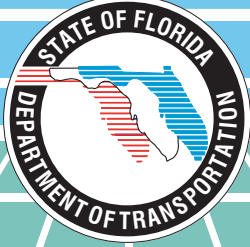


**C.R. 581
S.R. 581**

Bruce B. Downs



Final Pond Siting Report

C.R. 581/S.R. 581 (Bruce B. Downs Boulevard)
Project Development & Environment Study
From Bearss Avenue to S.R. 54

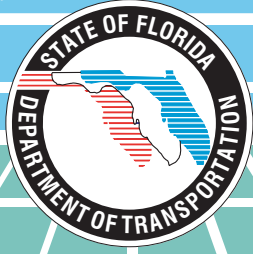
Work Program Item Segment Number: 405492 1
Federal-Aid Program Number: 7585 006 S
Hillsborough and Pasco Counties, Florida

The proposed project involves improving traffic capacity along C.R. 581/S.R. 581 (Bruce B. Downs Boulevard) by providing additional travel lanes from Bearss Avenue to S.R. 54 for a distance of approximately 12.8 miles.

June 2003
Revised August 2003

**C.R. 581
S.R. 581**

Bruce B. Downs



Final Pond Siting Report

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From Bearss Avenue to S.R. 54*

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*Prepared By:
Faller, Davis & Associates*

*June 2003
Revised August 2003*

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Section 1.0

SUMMARY

The Florida Department of Transportation (FDOT) in partnership with the City of Tampa, Hillsborough and Pasco Counties has conducted a Project Development and Environment (PD&E) Study to evaluate capacity improvement alternatives for C.R. 581/S.R. 581 (Bruce B. Downs Boulevard) in Hillsborough and Pasco Counties. The proposed project involves improving C.R. 581 from Bearss Avenue to S.R. 56 and S.R. 581 from S.R. 56 to S.R. 54 for a distance of approximately 12.8 miles (mi). In addition, an Interchange Modification Report (IMR) is also being prepared for the proposed improvements to the I-75/C.R. 581 interchange.

C.R. 581/S.R. 581 is currently a six-lane facility from Bearss Avenue to Lake Forest Drive, and a four-lane facility from Lake Forest Drive to north of S.R. 56. The remaining portion of C.R. 581/S.R. 581 is a two-lane facility. The recommended typical section for the Hillsborough County section is an eight-lane divided facility. In Pasco County, the recommended typical section is a six-lane divided facility.

The purpose of this Pond Siting Report is to present alternative drainage design concepts and the pond location analysis. Alternative methods of storm water treatment have been developed, and are summarized in this report. The recommended pond sites have been selected based on constructibility, maintainability, environmental impacts and economic risk analysis. The economic analysis includes costs related to right-of-way acquisition.

Pond locations were determined based on the existing and planned land uses, the existing topography, the SWFWMD aerial contour maps, the location of outfalls, and the locations of wetlands. Sites not directly adjacent to the roadway where property costs would be less expensive were studied. The Publicly owned properties within the project corridor were also studied as potential pond sites.

The C.R. 581/S.R. 581 corridor is heavily developed with numerous large residential subdivisions and commercial establishments. The undeveloped areas are primarily wetlands, or are properties with planned developments. Therefore, available parcels for pond sites in the corridor are scarce.

There are two major drainage basins for the project corridor, Cypress Creek and Trout Creek. The section of C.R. 581/S.R. 581 between Bearss Avenue and I-75 is located within the Cypress Creek Basin. Cypress Creek flows south into the Hillsborough River. C.R. 581/S.R. 581 north of I-75 is located within the Trout Creek drainage basin. Trout Creek flows south into the Hillsborough River. There are no reports of roadway overtopping for C.R. 581/S.R. 581 within the project limits and no major drainage problems have been documented.

A portion of the project corridor is located within the 100-year floodplain as designated by FEMA. The proposed improvements will not produce longitudinal floodplain encroachments.

The proposed project will encroach on two FEMA regulatory floodways, one at the Cypress Creek crossing and one at the Trout Creek crossing. The encroachments will be designed to cause no rise in the floodway water surface.

Recommended pond sites have been identified for the drainage basins within Hillsborough County. The segment of roadway in Pasco County, Segment E, extends from County Line Road to S.R. 54. This segment of the project, including the required treatment/attenuation facilities will be designed and constructed per a development agreement with Pasco County.

The first two basins, Basins 1 and 2, discharge into the 149th Avenue Outfall System. Hillsborough County operates this system. The system includes culverts and vegetated channels that discharge into the lake in the Lake Forest subdivision. An outfall control structure at the north end of the lake controls the discharge into Cypress Creek. The recommended action to provide water quality treatment and attenuation for these two basins (Basins 1 and 2) is to modify the existing outfall system. The outfall structure would be modified to provide more storage in the lake.

The recommended pond sites for the remaining drainage basins in Hillsborough County are discussed below.

Basin 3 – Pond site 1A is the recommended pond site. The parcel is located directly adjacent to the outfall (main channel of Cypress Creek) and the cost of acquisition is less than for the alternative pond site. The cost of acquisition for this site is \$8,812,200.

Basin 4 – Pond site 4A is the recommended pond site. The site is located directly adjacent to C.R. 581/S.R. 581, and the stormwater system could directly discharge into the pond. This pond is closer to the outfall than Pond site 3A, and the acquisition cost is lower. The cost of acquisition for this site is \$6,185,800.

Basin 5 – Pond site 6A is the recommended pond site. Pond site 5A was not chosen based on potential coordination issues with the Lutheran Church. The Church is currently using this site for a stormwater treatment facility. The cost of acquisition for this site is \$7,603,100

Basin 6 – Pond site 7A is the recommended pond site. The site is located closer to the outfall for the basin, and it is less expensive than Pond site 9A. The underground retention vault at the post office (Pond site 8A) was not chosen based on concerns regarding maintenance of traffic and parking for the post office during construction. The cost of acquisition for this site is \$5,832,100.

Basin 7 – Pond site 2B is the recommended pond site. Both pond sites are comparable with respect to proximity to the outfall, but Pond site 2B is much more cost effective than Pond site 1B (\$5,884,300 versus \$8,582,900).

Basin 8 – Pond site 4B is the recommended site. The parcel is currently available for sale. The pond site at the water treatment site may interfere with future expansion of the plant. The wetland areas (Pond site 5B) would require a substantial stormwater system to divert the runoff from the roadway to the ponds. The cost of acquisition for this site is \$12,349,900.

Basin 9 – Pond site 1C is the recommended site. This site is closer to the outfall than Pond site 2C and is surrounded by undeveloped areas. Pond site 2C is located within the Hunters Green subdivision, and may require more coordination to develop. The two sites are comparably priced. The cost of acquisition for this site is \$8,437,500.

Basin 10 - Drainage Basin 10 is a small basin that contains heavy commercial development and wetlands, and only one potential pond site was identified. Therefore, the recommended site is **Pond site 3C**. The cost of acquisition for this site is \$9,609,400.

Basin 11 – Pond site 2D is the recommended site. This site is located closer to the outfall to Trout Creek, and is more cost effective than Pond site 1D. The cost of acquisition for this site is \$16,974,800.

Basin 12 – Pond site 3D is the recommended pond site. The site is closer to the outfall than Pond site 4D, there would be less wetland involvement (more of an upland site) and Pond site 4D is located on a parcel that is planned for a commercial development. The cost of acquisition for this site is \$5,786,300.

The total estimated pond site acquisition cost for the project would be \$87,475,400. This does not include pond sites in the Pasco County section.

Pasco County is providing pond sites located in Pasco County (Segment E) as the result of a Development of Regional Impact agreement with a Developer. The pond sites being provided will accommodate the stormwater runoff from the proposed development as well as the roadway runoff.

Section 2.0

INTRODUCTION

The Florida Department of Transportation (FDOT) in partnership with the City of Tampa, Hillsborough and Pasco Counties has conducted a Project Development and Environment (PD&E) Study to evaluate capacity improvement alternatives for C.R. 581/S.R. 581 (Bruce B. Downs Boulevard) in Hillsborough and Pasco Counties, as shown in Figure 2-1. The proposed project involves improving C.R. 581 from Bearss Avenue to S.R. 56 and S.R. 581 from S.R. 56 to S.R. 54 for a distance of approximately 12.8 miles (mi). In addition, an Interchange Modification Report (IMR) is also being prepared for the proposed improvements to the I-75/C.R. 581 interchange.

2.1 PURPOSE

The objective of the PD&E Study provided documented environmental and engineering analyses that assisted the FDOT and the Federal Highway Administration (FHWA) in reaching a decision on the location and conceptual design for improvements to C.R. 581. This study also complied with the requirements of the National Environmental Policy Act (NEPA) and other Federal laws to qualify the proposed project for Federal-aid funding.

The purpose of this Pond Siting Report is to present alternative drainage design concepts and the pond location analysis. Alternative methods of storm water treatment have been developed, and are summarized in this report. The recommended pond sites have been selected based on constructibility, maintainability, environmental impacts and economic risk analysis. The economic analysis includes costs related to right-of-way acquisition.

2.2 PROJECT DESCRIPTION

The C.R. 581/S.R. 581 corridor is a north/south facility and is functionally classified as an arterial. Table 2-1 lists the Sections, Townships, and Ranges the project corridor is located within.

**TABLE 2-1
SECTION, TOWNSHIP, AND RANGE**

County	Township	Range	Sections
Hillsborough	28 South	19 East	4 and 5
	27 South	19 East	1, 12, 13, 14, 23, 24, 26, 27, 33, and 34
	27 South	20 East	6 and 7
Pasco	26 South	19 East	13, 24, 25, and 36
	26 South	20 East	7, 18, 19, 30, and 31

C.R. 581/S.R. 581 is currently a six-lane facility from Bearss Avenue to Lake Forest Drive, and a four-lane facility from Lake Forest Drive to north of S.R. 56. The remaining portion of C.R.

581/S.R. 581 is a two-lane facility. The existing posted speed limit along C.R. 581/S.R. 581 is 45 miles per hour (mph) from Bearss Avenue to S.R. 56 and 55 mph from S.R. 56 to S.R. 54.

Primary land uses along C.R. 581/S.R. 581 include numerous large residential subdivisions, commercial development and wetland areas. In addition, the Paul R. Wharton Senior High School and the Flatwoods Wilderness Park are located adjacent to the project corridor.

**FIGURE 2-1
PROJECT LOCATION MAP**



Section 3.0

PROPOSED IMPROVEMENT

As part of the analysis process for developing an improved roadway facility for C.R. 581/S.R. 581 the following factors were taken into consideration. These factors had a direct bearing on the selection of the recommended alternative.

- Engineering: The design and alignment of the improved facility, and accommodations for future transit needs;
- Environmental: Social, cultural, natural, and physical factors;
- Public Involvement: Needs and concerns of the local community; and
- Economic Factors: Project costs and the opportunity to optimize expenses.

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

Step One: Typical sections were jointly developed by the Department with the City of Tampa, Hillsborough County, Hillsborough County Metropolitan Planning Organization (MPO) and Pasco County based on design criteria and the findings of the traffic analysis. The results of this analysis can be found in Section 2.1.

Step Two: Project segments were developed based on the existing land use patterns and logical termini for future construction segments. A description of these segments can be found in Section 2.2.

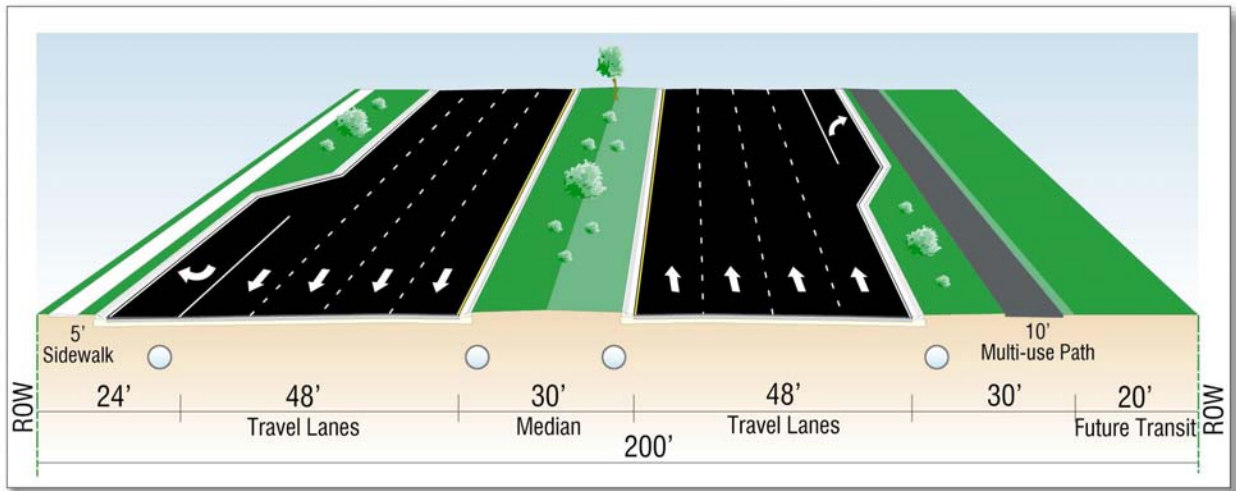
Step Three: Alternative alignments were developed for each segment based on the typical sections developed in Step One and the assumption that minimal right-of-way (ROW) would be acquired. The recommended alignment can be found in Section 2.3.

3.1 TYPICAL SECTIONS

The recommended typical section for C.R. 581/S.R. 581 in Hillsborough County is an eight-lane divided facility, with a 30 foot (ft) raised median, four 12 ft travel lanes in each direction, a 5 ft sidewalk on the west side of the roadway and a 10 ft multi-use path on the east side of the roadway. This typical section would be constructed from Bearss Avenue to County Line Road. The proposed design speed for this typical section is 45 miles per hour (mph) and would be constructed within the existing ROW, as shown in Figure 2-1. This typical section will require ROW for stormwater treatment ponds and possible floodplain compensation sites.

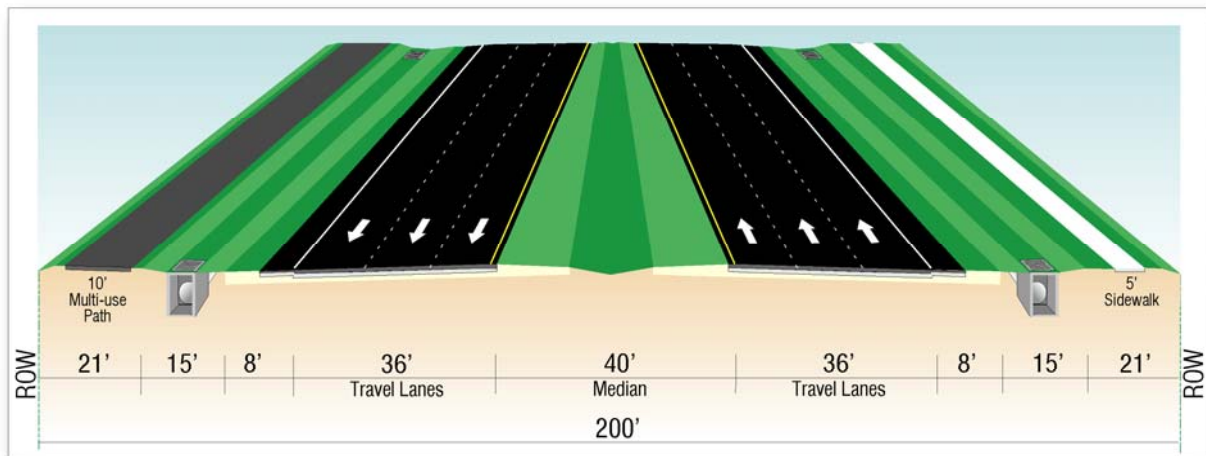
FIGURE 3-1

C.R. 581/S.R. 581 IN HILLSBOROUGH COUNTY TYPICAL SECTION



In Pasco County, the recommended typical section is an six-lane divided facility, with a 40 ft depressed median, three 12 ft travel lanes in each direction, 8 ft outside shoulders with 5 ft of the shoulder paved, and 15 ft drainage swales. A 5 ft sidewalk on the east side of the roadway and a 10 ft multi-use path on the west side of the roadway are also being proposed. This typical section would be constructed from County Line Road to S.R. 54. The proposed design speed for this typical section is 55 mph and can be constructed within the existing 200 ft ROW envelope, as shown in Figure 2-2. This segment of roadway and stormwater treatment ponds is to be designed and constructed per a development agreement with Pasco County.

**FIGURE 3-2
PASCO COUNTY TYPICAL SECTION**



3.2 PROJECT SEGMENTS

To effectively assess and compare the effects of each Build Alternative for C.R. 581/S.R. 581, the project was divided into five study segments on the basis of existing land use patterns and location of intersecting cross streets for future construction segments.

- Segment A: Bearss Avenue to Palm Springs Boulevard, Hillsborough County (3.52 mi).
- Segment B: Palms Springs Boulevard to Richmond Place Drive, Hillsborough County (1.89 mi).
- Segment C: Richmond Place Drive to Pebble Creek Drive, Hillsborough County (1.47 mi).
- Segment D: Pebble Creek Drive to County Line Road, Hillsborough County (1.36 mi).
- Segment E: County Line Road to S.R. 54, Pasco County (4.56 mi).

3.3 BUILD ALTERNATIVE ALIGNMENT

An Alternatives Public Workshop was held on June 18, 2002 at Wharton High School. Three alternative alignments were developed for Hillsborough County and one alternative alignment was developed for Pasco County. Each alternative alignment in Hillsborough County incorporates a new flyover at the I-75/C.R. 581 interchange.

After the Alternatives Public Workshop, the Department with Hillsborough County, City of Tampa, HARTLINE, and the Hillsborough County MPO jointly determined the proposed improvements for C.R. 581/S.R. 581 in Hillsborough County. This joint determination resulted in satisfying the future needs along the corridor with an urban roadway and accommodations to reserve a portion of the existing ROW for future transit needs. This transit corridor would be constructed adjacent to the east side of the ROW in Hillsborough County. However, currently there are no provisions for a dedicated transit or rail facility in the Cost Affordable Plan.

The recommended alternative was presented at a Public Hearing on May 15, 2003. Seventy-three citizens signed in, two citizens spoke and 11 written comments were received; no opposition to the recommended project was received.

The recommended alternative has been developed to satisfy the Hillsborough County MPO's policy to provide for a future transit facility along major arterial roadways such as C.R. 581/S.R. 581. This alternative would be constructed adjacent to the western ROW from Bearss Avenue to County Line Road. It provides for 8-lanes of travel encompassing dual lefts, right-turn lanes both northbound and southbound, a sidewalk and a multi-use path within the existing 200 ft of ROW. The remainder along the eastside of the roadway would be reserved for future transit needs. The recommended typical section, in Hillsborough County, is shown in Figure 2-1.

In Pasco County, the recommended alternative proposes a six-lane rural typical section as shown in Figure 2-2. This typical section would be constructed from County Line Road to S.R. 54. This alternative could be expanded to eight-lanes in the future when capacity is needed.

Section 4.0

EXISTING CONDITIONS

4.1 EXISTING DRAINAGE PATTERNS

There are two major drainage basins for the project corridor, Cypress Creek and Trout Creek.

The section of C.R. 581/S.R. 581 between Bearss Avenue and I-75 is located within the Cypress Creek Basin. Cypress Creek flows south into the Hillsborough River. According to the Cypress Creek Watershed Management Plan (December 2000) prepared by URS Corporation Southern, the Cypress Creek main channel is the largest tributary to the Hillsborough River. Stormwater runoff enters roadside ditches that are connected with numerous crossdrains, and discharges into Cypress Creek.

C.R. 581/S.R. 581 north of I-75 is located within the Trout Creek drainage basin. The runoff from the existing roadway flows into roadside ditches which discharge into low areas and tributaries connected to Trout Creek. Trout Creek flows south into the Hillsborough River.

The first two basins in the project discharge into a drainage system with a controlled outfall. Stormwater runoff for the remainder of the project flows into roadside swales that are connected with numerous crossdrains and discharge into wetland areas and tributaries of Cypress Creek or Trout Creek.

The first two basins in Segment A currently discharge into the 149th Street Outfall System. According to the Cypress Creek Watershed Management Plan, Hillsborough County improved this outfall system in 1983. Runoff from the section of C.R.581/S.R. 581 between the beginning of the project and 42nd Street drains into a wetland area on the east side of the C.R. 581/S.R. 581 and Skipper Road intersection. This area discharges to the north via a culvert under C.R. 581/S.R. 581 into a channel in the Lake Forest Subdivision. This channel flows into the lake at Lake Forest. The lake discharges north into Cypress Creek.

4.2 EXISTING DRAINAGE STRUCTURES

There are thirty-one existing cross-drains within the project limits. The locations, sizes and project segment for each cross-drain are shown in Table 4-1. A Location Hydraulic Report was prepared for this project in March 2002.

The existing structure at Cypress Creek is a 150-foot bridge (constructed in 1960) for the northbound roadway and a 150-foot bridge (constructed in 1987) for the southbound roadway.

**TABLE 4-1
EXISTING CROSSDRAINS**

SEGMENT NO.	STA. NO.	STRUCTURE
A	148+50	2-24" X 38" ERCP
A	197+00	10' X 5' CBC
A	235+10	24" RCP
A	244+00	2-18" RCP
A	267+87	28" X 48" ERCP
A	281+00	2-36" RCP
A	306+00	4-24" RCP
A	316+95	2-24" RCP
B	331+00	24" RCP
B	349+50	18" RCP
B	361+00	24" RCP
B	405+50	4-24" RCP
B	412+00	18" RCP
B	412+50	18" RCP
C	451+00	2-30" RCP
C	511+20	12' X 4' CBC
D	536+70	2-24" RCP
D	558+10	2-24" RCP
D	568+30	24" RCP
E	576+50	2-24" RCP
E	587+30	2-18" RCP
E	601+50	2-8' X 4' CBC
E	639+40	3-9' X 6' CBC
E	667+80	24" RCP
E	673+80	24" RCP
E	689+50	2- 8' X 4' CBC
E	705+80	24" RCP
E	732+60	2 - 8' X 4' CBC
E	748+80	2 - 24" RCP
E	789+80	24" RCP
E	795+75	24" RCP

The existing structure at Trout Creek is a 120-foot bridge (constructed in 1960) for the northbound roadway and 132-foot bridge (constructed in 1989) for the southbound roadway.

4.3 *EXISTING DRAINAGE RELATED PROBLEMS*

There are no reports of roadway overtopping for C.R. 581/S.R. 581 within the project limits. Representatives from the maintenance departments for the FDOT, Hillsborough County, City of Tampa and Pasco County were contacted regarding any known drainage or flooding problems for this project (see telephone conversation records in Appendix A). There were no documented major drainage problems. Minor problems included a maintenance issue regarding curb openings that had become overgrown with grass that was preventing runoff from flowing from the roadway to the inlet in back of the curb. The County maintenance engineer mentioned that the entrance to Tampa Palms experiences some flooding if the ground is saturated before a storm event.

4.4 *ENCROACHMENTS TO BASE FLOODPLAINS*

A portion of the project corridor is located within the 100-year floodplain as designated by FEMA. The proposed improvements will not produce longitudinal floodplain encroachments. The potential for impacts to FEMA designated Flood Zone A areas for each project segment is as follows:

- Segment A - High
- Segment B - Low/Moderate
- Segment C - Low/Moderate
- Segment D - Low/Moderate
- Segment E - High

The proposed project will encroach on two FEMA floodways, one at the Cypress Creek crossing and one at the Trout Creek crossing. The encroachments will be designed to cause no rise in the floodway water surface.

4.5 *STUDY AREA SOILS*

Soils in the study area are generally classified as Hydrologic Soil Group B/D (HSG B/D) according to the National Resources Conservation Service's (NRCS a.k.a. SCS) Hillsborough County Soil Survey dated April 1987. HSG B/D soils are typically poorly drained soils with a high water depth of 0 to 1 foot below the ground surface.

Section 5.0

STORMWATER MANAGEMENT REQUIREMENTS

5.1 FDOT CHAPTER 14.86 REQUIREMENTS

The FDOT's regulations regarding stormwater management facilities are contained in Chapter 14.86 of the Florida Administrative Code (FAC). For projects located in watersheds with positive outlets, FDOT criteria requires a detention system of sufficient size to attenuate the post-development peak rate to the pre-development peak rate for all frequencies (2 year through 100 year). Peak rates shall be determined by solving for the critical duration (1 hour through 10 day). These systems must also address water quality requirements by providing retention or detention with filtration.

5.2 SWFWMD CRITERIA

Southwest Florida Water Management District (SWFWMD) has specific regulations governing alterations to existing public roadway projects (see Section 3.2.2.8 of SWFWMD permit manual). For roadway improvement projects, the contributing area to be used in calculating the required treatment volume for on-line treatment systems would be the entire directly connected impervious areas contributing to the system, both on-site and off-site. Off-line treatment systems would be designed to treat only the new added impervious areas. Wet detention treatment systems must treat one inch of runoff from the contributing area. Dry detention treatment systems must treat the first one-half inch of runoff for projects with subunit drainage areas less than 100 acres, and the runoff from the first one-inch of rainfall for subunit drainage areas greater than 100 acres. The treatment volume can be treated as part of the storage volumes required for water quantity treatment.

Both Cypress Creek and Trout Creek are classified as "Outstanding Florida Waters" (OFW) since they are tributaries of the Hillsborough River. For a stormwater system discharging to an OFW, the water quality treatment volume is increased by a factor of 1.5.

SWFWMD requires attenuation of the runoff for the 25-year 24-hour storm for post-development conditions, with a peak discharge rate equal to the pre-development discharge rate for a 25-year 24-hour storm event for any new impervious area. Off-site discharges must be computed using SWFWMD's 24-hour 25-year rainfall map and the SCS Type 2 Florida Modified 24-hour rainfall distribution with an antecedent moisture condition 2.

A Pre-application meeting was held with SWFWMD. The meeting minutes are contained in Appendix A.

5.3 HILLSBOROUGH COUNTY CRITERIA

The Hillsborough County stormwater regulations follow the same criteria as SWFWMD unless the downstream receiving water body is classified as peak sensitive or volume sensitive. The County does not classify Cypress Creek and Trout Creek as peak sensitive or volume sensitive.

Section 6.0

POND SITING ANALYSIS

6.1 Alternative Stormwater Treatment/Attenuation Methods

Alternative stormwater treatment methods were investigated. A 20-foot grass swale on the east side of the roadway has been dedicated to future mass transit, and was considered as an alternative. This grass strip could be used for a swale for treatment/attenuation. This would be an interim solution, however, and at the time the mass transit corridor was developed, this treatment/attenuation volume would have to be replaced. Since available pond sites in the C.R. 581/S.R. 581 corridor are difficult to locate at the present time due to heavy development, it is expected that available cost-effective pond site locations would be even more difficult to locate in the future. Therefore, the use of the mass transit corridor was eliminated as a potential treatment/attenuation alternative.

Another alternative that was investigated was the use of the existing stormwater treatment facilities for the larger private developments in the corridor. A review of the permitted facilities revealed that they had been designed to maximize the storage provided and minimize the land area, and there was no excess available storage in the facilities.

The potential for the use of an existing stormwater facility and outfall operated by the County was examined as an alternative to ponds in the first two basins of the project corridor. The outfall control structure would be modified to increase the available storage as needed for post-development conditions.

The potential for underground storage facilities on publicly owned properties was examined. One of the alternative pond sites in this study is an underground facility at a post office.

Underdrains could be considered for this project as a method for water quality treatment. A system composed of oversized pipes for attenuation, which are connected to underdrains to provide the water quality treatment may be a feasible alternative. This type of system could be used in the sections of roadway located in the high points. During the design phase, when detailed topographic information is available, this option will be evaluated. However, based on the high water table throughout the majority of the project corridor, underdrains are not a viable alternative to ponds in every basin.

An option to reduce the size of a pond would be to line the pond to increase the available depth. The feasibility of lining potential ponds would be examined during the design of the ponds.

Some of the alternative stormwater treatment options examined may be feasible for this roadway corridor, and will be evaluated during the design phase. This analysis proceeded

with the identification of suitable sites for pond locations in the event that ponds are the only viable alternative.

The C.R. 581/S.R. 581 corridor is heavily developed with numerous large residential subdivisions and commercial establishments. The undeveloped areas are primarily wetlands, or are properties with planned developments. Therefore, available parcels for pond sites in the corridor are scarce.

6.2 Determination of Required Pond Areas

The required storage volume was estimated using the software program "Advanced Interconnected Channel & Pond Routing" (ICPR Ver 2.20). National Resources Conservation Service (NRCS) soil types were mapped to determine the appropriate hydrologic soil group and corresponding runoff curve numbers for the pre-development and post-development conditions. The program was run for the pond sites to determine the storage volume required. The volume of stormwater to be retained to satisfy SWFWMD's water quality treatment requirements was calculated for each basin, and is included in the estimated pond volume.

Pond sizes were calculated based on the required storage volume for the entire roadway right of way. The preliminary pond sizes are based on a seasonal high water table of 1 foot below the ground surface based on information contained in the NRCS Survey. The analysis assumed that berms (approximately 2 feet high) would be built around the ponds. The proposed ponds were estimated to include 1:4 vertical to horizontal side slopes. The total acreage for each pond also includes a 20-foot maintenance berm. The actual depths, sizes and design of each individual pond will be determined in the final design phase, and will depend on the proposed stormwater collection system design, results of the routing analysis, available storage in the ditches, and final roadway profile grade. The storage volume and pond area calculations are contained in Appendix B. The Hillsborough County design criteria was used since this project will be constructed by the County.

6.3 Site Selection Criteria

Pond locations were determined based on the existing and planned land uses, the existing topography, the SWFWMD aerial contour maps, the location of outfalls, and the locations of wetlands. Sites not directly adjacent to the roadway where property costs would be less expensive were studied. The publicly owned properties within the project corridor were studied as potential pond sites.

Since the roadway will be reconstructed, there will be some flexibility in the profile grade according to the FDOT. Therefore, potential pond sites were not limited to the area in the low point of the basin. It was assumed that the profile grade would be adjusted as necessary to accommodate the proposed stormwater system and pond locations.

The pond site calculations are contained in Appendix B. Appendix C contains aerials showing the basin divides and the recommended pond sites for Basins 3 through 12. Appendix E contains the FDOT's estimated right-of-way costs for each alternative. A wetland impact evaluation was prepared in February 2003 as part of the PD&E Study for this project. The wetland impacts for each pond site alternative were obtained from this report.

6.4 Conceptual Design Options

6.4.1 Drainage Basins 1 and 2 (Segment A)

Station 130+00 to Station 145+00 and Station 145+00 to Station 177+00

The first two basins in Segment A discharge into the 149th Avenue Outfall System. Hillsborough County operates this system. The system includes culverts and vegetated channels that discharge into the lake in the Lake Forest Subdivision. An outfall control structure at the north end of the lake controls the discharge into Cypress Creek. The recommended action to provide water quality treatment and attenuation for these two basins (Basins 1 and 2) is to modify the existing outfall system. Water quality treatment would be provided in the grassed channels. The outfall between the lake in Lake Forest and Cypress Creek is a low berm that is currently overgrown. This structure would be modified to provide more storage in the lake.

The Cypress Creek Watershed Management Plan has given the 149th Avenue Outfall system a rating of Level of Service C (LOS C) for a 25-year/24-hour storm event. Improvements recommended by this plan include clearing and grubbing the channels and reconstruction of the existing control structure and outfall pipe from the Lake Forest Lake to Cypress Creek.

6.4.2 Drainage Basin 3- Pond Sites 1A and 2A

Station 177+00 to Station 225+00

Drainage Basin 3 includes the C.R 581 bridge over the main channel of Cypress Creek. Roadway runoff from this basin flows either into low areas and wetlands connected to Cypress Creek or directly into the creek.

Pond Site 1A is located in a small undeveloped upland area adjacent to the wetlands bordering Cypress Creek. The NRCS soil type is Immokalee, which is classified as having a Hydrologic Soil Group (HSG) B/D (poorly drained), with a seasonal high water table of 0 to 1 foot below the ground surface. This proposed pond would be a wet detention pond and would be approximately 4.4 acres.

- Engineering Feasibility – Good; very close to the outfall at Cypress Creek
- Cost – The estimated cost for the acquisition of this parcel is \$8,812,200 (see cost estimate in Appendix E).
- Cultural Impact Potential – None
- Wetland Involvement Potential – 1.12 acres
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low
- Outfall - Direct discharge to Cypress Creek wetland system

Pond Site 2A is located on a partially cleared site west of the C.R. 581/S.R. 581 and Amberly Drive intersection. This site is located adjacent to a developed area (Tampa Palms) and the site is currently vacant, but it appears that the developer is beginning to construct a roadway system on the parcel. The SCS soil type is Immokalee and Chobee. Both of these soils are classified as having a Hydrologic Soil Group (HSG) B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the ground surface. This proposed pond would be a wet detention pond and would be approximately 4.4 acres.

- Engineering Feasibility – Good; discharge would be to Cypress Creek
- Cost – The estimated cost for the acquisition of this parcel is \$9,949,300.
- Cultural Impact Potential – None
- Wetland Involvement Potential - 0.90 acres
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall – Direct discharge to Cypress Creek

6.4.3 Drainage Basin 4- Pond Sites 3A and 4A

Station 225+00 to Station 255+00

Drainage Basin 4 extends from north of Amberly Drive to north of Tampa Palms Boulevard. Roadway runoff from this basin flows into low areas and wetlands connected to Cypress Creek. The alternative pond sites are not located at the low point of the roadway, and modification of the profile grade would be required for this section of C.R. 581/S.R. 581. This basin is highly developed with subdivisions, and contains a substantial amount of wetland areas, and available parcels for pond sites are scarce.

Pond Site 3A is located in the southern quadrant of the Tampa Palms Boulevard West and Amberly Drive intersection. The parcel is currently undeveloped. The SCS soil type is Myakka, which is classified as HSG B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the ground surface. This proposed pond would be a wet detention pond and would be approximately 2.7 acres.

- Engineering Feasibility – Good
- Cost – The estimated cost for the acquisition of this parcel is \$6,382,200.
- Cultural Impact Potential – None

- Wetland Involvement Potential – 0.90 acres
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall – Direct discharge to wetland area connected to Cypress Creek system

Pond Site 4A is located in the western quadrant of the Tampa Palms Boulevard West and C.R. 581/S.R. 581 intersections. The parcel is currently undeveloped. The NRCS soil type is Myakka, which is classified as HSG B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the ground surface. This proposed pond would be a wet detention pond and would be approximately 2.7 acres.

- Engineering Feasibility – Good
- Cost – The estimated cost for the acquisition of this parcel is \$6,185,800.
- Cultural Impact Potential – None
- Wetland Involvement Potential - 0.58 acres
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall – Direct discharge to wetland area connected to Cypress Creek system

6.4.4 Drainage Basin 5- Pond Sites 5A and 6A

Station 255+00 to Station 295+00

Drainage Basin 5 extends from north of Tampa Palms Boulevard to north of the power line easement. Roadway runoff from this basin flows into low areas and wetlands connected to Cypress Creek.

Pond Site 5A is located in the on the Family of Christ Lutheran Church property. The site is the existing stormwater facility for the church and school. The NRCS soil type is Myakka, which is classified as HSG B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the ground surface. The existing pond would be modified to handle the additional volume.

- Engineering Feasibility – Fair/Good
- Cost – Not estimated, see Appendix E
- Cultural Impact Potential – None
- Wetland Involvement Potential – 3.77 acres
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall – Direct discharge to wetland connected to Cypress Creek system

Pond Site 6A is located north of the power line easement behind the Fire Station. The parcel is currently undeveloped. The NRCS soil type is Wabaso, which is classified as HSG B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the

ground surface. This proposed pond would be a wet detention pond and would be approximately 3.7 acres.

- Engineering Feasibility – Fair
- Cost – The estimated cost for the acquisition of this parcel is \$7,603,100.
- Cultural Impact Potential – None
- Wetland Involvement Potential - 1.12 acres
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall - Outfall system piped along the northwest side of the roadway to a wetland connected to Cypress Creek; wetland is approximately 1100 feet south of pond site

6.4.5 Drainage Basin 6- Pond Sites 7A, 8A and 9A

Station 295+00 to Station 326+00

Drainage Basin 6 extends from north of the power line easement to Palm Springs Boulevard. Roadway runoff from this basin flows into low areas and wetlands connected to Cypress Creek.

Pond Site 7A is located on Cypress Preserve east of C.R. 581/S.R. 581. The site is currently undeveloped. The NRCS soil type is Myakka, which is classified as HSG B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the ground surface. This proposed pond would be a wet detention pond and would be approximately 2.5 acres.

- Engineering Feasibility – Good
- Cost – The estimated cost for the acquisition of this parcel is \$5,832,100.
- Cultural Impact Potential – None
- Wetland Involvement Potential – None
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall – Direct discharge to wetland area north of pond site; wetland is connected to Cypress Creek system

Pond Site 8A is located at the existing post office on Palm Springs Boulevard. The NRCS soil type is Myakka, which is classified as HSG B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the ground surface. The proposed stormwater treatment facility would be an underground retention vault located underneath the parking area.

- Engineering Feasibility – Fair
- Cost – Not estimated, see Appendix E
- Cultural Impact Potential – None
- Wetland Involvement Potential - None

- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall – Outfall pipe to wetland south of pond site; wetland is connected to Cypress Creek

Pond Site 9A is located adjacent to the post office in the western quadrant of C.R. 581/S.R. 581 and Palm Spring Boulevard. The NRCS soil type is Myakka, which is classified as HSG B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the ground surface. This proposed pond would be a wet detention pond and would be approximately 2.5 acres.

- Engineering Feasibility – Fair
- Cost – The estimated cost for the acquisition of this parcel is \$5,974,100.
- Cultural Impact Potential – None
- Wetland Involvement Potential - 0.47 acres
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall - Outfall pipe to wetland south of pond site; wetland is connected to Cypress Creek

6.4.6 Drainage Basin 7- Pond Sites 1B and 2B

Station 326+00 to Station 371+00

Drainage Basin 7 extends from Palm Springs Boulevard to I-75. Roadway runoff from this basin flows into low areas and wetlands connected to Cypress Creek.

Pond Site 1B is located immediately south of the Lowe’s store on C.R. 581/S.R. 581, north of Palm Springs Boulevard. The site is currently undeveloped. The NRCS soil type is Myakka, which is classified as HSG B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the ground surface. This proposed pond would be a wet detention pond and would be approximately 3.7 acres.

- Engineering Feasibility – Fair/Good
- Cost – The estimated cost for the acquisition of this parcel is \$8,582,900.
- Cultural Impact Potential – None
- Wetland Involvement Potential – None
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall - Outfall pipe to cross drain located west of site; cross drain connects Cypress Creek wetland systems

Pond Site 2B is located in the southern quadrant of the C.R. 581/S.R. 581/I-75 interchange. A City of Tampa R/W easement borders the site on the south. The NRCS soil type is Myakka, which is classified as HSG B/D (poorly drained) with a seasonal

high water table of 0 to 1 foot below the ground surface. This proposed pond would be a wet detention pond and would be approximately 3.7 acres.

- Engineering Feasibility – Fair/Good
- Cost – The estimated cost for the acquisition of this parcel is \$5,884,300.
- Cultural Impact Potential – None
- Wetland Involvement Potential - 0.75 acres
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall - Outfall system piped along the southeast side of the roadway to a wetland connected to Cypress Creek; wetland is approximately 800 feet south of pond site

6.4.7 Drainage Basin 8- Pond Sites 3B, 4B and 5B

Station 371+00 to Station 432+00

Drainage Basin 8 extends from I-75 to Trout Creek. Roadway runoff from this basin flows into Trout Creek.

Pond Site 3B is located at the existing Hillsborough County Water Treatment Plant along the northeast side of I-75. The NRCS soil type is Myakka, which is classified as HSG B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the ground surface. This proposed pond would be a wet detention pond and would be approximately 7.1 acres.

- Engineering Feasibility – Fair
- Cost – The estimated cost for the acquisition of this parcel is \$10,902,400.
- Cultural Impact Potential – None
- Wetland Involvement Potential – 0.91 acres
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall – Direct discharge to wetland connected to Trout Creek

Pond Site 4B is located in the northern quadrant of the C.R. 581/S.R. 581/I-75 interchange. The NRCS soil type is Myakka, which is classified as HSG B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the ground surface. This proposed pond would be a wet detention pond and would be approximately 7.1 acres.

- Engineering Feasibility – Fair
- Cost – The estimated cost for the acquisition of this parcel is \$12,349,900.
- Cultural Impact Potential – None
- Wetland Involvement Potential - 0.27 acres
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.

- Outfall – Discharge to a wetland connected to the Trout Creek wetland system

Pond Site 5B consists of two existing wetland areas between Highwoods Preserve Parkway and Richmond Place Drive behind the commercial areas on C.R. 581/S.R. 581. These wetlands would be modified to increase the storage volume based on a retention pond with 2-feet of available storage, a 7.1 acre pond would be required.

- Engineering Feasibility – Poor
- Cost – The estimated cost for the acquisition of this parcel is \$15,516,000.
- Cultural Impact Potential – None
- Wetland Involvement Potential - 7.14
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall - Outfall system piped along the northwest side of the roadway to Trout Creek; Trout Creek bridge is approximately 1150 feet north of pond site

6.4.8 Drainage Basin 9- Pond Sites 1C and 2C

Station 432+00 to Station 451+00

Drainage Basin 9 extends from Trout Creek to north of Hunters Green Drive. Roadway runoff from this basin flows into Trout Creek.

Pond Site 1C is located on the northwest side of C.R. 581/S.R. 581, north of Trout Creek. The NRCS soil type is Myakka, which is classified as HSG B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the ground surface. The site is currently undeveloped. This proposed pond would be a wet detention pond and would be approximately 2.4 acres.

- Engineering Feasibility – Fair/Good
- Cost – The estimated cost for the acquisition of this parcel is \$8,437,500.
- Cultural Impact Potential – None
- Wetland Involvement Potential – 1.65 acres
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall - Outfall system piped along the northwest side of the roadway to Trout Creek; Trout Creek bridge is approximately 700 feet south of pond site

Pond Site 2C is located in the south quadrant of the C.R. 581/S.R. 581 and Hunters Green intersection. This site is within the Hunters Green subdivision but is currently undeveloped. The NRCS soil type is Myakka, which is classified as HSG B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the ground surface. This proposed pond would be a wet detention pond and would be approximately 2.4 acres.

- Engineering Feasibility – Fair/Good

- Cost – The estimated cost for the acquisition of this parcel is \$8,234,200.
- Cultural Impact Potential – None
- Wetland Involvement Potential – 1.13 acres
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall - Outfall system piped along the southeast side of the roadway to Trout Creek; Trout Creek bridge is approximately 1150 feet south of pond site

6.4.9 Drainage Basin 10- Pond Site 3C

Station 451+00 to Station 475+00

Drainage Basin 10 is a small basin that extends from north of Hunters Green Drive to Cross Creek Boulevard/New Tampa Boulevard. The basin contains heavy commercial development and wetlands, and only one potential pond site was identified. Roadway runoff from this basin flows into low areas and wetlands that connect to Trout Creek.

Pond Site 3C is located on the west side of C.R. 581/S.R. 581, north of Hunters Green Drive. The NRCS soil type is Basinger, which is classified as HSG D (very poorly drained) with a seasonal high water table of 2 foot above to 1 foot below the ground surface. The site is currently undeveloped. This proposed pond would be a wet detention pond and would be approximately 3.0 acres.

- Engineering Feasibility – Fair
- Cost – The estimated cost for the acquisition of this parcel is \$9,609,400.
- Cultural Impact Potential – None
- Wetland Involvement Potential – None
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall – direct discharge into wetland system connected to Trout Creek

6.4.10 Drainage Basin 11- Pond Sites 1D and 2D

Station 475+00 to Station 557+00

Drainage Basin 11 extends from Cross Creek Boulevard/New Tampa Boulevard to north of Paul R. Wharton High School. Roadway runoff from this basin flows into wetland areas connected to a tributary of Trout Creek.

Pond Site 1D is located on the east side of C.R. 581/S.R. 581, across from Paul R. Wharton High School. The site is currently undeveloped, however, a subdivision is planned on the site. The NRCS soil type is Malabar and Myakka, which are classified as HSG B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the ground surface. This proposed pond would be a wet detention pond and would be approximately 7.1 acres.

- Engineering Feasibility – Fair
- Cost – The estimated cost for the acquisition of this parcel is \$21,979,100.
- Cultural Impact Potential – None
- Wetland Involvement Potential – 0.01 acres
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall - Outfall system piped along the east side of the roadway to wetland connected to Trout Creek wetland system; wetland is approximately 1000 feet north of pond site

Pond Site 2D is located on the parcel immediately north of Paul R. Wharton High School. The site is currently undeveloped. The NRCS soil type is Myakka, which is classified as HSG B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the ground surface. This proposed pond would be a wet detention pond and would be approximately 7.1 acres. The proposed pond has been configured to maintain access to the back portion of the parcel.

- Engineering Feasibility – Fair
- Cost – The estimated cost for the acquisition of this parcel is \$16,974,800.
- Cultural Impact Potential – None
- Wetland Involvement Potential – 1.51 acres
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall - Outfall system piped along the west side of the roadway to wetland connected to Trout Creek; wetland is approximately 500 feet south of pond site and is connected to Trout Creek via a culvert under the high school

6.4.11 Drainage Basin 12- Pond Sites 3D and 4D

Station 557+00 to Station 575+00

Drainage Basin 11 extends from north of Paul R. Wharton High School to the County Line. Roadway runoff from this basin flows into a wetland area that discharges to tributary of Trout Creek.

Pond Site 3D is located on the west side of C.R. 581/S.R. 581 south of County Line Road. The site is currently undeveloped. The NRCS soil type is Myakka, which is classified as HSG B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the ground surface. This proposed pond would be a wet detention pond and would be approximately 2.4 acres.

- Engineering Feasibility – Good
- Cost – The estimated cost for the acquisition of this parcel is \$5,786,300.

- Cultural Impact Potential – None
- Wetland Involvement Potential – None
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall - Outfall system piped along the west side of the roadway to wetland connected to Trout Creek; wetland is approximately 500 feet south of pond site

Pond Site 4D is located on the east side of C.R. 581/S.R. 581 south of County Line Road. The site is currently undeveloped, however, a shopping center is planned for the site. The NRCS soil type is Myakka, which is classified as HSG B/D (poorly drained) with a seasonal high water table of 0 to 1 foot below the ground surface. This proposed pond would be a wet detention pond and would be approximately 2.4 acres.

- Engineering Feasibility – Fair
- Cost – The estimated cost for the acquisition of this parcel is \$5,653,900.
- Cultural Impact Potential – None
- Wetland Involvement Potential – 1.28 acres
- Contamination Risk – None
- Protected Species – The potential for protected species involvement is low.
- Outfall - Outfall system piped along the east side of the roadway to wetland connected to Trout Creek; wetland is approximately 500 feet south of pond site

6.4.12 Pasco County Pond Sites

The segment of roadway in Pasco County, Segment E, extends from the County line to S.R. 54. This segment of the project, including the required treatment/attenuation facilities will be designed and constructed by a private developer. This construction is part of a development agreement with Pasco County. The developer has identified proposed detention ponds and floodplain mitigation ponds for the section of Segment E between S.R. 54 and S.R. 56. A table summarizing the stormwater management requirements and arials showing the locations of these ponds are contained in Appendix D. Alternative facilities are still being evaluated for Segment E between the county line and S.R. 56. The wetland impacts associated with the Pasco County pond sites are approximately 1.69 acres.

6.5 Recommended Pond Site Analysis

Basin 3 – Pond site 1A is the recommended pond site. The parcel is located directly adjacent to the outfall (main channel of Cypress Creek) and the cost of acquisition is less than for the alternative pond site.

Basin 4 – Pond site 4A is the recommended pond site. The site is located directly adjacent to C.R. 581/S.R. 581, and the stormwater system could directly discharge into the pond. This pond is closer to the outfall than Pond site 3A, and the acquisition cost is lower.

Basin 5 – Pond site 6A is the recommended pond site. Pond site 5A was not chosen based on potential coordination issues with the Lutheran Church. The Church is currently using this site for a stormwater treatment facility. Pond site 6A is located close to the high point of the basin, and modifications to the roadway profile grade would be required.

Basin 6 – Pond site 7A is the recommended pond site. The site is located closer to the outfall for the basin, and it is less expensive than Pond site 9A. The underground retention vault at the post office (Pond site 8A) was not chosen based on concerns regarding maintenance of traffic and parking for the post office during construction. There are no wetland impacts associated with this pond site.

Basin 7 – Pond site 2B is the recommended pond site. Both pond sites are comparable with respect to proximity to the outfall, but Pond site 2B is much more cost effective than Pond site 1B (\$5,884,300 versus \$8,582,900).

Basin 8 – Pond site 4B is the recommended site. The parcel is currently available for sale. The pond site at the water treatment site may interfere with future expansion of the plant. The wetland areas (Pond site 5B) would require a substantial stormwater system to divert the runoff from the roadway to the ponds.

Basin 9 – Pond site 1C is the recommended site. This site is closer to the outfall than Pond site 2C and is surrounded by undeveloped areas. Pond site 2C is located within the Hunters Green subdivision, and may require more coordination to develop. The two sites are comparably priced.

Basin 10 - Drainage Basin 10 is a small basin that contains heavy commercial development and wetlands, and only one potential pond site was identified. Therefore, the recommended site is **Pond site 3C**.

Basin 11 – Pond site 2D is the recommended site. This site is located closer to the outfall to Trout Creek, and is more cost effective than Pond site 1D.

Basin 12 – Pond site 3D is the recommended pond site. The site is closer to the outfall than Pond site 4D, there are no wetland impacts, and Pond site 4D is located on a parcel that is planned for a commercial development.

Section 7.0

POND SITING EVALUATION MATRIX

Table 7.1 presents an evaluation matrix comparing the pond site alternatives. The treatment method, engineering feasibility, right-of-way costs, cultural impact potential, wetland involvement potential, contamination risk and protected species involvement potential and potential residential relocation requirements are listed for each pond site.

The shaded pond sites indicate the recommended site for each basin.

As can be seen on this matrix, several pond sites would impact wetland areas. The use a wetland mitigation bank to mitigate for the impacts would be coordinated with SWFWMD.


The total estimated cost for pond site acquisition by segment is listed below:

- Segment A - \$ 28,433,200
- Segment B - \$ 18,234,200
- Segment C - \$ 18,046,900
- Segment D - \$ 22,761,100
- Segment E - Provided by developer (Pasco County section)

The total estimated pond site acquisition cost for the entire project would be \$87,475,400.

**TABLE 7-1
BRUCE B. DOWNS
POND SITING EVALUATION MATRIX**

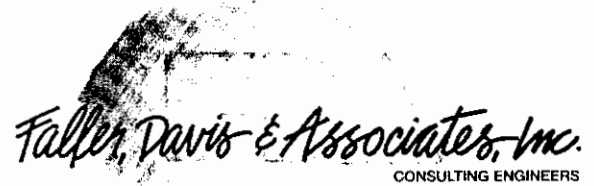
Basin	Pond Site	Treatment Method	Engineering Feasibility	R/W Costs (\$)	Cultural Impact Potential	Wetland Involvement Potential	Contamination Risk	Protected Species Involvement Potential	Potential Relocations
3A	1A	WET	GOOD	\$8,812,200	None	Yes	None	Low	None
3B	2A	WET	GOOD	\$9,949,300	None	Yes	None	Low	None
4	3A	WET	GOOD	\$6,382,200	None	Yes	None	Low	None
4	4A	WET	GOOD	\$6,185,800	None	Yes	None	Low	None
5	5A	WET	FAIR/GOOD	N/A	None	Yes	None	Low	None
5	6A	WET	FAIR	\$7,603,100	None	Yes	None	Low	None
6	7A	WET	GOOD	\$5,832,100	None	None	None	Low	None
6	8A	WET	FAIR	N/A	None	Yes	None	Low	None
6	9A	WET	FAIR	\$5,974,100	None	Yes	None	Low	None
7	1B	WET	FAIR/GOOD	\$8,582,900	None	None	None	Low	None
7	2B	WET	FAIR/GOOD	\$5,884,300	None	Yes	None	Low	None
8	3B	WET	FAIR	\$10,902,400	None	Yes	None	Low	None
8	4B	WET	FAIR	\$12,349,900	None	Yes	None	Low	None
8	5B	WET	POOR	\$15,516,000	None	Yes	None	Low	None
9	1C	WET	FAIR/GOOD	\$8,437,500	None	Yes	None	Low	None
9	2C	WET	FAIR/GOOD	\$8,234,200	None	Yes	None	Low	None
10	3C	WET	FAIR	\$9,609,400	None	None	None	Low	None
11	1D	WET	FAIR	\$31,829,100	None	Yes	None	Low	None
11	2D	WET	FAIR	\$16,974,800	None	Yes	None	Low	None
12	3D	WET	GOOD	\$5,786,300	None	None	None	Low	None
12	4D	WET	FAIR	\$5,653,900	None	Yes	None	Low	None
Pasco Co.	2E	DRY	GOOD	N/A*	None	Yes	None	Low	None
Pasco Co.	5E	DRY	GOOD	N/A*	None	None	None	Low	None
Pasco Co.	6E	DRY	GOOD	NA*	None	Yes	None	Low	None

 Recommended pond site.

* Provided by Pasco County Development Order.

APPENDIX A
CORRESPONDENCE/COORDINATION

Faller, Davis & Associates, Inc.
550 North Reo Street, Suite 301
Tampa, FL 33609
(813) 261-5136 fax (813) 261-5142



MEMORANDUM

TO: Tom Mueller
FROM: Nancy Faller Brown
DATE: June 4, 2003
SUBJECT: BBD Pond Site 4B

Attached are our calculations for Pond Site 4B as you requested.

As we discussed on the phone, this pond site, as well as several others for this project, was chosen based on land costs and availability. These pond sites are not necessarily the most feasible sites from a hydraulic or engineering perspective.

Land costs in the BBD corridor are so expensive that the FDOT Project Manager and FDOT R/W staff directed us to locate ponds based on the potential cost of the parcels in some cases. According to the FDOT, it will be more cost effective to pump stormwater to ponds that are located on higher ground, or to revise the roadway profile to drain to the ponds.

Basins 1 and 2 currently drain into the County's Lake Forest/149th Street Outfall system. Ponds have not been identified for these 2 basins based on the assumption that improvements to the roadway will be treated and attenuated in this system.

Conrad Brown is the engineer at our firm who performed the attached computations.

TELEPHONE CONVERSATION RECORD

PROJECT NAME: BBD PD&E FDA NO.: 149.16
PROJECT CLIENT: URS
CONVERSATION WITH: Tom Mueller
COMPANY NAME: Hillsborough County Public Works
PHONE NUMBER: 272-5912 DATE: June 4, 2003 TIME: _____

LEFT MESSAGE TO CALL ME

SUBJECT:

The FDOT Project Manager asked us to forward a copy of the calculations for Pond Site 4B (Basin 8) to him – the County is currently negotiating with the owner of the parcel. We wanted to explain that this pond site was chosen as an alternative site based on availability. In one of our meetings with the FDOT, we were informed that the County had an opportunity to purchase this parcel, and to add it as a pond site alternative. Based on the cost of the parcel, it is the recommended site for the basin.

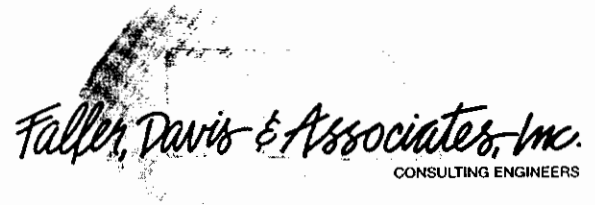
Some of the sites were chosen based on parcel cost as opposed to hydraulic or engineering feasibility. The FDOT has stated that sites that are not located in the vicinity of the low points or discharge points are still viable sites if they are the least expensive from an acquisition standpoint. Stormwater will be pumped to and from the site if necessary. In some instances the profile grade of the proposed roadway will be altered to move the low point closer to the pond site, according to the FDOT.

Mr. Mueller stated that part of the parcel is a wetland, and a wetland area may be built into the pond. EPC may have issues with this concept. According to the Master Drainage Plan for the remainder of the site, this parcel was designed to discharge to an on-site wetland which discharges into a borrow pit which is connected to Trout Creek. The design high water in the wetland is around elevation 43.5 or 44.

I also discussed the fact that Basins 1 and 2 currently discharge into the County's Lake Forest/149th St. outfall system, and will continue to do so. No ponds are proposed for these basins. The assumption is that the County will modify their existing system to accommodate any increase in volume, and will provide for any water quality requirements.

CONVERSATION RECORDED BY: Nancy Faller Brown

Faller, Davis & Associates, Inc.
550 North Reo Street, Suite 301
Tampa, FL 33609
(813) 261-5136 fax (813) 261-5142



TELEPHONE CONVERSATION RECORD

PROJECT NAME: BBD PD&E FDA NO.: 149.16
PROJECT CLIENT: URS
CONVERSATION WITH: Dale Ravencraft
COMPANY NAME: SWFWMD Operations Office - Brooksville
PHONE NUMBER: _____ DATE: 5/20/03 TIME: _____

LEFT MESSAGE TO CALL ME

SUBJECT:

Does SWFWMD operate the control structure on the lake at Lake Forest ?
No, that is probably a County structure. Ed Tapia or Frank Dees at the County may know.

CONVERSATION RECORDED BY: Nancy Faller Brown

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.

Bruce B. Downs PD&E

Date: April 24, 2003
Time: 11 AM
Project Name: Bruce B. Downs Widening PD&E
Attendees: Michelle Hopkins, Alberto Martinez,
Nancy Faller, Conrad Brown, Richard Griffin

County: Hillsborough **S/T/R:** varies
Total Land acreage: R/W **Project acreage:** ?
Prior Onsite/Offsite Permit activity:

Project Overview:

Proposed widening of Bruce B. Downs from Bears to Hillsborough County Line. The roadway will be widened to eight lanes. They are in the PD&E phase of the project development.

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.)

- They are trying to identify potential pond sites for the roadway improvements, with the exception of the portion that drains to Lake Forest. The problem they are having is that the area is heavily developed. The ponds sites that are available are mostly located in wetland areas and the proposed design has become very expensive. They would like to provide equivalent treatment where they are not able to treat the roadway.

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.)

- Wetland impacts and mitigation were not discussed specifically.

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

- N/A

Water Quantity Discussion: (Basin Description, Design Storm Event, Pre/Post Volume, Pre/Post Discharge, Local Requirements, Other)

- A portion of the roadway drains to Lake Forest, which is part of a County regional system for the Cypress Creek basin. The County advised them that they would need permission from the District to change the weir for Lake Forest. They can check with our operations section (Dale Ravencraft) to see if the District operates a structure or they should check 40D-8 to see if lake levels were established. Otherwise the permission to alter the weir will just have to address standard ERP requirements.
- They need to provide detailed calculations to demonstrate no net fill in the 100 year floodplain.
- Additional quantity requirements will need to be discussed further.

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.)

- They will need to provide water quality treatment for the site in accordance with the Basis of Review. They have asked about providing equivalent treatment to offset where it will be difficult to provide treatment. They can provide equivalent treatment of other untreated roadway portions as long as the treatment is in the same basin. Since the receiving waters are OFW, they will need to ensure that water quality will not be degraded. This can be reviewed in more detail after the design evolves.
- OFW requires 1 ½ times the required treatment volume.

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.)

- Provide evidence of ownership or control of the project area.

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

- To be determined...however if work in, on or over wetlands exceeds 1 acre an Individual permit (\$2500 fee) will be required.

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

- This was a very preliminary discussion....we will need to discuss in more detail in future preaps.

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.

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.



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ERP Pre-Application Meeting NOTES**

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- They are trying to identify potential pond sites for the roadway improvements, with the exception of the portion that drains to Lake Forest. The problem they are having is that the area is heavily developed. The ponds sites that are available are mostly located in wetland areas and the proposed design has become very expensive. They would like to provide equivalent treatment where they are not able to treat the roadway.

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.)

- Wetland impacts and mitigation were not discussed specifically.

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

- N/A

MEMORANDUM

TO: Files
FROM: Nancy Faller
DATE: 11.20/02
SUBJECT: Meeting with Hillsborough County Regarding BBD

Attendees: Scott Cottrell, Hillsborough County
Frank Deese, Hillsborough County
Robert Wisemen, Hillsborough County
Conrad Brown, Faller Davis
Nancy Faller, Faller Davis

We met with members of the County Engineering staff to discuss the 149th Street Outfall and Lake Forest, and to discuss the possibility of using the existing County system for attenuation for BBD.

The staff was unsure as to whether the system could handle any additional stormwater. We will need to meet with Dr. Ho for a definite determination. Dr. Ho was responsible for the Cypress Creek model.

Dr. Su provided us with a copy of the Cypress Creek stormwater model report.

MEMORANDUM

TO: Files
FROM: Nancy Faller
DATE: December 12, 2002
SUBJECT: BBD PD&E Pond Siting

Attendees: Ming Gao (FDOT)
Richard Griffin (FDOT)
Bill McTeer (FDOT)
Rick Adair (FDOT)
Ron Pscion, URS
Nancy Faller, FDA

Summary of Meeting:

The proposed pond sites were reviewed with representatives from FDOT Right-of-way, PD&E and Drainage departments. The comments are as follows:

- o Hillsborough County is currently negotiating with the owner of a 9.6 Acres parcel in the Northwest quadrant of I-75 and Bruce B. Down. Pond Site 4B will be moved to this site.*
- o Pond site 2A will be reshaped and moved to the back section of the parcel; the easement will be shown along the existing pond in the maintenance berm.*
- o The FDOT has not had any luck in dealing with the power company to use their easements for pond sites. Pond Site 6A will be moved to the west side of Bruce B. Downs behind the fire station.*
- o Pond site 7A will be moved to the back section of the parcel.*
- o Pond site 1B will be moved to the upland area to the north. The pond will be located so that as much frontage along the road as possible will be left.*
- o The entire easement for Pond 3B will be shown on the aerials.*
- o Pond site 2B will be reshaped to a long narrow pond along the high school property line to maintain access to the back section of the parcel.*

The section of roadway between I-75 and Pebble Creek will be the first segment constructed.

Cypress Creek may be an OFW, and have more stringent water quality treatment requirements. However, there are exceptions for transportation corridors.

The engineers who are designing the Pasco County section for the developer are proposing treatment in the roadside ditches and attenuation on the Seven Oaks property.

The right-of-way estimates for the pond sites will be detailed enough to present to Hillsborough County and the MPO. The right-of-way department should not spend an extensive amount of time on it, assumptions can be made.

Ron Pscion asked if anything else needed to be depicted on the plans sheet. Richard Griffin replied that the plan sheets were adequate.

MEMORANDUM

TO: Files
FROM: Nancy Faller
DATE: 12/02/02
SUBJECT: Meeting with Hillsborough County Regarding 149th St. Outfall

Attendees: Horatiu Droc, Hillsborough County Stormwater Management Section
Conrad Brown, Faller Davis
Nancy Faller, Faller Davis

We met with Horatiu Droc to discuss the 149th Street Outfall and the lake at Lake Forest, and to discuss the possibility of using the existing County system for attenuation for BBD.

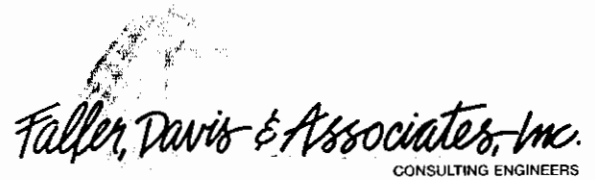
Mr. Droc informed us that SWFWMD controls the lake levels and that we would have to coordinate with them regarding use of the lake.

Currently the drainage flow in the area is to the north to the lake at Lake Forest. There is some blockage around the sinkhole at the commercial site (BBD and Bearss Avenue) at the present time though.

We would also have to coordinate with EPC regarding wetland issues associated with the lake. Peter Owens would be the contact person at EPC.

Mr. Droc provided us with a CD containing the Cypress Creek Water Management Plan.

Faller, Davis & Associates, Inc.
550 North Reo Street, Suite 301
Tampa, FL 33609
(813) 261-5136 fax (813) 261-5142



TELEPHONE CONVERSATION RECORD

PROJECT NAME: BBD PD&E FDA NO.: 149.16
PROJECT CLIENT: URS
CONVERSATION WITH: Joe Kidd, Assistant Maintenance Engineer
COMPANY NAME: FDOT District 7 Maintenance
PHONE NUMBER: 813-744-6038 DATE: February 4, 2003 TIME: _____

LEFT MESSAGE TO CALL ME

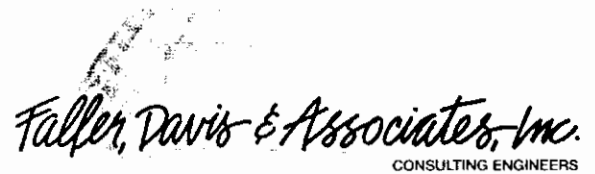
SUBJECT:

Any known historic drainage or flooding problems on Bruce B. Downs between Bearss Avenue and SR 54?

Response: BBD is a County Road and the FDOT does not have any knowledge of any problems.

CONVERSATION RECORDED BY: Nancy R. Faller, P.E.

Faller, Davis & Associates, Inc.
550 North Reo Street, Suite 301
Tampa, FL 33609
(813) 261-5136 fax (813) 261-5142



TELEPHONE CONVERSATION RECORD

PROJECT NAME: BBD PD&E Study FDA NO.: 149.16
PROJECT CLIENT: URS
CONVERSATION WITH: Gary Mays, Northside Stormwater Technician - Maintenance Dept.
COMPANY NAME: City of Tampa Stormwater Section.
PHONE NUMBER: 813-274-8588 DATE: February 5, 2003 TIME: _____

LEFT MESSAGE TO CALL ME

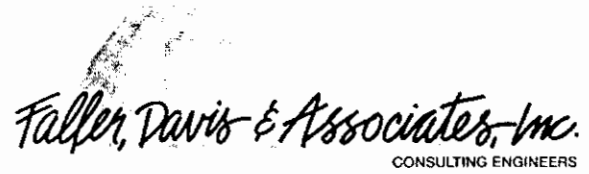
SUBJECT:

Any known historic drainage or flooding problems on Bruce B. Downs between Bearss Avenue and the Tampa City Limits?

Response: They have had 4 calls regarding overgrown curb openings at 2 of the subdivisions. The grass and dirt were blocking the flow of runoff from the road through the curb cuts to the inlets. The stormwater was backing up into the roads. It was a maintenance problem. No other known drainage problems.

CONVERSATION RECORDED BY: Nancy R. Faller, P.E.

Faller, Davis & Associates, Inc.
550 North Reo Street, Suite 301
Tampa, FL 33609
(813) 261-5136 fax (813) 261-5142



TELEPHONE CONVERSATION RECORD

PROJECT NAME: BBD PD&E Study FDA NO.: 149.16
PROJECT CLIENT: URS
CONVERSATION WITH: John Warren, Roadway Maintenance Engineer
COMPANY NAME: Hillsborough County Road and Street Maintenance Dept.
PHONE NUMBER: 813-744-5518 DATE: February 5, 2003 TIME: _____

LEFT MESSAGE TO CALL ME

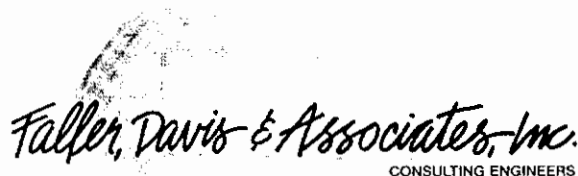
SUBJECT:

Any known historic drainage or flooding problems on Bruce B. Downs between Bearss Avenue and the Pasco County Line?

Response: The whole section is pretty wet and flat. There are a couple of ponds that fill up pretty quickly, but they are in the City section. It depends on the situation. After the ground is saturated there are some problems. We haven't had any heavy rains lately. They did not have to do any pumping out there during the El Nino storms though which is a good sign. BBD is higher than the surrounding side roads and property which helps. The southernmost Tampa Palm's entrance road sometimes has a problem – the ditches fill up pretty fast and back up into the intersection.

CONVERSATION RECORDED BY: Nancy R. Faller, P.E.

Faller, Davis & Associates, Inc.
550 North Reo Street, Suite 301
Tampa, FL 33609
(813) 261-5136 fax (813) 261-5142



TELEPHONE CONVERSATION RECORD

PROJECT NAME: BBD PD&E Study FDA NO.: 149.16
PROJECT CLIENT: URS
CONVERSATION WITH: Stan O'Dell, Area Superintendent.
COMPANY NAME: Pasco County Maintenance
PHONE NUMBER: 727-847-8143 DATE: February 5, 2003 TIME: _____

LEFT MESSAGE TO CALL ME

SUBJECT:

Any known historic drainage or flooding problems on Bruce B. Downs between the Hillsborough County line and SR 54?

Response: No problems to his knowledge. No problems with roadway flooding. It is a low lying area though.

CONVERSATION RECORDED BY: Nancy R. Faller, P.E.

Faller, Davis & Associates, Inc.
550 North Reo Street, Suite 301
Tampa, FL 33609
(813) 261-5136 fax (813) 261-5142

Faller, Davis & Associates, Inc.
CONSULTING ENGINEERS

TELEPHONE CONVERSATION RECORD

PROJECT NAME: BBD PD&E Study FDA NO.: 149.16
PROJECT CLIENT: URS
CONVERSATION WITH: Frank Deese
COMPANY NAME: Hillsborough County Stormwater Department
PHONE NUMBER: 813-307-1828 DATE: February 7, 2003 TIME: _____

LEFT MESSAGE TO CALL ME

SUBJECT:

We understand that the County follows the same criteria as SWFWMD for stormwater attenuation unless the downstream receiving body is volume sensitive. Are Cypress Creek or Trout Creek classified as volume sensitive by the County?

Response: No, neither Cypress Creek or Trout Creek are volume or peak sensitive.

CONVERSATION RECORDED BY: Nancy R. Faller, P.E.

APPENDIX B
POND SITE CALCULATIONS

POND SITE CALCULATIONS:

A summary table of the pond requirements and calculations for the pond sites are contained in this appendix.

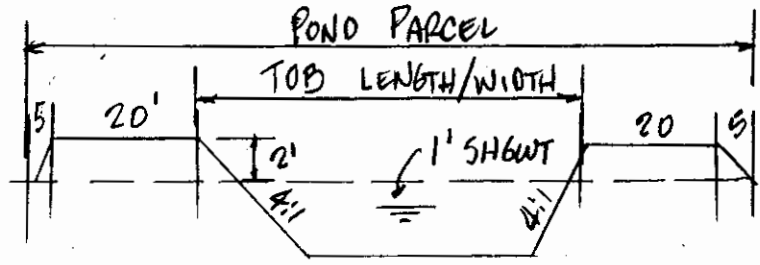
The pond sites evaluated in this report were primarily chosen based on land cost criteria and not based on physical criteria such as topography or proximity to the outfall.

Based on the cost of land in the Bruce B. Downs corridor, the cost criteria is the most important criteria in rating the recommended pond sites.

Design and construction techniques such as lining the ponds, pumping stormwater from the low areas of the roadway to the pond sites, and piping the outfall systems will be used. Although these techniques can be costly, they are less expensive than acquiring some of the residential areas and commercial sites in the corridor that may be more desirable hydraulically.

SUBJECT: CR 581
POND SUMMARY

BASIN	STA TO STA	POND SIZE	DHW	WQ VOL (ACFT)	VOL @ DHW AC. FT	PEAK ATTN. (GAL)
1	130+00 TO 145+00	155x155		0.3	1.3	1.0
2	145+00 TO 177+00	255x255		0.7	2.7	2.0
3	177+00 TO 225+00	440x440	34.44	1.9	7.7	5.8
4	225+00 TO 255+00	340x340	35.53	1.3	4.7	3.4
5	255+00 TO 295+00	400x400	35.48	1.8	6.9	5.1
6	295+00 TO 326+00	330x330	38.65	1.3	4.7	3.4
7	326+00 TO 371+00	400x400	42.75	2.1	7.6	5.5
8	371+00 TO 432+00	555x555	47.61	2.8	14.9	12.1
9	432+00 TO 451+00	320x320	46.22	0.9	3.3	2.4
10	451+00 TO 475+00	360x360	47.00	1.2	2.2	1.0
11	475+00 TO 557+00	555x555	54.83	3.9	16.1	12.2
12	557+00 TO 575+00	320x320	59.32	0.9	4.3	3.4



Faller, Davis and Associates, Inc.

COMP. BY: C BROWN

CK. BY: DS

SUBJECT: CR 581

DATE: 6-3-03

SHEET NO.: 10F 2

JOB NO.: 149.16

PRELIMINARY POND SIZING (REVISED)

STA. 177+00 TO STA 225+00 (w/200' R/W)

$$\begin{aligned} \text{TOTAL AREA} &= (22500 - 17700)(200) \left(\frac{1}{43560} \right) + \text{POND SITE} \\ &= 22.0 \text{ AC} + 4.4 \text{ AC} = 26.4 \text{ AC} \end{aligned}$$

EXISTING (2-24' PAVEMENT WIDTH)

$$CN_{\text{EXIST}} = \frac{(5.3)(98) + (167)(80) + (4.4)(80)}{26.4} = 84$$

$$H_L = 1900 \text{ FT}$$

$$t_c = \frac{1900}{(1 \text{ ft/sec}) \left(60 \frac{\text{SEC}}{\text{MIN}} \right)} = 32 \text{ MIN}$$

PROPOSED (2-48' PAVEMENT WIDTH) + 5' SW + 10' MULTI USE + DHW POND)

$$CN_{\text{PROPOSED}} = \frac{(13.1)(98) + (10.0)(80) + (3.3)(98)}{26.4} = 91$$

$$t_c = \frac{3450}{(2.5)(60)} = 23 \text{ MIN}$$

Faller, Davis and Associates, Inc.

COMP. BY: C. BROWN

CK. BY: DB

SUBJECT: CR 581

DATE: 6-3-03

SHEET NO.: 2 OF 2

PRELIMINARY POND SIZING (REVISED)

JOB NO.: 149.16

STAGE	AREA
32	3.04
33	3.17
34	3.31
35	3.45

TREATMENT REQUIRED (INCL DHW)

$$\text{AREA} = 13.1 + 3.3 = 24.6 \text{ AC}$$

$$\text{VOL} = \frac{(13.1)(1.5)}{12} = 1.6 \text{ AC}\cdot\text{FT}$$

$$\text{@ } 32.6 \text{ VOL} = 1.9 \text{ AC}\cdot\text{FT (TREATMENT)}$$

$$\text{@ } 34.4 \text{ VOL} = 7.7 \text{ AC}\cdot\text{FT (TOTAL)}$$

$$\text{VOL} = 5.8 \text{ AC}\cdot\text{FT (ATTENUATION)}$$

(8U

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STA. 177+00 TO 197+00

PRE 25Y-24 POST 25Y-24 HOUR

***** Node Maximum Conditions - 25YR24HR *****

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
OUTFALL	BASE	0.00	30.80	32.00	0.0000	0.00	13.08	34.44	0.00	0.00
POND3	BASE	13.08	34.44	35.00	0.0280	146848.70	12.17	84.18	13.08	34.44

STA. 177+00 TO 197+00
PRE 25Y-24 POST 25Y-24 HOUR

***** Link Maximum Conditions - 25YR24HR *****

(Time units - hours)

Link Name	Group Name	Max Time Flow	Max Flow (cfs)	Max Delta Q (cfs)	Max Time U/S Stage	Max US Stage (ft)	Max Time D/S Stage	Max DS Stage (ft)
CONTROL	BASE	13.08	34.44	0.63	13.08	34.44	0.00	30.80

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STA. 177+00 TO 197+00
PRE 25Y-24 POST 25Y-24 HOUR

***** Basin Summary - 25YR24HR *****

Basin Name:	EXISTING	PRPSED
Group Name:	BASE	BASE
Node Name:	RUNOFF	POND3
Hydrograph Type:	UH	UH
Unit Hydrograph:	UH256	UH256
Peaking Factor:	256.00	256.00
Spec Time Inc (min):	4.27	3.07
Comp Time Inc (min):	4.27	3.07
Rainfall File:	FLMOD	FLMOD
Rainfall Amount (in):	8.00	8.00
Storm Duration (hr):	24.00	24.00
Status:	INACTIVE	ONSITE
Time of Conc. (min):	32.00	23.00
Lag Time (hr):	0.00	0.00
Area (acres):	26.40	26.40
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	84.00	91.00
DCIA (%):	0.00	0.00
Time Max (hrs):	12.30	12.16
Flow Max (cfs):	64.11	84.25
Runoff Volume (in):	6.09	6.92
Runoff Volume (cf):	583661	663141

sta 177+00 to sta.225+00

***** Input Report *****

-----Class: Node-----

Name: OUTFALL Base Flow(cfs): 0 Init Stage(ft): 30.8
Group: BASE Warn Stage(ft): 32
Comment:

Time(hrs)	Stage(ft)
0	30.8
300	30.8

-----Class: Node-----

Name: POND3 Base Flow(cfs): 0 Init Stage(ft): 32.6
Group: BASE Warn Stage(ft): 35
Comment:

Stage(ft)	Area(ac)
32	3.04
33	3.17
34	3.31
35	3.45

-----Class: Basin-----

Basin: EXISTING Node: RUNOFF Status: Inactive Type: SCS Unit Hydr
Group: BASE
Unit Hydrograph: UH256 Peak Factor: 256
Rainfall File: FLMOD Storm Duration(hrs): 24
Rainfall Amount(in): 8
Area(ac): 26.4 Concentration Time(min): 32
Curve #: 84 Time Shift(hrs): 0
DCIA(%): 0

-----Class: Basin-----

Basin: PRPSED Node: POND3 Status: On Site Type: SCS Unit Hydr
Group: BASE
Unit Hydrograph: UH256 Peak Factor: 256
Rainfall File: FLMOD Storm Duration(hrs): 24
Rainfall Amount(in): 8
Area(ac): 26.4 Concentration Time(min): 23
Curve #: 91 Time Shift(hrs): 0
DCIA(%): 0

sta 177+00 to sta.225+00

***** Input Report *****

-----Class: Weir-----

Name: CONTROL From Node: POND3
Group: BASE To Node: OUTFALL
Count: 1

Type: Mavis Flow: Both Geometry: Rectangular

Span(in): 50
Rise(in): 999
Invert(ft): 32.6
Control Elev(ft): 32.6

TABLE

Bottom Clip(in): 0
Top Clip(in): 0
Weir Discharge Coef: 3.32
Orifice Discharge Coef: 0.6

-----Class: Simulation-----

C:\ICPR2\CR581B3\25YR24HR

Execution: Both

Header: STA. 177+00 TO 197+00

PRE 25Y-24 POST 25Y-24 HOUR

-----HYDRAULICS-----HYDROLOGY-----

Max Delta Z (ft): 1
Delta Z Factor: 0.05 Override Defaults: No

Time Step Optimizer: 10

Drop Structure Optimizer: 10

Sim Start Time(hrs): 0

Sim End Time(hrs): 30

Min Calc Time(sec): 0.5

Max Calc Time(sec): 60

To Hour: PInc(min): To Hour: PInc(min):

30 5 30 5

-----GROUP SELECTIONS-----

+ BASE [06/04/03]

Faller, Davis and Associates, Inc.

COMP. BY: C BROWN

CK. BY: SC

SUBJECT: CR 581

DATE: 6-03-03

SHEET NO.: 1 OF 2

JOB NO.: 149.16

PRELIMINARY POND SIZING (REVISED)

STA. 225+00 TO STA 255+00 (W/200' RW)

$$\begin{aligned} \text{TOTAL AREA} &= (25500 - 22500)(200)(1/43560) + \text{POND SITE} \\ &= 13.8 \text{ AC} + 2.7 \text{ AC} = 16.5 \text{ AC} \end{aligned}$$

EXISTING (2-24' PAVEMENT WIDTH)

$$CN_{\text{EXIST}} = \frac{(3.3)(98) + (10.5)(80) + (2.7)(80)}{16.5} = 84$$

$$t_c = \frac{1500}{(1 \text{ ft/sec})(60 \frac{\text{sec}}{\text{MIN}})} = 25 \text{ MIN}$$

PROPOSED (2-48' PAVEMENT WIDTH + 5' SW + 10' MULTI USE + DHW POND)

$$CN_{\text{PROPOSED}} = \frac{(8.2)(98) + (6.3)(80) + (2.0)(98)}{16.5} = 91$$

$$t_c = 15 \text{ MIN}$$

SUBJECT: CR 581DATE: 6-03-03SHEET NO.: 2 OF 2JOB NO.: 149.16PRELIMINARY POND SIZING (REVISED)

STAGE	AREA	TREATMENT REQUIRED (INCL DHW)
33	1.74	AREA = 8.2 + 2.0 = 10.2 AC
34	1.85	VOL = $\frac{(10.2)(1.5)}{12} = 1.3 \text{ AC} \cdot \text{FT}$
35	1.96	
36	2.07	

@ 33.7 VOL = 1.3 AC·FT (TREATMENT)

@ 35.5 VOL = 4.7 AC·FT (TOTAL)

VOL = 3.4 AC·FT (ATTENUATION)

STA. 225+00 TO 255+00
PRE 25Y POST 25Y-24 HOUR

***** Node Maximum Conditions - 25YR24HR *****

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
OUTFALL	BASE	0.00	32.00	36.00	0.0000	0.00	12.72	27.50	0.00	0.00
POND6	BASE	12.72	35.53	36.00	0.0345	87939.40	12.08	64.27	12.72	27.50

STA. 225+00 TO 255+00
PRE 25Y POST 25Y-24 HOUR

***** Link Maximum Conditions - 25YR24HR *****

(Time units - hours)

Link Name	Group Name	Max Time Flow	Max Flow (cfs)	Max Delta Q (cfs)	Max Time U/S Stage	Max US Stage (ft)	Max Time D/S Stage	Max DS Stage (ft)
CONTROL	BASE	12.72	27.50	0.64	12.72	35.53	0.00	32.00

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STA. 225+00 TO 255+00
PRE 25Y POST 25Y-24 HOUR

***** Basin Summary - 25YR24HR *****

Basin Name:	EXISTING	PROPOSED
Group Name:	BASE	BASE
Node Name:	RUNOFF	POND6
Hydrograph Type:	UH	UH

Unit Hydrograph:	UH256	UH256
Peaking Factor:	256.00	256.00
Spec Time Inc (min):	3.33	2.00
Comp Time Inc (min):	3.33	2.00
Rainfall File:	FLMOD	FLMOD
Rainfall Amount (in):	8.00	8.00
Storm Duration (hr):	24.00	24.00
Status:	INACTIVE	ONSITE
Time of Conc. (min):	25.00	15.00
Lag Time (hr):	0.00	0.00
Area (acres):	16.50	16.50
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	84.00	91.00
DCIA (%):	0.00	0.00

Time Max (hrs):	12.17	12.10
Flow Max (cfs):	45.70	64.33
Runoff Volume (in):	6.09	6.92
Runoff Volume (cf):	364951	414601

STA.225+00 TO STA.255+00

***** Input Report *****

-----Class: Node-----

Name: OUTFALL Base Flow(cfs): 0 Init Stage(ft): 32
Group: BASE Warn Stage(ft): 36
Comment:

Time(hrs)	Stage(ft)
0	32
30	32

-----Class: Node-----

Name: POND6 Base Flow(cfs): 0 Init Stage(ft): 33.7
Group: BASE Warn Stage(ft): 36
Comment:

Stage(ft)	Area(ac)
33	1.74
34	1.85
35	1.96
36	2.07

-----Class: Basin-----

Basin: EXISTING Node: RUNOFF Status: Inactive Type: SCS Unit Hydr
Group: BASE
Unit Hydrograph: UH256 Peak Factor: 256
Rainfall File: FLMOD Storm Duration(hrs): 24
Rainfall Amount(in): 8
Area(ac): 16.5 Concentration Time(min): 25
Curve #: 84 Time Shift(hrs): 0
DCIA(%): 0

-----Class: Basin-----

Basin: PROPOSED Node: POND6 Status: On Site Type: SCS Unit Hydr
Group: BASE
Unit Hydrograph: UH256 Peak Factor: 256
Rainfall File: FLMOD Storm Duration(hrs): 24
Rainfall Amount(in): 8
Area(ac): 16.5 Concentration Time(min): 15
Curve #: 91 Time Shift(hrs): 0
DCIA(%): 0

STA.225+00 TO STA.255+00

***** Input Report *****

-----Class: Weir-----

Name: CONTROL From Node: POND6
Group: BASE To Node: OUTFALL
Count: 1

Type: Mavis Flow: Both Geometry: Rectangular

Span(in): 40
Rise(in): 999
Invert(ft): 33.7
Control Elev(ft): 33.7

TABLE

Bottom Clip(in): 0
Top Clip(in): 0
Weir Discharge Coef: 3.32
Orifice Discharge Coef: 0.6

-----Class: Simulation-----

C:\ICPR2\CR581B6\25YR24HR

Execution: Both

Header: STA. 225+00 TO 255+00
PRE 25Y POST 25Y-24 HOUR

-----HYDRAULICS-----HYDROLOGY-----

Max Delta Z (ft): 1
Delta Z Factor: 0.05 Override Defaults: No
Time Step Optimizer: 10
Drop Structure Optimizer: 10
Sim Start Time(hrs): 0
Sim End Time(hrs): 30
Min Calc Time(sec): 0.5
Max Calc Time(sec): 60
To Hour: PInc(min): To Hour: PInc(min):
30 5 30 5

-----GROUP SELECTIONS-----

+ BASE [06/03/03]

Faller, Davis and Associates, Inc.

COMP. BY: C. BROWN

CK. BY: DB

SUBJECT: CR E81

DATE: 6-3-03

SHEET NO.: 10F2

JOB NO.: 149.16

PRELIMINARY POND SIZING (REVISED)

STA. 255+00 TO STA 295+00 (w/200' RW)

$$\begin{aligned}\text{TOTAL AREA} &= (29500 - 25500)(200) \left(\frac{1}{43560}\right) + \text{POND SITE} \\ &= 18.4 \text{ AC} + 3.8 \text{ AC} \\ &= 22.2 \text{ AC}\end{aligned}$$

EXISTING (2-24' PAVEMENT WIDTH)

$$\text{CN}_{\text{EXIST}} = \frac{(4.4)(98) + (14.0)(80) + (3.8)(80)}{22.2} = 84$$

$$t_c = \frac{1980}{(1\text{ft/sec})(60\frac{\text{sec}}{\text{min}})} = 33 \text{ MIN}$$

PROPOSED (2-48' PAVEMENT WIDTH + 5' SW + 10' MULTIPLE + DHW POND)

$$\text{CN}_{\text{PROPOSED}} = \frac{(10.9)(98) + (8.5)(80) + (2.8)(98)}{22.2} = 91$$

$$t_c = 15 \text{ MIN}$$

SUBJECT: CR 581

PRELIMINARY POND SIZING (REVISED)

STAGE	AREA
33.0	2.59
34.0	2.72
35.0	2.84
36.0	2.97

TREATMENT REQUIRED (INCL. DHW)

$$AREA = 10.9 AC + 2.8 = 13.7 AC$$

$$VOL = \frac{(13.7)(1.5)}{12} = 1.7 AC \cdot FT$$

@ 33.7 VOL = 1.8 AC · FT (TREATMENT)

@ 35.5 VOL = 6.9 AC · FT (TOTAL)

VOL = 5.1 AC · FT (ATTENUATION)

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STA. 255+00 TO 295+00

PRE 25Y POST 25Y - 24 HOUR

***** Node Maximum Conditions - 25YR25HR *****

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
OUTFALL	BASE	0.00	32.70	36.00	0.0000	0.00	12.93	26.25	0.00	0.00
POND7	BASE	12.93	35.48	36.00	0.0373	126419.32	12.08	86.47	12.93	26.25

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STA. 255+00 TO 295+00

PRE 25Y POST 25Y - 24 HOUR

***** Link Maximum Conditions - 25YR25HR *****

(Time units - hours)

Link Name	Group Name	Max Time Flow	Max Flow (cfs)	Max Delta Q (cfs)	Max Time U/S Stage	Max US Stage (ft)	Max Time D/S Stage	Max DS Stage (ft)
CONTROL	BASE	12.93	26.25	0.61	12.93	35.48	0.00	32.70

STA. 255+00 TO 295+00
PRE 25Y POST 25Y - 24 HOUR

***** Basin Summary - 25YR25HR *****

Basin Name:	EXISTING	PROPOSED
Group Name:	BASE	BASE
Node Name:	RUNOFF	POND7
Hydrograph Type:	UH	UH
Unit Hydrograph:	UH256	UH256
Peaking Factor:	256.00	256.00
Spec Time Inc (min):	4.40	2.00
Comp Time Inc (min):	4.40	2.00
Rainfall File:	FLMOD	FLMOD
Rainfall Amount (in):	8.00	8.00
Storm Duration (hr):	24.00	24.00
Status:	INACTIVE	ONSITE
Time of Conc. (min):	33.00	15.00
Lag Time (hr):	0.00	0.00
Area (acres):	22.20	22.20
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	84.00	91.00
DCIA (%):	0.00	0.00
Time Max (hrs):	12.32	12.10
Flow Max (cfs):	52.99	86.56
Runoff Volume (in):	6.09	6.92
Runoff Volume (cf):	490902	557827

sta 255+00 to sta.295+00

***** Input Report *****

-----Class: Weir-----

Name: CONTROL From Node: POND7
Group: BASE To Node: OUTFALL
Count: 1

Type: Mavis Flow: Both Geometry: Rectangular

Span(in): 40
Rise(in): 999
Invert(ft): 33.7
Control Elev(ft): 33.7

TABLE

Bottom Clip(in): 0
Top Clip(in): 0
Weir Discharge Coef: 3.32
Orifice Discharge Coef: 0.6

-----Class: Simulation-----

C:\ICPR2\CR581B7\25YR25HR

Execution: Both

Header: STA. 255+00 TO 295+00
PRE 25Y POST 25Y - 24 HOUR

-----HYDRAULICS-----HYDROLOGY-----

Max Delta Z (ft): 1
Delta Z Factor: 0.05 Override Defaults: No
Time Step Optimizer: 10
Drop Structure Optimizer: 10
Sim Start Time(hrs): 0
Sim End Time(hrs): 30
Min Calc Time(sec): 0.5
Max Calc Time(sec): 60
To Hour: PInc(min): To Hour: PInc(min):
30 5 30 5

-----GROUP SELECTIONS-----

+ BASE [06/03/03]

SUBJECT: CR 581DATE: 6-02-03PRELIMINARY POND SIZING (REVISED)SHEET NO.: 10F2JOB NO.: 149.16

STA. 295+00 TO STA 326+00 (W/200' RW)

$$\begin{aligned} \text{TOTAL AREA} &= (32600 - 29500)(200) \left(\frac{1}{43560} \right) + \text{POND SITE} \\ &= 14.2 + 2.6 = 16.8 \text{ AC} \end{aligned}$$

EXISTING (2-24' PAVEMENT WIDTH)

$$CN_{\text{EXIST}} = \frac{(3.4)(98) + (10.8)(80) + (2.6)(80)}{16.8} = 84$$

$$t_c = \frac{1550}{(1 \text{ f/sec}) \left(60 \frac{\text{sec}}{\text{MIN}} \right)} = 25.8 \text{ MIN (DITCH TRAVEL @ 1 f/sec)}$$

PROPOSED (2-48' PAVEMENT WIDTH + 5' SW + 10' MULTI USE + DHW POND)

$$CN_{\text{PROPOSED}} = \frac{(8.5)(98) + (6.5)(80) + (1.8)(98)}{16.8} = 91$$

$$t_c = \frac{(2790)}{(2.5)(60)} = 18.6 \text{ MIN}$$

Faller, Davis and Associates, Inc.

COMP. BY: C. BROWN

CK. BY: JB

SUBJECT: C.R. 581

DATE: 6-02-03

SHEET NO.: 20F2

JOB NO.: 149.16

PRELIMINARY POND SIZING (REVISED)

STAGE	AREA
36	1.62
37	1.72
38	1.82
39	1.93

TREATMENT REQUIRED (INCL DHW)

$$\text{AREA} = 8.5\text{AC} + 1.8\text{AC} = 10.3\text{AC}$$

$$\text{VOL REQ} = \frac{(10.3)(1.5)}{12} = 1.3\text{AC}\cdot\text{FT}$$

@ 36.8 VOL = 1.3 AC·FT (TREATMENT)

@ 38.65 VOL = 4.66 AC FT (TOTAL)

VOL = 3.36 AC FT (ATTENUATION)

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STA. 295+00 TO 326+00

PRE 25Y POST 25Y - 24 HOUR

***** Node Maximum Conditions - 25YR10HR *****

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
OUTFALL	BASE	0.00	33.80	39.00	0.0000	0.00	12.78	27.93	0.00	0.00
POND8	BASE	12.78	38.65	39.00	0.0332	82411.85	12.08	58.44	12.78	27.93

STA. 295+00 TO 326+00
PRE 25Y POST 25Y - 24 HOUR

***** Link Maximum Conditions - 25YR10HR *****

(Time units - hours)

Link Name	Group Name	Max Time Flow	Max Flow (cfs)	Max Delta Q (cfs)	Max Time U/S Stage	Max US Stage (ft)	Max Time D/S Stage	Max DS Stage (ft)
CONTROL	BASE	12.78	27.93	0.61	12.78	38.65	0.00	33.80

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STA. 295+00 TO 326+00
PRE 25Y POST 25Y - 24 HOUR

***** Basin Summary - 25YR10HR *****

Basin Name:	EXISTING	PROPOSED
Group Name:	BASE	BASE
Node Name:	RUNOFF	POND8
Hydrograph Type:	UH	UH
Unit Hydrograph:	UH256	UH256
Peaking Factor:	256.00	256.00
Spec Time Inc (min):	3.44	2.48
Comp Time Inc (min):	3.44	2.48
Rainfall File:	FLMOD	FLMOD
Rainfall Amount (in):	8.00	8.00
Storm Duration (hr):	24.00	24.00
Status:	INACTIVE	ONSITE
Time of Conc. (min):	25.80	18.60
Lag Time (hr):	0.00	0.00
Area (acres):	16.80	16.80
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	84.00	91.00
DCIA (%):	0.00	0.00
Time Max (hrs):	12.21	12.11
Flow Max (cfs):	45.83	59.36
Runoff Volume (in):	6.09	6.92
Runoff Volume (cf):	371424	422009

sta.295+00 to sta.326+00

***** Input Report *****

-----Class: Node-----

Name: OUTFALL Base Flow(cfs): 0 Init Stage(ft): 33.8

Group: BASE Warn Stage(ft): 39

Comment:

Time(hrs) Stage(ft)

0 33.8

30 33.8

-----Class: Node-----

Name: POND8 Base Flow(cfs): 0 Init Stage(ft): 36.8

Group: BASE Warn Stage(ft): 39

Comment:

Stage(ft) Area(ac)

36 1.62

37 1.72

38 1.82

39 1.93

-----Class: Basin-----

Basin: EXISTING Node: RUNOFF Status: Inactive Type: SCS Unit Hydr

Group: BASE

Unit Hydrograph: UH256 Peak Factor: 256

Rainfall File: FLMOD Storm Duration(hrs): 24

Rainfall Amount(in): 8

Area(ac): 16.8 Concentration Time(min): 25.8

Curve #: 84 Time Shift(hrs): 0

DCIA(%): 0

-----Class: Basin-----

Basin: PROPOSED Node: POND8 Status: On Site Type: SCS Unit Hydr

Group: BASE

Unit Hydrograph: UH256 Peak Factor: 256

Rainfall File: FLMOD Storm Duration(hrs): 24

Rainfall Amount(in): 8

Area(ac): 16.8 Concentration Time(min): 18.6

Curve #: 91 Time Shift(hrs): 0

DCIA(%): 0

sta.295+00 to sta.326+00

***** Input Report *****

-----Class: Weir-----

Name: CONTROL From Node: POND8
Group: BASE To Node: OUTFALL
Count: 1

Type: Mavis Flow: Both Geometry: Rectangular

Span(in): 40
Rise(in): 999
Invert(ft): 36.8
Control Elev(ft): 36.8

TABLE

Bottom Clip(in): 0
Top Clip(in): 0
Weir Discharge Coef: 3.32
Orifice Discharge Coef: 0.6

-----Class: Simulation-----

C:\ICPR2\CR581B8\25YR10HR

Execution: Both

Header: STA. 295+00 TO 326+00

PRE 25Y POST 25Y - 24 HOUR

-----HYDRAULICS-----HYDROLOGY-----

Max Delta Z (ft): 1
Delta Z Factor: 0.05 Override Defaults: No
Time Step Optimizer: 10
Drop Structure Optimizer: 10
Sim Start Time(hrs): 0
Sim End Time(hrs): 30
Min Calc Time(sec): 0.5
Max Calc Time(sec): 60
To Hour: PInc(min): To Hour: PInc(min):
30 5 30 5

-----GROUP SELECTIONS-----

+ BASE [06/03/03]

Faller, Davis and Associates, Inc.

COMP. BY: C BROWN

CK. BY: 23

DATE: 6-2-03

SUBJECT: C.R. 581

SHEET NO.: 1 OF 2

PRELIMINARY POND SIZING (REVISED)

JOB NO.: 149.16

STA. 326+00 TO STA 371+00 (w/200' R/W)

$$\begin{aligned} \text{TOTAL AREA} &= \left[(37100 - 32600)(200) \right] \frac{1}{43560} + \text{POND SITE} \\ &= 20.7 + 3.7 = 24.4 \text{ AC} \end{aligned}$$

EXISTING (2-24' PAVEMENT WIDTH)

$$CN_{\text{EXIST}} = \frac{(5.0)(95) + (15.7)(80) + (3.7)(80)}{24.4} = 84$$

$$t_c = \frac{2250}{(15/\text{sec})(60 \frac{\text{sec}}{\text{min}})} = 37.5 \text{ MIN (DITCH TRAVEL @ 1 ft/sec)}$$

PROPOSED (2-48' PAVEMENT WIDTH + 5' SW + 10' MULTI USE + DHW POND)

$$CN_{\text{PROPOSED}} = \frac{(12.3)(95) + (9.2)(80) + (2.9)(95)}{24.4} = 91$$

$$t_c = 20 \text{ MIN}$$

Faller, Davis and Associates, Inc.

COMP. BY: C. BROWN

CK. BY: CB

DATE: 6-2-03

SHEET NO.: 20F2

JOB NO.: 149.16

SUBJECT: CR 581

PRELIMINARY POND SIZING (REVISED)

STAGE	AREA
40	2.59
41	2.72
42	2.84
43	2.97

TREATMENT REQUIRED (INCL DHW)

$$\text{AREA} = 12.3 + 2.9 = 15.1 \text{ AC}$$

$$\text{VOL REQ} = \frac{(15.2)(1.5)}{12} = 1.90 \text{ AC.FT}$$

@ 40.8 VOL = 2.1 AC.FT (TREATMENT)

@ 42.75 VOL = 7.6 AC.FT (TOTAL)

VOL = 5.5 AC.FT (ATTENUATION)

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STA. 326+00 TO 371+00
PRE 25Y POST 25Y - 24 HOUR

***** Node Maximum Conditions - 25YR24HR *****

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
OUTFALL	BASE	0.00	39.80	43.00	0.0000	0.00	12.97	33.93	0.00	0.00
POND9	BASE	12.97	42.75	43.00	0.0319	127963.76	12.17	82.60	12.97	33.93

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Copyright 1995, Streamline Technologies, Inc.

STA. 326+00 TO 371+00

PRE 25Y POST 25Y - 24 HOUR

***** Link Maximum Conditions - 25YR24HR *****

(Time units - hours)

Link Name	Group Name	Max Time Flow	Max Flow (cfs)	Max Delta Q (cfs)	Max Time U/S Stage	Max US Stage (ft)	Max Time D/S Stage	Max DS Stage (ft)
CONTROL	BASE	12.97	33.93	0.66	12.97	42.75	0.00	39.80

STA. 326+00 TO 371+00
PRE 25Y POST 25Y - 24 HOUR

***** Basin Summary - 25YR24HR *****

Basin Name:	EXISTING	PROPOSED
Group Name:	BASE	BASE
Node Name:	RUNOFF	POND9
Hydrograph Type:	UH	UH
Unit Hydrograph:	UH256	UH256
Peaking Factor:	256.00	256.00
Spec Time Inc (min):	5.00	2.67
Comp Time Inc (min):	5.00	2.67
Rainfall File:	FLMOD	FLMOD
Rainfall Amount (in):	8.00	8.00
Storm Duration (hr):	24.00	24.00
Status:	INACTIVE	ONSITE
Time of Conc. (min):	37.50	20.00
Lag Time (hr):	0.00	0.00
Area (acres):	24.40	24.40
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	84.00	91.00
DCIA (%):	0.00	0.00
Time Max (hrs):	12.33	12.13
Flow Max (cfs):	54.37	83.58
Runoff Volume (in):	6.09	6.92
Runoff Volume (cf):	539686	613105

sta.326+00 to sta.371+00

***** Input Report *****

-----Class: Node-----

Name: OUTFALL Base Flow(cfs): 0 Init Stage(ft): 39.8
Group: BASE Warn Stage(ft): 43

Comment:

Time(hrs)	Stage(ft)
0	39.8
30	39.8

-----Class: Node-----

Name: POND9 Base Flow(cfs): 0 Init Stage(ft): 40.8
Group: BASE Warn Stage(ft): 43

Comment:

Stage(ft)	Area(ac)
40	2.59
41	2.72
42	2.84
43	2.97

-----Class: Basin-----

Basin: EXISTING Node: RUNOFF Status: Inactive Type: SCS Unit Hydr
Group: BASE

Unit Hydrograph: UH256 Peak Factor: 256
Rainfall File: FLMOD Storm Duration(hrs): 24
Rainfall Amount(in): 8
Area(ac): 24.4 Concentration Time(min): 37.5
Curve #: 84 Time Shift(hrs): 0
DCIA(%): 0

-----Class: Basin-----

Basin: PROPOSED Node: POND9 Status: On Site Type: SCS Unit Hydr
Group: BASE

Unit Hydrograph: UH256 Peak Factor: 256
Rainfall File: FLMOD Storm Duration(hrs): 24
Rainfall Amount(in): 8
Area(ac): 24.4 Concentration Time(min): 20
Curve #: 91 Time Shift(hrs): 0
DCIA(%): 0

sta.326+00 to sta.371+00

***** Input Report *****

-----Class: Weir-----

Name: CONTROL From Node: POND9
Group: BASE To Node: OUTFALL
Count: 1

Type: Mavis Flow: Both Geometry: Rectangular

Span(in): 45
Rise(in): 999
Invert(ft): 40.8
Control Elev(ft): 40.8

TABLE

Bottom Clip(in): 0
Top Clip(in): 0
Weir Discharge Coef: 3.32
Orifice Discharge Coef: 0.6

-----Class: Simulation-----

C:\ICPR2\CR581B9\25YR24HR

Execution: Both

Header: STA. 326+00 TO 371+00
PRE 25Y POST 25Y - 24 HOUR

-----HYDRAULICS-----HYDROLOGY-----

Max Delta Z (ft): 1
Delta Z Factor: 0.05 Override Defaults: No
Time Step Optimizer: 10
Drop Structure Optimizer: 10
Sim Start Time(hrs): 0
Sim End Time(hrs): 30
Min Calc Time(sec): 0.5
Max Calc Time(sec): 60
To Hour: PInc(min): To Hour: PInc(min):
30 5 30 5

-----GROUP SELECTIONS-----

+ BASE [06/02/03]

SUBJECT: C.R. 581PRELIMINARY POND SIZING (REVISED)

STA. 371+00 TO STA 432+00

$$\begin{aligned} \text{TOTAL AREA} &= [(43200 - 37100)(200)] \frac{1}{43560} + \text{EXIST WETLANDS} \\ &= 28.0 \text{ AC} + 7.1 \text{ AC} = 35.1 \text{ AC} \end{aligned}$$

EXISTING (2-24" PAVEMENT WIDTH)

$$CN_{\text{EXIST}} = \frac{(6.7)(98) + (22.7)(80) + (5.7)(98)}{35.1} = 86$$

$$t_c = \frac{6100}{(1 \text{ f/sec})(60 \frac{\text{sec}}{\text{MIN}})} = 102 \text{ MIN (DITCH TRAVEL @ 1 f/sec)}$$

PROPOSED (2-48' PAVEMENT WIDTH + 5'SW + 10' MULTI USE + DHW POND)

$$CN_{\text{PROPOSED}} = \frac{(16.7)(98) + (5.8)(98) + (12.6)(80)}{35.1} = 92$$

$$t_c = \frac{6100}{(2.5 \text{ f/sec})(60 \frac{\text{sec}}{\text{MIN}})} = 41 \text{ MIN (STORMSEWER TRAVEL @ 2.5 f/sec)}$$

SUBJECT: CR 581DATE: 5-29-03SHEET NO.: 2 OF 2JOB NO.: 149.16PRELIMINARY POND SIZING (REVISED)

STAGE	AREA
45	5.50
46	5.68
47	5.87
48	6.05

TREATMENT REQUIRED

$$\text{AREA} = 16.7 + 5.8 = 22.5$$

$$\text{VOL REQ} = \frac{(22.5)(1.5)}{12} = 2.8 \text{ AC.FT}$$

@ 45.5 VOL = 2.8 AC.FT (TREATMENT)

@ 47.6 VOL = 14.9 AC.FT (12.1 AC.FT ATTENUATION)

sta.371+00 to sta.432+00

***** Node Maximum Conditions - 25YR24HR *****

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
OUTFALL	BASE	0.00	45.00	48.00	0.0000	0.00	15.07	16.92	0.00	0.00
POND10	BASE	15.07	47.61	48.00	0.0182	260456.51	12.42	82.32	15.07	16.92

sta.371+00 to sta.432+00

***** Link Maximum Conditions - 25YR24HR *****

(Time units - hours)

Link Name	Group Name	Max Time Flow	Max Flow (cfs)	Max Delta Q (cfs)	Max Time U/S Stage	Max US Stage (ft)	Max Time D/S Stage	Max DS Stage (ft)
CONTROL	BASE	15.07	16.92	0.16	15.07	47.61	0.00	45.00

sta.371+00 to sta.432+00

***** Basin Summary - 25YR24HR *****

	EXISTING	PROPOSED
Basin Name:	EXISTING	PROPOSED
Group Name:	BASE	BASE
Node Name:	RUNOFF	POND10
Hydrograph Type:	UH	UH
Unit Hydrograph:	UH256	UH256
Peaking Factor:	256.00	256.00
Spec Time Inc (min):	13.60	5.47
Comp Time Inc (min):	13.60	5.47
Rainfall File:	FLMOD	FLMOD
Rainfall Amount (in):	8.00	8.00
Storm Duration (hr):	24.00	24.00
Status:	INACTIVE	ONSITE
Time of Conc. (min):	102.00	41.00
Lag Time (hr):	0.00	0.00
Area (acres):	35.10	35.10
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	86.00	92.00
DCIA (%):	0.00	0.00
Time Max (hrs):	13.15	12.39
Flow Max (cfs):	41.84	82.76
Runoff Volume (in):	6.31	7.04
Runoff Volume (cf):	804454	896747

sta.371+00 to sta.432+00

***** Input Report *****

-----Class: Weir-----

Name: CONTROL From Node: POND10
Group: BASE To Node: OUTFALL
Count: 1

Type: Mavis Flow: Both Geometry: Rectangular

Span(in): 20
Rise(in): 999
Invert(ft): 45.5
Control Elev(ft): 45.5

TABLE

Bottom Clip(in): 0
Top Clip(in): 0
Weir Discharge Coef: 3.32
Orifice Discharge Coef: 0.6

-----Class: Simulation-----

C:\ICPR2\CR58110\25YR24HR
Execution: Both
Header: sta.371+00 to sta.432+00

-----HYDRAULICS-----HYDROLOGY-----

Max Delta Z (ft): 0.5
Delta Z Factor: 0.05 Override Defaults: No
Time Step Optimizer: 10
Drop Structure Optimizer: 10
Sim Start Time(hrs): 0
Sim End Time(hrs): 30
Min Calc Time(sec): 0.5
Max Calc Time(sec): 60
To Hour: PInc(min): To Hour: PInc(min):
30 5 30 5

-----GROUP SELECTIONS-----

+ BASE [05/30/03]

SUBJECT: C.R. 581

DATE: 5-29-03

PRELIMINARY POND SIZING (REVISED)

SHEET NO.: 1 OF 2

JOB NO.: 149.16

STA. 432+00 TO STA. 451+00

$$\text{TOTAL AREA} = [(45100 - 43200)(200)] \left(\frac{1}{43560} \right) + \text{POND SITE (2.5 AC)}$$

$$= 11.2 \text{ AC}$$

EXISTING (2-24" PAVEMENT WIDTH)

$$CN_{\text{EXIST}} = \frac{(2.1)(98) + (2.5)(80) + (6.6)(80)}{11.2} = 84$$

$$t_c = \frac{(1900)}{(1 \text{ f/sec}) \left(60 \frac{\text{sec}}{\text{MIN}} \right)} = 32 \text{ MIN (DITCH TRAVEL @ 1 f/sec)}$$

PROPOSED (2-48' PAVEMENT WIDTH + 5' SW + 10' MULTI USE + DHW POND)

$$CN_{\text{PROPOSED}} = \frac{(5.2)(98) + (1.7)(98) + (4.3)(80)}{11.2} = 91$$

$$t_c = \frac{(1900)}{(2.5 \text{ f/sec}) \left(60 \frac{\text{sec}}{\text{MIN}} \right)} = 13 \text{ MIN}$$

Faller, Davis and Associates, Inc.

COMP. BY: C. BROWN

CK. BY: JB

SUBJECT: C.R. 581

DATE: 5-29-03

PRELIMINARY POND SIZING (REVISED)

SHEET NO.: 2 OF 2

JOB NO.: 149.16

STAGE	AREA
44	1.50
45	1.60
46	1.69
47	1.79

TREATMENT REQUIRED

$$\text{AREA} = 5.2 + 1.7 = 6.9$$

$$\text{VOL REQ} = \frac{(6.9)(1.5)}{12} = 0.86 \text{ AC FT}$$

@ 44.6 VOL = 0.91 AC FT

@ 46.1 VOL = 3.35 AC FT (2.44 AC FT ATTENUATION)

sta.432+00 to sta.451+00

***** Node Maximum Conditions - 25YR24HR *****

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
OUTFALL	BASE	0.00	44.00	44.00	0.0000	0.00	12.72	17.08	0.00	0.00
POND11	BASE	12.72	46.22	47.00	0.0241	74564.40	12.09	45.90	12.72	17.08

sta.432+00 to sta.451+00

***** Link Maximum Conditions - 25YR24HR *****

(Time units - hours)

Link Name	Group Name	Max Time Flow	Max Flow (cfs)	Max Delta Q (cfs)	Max Time U/S Stage	Max US Stage (ft)	Max Time D/S Stage	Max DS Stage (ft)
CONTROL	BASE	12.72	17.08	0.31	12.72	46.22	0.00	44.00

sta.432+00 to sta.451+00

***** Basin Summary - 25YR24HR *****

Basin Name:	EXISTING	PROPOSED
Group Name:	BASE	BASE
Node Name:	RUNOFF	POND11
Hydrograph Type:	UH	UH

Unit Hydrograph:	UH256	UH256
Peaking Factor:	256.00	256.00
Spec Time Inc (min):	4.27	1.73
Comp Time Inc (min):	4.27	1.73
Rainfall File:	FLMOD	FLMOD
Rainfall Amount (in):	8.00	8.00
Storm Duration (hr):	24.00	24.00
Status:	INACTIVE	ONSITE
Time of Conc. (min):	32.00	13.00
Lag Time (hr):	0.00	0.00
Area (acres):	11.20	11.20
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	84.00	91.00
DCIA (%):	0.00	0.00

Time Max (hrs):	12.30	12.08
Flow Max (cfs):	27.20	46.29
Runoff Volume (in):	6.09	6.92
Runoff Volume (cf):	247614	281354

sta.432+00 to sta.451+00

***** Input Report *****

-----Class: Node-----

Name: OUTFALL Base Flow(cfs): 0 Init Stage(ft): 44
Group: BASE Warn Stage(ft): 44

Comment:

Time(hrs)	Stage(ft)
0	44
30	44

-----Class: Node-----

Name: POND11 Base Flow(cfs): 0 Init Stage(ft): 44.6
Group: BASE Warn Stage(ft): 47

Comment:

Stage(ft)	Area(ac)
44	1.5
45	1.6
46	1.69
47	1.79

-----Class: Basin-----

Basin: EXISTING Node: RUNOFF Status: Inactive Type: SCS Unit Hydr
Group: BASE

Unit Hydrograph: UH256 Peak Factor: 256

Rainfall File: FLMOD Storm Duration(hrs): 24

Rainfall Amount(in): 8

Area(ac): 11.2 Concentration Time(min): 32

Curve #: 84 Time Shift(hrs): 0

DCIA(%): 0

-----Class: Basin-----

Basin: PROPOSED Node: POND11 Status: On Site Type: SCS Unit Hydr
Group: BASE

Unit Hydrograph: UH256 Peak Factor: 256

Rainfall File: FLMOD Storm Duration(hrs): 24

Rainfall Amount(in): 8

Area(ac): 11.2 Concentration Time(min): 13

Curve #: 91 Time Shift(hrs): 0

DCIA(%): 0

sta.432+00 to sta.451+00

***** Input Report *****

-----Class: Weir-----

Name: CONTROL From Node: POND11
Group: BASE To Node: OUTFALL
Count: 1

Type: Mavis Flow: Both Geometry: Rectangular

Span(in): 30
Rise(in): 999
Invert(ft): 44.6
Control Elev(ft): 44.6

TABLE

Bottom Clip(in): 0
Top Clip(in): 0
Weir Discharge Coef: 3.32
Orifice Discharge Coef: 0.6

-----Class: Simulation-----

C:\ICPR2\CR58111\25YR24HR

Execution: Both

Header: sta.432+00 to sta.451+00

-----HYDRAULICS-----HYDROLOGY-----

Max Delta Z (ft): 0.5
Delta Z Factor: 0.05 Override Defaults: No
Time Step Optimizer: 10
Drop Structure Optimizer: 10
Sim Start Time(hrs): 0
Sim End Time(hrs): 30
Min Calc Time(sec): 0.5
Max Calc Time(sec): 60
To Hour: PInc(min): To Hour: PInc(min):
30 5 30 5

-----GROUP SELECTIONS-----

+ BASE [06/03/03]

SUBJECT: C.R. 581

PRELIMINARY POND SIZING (REVISED)

STA. 451+00 TO STA 475+00

$$\text{TOTAL AREA} = [(47500 - 45100)(200)] \frac{1}{43560} + 3.1 \text{ AC BND}$$

EXISTING (2-24' PAVEMENT WIDTH)

$$CN_{\text{EXIST}} = \frac{(2.6)(98) + (3.1)(80) + (8.4)(80)}{14.1} = 83$$

$$t_c = \frac{2400}{(1 \text{ f/sec})(60 \frac{\text{sec}}{\text{MIN}})} = 40 \text{ MIN (DITCH TRAVEL @ 1 f/sec)}$$

PROPOSED (4-48' PAVEMENT WIDTH + 5'SW + 10' MULTI USE + DHW POND)

$$CN_{\text{PROP}} = \frac{(6.6)(98) + (2.2)(98) + (5.3)(80)}{14.1} = 91$$

$$t_c = \frac{2400}{(2.5 \text{ f/sec})(60)} = 16 \text{ MIN} + 10 \text{ MIN (STREET @ 2.5 f/sec)}$$

SUBJECT: C.R. 581DATE: 5/29/03SHEET NO.: 2 OF 2JOB NO.: 149.16PRELIMINARY POND SIZING (REVISED)

STAGE	AREA
45	2.00
46	2.11
47	2.22
48	2.34

TREATMENT REQUIRED

$$\text{AREA} = 6.6 \text{ AC} + 2.2 \text{ AC} =$$

$$\text{VOL REQ} = \frac{(8.8 \text{ AC})(1.5)}{12}$$

$$= 1.1 \text{ AC} \cdot \text{FT}$$

$$\textcircled{c} \text{ 45.6 VOL} = 1.2 \text{ AC} \cdot \text{FT (TREATMENT)}$$

$$\textcircled{c} \text{ 47.0 VOL} = 2.2 \text{ AC} \cdot \text{FT (TOTAL)}$$

$$\text{VOL} = 1.0 \text{ AC} \cdot \text{FT (ATTENUATION)}$$

sta.451+00 to sta.475+00

***** Node Maximum Conditions - 25YR24HR *****

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
OUTFALL	BASE	0.00	45.00	48.00	0.0000	0.00	13.13	18.33	0.00	0.00
POND12	BASE	13.13	47.00	48.00	0.0200	96703.24	12.25	41.88	13.13	18.33

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sta.451+00 to sta.475+00

***** Link Maximum Conditions - 25YR24HR *****

(Time units - hours)

Link Name	Group Name	Max Time Flow	Max Flow (cfs)	Max Delta Q (cfs)	Max Time U/S Stage	Max US Stage (ft)	Max Time D/S Stage	Max DS Stage (ft)
CONTROL	BASE	13.13	18.33	0.32	13.13	47.00	0.00	45.00

sta.451+00 to sta.475+00

***** Basin Summary - 25YR24HR *****

Basin Name:	EXISTING	PROPOSED
Group Name:	BASE	BASE
Node Name:	RUNOFF	POND12
Hydrograph Type:	UH	UH

Unit Hydrograph:	UH256	UH256
Peaking Factor:	256.00	256.00
Spec Time Inc (min):	5.33	3.47
Comp Time Inc (min):	5.33	3.47
Rainfall File:	FLMOD	FLMOD
Rainfall Amount (in):	8.00	8.00
Storm Duration (hr):	24.00	24.00
Status:	INACTIVE	ONSITE
Time of Conc. (min):	40.00	26.00
Lag Time (hr):	0.00	0.00
Area (acres):	14.10	14.10
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	83.00	91.00
DCIA (%):	0.00	0.00

Time Max (hrs):	12.36	12.19
Flow Max (cfs):	29.68	42.20
Runoff Volume (in):	5.98	6.92
Runoff Volume (cf):	305838	354204

sta. 451+00 to sta.475+00

***** Input Report *****

-----Class: Node-----

Name: OUTFALL Base Flow(cfs): 0 Init Stage(ft): 45
Group: BASE Warn Stage(ft): 48
Comment:

Time(hrs)	Stage(ft)
0	45
30	45

-----Class: Node-----

Name: POND12 Base Flow(cfs): 0 Init Stage(ft): 45.5
Group: BASE Warn Stage(ft): 48
Comment:

Stage(ft)	Area(ac)
45	2
46	2.11
47	2.22
48	2.34

-----Class: Basin-----

Basin: EXISTING Node: RUNOFF Status: Inactive Type: SCS Unit Hydr
Group: BASE
Unit Hydrograph: UH256 Peak Factor: 256
Rainfall File: FLMOD Storm Duration(hrs): 24
Rainfall Amount(in): 8
Area(ac): 14.1 Concentration Time(min): 40
Curve #: 83 Time Shift(hrs): 0
DCIA(%): 0

existing conditions (sta.451+00 to sta.475+00)

-----Class: Basin-----

Basin: PROPOSED Node: POND12 Status: On Site Type: SCS Unit Hydr
Group: BASE
Unit Hydrograph: UH256 Peak Factor: 256
Rainfall File: FLMOD Storm Duration(hrs): 24
Rainfall Amount(in): 8
Area(ac): 14.1 Concentration Time(min): 26
Curve #: 91 Time Shift(hrs): 0
DCIA(%): 0

sta. 451+00 to sta.475+00

***** Input Report *****

-----Class: Weir-----

Name: CONTROL From Node: POND12
Group: BASE To Node: OUTFALL
Count: 2

Type: Mavis Flow: Both Geometry: Rectangular

Span(in): 20
Rise(in): 999
Invert(ft): 45.6
Control Elev(ft): 45.6

TABLE

Bottom Clip(in): 0
Top Clip(in): 0
Weir Discharge Coef: 3.32
Orifice Discharge Coef: 0.6

-----Class: Simulation-----

C:\ICPR2\CR58112\25YR24HR

Execution: Both

Header: sta.451+00 to sta.475+00

-----HYDRAULICS-----HYDROLOGY-----

Max Delta Z (ft): 1
Delta Z Factor: 0.05 Override Defaults: No
Time Step Optimizer: 10
Drop Structure Optimizer: 10
Sim Start Time(hrs): 0
Sim End Time(hrs): 30
Min Calc Time(sec): 0.5
Max Calc Time(sec): 60
To Hour: PInc(min): To Hour: PInc(min):
30 15 30 15

-----GROUP SELECTIONS-----

+ BASE [05/29/03]

SUBJECT: C.R. 581DATE: 5-29-03SHEET NO.: 1 OF 2JOB NO.: 149.16STA. 475+00 TO STA 557+00 W/200 FT R/W

$$\begin{aligned} \text{TOTAL AREA} &= \text{PROJECT LIMITS} + \text{POND SITE} \\ &= [(55700 - 47500)(200)](1/43500) + 7.1 \\ &= 44.8 \text{ AC} \end{aligned}$$

EXISTING (2-24" PAVEMENT WIDTH)

SURFACE RUNOFF FROM STA. 537+00 TO STA 557+00 IS DISCHARGING TO THE PROPOSED OUTFALL POINT @ STA 537+00

$$CN_{\text{EXIST}} = \frac{(1.1)(98) + (8.1)(80) + (7.1)(80)}{16.3 \text{ AC}} = 81$$

TIME OF CONCENTRATION $v_c = 2500 \text{ FT}$ ditch travel @ 1 ft/sec

$$t_c = \frac{2000}{(1 \text{ ft/sec})(60 \frac{\text{SEC}}{\text{MIN}})} = 33 \text{ MIN}$$

PROPOSED (2-48' PAVEMENT WIDTH) + 5' SW + 10' MULTIOUSE

$$CN_{\text{PROPOSED}} = \frac{(22.4)(98) + (15.3 + 1.2)(80) + (5.9)(98)}{44.8} = 91$$

SUBJECT: C.R. 581DATE: 5-29-03PRELIMINARY POND SIZING (REVISED)SHEET NO.: 2 OF 2JOB NO.: 149.16

$$t_c = \frac{4600}{(2.5)(60)} = 31 \text{ MIN (STORMSEWER TRAVEL @ 2.5 f/sec)}$$

STAGE	AREA
52	5.50
53	5.68
54	5.87
55	6.05

TREATMENT REQUIRED

$$\begin{aligned} \text{AREA TO TREAT} &= \text{IMPERVIOUS} + \text{POND (@ DHW)} \\ &= 22.4 \text{ AC} + 5.9 \text{ AC} = 28.3 \text{ AC} \\ \text{TREATMENT REQ} &= \frac{(28.3)(1.5)}{12} = 3.5 \text{ AC}\cdot\text{FT} \end{aligned}$$

$$\text{@ 52.7 VOL} = 3.9 \text{ AC}\cdot\text{FT (TREATMENT)}$$

$$\text{@ 54.8 VOL} = 16.1 \text{ AC}\cdot\text{FT (TOTAL)}$$

$$\text{VOL} = 12.2 \text{ AC}\cdot\text{FT (ATTENUATION)}$$

sta.475+00 to sta.557+00

***** Node Maximum Conditions - CR581B13 *****

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
OUTFALL	BASE	0.00	50.00	53.00	0.0000	0.00	13.96	34.42	0.00	0.00
POND13	BASE	13.96	54.83	55.00	0.0247	262211.68	12.26	121.53	13.96	34.42

sta.475+00 to sta.557+00

***** Link Maximum Conditions - CR581B13 *****

(Time units - hours)

Link Name	Group Name	Max Time Flow	Max Flow (cfs)	Max Delta Q (cfs)	Max Time U/S Stage	Max US Stage (ft)	Max Time D/S Stage	Max DS Stage (ft)
CONTROL	BASE	13.96	34.42	0.42	13.96	54.83	0.00	50.00

sta.475+00 to sta.557+00

***** Basin Summary - CR581B13 *****

	EXISTING	PROPOSED
Basin Name:	BASE	BASE
Group Name:	BASE	BASE
Node Name:	RUNOFF	POND13
Hydrograph Type:	UH	UH
Unit Hydrograph:	UH256	UH256
Peaking Factor:	256.00	256.00
Spec Time Inc (min):	4.40	4.13
Comp Time Inc (min):	4.40	4.13
Rainfall File:	FLMOD	FLMOD
Rainfall Amount (in):	8.00	8.00
Storm Duration (hr):	24.00	24.00
Status:	INACTIVE	ONSITE
Time of Conc. (min):	33.00	31.00
Lag Time (hr):	0.00	0.00
Area (acres):	16.30	44.80
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	81.00	91.00
DCIA (%):	0.00	0.00
Time Max (hrs):	12.32	12.26
Flow Max (cfs):	36.91	122.18
Runoff Volume (in):	5.74	6.92
Runoff Volume (cf):	339561	1125360

sta.475+00 to sta.557+00

***** Input Report *****

-----Class: Node-----
Name: OUTFALL Base Flow(cfs): 0 Init Stage(ft): 50
Group: BASE Warn Stage(ft): 53
Comment:

Time(hrs)	Stage(ft)
0	50
30	50

-----Class: Node-----
Name: POND13 Base Flow(cfs): 0 Init Stage(ft): 52.5
Group: BASE Warn Stage(ft): 55
Comment:

Stage(ft)	Area(ac)
52	5.5
53	5.68
54	5.87
55	6.05

-----Class: Basin-----
Basin: EXISTING Node: RUNOFF Status: Inactive Type: SCS Unit Hydr
Group: BASE
Unit Hydrograph: UH256 Peak Factor: 256
Rainfall File: FLMOD Storm Duration(hrs): 24
Rainfall Amount(in): 8
Area(ac): 16.3 Concentration Time(min): 33
Curve #: 81 Time Shift(hrs): 0
DCIA(%): 0

existing conditions - sta.475+00 to sta.557+00

-----Class: Basin-----
Basin: PROPOSED Node: POND13 Status: On Site Type: SCS Unit Hydr
Group: BASE
Unit Hydrograph: UH256 Peak Factor: 256
Rainfall File: FLMOD Storm Duration(hrs): 24
Rainfall Amount(in): 8
Area(ac): 44.8 Concentration Time(min): 31
Curve #: 91 Time Shift(hrs): 0
DCIA(%): 0

runoff after widening - sta.475+00 to sta.557+00

sta.475+00 to sta.557+00

***** Input Report *****

-----Class: Weir-----

Name: CONTROL From Node: POND13
Group: BASE To Node: OUTFALL
Count: 1

Type: Mavis Flow: Both Geometry: Rectangular

Span(in): 40
Rise(in): 999
Invert(ft): 52.7
Control Elev(ft): 52.7

TABLE

Bottom Clip(in): 0
Top Clip(in): 0
Weir Discharge Coef: 3.32
Orifice Discharge Coef: 0.6

-----Class: Simulation-----

C:\ICPR2\CR58113\CR581B13

Execution: Both

Header: sta.475+00 to sta.557+00

-----HYDRAULICS-----HYDROLOGY-----

Max Delta Z (ft): 0.5
Delta Z Factor: 0.05 Override Defaults: No
Time Step Optimizer: 10
Drop Structure Optimizer: 10
Sim Start Time(hrs): 0
Sim End Time(hrs): 30
Min Calc Time(sec): 0.5
Max Calc Time(sec): 60
To Hour: Pinc(min): To Hour: Pinc(min):
30 15 30 15

-----GROUP SELECTIONS-----

+ BASE [05/29/03]

SUBJECT: C.R. 581

PRELIMINARY POND SIZING (REVISED)STA. 557+00 TO STA 575+00 (END) W/ 200 FT R/W

EXISTING (565+00 TO 575+00)

THE PROPOSED POND SITE IS LOCATED WHERE ONLY THE
SOUTAROUND (565+00 TO 575+00) WILL PRODUCE RUNOFF IN
THIS SECTION + PROPOSED POND SITE

$$CN_{EXIST} = \frac{(0.6 AC)(98) + (1.7)(80) + (4.1)(80)}{0.4 AC} = 82$$

time of concentration

$$n_v = 1000 \text{ FT @ } V = 0.5 \text{ f/sec}$$

$$t_c = \frac{1000}{(0.5)(60)} = 33 \text{ MIN}$$

PROPOSED (557+00 TO 575+00)

$$CN = \frac{(4.9)(98) + (1.4)(80) + (4.4)(80)}{10.7} = 91$$

TIME OF CONCENTRATION

$$t_c = 20 \text{ MIN}$$

SUBJECT: _____

EXISTING GROUND @ 57.5
 SHWT (ASSUMED @ 1 FT) = 56.5

TREATMENT VOLUME (IMPERVIOUS + POND AREA @ TREATMENT)

$$\text{AREA} = (119)(1800) \left(\frac{1}{425600} \right) + 1.4 \text{ AC}$$

$$= 6.3 \text{ AC}$$

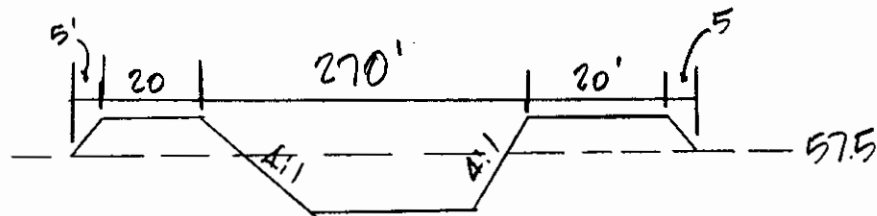
$$\text{TREATMENT VOL} = \frac{(6.3)(1.5)}{12} = 0.79 \text{ AC.FT}$$

STAGE	AREA
56.5	1.39
57.5	1.48
58.5	1.58
59.5	1.67

@ 57.1 VOL = 0.85 AC.FT (TREATMENT)

@ 59.3 VOL = 3.40 AC.FT (ATTENUATION)

TOTAL = 4.25 AC.FT



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sta.557+00 to sta.575+00

***** Node Maximum Conditions - 25YR24HR *****

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
OUTFALL	BASE	0.00	50.00	53.00	0.0000	0.00	13.56	7.32	0.00	0.00
POND14	BASE	13.56	59.32	59.50	0.0248	72042.30	12.25	34.36	13.56	7.32

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sta.557+00 to sta.575+00

***** Link Maximum Conditions - 25YR24HR *****

(Time units - hours)

Link Name	Group Name	Max Time Flow	Max Flow (cfs)	Max Delta Q (cfs)	Max Time U/S Stage	Max US Stage (ft)	Max Time D/S Stage	Max DS Stage (ft)
CONTROL	BASE	13.56	7.32	0.08	13.56	59.32	0.00	50.00

sta.557+00 to sta.575+00

***** Basin Summary - 25YR24HR *****

Basin Name:	EXISTING	PRPSED14
Group Name:	BASE	BASE
Node Name:	RUNOFF	POND14
Hydrograph Type:	UH	UH

Unit Hydrograph:	UH256	UH256
Peaking Factor:	256.00	256.00
Spec Time Inc (min):	4.40	2.67
Comp Time Inc (min):	4.40	2.67
Rainfall File:	FLMOD	FLMOD
Rainfall Amount (in):	8.00	8.00
Storm Duration (hr):	24.00	24.00
Status:	ONSITE	ONSITE
Time of Conc. (min):	33.00	20.00
Lag Time (hr):	0.00	0.00
Area (acres):	6.40	10.70
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	82.00	91.00
DCIA (%):	0.00	0.00

Time Max (hrs):	12.32	12.13
Flow Max (cfs):	14.76	36.65
Runoff Volume (in):	5.86	6.92
Runoff Volume (cf):	136053	268862

sta 557+00 to sta 575+00 (end)

***** Input Report *****

-----Class: Node-----

Name: OUTFALL Base Flow(cfs): 0 Init Stage(ft): 50
Group: BASE Warn Stage(ft): 53

Comment:

Table with 2 columns: Time(hrs), Stage(ft). Rows: 0 50, 30 50

-----Class: Node-----

Name: POND14 Base Flow(cfs): 0 Init Stage(ft): 57.1
Group: BASE Warn Stage(ft): 59.5

Comment:

Table with 2 columns: Stage(ft), Area(ac). Rows: 56.5 1.39, 57.5 1.48, 58.5 1.58, 59.5 1.67

-----Class: Basin-----

Basin: EXISTING Node: RUNOFF Status: On Site Type: SCS Unit Hydr
Group: BASE

Unit Hydrograph: UH256 Peak Factor: 256
Rainfall File: FLMOD Storm Duration(hrs): 24
Rainfall Amount(in): 8
Area(ac): 6.4 Concentration Time(min): 33
Curve #: 82 Time Shift(hrs): 0
DCIA(%): 0

predevelopment southbound only

-----Class: Basin-----

Basin: PRPSED14 Node: POND14 Status: On Site Type: SCS Unit Hydr
Group: BASE

Unit Hydrograph: UH256 Peak Factor: 256
Rainfall File: FLMOD Storm Duration(hrs): 24
Rainfall Amount(in): 8
Area(ac): 10.7 Concentration Time(min): 20
Curve #: 91 Time Shift(hrs): 0
DCIA(%): 0

postdevelopment

sta 557+00 to sta 575+00 (end)

***** Input Report *****

-----Class: Drop Structure-----

Name: CONTROL From Node: POND14 Length(ft): 50
Group: BASE To Node: OUTFALL Count: 1

Outlet Cntrl Spec: Use dn or tw Inlet Cntrl Spec: Use dn
Upstream Geometry: Circular Downstream Geometry: Circular

	UPSTREAM	DOWNSTREAM
Span(in):	24	24
Rise(in):	24	24
Invert(ft):	48	47.8
Manning's N:	0.012	0.012
Top Clip(in):	0	0
Bottom Clip(in):	0	0

Entrance Loss Coef: 0.6 Flow: Both
Exit Loss Coef: 0.6 Equation: Aver Conveyance

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall 1 1
Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall 1 1

*** Weir 1 of 1 for Drop Structure CONTROL *** [TABLE]

Count: 2 Bottom Clip(in): 0
Type: Mavis Top Clip(in): 0
Flow: Both Weir Discharge Coef: 3.32
Geometry: Rectangular Orifice Discharge Coef: 0.6

Span(in): 4 Invert(ft): 57.1
Rise(in): 999 Control Elev(ft): 57.1

sta 557+00 to sta 575+00 (end)

***** Input Report *****

-----Class: Simulation-----

C:\ICPR2\CR581\25YR24HR

Execution: Both

Header: sta.557+00 to sta.575+00

-----HYDRAULICS-----HYDROLOGY-----

Max Delta Z (ft): 0.5

Delta Z Factor: 0.05

Override Defaults: No

Time Step Optimizer: 10

Drop Structure Optimizer: 10

Sim Start Time(hrs): 0

Sim End Time(hrs): 30

Min Calc Time(sec): 0.5

Max Calc Time(sec): 60

To Hour: PInc(min):

30 15

To Hour: PInc(min):

30 15

-----GROUP SELECTIONS-----

+ BASE [05/28/03]

APPENDIX C
ALTERNATIVE POND SITES



MATCH LINE
STA. 200+00.00

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS
 URS Corporation Southern
 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. 581 / S.R. 581	HILLSBOROUGH & PASCO	405492.1 & 408460.1

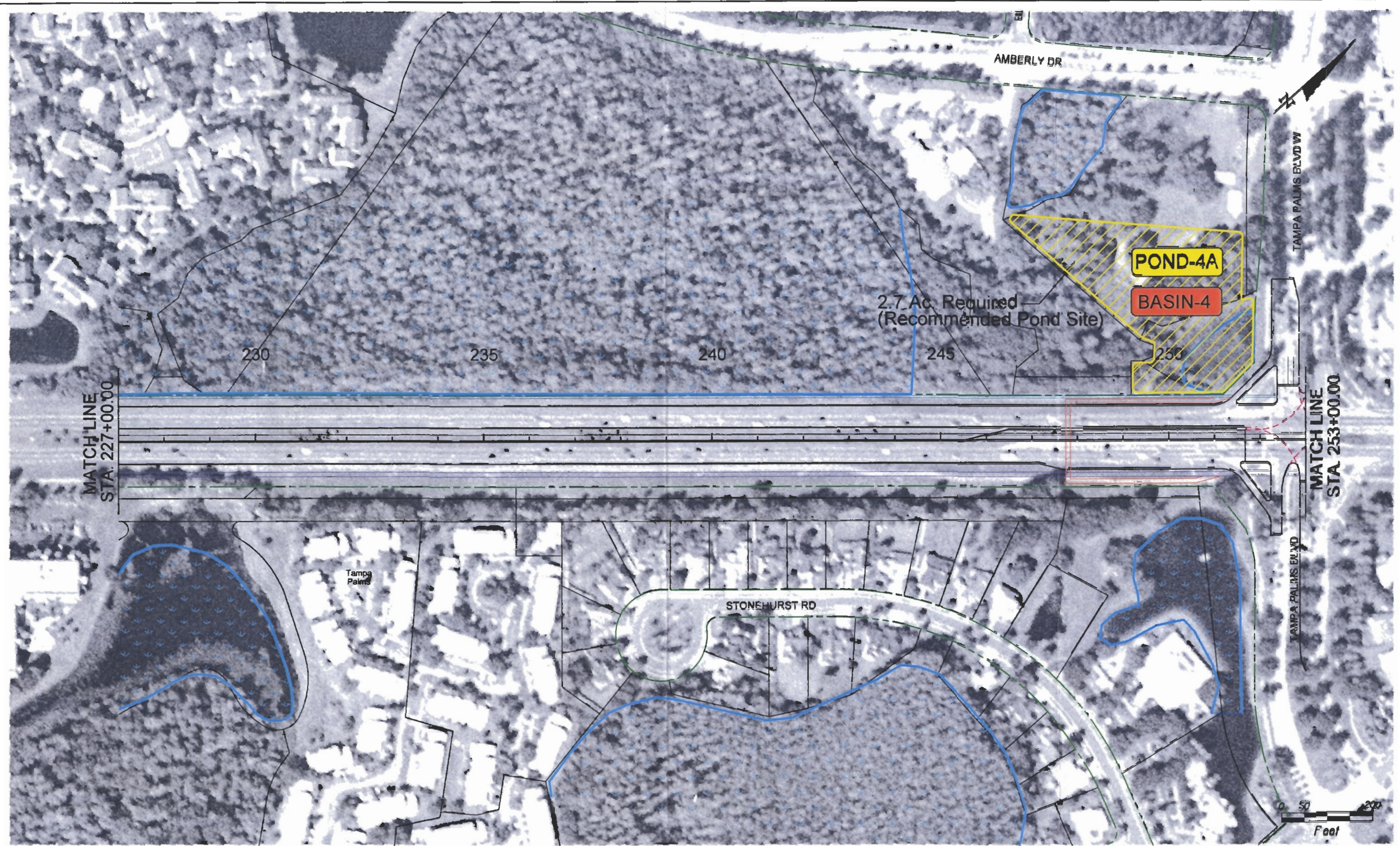
C.R. 581 / S.R. 581 (BRUCE B. DOWNS BOULEVARD)
 PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
 FROM BEARSS AVENUE TO S.R. 54
 ALTERNATIVE POND SITES - HILLSBOROUGH COUNTY

SHEET NO.
1



REVISIONS		DESCRIPTION	
DATE	BY	DATE	BY

		URS Corporation Southern 7650 West Courtney Campbell Causeway Tampa, FL 33607-1462 No. 00000002	
DEPARTMENT OF TRANSPORTATION COUNTY HILLSBOROUGH & PASCO		FINANCIAL PROJECT ID 405492 / & 408460 /	
ROAD NO. C.R. 581 / S.R. 581		PROJECT DEVELOPMENT AND ENVIRONMENT STUDY FROM BEARSS AVENUE TO S.R. 54 ALTERNATIVE POND SITES - HILLSBOROUGH COUNTY	
SHEET NO. 2		DATE: 11-30-03 09:22 FILE: H:\V\581\581\0001\0001.dwg	



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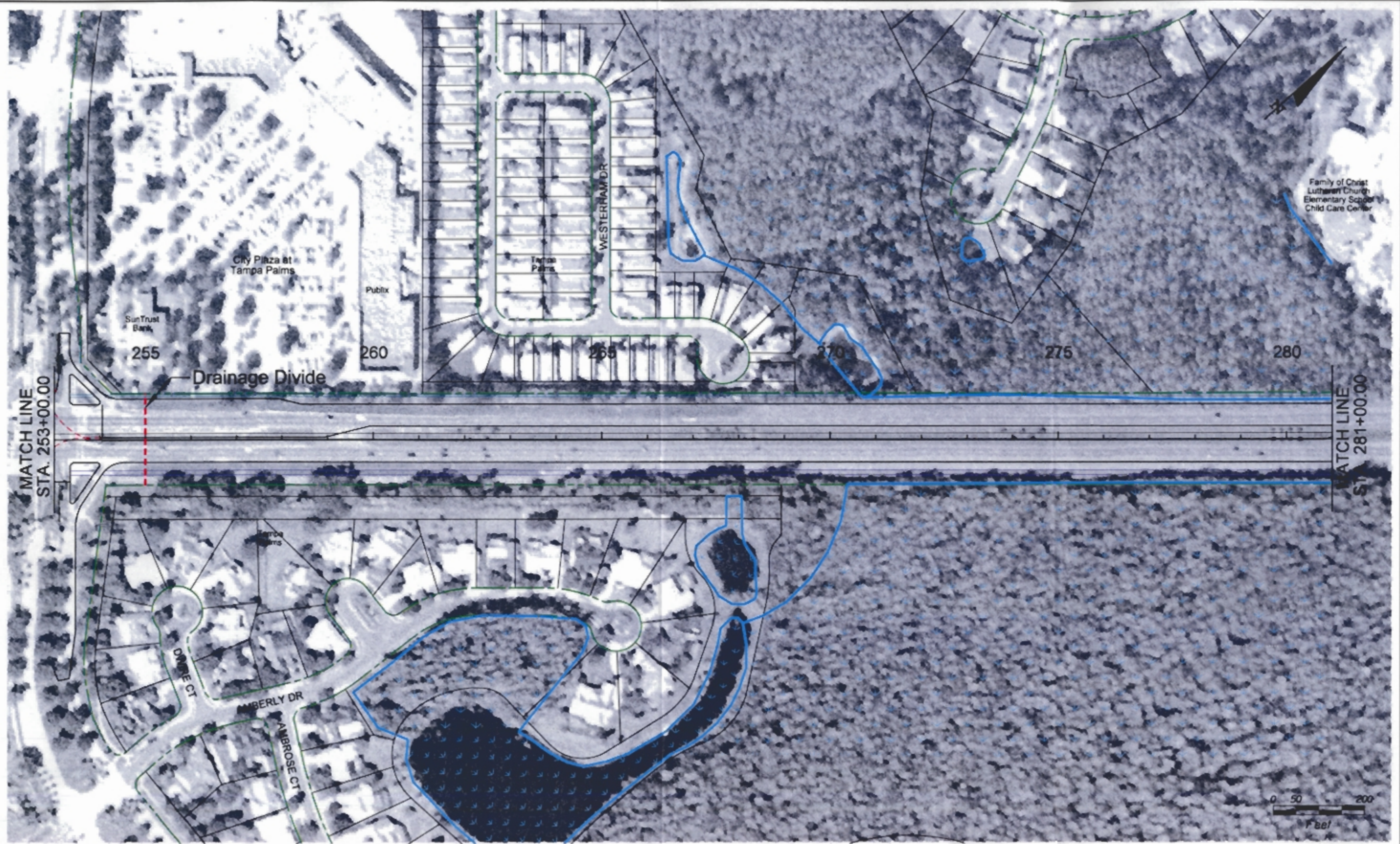


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 ALTERNATIVE POND SITES - HILLSBOROUGH COUNTY

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3



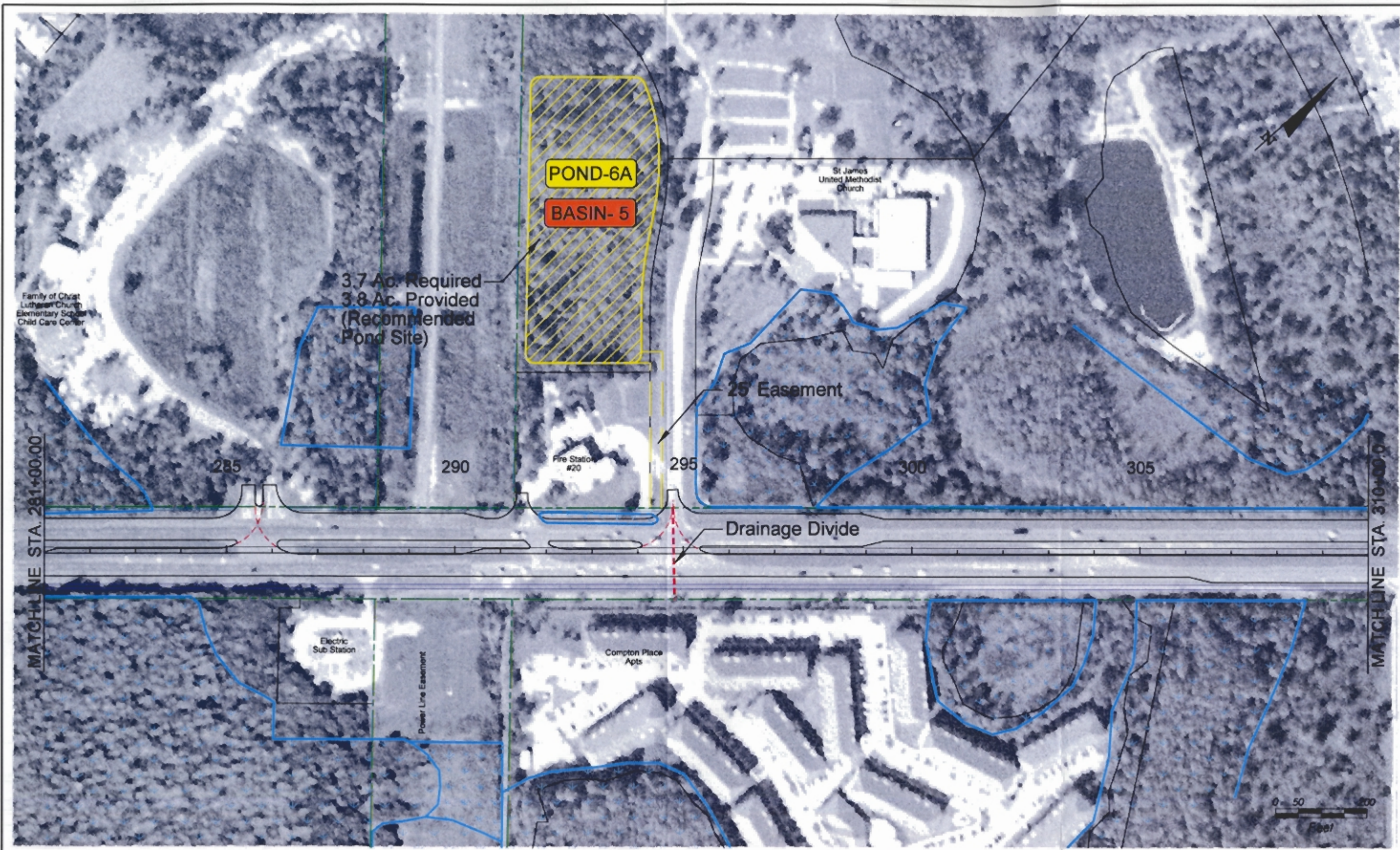
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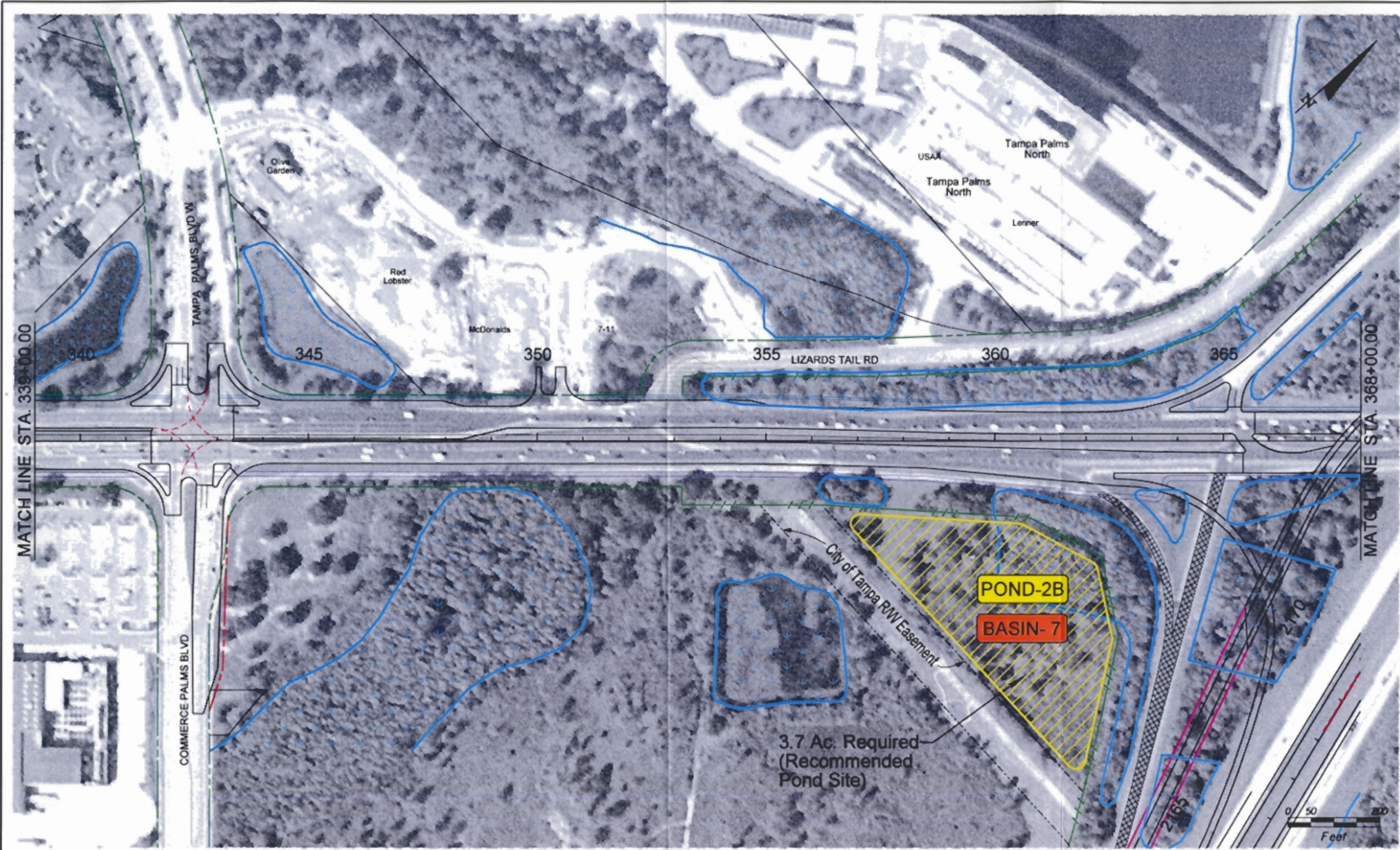
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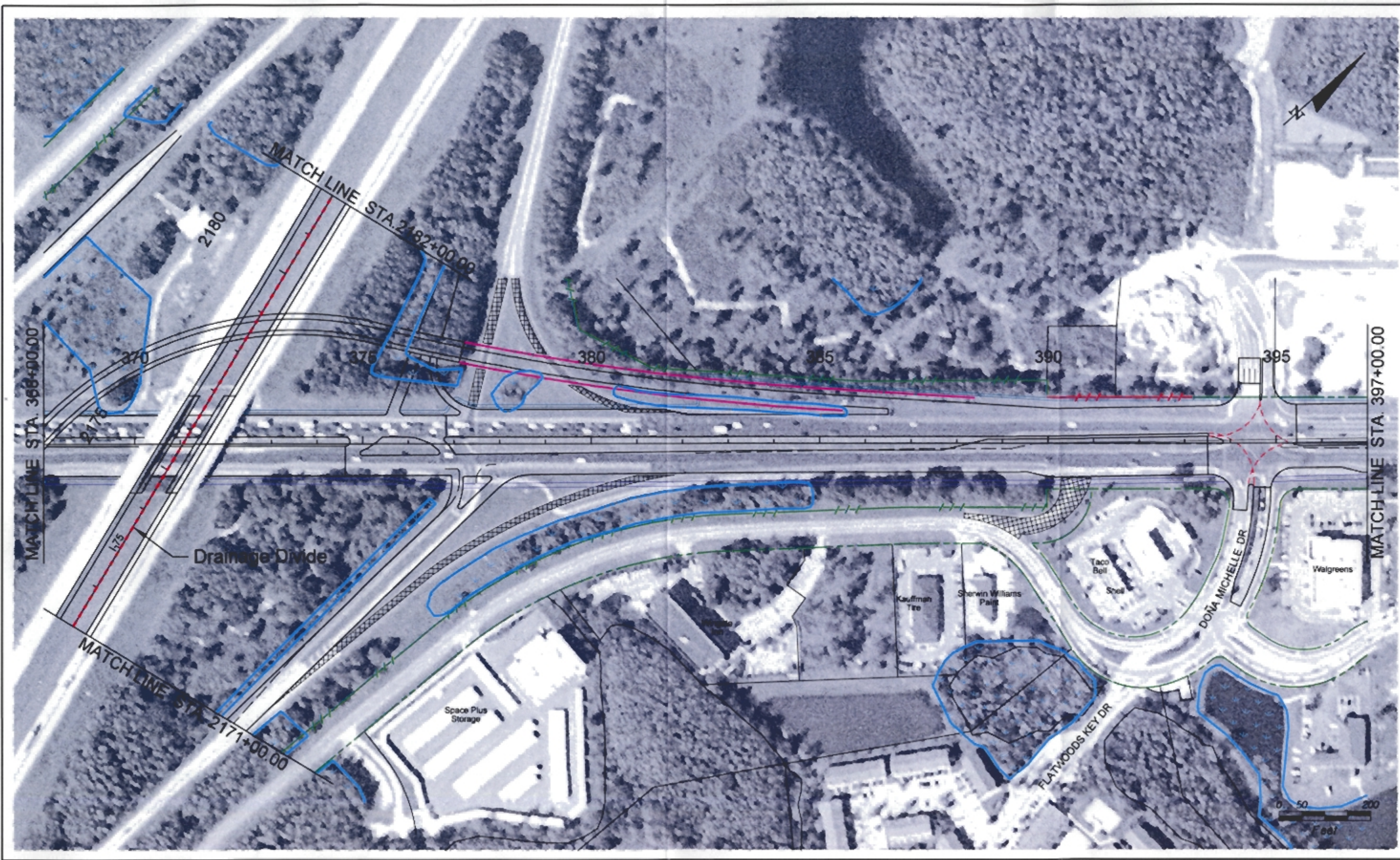


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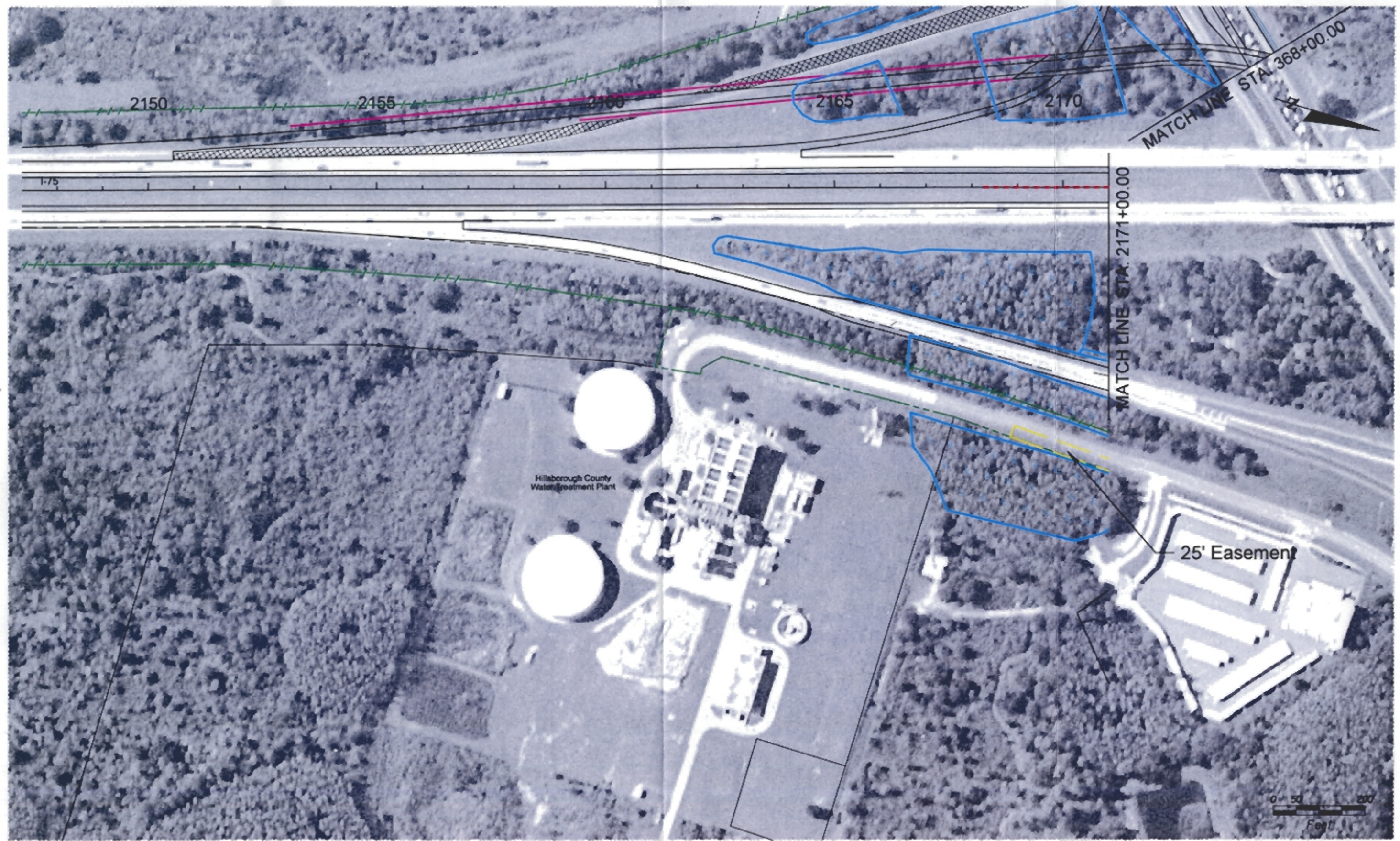


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9



MATCH LINE STA. 2182+00.00

2185

2190

2195

2200

2205

2210

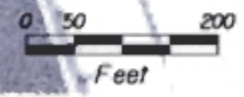
1-75

POND-4B

BASIN-8

7.1 Ac. Required
(Recommended
Pond Site)

25' Easement



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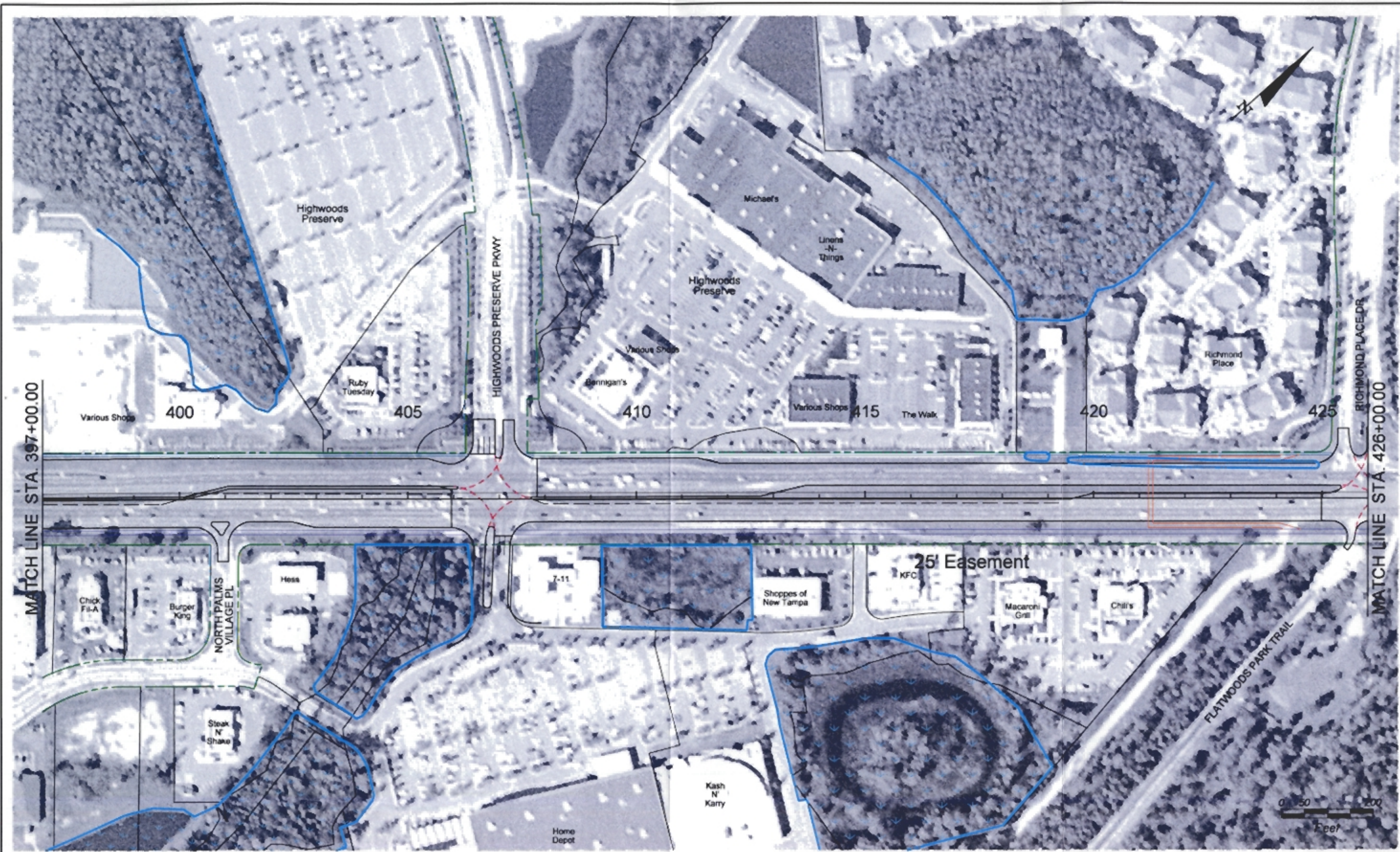
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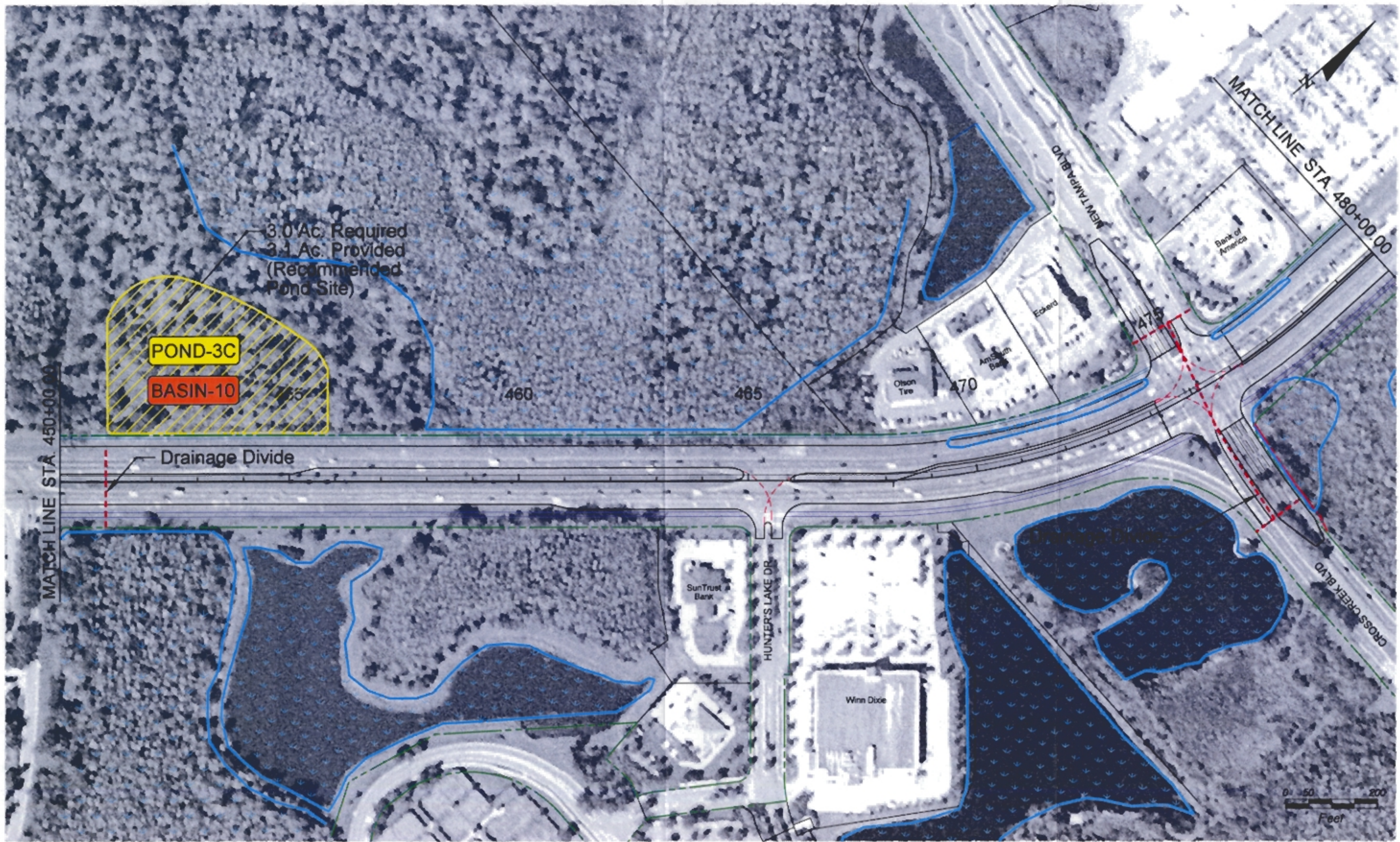


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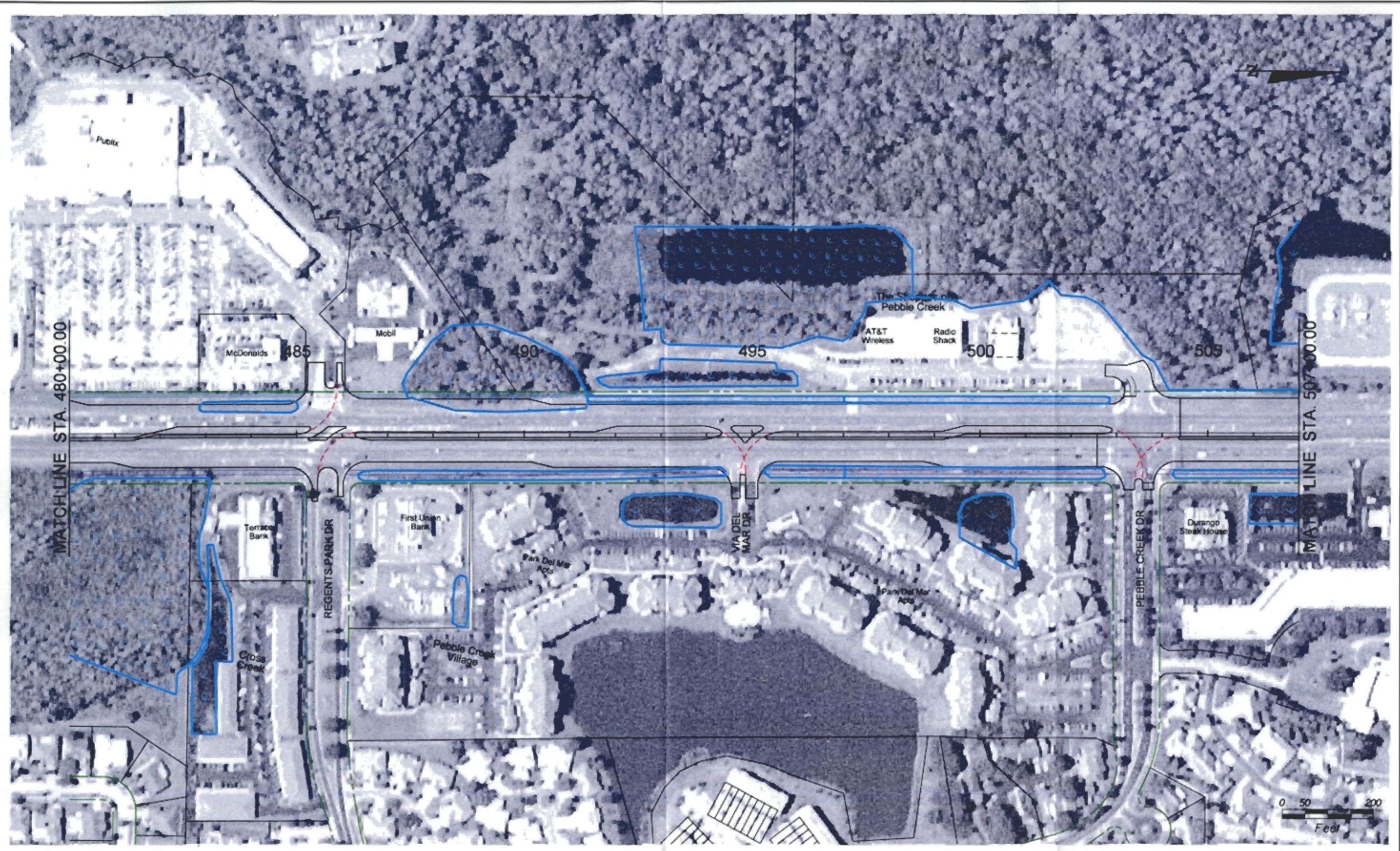


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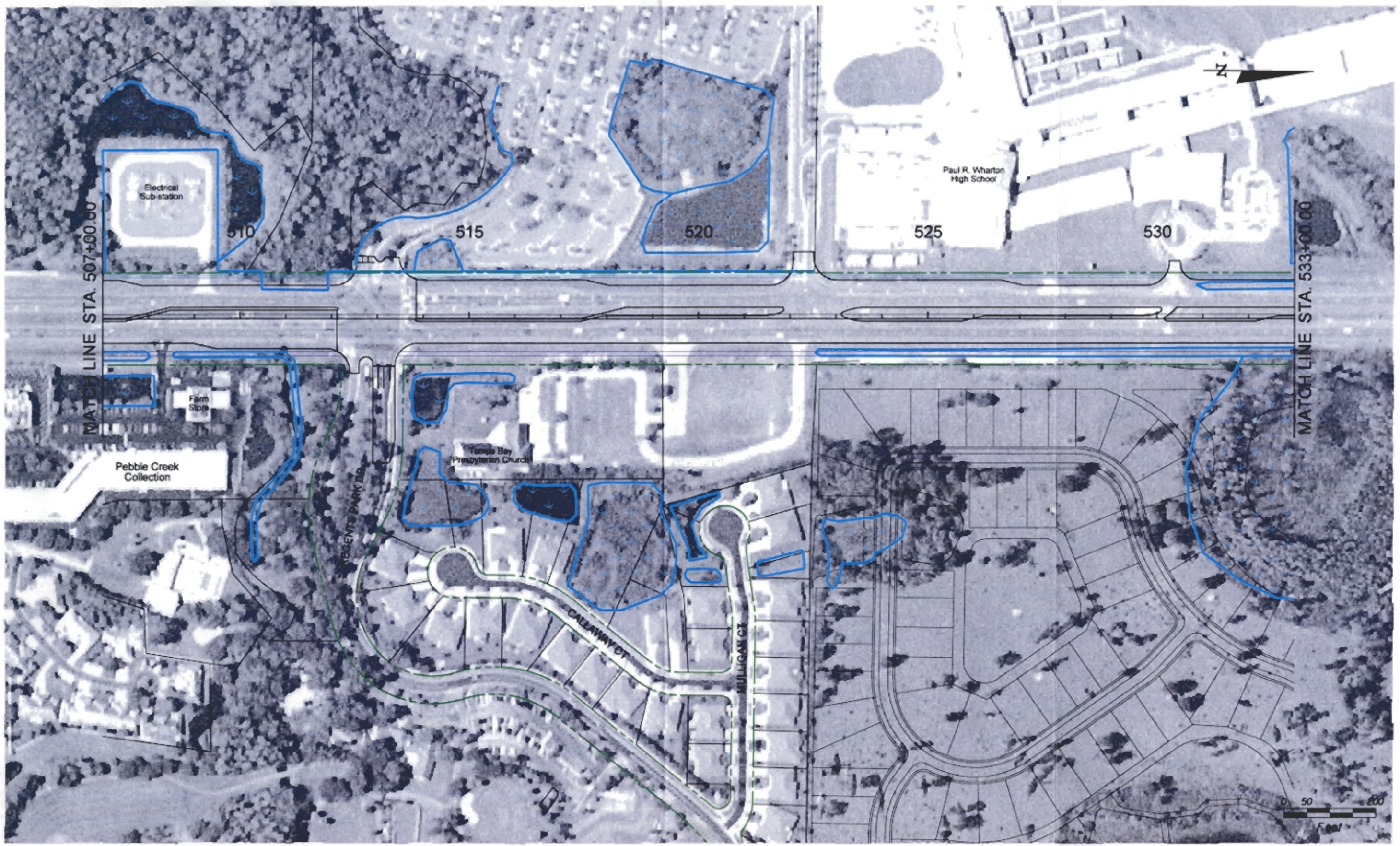
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14



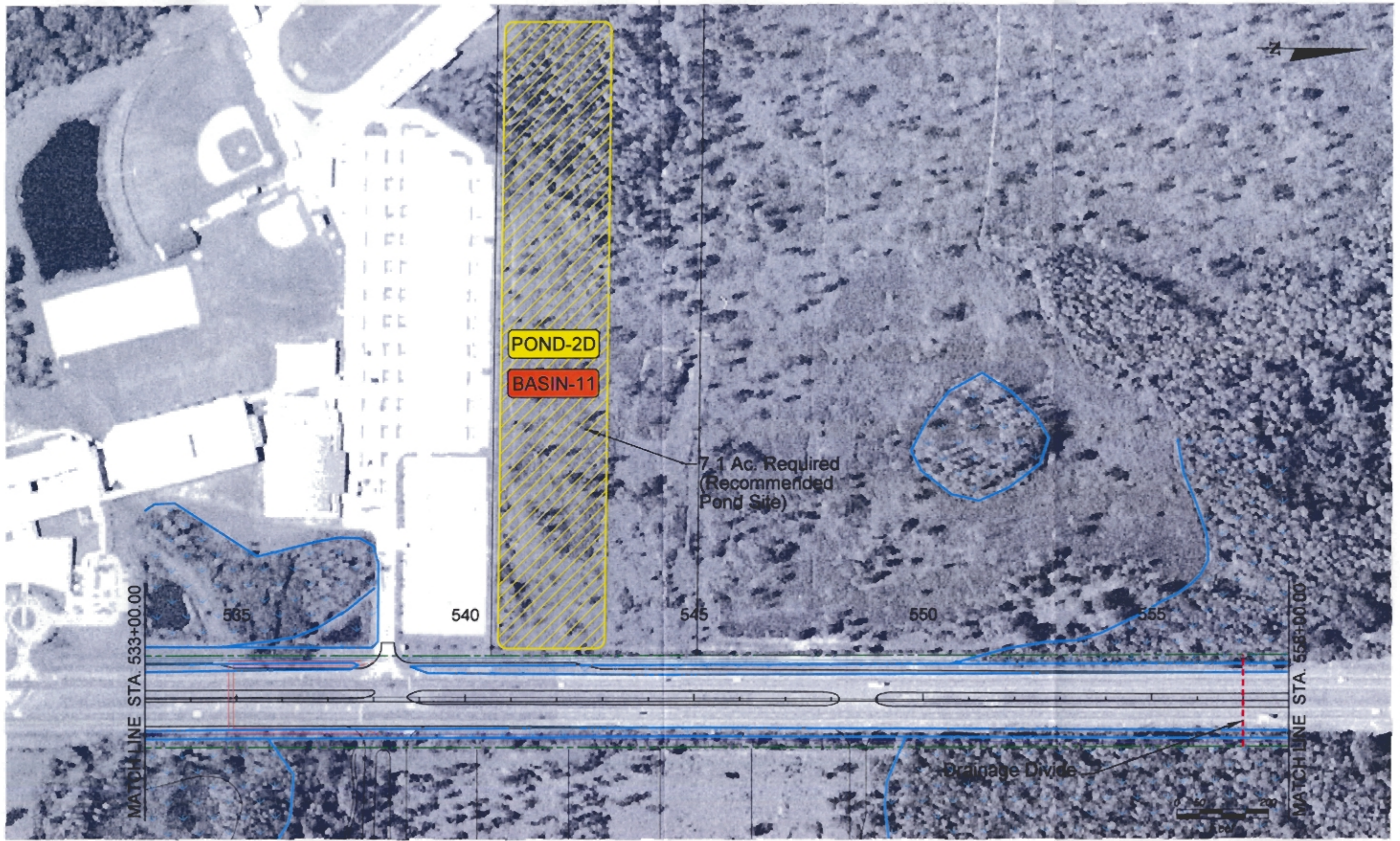
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 ALTERNATIVE POND SITES - HILLSBOROUGH COUNTY

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15



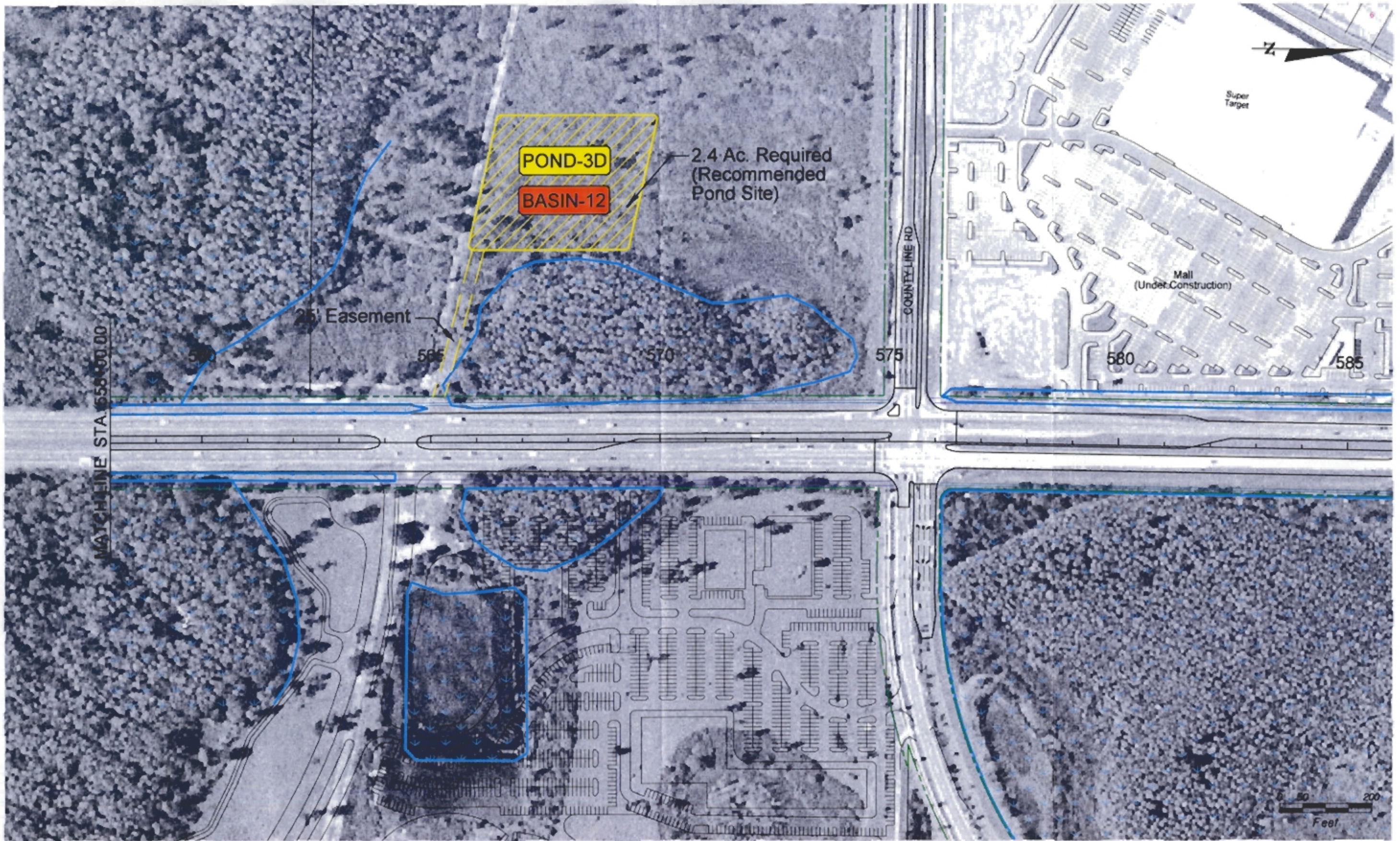
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 ALTERNATIVE POND SITES - HILLSBOROUGH COUNTY

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16



MATCHLINE STA. 658+00.00

COUNTY LINE RD

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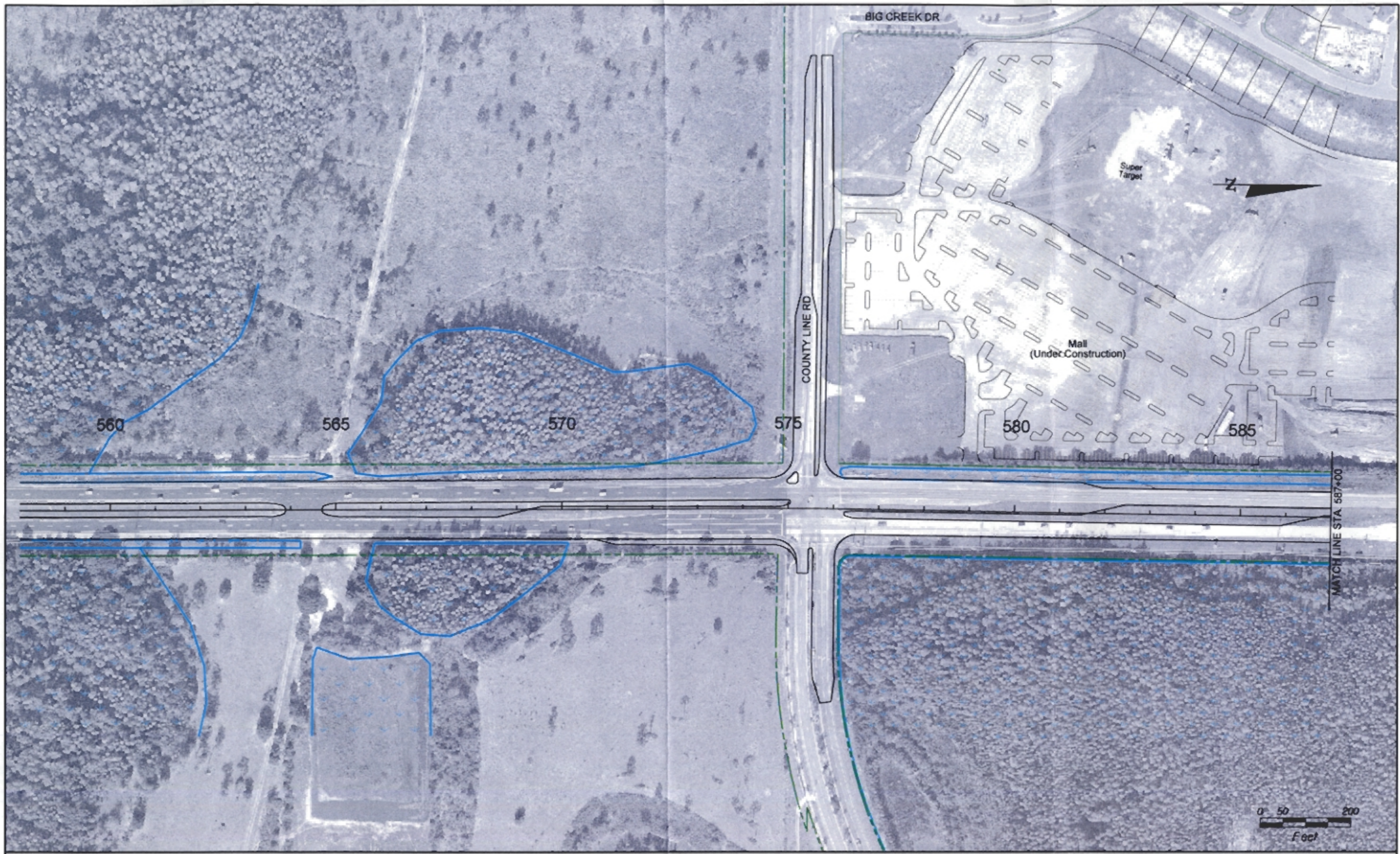
**STATE OF FLORIDA
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C.R. 581 / S.R. 581	HILLSBOROUGH & PASCO	405492 I & 408460 I

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FROM BEARSS AVENUE TO S.R. 54
ALTERNATIVE POND SITES - HILLSBOROUGH COUNTY

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17

**APPENDIX D
PROPOSED POND SITES
IN PASCO COUNTY**



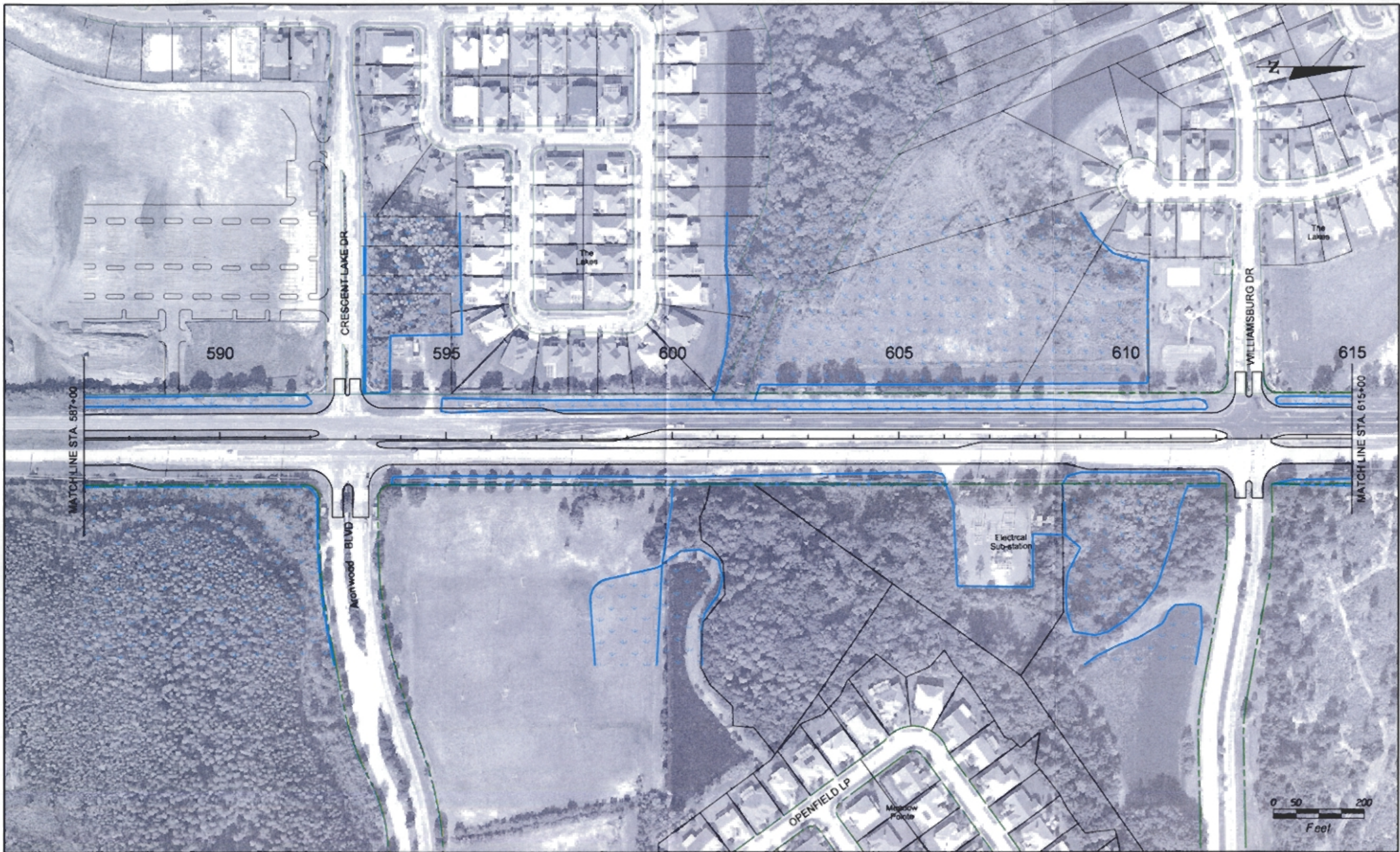
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 ALTERNATIVE POND SITES - PASCO COUNTY

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1



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ALTERNATIVE POND SITES - PASCO COUNTY

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NO.
2



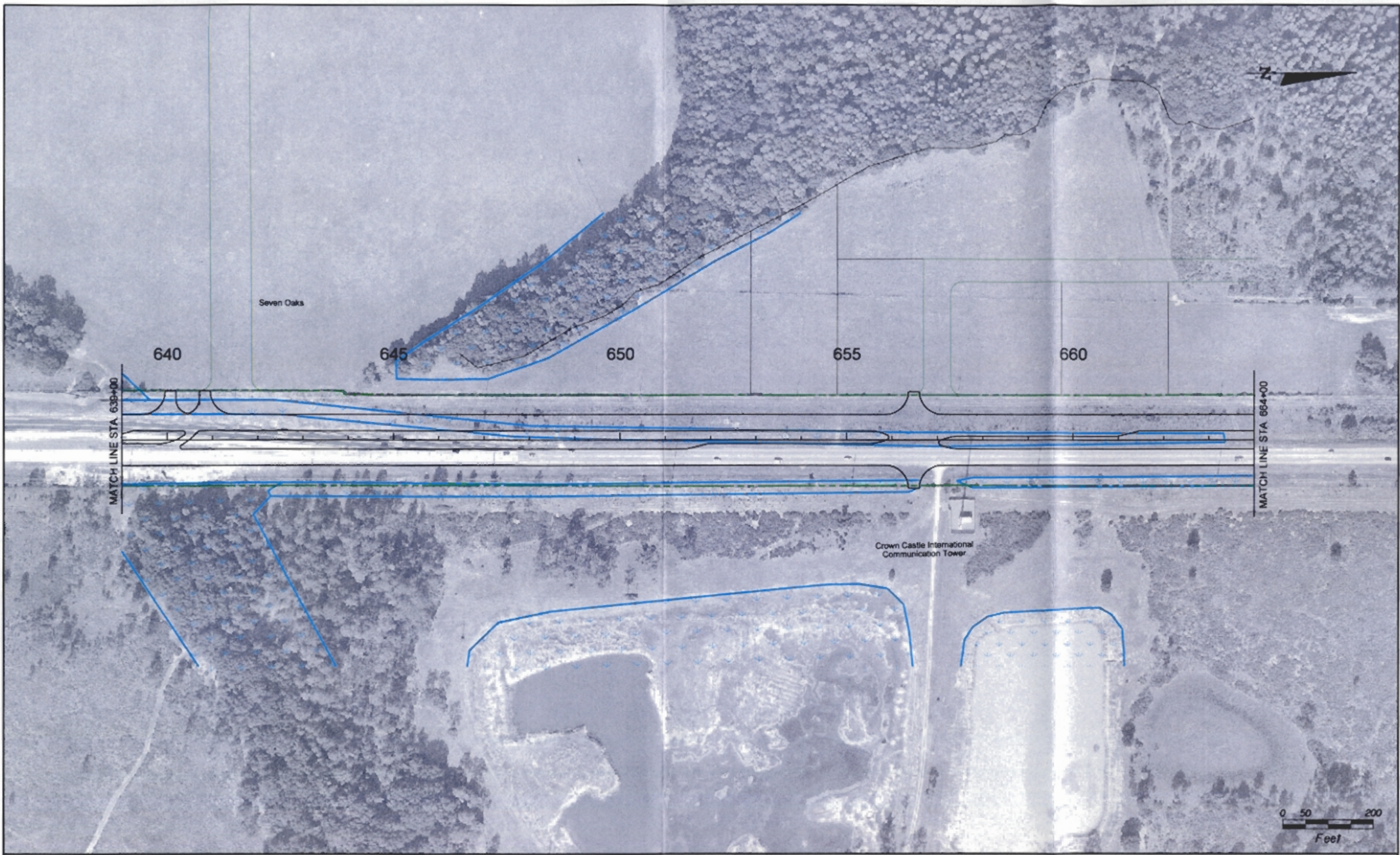
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 ALTERNATIVE POND SITES - PASCO COUNTY

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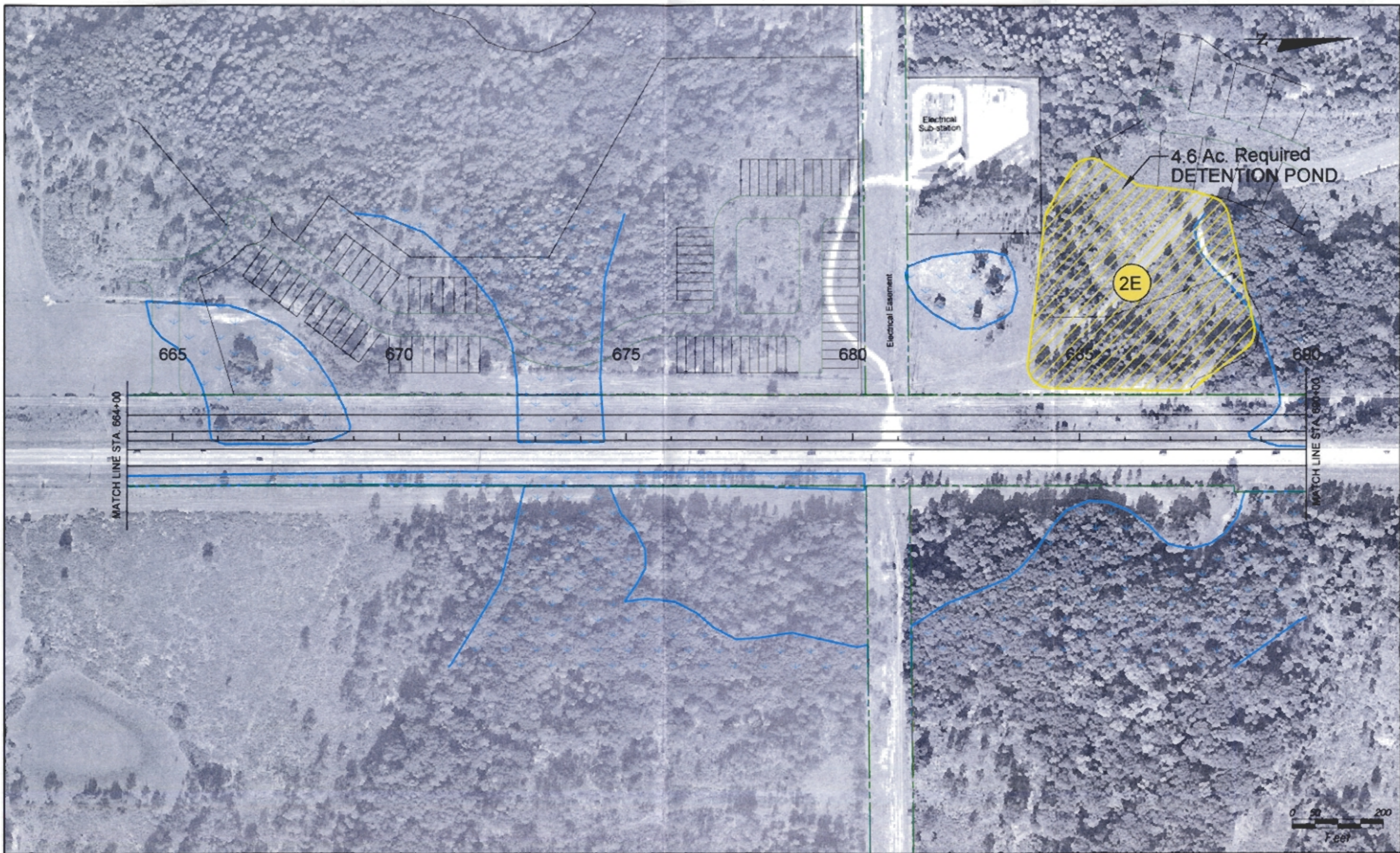


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4



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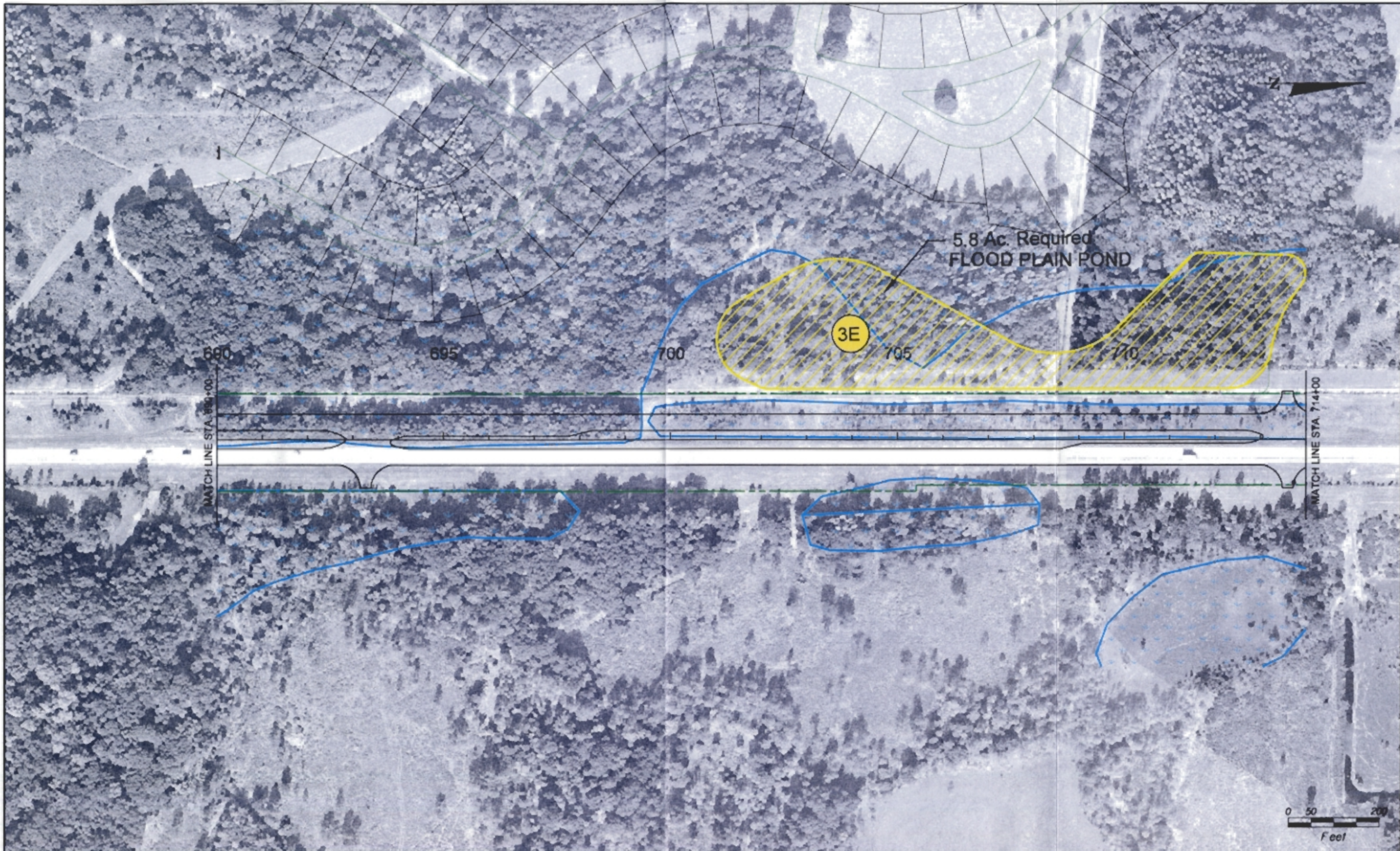


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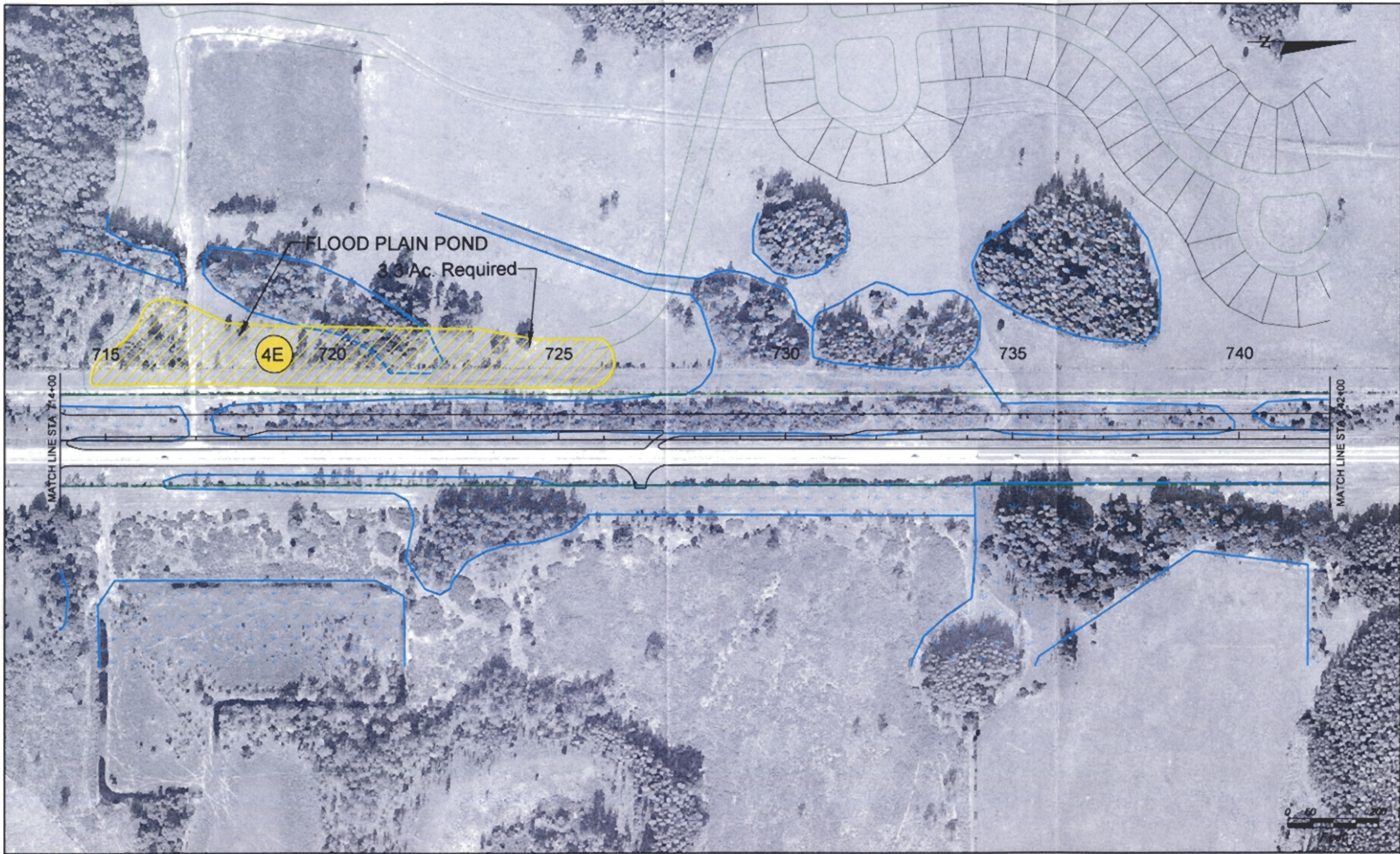
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
C.R. 581 / S.R. 581	HILLSBOROUGH & PASCO	405492 1 & 408460 1

C.R. 581 / S.R. 581 (BRUCE B. DOWNS BOULEVARD)
 PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
 FROM BEARSS AVENUE TO S.R. 54
 ALTERNATIVE POND SITES - PASCO COUNTY

SHEET NO.
6



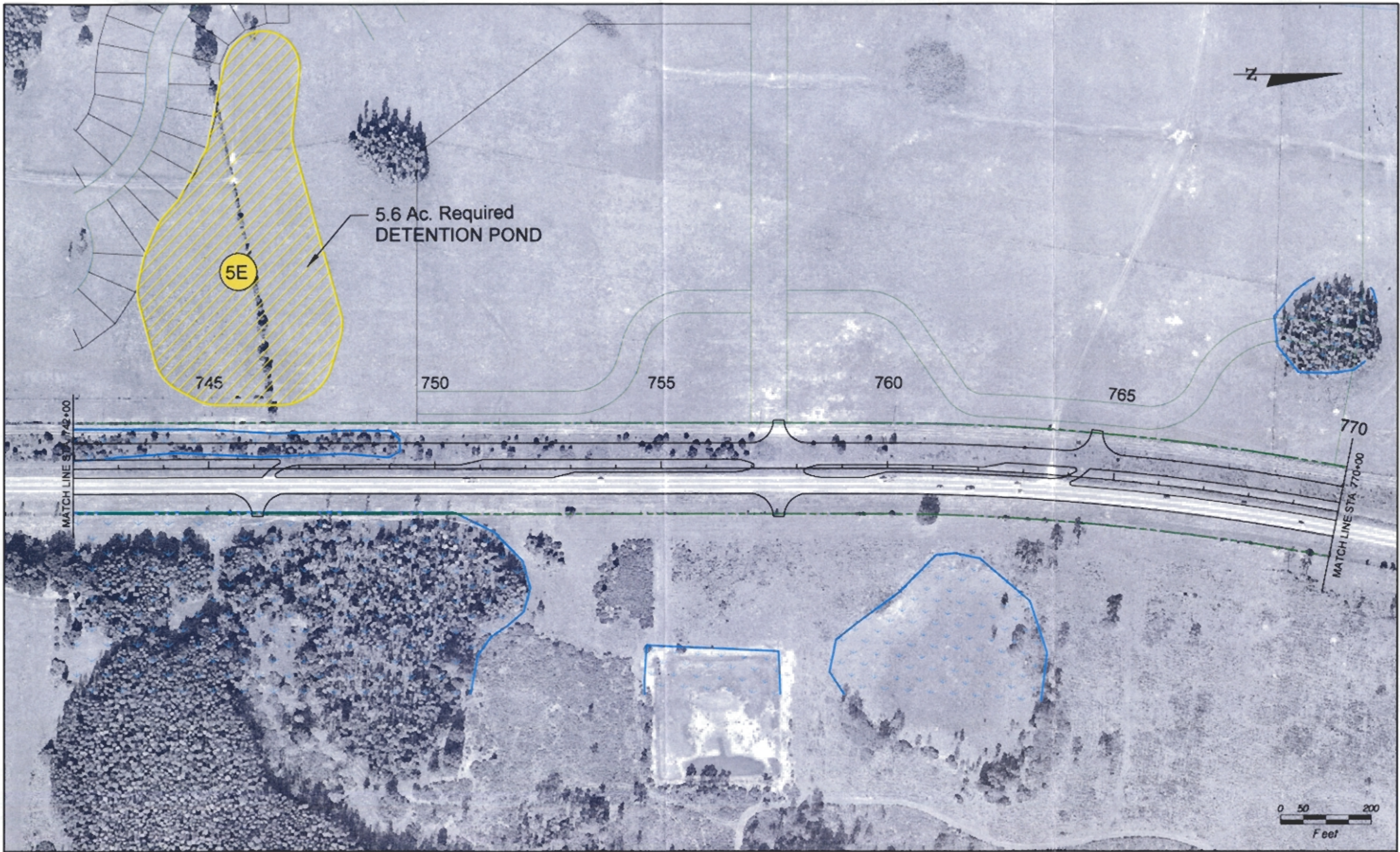
REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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. 581 / S.R. 581	HILLSBOROUGH & PASCO	405492.1 & 408460.1

C.R. 581 / S.R. 581 (BRUCE B. DOWNS BOULEVARD)
 PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
 FROM BEARSS AVENUE TO S.R. 54
 ALTERNATIVE POND SITES - PASCO COUNTY

SHEET
NO.
7



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION



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. 581 / S.R. 581	HILLSBOROUGH & PASCO	405492 1 & 408460 1

C.R. 581 / S.R. 581 (BRUCE B. DOWNS BOULEVARD)
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
FROM BEARSS AVENUE TO S.R. 54
ALTERNATIVE POND SITES - PASCO COUNTY

SHEET
NO.
8



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

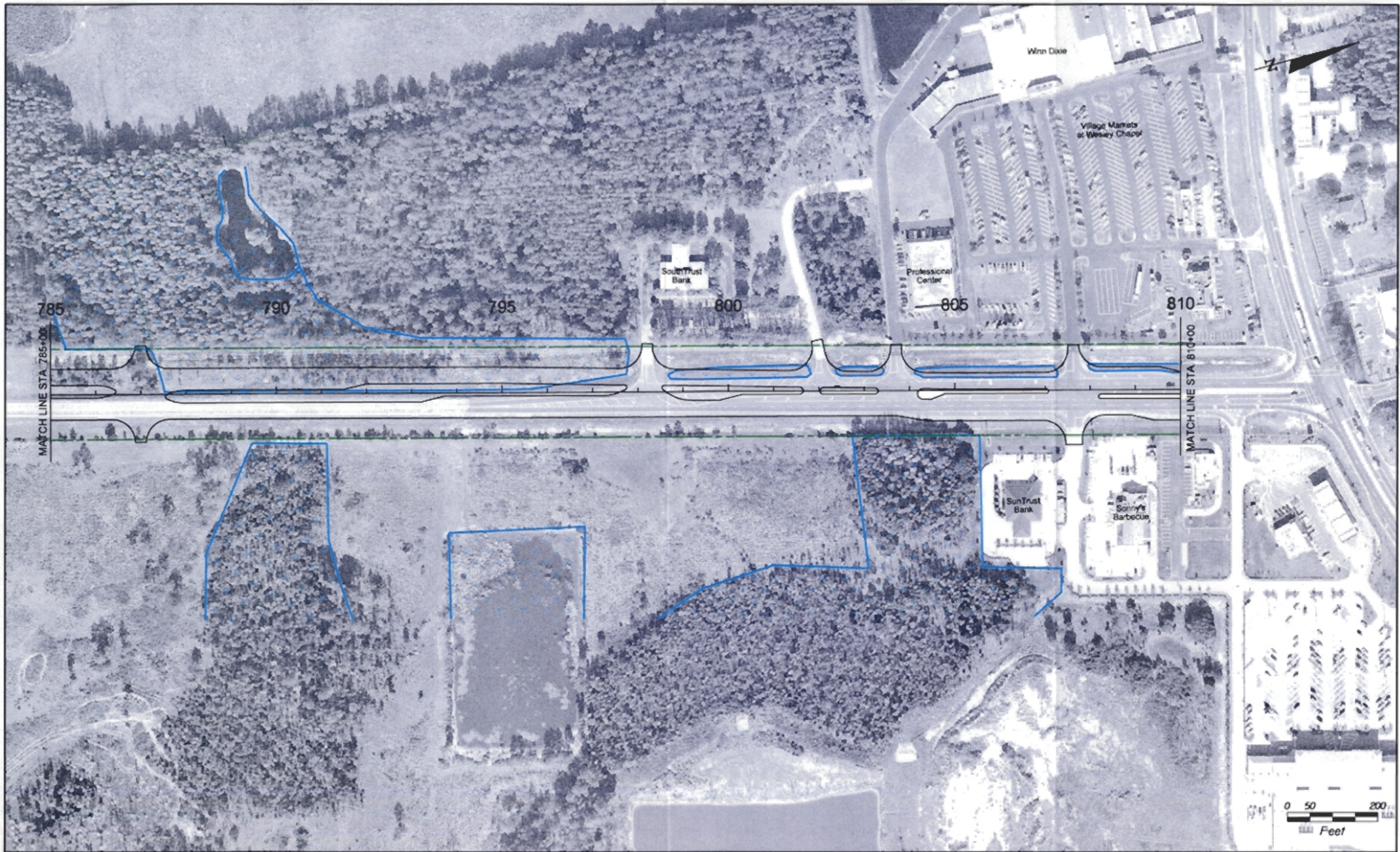


URS Corporation Southern
 7650 West Courtney
 Campbell Causeway
 Tampa, FL 33607-1462
 No. 00000002

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
C.R. 581 / S.R. 581	HILLSBOROUGH & PASCO	405492 I & 408460 I

C.R. 581 / S.R. 581 (BRUCE B. DOWNS BOULEVARD)
 PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
 FROM BEARSS AVENUE TO S.R. 54
 ALTERNATIVE POND SITES - PASCO COUNTY

SHEET NO.
9



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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. 581 / S.R. 581	HILLSBOROUGH & PASCO	405492 I & 408460 I

C.R. 581 / S.R. 581 (BRUCE B. DOWNS BOULEVARD)
 PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
 FROM BEARSS AVENUE TO S.R. 54
 ALTERNATIVE POND SITES - PASCO COUNTY

SHEET
NO.
10



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION



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. 581 / S.R. 581	HILLSBOROUGH & PASCO	405492.1 & 408460.1

C.R. 581 / S.R. 581 (BRUCE B. DOWNS BOULEVARD)
 PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
 FROM BEARSS AVENUE TO S.R. 54
 ALTERNATIVE POND SITES - PASCO COUNTY

SHEET NO.
11

APPENDIX E
R/W COSTS

Nancy R. Faller

From: <Ronald_Pscion@URSCorp.com>
 To: <nfaller@fallerdavis.com>
 Sent: Friday, February 07, 2003 11:48 AM
 Subject: CR 581 Pond Site R/W Cost Estimates

-FYI & Use

_Have a great weekend.

Ronald G. Pscion
 Senior Project Manager
 URS Corp.
 -7650 W. Courtney Campbell Csw.
 Tampa, Fl 33607-1462
 Office Ph. (813) 636-2438 or 286-1711
 Cell Ph. (813) 503-1119
 FAX (813) 286-6587
 E-Mail "ronald_pscion@urscorp.com

----- Forwarded by Ronald Pscion/Tampa/URSCorp on 02/07/03 12:11 PM -----

ming.gao@dot.state.fl.us

te.fl.us

To: Ronald_Pscion@urscorp.com

cc:

02/06/03 01:38

Subject: CR 581 Pond Site R/W Cost

Estimates

PM

Bill McTeer has updated the R/W cost estimates for the pond sites. Only two sites have different configurations than before (Pond 1D and 4D). The estimate for 4D remains the same as before and the estimate for 1D was changed to \$21,979,100. I will give Lisa a copy of the latest 1D estimate this afternoon.

Also, I talked to Kirk about our latest schedule. He suggested that, in

order to save, we can review the PER now without the traffic chapter.

Received
JAN 03 2003
Faller Davis & Assoc.

MEMORANDUM
FLORIDA DEPARTMENT OF TRANSPORTATION
Right of Way MS 7-900

DATE: December 24, 2002
TO: Aurelie Anthony, Deputy Right of Way Manager, Operations
FROM: Bill McTeer, Cost Estimate Coordinator *BM*
COPIES: Rick Adair
SUBJECT: FM 405492 1, Bruce B. Downs Blvd. Bearss to County Line Pond Sites

This is distribution of the aforementioned project cost estimate.

Pond Valuations:

Pond 1A	\$ 8,812,200
Pond 2A	\$ 9,949,300
Pond 3A	\$ 6,382,200
Pond 4A	\$ 6,185,800
Pond 5A	not valued. Is an existing drainage pond for church.
Pond 6A	\$ 7,603,100
Pond 7A	\$ 5,832,100
Pond 8A	not valued. No size given or timeframe to construct vault.
Pond 9A	\$ 5,974,100
Pond 1B	\$ 8,582,900
Pond 2B	\$ 5,884,300
Pond 3B	\$10,902,400
Pond 4B	\$12,349,900
Pond 5B	\$ 7,802,500
Pond 6B	\$ 7,713,500
Pond 1C	\$ 8,437,500
Pond 2C	\$ 8,234,200
Pond 3C	\$ 9,609,400
Pond 1D	\$31,829,100
Pond 2D	\$16,974,800
Pond 3D	\$ 5,786,300
Pond 4D	\$ 5,653,900

RECEIVED
PLANNING UNIT
2002 DE 24 PM 4:29

**FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

PBS&J#: 0

M#: 4054921	Former WPI#: N/A	District: Seven
County: Hillsborough	FAP No.: N/A	Date: 24-Dec-02
State Rd.: CR581	Alternate: POND 7A	C.E. Sequence: N/A
Project Des. Bruce B. Downs PD&E Pond Sites		

Parcels	Gross	Net	Estimated Relocates:
Commercial	Total	0	Business
Residential	Total	0	Residential
Unimproved	Total	1	Signs
			Special
Total Parcels	0	1	Total Relocates

R/W SUPPORT COSTS (PHASE 41)			Amount
1. Direct Labor Cos	(Parcels 1 x 13,000 = Rate)		13,000
2. Indirect Overhea	(Parcels 1 x 0 = Rate)		0
3.			
TOTAL PHASE 41			\$13,000

R/W OPS (PHASE 4B)			Amount
4. Appraisal Fees Through Trial	1 Parcels x 12,000 =		12,000
5. Business Damage CPA Fees Through Trial	0 Claims x 19,000 =		0
6. Court Reporter & Process Servers	75% x 1 = 1 Parcels x 500 =		500
7. Expert Witness	75% x 1 = 1 Parcels x 30,000 =		30,000
8. Mediators	50% x 1 = 1 Parcels x 2,400 =		2,400
9. Demolition, Asb. Abate., Survey, etc.	0 Imprvmet x 15,000 =		0
10. Miscellaneous Contracts	1 Per Proj: x 15,000 =		15,000
11. Appraisal Fee Review	N/A Parcels x 5,000 =		0
12.			
TOTAL PHASE 4B			\$59,900

R/W LAND COSTS (PHASE 43)			Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0 x 130% * Design plan stag =		0	
14. Water Retention & Mit.	2,395,800 x 130% (0 Parcels w/o R/W A		3,114,500	
15. SUBTOTAL				3,114,500
16. Admin. Settleme (Factor 45% x 0% of Line 15)			0	
17. Litigation Award (Factor 60% x 100% of Line 15)			1,868,700	
18. Business Damag (Claims 0 x \$0)			0	
19. Bus. Damages li (Factor 25% x \$0)			0	
20. Owner Appr. Fee (Parcels 1 x \$10,000)			10,000	
21. Owner CPA Fee (Claims 0 x \$10,000)			0	
22. Defend. Atty Fee (Sum of Lines 16- 1,868,700 x 40%)			747,500	
23. Owner Expert W (Comm.+Unimpr: 0 + 1) 18,000			18,000	
24. Other Condemn. Costs 1 x \$500			500	
25. SUBTOTAL	(Lines 16 thru 24) =		2,644,700	
26.				
TOTAL PHASE 43				\$5,769,200

* Design contingency for design plan stage:
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans -115% (5) 268 Date -110%

R/W ACQUISITION CONSULTANT (PHASE 42)	TOTAL PHASE 42	\$0
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RELOCATION COSTS (PHASE 45)		
Replacement Housing		
28. Owner	\$20,000 x 0 =	0
29. Tenant	\$10,000 x 0 =	0
Move Costs		
30. Residential	\$1,500 x 0 =	0
31. Business/Farm	\$20,000 x 0 =	0
32. Personal Property	\$2,000 x 0 =	\$0
33. (Lines 28 thru 32)		
TOTAL PHASE 45		
34. Relocation Services Cost	\$0 (Not in Phase Total)	

35. (All Phases)	TOTAL ESTIMATE	\$5,832,100
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Appraisal: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: 12/24/02
Bus. Dam.: N/A	Signed: _____	Date: _____
Relocation: N	Signed: _____	Date: _____
Overall Review: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: 12/24/02

Cost Estimate Sequence #: _____ Dated: _____ In the Amount of \$ _____ Data Input Completion Date: _____

REMARKS:
This estimate was calculated under the following assumptions: 1) ownership research was not conducted, 2) no development research done for any site plan identification, 3) land value at listing price of similar properties, and 4) limited and restricted field inspection.

The following indicates the estimator's confidence in the above estimate:	Future Value Factors @	10%
Type A - indicates the most confidence	Year One	1.1000
Type B - indicates above average confidence	Year Two	1.2100
X Type C - indicates below average confidence	Year Three	1.3310
Type D - indicates the least or no confidence	Year Four	1.4641
	Year Five	1.6105

The following indicates the Department's purpose for this estimate:
Work Program Upda _____ Document to R/W: _____ Gaming 1: _____ Special Purp X

Comments: _____

**FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

PBS&J#: 0

#:	4054921	Former WPH#:	N/A	District:	Seven
County:	Hillsborough	FAP No.:	N/A	Date:	24-Dec-02
State Rd.:	CR581	Alternate:	POND 6A	C.E. Sequence	N/A
Project Des.:	Bruce B. Downs PD&E Pond Sites				

Parcels	Gross	Net	Estimated Relocates:
Commercial	Total	0	Business
Residential	Total	0	Residential
Unimproved	Total	2	Signs
			Special
Total Parcels	0	2	Total Relocates
			0
			0
			0
			0

R/W SUPPORT COSTS (PHASE 41)

1. Direct Labor Cos	(Parcels	2	x	13,000	=	Rate)	Amount	26,000
2. Indirect Overhea	(Parcels	2	x	0	=	Rate)	0	
3.							TOTAL PHASE 41	\$26,000

R/W OPS (PHASE 4B)

4. Appraisal Fees Through Trial	2	Parcels	x	12,000	=	24,000	Amount			
5. Business Damage CPA Fees Through Trial	0	Claims	x	19,000	=	0				
6. Court Reporter & Process Servers	75%	x	2	=	2	Parcels	x	500	=	1,000
7. Expert Witness	75%	x	2	=	2	Parcels	x	30,000	=	60,000
8. Mediators	50%	x	2	=	1	Parcels	x	2,400	=	2,400
9. Demolition, Asb. Abate., Survey, etc.	0	imprvmet	x	15,000	=	0				
10. Miscellaneous Contracts	1	Per Proj	x	15,000	=	15,000				
11. Appraisal Fee Review	N/A	Parcels	x	5,000	=	0				
12.							TOTAL PHASE 4B	\$102,400		

R/W LAND COSTS (PHASE 43)

13. Land, Improvements & Severance Damages and Cost to Cure Amount	148,780	x	130%	* Design plan stag =	193,400	Amount	Subtotal	
14. Water Retention & Mlt.	3,062,268	x	130%	(0 Parcels w/o R/W A	3,980,900			
15. SUBTOTAL				(Lines 13 & 14)			4,174,300	
16. Admin. Settleme (Factor	45%	x	30%	of Line 15)	=	563,500		
17. Litigation Award (Factor	60%	x	70%	of Line 15)	=	1,753,200		
18. Business Damag (Claims	0	x	\$0)	=	0			
19. Bus. Damages h (Factor	25%	x	\$0)	=	0			
20. Owner Appr. Fee (Parcels	2	x	\$10,000)	=	20,000			
21. Owner CPA Fee (Claims	0	x	\$10,000)	=	0			
22. Defend. Atty Fee (Sum of Lines 16-	2,316,700	x	40%)	=	926,700			
23. Owner Expert W (Comm.+Unimprc	0	+	2)	18,000	=	38,000		
24. Other Condemn. Costs	2	x	\$500	=	1,000			
25. SUBTOTAL				(Lines 16 thru 24)	=	3,300,400		
26.							TOTAL PHASE 43	\$7,474,700

* Design contingency for design plan stage:

(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans - 115% (5) 268 Date - 110%

R/W ACQUISITION CONSULTANT (PHASE 42)

27.	TOTAL PHASE 42	\$0
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RELOCATION COSTS (PHASE 45)

Replacement Housing		Number	Amount
28. Owner	\$20,000	x 0	= 0
29. Tenant	\$10,000	x 0	= 0
Move Costs			
30. Residential	\$1,500	x 0	= 0
31. Business/Farm	\$20,000	x 0	= 0
32. Personal Property	\$2,000	x 0	= \$0
33. (Lines 28 thru 32)			TOTAL PHASE 45
34. Relocation Services Cost	\$0	(Not In Phase Total)	\$0

35. (All Phases) **TOTAL ESTIMATE** **\$7,603,100**

Appraisal:	Bill McTeer	Signed:	<i>Bill McTeer</i>	Date:	12/24/02
Bus. Dam.:	N/A	Signed:		Date:	
Relocation:	N	Signed:		Date:	
Overall Review:	Bill McTeer	Signed:	<i>Bill McTeer</i>	Date:	12/24/02

Cost Estimate Sequence #: _____ Dated: _____ In the Amount of \$ _____ Data Input Completion Date: _____

REMARKS:

This estimate was calculated under the following assumptions: 1) ownership research was not conducted, 2) no development research done for any site plan identification, 3) land value at listing price of similar properties, and 4) limited and restricted field inspection.

The following indicates the estimator's confidence in the above estimate:	Future Value Factors @	10%
Type A - Indicates the most confidence	Year One	1.1000
Type B - Indicates above average confidence	Year Two	1.2100
X Type C - Indicates below average confidence	Year Three	1.3310
Type D - Indicates the least or no confidence	Year Four	1.4641
	Year Five	1.6105

The following indicates the Department's purpose for this estimate:

Work Program Upda _____ Document to R/W: _____ Gaming 1: _____ Special Purp X

Comments: _____

**FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

PBS&J#: 0

AP#: 4054921	Former WPH#: N/A	District: Seven
County: Hillsborough	FAP No.: N/A	Date: 24-Dec-02
State Rd.: CR581	Alternate: POND 4A	C.E. Sequence: N/A
Project Des. Bruce B. Downs PD&E Pond Sites		

Parcels	Gross	Net	Estimated Relocates:	
Commercial	Total	0	Business	0
Residential	Total	0	Residential	0
Unimproved	Total	2	Signs	0
			Special	0
Total Parcels	0	2	Total Relocates	0

R/W SUPPORT COSTS (PHASE 41)

1. Direct Labor Cos (Parcels 2 x 13,000 = Rate)	Amount	26,000
2. Indirect Overhea (Parcels 2 x 0 = Rate)		0
3.	TOTAL PHASE 41	\$26,000

R/W OPS (PHASE 4B)

4. Appraisal Fees Through Trial	2 Parcels x 12,000 =	24,000
5. Business Damage CPA Fees Through Trial	0 Claims x 15,000 =	0
6. Court Reporter & Process Servers 75% x 2 = 2	2 Parcels x 500 =	1,000
7. Expert Witness 75% x 2 = 2	2 Parcels x 30,000 =	60,000
8. Mediators 50% x 2 = 1	1 Parcels x 2,400 =	2,400
9. Demolition, Asb. Abate., Survey, etc.	0 Imprvmet x 15,000 =	0
10. Miscellaneous Contracts	1 Per Proj x 15,000 =	15,000
11. Appraisal Fee Review N/A	Parcels x 5,000 =	0
12.	TOTAL PHASE 4B	\$102,400

R/W LAND COSTS (PHASE 43)

13. Land, Improvements & Severance Damages and Cost to Cure Amount	0 x 130% * Design plan stag =	0	Amount	Subtotal
14. Water Retention & Mit.	2,597,484 x 130% (0 Parcels w/o R/W A	3,376,700		
15. SUBTOTAL	(Lines 13 & 14)			3,376,700
16. Admin. Settlm (Factor 45% x 30% of Line 15)		455,900		
17. Litigation Award (Factor 60% x 70% of Line 15)		1,418,200		
18. Business Damag (Claims 0 x \$0)		0		
19. Bus. Damages li (Factor 25% x \$0)		0		
20. Owner Appr. Fee (Parcels 2 x \$10,000)		20,000		
21. Owner CPA Fee (Claims 0 x \$10,000)		0		
22. Defend. Atty Fee (Sum of Lines 16- 1,874,100 x 40%)		749,600		
23. Owner Expert W (Comm.+Unimpr 0 + 2) 18,000		36,000		
24. Other Condemn. Costs 2 x \$500		1,000		
25. SUBTOTAL	(Lines 16 thru 24) =	2,680,700		
26.	TOTAL PHASE 43			\$6,057,400

* Design contingency for design plan stage:
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans - 115% (5) 268 Date - 110%

R/W ACQUISITION CONSULTANT (PHASE 42)

27.	TOTAL PHASE 42	\$0
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RELOCATION COSTS (PHASE 45)

Replacement Housing		Number	Amount
28. Owner	\$20,000 x	0	0
29. Tenant	\$10,000 x	0	0
Move Costs			
30. Residential	\$1,500 x	0	0
31. Business/Farm	\$20,000 x	0	0
32. Personal Property	\$2,000 x	0	0
33. (Lines 28 thru 32)			0
34. Relocation Services Cost	\$0 (Not in Phase Total)		
35.	TOTAL PHASE 45		\$0

(All Phases) TOTAL ESTIMATE \$8,185,800

Appraisal: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: 12/24/02
Bus. Dam.: N/A	Signed: _____	Date: _____
Relocation: N	Signed: _____	Date: _____
Overall Review: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: 12/24/02

Cost Estimate Sequence #: _____ Dated: _____ In the Amount of \$ _____ Data Input Completion Date: _____

REMARKS:
This estimate was calculated under the following assumptions: 1) ownership research was not conducted, 2) no development research done for any site plan identification, 3) land value at listing price of similar properties, and 4) limited and restricted field inspection.

The following indicates the estimator's confidence in the above estimate:	Future Value Factors @	10%
Type A - indicates the most confidence	Year One	1.1000
Type B - indicates above average confidence	Year Two	1.2100
X Type C - indicates below average confidence	Year Three	1.3310
Type D - indicates the least or no confidence	Year Four	1.4641
	Year Five	1.6105

The following indicates the Department's purpose for this estimate:
Work Program Upds _____ Document to R/W: _____ Gaming 1: _____ Special Purp X

Comments: _____

**FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

PBS&J#: 0

FM#: 4054921	Former WPA#: N/A	District: Seven
County: Hillsborough	FAP No.: N/A	Date: 24-Dec-02
State Rd.: CR581	Alternate: POND 3A	C.E. Sequence: N/A

Project Des. Bruce B. Downs PD&E Pond Sites

Parcels	Gross	Net
Commercial	Total	2
Residential	Total	0
Unimproved	Total	0

Estimated Relocates:	
Business	0
Residential	0
Signs	0
Special	0
Total Relocates	0

Total Parcels 0 2

R/W SUPPORT COSTS (PHASE 41)

1. Direct Labor Cos (Parcels 2 x 13,000 = Rate)	Amount	28,000
2. Indirect Overhea (Parcels 2 x 0 = Rate)		0
3.	TOTAL PHASE 41	\$28,000

R/W OPS (PHASE 4B)

4. Appraisal Fees Through Trial	2 Parcels x 12,000 =	24,000
5. Business Damage CPA Fees Through Trial	0 Claims x 19,000 =	0
6. Court Reporter & Process Servers	2 Parcels x 500 =	1,000
7. Expert Witness	2 Parcels x 30,000 =	60,000
8. Mediators	1 Parcels x 2,400 =	2,400
9. Demolition, Ass. Abate., Survey, etc.	0 Imprvmet x 18,000 =	0
10. Miscellaneous Contracts	1 Per Proj x 15,000 =	15,000
11. Appraisal Fee Review	N/A Parcels x 5,000 =	0
12.	TOTAL PHASE 4B	\$102,400

R/W LAND COSTS (PHASE 43)

13. Land, Improvements & Severance Damages and Cost to Cure Amount	20,000 x 130% * Design plan stag =	26,000
14. Water Retention & Mit.	2,862,464 x 130% (0 Parcels w/o R/W A	3,461,200
15. SUBTOTAL	(Lines 13 & 14)	3,487,200
16. Admin. Settlements (Factor 45% x 30% of Line 15)	=	470,800
17. Litigation Award (Factor 60% x 70% of Line 15)	=	1,464,600
18. Business Damage (Claims 0 x \$0)	=	0
19. Bus. Damages h (Factor 25% x \$0)	=	0
20. Owner Appr. Fee (Parcels 2 x \$10,000)	=	20,000
21. Owner CPA Fee (Claims 0 x \$10,000)	=	0
22. Defend. Atty Fee (Sum of Lines 16-19, 35, 40%)	=	774,200
23. Owner Expert W (Comm.+Unimprc 2 + 0) 18,000	=	36,000
24. Other Condemn. Costs 2 x \$500	=	1,000
25. SUBTOTAL	(Lines 16 thru 24) =	2,766,600
26.	TOTAL PHASE 43	\$6,253,800

* Design contingency for design plan stage:
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans - 115% (5) 268 Date - 110%

R/W ACQUISITION CONSULTANT (PHASE 42)

27.	TOTAL PHASE 42	\$0
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RELOCATION COSTS (PHASE 45)

Replacement Housing			
28. Owner	\$20,000 x	0	= 0
29. Tenant	\$10,000 x	0	= 0
Move Costs			
30. Residential	\$1,500 x	0	= 0
31. Business/Farm	\$20,000 x	0	= 0
32. Personal Property	\$2,000 x	0	= \$0
33. (Lines 28 thru 32)			
34. Relocation Services Cost	\$0 (Not in Phase Total)		
35.	TOTAL PHASE 45	\$0	

(All Phases) **TOTAL ESTIMATE \$6,382,200**

Appraisal: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: 12/24/02
Bus. Dam.: N/A	Signed: _____	Date: _____
Relocation: N	Signed: _____	Date: _____
Overall Review: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: 12/24/02

Cost Estimate Sequence #: _____ Dated: _____ In the Amount of \$ _____ Data Input Completion Date: _____

REMARKS:
This estimate was calculated under the following assumptions: 1) ownership research was not conducted, 2) no development research done for any site plan identification, 3) land value at listing price of similar properties, and 4) limited and restricted field inspection.

The following indicates the estimator's confidence in the above estimate:	Future Value Factors @	10%
Type A - indicates the most confidence	Year One	1.1000
Type B - indicates above average confidence	Year Two	1.2100
X Type C - indicates below average confidence	Year Three	1.3310
Type D - indicates the least or no confidence	Year Four	1.4641
	Year Five	1.6105

The following indicates the Department's purpose for this estimate:
Work Program Upda _____ Document to R/W: _____ Gaming 1: _____ Special Purp X
Comments: _____

**FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

PBS&J#: 0

FMM#: 4054921 Former WPI#: N/A District: Seven
 County: Hillsborough FAP No.: N/A Date: 20-Dec-02
 State Rd.: CR581 Alternate: POND 2A C.E. Sequence: N/A
 Project Des.: Bruce B. Downs PD&E Pond Sites

Parcels	Gross	Net	Estimated Relocates:
Commercial	Total	2	Business
Residential	Total	0	Residential
Unimproved	Total	0	Signs
			Special
Total Parcels	0	2	Total Relocates

R/W SUPPORT COSTS (PHASE 41)

1. Direct Labor Cos (Parcels 2 x 13,000 = Rate)	Amount
2. Indirect Overhea (Parcels 2 x 0 = Rate)	26,000
3.	0
TOTAL PHASE 41 \$26,000	

R/W OPS (PHASE 4B)

4. Appraisal Fees Through Trial	2 Parcels x 12,000 =	24,000
5. Business Damage CPA Fees Through Trial	0 Claims x 19,000 =	0
6. Court Reporter & Process Servers 75% x 2 =	2 Parcels x 500 =	1,000
7. Expert Witness 75% x 2 =	2 Parcels x 30,000 =	60,000
8. Mediators 50% x 2 =	1 Parcels x 2,400 =	2,400
9. Demolition, Asb. Abate., Survey, etc.	0 Imprvmet x 15,000 =	0
10. Miscellaneous Contracts	1 Per Projec x 15,000 =	15,000
11. Appraisal Fee Review	N/A Parcels x 5,000 =	0
12.		
TOTAL PHASE 4B		\$102,400

R/W LAND COSTS (PHASE 43)

13. Land, Improvements & Severance Damages and Cost to Cure Amount	510,000 x 130% * Design plan stag =	663,000	
14. Water Retention & Mit.	3,716,616 x 130% (0 Parcels w/o R/W A)	4,831,600	
15. SUBTOTAL	(Lines 13 & 14)		5,494,600
16. Admin. Settlements (Factor 45% x 30% of Line 15)		741,800	
17. Litigation Award (Factor 60% x 70% of Line 15)		2,307,700	
18. Business Damages (Claims 0 x \$0)		0	
19. Bus. Damages II (Factor 25% x \$0)		0	
20. Owner Appr. Fee (Parcels 2 x \$10,000)		20,000	
21. Owner CPA Fee (Claims 0 x \$10,000)		0	
22. Defend. Atty Fee (Sum of Lines 16-21) 3,049,500 x 40%		1,219,800	
23. Owner Expert W (Comm.+Unimprc 2 + 0) : 18,000		35,000	
24. Other Condemn. Costs 2 x \$500		1,000	
25. SUBTOTAL	(Lines 16 thru 24)	4,326,300	
26.	TOTAL PHASE 43		\$9,820,900

* Design contingency for design plan stage:
 (1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans - 115% (5) 268 Date - 110%

R/W ACQUISITION CONSULTANT (PHASE 42)

27.	TOTAL PHASE 42	\$0
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RELOCATION COSTS (PHASE 45)

28. Owner Replacement Housing	\$20,000 x 0 =	0
29. Tenant Move Costs	\$10,000 x 0 =	0
30. Residential	\$1,500 x 0 =	0
31. Business/Farm	\$20,000 x 0 =	0
32. Personal Property	\$2,000 x 0 =	0
33. (Lines 28 thru 32)		
34. Relocation Services Cost	\$0 (Not in Phase Total)	
35.	TOTAL PHASE 45	\$0

(All Phases) **TOTAL ESTIMATE** \$9,949,300

Appraisal: Bill McTeer Signed: Bill McTeer Date: 12/24/02
 Bus. Dam.: N/A Signed: _____ Date: _____
 Relocation: N Signed: _____ Date: _____
 Overall Review: Bill McTeer Signed: Bill McTeer Date: 12/24/02

Cost Estimate Sequence #: _____ Dated: _____ In the Amount of \$ _____ Data Input Completion Date: _____

REMARKS:
 This estimate was calculated under the following assumptions: 1) ownership research was not conducted, 2) no development research done for any site plan identification, 3) land value at listing price of similar properties, and 4) limited and restricted field inspection.

The following indicates the estimator's confidence in the above estimate:

Type A - indicates the most confidence	Future Value Factors @	10%
Type B - indicates above average confidence	Year One	1.1000
X Type C - indicates below average confidence	Year Two	1.2100
Type D - indicates the least or no confidence	Year Three	1.3310
	Year Four	1.4641
	Year Five	1.6105

The following indicates the Department's purpose for this estimate:
 Work Program Update _____ Document to R/W: _____ Gaming 1: _____ Special Purp X
 Comments: _____

**FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

PBS&J#: 0

FM#: 4054921	Former WPH#: N/A	District: Seven
County: Hillsborough	FAP No.: N/A	Date: 20-Dec-02
State Rd.: CR581	Alternate: POND 1A	C.E. Sequence: N/A
Project Des. Bruce B. Downs PD&E Pond Sites		

Parcels	Gross	Net	Estimated Relocates:
Commercial	Total	1	Business
Residential	Total	0	Residential
Unimproved	Total	0	Signs
			Special
Total Parcels	0	1	Total Relocates

R/W SUPPORT COSTS (PHASE 41)			Amount
1. Direct Labor Cos	(Parcels 1 x 13,000 = Rate)		13,000
2. Indirect Overhea	(Parcels 1 x 0 = Rate)		0
3.			
TOTAL PHASE 41			\$13,000

R/W OPS (PHASE 4B)			Amount
4. Appraisal Fees Through Trial	1 Parcels x 12,000 =		12,000
5. Business Damage CPA Fees Through Trial	0 Claims x 19,000 =		0
6. Court Reporter & Process Servers	75% x 1 = 1 Parcels x 500 =		500
7. Expert Witness	75% x 1 = 1 Parcels x 30,000 =		30,000
8. Mediators	50% x 1 = 1 Parcels x 2,400 =		2,400
9. Demolition, Asb. Abate., Survey, etc.	0 Imprvmet x 18,000 =		0
10. Miscellaneous Contracts	1 Per Projex 15,000 =		15,000
11. Appraisal Fee Review	N/A Parcels x 8,000 =		0
12.			
TOTAL PHASE 4B			\$59,900

R/W LAND COSTS (PHASE 43)			Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0 x 130% * Design plan stag =		0	
14. Water Retention & Mit.	3,641,616 x 130% (0 Parcels w/o R/W A)		4,734,100	
15. SUBTOTAL	(Lines 13 & 14)			4,734,100
16. Admin. Settleme (Factor 45% x 0% of Line 15)			0	
17. Litigation Award (Factor 60% x 100% of Line 15)			2,840,500	
18. Business Damag (Claims 0 x \$0)			0	
19. Bus. Damages I (Factor 25% x \$0)			0	
20. Owner Appr. Fee (Parcels 1 x \$10,000)			10,000	
21. Owner CPA Fee (Claims 0 x \$10,000)			0	
22. Defend. Atty Fee (Sum of Lines 16-2,840,500 x 40%)			1,136,200	
23. Owner Expert W (Comm.+Unimprc 1 + 0) 18,000			18,000	
24. Other Condemn. Costs	1 x \$500		500	
25. SUBTOTAL	(Lines 16 thru 24) =		4,005,200	
26.				
TOTAL PHASE 43				\$8,739,300

* Design contingency for design plan stage:
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans - 115% (5) 268 Date - 110%

R/W ACQUISITION CONSULTANT (PHASE 42)	TOTAL PHASE 42	\$0
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RELOCATION COSTS (PHASE 45)		
Replacement Housing		
28. Owner	\$20,000 x 0 =	0
29. Tenant	\$10,000 x 0 =	0
Move Costs		
30. Residential	\$1,500 x 0 =	0
31. Business/Farm	\$20,000 x 0 =	0
32. Personal Property	\$2,000 x 0 =	\$0
33. (Lines 28 thru 32)		
TOTAL PHASE 45		
34. Relocation Services Cost	\$0 (Not in Phase Total)	

35. (All Phases) TOTAL ESTIMATE	\$8,812,200
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Appraisal: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: 12/24/02
Bus. Dam.: N/A	Signed: _____	Date: _____
Relocation: N	Signed: _____	Date: _____
Overall Review: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: 12/24/02

Cost Estimate Sequence #: _____ Dated: _____ In the Amount of \$ _____ Data Input Completion Date: _____

REMARKS:
This estimate was calculated under the following assumptions: 1) ownership research was not conducted, 2) no development research done for any site plan identification, 3) land value at listing price of similar properties, and 4) limited and restricted field inspection.

The following indicates the estimator's confidence in the above estimate:	Future Value Factors @	10%
Type A - indicates the most confidence	Year One	1.1000
Type B - indicates above average confidence	Year Two	1.2100
X Type C - indicates below average confidence	Year Three	1.3310
Type D - indicates the least or no confidence	Year Four	1.4641
	Year Five	1.6105

The following indicates the Department's purpose for this estimate:
Work Program Upds _____ Document to R/W: _____ Gaming 1: _____ Special Purp X

**FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

PBS&J#: 0

M#: 4054921	Former WPI#: N/A	District: Seven
County: Hillsborough	FAP No.: N/A	Date: 24-Dec-02
State Rd.: CR581	Alternate: POND 6B	C.E. Sequence: N/A
Project Des. Bruce B. Downs PD&E Pond Sites		

Parcels	Gross	Net	Estimated Relocates:
Commercial	Total	0	Business
Residential	Total	0	Residential
Unimproved	Total	2	Signs
			Special
Total Parcels	0	2	Total Relocates

R/W SUPPORT COSTS (PHASE 41)		Amount
1. Direct Labor Cos (Parcels)	2 x 13,000 = Rate	26,000
2. Indirect Overhea (Parcels)	2 x 0 = Rate	0
3.		TOTAL PHASE 41
		\$26,000

R/W OPS (PHASE 4B)		Amount
4. Appraisal Fees Through Trial	2 Parcels x 12,000 =	24,000
5. Business Damage CPA Fees Through Trial	0 Claims x 19,000 =	0
6. Court Reporter & Process Servers	2 Parcels x 500 =	1,000
7. Expert Witness	75% x 2 = 2 Parcels x 30,000 =	60,000
8. Mediators	50% x 2 = 1 Parcels x 2,400 =	2,400
9. Demolition, Asb. Abate., Survey, etc.	0 Imprvmet x 15,000 =	0
10. Miscellaneous Contracts	1 Per Projec x 15,000 =	15,000
11. Appraisal Fee Review	N/A Parcels x 5,000 =	0
12.		TOTAL PHASE 4B
		\$102,400

R/W LAND COSTS (PHASE 43)		Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0 x 130% * Design plan stag =	0	
14. Water Retention & Mit.	3,258,794 x 130% (0 Parcels w/o R/W A)	4,236,400	
15. SUBTOTAL	(Lines 13 & 14)		4,236,400
16. Admin. Settleme (Factor)	45% x 30% of Line 15 =	571,900	
17. Litigation Award (Factor)	60% x 70% of Line 15 =	1,779,300	
18. Business Dama (Claims)	0 x \$0 =	0	
19. Bus. Damages li (Factor)	25% x \$0 =	0	
20. Owner Appr. Fee (Parcels)	2 x \$10,000 =	20,000	
21. Owner CPA Fee (Claims)	0 x \$10,000 =	0	
22. Defend. Atty Fee (Sum of Lines 16-21)	2,351,200 x 40% =	940,500	
23. Owner Expert W (Comm.+Unimprc)	0 + 2 = 18,000 =	36,000	
24. Other Condemn. Costs	2 x \$500 =	1,000	
25. SUBTOTAL	(Lines 16 thru 24) =	3,348,700	
26.		TOTAL PHASE 43	\$7,585,100

* Design contingency for design plan stage:
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans - 115% (5) 268.Date - 110%

R/W ACQUISITION CONSULTANT (PHASE 42)	Amount
27.	TOTAL PHASE 42
	\$0

RELOCATION COSTS (PHASE 45)		Number	Amount
Replacement Housing			
28. Owner	\$20,000 x	0	= 0
29. Tenant	\$10,000 x	0	= 0
Move Costs			
30. Residential	\$1,800 x	0	= 0
31. Business/Farm	\$20,000 x	0	= 0
32. Personal Property	\$2,000 x	0	= \$0
33. (Lines 28 thru 32)			TOTAL PHASE 45
			\$0
34. Relocation Services Cost		\$0 (Not in Phase Total)	

35. (All Phases) **TOTAL ESTIMATE** **\$7,713,500**

Appraisal: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: <u>12/24/02</u>
Bus. Dam.: N/A	Signed: _____	Date: _____
Relocation: N	Signed: _____	Date: _____
Overall Review: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: <u>12/24/02</u>

Cost Estimate Sequence #: _____ Dated: _____ In the Amount of \$ _____ Data Input Completion Date: _____

REMARKS:
This estimate was calculated under the following assumptions: 1) ownership research was not conducted, 2) no development research done for any site plan identification, 3) land value at listing price of similar properties, and 4) limited and restricted field inspection.

The following indicates the estimator's confidence in the above estimate:	Future Value Factors @	10%
Type A - Indicates the most confidence	Year One	1.1000
Type B - Indicates above average confidence	Year Two	1.2100
X Type C - Indicates below average confidence	Year Three	1.3310
Type D - Indicates the least or no confidence	Year Four	1.4641
	Year Five	1.6105

The following indicates the Department's purpose for this estimate:
Work Program Upda _____ Document to R/W: _____ Gaming 1: _____ Special Purp X
Comments: _____

**FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

PBS&J#: 0

M#: 4054921	Former WPH#: N/A	District: Seven
County: Hillsborough	FAP No.: N/A	Date: 24-Dec-02
State Rd.: CR681	Alternate: POND 1C	C.E. Sequence: N/A
Project Des. Bruce B. Downs PD&E Pond Sites		

Parcels	Gross	Net	Estimated Relocates:
Commercial	Total	0	Business _____ 0
Residential	Total	0	Residential _____ 0
Unimproved	Total	1	Signs _____ 0
			Special _____ 0
Total Parcels	0	1	Total Relocates _____ 0

R/W SUPPORT COSTS (PHASE 41)		Amount
1. Direct Labor Cos	(Parcels 1 x 13,000 = Rate)	13,000
2. Indirect Overhea	(Parcels 1 x 0 = Rate)	0
3.		
TOTAL PHASE 41		\$13,000

R/W OPS (PHASE 4B)		Amount
4. Appraisal Fees Through Trial	1 Parcels x 12,000 =	12,000
5. Business Damage CPA Fees Through Trial	0 Claims x 19,000 =	0
6. Court Reporter & Process Servers	75% x 1 = 1 Parcels x 500 =	500
7. Expert Witness	75% x 1 = 1 Parcels x 30,000 =	30,000
8. Mediators	50% x 1 = 1 Parcels x 2,400 =	2,400
9. Demolition, Asb. Abate., Survey, etc.	0 Imprvmet x 15,000 =	0
10. Miscellaneous Contracts	1 Per Proj x 15,000 =	15,000
11. Appraisal Fee Review	N/A Parcels x 5,000 =	0
12.		
TOTAL PHASE 4B		\$59,900

R/W LAND COSTS (PHASE 43)		Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0 x 130% * Design plan stag =	0	
14. Water Retention & Mit.	3,484,968 x 130% (0 Parcels w/o R/W A	4,530,500	
15. SUBTOTAL	(Lines 13 & 14)		4,530,500
16. Admin. Settleme (Factor	45% x 0% of Line 15)	= 0	
17. Litigation Award (Factor	60% x 100% of Line 15)	= 2,718,300	
18. Business Dama (Claims	0 x \$0)	= 0	
19. Bus. Damages II (Factor	25% x \$0)	= 0	
20. Owner Appr. Fee (Parcels	1 x \$10,000)	= 10,000	
21. Owner CPA Fee (Claims	0 x \$10,000)	= 0	
22. Defend. Atty Fee (Sum of Lines 16-	2,718,300 x 40%)	= 1,087,300	
23. Owner Expert W (Comm.+Unimpr	0 + 1) 18,000	= 18,000	
24. Other Condemn. Costs	1 x \$500	= 500	
25. SUBTOTAL	(Lines 16 thru 24)		3,834,100
26.			
TOTAL PHASE 43			\$8,364,600

* Design contingency for design plan stage:
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans -115% (5) 268 Date -110%

R/W ACQUISITION CONSULTANT (PHASE 42)	Amount
27.	TOTAL PHASE 42 \$0

RELOCATION COSTS (PHASE 45)		Number	Amount
Replacement Housing			
28. Owner	\$20,000 x	0	= 0
29. Tenant	\$10,000 x	0	= 0
Move Costs			
30. Residential	\$1,500 x	0	= 0
31. Business/Farm	\$20,000 x	0	= 0
32. Personal Property	\$2,000 x	0	= \$0
33. (Lines 28 thru 32)			TOTAL PHASE 45 \$0
34. Relocation Services Cost	\$0 (Not in Phase Total)		

35. (All Phases) TOTAL ESTIMATE		Amount
		\$8,437,500

Appraisal: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: 12/24/02
Bus. Dam.: N/A	Signed: _____	Date: _____
Relocation: N	Signed: _____	Date: _____
Overall Review: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: 12/24/02

Cost Estimate Sequence #: _____ Dated: _____ In the Amount of \$ _____ Data Input Completion Date: _____

REMARKS:
This estimate was calculated under the following assumptions: 1) ownership research was not conducted, 2) no development research done for any site plan identification, 3) land value at listing price of similar properties, and 4) limited and restricted field inspection.

The following indicates the estimator's confidence in the above estimate:	Future Value Factors @	10%
Type A - indicates the most confidence	Year One	1.1000
Type B - indicates above average confidence	Year Two	1.2100
X Type C - indicates below average confidence	Year Three	1.3310
Type D - indicates the least or no confidence	Year Four	1.4641
	Year Five	1.6105

The following indicates the Department's purpose for this estimate:
Work Program Upda _____ Document to R/W: _____ Gaming 1: _____ Special Purp X
Comments: _____

**FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

PBS&J#: 0

PM#: 4054921	Former WP#: N/A	District: Seven
County: Hillsborough	FAP No.: N/A	Date: 24-Dec-02
State Rd.: CR581	Alternate: POND 4D	C.E. Sequence: N/A

Project Des. Bruce B. Downs PD&E Pond Sites

Parcels	Gross	Net	Estimated Relocates:
Commercial	Total	0	Business
Residential	Total	0	Residential
Unimproved	Total	1	Signs
			Special
Total Parcels	0	1	Total Relocates

R/W SUPPORT COSTS (PHASE 41)		Amount
1. Direct Labor Cos (Parcels	1 x 13,000 = Rate)	13,000
2. Indirect Overhea (Parcels	1 x 0 = Rate)	0
3.		
		TOTAL PHASE 41
		\$13,000

R/W OPS (PHASE 4B)		Amount
4. Appraisal Fees Through Trial	1 Parcels x 12,000 =	12,000
5. Business Damage CPA Fees Through Trial	0 Claims x 19,000 =	0
6. Court Reporter & Process Servers	75% x 1 = 1 Parcels x 500 =	500
7. Expert Witness	75% x 1 = 1 Parcels x 30,000 =	30,000
8. Mediators	50% x 1 = 1 Parcels x 2,400 =	2,400
9. Demolition, Asb. Abate., Survey, etc.	0 Imprvmet x 15,000 =	0
10. Miscellaneous Contracts	1 Per Proj: x 15,000 =	15,000
11. Appraisal Fee Review	N/A Parcels x 5,000 =	0
12.		
		TOTAL PHASE 4B
		\$59,900

R/W LAND COSTS (PHASE 43)		Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0 x 130% * Design plan stag =	0	
14. Water Retention & Mit.	2,321,336 x 130% (0 Parcels w/o R/W A	3,017,700	
15. SUBTOTAL	(Lines 13 & 14)		3,017,700
16. Admin. Settleme (Factor	45% x 0% of Line 15)	0	
17. Litigation Award (Factor	60% x 100% of Line 15)	1,810,600	
18. Business Damag (Claims	0 x \$0)	0	
19. Bus. Damages li (Factor	25% x \$0)	0	
20. Owner Appr. Fee (Parcels	1 x \$10,000)	10,000	
21. Owner CPA Fee (Claims	0 x \$10,000)	0	
22. Defend. Atty Fee (Sum of Lines 16-18)	1,810,600 x 40%	724,200	
23. Owner Expert W (Comm.+Unimprc	0 + 1) 18,000	18,000	
24. Other Condemn. Costs	1 x \$500	500	
25. SUBTOTAL	(Lines 16 thru 24)	2,563,300	
26.			TOTAL PHASE 43
			\$5,581,000

* Design contingency for design plan stage:
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans - 115% (5) 268 Date - 110%

R/W ACQUISITION CONSULTANT (PHASE 42)	TOTAL PHASE 42	\$0
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RELOCATION COSTS (PHASE 45)			
Replacement Housing			
28. Owner	\$20,000	x 0	= 0
29. Tenant	\$10,000	x 0	= 0
Move Costs			
30. Residential	\$1,500	x 0	= 0
31. Business/Farm	\$20,000	x 0	= 0
32. Personal Property	\$2,000	x 0	= 0
33. (Lines 28 thru 32)			
			TOTAL PHASE 45
			\$0
34. Relocation Services Cost	\$0	(Not in Phase Total)	

35. (All Phases)	TOTAL ESTIMATE	\$5,583,900
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Appraisal: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: <u>12/24/02</u>
Bus. Dam.: N/A	Signed: _____	Date: _____
Relocation: N	Signed: _____	Date: _____
Overall Review: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: <u>12/24/02</u>

Cost Estimate Sequence #: _____ Dated: _____ In the Amount of \$ _____ Data Input Completion Date: _____

REMARKS:
This estimate was calculated under the following assumptions: 1) ownership research was not conducted, 2) no development research done for any site plan identification, 3) land value at listing price of similar properties, and 4) limited and restricted field inspection.

The following indicates the estimator's confidence in the above estimate:	Future Value Factors @	10%
Type A - indicates the most confidence	Year One	1.1000
Type B - indicates above average confidence	Year Two	1.2100
X Type C - indicates below average confidence	Year Three	1.3310
Type D - indicates the least or no confidence	Year Four	1.4641
	Year Five	1.6105

The following indicates the Department's purpose for this estimate:
Work Program Upda _____ Document to R/W: _____ Gaming 1: _____ Special Purp X

Comments: _____

**FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

PBS&J#: 0

M#: 4054921	Former WPI#: N/A	District: Seven
County: Hillsborough	FAP No.: N/A	Date: 24-Dec-02
State Rd.: CR581	Alternate: POND 2D	C.E. Sequence: N/A
Project Des. Bruce B. Downs PD&E Pond Sites		

Parcels	Gross	Net	Estimated Relocates:
	Total	0	
Commercial	Total	0	Residential
Residential	Total	0	Signs
Unimproved	Total	1	Special
Total Parcels	0	1	Total Relocates

R/W SUPPORT COSTS (PHASE 41)			Amount	
1. Direct Labor Cos (Parcels	1	x	13,000 = Rate)	13,000
2. Indirect Overhea (Parcels	1	x	0 = Rate)	0
			TOTAL PHASE 41	\$13,000

R/W OPS (PHASE 4B)			Amount	
4. Appraisal Fees Through Trial	1	Parcels	x 12,000 = 12,000	
5. Business Damage CPA Fees Through Trial	0	Claims	x 19,000 = 0	
6. Court Reporter & Process Servers	75%	x 1 = 1	Parcels x 500 = 500	
7. Expert Witness	75%	x 1 = 1	Parcels x 30,000 = 30,000	
8. Mediators	50%	x 1 = 1	Parcels x 2,400 = 2,400	
9. Demolition, Asb. Abate., Survey, etc.		0	Imprvmet x 15,000 = 0	
10. Miscellaneous Contracts		1	Per Projct x 15,000 = 15,000	
11. Appraisal Fee Review	N/A	Parcels	x 5,000 = 0	
			TOTAL PHASE 4B	\$59,900

R/W LAND COSTS (PHASE 43)			Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130% * Design plan stag = 0	
14. Water Retention & Mit.	7,054,072	x	130% (0 Parcels w/o R/W A	9,170,300
15. SUBTOTAL			(Lines 13 & 14)	9,170,300
16. Admin. Settlements (Factor	45%	x	0% of Line 15)	0
17. Litigation Award (Factor	60%	x	100% of Line 15)	5,502,200
18. Business Damag (Claims	0	x	\$0)	0
19. Bus. Damages li (Factor	25%	x	\$0)	0
20. Owner Appr. Fee (Parcels	1	x	\$10,000)	10,000
21. Owner CPA Fee (Claims	0	x	\$10,000)	0
22. Defend. Atty Fee (Sum of Lines 16-	5,502,200	x	40%)	2,200,900
23. Owner Expert W (Comm.+Unimprc	0	+	1) 18,000	18,000
24. Other Condemn. Costs	1	x	\$500	500
25. SUBTOTAL			(Lines 16 thru 24)	7,731,600
			TOTAL PHASE 43	\$16,901,900

* Design contingency for design plan stage:
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans - 115% (5) 265 Date - 110%

R/W ACQUISITION CONSULTANT (PHASE 42)	TOTAL PHASE 42	\$0
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RELOCATION COSTS (PHASE 45)		
Replacement Housing		
28. Owner	\$20,000	x 0 = 0
29. Tenant	\$10,000	x 0 = 0
Move Costs		
30. Residential	\$1,500	x 0 = 0
31. Business/Farm	\$20,000	x 0 = 0
32. Personal Property	\$2,000	x 0 = \$0
33. (Lines 28 thru 32)		
34. Relocation Services Cost	\$0	(Not in Phase Total)
TOTAL PHASE 45		
\$0		

35. (All Phases) **TOTAL ESTIMATE** **\$16,974,800**

Appraisal: Bill McTeer	Signed: <i>Bill McTeer</i>	Date: 12/24/02
Bus. Dam.: N/A	Signed: _____	Date: _____
Relocation: N	Signed: _____	Date: _____
Overall Review: Bill McTeer	Signed: <i>Bill McTeer</i>	Date: 12/24/02

Cost Estimate Sequence #: _____ Dated: _____ In the Amount of \$ _____ Data Input Completion Date: _____

REMARKS:
This estimate was calculated under the following assumptions: 1) ownership research was not conducted, 2) no development research done for any site plan identification, 3) land value at listing price of similar properties, and 4) limited and restricted field inspection.

The following indicates the estimator's confidence in the above estimate:	Future Value Factors @	10%
Type A - indicates the most confidence	Year One	1.1000
Type B - indicates above average confidence	Year Two	1.2100
X Type C - indicates below average confidence	Year Three	1.3310
Type D - indicates the least or no confidence	Year Four	1.4641
	Year Five	1.6105

The following indicates the Department's purpose for this estimate:
Work Program Upda _____ Document to R/W: _____ Gaming 1: _____ Special Purp X
Comments: _____

**FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

PBS&J#: 0

FM#: 4054921	Former WPH#: N/A	District: Seven
County: Hillsborough	FAP No.: N/A	Date: 24-Dec-02
State Rd.: CR581	Alternate: POND 3D	C.E. Sequence: N/A
Project Des. Bruce B. Downs PD&E Pond Sites		

Parcels	Gross	Net	Estimated Relocates:
Commercial	Total	0	Business
Residential	Total	0	Residential
Unimproved	Total	1	Signs
			Special
Total Parcels	0	1	Total Relocates
			0
			0
			0
			0

R/W SUPPORT COSTS (PHASE 41)		Amount
1. Direct Labor Cos	(Parcels 1 x 13,000 = Rate)	13,000
2. Indirect Overhea	(Parcels 1 x 0 = Rate)	0
3.		
TOTAL PHASE 41		\$13,000

R/W OPS (PHASE 4B)		Amount
4. Appraisal Fees Through Trial	1 Parcels x 12,000 =	12,000
5. Business Damage CPA Fees Through Trial	0 Claims x 19,000 =	0
6. Court Reporter & Process Servers	75% x 1 = 1 Parcels x 500 =	500
7. Expert Witness	75% x 1 = 1 Parcels x 30,000 =	30,000
8. Mediators	50% x 1 = 1 Parcels x 2,400 =	2,400
9. Demolition, Asb. Abate., Survey, etc.	0 Imprvmet x 18,000 =	0
10. Miscellaneous Contracts	1 Per Projec x 15,000 =	15,000
11. Appraisal Fee Review	N/A Parcels x 5,000 =	0
12.		
TOTAL PHASE 4B		\$59,900

R/W LAND COSTS (PHASE 43)		Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0 x 130% * Design plan stag =	0	
14. Water Retention & Mit.	2,376,586 x 130% (0 Parcels w/o R/W A	3,089,800	
15. SUBTOTAL	(Lines 13 & 14)		3,089,800
16. Admin. Settlements (Factor 45% x 0% of Line 15)	=	0	
17. Litigation Award (Factor 60% x 100% of Line 15)	=	1,853,800	
18. Business Damag (Claims 0 x \$0)	=	0	
19. Bus. Damages It (Factor 25% x \$0)	=	0	
20. Owner Appr. Fee (Parcels 1 x \$10,000)	=	10,000	
21. Owner CPA Fee (Claims 0 x \$10,000)	=	0	
22. Defend. Atty Fee (Sum of Lines 16-21)	1,853,800 x 40%	741,500	
23. Owner Expert W (Comm.+Unimprc 0 + 1) 18,000	=	18,000	
24. Other Condemn. Costs	1 x \$500	500	
25. SUBTOTAL	(Lines 16 thru 24)		2,623,800
26.			
TOTAL PHASE 43			\$5,713,400

* Design contingency for design plan stage:
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans - 115% (5) 268 Date - 110%

R/W ACQUISITION CONSULTANT (PHASE 42)	TOTAL PHASE 42	\$0
27.		

RELOCATION COSTS (PHASE 45)		Amount
Replacement Housing		
28. Owner	\$20,000 x 0 =	0
29. Tenant	\$10,000 x 0 =	0
Move Costs		
30. Residential	\$1,500 x 0 =	0
31. Business/Farm	\$20,000 x 0 =	0
32. Personal Property	\$2,000 x 0 =	\$0
33. (Lines 28 thru 32)		
TOTAL PHASE 45		\$0
34. Relocation Services Cost	\$0 (Not in Phase Total)	

35. (All Phases)	TOTAL ESTIMATE	\$5,786,300
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Appraisal: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: 12/24/02
Bus. Dam.: N/A	Signed: _____	Date: _____
Relocation: N	Signed: _____	Date: _____
Overall Review: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: 12/24/02

Cost Estimate Sequence #: _____ Dated: _____ In the Amount of \$ _____ Data Input Completion Date: _____

REMARKS:
This estimate was calculated under the following assumptions: 1) ownership research was not conducted, 2) no development research done for any site plan identification, 3) land value at listing price of similar properties, and 4) limited and restricted field inspection.

The following indicates the estimator's confidence in the above estimate:	Future Value Factors @	10%
Type A - indicates the most confidence	Year One	1.1000
Type B - indicates above average confidence	Year Two	1.2100
X Type C - indicates below average confidence	Year Three	1.3310
Type D - indicates the least or no confidence	Year Four	1.4641
	Year Five	1.6105

The following indicates the Department's purpose for this estimate:
Work Program Upds _____ Document to R/W: _____ Gaming 1: _____ Special Purp X

Comments: _____

**FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

PBS&J#: 0

M#: 4054921	Former WP#: N/A	District: Seven
County: Hillsborough	FAP No.: N/A	Date: 24-Dec-02
State Rd.: CR581	Alternate: POND 3C	C.E. Sequence: N/A
Project Des. Bruce B. Downs PD&E Pond Sites		

Parcels	Gross	Net	Estimated Relocates:
Commercial	Total	0	Business
Residential	Total	0	Residential
Unimproved	Total	1	Signs
			Special
Total Parcels	0	1	Total Relocates

R/W SUPPORT COSTS (PHASE 41)			Amount
1. Direct Labor Cos	(Parcels 1 x 13,000 = Rate)		13,000
2. Indirect Overhea	(Parcels 1 x 0 = Rate)		0
3.			TOTAL PHASE 41
			\$13,000

R/W OPS (PHASE 4B)			Amount
4. Appraisal Fees Through Trial	1 Parcels x 12,000 =		12,000
5. Business Damage CPA Fees Through Trial	0 Claims x 19,000 =		0
6. Court Reporter & Process Servers	75% x 1 = 1 Parcels x 800 =		800
7. Expert Witness	75% x 1 = 1 Parcels x 30,000 =		30,000
8. Mediators	80% x 1 = 1 Parcels x 2,400 =		2,400
9. Demolition, Asb. Abate., Survey, etc.	0 Imprvmet x 15,000 =		0
10. Miscellaneous Contracts	1 Per Project x 15,000 =		15,000
11. Appraisal Fee Review	N/A Parcels x 5,000 =		0
12.			TOTAL PHASE 4B
			\$59,900

R/W LAND COSTS (PHASE 43)			Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0 x 130% * Design plan stag =		0	
14. Water Retention & Mit.	3,974,960 x 130% (0 Parcels w/o R/W A		5,167,400	
15. SUBTOTAL	(Lines 13 & 14)			5,167,400
16. Admn. Settlements (Factor 45% x 0% of Line 15)			0	
17. Litigation Award (Factor 60% x 100% of Line 15)			3,100,400	
18. Business Damag (Claims 0 x \$0)			0	
19. Bus. Damages li (Factor 25% x \$0)			0	
20. Owner Appr. Fee (Parcels 1 x \$10,000)			10,000	
21. Owner CPA Fee (Claims 0 x \$10,000)			0	
22. Defend. Atty Fee (Sum of Lines 16- 3,100,400 x 40%)			1,240,200	
23. Owner Expert W (Comm.+Unimprc 0 + 1) 18,000			18,000	
24. Other Condemn. Costs 1 x \$500			500	
25. SUBTOTAL	(Lines 16 thru 24)		4,369,100	
26.			TOTAL PHASE 43	\$9,536,500

* Design contingency for design plan stage:
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans - 115% (5) 268 Date - 110%

R/W ACQUISITION CONSULTANT (PHASE 42) **TOTAL PHASE 42** \$0

RELOCATION COSTS (PHASE 45)			
Replacement Housing		Number	Amount
28. Owner	\$20,000 x	0	= 0
29. Tenant	\$10,000 x	0	= 0
Move Costs			
30. Residential	\$1,500 x	0	= 0
31. Business/Farm	\$20,000 x	0	= 0
32. Personal Property	\$2,000 x	0	= \$0
33. (Lines 28 thru 32)			
34. Relocation Services Cost	\$0	(Not in Phase Total)	
35.	(All Phases)	TOTAL ESTIMATE	\$9,508,400

Appraisal:	Bill McTeer	Signed:	<i>Bill McTeer</i>	Date:	12/24/02
Bus. Dam.:	N/A	Signed:		Date:	
Relocation:	N	Signed:		Date:	
Overall Review:	Bill McTeer	Signed:	<i>Bill McTeer</i>	Date:	12/24/02

Cost Estimate Sequence #: _____ Dated: _____ In the Amount of \$ _____ Data Input Completion Date: _____

REMARKS:
This estimate was calculated under the following assumptions: 1) ownership research was not conducted, 2) no development research done for any site plan identification, 3) land value at listing price of similar properties, and 4) limited and restricted field inspection.

The following indicates the estimator's confidence in the above estimate:	Future Value Factors @	10%
Type A - Indicates the most confidence	Year One	1.1000
Type B - Indicates above average confidence	Year Two	1.2100
X Type C - Indicates below average confidence	Year Three	1.3310
Type D - Indicates the least or no confidence	Year Four	1.4641
	Year Five	1.6105

The following indicates the Department's purpose for this estimate:
Work Program Upda _____ Document to R/W: _____ Gaming 1: _____ Special Purp X
Comments: _____

**FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

PBS&J#: 0

Map#: 4054921	Former WPI#: N/A	District: Seven
County: Hillsborough	FAP No.: N/A	Date: 24-Dec-02
State Rd.: CR581	Alternate: POND 1D	C.E. Sequence: N/A

Project Des. Bruce B. Downs PD&E Pond Sites

Parcels	Gross	Net
Commercial	Total	1
Residential	Total	20
Unimproved	Total	0

Estimated Relocates:	
Business	0
Residential	20
Signs	0
Special	0
Total Relocates	20

Total Parcels 0 21

R/W SUPPORT COSTS (PHASE 41)

1. Direct Labor Cos (Parcels 21 x 13,000 = Rate)	Amount	273,000
2. Indirect Overhea (Parcels 21 x 0 = Rate)		0
3.	TOTAL PHASE 41	\$273,000

R/W OPS (PHASE 4B)

4. Appraisal Fees Through Trial	21 Parcels x 12,000 =	252,000
5. Business Damage CPA Fees Through Trial	0 Claims x 19,000 =	0
6. Court Reporter & Process Servers 75% x 21 = 16	Parcels x 500 =	8,000
7. Expert Witness 75% x 21 = 16	Parcels x 30,000 =	480,000
8. Mediators 50% x 21 = 11	Parcels x 2,400 =	26,400
9. Demolition, Asb. Abate., Survey, etc.	0 Imprvmet x	15,000 = 0
10. Miscellaneous Contracts	1 Per Proj: x	15,000 = 15,000
11. Appraisal Fee Review	N/A Parcels x	8,000 = 0
12.	TOTAL PHASE 4B	\$781,400

R/W LAND COSTS (PHASE 43)

13. Land, Improvements & Severance Damages and Cost to Cure Amount	0 x 130% * Design plan stag =	0	Amount	Subtotal
14. Water Retention & Mit.	13,054,072 x 130% (0 Parcels w/o R/W A	16,970,300		
15. SUBTOTAL	(Lines 13 & 14)			16,970,300
16. Admn. Settleme (Factor 45% x 30% of Line 15)	=	2,291,000		
17. Litigation Award (Factor 60% x 70% of Line 15)	=	7,127,500		
18. Business Dama; (Claims 0 x \$0)	=	0		
19. Bus. Damages li (Factor 25% x \$0)	=	0		
20. Owner Appr. Fee (Parcels 16 x \$10,000)	=	160,000		
21. Owner CPA Fee; (Claims 0 x \$10,000)	=	0		
22. Defend. Atty Fee; (Sum of Lines 16-21)	9,418,500 x 40%	3,767,400		
23. Owner Expert W (Comm.+Unimprc 1 + 0) 18,000	=	18,000		
24. Other Condemn. Costs 21 x \$500	=	10,500		
25. SUBTOTAL	(Lines 16 thru 24) =	13,374,400		
26.	TOTAL PHASE 43			\$30,344,700

* Design contingency for design plan stage:
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans - 115% (5) 268 Date - 110%

R/W ACQUISITION CONSULTANT (PHASE 42)

27. **TOTAL PHASE 42 \$0**

RELOCATION COSTS (PHASE 45)

Replacement Housing		Number	Amount
28. Owner	\$20,000 x	20	= 400,000
29. Tenant	\$10,000 x	0	= 0
Move Costs			
30. Residential	\$1,500 x	20	= 30,000
31. Business/Farm	\$20,000 x	0	= 0
32. Personal Property	\$2,000 x	0	= \$0
33. (Lines 28 thru 32)			TOTAL PHASE 45 \$430,000
34. Relocation Services Cost	\$43,000	(Not in Phase Total)	

35. (All Phases) **TOTAL ESTIMATE \$31,829,100**

Appraisal: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: 12/24/02
Bus. Dam.: N/A	Signed: _____	Date: _____
Relocation: N	Signed: _____	Date: _____
Overall Review: Bill McTeer	Signed: <u>Bill McTeer</u>	Date: 12/24/02

Cost Estimate Sequence #: _____ Dated: _____ In the Amount of \$ _____ Data Input Completion Date: _____

REMARKS:
This estimate was calculated under the following assumptions: 1) ownership research was not conducted, 2) no development research done for any site plan identification, 3) land value at listing price of similar properties, and 4) limited and restricted field inspection.
Please note this property is currently be developed and the current pond location will eliminate approximately 20 single family homes.

The following indicates the estimator's confidence in the above estimate:	Future Value Factors @	10%
Type A - Indicates the most confidence	Year One	1.1000
Type B - Indicates above average confidence	Year Two	1.2100
X Type C - Indicates below average confidence	Year Three	1.3310
Type D - Indicates the least or no confidence	Year Four	1.4641
	Year Five	1.6105

The following indicates the Department's purpose for this estimate:
Work Program Upda _____ Document to R/W: _____ Gaming 1: _____ Special Purp X
Comments: _____

**FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE**

PBS&J#: 0

FM#: 4054921	Former WPI#: N/A	District: Seven
County: Hillsborough	FAP No.: N/A	Date: 24-Dec-02
State Rd.: CR581	Alternate: POND 5B	C.E. Sequence: N/A
Project Des. Bruce B. Downs PD&E Pond Sites		

Parcels	Gross	Net	Estimated Relocates:	
Commercial	Total	0	Business	0
Residential	Total	0	Residential	0
Unimproved	Total	2	Signs	0
			Special	0
Total Parcels	0	2	Total Relocates	0

R/W SUPPORT COSTS (PHASE 41)			Amount
1. Direct Labor Cos (Parcels	2	x 13,000 = Rate)	26,000
2. Indirect Overhea (Parcels	2	x 0 = Rate)	0
3.			TOTAL PHASE 41 \$28,000

R/W OPS (PHASE 4B)			Amount
4. Appraisal Fees Through Trial	2	Parcels x 12,000 =	24,000
5. Business Damage CPA Fees Through Trial	0	Claims x 18,000 =	0
6. Court Reporter & Process Servers	75%	x 2 = 2	Parcels x 500 = 1,000
7. Expert Witness	75%	x 2 = 2	Parcels x 30,000 = 60,000
8. Mediators	60%	x 2 = 1	Parcels x 2,400 = 2,400
9. Demolition, Asb. Abate., Survey, etc.		0	Imprvmet x 15,000 = 0
10. Miscellaneous Contracts		1	Per Project x 15,000 = 15,000
11. Appraisal Fee Review	N/A	Parcels x 5,000 =	0
12.			TOTAL PHASE 4B \$102,400

R/W LAND COSTS (PHASE 43)			Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x 130% * Design plan stag =	0	
14. Water Retention & Mit.	3,297,294	x 130% (0 Parcels w/o R/W A	4,286,500	
15. SUBTOTAL		(Lines 13 & 14)		4,286,500
16. Admn. Settleme (Factor	45%	x 30% of Line 15)	= 578,700	
17. Litigation Award (Factor	60%	x 70% of Line 15)	= 1,800,300	
18. Business Damag (Claims	0	x \$0)	= 0	
19. Bus. Damages I (Factor	25%	x \$0)	= 0	
20. Owner Appr. Fee (Parcels	2	x \$10,000)	= 20,000	
21. Owner CPA Fee (Claims	0	x \$10,000)	= 0	
22. Defend. Atty Fee: (Sum of Lines 16-	2,379,000	x 40%)	= 951,600	
23. Owner Expert W (Comm.+Unimpr	0	+ 2) 18,000	= 36,000	
24. Other Condemn. Costs	2	x \$500	= 1,000	
25. SUBTOTAL		(Lines 16 thru 24) =	3,387,600	
26.			TOTAL PHASE 43	\$7,674,100

* Design contingency for design plan stage:
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 80% plans - 115% (5) 268 Date - 110%

R/W ACQUISITION CONSULTANT (PHASE 42)	TOTAL PHASE 42	\$0
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RELOCATION COSTS (PHASE 45)			Number	Amount
Replacement Housing				
28. Owner	\$20,000	x	0	= 0
29. Tenant	\$10,000	x	0	= 0
Move Costs				
30. Residential	\$1,500	x	0	= 0
31. Business/Farm	\$20,000	x	0	= 0
32. Personal Property	\$2,000	x	0	= \$0
33. (Lines 28 thru 32)				TOTAL PHASE 45 \$0
34. Relocation Services Cost	\$0	(Not in Phase Total)		

35. (All Phases) TOTAL ESTIMATE	\$7,802,500
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Appraisal: Bill McTeer	Signed: <i>Bill McTeer</i>	Date: 12/24/02
Bus. Dam.: N/A	Signed: _____	Date: _____
Relocation: N	Signed: _____	Date: _____
Overall Review: Bill McTeer	Signed: <i>Bill McTeer</i>	Date: 12/24/02

Cost Estimate Sequence #: _____ Dated: _____ In the Amount of \$ _____ Data Input Completion Date: _____

REMARKS:
This estimate was calculated under the following assumptions: 1) ownership research was not conducted, 2) no development research done for any site plan identification, 3) land value at listing price of similar properties, and 4) limited and restricted field inspection.

The following indicates the estimator's confidence in the above estimate:	Future Value Factors @	10%
Type A - Indicates the most confidence	Year One	1.1000
Type B - Indicates above average confidence	Year Two	1.2100
X Type C - Indicates below average confidence	Year Three	1.3310
Type D - Indicates the least or no confidence	Year Four	1.4641
	Year Five	1.6105

The following indicates the Department's purpose for this estimate:
Work Program Upda _____ Document to R/W: _____ Gaming 1: _____ Special Purp X
Comments: _____