FINAL
CONCEPTUAL POND SITING REPORT

Work Program Item Number: 256422 1
Federal Aid Project Number: 1455-001-U

U.S. 301 (S.R. 41)
S.R. 39 to C.R. 54
Pasco County, Florida

This study evaluates pond site alternatives on U.S. 301 from S.R. 39 to C.R. 54 through Zephyrhills. A one-way pair system using 6th Street and U. S. 301 is being considered. The approximate length of the project is 2.6 miles.

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May 2001

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SECTION 1

EXECUTIVE SUMMARY

The Florida Department of Transportation proposes to widen U.S. 301 from S.R.39 to C.R. 54 in Pasco County, Florida. The project is located in the Zephyrhills area. The widening will transform the existing 2 lane rural section of U.S. 301 into an urban section with curb and gutter. A one-way pair system with 3 lanes in each direction is proposed. U.S. 301 is to be used for northbound traffic and 6th Street for southbound traffic.

The purpose of this report is to evaluate pond site alternatives in order to recommend conceptual stormwater management facilities required due to the roadway improvements. The report will also provide the methodology proposed for the permitting of the project through the Southwest Florida Water Management District (SWFWMD) once the project goes to the design phase.

Much information regarding the floodplain and outfall data was obtained from the *Lake Zephyr Watershed Study, 1989* by Greiner, Inc. Excerpts from this Study are included in Appendices E and F (also see References listed in Section 4 of this report).

The project is 2.6 miles in length and is divided into six basins. A total of eighteen alternative pond sites were evaluated for their potential to serve as stormwater management facilities. The four recommended pond sites were selected based on hydraulic, environmental, and economic considerations. Table 1-1 summarizes the recommended pond sites, the right-of-way cost, and Hazmat rating. More detail as to the reasoning for the selection of pond sites is included in Section 7, *Conclusions and Recommendations* of this report.

TABLE 1-1

SUMMARY OF RECOMMENDED POND SITES

Pond No.	Basin No.	Area (ac)	Total Cost $	Relocations (Residential)	Hazmat Rating
2-3	1	2.45	755,000	0	Medium
2-6	2	1.20	778,100	3	Low
2-15A	3	1.20	947,000	2	Low
2-24	4,5,6	5.00	756,000	0	Medium

SECTION 2
INTRODUCTION

2.1 PROJECT DESCRIPTION

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study that evaluates improvement options along the U.S. 301 corridor from S.R. 39 to C.R. 54 in the Zephyrhills area of Pasco County. The U.S. 301 corridor is a north/south urban principal arterial facility located which passes through downtown Zephyrhills. The location and limits of the approximately 2.6 mile long project are shown in Figure 1. The project is located in Sections 2,3,10,11, and 14 of Township 26 South, Range 21 East. The southern portion of the project (from S.R. 39 to Avenue C) is located within unincorporated Pasco County. The northern portion (from Avenue C to C.R. 54) is located within the City of Zephyrhills. Figure 2 shows the project limits on the USGS quadrangle map.

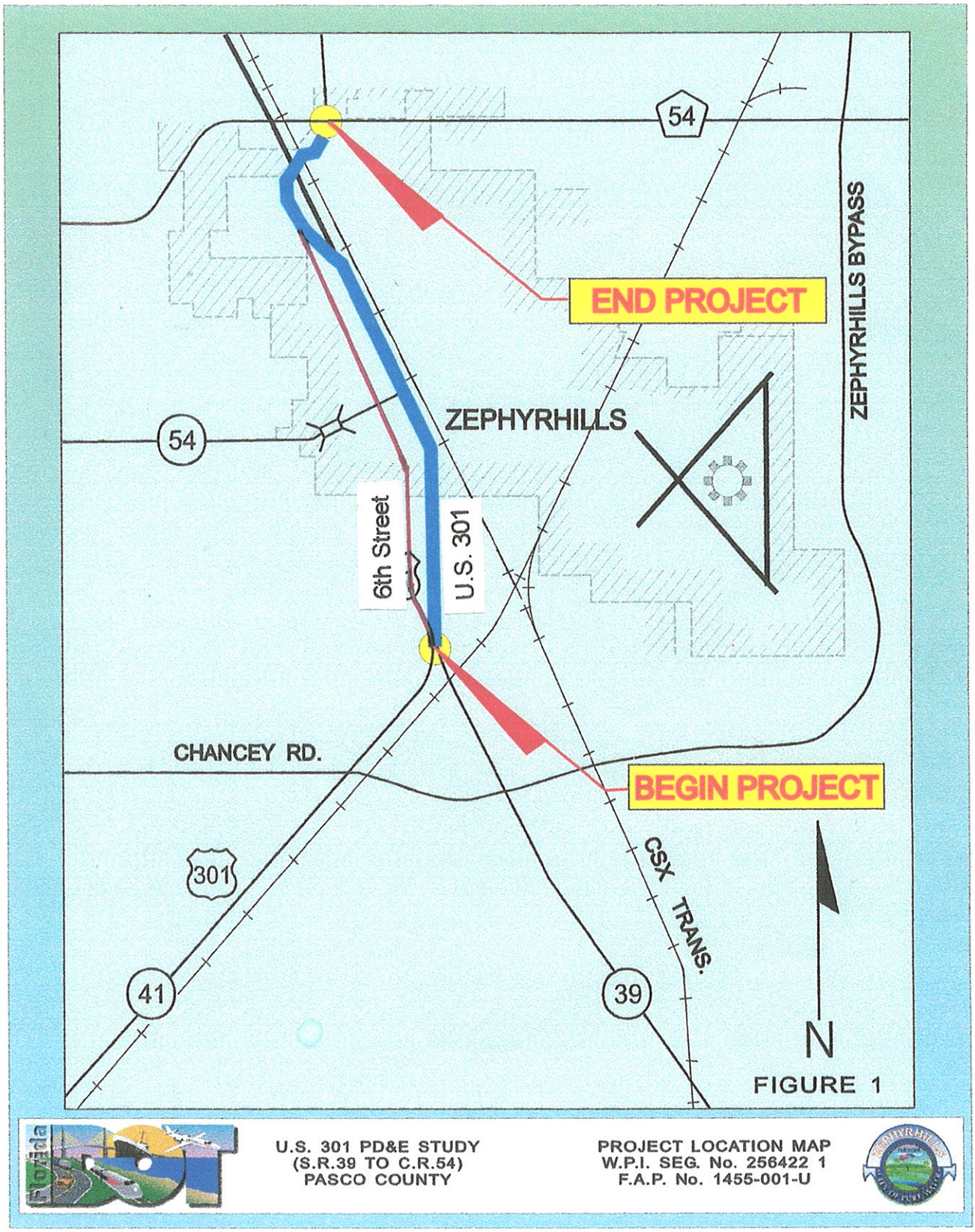
The U.S. 301 corridor is currently a two-lane rural section (open and closed drainage), FDOT-maintained roadway with four foot paved shoulders. Roadside ditches and occasional storm sewer systems convey runoff away from the road to low-lying areas adjacent to the roadway or to existing stormwater management facilities.

2.2 PURPOSE

The objective of the PD&E Study is to provide documented environmental and engineering analyses which will help the Florida Department of Transportation (FDOT) reach a decision on the type, conceptual design, and location of the necessary improvements along the U.S. 301 corridor to accommodate future transportation needs in a safe and efficient manner. The PD&E Study also satisfies the requirements of the National Environmental Policy Act (NEPA) and other state and federal requirements in order to qualify for Federal-aid funding.

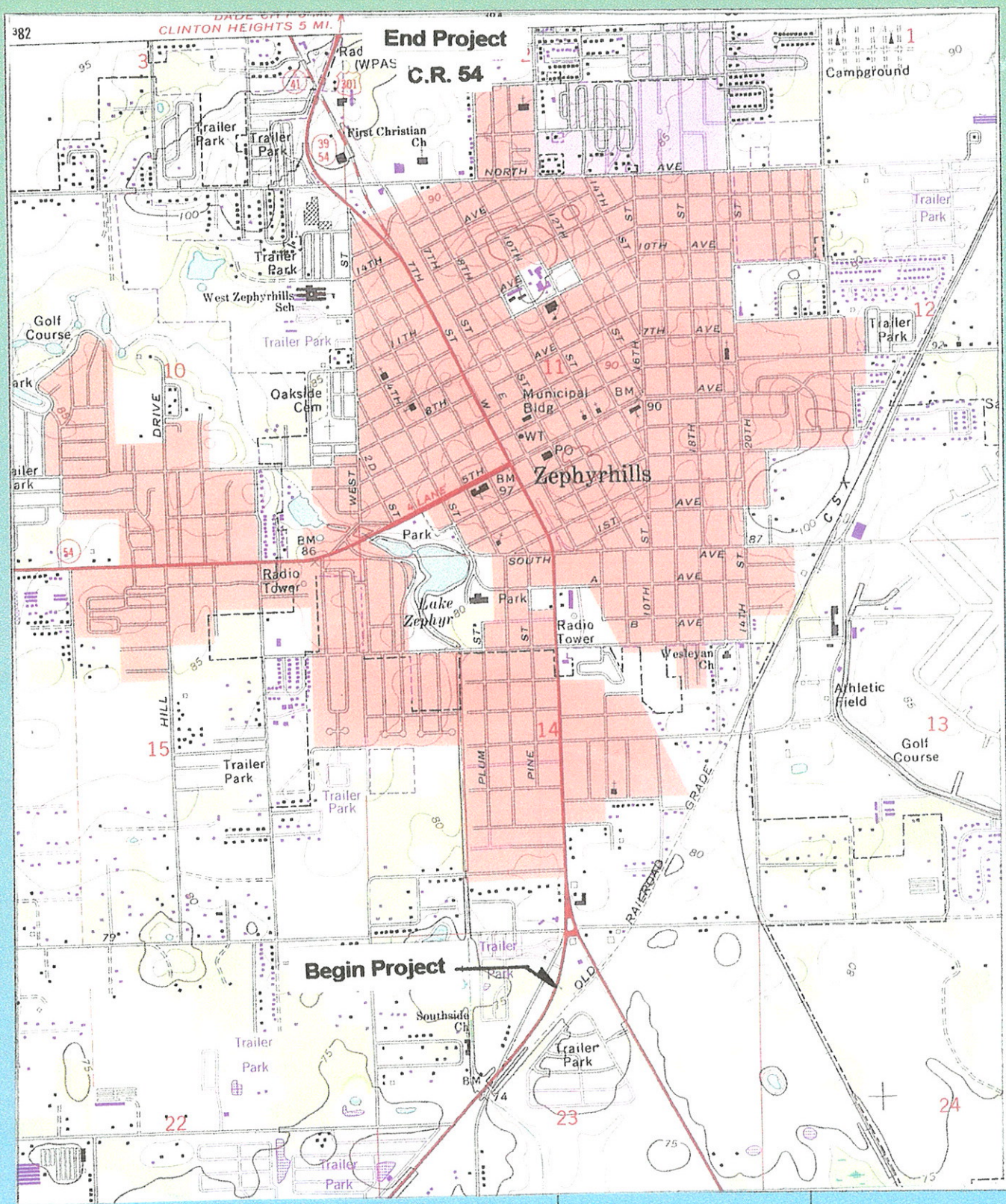
The purpose of this report is to evaluate pond site alternatives to recommend conceptual stormwater management facilities required due to the roadway improvements. The report will also provide the methodology proposed for the permitting of the project through the Southwest Florida Water Management District (SWFWMD) once the project goes to the design phase.

In November 2000, FHWA approved the PD&E study south of the project along S.R. 39 from the Hillsborough County line to the apex of S.R. 39 and U.S. 301. The FDOT Financial Project Number is FPN 2562891. Coordination with the section to the south will be required for pond location and tie-ins during the design phase.



U.S. 301 PD&E STUDY
(S.R.39 TO C.R.54)
PASCO COUNTY

PROJECT LOCATION MAP
W.P.I. SEG. No. 256422 1
F.A.P. No. 1455-001-U



STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 7	USGS QUADRANGLE	FIGURE 2

2.3 EXISTING TYPICAL SECTION

Existing U.S. 301 is currently a 2 lane rural section with 12 foot travel lanes, a 4 foot paved shoulder, and roadside ditches. The existing typical section is shown on Figure 3. 6th Street is a two lane rural section with 11 foot travel lanes. Roadside ditches along 6th Street are minimal south of S.R. 54. 6th Street is an unpaved dirt road from Jendrall Ave. to Avenue C.

2.4 RECOMMENDED TYPICAL SECTION

Following the Public Hearing in April 2001, the recommended typical changed from 12-foot lanes to 11-foot for both U.S. 301 and 6th Street. The recommended typical section is shown on Figure 4. The typical is a one-way pair system using 6th Street (southbound) and U.S. 301 (northbound). The typical proposes a 3 lane urban section for both roadways with separate trunk line storm sewers. Below is a more detailed description of each one-way road.

2.4.1 U.S. 301

The recommended typical section for U.S. 301 is an urban section with 3-11 foot travel lanes, a 4-foot bike lane, and a 5-foot sidewalk on both sides of the roadway. The cross slope drains to the east so that the mainline storm sewer is located on the east side of the roadway under the sidewalk. The four-foot bike lane is located on the east side adjacent to the gutter.

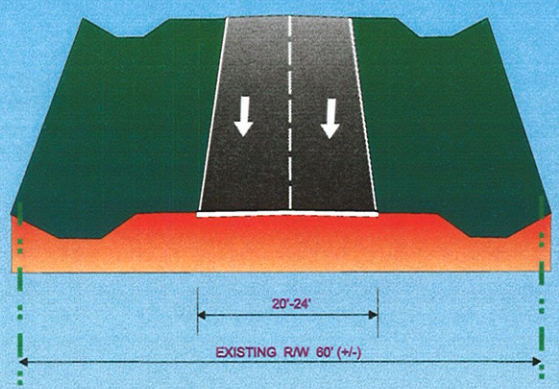
2.4.2 6th Street

The proposed typical section for 6th Street is an urban section with 3-11 foot travel lanes, a four-foot bike lane, and a 5-foot sidewalk on both sides of the roadway. The typical section for 6th Street is a mirror image of the typical for U.S. 301. 6th Street cross slope drains to the west side where the mainline storm sewer would intercept the pavement runoff. The four-foot bike lane is located on the west side adjacent to the gutter.

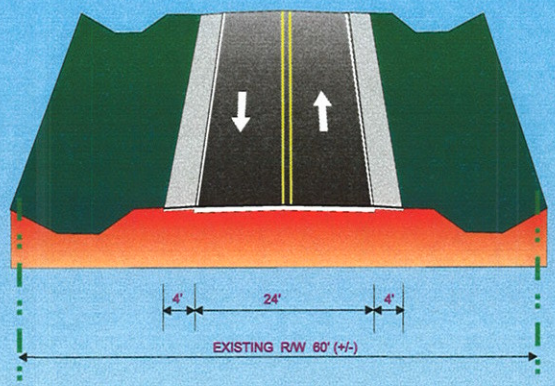
U.S. 301
IN ZEPHYRHILLS
FROM S.R. 39 TO C.R. 54

W.P.I. SEG. 256422 1

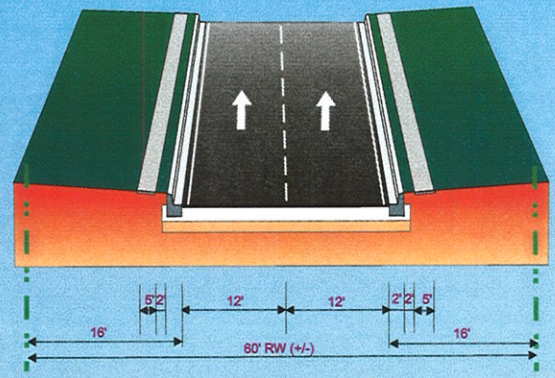
FEDERAL AID NO. 1455-001-U



6TH STREET



U.S. 301



7TH STREET

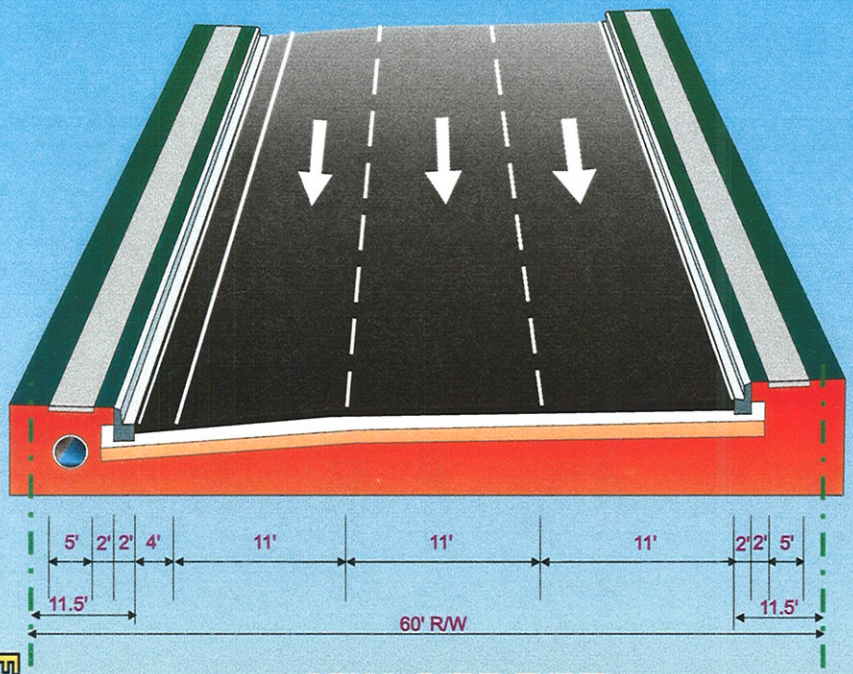
EXISTING
TYPICAL SECTIONS

FIGURE 3

U.S. 301 ZEPHYRHILLS PD&E STUDY
FROM S.R. 39 TO C.R. 54

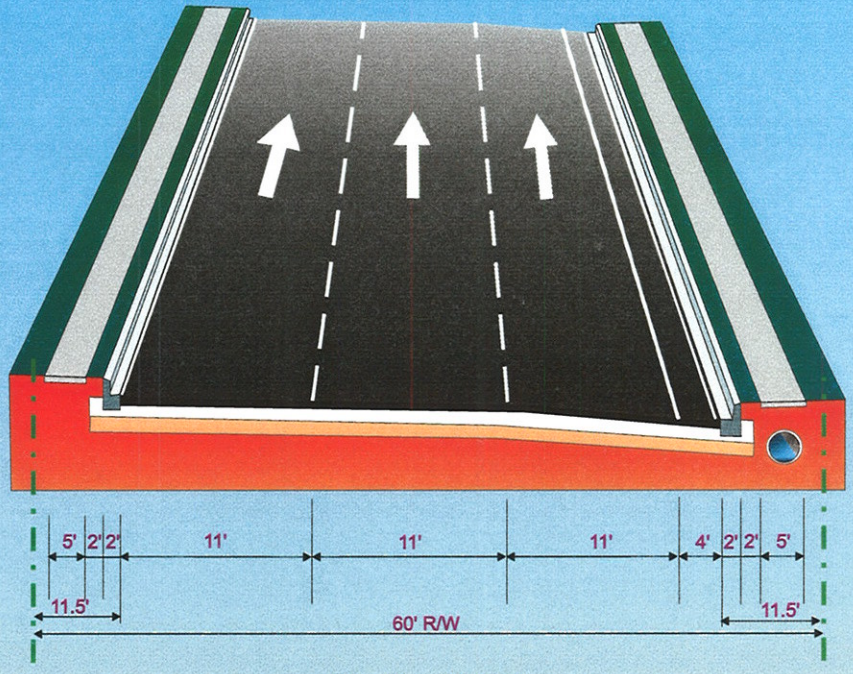
W.P.I. SEG. 256422 1 FEDERAL AID NO. 1455-001-U

PROPOSED THREE LANE ONE WAY
TYPICAL SECTION



6TH STREET

PROPOSED THREE LANE ONE WAY
TYPICAL SECTION



U.S. 301

FIGURE 4

RECOMMENDED ALTERNATIVE

SECTION 3

STORMWATER MANAGEMENT REQUIREMENTS

This project lies within the jurisdiction of the SWFWMD and will require stormwater management systems that meet the District's criteria. An Environmental Resource Permit will be required for this project. The stormwater management systems should provide water quality requirement, peak discharge attenuation and adequate drainage.

3.1 WATER QUALITY REQUIREMENTS

The water quality requirements, as defined in Chapter 40D.4 of the Florida Administrative Code (FAC) and the SWFWMD Environmental Resource Permitting Information Manual, 1999 are used to quantify treatment volumes for wet detention, on-line, and off-line ponds.

The following water quality requirements were derived from Chapter 5 of the SWFWMD ERP Manual:

(1) If off-site runoff is not prevented from combining with on-site runoff prior to treatment, then treatment must be provided for the combined off-site project runoff.

(2) A wet detention system shall treat one inch of runoff from the contributing area. Since Zephyr Creek is not listed as an Outstanding Florida Water (reference Rule 62-302.700 in the Florida Administrative Code), no additional treatment volume is required.

The stormwater management facilities selected for this project have been analyzed as on-line wet detention treatment systems.

3.2 WATER QUANTITY REQUIREMENTS

There are two jurisdictional criteria for determining water quantity volumes, which are the FDOT 14.86 and SWFWMD 40D-4. The criteria used to design the stormwater management ponds were the more stringent of the two.

FDOT 14.86 Requirements

The critical duration analysis is defined as:

"The duration of a specific storm event (i.e., 100-year storm) which creates the largest volume or highest rate of net stormwater runoff (post-developed less pre-developed runoff) for typical durations up through and including the 10-day duration event. The critical duration is determined by comparing various durations of the specified storm and calculating the peak rate and volume of runoff for each. The duration resulting in the highest peak discharge rate is the "critical duration" storm for an open basin.

SWFWMD Criteria

Section 3.2.1.2 of the SWFWMD ERP Manual states that allowable discharge is determined based on whether or not the project is located within an open or closed basin. An open basin is defined as a watershed that has a positive outfall under gravity flow. A closed basin is defined as a watershed in which the runoff does not have a surface outfall up to and including the 100-year flood level. This majority of the project is located within open basin. The runoff within the limits of project discharges to Zephyr Creek.

The allowable discharge for an open basin is based on the historical discharge. The historical discharge is the peak rate at which runoff leaves a parcel of land by gravity under existing site conditions.

The offsite discharges for the existing and developed condition shall be computed using the SWFWMD's 24-hour, 25-year rainfall maps and the Soil Conservation Services's type II Florida Modified 24-hour rainfall distribution with an antecedent moisture condition II.

The historic or pre-developed and post-developed discharge is determined by the 25-year /24-hour duration storm event. The pre-developed discharge runoff rate must be preserved in the post-developed condition. The peak runoff rate must be detained within the stormwater pond, which discharges at no greater than the pre-developed rate. The resulting volume within the pond is the attenuation volume.

SWFWMD was contacted regarding the attenuation requirements for this project. (Refer to Appendix A Pre-Application memo dated 8-23-00). The existing stormwater management facilities within the limits of project all discharge to Zephyr Creek.

SECTION 4
EXISTING CONDITIONS

4.1 DESIGN INFORMATION SOURCES

The design information sources used for the Pond Siting Report are listed below. One of the more useful reports was the Lake Zephyr Watershed Mater Plan by Greiner, Inc. (1989). This study was instrumental in revising the floodplain map (revised 1992).

(1) FDOT Drainage Manual, Volume 1 - Standards, 1992

(2) SWFWMD Permit Information Manual, February 1999

(3) SWFWMD aerials, 1980

(4) Soil Survey of Pasco County, Florida, 1982

(5) Field reviews by Carlos Lopez and Scott Garth (1999-2000).

(6) FEMA Flood Insurance Rate Map Panel No. 460 (September 1992).

(7) Aerial Photographic Maps, 1998

(8) USGS Quadrangle Map, Zephyrhills (1998).

(9) Lake Zephyr Watershed Stormwater and Flood Management Master Plan, Greiner, Inc. (April 1989).

(10) Location Hydraulic Report U.S. 301 from Chancey Road to C.R. 54E, Greiner Inc., (August 1988).

(11) Original Construction Plans U.S.301, Project No. B-940 (Fiscal Year 1935).

(12) Old Drainage Maps, Project No. 14050-1511-01 (no date found).

(13) Technical Proposal for U.S. 301 from Chancey Road to C.R. 54E, State Project No. 14050-1537, WPA No. 7115944; HNTB (Feb. 16, 1988).

(14) Drainage Structure Investigation and Evaluation Report, SPN 14050-3546, WPA 7116045, S.R. 39 (U.S. 301); Coastal Engineering (August 1993).

(15) Design Documentation U.S. 301 Zephyrhills; Coastal Engineering (March 1994).

(16) Interviews with FDOT Maintenance personnel and outside agency officials (see Appendix for project correspondence).

(17) PD&E Manual; Part 2, Chapter 24-Floodplains

(18) Draft Preliminary Engineering Report, WPI No. 256422 1, May 2000

(19) Level I Hazardous Materials Investigation, WPI No. 256422 1 May 2000

4.2 SOILS DATA

The soils within the limits of the project are categorized according to the U.S. Department of Agriculture Soil Conservation Service (SCS) Soil Survey of Pasco County, (1982). The predominant soil categories located within the project limits are identified in Table 4-1 below. A soils map is shown as Figure 5.

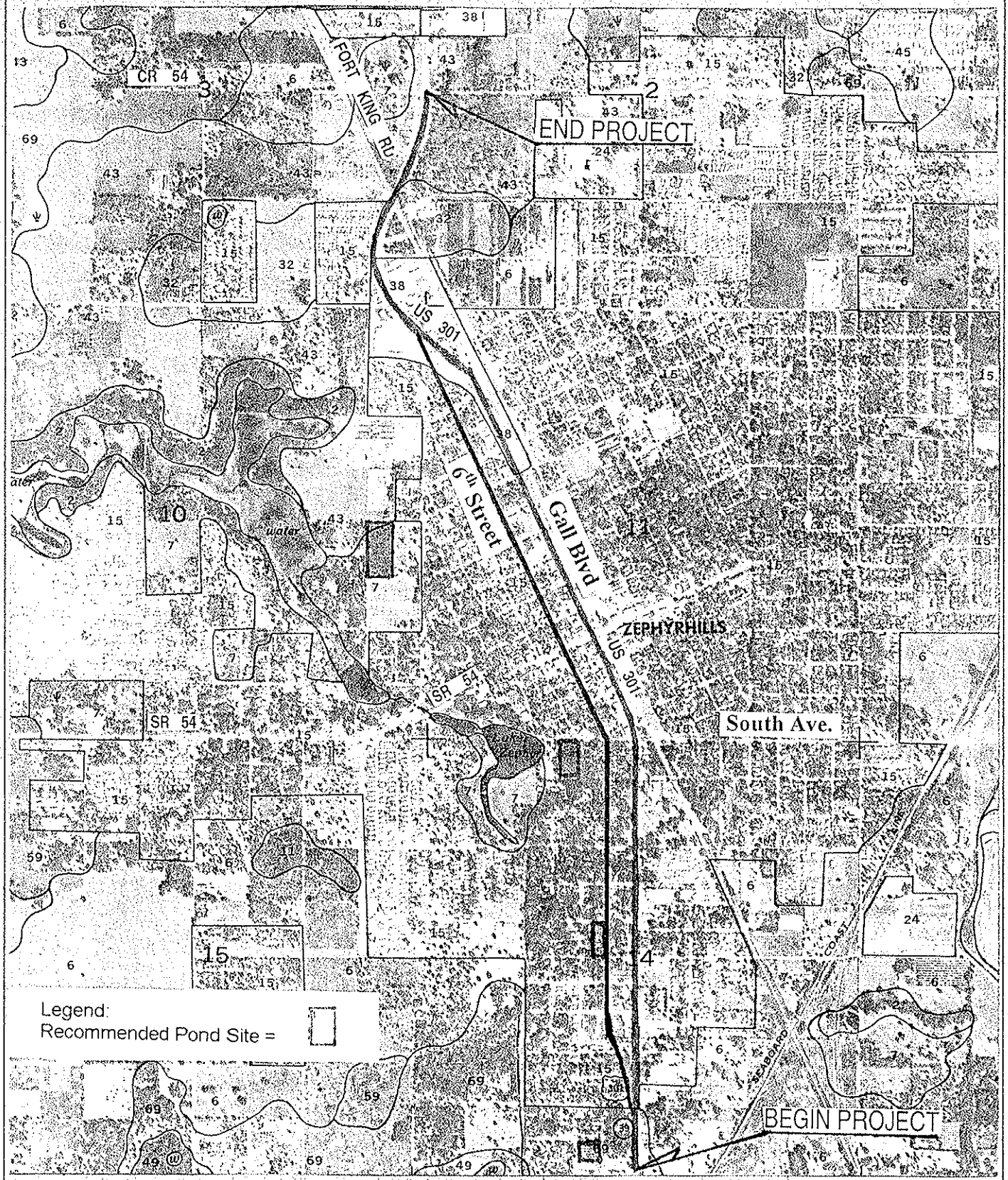
The predominant soil type within the project corridor is Tavares-Urban Land Complex that is characterized by heavy urbanization. In general, the soils are uplands, nearly level to sloping, moderately to well-drained soils that are sandy throughout. All of the soil types within the project limits are type A soil that have high infiltration rates (low runoff potential).

The seasonal high water table is at a depth of 3.5 feet or greater. Since no soil borings were performed at the pond sites, the Soil Survey was used to approximate the depth to seasonal high water table. In the design phase of the project, it is recommended that geotechnical investigation be performed at each recommended pond site. The establishment of an accurate Seasonal High Water Table (SHWT) is critical to the proper design of a stormwater management facility.

Table 4-1

Summary of Pasco County USDA / SCS Soil Survey

USDA Map Symbol and Soil Name	Hydrologic Group	Seasonal High Water Table		
		Depth (ft)	Kind	Month
Tavares Sand (6)	A	3.5-6.0	Apparent	Jun-Dec
Sparr (7)	C	1.5-3.5	Apparent	Jul-Oct
Tavares - Urban Land Complex (15)	A	3.5-6.0	Apparent	Jun-Dec
Lake Fine Sand (32)	A	>6.0	---	---
Urban Land (38)	N/A	---	---	---
Arredondo Fine Sand (43)	A	>6.0	---	---
Millhopper Fine Sand (69)	A	3.5-6.0	Perched	Aug-Feb



STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
DISTRICT 7

Pasco County, Florida

USDA SOILS
MAP
Sheet Number 49

FIGURE 5

4.3 EXISTING DRAINAGE PATTERNS AND LOCAL DRAINAGE RELATED PROBLEMS

The existing drainage patterns and basin limits were determined using several sources including USGS quadrangle maps, Southwest Florida Water Management District (SWFWMD) 1 inch = 200 feet aerial photography with 1 foot contours, and the Lake Zephyr Watershed Stormwater and Flood Management Master Plan by Greiner, Inc. (1989). Copies of the Watershed Delineation Map are included in Appendix E.

The study area is encompassed within the Lake Zephyr Watershed (see Appendix E for basin delineation maps). In general, the project could be divided into two existing basins with the ridgeline being S.R. 54 (5th Avenue). The south basin begins at the apex of S.R. 39 and extends north to S.R. 54. The northern basin extends from S.R. 54 to Geiger Road. Both basins drain west to the Lake Zephyr Watershed. A small portion of U.S. 301 in the south basin from Charles Avenue to Avenue C (Station 424+00 to 432+00,RT) drains to a closed basin to the east and does not outfall to the Lake Zephyr Watershed.

According to the above noted Greiner report, areas within the Lake Zephyr Watershed experience flooding problems during frequent storm events. These flooding problems are attributed to:

- Limited channel capacity of Zephyr Creek
- Hydraulically inadequate structures along Zephyr Creek
- Development in flood prone areas
- Urbanized land uses in areas adjacent to Zephyr Creek, and
- Uncontrolled runoff from the upstream portions of the watershed (north of Geiger Road)

West of U.S. 301 are numerous closed basins which parallel Zephyr Creek. The depressional storage areas east of Zephyr Creek and west of 6th Street are usually self-contained for frequent events and then overflow to other basins or Zephyr Creek for less frequent events. The interconnections between the closed basins and/or Zephyr Creek are through natural overflows in the sub-basin divide. Zephyr Creek from U.S. 301 to Avenue C is a man-made

channel with several culverts located at the side streets. The Greiner report identifies the 60-inch culvert at Avenue C as a major constriction for the outfall of Lake Zephyr.

According to Pasco County (see telephone memo with Joellyn Miller dated 11-14-00 in Appendix B), the only drainage improvements to Zephyr Creek that are presently in design are at the following locations (other improvements are to follow):

a) The box culvert where Zephyr Creek crosses under U.S. 301 south of the project (approximately 600 feet north of Chancey Road), and
b) The Geiger Road Detention Pond located north of the project.

The City of Zephyrhills, FDOT Maintenance Department, and Pasco County were also contacted to identify any historic flooding problems in the vicinity of U.S. 301 in Zephyrhills (see correspondence in Appendix B). Contact with the agencies determined that there have been many flooding problems caused by the lack of adequate stormwater management facilities, drainage conveyance systems, and constrictions along Zephyr Creek.

4.4 EXISTING STORMWATER MANAGEMENT FACILITIES

Presently, four stormwater management facilities are located within the project limits. Three of the four ponds are owned and operated by the City of Zephyrhills. The existing ponds are shown on the Drainage Maps in Appendix G.

The only pond not owned by the City of Zephyrhills is **Existing Pond No. 1** located at Station 440+00, RT. The pond accepts runoff from the GTE site located immediately north and east of the pond. A small portion of runoff from U.S. 301(Gall Boulevard) also drains into the pond.

Existing Pond No. 2 is located adjacent to 7th Street, east of U.S. 301 between Avenue A and South Avenue (Station 445+00,RT). The pond was constructed around 1995 in conjunction with the City of Zephyrhills one-way pair extension of 7th Street. The pond accepts runoff from the improved 7th Street, a small portion of U.S. 301, and adjacent property. The dry retention pond has a high infiltration rate (Double Ring Infiltrometer tests on the pond site averaged 17 feet per

day). A conversation memo with Rick Moore of the City of Zephyrhills on 10-4-99 is included in Appendix A.

Existing Pond No. 3 is located near the middle of the project (Station 466+00,RT); north of 6th Avenue, east of U.S. 301 (across from The Clock Family Restaurant). The pond accepts runoff from approximately 40 acres of surrounding area. The pond is owned and operated by the City of Zephyrhills whose offices are located due east from the pond. The pond is equipped with a pump station and force main which discharges west to Lake Zephyr. The City of Zephyrhills has expressed a desire to increase the pumping capacity of the pond to help alleviate some flooding problems associated with the pond. No SWFWMD permit exists for this pond as it was constructed prior to the 1960's. A telephone memorandum (dated 11-15-99) with Rick Moore of City of Zephyrhills is included in Appendix A.

Existing Pond No. 4 is located at the West Zephyrhills Elementary School located west of U.S. 301 at 14th Avenue and 1st Street. The pond receives runoff from east of U.S. 301 and pumps to an outfall ditch that leads to Lake Zephyr via a 16-inch force main running south along 1st Street (see telephone memo with Rick Moore dated 2-21-00 in Appendix A). This pond was originally a Pasco County pond but has since been modified and is now permitted through SWFWMD (Permit no. 4011662.00) with the City of Zephyrhills as owner and operator. The ponds on the school site have been designed to attenuate the 25yr/24hr storm event.

4.5 WETLANDS

There are no wetlands present within the project limits.

4.6 CULTURAL AND HISTORICAL RESOURCES

It is anticipated that SHPO will concur that there are no cultural or historical resources affected within the project limits.

SECTION 5
DRAINAGE BASINS

The project has been divided into six drainage basins (Basin 1 through 6) within the limits of project area. These basins are delineated on the Drainage Maps in Appendix H (Sheets 1,2, and 3). Lake Zephyr (Zephyr Creek) is the water body that receives runoff from this project. Lake Zephyr outfalls south through Zephyr Creek and into the Hillsborough River.

Eighteen stormwater management facilities were evaluated based on estimated SHWT's (determined from Soil Survey) and ground surface elevations obtained from SWFWMD 1 foot contour maps to determine the hydraulic capacity of each pond. The sites were evaluated using the SUPRA-3 program developed for the FDOT critical duration analysis. The program simulates runoff hydrographs resulting from storms of different frequencies (2-year through 100-year) with different durations (1 hour through 10 day). FDOT critical duration analysis for six frequencies (2- 5- 10- 25- 50- and 100-year) with five durations (1- 2- 4- 8- and 24-hours) were analyzed. The 3, 7 and 10-day duration storms were not analyzed since there is no discharge to a closed basin. SUPRA-3 uses the rational method to compute pre-development peak discharges. Runoff hydrographs and peak discharges for the post development condition were determined from the modified rational method. The storage-area data for a detention pond was provided in each calculation and pre and post-development conditions were checked to make sure the post development discharge was not greater than the pre development discharge.

Tailwater elevations for each pond site were taken from the Lake Zephyr Watershed Study. The 5-year peak stage of the Zephyr Creek system was determined from the profiles along the Creek and used as a tailwater. A copy of the Zephyr Creek profiles is found in Appendix F. The tailwaters used for the recommended pond sites is shown on the profiles.

5.1 DESIGN CRITERIA

The design criteria that were used to analyze the proposed pond sites are listed below:

- Provide a 1-foot clearance between the Hydraulic Grade Line (HGL) and the existing low edge of pavement (LEOP) elevation (estimated from SWFWMD 1 foot contours).
- Using the 5-year critical duration max pond stage as a starting elevation, the HGL at LEOP was calculated by assuming a hydraulic slope of 0.08%. Note that the approximate location of the low point of each basin is shown on the Drainage Maps in Appendix H.
- A minimum of 1-foot must be provided between the 100-year max stage (E-Max) and the top of bank (TOB) elevation. Top of bank elevations were estimated from the SWFWMD 1 foot contour maps.
- A maximum allowable treatment depth of 1.5 feet must be provided between the weir discharge elevation and the SHWT elevation.
- Pond sites are not to be located in contaminated areas identified in the Level I Hazardous Materials Investigation Report.
- SHWT elevations used for the pond analysis were estimated from the Pasco County Soil Survey. No geotechnical borings were performed. The vertical constraints that determine the allowable vertical volume are the estimated SHWT and the estimated low edge of pavement. Therefore, depending on the ground surface elevation at the pond site, ponds in the same basin may be different sizes.
- Assume a 20-foot maintenance berm and 10-feet to tie-in to existing ground. Therefore, a total of 60-feet was added to the length and width of the pond site at Top of Bank to estimate the required pond area.
- Treatment Volume was calculated using 1-inch over DCIA plus the pond water at Top of Bank. Calculations are located in Appendix B. Zephyr Creek is not recognized as an Outstanding Florida Water (OFW). The closest OFW is Crystal Springs (a tributary to the Hillsborough River) located south of the project limits.
- Offsite runoff was separated from on-site runoff for all calculations. The existing cross drains will continue to pass offsite runoff as in existing conditions.

5.2 POND DESCRIPTIONS

Refer to Appendix B for SUPRA-3 program output of the proposed pond sites selected. The proposed basins and pond sites from S.R. 39 to C.R. 54 are described in the following section. The locations of the existing and proposed stormwater management facilities within the limits of the project are shown on the drainage maps in Appendix H. It should be noted that the basin limits labeled on the drainage maps correspond to the basin limits of 6th Street and not U.S. 301.

Basin 1

Basin 1 extends from Station 385+00 to Station 424+00. The U.S. 301 basin begins at the apex of S.R. 39 and U.S. 301 and extends north to Charles Avenue. For 6th Street, the basin begins at Palm Grove Avenue and extends north to Jendrall Avenue (approximate stationing for basin 1, 6th Street is from 606+00 to 618+00). In the existing condition, the runoff from U.S. 301 right-of-way and off site areas adjacent to U.S. 301, is directed to the existing storm drain system running parallel to U.S. 301. The system conveys stormwater via an 18 inch pipe north along U.S. 301 to the 24 inch cross drain located at Station 411+00. The cross drain serves as an equalizer pipe and is analyzed in more detail in the Location Hydraulics Report. The runoff from Basin 1 ultimately discharges to Zephyr Creek located approximately 1300 feet west of U.S. 301. In Basin 1, 6th Street is a new roadway on a new alignment which affects mobile home parks and businesses.

Impacts to the floodplain occur longitudinally along the west side of U.S. 301. Traverse impacts to the floodplain occur along 6th Street as well.

The proposed pond areas for Basin 1 have been included in the total pre developed and post developed basin areas used in the pond sizing calculations. Below is a description of the pond alternates for Basin 1.

Pond 2-2

Pond 2-2 is located south of the apex of U.S. 301 and S.R. 39 near Station 388+00, RT. The pond is 1.86 acres in size and is bordered on the south by the proposed new alignment of S.R. 39 (FPN 2562891). The site is bordered on the north by the Alan Chenkin Power Equipment site.

The existing land use of the pond site consists of vacant woodlands. Soils within the pond site are Tavares Sand of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is not located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-2 has a basin size of 8.89 acres with 0.62 ac-ft of required treatment volume. The estimated ground surface elevation is 76.0 feet which is the estimated top of berm elevation. The critical storm is the 100yr-2hr event with a peak stage of 75.13. The pond will outfall 1900 feet south along the east side of U.S. 301 to the existing cross drain located approximately 600 feet north of Chancey Road. The cross drain is to be upsized to a triple 6'x4' according to Pasco County. The system ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **medium** risk rating for Pond 2-2. The Level I report recommends approximately $4,000 of additional testing. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Pond 2-3

Pond 2-3 is located 500 feet west of U.S. 301 at the northeast quadrant of Tucker Road and Edwin Street (Station 395+00, LT). The pond is 2.45 acres in size.

The existing land use at the pond site consists of vacant woodlands and open grass. Soils within the pond site are Millhopper Fine Sand of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-3 has a basin size of 9.48 acres with 0.66 ac-ft of required treatment volume. The estimated ground surface elevation is 79.0 feet which is the estimated top of berm elevation. The critical storm is the 100yr-2hr event with a peak stage of 77.52. The pond will outfall west for 700 feet along Tucker Road (Michigan Avenue) to Zephyr Creek which has a tailwater elevation of 75.0 feet. The system ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **medium** risk rating for Pond 2-3. The Level I report recommends approximately $4,000 of additional testing. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Pond 2-4 and Pond 2-1

Pond 2-4:

Pond 2-4 is located 400 feet east of U.S. 301, north of Palm Grove Avenue (Station 406+00, RT). The pond is 1.56 acres in size. The pond is designed to work in conjunction with Pond 2-1.

The existing land use of the pond site consists of open grass. Soils within the pond site are Tavares Urban Land Complex of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is not located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-4 has a basin size of 7.22 acres with 0.50 ac-ft of required treatment volume. The estimated ground surface elevation is 78.0 feet which is the estimated top of berm elevation. The critical storm is the 100yr-8hr event with a peak stage of 76.96. The pond will outfall west for 1900 feet along Palm Grove Avenue to Zephyr Creek which has a tailwater elevation of 76.0 feet. The system ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **low** risk rating for Pond 2-4. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Pond 2-1:

Pond 2-1 is located 400 feet east of U.S. 301, north of Palm Grove Avenue (Station 385+00, RT). The pond is 1.1 acres in size. The pond is designed to work in conjunction with Pond 2-4.

The existing land use of the pond site consists of open grass. Soils within the pond site are Tavares Sand of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is not located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-1 has a basin size of 2.48 acres with 0.16 ac-ft of required treatment volume. The estimated ground surface elevation is 76.0 feet which is the estimated top of berm elevation. The critical storm is the 100yr-8hr event with a peak stage of 73.91. The pond will outfall west for 1700 feet south along the east side of U.S. 301 to the existing cross drain located approximately 600 feet north of Chancey Road. The cross drain is to be upsized to a triple 6'x4' according to Pasco County. The system ultimately outfalls to the Hillsborough River.

Table 5-1 below summarizes the results of the SUPRA-3 analysis for Ponds 2-2,2-3, and 2-4/2-1.

TABLE 5-1

BASIN 1 POND SITES DESIGN SUMMARY

Pond Site	Pond Size (ac)	Pre CN	Post CN	Treatment Volume (ac-ft)	SHWT Elev. (ft)	Weir Elev. (ft)	Q Pre (cfs)	Q Post (cfs)	E Max Elev. (ft)	TOB Elev. (ft)	HGL LP (ft)	EOP Elev. (ft)	R/W Cost Estimate ($)
2-2	1.86	62.1	88.6	0.62	72.5	73.2	19.71	19.42	75.13	76.0	74.35	77.0	728,300
2-3	2.45	60.7	88.4	0.66	75.5	76.01	19.83	19.54	77.52	79.0	77.87	80.0	729,800
2-4*	1.56	61.9	87.9	0.50	74.5	75.25	22.51	14.85	76.96	78.0	77.50	80.0	479,600
2-1	1.10	55.4	83.8	0.16	72.5	72.94	6.33	4.73	73.91	76.0	73.48	76.0	666,600

Note: E. Max - Maximum stage elevation in pond

TOB - Top of bank

EOP - Edge of pavement

HGL – Hydraulic Grade Line

LP – Low Point

* Pond 2-4 to work with Pond 2-1, therefore total r/w cost is $1,146,200.

Basin 2

Basin 2 extends from Station 424+00 to Station 432+00. In the existing condition, the crown of existing U.S. 301 forms a ridge between the open basin on the west (Zephyr Creek) and the closed basin on the east side. The closed basin on the east side is an existing low depressional area located near the Zephyr Egg Company.

A pond on the west side of U.S. 301 is proposed for this basin. The pond will be sized to account for the additional area that did not previously go to Zephyr Creek. Therefore, the post-developed area is larger than the pre developed area. The pond will outfall to Zephyr Creek. The proposed pond areas for Basin 2 have been included in the total pre developed and post developed basin areas used in the pond sizing calculations. Below is a description of the pond alternates for basin 2.

Impacts to the floodplain occur longitudinally along the west side of U.S. 301. Traverse impacts to the floodplain occur along 6th Street as well.

Pond 2-6

Pond 2-6 is located west of 6th Street, north of Alston Avenue and south of Stebbins Avenue (Station 623+00, LT). The Oakdale Village Trailer Park is located due east of the proposed pond site. The pond is 1.20 acres in size.

The existing land use of the pond site consists of residential. Soils within the pond site are Tavares Urban Land Complex of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-6 has a basin size of 5.06 acres (post development) with 0.34 ac-ft of required treatment volume. The estimated ground surface elevation is 80.0 feet which is the estimated top of berm elevation. The critical storm is the 100yr-2hr event with a peak stage of 79.63. The pond will outfall west for 900 feet along Stebbins Avenue to Zephyr Creek

which has a tailwater elevation of 78.6 feet. The system ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **low** risk rating for Pond 2-6. Therefore, no additional testing is required for this site. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Pond 2-7

Pond 2-7 is located east of 6th Street, north of Alston Avenue and south of Stebbins Avenue (Station 623+00, RT). The pond is located within the western half of the Oakdale Village Trailer Park. The pond is 1.20 acres in size.

The existing land use of the pond site consists of mobile homes. Soils within the pond site are Tavares Urban Land Complex of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-7 has a basin size of 5.06 acres (post development) with 0.34 ac-ft of required treatment volume. The estimated ground surface elevation is 80.0 feet which is the estimated top of berm elevation. The critical storm is the 100yr-2hr event with a peak stage of 79.02. The pond will outfall west for 900 feet along Stebbins Avenue to Zephyr Creek which has a tailwater elevation of 78.6 feet. The system ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **low** risk rating for Pond 2-7. Therefore, no additional testing is required for this site. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Pond 2-8a

Pond 2-8a is located west of 6th Street, north of Stebbins Avenue and south of Justin Avenue (Station 627+00, LT). The pond is 2.40 acres in size. The pond is larger than the other alternates in this basin because the estimated seasonal high water elevation is higher thereby reducing the available vertical storage volume.

The existing land use at the pond site consists of residential. Soils within the pond site are Tavares Urban Land Complex of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is not located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-8a has a basin size of 6.22 acres (post development) with 0.42 ac-ft of required treatment volume. The estimated average ground surface elevation is 81.2 feet. The estimated top of berm elevation is 81.2 feet. The critical storm is the 100yr-2hr event with a peak stage of 78.82. The pond will outfall west for 700 feet west along Stebbins Avenue to Zephyr Creek which has a tailwater elevation of 78.6 feet. The system ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **low** risk rating for Pond 2-8a. Therefore, no additional testing is required for this site. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Table 5-2 summarizes the results of the SUPRA-3 analysis for Basin 2.

TABLE 5-2

BASIN 2 POND SITES DESIGN SUMMARY

Pond Site	Pond Size (ac)	Pre CN	Post CN	Treatment Volume (ac-ft)	SHWT Elev. (ft)	Weir Elev. (ft)	Q Pre (cfs)	Q Post (cfs)	E Max Elev. (ft)	TOB Elev. (ft)	HGL LP (ft)	EOP Elev. (ft)	R/W Cost Estimate ($)
2-6	1.20	67.2	86.1	0.34	76.0	77.03	11.43	10.58	78.85	80.00	78.10	79.5	745,700
2-7	1.20	71.7	86.1	0.34	76.5	77.45	13.31	13.04	79.02	80.00	78.31	79.5	2,152,200
2-8a	2.40	65.9	86.6	0.42	77.7	78.06	13.88	13.67	78.82	81.00	78.62	79.5	2,356,800

Note: E. Max - Maximum stage elevation in pond

TOB - Top of bank

EOP - Edge of pavement

HGL – Hydraulic Grade Line

LP – Low Point

Basin 3

Basin 3 extends from Station 432+00 to Station 460+00. The approximate street limits extend from Avenue C to S.R. 54 (5th Avenue). In the existing condition, a portion of the basin (from Avenue C to Avenue A) is directed to the east side of U.S. 301 into a closed basin. An existing wet pond serving the GTE site at station 440+00 RT also accepts some of the runoff from U.S. 301. North of Avenue A to S.R. 54 the runoff from U.S. 301 is directed along South Avenue and then west to Lake Zephyr.

The 6th Street basin limits extend from Avenue B (station 638+00) to S.R. 54 (station 659+00). From Avenue B to 200 feet north of Avenue A the runoff flows towards Shepard Park. The park is a low area that collects runoff from the west side of U.S. 301 as well. The depressional area then pops over around elevation 82.6 (from 1' contours) and flows northwesterly towards Lake Zephyr. From north of Avenue A to S.R. 54, 6th Street drains to South Avenue and then flows west to Lake Zephyr.

A pond is proposed on the west side of U.S. 301. The pond will be sized to account for the additional area that did not previously go to Zephyr Creek. Therefore, the post-developed area is larger than the pre developed area. The pond will outfall to Zephyr Creek. The proposed pond area for Basin 3 has been included in the total pre developed and post developed basin areas used in the pond sizing calculations.

Impacts to the floodplain occur longitudinally along the west side of U.S. 301 near Shepard Park. Traverse impacts to the floodplain occur along 6th Street from Avenue A to 200 feet north of 2nd Avenue.

Pond 2-11 and Pond 2-12

Ponds 2-11 and 2-12 were combined because the ponds were found to be too small separately.

Pond 2-11

Pond 2-11(Station 645+00, RT) is located east of 6th Street, north of Avenue A and south of South Avenue. The pond is located west of the Hungry Howies on U.S. 301 (Gall Boulevard). The pond is 1.20 acres in size.

The existing land use at the pond site consists of residential and business. The Sun Motel is located on the site and it would be acquired. Soils within the pond site are Tavares Urban Land Complex of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is not located within the 100-year floodplain of Lake Zephyr.

The Level I Hazmat analysis assigned a **medium** risk rating for Pond 2-11. The Level I report recommends approximately $4,000 of additional testing. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Pond 2-12

Pond 2-12 (Station 445+00, LT) is located west of U.S. 301 (Gall Boulevard), north of Avenue A and south of South Avenue. The pond is located on the vacant lot immediately north of the Hungry Howies. The pond is 0.75 acres in size.

The existing land use at the pond site consists of grass and trees. The lot is vacant. Soils within the pond site are Tavares Urban Land Complex of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is not located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-11/2-12 has a basin size of 8.68 acres (post development) with 0.60 ac-ft of required treatment volume. The estimated ground surface elevation is 83.0 feet which is the estimated top of berm elevation. The critical storm event from the Supra-3 analysis is the 2yr/100hr event with a peak stage of 82.08 feet. Results from the analysis are summarized in Table 5-3. The pond will outfall west for 900 feet along South Avenue to Lake Zephyr

which has a tailwater elevation of 80.7 feet. Lake Zephyr outfalls south through Zephyr Creek which ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **medium** risk rating for Pond 2-12. The Level I report recommends approximately $4,000 of additional testing. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Pond 2-11 and Pond 2-14

A second alternative could be to combine Pond 2-11 with Pond 2-14. Pond 2-14 is located east of 6th Street between 2nd and 3rd Avenue. The pond is 1.0 acres in size and resides in a residential area.

The existing land use at the pond site consists of residential. Soils within the pond site are Tavares Urban Land Complex of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is not located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-14 has a basin size of 4.02 acres (post development) with 0.28 ac-ft of required treatment volume. The estimated ground surface elevation is 85.0 feet. The critical storm is the 100yr-2hr event with a peak stage of 83.39. The pond will outfall west for 1000 feet along South Avenue to Lake Zephyr which has a tailwater elevation of 80.7 feet. Lake Zephyr outfalls south through Zephyr Creek which ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **medium** risk rating for Pond 2-14. The Level I report recommends approximately $4,000 of additional testing. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Pond 2-15A

Pond 2-15A (Station 645+00, 400'LT) is located west of 5th Street, north of Avenue A and south of South Avenue. The pond is situated midway between 6th Street and Lake Zephyr. The pond is 1.20 acres in size.

The existing land use of the pond site consists of woodlands. The site is vacant. Soils within the pond site are Tavares Urban Land Complex of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-15A has a basin size of 7.95 acres (post development) with 0.55 ac-ft of required treatment volume. The estimated ground surface elevation is 81.0 feet. The critical storm is the 100yr-2hr event with a peak stage of 82.25. The pond will need to be bermed up approximately 2 feet to elevation 83.0 on the south end in order to contain the critical storm event. The pond will outfall west for 400 feet along South Avenue to Lake Zephyr which has a tailwater elevation of 80.7 feet. Lake Zephyr outfalls south through Zephyr Creek which ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **low** risk rating for Pond 2-15A. Therefore, no additional testing is required for this site. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Table 5-3 summarizes the results of the SUPRA-3 analysis for Ponds 2-11/2-12, 2-11/2-14, and 2-15A of Basin 3.

TABLE 5-3

BASIN 3 POND SITES DESIGN SUMMARY

Pond Site	Pond Size (ac)	Pre CN	Post CN	Treatment Volume (ac-ft)	SHWT Elev. (ft)	Weir Elev. (ft)	Q Pre (cfs)	Q Post (cfs)	E Max Elev. (ft)	TOB Elev. (ft)	HGL LP (ft)	EOP Elev. (ft)	R/W Cost Estimate ($)
2-11*	1.20	67.5	85.7	0.32	80.5	81.26	13.27	11.58	82.73	84.00	82.08	83.2	1,163,900
2-14	1.00	66.5	89.0	0.28	81.5	82.12	10.57	9.63	83.39	85.00	83.00	84.0	1,103,400
2-15A	1.20	62.6	88.1	0.55	77.5	79.00	18.66	17.85	82.25	83.00	81.38	83.2	932,600
2-11&12	1.95	60.4	88.2	0.60	79.5	80.20	18.81	18.68	82.08	83.00	81.33	83.20	1,577,900

Note: E. Max - Maximum stage elevation in pond

TOB - Top of bank

EOP - Edge of pavement

HGL – Hydraulic Grade Line

LP – Low Point

* Pond 2-11 to work with Ponds 2-12 and 2-14 as two separate alternates.

Basin 4

Basin 4 extends from Station 460+00 to Station 471+00. The street limits are from S.R. 54 to 8th Avenue. In the existing condition, the runoff from 40th Street right-of-way and off site areas adjacent to 40th Street, are directed to the existing storm drain systems running along 40th Street. These systems convey stormwater east to an existing stormwater management facility owned and operated by the City of Zephyrhills. (The facility is called Existing Pond No. 3 on the drainage maps in Appendix G). The outflow from the pond is pumped west to Lake Zephyr. A telephone memorandum with the City of Zephyrhills dated 11-15-99 is included in the Correspondence section, Appendix A. Since the existing pond has flooding problems associated with it already it is assumed that the pond is at full capacity. However, it may be possible to take a portion of Basin 4 (U.S. 301) into the existing pond and increase the pump capacity. Further coordination with the SWFWMD would be required.

Basin 4 is not in the 100-year flood zone of Lake Zephyr.

The proposed pond area for Basin 4 has been included in the total pre developed and post developed basin areas used in the pond sizing calculations.

Pond 2-17

Pond 2-17 (Station 668+00, 200'LT) is located east of 5th Street, north of 7th Avenue and south of 8th Avenue. The pond is 0.96 acres in size.

The existing land use at the pond site consists of residential. Soils within the pond site are Tavares Urban Land Complex of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is not located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-17 has a basin size of 4.55 acres (post development) with 0.31 ac-ft of required treatment volume. The estimated ground surface elevation is 87.0 feet which is also the estimated top to berm (TOB) elevation. The critical storm is the 100yr-2hr event with a peak stage of 86.76. The pond will outfall west for 1200 feet along 7th Avenue where it will

then drain south along 1St Street for 800 feet to Lake Zephyr. The tailwater elevation of Lake Zephyr at S.R. 54 is 80.7 feet (see profiles in Appendix F). Lake Zephyr outfalls south through Zephyr Creek which ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **low** risk rating for Pond 2-17. Therefore, no additional testing is required for this site. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Pond 2-18

Note: Pond 2-18 has the same hydraulic characteristics as Pond 2-17 only the outfall length is 200 feet longer.

Pond 2-18 (Station 668+00, LT) is located west of 6th Street, north of 7th Avenue and south of 8th Avenue. The pond is 0.96 acres in size.

The existing land use of the pond site consists of residential. Soils within the pond site are Tavares Urban Land Complex of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is not located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-18 has a basin size of 4.55 acres (post development) with 0.31 ac-ft of required treatment volume. The estimated ground surface elevation is 87.0 feet which is also the estimated top to berm (TOB) elevation. The critical storm is the 100yr-2hr event with a peak stage of 86.76. The pond will outfall west for 1400 feet along 7th Avenue where it will then drain south along 1St Street for 800 feet to Lake Zephyr. The tailwater elevation of Lake Zephyr at S.R. 54 is 80.7 feet (see profiles in Appendix F). Lake Zephyr outfalls south through Zephyr Creek which ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **low** risk rating for Pond 2-18. Therefore, no additional testing is required for this site. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Existing Pond No. 3

Existing Pond No. 3 is located within this basin and presently accepts a portion of the runoff from U.S. 301. The pond is equipped with a pump station that pumps to Lake Zephyr via a force main. It is owned and operated by the City of Zephyrhills (see memo in Appendix A dated 11-15-99).

Conversations with the City of Zephyrhills have indicated that it may be possible to use the existing pond site by increasing the pumping capacity to Lake Zephyr. This would involve seeking a permit modification to the existing SWFWMD permit. It may be possible to increase the size of the pond by buying adjacent property. Property north of the pond is an existing Auto Zone dealer. The cost estimate for the purchase of the Pond 2-16 site would be $1,286,600.

Table 5-4 summarizes the results of the SUPRA-3 analysis for Pond 2-17, Pond 2-18, and for Existing Pond No. 3 for Basin 4.

TABLE 5-4

BASIN 4 POND SITES DESIGN SUMMARY

Pond Site	Pond Size (ac)	Pre CN	Post CN	Treatment Volume (ac-ft)	SHWT Elev. (ft)	Weir Elev. (ft)	Q Pre (cfs)	Q Post (cfs)	E Max Elev. (ft)	TOB Elev. (ft)	HGL LP (ft)	EOP Elev. (ft)	R/W Cost Estimate ($)
2-17	0.96	64.3	86.4	0.31	83.5	84.61	13.12	13.04	86.76	87.0	85.94	88.0	1,104,100
2-18	0.96	64.3	86.4	0.31	83.5	84.61	13.12	13.04	86.76	87.0	85.80	88.0	1,063,100
Exist. Pond 3	1.65	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D

Note: E. Max - Maximum stage elevation in pond
LP – Low Point
N/D – Not Determined
HGL – Hydraulic Grade Line
EOP - Edge of pavement
TOB - Top of bank

Basin 5

Basin 5 extends from Station 471+00 to Station 486+00. The basin extends basically from 8th Avenue to 12th Avenue. Runoff from U.S. 301 drains to a low area east of and adjacent to U.S. 301 in front of the car wash near station 480+00. The low area is connected to an existing 18-inch storm sewer under U.S. 301 that outfalls west to the Lake Zephyr system. The basin limits for 6th Street are from 9th Avenue (Station 674+00) to just north of 12th Avenue (Station 687+00).

Minor impacts to the floodplain occur longitudinally along the west side of U.S. 301 near Station 480+00. Approximately 200 feet of traverse impacts to the floodplain occur along 6th Street between 10th Avenue and 11th Avenue.

The proposed condition will include construction of a storm drain system that will direct runoff to a stormwater management facility located west of U.S. 301. The proposed pond will outfall to Lake Zephyr. The pond will provide for treatment of the right-of-way area of U.S. 301 and 6th Street.

The proposed pond area for Basin 5 has been included in the total pre developed and post developed basin areas used in the pond sizing calculations.

Pond 2-19

Pond 2-19 (Station 680+00, 200'LT) is located east of 5th Street, north of 10th Avenue and south of 11th Avenue. The pond is 0.96 acres in size.

The existing land use at the pond site consists of residential. Soils within the pond site are Tavares Urban Land Complex of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-19 has a basin size of 4.82 acres with 0.33 ac-ft of required treatment volume. The estimated ground surface elevation is 84.0 feet. The critical storm is the 100yr-2hr event with a peak stage of 83.94. The top of berm (TOB) elevation would need to be set at elevation 85.0 feet to contain the critical storm event. The pond will outfall west for 800 feet along 10th Avenue where it will then drain south along 1St Street for 1200 feet to Lake Zephyr. The tailwater elevation of Lake Zephyr at S.R. 54 is 80.7 feet (see profiles in Appendix F). Lake Zephyr outfalls south through Zephyr Creek which ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **low** risk rating for Pond 2-19. Therefore, no additional testing is required for this site. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Pond 2-20A

Pond 2-20A (Station 679+00,LT) is located west of 6th Street, north of 10th Avenue and south of 11th Avenue. The pond is 0.96 acres in size.

The existing land use at the pond site consists of residential. Soils within the pond site are Tavares Urban Land Complex of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-20A has a basin size of 4.82 acres with 0.33 ac-ft of required treatment volume. The estimated ground surface elevation is 85.0 feet. The critical storm is the 100yr-2hr event with a peak stage of 84.94. The top of berm (TOB) elevation would need to be set at elevation 86.0 feet on the south side of the pond to contain the critical storm event. The pond will outfall west for 1000 feet along 10th Avenue where it will then drain south along 1St Street for 2000 feet to Lake Zephyr. The tailwater elevation of Lake Zephyr at S.R. 54 is 80.7 feet (see profiles in Appendix F). Lake Zephyr outfalls south through Zephyr Creek which ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **low** risk rating for Pond 2-20A. Therefore, no additional testing is required for this site. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Pond 2-20B

Pond 2-20B (Station 679+00,RT) is located east of 6th Street, north of 10th Avenue and south of 11th Avenue. The pond is 0.96 acres in size.

The existing land use of the pond site consists of residential. Soils within the pond site are Tavares Urban Land Complex of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-20B has a basin size of 4.82 acres with 0.33 ac-ft of required treatment volume. The estimated ground surface elevation is 84.0 feet. The critical storm is the 100yr-2hr event with a peak stage of 83.94. The top of berm (TOB) elevation would need to be set at elevation 85.0 feet to contain the critical storm event. The pond will outfall west for 1200 feet along 10th Avenue where it will then drain south along 1St Street for 2000 feet to Lake Zephyr. The tailwater elevation of Lake Zephyr at S.R. 54 is 80.7 feet (see profiles in Appendix F). Lake Zephyr outfalls south through Zephyr Creek which ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **medium** risk rating for Pond 2-20B. The Level I report recommends approximately $4,000 of additional testing. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Table 5-5 summarizes the results of the SUPRA-3 analysis for Ponds 2-19, 2-20A, and 2-20B for Basin 5.

TABLE 5-5

BASIN 5 POND SITES DESIGN SUMMARY

Pond Site	Pond Size (ac)	Pre CN	Post CN	Treatment Volume (ac-ft)	SHWT Elev. (ft)	Weir Elev. (ft)	Q Pre (cfs)	Q Post (cfs)	E Max Elev. (ft)	TOB Elev. (ft)	HGL LP (ft)	EOP Elev. (ft)	R/W Cost Estimate ($)
2-19	0.96	64.8	86.8	0.33	80.5	81.68	14.17	13.97	83.94	85.0	82.97	84.30	1,330,300
2-20A	0.96	64.8	86.8	0.33	80.5	81.68	14.17	13.97	84.94	86.0	84.00*	84.30	1,058,100
2-20B	0.96	64.8	86.8	0.33	80.5	81.68	14.17	13.97	83.94	85.0	83.00	84.30	1,200,500

Note: E. Max - Maximum stage elevation in pond

TOB - Top of bank

EOP - Edge of pavement

HGL – Hydraulic Grade Line

LP – Low Point

* Does not meet minimum criteria.

Basin 6

Basin 6 extends from Station 486+00 to Station 503+00. The basin extends from 12th Avenue to 1st Street. The basin limits for 6th Street are from 200 feet north of 12th Avenue (Station 687+00) to 1st Street (Station 700+00). Runoff from these portions of roadway as well as from offsite area to the east of U.S. 301 flow westerly to 1st Street. The runoff is collected into an existing pond that pumps to Lake Zephyr. The existing pond is identified on the drainage maps in Appendix G as Existing Pond No. 4.

Minor impacts to the floodplain occur longitudinally along the west side of U.S. 301 near Stations 493+00 and 497+00. Approximately 200 feet of traverse impacts to the floodplain occur along 6th Street at 14th Avenue and 15th Avenue.

The proposed pond area for Basin 6 has been included in the total pre developed and post developed basin areas used in the pond sizing calculations.

Pond 2-21

Pond 2-21 (Station 690+00, 200' LT) is located on the southeast quadrant of 5th Street and 14th Avenue. The pond is 0.90 acres in size.

The existing land use at the pond site consists of residential. Soils within the pond site are Tavares Urban Land Complex of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. A portion of the pond is located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-21 has a basin size of 5.09 acres with 0.35 ac-ft of required treatment volume. The estimated ground surface elevation is 85.0 feet which is also the estimated top of berm (TOB) elevation. The critical storm is the 100yr-2hr event with a peak stage of 83.11. The pond will outfall west for 200 feet along 13th Avenue where it will then drain south along 1St Street for 3000 feet to Lake Zephyr. The tailwater elevation of Lake Zephyr at

S.R. 54 is 80.7 feet (see profiles in Appendix F). Lake Zephyr outfalls south through Zephyr Creek which ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **low** risk rating for Pond 2-21. Therefore, no additional testing is required for this site. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Pond 2-22

Pond 2-22 (Station 690+00,LT) is located west of 6th Street north of 13th Avenue and south of 14th Avenue. The pond is 0.90 acres in size.

The existing land use at the pond site consists of residential. Soils within the pond site are Tavares Urban Land Complex of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. A portion of the pond is located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-22 has a basin size of 5.09 acres with 0.35 ac-ft of required treatment volume. The estimated ground surface elevation is 85.0 feet which is also the estimated top of berm (TOB) elevation. The critical storm is the 100yr-2hr event with a peak stage of 83.11. The pond will outfall west for 400 feet along 13th Avenue where it will then drain south along 1St Street for 3000 feet to Lake Zephyr. The tailwater elevation of Lake Zephyr at S.R. 54 is 80.7 feet (see profiles in Appendix F). Lake Zephyr outfalls south through Zephyr Creek which ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **low** risk rating for Pond 2-22. Therefore, no additional testing is required for this site. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Pond 2-23

Pond 2-23 (Station 697+00,LT) is located west of 6th Street north of 15th Avenue and south of 16th Avenue. The pond is bordered on the west by 1st Street. The pond is 0.61 acres in size.

The existing land use at the pond site consists mostly of open space. A barbershop and a satellite TV business occupy the northern portion of the site. The pond site is a natural low area soils within the pond site are Tavares Urban Land Complex of hydrologic soil type A with an anticipated depth to water table of 3.5 feet. The pond is located within the 100-year floodplain of Lake Zephyr.

The proposed Pond 2-23 has a basin size of 4.74 acres with 0.34 ac-ft of required treatment volume. The estimated ground surface elevation is 81.5 feet. The pond outfalls west for 100 feet along 15th Avenue where it will then drain south along 1St Street for 3500 feet to Lake Zephyr. The tailwater elevation of Lake Zephyr at S.R. 54 is 80.7 feet (see profiles in Appendix F). Lake Zephyr outfalls south through Zephyr Creek which ultimately outfalls to the Hillsborough River.

The Level I Hazmat analysis assigned a **medium** risk rating for Pond 2-23. The Level I report recommends approximately $4,000 of additional testing. No historic structures were found and no prehistoric archeological sites were discovered. No listed protected species were observed.

Basins 4, 5, and 6 Combined

Pond 2-24

It may be possible to combine basins 4,5,and 6 so that only one pond site would need to be purchased rather than three. The scenario was analyzed using the same methodology as with the previous pond sites. The basin hydrology for basin 4, 5,and 6 was combined for a total basin area of 16.6 acres. A possible pond site is located 500 feet west of 1st Street at 10th Avenue. The site is a 5.0 acre wooded area due west of Oakside Cemetery. The soil type is Hydrologic Soil Group C (Sparr). The estimated depth to seasonal high water table is 1.5

feet according to the SCS Soil Survey of Pasco County. The average ground surface elevation at the pond site is elevation 83.5 from the 1' contours. The critical storm is the 100yr/ 2hr event with a peak stage of 83.15 feet. The pond would outfall to the Lake Zephyr Watershed.

Table 5-6 summarizes the results of the SUPRA-3 analysis for Ponds 2-21, 2-22, and 2-23 for Basin 6. Pond 2-24 (combined Basins 4,5,and 6) is shown at the bottom of Table 5-6.

TABLE 5-6

BASIN 6 POND SITES DESIGN SUMMARY

Pond Site	Pond Size (ac)	Pre CN	Post CN	Treatment Volume (ac-ft)	SHWT Elev. (ft)	Weir Elev. (ft)	Q Pre (cfs)	Q Post (cfs)	E Max Elev. (ft)	TOB Elev. (ft)	HGL LP (ft)	EOP Elev. (ft)	R/W Cost Estimate ($)
2-21	0.96	60.9	87.2	0.35	79.0	80.35	12.79	12.05	83.11	85.00	82.40	83.50	1,605,300
2-22	0.96	60.9	87.2	0.35	79.0	80.35	12.79	12.05	83.11	85.00	82.24	83.50	1,517,600
2-23	0.61	64.8	89.5	0.34	78.0	80.56	13.93	13.37	83.51	84.00	82.44	83.40	384,600
2-24	5.00	67.0	91.7	1.18	82.0	80.35	44.42	41.00	83.15	83.50	83.42	84.50	622,400

Note: E. Max - Maximum stage elevation in pond

TOB - Top of bank

EOP - Edge of pavement

HGL – Hydraulic Grade Line

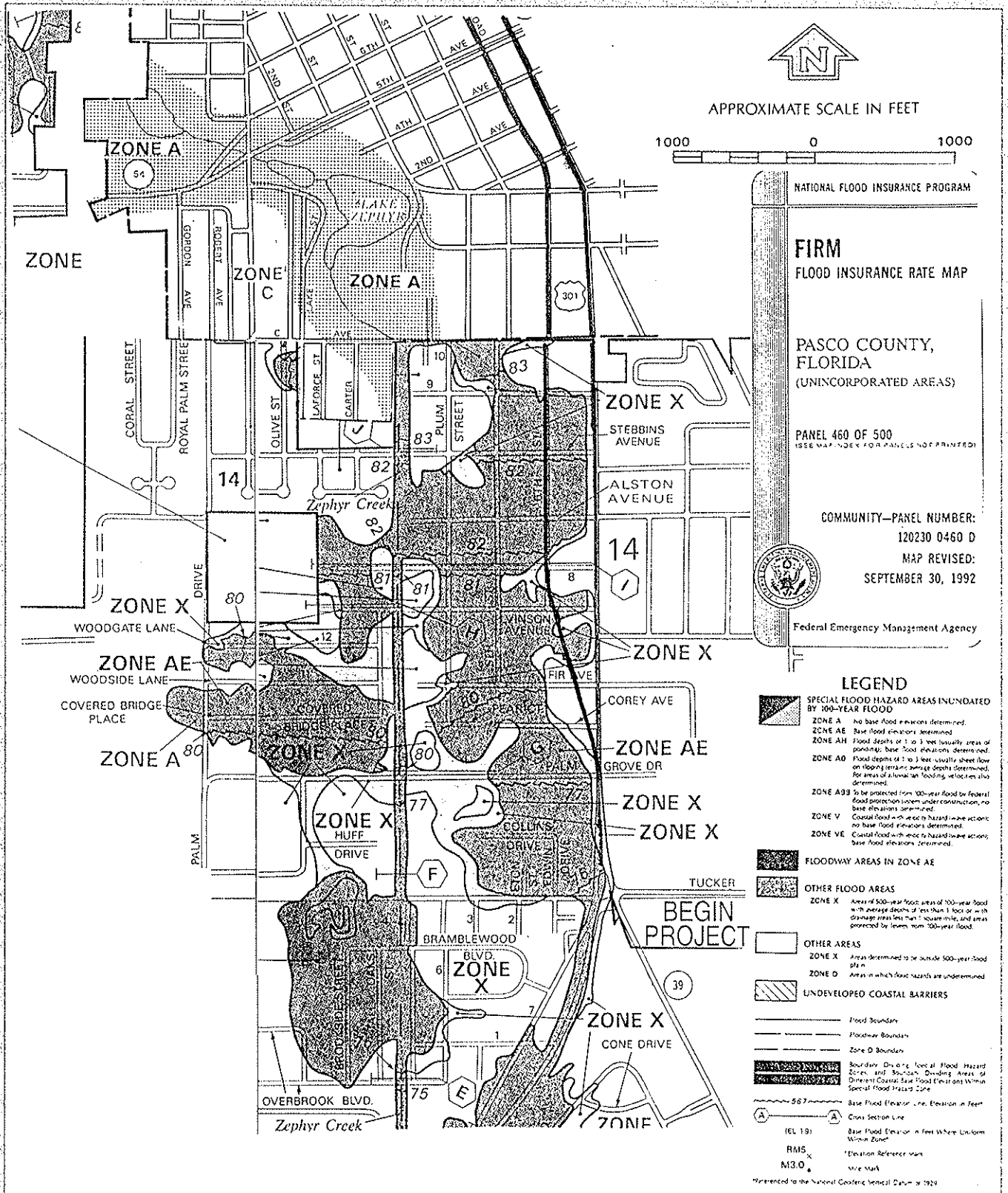
LP – Low Point

SECTION 6

BASE FLOODPLAIN INVOLVEMENT

There are no regulated floodways within the project limits. The 100-year (base) floodplain has been established for the Lake Zephyr Watershed and is shown in Figure 6. The Lake Zephyr floodplain is located adjacent to Zephyr Creek and extends eastward to U.S. 301. Flood profiles along Zephyr Creek have been developed and can be seen in the Pasco County Flood Insurance Study (revised 1992).

Measures have been taken during conceptual design of the proposed roadway improvements for U.S. 301 and 6th Street to avoid or minimize roadway encroachments within the base floodplain. It is anticipated however that encroachments will occur and that compensating storage ponds will likely be required to offset the impact. Estimated floodplain encroachments and compensation pond sizes are included in Appendix C.

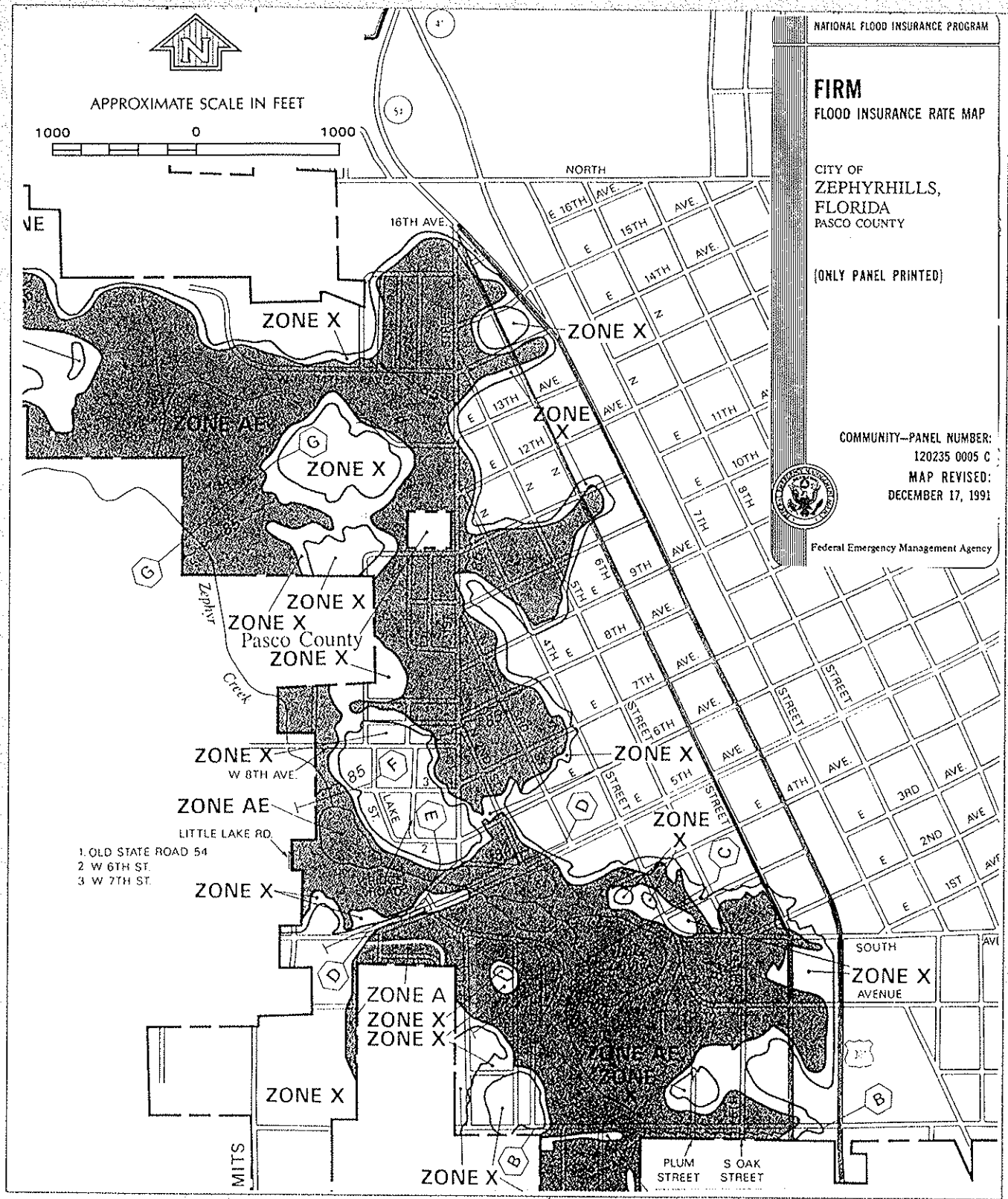


STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
DISTRICT 7

Pasco County, Florida

FEMA 100 YEAR FLOOD MAP 1992

FIGURE 6a



STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
DISTRICT 7

City of Zephyrhills

FEMA 100 YEAR
FLOOD MAP
1992

FIGURE 6b

SECTION 7

CONCLUSIONS AND RECOMMENDATIONS

Six basins were evaluated for pond siting alternatives. A total of 18 stormwater management facilities were considered for their potential to serve the basins. Historical and archeological sites, wetlands, and protected species are not found within the project limits. Therefore, the recommended ponds were based largely on hydraulic adequacy, right-of-way cost, and hazardous materials involvement. The following conclusions and recommendations were made for each basin. Table 7-1 lists the recommended alternatives. Table 7-2 is an evaluation matrix for all pond alternates.

Basin 1

Because Pond 2-1/2-4 right-of-way is so costly, the recommended alternate is between Pond 2-2 and 2-3. The cost of the outfall pipe for Pond 2-3 is approximately $40,000 less than that of Pond 2-2. From a permitting standpoint, Pond 2-2 may cause difficulty since not all of the basin drains to its location in the pre-development condition. Hydraulically, Pond 2-3 is better situated to outfall to the Zephyr Creek system than Pond 2-2. **Pond 2-3 is the recommended site for Basin 1.**

Basin 2

The recommended site for Basin 2 is Pond 2-6. The cost savings of Pond 2-6 is over $1 million compared to the other two alternates. Therefore, **Pond 2-6 is the recommended site for Basin 2.**

Basin 3

The recommended site for Basin 3 is Pond 2-15A. The cost of Pond 2-15A is considerably less costly (approximately $1.5 million) than the other alternates in the basin. **Pond 2-15A is the recommended site for Basin 3.**

Basin 4,5, and 6

The recommended site for Basin 4,5 and 6 is Pond 2-24. Since all of the runoff from basins 4, 5, and 6 goes to the same point of entry into the Lake Zephyr system, it would be possible to combine the basins into one pond. The recommended pond alternates for basins 4, 5 and 6 are listed in Table 7-1 below. These sites represent what would be the recommended pond for each separate basin if Pond 2-24 had not been an option. As shown in the table, the cost of Pond 2-24 is approximately $2 million less than that of the cost of purchasing three separate pond sites. Therefore, **Pond 2-24 is the recommended site for Basin 4,5, and 6.**

TABLE 7-1

COST COMPARISON: ONE POND VS. THREE PONDS

Basin	Pond Alternate	Total cost, $
4	2-18	1,142,300
5	2-20a	1,176,900
6	2-23	496,600
	Total cost	**2,815,800**
4,5,6	2-24	756,000
	Potential Savings	**2,059,800**

A summary of recommended pond sites is shown in Table 7-2 below.

TABLE 7-2

SUMMARY OF RECOMMENDED POND SITES

Pond No.	Basin No.	Area (acres)	Total Cost $	Relocations (Residential)	Hazmat Risk Rating
2-3	1	2.45	755,000	0	Medium
2-6	2	1.20	778,100	3	Low
2-15A	3	1.20	947,000	2	Low
2-24	4,5,6	5.00	756,000	0	Medium

TABLE 7-3a

ALTERNATIVES EVALUATION MATRIX

	Basin 1			Basin 2			Basin 3		
Pond Site	2-2	2-3	2-4/2-1	2-6	2-7	2-8a	2-11/2-12	2-11/2-14	2-15A
Location (Station)	388+00 LT	396+00 LT	406+00 RT	623+00 LT	623+00 RT	627+00 LT	645+00 RT	445+00 LT	627+00 LT
Size (Acres)	1.86	2.45	2.66	1.20	1.20	2.40	1.95	2.20	1.20
Wetland Impact	None	None	None	None	None	None	None	None	None
Historic and Architectural Sites	None	None	None	None	None	None	None	None	None
Contamination Type P=Petroleum H=Non Petroleum	P	P	H	H	H	H	P	P	H
Contamination Ranking	Medium	Medium	Low	Low	Low	Low	Medium	Medium	Low
Additional Testing Cost,$	4,000	4,000	0	0	0	0	8,000	8,000	0
Protected Species	None	None	None	None	None	None	None	None	None
Outflow Pipe Length (feet)	1900	700	3600	900	900	700	900	1000	400
Pipe Cost,$ Assume 36" pipe @ $36/LF	68,400	25,200	108,000	32,400	32,400	25,200	32,400	36,000	14,400
Estimated R/W Cost,$	728,300	729,800	1,146,200	745,700	2,152,200	2,356,800	1,577,900	2,267,300	932,600
Total Cost,$	796,700	755,000	1,254,200	778,100	2,184,600	2,382,000	1,618,300	2,311,300	947,000

TABLE 7-3b

ALTERNATIVES EVALUATION MATRIX

	Basin 4		Basin 5			Basin 6			Basin 4,5, 6
Pond Site	2-17	2-18	2-19	2-20A	2-20B	2-21	2-22	2-23	2-24
Location (Station)	668+00 LT	689+00 LT	680+00 LT	679+00 LT	679+00 RT	690+00 LT	690+00 LT	697+00 LT	680+00, 1500' LT
Size (Acres)	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.61	5.00
Wetland Impact	None	None	None	None	None	None	None	None	None
Historic and Architectural Sites	None	None	None	None	None	None	None	None	None
Contamination Type P=Petroleum H=Non Petroleum	H	H	H	H	P	H	H	P	H
Contamination Ranking	Low	Low	Low	Low	Medium	Low	Low	Medium	Medium
Additional Testing Cost,$	0	0	0	0	4,000	0	0	4,000	4,000
Protected Species	None	None	None	None	None	None	None	None	None
Outflow Pipe Length (feet)	2000	2200	3000	3300	3500	3000	3000	3000	3600*
Pipe Cost,$ Assume 36" pipe @ $36/LF	72,000	79,200	108,000	118,800	126,000	108,000	108,000	108,000	129,600
Estimated R/W Cost,$	1,104,100	1,063,100	1,330,300	1,058,100	1,200,500	1,605,300	1,517,600	384,600	622,400
Total Cost,$	1,176,100	1,142,300	1,438,300	1,176,900	1,330,500	1,713,300	1,625,600	496,600	756,000

* includes length of inflow pipe due to distance of Pond 2-24 from U.S. 301.

APPENDICES

APPENDIX A	CORRESPONDENCE
APPENDIX B	SUPRA-3 ANALYSIS FOR THE CONCEPTUAL POND ALTERNATES BASINS 1 THROUGH 6
APPENDIX C	FLOODPLAIN COMPENSATION CALCULATIONS BASINS 1 THROUGH 6
APPENDIX D	POND COST ESTIMATES
APPENDIX E	LAKE ZEPHYR WATERSHED BASIN DELINEATION MAPS
APPENDIX F	LAKE ZEPHYR WATERSHED EXISTING CONDITIONS PROFILES
APPENDIX G	HISTORICAL DRAINAGE MAPS
APPENDIX H	AERIAL DRAINAGE MAPS

APPENDIX A
CORRESPONDENCE

PD701SF@DOT1

02/26/01 04:01 PM

To: Scott A Garth/D7/FDOT
cc:
Subject: US 301 Hazmat assessment for new Pond sites

Date:	02/26/01 16:01	
From:	Farash,Scott	PD701SF - F
To:	Arasteh,Megan	RD744MA - D
	GARTH,SCOTT	RD744SG - D
Copylist:	Gao,Ming	PD701GM - F
	Bogen,Kirk	PD701KB - F
Subject:	US 301 Hazmat assessment for new Pond sites	

As we discussed, the Pond Site report can be completed using a preliminary risk rating for the three new pond sites. Ming suggested using a "medium" rating for the large site on undeveloped, wooded land and a "low" rating for the other two sites.

This is acceptable since the ratings should not affect the selection of the preferred pond sites unless the remediation cost is prohibitive.

CONVERSATION FORM

DISTRICT SEVEN
DESIGN
1201 N. MCKINLEY DRIVE
TAMPA, FL 33612

TELEPHONE CONVERSATION ✓

OFFICE CONVERSATION _____

TIME: 11 (AM)/PM

DATE: 11/13/00

CONVERSATION WITH: Joellyn Miller

RE: _____

REPRESENTING: Pasco County

DISCUSSION: I spoke to Joellyn miller today regarding Zephyr Creek improvements. Presently in design are two projects associated with Zephyr Creek. (Joellyn is sending me the data)

1. US 301 / Chancey Rd culvert upgrade to triple 6'x4' RCBC.

2. Geiger Rd Detention Pond (≈ ~~78~~ acres?)

XC: _____

BY: SG

TITLE: _____

MEMORANDUM

FLORIDA DEPARTMENT OF TRANSPORTATION

Drainage Design Office - M/S 7-800

DATE: August 23, 2000

TO: Scott Farash-FDOT Environmental Management Engineer

FROM: Scott Garth-FDOT Drainage Engineer SG

SUBJECT: US 301 Zephyrhills
From S.R. 39 to C.R. 54
FM 256422 1 21 01
Pre Application Meeting with SWFWMD

I met with Mr.Wojciech Mroz of the SWFWMD on August 1, 2000 at 9 am in Brooksville. The purpose of our meeting was to discuss criteria for the sizing and selecting of pond sites for the above referenced project.

I informed Wojciech that the project is not scheduled for design until 2002. I also showed him the proposed *typical section (attached) as shown in the draft Preliminary Engineering Report. Proposed is Alternate 2 which is a one way pair involving the widening of 6th Street which is located west of US 301. Both US 301 and 6th Street are to be curb and gutter sections.

*Note: The typical section presented in the meeting was incorrect. The correct typical has three lanes of traffic each direction rather than two.

Wojciech informed me that the Greiner study (*Lake Zephyr Watershed*, 1989) should be used as the most recent information. Based on our discussion several issues arose which are listed below.

1. For floodplain elevations use the Lake Zephyr cross section tables in the Greiner report.

2. In general, US 301 forms a ridge between the Lake Zephyr Basin (open) and closed basins to the east. **Mixing of basins is not recommended.** Therefore, separate storage facilities should be provided for both basins. For the west side of US 301 (including 6th Street) use the difference in the 25yr/24hr pre- post volume. For portions of the east side of US 301 that are located within

closed basins, ponds should be sized to accommodate the pre-post volume for the 100yr/24hr event. However, if the east side of US 301 is to be taken into the Lake Zephyr Basin where runoff used to outfall into a closed basin (i.e., mixing basins), then 100 year total retention would be required for the eastern portion that did not previously go to Lake Zephyr. This would likely increase the size of the pond for that basin.

3. The portion of 6th Street that is presently not paved (i.e., dirt road) will be considered undeveloped and will need to consider off-site runoff as well.

4. Contact Joellyn Miller (Pasco County) for information regarding the development south of the SR 39/US 301 intersection.

5. The culvert north of Chancey Road is to be restricted to the pre-development discharge rate until the large pond on Geiger Road is constructed as shown in Greiner report. When the pond is constructed, the pipe can be opened up.

End of Memorandum

Attachment

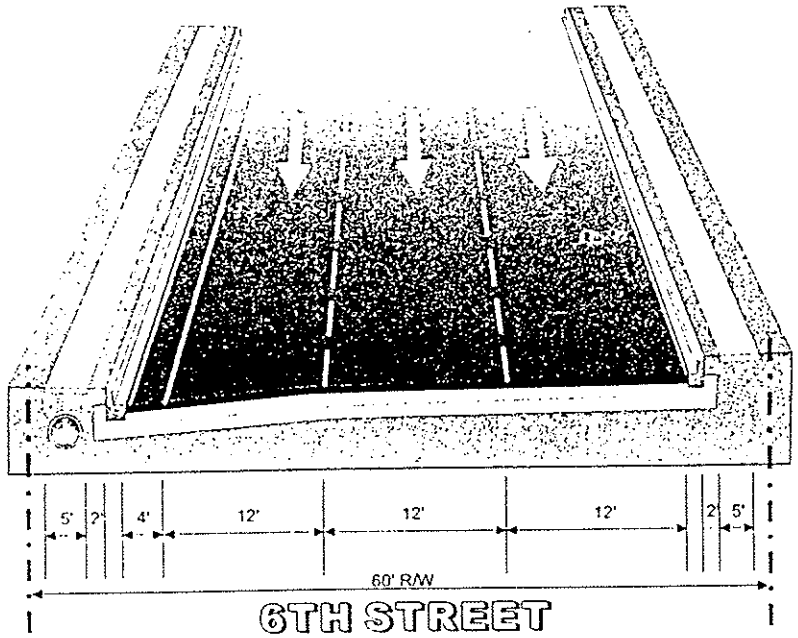
cc: Wojciech Mroz
Megan Arasteh

H:\DRAINAGE\SCOTT\US301PDE\correspondence\preapp.doc

U.S. 301 ZEPHYRHILLS
FROM S.R. 39 TO C.R. 54

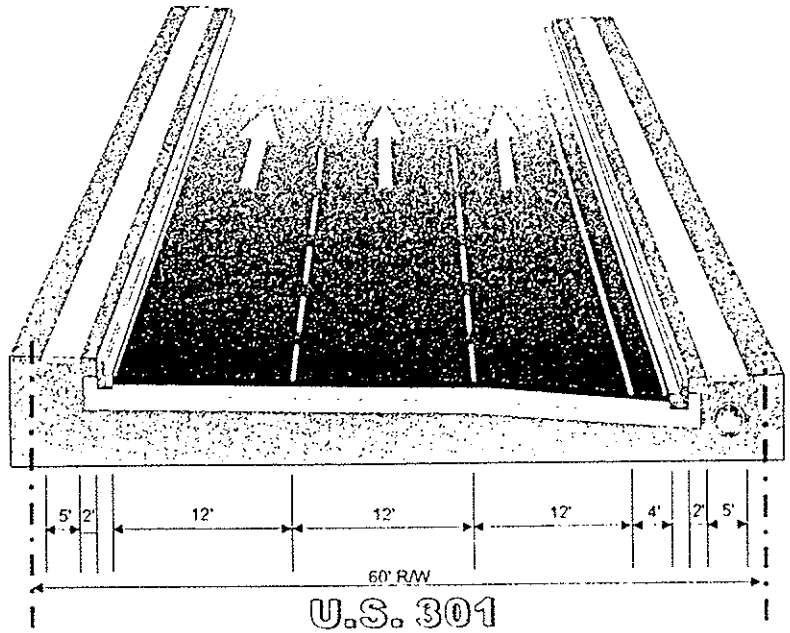
ITEM SEG. 256422 1 FEDERAL AID NO. 1455-001-U

PROPOSED THREE LANE ONE WAY
TYPICAL SECTION



6TH STREET

PROPOSED THREE LANE ONE WAY
TYPICAL SECTION



U.S. 301

ALTERNATIVE 2

RECORD OF TELEPHONE COMMUNICATION

DATE: 02-21-00

TIME: 2:00 pm

PROJECT NAME: US 301 Zephyrhills

PROJECT NO.: 25642212101

PARTY CALLING: Scott A. Garth

COMPANY: FDOT D. 7

PARTY CONTACTED: Rick Moore

COMPANY: CITY OF ZEPHYRHILLS
813-788-2313

SUBJECT: 12" rcp @ U.S. 301 and Fort King Road

TELEPHONE COMMUNICATION SUMMARY (Including Decisions and Commitments)

I spoke to Rick today concerning the 12-inch cross drain at 14th Avenue and U.S. 301. Rick said the pipe conveys runoff to the west to the Zephyrhills Elementary School detention pond. The pond has a pump station with a 16-inch force main that pumps to Lake Zephyr. This was permitted by SWFWMD.

As for the cross drain, only Fort King Road overtops. No overtopping of U.S. 301.

ACTION REQUIRED

obtain SWFWMD permit for pump station at Zephyrhills Elementary School

H:\DRAINAGE\SCOTT\US301PDE\022100.WPD

CONVERSATION FORM

DISTRICT SEVEN
DESIGN
1201 N. MCKINLEY DRIVE
TAMPA, FL 33612

TELEPHONE CONVERSATION ✓

OFFICE CONVERSATION _____

TIME: 9:30 (AM)/PM

DATE: 11/15/99

CONVERSATION WITH: Rick Moore 813-782-5531

RE: US 301 Zephyrhills PD&E
Existing City pond across from city Hall

REPRESENTING: City of Zephyrhills Public Works Director

DISCUSSION: I asked Rick about the existing pond located between 7th street and US 301, north of S.R. 54 west of City Hall, east of Clock Restaurant.

Rick said that pond was built in 1960's and is pumped via a 12" FM to Zephyr Lake. (non permitted - prior to SWFWMD). The pond has flooding problems and the city has tried to increase capacity of pump thru SWFWMD but has not been able to. Pond is equipped with a backup pump/generator.

Rick has pump data but no old plans/calcs. Rick is agreeable to DOT usage of pond if pump capacity could be increased thru SWFWMD and DOT maintained

XC: _____

Carlos Lopez

BY: Scott Garth

TITLE: Drainage

CONVERSATION FORM

DISTRICT SEVEN
DESIGN
1201 N. MCKINLEY DRIVE
TAMPA, FL 33612

TELEPHONE CONVERSATION ✓

OFFICE CONVERSATION _____

TIME: 12:40 AM/(PM)

DATE: 10/4/99

CONVERSATION WITH: Rick Moore

RE: US 301 PD&E

REPRESENTING: City of Zephyrhills Public Works Director

DISCUSSION: I asked Rick two (2) questions:

1) Do you have a site plan for the proposed Ferman Auto site on the east side of US 301 between Ave B and Ave C?

A: Yes. A site plan has been submitted but not approved yet. City of Zephyrhills tried to buy his property but failed. Oval Terrace is the owner. Rick suggested calling him to see if he's interested in selling.

2) Dry retention ponds north of GTE on 7th Street. Do you have calc's/borings/perc rates.

A: TBE (Peter Nikolov) did design. Rick to get us copy of calc's. We are welcome to use these ponds. They are overdesigned and working great.

XC: Carlos Lopez

BY: Scott Garth

TITLE: Drainage

CONVERSATION FORM

DISTRICT SEVEN
DESIGN
1201 N. MCKINLEY DRIVE
TAMPA, FL 33612

TELEPHONE CONVERSATION _____
OFFICE CONVERSATION X
TIME: 2:30 AM/(PM)
DATE: 9/15/99

CONVERSATION WITH: Jerry Sanford

RE: US 301 Zephyrhills PD&E
SR 39 to SR 54

REPRESENTING: Brooksville - Maintenance

DISCUSSION: Carlos Lopez and Scott Garth met with Jerry Sanford to discuss drainage issues concerning US 301 in Zephyrhills. The following items were discussed:

- No overtopping associated with existing 24" cross drain just north of Fir Avenue. Jerry feels that it probably used to flow west towards Zephyr Creek.
- Ponding problem from SR 39 to cross drain along east side US 301 (where closed piping exists)
- Ponding behind Zephyr Egg Company
- Jerry referred to work done to Phase II about 10 years ago. Pumping involved? Drainage "killed" the project.

XC: Carlos Lopez
Jerry Sanford

BY: Scott Garth
TITLE: Drainage Engineer

MEMORANDUM TO PROJECT NOTEBOOK

Date: June 2, 1993

From: Jack M. Wright, Project Designer

RE: Concerns of FDOT Maintenance Department
Project No. 93270, CR 39 (US 301), Pasco County, Florida

On this date I talked with Mr. Jerry Sanford of FDOT, Dade City, Florida, regarding any special concerns they might have about drainage or other facets of maintenance of the captioned project. Mr. Sanford expressed concern for the following locations:

1. Intersection of 12th Avenue and US 301. Mr. Sanford stated that even though he had not witnessed any flooding at this location, he felt that the roadway was low in this area and that an analysis of the area would be in order. He stated that the basin was closed and the he felt that this was a potential problem area.

2. Intersection of Fort King Road and US 301. Mr. Sanford stated that this intersection floods very frequently and that the local police had become very efficient at closing this intersection to traffic during rainstorms. He also related that the properties adjacent to this intersection were inundated at these times as well. This location is a major source of concern for FDOT forces.

3. Intersection of 6th Avenue and US 301 near the Clock Restaurant. Mr. Sanford stated that the outfall pipe from the side ditch at this location which transports water to the City's DRA is of insufficient capacity to accept the runoff at this location. Some minor flooding and excess standing water is experienced at this location.

4. Intersection of 5th Avenue (SR 54) and US 301. Some flooding has been experienced along the side streets at this location. The problem may well be outside the Scope of this project, but Mr. Sanford expressed the desire for us to investigate this location to determine if anything could be done to alleviate this problem.

5. First intersection north of begin project to east: Mr. Sanford stated that this location traps runoff and that the side ditches have no outfall. He suggested that the possibility of cutting a lateral ditch to the existing canal be investigated or transporting runoff to the existing city right-of-way and thence to the canal. (There may be difficulties encountered in that the canal is a connection for the chain of lakes in the area. Should these be classed as "outstanding" waters it may not be possible to discharge without prior treatment, if at all.)

FROM COASTAL ENGINEERING REPORT (8-93)

MEMORANDUM TO PROJECT NOTE BOOK

FROM: JACK M. WRIGHT, PROJECT DESIGNER

AUGUST 25, 1993

PROJECT NO. 93709, SR 39 (US 301), PASCO COUNTY, FLORIDA

RE: MEMORANDUM DATED JUNE 2, 1993 DOCUMENTING CONCERNS OF THE FDOT MAINTENANCE DEPARTMENT

ON THIS DATE LT. TRACY OF THE ZEPHYRHILLS POLICE DEPARTMENT WAS CONTACTED REGARDING THE FLOODING REPORTED TO CEA IN THE CAPTIONED MEMORANDUM. LT. TRACY STATED THAT NO FLOODING IMPACTED US 301 (SR 39). DURING HEAVY RAINSTORMS FLOODING DOES OCCUR NEAR THE INTERSECTION OF FORT KING AVENUE AND SR 39, BUT THE FLOODING ONLY AFFECTS FORT KING ROAD.

RESPECTFULLY SUBMITTED,

Jack

CC: FRANK MATTMULLER

FROM COASTAL ENGINEERING REPORT (8-93)

APPENDIX B
SUPRA-3 ANALYSIS FOR THE CONCEPTUAL POND ALTERNATES
BASINS 1 THROUGH 6

Hydology and pond routings are kept in file H:\drainage\scott\US301pde\psr

BASIN 1 - HYDROLOGY 2-2

Pre Development Hydrology

Basin 1

Approximate Stations
385+00 to 424+00 LT. US 301
385+00 to 424+00 RT. US301
606+00 to 618+00 6th Street

Total Area (ac) = 8.89
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (30')		2.68	98	262.64
pervious	A	2.69	39	104.91
Pond Site	A	1.86	39	72.72
6th Street:				
residential (1/4 ac)	A	1.28	61	78.08
business	A	0.38	89	33.82
Total Area (ac) =		8.89		552.17
		Weighted CN =		**62.1**

Post Development Hydrology

Basin 1

Approximate Stations
385+00 to 424+00 LT. US 301
385+00 to 424+00 RT. US301
606+00 to 618+00 6th Street

Total Area (ac) = 8.89
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		4.83	98	473.34
Pervious	A	0.54	39	21.06
Pond (Impervious)		1.16	98	113.89
Pond (Pervious)	A	0.70	39	27.40
6th Street:				
Impervious (54')		1.49	98	146.02
Pervious	A	0.17	39	6.63
Total Area (ac) =		8.89		788.34
		Weighted CN =		**88.6**

BASIN 1 - TREATMENT 2-2

1 in. over impervious, DCIA and Pond TOB =	0.62	Ac.-ft

BASIN 1 - HYDRAULICS 2-2

Basin No.	1
Location	388+00 RT.

Estimated Ground Surface Elevation at pond =	76.0	ft.	
Estimated depth to Seasonal High Water, ft =	3.50	ft.	
Estimated Seasonal High Water Elevation =	72.5	ft.	

Pond site width=	285	ft.	Pond site Length=	285 ft.
Pond site area=	1.86	Ac.		
Pond TOB width =	225		Pond TOB length =	225 ft.
Pond TOB area=	1.16	Ac.		
Pond TOB el. =	76.0	ft.		
Pond 100 yr. el. =	75.13	ft.	E-Max from Supra	

Weir elevation =	73.2	ft.	
Outfall TW elevation (5 yr.)=	72.0	ft.	
Length of pipe to outfall =	1900	ft.	
estimated pipe size =	36	in.	19.4 cfs

Estimated low road E/P in basin =	77.0	ft.	
5 yr. Critical duration pond elevation =	74.33	ft.	from supra
HGL slope =	0.08%		estimated
Approximate stormsewer length pond to low point =	20	ft.	
calculated HGL at low point =	74.35	ft.	
Low point - HGL =	2.7	ft.	ok

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LICENSED TO:

Pond 2-2 (22bas1)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 8.89
CURVE NUMBER	= 62.1
RUNOFF COEFFICIENT	= .348
TIME OF CONCENTRATION (min.)	= 30.0
RAINFALL INTENSITY (in/hr)	= 6.38
PEAK FLOW RATE (cfs)	= 19.71

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 8.89
CURVE NUMBER	= 88.6
RUNOFF COEFFICIENT	= .781
RAINFALL ZONE NUMBER	= 6
TOTAL RAINFALL DEPTH (inches)	= 5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	73.20	.00	.00	.00
.2	.500	20.68	73.38	.57	.00	.57
.4	.750	31.02	73.78	3.25	.00	3.25
.6	1.000	41.36	74.29	8.24	.00	8.24
.8	1.250	51.70	74.84	15.21	.00	15.21
1.0	.500	20.68	75.13	19.42	.00	19.42
1.2	.300	12.41	75.09	18.83	.00	18.83
1.4	.250	10.34	74.98	17.31	.00	17.31
1.6	.200	8.27	74.87	15.73	.00	15.73
1.8	.150	6.20	74.75	14.08	.00	14.08
2.0	.000	.00	74.60	12.01	.00	12.01

OUTPUT SUMMARY

PEAK FLOW (cfs)	= 19.42
PEAK STAGE (ft)	= 75.13
PEAK STORAGE (ac-ft)	= 1.953
TIME TO PEAK (hrs)	= 1.00

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LICENSED TO:

Pond 2-2 (22bas1)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 73.20
WEIR LENGTH (ft)	= 2.20
TOP BANK ELEVATION (ft)	= 76.00
POND AREA AT TOP BANK (acres)	= 1.160
POND PERIMETER AT TOP BANK (ft)	= 900.0
SIDE SLOPE OF POND	= 4.0
DESIGN NORMAL WATER ELEVATION (ft)	= 73.20
DISCHARGE ELEVATION (ft)	= 73.20
TREATMENT VOLUME (ac-ft)	= .620
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
73.20	.940	.000	.00	.00	.00
73.20	.940	.000	.00	.00	.00
73.40	.955	.190	.00	.65	.65
73.60	.970	.382	.00	1.84	1.84
73.80	.985	.578	.00	3.37	3.37
74.00	1.001	.776	.00	5.19	5.19
74.20	1.016	.978	.00	7.26	7.26
74.40	1.032	1.183	.00	9.54	9.54
74.60	1.047	1.390	.00	12.03	12.03
74.80	1.063	1.601	.00	14.69	14.69
75.00	1.079	1.816	.00	17.53	17.53
75.20	1.095	2.033	.00	20.53	20.53
75.40	1.111	2.254	.00	23.69	23.69
75.60	1.127	2.477	.00	26.99	26.99
75.80	1.144	2.704	.00	30.44	30.44

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

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LICENSED TO:

Pond 2-2 (22bas1)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	2.23	3.77	5.43	7.34	10.61
	Q-post	4.97	5.46	5.99	6.17	3.16
	E-max	73.98	74.03	74.08	74.09	73.77
5-YR	Q-pre	4.30	6.61	9.02	11.56	15.75
	Q-post	7.38	7.98	8.59	8.78	4.39
	E-max	74.21	74.26	74.32	74.33	73.91
10-YR	Q-pre	6.08	9.18	11.84	15.01	19.48
	Q-post	9.33	10.33	10.55	10.99	5.27
	E-max	74.38	74.46	74.48	74.52	74.01
25-YR	Q-pre	8.96	12.71	16.22	19.70	25.23
	Q-post	12.24	13.26	13.43	13.64	6.67
	E-max	74.62	74.69	74.71	74.72	74.14
50-YR	Q-pre	11.41	15.96	19.48	23.33	28.88
	Q-post	14.70	16.23	15.48	15.73	7.39
	E-max	74.80	74.91	74.86	74.87	74.21
100-YR	Q-pre	14.24	19.71	23.73	27.87	33.80
	Q-post	17.27	19.42	18.20	18.32	8.51
	E-max	74.98	75.13	75.04	75.05	74.31

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 19.71
Q-post (cfs) = 19.42
E-max (ft) = 75.13 < 76 OK

BASIN 1 - HYDROLOGY 2-3

Pre Development Hydrology
Basin 1

Approximate Stations
385+00 to 424+00 LT. US 301
385+00 to 424+00 RT. US301
606+00 to 618+00 6th Street

Total Area (ac) = 9.48
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (30')		2.68	98	262.64
pervious	A	2.69	39	104.91
Pond Site	A	2.45	39	95.48
6th Street:				
residential (1/4 ac)	A	1.28	61	78.08
business	A	0.38	89	33.82
Total Area (ac) =		9.48		574.93
		Weighted CN =	**60.7**	

Post Development Hydrology
Basin 1

Approximate Stations
385+00 to 424+00 LT. US 301
385+00 to 424+00 RT. US301
606+00 to 618+00 6th Street

Total Area (ac) = 9.478232
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		4.83	98	473.34
Pervious	A	0.54	39	21.06
Pond (Impervious)		1.62	98	158.6651
Pond (Pervious)	A	0.83	39	32.33884
6th Street:				
Impervious (54')		1.49	98	146.02
Pervious	A	0.17	39	6.63
Total Area (ac) =		9.48		838.05
		Weighted CN =		**88.4**

BASIN 1 - TREATMENT 2- 3

1 in. over impervious, DCIA and Pond TOB =	0.66	Ac.-ft

BASIN 1 - HYDRAULICS 2-3

Basin No.	1
Location	396+00 LT.

Estimated Ground Surface Elevation at pond =	79.0	ft.	
Estimated depth to Seasonal High Water, ft =	3.50	ft.	
Estimated Seasonal High Water Elevation =	75.5	ft.	

Pond site width=	385	ft.	Pond site Length=	277 ft.
Pond site area=	2.45	Ac.		
Pond TOB width =	325		Pond TOB length =	217 ft.
Pond TOB area=	1.62	Ac.		
Pond TOB el. =	79.0	ft.		
Pond 100 yr el. =	77.52	ft.	E-Max from Supra	

Weir elevation =	76.01	ft.	
Outfall TW elevation (5 yr)=	75.0	ft.	
Length of pipe to outfall =	700	ft.	
estimated pipe size =	30	in.	19.5 cfs

Estimated low road E/P in basin =	80.0	ft.	
5 yr. Critical duration pond elevation =	76.9	ft.	from supra
HGL slope =	0.08%		estimated
Approximate stormsewer length pond to low point =	1200	ft.	
calculated HGL at low point =	77.87	ft.	
Low point - HGL =	2.1	ft.	ok

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LICENSED TO:

Basin 1 - Pond 2-3 (23bas1)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	9.48
CURVE NUMBER	=	60.7
RUNOFF COEFFICIENT	=	.328
TIME OF CONCENTRATION (min.)	=	30.0
RAINFALL INTENSITY (in/hr)	=	6.38
PEAK FLOW RATE (cfs)	=	19.83

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	9.48
CURVE NUMBER	=	88.4
RUNOFF COEFFICIENT	=	.777
RAINFALL ZONE NUMBER	=	6
TOTAL RAINFALL DEPTH (inches)	=	5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	76.01	.00	.00	.00
.2	.500	21.95	76.14	.62	.00	.62
.4	.750	32.93	76.45	3.14	.00	3.14
.6	1.000	43.90	76.84	8.02	.00	8.02
.8	1.250	54.88	77.28	15.10	.00	15.10
1.0	.500	21.95	77.52	19.54	.00	19.54
1.2	.300	13.17	77.50	19.15	.00	19.15
1.4	.250	10.98	77.42	17.76	.00	17.76
1.6	.200	8.78	77.34	16.28	.00	16.28
1.8	.150	6.59	77.25	14.68	.00	14.68
2.0	.000	.00	77.14	12.65	.00	12.65

OUTPUT SUMMARY

PEAK FLOW (cfs)	=	19.54
PEAK STAGE (ft)	=	77.52
PEAK STORAGE (ac-ft)	=	2.116
TIME TO PEAK (hrs)	=	1.00

SUPRA-3 (VERSION 4.02) 11-14-2000

LICENSED TO:

Basin 1 - Pond 2-3 (23bas1)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 76.01
WEIR LENGTH (ft)	= 3.20
TOP BANK ELEVATION (ft)	= 79.00
POND AREA AT TOP BANK (acres)	= 1.620
POND PERIMETER AT TOP BANK (ft)	=1084.0
SIDE SLOPE OF POND	= 4.0
DESIGN NORMAL WATER ELEVATION (ft)	= 76.01
DISCHARGE ELEVATION (ft)	= 76.01
TREATMENT VOLUME (ac-ft)	= .660
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
76.01	1.336	.000	.00	.00	.00
76.01	1.336	.000	.00	.00	.00
76.21	1.354	.269	.00	.94	.94
76.41	1.372	.541	.00	2.67	2.67
76.61	1.390	.818	.00	4.91	4.91
76.81	1.409	1.098	.00	7.56	7.56
77.01	1.428	1.381	.00	10.56	10.56
77.21	1.447	1.669	.00	13.88	13.88
77.41	1.465	1.960	.00	17.49	17.49
77.61	1.484	2.255	.00	21.37	21.37
77.81	1.504	2.554	.00	25.50	25.50
78.01	1.523	2.856	.00	29.87	29.87
78.21	1.542	3.163	.00	34.46	34.46
78.41	1.562	3.473	.00	39.26	39.26
78.61	1.581	3.788	.00	44.27	44.27

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

SUPRA-3 (VERSION 4.02) 11-14-2000

LICENSED TO:

Basin 1 - Pond 2-3 (23bas1)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	1.98	3.53	5.22	7.21	10.65
	Q-post	4.80	5.37	6.06	6.30	3.32
	E-max	76.60	76.65	76.70	76.72	76.47
5-YR	Q-pre	4.00	6.37	8.88	11.55	16.01
	Q-post	7.20	7.94	8.78	9.02	4.60
	E-max	76.78	76.84	76.89	76.91	76.58
10-YR	Q-pre	5.78	8.98	11.77	15.13	19.92
	Q-post	9.17	10.29	10.82	11.35	5.56
	E-max	76.92	76.99	77.03	77.06	76.66
25-YR	Q-pre	8.68	12.59	16.30	20.01	25.97
	Q-post	12.11	13.19	13.86	14.15	7.04
	E-max	77.10	77.17	77.21	77.22	76.77
50-YR	Q-pre	11.17	15.95	19.68	23.81	29.81
	Q-post	14.60	16.25	16.05	16.36	7.80
	E-max	77.25	77.34	77.33	77.35	76.83
100-YR	Q-pre	14.05	19.83	24.11	28.57	35.01
	Q-post	17.21	19.54	18.92	19.14	9.00
	E-max	77.39	77.52	77.48	77.49	76.91

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 19.83
Q-post (cfs) = 19.54
E-max (ft) = 77.52

BASIN 1 - HYDROLOGY 2-1

Pre Development Hydrology

Basin 1

Approximate Stations
385+00 to 395+00 US 301

Total Area (ac) = 2.48
Soils = Tavares-Sand

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (30')		0.69	98	67.62
pervious	A	0.69	39	26.91
Pond Site	A	1.10	39	43.09
Total Area (ac) =		2.48		137.62
		Weighted CN =		**55.4**

Post Development Hydrology

Basin 1

Approximate Stations
385+00 to 395+00 US 301

Total Area (ac) = 2.48
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		1.24	98	121.52
Pervious	A	0.14	39	5.46
Pond (Impervious)		0.65	98	63.39
Pond (Pervious)	A	0.46	39	17.86
Total Area (ac) =		2.48		208.23
		Weighted CN =		**83.8**

BASIN 1 - TREATMENT 2-1

1 in. over impervious, DCIA and Pond TOB =	0.16 Ac.-ft

BASIN 1 - HYDRAULICS 2-1

Basin No.	1
Location	385+00 RT

Estimated Ground Surface Elevation at pond =			76.0 ft.
Estimated depth to Seasonal High Water, ft =			3.50 ft.
Estimated Seasonal High Water Elevation =			72.5 ft.
Pond site width=	175 ft.	Pond site Length=	550 ft.
Pond site area=	1.10 Ac.	(triangular shape)	
Pond TOB width =	115	Pond TOB length =	490 ft.
Pond TOB area=	0.65 Ac.		
Pond TOB el. =	76.0 ft.		
Pond 100 yr el. =	73.91 ft.	E-Max from Supra	

Weir elevation =	72.94 ft.
Outfall TW elevation (5 yr)=	72.0 ft.
Length of pipe to outfall =	1500 ft.
estimated pipe size =	36 in.

Estimated low road E/P in basin =	76.0 ft.
5 yr. Critical duration pond elevation =	73.46 ft. from supra
HGL slope =	0.08% estimated
Approximate stormsewer length pond to low point =	20 ft.
calculated HGL at low point =	73.48 ft.
Low point - HGL =	2.5 ft.

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LICENSED TO:

Pond 2-1 (21bas1)

**** 8-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	2.48
CURVE NUMBER	=	55.4
RUNOFF COEFFICIENT	=	.400
TIME OF CONCENTRATION (min.)	=	30.0
RAINFALL INTENSITY (in/hr)	=	6.38
PEAK FLOW RATE (cfs)	=	6.33

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	2.48
CURVE NUMBER	=	83.8
RUNOFF COEFFICIENT	=	.786
RAINFALL ZONE NUMBER	=	6
TOTAL RAINFALL DEPTH (inches)	=	9.20

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	72.50	.00	.00	.00
1.0	.020	.36	72.54	.00	.00	.00
2.0	.060	1.08	72.70	.00	.00	.00
3.0	.150	2.69	73.07	.44	.00	.44
4.0	.420	7.53	73.69	3.38	.00	3.38
5.0	.160	2.87	73.91	4.73	.00	4.73
6.0	.060	1.08	73.58	2.68	.00	2.68
7.0	.050	.90	73.37	1.51	.00	1.51
8.0	.000	.00	73.21	.95	.00	.95

OUTPUT SUMMARY

PEAK FLOW (cfs)	=	4.73
PEAK STAGE (ft)	=	73.91
PEAK STORAGE (ac-ft)	=	.570
TIME TO PEAK (hrs)	=	5.00

SUPRA-3 (VERSION 4.02) 1- 4-2001

LICENSED TO:

Pond 2-1 (21bas1)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 72.94
WEIR LENGTH (ft)	= 1.50
TOP BANK ELEVATION (ft)	= 76.00
POND AREA AT TOP BANK (acres)	= .650
POND PERIMETER AT TOP BANK (ft)	=1000.0
SIDE SLOPE OF POND	= 4.0
DESIGN NORMAL WATER ELEVATION (ft)	= 72.50
DISCHARGE ELEVATION (ft)	= 72.94
TREATMENT VOLUME (ac-ft)	= .160
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
72.50	.347	.000	.00	.00	.00
72.94	.383	.160	.00	.00	.00
73.44	.425	.362	.00	1.75	1.75
73.94	.467	.585	.00	4.95	4.95
74.44	.510	.830	.00	9.09	9.09
74.94	.554	1.096	.00	14.00	14.00
75.44	.599	1.384	.00	19.57	19.57
75.94	.644	1.695	.00	25.72	25.72

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

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LICENSED TO:

Pond 2-1 (21bas1)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	.21	.51	.87	1.32	2.16
	Q-post	.26	.61	1.00	1.16	.79
	E-max	73.01	73.11	73.22	73.27	73.17
5-YR	Q-pre	.56	1.07	1.65	2.29	3.43
	Q-post	.80	1.16	1.64	1.86	1.11
	E-max	73.17	73.27	73.41	73.46	73.26
10-YR	Q-pre	.91	1.62	2.29	3.12	4.37
	Q-post	1.22	1.66	2.30	2.64	1.34
	E-max	73.29	73.41	73.53	73.58	73.32
25-YR	Q-pre	1.49	2.41	3.32	4.27	5.87
	Q-post	1.82	2.51	3.17	3.46	1.71
	E-max	73.45	73.56	73.66	73.71	73.43
50-YR	Q-pre	2.02	3.16	4.10	5.18	6.81
	Q-post	2.56	3.34	3.76	4.03	1.94
	E-max	73.57	73.69	73.75	73.80	73.47
100-YR	Q-pre	2.63	4.05	5.15	6.33	8.11
	Q-post	3.31	4.22	4.51	4.73	2.27
	E-max	73.68	73.83	73.87	73.91	73.52

CRITICAL DURATION : **** 8-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 6.33
Q-post (cfs) = 4.73
E-max (ft) = 73.91

BASIN 1 - HYDROLOGY 2-4

Pre Development Hydrology

Basin 1

Approximate Stations
395+00 to 424+00 US 301
606+00 to 618+00 6th Street

Total Area (ac) = 7.22
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (30')		2.00	98	196
pervious	A	2.00	39	78
Pond Site	A	1.56	39	60.88
6th Street:				
residential (1/4 ac)	A	1.28	61	78.08
business	A	0.38	89	33.82
Total Area (ac) =		7.22		446.78
		Weighted CN =	**61.9**	

Post Development Hydrology

Basin 1

Approximate Stations
395+00 to 424+00 US 301
606+00 to 618+00 6th Street

Total Area (ac) = 7.22
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		3.60	98	352.8
Pervious	A	0.40	39	15.6
Pond (Impervious)		0.90	98	88.19
Pond (Pervious)	A	0.66	39	25.79
6th Street:				
Impervious (54')		1.49	98	146.02
Pervious	A	0.17	39	6.63
Total Area (ac) =		7.22		635.03
		Weighted CN =		**87.9**

^

01/04/2001

BASIN 1 - TREATMENT 2-4

1 in. over impervious, DCIA and Pond TOB =	0.50	Ac.-ft

BASIN 1 - HYDRAULICS 2-4

Basin No.	1
Location	606+00 RT.

Estimated Ground Surface Elevation at pond =	78.0	ft.	
Estimated depth to Seasonal High Water, ft =	3.50	ft.	
Estimated Seasonal High Water Elevation =	74.5	ft.	

Pond site width=	200	ft.	Pond site Length=	340 ft.
Pond site area=	1.56	Ac.		
Pond TOB width =	140		Pond TOB length =	280 ft.
Pond TOB area=	0.90	Ac.		
Pond TOB el. =	78.0	ft.		
Pond 100 yr el. =	76.96	ft.	E-Max from Supra	

Weir elevation =	75.25	ft.	
Outfall TW elevation (5 yr)=	76.0	ft.	
Length of pipe to outfall =	1900	ft.	
estimated pipe size =	36	in.	19.1 cfs

Estimated low road E/P in basin =	80.0	ft.	
5 yr. Critical duration pond elevation =	76.2	ft.	from supra
HGL slope =	0.08%		estimated
Approximate stormsewer length pond to low point =	1600	ft.	
calculated HGL at low point =	77.5	ft.	
Low point - HGL =	2.5	ft.	ok

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LICENSED TO:

Pond 2-4 (24bas1)

**** 8-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	7.22
CURVE NUMBER	=	61.9
RUNOFF COEFFICIENT	=	.489
TIME OF CONCENTRATION (min.)	=	30.0
RAINFALL INTENSITY (in/hr)	=	6.38
PEAK FLOW RATE (cfs)	=	22.51

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	7.22
CURVE NUMBER	=	87.9
RUNOFF COEFFICIENT	=	.840
RAINFALL ZONE NUMBER	=	6
TOTAL RAINFALL DEPTH (inches)	=	9.20

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	74.50	.00	.00	.00
1.0	.020	1.12	74.57	.00	.00	.00
2.0	.060	3.35	74.84	.00	.00	.00
3.0	.150	8.37	75.48	1.08	.00	1.08
4.0	.420	23.45	76.59	10.41	.00	10.41
5.0	.160	8.93	76.96	14.85	.00	14.85
6.0	.060	3.35	76.40	8.26	.00	8.26
7.0	.050	2.79	76.03	4.73	.00	4.73
8.0	.000	.00	75.78	2.60	.00	2.60

OUTPUT SUMMARY

PEAK FLOW (cfs)	=	14.85
PEAK STAGE (ft)	=	76.96
PEAK STORAGE (ac-ft)	=	1.805
TIME TO PEAK (hrs)	=	5.00

SUPRA-3 (VERSION 4.02) 1- 4-2001

LICENSED TO:

Pond 2-4 (24bas1)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 75.25
WEIR LENGTH (ft)	= 2.00
TOP BANK ELEVATION (ft)	= 78.00
POND AREA AT TOP BANK (acres)	= .900
POND PERIMETER AT TOP BANK (ft)	= 840.0
SIDE SLOPE OF POND	= 4.0
DESIGN NORMAL WATER ELEVATION (ft)	= 74.50
DISCHARGE ELEVATION (ft)	= 75.25
TREATMENT VOLUME (ac-ft)	= .500
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
74.50	.648	.000	.00	.00	.00
75.25	.699	.505	.00	.00	.00
75.75	.734	.863	.00	2.33	2.33
76.25	.770	1.239	.00	6.60	6.60
76.75	.806	1.633	.00	12.12	12.12
77.25	.843	2.045	.00	18.67	18.67
77.75	.881	2.476	.00	26.09	26.09

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

SUPRA-3 (VERSION 4.02)

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1- 4-2001

Pond 2-4 (24bas1)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	1.76	3.01	4.35	5.90	8.54
	Q-post	1.21	2.04	3.35	3.85	2.43
	E-max	75.51	75.69	75.87	75.93	75.76
5-YR	Q-pre	3.42	5.29	7.25	9.30	12.71
	Q-post	2.76	4.02	5.77	6.37	3.58
	E-max	75.80	75.95	76.15	76.22	75.90
10-YR	Q-pre	4.86	7.37	9.52	12.09	15.73
	Q-post	4.39	5.91	7.64	8.43	4.31
	E-max	75.99	76.17	76.34	76.42	75.98
25-YR	Q-pre	7.18	10.22	13.07	15.89	20.39
	Q-post	6.65	8.39	10.17	10.86	5.43
	E-max	76.25	76.41	76.57	76.64	76.11
50-YR	Q-pre	9.16	12.85	15.70	18.83	23.35
	Q-post	8.90	10.90	11.93	12.58	6.01
	E-max	76.46	76.64	76.73	76.78	76.18
100-YR	Q-pre	11.44	15.88	19.14	22.51	27.34
	Q-post	11.12	13.64	14.33	14.85	6.93
	E-max	76.66	76.87	76.92	76.96	76.28

CRITICAL DURATION : **** 8-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 22.51
Q-post (cfs) = 14.85
E-max (ft) = 76.96

B-20

BASIN 2 - HYDROLOGY 2-6

Pre Development Hydrology
Basin 2

Approximate Stations
424+00 to 432+00 LT. US 301
618+00 to 638+00 6th Street

Total Area (ac) = 4.24
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (15')		0.28	98	27.44
pervious (15')	A	0.28	39	10.92
Pond Site	A	1.20	61	73.44
6th Street:				
impervious (400'x24')	A	0.22	98	21.56
pervious (400'x36')	A	0.33	39	12.87
dirt; includes r/w	A	1.93	72	138.96
Total Area (ac) =		4.24		285.19
		Weighted CN =		**67.2**

Post Development Hydrology
Basin 2

Total Area (ac) = 5.06
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		0.99	98	97.02
Pervious	A	0.11	39	4.29
Pond (Impervious)		0.57	98	56.15
Pond (Pervious)	A	0.63	39	24.60
6th Street:				
Impervious (54')		2.48	98	243.04
Pervious	A	0.28	39	10.92
Total Area (ac) =		5.06		436.03
		Weighted CN =		**86.1**

B-22

BASIN 2 - TREATMENT 2-6

1 in. over impervious, DCIA and Pond TOB = 0.34 Ac.-ft

BASIN 2 - HYDRAULICS 2-6

Basin No.	Basin 2
Location	623+00 LT.

Estimated Ground Surface Elevation at pond =			79.5	ft.
Estimated depth to Seasonal High Water, ft =			3.50	ft.
Estimated Seasonal High Water Elevation =			76.0	ft.
Pond site width=	138 ft.	Pond site Length=	380	ft.
Pond site area=	1.20 Ac.			
Pond TOB width =	78 ft.	Pond TOB length =	320	ft.
Pond TOB area=	0.57 Ac.			
Pond TOB el. =	80.0 ft.			
Pond 100 yr. el. =	78.85 ft.	E-Max from Supra		

Weir elevation =	77.03 ft.	
Outfall TW elevation (5 yr.)=	78.6 ft.	
Length of pipe to outfall =	900 ft.	
estimated pipe size =	30 in.	10.7 cfs

Estimated low road E/P in basin =	79.5 ft.	
5 yr. Critical duration pond elevation =	78.08 ft.	from supra
HGL slope =	0.08%	estimated
Approximate stormsewer length pond to low point =	20 ft.	
calculated HGL at low point =	78.10 ft.	
Low point - HGL =	1.4 ft.	ok

SUPRA-3 (VERSION 4.02) 1- 4-2001
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LICENSED TO:

Pond 2-6 (26bas2)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	4.24
CURVE NUMBER	=	67.2
RUNOFF COEFFICIENT	=	.422
TIME OF CONCENTRATION (min.)	=	30.0
RAINFALL INTENSITY (in/hr)	=	6.38
PEAK FLOW RATE (cfs)	=	11.43

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	5.06
CURVE NUMBER	=	86.1
RUNOFF COEFFICIENT	=	.735
RAINFALL ZONE NUMBER	=	6
TOTAL RAINFALL DEPTH (inches)	=	5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	76.00	.00	.00	.00
.2	.500	11.09	76.28	.00	.00	.00
.4	.750	16.63	76.97	.00	.00	.00
.6	1.000	22.17	77.74	2.68	.00	2.68
.8	1.250	27.72	78.49	7.60	.00	7.60
1.0	.500	11.09	78.85	10.58	.00	10.58
1.2	.300	6.65	78.80	10.14	.00	10.14
1.4	.250	5.54	78.68	9.12	.00	9.12
1.6	.200	4.43	78.55	8.07	.00	8.07
1.8	.150	3.33	78.42	7.07	.00	7.07
2.0	.000	.00	78.24	5.81	.00	5.81

OUTPUT SUMMARY

PEAK FLOW (cfs)	=	10.58
PEAK STAGE (ft)	=	78.85
PEAK STORAGE (ac-ft)	=	1.117
TIME TO PEAK (hrs)	=	1.00

SUPRA-3 (VERSION 4.02) 1- 4-2001

LICENSED TO:

Pond 2-6 (26bas2)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 77.03
WEIR LENGTH (ft)	= 1.30
TOP BANK ELEVATION (ft)	= 80.00
POND AREA AT TOP BANK (acres)	= .570
POND PERIMETER AT TOP BANK (ft)	= 800.0
SIDE SLOPE OF POND	= 4.0
DESIGN NORMAL WATER ELEVATION (ft)	= 76.00
DISCHARGE ELEVATION (ft)	= 77.03
TREATMENT VOLUME (ac-ft)	= .340
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
76.00	.300	.000	.00	.00	.00
77.03	.365	.342	.00	.00	.00
77.53	.398	.533	.00	1.52	1.52
78.03	.431	.740	.00	4.29	4.29
78.53	.465	.964	.00	7.88	7.88
79.03	.500	1.205	.00	12.13	12.13
79.53	.536	1.464	.00	16.96	16.96

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

SUPRA-3 (VERSION 4.02)

LICENSED TO:

1- 4-2001

Pond 2-6 (26bas2)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	1.85	2.73	3.62	4.60	6.19
	Q-post	.77	1.42	2.50	2.90	1.74
	E-max	77.28	77.50	77.71	77.78	77.57
5-YR	Q-pre	3.14	4.38	5.60	6.85	8.82
	Q-post	2.07	2.98	4.21	4.67	2.47
	E-max	77.63	77.79	78.02	78.08	77.70
10-YR	Q-pre	4.19	5.80	7.12	8.63	10.68
	Q-post	3.31	4.50	5.54	6.14	2.97
	E-max	77.85	78.06	78.20	78.29	77.79
25-YR	Q-pre	5.85	7.73	9.43	11.05	13.53
	Q-post	5.20	6.38	7.31	7.75	3.76
	E-max	78.16	78.32	78.45	78.51	77.93
50-YR	Q-pre	7.21	9.46	11.12	12.89	15.36
	Q-post	6.89	8.39	8.55	9.00	4.16
	E-max	78.39	78.59	78.61	78.66	78.01
100-YR	Q-pre	8.78	11.43	13.30	15.17	17.77
	Q-post	8.60	10.58	10.24	10.56	4.81
	E-max	78.61	78.85	78.81	78.85	78.10

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 11.43
Q-post (cfs) = 10.58
E-max (ft) = 78.85

BASIN 2 - HYDROLOGY 2-7

Pre Development Hydrology
Basin 2

Approximate Stations
424+00 to 432+00 LT. US
618+00 to 638+00 6th Str

Total Area (ac) = 4.24
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (15')		0.28	98	27.44
pervious (15')	A	0.28	39	10.92
Pond Site	A	1.20	77	92.70
6th Street:				
impervious (400'x24')	A	0.22	98	21.56
pervious (400'x36')	A	0.33	39	12.87
dirt; includes r/w	A	1.93	72	138.96
Total Area (ac) =		4.24		304.45
		Weighted CN =		**71.7**

Post Development Hydrology
Basin 2

Total Area (ac) = 5.06
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		0.99	98	97.02
Pervious	A	0.11	39	4.29
Pond (Impervious)		0.57	98	56.15
Pond (Pervious)	A	0.63	39	24.60
6th Street:				
Impervious (54')		2.48	98	243.04
Pervious	A	0.28	39	10.92
Total Area (ac) =		5.06		436.03
		Weighted CN =		**86.1**

BASIN 2 - TREATMENT 2-7

1 in. over impervious, DCIA and Pond TOB =	0.34 Ac.-ft

BASIN 2 - HYDRAULICS 2-7

Basin No.	Basin 2
Location	623+00 RT.

Estimated Ground Surface Elevation at pond =			80.0 ft.
Estimated depth to Seasonal High Water, ft =			3.50 ft.
Estimated Seasonal High Water Elevation =			76.5 ft.
Pond site width=	138 ft.	Pond site Length=	380 ft.
Pond site area=	1.20 Ac.		
Pond TOB width =	78 ft.	Pond TOB length =	320 ft.
Pond TOB area=	0.57 Ac.		
Pond TOB el. =	80.0 ft.		
Pond 100 yr. el. =	79.02 ft. E-Max from Supra		
Weir elevation =			77.45 ft.
Outfall TW elevation (5 yr.)=			78.6 ft.
Length of pipe to outfall =			900 ft.
estimated pipe size =			30 in.
Estimated low road E/P in basin =			79.5 ft.
5 yr. Critical duration pond elevation =			78.29 ft. from supra
HGL slope =			0.08% estimated
Approximate stormsewer length pond to low point =			20 ft.
calculated HGL at low point =			78.31 ft.
Low point - HGL =			1.2 ft.

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1- 4-2001

Pond 2-7 (27bas2)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	4.24
CURVE NUMBER	=	71.7
RUNOFF COEFFICIENT	=	.492
TIME OF CONCENTRATION (min.)	=	30.0
RAINFALL INTENSITY (in/hr)	=	6.38
PEAK FLOW RATE (cfs)	=	13.31

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	5.06
CURVE NUMBER	=	86.1
RUNOFF COEFFICIENT	=	.735
RAINFALL ZONE NUMBER	=	6
TOTAL RAINFALL DEPTH (inches)	=	5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	76.50	.00	.00	.00
.2	.500	11.09	76.75	.00	.00	.00
.4	.750	16.63	77.39	.00	.00	.00
.6	1.000	22.17	78.09	3.57	.00	3.57
.8	1.250	27.72	78.75	9.92	.00	9.92
1.0	.500	11.09	79.02	13.04	.00	13.04
1.2	.300	6.65	78.91	11.63	.00	11.63
1.4	.250	5.54	78.74	9.85	.00	9.85
1.6	.200	4.43	78.60	8.29	.00	8.29
1.8	.150	3.33	78.47	6.87	.00	6.87
2.0	.000	.00	78.31	5.40	.00	5.40

OUTPUT SUMMARY

PEAK FLOW (cfs)	=	13.04
PEAK STAGE (ft)	=	79.02
PEAK STORAGE (ac-ft)	=	1.044
TIME TO PEAK (hrs)	=	1.00

SUPRA-3 (VERSION 4.02) 1- 4-2001

LICENSED TO:

Pond 2-7 (27bas2)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 77.45
WEIR LENGTH (ft)	= 2.00
TOP BANK ELEVATION (ft)	= 80.00
POND AREA AT TOP BANK (acres)	= .570
POND PERIMETER AT TOP BANK (ft)	= 800.0
SIDE SLOPE OF POND	= 4.0
DESIGN NORMAL WATER ELEVATION (ft)	= 76.50
DISCHARGE ELEVATION (ft)	= 77.45
TREATMENT VOLUME (ac-ft)	= .340
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
76.50	.331	.000	.00	.00	.00
77.45	.392	.343	.00	.00	.00
77.95	.426	.548	.00	2.33	2.33
78.45	.460	.769	.00	6.60	6.60
78.95	.494	1.008	.00	12.12	12.12
79.45	.530	1.264	.00	18.67	18.67
79.95	.566	1.538	.00	26.09	26.09

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

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Pond 2-7 (27bas2)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	2.74	3.72	4.66	5.67	7.24
	Q-post	1.04	1.76	2.87	3.28	1.77
	E-max	77.67	77.83	78.01	78.06	77.83
5-YR	Q-pre	4.30	5.62	6.87	8.10	9.99
	Q-post	2.57	3.65	4.74	5.24	2.48
	E-max	77.98	78.10	78.23	78.29	77.97
10-YR	Q-pre	5.53	7.20	8.52	9.99	11.92
	Q-post	4.24	5.52	6.04	6.57	3.05
	E-max	78.17	78.32	78.38	78.45	78.03
25-YR	Q-pre	7.43	9.34	11.00	12.54	14.84
	Q-post	6.56	7.95	8.13	8.29	3.90
	E-max	78.45	78.57	78.59	78.60	78.13
50-YR	Q-pre	8.96	11.19	12.80	14.47	16.72
	Q-post	8.74	10.49	9.70	9.50	4.31
	E-max	78.64	78.80	78.73	78.71	78.18
100-YR	Q-pre	10.71	13.31	15.09	16.83	19.18
	Q-post	10.80	13.04	11.65	10.99	4.97
	E-max	78.83	79.02	78.91	78.85	78.26

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 13.31
Q-post (cfs) = 13.04
E-max (ft) = 79.02

BASIN 2 - HYDROLOGY 2-8A

Pre Development Hydrology
Basin 2

Approximate Stations
424+00 to 432+00 LT. US 301
618+00 to 638+00 6th Street

Total Area (ac) = 5.40
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (15')		0.28	98	27.44
pervious (15')	A	0.28	39	10.92
Pond Site	A	2.36	61	143.68
6th Street:				
impervious (400'x24')	A	0.22	98	21.56
pervious (400'x36')	A	0.33	39	12.87
dirt; includes r/w	A	1.93	72	138.96
Total Area (ac) =		5.40		355.43
		Weighted CN =	**65.9**	

Post Development Hydrology
Basin 2

Total Area (ac) = 6.22
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		0.99	98	97.02
Pervious	A	0.11	39	4.29
Pond (Impervious)		1.54	98	151.18
Pond (Pervious)	A	0.81	39	31.69
6th Street:				
Impervious (54')		2.48	98	243.04
Pervious	A	0.28	39	10.92
Total Area (ac) =		6.22		538.15
		Weighted CN =		**86.6**

BASIN 2 - TREATMENT 2-8A

1 in. over impervious, DCIA and Pond TOB = 0.42 Ac.-ft

BASIN 2 - HYDRAULICS 2-8A

Basin No.	Basin 2
Location	627+00 LT.

Estimated Ground Surface Elevation at pond =			81.2 ft.
Estimated depth to Seasonal High Water, ft =			3.50 ft. to 6.0 ft.
Estimated Seasonal High Water Elevation =			77.7 ft.
Pond site width=	270 ft.	Pond site Length=	380 ft.
Pond site area=	2.36 Ac.		
Pond TOB width =	210 ft.	Pond TOB length =	320 ft.
Pond TOB area=	1.54 Ac.		
Pond TOB el. =	81.2 ft.		
Pond 100 yr. el. =	78.82 ft.	E-Max from Supra	

Weir elevation =	78.06 ft.
Outfall TW elevation (5 yr.)=	78.6 ft.
Length of pipe to outfall =	700 ft.
estimated pipe size =	24 in.
Estimated low road E/P in basin =	79.5 ft.
5 yr. Critical duration pond elevation =	78.5 ft. from supra
HGL slope =	0.08% estimated
Approximate stormsewer length pond to low point =	200 ft.
calculated HGL at low point =	78.62 ft.
Low point - HGL =	0.9 ft.

SUPRA-3 (VERSION 4.02) 1- 4-2001
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LICENSED TO:

Pond 2-8A (28Abas2)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	5.40
CURVE NUMBER	=	65.9
RUNOFF COEFFICIENT	=	.403
TIME OF CONCENTRATION (min.)	=	30.0
RAINFALL INTENSITY (in/hr)	=	6.38
PEAK FLOW RATE (cfs)	=	13.88

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	6.22
CURVE NUMBER	=	86.6
RUNOFF COEFFICIENT	=	.744
RAINFALL ZONE NUMBER	=	6
TOTAL RAINFALL DEPTH (inches)	=	5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	77.70	.00	.00	.00
.2	.500	13.80	77.80	.00	.00	.00
.4	.750	20.69	78.04	.00	.00	.00
.6	1.000	27.59	78.34	3.88	.00	3.88
.8	1.250	34.49	78.66	9.55	.00	9.55
1.0	.500	13.80	78.82	13.67	.00	13.67
1.2	.300	8.28	78.79	12.93	.00	12.93
1.4	.250	6.90	78.73	11.42	.00	11.42
1.6	.200	5.52	78.68	9.95	.00	9.95
1.8	.150	4.14	78.62	8.50	.00	8.50
2.0	.000	.00	78.55	6.81	.00	6.81

OUTPUT SUMMARY

PEAK FLOW (cfs)	=	13.67
PEAK STAGE (ft)	=	78.82
PEAK STORAGE (ac-ft)	=	1.375
TIME TO PEAK (hrs)	=	1.00

SUPRA-3 (VERSION 4.02) 1- 4-2001

LICENSED TO:

Pond 2-8A (28Abas2)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 78.06
WEIR LENGTH (ft)	= 6.00
TOP BANK ELEVATION (ft)	= 81.00
POND AREA AT TOP BANK (acres)	= 1.540
POND PERIMETER AT TOP BANK (ft)	=1300.0
SIDE SLOPE OF POND	= 4.0
DESIGN NORMAL WATER ELEVATION (ft)	= 77.70
DISCHARGE ELEVATION (ft)	= 78.06
TREATMENT VOLUME (ac-ft)	= .420
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
77.70	1.162	.000	.00	.00	.00
78.06	1.202	.425	.00	.00	.00
78.56	1.257	1.040	.00	7.00	7.00
79.06	1.314	1.683	.00	19.80	19.80
79.56	1.371	2.354	.00	36.37	36.37
80.06	1.429	3.054	.00	56.00	56.00
80.56	1.488	3.784	.00	78.27	78.27

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

SUPRA-3 (VERSION 4.02) 1- 4-2001

LICENSED TO:

Pond 2-8A (28Abas2)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	2.07	3.15	4.25	5.48	7.51
	Q-post	1.39	2.25	3.39	3.78	2.20
	E-max	78.16	78.22	78.30	78.33	78.22
5-YR	Q-pre	3.61	5.15	6.70	8.28	10.80
	Q-post	3.18	4.08	5.26	5.65	3.04
	E-max	78.29	78.35	78.44	78.46	78.28
10-YR	Q-pre	4.89	6.90	8.57	10.50	13.15
	Q-post	4.49	5.69	6.65	7.29	3.65
	E-max	78.38	78.47	78.53	78.57	78.32
25-YR	Q-pre	6.91	9.29	11.45	13.53	16.75
	Q-post	6.41	7.78	9.08	9.83	4.60
	E-max	78.52	78.59	78.64	78.67	78.39
50-YR	Q-pre	8.58	11.43	13.56	15.84	19.05
	Q-post	8.63	10.74	10.71	11.46	5.09
	E-max	78.62	78.71	78.70	78.73	78.42
100-YR	Q-pre	10.51	13.88	16.29	18.72	22.11
	Q-post	11.12	13.67	13.09	13.30	5.85
	E-max	78.72	78.82	78.80	78.81	78.48

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 13.88
Q-post (cfs) = 13.67
E-max (ft) = 78.82

BASIN 3 - HYDROLOGY 2-11
Pond 2-11 to work with Pond 2-14

Pre Development Hydrology
Basin 3

Approximate Stations
432+00 to 450+00 LT US 301
447+00 to 450+00 RT US 301
638+00 to 647+00 6th Street

Total Area (ac) = 4.09
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (25'x1800')		1.03	98	100.94
impervious (25'x300')		0.17	39	6.63
pervious	A	0.46	39	17.94
pond site	A	1.19	61	72.82
6th Street:				
impervious (24')	A	0.50	98	49
pervious	A	0.74	39	28.86
Total Area (ac) =		4.09		276.19
		Weighted CN =	**67.5**	

Post Development Hydrology
Basin 3

Approximate Stations
432+00 to 450+00 LT US 301
638+00 to 647+00 6th Street

Total Area (ac) = 4.91
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		2.23	98	218.54
Pervious	A	0.25	39	9.75
Pond (Impervious)		0.55	98	53.54454
Pond (Pervious)	A	0.65	39	25.24793
6th Street:				
Impervious (54')		1.11	98	108.78
Pervious	A	0.13	39	5.07
Total Area (ac) =		4.91		420.93
		Weighted CN =		**85.7**

BASIN 3 - TREATMENT 2-11

1 in. over impervious, DCIA and Pond TOB =	0.32	Ac.-ft

BASIN 3 - HYDRAULICS 2-11

Basin No.	Basin 3
Location	645+00 RT.

Estimated Ground Surface Elevation at pond =			84.0	ft.
Estimated depth to Seasonal High Water, ft =			3.50	ft. to 6.0
Estimated Seasonal High Water Elevation =			80.5	ft.
Pond site width=	130 ft.	Pond site Length=	400	ft.
Pond site area=	1.19 Ac.			
Pond TOB width =	70 ft.	Pond TOB length =	340	ft.
Pond TOB area=	0.55 Ac.			
Pond TOB el. =	84.0 ft.			
Pond 100 yr. el. =	82.73 ft.	E-Max from Supra		
Weir elevation =			81.26	ft.
Outfall TW elevation (5 yr.)=			80.7	ft.
Length of pipe to outfall =			900	ft.
estimated pipe size =			30	in. 18 cfs
Estimated low road E/P in basin =			83.2	ft.
5 yr. Critical duration pond elevation =			82.06	ft. from supra
HGL slope =			0.08%	estimated
Approximate stormsewer length pond to low point =			20	ft.
calculated HGL at low point =			82.08	ft.
Low point - HGL =			1.1	ft. ok

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LICENSED TO:

Pond 2-11(211bas3)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 4.09
CURVE NUMBER	= 67.5
RUNOFF COEFFICIENT	= .427
TIME OF CONCENTRATION (min.)	= 20.0
RAINFALL INTENSITY (in/hr)	= 7.60
PEAK FLOW RATE (cfs)	= 13.27

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 4.91
CURVE NUMBER	= 85.7
RUNOFF COEFFICIENT	= .728
RAINFALL ZONE NUMBER	= 6
TOTAL RAINFALL DEPTH (inches)	= 5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	80.50	.00	.00	.00
.2	.500	10.65	80.71	.00	.00	.00
.4	.750	15.98	81.24	.00	.00	.00
.6	1.000	21.31	81.86	3.01	.00	3.01
.8	1.250	26.63	82.46	8.60	.00	8.60
1.0	.500	10.65	82.73	11.58	.00	11.58
1.2	.300	6.39	82.65	10.67	.00	10.67
1.4	.250	5.33	82.52	9.24	.00	9.24
1.6	.200	4.26	82.40	7.92	.00	7.92
1.8	.150	3.20	82.29	6.67	.00	6.67
2.0	.000	.00	82.14	5.38	.00	5.38

OUTPUT SUMMARY

PEAK FLOW (cfs)	= 11.58
PEAK STAGE (ft)	= 82.73
PEAK STORAGE (ac-ft)	= 1.033
TIME TO PEAK (hrs)	= 1.00

SUPRA-3 (VERSION 4.02) 1- 4-2001

LICENSED TO:

Pond 2-11(211bas3)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 81.28
WEIR LENGTH (ft)	= 2.00
TOP BANK ELEVATION (ft)	= 85.00
POND AREA AT TOP BANK (acres)	= .700
POND PERIMETER AT TOP BANK (ft)	= 820.0
SIDE SLOPE OF POND	= 4.0
DESIGN NORMAL WATER ELEVATION (ft)	= 80.50
DISCHARGE ELEVATION (ft)	= 81.28
TREATMENT VOLUME (ac-ft)	= .320
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
80.50	.391	.000	.00	.00	.00
81.28	.440	.324	.00	.00	.00
81.78	.473	.552	.00	2.33	2.33
82.28	.506	.797	.00	6.60	6.60
82.78	.540	1.059	.00	12.12	12.12
83.28	.575	1.337	.00	18.67	18.67
83.78	.610	1.634	.00	26.09	26.09
84.28	.647	1.948	.00	34.29	34.29
84.78	.684	2.280	.00	43.22	43.22

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

SUPRA-3 (VERSION 4.02) 1- 4-2001

LICENSED TO:

Pond 2-11(211bas3)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	2.27	3.34	4.40	5.58	7.48
	Q-post	.91	1.59	2.48	2.91	1.68
	E-max	81.47	81.62	81.80	81.85	81.64
5-YR	Q-pre	3.76	5.22	6.66	8.12	10.42
	Q-post	2.19	3.16	4.35	4.86	2.33
	E-max	81.75	81.88	82.02	82.08	81.78
10-YR	Q-pre	5.01	6.90	8.45	10.22	12.62
	Q-post	3.58	4.85	5.62	6.16	2.88
	E-max	81.93	82.08	82.17	82.23	81.84
25-YR	Q-pre	6.96	9.17	11.15	13.04	15.93
	Q-post	5.70	6.87	7.32	7.78	3.70
	E-max	82.17	82.30	82.35	82.39	81.94
50-YR	Q-pre	8.53	11.14	13.07	15.13	17.98
	Q-post	7.55	9.25	8.80	9.04	4.11
	E-max	82.37	82.52	82.48	82.50	81.99
100-YR	Q-pre	10.23	13.27	15.41	17.56	20.53
	Q-post	9.49	11.58	10.73	10.49	4.73
	E-max	82.54	82.73	82.65	82.63	82.06

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 13.27
Q-post (cfs) = 11.58
E-max (ft) = 82.73

BASIN 3 - HYDROLOGY 2-14

Pre Development Hydrology
Basin 3

Approximate Stations
450+00 to 460+00 US 301
647+00 to 659+00 6th Street

Total Area (ac) = 4.02
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (32'x1000')		0.73	98	71.54
pervious	A	0.64	49	31.36
pond site	A	1.00	61	61.00
6th Street:				
impervious (1200'x24')	A	0.66	98	64.68
pervious	A	0.99	39	38.61
Total Area (ac) =		4.02		267.19
		Weighted CN =		**66.5**

Post Development Hydrology
Basin 3

Approximate Stations
450+00 to 460+00 US 301
647+00 to 659+00 6th Street

Total Area (ac) = 4.02
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		1.24	98	121.52
Pervious	A	0.13	49	6.37
Pond (Impervious)		0.66	98	64.34
Pond (Pervious)	A	0.34	39	13.39
6th Street:				
Impervious (54')		1.49	98	146.02
Pervious	A	0.16	39	6.24
Total Area (ac) =		4.02		357.89
		Weighted CN =		**89.0**

1 in. over impervious, DCIA and Pond TOB = 0.28 Ac.-ft

BASIN 3 - HYDRAULICS 2-14

Basin No.	Basin 3
Location	650+00 RT.

Estimated Ground Surface Elevation at pond =			85.0 ft.
Estimated depth to Seasonal High Water, ft =			3.50 ft.
Estimated Seasonal High Water Elevation =			81.5 ft.
Pond site width=	150 ft.	Pond site Length=	300 ft.
Pond site area=	1.03 Ac.		
Pond TOB width =	110 ft.	Pond TOB length =	260 ft.
Pond TOB area=	0.66 Ac.		
Pond TOB el. =	85.0 ft.		
Pond 100 yr. el. =	83.4 ft. E-Max from Supra		
Weir elevation =			82.12 ft.
Outfall TW elevation (5 yr.)=			80.7 ft.
Length of pipe to outfall =			1000 ft.
estimated pipe size =			24 in.
Estimated low road E/P in basin =			84.0 ft.
5 yr. Critical duration pond elevation =			82.84 ft. from supra
HGL slope =			0.08% estimated
Approximate stormsewer length pond to low point =			200 ft.
calculated HGL at low point =			83.00 ft.
Low point - HGL =			1.0 ft.

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LICENSED TO:

Pond 2-14 (214Bas3)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	4.02
CURVE NUMBER	=	66.5
RUNOFF COEFFICIENT	=	.412
TIME OF CONCENTRATION (min.)	=	30.0
RAINFALL INTENSITY (in/hr)	=	6.38
PEAK FLOW RATE (cfs)	=	10.57

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	4.02
CURVE NUMBER	=	89.0
RUNOFF COEFFICIENT	=	.788
RAINFALL ZONE NUMBER	=	6
TOTAL RAINFALL DEPTH (inches)	=	5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	81.50	.00	.00	.00
.2	.500	9.44	81.67	.00	.00	.00
.4	.750	14.16	82.10	.00	.00	.00
.6	1.000	18.88	82.62	2.33	.00	2.33
.8	1.250	23.60	83.15	6.90	.00	6.90
1.0	.500	9.44	83.39	9.63	.00	9.63
1.2	.300	5.66	83.34	9.04	.00	9.04
1.4	.250	4.72	83.24	7.95	.00	7.95
1.6	.200	3.78	83.15	6.90	.00	6.90
1.8	.150	2.83	83.05	5.99	.00	5.99
2.0	.000	.00	82.92	4.90	.00	4.90

OUTPUT SUMMARY

PEAK FLOW (cfs)	=	9.63
PEAK STAGE (ft)	=	83.39
PEAK STORAGE (ac-ft)	=	.938
TIME TO PEAK (hrs)	=	1.00

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LICENSED TO:

Pond 2-14 (214Bas3)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	1.64	2.46	3.29	4.21	5.72
	Q-post	1.12	1.59	2.25	2.51	1.48
	E-max	82.36	82.46	82.60	82.64	82.44
5-YR	Q-pre	2.82	3.98	5.14	6.31	8.19
	Q-post	2.18	2.86	3.83	4.18	2.02
	E-max	82.59	82.68	82.80	82.84	82.55
10-YR	Q-pre	3.79	5.30	6.55	7.99	9.95
	Q-post	3.31	4.26	4.92	5.32	2.44
	E-max	82.73	82.85	82.92	82.97	82.63
25-YR	Q-pre	5.33	7.11	8.71	10.26	12.64
	Q-post	5.07	5.82	6.32	6.57	3.13
	E-max	82.94	83.03	83.09	83.12	82.71
50-YR	Q-pre	6.60	8.72	10.30	11.99	14.36
	Q-post	6.46	7.62	7.34	7.64	3.46
	E-max	83.10	83.21	83.19	83.21	82.75
100-YR	Q-pre	8.05	10.57	12.35	14.14	16.64
	Q-post	8.06	9.63	8.90	8.95	3.99
	E-max	83.25	83.39	83.33	83.33	82.81

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 10.57
Q-post (cfs) = 9.63
E-max (ft) = 83.39

BASIN 3 - HYDROLOGY 2-15A

Pre Development Hydrology
Basin 3

Approximate Stations
432+00 to 460+00 LT US 301
447+00 to 460+00 RT US 301
638+00 to 659+00 6th Street

Total Area (ac) = 6.92
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (25'x2800')		1.61	98	157.78
impervious (25'x1300')		0.75	39	29.25
pervious	A	0.46	39	17.94
pond site	A	1.20	39	46.91
6th Street:				
impervious (24')	A	1.16	98	113.68
pervious	A	1.74	39	67.86
Total Area (ac) =		6.92		433.42
		Weighted CN =		**62.6**

Post Development Hydrology
Basin 3

Approximate Stations
432+00 to 460+00 US 301
638+00 to 659+00 6th Street

Total Area (ac) = 7.95
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		3.47	98	340.06
Pervious	A	0.39	39	15.21
Pond (Impervious)		0.55	98	54.31
Pond (Pervious)	A	0.65	39	25.30
6th Street:				
Impervious (54')		2.6	98	254.8
Pervious	A	0.29	39	11.31
Total Area (ac) =		7.95		700.99
		Weighted CN =		**88.1**

BASIN 3 - TREATMENT 2-15A

1 in. over impervious, DCIA and Pond TOB = 0.55 Ac.-ft

BASIN 3 - HYDRAULICS 2-15A

Basin No.	Basin 3
Location	627+00 LT.

Estimated Ground Surface Elevation at pond =	81.0	ft. to 84.0	
Estimated depth to Seasonal High Water, ft =	3.50	ft. to 6.0	
Estimated Seasonal High Water Elevation =	77.5	ft.	

Pond site width=	131 ft.	Pond site Length=	400 ft.
Pond site area=	1.20 Ac.		
Pond TOB width =	71 ft.	Pond TOB length =	340 ft.
Pond TOB area=	0.55 Ac.		
Pond TOB el. =	81.0 ft. (Berm to elevation 83.0 on the south end)		
Pond 100 yr. el. =	82.25 ft. E-Max from Supra		

Weir elevation =	79 ft.	
Outfall TW elevation (5 yr.)=	80.7 ft.	
Length of pipe to outfall =	400 ft.	
estimated pipe size =	30 in.	18 cfs

Estimated low road E/P in basin =	83.2 ft.	
5 yr. Critical duration pond elevation =	80.82 ft.	from supra
HGL slope =	0.08%	estimated
Approximate stormsewer length pond to low point =	700 ft.	
calculated HGL at low point =	81.38 ft.	
Low point - HGL =	1.8 ft.	ok

SUPRA-3 (VERSION 4.02) 11-15-2000

LICENSED TO:

Pond 2-15A(215bas3)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 6.92
CURVE NUMBER	= 62.6
RUNOFF COEFFICIENT	= .355
TIME OF CONCENTRATION (min.)	= 20.0
RAINFALL INTENSITY (in/hr)	= 7.60
PEAK FLOW RATE (cfs)	= 18.66

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 7.95
CURVE NUMBER	= 88.1
RUNOFF COEFFICIENT	= .772
RAINFALL ZONE NUMBER	= 6
TOTAL RAINFALL DEPTH (inches)	= 5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	79.00	.00	.00	.00
.2	.500	18.28	79.32	.63	.00	.63
.4	.750	27.42	80.04	3.53	.00	3.53
.6	1.000	36.56	80.87	8.45	.00	8.45
.8	1.250	45.70	81.77	14.58	.00	14.58
1.0	.500	18.28	82.25	17.85	.00	17.85
1.2	.300	10.97	82.16	17.24	.00	17.24
1.4	.250	9.14	81.96	15.89	.00	15.89
1.6	.200	7.31	81.75	14.46	.00	14.46
1.8	.150	5.48	81.53	12.94	.00	12.94
2.0	.000	.00	81.25	11.03	.00	11.03

OUTPUT SUMMARY

PEAK FLOW (cfs)	= 17.85
PEAK STAGE (ft)	= 82.25
PEAK STORAGE (ac-ft)	= 1.669
TIME TO PEAK (hrs)	= 1.00

SUPRA-3 (VERSION 4.02) 1- 4-2001

LICENSED TO:

Pond 2-14 (214Bas3)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	=	1
WEIR COEFFICIENT	=	3.3
EXPONENTIAL CONSTANT	=	1.5
WEIR ELEVATION (ft)	=	82.12
WEIR LENGTH (ft)	=	2.00
TOP BANK ELEVATION (ft)	=	85.00
POND AREA AT TOP BANK (acres)	=	.660
POND PERIMETER AT TOP BANK (ft)	=	750.0
SIDE SLOPE OF POND	=	4.0
DESIGN NORMAL WATER ELEVATION (ft)	=	81.50
DISCHARGE ELEVATION (ft)	=	82.12
TREATMENT VOLUME (ac-ft)	=	.280
PERCOLATION RATE (in/hr)	=	.00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
81.50	.437	.000	.00	.00	.00
82.12	.474	.282	.00	.00	.00
82.62	.504	.527	.00	2.33	2.33
83.12	.536	.787	.00	6.60	6.60
83.62	.568	1.063	.00	12.12	12.12
84.12	.601	1.355	.00	18.67	18.67
84.62	.634	1.664	.00	26.09	26.09

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

SUPRA-3 (VERSION 4.02) 11-15-2000

LICENSED TO:

Pond 2-15A(215bas3)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 79.00
WEIR LENGTH (ft)	= 1.00
TOP BANK ELEVATION (ft)	= 81.00
POND AREA AT TOP BANK (acres)	= .550
POND PERIMETER AT TOP BANK (ft)	= 820.0
SIDE SLOPE OF POND	= 3.0
DESIGN NORMAL WATER ELEVATION (ft)	= 79.00
DISCHARGE ELEVATION (ft)	= 79.00
TREATMENT VOLUME (ac-ft)	= .550
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
79.00	.440	.000	.00	.00	.00
79.00	.440	.000	.00	.00	.00
79.20	.451	.089	.00	.30	.30
79.40	.462	.180	.00	.83	.83
79.60	.473	.274	.00	1.53	1.53
79.80	.483	.369	.00	2.36	2.36
80.00	.494	.467	.00	3.30	3.30
80.20	.505	.567	.00	4.34	4.34
80.40	.516	.669	.00	5.47	5.47
80.60	.528	.774	.00	6.68	6.68
80.80	.539	.880	.00	7.97	7.97
81.00	.550	.989	.00	9.33	9.33

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

SUPRA-3 (VERSION 4.02) 11-15-2000

LICENSED TO:

Pond 2-15A(215bas3)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	2.28	3.81	5.43	7.29	10.45
	Q-post	5.06	5.40	5.63	5.79	2.86
	E-max	80.33	80.39	80.43	80.45	79.91
5-YR	Q-pre	4.25	6.47	8.77	11.18	15.14
	Q-post	7.41	7.89	7.98	8.13	3.96
	E-max	80.71	80.79	80.80	80.82	80.13
10-YR	Q-pre	5.98	8.94	11.47	14.47	18.69
	Q-post	9.27	10.14	9.73	10.09	4.75
	E-max	80.99	81.12	81.06	81.11	80.27
25-YR	Q-pre	8.74	12.31	15.63	18.91	24.10
	Q-post	11.90	12.72	12.25	12.36	6.00
	E-max	81.38	81.50	81.43	81.44	80.49
50-YR	Q-pre	11.04	15.34	18.64	22.26	27.44
	Q-post	14.04	15.24	14.01	14.14	6.63
	E-max	81.69	81.87	81.69	81.70	80.59
100-YR	Q-pre	13.57	18.66	22.37	26.20	31.66
	Q-post	16.19	17.85	16.32	16.33	7.63
	E-max	82.00	82.25	82.02	82.03	80.75

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 18.66
Q-post (cfs) = 17.85
E-max (ft) = 82.25

BASIN 3 - HYDROLOGY 2-11 and 2-12

Pre Development Hydrology
Basin 3

Approximate Stations
432+00 to 460+00 LT US 301
447+00 to 460+00 RT US 301
638+00 to 659+00 6th Street

Total Area (ac) = 7.65
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (25'x2800')		1.61	98	157.78
impervious (25'x1300')		0.75	39	29.25
pervious	A	0.46	39	17.94
pond site	A	1.93	39	75.21
6th Street:				
impervious (24')	A	1.16	98	113.68
pervious	A	1.74	39	67.86
Total Area (ac) =		7.65		461.72
		Weighted CN =		**60.4**

Post Development Hydrology
Basin 3

Approximate Stations
432+00 to 460+00 US 301
638+00 to 659+00 6th Street

Total Area (ac) = 8.68
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		3.47	98	340.06
Pervious	A	0.39	39	15.21
Pond (Impervious)		1.17	98	114.7383
Pond (Pervious)	A	0.76	39	29.54545
6th Street:				
Impervious (54')		2.6	98	254.8
Pervious	A	0.29	39	11.31
Total Area (ac) =		8.68		765.66
		Weighted CN =		**88.2**

BASIN 3 - TREATMENT 2-11 and 2-12

1 in. over impervious, DCIA and Pond TOB =	0.60	Ac.-ft

BASIN 3 - HYDRAULICS 2-11 and 2-12

Basin No.	Basin 3
Location	645+00 RT.

Estimated Ground Surface Elevation at pond =			83.0	ft. to 85.5
Estimated depth to Seasonal High Water, ft =			3.50	ft. to 6.0
Estimated Seasonal High Water Elevation =			79.5	ft.
Pond site width=	210 ft.	Pond site Length=	400	ft.
Pond site area=	1.93 Ac.			
Pond TOB width =	150 ft.	Pond TOB length =	340	ft.
Pond TOB area=	1.17 Ac.			
Pond TOB el. =	83.0 ft.			
Pond 100 yr. el. =	82.08 ft.	E-Max from Supra		
Weir elevation =			80.2	ft.
Outfall TW elevation (5 yr.)=			80.7	ft.
Length of pipe to outfall =			900	ft.
estimated pipe size =			24	in. 19 cfs
Estimated low road E/P in basin =			83.2	ft.
5 yr. Critical duration pond elevation =			81.31	ft. from supra
HGL slope =			0.08%	estimated
Approximate stormsewer length pond to low point =			20	ft.
calculated HGL at low point =			81.33	ft.
Low point - HGL =			1.9	ft. ok

SUPRA-3 (VERSION 4.02) 11-15-2000
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LICENSED TO:

Pond 2-11 and 2-12 (bas3com)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	7.65
CURVE NUMBER	=	60.4
RUNOFF COEFFICIENT	=	.324
TIME OF CONCENTRATION (min.)	=	20.0
RAINFALL INTENSITY (in/hr)	=	7.60
PEAK FLOW RATE (cfs)	=	18.81

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	8.68
CURVE NUMBER	=	88.2
RUNOFF COEFFICIENT	=	.773
RAINFALL ZONE NUMBER	=	6
TOTAL RAINFALL DEPTH (inches)	=	5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	80.20	.00	.00	.00
.2	.500	20.00	80.37	.56	.00	.56
.4	.750	30.01	80.77	3.14	.00	3.14
.6	1.000	40.01	81.26	7.93	.00	7.93
.8	1.250	50.01	81.79	14.62	.00	14.62
1.0	.500	20.00	82.08	18.68	.00	18.68
1.2	.300	12.00	82.04	18.13	.00	18.13
1.4	.250	10.00	81.94	16.70	.00	16.70
1.6	.200	8.00	81.83	15.19	.00	15.19
1.8	.150	6.00	81.72	13.62	.00	13.62
2.0	.000	.00	81.57	11.63	.00	11.63

OUTPUT SUMMARY

PEAK FLOW (cfs)	=	18.68
PEAK STAGE (ft)	=	82.08
PEAK STORAGE (ac-ft)	=	1.892
TIME TO PEAK (hrs)	=	1.00

SUPRA-3 (VERSION 4.02) 11-15-2000

LICENSED TO:

Pond 2-11 and 2-12 (bas3com)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 80.20
WEIR LENGTH (ft)	= 2.20
TOP BANK ELEVATION (ft)	= 83.00
POND AREA AT TOP BANK (acres)	= 1.170
POND PERIMETER AT TOP BANK (ft)	= 980.0
SIDE SLOPE OF POND	= 4.0
DESIGN NORMAL WATER ELEVATION (ft)	= 80.20
DISCHARGE ELEVATION (ft)	= 80.20
TREATMENT VOLUME (ac-ft)	= .600
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
80.20	.930	.000	.00	.00	.00
80.20	.930	.000	.00	.00	.00
80.40	.946	.188	.00	.65	.65
80.60	.962	.378	.00	1.84	1.84
80.80	.979	.573	.00	3.37	3.37
81.00	.996	.770	.00	5.19	5.19
81.20	1.013	.971	.00	7.26	7.26
81.40	1.030	1.175	.00	9.54	9.54
81.60	1.047	1.383	.00	12.03	12.03
81.80	1.064	1.594	.00	14.69	14.69
82.00	1.081	1.809	.00	17.53	17.53
82.20	1.099	2.027	.00	20.53	20.53
82.40	1.117	2.248	.00	23.69	23.69
82.60	1.134	2.473	.00	26.99	26.99
82.80	1.152	2.702	.00	30.44	30.44

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

SUPRA-3 (VERSION 4.02) 11-15-2000

LICENSED TO:

Pond 2-11 and 2-12 (bas3com)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	1.90	3.43	5.11	7.08	10.51
	Q-post	4.72	5.19	5.74	5.93	3.05
	E-max	80.95	81.00	81.05	81.07	80.76
5-YR	Q-pre	3.81	6.11	8.55	11.15	15.53
	Q-post	7.03	7.64	8.26	8.46	4.26
	E-max	81.18	81.23	81.29	81.31	80.90
10-YR	Q-pre	5.53	8.64	11.37	14.65	19.35
	Q-post	8.91	9.89	10.15	10.62	5.11
	E-max	81.34	81.43	81.45	81.49	80.99
25-YR	Q-pre	8.31	12.12	15.74	19.37	25.21
	Q-post	11.70	12.72	12.96	13.19	6.48
	E-max	81.57	81.65	81.67	81.69	81.12
50-YR	Q-pre	10.67	15.31	18.94	22.96	28.82
	Q-post	14.08	15.59	14.94	15.21	7.17
	E-max	81.75	81.86	81.82	81.84	81.19
100-YR	Q-pre	13.28	18.81	22.93	27.23	33.44
	Q-post	16.55	18.68	17.58	17.73	8.27
	E-max	81.93	82.08	82.00	82.01	81.29

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 18.81
Q-post (cfs) = 18.68
E-max (ft) = 82.08

BASIN 4 - HYDROLOGY 2-17

Pre Development Hydrology
Basin 4

Approximate Stations
460+00 to 471+00 US 301
659+00 to 674+00 6th Street

Total Area (ac) = 4.55
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (30')		0.76	98	74.48
pervious	A	0.76	39	29.64
pond site	A	0.96	61	58.82
6th Street:				
impervious (24')	A	0.83	98	81.34
pervious	A	1.24	39	48.36
Total Area (ac) =		4.55		292.64
		Weighted CN =		**64.3**

Post Development Hydrology
Basin 4

Approximate Stations
460+00 to 471+00 US 301
659+00 to 674+00 6th Street

Total Area (ac) = 4.55
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		1.36	98	133.28
Pervious	A	0.16	39	6.24
Pond (Impervious)		0.44	98	43.20
Pond (Pervious)	A	0.52	39	20.41
6th Street:				
Impervious (54')		1.86	98	182.28
Pervious	A	0.21	39	8.19
Total Area (ac) =		4.55		393.60
		Weighted CN =		**86.4**

BASIN 4 - TREATMENT 2-17

1 in. over impervious, DCIA and Pond TOB =	0.31	Ac.-ft

BASIN 4 - HYDRAULICS 2-17

Basin No.	Basin 4
Location	668+00 LT.

Estimated Ground Surface Elevation at pond =			87.0	ft.
Estimated depth to Seasonal High Water, ft =			3.50	ft.
Estimated Seasonal High Water Elevation =			83.5	ft.
Pond site width=	140 ft.	Pond site Length=	300	ft.
Pond site area=	0.96 Ac.			
Pond TOB width =	80 ft.	Pond TOB length =	240	ft.
Pond TOB area=	0.44 Ac.			
Pond TOB el. =	87.0 ft.			
Pond 100 yr. el. =	86.76 ft.	E-Max from Supra		
Weir elevation =			84.61	ft.
Outfall TW elevation (5 yr.)=			80.7	ft.
Length of pipe to outfall =			2000	ft.
estimated pipe size =			30	in. 13 cfs
Estimated low road E/P in basin =			88.0	ft.
5 yr. Critical duration pond elevation =			85.78	ft. from supra
HGL slope =			0.08%	estimated
Approximate stormsewer length pond to low point =			200	ft.
calculated HGL at low point =			85.94	ft.
Low point - HGL =			2.1	ft. ok

SUPRA-3 (VERSION 4.02) 11-14-2000
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LICENSED TO:

Pond 2-17(217bas4)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	4.55
CURVE NUMBER	=	64.3
RUNOFF COEFFICIENT	=	.379
TIME OF CONCENTRATION (min.)	=	20.0
RAINFALL INTENSITY (in/hr)	=	7.60
PEAK FLOW RATE (cfs)	=	13.12

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	4.55
CURVE NUMBER	=	86.4
RUNOFF COEFFICIENT	=	.741
RAINFALL ZONE NUMBER	=	6
TOTAL RAINFALL DEPTH (inches)	=	5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	84.61	.00	.00	.00
.2	.500	10.04	84.86	.54	.00	.54
.4	.750	15.06	85.39	2.87	.00	2.87
.6	1.000	20.09	85.98	6.59	.00	6.59
.8	1.250	25.11	86.55	11.13	.00	11.13
1.0	.500	10.04	86.76	13.04	.00	13.04
1.2	.300	6.03	86.60	11.55	.00	11.55
1.4	.250	5.02	86.39	9.79	.00	9.79
1.6	.200	4.02	86.20	8.29	.00	8.29
1.8	.150	3.01	86.03	6.96	.00	6.96
2.0	.000	.00	85.82	5.50	.00	5.50

OUTPUT SUMMARY

PEAK FLOW (cfs)	=	13.04
PEAK STAGE (ft)	=	86.76
PEAK STORAGE (ac-ft)	=	.788
TIME TO PEAK (hrs)	=	1.00

SUPRA-3 (VERSION 4.02) 11-14-2000

LICENSED TO:

Pond 2-17(217bas4)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 84.61
WEIR LENGTH (ft)	= 1.25
TOP BANK ELEVATION (ft)	= 87.00
POND AREA AT TOP BANK (acres)	= .440
POND PERIMETER AT TOP BANK (ft)	= 640.0
SIDE SLOPE OF POND	= 4.0
DESIGN NORMAL WATER ELEVATION (ft)	= 84.61
DISCHARGE ELEVATION (ft)	= 84.61
TREATMENT VOLUME (ac-ft)	= .310
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
84.61	.308	.000	.00	.00	.00
84.61	.308	.000	.00	.00	.00
84.81	.318	.063	.00	.37	.37
85.01	.329	.127	.00	1.04	1.04
85.21	.340	.194	.00	1.92	1.92
85.41	.350	.263	.00	2.95	2.95
85.61	.361	.334	.00	4.12	4.12
85.81	.372	.408	.00	5.42	5.42
86.01	.383	.483	.00	6.83	6.83
86.21	.394	.561	.00	8.35	8.35
86.41	.406	.641	.00	9.96	9.96
86.61	.417	.723	.00	11.67	11.67
86.81	.429	.808	.00	13.46	13.46

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

11-14-2000

SUPRA-3 (VERSION 4.02)
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LICENSED TO:

Pond 2-17(217bas4)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	1.83	2.90	4.01	5.27	7.37
	Q-post	3.57	3.80	3.46	3.48	1.62
	E-max	85.52	85.56	85.50	85.50	85.14
5-YR	Q-pre	3.24	4.77	6.32	7.92	10.52
	Q-post	5.25	5.58	4.99	4.87	2.25
	E-max	85.78	85.83	85.74	85.73	85.27
10-YR	Q-pre	4.47	6.48	8.17	10.15	12.90
	Q-post	6.59	7.19	6.15	6.04	2.70
	E-max	85.98	86.06	85.91	85.90	85.36
25-YR	Q-pre	6.41	8.80	11.00	13.14	16.50
	Q-post	8.55	9.11	7.86	7.42	3.43
	E-max	86.24	86.30	86.15	86.09	85.49
50-YR	Q-pre	8.00	10.87	13.04	15.39	18.73
	Q-post	10.19	11.02	9.07	8.50	3.81
	E-max	86.44	86.53	86.30	86.23	85.56
100-YR	Q-pre	9.75	13.12	15.55	18.03	21.53
	Q-post	11.87	13.04	10.68	9.85	4.40
	E-max	86.63	86.76	86.49	86.40	85.65

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 13.12
Q-post (cfs) = 13.04
E-max (ft) = 86.76

BASIN 4 - HYDROLOGY 2-18

Pre Development Hydrology
Basin 4

Approximate Stations
460+00 to 471+00 US 301
659+00 to 674+00 6th Street

Total Area (ac) = 4.55
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (30')		0.76	98	74.48
pervious	A	0.76	39	29.64
pond site	A	0.96	61	58.82
6th Street:				
impervious (24')		0.83	98	81.34
pervious	A	1.24	39	48.36
Total Area (ac) =		4.55		292.64
		Weighted CN =		**64.3**

Post Development Hydrology
Basin 4

Approximate Stations
460+00 to 471+00 US 301
659+00 to 674+00 6th Street

Total Area (ac) = 4.55
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		1.36	98	133.28
Pervious	A	0.16	39	6.24
Pond (Impervious)		0.44	98	43.20
Pond (Pervious)	A	0.52	39	20.41
6th Street:				
Impervious (54')		1.86	98	182.28
Pervious	A	0.21	39	8.19
Total Area (ac) =		4.55		393.60
		Weighted CN =		**86.4**

BASIN 4 - TREATMENT 2-18

1 in. over impervious, DCIA and Pond TOB =	0.31 Ac.-ft

BASIN 4 - HYDRAULICS 2-18

Basin No.	Basin 4
Location	689+00 LT.

Estimated Ground Surface Elevation at pond =		87.0	ft.
Estimated depth to Seasonal High Water, ft =		3.50	ft.
Estimated Seasonal High Water Elevation =		83.5	ft.
Pond site width=	140 ft.	Pond site Length=	300 ft.
Pond site area=	0.96 Ac.		
Pond TOB width =	80 ft.	Pond TOB length =	240 ft.
Pond TOB area=	0.44 Ac.		
Pond TOB el. =	87.0 ft.		
Pond 100 yr. el. =	86.76 ft. E-Max from Supra		
Weir elevation =		84.61 ft.	
Outfall TW elevation (5 yr.)=		80.7 ft.	
Length of pipe to outfall =		2200 ft.	
estimated pipe size =		30 in.	13 cfs
Estimated low road E/P in basin =		88.0 ft.	
5 yr. Critical duration pond elevation =		85.78 ft. from supra	
HGL slope =		0.08% estimated	
Approximate stormsewer length pond to low point =		20 ft.	
calculated HGL at low point =		85.80 ft.	
Low point - HGL =		2.2 ft.	ok

SUPRA-3 (VERSION 4.02) 11-14-2000

LICENSED TO:

Pond 2-18(218bas4)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 4.55
CURVE NUMBER	= 64.3
RUNOFF COEFFICIENT	= .379
TIME OF CONCENTRATION (min.)	= 20.0
RAINFALL INTENSITY (in/hr)	= 7.60
PEAK FLOW RATE (cfs)	= 13.12

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 4.55
CURVE NUMBER	= 86.4
RUNOFF COEFFICIENT	= .741
RAINFALL ZONE NUMBER	= 6
TOTAL RAINFALL DEPTH (inches)	= 5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	84.61	.00	.00	.00
.2	.500	10.04	84.86	.54	.00	.54
.4	.750	15.06	85.39	2.87	.00	2.87
.6	1.000	20.09	85.98	6.59	.00	6.59
.8	1.250	25.11	86.55	11.13	.00	11.13
1.0	.500	10.04	86.76	13.04	.00	13.04
1.2	.300	6.03	86.60	11.55	.00	11.55
1.4	.250	5.02	86.39	9.79	.00	9.79
1.6	.200	4.02	86.20	8.29	.00	8.29
1.8	.150	3.01	86.03	6.96	.00	6.96
2.0	.000	.00	85.82	5.50	.00	5.50

OUTPUT SUMMARY

PEAK FLOW (cfs)	= 13.04
PEAK STAGE (ft)	= 86.76
PEAK STORAGE (ac-ft)	= .788
TIME TO PEAK (hrs)	= 1.00

SUPRA-3 (VERSION 4.02) 11-14-2000

LICENSED TO:

Pond 2-18(218bas4)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	=	1
WEIR COEFFICIENT	=	3.3
EXPONENTIAL CONSTANT	=	1.5
WEIR ELEVATION (ft)	=	84.61
WEIR LENGTH (ft)	=	1.25
TOP BANK ELEVATION (ft)	=	87.00
POND AREA AT TOP BANK (acres)	=	.440
POND PERIMETER AT TOP BANK (ft)	=	640.0
SIDE SLOPE OF POND	=	4.0
DESIGN NORMAL WATER ELEVATION (ft)	=	84.61
DISCHARGE ELEVATION (ft)	=	84.61
TREATMENT VOLUME (ac-ft)	=	.310
PERCOLATION RATE (in/hr)	=	.00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
84.61	.308	.000	.00	.00	.00
84.61	.308	.000	.00	.00	.00
84.81	.318	.063	.00	.37	.37
85.01	.329	.127	.00	1.04	1.04
85.21	.340	.194	.00	1.92	1.92
85.41	.350	.263	.00	2.95	2.95
85.61	.361	.334	.00	4.12	4.12
85.81	.372	.408	.00	5.42	5.42
86.01	.383	.483	.00	6.83	6.83
86.21	.394	.561	.00	8.35	8.35
86.41	.406	.641	.00	9.96	9.96
86.61	.417	.723	.00	11.67	11.67
86.81	.429	.808	.00	13.46	13.46

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

SUPRA-3 (VERSION 4.02) 11-14-2000

LICENSED TO:

Pond 2-18(218bas4)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	1.83	2.90	4.01	5.27	7.37
	Q-post	3.57	3.80	3.46	3.48	1.62
	E-max	85.52	85.56	85.50	85.50	85.14
5-YR	Q-pre	3.24	4.77	6.32	7.92	10.52
	Q-post	5.25	5.58	4.99	4.87	2.25
	E-max	85.78	85.83	85.74	85.73	85.27
10-YR	Q-pre	4.47	6.48	8.17	10.15	12.90
	Q-post	6.59	7.19	6.15	6.04	2.70
	E-max	85.98	86.06	85.91	85.90	85.36
25-YR	Q-pre	6.41	8.80	11.00	13.14	16.50
	Q-post	8.55	9.11	7.86	7.42	3.43
	E-max	86.24	86.30	86.15	86.09	85.49
50-YR	Q-pre	8.00	10.87	13.04	15.39	18.73
	Q-post	10.19	11.02	9.07	8.50	3.81
	E-max	86.44	86.53	86.30	86.23	85.56
100-YR	Q-pre	9.75	13.12	15.55	18.03	21.53
	Q-post	11.87	13.04	10.68	9.85	4.40
	E-max	86.63	86.76	86.49	86.40	85.65

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 13.12
Q-post (cfs) = 13.04
E-max (ft) = 86.76

BASIN 5 - HYDROLOGY 2-19

Pre Development Hydrology
Basin 5

Approximate Stations
471+00 to 486+00 US 301
674+00 to 687+00 6th Street

Total Area (ac) = 4.82
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (30')		1.03	98	100.94
pervious	A	1.04	39	40.56
pond site	A	0.96	61	58.82
6th Street:				
impervious (24')	A	0.72	98	70.56
pervious	A	1.07	39	41.73
Total Area (ac) =		4.82		312.61
		Weighted CN =		**64.8**

Post Development Hydrology
Basin 5

Approximate Stations
471+00 to 486+00 US 301
674+00 to 687+00 6th Street

Total Area (ac) = 4.82
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		1.86	98	182.28
Pervious	A	0.21	39	8.19
Pond (Impervious)		0.44	98	43.20
Pond (Pervious)	A	0.52	39	20.41
6th Street:				
Impervious (54')		1.61	98	157.78
Pervious	A	0.18	39	7.02
Total Area (ac) =		4.82		418.88
		Weighted CN =		**86.8**

BASIN 5 - TREATMENT 2-19

1 in. over impervious, DCIA and Pond TOB =	0.33 Ac.-ft

BASIN 5 - HYDRAULICS 2-19

Basin No.	Basin 5
Location	680+00 LT.

Estimated Ground Surface Elevation at pond =		84.0	ft.
Estimated depth to Seasonal High Water, ft =		3.50	ft.
Estimated Seasonal High Water Elevation =		80.5	ft.
Pond site width=	140 ft.	Pond site Length=	300 ft.
Pond site area=	0.96 Ac.		
Pond TOB width =	80 ft.	Pond TOB length =	240 ft.
Pond TOB area=	0.44 Ac.		
Pond TOB el. =	84.0 ft.	Berm to 85.0 ft.	
Pond 100 yr. el. =	83.9 ft.	E-Max from Supra	

Weir elevation =		81.68	ft.
Outfall TW elevation (5 yr.)=		80.7	ft. (SR54)
Length of pipe to outfall =		3000	ft.
estimated pipe size =		24	in. 14 cfs
Estimated low road E/P in basin =		84.3	ft.
5 yr. Critical duration pond elevation =		83.0	ft. from supra
HGL slope =		0.08%	estimated
Approximate stormsewer length pond to low point =		400	ft.
calculated HGL at low point =		83.29	ft.
Low point - HGL =		1.0	ft. ok

SUPRA-3 (VERSION 4.02) 11-14-2000
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LICENSED TO:

Pond 2-19(219bas5)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 4.82
CURVE NUMBER	= 64.8
RUNOFF COEFFICIENT	= .387
TIME OF CONCENTRATION (min.)	= 20.0
RAINFALL INTENSITY (in/hr)	= 7.60
PEAK FLOW RATE (cfs)	= 14.17

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 4.82
CURVE NUMBER	= 86.8
RUNOFF COEFFICIENT	= .748
RAINFALL ZONE NUMBER	= 6
TOTAL RAINFALL DEPTH (inches)	= 5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	81.68	.00	.00	.00
.2	.500	10.74	81.94	.58	.00	.58
.4	.750	16.11	82.51	3.10	.00	3.10
.6	1.000	21.48	83.11	7.09	.00	7.09
.8	1.250	26.86	83.71	11.94	.00	11.94
1.0	.500	10.74	83.94	13.97	.00	13.97
1.2	.300	6.45	83.76	12.38	.00	12.38
1.4	.250	5.37	83.54	10.49	.00	10.49
1.6	.200	4.30	83.35	8.88	.00	8.88
1.8	.150	3.22	83.16	7.45	.00	7.45
2.0	.000	.00	82.95	5.88	.00	5.88

OUTPUT SUMMARY

PEAK FLOW (cfs)	= 13.97
PEAK STAGE (ft)	= 83.94
PEAK STORAGE (ac-ft)	= .841
TIME TO PEAK (hrs)	= 1.00

SUPRA-3 (VERSION 4.02) 11-14-2000

LICENSED TO:

Pond 2-19(219bas5)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 81.68
WEIR LENGTH (ft)	= 1.25
TOP BANK ELEVATION (ft)	= 84.00
POND AREA AT TOP BANK (acres)	= .440
POND PERIMETER AT TOP BANK (ft)	= 640.0
SIDE SLOPE OF POND	= 4.0
DESIGN NORMAL WATER ELEVATION (ft)	= 81.68
DISCHARGE ELEVATION (ft)	= 81.68
TREATMENT VOLUME (ac-ft)	= .330
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
81.68	.312	.000	.00	.00	.00
81.68	.312	.000	.00	.00	.00
81.88	.322	.063	.00	.37	.37
82.08	.333	.129	.00	1.04	1.04
82.28	.343	.196	.00	1.92	1.92
82.48	.354	.266	.00	2.95	2.95
82.68	.365	.338	.00	4.12	4.12
82.88	.376	.412	.00	5.42	5.42
83.08	.387	.488	.00	6.83	6.83
83.28	.398	.567	.00	8.35	8.35
83.48	.410	.648	.00	9.96	9.96
83.68	.421	.731	.00	11.67	11.67
83.88	.433	.816	.00	13.46	13.46

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

SUPRA-3 (VERSION 4.02) 11-14-2000

LICENSED TO:

Pond 2-19(219bas5)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	2.04	3.20	4.39	5.73	7.96
	Q-post	3.91	4.13	3.74	3.74	1.73
	E-max	82.64	82.68	82.61	82.61	82.24
5-YR	Q-pre	3.58	5.21	6.87	8.57	11.32
	Q-post	5.72	6.04	5.37	5.22	2.40
	E-max	82.92	82.97	82.87	82.85	82.37
10-YR	Q-pre	4.91	7.06	8.85	10.95	13.85
	Q-post	7.15	7.76	6.60	6.46	2.88
	E-max	83.12	83.20	83.05	83.03	82.47
25-YR	Q-pre	7.00	9.55	11.88	14.15	17.68
	Q-post	9.25	9.80	8.42	7.93	3.66
	E-max	83.39	83.46	83.29	83.22	82.60
50-YR	Q-pre	8.72	11.76	14.06	16.54	20.05
	Q-post	10.99	11.83	9.70	9.08	4.05
	E-max	83.60	83.70	83.45	83.37	82.67
100-YR	Q-pre	10.59	14.17	16.73	19.35	23.03
	Q-post	12.78	13.97	11.41	10.51	4.69
	E-max	83.80	83.94	83.65	83.54	82.77

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre	(cfs)	=	14.17
Q-post	(cfs)	=	13.97
E-max	(ft)	=	83.94

BASIN 5 - HYDROLOGY 2-20A

Pre Development Hydrology
Basin 5

Approximate Stations
471+00 to 486+00 US 301
674+00 to 687+00 6th Street

Total Area (ac) = 4.82
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (30')		1.03	98	100.94
pervious	A	1.04	39	40.56
pond site	A	0.96	61	58.82
6th Street:				
impervious (24')	A	0.72	98	70.56
pervious	A	1.07	39	41.73
Total Area (ac) =		4.82		312.61
		Weighted CN =		**64.8**

Post Development Hydrology
Basin 5

Approximate Stations
471+00 to 486+00 US 301
674+00 to 687+00 6th Street

Total Area (ac) = 4.82
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		1.86	98	182.28
Pervious	A	0.21	39	8.19
Pond (Impervious)		0.44	98	43.20
Pond (Pervious)	A	0.52	39	20.41
6th Street:				
Impervious (54')		1.61	98	157.78
Pervious	A	0.18	39	7.02
Total Area (ac) =		4.82		418.88
		Weighted CN =		**86.8**

BASIN 5 - TREATMENT 2-20A

1 in. over impervious, DCIA and Pond TOB =	0.33	Ac.-ft

BASIN 5 - HYDRAULICS 2-20A

Basin No.	Basin 5
Location	679+00 LT.

Estimated Ground Surface Elevation at pond =	85.0	ft.	
Estimated depth to Seasonal High Water, ft =	3.50	ft.	
Estimated Seasonal High Water Elevation =	81.5	ft.	

Pond site width=	140	ft.	Pond site Length=	300 ft.
Pond site area=	0.96	Ac.		
Pond TOB width =	80	ft.	Pond TOB length =	240 ft.
Pond TOB area=	0.44	Ac.		
Pond TOB el. =	85.0	ft.		
Pond 100 yr. el. =	84.94	ft.	E-Max from Supra	

Weir elevation =	82.68	ft.	
Outfall TW elevation (5 yr.)=	80.7	ft.	(SR54)
Length of pipe to outfall =	3300	ft.	
estimated pipe size =	30	in.	14 cfs

Estimated low road E/P in basin =	84.3	ft.	
5 yr. Critical duration pond elevation =	83.97	ft.	from supra
HGL slope =	0.08%		estimated
Approximate stormsewer length pond to low point =	20	ft.	
calculated HGL at low point =	83.986	ft.	
Low point - HGL =	0.3	ft.	error

SUPRA-3 (VERSION 4.02) 11-14-2000
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LICENSED TO:

Pond 2-20A(220Abas5)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	4.82
CURVE NUMBER	=	64.8
RUNOFF COEFFICIENT	=	.387
TIME OF CONCENTRATION (min.)	=	20.0
RAINFALL INTENSITY (in/hr)	=	7.60
PEAK FLOW RATE (cfs)	=	14.17

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	4.82
CURVE NUMBER	=	86.8
RUNOFF COEFFICIENT	=	.748
RAINFALL ZONE NUMBER	=	6
TOTAL RAINFALL DEPTH (inches)	=	5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	82.68	.00	.00	.00
.2	.500	10.74	82.94	.58	.00	.58
.4	.750	16.11	83.51	3.10	.00	3.10
.6	1.000	21.48	84.11	7.09	.00	7.09
.8	1.250	26.86	84.71	11.94	.00	11.94
1.0	.500	10.74	84.94	13.97	.00	13.97
1.2	.300	6.45	84.76	12.38	.00	12.38
1.4	.250	5.37	84.54	10.49	.00	10.49
1.6	.200	4.30	84.35	8.88	.00	8.88
1.8	.150	3.22	84.16	7.45	.00	7.45
2.0	.000	.00	83.95	5.88	.00	5.88

OUTPUT SUMMARY

PEAK FLOW (cfs)	=	13.97
PEAK STAGE (ft)	=	84.94
PEAK STORAGE (ac-ft)	=	.841
TIME TO PEAK (hrs)	=	1.00

SUPRA-3 (VERSION 4.02) 11-14-2000

LICENSED TO:

Pond 2-20A(220Abas5)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	=	1
WEIR COEFFICIENT	=	3.3
EXPONENTIAL CONSTANT	=	1.5
WEIR ELEVATION (ft)	=	82.68
WEIR LENGTH (ft)	=	1.25
TOP BANK ELEVATION (ft)	=	85.00
POND AREA AT TOP BANK (acres)	=	.440
POND PERIMETER AT TOP BANK (ft)	=	640.0
SIDE SLOPE OF POND	=	4.0
DESIGN NORMAL WATER ELEVATION (ft)	=	82.68
DISCHARGE ELEVATION (ft)	=	82.68
TREATMENT VOLUME (ac-ft)	=	.330
PERCOLATION RATE (in/hr)	=	.00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
82.68	.312	.000	.00	.00	.00
82.68	.312	.000	.00	.00	.00
82.88	.322	.063	.00	.37	.37
83.08	.333	.129	.00	1.04	1.04
83.28	.343	.196	.00	1.92	1.92
83.48	.354	.266	.00	2.95	2.95
83.68	.365	.338	.00	4.12	4.12
83.88	.376	.412	.00	5.42	5.42
84.08	.387	.488	.00	6.83	6.83
84.28	.398	.567	.00	8.35	8.35
84.48	.410	.648	.00	9.96	9.96
84.68	.421	.731	.00	11.67	11.67
84.88	.433	.816	.00	13.46	13.46

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

BASIN 5 - HYDROLOGY 2-20B

Pre Development Hydrology
Basin 5

Approximate Stations
471+00 to 486+00 US 301
674+00 to 687+00 6th Street

Total Area (ac) = 4.82
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (30')		1.03	98	100.94
pervious	A	1.04	39	40.56
pond site	A	0.96	61	58.82
6th Street:				
impervious (24')	A	0.72	98	70.56
pervious	A	1.07	39	41.73
Total Area (ac) =		4.82		312.61
		Weighted CN =		**64.8**

Post Development Hydrology
Basin 5

Approximate Stations
471+00 to 486+00 US 301
674+00 to 687+00 6th Street

Total Area (ac) = 4.82
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		1.86	98	182.28
Pervious	A	0.21	39	8.19
Pond (Impervious)		0.44	98	43.20
Pond (Pervious)	A	0.52	39	20.41
6th Street:				
Impervious (54')		1.61	98	157.78
Pervious	A	0.18	39	7.02
Total Area (ac) =		4.82		418.88
		Weighted CN =		**86.8**

BASIN 5 - TREATMENT 2-20B

1 in. over impervious, DCIA and Pond TOB =	0.33 Ac.-ft

BASIN 5 - HYDRAULICS 2-20B

Basin No.	Basin 5
Location	679+00 RT.

Estimated Ground Surface Elevation at pond =		84.0	ft.
Estimated depth to Seasonal High Water, ft =		3.50	ft.
Estimated Seasonal High Water Elevation =		80.5	ft.
Pond site width=	140 ft.	Pond site Length=	300 ft.
Pond site area=	0.96 Ac.		
Pond TOB width =	80 ft.	Pond TOB length =	240 ft.
Pond TOB area=	0.44 Ac.		
Pond TOB el. =	84.0 ft.	Berm to 85.0 ft.	
Pond 100 yr. el. =	83.94 ft.	E-Max from Supra	

Weir elevation =		81.68	ft.
Outfall TW elevation (5 yr.)=		80.7	ft. (SR54)
Length of pipe to outfall =		3500	ft.
estimated pipe size =		36	in. 14 cfs
Estimated low road E/P in basin =		84.3	ft.
5 yr. Critical duration pond elevation =		82.97	ft. from supra
HGL slope =		0.08%	estimated
Approximate stormsewer length pond to low point =		20	ft.
calculated HGL at low point =		82.986	ft.
Low point - HGL =		1.3	ft. ok

SUPRA-3 (VERSION 4.02) 11-15-2000

LICENSED TO:

Pond 2-20b(220Bbas5)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 4.82
CURVE NUMBER	= 64.8
RUNOFF COEFFICIENT	= .387
TIME OF CONCENTRATION (min.)	= 20.0
RAINFALL INTENSITY (in/hr)	= 7.60
PEAK FLOW RATE (cfs)	= 14.17

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 4.82
CURVE NUMBER	= 86.8
RUNOFF COEFFICIENT	= .748
RAINFALL ZONE NUMBER	= 6
TOTAL RAINFALL DEPTH (inches)	= 5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	81.68	.00	.00	.00
.2	.500	10.74	81.94	.58	.00	.58
.4	.750	16.11	82.51	3.10	.00	3.10
.6	1.000	21.48	83.11	7.09	.00	7.09
.8	1.250	26.86	83.71	11.94	.00	11.94
1.0	.500	10.74	83.94	13.97	.00	13.97
1.2	.300	6.45	83.76	12.38	.00	12.38
1.4	.250	5.37	83.54	10.49	.00	10.49
1.6	.200	4.30	83.35	8.88	.00	8.88
1.8	.150	3.22	83.16	7.45	.00	7.45
2.0	.000	.00	82.95	5.88	.00	5.88

OUTPUT SUMMARY

PEAK FLOW (cfs)	= 13.97
PEAK STAGE (ft)	= 83.94
PEAK STORAGE (ac-ft)	= .841
TIME TO PEAK (hrs)	= 1.00

SUPRA-3 (VERSION 4.02) 11-15-2000

LICENSED TO:

Pond 2-20b(220Bbas5)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 81.68
WEIR LENGTH (ft)	= 1.25
TOP BANK ELEVATION (ft)	= 84.00
POND AREA AT TOP BANK (acres)	= .440
POND PERIMETER AT TOP BANK (ft)	= 640.0
SIDE SLOPE OF POND	= 4.0
DESIGN NORMAL WATER ELEVATION (ft)	= 81.68
DISCHARGE ELEVATION (ft)	= 81.68
TREATMENT VOLUME (ac-ft)	= .330
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
81.68	.312	.000	.00	.00	.00
81.68	.312	.000	.00	.00	.00
81.88	.322	.063	.00	.37	.37
82.08	.333	.129	.00	1.04	1.04
82.28	.343	.196	.00	1.92	1.92
82.48	.354	.266	.00	2.95	2.95
82.68	.365	.338	.00	4.12	4.12
82.88	.376	.412	.00	5.42	5.42
83.08	.387	.488	.00	6.83	6.83
83.28	.398	.567	.00	8.35	8.35
83.48	.410	.648	.00	9.96	9.96
83.68	.421	.731	.00	11.67	11.67
83.88	.433	.816	.00	13.46	13.46

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

SUPRA-3 (VERSION 4.02) 11-15-2000

LICENSED TO:

Pond 2-20b(220Bbas5)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	2.04	3.20	4.39	5.73	7.96
	Q-post	3.91	4.13	3.74	3.74	1.73
	E-max	82.64	82.68	82.61	82.61	82.24
5-YR	Q-pre	3.58	5.21	6.87	8.57	11.32
	Q-post	5.72	6.04	5.37	5.22	2.40
	E-max	82.92	82.97	82.87	82.85	82.37
10-YR	Q-pre	4.91	7.06	8.85	10.95	13.85
	Q-post	7.15	7.76	6.60	6.46	2.88
	E-max	83.12	83.20	83.05	83.03	82.47
25-YR	Q-pre	7.00	9.55	11.88	14.15	17.68
	Q-post	9.25	9.80	8.42	7.93	3.66
	E-max	83.39	83.46	83.29	83.22	82.60
50-YR	Q-pre	8.72	11.76	14.06	16.54	20.05
	Q-post	10.99	11.83	9.70	9.08	4.05
	E-max	83.60	83.70	83.45	83.37	82.67
100-YR	Q-pre	10.59	14.17	16.73	19.35	23.03
	Q-post	12.78	13.97	11.41	10.51	4.69
	E-max	83.80	83.94	83.65	83.54	82.77

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 14.17
Q-post (cfs) = 13.97
E-max (ft) = 83.94

BASIN 6 - HYDROLOGY 2-21

Pre Development Hydrology
Basin 6

Approximate Stations
486+00 to 503+00 US 301
687+00 to 700+00 6th Street

Total Area (ac) = 5.09
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (30')		1.17	98	114.66
pervious	A	1.17	39	45.63
pond site	A	0.96	39	37.60
6th Street:				
impervious (24')	A	0.72	98	70.56
pervious	A	1.07	39	41.73
Total Area (ac) =		5.09		310.18
		Weighted CN =		**60.9**

Post Development Hydrology
Basin 6

Approximate Stations
486+00 to 503+00 US 301
687+00 to 700+00 6th Street

Total Area (ac) = 5.09
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		2.11	98	206.78
Pervious	A	0.23	39	8.97
Pond (Impervious)		0.44	98	43.20
Pond (Pervious)	A	0.52	39	20.41
6th Street:				
Impervious (54')		1.61	98	157.78
Pervious	A	0.18	39	7.02
Total Area (ac) =		5.09		444.16
		Weighted CN =		**87.2**

BASIN 6 - TREATMENT 2-21

1 in. over impervious, DCIA and Pond TOB = 0.35 Ac.-ft

BASIN 6 - HYDRAULICS 2-21

Basin No.	Basin 6
Location	690+00 LT.

Estimated Ground Surface Elevation at pond =			85.0 ft.
Estimated depth to Seasonal High Water, ft =			6.00 ft.
Estimated Seasonal High Water Elevation =			79.0 ft.
Pond site width=	140 ft.	Pond site Length=	300 ft.
Pond site area=	0.96 Ac.		
Pond TOB width =	80 ft.	Pond TOB length =	240 ft.
Pond TOB area=	0.44 Ac.		
Pond TOB el. =	85.0 ft.		
Pond 100 yr. el. =	83.11 ft.	E-Max from Supra	
Weir elevation =			80.35 ft.
Outfall TW elevation (5 yr.)=			80.7 ft.
Length of pipe to outfall =			3000 ft.
estimated pipe size =			36 in. 12.5 cfs
Estimated low road E/P in basin =			83.5 ft. raised LP 0.7 ft.
5 yr. Critical duration pond elevation =			81.92 ft. from supra
HGL slope =			0.08% estimated
Approximate stormsewer length pond to low point =			600 ft.
calculated HGL at low point =			82.4 ft.
Low point - HGL =			1.1 ft. ok

SUPRA-3 (VERSION 4.02) 11-15-2000
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LICENSED TO:

Pond 2-21(221bas6)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 5.09
CURVE NUMBER	= 60.9
RUNOFF COEFFICIENT	= .331
TIME OF CONCENTRATION (min.)	= 20.0
RAINFALL INTENSITY (in/hr)	= 7.60
PEAK FLOW RATE (cfs)	= 12.79

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 5.09
CURVE NUMBER	= 87.2
RUNOFF COEFFICIENT	= .755
RAINFALL ZONE NUMBER	= 6
TOTAL RAINFALL DEPTH (inches)	= 5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	80.35	.00	.00	.00
.2	.500	11.45	80.65	.45	.00	.45
.4	.750	17.18	81.30	2.45	.00	2.45
.6	1.000	22.91	82.02	5.73	.00	5.73
.8	1.250	28.63	82.76	9.87	.00	9.87
1.0	.500	11.45	83.11	12.05	.00	12.05
1.2	.300	6.87	83.01	11.43	.00	11.43
1.4	.250	5.73	82.83	10.33	.00	10.33
1.6	.200	4.58	82.65	9.23	.00	9.23
1.8	.150	3.44	82.47	8.13	.00	8.13
2.0	.000	.00	82.23	6.81	.00	6.81

OUTPUT SUMMARY

PEAK FLOW (cfs)	= 12.05
PEAK STAGE (ft)	= 83.11
PEAK STORAGE (ac-ft)	= 1.015
TIME TO PEAK (hrs)	= 1.00

SUPRA-3 (VERSION 4.02) 11-15-2000

LICENSED TO:

Pond 2-21(221bas6)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 80.35
WEIR LENGTH (ft)	= .80
TOP BANK ELEVATION (ft)	= 83.00
POND AREA AT TOP BANK (acres)	= .440
POND PERIMETER AT TOP BANK (ft)	= 640.0
SIDE SLOPE OF POND	= 4.0
DESIGN NORMAL WATER ELEVATION (ft)	= 80.35
DISCHARGE ELEVATION (ft)	= 80.35
TREATMENT VOLUME (ac-ft)	= .350
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
80.35	.295	.000	.00	.00	.00
80.35	.295	.000	.00	.00	.00
80.55	.305	.060	.00	.24	.24
80.75	.315	.122	.00	.67	.67
80.95	.326	.186	.00	1.23	1.23
81.15	.336	.252	.00	1.89	1.89
81.35	.347	.321	.00	2.64	2.64
81.55	.358	.391	.00	3.47	3.47
81.75	.369	.464	.00	4.37	4.37
81.95	.380	.539	.00	5.34	5.34
82.15	.391	.616	.00	6.38	6.38
82.35	.402	.695	.00	7.47	7.47
82.55	.414	.777	.00	8.61	8.61
82.75	.425	.861	.00	9.82	9.82
82.95	.437	.947	.00	11.07	11.07

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

SUPRA-3 (VERSION 4.02) 11-15-2000

LICENSED TO:

Pond 2-21(221bas6)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	1.35	2.39	3.53	4.86	7.15
	Q-post	3.32	3.55	3.59	3.70	1.81
	E-max	81.51	81.57	81.58	81.60	81.12
5-YR	Q-pre	2.66	4.22	5.86	7.60	10.51
	Q-post	4.86	5.20	5.10	5.20	2.51
	E-max	81.85	81.92	81.90	81.92	81.31
10-YR	Q-pre	3.84	5.94	7.76	9.95	13.07
	Q-post	6.08	6.69	6.22	6.46	3.02
	E-max	82.09	82.21	82.12	82.17	81.44
25-YR	Q-pre	5.73	8.29	10.71	13.12	16.99
	Q-post	7.87	8.45	7.86	7.96	3.81
	E-max	82.42	82.52	82.42	82.44	81.63
50-YR	Q-pre	7.33	10.43	12.85	15.53	19.41
	Q-post	9.35	10.21	9.06	9.14	4.22
	E-max	82.67	82.81	82.62	82.64	81.72
100-YR	Q-pre	9.09	12.79	15.53	18.38	22.49
	Q-post	10.86	12.05	10.67	10.60	4.86
	E-max	82.92	83.11	82.89	82.88	81.85

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 12.79
Q-post (cfs) = 12.05
E-max (ft) = 83.11

BASIN 6 - HYDROLOGY 2-22

Pre Development Hydrology
Basin 6

Approximate Stations
486+00 to 503+00 US 301
687+00 to 700+00 6th Street

Total Area (ac) = 5.09
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (30')		1.17	98	114.66
pervious	A	1.17	39	45.63
pond site	A	0.96	39	37.60
6th Street:				
impervious (24')	A	0.72	98	70.56
pervious	A	1.07	39	41.73
Total Area (ac) =		5.09		310.18
		Weighted CN =		**60.9**

Post Development Hydrology
Basin 6

Approximate Stations
486+00 to 503+00 US 301
687+00 to 700+00 6th Street

Total Area (ac) = 5.09
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		2.11	98	206.78
Pervious	A	0.23	39	8.97
Pond (Impervious)		0.44	98	43.20
Pond (Pervious)	A	0.52	39	20.41
6th Street:				
Impervious (54')		1.61	98	157.78
Pervious	A	0.18	39	7.02
Total Area (ac) =		5.09		444.16
		Weighted CN =		**87.2**

BASIN 6 - TREATMENT 2-22

1 in. over impervious, DCIA and Pond TOB =	0.35 Ac.-ft

BASIN 6 - HYDRAULICS 2-22

Basin No.	Basin 6
Location	690+00 LT.

Estimated Ground Surface Elevation at pond =			85.0 ft.
Estimated depth to Seasonal High Water, ft =			6.00 ft.
Estimated Seasonal High Water Elevation =			79.0 ft.
Pond site width=	140 ft.	Pond site Length=	300 ft.
Pond site area=	0.96 Ac.		
Pond TOB width =	80 ft.	Pond TOB length =	240 ft.
Pond TOB area=	0.44 Ac.		
Pond TOB el. =	85.0 ft.		
Pond 100 yr. el. =	83.11 ft.	E-Max from Supra	
Weir elevation =			80.35 ft.
Outfall TW elevation (5 yr.)=			80.7 ft.
Length of pipe to outfall =			3000 ft.
estimated pipe size =			99 in. 99 cfs
Estimated low road E/P in basin =			83.5 ft. raised LP 0.7 ft.
5 yr. Critical duration pond elevation =			81.92 ft. from supra
HGL slope =			0.08% estimated
Approximate stormsewer length pond to low point =			400 ft.
calculated HGL at low point =			82.24 ft.
Low point - HGL =			1.3 ft. ok

11-15-2000

SUPRA-3 (VERSION 4.02)
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LICENSED TO:

Pond 2-22(222bas6)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 5.09
CURVE NUMBER	= 60.9
RUNOFF COEFFICIENT	= .331
TIME OF CONCENTRATION (min.)	= 20.0
RAINFALL INTENSITY (in/hr)	= 7.60
PEAK FLOW RATE (cfs)	= 12.79

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 5.09
CURVE NUMBER	= 87.2
RUNOFF COEFFICIENT	= .755
RAINFALL ZONE NUMBER	= 6
TOTAL RAINFALL DEPTH (inches)	= 5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	80.35	.00	.00	.00
.2	.500	11.45	80.65	.45	.00	.45
.4	.750	17.18	81.30	2.45	.00	2.45
.6	1.000	22.91	82.02	5.73	.00	5.73
.8	1.250	28.63	82.76	9.87	.00	9.87
1.0	.500	11.45	83.11	12.05	.00	12.05
1.2	.300	6.87	83.01	11.43	.00	11.43
1.4	.250	5.73	82.83	10.33	.00	10.33
1.6	.200	4.58	82.65	9.23	.00	9.23
1.8	.150	3.44	82.47	8.13	.00	8.13
2.0	.000	.00	82.23	6.81	.00	6.81

OUTPUT SUMMARY

PEAK FLOW (cfs)	= 12.05
PEAK STAGE (ft)	= 83.11
PEAK STORAGE (ac-ft)	= 1.015
TIME TO PEAK (hrs)	= 1.00

SUPRA-3 (VERSION 4.02) 11-15-2000

LICENSED TO:

Pond 2-22(222bas6)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 80.35
WEIR LENGTH (ft)	= .80
TOP BANK ELEVATION (ft)	= 83.00
POND AREA AT TOP BANK (acres)	= .440
POND PERIMETER AT TOP BANK (ft)	= 640.0
SIDE SLOPE OF POND	= 4.0
DESIGN NORMAL WATER ELEVATION (ft)	= 80.35
DISCHARGE ELEVATION (ft)	= 80.35
TREATMENT VOLUME (ac-ft)	= .350
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
80.35	.295	.000	.00	.00	.00
80.35	.295	.000	.00	.00	.00
80.55	.305	.060	.00	.24	.24
80.75	.315	.122	.00	.67	.67
80.95	.326	.186	.00	1.23	1.23
81.15	.336	.252	.00	1.89	1.89
81.35	.347	.321	.00	2.64	2.64
81.55	.358	.391	.00	3.47	3.47
81.75	.369	.464	.00	4.37	4.37
81.95	.380	.539	.00	5.34	5.34
82.15	.391	.616	.00	6.38	6.38
82.35	.402	.695	.00	7.47	7.47
82.55	.414	.777	.00	8.61	8.61
82.75	.425	.861	.00	9.82	9.82
82.95	.437	.947	.00	11.07	11.07

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

SUPRA-3 (VERSION 4.02) 11-15-2000
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LICENSED TO:

Pond 2-22(222bas6)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	1.35	2.39	3.53	4.86	7.15
	Q-post	3.32	3.55	3.59	3.70	1.81
	E-max	81.51	81.57	81.58	81.60	81.12
5-YR	Q-pre	2.66	4.22	5.86	7.60	10.51
	Q-post	4.86	5.20	5.10	5.20	2.51
	E-max	81.85	81.92	81.90	81.92	81.31
10-YR	Q-pre	3.84	5.94	7.76	9.95	13.07
	Q-post	6.08	6.69	6.22	6.46	3.02
	E-max	82.09	82.21	82.12	82.17	81.44
25-YR	Q-pre	5.73	8.29	10.71	13.12	16.99
	Q-post	7.87	8.45	7.86	7.96	3.81
	E-max	82.42	82.52	82.42	82.44	81.63
50-YR	Q-pre	7.33	10.43	12.85	15.53	19.41
	Q-post	9.35	10.21	9.06	9.14	4.22
	E-max	82.67	82.81	82.62	82.64	81.72
100-YR	Q-pre	9.09	12.79	15.53	18.38	22.49
	Q-post	10.86	12.05	10.67	10.60	4.86
	E-max	82.92	83.11	82.89	82.88	81.85

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 12.79
Q-post (cfs) = 12.05
E-max (ft) = 83.11

BASIN 6 - HYDROLOGY 2-23

Pre Development Hydrology
Basin 6

Approximate Stations
486+00 to 503+00 US 301
687+00 to 700+00 6th Street

Total Area (ac) = 4.74
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious (32')		1.25	98	122.5
pervious	A	1.09	39	42.51
pond site	A	0.61	49	29.70
6th Street:				
impervious (24')		0.72	98	70.56
pervious	A	1.07	39	41.73
Total Area (ac) =		4.74		307.00
		Weighted CN =		**64.8**

Post Development Hydrology
Basin 6

Approximate Stations
486+00 to 503+00 US 301
687+00 to 700+00 6th Street

Total Area (ac) = 4.74
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		2.11	98	206.78
Pervious	A	0.23	39	8.97
Pond (Impervious)		0.33	98	32.40
Pond (Pervious)	A	0.28	39	10.74
6th Street:				
Impervious (54')		1.61	98	157.78
Pervious	A	0.18	39	7.02
Total Area (ac) =		4.74		423.69
		Weighted CN =		**89.5**

BASIN 6 - TREATMENT 2-23

1 in. over impervious, DCIA and Pond TOB =	0.34 Ac.-ft

BASIN 6 - HYDRAULICS 2-23

Basin No.	Basin 6
Location	697+00 LT.

Estimated Ground Surface Elevation at pond =			81.5 ft.
Estimated depth to Seasonal High Water, ft =			3.50 ft.
Estimated Seasonal High Water Elevation =			78.0 ft.
Pond site width=	120 ft.	Pond site Length=	220 ft.
Pond site area=	0.61 Ac.		
Pond TOB width =	80 ft.	Pond TOB length =	180 ft.
Pond TOB area=	0.33 Ac.		
Pond TOB el. =	84.0 ft.		
Pond 100 yr. el. =	83.74 ft.	E-Max from Supra	

Weir elevation =	80.56 ft.	
Outfall TW elevation (5 yr.)=	80.7 ft.	
Length of pipe to outfall =	3000 ft.	
estimated pipe size =	36 in.	12 cfs

Estimated low road E/P in basin =	83.4 ft.	
5 yr. Critical duration pond elevation =	82.42 ft.	from supra
HGL slope =	0.08%	estimated
Approximate stormsewer length pond to low point =	20 ft.	
calculated HGL at low point =	82.44 ft.	
Low point - HGL =	1.0 ft.	

SUPRA-3 (VERSION 4.02) 1- 4-2001
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LICENSED TO:

Pond 2-23(223bas6)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	4.74
CURVE NUMBER	=	64.8
RUNOFF COEFFICIENT	=	.387
TIME OF CONCENTRATION (min.)	=	20.0
RAINFALL INTENSITY (in/hr)	=	7.60
PEAK FLOW RATE (cfs)	=	13.93

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	=	4.74
CURVE NUMBER	=	89.5
RUNOFF COEFFICIENT	=	.797
RAINFALL ZONE NUMBER	=	6
TOTAL RAINFALL DEPTH (inches)	=	5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	78.00	.00	.00	.00
.2	.500	11.26	78.71	.00	.00	.00
.4	.750	16.89	80.48	.00	.00	.00
.6	1.000	22.52	81.93	4.26	.00	4.26
.8	1.250	28.15	83.07	10.53	.00	10.53
1.0	.500	11.26	83.51	13.37	.00	13.37
1.2	.300	6.76	83.30	12.02	.00	12.02
1.4	.250	5.63	83.02	10.22	.00	10.22
1.6	.200	4.50	82.76	8.65	.00	8.65
1.8	.150	3.38	82.51	7.23	.00	7.23
2.0	.000	.00	82.20	5.59	.00	5.59

OUTPUT SUMMARY

PEAK FLOW (cfs)	=	13.37
PEAK STAGE (ft)	=	83.51
PEAK STORAGE (ac-ft)	=	1.041
TIME TO PEAK (hrs)	=	1.00

SUPRA-3 (VERSION 4.02) 1- 4-2001

LICENSED TO:

Pond 2-23(223bas6)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 80.56
WEIR LENGTH (ft)	= .80
TOP BANK ELEVATION (ft)	= 84.00
POND AREA AT TOP BANK (acres)	= .330
POND PERIMETER AT TOP BANK (ft)	= 540.0
SIDE SLOPE OF POND	= 4.0
DESIGN NORMAL WATER ELEVATION (ft)	= 78.00
DISCHARGE ELEVATION (ft)	= 80.56
TREATMENT VOLUME (ac-ft)	= .330
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
78.00	.085	.000	.00	.00	.00
80.56	.177	.336	.00	.00	.00
81.06	.197	.429	.00	.93	.93
81.56	.218	.533	.00	2.64	2.64
82.06	.239	.647	.00	4.85	4.85
82.56	.262	.772	.00	7.47	7.47
83.06	.285	.909	.00	10.44	10.44
83.56	.308	1.057	.00	13.72	13.72

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

SUPRA-3 (VERSION 4.02) 1- 4-2001
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LICENSED TO:

Pond 2-23(223bas6)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	2.01	3.14	4.31	5.63	7.83
	Q-post	1.75	2.41	3.45	3.80	1.85
	E-max	81.30	81.49	81.74	81.82	81.33
5-YR	Q-pre	3.52	5.13	6.75	8.43	11.13
	Q-post	3.81	4.51	5.16	5.45	2.52
	E-max	81.83	81.98	82.12	82.17	81.52
10-YR	Q-pre	4.83	6.94	8.71	10.77	13.62
	Q-post	5.49	6.51	6.50	6.77	3.03
	E-max	82.18	82.38	82.38	82.43	81.65
25-YR	Q-pre	6.88	9.39	11.68	13.91	17.39
	Q-post	7.87	8.82	8.51	8.26	3.83
	E-max	82.63	82.79	82.74	82.69	81.83
50-YR	Q-pre	8.57	11.57	13.83	16.27	19.72
	Q-post	9.80	11.06	9.88	9.42	4.22
	E-max	82.95	83.16	82.97	82.89	81.92
100-YR	Q-pre	10.41	13.93	16.46	19.03	22.64
	Q-post	11.73	13.37	11.65	10.84	4.84
	E-max	83.26	83.51	83.25	83.12	82.06

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 13.93
Q-post (cfs) = 13.37
E-max (ft) = 83.51

BASIN 4,5,6 - HYDROLOGY
Pond 2-24

Pre Development Hydrology
Combined basins 4, 5, & 6

Approximate Stations
460+00 to 503+00 US 301
659+00 to 700+00 6th Street

Total Area (ac) = 16.60
Soils = Sparr

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
impervious		2.96	98	290.08
pervious	A	2.97	39	115.83
pond site	C	5.02	70	351.53
6th Street:				
impervious (24')	A	2.27	98	222.46
pervious	A	3.38	39	131.82
Total Area (ac) =		16.60		1111.72
		Weighted CN =		**67.0**

Post Development Hydrology
Combined basins 4, 5, & 6

Total Area (ac) = 16.60
Soils = Tavares-Urban land complex

Weighted CN Calculation:

Land Use	Hydrologic Soil Group	Area (ac)	CN	Product
US 301:				
Impervious (54')		5.33	98	522.34
Pervious	A	0.60	39	23.4
Pond (Impervious)		3.76	98	368.62
Pond (Pervious)	C	1.26	70	88.22
6th Street:				
Impervious (54')		5.08	98	497.84
Pervious	A	0.57	39	22.23
Total Area (ac) =		16.60		1522.66
		Weighted CN =		**91.7**

BASIN 6 - TREATMENT 2-24

1 in. over impervious, DCIA and Pond TOB = 1.18 Ac.-ft

BASIN 6 - HYDRAULICS 2-24

Basin No.	Combined basins 4, 5, & 6
Location	690+00 LT.

Estimated Ground Surface Elevation at pond =			83.5 ft.
Estimated depth to Seasonal High Water, ft =			1.50 ft.
Estimated Seasonal High Water Elevation =			82.0 ft.
Pond site width=	350 ft.	Pond site Length=	625 ft.
Pond site area=	5.02 Ac.		
Pond TOB width =	290 ft.	Pond TOB length =	565 ft.
Pond TOB area=	3.76 Ac.		
Pond TOB el. =	83.5 ft.		
Pond 100 yr. el. =	83.36 ft. E-Max from Supra		
Weir elevation =			80.35 ft.
Outfall TW elevation (5 yr.)=			80.7 ft.
Length of pipe to outfall =			2700 ft.
estimated pipe size =			36 in.
Estimated low road E/P in basin =			84.5 ft.
5 yr. Critical duration pond elevation =			82.94 ft. from su
HGL slope =			0.08% estimated
Approximate stormsewer length pond to low point =			600 ft.
calculated HGL at low point =			83.42 ft.
Low point - HGL =			1.1 ft.

SUPRA-3 (VERSION 4.02) 1- 4-2001

LICENSED TO:

Pond 2-24 (comb)

**** 2-HOUR,100-YEAR STORM ****

PRE-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 16.60
CURVE NUMBER	= 67.0
RUNOFF COEFFICIENT	= .419
TIME OF CONCENTRATION (min.)	= 30.0
RAINFALL INTENSITY (in/hr)	= 6.38
PEAK FLOW RATE (cfs)	= 44.42

POST-DEVELOPMENT CONDITION:

DRAINAGE AREA (acres)	= 16.60
CURVE NUMBER	= 91.7
RUNOFF COEFFICIENT	= .838
RAINFALL ZONE NUMBER	= 6
TOTAL RAINFALL DEPTH (inches)	= 5.96

TIME (hrs)	I/Ptotal RATIO	INFLOW (cfs)	STAGE (ft)	TOTAL OUTFLOW	PERCOLATION FLOW	CONNECTED OUTFLOW
.0	.000	.00	82.00	.00	.00	.00
.2	.500	41.47	82.10	.00	.00	.00
.4	.750	62.21	82.34	.00	.00	.00
.6	1.000	82.94	82.65	9.99	.00	9.99
.8	1.250	103.68	82.98	29.06	.00	29.06
1.0	.500	41.47	83.15	41.00	.00	41.00
1.2	.300	24.88	83.12	38.79	.00	38.79
1.4	.250	20.74	83.06	34.43	.00	34.43
1.6	.200	16.59	83.00	30.14	.00	30.14
1.8	.150	12.44	82.94	25.90	.00	25.90
2.0	.000	.00	82.86	21.24	.00	21.24

OUTPUT SUMMARY

PEAK FLOW (cfs)	= 41.00
PEAK STAGE (ft)	= 83.15
PEAK STORAGE (ac-ft)	= 4.157
TIME TO PEAK (hrs)	= 1.00

SUPRA-3 (VERSION 4.02) 1- 4-2001

LICENSED TO:

Pond 2-24 (comb)

***** WEIR STRUCTURE *****

NUMBER OF WEIRS	= 1
WEIR COEFFICIENT	= 3.3
EXPONENTIAL CONSTANT	= 1.5
WEIR ELEVATION (ft)	= 82.34
WEIR LENGTH (ft)	= 17.00
TOP BANK ELEVATION (ft)	= 83.50
POND AREA AT TOP BANK (acres)	= 3.760
POND PERIMETER AT TOP BANK (ft)	=1760.0
SIDE SLOPE OF POND	= 4.0
DESIGN NORMAL WATER ELEVATION (ft)	= 82.00
DISCHARGE ELEVATION (ft)	= 82.34
TREATMENT VOLUME (ac-ft)	= 1.180
PERCOLATION RATE (in/hr)	= .00

**** STAGE/STORAGE/DISCHARGE DATA ****

STAGE (ft)	AREA (acres)	STORAGE (ac-ft)	PERCOLATION FLOW	CONNECTED OUTFLOW	TOTAL OUTFLOW
82.00	3.521	.000	.00	.00	.00
82.34	3.575	1.206	.00	.00	.00
82.54	3.606	1.924	.00	5.02	5.02
82.74	3.638	2.649	.00	14.19	14.19
82.94	3.670	3.379	.00	26.07	26.07
83.14	3.702	4.117	.00	40.14	40.14
83.34	3.734	4.860	.00	56.10	56.10

NOTE: The stage-storage data is computed by a rectangular shape approximation in conjunction with the double-end area method. The other option should be used for highly irregular pond shape or for nonuniform side slope.

SUPRA-3 (VERSION 4.02) 1- 4-2001
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LICENSED TO:

Pond 2-24 (comb)

OUTPUT SUMMARY

FREQUENCY	RESULTS	DURATION 1-HR	2-HR	4-HR	8-HR	24-HR
2-YR	Q-pre	7.10	10.53	13.99	17.82	24.05
	Q-post	4.94	7.33	10.70	11.72	6.54
	E-max	82.54	82.59	82.66	82.69	82.57
5-YR	Q-pre	12.10	16.93	21.73	26.59	34.31
	Q-post	10.79	13.05	17.06	17.87	8.99
	E-max	82.67	82.71	82.79	82.80	82.63
10-YR	Q-pre	16.20	22.47	27.63	33.55	41.61
	Q-post	15.13	18.65	21.39	23.02	10.67
	E-max	82.76	82.82	82.86	82.89	82.66
25-YR	Q-pre	22.64	30.01	36.64	43.00	52.75
	Q-post	22.69	25.30	27.64	28.52	13.27
	E-max	82.88	82.93	82.96	82.97	82.72
50-YR	Q-pre	27.95	36.73	43.25	50.20	59.88
	Q-post	28.85	33.04	31.92	32.93	14.66
	E-max	82.98	83.04	83.02	83.04	82.75
100-YR	Q-pre	34.05	44.42	51.75	59.12	69.34
	Q-post	35.40	41.00	38.19	38.19	16.81
	E-max	83.07	83.15	83.11	83.11	82.78

CRITICAL DURATION : **** 2-HOUR,100-YEAR STORM ****

Q-pre (cfs) = 44.42
Q-post (cfs) = 41.00
E-max (ft) = 83.15

APPENDIX C
FLOODPLAIN COMPENSATION CALCULATIONS
BASINS 1 THROUGH 6

BASIN 1 - FLOODPLAIN

Floodplain impacts

Basin 1

U.S. 301

	Station to	Station	Side	Length ft.	Width ft.	Area Ac.	Fema El.
	38500	39400	Lt.	900	30	0.62	75.5 to 76.0
	39400	40300	Lt.	900	30	0.62	76.0 to 77.0
	41050	41300	Lt.	250	30	0.17	80.5 to 81.0
	41400	41550	Lt.	150	30	0.10	80.5 to 81.0
	42000	42400	Lt.	400	30	0.28	82.0 to 82.0
6th St.							
	61050	61250		200	60	0.28	80.5 to 81.0
	61350	61600		250	60	0.34	80.5 to 81.0
Total Area						2.41	

BASIN 2 - FLOODPLAIN

Floodplain impacts

Basin 2

U.S. 301

	Station to	Station	Side	Length ft.	Width ft.	Area Ac.	Fema El.
	42400	42950	Lt.	550	30	0.38	82.0 to 82.5
6th St.							
	61800	63000		1200	60	1.65	82.0 to 82.5
	63400	63500		100	60	0.14	83.0
Total Area						2.17	

BASIN 3 - FLOODPLAIN

Floodplain impacts

Basin 3

U.S. 301

	Station to	Station	Side	Length ft.	Width ft.	Area Ac.	Fema El.
	43700	44350	Lt.	650	30	0.45	
	44650	44700	Lt.	50	30	0.03	
6th St.							
	63500	63600		100	60	0.14	
	64150	64450		300	60	0.41	
	64600	65050		450	60	0.62	
Total Area						1.65	

BASIN 4 - FLOODPLAIN (no impacts)

BASIN 5 - FLOODPLAIN

Floodplain impacts

Basin 5

U.S. 301

	Station to	Station	Side	Length ft.	Width ft.	Area Ac.	Fema El.
	48000	48200	Lt.	200	30	0.14	
6th St.							
	67900	68100		200	60	0.28	
Total Area						0.41	

BASIN 6 - FLOODPLAIN

Floodplain impacts

Basin 6

U.S. 301

	Station to	Station	Side	Length ft.	Width ft.	Area Ac.	Fema El.
	49200	49350	Lt.	150	30	0.10	
	49700	49900	Lt.	200	30	0.14	
6th St.							
	69200	69350		150	60	0.21	
	69650	70000		350	60	0.48	
Total Area						0.93	

APPENDIX D
POND COST ESTIMATES

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-1	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	1	1
Residential	0	0
Unimproved	3	3
Total Parcels	4	4

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

R/W SUPPORT COSTS (PHASE 41)

							Amount
1. Direct Labor Cost	(Parcels	4	x	13,000	= Rate)		52,000
2. Indirect Overhead	(Parcels	4	x	0	= Rate)		0
3.						TOTAL PHASE 41	$52,000

R/W OPS (PHASE 48)

								Amount
4. Appraisal Fees Through Trial					4	Parcels	x 12,000 =	48,000
5. Business Damage CPA Fees Through Trial					0	Claims	x 19,000 =	0
6. Court Reporter & Process Servers	75%	x	4	=	3	Parcels	x 500 =	1,500
7. Expert Witness	75%	x	4	=	3	Parcels	x 30,000 =	90,000
8. Mediators	50%	x	4	=	2	Parcels	x 2,400 =	4,800
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 48	$159,300

R/W LAND COSTS (PHASE 43)

						Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* *Design plan stage*	=	0	
14. Water Retention & Mit.	152,088	x	130%	(0 Parcels w/o R/W Acq)		197,700	
15. SUBTOTAL				(Lines 13 &14)			197,700
16. Admin. Settlements (Factor	45%	x	30%	of Line 15)	=	26,700	
17. Litigation Awards (Factor	60%	x	70%	of Line 15)	=	83,000	
18. Business Damages (Claims	0	x	$0	)	=	0	
19. Bus. Damages Incrs. (Factor	25%	x	$0	)	=	0	
20. Owner Appr. Fees (Parcels	3	x	$10,000	)	=	30,000	
21. Owner CPA Fees (Claims	0	x	$10,000	)	=	0	
22. Defend.Atty Fees (Sum of Lines 16,17&1	109,700	x	40%	)	=	43,900	
23. Owner Expert Witnes (Comm.+Unimproved)	1	+	3	)) 18,000	=	72,000	
24. Other Condemn. Costs	4	x	$500		=	2,000	
25. SUBTOTAL				(Lines 16 thru 24)	=		257,600
26.						TOTAL PHASE 43	$455,300

* *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)

27.	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)					TOTAL PHASE 45	$0
34. Relocation Services Cost			$0	(Not in Phase Total)		
35.				(All Phases)	TOTAL ESTIMATE	$666,600

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam. :	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-1 is one of the pond alternatives for Basin 1. The total take area calculations for those parcels located within Pond 2-1 differ from the R/W maps.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-2	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	1	0
Residential	0	0
Unimproved	3	0
Total Parcels	4	0

Estimated Relocatees:	
Business	0
Residential	0
Signs	0
Special	1
Total Relocatees	1

R/W SUPPORT COSTS (PHASE 41)

						Amount
1. Direct Labor Cost	(Parcels	0	x	13,000	= Rate)	0
2. Indirect Overhead	(Parcels	0	x	0	= Rate)	0
3.					TOTAL PHASE 41	$0

R/W OPS (PHASE 4B)

								Amount
4. Appraisal Fees Through Trial					0	Parcels	x 12,000 =	0
5. Business Damage CPA Fees Through Trial					3	Claims	x 19,000 =	57,000
6. Court Reporter & Process Servers	75%	x	0	=	0	Parcels	x 500 =	0
7. Expert Witness	75%	x	0	=	0	Parcels	x 30,000 =	0
8. Mediators	50%	x	0	=	0	Parcels	x 2,400 =	0
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	$72,000

R/W LAND COSTS (PHASE 43)

						Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* Design plan stage	=	0	
14. Water Retention & Mit.	237,001	x	130%	(0 Parcels w/o R/W Acq)		308,100	
15. SUBTOTAL				(Lines 13 &14)			308,100
16. Admin. Settlements (Factor	45%	x	30%	of Line 15)	=	41,600	
17. Litigation Awards (Factor	60%	x	70%	of Line 15)	=	129,400	
18. Business Damages (Claims	3	x	$0	)	=	56,900	
19. Bus. Damages Incrs. (Factor	25%	x	$56,900	)	=	14,200	
20. Owner Appr. Fees (Parcels	0	x	$10,000	)	=	0	
21. Owner CPA Fees (Claims	3	x	$10,000	)	=	30,000	
22. Defend.Atty Fees (Sum of Lines 16,17&1	185,200	x	40%	)	=	74,100	
23. Owner Expert Witnes: (Comm.+Unimproved)	0	+	0	) x 18,000	=	0	
24. Other Condemn. Costs	0	x	$500		=	0	
25. SUBTOTAL				(Lines 16 thru 24)	=		346,200
26.						TOTAL PHASE 43	$654,300

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

R/W ACQUISITION CONSULTANT (PHASE 42)

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	1	=	$2,000			
33. (Lines 28 thru 32)							TOTAL PHASE 45	$2,000
34. Relocation Services Cost					$200	(Not in Phase Total)		
35.						(All Phases)	TOTAL ESTIMATE	$726,300

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam. :	Gerson, Preston & Co.	Signed:	Per attachment.	Date: 25-Jul-00
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

The parcels included in Pond 2-2 were also included in the mainline take in the previous SR 39 from I-4 to US 301- Segment 1 estimate (FM#2550991 & 2562891 dated 10/26/99). For this reason, parcel counts were not included in the estimate.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 7001030.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-3	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	0	0
Residential	0	0
Unimproved	1	1
Total Parcels	1	1

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

R/W SUPPORT COSTS (PHASE 41)

							Amount	
1. Direct Labor Cost	(Parcels	1	x	13,000	=	Rate)	13,000	
2. Indirect Overhead	(Parcels	1	x	0	=	Rate)	0	
3.							TOTAL PHASE 41	$13,000

R/W OPS (PHASE 48)

									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 Project	x	15,000	= 15,000	
11. Appraisal Fee Review					N/A	Parcels	x	5,000	= 0	
12.								TOTAL PHASE 48		$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 stage*	=		0	
14. Water Retention & Mit.	262,710	x	130%	(0 Parcels w/o R/W Acq)	=		341,500	
15. SUBTOTAL				(Lines 13 &14)				341,500
16. Admin. Settlements (Factor	45%	x	0%	of Line 15)	=		0	
17. Litigation Awards (Factor	60%	x	100%	of Line 15)	=		204,900	
18. Business Damages (Claims	0	x	$0	)	=		0	
19. Bus. Damages Incrs. (Factor	25%	x	$0	)	=		0	
20. Owner Appr. Fees (Parcels	1	x	$10,000	)	=		10,000	
21. Owner CPA Fees (Claims	0	x	$10,000	)	=		0	
22. Defend.Atty Fees (Sum of Lines 16,17&	204,900	x	40%	)	=		82,000	
23. Owner Expert Witnes (Comm.+Unimproved)	0	+	1	)) 18,000	=		18,000	
24. Other Condemn. Costs	1	x	$500		=		500	
25. SUBTOTAL				(Lines 16 thru 24)	=			315,400
26.							TOTAL PHASE 43	$656,900

* *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

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	$729,800

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam.:	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-3 is one of the pond alternatives for Basin 1.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X
Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-4	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	0	0
Residential	1	1
Unimproved	0	0
Total Parcels	1	1

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

R/W SUPPORT COSTS (PHASE 41)

							Amount
1. Direct Labor Cost	(Parcels	1	x	13,000	=	Rate)	13,000
2. Indirect Overhead	(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 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 stage*	=	0		
14. Water Retention & Mit.	165,585	x	130%	(0 Parcels w/o R/W Acq)		215,300		
15. SUBTOTAL				(Lines 13 &14)			215,300	
16. Admin. Settlements (Factor	45%	x	0%	of Line 15)	=	0		
17. Litigation Awards (Factor	60%	x	100%	of Line 15)	=	129,200		
18. Business Damages (Claims	0	x	$0	)	=	0		
19. Bus. Damages Incrs. (Factor	25%	x	$0	)	=	0		
20. Owner Appr. Fees (Parcels	1	x	$10,000	)	=	10,000		
21. Owner CPA Fees (Claims	0	x	$10,000	)	=	0		
22. Defend.Atty Fees (Sum of Lines 16,17&	129,200	x	40%	)	=	51,700		
23. Owner Expert Witnes: (Comm.+Unimproved)	0	+	0	) 18,000	=	0		
24. Other Condemn. Costs	1	x	$500		=	500		
25. SUBTOTAL				(Lines 16 thru 24)	=		191,400	
26.						TOTAL PHASE 43		$406,700

* *Design contingency for design plan stage:*
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans -115% (5) 2ND 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	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 $479,600

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam. :	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-4 is one of the pond alternatives for Basin 1. The pond is to be used with Pond 2-1.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-6	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	0	0
Residential	4	4
Unimproved	0	0
Total Parcels	4	4

Estimated Relocatees:	
Business	0
Residential	3
Signs	0
Special	1
Total Relocatees	4

R/W SUPPORT COSTS (PHASE 41)							Amount	
1. Direct Labor Cost	(Parcels	4	x	13,000	=	Rate)	52,000	
2. Indirect Overhead	(Parcels	4	x	0	=	Rate)	0	
3.							TOTAL PHASE 41	$52,000

R/W OPS (PHASE 4B)								Amount	
4. Appraisal Fees Through Trial					4	Parcels	x	12,000 =	48,000
5. Business Damage CPA Fees Through Trial					0	Claims	x	19,000 =	0
6. Court Reporter & Process Servers	75%	x	4	=	3	Parcels	x	500 =	1,500
7. Expert Witness	75%	x	4	=	3	Parcels	x	30,000 =	90,000
8. Mediators	50%	x	4	=	2	Parcels	x	2,400 =	4,800
9. Demolition, Asb. Abate., Survey, etc.					3	Imprvmet	x	15,000 =	45,000
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	$204,300

R/W LAND COSTS (PHASE 43)						Amount	Subtotal	
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* *Design plan stage*	=	0		
14. Water Retention & Mit.	169,250	x	130%	(0 Parcels w/o R/W Acq)		220,000		
15. SUBTOTAL				(Lines 13 &14)			220,000	
16. Admin. Settlements (Factor	45%	x	30%	of Line 15)	=	29,700		
17. Litigation Awards (Factor	60%	x	70%	of Line 15)	=	92,400		
18. Business Damages (Claims	0	x	$0)		=	0		
19. Bus. Damages Incrs. (Factor	25%	x	$0)		=	0		
20. Owner Appr. Fees (Parcels	3	x	$10,000)		=	30,000		
21. Owner CPA Fees (Claims	0	x	$10,000)		=	0		
22. Defend.Atty Fees (Sum of Lines 16,17&	122,100	x	40%)		=	48,800		
23. Owner Expert Witnes (Comm.+Unimproved)	0	+	0)	18,000	=	0		
24. Other Condemn. Costs	4	x	$500		=	2,000		
25. SUBTOTAL				(Lines 16 thru 24)	=		202,900	
26.						TOTAL PHASE 43		$422,900

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

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

RELOCATION COSTS (PHASE 45)				Number		Amount
Replacement Housing						
28. Owner	$20,000	x	3	=	60,000	
29. Tenant	$10,000	x	0	=	0	
Move Costs						
30. Residential	$1,500	x	3	=	4,500	
31. Business/Farm	$20,000	x	0	=	0	
32. Personal Property	$2,000	x	1	=	$2,000	
33. (Lines 28 thru 32)					TOTAL PHASE 45	$66,500
34. Relocation Services Cost			$6,650	(Not in Phase Total)		
35.				(All Phases)	TOTAL ESTIMATE	$745,700

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam. :	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-6 is one of the pond alternatives for Basin 2.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-7	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	0	0
Residential	1	1
Unimproved	0	0
Total Parcels	1	1

Estimated Relocatees:	
Business	0
Residential	50
Signs	0
Special	0
Total Relocatees	50

R/W SUPPORT COSTS (PHASE 41)

							Amount
1. Direct Labor Cost	(Parcels	1	x	13,000	= Rate)		13,000
2. Indirect Overhead	(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.					3	Imprvmat	x 15,000 =	45,000
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	$104,900

R/W LAND COSTS (PHASE 43)

						Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* *Design plan stage*	=	0	
14. Water Retention & Mit.	605,680	x	130%	(0 Parcels w/o R/W Acq)		787,400	
15. SUBTOTAL				(Lines 13 &14)			787,400
16. Admin. Settlements (Factor	45%	x	0%	of Line 15)	=	0	
17. Litigation Awards (Factor	60%	x	100%	of Line 15)	=	472,400	
18. Business Damages (Claims	0	x	$0	)	=	0	
19. Bus. Damages Incrs. (Factor	25%	x	$0	)	=	0	
20. Owner Appr. Fees (Parcels	1	x	$10,000	)	=	10,000	
21. Owner CPA Fees (Claims	0	x	$10,000	)	=	0	
22. Defend.Atty Fees (Sum of Lines 16,17&	472,400	x	40%	)	=	189,000	
23. Owner Expert Witnes (Comm.+Unimproved)	0	+	0	) x 18,000	=	0	
24. Other Condemn. Costs	1	x	$500		=	500	
25. SUBTOTAL				(Lines 16 thru 24)	=		671,900
26.						TOTAL PHASE 43	$1,459,300

* *Design contingency for design plan stage:*
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans -115% (5) 2ND 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	0	=	0	
29. Tenant	$10,000	x	50	=	500,000	
	Move Costs					
30. Residential	$1,500	x	50	=	75,000	
31. Business/Farm	$20,000	x	0	=	0	
32. Personal Property	$2,000	x	0	=	$0	
33. (Lines 28 thru 32)					TOTAL PHASE 45	$575,000
34. Relocation Services Cost			$57,500	(Not in Phase Total)		
35.				(All Phases)	TOTAL ESTIMATE	$2,152,200

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam.:	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-7 is one of the pond alternatives for Basin 2.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X
Comments: _____

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-8A	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	0	0
Residential	11	11
Unimproved	0	0
Total Parcels	11	11

Estimated Relocatees:	
Business	0
Residential	11
Signs	0
Special	0
Total Relocatees	11

R/W SUPPORT COSTS (PHASE 41)

							Amount
1. Direct Labor Cost	(Parcels	11	x	13,000	= Rate)		143,000
2. Indirect Overhead	(Parcels	11	x	0	= Rate)		0
3.						TOTAL PHASE 41	$143,000

R/W OPS (PHASE 48)

								Amount
4. Appraisal Fees Through Trial					11	Parcels	x 12,000 =	132,000
5. Business Damage CPA Fees Through Trial					0	Claims	x 19,000 =	0
6. Court Reporter & Process Servers	75%	x	11	=	8	Parcels	x 500 =	4,000
7. Expert Witness	75%	x	11	=	8	Parcels	x 30,000 =	240,000
8. Mediators	50%	x	11	=	6	Parcels	x 2,400 =	14,400
9. Demolition, Asb. Abate., Survey, etc.					11	Imprvmet	x 15,000 =	165,000
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 48	$570,400

R/W LAND COSTS (PHASE 43)

						Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* *Design plan stage*	=	0	
14. Water Retention & Mit.	589,270	x	130%	(0 Parcels w/o R/W Acq)		766,100	
15. SUBTOTAL				(Lines 13 &14)			766,100
16. Admin. Settlements (Factor	45%	x	30%	of Line 15)	=	103,400	
17. Litigation Awards (Factor	60%	x	70%	of Line 15)	=	321,800	
18. Business Damages (Claims	0	x	$0	)	=	0	
19. Bus. Damages Incrs. (Factor	25%	x	$0	)	=	0	
20. Owner Appr. Fees (Parcels	8	x	$10,000	)	=	80,000	
21. Owner CPA Fees (Claims	0	x	$10,000	)	=	0	
22. Defend.Atty Fees (Sum of Lines 16,17&	425,200	x	40%	)	=	170,100	
23. Owner Expert Witnes (Comm.+Unimproved)	0	+	0	)) 18,000	=	0	
24. Other Condemn. Costs	11	x	$500		=	5,500	
25. SUBTOTAL				(Lines 16 thru 24)	=		680,800
26.						TOTAL PHASE 43	$1,446,900

* *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

RELOCATION COSTS (PHASE 45)

						Number		Amount
Replacement Housing								
28. Owner	$20,000	x			7	=		140,000
29. Tenant	$10,000	x			4	=		40,000
Move Costs								
30. Residential	$1,500	x			11	=		16,500
31. Business/Farm	$20,000	x			0	=		0
32. Personal Property	$2,000	x			0	=		$0
33. (Lines 28 thru 32)							TOTAL PHASE 45	$196,500
34. Relocation Services Cost						$19,650	(Not in Phase Total)	
35.							(All Phases) TOTAL ESTIMATE	$2,356,800

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam. :	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-8A is one of the pond alternatives for Basin 2.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-11	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	1	1
Residential	3	3
Unimproved	0	0
Total Parcels	4	4

Estimated Relocatees:	
Business	0
Residential	3
Signs	0
Special	2
Total Relocatees	5

R/W SUPPORT COSTS (PHASE 41)

							Amount	
1. Direct Labor Cost	(Parcels	4	x	13,000	=	Rate)	52,000	
2. Indirect Overhead	(Parcels	4	x	0	=	Rate)	0	
3.							TOTAL PHASE 41	$52,000

R/W OPS (PHASE 4B)

									Amount	
4. Appraisal Fees Through Trial					4	Parcels	x	12,000	= 48,000	
5. Business Damage CPA Fees Through Trial					0	Claims	x	19,000	= 0	
6. Court Reporter & Process Servers	75%	x	4	=	3	Parcels	x	500	= 1,500	
7. Expert Witness	75%	x	4	=	3	Parcels	x	30,000	= 90,000	
8. Mediators	50%	x	4	=	2	Parcels	x	2,400	= 4,800	
9. Demolition, Asb. Abate., Survey, etc.					6	Imprvmet	x	15,000	= 90,000	
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		$249,300

R/W LAND COSTS (PHASE 43)

							Amount	Subtotal	
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* *Design plan stage*	=		0		
14. Water Retention & Mit.	326,476	x	130%	(0 Parcels w/o R/W Acq)			424,400		
15. SUBTOTAL				(Lines 13 &14)				424,400	
16. Admin. Settlements (Factor	45%	x	30%	of Line 15)	=		57,300		
17. Litigation Awards (Factor	60%	x	70%	of Line 15)	=		178,200		
18. Business Damages (Claims	0	x	$0	)	=		0		
19. Bus. Damages Incrs. (Factor	25%	x	$0	)	=		0		
20. Owner Appr. Fees (Parcels	3	x	$10,000	)	=		30,000		
21. Owner CPA Fees (Claims	0	x	$10,000	)	=		0		
22. Defend.Atty Fees (Sum of Lines 16,17&	235,500	x	40%	)	=		94,200		
23. Owner Expert Witnes (Comm.+Unimproved)	1	+	0	) > 18,000	=		18,000		
24. Other Condemn. Costs	4	x	$500		=		2,000		
25. SUBTOTAL				(Lines 16 thru 24)	=			379,700	
26.							TOTAL PHASE 43		$804,100

* *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)

27.	TOTAL PHASE 42	$0

RELOCATION COSTS (PHASE 45)

	Replacement Housing			Number		Amount	
28. Owner	$20,000	x	2	=	40,000		
29. Tenant	$10,000	x	1	=	10,000		
	Move Costs						
30. Residential	$1,500	x	3	=	4,500		
31. Business/Farm	$20,000	x	0	=	0		
32. Personal Property	$2,000	x	2	=	$4,000		
33. (Lines 28 thru 32)						TOTAL PHASE 45	$58,500
34. Relocation Services Cost			$5,850	(Not in Phase Total)			
35.				(All Phases)		TOTAL ESTIMATE	$1,163,900

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam. :	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-11 is one of the pond alternatives for Basin 3.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-12	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	1	1
Residential	0	0
Unimproved	0	0
Total Parcels	1	1

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

R/W SUPPORT COSTS (PHASE 41)

							Amount
1. Direct Labor Cost	(Parcels	1	x	13,000	= Rate)		13,000
2. Indirect Overhead	(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 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 stage*		=	0	
14. Water Retention & Mit.	130,680	x	130%	(0 Parcels w/o R/W Acq)			169,900	
15. SUBTOTAL				(Lines 13 &14)				169,900
16. Admin. Settlements (Factor	45%	x	0%	of Line 15)		=	0	
17. Litigation Awards (Factor	60%	x	100%	of Line 15)		=	101,900	
18. Business Damages (Claims	0	x	$0	)		=	0	
19. Bus. Damages Incrs. (Factor	25%	x	$0	)		=	0	
20. Owner Appr. Fees (Parcels	1	x	$10,000	)		=	10,000	
21. Owner CPA Fees (Claims	0	x	$10,000	)		=	0	
22. Defend.Atty Fees (Sum of Lines 16,17&	101,900	x	40%	)		=	40,800	
23. Owner Expert Witnes: (Comm.+Unimproved)	1	+	0	)	18,000	=	18,000	
24. Other Condemn. Costs	1	x	$500			=	500	
25. SUBTOTAL				(Lines 16 thru 24)		=		171,200
26.							TOTAL PHASE 43	$341,100

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

R/W ACQUISITION CONSULTANT (PHASE 42)

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	$414,000

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam.:	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-12 is one of the pond alternatives for Basin 3. The pond is to be used with Pond 2-13.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X
Comments: _____

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WP#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-14	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	1	1
Residential	2	2
Unimproved	2	2
Total Parcels	5	5

Estimated Relocatees:	
Business	1
Residential	5
Signs	0
Special	4
Total Relocatees	10

R/W SUPPORT COSTS (PHASE 41)

							Amount
1. Direct Labor Cost	(Parcels	5	x	13,000	= Rate)		65,000
2. Indirect Overhead	(Parcels	5	x	0	= Rate)		0
3.						TOTAL PHASE 41	$65,000

R/W OPS (PHASE 4B)

								Amount
4. Appraisal Fees Through Trial					5	Parcels	x 12,000 =	60,000
5. Business Damage CPA Fees Through Trial					0	Claims	x 19,000 =	0
6. Court Reporter & Process Servers	75%	x	5	=	4	Parcels	x 500 =	2,000
7. Expert Witness	75%	x	5	=	4	Parcels	x 30,000 =	120,000
8. Mediators	50%	x	5	=	3	Parcels	x 2,400 =	7,200
9. Demolition, Asb. Abate., Survey, etc.					4	Imprvmat	x 15,000 =	60,000
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	$264,200

R/W LAND COSTS (PHASE 43)

						Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* *Design plan stage*	=	0	
14. Water Retention & Mit.	252,081	x	130%	(8 Parcels w/o R/W Acq)		327,700	
15. SUBTOTAL				(Lines 13 &14)			327,700
16. Admin. Settlements (Factor	45%	x	30%	of Line 15)	=	44,200	
17. Litigation Awards (Factor	60%	x	70%	of Line 15)	=	137,600	
18. Business Damages (Claims	0	x	$0	)	=	0	
19. Bus. Damages Incrs. (Factor	25%	x	$0	)	=	0	
20. Owner Appr. Fees (Parcels	4	x	$10,000	)	=	40,000	
21. Owner CPA Fees (Claims	0	x	$10,000	)	=	0	
22. Defend.Atty Fees (Sum of Lines 16,17&	181,800	x	40%	)	=	72,700	
23. Owner Expert Witnes (Comm.+Unimproved)	1	+	2	) x 18,000	=	54,000	
24. Other Condemn. Costs	5	x	$500		=	2,500	
25. SUBTOTAL				(Lines 16 thru 24)	=		351,000
26.						TOTAL PHASE 43	$678,700

* *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)

			Number		Amount
Replacement Housing					
28. Owner	$20,000	x	1	=	20,000
29. Tenant	$10,000	x	4	=	40,000
Move Costs					
30. Residential	$1,500	x	5	=	7,500
31. Business/Farm	$20,000	x	1	=	20,000
32. Personal Property	$2,000	x	4	=	$8,000
33. (Lines 28 thru 32)					TOTAL PHASE 45 $95,500
34. Relocation Services Cost			$9,550	(Not in Phase Total)	
35.				(All Phases)	TOTAL ESTIMATE $1,103,400

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam. :	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-14 is one of the pond alternatives for Basin 3.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPW:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-15A	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	0	0
Residential	2	2
Unimproved	4	4
Total Parcels	6	6

Estimated Relocatees:	
Business	0
Residential	2
Signs	0
Special	0
Total Relocatees	2

R/W SUPPORT COSTS (PHASE 41)

							Amount
1. Direct Labor Cost	(Parcels	6	x	13,000	=	Rate)	78,000
2. Indirect Overhead	(Parcels	6	x	0	=	Rate)	0
3.						TOTAL PHASE 41	$78,000

R/W OPS (PHASE 4B)

									Amount
4. Appraisal Fees Through Trial					6	Parcels	x	12,000 =	72,000
5. Business Damage CPA Fees Through Trial					0	Claims	x	19,000 =	0
6. Court Reporter & Process Servers	75%	x	6	=	5	Parcels	x	500 =	2,500
7. Expert Witness	75%	x	6	=	5	Parcels	x	30,000 =	150,000
8. Mediators	50%	x	6	=	3	Parcels	x	2,400 =	7,200
9. Demolition, Asb. Abate., Survey, etc.					2	Imprvmet	x	15,000 =	30,000
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	$276,700

R/W LAND COSTS (PHASE 43)

							Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* *Design plan stage*	=		0	
14. Water Retention & Mit.	177,485	x	130%	(0 Parcels w/o R/W Acq)			230,700	
15. SUBTOTAL				(Lines 13 &14)				230,700
16. Admin. Settlements (Factor	45%	x	30%	of Line 15)	=		31,100	
17. Litigation Awards (Factor	60%	x	70%	of Line 15)	=		96,900	
18. Business Damages (Claims	0	x	$0	)	=		0	
19. Bus. Damages Incrs. (Factor	25%	x	$0	)	=		0	
20. Owner Appr. Fees (Parcels	5	x	$10,000	)	=		50,000	
21. Owner CPA Fees (Claims	0	x	$10,000	)	=		0	
22. Defend.Atty Fees (Sum of Lines 16,17&	128,000	x	40%	)	=		51,200	
23. Owner Expert Witnes (Comm.+Unimproved)	0	+	4	)) 18,000	=		72,000	
24. Other Condemn. Costs	6	x	$500		=		3,000	
25. SUBTOTAL				(Lines 16 thru 24)	=			304,200
26.						TOTAL PHASE 43		$534,900

* *Design contingency for design plan stage:*
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans -115% (5) 258 Date -110%

R/W ACQUISITION CONSULTANT (PHASE 42)

27.	TOTAL PHASE 42	$0

RELOCATION COSTS (PHASE 45)

						Number		Amount
	Replacement Housing							
28. Owner	$20,000	x			=	2	=	40,000
29. Tenant	$10,000	x			=	0	=	0
	Move Costs							
30. Residential	$1,500	x			=	2	=	3,000
31. Business/Farm	$20,000	x			=	0	=	0
32. Personal Property	$2,000	x			=	0	=	$0
33. (Lines 28 thru 32)								TOTAL PHASE 45 $43,000
34. Relocation Services Cost						$4,300	(Not in Phase Total)	
35.							(All Phases)	TOTAL ESTIMATE $932,600

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam.:	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-15A is one of the pond alternatives for Basin 3.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-15B	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	1	1
Residential	0	0
Unimproved	0	0
Total Parcels	1	1

Estimated Relocatees:	
Business	0
Residential	1
Signs	0
Special	1
Total Relocatees	2

R/W SUPPORT COSTS (PHASE 41)

							Amount	
1. Direct Labor Cost	(Parcels	1	x	13,000	=	Rate)	13,000	
2. Indirect Overhead	(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					1	Claims	x	19,000	= 19,000	
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. Abato., 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		$78,900

R/W LAND COSTS (PHASE 43)

						Amount	Subtotal	
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* *Design plan stage*	=	0		
14. Water Retention & Mit.	115,500	x	130%	(0 Parcels w/o R/W Acq)		150,200		
15. SUBTOTAL				(Lines 13 &14)			150,200	
16. Admin. Settlements (Factor	45%	x	0%	of Line 15)	=	0		
17. Litigation Awards (Factor	60%	x	100%	of Line 15)	=	90,100		
18. Business Damages (Claims	1	x	$0	)	=	39,500		
19. Bus. Damages Incrs. (Factor	25%	x	$39,500	)	=	9,900		
20. Owner Appr. Fees (Parcels	1	x	$10,000	)	=	10,000		
21. Owner CPA Fees (Claims	1	x	$10,000	)	=	10,000		
22. Defend.Atty Fees (Sum of Lines 16,17&	100,000	x	40%	)	=	40,000		
23. Owner Expert Witnes: (Comm.+Unimproved)	1	+	0	) 18,000	=	18,000		
24. Other Condemn. Costs	1	x	$500		=	500		
25. SUBTOTAL				(Lines 16 thru 24)	=		218,000	
26.						TOTAL PHASE 43		$368,200

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

R/W ACQUISITION CONSULTANT (PHASE 42)

27.	TOTAL PHASE 42	$0

RELOCATION COSTS (PHASE 45)

					Number		Amount		
Replacement Housing									
28. Owner	$20,000	x		1	=	20,000			
29. Tenant	$10,000	x		0	=	0			
Move Costs									
30. Residential	$1,500	x		1	=	1,500			
31. Business/Farm	$20,000	x		0	=	0			
32. Personal Property	$2,000	x		1	=	$2,000			
33. (Lines 28 thru 32)							TOTAL PHASE 45		$23,500
34. Relocation Services Cost					$2,350	(Not in Phase Total)			
35.						(All Phases)	TOTAL ESTIMATE		$483,600

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam.:	Gerson Preston & Co.	Signed:	Per Attachment.	Date: 06/25/2000
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-15B is one of the pond alternatives for Basin 4.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-16	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	1	1
Residential	0	0
Unimproved	0	0
Total Parcels	1	1

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

R/W SUPPORT COSTS (PHASE 41)

							Amount
1. Direct Labor Cost	(Parcels	1	x	13,000	=	Rate)	13,000
2. Indirect Overhead	(Parcels	1	x	0	=	Rate)	0
3.							
						TOTAL PHASE 41	$13,000

R/W OPS (PHASE 48)

									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.					1	Imprvmet	x	15,000 =	15,000
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 48	$74,900

R/W LAND COSTS (PHASE 43)

							Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* *Design plan stage*		=	0	
14. Water Retention & Mit.	489,224	x	130%	(0 Parcels w/o R/W Acq)			636,000	
15. SUBTOTAL				(Lines 13 &14)				636,000
16. Admin. Settlements (Factor	45%	x	0%	of Line 15)		=	0	
17. Litigation Awards (Factor	60%	x	100%	of Line 15)		=	381,600	
18. Business Damages (Claims	0	x	$0	)		=	0	
19. Bus. Damages Incrs. (Factor	25%	x	$0	)		=	0	
20. Owner Appr. Fees (Parcels	1	x	$10,000	)		=	10,000	
21. Owner CPA Fees (Claims	0	x	$10,000	)		=	0	
22. Defend.Atty Fees (Sum of Lines 16,17&	381,600	x	40%	)		=	152,600	
23. Owner Expert Witnes (Comm.+Unimproved)	1	+	0	)	18,000	=	18,000	
24. Other Condemn. Costs	1	x	$500			=	500	
25. SUBTOTAL				(Lines 16 thru 24)		=		562,700
26.							TOTAL PHASE 43	$1,198,700

* *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)

						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	$1,286,600

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/31/01
Bus. Dam.:	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/31/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/31/01

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

REMARKS:

Pond 2-16 is one of the pond alternatives for Basin 4.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-17	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	0	0
Residential	5	5
Unimproved	0	0
Total Parcels	5	5

Estimated Relocatees:	
Business	0
Residential	5
Signs	0
Special	2
Total Relocatees	7

R/W SUPPORT COSTS (PHASE 41)							Amount	
1. Direct Labor Cost	(Parcels	5	x	13,000	=	Rate)	65,000	
2. Indirect Overhead	(Parcels	5	x	0	=	Rate)	0	
3.							TOTAL PHASE 41	$65,000

R/W OPS (PHASE 4B)									Amount	
4. Appraisal Fees Through Trial					5	Parcels	x	12,000	=	60,000
5. Business Damage CPA Fees Through Trial					0	Claims	x	19,000	=	0
6. Court Reporter & Process Servers	75%	x	5	=	4	Parcels	x	500	=	2,000
7. Expert Witness	75%	x	5	=	4	Parcels	x	30,000	=	120,000
8. Mediators	50%	x	5	=	3	Parcels	x	2,400	=	7,200
9. Demolition, Asb. Abate., Survey, etc.					5	Imprvmet	x	15,000	=	75,000
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		$279,200

R/W LAND COSTS (PHASE 43)							Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* Design plan stage		=	0	
14. Water Retention & Mit.	262,275	x	130%	(8 Parcels w/o R/W Acq)			341,000	
15. SUBTOTAL				(Lines 13 &14)				341,000
16. Admin. Settlements (Factor	45%	x	30%	of Line 15)		=	46,000	
17. Litigation Awards (Factor	60%	x	70%	of Line 15)		=	143,200	
18. Business Damages (Claims	0	x	$0	)		=	0	
19. Bus. Damages Incrs. (Factor	25%	x	$0	)		=	0	
20. Owner Appr. Fees (Parcels	4	x	$10,000	)		=	40,000	
21. Owner CPA Fees (Claims	0	x	$10,000	)		=	0	
22. Defend.Atty Fees (Sum of Lines 16,17&	189,200	x	40%	)		=	75,700	
23. Owner Expert Witnes (Comm.+Unimproved)	0	+	0	)	18,000	=	0	
24. Other Condemn. Costs	5	x	$500			=	2,500	
25. SUBTOTAL				(Lines 16 thru 24)		=		307,400
26.							TOTAL PHASE 43	$648,400

* *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

RELOCATION COSTS (PHASE 45)							
Replacement Housing			Number		Amount		
28. Owner	$20,000	x	5	=	100,000		
29. Tenant	$10,000	x	0	=	0		
Move Costs							
30. Residential	$1,500	x	5	=	7,500		
31. Business/Farm	$20,000	x	0	=	0		
32. Personal Property	$2,000	x	2	=	$4,000		
33. (Lines 28 thru 32)						TOTAL PHASE 45	$111,500
34. Relocation Services Cost			$11,150	(Not in Phase Total)			
35.				(All Phases)		TOTAL ESTIMATE	$1,104,100

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/31/01
Bus. Dam.:	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/31/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/31/01

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

REMARKS:

Pond 2-17 is one of the pond alternatives for Basin 4.

The following indicates the estimator's confidence in the above estimate:	
	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X
Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-18	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	1	1
Residential	3	3
Unimproved	1	1
Total Parcels	5	5

Estimated Relocatees:	
Business	0
Residential	3
Signs	0
Special	0
Total Relocatees	3

R/W SUPPORT COSTS (PHASE 41)

							Amount	
1. Direct Labor Cost	(Parcels	5	x	13,000	=	Rate)	65,000	
2. Indirect Overhead	(Parcels	5	x	0	=	Rate)	0	
3.							TOTAL PHASE 41	$65,000

R/W OPS (PHASE 48)

								Amount	
4. Appraisal Fees Through Trial					5	Parcels	x 12,000 =	60,000	
5. Business Damage CPA Fees Through Trial					0	Claims	x 19,000 =	0	
6. Court Reporter & Process Servers	75%	x	5	=	4	Parcels	x 500 =	2,000	
7. Expert Witness	75%	x	5	=	4	Parcels	x 30,000 =	120,000	
8. Mediators	50%	x	5	=	3	Parcels	x 2,400 =	7,200	
9. Demolition, Asb. Abate., Survey, etc.					4	Imprvmet	x 15,000 =	60,000	
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 48		$264,200

R/W LAND COSTS (PHASE 43)

						Amount	Subtotal	
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* *Design plan stage*	=	0		
14. Water Retention & Mit.	255,776	x	130%	(0 Parcels w/o R/W Acq)		332,500		
15. SUBTOTAL				(Lines 13 &14)			332,500	
16. Admin. Settlements (Factor	45%	x	30%	of Line 15)	=	44,900		
17. Litigation Awards (Factor	60%	x	70%	of Line 15)	=	139,700		
18. Business Damages (Claims	0	x	$0	)	=	0		
19. Bus. Damages Incrs. (Factor	25%	x	$0	)	=	0		
20. Owner Appr. Fees (Parcels	4	x	$10,000	)	=	40,000		
21. Owner CPA Fees (Claims	0	x	$10,000	)	=	0		
22. Defend.Atty Fees (Sum of Lines 16,17&	184,600	x	40%	)	=	73,800		
23. Owner Expert Witnes: (Comm.+Unimproved)	1	+	1	)) 18,000	=	36,000		
24. Other Condemn. Costs	5	x	$500		=	2,500		
25. SUBTOTAL				(Lines 16 thru 24)	=		336,900	
26.						TOTAL PHASE 43		$669,400

* *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

RELOCATION COSTS (PHASE 45)

	Replacement Housing			Number		Amount		
28. Owner	$20,000	x	3	=	60,000			
29. Tenant	$10,000	x	0	=	0			
Move Costs								
30. Residential	$1,500	x	3	=	4,500			
31. Business/Farm	$20,000	x	0	=	0			
32. Personal Property	$2,000	x	0	=	$0			
33. (Lines 28 thru 32)						TOTAL PHASE 45		$64,500
34. Relocation Services Cost				$6,450	(Not in Phase Total)			
35.					(All Phases)	TOTAL ESTIMATE		$1,063,100

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/31/01
Bus. Dam.:	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/31/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/31/01

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

REMARKS:

Pond 2-18 is one of the pond alternatives for Basin 4.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-19	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	0	0
Residential	6	6
Unimproved	0	0
Total Parcels	6	6

Estimated Relocatees:	
Business	0
Residential	6
Signs	0
Special	2
Total Relocatees	8

R/W SUPPORT COSTS (PHASE 41)

							Amount
1. Direct Labor Cost	(Parcels	6	x	13,000	=	Rate)	78,000
2. Indirect Overhead	(Parcels	6	x	0	=	Rate)	0
3.						TOTAL PHASE 41	$78,000

R/W OPS (PHASE 48)

								Amount
4. Appraisal Fees Through Trial					6	Parcels	x 12,000 =	72,000
5. Business Damage CPA Fees Through Trial					0	Claims	x 19,000 =	0
6. Court Reporter & Process Servers	75%	x	6	=	5	Parcels	x 500 =	2,500
7. Expert Witness	75%	x	6	=	5	Parcels	x 30,000 =	150,000
8. Mediators	50%	x	6	=	3	Parcels	x 2,400 =	7,200
9. Demolition, Ash. Abate., Survey, etc.					6	Imprvmet	x 15,000 =	90,000
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 48	$336,700

R/W LAND COSTS (PHASE 43)

						Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* Design plan stage	=	0	
14. Water Retention & Mit.	320,162	x	130%	(0 Parcels w/o R/W Acq)		416,200	
15. SUBTOTAL				(Lines 13 &14)			416,200
16. Admin. Settlements (Factor	45%	x	30%	of Line 15)	=	56,200	
17. Litigation Awards (Factor	60%	x	70%	of Line 15)	=	174,800	
18. Business Damages (Claims	0	x	$0	)	=	0	
19. Bus. Damages Incrs. (Factor	25%	x	$0	)	=	0	
20. Owner Appr. Fees (Parcels	5	x	$10,000	)	=	50,000	
21. Owner CPA Fees (Claims	0	x	$10,000	)	=	0	
22. Defend.Atty Fees (Sum of Lines 16,17&	231,000	x	40%	)	=	92,400	
23. Owner Expert Witnes (Comm.+Unimproved)	0	+	0	) x 18,000	=	0	
24. Other Condemn. Costs	6	x	$500		=	3,000	
25. SUBTOTAL				(Lines 16 thru 24)	=		376,400
26.						TOTAL PHASE 43	$792,600

* *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)

27.	TOTAL PHASE 42	$0

RELOCATION COSTS (PHASE 45)

						Number		Amount
	Replacement Housing							
28. Owner	$20,000	x			5	=		100,000
29. Tenant	$10,000	x			1	=		10,000
	Move Costs							
30. Residential-	$1,500	x			6	=		9,000
31. Business/Farm	$20,000	x			0	=		0
32. Personal Property	$2,000	x			2	=		$4,000
33. (Lines 28 thru 32)							TOTAL PHASE 45	$123,000
34. Relocation Services Cost					$12,300	(Not in Phase Total)		
35.						(All Phases)	TOTAL ESTIMATE	$1,330,300

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam. :	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-19 is one of the pond alternatives for Basin 5.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-20A	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	0	0
Residential	4	4
Unimproved	0	0
Total Parcels	4	4

Estimated Relocatees:	
Business	0
Residential	3
Signs	0
Special	1
Total Relocatees	4

R/W SUPPORT COSTS (PHASE 41)							Amount	
1. Direct Labor Cost	(Parcels	4	x	13,000	=	Rate)	52,000	
2. Indirect Overhead	(Parcels	4	x	0	=	Rate)	0	
3.							TOTAL PHASE 41	$52,000

R/W OPS (PHASE 48)								Amount	
4. Appraisal Fees Through Trial					4	Parcels	x 12,000 =	48,000	
5. Business Damage CPA Fees Through Trial					0	Claims	x 19,000 =	0	
6. Court Reporter & Process Servers	75%	x	4	=	3	Parcels	x 500 =	1,500	
7. Expert Witness	75%	x	4	=	3	Parcels	x 30,000 =	90,000	
8. Mediators	50%	x	4	=	2	Parcels	x 2,400 =	4,800	
9. Demolition, Asb. Abate., Survey, etc.					5	Imprvmet	x 15,000 =	75,000	
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 48		$234,300

R/W LAND COSTS (PHASE 43)								Amount	Subtotal	
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* *Design plan stage*			=	0		
14. Water Retention & Mit.	291,437	x	130%	(0 Parcels w/o R/W Acq)			=	378,900		
15. SUBTOTAL				(Lines 13 &14)					378,900	
16. Admin. Settlements (Factor	45%	x	30%	of Line 15)			=	51,200		
17. Litigation Awards (Factor	60%	x	70%	of Line 15)			=	159,100		
18. Business Damages (Claims	0	x	$0)				=	0		
19. Bus. Damages Incrs. (Factor	25%	x	$0)				=	0		
20. Owner Appr. Fees (Parcels	3	x	$10,000)				=	30,000		
21. Owner CPA Fees (Claims	0	x	$10,000)				=	0		
22. Defend.Atty Fees (Sum of Lines 16,17&	210,300	x	40%)				=	84,100		
23. Owner Expert Witnes (Comm.+Unimproved)	0	+	0)	)	18,000		=	0		
24. Other Condemn. Costs	4	x	$500				=	2,000		
25. SUBTOTAL				(Lines 16 thru 24)			=		326,400	
26.								TOTAL PHASE 43		$705,300

* *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)		
27.	TOTAL PHASE 42	$0

RELOCATION COSTS (PHASE 45)							
Replacement Housing			Number		Amount		
28. Owner	$20,000	x	3	=	60,000		
29. Tenant	$10,000	x	0	=	0		
Move Costs							
30. Residential	$1,500	x	3	=	4,500		
31. Business/Farm	$20,000	x	0	=	0		
32. Personal Property	$2,000	x	1	=	$2,000		
33. (Lines 28 thru 32)						TOTAL PHASE 45	$66,500
34. Relocation Services Cost			$6,650	(Not in Phase Total)			
35.					(All Phases)	TOTAL ESTIMATE	$1,058,100

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam.:	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-20A is one of the pond alternatives for Basin 5.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-20B	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	3	3
Residential	1	1
Unimproved	0	0
Total Parcels	4	4

Estimated Relocatees:	
Business	3
Residential	2
Signs	0
Special	3
Total Relocatees	8

R/W SUPPORT COSTS (PHASE 41)

								Amount
1. Direct Labor Cost	(Parcels	4	x	13,000	=	Rate)		52,000
2. Indirect Overhead	(Parcels	4	x	0	=	Rate)		0
3.							TOTAL PHASE 41	$52,000

R/W OPS (PHASE 4B)

									Amount	
4. Appraisal Fees Through Trial					4	Parcels	x	12,000	=	48,000
5. Business Damage CPA Fees Through Trial					0	Claims	x	19,000	=	0
6. Court Reporter & Process Servers	75%	x	4	=	3	Parcels	x	500	=	1,500
7. Expert Witness	75%	x	4	=	3	Parcels	x	30,000	=	90,000
8. Mediators	50%	x	4	=	2	Parcels	x	2,400	=	4,800
9. Demolition, Asb. Abate., Survey, etc.					4	Imprvmet	x	15,000	=	60,000
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		$219,300

R/W LAND COSTS (PHASE 43)

						Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* *Design plan stage*	=	0	
14. Water Retention & Mit.	322,138	x	130%	(0 Parcels w/o R/W Acq)		418,800	
15. SUBTOTAL				(Lines 13 &14)			418,800
16. Admin. Settlements (Factor	45%	x	30%	of Line 15)	=	56,500	
17. Litigation Awards (Factor	60%	x	70%	of Line 15)	=	175,900	
18. Business Damages (Claims	0	x	$0	)	=	0	
19. Bus. Damages Incrs. (Factor	25%	x	$0	)	=	0	
20. Owner Appr. Fees (Parcels	3	x	$10,000	)	=	30,000	
21. Owner CPA Fees (Claims	0	x	$10,000	)	=	0	
22. Defend.Atty Fees (Sum of Lines 16,17&1	232,400	x	40%	)	=	93,000	
23. Owner Expert Witnes (Comm.+Unimproved)	3	+	0	) x 18,000	=	54,000	
24. Other Condemn. Costs	4	x	$500		=	2,000	
25. SUBTOTAL				(Lines 16 thru 24)	=		411,400
26.						TOTAL PHASE 43	$830,200

* *Design contingency for design plan stage:*
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans -115% (5) 2ß8 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	1	=	20,000	
29. Tenant	$10,000	x	1	=	10,000	
	Move Costs					
30. Residential	$1,500	x	2	=	3,000	
31. Business/Farm	$20,000	x	3	=	60,000	
32. Personal Property	$2,000	x	3	=	$6,000	
33. (Lines 28 thru 32)					TOTAL PHASE 45	$99,000
34. Relocation Services Cost			$9,900	(Not in Phase Total)		
35.				(All Phases)	TOTAL ESTIMATE	$1,200,500

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam. :	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-20B is one of the pond alternatives for Basin 5.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PB&SJ#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-21	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	0	0
Residential	4	4
Unimproved	0	0
Total Parcels	4	4

Estimated Relocatees:	
Business	0
Residential	17
Signs	0
Special	1
Total Relocatees	18

R/W SUPPORT COSTS (PHASE 41)							Amount	
1. Direct Labor Cost	(Parcels	4	x	13,000	=	Rate)	52,000	
2. Indirect Overhead	(Parcels	4	x	0	=	Rate)	0	
3.							TOTAL PHASE 41	$52,000

R/W OPS (PHASE 48)								Amount	
4. Appraisal Fees Through Trial					4	Parcels	x 12,000 =	48,000	
5. Business Damage CPA Fees Through Trial					0	Claims	x 19,000 =	0	
6. Court Reporter & Process Servers	75%	x	4	=	3	Parcels	x 500 =	1,500	
7. Expert Witness	75%	x	4	=	3	Parcels	x 30,000 =	90,000	
8. Mediators	50%	x	4	=	2	Parcels	x 2,400 =	4,800	
9. Demolition, Asb. Abate., Survey, etc.					4	Imprvmet	x 15,000 =	60,000	
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 48		$219,300

R/W LAND COSTS (PHASE 43)							Amount	Subtotal	
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* *Design plan stage*		=	0		
14. Water Retention & Mit.	465,143	x	130%	(0 Parcels w/o R/W Acq)		=	604,700		
15. SUBTOTAL				(Lines 13 &14)				604,700	
16. Admin. Settlements (Factor	45%	x	30%	of Line 15)		=	81,600		
17. Litigation Awards (Factor	60%	x	70%	of Line 15)		=	254,000		
18. Business Damages (Claims	0	x	$0	)		=	0		
19. Bus. Damages Incrs. (Factor	25%	x	$0	)		=	0		
20. Owner Appr. Fees (Parcels	3	x	$10,000	)		=	30,000		
21. Owner CPA Fees (Claims	0	x	$10,000	)		=	0		
22. Defend.Atty Fees (Sum of Lines 16,17&	335,600	x	40%	)		=	134,200		
23. Owner Expert Witnes (Comm.+Unimproved)	0	+	0	)	18,000	=	0		
24. Other Condemn. Costs	4	x	$500			=	2,000		
25. SUBTOTAL				(Lines 16 thru 24)		=		501,800	
26.							TOTAL PHASE 43		$1,106,500

* *Design contingency for design plan stage:*
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans -115% (5) 288 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	3	=	60,000	
29. Tenant	$10,000	x	14	=	140,000	
	Move Costs					
30. Residential	$1,500	x	17	=	25,500	
31. Business/Farm	$20,000	x	0	=	0	
32. Personal Property	$2,000	x	1	=	$2,000	
33. (Lines 28 thru 32)					TOTAL PHASE 45	$227,500
34. Relocation Services Cost			$22,750	(Not in Phase Total)		
35.				(All Phases)	TOTAL ESTIMATE	$1,605,300

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam. :	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-21 is one of the pond alternatives for Basin 6.

The following indicates the estimator's confidence in the above estimate:	
	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X
Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-22	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	1	1
Residential	5	5
Unimproved	0	0
Total Parcels	6	6

Estimated Relocatees:	
Business	2
Residential	4
Signs	0
Special	3
Total Relocatees	9

R/W SUPPORT COSTS (PHASE 41)

							Amount
1. Direct Labor Cost	(Parcels	6	x	13,000	=	Rate)	78,000
2. Indirect Overhead	(Parcels	6	x	0	=	Rate)	0
3.						TOTAL PHASE 41	$78,000

R/W OPS (PHASE 4B)

								Amount
4. Appraisal Fees Through Trial					6	Parcels	x 12,000 =	72,000
5. Business Damage CPA Fees Through Trial					0	Claims	x 19,000 =	0
6. Court Reporter & Process Servers	75%	x	6	=	5	Parcels	x 500 =	2,500
7. Expert Witness	75%	x	6	=	5	Parcels	x 30,000 =	150,000
8. Mediators	50%	x	6	=	3	Parcels	x 2,400 =	7,200
9. Demolition, Asb. Abate., Survey, etc.					6	Imprvmet	x 15,000 =	90,000
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	$336,700

R/W LAND COSTS (PHASE 43)

							Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	*	*Design plan stage*	=	0	
14. Water Retention & Mit.	398,226	x	130%		(0 Parcels w/o R/W Acq)		517,700	
15. SUBTOTAL					(Lines 13 &14)			517,700
16. Admin. Settlements (Factor	45%	x	30%		of Line 15)	=	69,900	
17. Litigation Awards (Factor	60%	x	70%		of Line 15)	=	217,400	
18. Business Damages (Claims	0	x	$0	)		=	0	
19. Bus. Damages Incrs. (Factor	25%	x	$0	)		=	0	
20. Owner Appr. Fees (Parcels	5	x	$10,000	)		=	50,000	
21. Owner CPA Fees (Claims	0	x	$10,000	)		=	0	
22. Defend.Atty Fees (Sum of Lines 16,17&	287,300	x	40%	)		=	114,900	
23. Owner Expert Witnes (Comm.+Unimproved)	1	+	0	)	18,000	=	18,000	
24. Other Condemn. Costs	6	x	$500			=	3,000	
25. SUBTOTAL					(Lines 16 thru 24)	=		473,200
26.							TOTAL PHASE 43	$990,900

* *Design contingency for design plan stage:*
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans -115% (5) 2ß 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	2	=	40,000	
29. Tenant	$10,000	x	2	=	20,000	
	Move Costs					
30. Residential	$1,500	x	4	=	6,000	
31. Business/Farm	$20,000	x	2	=	40,000	
32. Personal Property	$2,000	x	3	=	$6,000	
33. (Lines 28 thru 32)						TOTAL PHASE 45 $112,000
34. Relocation Services Cost				$11,200	(Not in Phase Total)	
35.					(All Phases)	TOTAL ESTIMATE $1,517,600

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam.:	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-22 is one of the pond alternatives for Basin 6.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-23	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	1	1
Residential	0	0
Unimproved	0	0
Total Parcels	1	1

Estimated Relocatees:	
Business	0
Residential	1
Signs	0
Special	0
Total Relocatees	1

R/W SUPPORT COSTS (PHASE 41)

								Amount
1. Direct Labor Cost	(Parcels	1	x	13,000	=	Rate)		13,000
2. Indirect Overhead	(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.					1	Imprvmet	x	15,000 =	15,000
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	$74,900

R/W LAND COSTS (PHASE 43)

							Amount	Subtotal
13. Land, Improvements & Severance Damages and Cost to Cure Amount	0	x	130%	* *Design plan stage*		=	0	
14. Water Retention & Mit.	107,270	x	130%	(0 Parcels w/o R/W Acq)			139,500	
15. SUBTOTAL				(Lines 13 &14)				139,500
16. Admin. Settlements (Factor	45%	x	0%	of Line 15)		=	0	
17. Litigation Awards (Factor	60%	x	100%	of Line 15)		=	83,700	
18. Business Damages (Claims	0	x	$0	)		=	0	
19. Bus. Damages Incrs. (Factor	25%	x	$0	)		=	0	
20. Owner Appr. Fees (Parcels	1	x	$10,000	)		=	10,000	
21. Owner CPA Fees (Claims	0	x	$10,000	)		=	0	
22. Defend.Atty Fees (Sum of Lines 16,17&	83,700	x	40%	)		=	33,500	
23. Owner Expert Witnes (Comm.+Unimproved)	1	+	0	))	18,000	=	18,000	
24. Other Condemn. Costs	1	x	$500			=	500	
25. SUBTOTAL				(Lines 16 thru 24)		=		145,700
26.							TOTAL PHASE 43	$285,200

* *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)

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				1	=	10,000	
	Move Costs								
30. Residential	$1,500	x				1	=	1,500	
31. Business/Farm	$20,000	x				0	=	0	
32. Personal Property	$2,000	x				0	=	$0	
33. (Lines 28 thru 32)								TOTAL PHASE 45	$11,500
34. Relocation Services Cost						$1,150		(Not in Phase Total)	
35.								(All Phases) TOTAL ESTIMATE	$384,600

Appraisal:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Bus. Dam. :	N/A	Signed:		Date:
Relocation:	Gerald W. Springstead II	Signed:		Date: 1/30/01
Overall Review:	Norris L. Smith	Signed:		Date: 1/30/01

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

REMARKS:

Pond 2-23 is one of the pond alternatives for Basin 6.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN RIGHT OF WAY COST ESTIMATE

PBS&J#: 700103.30 5023

FM#:	2564221	Former WPI#:	N/A	District:	Seven
County:	Pasco	FAP No.:	1455-001-U	Date:	30-Jan-01
State Rd.:	41	Alternate:	POND 2-24	C.E. Sequence	N/A
Project Des.	SR 41 (US 301) from SR39 to CR54, One Way Pairs Using 6th St & US301.				

Parcels	Gross	Net
Commercial	0	0
Residential	0	0
Unimproved	1	1
Total Parcels	1	1

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

R/W SUPPORT COSTS (PHASE 41)

								Amount
1. Direct Labor Cost	(Parcels	1	x	13,000	=	Rate)		13,000
2. Indirect Overhead	(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 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 stage*	=		0	
14. Water Retention & Mit.	217,800	x	130%	(0 Parcels w/o R/W Acq)			283,100	
15. SUBTOTAL				(Lines 13 &14)				283,100
16. Admin. Settlements (Factor	45%	x	0%	of Line 15)	=		0	
17. Litigation Awards (Factor	60%	x	100%	of Line 15)	=		169,900	
18. Business Damages (Claims	0	x	$0	)	=		0	
19. Bus. Damages Incrs. (Factor	25%	x	$0	)	=		0	
20. Owner Appr. Fees (Parcels	1	x	$10,000	)	=		10,000	
21. Owner CPA Fees (Claims	0	x	$10,000	)	=		0	
22. Defend.Atty Fees (Sum of Lines 16,17&	169,900	x	40%	)	=		68,000	
23. Owner Expert Witnes: (Comm.+Unimproved)	0	+	1	)) 18,000	=		18,000	
24. Other Condemn. Costs	1	x	$500		=		500	
25. SUBTOTAL				(Lines 16 thru 24)	=			266,400
26.							TOTAL PHASE 43	$549,500

* *Design contingency for design plan stage:*
(1) PD&E plans - 130% (2) 30% plans - 125% (3) 60% plans - 120% (4) 90% plans -115% (5) 2ND 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	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 $622,400

Appraisal:	Gerald W. Springstead II	Signed:	Date:	1/30/01
Bus. Dam.:	N/A	Signed:	Date:	
Relocation:	Gerald W. Springstead II	Signed:	Date:	1/30/01
Overall Review:	Norris L. Smith	Signed:	Date:	1/30/01

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

REMARKS:

Pond 2-24 is one of the pond alternatives for Basin 5.

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

	Type A - indicates the most confidence
	Type B - indicates above average confidence
X	Type C - indicates below average confidence
	Type D - indicates the least or no confidence

Future Value Factors @	10%
Year One	1.1000
Year Two	1.2100
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 Purpose X

Comments:

APPENDIX E
LAKE ZEPHYR WATERSHED DELINEATION MAPS

Lake Zephyr Watershed

STORMWATER AND FLOOD MANAGEMENT MASTER PLAN

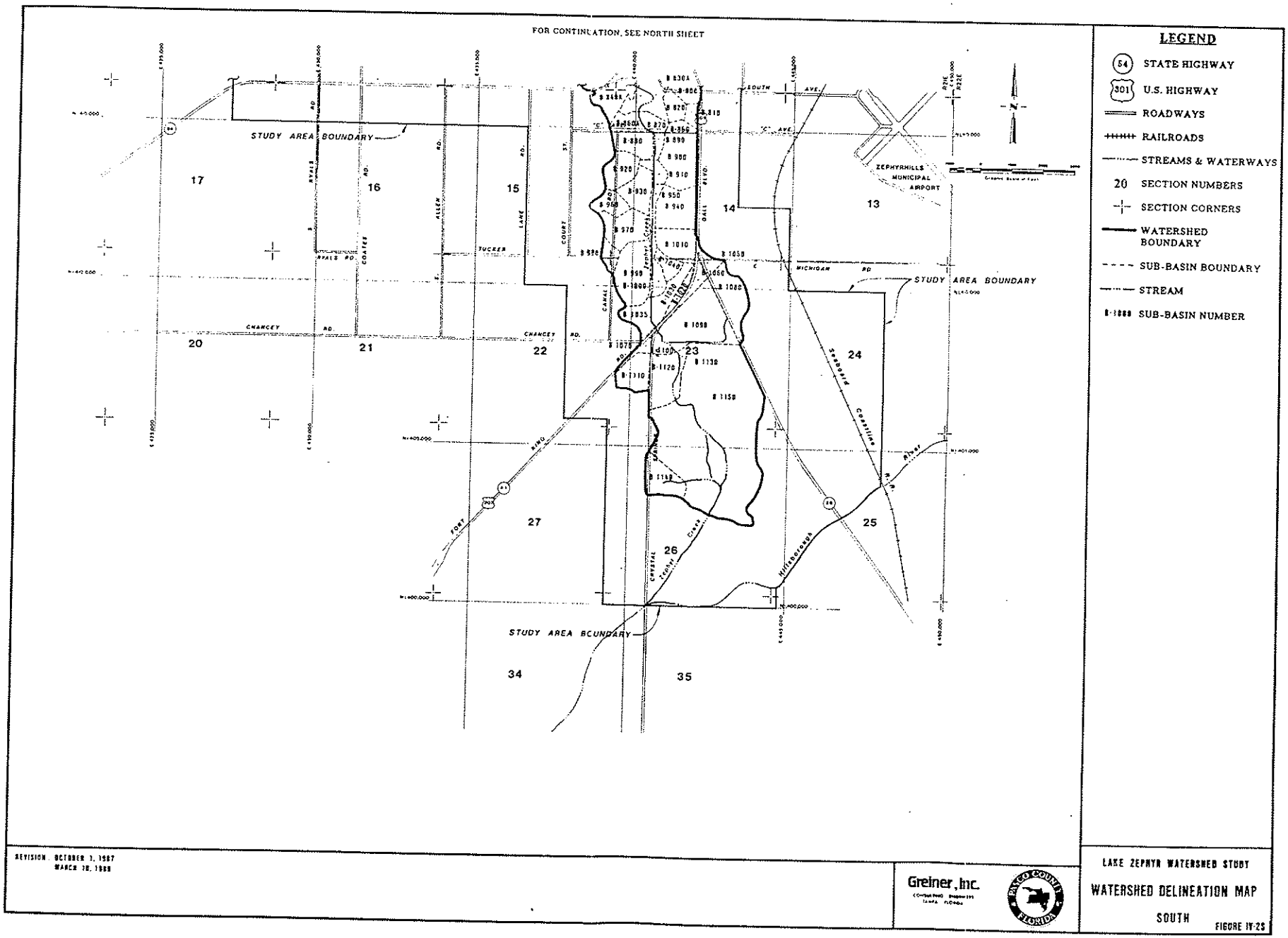
FINAL REPORT

April, 1989

PREPARED FOR:

PASCO COUNTY
BOARD OF COUNTY COMMISSIONERS

By:
Greiner, Inc.
Tampa, Florida



REVISION: OCTOBER 1, 1987
MARCH 28, 1988

Greiner, Inc.

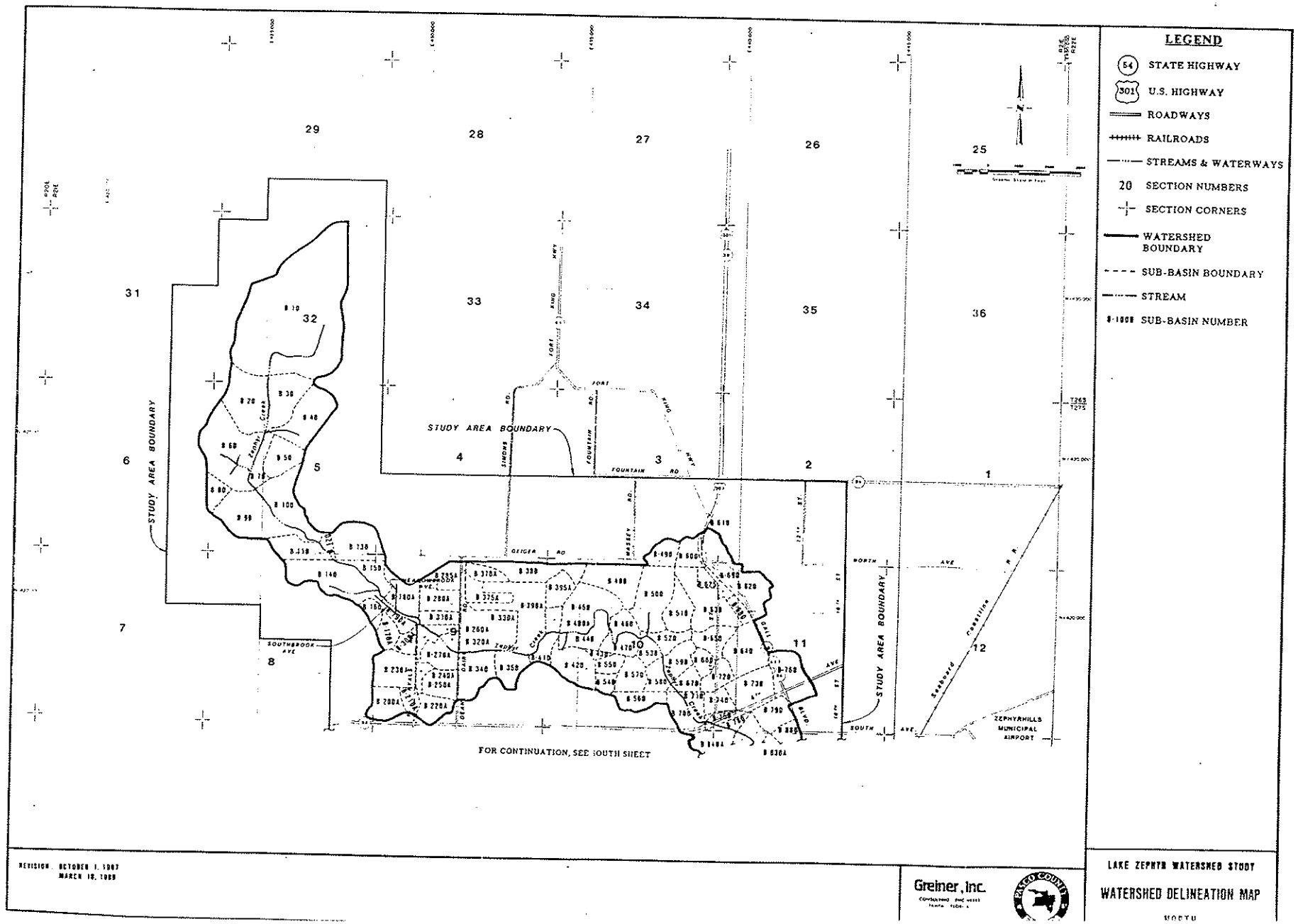
PASCO COUNTY FLORIDA

LAKE ZEPHYR WATERSHED STUDY

WATERSHED DELINEATION MAP

SOUTH

FIGURE IV-25


LEGEND
54 STATE HIGHWAY
301 U.S. HIGHWAY
ROADWAYS
RAILROADS
STREAMS & WATERWAYS
20 SECTION NUMBERS
SECTION CORNERS
WATERSHED BOUNDARY
SUB-BASIN BOUNDARY
STREAM
B-1000 SUB-BASIN NUMBER
STUDY AREA BOUNDARY
FOR CONTINUATION, SEE SOUTH SHEET
REVISION: OCTOBER 1, 1987
MARCH 10, 1988
Greiner, Inc.
PASCO COUNTY
LAKE ZEPHYR WATERSHED STUDY
WATERSHED DELINEATION MAP
NORTH

APPENDIX F
LAKE ZEPHYR WATERSHED FLOOD PROFILES

Lake Zephyr Watershed

STORMWATER AND FLOOD MANAGEMENT MASTER PLAN

FINAL REPORT

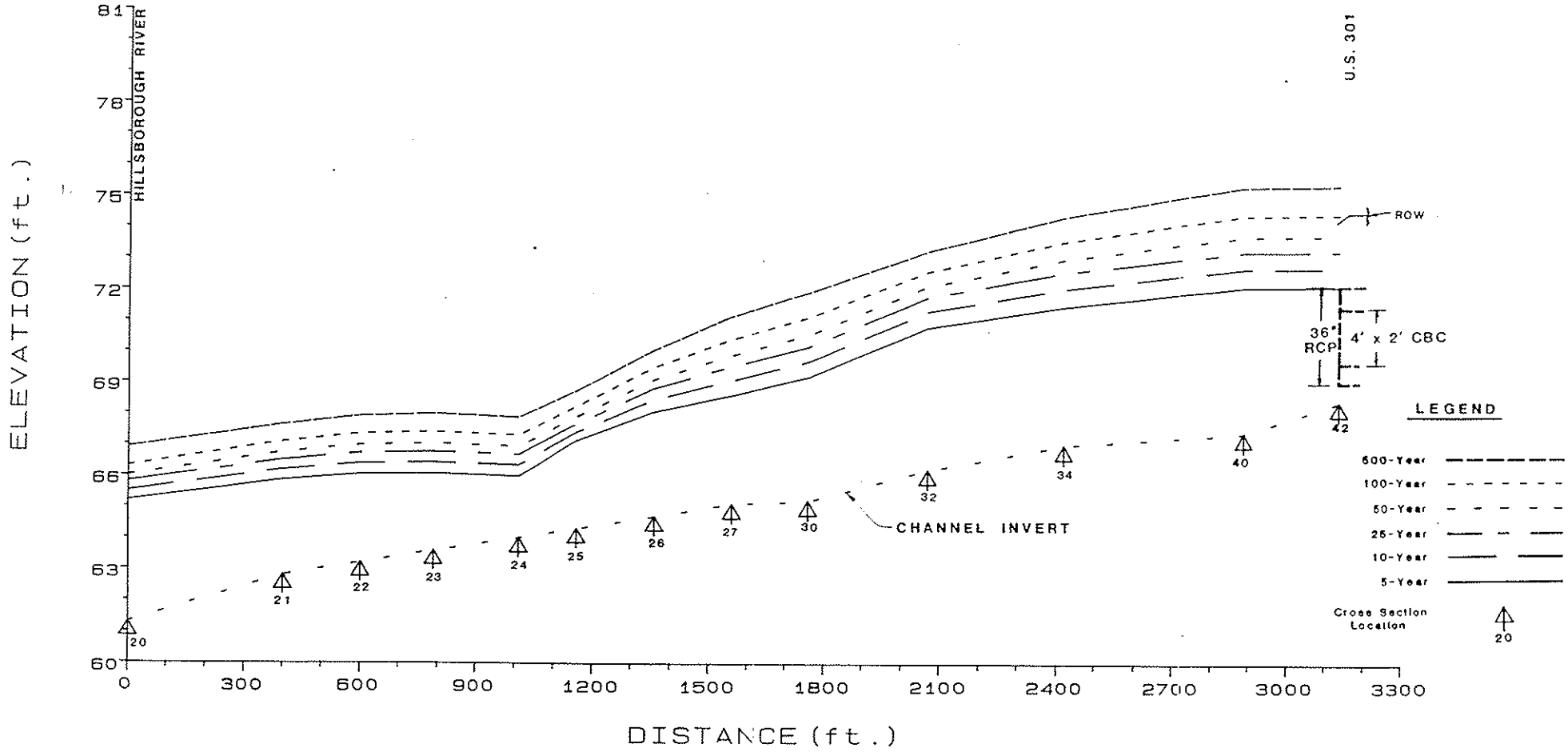
April, 1989

PREPARED FOR:

PASCO COUNTY
BOARD OF COUNTY COMMISSIONERS

By:
Greiner, Inc.
Tampa, Florida

LAKE ZEPHYR WATERSHED STUDY EXISTING CONDITIONS
DESIGN UNIT #1

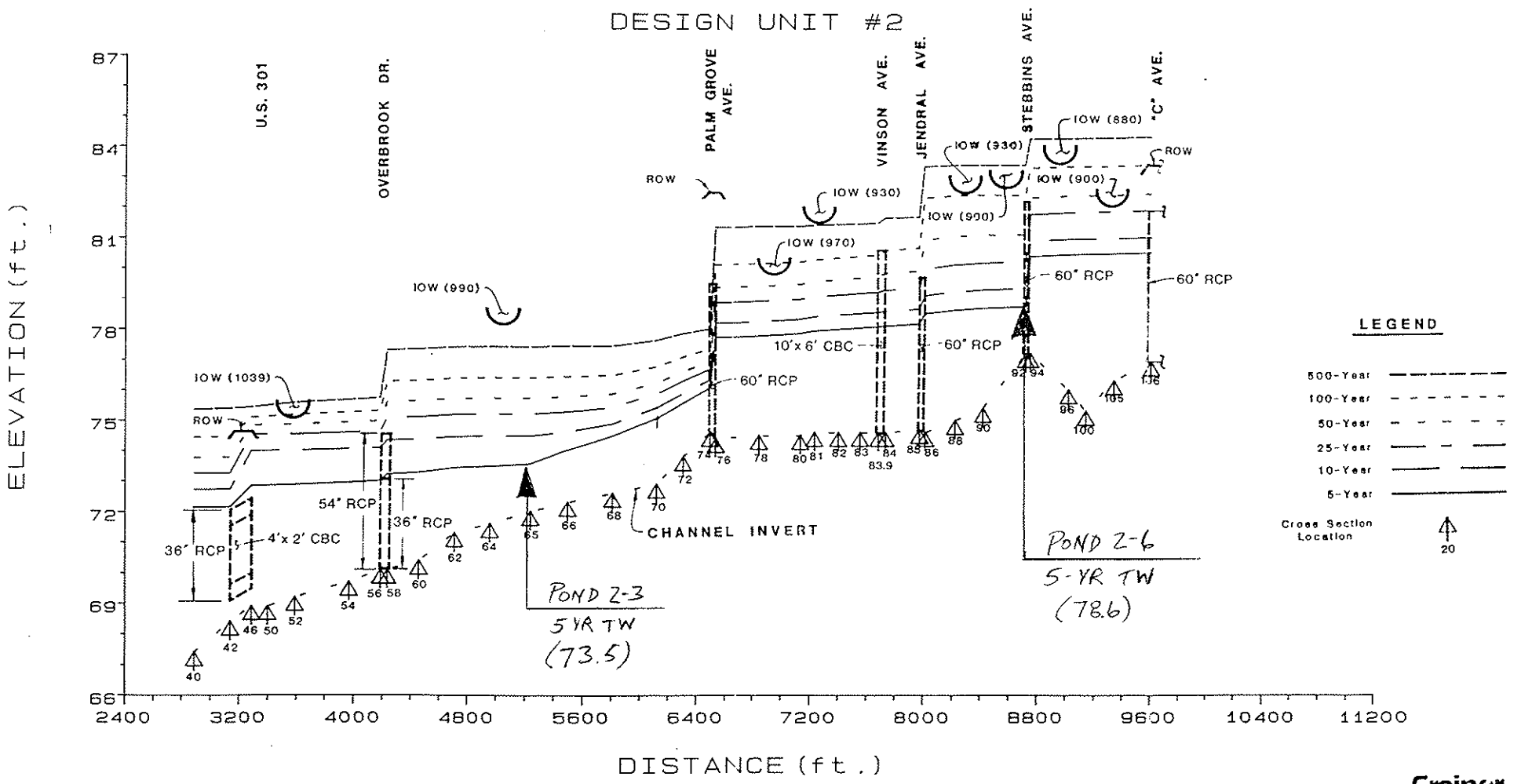


CBC - Concrete Box Culvert RCP - Reinforced Concrete Pipe ROW (/¯\) - Roadway Overtopping Weir (May not be located at creek crossing)

Greiner
Greiner, Inc.
Tampa, Florida

FIGURE V-3.1

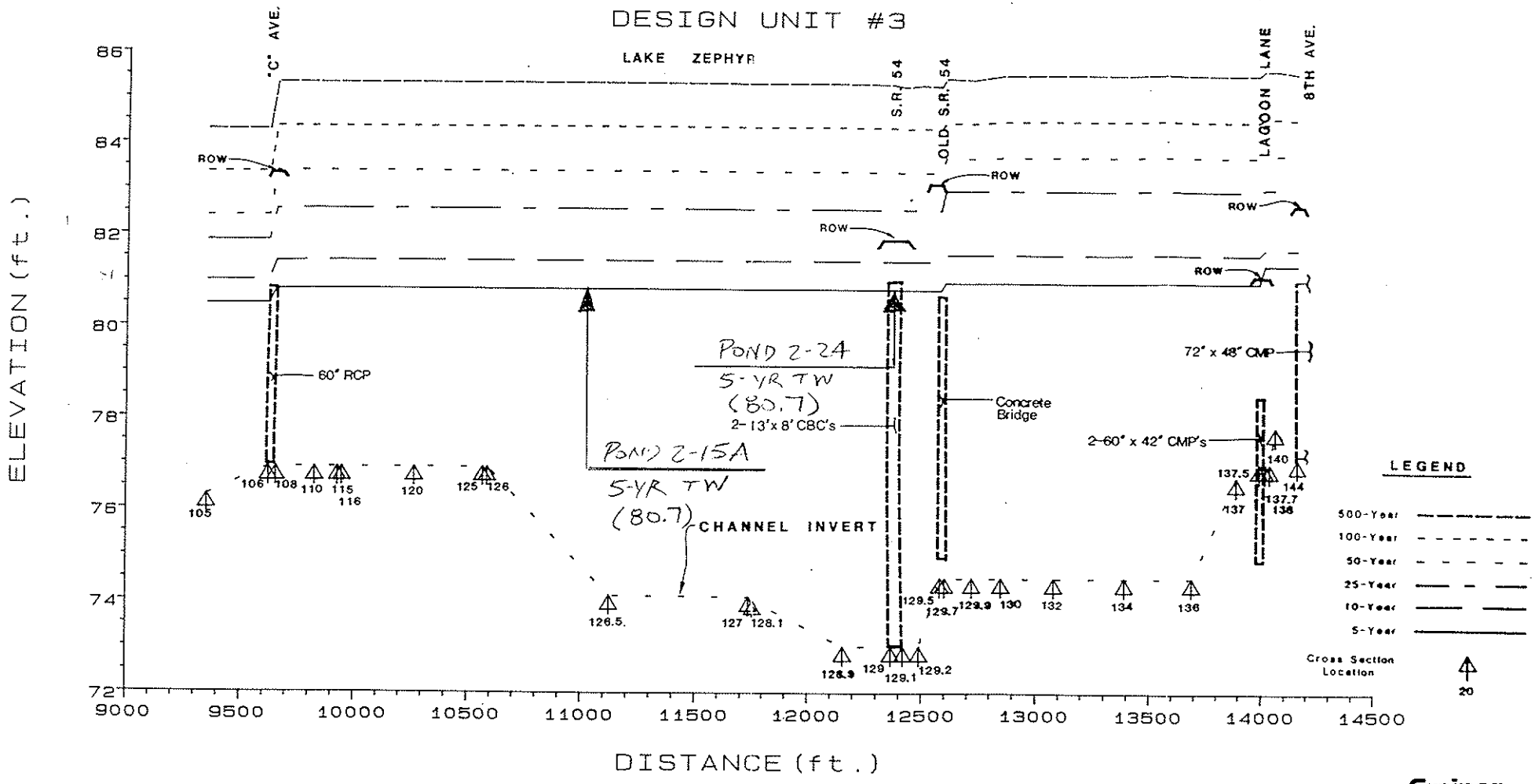
LAKE ZEPHYR WATERSHED STUDY EXISTING CONDITIONS
DESIGN UNIT #2



CBC-Concrete Box Culvert RCP - Reinforced Concrete Pipe ROW (⌒) - Roadway Overtopping Weir (May not be located at creek crossing) IOW (◡) - Inter-basin Overtopping Weir (900) - Node Number

FIGURE V-3.2

LAKE ZEPHYR WATERSHED STUDY EXISTING CONDITIONS
DESIGN UNIT #3



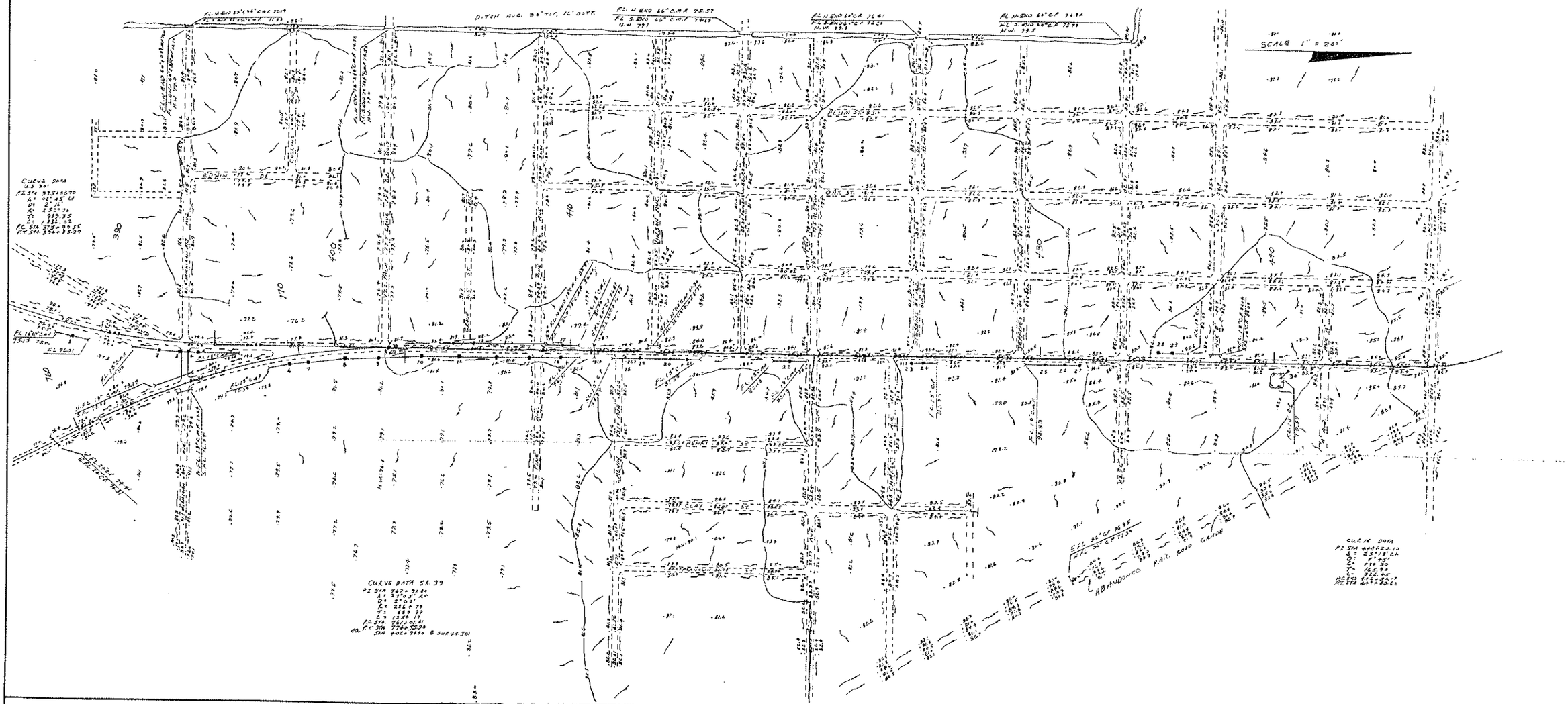
CBC – Concrete Box Culvert CMP – Corrugated Metal Pipe RCP – Reinforced Concrete Pipe ROW (⌒) – Roadway Overtopping Weir (May not be located at creek crossing)

Greiner
Greiner, Inc.
Tampa, Florida

FIGURE V-3.3

APPENDIX G
HISTORICAL DRAINAGE MAPS

STATE PROJ. NO.	SHEET NO.



REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

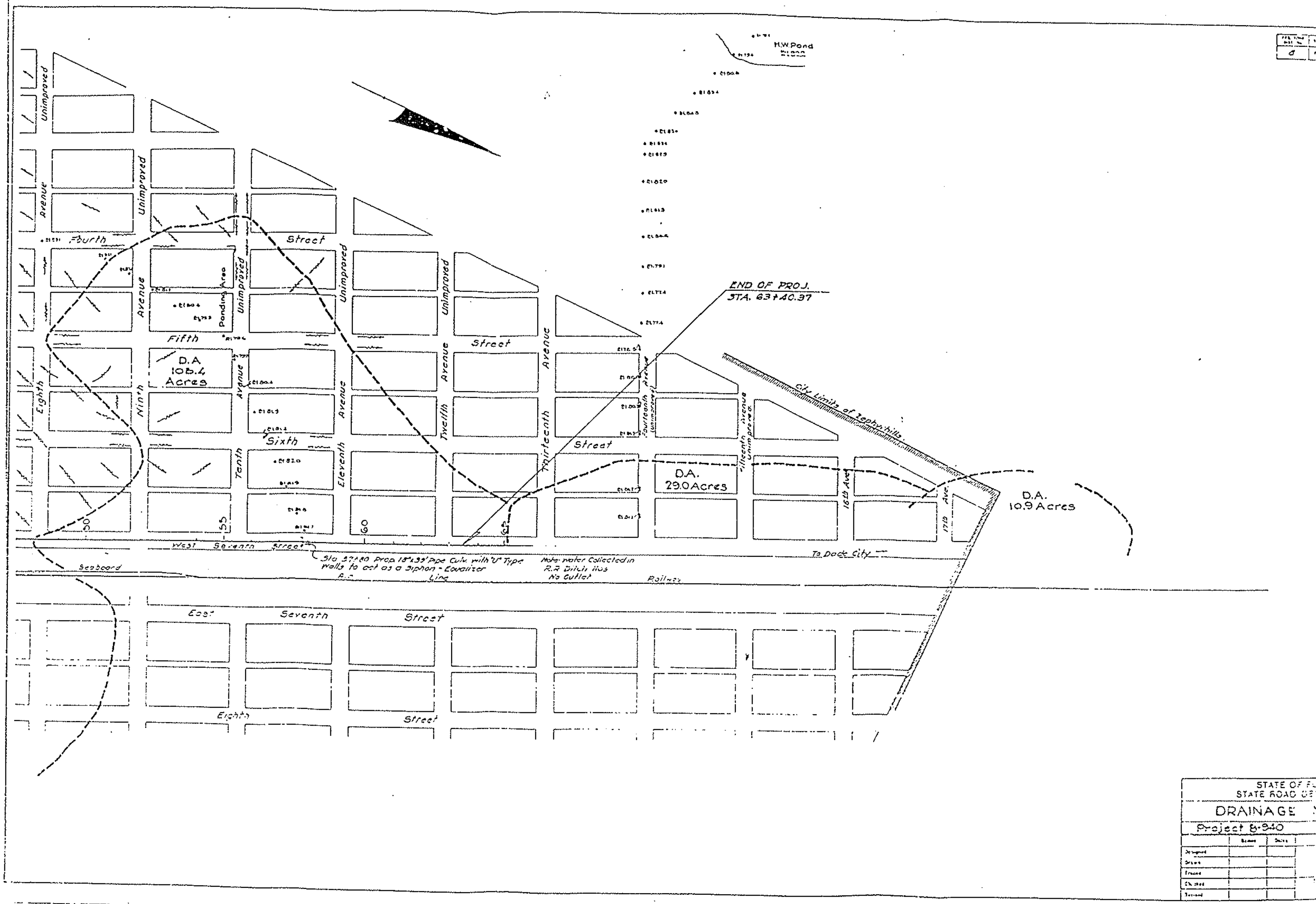
	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED BY					

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY

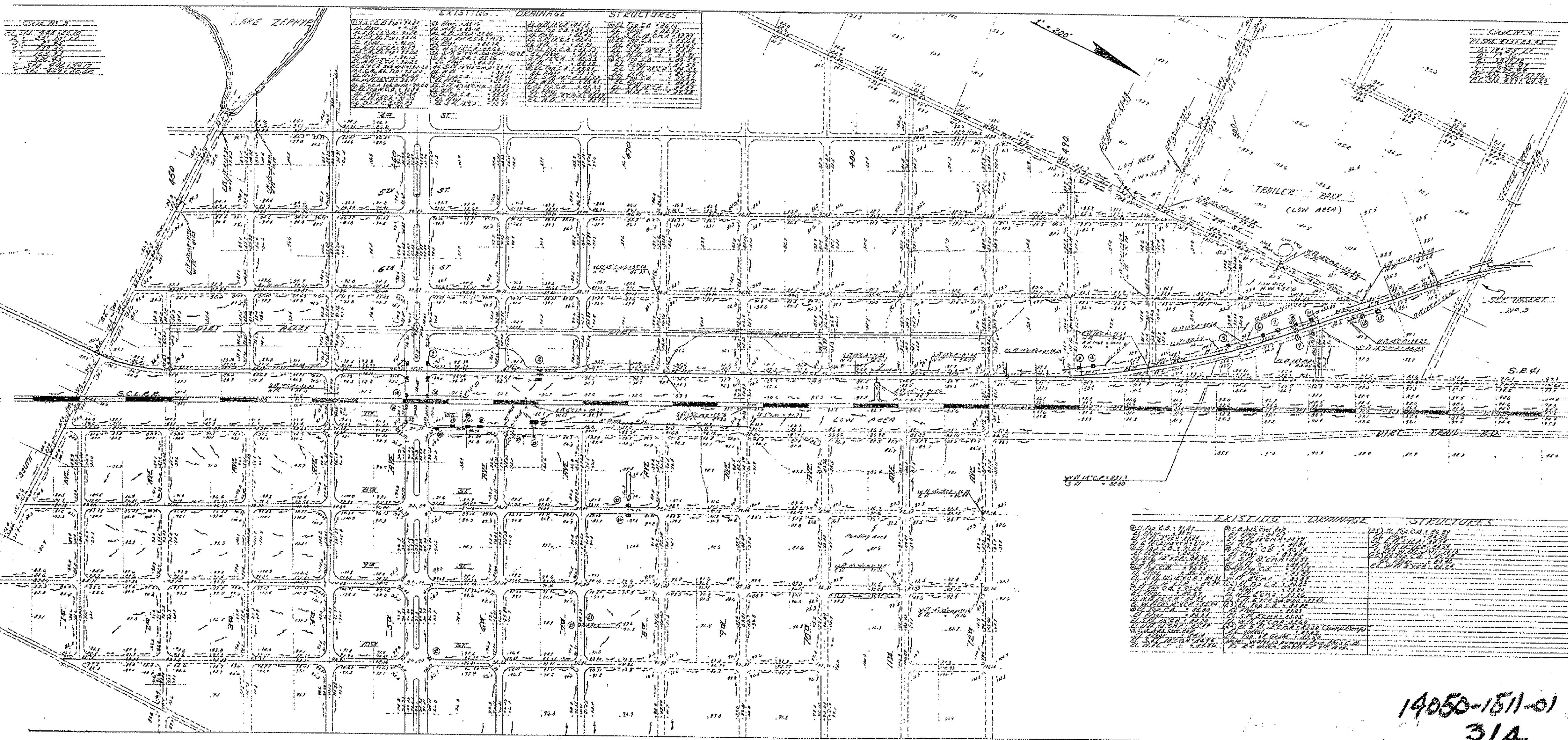
DATE

FIELD DRAINAGE MAP
1-4051-1537, SHEET 1 OF 1
D.E.S


H.W. Pond
Unimproved
Avenue
Fourth
Street
Fifth
Avenue
Street
Sixth
Street
Eighth
Ninth
Tenth
Eleventh
Twelfth
Thirteenth
Fourteenth Avenue (Unimproved)
Fifteenth Avenue Unimproved
16th Ave.
17th Ave.
Ponding Area
D.A. 106.4 Acres
D.A. 29.0 Acres
D.A. 10.9 Acres
END OF PROJ. STA. 63+40.37
City Limits of Zephyrhills
50
55
60
West Seventh Street
Sta 57+80 Prop. 18"x33' Pipe Culv. with "U" Type Walls to act as a Siphon - Equalizer
Note: Water Collected in R.R. Ditch Has No Outlet
Seaboard A.C. Line Railway
To Dade City
East Seventh Street
Eighth Street
STATE OF F
STATE ROAD DE
DRAINAGE
Project 8-940

DRAINAGE MAP

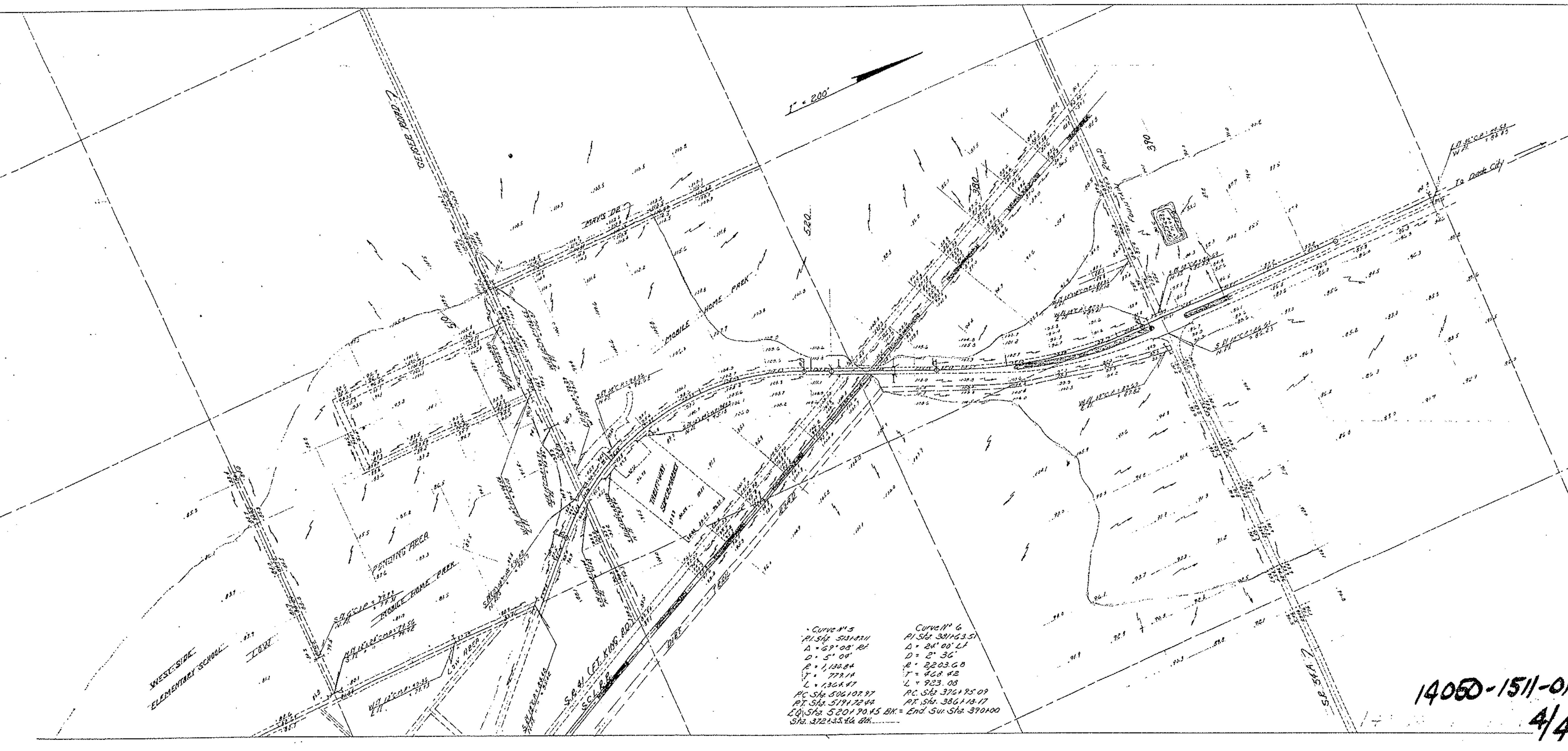
Dist.	State	County	Route	Proj.	Sheet No.
1	Fla.	Pasco	US 301	14050-1511-01	Inset No 2



14050-1511-01
3/4

DRAINAGE MAP

Dist.	State	County	Route	Proj.	Sheet No.
1	Fla.	Pasco	U.S. 301	14050-1511-01	Insert 3 of 3


1" = 200'
GEIGER ROAD
MAYS DR.
MOBILE HOME PARK
PONDING AREA
MOBILE HOME PARK
WEST SIDE ELEMENTARY SCHOOL
LOW
LOW AREA
THRIFTWAY SUPERMARKET
S.R. 41 (FT. KING RD.)
S.C.L.R.R.
DIST.
S.R. 54A
To Dade City
380
390
520
Curve Nº 5
P.I. Sta. 513+82.11
Δ = 69° 08' Rt.
D = 5° 04'
R = 1,130.84
T = 779.14
L = 1,364.47
P.C. Sta. 506+07.97
P.T. Sta. 519+72.44
Curve Nº 6
P.I. Sta. 381+63.51
Δ = 24° 00' Lt.
D = 2° 36'
R = 2,203.68
T = 468.42
L = 923.08
P.C. Sta. 376+95.09
P.T. Sta. 386+18.17
EQ. Sta. 520+90.45 BK. = End. Sur. Sta. 390+00
Sta. 372+35.44 Bk.

14050-1511-01
4/4

U.S. 301 Original Construction Plans

INDEX OF SHEETS

SHE.T NO. 1 TITLE PAGE
1A, 1B, & 1C DRAINAGE MAPS
2 & 2A TYPICAL CROSS SECTION OF IMPROVEMENT & SUMMARY OF QUANTITIES
3 PLAN AND PROFILE STA. 226+35.3 TO STA. 240+00
4 " " " " 240+00 " " 270+00
5 " " " " 270+00 " " 15+00
6 " " " " 15+00 " " 30+00
7 " " " " 30+00 " " 45+00
8 " " " " 45+00 " " 60+00
9 " " " " 60+00 " " 75+00
10 THRU 12 DETAIL OF DRAINAGE STRUCTURES
13 " 16 DRAINAGE DETAILS
17 INDEX NO. 773 PROJECT MARKERS
18 " " 750 PIPE HEADWALLS
19 " " 767 TYPE 'D' DROP INLETS
20 " " 920 " 'A' " "
21 " " 1100 PIPE 'U' WALLS
22 " " 1767 CATTLE GUARD
23 " " 1101 STD. ROAD DETAILS
24 " " 860 RESILIFLEX GUARD RAIL
25 " " 1000 FLEXPLATE " "
26 " " 1041 DURAGUARD " "
27 " " 1043 EMPIRE " "
28 " " 1045 TUTHILL " "
29 DETAIL OF ROCK AT FILLING STATIONS
30 THRU 44 STREET & ROAD INTERSECTIONS
45 " 51 LATERAL DITCHES
52 MASS DIAGRAM OF OVERHAUL
53 THRU 73 CROSS SECTIONS
SHEET 73 N/A

STATE OF FLORIDA
STATE ROAD DEPARTMENT

PLAN AND PROFILE OF PROPOSED
STATE HIGHWAY

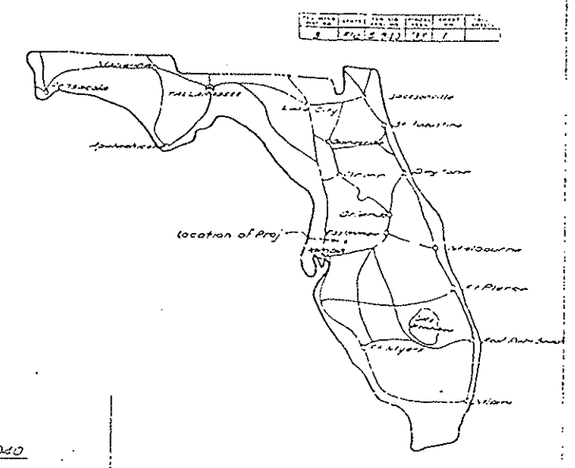
PROJECT NO. B-940

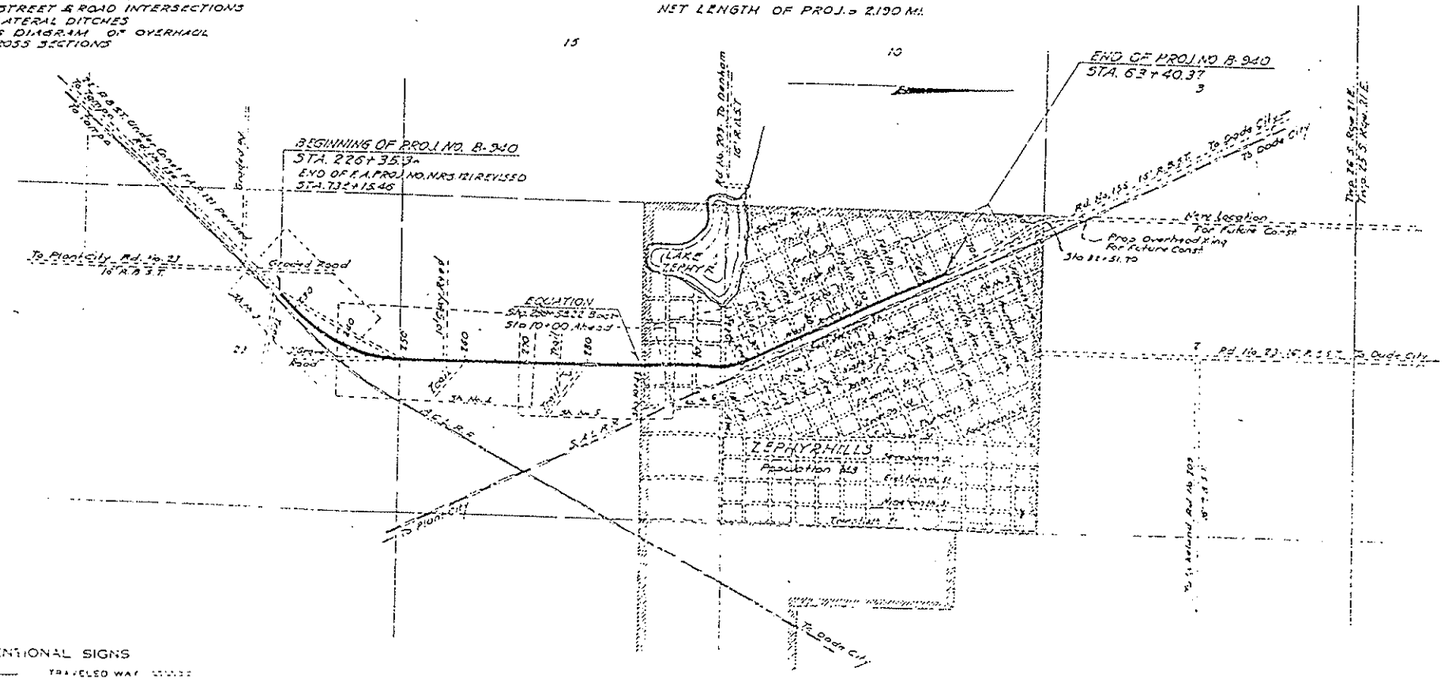
PASCO COUNTY

SCALES {PLAN, 1 IN. = 100 FT.
{PROFILE, HOR. 1 IN. = 100 FT. VERT. 1 IN. = 10 FT.

SCALE: 1" = 1,000'

NET LENGTH OF PROJ. = 2.190 MI.





CONVENTIONAL SIGNS

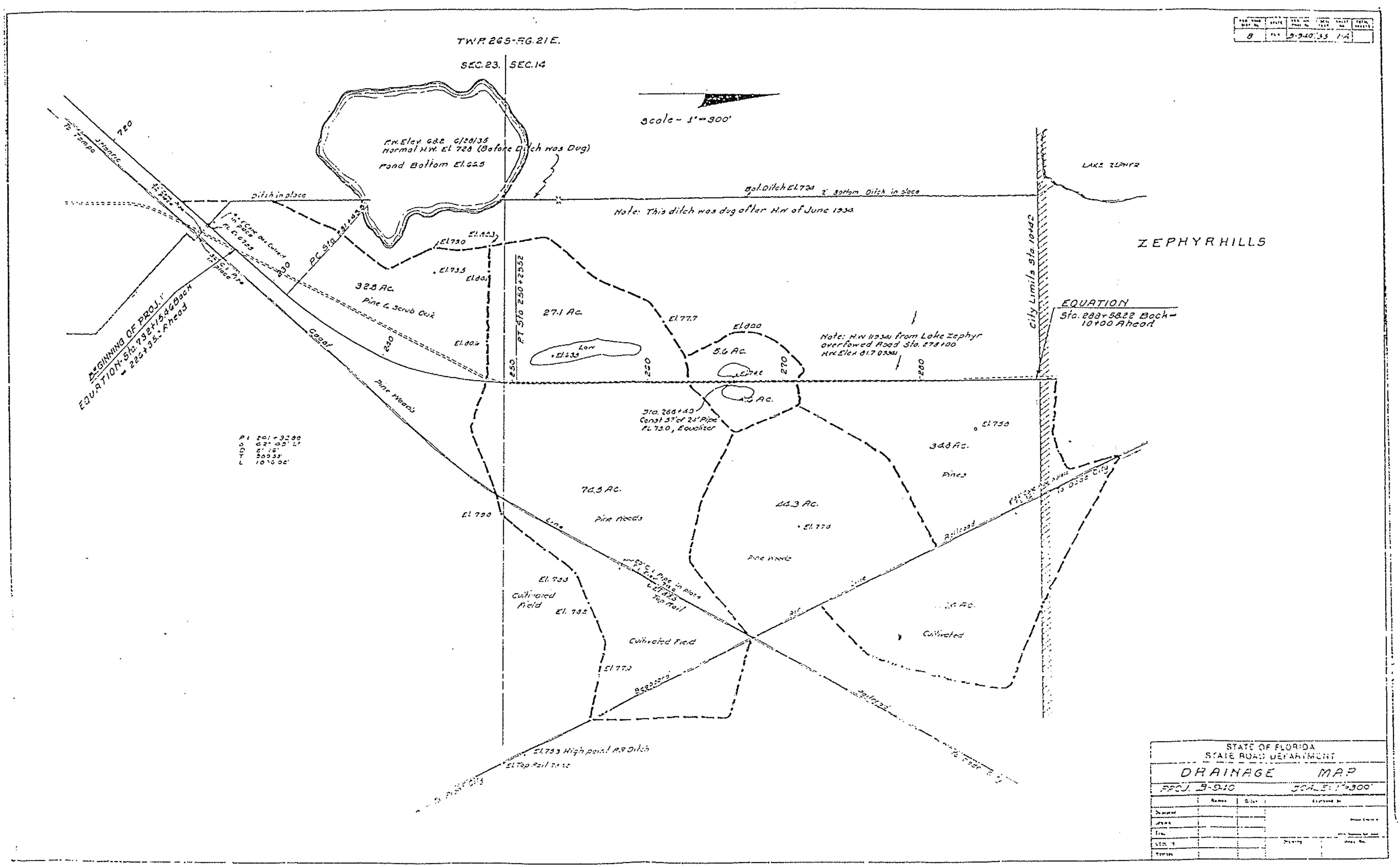
COUNTY LINE
TOWNSHIP LINE
SECTION LINE
UNFENCED PROPERTY
CITY LINE
FENCE LINE
RIGHT OF WAY LINE
BASE OR SURVEY LINE
RAILROADS
TRAVELED WAY
CULVERTS
BRIDGES OVER 20 FT. SPAN
POWER POLE
PHONE POLE
MARSH
GROUND ELEV.
GRADE ELEV.
R. R. MILE POST

LENGTH OF PROJ.

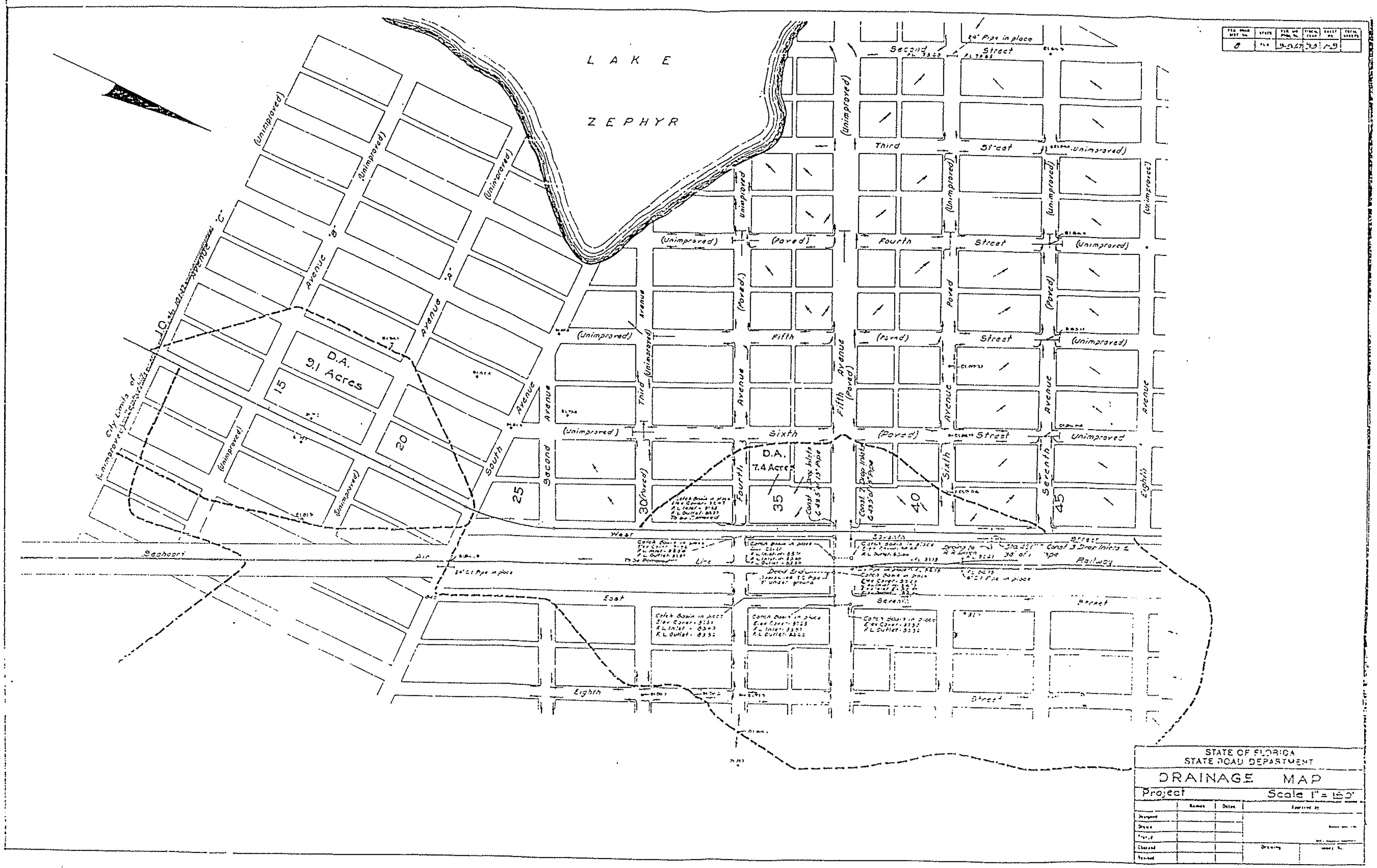
Roadway	11,563.29 Lin. Ft.	=	2.190 Miles
Bridges	0.0	"	0.0
Net Length of Proj.	11,563.29	"	2.190
Exceptions	0.0	"	0.0
Gross Length of Proj.	11,563.29	"	2.190

SUBMITTED BY
STATE HIGHWAY ENGINEER

RECOMMENDED FOR APPROVAL DATE
DISTRICT ENGINEER
RECOMMENDED FOR APPROVAL
CHIEF ENGINEER BUREAU OF PUBLIC ROADS
APPROVED
CHIEF OF BUREAU OF PUBLIC ROADS



TWP. 26S - RG. 21 E.
SEC. 23.
SEC. 14
Scale - 1" = 300'
Pond Bottom El. 66.5
Ditch in place
Note: This ditch was dug after H.W. of June 1934
LAKE ZEPHYR
ZEPHYRHILLS
City Limits Sta. 10+42
EQUATION
Sta. 288+58.22 Back = 10+00 Ahead
32.8 Ac.
Pine & Scrub Oak
27.1 Ac.
Low
5.6 Ac.
74.5 Ac.
Pine Woods
44.3 Ac.
34.8 Ac.
Pines
Cultivated Field
Cultivated
BEGINNING OF PROJ.
EQUATION - Sta. 73+15.46 Back = 226+55 Ahead
Canal
Railroad
To Tampa
STATE OF FLORIDA
STATE ROAD DEPARTMENT
DRAINAGE MAP
PROJ. 3-910
SCALE: 1" = 300'


LAKE
ZEPHYR
Second Street
Third Street
Fourth Street
Fifth Street
Sixth Street
Seventh Street
Eighth Street
Avenue "A"
Avenue "B"
Avenue "C"
South Avenue
Second Avenue
Third Avenue
Fourth Avenue
Fifth Avenue (Paved)
Sixth Avenue
Seventh Avenue
Eighth Avenue
(Unimproved)
(Paved)
D.A. 9.1 Acres
D.A. 7.4 Acres
15
20
25
30
35
40
45
City Limits of
Seaboard Air Line Railway
West
East
24" Pipe in place
Catch Basin in place
Const. 3 Drop Inlets & 30' of 15" Pipe
STATE OF FLORIDA
STATE ROAD DEPARTMENT
DRAINAGE MAP
Project
Scale 1" = 150'

APPENDIX H
AERIAL DRAINAGE MAPS

STATE PROJ. NO.	SHEET NO.
256422-1	1 OF 3


FOR CLARITY, THE BASIN LIMITS
LABELING CORRESPONDS TO THE
BASIN LIMITS OF 6th ST. ONLY (TYP.)
BASIN
1
ZEPHYR CREEK
ZEPHYR CREEK
4'x2' CBC
36" RCP
54" RCP
35" RCP
60" RCP
10'x6' CBC
60" RCP
24" RCP
BEGIN
PROJECT
CHANCEY RD.
OVERBROOK DR.
OHIO AVE.
COLLINS AVE.
EDWIN ST.
LEXINGTON AVE.
MICHIGAN AV.
STAFFORD DR.
MILLER DR.
MONET DR.
BENGER DR.
WILLOUGHBY DR.
CASTILE DR.
CONE DR.
FIR AVE.
HOOVER
6TH ST.
GALL BLVD.
U.S. 301
LAWANDA LOOP
LEGEND
Existing Right of Way
Proposed Right of Way
Proposed Pavement
Drainage Divide
Proposed Pond Site
Existing Culvert
Existing Pond Site
Est. Low Edge of Pvm't.
Pond Outfall

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

POND SITING REPORT
DRAINAGE MAP
BASIN I

STATE PROJ. NO.	SHEET NO.
256422-1	3 OF 3

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

POND SITING REPORT
DRAINAGE MAP
BASIN 6

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

POND SITING REPORT
DRAINAGE MAP
BASINS 2 - 5