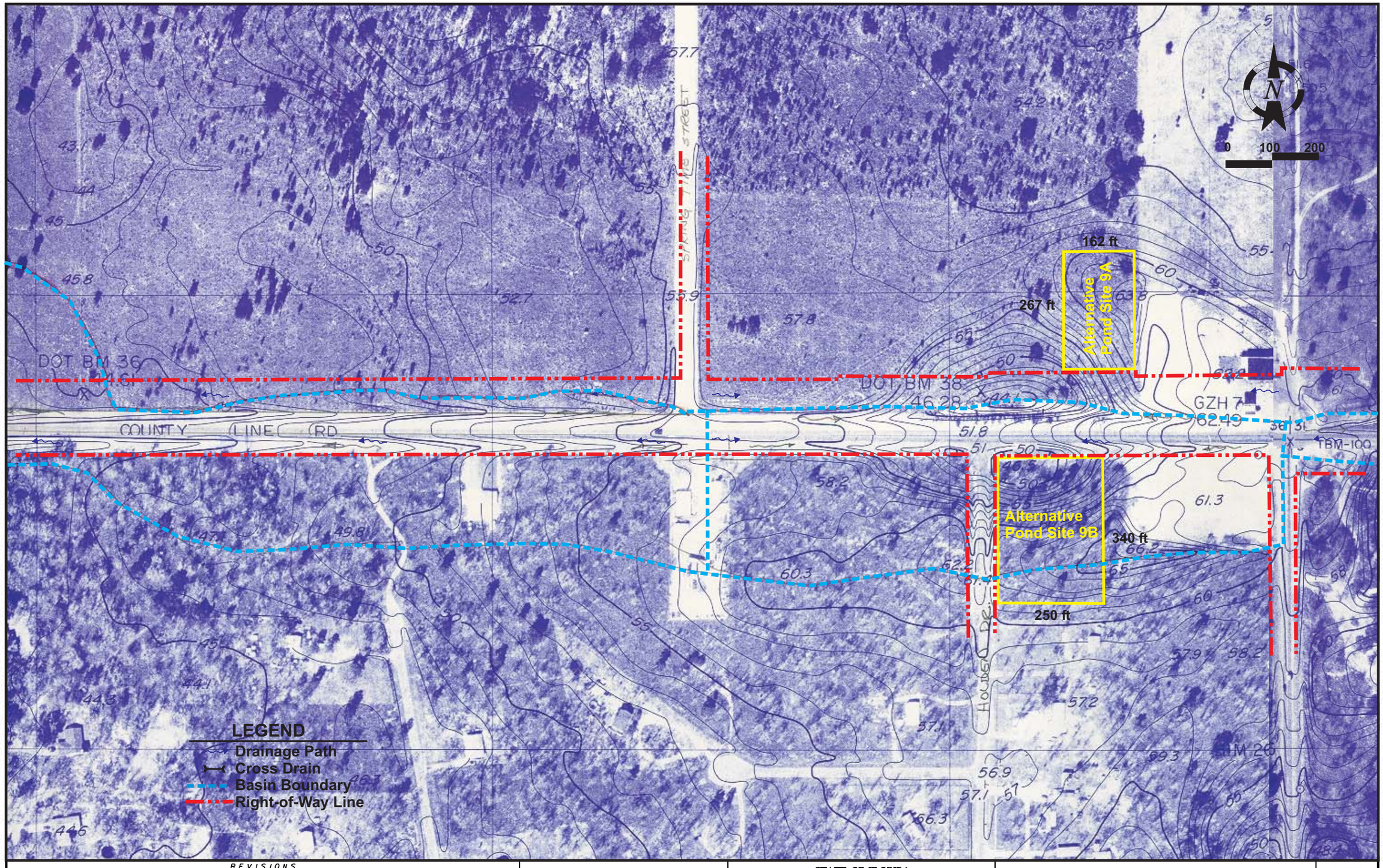

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From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

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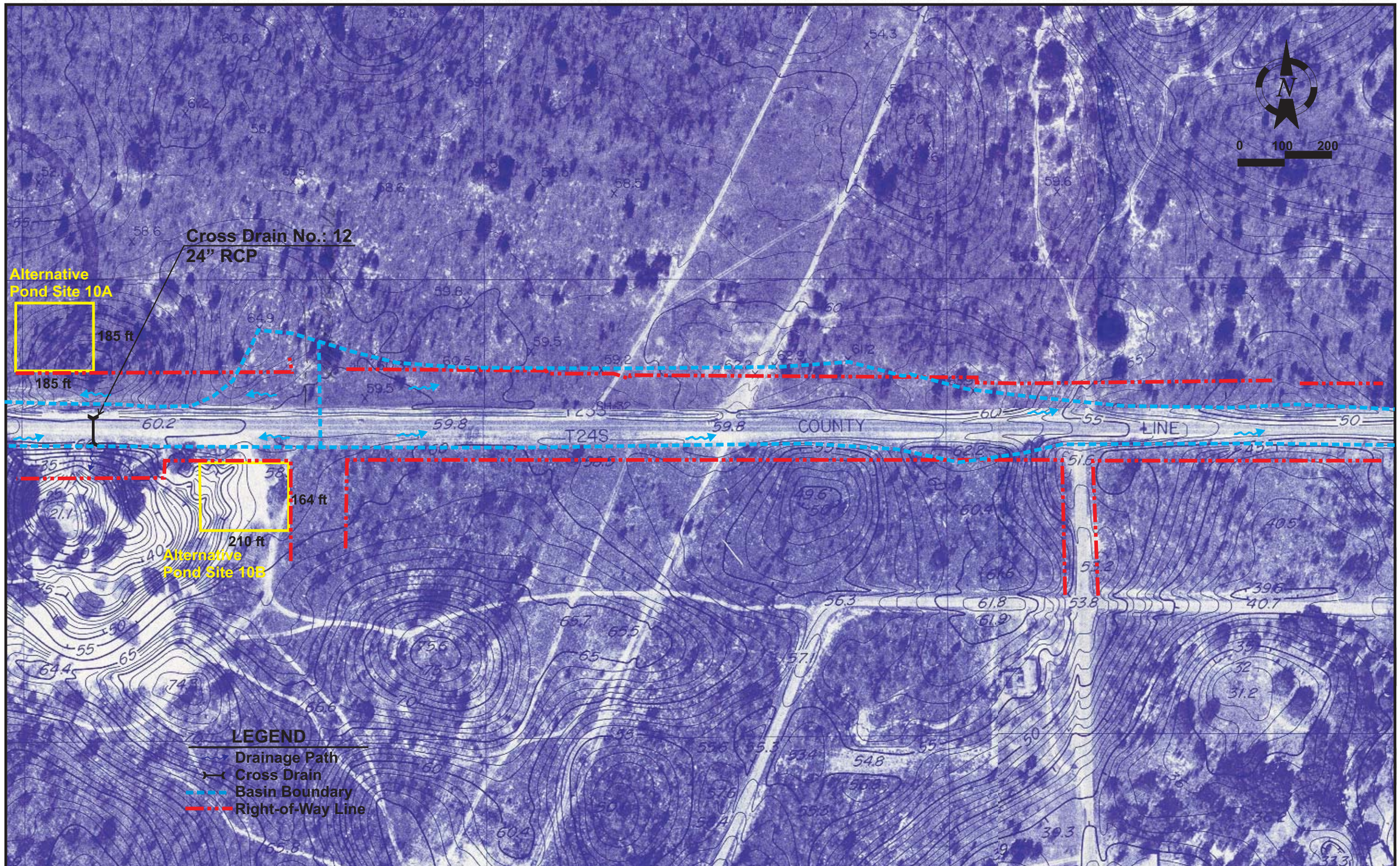

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COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

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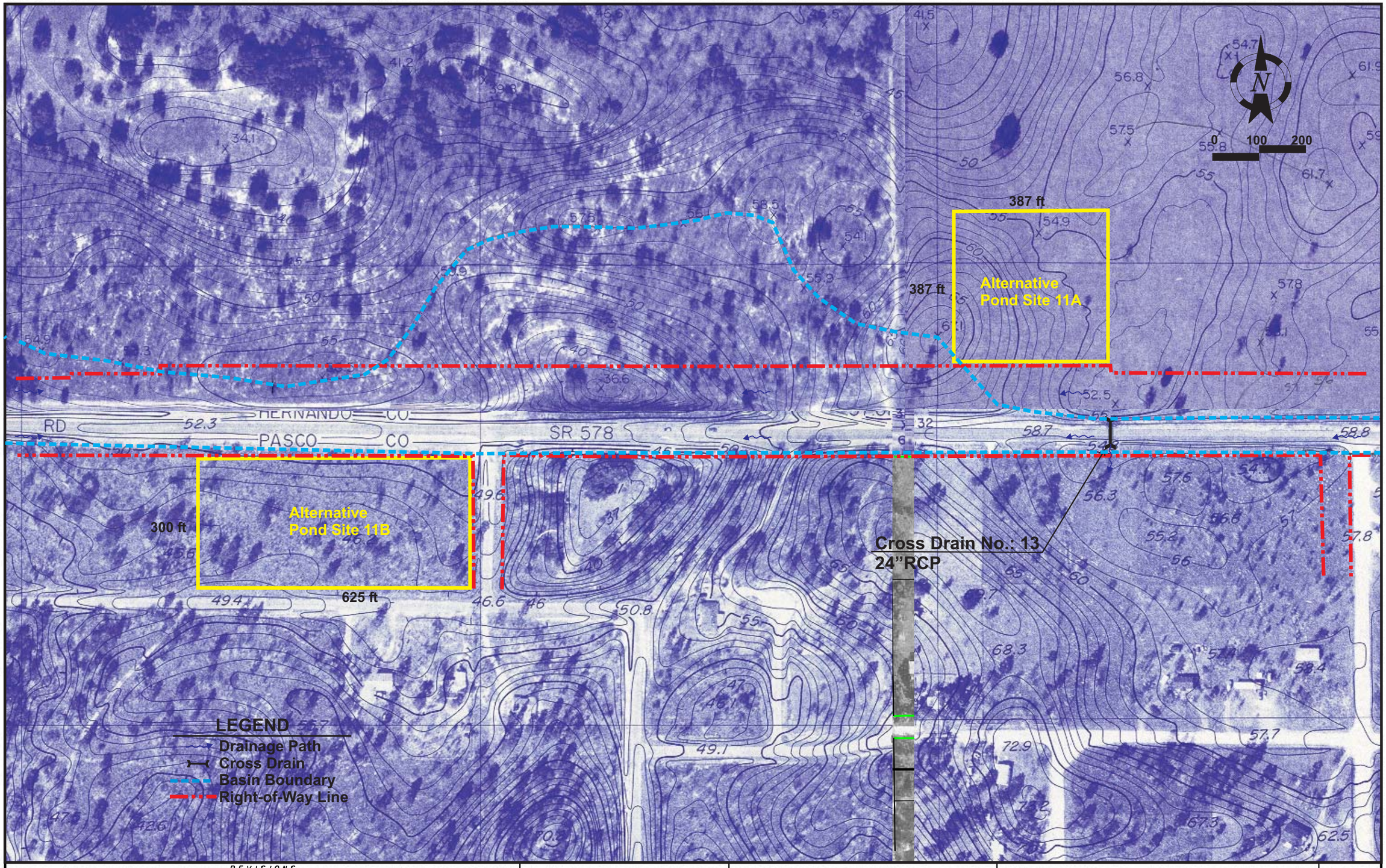

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From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

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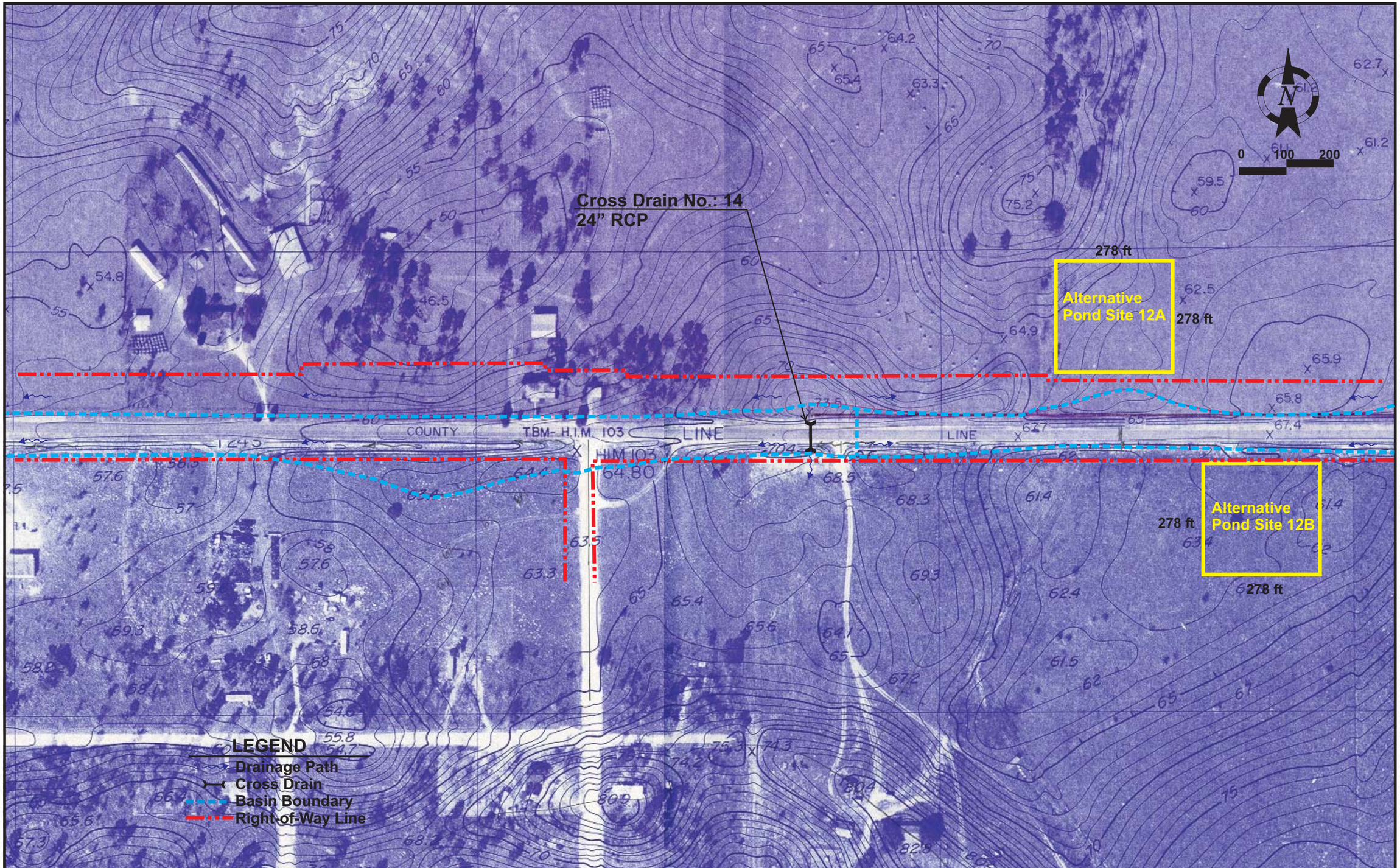

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

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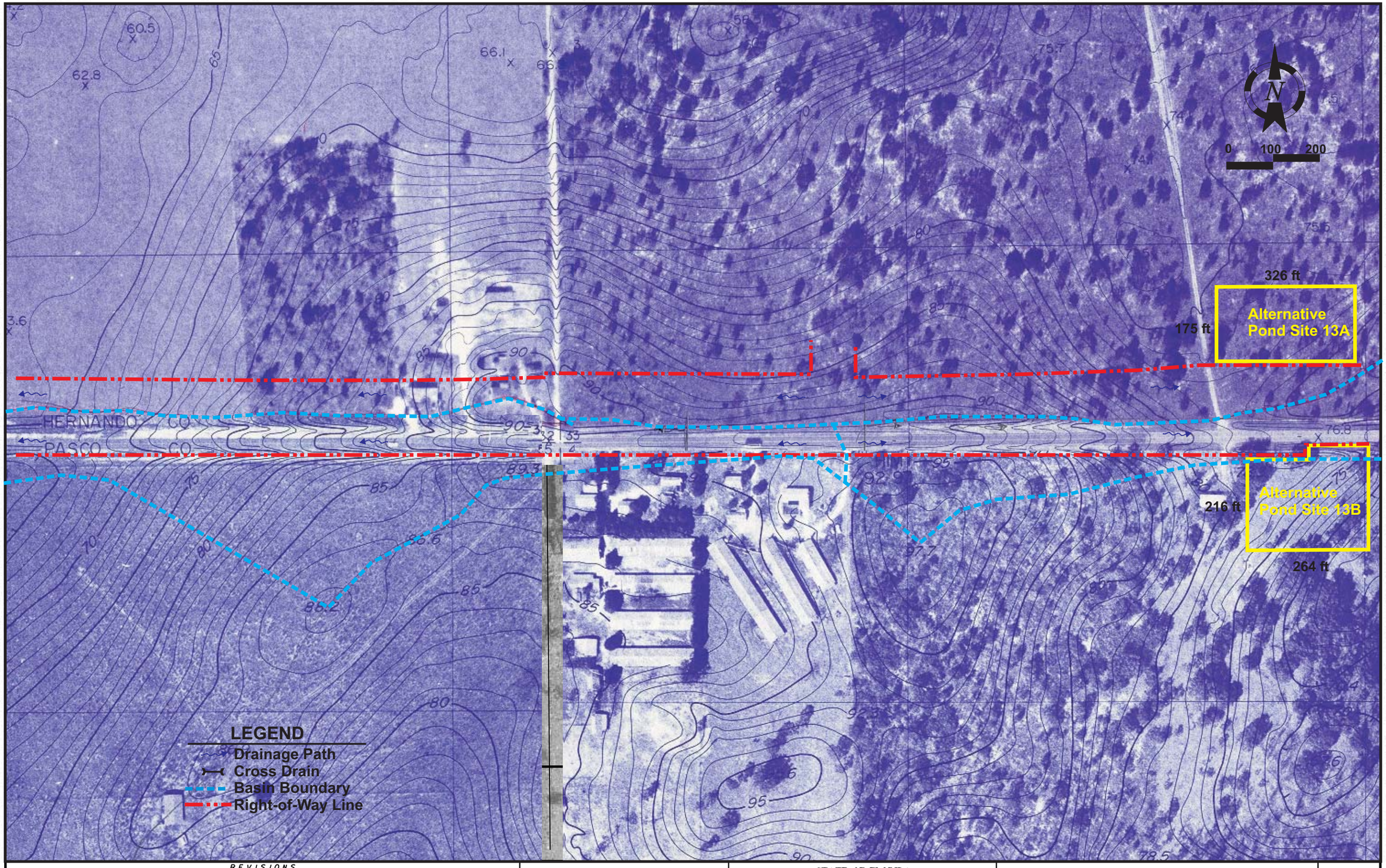

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09/13/99		DATE OF FLIGHT			

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COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

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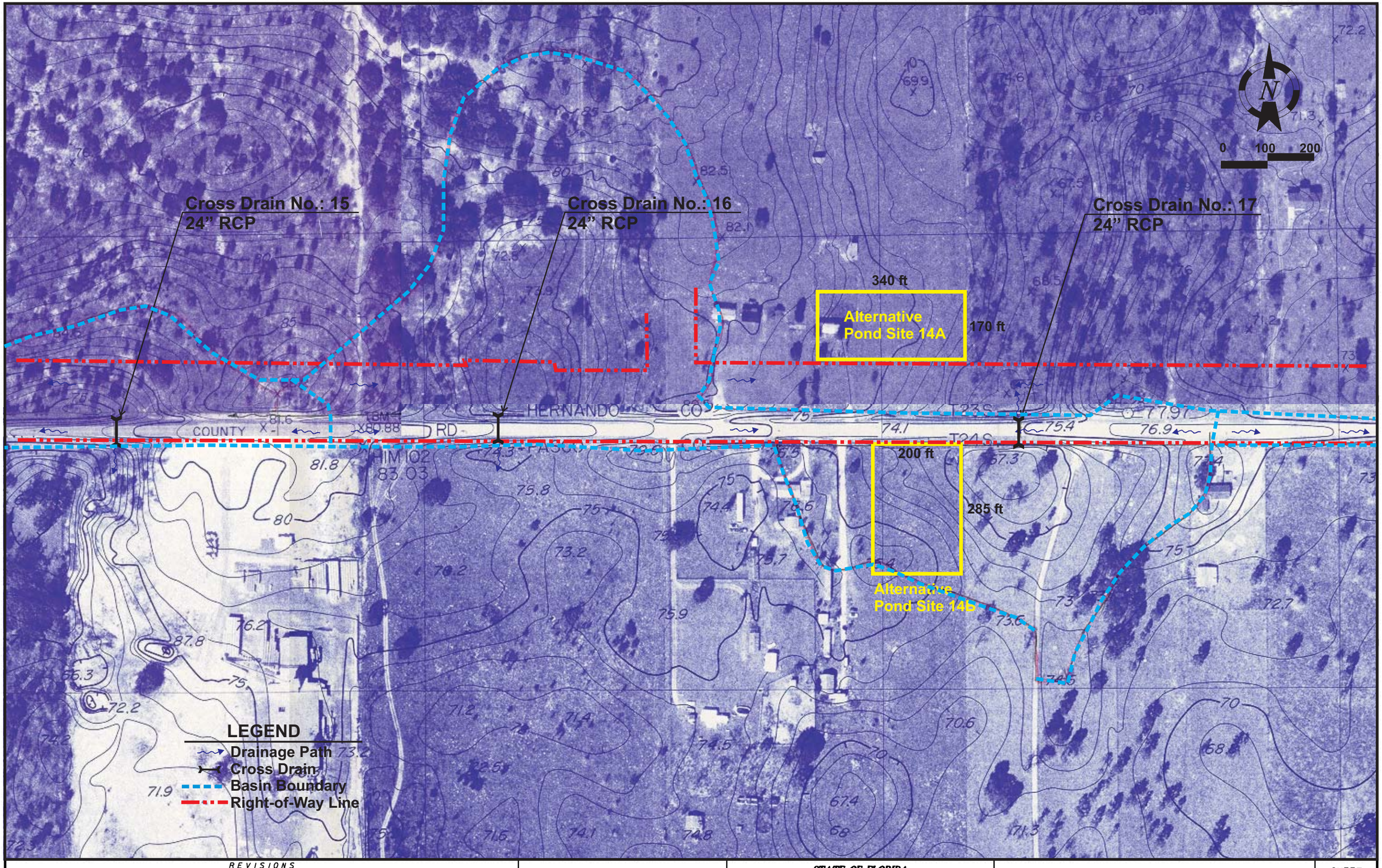

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COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

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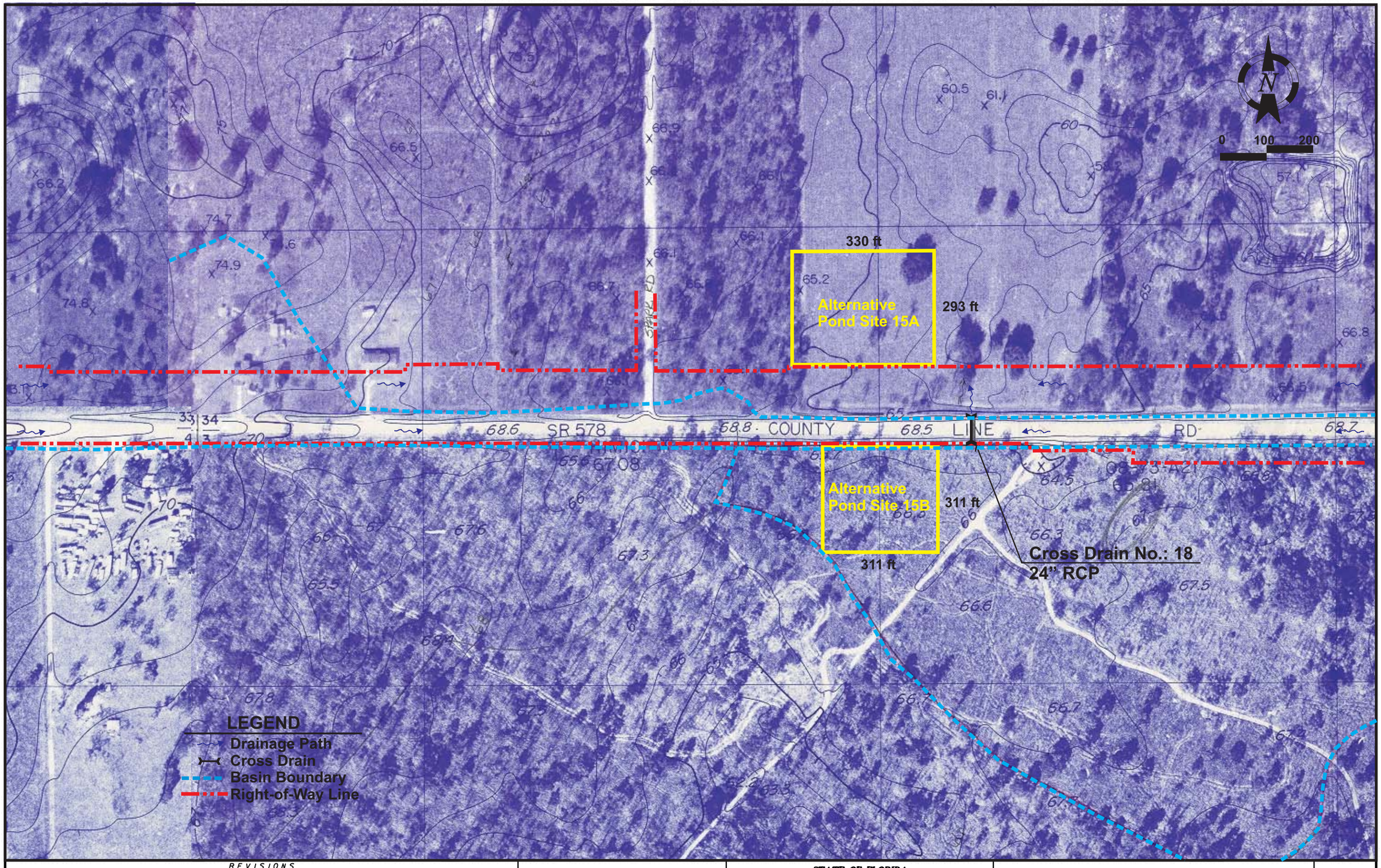

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From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

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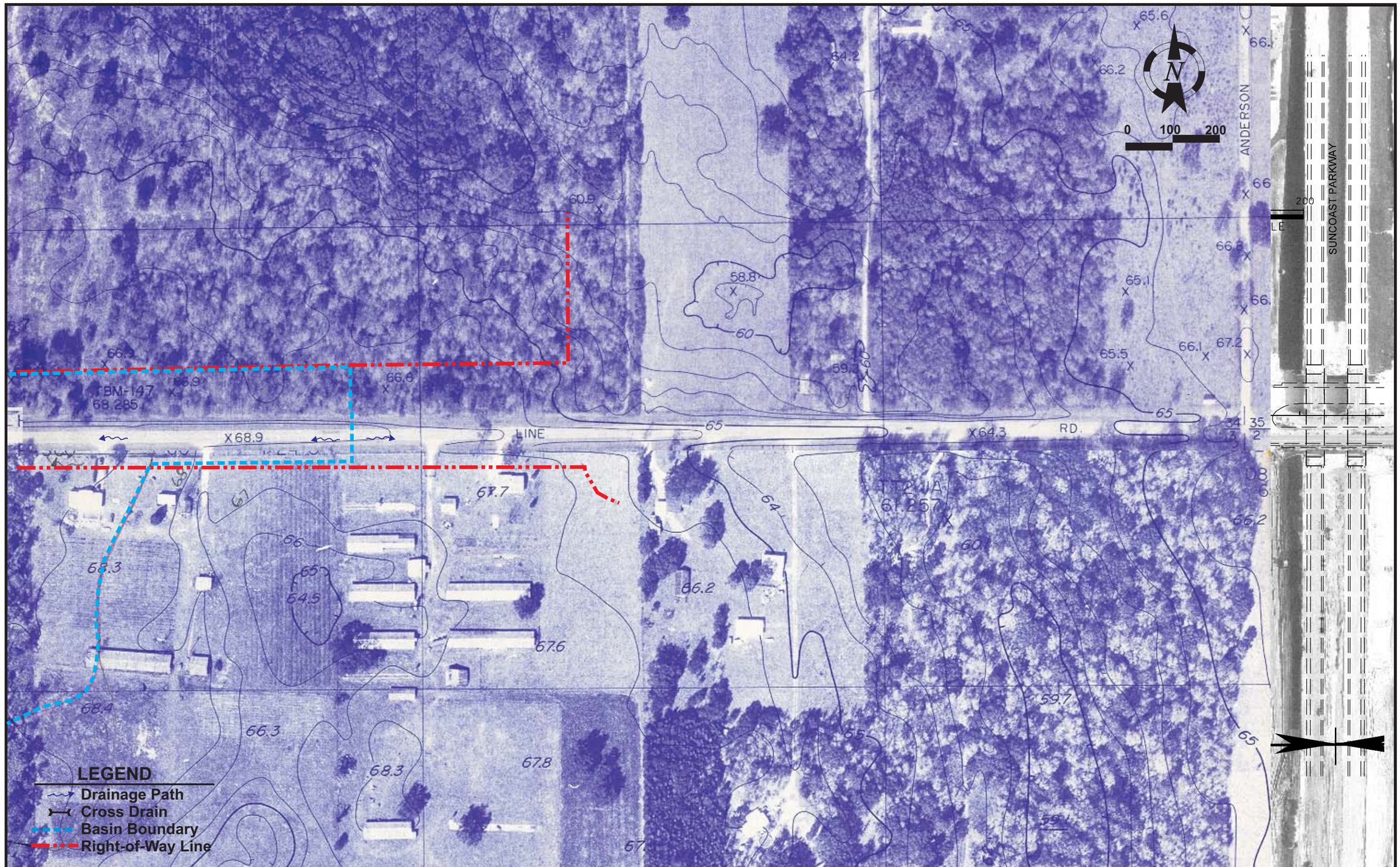

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COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-8

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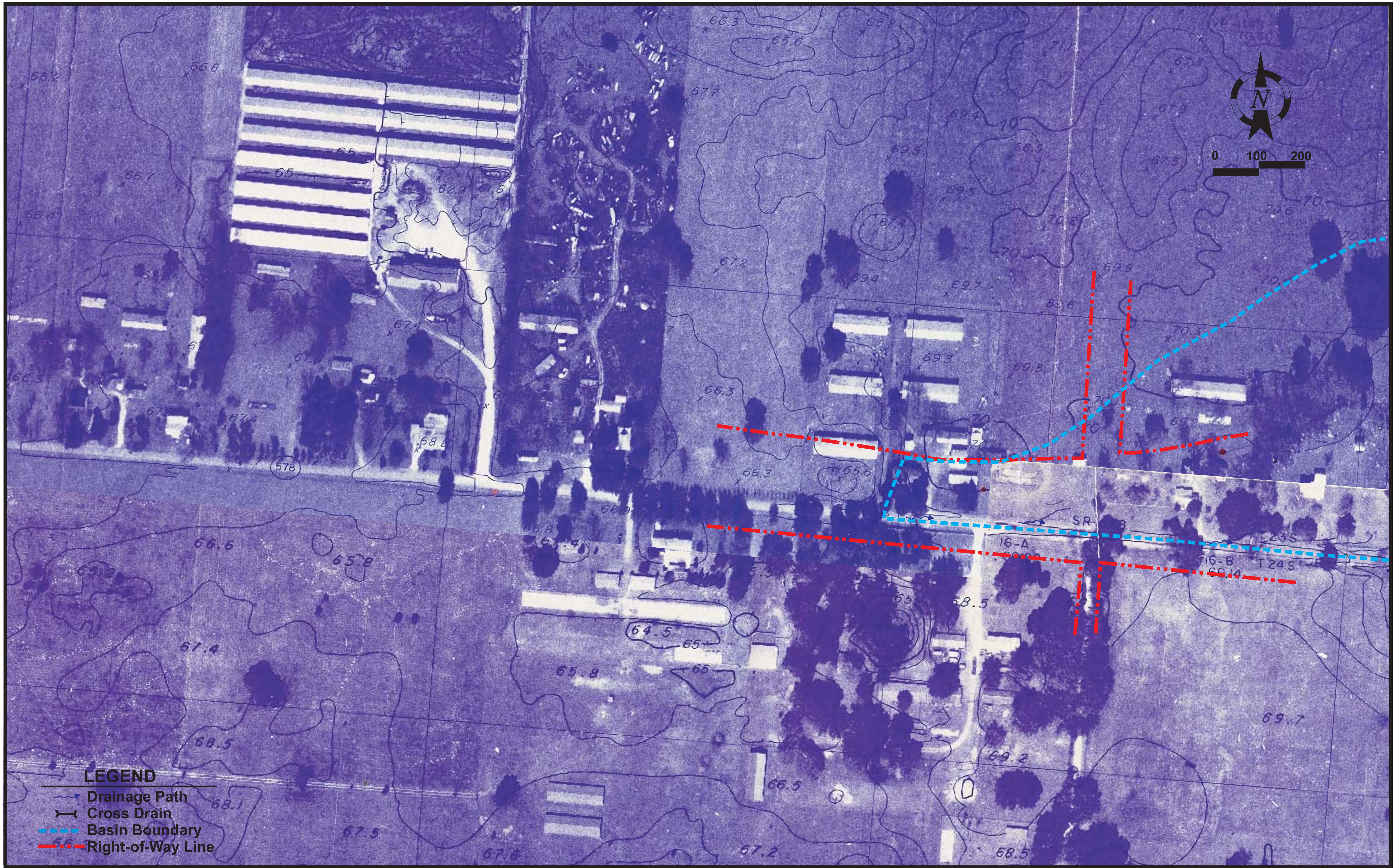

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COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-5 (AYERS ROAD)

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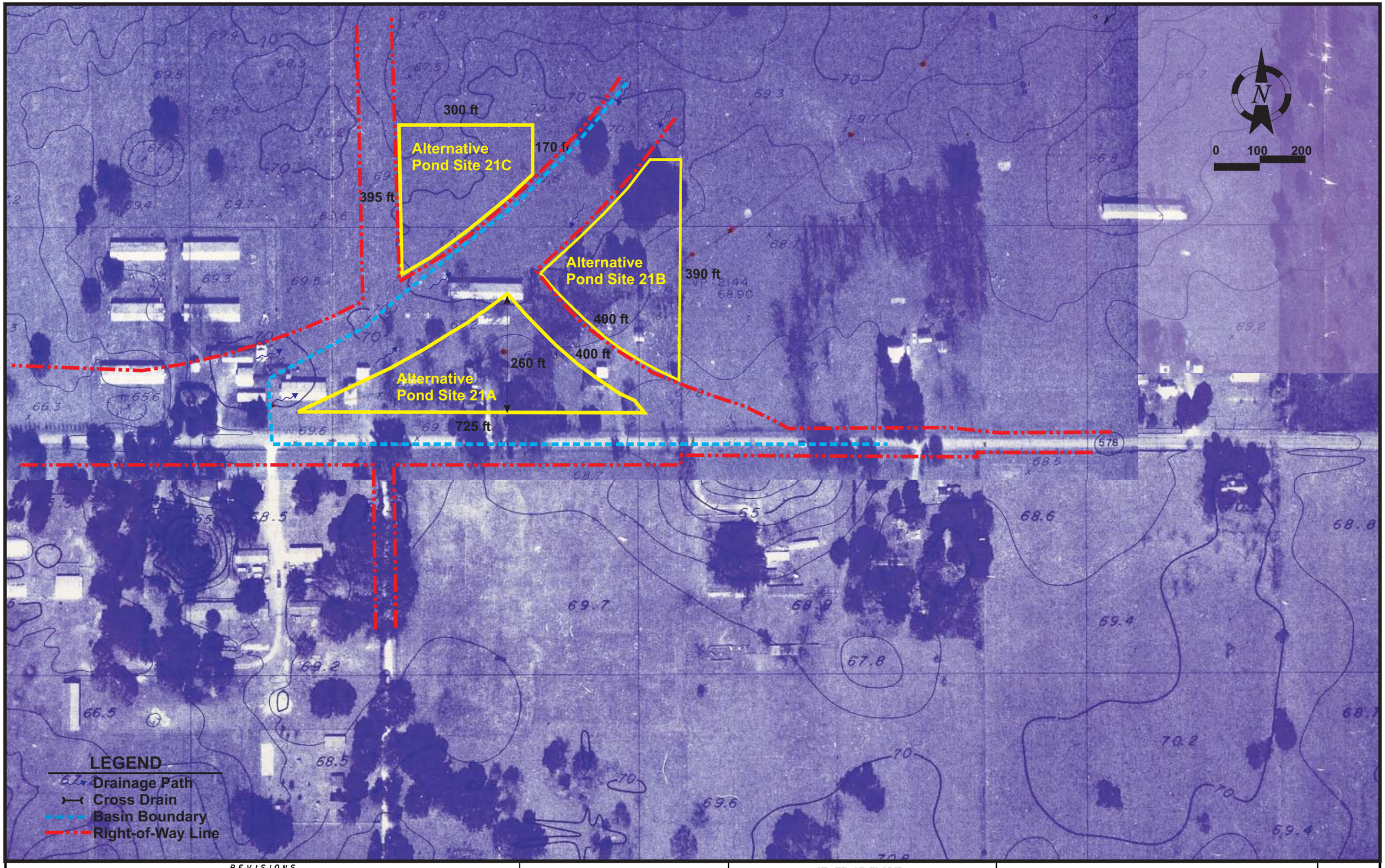

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COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-5 (AYERS ROAD)

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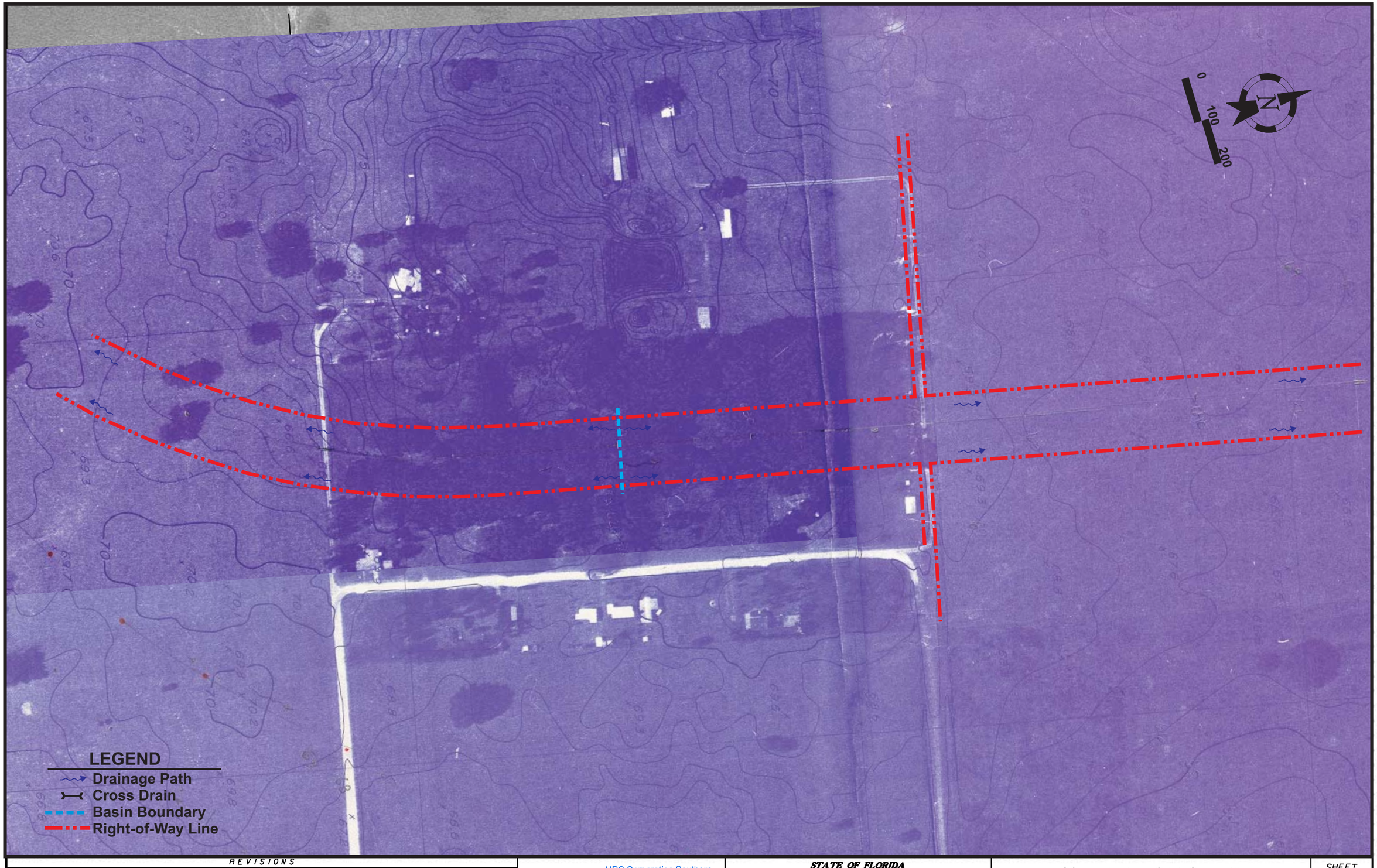

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COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-5 (AYERS ROAD)

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N

LEGEND

- Drainage Path
- Cross Drain
- Basin Boundary
- Right-of-Way Line

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From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-5 (AYERS ROAD)

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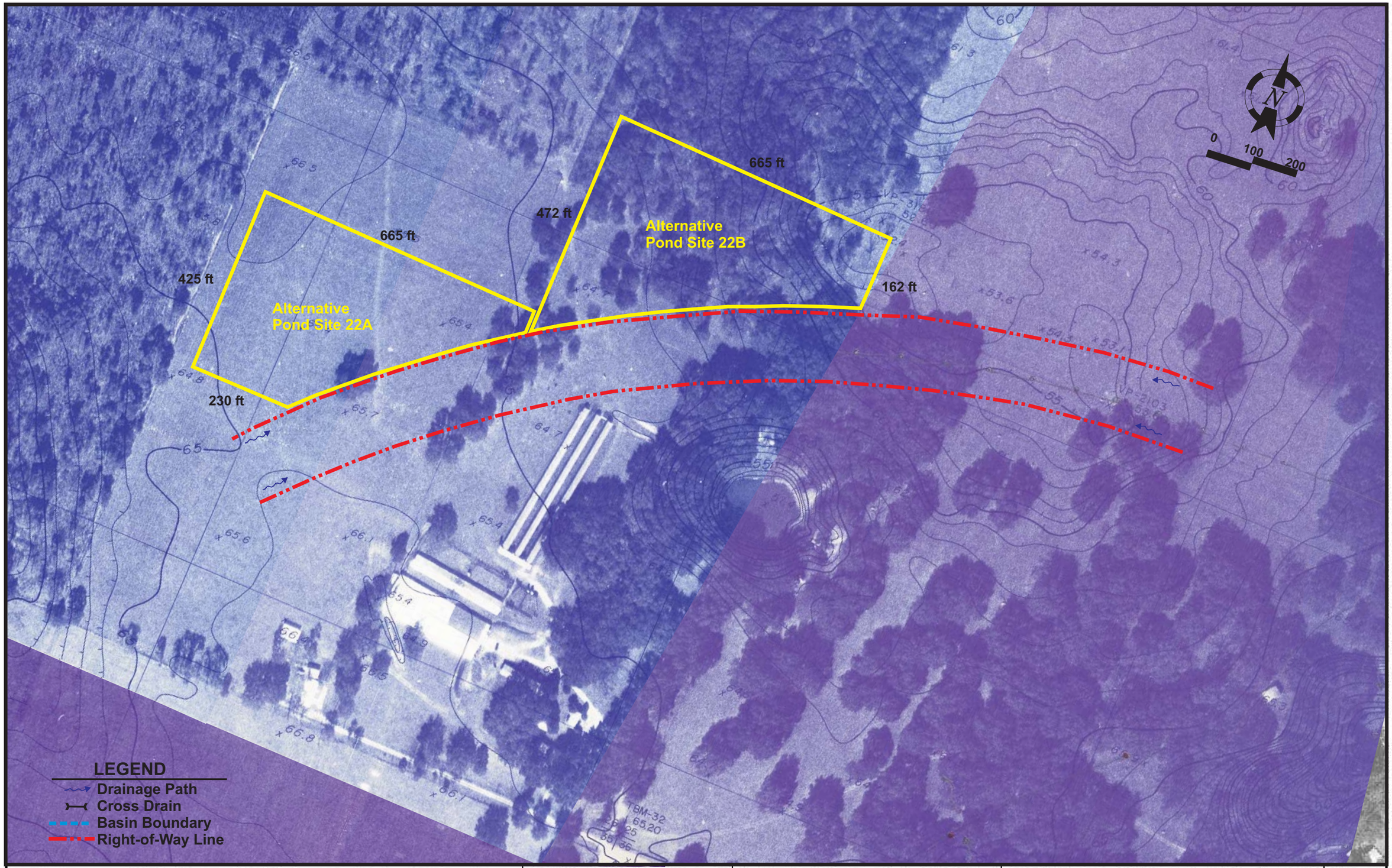

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ALIGNMENT S-5 (AYERS ROAD)

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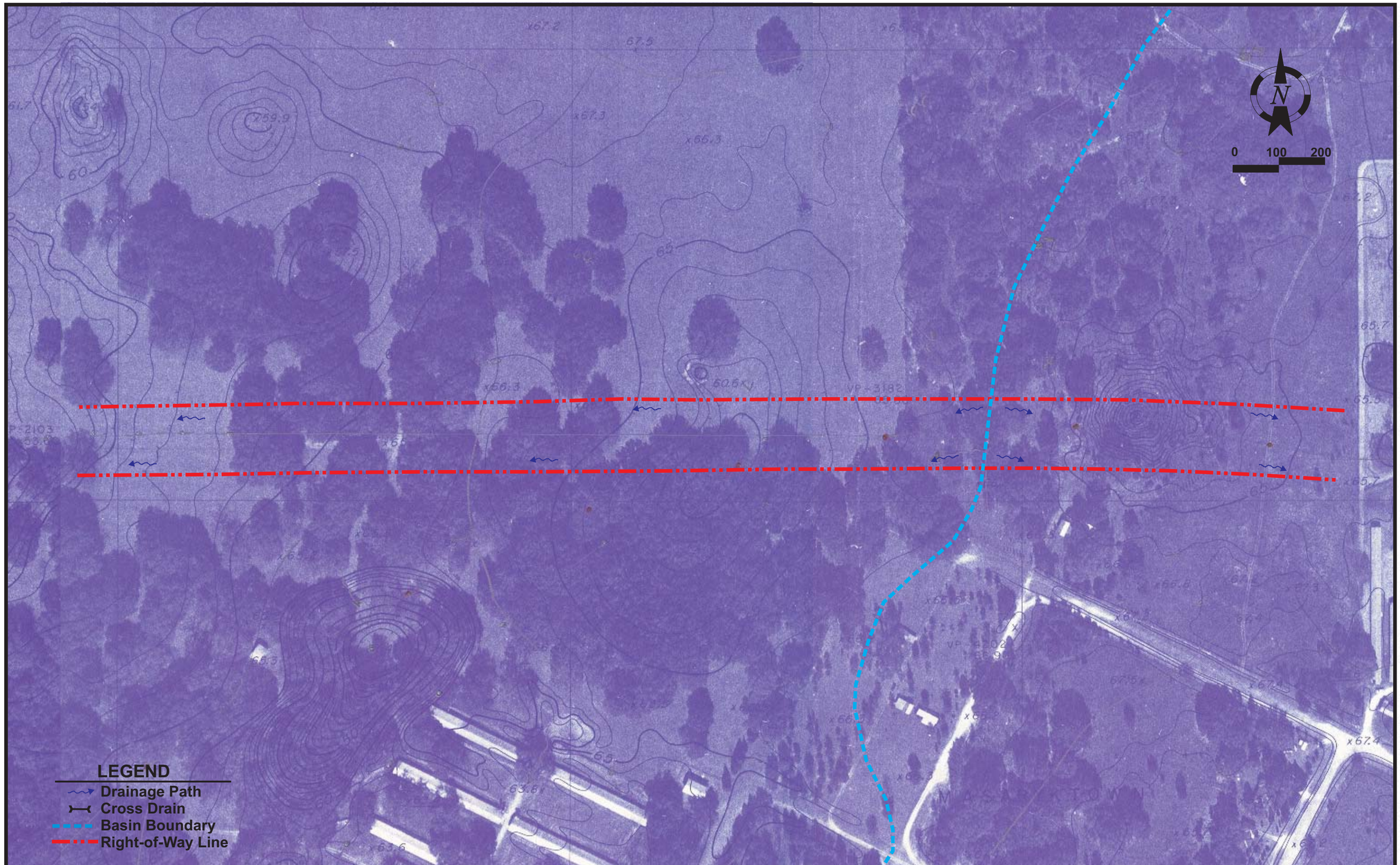

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ALIGNMENT S-5 (AYERS ROAD)

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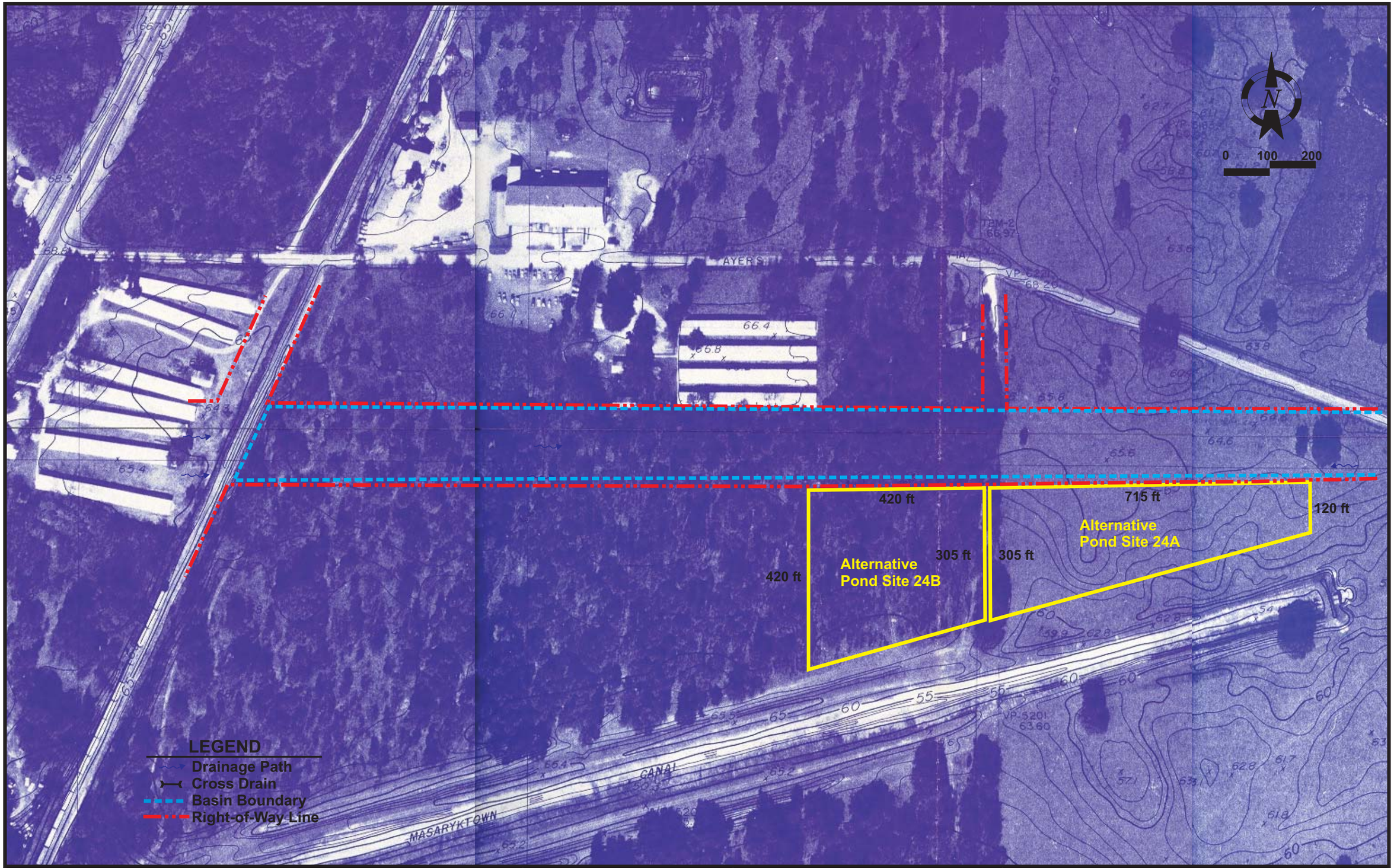

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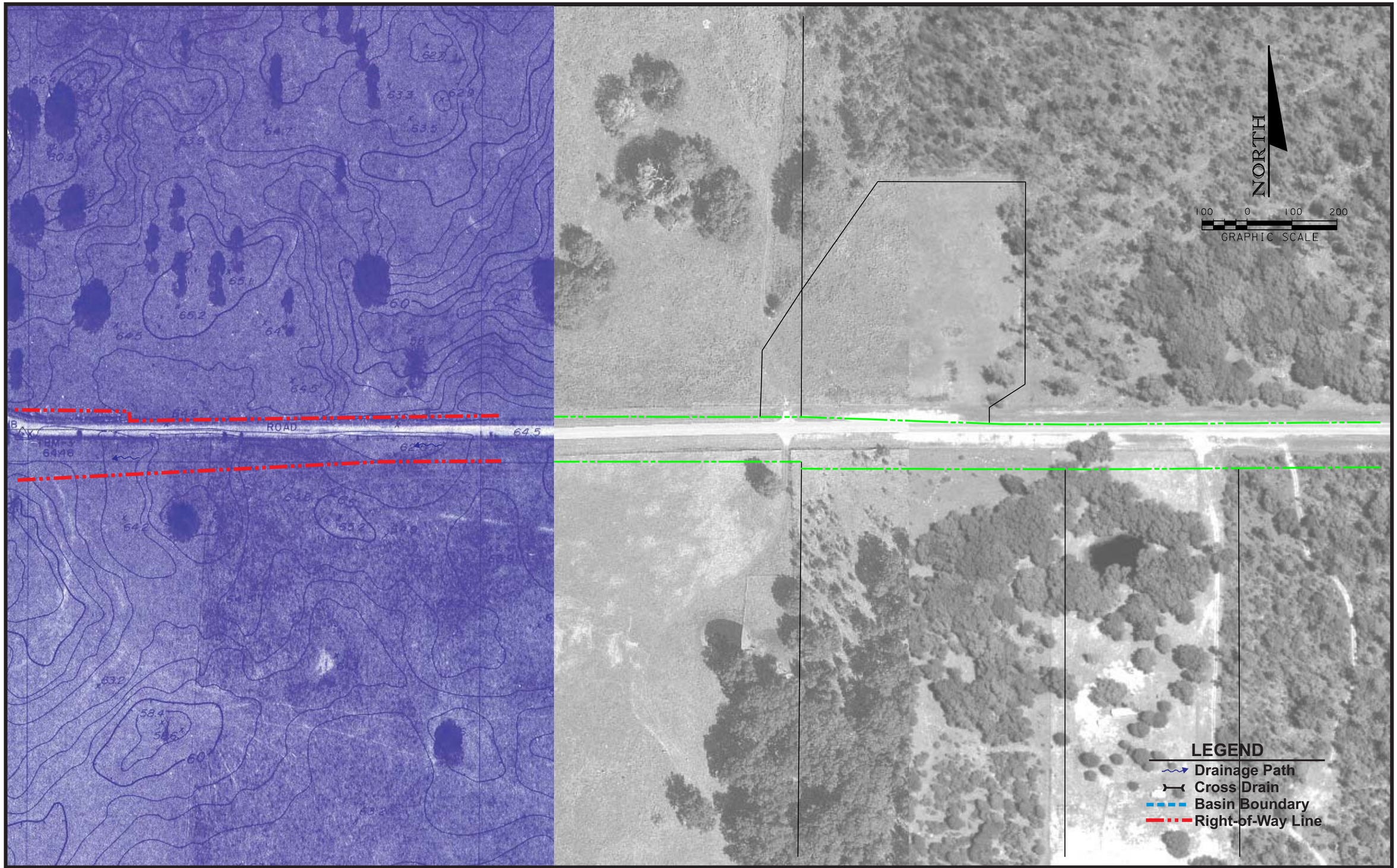

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ALIGNMENT S-5 (AYERS ROAD)

SHEET NO. 29

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APPENDIX E

WATER QUALITY IMPACT EVALUATION

Exhibit A

WQIE CHECK LIST

Project Name: County Line Road (C.R. 578) from U.S. 19 (S.R.55) to U.S. 41 (S.R. 45)

County: Pasco and Hernando

FIN (Financial Number):

Federal Aid Project No: 7822 001 S

Short project description: Improving County Line Road to a multi-lane facility from U.S. 19 to east of U.S. 41, including a new segment of roadway from the Suncoast Parkway Interchange to east of U.S. 41.

PART 1: DETERMINATION OF WQIE SCOPE

Does project increase impermeable surface area? ☒ Yes ☐ No

Does project alter the drainage system? ☒ Yes ☐ No

If the answer to both questions is no, complete the WQIE by checking Box A in Part 4.

Do environmental regulatory requirements apply? ☒ Yes ☐ No

If no, proceed to Part 4 and check Box B.

PART 2: PROJECT CHARACTERISTICS

20-year design ADT: 7000 to 16,000 Expected speed limit: 55 mi/hr

Drainage area: 176 acres 40 % Impervious 60 % Pervious

Land Use: 40 % Residential 10 % Commercial 1 % Industrial

20 % Agricultural 10 % Wetlands 19 % Other Natural

Potential large sources of pollution (identify): None

Groundwater receptor (name of aquifer or N/A): Floridan

Designated well head protection area: ☐ Yes ☒ No Name:

Sole source aquifer: ☐ Yes ☒ No Name:

Groundwater recharge mechanism:

Percoloation and recharge through sinkholes

(Notify District Drainage Engineer if karst conditions expected)

Surface water receptor (name or N/A): Long Pond / Various Depression Areas
Classification: ☐ I ☐ II ☒ III ☐ IV ☐ V

Special designation (check all that apply):
☐ ONRW ☐ OFW ☐ Aquatic Preserve ☐ Wild & Scenic River
☐ Special Water ☐ SWIM Area ☐ Local Comp Plan ☐ MS4 Area
☐ Other (specify): _____

Conceptual storm water conveyances & system (check all that apply):
☒ Swales ☐ Curb and Gutter ☐ Scuppers ☒ Pipe ☐ French Drains
☒ Retention/Detention Ponds ☐ Other _____

PART 3: ENVIRONMENTAL REGULATORY REQUIREMENTS

Regulatory Agency (check all that apply)	Reference citation for regulatory criteria (**attach copy of pertinent pages**)	Most stringent criteria (check all that apply)
USEPA ☐		☐
FDEP ☒	NPDES for Construction Activities	☒
WMD (Specify) ☒	Chapter 40D-4 FAC	☒
OTHER (Specify) ☒	Dredge & Fill Activities	☒

Proceed to Part 4 and check Box C.

PART 4: WQIE DOCUMENTATION

A. ☐ Water quality is not an issue.

B. ☐ No regulatory requirements apply to water quality issues.
(Document by checking the "none" box for water quality in Section 6.C.3 of the Environmental Determination Form or Section 5.C.3 of the SEIR.

C. ☒ Regulatory requirements apply to water quality issues. Water quality issues will be mitigated through compliance with the quantity design requirements placed by SWFWMD, an authorized regulatory agency.
(Document by checking the "none" box for water quality in Section 6.C.3 of the Environmental Determination Form or Section 5.C.3 of the SEIR.

Evaluator Name (print): Robert E. Johnson

Office: URS Corporation - Tampa

Signature: _____ Date: 10/9/02

ADDENDUM
JUNE 2003

INTRODUCTION

This addendum addresses and expands on a review comment received on both the Draft and Final Pond Siting Reports. The specific comment for which this addendum has been performed is as follows, "*There appears to be significant diversions of area in several basins. In some basins, this may be significant enough to render proposed pond sizes inadequate. For example see Basin 11. The calculations are based on providing a volume equal to the increase in runoff for the 100-year, 24-hour storm event, as if the entire area enclosed within the proposed R/W now drains to the pond outfall, however the contour map indicates very little does.*" While the January 2003, Final Pond Siting addressed this comment for Basins 11 and 22 it was determined that additional review of other Basins was needed to better satisfy the review comment. Consequently, it was determined that the comment also applied to the proposed pond sites located in Basins 21, 23 and 24. As a result of the drainage analysis within these Basins the pond sizes increased. The methodology, calculations, and plan-sheets that reflect the results of this analysis are incorporated as part of this addendum.

METHODOLOGY

Calculations for the Final Pond Siting Report assumed two calculation methodologies. The first methodology assumed no diversion of runoff and the second assumed that, because of topographic relief and pond site locations, diversion of run off could occur. The diversion methodology was applied to pond sites located in Basins 11, 21,22,23, and 24.

The pond sites calculations for basins 21, 23 and 24 were revised based on the diversion methodology used for the ponds for Basin 11 and 22. The pond sites for these basins were revised to account for portions of the proposed contributing drainage area that may not currently drain to the proposed pond area. The procedure is as follows:

Treatment Volume

The additional impervious area for treatment was calculated based on the roadway segment length and the additional impervious width (pavement only) of 90ft. The required treatment volume was calculated as one inch of runoff from the additional impervious area.

Attenuation Volume

The additional impervious area for attenuation was calculated based on the roadway segment length and the additional impervious width of the right of way (pavement, curb, gutter, and sidewalk) of 111ft. In the case of basin 24, the width of the existing lanes (24ft) was subtracted from the right of way width (111ft) for a total additional impervious width of 87ft.

The required attenuation volume was calculated using the SCS method for a 100 year-24 hour rainfall event with 11.5 inches of depth. The post development weighted curve numbers were calculated using the total right of way width (155ft) with a pervious width of 44ft and impervious width of 111ft. The attenuation volume was calculated as the

product of the runoff depth and the calculated impervious areas for attenuation.

Pond Volume and Dimensions

The total required pond volume was calculated as the sum of the treatment volume and the attenuation volume. The ponds will have a side slope of 1:4 and a 20ft maintenance berm. The ponds for basins 21 and 22 were estimated to be 4.5ft deep (SHWT > 6ft) and a total of 80ft was added to the pond top of bank dimensions to account for the side slope and maintenance berm. The ponds for basins 23 and 24 were estimated to be 2ft deep (SHWT 1.5-2.5ft) and a total of 60ft was added to the pond top of bank dimensions to account for the side slope and maintenance berm.

CONCLUSIONS

Based on this addendum the conceptual design criteria and diversion assumptions applied to determine storm-water pond size requirements within Basins 21,23 and 24 the conceptual pond sizes were increased. However, given final survey and design requirements it could be found that diversion of runoff may not apply. Consequently, the calculations that assumed no requirement for diversion of the contributing area within these basins, which are reflected in the text and appendices of the Final Pond Siting Report, would be found suitable.

Preliminary Pond Site Number Numbers 21A, 21B, and 21C
Alignment S-5 (Ayers Road)

Description: Basin number 21 extends from the intersection of C.R. 578 and Kuka Lane (Station 600+00) to Station 626+70 and includes approximately 2,670 feet of roadway improvements.

Roadway Segment: station 600+00 to station 626+70
Length: 2,670 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 2,670(90)/43560 =5.52 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane)
Additional Impervious Area (attenuation)= 2,670(111)/43560 = 6.80 acres

Treatment Volume
Required Treatment Volume (wet) = (1.0/12)(5.52) = 0.46 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Post-Development Weighted Curve Number for Attenuation of Entire R/W

Total R/W Width = 155 ft
Impervious Width (Pavement, curb, gutter, and sidewalk) = 111 ft/ft of right-of-way
Pervious Width = 44 ft/ft of right-of-way

Description	Area (ac)	Land Use	Hyd. Soil Grp.	Runoff Coef.	Product
Project Impervious	6.80	Pavement	A	98	666.40
Project Pervious	2.70	Grass	A	49	132.30
Total Area	9.50				798.70

C N = Product/Total Area = 798.70/9.50 = 84

S = (1000/84)-10 = 1.90 inches

Runoff Depth (Q) = $\frac{\{11.5 - 0.2(1.90)\}^2}{\{11.5 + 0.8(1.90)\}}$ = 9.50 inches

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area) = (9.50/12)(6.80) = 5.38 ac-ft

Total Required Pond Volume = 5.38 + 0.46 = 5.84 ac-ft

Preliminary Pond Site Numbers 21A, 21B, and 21C
Alignment S-5 (Ayers Road)

Pond Dimensions

SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

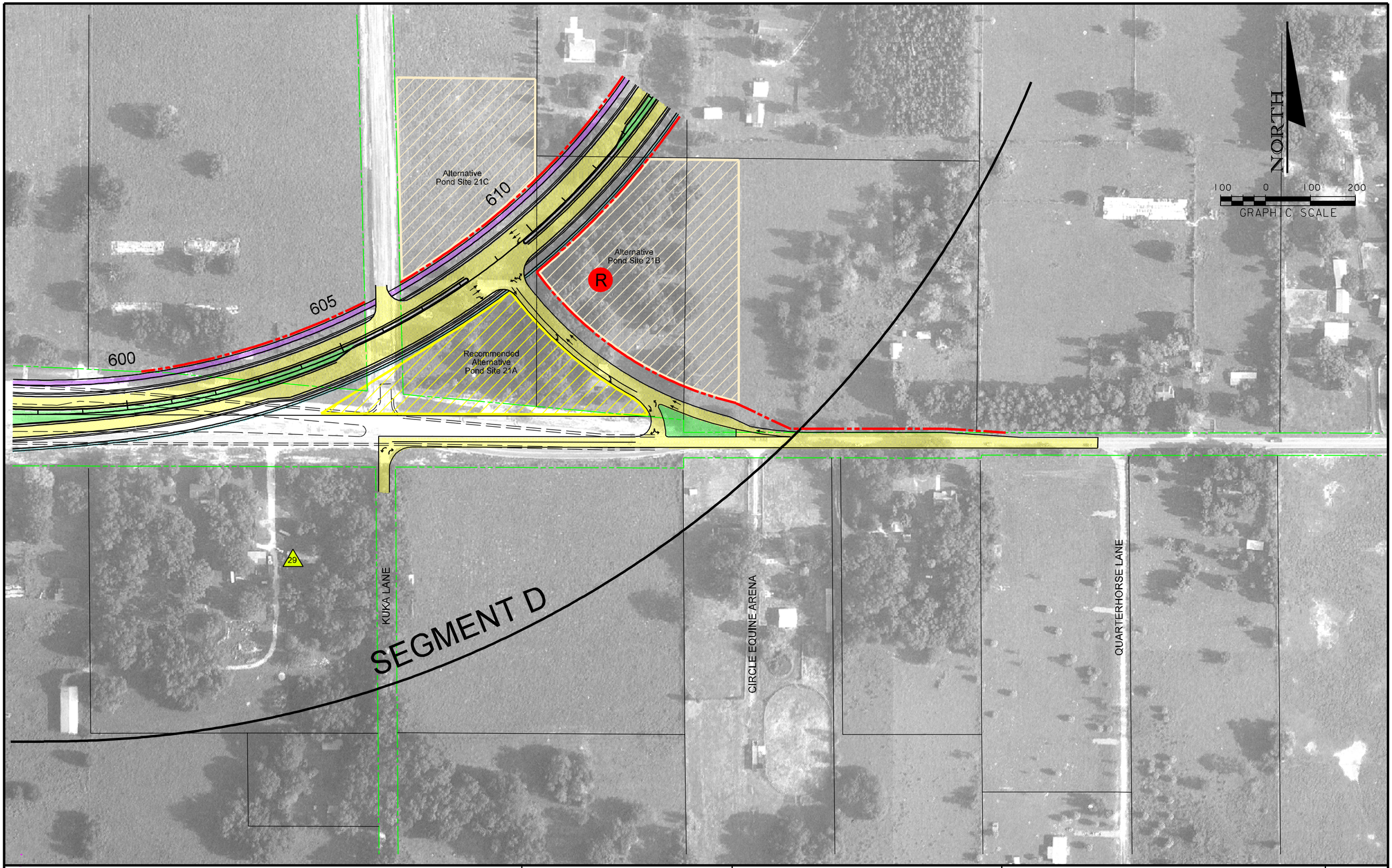
Dimension of square pond with vertical sides = $[(5.84/4.5)(43560)]^{1/2}$ = 238 ft x 238 ft
Dimension with side slope and berm = 318 ft x 318 ft

Total Area Required =$(318)^2/43560$ = 2.32 acres

Pond Site 21A is located on the north side of C.R. 578, east of Kuka Lane. This site is a remnant parcel resulting from right-of-way acquisition for the proposed roadway improvements. The soil at pond site 21A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 21A has an available area of 2.32 acres.

Pond Site 21B is located on the north side of C.R. 578 approximately 500 feet east of Kuka Lane. This site requires the partial acquisition of two parcels that will both be partially be acquired as part of the proposed roadway improvements. The soil at pond site 21B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 21B has an available area of 2.72 acres.

Pond Site 21C is located on the north side of C.R. 578, east of Kuka Lane. This site requires the partial acquisition of an undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 21C consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 21C has an available area of 2.34 acres.



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Tampa, FL 33607-1462
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
C.R.578	PASCO & HERNANDO	257298 1 22 01

COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-5 (AYERS ROAD)

SHEET NO. 22

Preliminary Pond Site Numbers 22A and 22B
Alignment S-5 (Ayers Road)

Description: Basin number 22 extends from Station 626+70 to Station 708+00 and includes approximately 8,130 feet of roadway improvements.

Roadway Segment: station 626+70 to station 708+00
Length: 8,130 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 8,130(90)/43560 =16.80 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane)
Additional Impervious Area (attenuation)= 8,130(111)/43560 = 20.72 acres

Treatment Volume
Required Treatment Volume (wet) = (1.0/12)(16.80) = 1.40 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A"

Potential Abstraction (S) = (1000/CN) –10

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

Post-Development Weighted Curve Number for Attenuation of Entire R/W

Total R/W Width = 155 ft
Impervious Width (Pavement, curb, gutter, and sidewalk) = 111 ft/ft of right-of-way
Pervious Width = 44 ft/ft of right-of-way

Description	Area (ac)	Land Use	Hyd. Soil Grp.	Runoff Coef.	Product
Project Impervious	20.72	Pavement	A	98	2030.56
Project Pervious	8.21	Grass	A	49	402.29
Total Area	28.93				2432.85

C N = Product/Total Area = 2432.85/28.93 = 84

S = (1000/84)-10 = 1.90 inches

Runoff Depth (Q) = $\frac{\{11.5 - 0.2(1.90)\}^2}{\{11.5 + 0.8(1.90)\}}$ = 9.50 inches

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area) = (9.50/12)(20.72) = 16.40 ac-ft

Total Required Pond Volume = 16.40 + 1.40 = 17.80 ac-ft

Preliminary Pond Site Numbers 22A and 22B
Alignment S-5 (Ayers Road)

Pond Dimensions

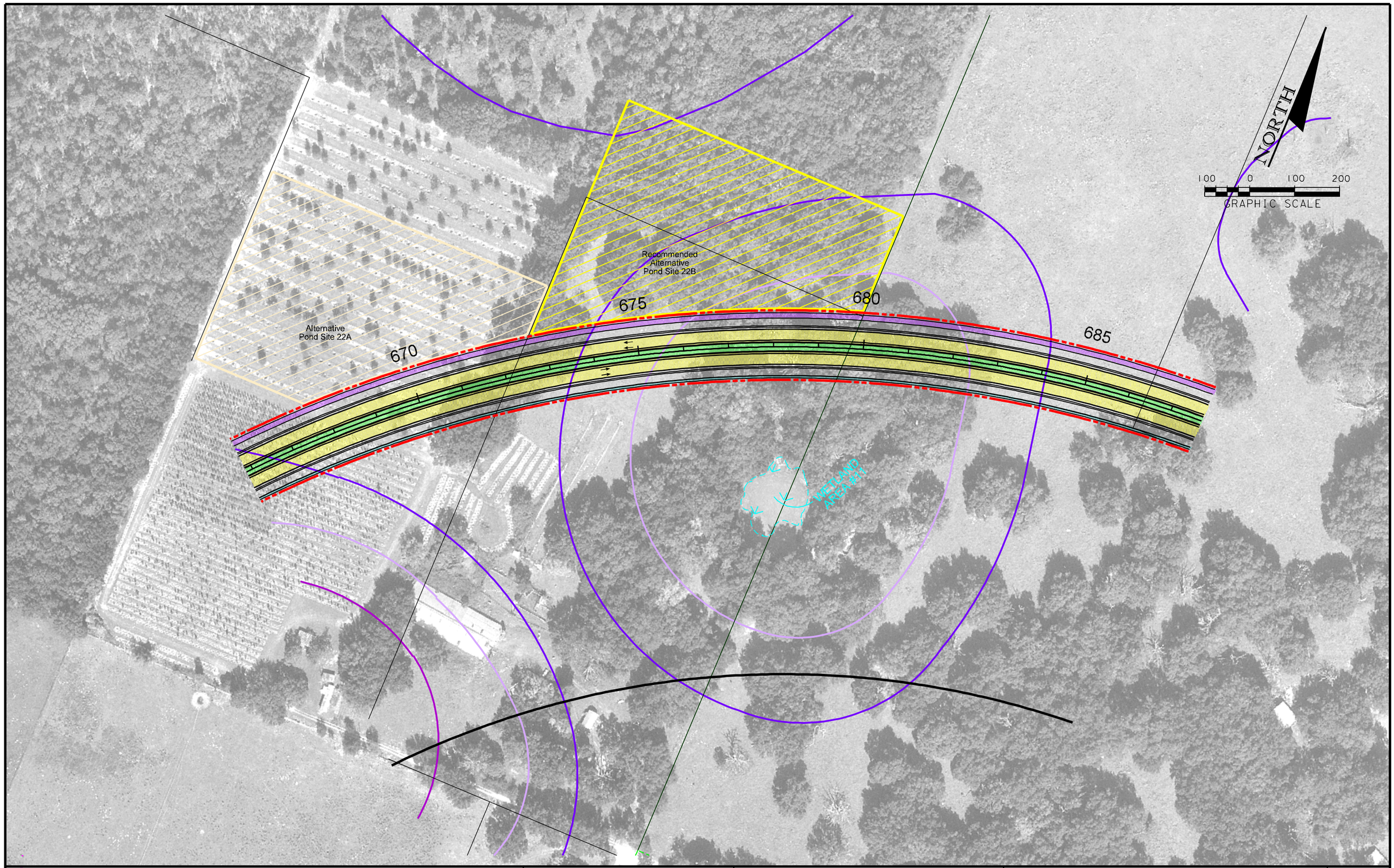
SHWT Depth = >6 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 80 ft to pond dimensions to accommodate side slopes and maintenance berm)

Dimension of square pond with vertical sides = $[(17.80/4.5)(43560)]^{1/2}$ = 415 ft x 415 ft
Dimension with side slope and berm = 495 ft x 495 ft

Total Area Required =$(495)^2/43560$ = 5.63 acres

Pond Site 22A is located on the west side of the proposed Ayers Road extension at Station 670+00. This site requires the acquisition of a parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 22A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 22A has an available area of 5.63 acres.

Pond Site 22B is located on the west side of the proposed Ayers Road extension at Station 676+00. This site requires the acquisition of two parcels one of which will be partially acquired as part of the proposed roadway improvements. The soil at pond site 22B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 22B has an available area of 5.63 acres.



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COUNTY LINE ROAD (C.R. 578)
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-5 (AYERS ROAD)

SHEET NO. 25

Preliminary Pond Site Numbers 23A and 23B
Alignment S-5 (Ayers Road)

Description: Basin number 23 extends from Station 708+00 to Station 735+45 and includes approximately 2,745 feet of roadway improvements.

Roadway Segment: station 708+00 to station 735+45
Length: 2,745 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 2,745(90)/43560 = 5.67 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane)
Additional Impervious Area (attenuation)= 2,745(111)/43560 = 6.99 acres

Treatment Volume
Required Treatment Volume (wet) = (1.0/12)(5.67) = 0.47 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A & C"

Potential Abstraction (S) = (1000/CN) –10

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

Post-Development Weighted Curve Number for Attenuation of Entire R/W

Total R/W Width = 155 ft
Impervious Width (Pavement, curb, gutter, and sidewalk) = 111 ft/ft of right-of-way
Pervious Width = 44 ft/ft of right-of-way

Description	Area (ac)	Land Use	Hyd. Soil Grp.	Runoff Coef.	Product
Project Impervious	1.71	Pavement	A	98	167.58
Project Pervious	0.68	Grass	A	49	33.32
Project Impervious	5.28	Pavement	C	98	517.44
Project Pervious	2.09	Grass	C	79	165.11
Total Area	9.76				883.45

C N = Product/Total Area = 883.45/9.76 = 91

S = (1000/91)-10 = 0.99 inches

Runoff Depth (Q) = $\frac{\{11.5 - 0.2(0.99)\}^2}{\{11.5 + 0.8(0.99)\}}$ = 10.39 inches

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area) = (10.39/12)(6.99) = 6.05 ac-ft

Total Required Pond Volume = 6.05 + 0.47 = 6.52 ac-ft

Preliminary Pond Site Numbers 23A and 23B
Alignment S-5 (Ayers Road)

Pond Dimensions

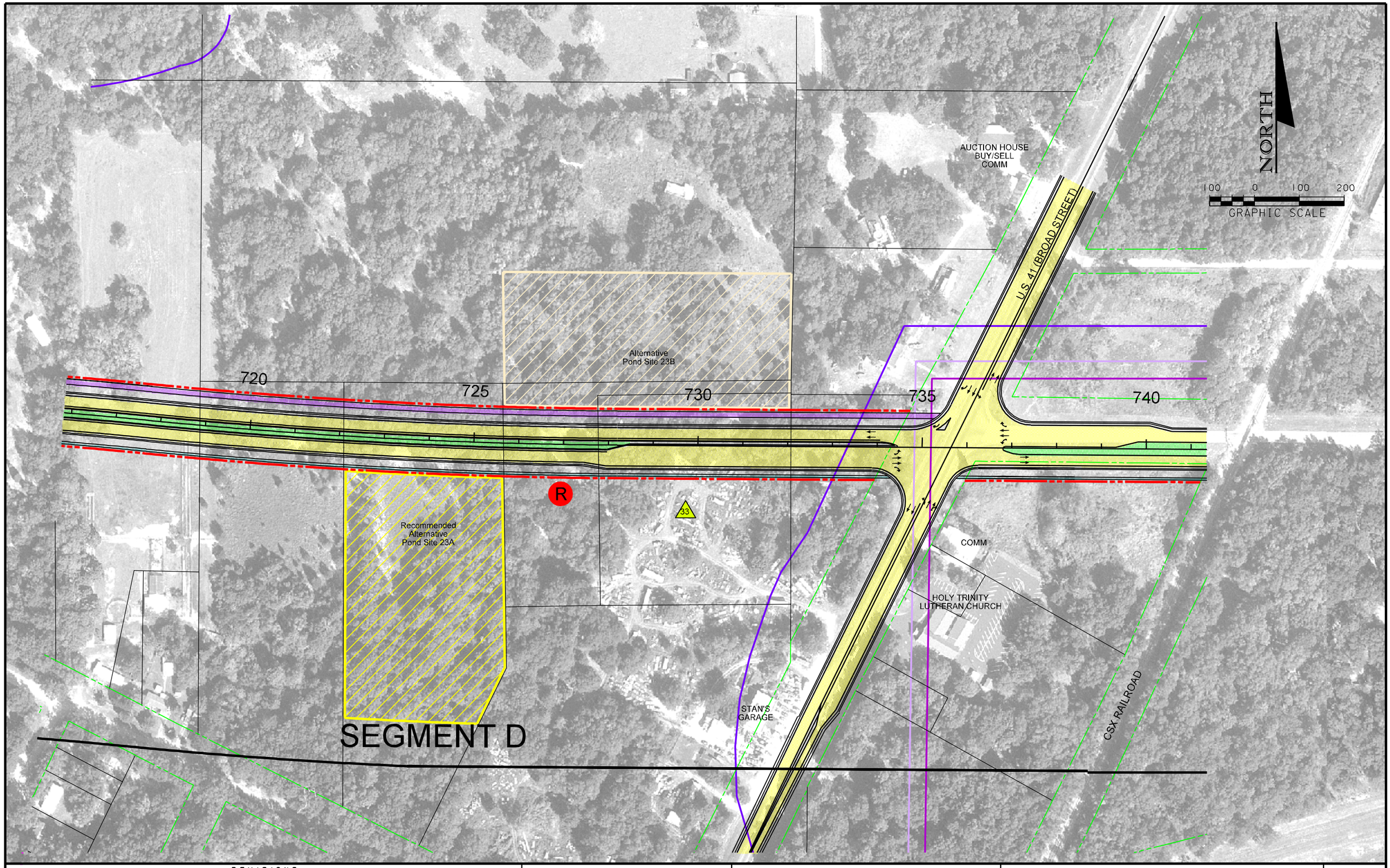
SHWT Depth = 1.5-2.5 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 60 ft to pond dimensions to accommodate side slopes and maintenance berm)

Dimension of square pond with vertical sides = $[(6.52/2.0)(43560)]^{1/2}$ = 377 ft x 377 ft
Dimension with side slope and berm = 437 ft x 437 ft

Total Area Required =$(437)^2/43560$ = 4.38 acres

Pond Site 23A is located on the south side of the proposed Ayers Road extension at Station 724+00. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 23A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 23A has an available area of 4.43 acres.

Pond Site 23B is located on the north side of the proposed Ayers Road extension at Station 727+00. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 23B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 23B has an available area of 4.34acres.



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COUNTY LINE ROAD (C.R. 578)
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From U.S. 19 (S.R 55) to U.S. 41 (S.R. 45)
ALIGNMENT S-5 (AYERS ROAD)

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Preliminary Pond Site Numbers 24A and 24B
Alignment S-5 (Ayers Road)

Description: Basin number 20 extends from the intersection of US 41 (Station 735+90) to the Project End (Station 779+00) and includes approximately 4,310 feet of roadway improvements.

Roadway Segment: station 735+90 to station 779+00
Length: 4,310 feet

Additional Impervious Width (for treatment): 90' (proposed 6-lane)
Additional Impervious Area (treatment)= 4,310(90)/43560 = 8.90 acres

Additional Impervious Width (for attenuation): 111' (proposed 6-lane) - 24' (existing lanes) = 87'
Additional Impervious Area (attenuation)= 4,310 (87)/43560 = 8.61 acres

Treatment Volume
Required Treatment Volume (wet) = (1.0/12)(8.90) = 0.74 ac-ft

Attenuation Volume

Storm Frequency: 100 year
Storm Duration: 24 hour
Rainfall Amount: 11.5 inches

Hydrologic Soil Group: "A & C"

Potential Abstraction (S) = (1000/CN) –10

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

Post-Development Weighted Curve Number for Attenuation of Entire R/W

Total R/W Width = 155 ft
Impervious Width (Pavement, curb, gutter, and sidewalk) = 111 ft/ft of right-of-way
Pervious Width = 44 ft/ft of right-of-way

Description	Area (ac)	Land Use	Hyd. Soil Grp.	Runoff Coef.	Product
Project Impervious	1.83	Pavement	A	98	179.34
Project Pervious	0.73	Grass	A	49	35.77
Project Impervious	9.15	Pavement	C	98	896.70
Project Pervious	3.63	Grass	C	79	286.77
Total Area	15.34				1398.58

C N = Product/Total Area = 1398.58/15.34 = 91

S = (1000/91)-10 = 0.99 inches

Runoff Depth (Q) = $\frac{\{11.5 - 0.2(0.99)\}^2}{\{11.5 + 0.8(0.99)\}}$ = 10.39 inches

Attenuation Volume = (Runoff Depth) x (Additional Impervious Area) = (10.39/12)(8.61) = 7.45 ac-ft

Total Required Pond Volume = 7.45 + 0.74 = 8.19 ac-ft

Preliminary Pond Site Numbers 24A and 24B
Alignment S-5 (Ayers Road)

Pond Dimensions

Water Depth = 1.5-2.5 ft Free board = 1 ft Maintenance Berm = 20 ft Side Slope 1:4
(add 60 ft to pond dimensions to accommodate side slopes and maintenance berm)

Dimension of square pond with vertical sides = $[(8.19/2.0)(43560)]^{1/2}$ = 422 ft x 422 ft
Dimension with side slope and berm = 482 ft x 482 ft

Total Area Required =$(482)^2/43560$ = 5.33 acres

Pond Site 24A is located on the south side of the proposed Ayers Road extension at Station 752+00. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 24A consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 24A has an available area of 5.34 acres.

Pond Site 24B is located on the south side of the proposed Ayers Road extension at Station 742+00. This site requires the partial acquisition of a large undeveloped parcel that will be partially acquired as part of the proposed roadway improvements. The soil at pond site 24B consists of the Candler series that is defined as nearly level to sloping, excessively drained sandy soils. Pond site 24B has an available area of 5.52 acres.

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