FINAL
PRELIMINARY ENGINEERING REPORT

S.R. 39
FROM I-4 TO U.S. 301
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Work Program Item Segment Nos: 255099 1 & 256289 1
Federal Aid Project No: F-321-1(4)
FPN: 255099-1/256289-1

This proposed project involves multi-lane improvements to S.R. 39 and the proposed extension at the Alexander Street Bypass from I-4 in Hillsborough County to U.S. 301 in Pasco County, a distance of approximately 21.2 kilometers (13.2 miles).

October 2000

001

255099 1.20

Federal Highway Administration
Florida Division
227 N. Bronough Street, Suite 2015
Tallahassee, FL 32301
(850) 942-9650

November 14, 2000

IN REPLY REFER TO: HPO-FL

Mr. Jeraldo Comellas, Jr., P.E.
Florida Department of Transportation
11201 N. McKinley Drive
Tampa, Florida 33612-6456

Subject: Environmental Assessment with Finding Of No Significant Impact (FONSI)
Federal-Aid Project Nos.: F-321-1(4)
WPI Seg. Nos.: 255099 1 & 256289 1
SR 39, from I-4 to US 301
Hillsborough and Pasco Counties

Dear Mr. Comellas:

The Federal Highway Administration (FHWA) has reviewed and concurred in the Class of Action determination for the subject project limits. A signed copy of the FONSI is enclosed for your use. We are also granting approval of the Location and Design Concept Acceptance (LDA) for the following portions of the subject project:

1. I-4 to North of Knights-Griffin Road
2. Blackwater Creek Bridges and Approaches
3. Central Avenue to Chancey Road

Should you have any questions, please contact me at (850) 942-9650 Ext. 3032.

Sincerely,

Thomas Shanklin

For: James E. St. John
Division Administrator

Enclosure

002

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45152

(P.E. Number)

October 2000

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SECTION 1.0
SUMMARY

The proposed action is located in eastern Hillsborough County and eastern Pasco County, Florida. It traverses in a north-south direction from I-4 in Hillsborough County to U.S. 301 in Pasco County, a distance of approximately 21.2 kilometers (km) [13.2 miles (mi)]. The Alexander Street Bypass portion (new alignment) from I-4 to the vicinity of Joe McIntosh Road is approximately 4.02 km (2.5 mi). The remaining section of S.R. 39 from Joe McIntosh to U.S. 301 is approximately 17.18 km (10.7 mi).

S.R. 39 provides one of the few north-south routes within eastern Pasco and Hillsborough Counties. The proposed action's purpose is to divert traffic from downtown Plant City and improve the capacity of the corridor. The need for the project was based on the evaluation of current substandard traffic operations within the study area, expected future quality of traffic flow along S.R. 39 based on the No-Build Alternative, and the projected future socio-economic growth in the region of the project.

The *Hillsborough County Metropolitan Planning Organization (MPO) Adopted 2020 Long Range Transportation Plan (LRTP)*[1] for the year 2020 takes into account planned projects in the Capital Improvements Programs of the local government jurisdictions in Hillsborough County. The Florida Department of Transportation's (FDOT) Adopted Five-Year Program for projects within Hillsborough County is also consistent with the *LRTP*[1]. The Alexander Street Bypass and S.R. 39 from its juncture with the Bypass northward to Knights-Griffin Road are identified as needed four-lane roadways in the MPO's Cost Affordable Highway Improvements map that is contained in its *2020 LRTP*[1]. The current *Pasco County 2020 Transportation Plan*[2] indicates that from Central Avenue to Chancey Road S.R. 39 is proposed as a four-lane facility. The proposed project was not required by the FHWA to be subject to a Major Investment Study. The portion of the project subject to Location Design and Concept Approval is in both *MPO's LRTP*[1,2] Cost Affordable Plans that have been determined by the FHWA, Federal Transit Authority, and the Environmental Protection Agency (EPA) to be in conformance with the State Implementation Plan. Therefore, this project comes from a conforming transportation plan and Transportation Improvement Plans as required by the Clean Air Act Amendments of 1990.

1.1 RECOMMENDATIONS

The Florida Department of Transportation (FDOT) has completed a Project Development and Environment Study to evaluate the expansion of S.R. 39 to a four-lane facility from the vicinity of Joe McIntosh Road in Hillsborough County to the vicinity of U.S. 301 in Pasco County. In addition to this expansion, the study also evaluated the extension of the Alexander Street Bypass as a new four-lane facility from I-4 northward to S.R. 39 in the vicinity of Joe McIntosh Road.

Both the existing and design year conditions were evaluated, and various improvement alternative alignments were developed. A total of twenty (20) alternative alignments were developed in the area of the Alexander Street Bypass consisting of both urban and rural typical sections, two (2) alignments were developed from Knights-Griffin Road to Fredda Avenue, and five (5) alignments were developed from Fredda Avenue to U.S. 301. These alignments are described in detail in Section 8.0 of this report.

After a thorough technical analysis and a comprehensive public involvement process, the study recommends the following improvements.

- From I-4 to Cason Street (Alexander Street Bypass)

  A four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, a 16.2 m (54 ft) depressed median, 3.0 m (10 ft) outside shoulders with 1.5 m (5 ft) of the shoulder paved, 3.0 m (10 ft) inside shoulders, and 21.9 m (73 ft) borders to accommodate a fill height of 1.8 m (6 ft). The proposed design speed for this typical section is 110 km/h (70 mph). This alignment will require 80.4 m (268 ft) of right-of-way (see Figure 1-1). The recommended Build Alternative selected for this portion of roadway is Alignment R-H.

- From Cason Street to S.R. 39 (Alexander Street Bypass)

  A four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, a 16.2 m (54 ft) depressed median, 3.0 m (10 ft) outside shoulders with 1.5 m (5 ft) of the shoulder paved, 3.0 m (10 ft) inside shoulders, and 15.0 m (50 ft) borders to accommodate a fill height of 0.9 m (3 ft). The proposed design speed for this typical section is 110 km/h (70 mph). This alignment will require 66.6 m (222 ft) of right-of-way (see Figure 1-2). The recommended Build Alternative selected for this portion of roadway is Alignment R-H.

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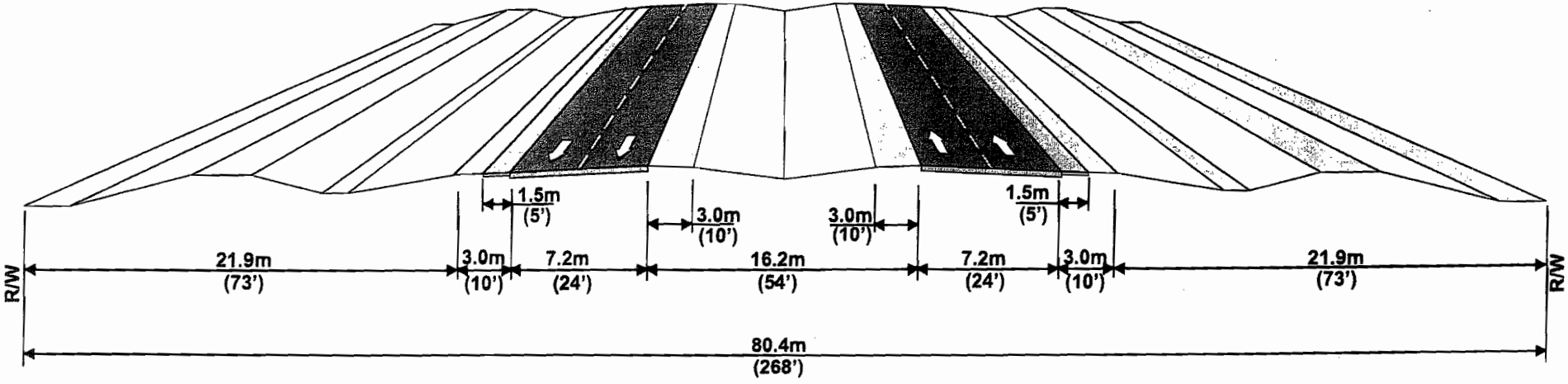

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FROM I-4 TO CASON STREET

Based on 6' of Fill to Proposed PGL

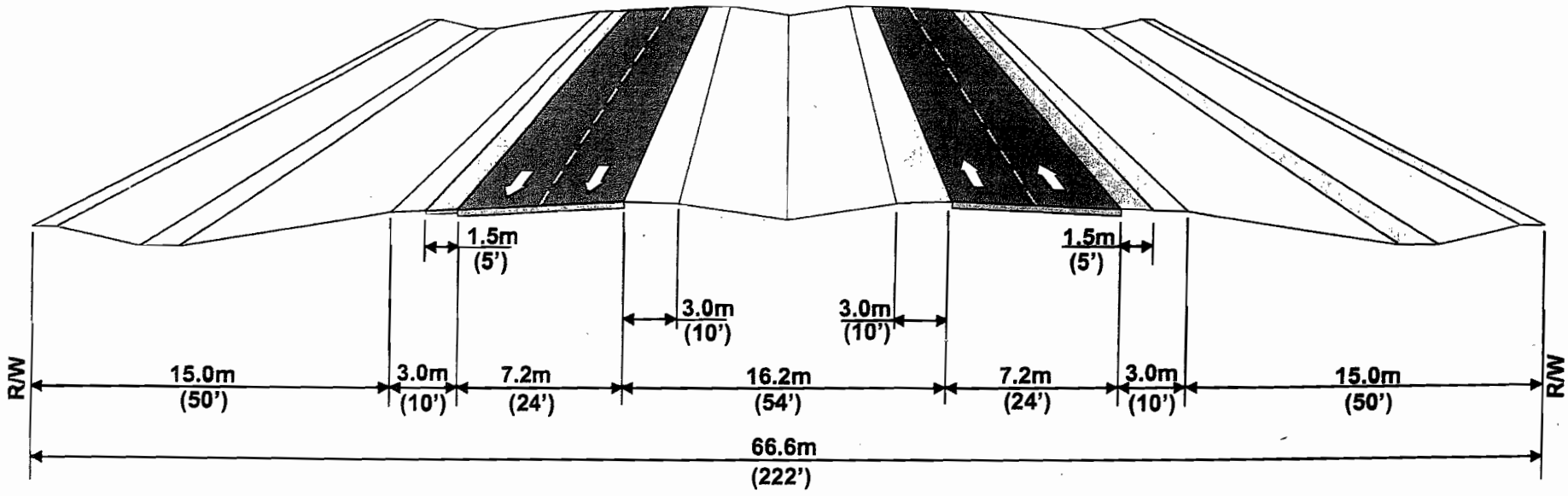
RECOMMENDED TYPICAL SECTION

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 1-1



014

FROM CASON STREET TO S.R. 39

Based on 3' of Fill to Proposed PGL

RECOMMENDED TYPICAL SECTION

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 1-2

- From S.R. 39 to Blount Avenue (Existing S.R. 39)

  A four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, a 16.2 m (54 ft) depressed median, 3.0 m (10 ft) outside shoulders with 1.5 m (5 ft) of the shoulder paved, 3.0 m (10 ft) inside shoulders, and a 13.8 m (46 ft) border on the west side of the roadway to accommodate a fill height of 0.45 m (1.5 ft) and an 8.4 m (28 ft) minimum border on the east side of the roadway. This alignment would share the ditch on the east side of the roadway with CSX Railroad. The proposed design speed for this typical section is 110 km/h (70 mph). This alignment will require 58.8 m (196 ft) of right-of-way (see Figure 1-3). The recommended Build Alternative selected for this portion of roadway is Alignment B which acquires right-of-way from the west side of the roadway.

- From Blount Avenue to Shady Oaks Drive (Existing S.R. 39)

  A four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, a 16.2 m (54 ft) depressed median, 3.0 m (10 ft) outside shoulders with 1.5 m (5 ft) of the shoulder paved, 3.0 m (10 ft) inside shoulders, and a 13.8 m (46 ft) border to accommodate a fill height of 0.45 m (1.5 ft). The proposed design speed for this typical section is 110 km/h (70 mph). This alignment will require 64.2 m (214 ft) of right-of-way (see Figure 1-4). The recommended Build Alternative selected for this portion of roadway is Alignment D which acquires right-of-way from the east side of the roadway.

- From Shady Oaks Drive to U.S. 301

  A four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, 1.2 m (4 ft) bicycle lanes, a 16.2 m (54 ft) depressed median, Type E curb and gutter, and 1.5 m (5 ft) sidewalks. The proposed design speed for this typical section is 90 km/h (55 mph). This typical section will require 50.4 m (168 ft) of right-of-way (see Figure 1-5). The recommended Build Alternative selected for this portion of roadway is Alignment D which is a new connection with U.S. 301.

The proposed improvements will relocate 7 businesses, 1 non-profit (church), and 59 residences. These improvements will have a construction cost of $32.26 million, $6.45 million for engineering and inspection, $34.35 million for right-of-way acquisition, and $1.09 million for ponds (Alexander Street Bypass only) for a total of $74.15 million. See Appendix B for the recommended Build Alternative.

During the PD&E Study it was determined that a design variance would be required during the design phase of the project for the minimum border area from S.R. 39 to Blount Avenue. The standard border width per the Plans Preparation Manual is 12.0 m (40 ft). However, in order to minimize impacts to the community on the west side of the roadway due to the CSX Railroad along the east side of the roadway, the border area was reduced to 8.4 m (28 ft) and the open drainage ditch would be shared with CSX Railroad. In addition, after reviewing the alignment in the area of Knight-Griffin Road, the alignment and typical section were modified in order to avoid impacts to the Knights School. The typical section in the area of Knights-Griffin Road will be similar to Figure 1-3 except that the median width will be reduced to 13.8 m (46 ft) in width with a retaining wall along the northwest corner of the intersection in order to avoid impacting the Knights School property.

Three historical properties are located within the project corridor: the Dr. T.C. Maguire Estate, the Knights School, and the Blackwater Creek Relief Structure. All three have been determined by the State Historic Preservation Officer (SHPO) to be eligible for listing in the *National Register of Historic Places (NHRP)*[3]. The Blackwater Creek Relief Structure is scheduled to be rehabilitated, along with the replacement of the Blackwater Creek Bridge, which will be advanced ahead of the rest of the S.R. 39 project corridor. The FHWA, in compliance with Section 106 of the National Historic Preservation Act and in consultation with the SHPO, has determined that the proposed action will have no effect upon the Dr. T.C. Maguire Estate and the Knights School. The FHWA has applied the Criteria of Adverse Effect found in 36 CFR Part 800.5 and has determined that the bridge replacement project will have an effect on the Blackwater Creek Relief Structure; however, based upon the conclusions noted in the previously submitted "Section 106 Consultation Technical Memorandum for the State Road 39 Blackwater Creek Bridges and Approaches" and the conditions outlined in a January 2000 letter of concurrence between the FHWA and the SHPO, the effect will not be adverse.

1.2 COMMITMENTS

1.2.1 Design Commitments

- I-4 to Knights-Griffin Road, Hillsborough County, and Central Avenue to Chancey Road in Pasco County.

  1. Evaluate median opening at STA. 63+47 to align with nearby driveway.

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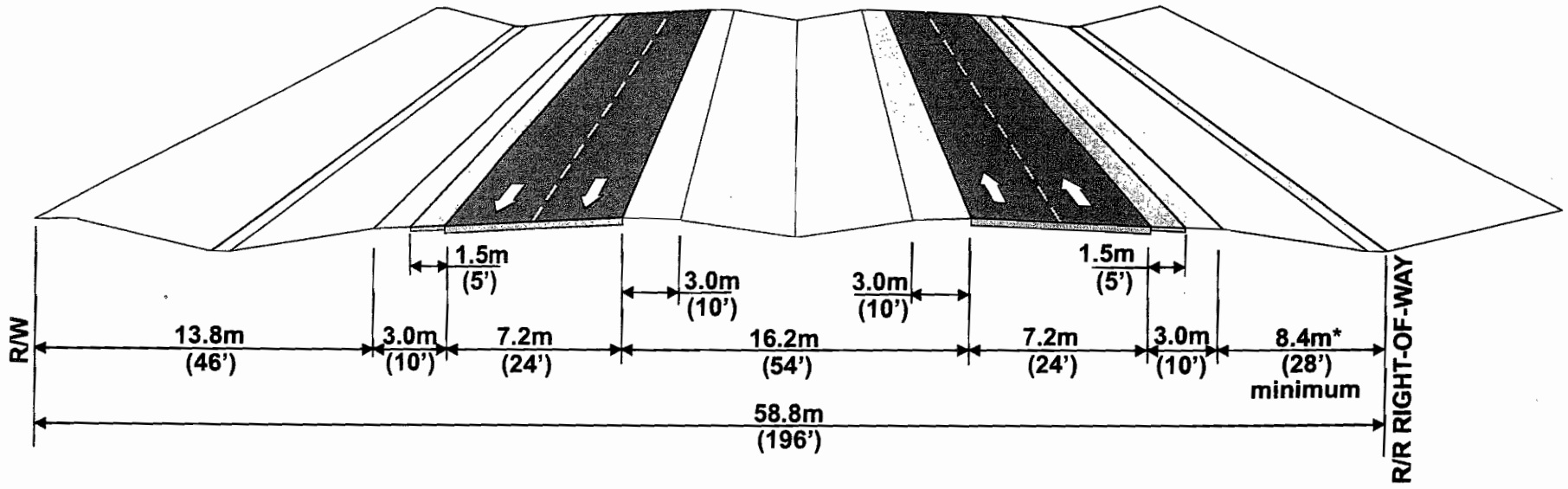


017

FROM S.R. 39 TO BLOUNT AVENUE

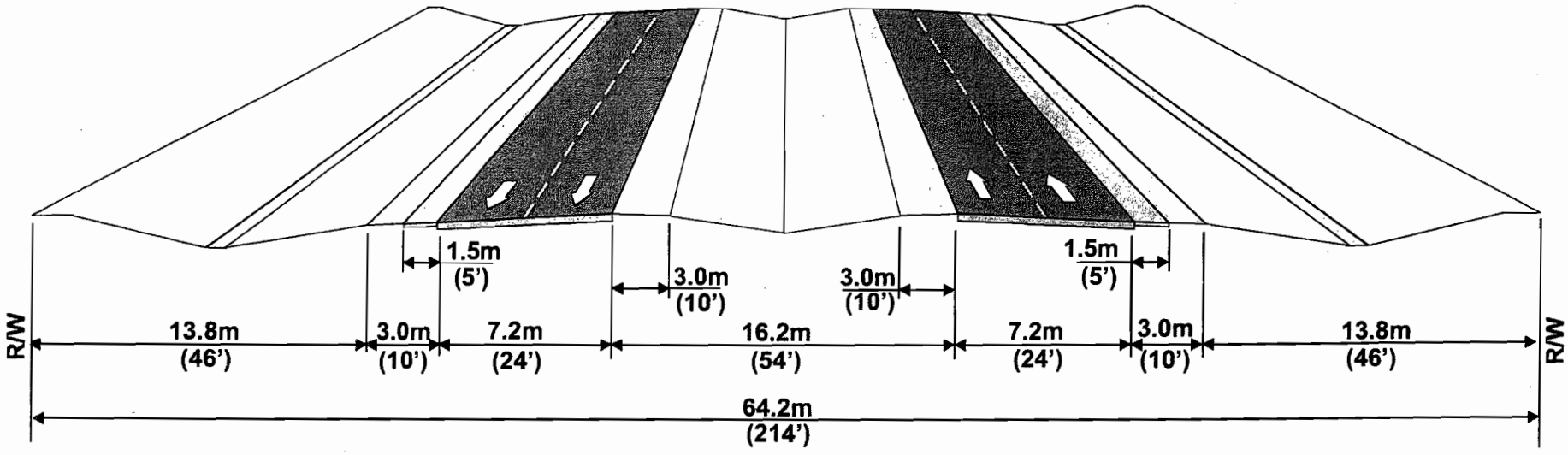
Based on 1.5' of Fill to Proposed PGL & Sharing R/R Right-of-Way

* Does Not Meet Border Criteria.
However, it does meet clear zone criteria.

RECOMMENDED TYPICAL SECTION

S.R. 39 FROM I-4 TO U.S. 301
WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 1-3



018

FROM BLOUNT AVENUE TO SHADY OAKS DRIVE

Based on 1.5' of Fill to Proposed PGL

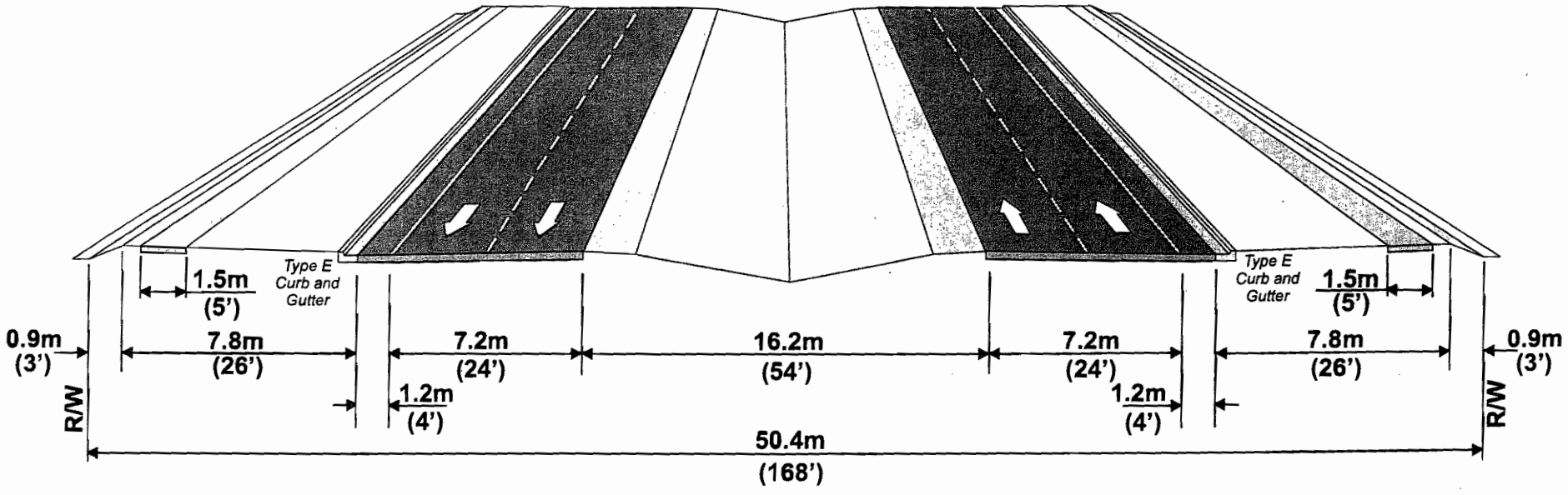
RECOMMENDED TYPICAL SECTION

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 1-4



019

FROM SHADY OAKS DRIVE TO U.S. 301

Based on 1.5' of Fill to Proposed PGL

RECOMMENDED TYPICAL SECTION

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 1-5

2. Re-initiate coordination with the Natural Resources Conservation Service when ROW requirements are more accurately defined in the latter stages of the design/ROW phase.

3. Coordinate with the City of Plant City staff to consider an alternate truck route using Sam Allen Road and Park Road to provide more efficient truck routing around the city.

- Knights-Griffin Road, Hillsborough County to Chancey Road, Pasco County, and Central Avenue, Pasco County, to U.S. 301 in Pasco County.

1. At STA. 128+30 (a driveway), the property owner suggests that the median opening proposed for STA. 126+75 be moved to STA. 128+50 to accommodate his large trucks.

2. At STA. 195+00 (Fig Street), the owner desires a full or left-out northbound median opening.

3. At STA. 118+25, it is suggested that the median opening be relocated southward to STA. 117+85 to align with the existing driveway on the west side to accommodate large trucks and school buses.

4. A frontage road concept will be evaluated between Lightning Rod Lane and Moriezville Road.

5. Construction of a noise wall at the Colonial Park residential area contingent upon the conditions outlined in the EA/FONSI.

6. Re-initiate coordination with the Natural Resources Conservation Service when ROW requirements are more accurately defined in the latter stages of the design/ROW phase.

1.2.2 Construction Commitments

Construction noise and vibrations will be controlled by adherence to the controls listed in the most recent available edition of the FDOT's *Standard Specifications for Road and Bridge Construction*[4].

Short-term air quality effects will be minimized by adherence to all State and local regulations and to the latest version of the FDOT's *Standard Specifications for Road and Bridge Construction*[4].

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Water quality effects resulting from erosion and sedimentation will be controlled in accordance with the most current version of the FDOT's *Standard Specifications for Road and Bridge Construction*[4], and through the use of Best Management Practices.

Maintenance of traffic and sequence of construction will be planned and scheduled to minimize traffic delays. Access to all businesses and residences will be maintained to the extent practical through controlled construction scheduling. Signs will be used as appropriate to provide notice of road closures and other pertinent information. A sign providing the name, address, and telephone of a Department contact person will be displayed on-site.

Construction of the roadway and bridges requires excavation of unsuitable material (muck), and placement of embankments, and use of materials, such as limerick, asphaltic concrete, and portland cement concrete. Demucking is anticipated at most of the wetland sites and will be controlled by Section 120 of the FDOT *Standard Specifications for Road and Bridge Construction*[4]. Disposal will be on-site in detention areas or off-site. The removal of structures and debris will be in accordance with local and State regulation agencies permitting this operation. The contractor is responsible for his methods of controlling pollution and haul roads, in borrow pits, other materials pits, and areas used for disposal of waste materials from the project. Temporary erosion control features as specified in the FDOT's *Standard Specifications for Road and Bridge Construction*[4], Section 104, will consist of temporary grassing, sodding, mulching, sandbagging, slope drains, sediment basins, sediment checks, artificial coverings, and berms.

Because of its evacuation route status, maintenance of traffic plans must include provisions for maintaining current level of service and number of lanes, especially during hurricane season.

1.3 REFERENCES

1. *Hillsborough County Metropolitan Planning Organization (MPO) Adopted 2020 Long Range Transportation Plan*; Hillsborough County Metropolitan Planning Organization; Hillsborough County, Florida; Adopted November 9, 1998.

2. *Pasco County 2020 Transportation Plan*; Pasco County Metropolitan Planning Organization; New Port Richey, Florida; January 1999.

3. *National Register of Historic Places (NRHP)*; Division of Archives, History and Records Management; Tallahassee, Florida; 1972.

4. *Florida Department of Transportation's Standard Specifications for Road and Bridge Construction 2000*; Florida Department of Transportation; Tallahassee, Florida.

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SECTION 2.0
INTRODUCTION

The Florida Department of Transportation (FDOT) conducted a Project Development and Environment (PD&E) Study to evaluate the expansion of S.R. 39 to a four-lane facility from the vicinity of Joe McIntosh Road in Hillsborough County to the vicinity of U.S. 301 in Pasco County, Florida. In addition, the FDOT is evaluating the extension of Alexander Street Bypass as a four-lane facility from I-4 northward to S.R. 39 in the vicinity of Joe McIntosh Road.

2.1 PURPOSE

The objective of the PD&E Study is to provide documented environmental and engineering analyses, which will help the FDOT and the Federal Highway Administration (FHWA) reach a decision on the type, conceptual design, and location of the necessary improvements along the S.R. 39 corridor to accommodate future transportation needs in a safe and efficient manner.

This report documents the need for the project and presents the procedures used to develop and evaluate various improvement alternatives as they relate to the transportation facility. Engineering data and information about the environmental characteristics of the area, which are essential to the alignment and analytical decision-making process, were collected. Once sufficient data were available, alignment criteria were established and alternatives were developed. Comparison of alternatives was based on a variety of parameters using a matrix format. This analytical process identified the alternative that will have the least impact while providing the necessary improvements.

2.2 PROJECT DESCRIPTION

Through the PD&E Study process, the FDOT is evaluating the expansion of S.R. 39 to a four-lane facility from the vicinity of Joe McIntosh Road in Hillsborough County to the vicinity of U.S. 301 in Pasco County. In addition, the FDOT is evaluating the extension of Alexander Street Bypass as a four-lane facility from Interstate 4 (I-4) northward to S.R. 39 in the vicinity of Joe McIntosh Road.

The S.R. 39 corridor is functionally classified as a north/south minor arterial facility between I-4 and U.S. 301. S.R. 39 is part of the Federal-Aid Primary and State Highway System and is classified as an emergency evacuation route. The project limits extend from I-4 in Plant City and Hillsborough County to U.S. 301 in Pasco County, a distance of 21.2 kilometers (km) [13.2 miles (mi)]. Figure 2-1 illustrates the limits of the study area in relation to the highway system.

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The existing S.R. 39 within the project limits contains a two-lane undivided typical section with 3.658 meter (m) [12 foot (ft)] wide travel lanes, 1.219 m (4 ft) paved shoulders, and open roadside ditches on both sides of the roadway. The existing right-of-way (ROW) varies from 18.288 m (60 ft) to 45.720 m (150 ft).

S.R. 39 is currently a two-lane undivided roadway with drainage ditches adjacent to the existing roadway. A CSX Transportation railroad line parallels the existing roadway on the east side of S.R. 39 for approximately 17.7 km (11.0 mi) from the existing S.R. 39 and I-4 intersection to a point just north of Crystal Springs in Pasco County.

In 1988, FDOT began the PD&E Study for the widening of S.R. 39 from I-4 to U.S. 301. Early in the study process, it was determined that it would not be feasible to widen S.R. 39 from I-4 to the vicinity of Knights-Griffin Road. The existing facility could not be expanded to the west due to the presence of Plant City Memorial Park cemetery near the I-4 interchange and two structures located farther north that were found to be potentially eligible for listing on the *National Register of Historic Places (NRHP)*[1]. Expansion to the east was constrained by the presence of the CSX railroad which parallels S.R. 39.

FDOT then considered other options for improving the corridor. As a result of coordination with the City of Plant City and the Hillsborough County MPO, the PD&E Study was to instead evaluate a new bypass alignment from I-4 to the vicinity of Knights-Griffin Road in addition to widening S.R. 39 north of the bypass alignment. The City of Plant City had identified the need to divert traffic from its historic district by relocating the S.R. 39 interchange to Alexander Street. At this point in the PD&E Study process, the question was where to merge the Alexander Street Bypass back into S.R. 39. To avoid impacts to the Shiloh community as well as the potential historic sites, the S.R. 39 and Alexander Street Bypass merge point was placed in the vicinity of Joe McIntosh Road.

Project segments were developed to effectively assess and compare the impacts of each alternative in different geographical areas within the project corridor. After considering the existing land use patterns, locations of major intersections, and available ROW along S.R. 39, the project was divided into three study segments as follows:

Segment 1 Alexander Street Bypass area from I-4 to Joe McIntosh Road, including the existing S.R. 39. This includes all of the Alexander Street Bypass alternatives.

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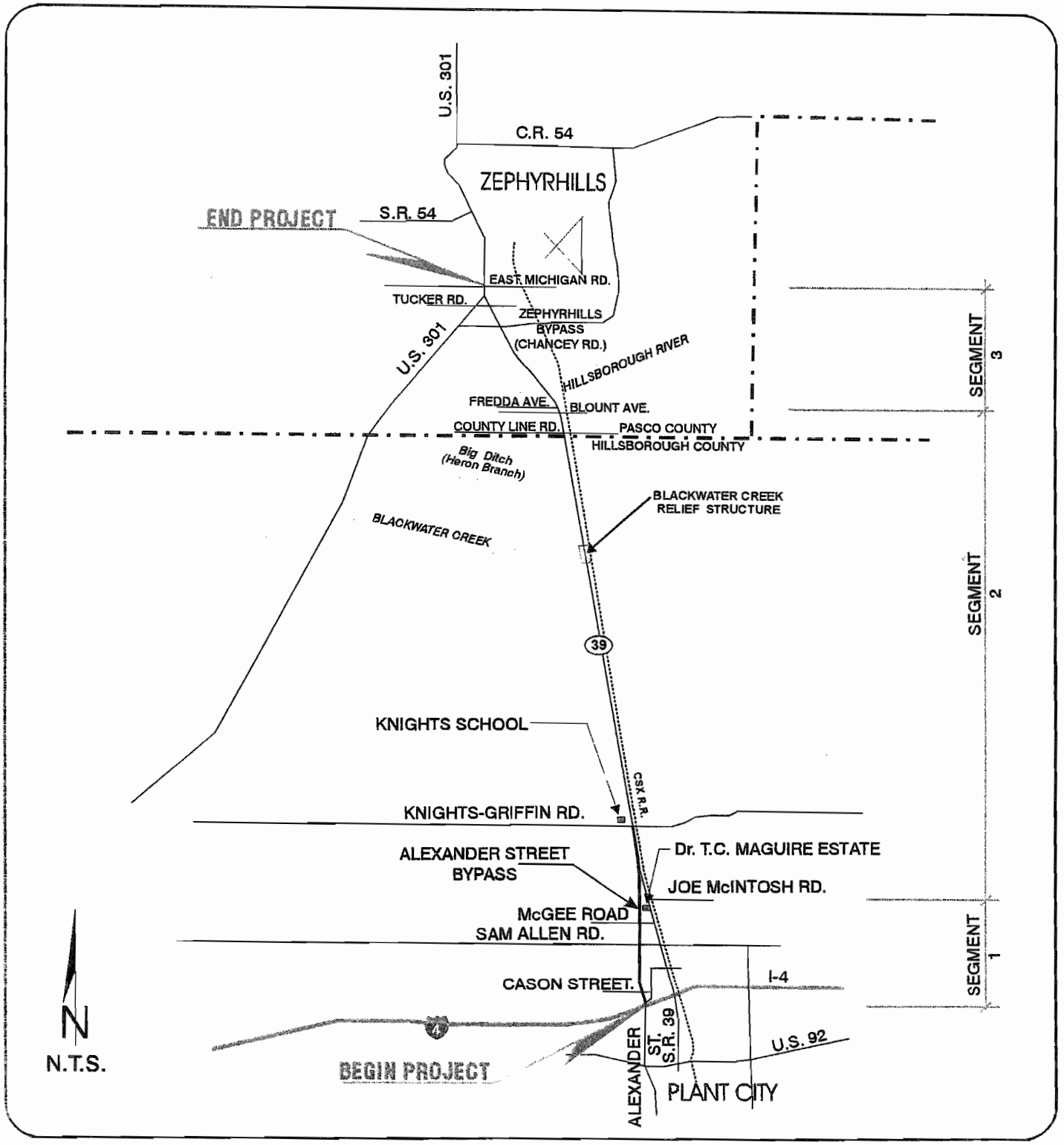

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39

From I-4 to U.S. 301
Hillsborough and Pasco Counties, Florida

PROJECT LOCATION MAP

Work Program Item Segment #: 255099 1 & 256289 1
FAP #: F-321-1(4)

FIGURE 2-1

Segment 2 S.R. 39 from Joe McIntosh Road to Fredda Avenue in Crystal Springs (Pasco County). This includes S.R. 39 in the area adjacent to the CSX Railroad. In addition, alternatives are considered in the vicinity of the Dr. T.C. Maguire Estate and the Knights School since both are potentially eligible for listing on the *NRHP*[1].

Segment 3 S.R. 39 from Fredda Avenue to U.S. 301. This includes S.R. 39 from where the roadway and railroad diverge to the end of the project at U.S. 301.

2.3 PROJECT HISTORY

A Public Workshop for the PD&E Study was held in 1993 and conceptual alignments were displayed using segments as described above. A follow-up meeting was held with the Shiloh community to address neighborhood concerns. Additional alignments to the west were developed for the Alexander Street Bypass in order to avoid impacts to the Shiloh community.

Before the refined alignments could be presented to the public, the PD&E Study was placed on hold due to a change in the *LRTP*[2], which is now based on cost affordability rather than need for the project, as was the case with the earlier *LRTP*[2]. The northern portion of the project was in the needs plan but not the cost affordable plan. Therefore, the Hillsborough County MPO removed the project from the *LRTP*[2], except for the section from I-4 to Knights-Griffin Road. Through coordination between the Federal Highway Administration (FHWA) and FDOT, it was determined that the PD&E Study should move forward with the original project limits but only request Location Design and Concept Approval for the portion that is in the *LRTP*[2] Cost Affordable Plan.

The current PD&E Study evaluates the widening of the entire project but design year traffic volumes do not support widening of S.R. 39 north of Knights-Griffin Road. The Segment 1 limits have been changed to coincide with the *LRTP*[2]. The northern portion of the project will be reevaluated after it is included in the *LRTP*[2].

When the PD&E Study resumed in 1997, it was necessary to revise the typical sections due to new design criteria. Therefore, in addition to adding new alignments, the typical sections have been changed to reflect the new design criteria. Affects of the new typical section are evaluated in this environmental evaluation.

2.4 REFERENCES

1. *National Register of Historic Places*; Division of Archives, History and Records Management; Tallahassee, Florida; 1972.

2. *Hillsborough County Metropolitan Planning Organization (MPO) Adopted 2020 Long Range Transportation Plan*; Hillsborough County Metropolitan Planning Organization; Hillsborough County, Florida; Adopted November 9, 1998.

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SECTION 3.0
NEED FOR IMPROVEMENT

S.R. 39 provides one of the few north-south routes within eastern Pasco and Hillsborough Counties. Connecting Plant City to Zephyrhills, this facility will provide a transportation service to the area through the design year of 2020. The need for improvement along the S.R. 39 corridor was established based on the evaluation of the following:

- Current substandard traffic operations within the study area,
- The expected future quality of traffic along S.R. 39 under the No-Build Alternative, and
- The projected future socioeconomic growth in the region of the project.

3.1 DEFICIENCIES

Capacity analyses were conducted to identify the roadway segments and intersections that presently or will in the future operate at a deficient level of service (LOS) if no improvements are constructed. Hillsborough and Pasco Counties require that the roadway and intersections operate at LOS C (Rural) and LOS D (Urban) or better under future traffic conditions. This effort is documented in the *Project Traffic and Intersection Analysis Technical Memorandum*[1] prepared for this PD&E study.

3.1.1 Capacity and LOS Deficiencies

The results of the capacity analysis of the existing traffic conditions performed for S.R. 39 indicate that traffic volumes are expected to increase by the design year. As a result of this increase in demand and no roadway improvements, the existing two-lane S.R. 39 would operate at LOS F. The LOS is a measure of the operational conditions of a roadway ranging from A, which is the best condition, to F, which is the worst operational condition resulting in heavy traffic and long delays. The LOS analysis indicates the need for a four-lane facility on S.R. 39, including the Alexander Street Bypass, from north of I-4 to U.S. 301, to achieve an LOS C (rural) and D (urban) for projected year 2020 design hour traffic volumes.

3.2 SAFETY

3.2.1 Accident Evaluation

The crash analysis indicates that although S.R. 39, within the study limits, is operating within the expected parameters with respect to the number and types of crashes, the number of injuries experienced is high, averaging approximately 1.5 injuries per crash. This high injury rate is presumably due to the high speeds on S.R. 39 and the lack of access control common on two-lane facilities. A four-lane divided roadway on S.R. 39 should have a positive effect on the safety of traffic operations because it will provide increased control of access to the roadway and improve the geometry of the intersections on S.R. 39 within the study limits.

3.3 CONSISTENCY WITH TRANSPORTATION PLAN

The Hillsborough County Metropolitan Planning Organization (MPO) Adopted 2020 Long Range Transportation Plan[2] designates S.R. 39 and the Alexander Street Bypass as a future four-lane divided facility from I-4 to Knights-Griffin Road and a two-lane facility from Knights-Griffin Road to the Hillsborough/Pasco County Line.

Pasco County 2020 Transportation Plan[3], designates S.R. 39 as a four-lane divided facility from Central Avenue to Chancey Road. The plan indicates S.R. 39 to be a two-lane roadway from the Pasco County Line to Central Avenue, and from Chancey Road to U.S. 301.

3.4 SOCIAL AND ECONOMIC DEMANDS

S.R. 39 from I-4 to U.S. 301 traverses both Hillsborough and Pasco Counties. Hillsborough County encompasses 3,280 gross square kilometers (km^2) [1,266.4 gross square miles (sq mi)] and 2,722 net km^2 (1,051 net sq mi) of land area; and Pasco County encompasses 868 gross sq mi and 745 net sq mi of land area. The difference between gross and net is that gross includes land and bodies of water while net includes only land. The S.R. 39 corridor from I-4 to Pasco County in Hillsborough County is located within Census Tracts 101.02, 101.03, and 101.04; from Hillsborough County to U.S. 301 in Pasco County, the corridor is located in Census Tracts 330.04, 331, and 329. These census tracts are predominantly rural in nature.

According to the 1990 Census of Population, Housing, and Employment, Hillsborough County's population was 834,054 in 1990 which was a 29 percent increase over the 1980 population. Projected population for 2020 is 1,224,900, which represents an increase of 47 percent over 1990's

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population. Pasco County's population in 1990 was 281,131, which was a 45 percent increase over the 1980 population, and the 2020 projected population is 431,300, which is a 53 percent increase over the 1990 population. Population data for both Hillsborough and Pasco Counties and the above-referenced Census Tracts, as well as other relevant socioeconomic information, are presented in Table 3-1.

TABLE 3-1

HILLSBOROUGH AND PASCO COUNTIES
SOCIOECONOMIC INFORMATION

Statistic	Value
Population - 1990 - Hillsborough County	834,054
Population - 2020 - Hillsborough County	1,224,900
Percent Increase in Population 1990 - 2020	47%
Population - 1990 - Pasco County	281,131
Population - 2020 - Pasco County	431,300
Percent Increase in Population 1990 - 2020	53%
Population - 1990 - Hillsborough County Census Tracts 101 .02, .03, .04	15,195
Projected Population - 2020 - Hillsborough County Census Tracts 101 .02, .03, .04	17,095
Percent Increase in Population - 1990 - 2020 Census Tract –	12.5%
Population - 1990 - Pasco County Census Tracts 330.04, 331, 329	15,045
Projected Population - 2020 - Census Tracts 330.04, 331, 329	16,926
Percent Increase in Population - 1990 - 2020 Census Tract –	12.5%
Median Age - 1990 - Hillsborough County	35
Median Age - 1990 - Pasco County	49
Percent 65 and older - Hillsborough County 1997	13%
Percent 65 and older - Pasco County 1997	32%
Persons per Household - Hillsborough County 1997	2.51
Persons per Household - Pasco County 1997	2.26
House purchase price - 1996 - Hillsborough County	$100,951.00
House purchase price - 1996 - Pasco County	$79,923.00
Per Capita Income - 1996 - Hillsborough County	$22,872.00
Per Capita Income - 1996 - Pasco County	$19,843.00

Source: *1998 Florida Statistical Abstract*[4].

U.S. Census Bureau.

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3.5 REFERENCES

1. *Project Traffic and Intersection Analysis Technical Memorandum*; Parsons Brinckerhoff Quade & Douglas; Inc.; Tampa, Florida; November 3, 1999.

2. *The Hillsborough County Metropolitan Planning Organization (MPO) Adopted 2020 Long Range Transportation Plan;* Hillsborough County Metropolitan Planning Organization; Hillsborough County; Adopted November 9, 1998.

3. *Pasco County 2020 Transportation Plan;* Pasco County Metropolitan Planning Organization; New Port Richey, Florida; January 1999.

4. *1998 Florida Statistical Abstract,* University of Florida, Bureau of Economic and Business Research, 1998.

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SECTION 4.0
EXISTING CONDITIONS

4.1 EXISTING ROADWAY CHARACTERISTICS

4.1.1 Functional Classification

S.R. 39 is designated as a Federal Aid Primary route and is functionally classified as follows:

- I-4 to south of Sam Allen Road — Urban Minor Arterial
- South of Sam Allen Road to Shady Oaks Drive — Rural Minor Arterial
- Shady Oaks Drive to U.S. 301 — Urban Minor Arterial

4.1.2 Typical Section(s)

Within the project limits, the S.R. 39 corridor displays one roadway typical cross section:

- I-4 to U.S. 301, the roadway consists of a two-lane undivided typical section with 3.658 m (12 ft) wide travel lanes, 1.219 m (4 ft) paved shoulders, and open roadside ditches on both sides of the roadway.

4.1.3 Pedestrian and Bicycle Facilities

There are currently no existing pedestrian facilities along the S.R. 39 corridor. Under the FDOT's current design policies, the paved shoulder adjacent to the existing travel lanes from I-4 to the Hillsborough/Pasco County line is considered an undesignated bicycle lane.

4.1.4 Right-of-Way

The existing right-of-way (ROW) for S.R. 39 varies from I-4 to U.S. 301. Table 4-1 summarizes the existing ROW widths along the project corridor.

TABLE 4-1

EXISTING RIGHT-OF-WAY DATA

Location		Right-of-Way Width [meters (feet)]
From	To	
I-4	West of Terrace Drive	18.288 m (60 ft)
West of Terrace Drive	0.5 mile north of Knights Griffin Road	21.336 m (70 ft)
0.5 mile north of Knights Griffin Road	Hunter Road	36.576 m (120 ft)
Hunter Road	North 914.4 m (3,000 feet)	30.480 m (100 ft)
North 914.4 m (3,000 feet)	Patrinostro Road	36.576 m (120 ft)
Patrinostro Road	Blackwater Creek	45.720 m (150 ft)
Blackwater Creek	U.S. 301	30.480 m (100 ft)

4.1.5 Horizontal Alignment

The existing horizontal alignment was obtained from the FDOT Right-of-Way Maps. Table 4-2 summarizes the existing horizontal alignment characteristics of each curve.

TABLE 4-2

EXISTING HORIZONTAL ALIGNMENT CHARACTERISTICS ALONG S.R. 39

Curve Number	Degree of Deflection	Radius	
		(meters)	(feet)
1	14° 38' 00" LT	873.187	2864.789
2	2° 00' 00" LT	2619.563	8594.367
3	2° 00' 00" RT	2619.563	8594.367
4	5° 59' 00" RT	1746.375	5729.578
5	1° 26' 00" LT	13097.815	42971.835
6	1° 26' 00" RT	13097.815	42971.835
7	26° 58' 00" LT	873.187	2864.789
8	9° 18' 00" RT	2095.650	6875.494
9	27° 05' 00" RT	873.187	2864.789

4.1.6 Vertical Alignment

U.S. Geological Survey (USGS) quadrangle maps were used in determining the elevations along the roadway. The following list identifies the maps used to determine the elevations along the roadway:

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- Plant City West 1975
- Zephyrhills 1975

The existing roadway elevations within Hillsborough County range from 36.58 m (120 ft) at S.R. 39 and I-4 to 22.86 m (75 ft) at the Hillsborough/Pasco County Line. In Pasco County, the elevations range from 22.86 m (75 ft) to 16.7 6 m (55 ft) at the Hillsborough River and gradually increase to an elevation of 24.38 m (80 ft) in the vicinity of U.S. 301.

4.1.7 Drainage

A detailed *Location Hydraulic Report*[1] has been prepared for the project. The following summarizes selected data from that report.

The existing roadway drainage is carried in parallel roadside swales that tie into the major drainage systems that flow from east to west and cross S.R. 39. The existing drainage structures along S.R. 39 were identified in the field and by examining existing roadway plans. Twenty-one crossings were located, including 18 culverts, 1 bridge culvert, and 2 bridges, along the existing S.R. 39 alignment between Joe McIntosh Road and U.S. 301. The majority of these cross drains are reinforced concrete boxes. Some existing structures have been extended from earlier widening(s) of S.R. 39. The first bridge, proceeding up-station, traverses Blackwater Creek in Hillsborough County and is a 49 m (161 ft) long composite steel bridge with an adjacent triple 13.71 m (45 ft) long semi-circular arch flood relief structure. A triple 3.05 x 1.22 m (10-x-4-ft) CBC bridge culvert, crossing Big Ditch (also known as Heron Branch) is located in Hillsborough County. The second bridge is a 96.01 m (315 ft) steel girder bridge supported by timber piles crossing the Hillsborough River in Pasco County.

This section of S.R. 39 has not exhibited serious historical drainage problems. From conversations with FDOT maintenance personnel, some flooding occurs in the areas surrounding the Sam Allen Road intersection, but no overtopping of the roadway or traffic interruption of S.R. 39 has been reported. The flooding problems appear to be caused by the downstream cross drains at the CSX railroad and do not appear to be due to insufficient culvert capacity but to inadequate outfall situations. By field observation during a September 1988 storm, the structures functioned properly. According to Southwest Florida Water Management District (SWFWMD), for the four day event (September 5-9, 1988), the rainfall amount recorded was 304.8 millimeters (mm) (12 inches). This reading established the storm event at roughly a 25-year return period.

The site investigations revealed that although silting has occurred in some structures, the existing drainage structures appear to be in good condition and functioning properly.

S.R. 39 crosses six flood zone areas, of which four of the crossings are Zone A and two are Zone A3 (Hillsborough River floodplain and Blackwater Creek floodplain). Most of the alignment lies within Zone C.

4.1.8 Geotechnical Data

The soils within the limits of the project range from a level, well drained fine sand to a very poorly drained soil. At the south end of the project, the soils are predominantly of the better drained Orlando fine sand and Blanton fine sand. Both are of the level phase types, but the latter is a well to moderately well drained sand characteristic of low ridges in the pine flatwoods.

From Pemberton Creek north to the town of Knights, the area is characterized by a mosaic of soil types, including Leon, Candler, Myakka, and Seffner fine sands. Both Leon and Myakka fine sands are of the most extensive, poorly drained soils of the pine flatwoods predominant to this area. Seffner fine sand is nearly level and somewhat poorly drained and found on the rims of depressions and on broad, low ridges on the flatwoods. Candler fine sand is nearly level but excessively drained found on the uplands.

Beginning approximately 2.41 km (1.5 miles) north of Knights-Griffin Road and continuing to the northern project terminus at U.S. 301, the terrain is generally flat. The primary soil association for the Pasco County segment is comprised of predominantly Wauchula and Pomona fine sands. These are nearly level, poorly and very poorly drained soils of the flatwoods and depressions. Along the Hillsborough River are Chobee soils, which are nearly level and very poorly drained found along the flood plains of most major rivers and streams. Approaching U.S. 301, Tavares sand is predominant and characterized as nearly level to gently sloping, moderately well drained soil found on low ridges and knolls. Tables 4-3 and 4-4 summarize the soil types for Hillsborough and Pasco Counties throughout the project area.

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TABLE 4-3

SUMMARY OF HILLSBOROUGH COUNTY USDA SOIL SURVEY

Hillsborough County USDA Soil Series	Classification			Seasonal High Groundwater Table	
	Depth meters (inches)	AASHTO Group	USCS Group	Depth meters (inches)	Duration (months)
Basinger soil	0-0.2 (0-7) 0.2-2.0 (7-80	A-3 A-3, A-2-4	SP SP, SP-SM	0.6-0.3 (24-12)	9
Hopolaw soil	0-1.3 (0-52) 1.3-2.0(52-80)	A-3 A-2-4	SP, SP-SM SM, SM-SC	0.6-0.3 (24-12)	11
Samsula soil	0-0.9 (0-34) 0.9-2.0 (34-80)	----- A-3, A-2-4	----- SP-SM, SM, SP	0.6-0.3 (24-12)	12
Candler fine sand	0-1.8 (0-72) 1.8-2.0 (72-80)	A-3 A-3, A-2-4	SP, SP-SM SP-SM	> 1.8 (>72)	-----
Chobee loamy fine sand	0-0.4 (0-16) 0.4 -1.2 (16-49)	A-2-4 A-2-6, A-2-7, A-6, A-7	SP-SM, SM SC	0 - 0.3 (0-12)	9
Chobee sandy loam	0-0.4 (0-15) 0.4-1.5 (15-60)	A-2-4 A-2-6 , A-2-7	SP-SM, SM SC	0 - 0.3 (0-12)	9
Eaton fine sand	0-0.6 (0-22) 0.6-2.0 (22-80)	A-3, A-2-4 A-6, A-7	SP-SM SC, CL, CH	0 - 0.3 (0-12)	4
Felda fine sand	0-0.6 (0-22) 0.6-1.1 (22-45) 1.1-2.0 (45-80)	A-3 A-2-4, A-2-6 A-3, A-2-4	SP, SP-SM SM, SM-SC, SC SP, SP-SM	0 - 0.3 (0-12)	9
Fort Meade loamy fine sand	0-2.0 (0-80)	A-2-4	SM SM	> 1.8 (>72)	-----
Gainesville loamy fine sand	0-2.0 (0-80)	A-2-4	SM	> 1.8 (>72)	-----
Lake fine sand	0-2.0 (0-80)	A-3, A-2-4	SP-SM	> 1.8 (>72)	-----
Malabar fine sand	0-0.3 (0-12) 0.3-0.8 (12-30) 0.8-1.3 (30-50)	A-3 A-3, A-2-4 A-3	SP, SP-SM SP, SP-SM SP, SP-SM	0 - 0.3 (0-12)	6
Myakka fine sand	0-0.5 (0-20) 0.5-0.8 (20-30) 0.8-2.0 (30-80)	A-3 A-3, A-2-4 A-3	SP, SP-SM SM, SP-SM SP, SP-SM	0 - 0.3 (0-12)	6
Orlando fine sand	0-2.0 (0-80)	A-3, A-2-4	SP, SP-SM	> 1.8 (>72)	-----
Paisley fine sand	0-0.1 (0-4) 0.1-2.0 (4-80)	A-2-4, A-3 A-7	SP-SM CH, CL	0.6-0.3 (24-12)	9
St. Johns fine sand	0-0.7 (0-29) 0.7-1.1 (29-46) 1.1-2.0 (46-80)	A-3 A-3, A-2-4 A-3	SP, SP-SM SP-SM, SM SP, SP-SM	0-0.3 (0-12)	11
Seffner fine sand	0-2.0 (0-80)	A-3, A-2-4	SP-SM. SP	0.5-1.1 (18-42)	6
Wabasso fine sand	0-0.8 (0-60) 0.8-2.0 (60-80)	A-3 A-2-4, A-2-6	SP, SP-SM SC, SM-SC	0-0.3 (0-12)	5
Winder fine sand	0-0.3 (0-10) 0.3-0.4 (10-14) 0.4-0.8 (14-30)	A-3, A-2-4 A-2-4 A-2-4, A–6	SP, SP-SM SM SC	0-0.3 (0-12)	7
Zolfo fine sand	0-0.1 (0-3) 0.1-2.0 (3-80)	A-3, A-2-4 A-3, A-2-4	SP-SM SP-SM, SM	0.6-1.1 (24-42)	6

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TABLE 4-4

SUMMARY OF PASCO COUNTY USDA SOIL SURVEY

Pasco County USDA Soil Series	Classification			Seasonal High Groundwater Table	
	Depth meters (inches)	AASHTO Group	USCS Group	Depth meters (inches)	Duration (months)
Wauchula Fine Sand	0-0.2 (0-8) 0.2-0.9 (8-34) 0.9-2.0 (34-80)	A-3, A-2-4 A-3, A-2-4 A-2-4, A-2-6, A-4, A-6	SP-SM SP-SM, SM SM, SM-SC, SC	0-0.3 (0-12)	9
Pomona Fine Sand	0-0.2 (0-6) 0.2-0.6 (6-22) 0.6-0.9 (22-36)	A-3, A-2-4 A-3, A-2-4 A-3, A-2-4	SP, SP-SM SP, SP-SM, SM SP-SM, SM	0-0.3 (0-12)	3
Tavares Sand	0-2.2 (0-86)	A-3	SP, SP-SM	1.1-1.8 (42-72)	7
Sparr Fine Sand	0-1.1 (0-43) 1.1-1.2 (43-48) 1.2-1.5 (48-59)	A-3, A-2-4 A-2 A-2, A-4, A-6	SP-SM SM-SC, SC, SM SC, SM-SC	0.5-1.1 (18-42)	4
Vero Fine Sand	0-0.6 (0-23) 0.6-0.8 (23-30) 0.8-2.0 (30-80)	A-3, A-2-4 A-2-4 A-2-4, A-2-6, A-4, A-6	SP-SM, SM SM SM, SM-SC, SC	0-0.3 (0-12)	5
Tavares-Urban Land Complex	0-2.2 (0-86)	A-3	SP, SP-SM	1.1-1.8 (42-72)	7
Zephyr Muck	0-0.5 (0-18) 0.5-1.2 (18-48) 1.2-1.7 (48-67)	A-3, A-2-4 A-2-4, A-2-6 A-2-4, A-4	SP-SM, SM SM, SM-SC, SC SM, SM-SC, SC	+0.6-0.3 (+24 -12)	9
Electra Variant Fine Sand	0-1.0 (0-39) 1.0-1.3 (39-51) 1.3-1.8 (51-70)	A-3 A-3, A-2-4 A-3	SP, SP-SM SP-SM, SM SP, SP-SM	0.6-1.1 (24-42)	4
Smyrna Fine Sand	0-0.3 (0-13) 0.3-0.6 (13-25) 0.6-2.0 (25-80)	A-3 A-3, A-2-4 A-3	SP, SP-SM SM, SP-SM SP, SP-SM	0-0.3 (0-12)	4
Chobee Soils	0-0.3 (0-11) 0.3-1.4 (11-56) 1.4-2.0 (56-80)	A-2-4 A-2-6, A-2-7. A-2-4, A-2-6	SP-SM, SM SC SP-SM, SM, SC, SM-SC	0-0.3 (0-12)	9
Lochloosa Fine Sand	0-0.9 (0-36) 0.9-1.0 (36-42) 1.0-1.6 (42-63)	A-2-4, A-3 A-2-4 A-2, A-4, A-6	SP-SM, SM SM, SM-SC SC, SM-SC	0.8-1.5 (30-60)	4
Millhopper Fine Sand	0-1.5 (0-59) 1.5-2.0 (59-80)	A-3, A-2-4 A-2-4, A-4, A-2-6	SM, SM-SC SC	1.1-1.8 (42-72)	7

4.1.9 Accident Data

The evaluation of the accident data revealed that there have been 182 accidents recorded within the study corridor over the 5-year period from 1993 to 1997. A review of the safety ratio data contained in Table 4-5, and the crash experience data contained in Tables 4-6, shows that the four study intersections and four study segments exhibited no consistent crash patterns over the 5-year study period. The intersection of S.R. 39/Sam Allen Road was a high crash location in 1997, but was not

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a high crash location in the first 4 years of the period. The intersection of S.R. 39/Zephyrhills Bypass was a high crash location in 3 of the 5 years studied, but had a low safety ratio (not a high crash location) in 1997, the last year of the period.

The only roadway segment listed as a high crash segment was S.R. 39 from I-4 to Sam Allen Road, and it exhibited a declining pattern over the 5-year period.

The only pattern evidenced by the four intersections and four roadway segments was the generation of a high number of injuries per crash, averaging approximately 1.5 injuries per crash, which is a significantly high rate of injury. This high injury rate is probably due to the high speeds on S.R. 39 and the lack of access control common on two-lane highways.

TABLE 4-5

SUMMARY OF CALCULATED SAFETY RATIOS

Location		Year				
		1993	1994	1995	1996	1997
Intersection	Sam Allen Road	0.867	0.610	0.717	0.540	1.701
	Knight-Griffin Road	0.422	0.542	0.417	0.696	0.529
	Zephyrhills Bypass	2.049	1.117	0.311	1.279	0.551
	U.S. 301	0.000	0.000	0.156	0.000	0.000
Roadway Segment	I-4 to Sam Allen Road	2.801	1.867	0.682	1.678	0.000
	Sam Allen Road to Knights-Griffin Road	0.802	0.692	0.848	0.765	0.000
	Knights-Griffin Road to Zephyrhills Bypass	0.000	0.474	0.835	0.678	0.000
	Zephyrhills Bypass to U.S. 301	0.000	0.000	0.000	0.000	0.426

TABLE 4-6

SUMMARY OF CRASH EXPERIENCE

Location		# of Crashes by Crash Type								# of Crashes	
		Year	Right Angle	Left Turn	Rear End	Side Swipe	Auto/ Ped	Other	Total	Injury	Fatality
Intersection	S.R. 39/Sam Allen Road	1993	2	2	2	0	1	0	7	8	2
		1994	3	0	2	1	0	0	6	9	0
		1995	2	2	1	0	0	2	7	6	0
		1996	0	0	3	2	0	0	5	6	0
		1997	2	4	7	1	0	0	14	22	0
		Total	9	8	15	4	1	2	39	51	2
	S.R. 39/Knights-Griffin Road	1993	0	1	1	0	0	0	2	8	0
		1994	3	1	0	0	0	0	4	5	0
		1995	1	1	1	0	0	0	3	2	0
		1996	3	2	0	0	0	0	5	20	0
		1997	0	0	3	1	0	0	4	5	0
		Total	7	5	5	1	0	0	18	40	0
	S.R. 39/Zephyrhills Bypass	1993	10	1	1	0	0	0	12	34	0
		1994	5	1	0	0	0	0	6	10	1
		1995	1	0	1	0	0	0	2	5	0
		1996	3	4	1	0	0	0	8	11	0
		1997	1	2	0	0	1	0	4	5	0
		Total	20	8	3	0	1	0	32	65	1
	S.R. 39/U.S. 301	1993	0	0	0	0	0	0	0	0	0
		1994	0	0	0	0	0	0	0	0	0
		1995	0	0	1	0	0	0	1	2	0
		1996	0	0	0	0	0	0	0	0	0
		1997	0	0	0	0	0	0	0	0	0
		Total	0	0	1	0	0	0	1	2	0
Roadway Segment	I-4 to Sam Allen Road	1993	3	4	1	0	1	1	10	9	0
		1994	2	3	2	0	0	0	7	19	0
		1995	0	0	0	0	0	2	2	0	0
		1996	0	2	5	0	0	0	7	3	0
		1997	0	0	0	0	0	0	0	0	0
		Total	5	9	8	0	1	3	26	31	0
	Sam Allen Road to Knights-Griffin Road	1993	2	0	1	0	0	2	5	15	0
		1994	3	0	1	0	0	2	6	8	0
		1995	1	0	2	0	1	2	6	6	0
		1996	0	0	3	0	0	3	6	3	0
		1997	0	0	0	0	0	0	0	0	0
		Total	6	0	7	0	1	9	23	32	0
	Knights-Griffin Road to Zephyrhills Bypass	1993	0	0	0	0	0	0	0	0	0
		1994	1	1	3	0	0	4	9	11	2
		1995	2	1	4	1	0	10	18	22	1
		1996	2	1	4	3	0	5	15	17	0
		1997	0	0	0	0	0	0	0	0	0
		Total	5	3	11	4	0	19	42	50	3
	Zephyrhills Bypass to U.S. 301	1993	0	0	0	0	0	0	0	0	0
		1994	0	0	0	0	0	0	0	0	0
		1995	0	0	0	0	0	0	0	0	0
		1996	0	0	0	0	0	0	0	0	0
		1997	0	1	0	0	0	0	1	0	0
		Total	0	1	0	0	0	0	1	0	0

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4.1.10 Intersections and Signalization

Along the project corridor there are three signalized intersections: Sam Allen Road, Knights-Griffin Road, and Zephyrhills Bypass. All other intersections along the corridor feature unsignalized stop control for the side street.

4.1.11 Railroad Crossings

There currently exists a CSX Transportation System railroad that runs parallel to the east of S.R. 39 for approximately 17.7 km (11.0 mi). On September 16, 1988, FDOT representatives met with CSX Transportation. FDOT requested information from CSX Transportation regarding type and character of train traffic, schedule of train traffic, and future plans through the year 2010 for additional lines, realignment, increased traffic, etc.

There are several railroad crossing throughout the project corridor across the intersecting roads with S.R. 39. These crossings occur at Terrace Drive, Sam Allen Road, Chapman Road, County Line Road, and Bay Avenue.

These crossings have the following general characteristics:

Terrace Drive:

Crossing Highway Number:	624401A
Railroad Milepost Number:	S821.35
Traffic Control Equipment:	Flashing warning lights and gates

Sam Allen Road:

Crossing Highway Number:	626426C
Railroad Milepost Number:	S820.83
Traffic Control Equipment:	Flashing warning lights, gates, and cantilevers

Chapman Road:

Crossing Highway Number:	624398U
Railroad Milepost Number:	F819.92
Traffic Control Equipment:	Flashing warning lights, gates

County Line Road:

Crossing Highway Number:	624381R
Railroad Milepost Number:	S812.10
Traffic Control Equipment:	Flashing warning lights only

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Bay Avenue:

Crossing Highway Number:	624380J
Railroad Milepost Number:	S811.40
Traffic Control Equipment:	Flashing warning lights only

4.1.12 Transit

There are currently no existing transit services provided along the S.R. 39 corridor.

4.1.13 Lighting

Street lighting is currently provided at the interchange of I-4 /S.R. 39 and I-4/ Alexander Street. No other lighting is provided along the S.R. 39 study corridor.

4.1.14 Utility and Railroad Coordination

To evaluate potential utility conflicts associated with the most feasible improvement alternative, all available information was obtained concerning the location and characteristics of major existing or proposed utilities within the boundaries of the project. As a first step in the process, a preliminary list of utility owners to contact was developed. Candidate owners for this contact list were those known to operate facilities within the project area. The FDOT's utility department and the FDOT's Tampa maintenance staff were contacted to verify the completeness of the list. The resulting contact list is shown below:

- Tampa Electric Company
- GTE Florida, Inc.
- City of Plant City
- AT&T Communications
- MCI World Communications
- FSN Cable Inc., LTD
- Time Warner Communications
- Adelphia Cable
- Florida Gas Transmission

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Each utility owner listed above was then contacted and asked to verify ownership or operation of any utility facilities, existing or proposed, within the S.R. 39 corridor from I-4 to U.S. 301 in Hillsborough and Pasco Counties. The companies on the contact list confirmed ownership of utility facilities within the project corridor. These owners were then provided with two sets of aerial photography based on plans depicting existing drainage structures, ROW lines, highway stationing numbers, and the conceptual layout of the most feasible roadway improvement alternative. The owners were asked to mark and return one set with an indication of existing facilities and proposed adjustments.

The existing facilities indicated by the utility owners are summarized in Table 4-7.

TABLE 4-7

EXISTING UTILITIES ALONG S.R. 39

Owner	Utility Type	Aerial (A) Buried (B)	Side	Location
City of Plant City	30" Reclaimed Waterline, 24" Reclaimed Waterline, 12" Water Main, 6" Water Main W/2 Blow Off	B	E	30" reclaimed WM and 12" WM cross I-4 and run east on North Frontage Lane, 12" WM crossed S.R. 39 and the 30" reclaimed WM runs north on S.R. 39 until it changes into a 24" WM just south of Knights Griffin Road, then the 24" line runs north on S.R. 39 until it ends at CF Industries. The 6" WM starts just west of Alexander Street Bypass with a 2" Blow Off Valve and runs east on Cason Street and crosses S.R. 39.
Tampa Electric Company	Electrical Distribution and Transmission Lines	A		Throughout entire length of project
AT&T Communications	Telephone Communication Cable	B		3-2" PVC conduit pipes run east and west along Sam Allen Road on the south side of the street.
MCI World Communications	Fiber Optic Communication Cable	B		Crossing S.R. 39 at Knights Griffin Road
GTE Florida, Inc.	Communication Cable	A & B		Throughout entire project length on S.R. 39 from I-4 to U.S. 301
Florida Gas Transmission	1) 16" O.D. x 0.219" W.T. & 14" O.D. x 0.250" W.T. Steel High Pressure Natural Gas Line. 2) 6.625" O.D. x 0.188" W.T. Steel High Pressure Natural Gas Line	B	E	1) The 16" & 14" gas lines cross S.R. 39 a half mile north of Knights Griffin Road going east and west. 2) The 6.625" gas line runs north paralleling S.R. 39 form a half mile north of Knights Griffin Road to about an eighth of a mile north of CF Industries Gate #6, then turns east going away from S.R. 39. The #2 gas line also runs parallel to the CSX Railroad Tracks.
Adelphia Cable	Cable TV Coaxil Transmission Line	A & B	W	Cable lines start about 1 mile south of McLin Road and is aerial going north to one half mile past Knight Griffin Road, then goes underground and stops at Tollar Road.
FSN Cable Inc.	Cable TV Coaxil Transmission Line			
Time Warner Communications	Cable TV Coaxil Transmission Line			

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4.1.15 Pavement Conditions

A pavement condition survey was conducted by FDOT in June of 1997 for the project corridor. The pavement program provides ratings based on cracking, ridability, and rutting conditions. A scale of 1 to 10 is used in rating the pavement condition of a roadway with a rating of 6 or less considered deficient. Table 4-8 identifies the pavement ratings for S.R. 39.

TABLE 4-8

PAVEMENT CONDITION RATING

Location	Milepost	Cracking Rating	Ride Rating	Rutting Rating
S.R. 39: Hillsborough County	1.400-10.910	10	8	10
S.R. 39: Pasco County	0.000-3.561	10	8.9	9

4.2 EXISTING BRIDGES

Major structures exist at Blackwater Creek, the Blackwater Creek Relief Structure, Heron Branch, and the Hillsborough River.

Bridge Name	Bridge Number(s)
Blackwater Creek Bridge & Relief Structure	00036 and 100037
Heron Branch	100038
Hillsborough River	140007

4.2.1 Type of Structure

4.2.1.1 Blackwater Creek

The existing bridge over Blackwater Creek is 24 km (14.9 mi) north of I-4 at mile post 8.675. The substructure consists of solid wall-type concrete piers on a spread footing. The superstructure consists of 21-inch Wide Flange (59 pounds) steel girders with a 7-inch reinforced concrete deck.

The Blackwater Creek Relief Structure serves as an overflow bridge for the floodplain of Blackwater Creek. The structure is located 1.36 km (0.85 mi) north of C.R. 582 at Mile Post 8.729 of S.R. 39. The structure is a three-arch culvert.

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4.2.1.2 Heron Branch

The existing structure is a three-bay reinforced box culvert across Heron Branch 1.2 km (0.75 mi) south of the Pasco County Line at Mile Post 10.164 of S.R. 39.

4.2.1.3 Hillsborough River

The existing bridge crosses the Hillsborough River in Pasco County 3.2 km (1.99 mi) south of U.S. 301. The structure is located at Mile Post 1.585 of S.R. 39. The substructure consists of pile bents. Each pile bent has five timber piles, spaced at 6 feet, topped by a 0.06 m (1.83 ft) square cap. The superstructure is a 13-inch-deep flat slab. The bridge was designed for a H-20 vehicle as specified in the 1944 edition of the AASHTO Standard Specifications for Highway Bridges.

4.2.2 Current Conditions and Year of Construction

4.2.2.1 Blackwater Creek

The bridge across Blackwater Creek was first constructed in 1915 and consisted of two arches. It was later rehabilitated in 1941 where the existing substructure was salvaged, resulting in the current six-span structure. The bridge was designed for an H-15 vehicle as specified in the State Road Department Design Specifications of 1937.

The most recent inspection report is dated January 9, 1996. The overall ratings are:

Substructures Overall Rating	7
Superstructure Overall Rating	7
Deck Overall Rating	7
Approach Overall Rating	7
Channel Overall Rating	7

A structural rating of 7 in the inspection report is described to be:

"Good Condition - Some minor problems. Minor maintenance may be needed."

From a functional standpoint, the structure is obsolete because of its narrow width of 7.32 m (24 ft) between curbs. In addition, the traffic rating does not meet the current standards.

The Blackwater Creek Relief Structure was constructed in 1914. The last inspection report is dated January 9, 1996. In this report, the culvert received the following overall ratings:

Culvert Overall Rating	7
Approach Roadway Overall Rating	8
Channel Overall Rating	7

A structural rating of 8 in the inspection report is described to be:

"Very Good Condition - No problems noted."

Functionally, the structure is obsolete due to its narrow width of 7.32 m (24 ft) between curbs. In addition, the traffic railing does not meet current standards.

4.2.2.2 Heron Branch

The culvert was first constructed in 1941 and was later lengthened in 1988 to provide a 9.14 m (30 ft) clear zone from the edge of the S.R. 39 travel lanes. The last inspection report is dated January 6, 1998. In this report, the culvert had the following overall ratings:

Culvert Overall Rating	7
Approach Roadway Overall Rating	8
Channel Overall Rating	7

4.2.2.3 Hillsborough River

The structure was constructed in 1947. The most recent inspection report is dated February 19, 1997. The overall ratings were reported to be:

Substructure Overall Rating	7
Superstructure Overall Rating	7
Deck Overall Rating	7
Approach Overall Rating	7
Channel Overall Rating	8

Some of the timber piles are starting to show signs of rotting; however, all of the piles exhibit weathering splits but are in surprisingly good shape after more than 50 years of service.

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Functionally, the structure is obsolete because of the 7.92 m (26 ft) width between curbs. The traffic railing does not meet current standards.

4.2.3 Span Arrangement

4.2.3.1 Blackwater Creek

The structure has six spans of approximately 8.23 m (27 ft), each resulting in an overall length of 49.38 m (162 ft).

The Blackwater Creek Relief Structure consists of three 4.57 m (15 ft) arches for a total length of 13.72 m (45 ft).

4.2.3.2 Heron Branch

The structure contains three spans with a maximum span arrangement of 3.3 m (11 ft) with a structure length of 9.9 m (32 ft).

4.2.3.3 Hillsborough River

The structure has 21 spans of 4.6 m (15 ft), each resulting in an overall structure length of 96.2 m (315.5 ft).

4.3 REFERENCES

1. *Location Hydraulic Report*; URS Greiner Woodward Clyde; Tampa, Florida; October 1999.

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SECTION 5.0
DESIGN CRITERIA

For the proposed roadway improvements to fulfill the objective of accommodating motorized vehicles, pedestrians, and bicyclists in a safe and efficient manner, they must adhere to specific design standards. The *Florida Department of Transportation's Plans Preparation Manual*[1] was consulted in developing design criteria for this project. Tables 5-1 and 5-2 present the criteria used for this project and their respective values. A discussion of each criterion follows.

5.1 FUNCTIONAL CLASSIFICATION

The functional classification of a roadway affects elements of design such as design speed, level of service requirements, and local access accommodations. For this segment of S.R. 39, the functional classification of a minor arterial was utilized.

5.2 ACCESS CLASSIFICATION

The objective of this classification system is to protect the public safety, enhance the mobility of people and goods, and preserve the functional integrity of the highway system.

The proposed access management classification for S.R. 39 is Class 3. Table 5-1 displays the FDOT access management standards for Class 3 roadways.

TABLE 5-1

ACCESS CLASSIFICATION STANDARDS

Access Class (Facility Design Features)	Minimum Median Opening Spacing (Directional)	Minimum Median Opening Spacing (Full)	Minimum Signal Spacing
Class 3 (Restrictive)	400 m (1,320 ft)	800 m (2,640 ft)	800 m (2,640 ft)

TABLE 5-2

ROADWAY DESIGN CRITERIA

Design Element			Value/Designation		Plans Preparation Manual Documentation
General	Functional Classification		Minor Arterial	Minor Arterial	
	Access Classification		3	3	Table 1.8.2
	Number of Lanes		4	4	Table 2.1.4
	Design Speed		110 km/h (70 mph)	80 km/h (50 mph)	Table 1.9.1
Typical Section	Lane Width	Standard	3.6 m (12 ft)	3.6 m (12 ft)	Table 2.1.1
		Minimum	3.6 m (12 ft)	3.3 m (11 ft)	Table 2.1.1
	Median Width	Design Speed > 80 km/h	12.0 m (40 ft)	N/A	Table 2.2.1
		Design Speed ≤ 80 km/h	N/A	6.6 m (22 ft)	Table 2.2.1
	Shoulder Width	Full Width Outside	3.0 m (10 ft)	N/A	Table 2.3.2
		Full Width Inside	3.0 m (10 ft)	N/A	Table 2.3.2
		Paved Width Outside	1.5 m (5 ft)	N/A	Table 2.3.2
		Paved Width Inside	0.0 m (0 ft)	N/A	Table 2.3.2
	Border Width: Design Speed > 80 km/h	Adjacent to Shoulder	12.0 m (40 ft)		Table 2.5.1
	Border Width: Design Speed ≥ 70 km/h	Travel Lanes at Curb		4.2 m (14 ft)	Table 2.5.2
		Bike Lanes at Curb		3.6 m (12 ft)	Table 2.5.2
	Bicycle Lane Width	Paved Shoulder	1.5 m (5 ft)		Section 8.4
		Adjacent to Curb and Gutter		1.2 m (4 ft)	Section 8.4.1
	Sidewalk Width	With a Buffer Strip	1.5 m (5 ft)	1.5 m (5 ft)	Section 8.3.1
		Adjacent to Curb and Gutter	1.8 m (6 ft)	1.8 m (6 ft)	Section 8.3.1
	Clear Zone Width	Design Speed > 80 km/h	11.0 m (36 ft)		Table 2.12.1
Horizontal	Length of Horizontal Curve		330 m (1100 ft)	240 m (800 ft)	Table 2.8.2a
	Minimum Length of Horizontal Curve		120 m (400 ft)	120 m (400 ft)	Table 2.8.2a
	Maximum Deflection Without Curve		0° 45' 00"	1° 00' 00"	Table 2.8.1a
	Minimum Radius		455 m (1637 ft)	270 m (881 ft)	Table 2.8.3
	Maximum Rate of Superelevation		0.10	0.05	
	Minimum Stopping Sight Distance Grades of 2 percent or Less		200 m (700 ft)	120 m (400 ft)	Table 2.7.1
	Minimum Stopping Sight Distance for Grades Greater that 2 percent See Table 2.7.1				
Vertical	Maximum Grade		3 percent	6 percent	Table 2.6.1
	Maximum Change in Grade without Vertical Curves		0.2 percent	0.7 percent	Table 2.6.2
	K Values for Crest Curves		100 (370)	36 (130)	Table 2.8.5
	K Values for Sag Curves		45 (170)	25 (90)	Table 2.8.6

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5.3 DESIGN SPEED

The design speed affects design elements such as horizontal and vertical alignments, superelevation, and typical section dimensions (clear zone, median width, etc.). See Table 5-2 for the appropriate design criteria.

5.4 TRAVEL LANE WIDTH

A standard travel lane width of 3.6 m (12 ft) is to be utilized along this facility. For an urban arterial, 3.3 m (11 ft) lanes are permitted if one of the following conditions exists:

- Right-of-way and existing conditions are stringent controls,
- Facility operates on interrupted flow conditions,
- Design speed 80 km/h or less,
- Intersection capacity not adversely affected, or
- Truck volume 10 percent or less.

See Table 5-2 for the appropriate design criteria.

5.5 MEDIAN WIDTH

A median is defined as the portion of a divided highway separating the traveled way for traffic in opposing directions. The median width is expressed as the dimension between the through-lane edges and includes the left shoulders or curb and gutter. The principal functions of a median are to separate opposing traffic, provide a recovery area for out-of-control vehicles, provide a stopping area in case of emergencies, allow space for speed changes and storage of left-turning and U-turning vehicles, and minimize headlight glare. Medians may be depressed or raised in relation to the traveled way surface. Medians should be as wide as feasible but of a dimension in balance with other components of the cross section. See Table 5-2 for the appropriate design criteria.

5.6 SHOULDER WIDTH

A shoulder is the portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles; for emergency use; and for lateral support of subbase, base, and surface courses. In some cases, the shoulder can be made to be usable for bicyclists. See Table 5-2 for the appropriate design criteria.

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5.7 BORDER WIDTH

Border width in roadway design is defined as the area between the outside shoulder point and the right-of-way line for a rural section.

Border width for an urban section is defined as the area between the lip of the gutter and the right-of-way line. It usually includes such features as curb and gutter, buffer (utility) strip, and sidewalks. Its minimum width is controlled by sight distance requirements for traffic exiting side streets and driveways. See Table 5-2 for the appropriate design criteria.

5.8 SIDEWALK WIDTH

A sidewalk is that portion of a highway designed for preferential or exclusive use by pedestrians. Sidewalks are located within the border area and are either adjacent to a curb and gutter or separated from the travel way by a grass buffer strip. See Table 5-2 for the appropriate design criteria.

5.9 BICYCLE LANES

The FDOT's current policy is to consider the needs of bicyclists on all projects, except limited access facilities. This policy will generally provide for the construction of bicycle lanes or paved shoulders for the needs of bicyclists in conjunction with other planned roadway improvements. See Table 5-2 for the appropriate design criteria.

5.10 CLEAR ZONE

The term clear zone is used to designate the unobstructed, relatively flat area provided beyond the edge of the traveled way for the recovery of errant vehicles. The traveled way does not include shoulders or auxiliary lanes. The width of the clear zone is influenced by the traffic volume, speed, and embankment slopes. See Table 5-2 for the appropriate design criteria.

5.11 HORIZONTAL ALIGNMENT

For balance in highway design, all geometric elements should be determined, as far as economically feasible, to provide safe, continuous operation at the design speed for the highway or street. In the design of highway curves, it is necessary to establish the proper relation between design speed and curvature and also their joint relationships with superelevation and side friction. See Table 5-2 for the appropriate design criteria.

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5.12 VERTICAL ALIGNMENT

The topography of the land traversed has an influence on the alignment of roads and streets. Roads and streets should be designed to encourage uniform operation throughout. In addition to specific controls for vertical alignment, there are several general controls that should be considered in design:

- A smooth gradeline with gradual changes consistent with the type of roadway and the character of the terrain should be strived for in preference to a line with numerous breaks and short lengths of grades.
- The "roller coaster" or the "hidden dip" type of profile should be avoided. Such profiles generally occur on relatively straight horizontal alignment where the roadway profile closely follows a rolling natural ground line.
- A broken-back gradeline (two vertical curves in the same direction separated by a short section of tangent grade) generally should be avoided, particularly in sags where the full view of both vertical curves is not pleasing.
- Where at-grade intersections occur on roadway sections with moderate to steep grades, it is desirable to reduce the gradient through the intersection. Such a profile change is beneficial for all vehicles making turns and serves to reduce the potential hazards.
- Sag vertical curves should be avoided in cuts unless adequate drainage can be provided.

See Table 5-2 for the appropriate design criteria.

5.13 STOPPING SIGHT DISTANCE

Sight distance is the length of roadway ahead visible to the driver. The minimum sight distance available on a roadway should be sufficiently long to enable a vehicle traveling at or near the design speed to stop before reaching a stationary object in its path. Although greater length is desirable, sight distance at every point along the highway should be at least that required for a below-average operator or vehicle to stop in this distance. See Table 5-2 for the appropriate design criteria.

5.14 REFERENCES

1. *Florida Department of Transportation's Plans Preparation Manual*; Florida Department of Transportation; Tallahassee, Florida; January 1998.

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SECTION 6.0
TRAFFIC

6.1 EXISTING CONDITIONS

S.R. 39 currently exists as a two-lane rural arterial highway within the study area. There are three signalized intersections within the project limits as follows:

- S.R. 39/Sam Allen Road;
- S.R. 39/Knights-Griffin Road; and
- S.R. 39/Zephyrhills Bypass.

The lane-use on S.R. 39 and at the four study intersections is illustrated on Figure 6-1 which represents the No-Build roadway network.

6.1.1 Existing Traffic Demand

Existing (1998) traffic demand was estimated using 1996 and 2005 Average Annual Daily Traffic (AADT) volumes provided by the FDOT District 7 Planning Office, and AM and PM peak period intersection turning movement counts conducted for this study.

6.1.1.1 1998 AADT Volumes

1998 AADT volumes on S.R. 39 and the intersecting major roadways were developed by straight line interpolation between the 1996 AADT volumes and projected year 2005 AADT volumes for the same roadway links. The 1998 estimated AADT volume on S.R. 39 between I-4 and Sam Allen Road was adjusted downward to reflect a decline in traffic volumes on this segment of S.R. 39 in 1997, probably due to the ongoing construction at the S.R. 39/I-4 interchange. The 1997 AADT volume data used to make these adjustments are contained in the study report titled, "Interchange Operational Analysis Report, Interstate 4 Corridor, Thonotosassa Road (S.R. 566) to Park Road (S.R. 553), February 18, 1999." The 1996 and projected 2005 AADT volumes used to estimate the 1998 AADT volumes are contained *Project Traffic and Intersection Analysis Technical Memorandum*[1]. The estimated 1998 AADT volumes developed by this procedure are illustrated on Figure 6-2.

6.1.1.2 Peak Hour Traffic Volumes

Vehicle turning movement counts were conducted between the hours of 6:00AM to 9:00AM, 11:00AM to 1:00PM and 3:00PM to 6:00PM on September 21 and 22, 1998, at the following four intersections:

- S.R. 39/Sam Allen Road
- S.R. 39/Knights-Griffin Road
- S.R. 39/Zephyrhills Bypass
- S.R. 39/U.S. 301/Michigan Avenue

The intersection turning movement count data was analyzed to identify the peak traffic volume hours. The analysis determined that the peak traffic hours occurred between 6:00AM and 8:00AM, and between 4:00PM and 6:00PM, the traditional AM and PM peak traffic periods.

The peak hours for the four study intersections are as follows:

INTERSECTION	AM PEAK HOUR	PM PEAK HOUR
S.R. 39/Sam Allen Road	7:00AM-8:00AM	5:00PM-6:00PM
S.R. 39/Knights-Griffin Road	7:00AM-8:00AM	5:00PM-6:00PM
S.R. 39/Zephyrhills Bypass	6:00AM-7:00AM	4:00PM-5:00PM
S.R. 39/US 301	7:00AM-8:00AM	5:00PM-6:00PM

The AM and PM peak hour traffic volumes were adjusted to design hour conditions by applying a factor of 1.03 for Hillsborough County and 1.07 for Pasco County, from the 1997 Weekly Volume Factor Reports provided by District 7 Planning. The resulting 1998 AM and PM design hour volumes for the four study intersections are illustrated on Figure 6-3.

6.1.1.3 Truck, Bus, Pedestrian, and Bicycle Volumes

The AM and PM peak period intersection turning movement counts also identified truck and bus (primarily school bus) volumes and the pedestrian and bicycle volumes at each of the four study intersections. The count summary indicates that there were no significant pedestrian or bicycle volumes observed.

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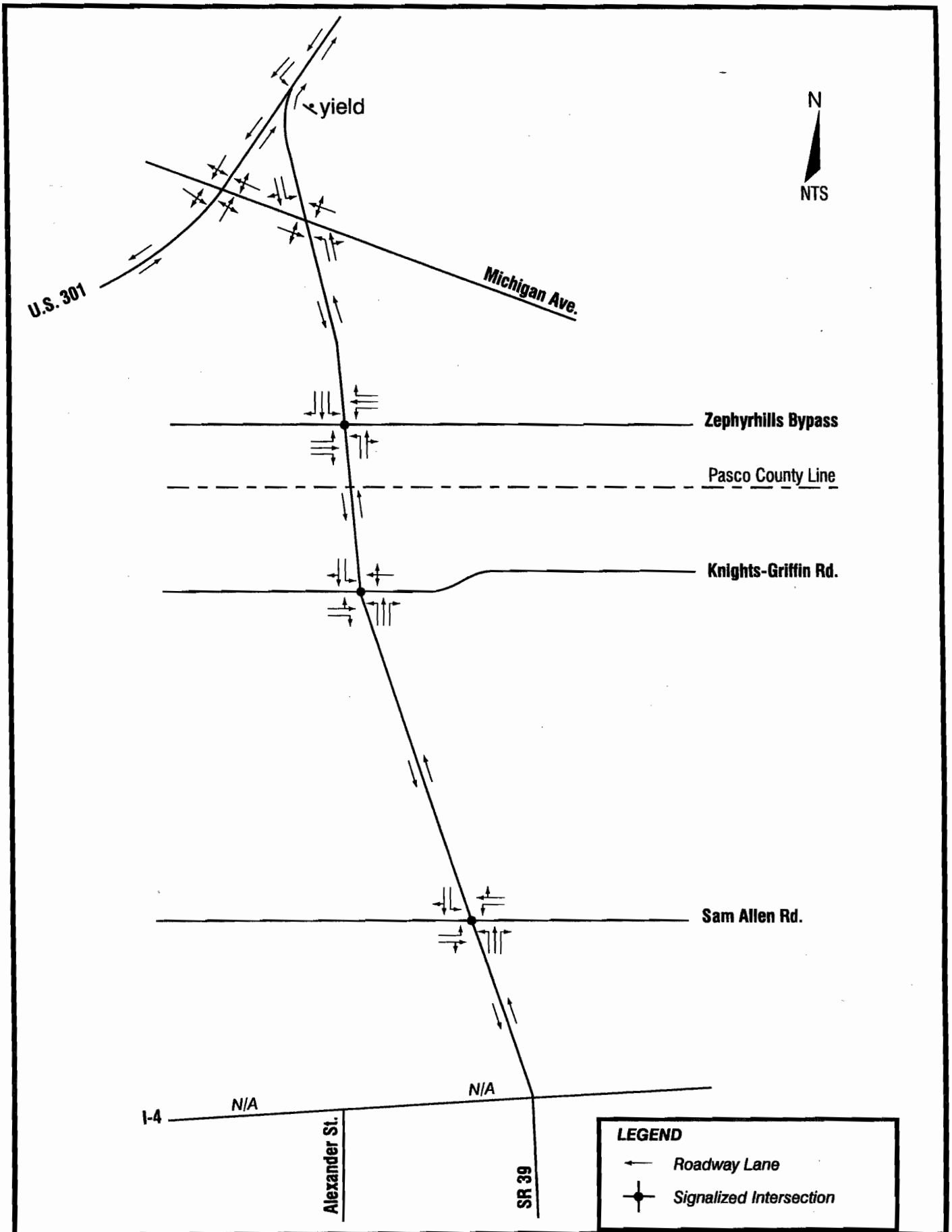


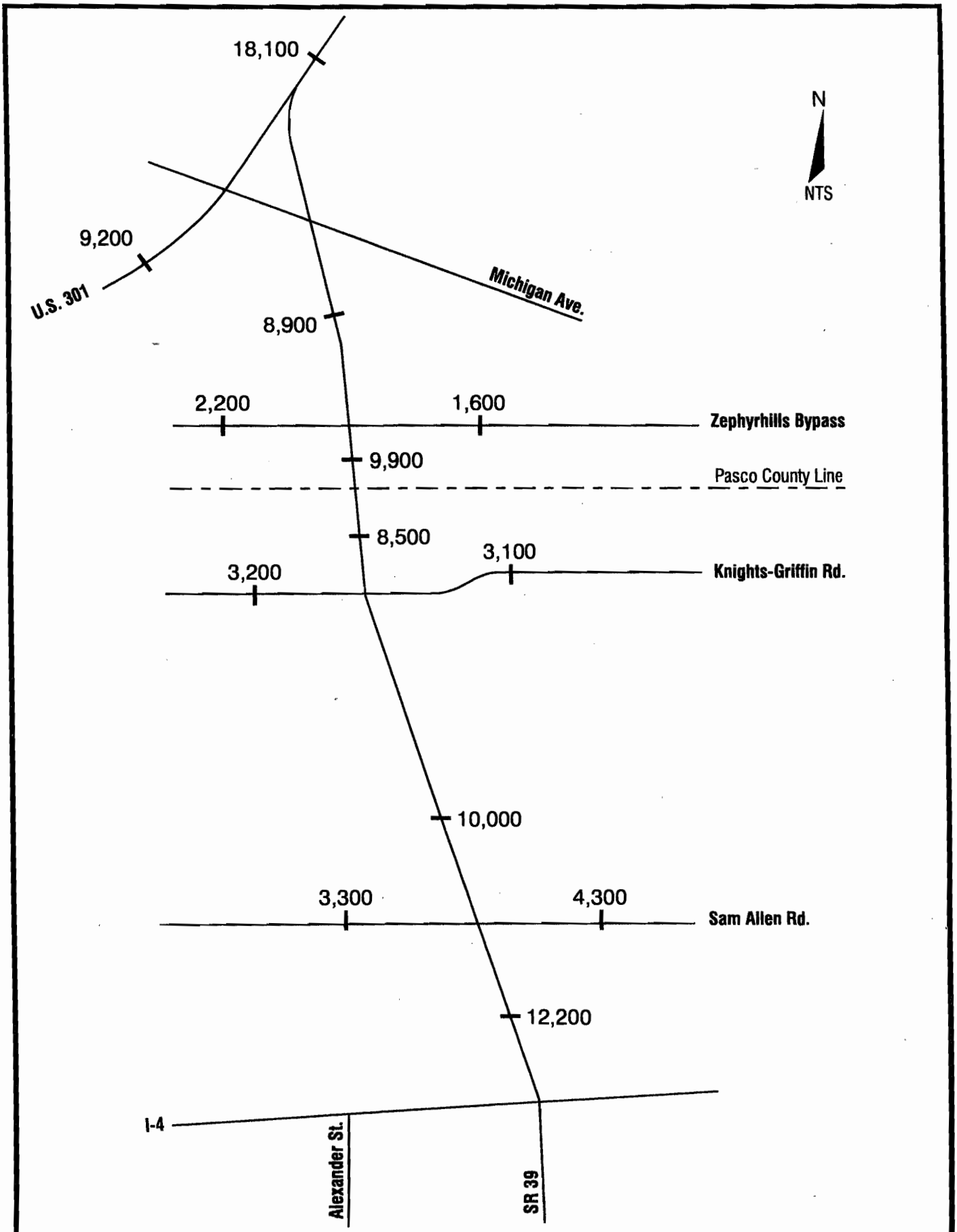
NO BUILD ALTERNATIVE ROADWAY NETWORK

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-1



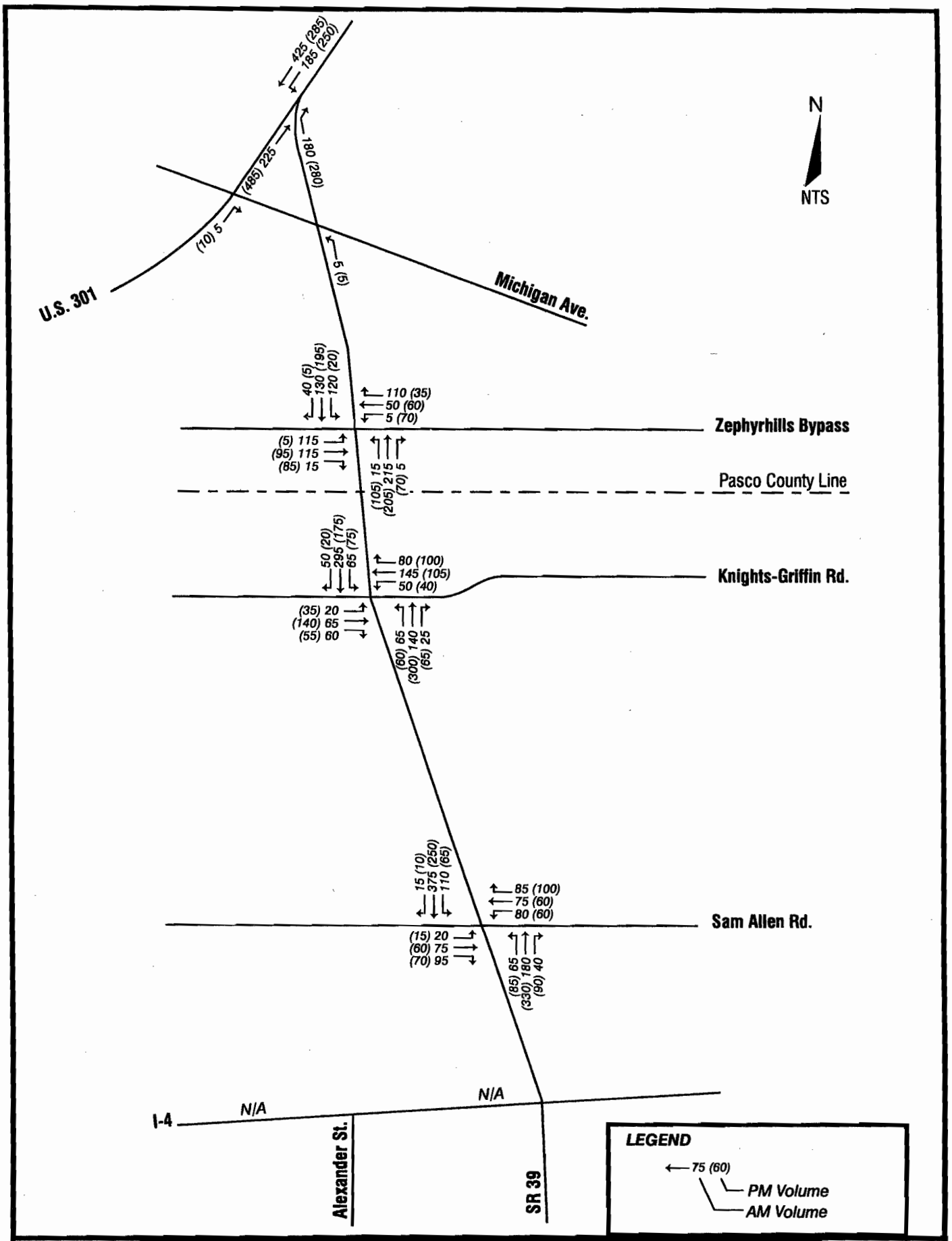
1998 AADT VOLUMES

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-2



1998 DESIGN HOUR TURNING MOVEMENT VOLUMES

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-3

6.1.2 Existing Traffic Control And Posted Speed Limits

During the field review of the S.R. 39 corridor, the posted speed limits on S.R. 39 and on the four intersecting thoroughfare roadways were observed. The current posted speed limits on the study area roadways are illustrated on Figure 6-4.

6.1.2.1 Pedestrian Facilities

S.R. 39 is a rural highway with only sparse development within the project limits. There are no pedestrian facilities along S.R. 39 or at any of the intersections within the study area.

6.1.2.2 Public Transportation

Except for school buses, there are no bus routes currently on S.R. 39 within the project limits, and there are no bus stops, bus bays, or bus shelters.

6.2 EXISTING LEVELS OF SERVICE

Intersection and roadway segment LOS analyses were conducted to determine the existing operational characteristics on S.R. 39 within the project limits. The intersection analyses were conducted using the 1998 design hour intersection turning movement volumes illustrated on Figure 6-3 and the procedures from the *Transportation Research Board Special Report 209 - Highway Capacity Manual (HCM), 1997*, Chapter 9 (Signalized Intersections) and Chapter 10 (Unsignalized Intersections). The roadway segment LOS analysis was conducted using the 1998 AADT volumes illustrated on Figure 6-2 and *Florida's Level Of Service Standards And Guidelines Manual For Planning, 1995*. The results of the intersection analyses and roadway segment analyses are summarized in Tables 6-1, 6-2, and 6-3 and are illustrated on Figure 6-5.

TABLE 6-1

RESULTS OF UNSIGNALIZED INTERSECTION LOS ANALYSIS
1998 CONDITIONS

Intersection			Level of Service		
			Left	Through	Right
S.R. 39/U.S. 301	NB	AM	A	-	A
		PM	A	-	B
	SB	AM	-	-	-
		PM	-	-	-
	EB	AM	-	-	A
		PM	-	-	B
	WB	AM	A	-	-
		PM	B	-	-

TABLE 6-2

RESULTS OF SIGNALIZED INTERSECTION LOS ANALYSIS
1998 CONDITIONS

Intersection		Average Delay (seconds)	LOS
S.R. 39/Sam Allen Road	AM	11.6	B
	PM	11.2	B
S.R. 39/Knights Griffin Rd.	AM	9.8	B
	PM	9.7	B
S.R. 39/Zephyrhills Road	AM	9.0	B
	PM	8.9	B

TABLE 6-3

RESULTS OF ROADWAY SEGMENT LOS ANALYSIS
1998 CONDITIONS

Roadway Segment	AADT Volume	LOS
I-4 to Sam Allen Road	12,200	C
Sam Allen Road to Knights- Griffin Road	10,000	B
Knights-Griffins Road to Pasco County Line	8,500	B
Pasco County Line to Zephyrhills Bypass	9,900	B
Zephyrhills Bypass to U.S. 301	8,900	B

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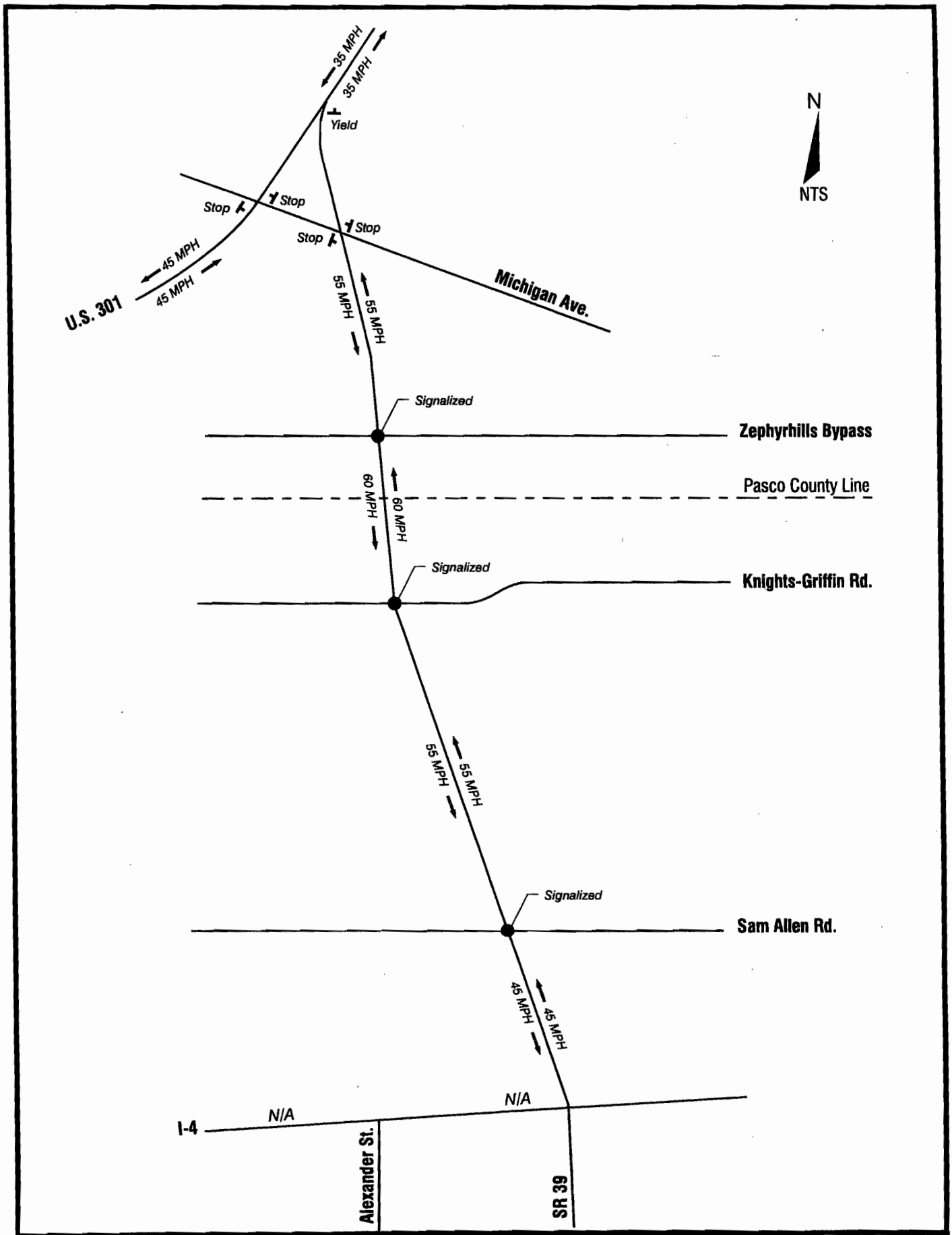


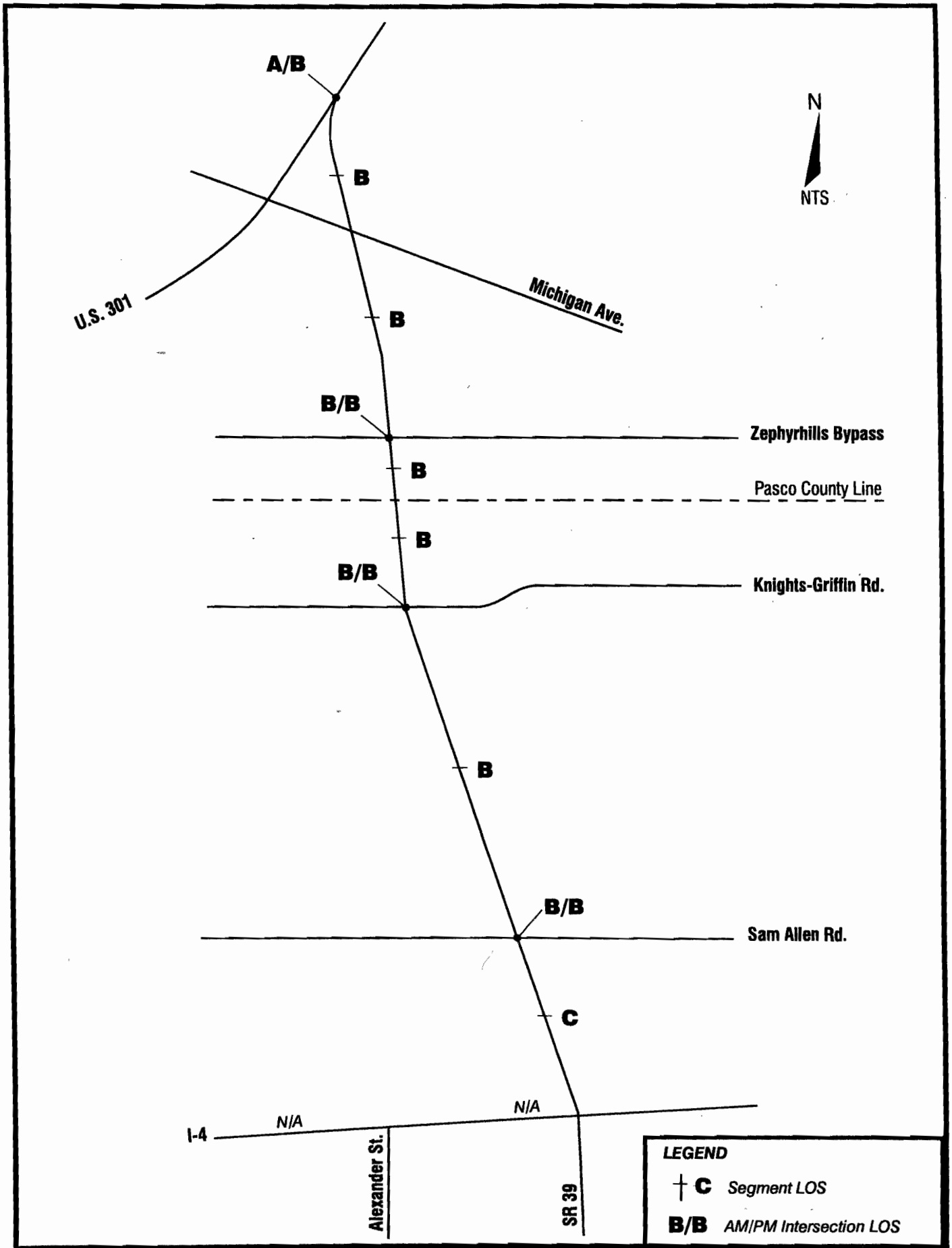
EXISTING TRAFFIC CONTROL AND POSTED SPEED LIMITS

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-4



RESULTS OF LOS ANALYSIS EXISTING CONDITIONS

S.R. 39 FROM I-4 TO U.S. 301
WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-5

6.3 FUTURE CONDITIONS

The extension of Alexander Street from I-4 to S.R. 39 will add two (2) new intersections to the study area as follows:

- Alexander Street Bypass/Sam Allen Road, and
- Alexander Street Bypass/Joe McIntosh Road

The Build Alternative proposes that the Alexander Street Bypass - S.R. 39 alignment, within the project limits, be constructed as a four-lane divided roadway. The existing segment of S.R. 39 between I-4 and the Alexander Street Bypass is proposed to remain a two-lane undivided roadway. The proposed lane use on the Alexander Street Bypass, and on S.R. 39 including the six study intersections, is illustrated on Figure 6-6, which represents the Build Alternative roadway network.

6.3.1 Year 2010 And 2020 Traffic Forecasts

Design traffic data for the years 2005 and 2020 for the Build and No-Build Alternatives were provided by the District 7 Planning Office. Design traffic factors (K, D, and T) are summarized in Table 6-4.

TABLE 6-4

DESIGN TRAFFIC FACTORS

Roadway	K Factor	D Factor	24-Hour Truck Factor	Design Hour Truck Factor
U.S. 301	10.56%	54.1%	8.0%	4.0%
Alexander Street Bypass	9.54%	59.5%	14.0%	7.0%
Zephyrhills Bypass (Chaney Road)	9.54%	59.5%	6.0%	3.0%
Knights-Griffin Road	9.54%	59.5%	6.0%	3.0%
Sam Allen Road	9.54%	59.5%	6.0%	3.0%

The factors identified for the Alexander Street Bypass were assumed for S.R. 39.

6.3.2 AADT Volumes

The AADT volumes for the year 2010 (project opening year) were interpolated from the year 2005 and year 2020 AADT volumes. Figures 6-7 and 6-8 illustrate the year 2010 and 2020 No-Build and Build AADT volumes, respectively, on the study roadways.

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6.3.3 Design Hour Volumes

Design hour segment volumes and AM and PM design hour turning movement volumes for the years 2010 and 2020 were estimated using the TURNS 4 software and the 1998, 2005, and 2020 AADT volume data previously described. The results of the TURNS 4 analysis were used as a preliminary estimate, which was then manually adjusted to achieve a reasonable correlation with the distributions from the 2005 and 2020 AADT volumes provided by FDOT.

Figures 6-9 and 6-10 illustrate the years 2010 and 2020 Directional Design Hour Volumes (DDHV) for the No-Build and Build Alternatives, respectively. Figures 6-11 and 6-12 illustrate the years 2010 and 2020, respectively, AM and PM design hour intersection turning movement volumes for the No-Build Alternative. Figures 6-13 and 6-14 illustrate the years 2010 and 2020, respectively, AM and PM design hour intersection turning movement volumes for the Build Alternative.

6.3.4 Year 2010 and 2020 Level of Service Analysis

Intersection and roadway segment LOS analyses were conducted to determine the operational characteristics on S.R. 39 within the project limits, and on the Alexander Street Bypass in the years 2010 and 2020. The intersection LOS analyses were conducted using the years 2010 and 2020 design hour traffic volumes for the No-Build and the Build alternatives, and the procedures from the *Transportation Research Board Special Report 209 - Highway Capacity Manual (HCM), 1997,* Chapter 9 (Signalized Intersections) and Chapter 10 (Unsignalized Intersections).

The roadway segment LOS analyses were conducted using the years 2010 and 2020 AADT volumes for the No-Build and the Build alternatives, and *Florida's Level of Service Standards and Guidelines Manual for Planning, 1995.*

The results of the roadway segment LOS analysis for the years 2010 and 2020 for the No-Build Alterative are summarized in Table 6-5 and illustrated on Figure 6-15. The results of the roadway segment LOS analysis for the years 2010 and 2020 for the Build Alterative are summarized in Table 6-6 and illustrated on Figure 6-16.

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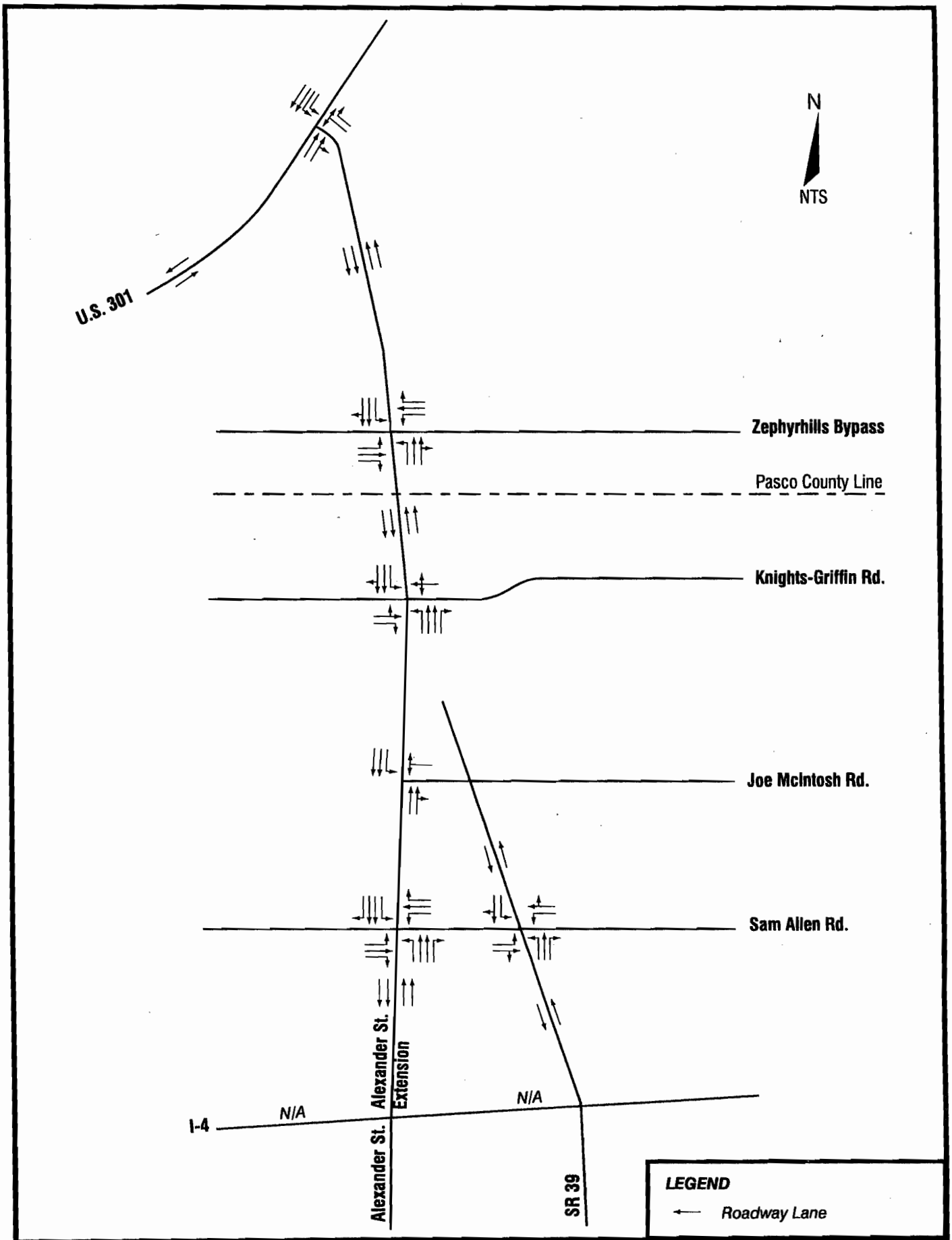


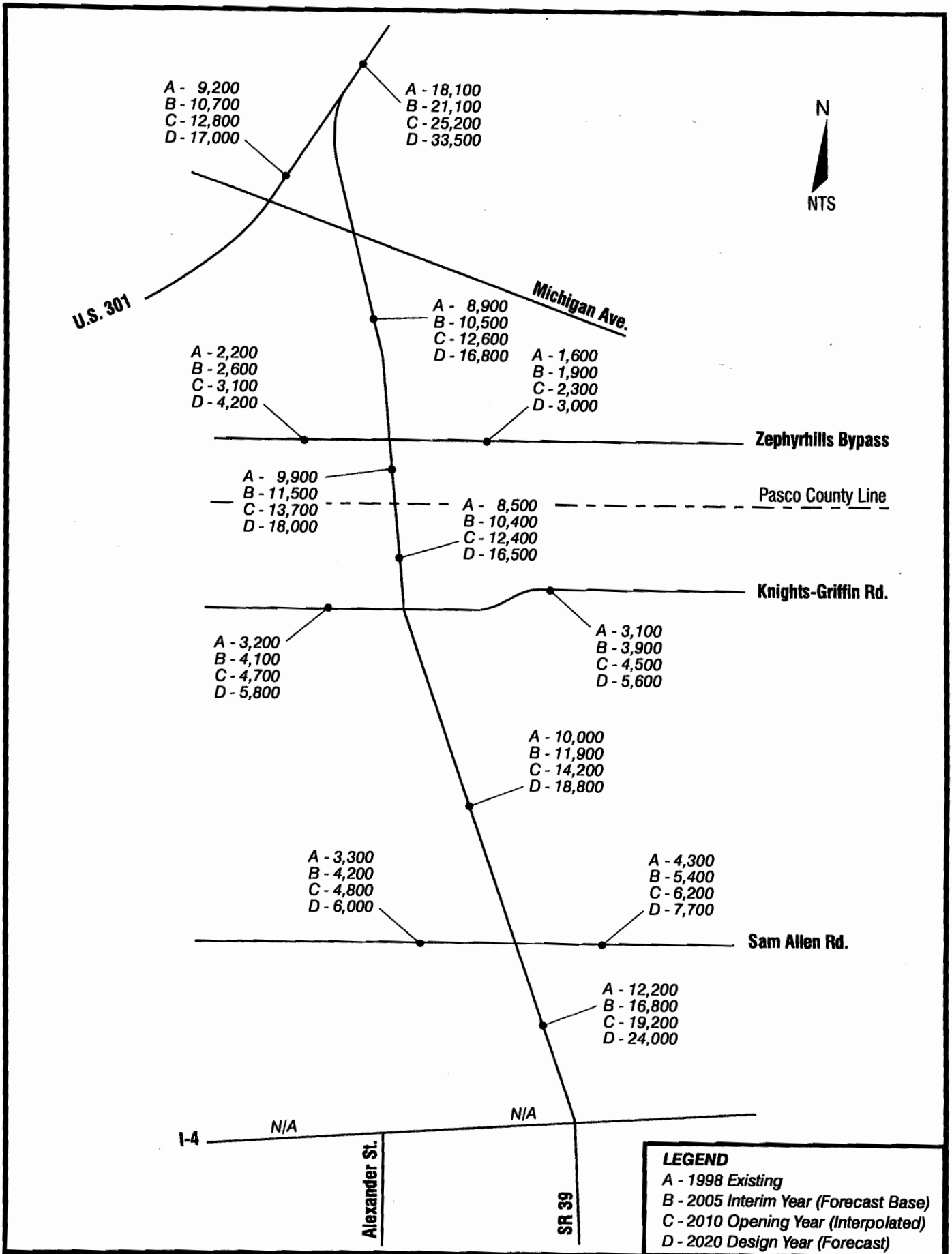
BUILD ALTERNATIVE ROADWAY NETWORK

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-6



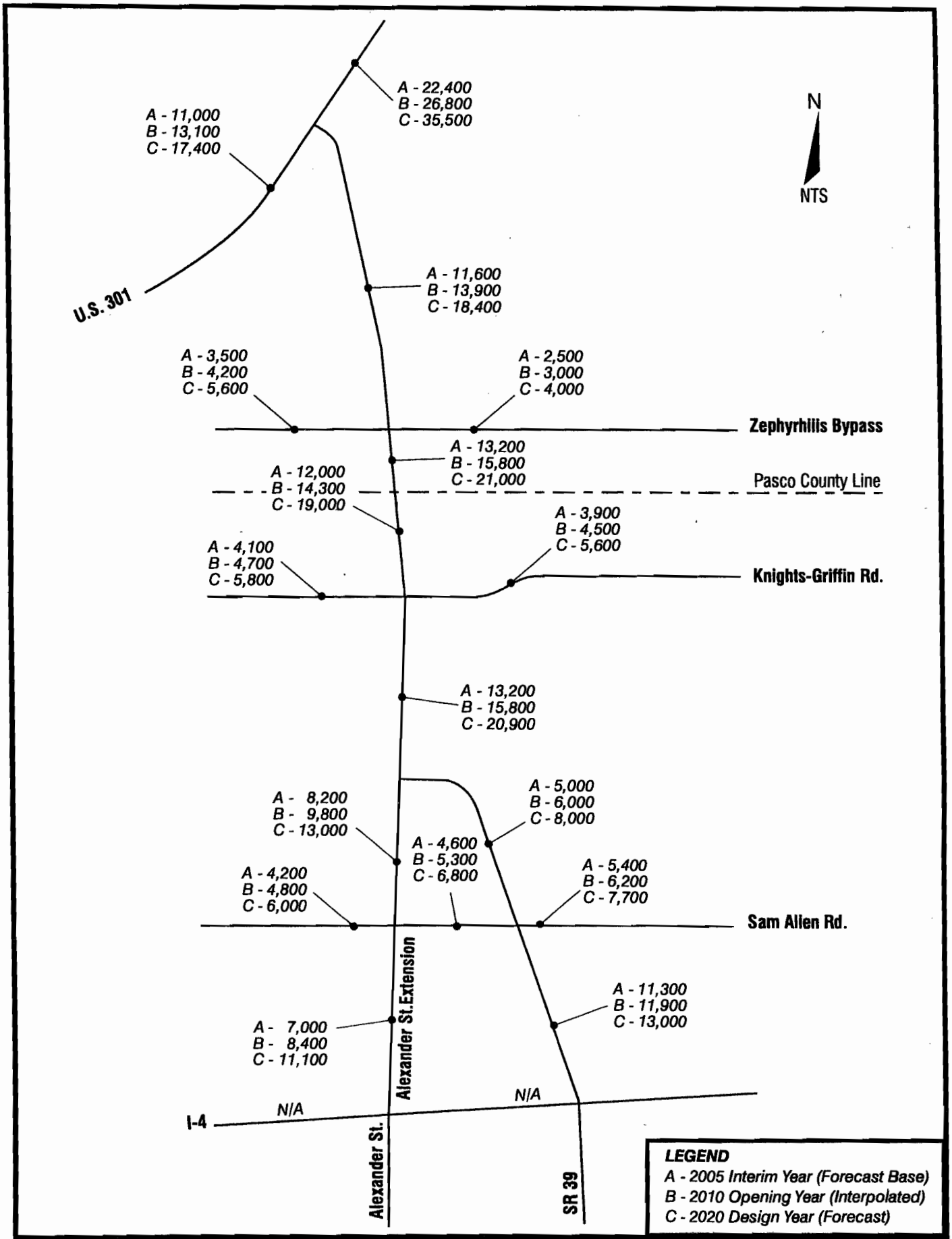
NO BUILD ALTERNATIVE AADT

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-7



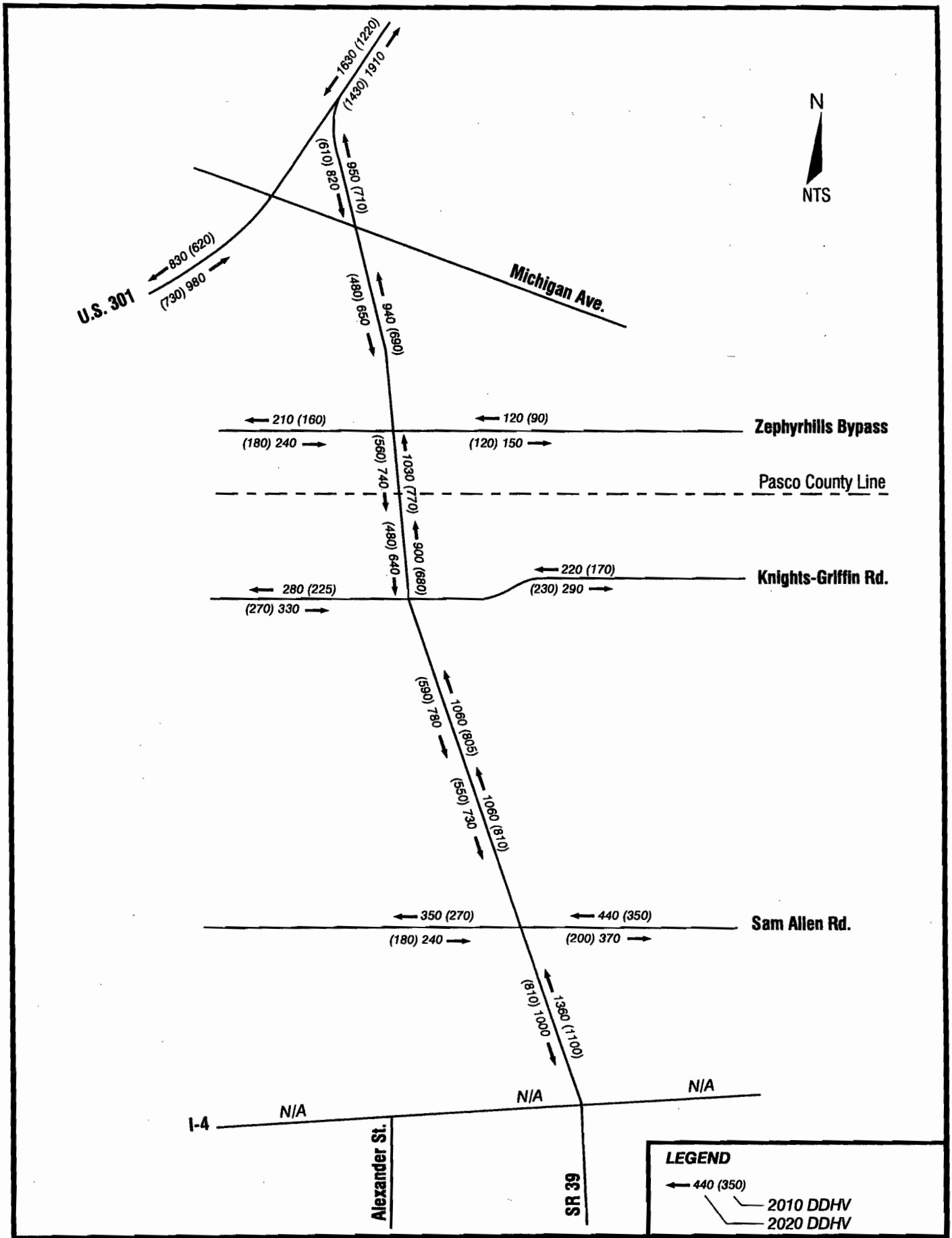
BUILD ALTERNATIVE AADT

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-8



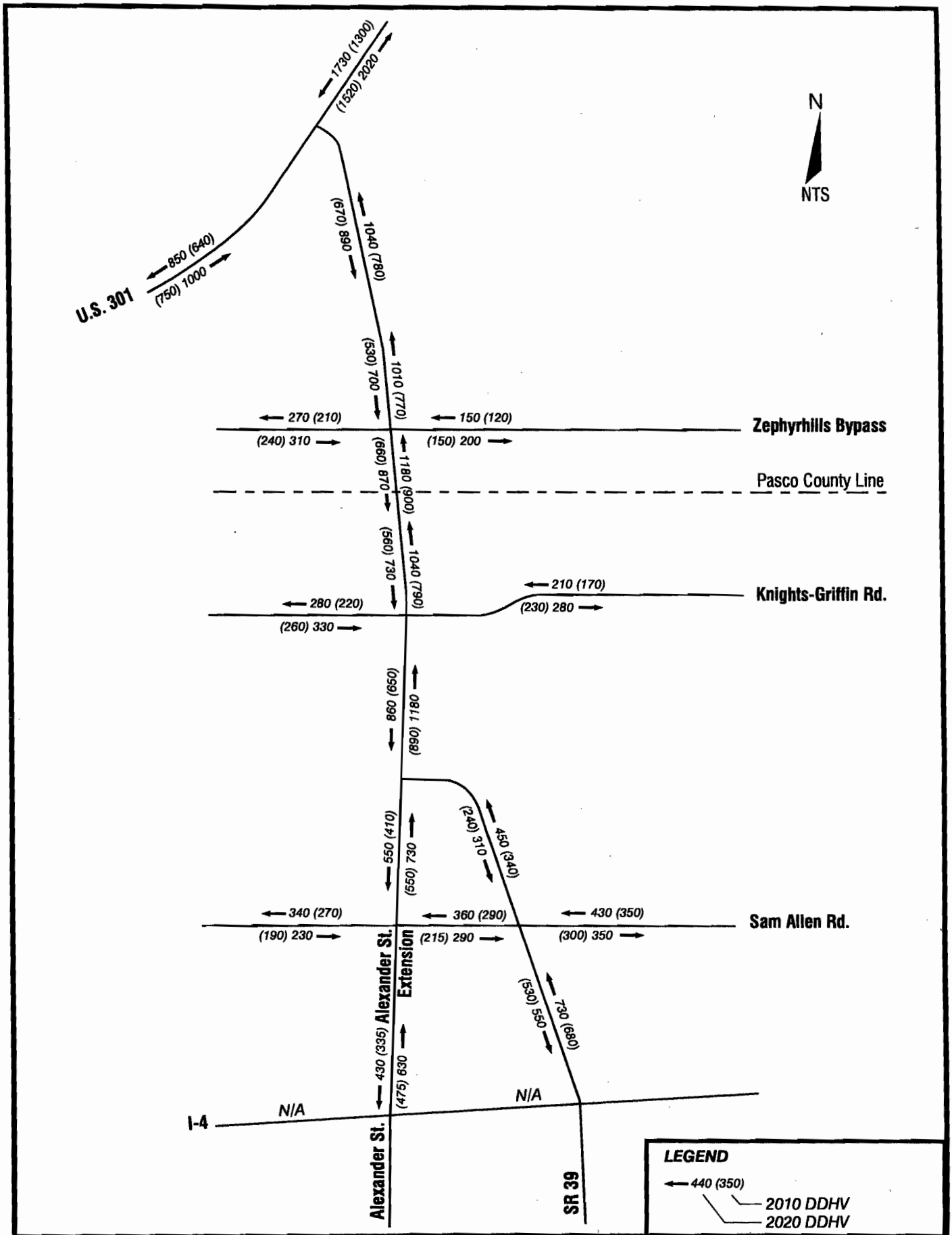
NO BUILD ALTERNATIVE DIRECTIONAL DESIGN HOUR VOLUMES

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-9



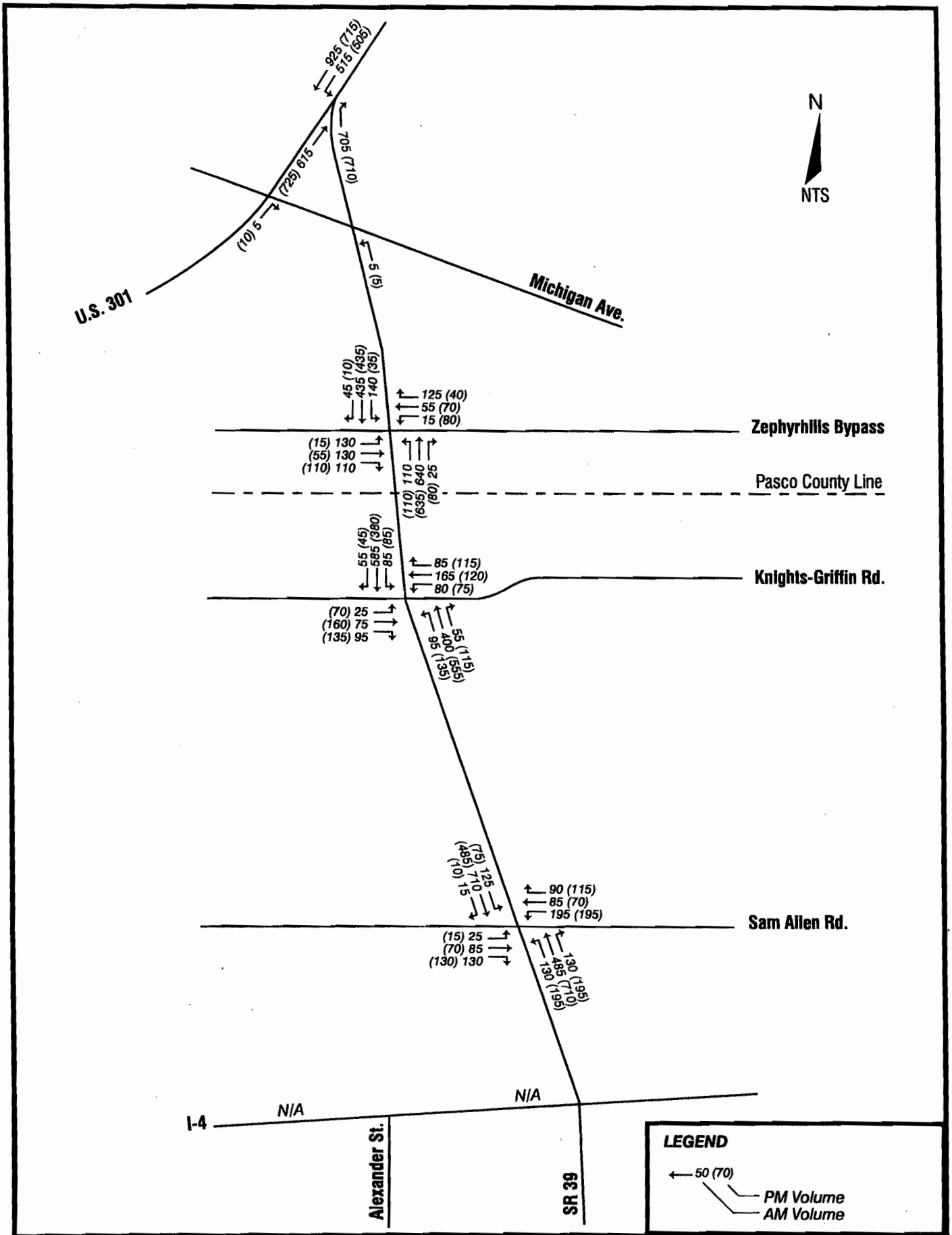
BUILD ALTERNATIVE DIRECTIONAL DESIGN HOUR VOLUMES

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-10



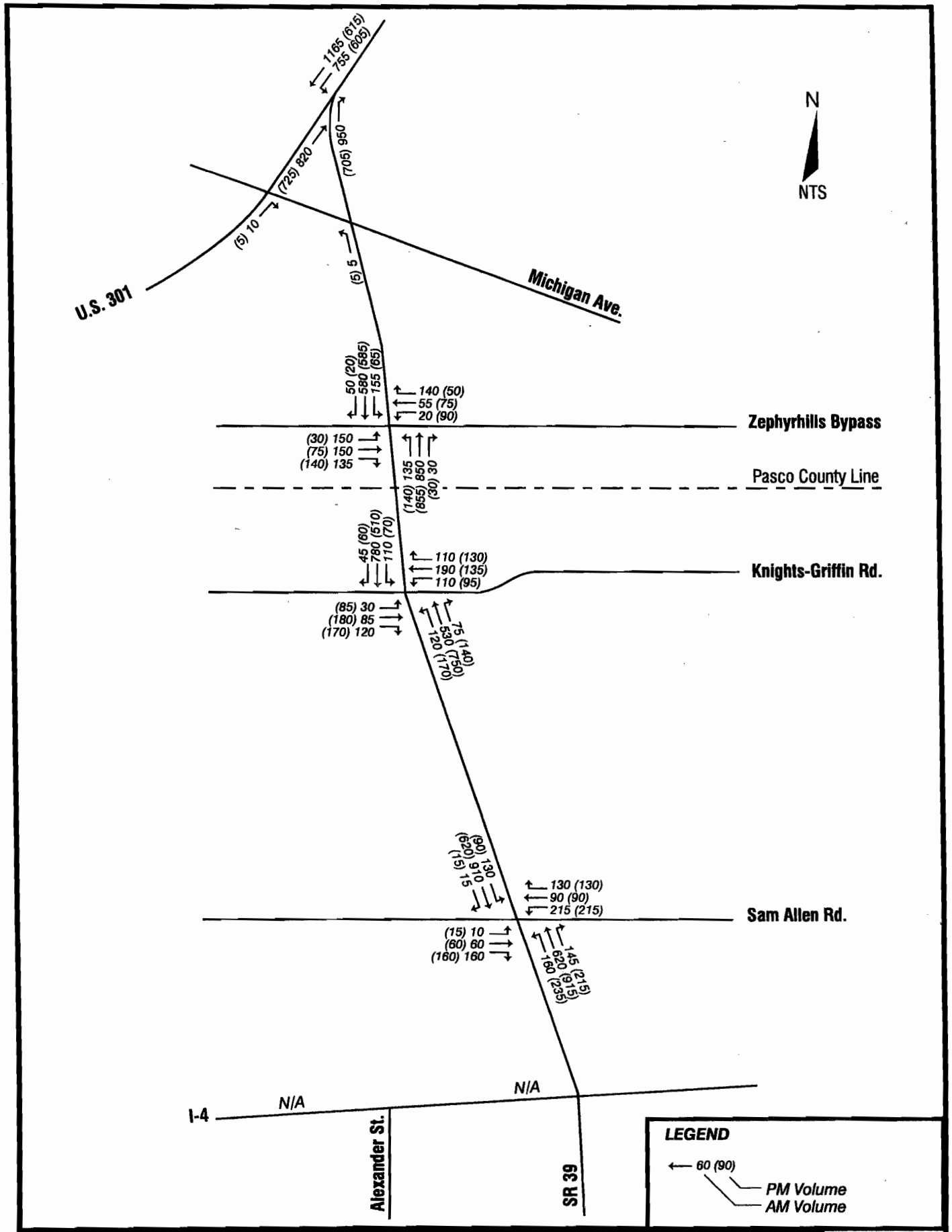
YEAR 2010 NO BUILD TURNING MOVEMENT VOLUMES

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-11



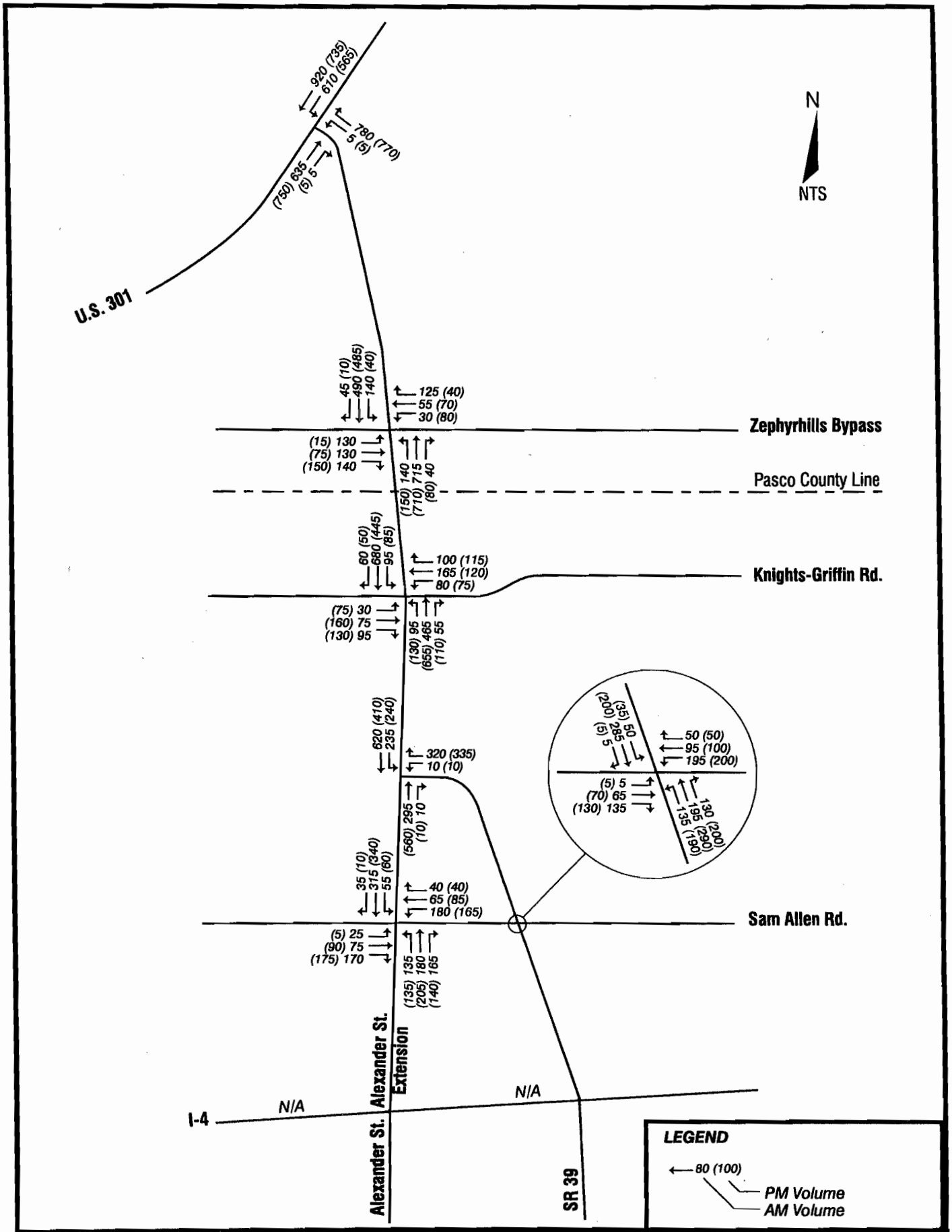
YEAR 2020 NO BUILD TURNING MOVEMENT VOLUMES

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-12

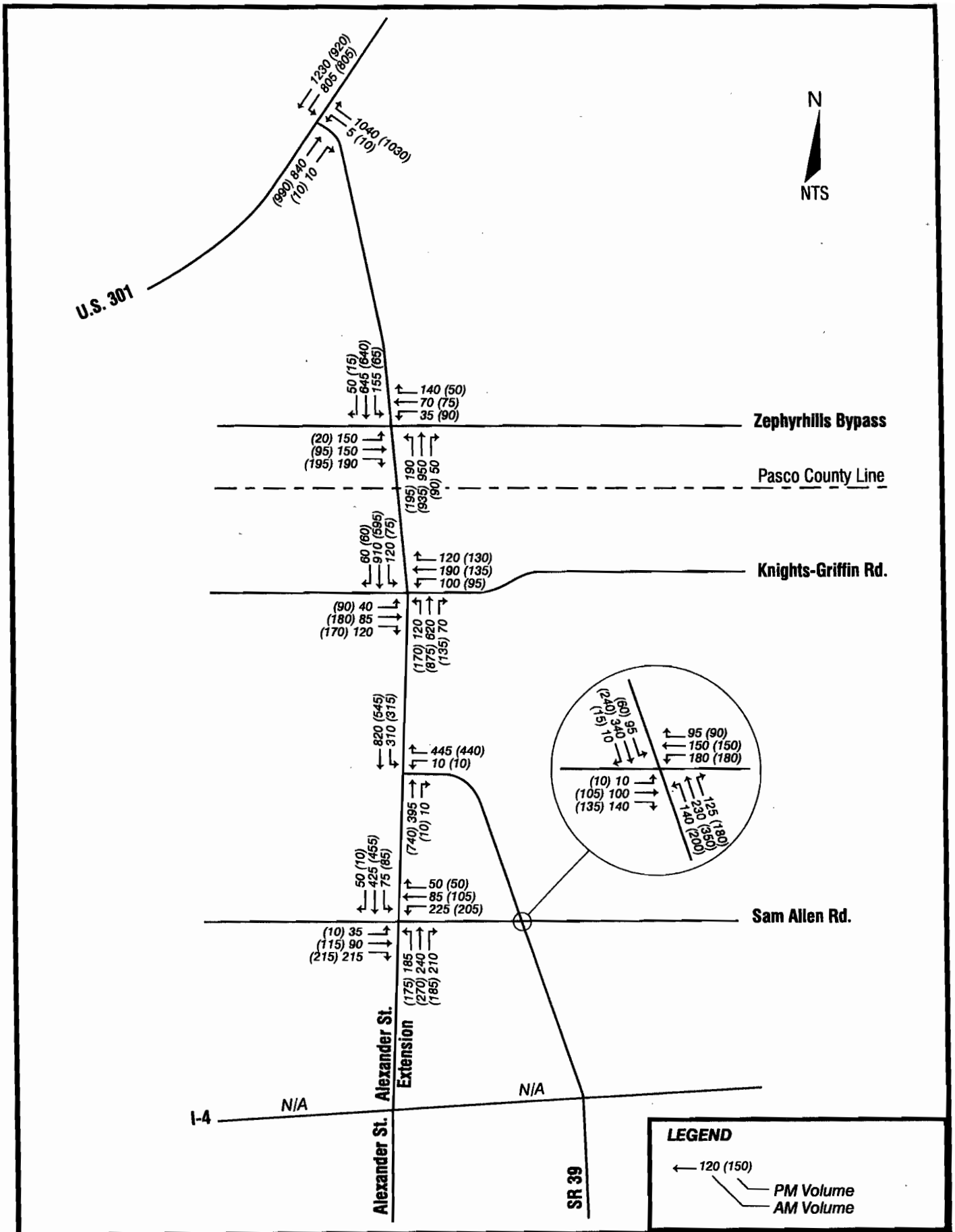


YEAR 2010 BUILD TURNING MOVEMENT VOLUMES

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-13



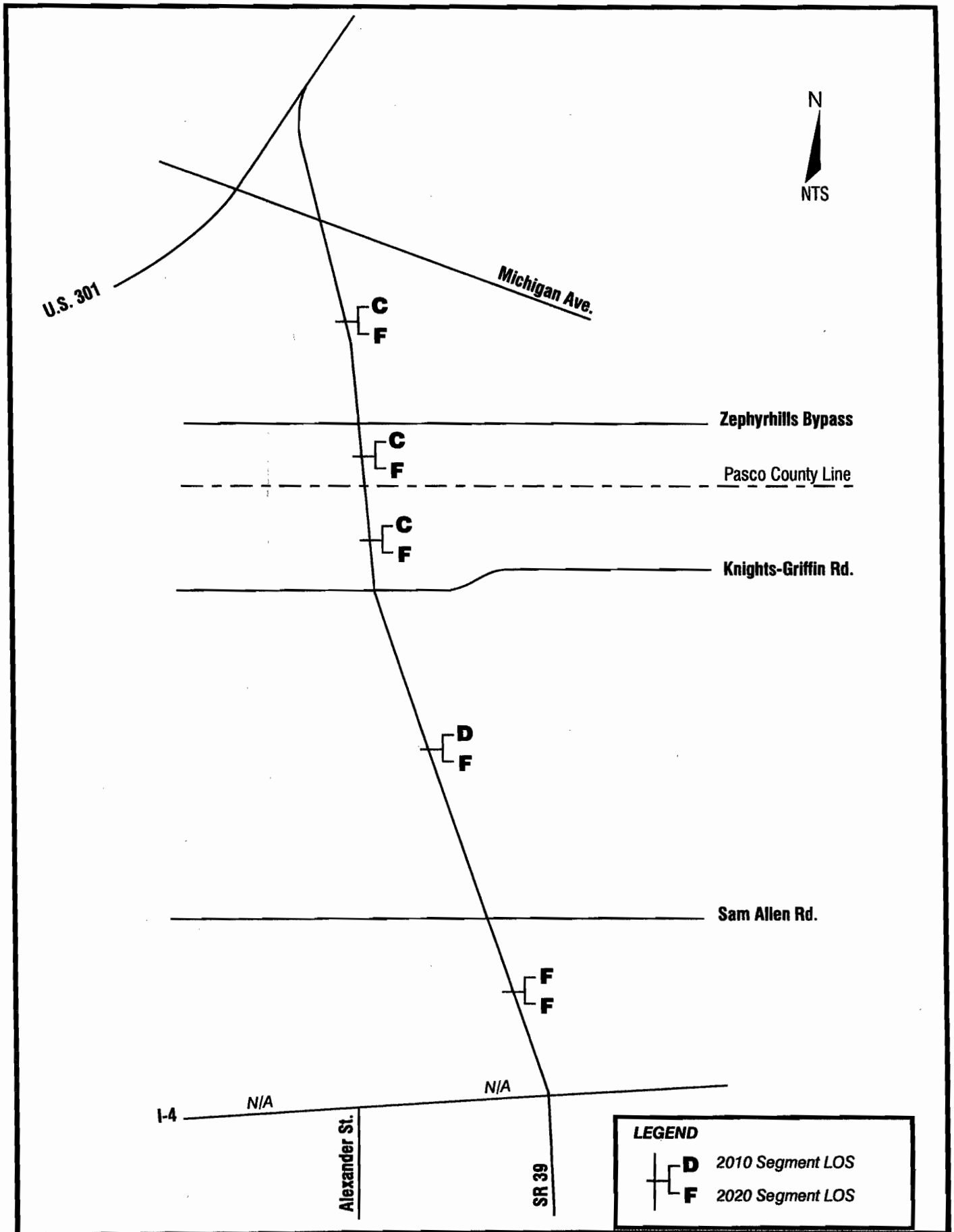
YEAR 2020 BUILD TURNING MOVEMENT VOLUMES

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-14

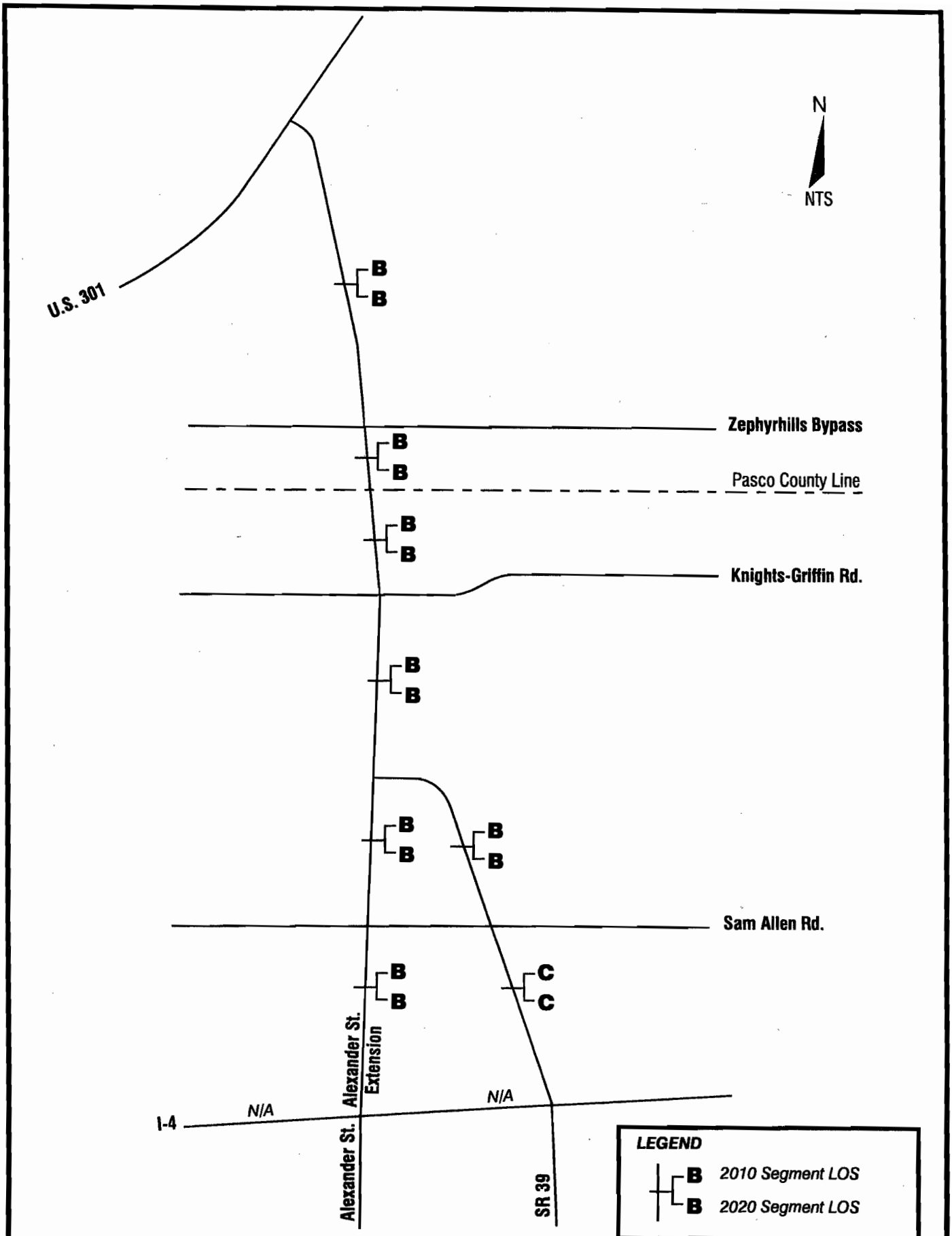


YEAR 2010/2020 ROADWAY SEGMENT LOS - NO BUILD ALTERNATIVE

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-15



YEAR 2010/2020 ROADWAY SEGMENT LOS - BUILD ALTERNATIVE

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-16

TABLE 6-5

RESULTS OF YEAR 2010 AND 2020 ROADWAY SEGMENT LOS ANALYSIS NO-BUILD ALTERNATIVE

Roadway Segment S.R. 39	Number of Lanes	AADT Volume		Level of Service	
		2010	2020	2010	2020
I-4 to Sam Allen Road	2	19,200	24,000	F	F
Sam Allen Road to Knights-Griffin Road	2	14,200	18,800	D	F
Knights-Griffin Road to Pasco County Line	2	12,400	16,500	C	F
Pasco County Line to Zephyrhills Bypass	2	13,700	18,000	C	F
Zephyrhills Bypass to U.S. 301	2	12,600	16,800	C	F

TABLE 6-6

RESULTS OF YEAR 2010 AND 2020 ROADWAY SEGMENT LOS ANALYSIS BUILD ALTERNATIVE

Roadway Segment	Number of Lanes	AADT Volume		Level of Service	
		2010	2020	2010	2020
S.R. 39					
I-4 to Sam Allen Road	2	11,900	13,000	C	C
Sam Allen Road to Alexander Street Bypass	2	6,000	8,000	B	B
Alexander Street Bypass to Knights-Griffin Road	4	15,800	20,900	B	B
Knights-Griffin Road to Pasco County Line	4	14,300	19,000	B	B
Pasco County Line to Zephyrhills Bypass	4	15,800	21,000	B	B
Zephyrhills Bypass to U.S. 301	4	13,900	18,400	B	B
Alexander Street Bypass					
I-4 to Sam Allen Road	4	8,400	11,100	B	B
Sam Allen Road to S.R. 39	4	9,800	13,000	B	B

The results of the intersection LOS analysis for the years 2010 and 2020 for the No-Build Alternative are summarized in Table 6-7 and illustrated on Figure 6-17. The results of the intersection LOS analysis for the years 2010 and 2020 for the Build Alternative are summarized in Table 6-8 and illustrated on Figure 6-18.

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TABLE 6-7

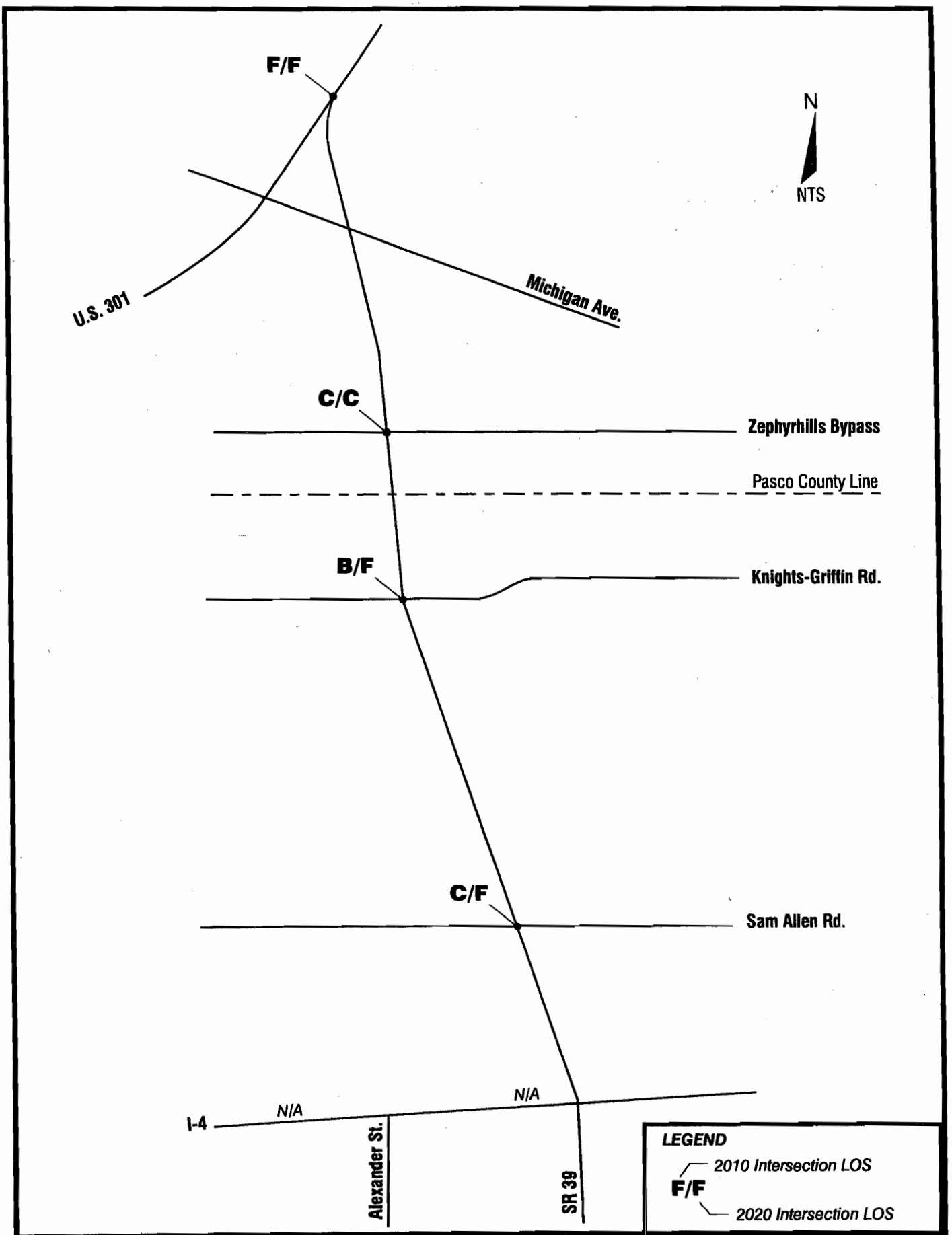
RESULTS OF YEAR 2010 AND 2020 INTERSECTION LOS ANALYSIS NO-BUILD ALTERNATIVE

Intersection		2010		2020	
		Average Delay (seconds)	LOS	Average Delay (seconds)	LOS
S.R. 39/Sam Allen Road	AM	22.0	C	*	F
	PM	19.2	C	*	F
S.R. 39/Knights-Griffin Road	AM	12.3	B	*	F
	PM	14.5	B	*	F
S.R. 39/Zephyrhills Bypass	AM	15.7	C	24.8	C
	PM	13.3	B	12.5	B
S.R. 39/U.S. 301	AM	116.2	F	999.9	F
	PM	200.7	F	207.7	F

TABLE 6-8

RESULTS OF YEAR 2010 AND 2020 INTERSECTION LOS ANALYSIS BUILD ALTERNATIVE

Intersection		2010		2020	
		Average Delay (seconds)	LOS	Average Delay (seconds)	LOS
S.R. 39/Sam Allen Road	AM	12.7	B	13.6	B
	PM	12.7	B	13.5	B
S.R. 39/Alexander Street Bypass	AM	13.7	B	18.5	C
	PM	16.7	C	21.0	C
S.R. 39/Knights-Griffin Road	AM	13.9	B	16.3	C
	PM	15.2	C	20.0	C
S.R. 39/Zephyrhills Bypass	AM	8.4	B	16.3	C
	PM	7.4	B	16.2	C
S.R. 39/U.S. 301	AM	17.7	C	14.3	B
	PM	18.6	C	15.8	C
Alexander Street Bypass/Sam Allen Road	AM	19.8	C	21.9	C
	PM	19.7	C	21.4	C

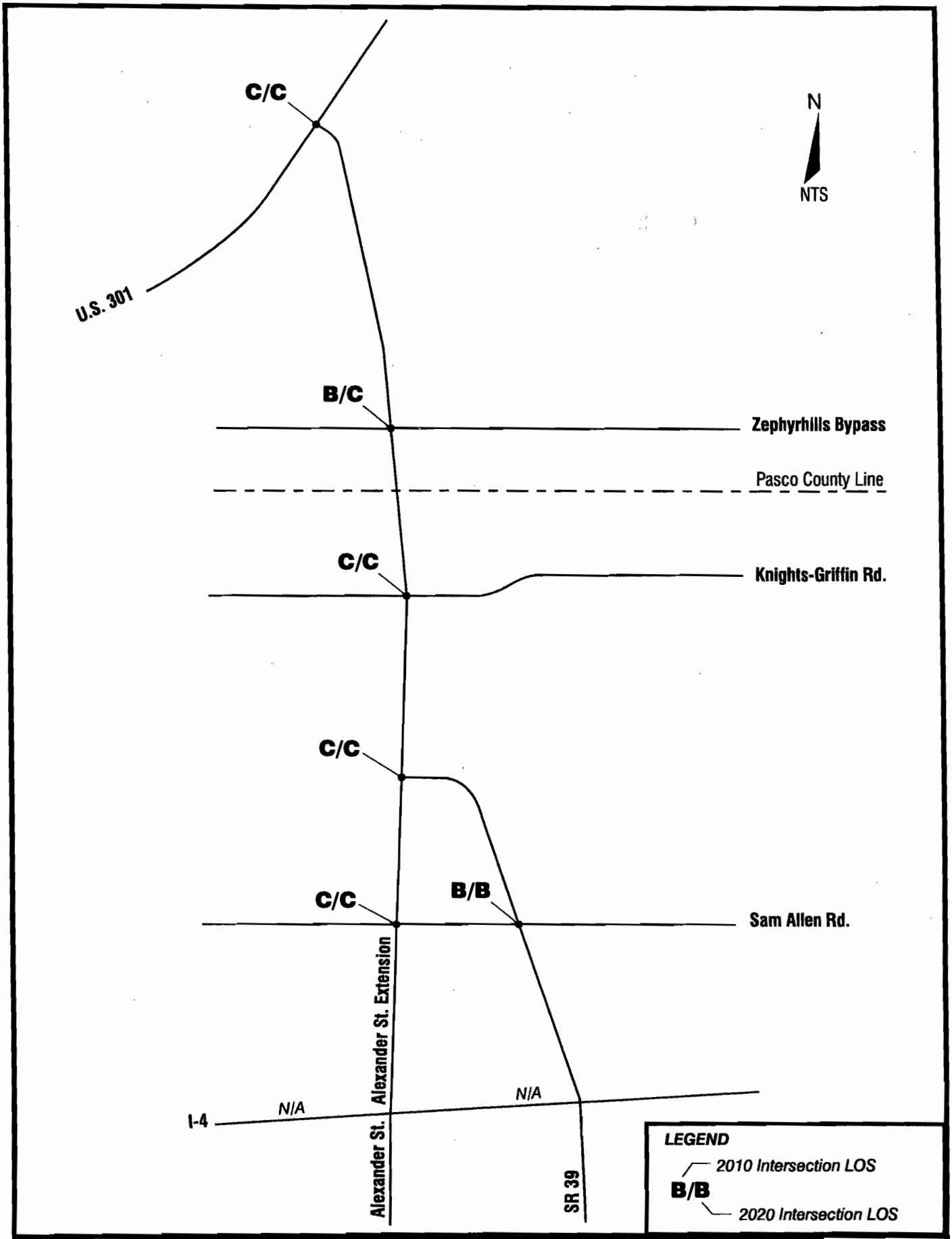


YEAR 2010/2020 INTERSECTION LOS - NO BUILD ALTERNATIVE

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-17



YEAR 2010/2020 INTERSECTION LOS - BUILD ALTERNATIVE

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-18

6.3.5 Intersection Queue Length Analysis

A queue length analysis was conducted for the Build Alternative for the AM and PM peak hours in the years 2010 and 2020. The analysis used the *FDOT Plans Preparation Manual* (PPM) formula for computing queue lengths and the intersection traffic volumes illustrated on Figures 6-13 and 6-14. A 90-second traffic signal cycle, or 40 cycles per hour, was assumed for this analysis.

6.4 CONCLUSIONS

The LOS analysis indicates that by the design year 2020 S.R. 39 will require a four-lane cross section to maintain an acceptable LOS.

The analyses indicate that the intersection lane-use illustrated on Figure 6-6 should provide a good LOS through the year 2020, except at the intersection of S.R. 39 with U.S. 301. The analyses indicate that by 2020, the south approach of S.R. 39 at U.S. 301 will require exclusive dual right-turn lanes in addition to a separate left-turn lane. The intersection lane requirements to accommodate year 2020 AM and PM design hour traffic volumes is illustrated on Figure 6-19.

The crash analysis indicates that although S.R. 39, within the study limits, is operating within generally expected parameters with respect to the number and types of crashes, the number of injuries experienced is high, averaging approximately 1.5 injuries per crash. This high injury rate is probably due to the high speeds on S.R. 39 and the lack of access control common on two-lane highways. A four-lane median divided roadway on S.R. 39 should have a positive effect on the safety of traffic operations because it will provide increased control of access to the roadway and improved definition at the intersections on S.R. 39 within the study limits.

6.5 RECOMMENDED IMPROVEMENTS

The LOS analysis indicates the need for a four-lane facility on the Alexander Street Bypass - S.R. 39 alignment, from north of I-4 to U.S. 301, to achieve LOS C for projected year 2020 design hour traffic volumes.

Figure 6-19 identifies the number and type of lanes required at each of the six major intersections within the project to achieve LOS C for projected year 2020 design hour traffic volumes.

6.6 REFERENCES

1. *Project Traffic and Intersection Analysis Technical Memorandum*; Parsons Brinckerhoff Quade & Douglas, Inc.; Tampa, Florida; November 3, 1999.

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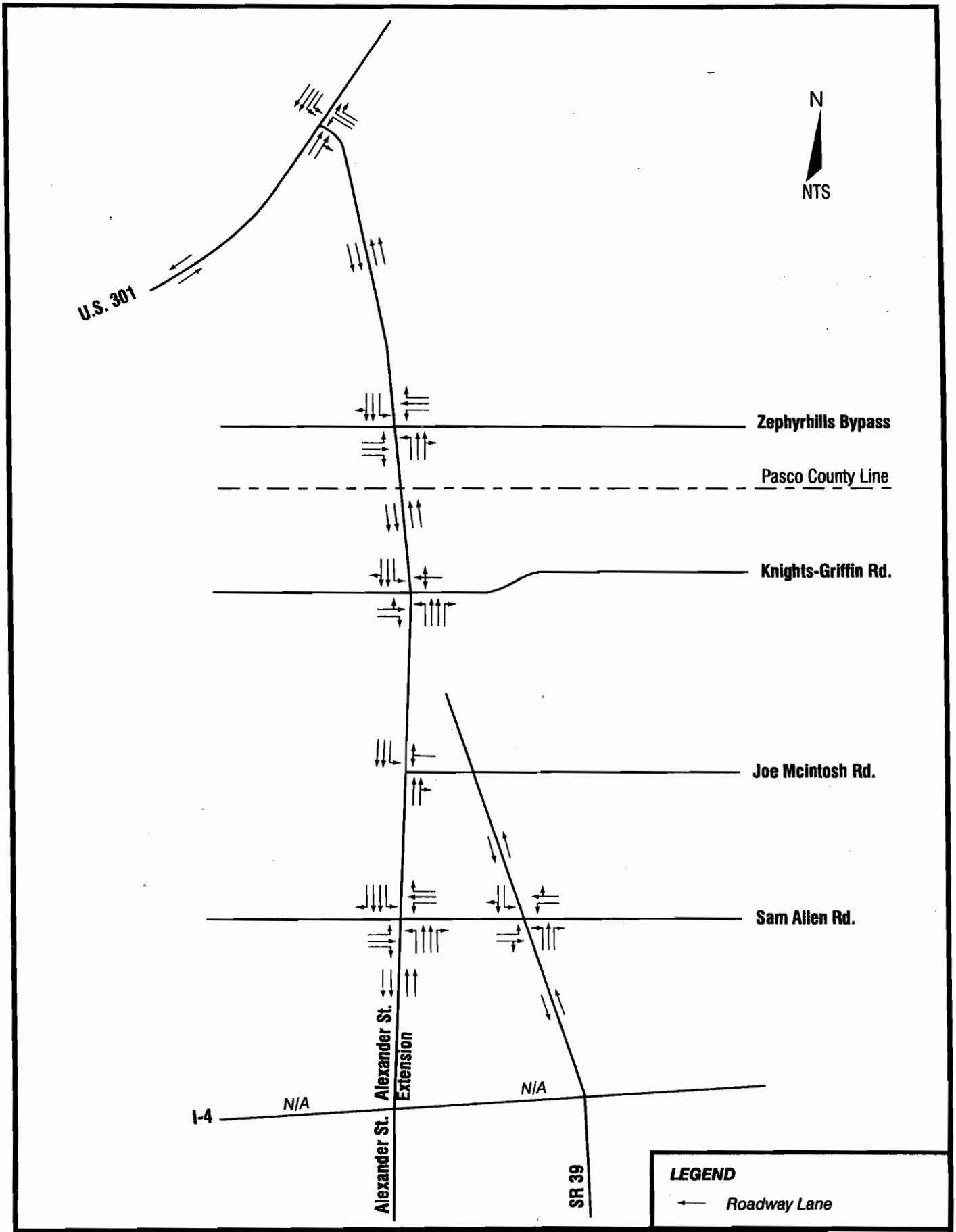

YEAR 2020 LANE REQUIREMENTS

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT No. 255099 1 & 256289 1 FAP No. F-321-1(4)
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6-19

SECTION 7.0
CORRIDOR ANALYSIS

7.1 EVALUATION OF ALTERNATIVE CORRIDORS

In an effort to identify potential alternative corridors that could serve the future travel demand of the S.R. 39 corridor, the following options were considered:

- Improvement to another parallel north-to-south roadway within the region,
- Roadway improvements to the existing S.R. 39 corridor, or
- Development of a new corridor.
- Modal Interrelationships.

7.1.1 Improvement of Parallel Roadways

A review of the existing roadway network in the immediate vicinity of S.R. 39 reveals that there are no parallel north-south corridors within the project vicinity.

7.1.2 Improvement to the Existing Corridor

The existing right-of-way for S.R. 39 from I-4 to U.S. 301 ranges from 18.288 m (60 ft) to 45.720 m (150 ft). Accommodation of a four-lane divided facility will require additional right-of-way along the project corridor. Certain advantages would be associated with improvement to the existing corridor, including:

- Maximizes the use of the existing right-of-way.
- Maintains access to existing residences/businesses along S.R. 39.
- The proposed improvements would utilize the existing alignment and, therefore, would not separate established communities.
- Impacts to wetland areas and wildlife communities would be minimized to areas previously impacted by the existing roadway.

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The disadvantages of expanding the existing facility include:

- Widening S.R. 39 to a four-lane facility in the vicinity of I-4 would require the relocation of existing grave sites at the Memorial Park Cemetery.
- Access from S.R. 39 to the I-4 interchange at Alexander Street would require the use of service roads.
- The relocation of existing businesses along S.R. 39 due to the roadway widening.

7.1.3 Development of a New Corridor

A review of the land use and available land to the west of S.R. 39 indicated the potential for a new corridor. The analysis indicated that three new corridors west of S.R. 39 could be developed for the evaluation of the Alexander Street Bypass. Each corridor provides opportunities for developing different roadway typical sections and alignments. The three corridors are described as follows:

- From the Alexander Street/I-4 interchange to S.R. 39 north of Oakland Heights Avenue.
- From the Alexander Street /I-4 interchange to S.R. 39 south of Sam Allen Road.
- From the Alexander Street/I-4 interchange to S.R. 39 north of Sam Allen Road.

Certain advantages would be associated with the development of a new corridor, including:

- Direct access could be provided to the future Alexander Street/I-4 interchange.
- Grave relocations at the Memorial Park Cemetery could be avoided.
- The Alexander Street Bypass would connect to the planned improvements on Alexander Street.
- The Alexander Street Bypass could accommodate a higher design speed.
- The Alexander Street Bypass would be consistent with *The Hillsborough County Metropolitan Planning Organization (MPO) Adopted 2020 Long Range Transportation Plan*[1].

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Disadvantages associated with the development of a new corridor include:

- Additional wetland impacts in the area of Pemberton Creek.
- Existing businesses along S.R. 39 would not be adjacent to the Alexander Street Bypass.
- The Alexander Street Bypass may divide existing large land tracts.

7.1.4 Modal Interrelationship

Local government comprehensive plans were reviewed to determine the effect of local transit, commuter rail, rail service, aviation, and port activities on the S.R. 39 project. A summary of the findings follows.

Hillsborough Area Regional Transit (HARTline) is designated by the State of Florida to provide mass transit service in Hillsborough County but there is no designated transit provider in Pasco County. Although HARTline transit service does not currently extend out to eastern Hillsborough, the I-4 corridor from I-75 to the Hillsborough/Polk County Line is identified in the *Future of Hillsborough, Comprehensive Plan for Unincorporated Hillsborough County*[2] as a transit emphasis corridor. The Plan also identifies Plant City as one of 14 Transit Activity Centers. The *Comprehensive Plan for the City of Plant City, Transportation Plan*[3] states that Plant City has not yet chosen to enact an ad valorem property tax or otherwise participate in funding HARTline service; therefore, the city is not currently served by HARTline. The Light Rail Transit Plan envisions a rail transit system evolving out of the improved bus system when sufficient ridership develops; there will be rail transit connections between major activity centers.

The Plant City Airport, located 3.219 km (2 mi) southwest of Plant City, is one of four airports operated by the Hillsborough County Aviation Authority. Existing Alexander Street Bypass, south of the project study area, provides a direct connection to Airport Road, the main access road to Plant City Airport. The proposed project will facilitate access to the airport and will provide improved access to transit service when transit becomes available in the area.

7.2 CORRIDOR SELECTION

In summary, a preliminary analysis of the corridors indicates that all of the corridors identified have advantages and disadvantages associated with each of them. Therefore, all of the corridors identified are viable options and will be further evaluated for potential alternative alignments. A number of alignment and typical section alternatives were developed for each corridor and are evaluated in detail in Section 8.0 of this report.

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7.3 REFERENCES

1. *The Hillsborough County Metropolitan Planning Organization (MPO) Adopted 2020 Long Range Transportation Plan;* Hillsborough County Metropolitan Planning Organization; Hillsborough County; Adopted November 9, 1998.

2. *Future of Hillsborough, Comprehensive Plan for Unincorporated Hillsborough County,* Hillsborough County City-County Planning Commission, Tampa, Florida, effective March 1, 1999.

3. *Comprehensive Plan for the City of Plant City, Transportation Plan*, Plant City, effective May 13, 1999.

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SECTION 8.0
ALTERNATIVE ALIGNMENT ANALYSIS

To develop an improved roadway facility for S.R. 39 that is in the best overall public interest, the following factors must be taken into consideration:

- Engineering: The design and alignment of the improved facility;
- Environmental: The social, cultural, natural, and physical factors;
- Public Involvement: The needs and concerns of the affected local community; and
- Economic Factors: The project costs and opportunities to optimize expenses such as construction staging and traffic control.

The improved facility should be designed to safely and efficiently accommodate the projected design year vehicular traffic. All of these criteria have a direct bearing on the selection of the preferred design concept.

Included in this section are descriptions of the alternative improvement concepts developed for this project and the evaluation methods used to compare the alternatives. These descriptions are preceded by a discussion of the advantages and disadvantages of the No-Project Alternative.

8.1 NO-PROJECT ALTERNATIVE

The No-Project Alternative consists of maintaining S.R. 39 in its present condition except for routine maintenance as required. Certain advantages would be associated with the implementation of the No-Project Alternative, including the following:

- No new construction costs,
- No disruption to the existing land uses due to construction activities,
- No disruptions of traffic due to construction activities,
- No right-of-way acquisitions and relocations, and
- No environmental degradation or disruption of natural resources.

The disadvantages of the No-Project Alternative include the following:

- Increased traffic congestion causing increased road user cost due to travel delay,
- Inefficient traffic operations and associated safety conditions,
- Deterioration of air quality caused by traffic congestion and delays,
- Deterioration in the emergency service response time, and
- Increased roadway maintenance costs.

Although there are major disadvantages associated with the No-Project Alternative, it will remain under consideration as a viable alternative throughout the analysis and evaluation process.

8.2 TRANSPORTATION SYSTEM MANAGEMENT

The Transportation System Management (TSM) alternative, which consists of low-cost capital improvements that maximize the efficiency of the present system, was also considered for this project. TSM amenities for the proposed project include signal timing and improved access. A review of the project indicates that such TSM improvements have been implemented at the major intersections of S.R. 39 that have improved safety; however, they will not serve the year 2020 traffic forecast that will require a four-lane facility to provide acceptable service to the public. Therefore, TSM activities alone are not considered a viable alternative to roadway improvements.

8.3 ALTERNATIVES EVALUATION

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

- Step One: The project was divided into three segments based on the existing land use patterns, location of crossover streets, and available right-of-way widths.
- Step Two: Alternative typical sections were developed based on roadway design criteria discussed in Section 5.0 and the findings of the traffic analyses.
- Step Three: Alternative improvement alignments were developed for each segment based on the typical sections (developed in Step Two) and the assumption that additional right-of-way could be acquired on the west side, east side, or from both sides of the existing facility.

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8.3.1 Project Segmentation

Project segments were developed to effectively assess and compare the impacts of each alternative in different geographical areas within the project corridor. After considering the existing land use patterns, locations of major intersections, and available ROW along S.R. 39, the project was divided into three study segments as follows:

- Segment 1 — Alexander Street Bypass area from I-4 to Joe McIntosh Road including the existing S.R. 39. This includes all of the Alexander Street Bypass alternatives.
- Segment 2 — S.R. 39 from Joe McIntosh Road to Fredda Avenue in Crystal Springs (Pasco County). This includes S.R. 39 in the area adjacent to the CSX railroad. In addition, alternatives were considered in the vicinity of the Dr. T.C. Maquire Estate and the Knights School since both are potentially eligible for listing on the NRHP.
- Segment 3 — S.R. 39 from Fredda Avenue to U.S. 301. This includes S.R. 39 from where the roadway and railroad diverge to the end of the project at U.S. 301.

8.4 1993 STUDY OF TYPICAL SECTIONS AND ALTERNATIVES

This section of the report describes and presents graphically the typical sections and alternative alignments evaluated in the previous efforts to prepare the PD&E Study. Typical roadway sections provide for an initial four-lane divided section.

8.4.1 1993 Typical Section Evaluation

8.4.1.1 Typical Section 1

Typical Section 1 is a four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, a 13.8 m (46 ft) depressed median, 3.0 m (10 ft) outside shoulders, 1.8 m (6 ft) inside shoulders, and 13.8 m (46 ft) borders. The proposed design speed for this typical section is 110 km/h (70 mph). This typical section will require 61.8 m (206 ft) of right-of-way (see Figure 8-1). This typical section was developed for the new alignment of the Alexander Street Bypass.

8.4.1.2 Typical Section 2

Typical Section 2 is a four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, a 13.8 m (46 ft) depressed median, 3.0 m (10 ft) outside shoulders, and 13.8 m (46 ft) borders. The proposed design speed for this typical section is 110 km/h (70 mph). This typical section will require 61.8 m (206 ft) of right-of-way (see Figure 8-1). This typical section was developed to utilize the existing two lanes of S.R. 39 as northbound lanes.

8.4.1.3 Typical Section 3

Typical Section 3 is a four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, a 13.8 m (46 ft) depressed median, 3.0 m (10 ft) outside shoulders, and 13.8 m (46 ft) borders. The proposed design speed for this typical section is 110 km/h (70 mph). This typical section will require 61.8 m (206 ft) of right-of way (see Figure 8-1). This typical section was developed to utilize the existing two lanes of S.R. 39 as southbound lanes.

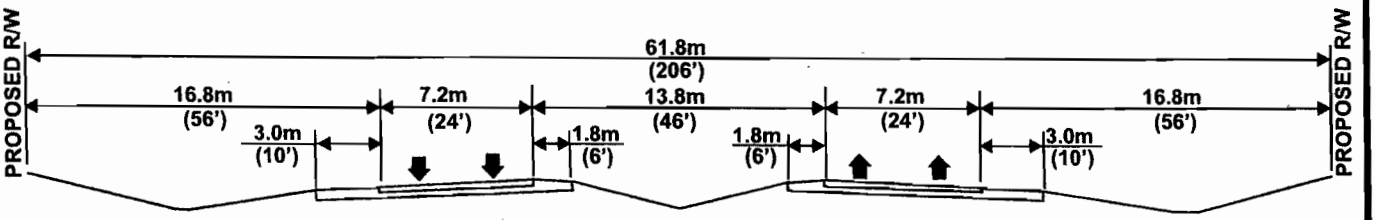
8.4.1.4 Typical Section 4

Typical Section 4 is a four-lane divided facility, with 3.6 m (12 ft) wide inside travel lanes; 4.2 m (14 ft) wide outside travel lanes; a 13.8 m (46 ft) depressed median, curb, and gutter; and 1.5 m (5 ft) sidewalks within the 3.6 m (12 ft) borders. The proposed design speed for this typical section is 80 km/h (50 mph). This typical section will require 36.6 m (122 ft) of right-of-way (see Figure 8-1). This typical section was also developed for the new alignment of the Alexander Street Bypass and portions of S.R. 39 in the area of Knights-Griffin Road and U.S. 301.

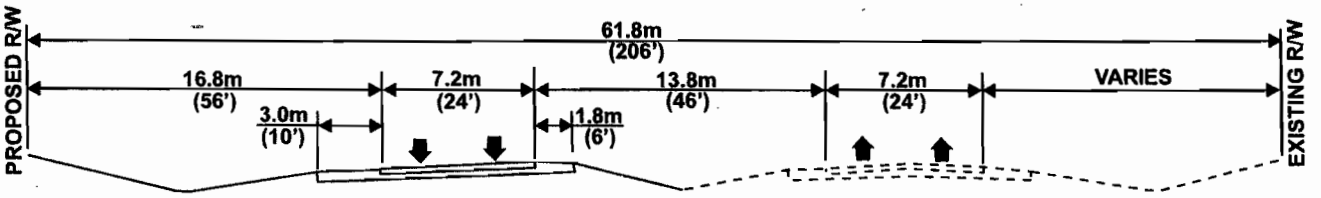
8.4.1.5 Typical Section 5

Typical Section 5 is a five-lane facility, with 3.6 m (12 ft) wide inside travel lanes; 4.2 m (14 ft) wide outside travel lanes; a 4.2 m (14 ft) continuous two-way left-turn lane, curb, and gutter; and 1.5 m (5 ft) sidewalks within the 3.6 m (12 ft) borders. The proposed design speed for this typical section is 60 km/h (40 mph). This typical section will require 27.0 m (90 ft) of right-of-way (see Figure 8-1). This typical section was developed to be utilized in the constrained area along S.R. 39 immediately north of I-4.

085



TYPICAL SECTION 1



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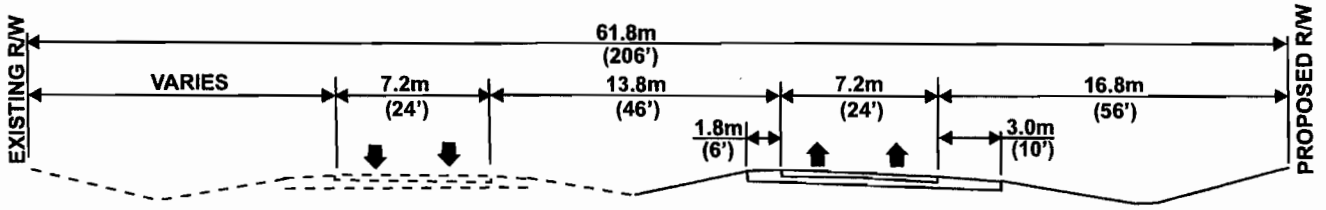

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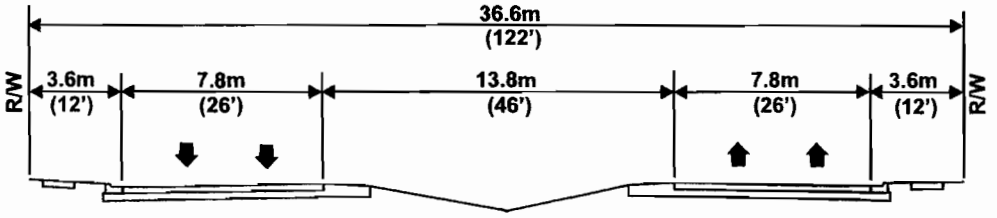

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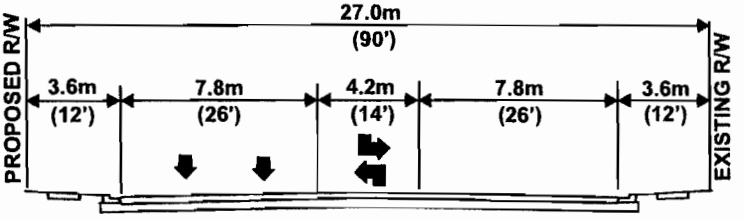


TYPICAL SECTION 5

086

TYPICAL SECTIONS PREVIOUSLY EVALUATED

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 8-1

8.4.2 1993 Alternative Alignments

8.4.2.1 Segment 1 Urban Alignments

Using the typical sections described in Section 8.4.1, the following urban alignments were developed for Segment 1 and are shown on Figure 8-2.

S.R. 39 Alignment

The S.R. 39 alignment consists of widening the existing facility from I-4 to Joe McIntosh Road. From north of I-4 to 76.2 m (250 ft) north of Oakland Heights Avenue, Typical Section 5 would be utilized to minimize impacts within the constrained area adjacent to the Memorial Park Cemetery and developed areas. North of Oakland Heights Avenue to 365.8 m (1,200 ft) north of Sam Allen Road, Typical Section 4 was recommended to minimize impacts while providing a standard four-lane facility with a raised median. From north of Sam Allen Road to Joe McIntosh Road, Typical Section 2 is recommended, which utilizes the existing two lanes of pavement.

Alignment U-A

Urban Alignment A (U-A) was developed for the Alexander Street Bypass from the I-4 interchange and immediately turns northeast towards S.R. 39. This alignment was developed to reduce encroachment into the Pemberton Creek wetland area and follows an alignment southwest of Hancock Street. This alignment would use Typical Section 4 from I-4 to S.R. 39 in the area of Oakland Heights. North of Oakland Heights Avenue to Joe McIntosh Road, Typical Sections 2 and 4 would be utilized as described in the S.R. 39 Alignment.

Alignment U-B

Urban Alignment B (U-B) was developed for the Alexander Street Bypass from the I-4 interchange northward to the area south of Cason Road where the alignment turns northeast and connects to S.R. 39 in the area north of Oakland Heights Avenue. This alignment utilizes Typical Section 4 and was developed to minimize impact to the residential areas south of West Terrace Drive. North of Oakland Heights Avenue to Joe McIntosh Road, Typical Sections 2 and 4 would be utilized as described in the S.R. 39 Alignment.

087

Alignment U-C

Urban Alignment C (U-C) was developed for the Alexander Street Bypass from the proposed I-4 interchange and continues north to an area south of Oakland Heights Avenue where it turns northeast and connects to S.R. 39 in the area south of Sam Allen Road. This alignment was developed to minimize impacts to much of the community south of Oakland Heights Avenue and provides a direct north-south route for a distance of about 914.4 m (3,000 ft) north of I-4. Typical Section 4 would be used for the new alignment. From south of Sam Allen Road to Joe McIntosh Road, a combination of Typical Sections 2 and 4 would be utilized as described in the S.R. 39 Alignment.

Alignment U-D

Urban Alignment D (U-D) follows the alignment of U-C in the area south of Cason Road and north of Oakland Heights Avenue. However, between those two areas, Alternative U-D is aligned to the west of homes located northwest of the end of Cason Road. Alignment U-D was developed to place the roadway in the rear of homes that may be displaced by Alignment U-C. The typical sections are the same for Alternative U-D as described for Alignment U-C.

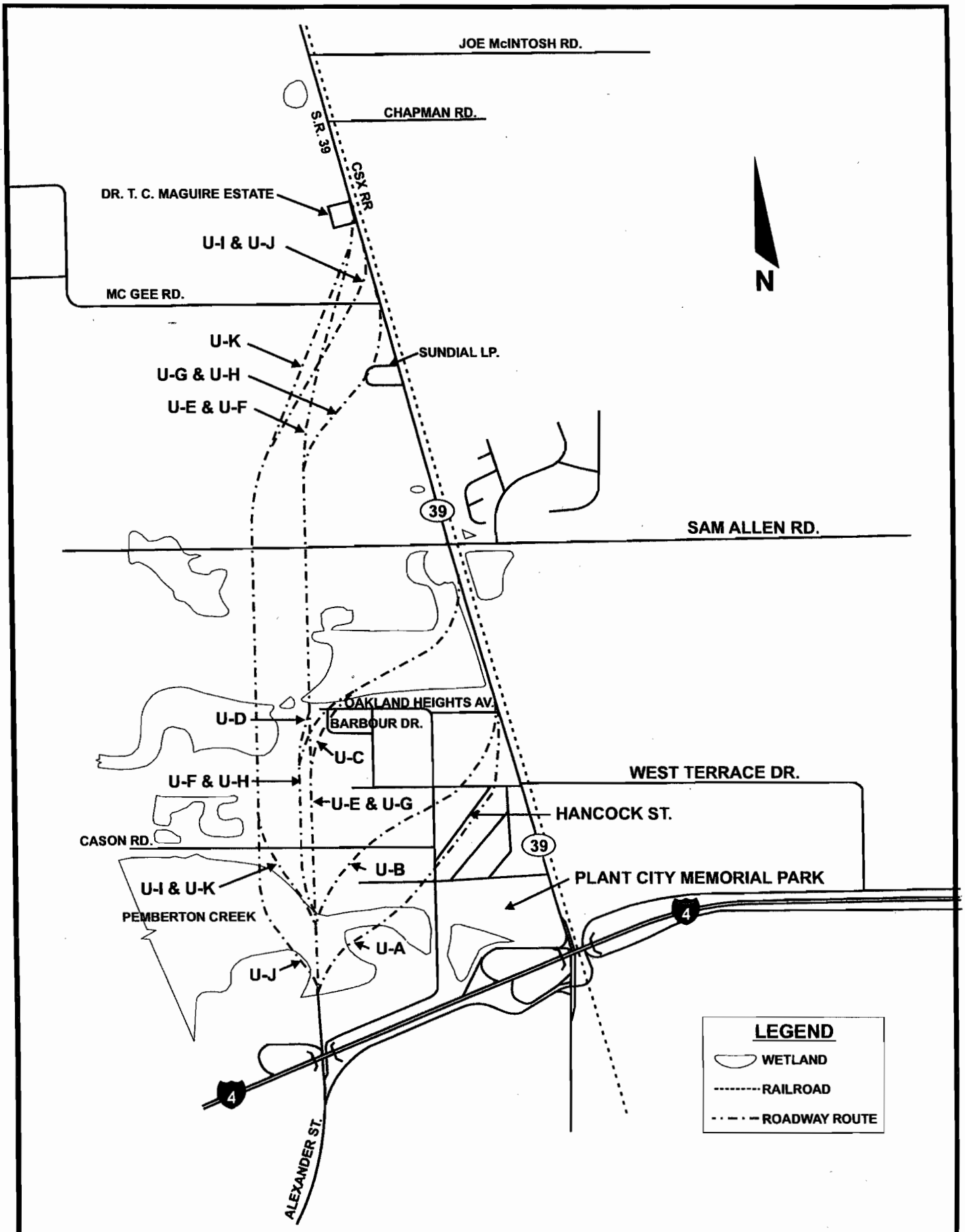
Alignment U-E

Urban Alignment E (U-E) begins at the proposed Alexander Street interchange with I-4 and would proceed to an area north of Sam Allen Road where it would turn to the northeast and connect to S.R. 39 about 426.7 m (1,400 ft) north of McGee Road. This alignment was developed to provide a bypass that extends north of McGee Road and allows the intersection of the Bypass and Sam Allen Road to be about 487.7 m (1,600 ft) west of S.R. 39. Typical Section 4 would be used for the roadway on new alignment, and Typical Section 2 would be used for S.R. 39 from the Bypass to Joe McIntosh Road.

Alignment U-F

Urban Alignment F (U-F) follows the alignment of Alignment U-E except for the area between Cason Road and Oakland Heights Avenue. In that area, Alignment U-F is aligned to the west of residences located in the area. The typical sections for Alignment U-F would be the same as Alignment U-E.

088



SEGMENT 1 - URBAN ALIGNMENTS

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 8-2

Alignment U-G

Urban Alignment G (U-G) is the same as Alignment U-E to an area north of Sam Allen Road. From this location, Alignment U-G turns to the northeast and connects to S.R. 39 south of McGee Road. This alignment was developed to provide the benefits of Alignment U-E, but connects to S.R. 39 before McGee Road to avoid a business at the intersection. The typical sections for Alignment U-G are the same as described for Alignment U-E.

Alignment U-H

Urban Alignment H (U-H) is the same as Alignment U-G except in the area between Cason Road and Oakland Heights Avenue. In that area, Alignment U-H is aligned to the west of residences located in the area. The typical sections for Alignment U-H are the same as described for Alignments U-G.

Alignment U-I

Urban Alignment I (U-I) begins at the I-4 interchange and continues north through the Pemberton Creek wetland area and then turns northwest to an alignment that would place the roadway to the west of most of the residences in the area. The alignment continues northward past Sam Allen Road where it would turn northeast and connect to S.R. 39 north of McGee Road. Typical Section 4 would be used for the new alignment, and Typical Section 2 would be used for S.R. 39 between the Alexander Street Bypass and Joe McIntosh Road.

Alignment U-J

Urban Alignment J (U-J) is the same as Alignment U-I except in the area of Pemberton Creek. In that area, Alignment U-J turns northwest before the wetland area and crosses the wetland for a longer distance. This alignment was developed to compare the larger wetland impact to Alignment U-I that has less wetland impact but additional upland forest impacts. The typical sections are the same as described for Alignment U-I.

Alignment U-K

Urban Alignment K (U-K) follows Alignment U-I to an area north of Sam Allen Road. From that point, Alignment U-K turns northeast and connects to S.R. 39 farther north of McGee Road. This alignment was developed to have the benefits of Alignment U-I, but was aligned to miss the business at the northwest corner of McGee Road and S.R. 39. The typical sections for Alignment U-K would be the same as described for Alignment U-I.

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8.4.2.2 Segment 1 Rural Alignments

Using the typical sections described in Section 8.4.1, the following rural alignments were developed for Segment 1 and are shown on Figure 8-3.

Alignment R-A

Rural Alignment A (R-A) was developed for the Alexander Street Bypass and begins at the I-4 interchange and continues northward to an area south of McGee Road. At that point, the alignment turns northeast and connects to S.R. 39 north of McGee Road. This alignment was developed to provide a bypass with minimum horizontal curvature and would miss the existing business at the northwest corner of McGee Road and S.R. 39. Typical Section 1 would be utilized for the new alignment, and Typical Section 2 would be used for S.R. 39 between the Bypass and Joe McIntosh Road.

Alignment R-B

Rural Alignment B (R-B) follows Alignment R-A to south of McGee Road. At that point, it provides flatter curves as it turns northeast to connect to S.R. 39. The typical sections would be the same as Alignment R-A.

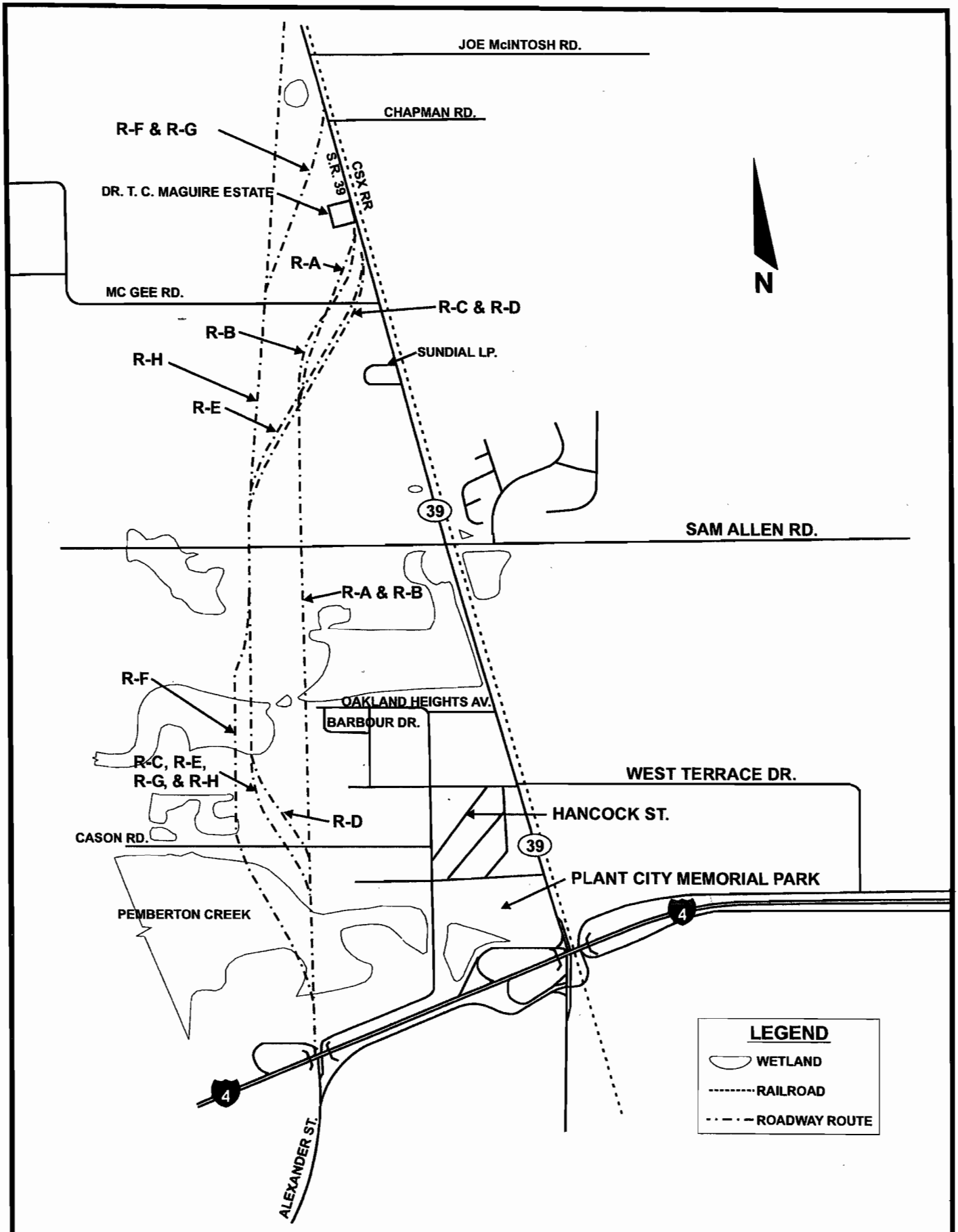
Alignment R-C

Rural Alignment C (R-C) begins at the I-4 interchange and continues north through the Pemberton Creek wetland area to Cason Road. From this location, the alignment turns northwest to place the roadway to the west of most of the residences in this area. North of Sam Allen Road, the alignment turns northeast and connects to S.R. 39 in the area immediately north of McGee Road. The typical sections for Alignment R-C would be the same as described for Alignment R-A.

Alignment R-D

Rural Alignment D (R-D) follows Alignment R-C except in the area north of Cason Road. In that area, Alignment R-D is realigned to the west of a large residence that is located at the end of Cason Road. The typical sections for Alignment R-D are the same as described for Alignment R-A.

091



SEGMENT 1 - RURAL ALIGNMENTS

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 8-3

Alignment R-E

Rural Alignment E (R-E) follows Alignment R-C to an area south of McGee Road. From this location, Alignment R-E provides flatter curves to connect to S.R. 39 than Alignment R-C. The typical section for Alignment R-E are the same as Alignment R-A.

Alignment R-F

Rural Alignment R-F was developed at the request of area residents to place the alignment west of their community. This alignment turns westward in the area immediately north of I-4 and crosses the Pemberton Creek wetland area at an angle. It then turns northward in the vicinity of Cason Road. This alignment continues northward past McGee Road to avoid impacts at the intersection of McGee Road and SR 39. Alignment R-F connects to SR 39 in the area south of Joe McIntosh Road. Because of the length of encroachment into the Pemberton Creek wetland, Typical Section 4 is recommended south of Cason Road. To the north of Cason Road, it is recommended that Alignment R-F be constructed with Typical Section 1.

Alignment R-G

Rural Alignment R-G follows Alignments R-C and R-E to the area north of Sam Allen Road. At this location, Alignment R-G continues northward of McGee Road and connects to SR 39 in the area south of Joe McIntosh Road. The roadway typical section includes Typical Section 4 at I-4 and Typical Section 1 from north of I-4 to SR 39.

Alignment R-H

Rural Alignment R-H was developed to follow Alignment R-G to the area of McGee Road. North of McGee Road, Alignment R-H continues northward past Joe McIntosh Road to avoid a design problem of the Alexander Street Bypass intersecting SR 39 at an intersection. The typical sections for Alignment R-H are the same as Alignment R-G.

8.4.2.3 Dr. T.C. Maguire Estate Alignments

The original Cultural Resource Survey indicated that the Dr. T.C. Maguire Estate is potentially eligible for the NRHP. This site is located west of S.R. 39 north of McGee Road. To minimize impacts to the site, three alignment typical sections were developed that would be located east of the property. These alignments are as follows and are shown in a plan view on Figures 8-4, 8-5, and 8-6.

Alignment Typical Section A

This typical section utilizes the existing S.R. 39 as two northbound lanes and provides a 13.8 m (46 ft) grassed median and two southbound lanes to the west. The new right-of-way would be 9.0 m (30 ft) west of the two new lanes, providing a 9.0 m (30 ft) clear zone with underground drainage, if necessary. A design variance would be required for a 9.0 m (30 ft) clear zone instead of the required 10.8 m (36 ft).

Alignment Typical Section B

This typical section is identical to Alignment A except that 10.8 m (36 ft) would be provided from the southbound lanes to the new right-of-way. This would provide the required 10.8 m (36 ft) clear zone with underground drainage, if necessary.

Alignment Typical Section C

This typical section is identical to Alternative A except that 16.8 m (56 ft) would be provided between the southbound lanes and the new right-of-way. This typical section would allow a drainage swale to be constructed and would be consistent with the proposed roadway design within Segment 2.

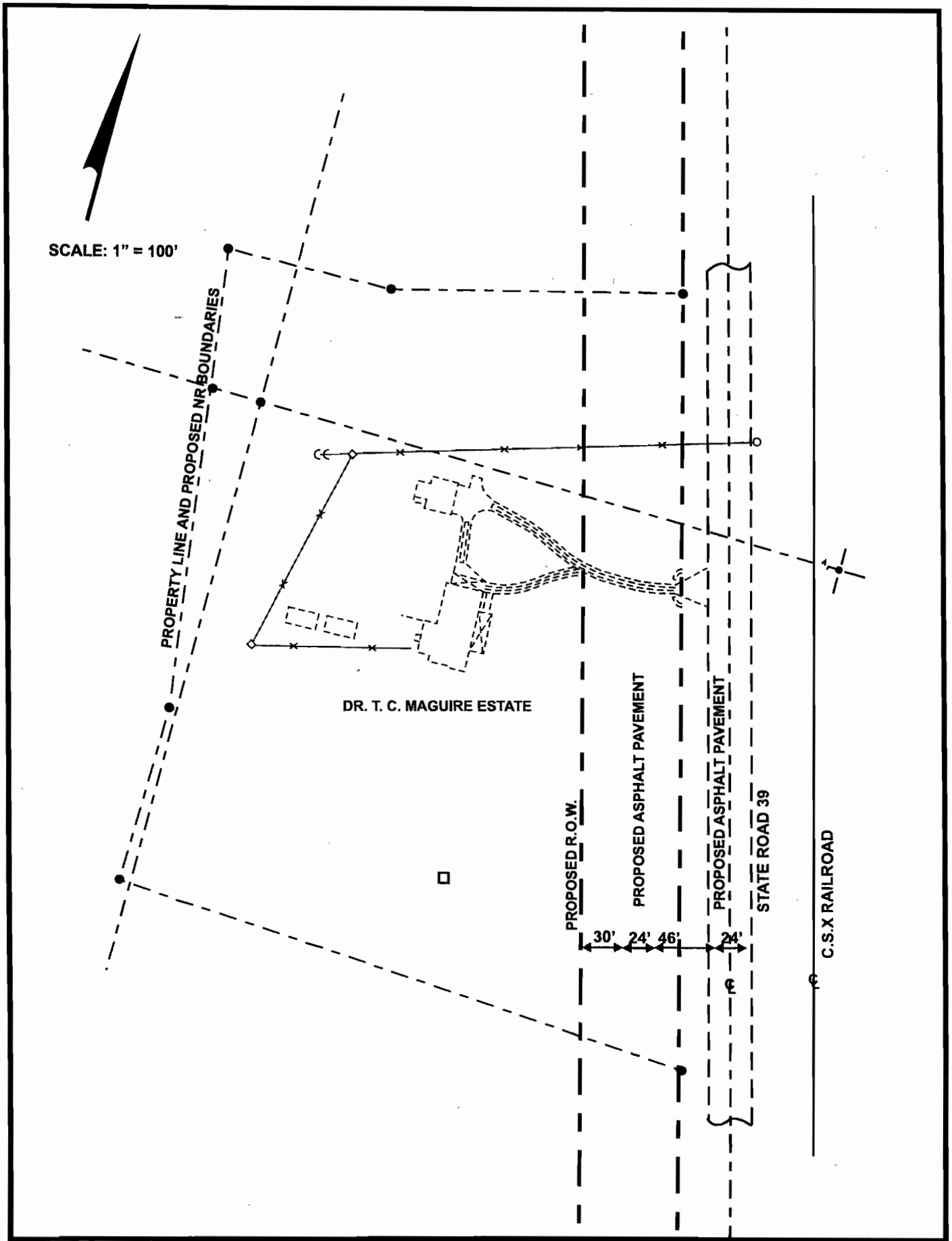
8.4.2.4 Segment 2 Alignments

Segment 2 begins at Joe McIntosh Road and continues northward following S.R. 39 to the vicinity of Fredda Avenue in Crystal Springs. This segment is approximately 13.7 km (8.5 mi) in length and represents the area between the Alexander Street Bypass and the point where S.R. 39 diverges from the CSX Railroad. The following alignments were developed for this segment.

Alignment A

Alignment A would provide four new travel lanes for S.R. 39 within a total 62.8 m (206 ft) of right-of-way. The roadway would be a rural design utilizing Typical Section 1. The existing eastern right-of-way line adjacent to the railroad would be maintained, and all new right-of-way would be acquired from the west. This alignment was developed to provide 16.8 m (56 ft) from the edge of pavement to the right-of-way line for drainage and clear zones.

094



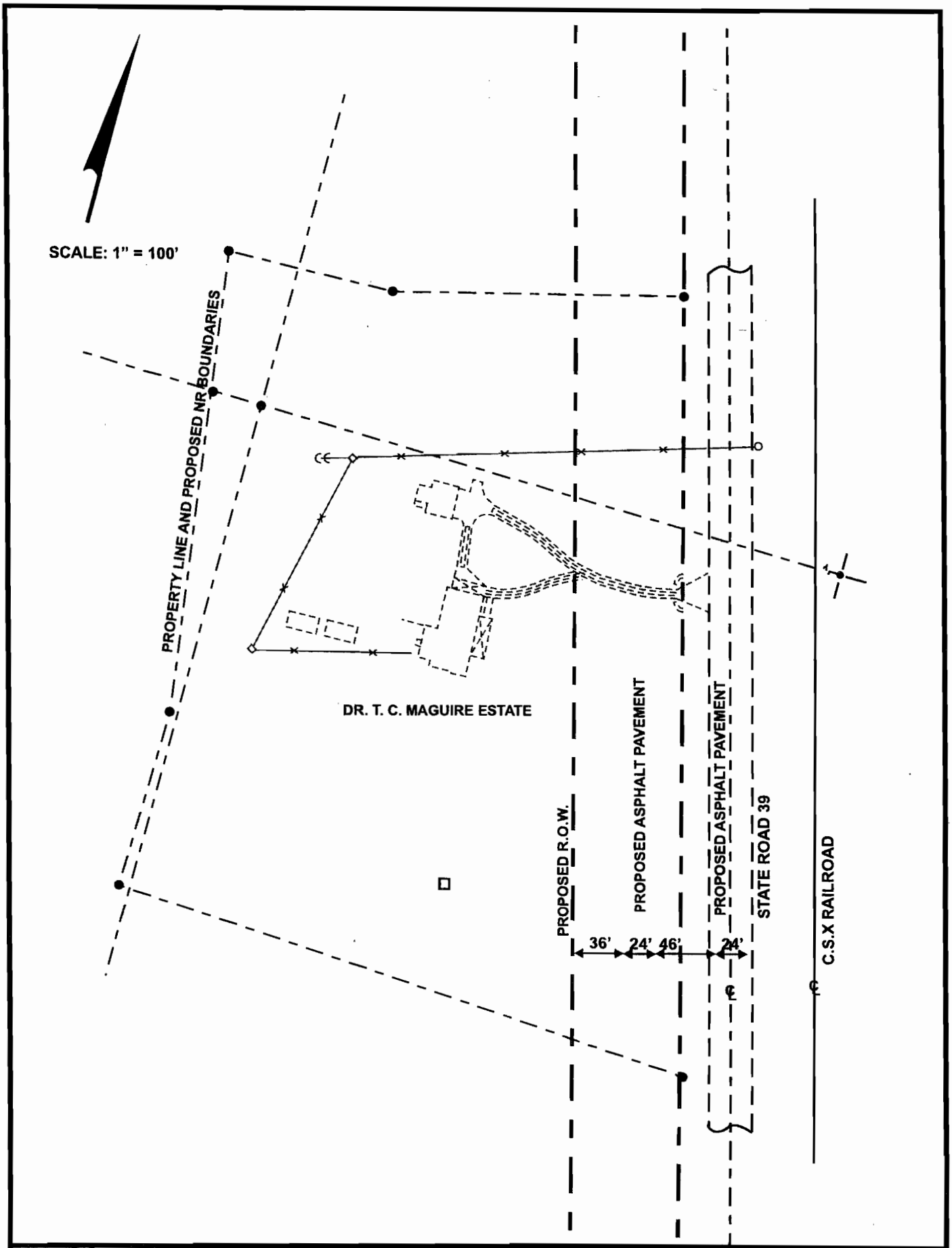
DR. T.C. MAGUIRE ESTATE - ALIGNMENT A

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 8-4



DR. T.C. MAGUIRE ESTATE - ALIGNMENT B

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 8-5

Alignment C

This alignment is identical to Alignment B except that a 10.8 m (36 ft) clear zone would be provided for the southbound through lane. This alignment would encroach approximately 7.2 m (24 ft) into the northeast corner of the school property.

Alignment D

This alignment is identical to Alignment B except that 16.8 m (56 ft) would be provided between the new southbound lanes and the new right-of-way. A closed drainage system would not be required for this improvement and the roadside design would be consistent with the remaining roadway within Segment 2. Approximately 13.2 m (44 ft) of encroachment would occur with this alignment.

Alignment E

Alignment E is identical to Alignment A except that a northbound right-turn lane would be provided and would encroach into the railroad right-of-way. No encroachment would occur into the Knights School property, but a design exception would be required for the proposed 9.0 m (30 ft) recovery area. A closed drainage system adjacent to the school could also be required with this alignment.

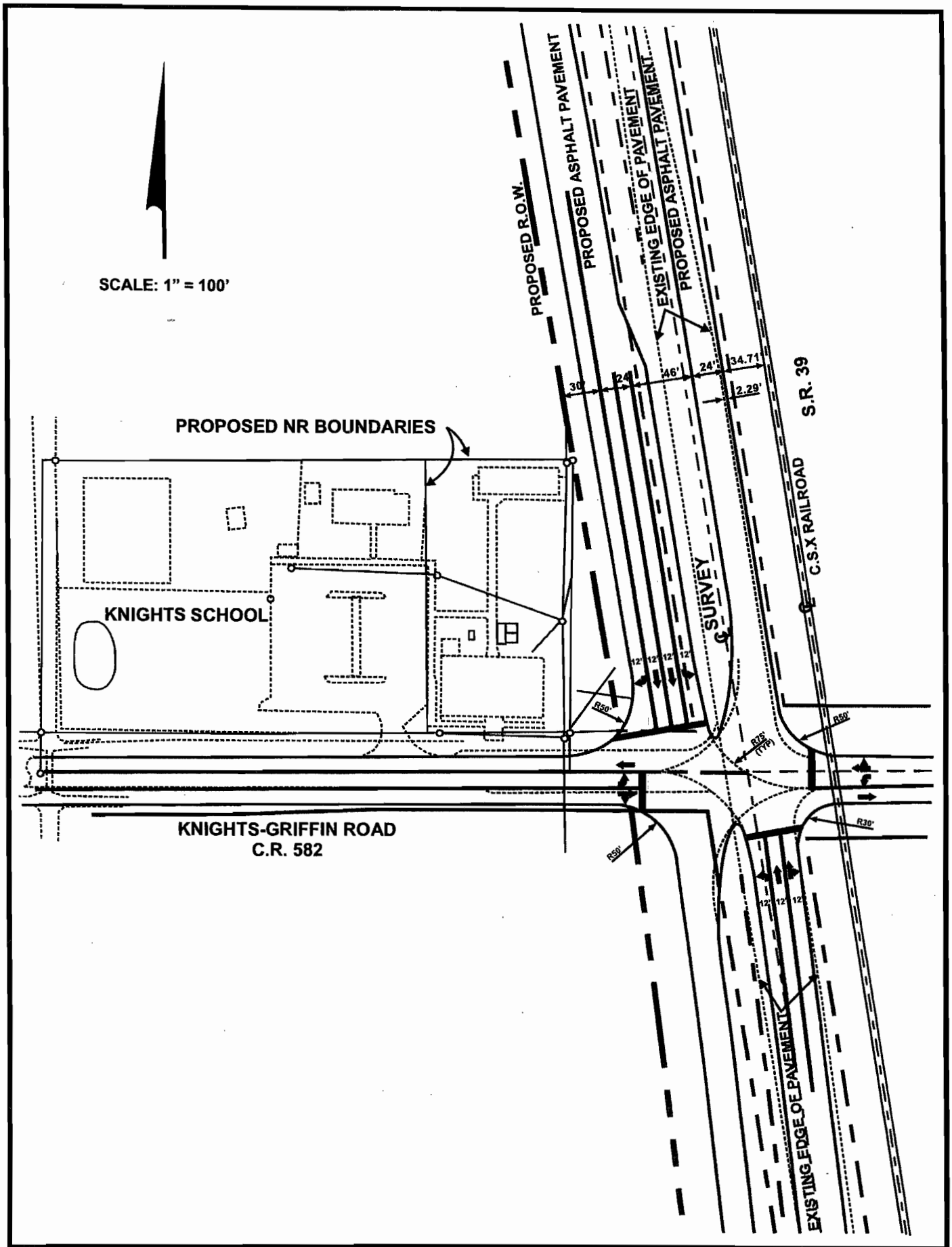
8.4.2.6 Segment 3 Alignments

Segment 3 follows S.R. 39 from Fredda Avenue in Crystal Springs to U.S. 301, a distance of approximately 4.0 km (2.5 mi). This segment represents the area of S.R. 39 north of where it diverges from the railroad. Segment 3 has five alignments that parallel S.R. 39 with various right-of-way scenarios required for construction. All five alignments transition to an urban typical section approximately 304.8 m (1,000 ft) south of U.S. 301.

Alignment A

Alignment A will provide four new travel lanes for S.R. 39 with all new right-of-way being acquired from the west side of existing S.R. 39. The total right-of-way would be 61.8 m (206 ft) which would require approximately 32.3 m (106 ft) of additional right-of-way to the west. Typical Section 1 would be used for Alignment A for 3.46 km (2.15 mi). The remaining 0.35 km (0.22 mi) section south of U.S. 301 would use urban Typical Section 4.

097



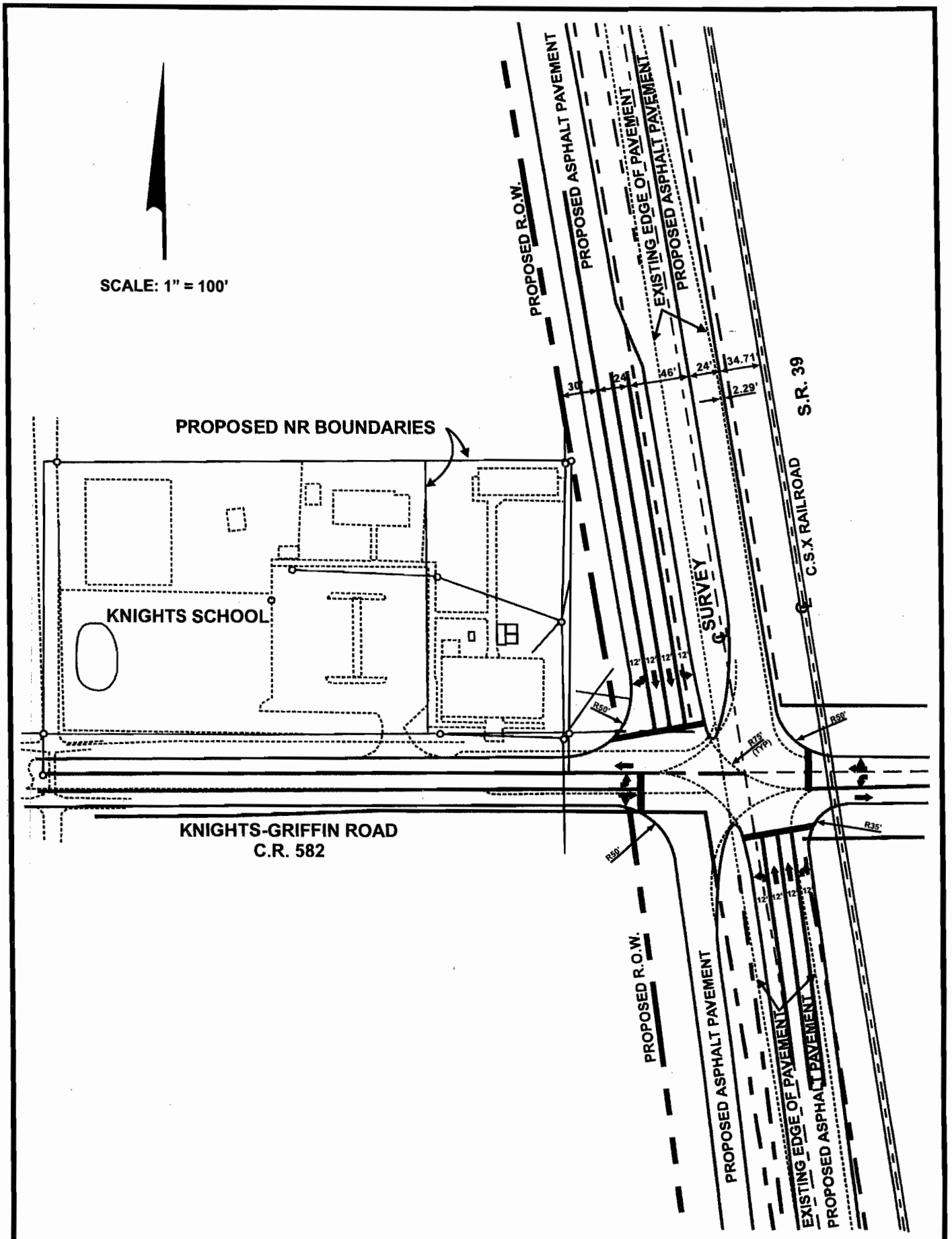
KNIGHTS SCHOOL - ALIGNMENT A

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 8-7



KNIGHTS SCHOOL - ALIGNMENT E

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 8-11

Alignment B

Alignment B would utilize the existing two lanes of S.R. 39 for northbound traffic and would maintain the existing eastern right-of-way line. Total right-of-way would be approximately 57.3 m (188 ft) and would require approximately 26.8 m (88 ft) of additional right-of-way to the west. This alignment was developed to utilize the existing two lanes while avoiding right-of-way taken from the east. Typical Section 2 would be used for Alignment B for 3.46 km (2.15 mi). The last 0.35 km (0.22 mi) section south of U.S. 301 would use urban Typical Section 4.

Alignment C

Alignment C would obtain 16.8 m (56 ft) of additional right-of-way on the east and west of the existing 100 feet. This alignment was developed to evaluate a centered widening of the existing facility. Typical Section 1 would be used for Alignment C for 3.46 km (2.15 mi). South of U.S. 301 Typical Section 4 would be utilized.

Alignment D

Alignment D would use the existing two lanes of S.R. 39 as southbound lanes and would hold the existing western right-of-way line. Approximately 26.8 m (88 ft) of new right-of-way would be acquired from the east. This alignment was developed to utilize the existing roadway and to avoid taking right-of-way on the west side. Typical Section 3 would be used for Alignment D for 3.46 km (2.15 mi). The last 0.35 km (0.22 mi) section south of U.S. 301 would use urban Typical Section 4.

Alignment E

Alignment E would provide four new lanes while holding the west right-of-way line. Approximately 32.3 m (106 ft) of right-of-way would be acquired to the east of the existing right-of-way. This alignment was developed to provide 16.8 m (56 ft) between the edge of pavement and the right-of-way lines for drainage and recovery areas. Typical Section 1 would be used for Alignment E for 3.46 km (2.15 mi). The last 0.35 km (0.22 mi) section south of U.S. 301 would use urban Typical Section 4.

8.4.2.7 1993 Alternative Alignments Evaluation

Sixteen preliminary alternative alignments for the Alexander Street Bypass were developed for initial consideration in Segment 1. Based on the initial evaluation of the Alexander Street Bypass, the following alignments were eliminated from further consideration.

Alignment U-A:	Eliminated due to 18 residences and 2 businesses being impacted. This alignment would create the most community impact of the alignments considered.
Alignment U-C:	Eliminated because of impacts to residences on Barbour Drive and Oakland Heights Avenue and major wetland impacts that can be avoided by other alternatives.
Alignment U-D:	Eliminated due to major impact on wetlands south of Sam Allen Road that can be reduced by other alignments.
Alignments U-G & U-H	Eliminated due to impacts to area at Sundial Loop that can be avoided by other alignments.
Alignments U-I & U-J	Eliminated due to business impacts at northwest corner of McGee Road and S.R. 39 that can be avoided by other alignments.
Alignment R-A:	Eliminated because of sharp curves in area of McGee Road.
Alignment R-C:	Eliminated because of sharp curves in area of McGee Road.
Alignment R-D:	Eliminated because of separation of community that can be avoided with other alignments.

All remaining alternatives alignments were developed and evaluated in additional detail.

8.4.3 Detailed Evaluation of 1993 Build Alternative Alignments

The following sections provide quantitative data that compares the detailed project alignments.

8.4.3.1 Segment 1 Matrix

Table 8-1 provides quantitative data for the detailed Alexander Street Bypass alignments and for the widening of S.R. 39 within Segment 1.

TABLE 8-1

SEGMENT 1 ALTERNATIVES ALIGNMENT MATRIX

Alignment	Typical Section	Lanes	Length (mi)	Design Speed (mph)	Relocations		Wetlands (a.c.)	Wetland Mitigation (a.c.)	Preliminary Estimated Costs x 1,000					
					Business	Residential			R/W	Wetland Mitigation	Drainage	Construction	PE & CEI	Total
S.R. 39	5	5 New U	0.59	45	4	13	2.46	9.84	$3,564	$541	$744	$4,365	$873	$10,087
	4	4 New U	0.47	45										
	2	2 New R	1.56	65										
U-B	4	4 New U	1.47	45	4	19	4.96	19.84	$4,960	$1,091	$841	$4,709	$942	$12,543
	2	2 New R	1.15	65										
U-E	4	4 New U	2.04	45	0	11	3.68	14.72	$3,290	$810	$976	$5,319	$1,064	$11,459
	2	2 New R	0.58	65										
U-F	4	4 New U	2.04	45	0	10	4.31	17.24	$3,305	$948	$976	$5,319	$1,064	$11,612
	2	2 New R	0.58	65										
U-K	4	4 New U	2.20	45	0	13	3.42	13.68	$3,112	$752	$980	$5,340	$1,068	$11,252
	2	2 New R	0.56	65										
R-B	4	4 New U	0.08	45	0	13	5.27	21.08	$4,295	$1,159	$873	$4,127	$825	$11,279
	1	4 New R	1.71	65										
	2	2 New R	0.78	65										
R-E	4	4 New U	0.08	45	3	14	5.33	21.32	$5,577	$1,173	$872	$4,153	$831	$12,606
	1	4 New R	1.69	65										
	2	2 New R	0.86	65										
R-F	4	4 New U	0.44	45	0	14	10.48	41.92	$3,977	$2,306	$960	$4,544	$909	$12,696
	1	4 New R	1.70	65										
	2	2 New R	0.49	65										
R-G	4	4 New U	0.08	45	0	18	6.61	20.44	$3,383	$1,454	$949	$4,343	$869	$10,998
	1	4 New R	2.06	65										
	2	2 New R	0.48	65										
R-H	4	4 New U	0.08	45	0	21	7.35	29.36	$4,345	$1,617	$1,003	$4,453	$891	$12,309
	1	4 New R	2.35	65										
	2	2 New R	0.15	65										

(1) In addition to the business and residential relocations, if S.R. 39 is widened within Segment 1, an estimated 42 occupied graves and 35 unoccupied grave sites will be displaced.

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S.R. 39 Alignment

If S.R. 39 is widened within Segment 1, the following advantages can be provided:

- Total costs can be minimized by making use of existing facility.
- Wetland impacts can be minimized.
- Wetlands to be impacted have previously been disturbed by existing roadway.
- Maximum use of existing right-of-way will occur.
- Indirect impact to the adjacent residential community of Shiloh will not occur.
- Existing businesses on S.R. 39 will continue to be served by significant volumes of traffic.

The disadvantages of widening S.R. 39 within Segment 1 are as follows:

- An estimated 42 occupied graves and 35 unoccupied grave sites would be displaced.
- Thirteen residences and four businesses would be estimated to be displaced.
- Access to I-4 in the future would be via a frontage road to Park Street or to Alexander Street.
- Use of the frontage road to Alexander Street would significantly increase traffic adjacent to the residences at the southeast corner of I-4 and Alexander Street.
- Widening of S.R. 39 may not be feasible south of I-4 due to Oaklawn Cemetery graves being on both sides of the existing two-lane roadway. Therefore, system continuity of providing four lanes to Plant City may not be possible.
- This alignment would have a direct impact on the Dr. T.C. Maguire Estate.

Alignment U-B

If Alignment U-B is constructed, the advantages would be as follows:

- The proposed alignment would be consistent with the Hillsborough County MPO Long Range Transportation Plans.

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- The length of new alignment would be minimized.
- Businesses at Sam Allen Road would continue to be served by a large volume of traffic on S.R. 39.

The disadvantages of constructing Alignment U-B would be as follows:

- Nineteen residences and four businesses would be estimated to be displaced.
- Wetland impacts would total almost 2.03 ha (5 ac).
- Total project cost would be the highest of the detailed urban alternatives analyzed due to the high right-of-way and wetland mitigation costs.
- An established community would be separated by the new alignment.
- The urban design would place the edge of roadway approximately 3.6 m (12 ft) from the right-of-way.
- This alignment would have a direct impact on the Dr. T.C. Maguire Estate.
- The curb and gutter urban roadway would provide a design speed of 70 km/h (45 mph). Because of the alignment and rural nature of the area, it is expected that motorists would travel at a higher, unsafe speed.

Alignment U-E

The advantages of Alignment U-E are as follows:

- The estimated displacement of 11 residences and no businesses would be the second- lowest impact of the alignments that were studied.
- The alignment would be tangent from I-4 northward to the area south of McGee Road.
- Two relatively flat curves would be provided to connect Alignment U-E to S.R.39.
- Wetland impacts would be approximately 1.62 ha (4 ac) and would be the second-lowest for the Alexander Street alignments studied in detail.

The disadvantages of Alignment U-E are as follows:

- The curb and gutter urban roadway would provide a design speed of 70 km/h (45 mph). Because of the alignment and rural nature of the area, it is expected that motorists would travel at a higher, unsafe speed.
- The alignment would separate a portion of the western part of the Shiloh community.
- The urban design would place the edge of the roadway approximately 3.6 m (12 ft) from the right-of-way.
- This alignment would have a direct impact on the Dr. T.C. Maguire Estate.

Alignment U-F

The advantages of constructing Alignment U-F are as follows:

- This alignment would displace an estimated 10 homes and 0 businesses. This displacement would be the lowest of the alternatives considered in detail.
- Except for the area near Cason Road, the alignment would be relatively straight.

The disadvantages of Alignment U-F are as follows:

- The curb and gutter urban roadway would provide a design speed of 70 km/h (45 mph). It is expected that the motorists would travel at a higher, unsafe speed due to the alignment and rural nature of the area.
- The alignment would separate a portion of the western part of the Shiloh community.
- The alignment would introduce additional curves to place the roadway to the west of homes in the area of Cason Road.
- The urban design would place the edge of the roadway approximately 3.6 m (12 ft) from the right-of-way.
- This alignment would have a direct impact on the Dr. T.C. Maguire Estate.

Alignment U-K

The advantages of Alignment U-K are as follows:

- Approximately 1.38 ha (3.4 ac) of wetlands would be displaced. This would be the lowest impact of the Alexander Street alignments that were studied in detail.
- The alignment would place the roadway to the west of most of the Shiloh community.

The disadvantages of Alignment U-K are as follows:

- Thirteen residences would be displaced.
- The curb and gutter urban roadway would provide a design speed of 70 km/h (45 mph). It is expected that motorists would travel at a higher unsafe speed due to the alignment and rural nature of the area.
- The alignment would introduce additional curves to place the roadway to the west side of the Shiloh community.
- The urban roadway would place the edge of roadway approximately 3.6 m (12 ft) from the right-of-way.
- This alignment would have a direct impact on the Dr. T.C. Maguire Estate.

Alignment R-B

The advantages of Alignment R-B are as follows:

- The rural roadway can be designed to provide a safe recovery area and horizontal and vertical alignments to allow the facility to be posted for a speed of 90 km/h (55 mph). Because of the alignment and rural nature of the area, it is believed that motorists would travel at this speed.
- The estimated project cost would be the second-lowest of the rural alignments studied in detail.
- The alignment would be tangent from I-4 to south of McGee Road. Two relatively flat curves would be provided to connect Alternative R-B to S.R. 39.
- The rural typical section would place the edge of the roadway on the new alignment approximately 16.8 m (56 ft) from the right-of-way.

The disadvantages of Alignment R-B are as follows:

- The alignment would separate a portion of the western part of the Shiloh community.
- The wider right-of-way for the rural roadway would displace approximately 2.15 ha (5.3 ac) of wetlands. This would be approximately 0.65 ha (1.6 ac) more than the wetland impact estimated for the urban alignment (U-E) along this same general alignment.
- The wider right-of-way for the rural roadway would displace an estimated 13 residences.
- This alignment would have a direct impact on the Dr. T.C. Maguire Estate.

Alignment R-E

The advantages of Alignment R-E are as follows:

- The rural roadway can be designed to provide safe recovery areas and horizontal and vertical alignments to allow this facility to be posted for a speed of 90 km/h (55 mph). Because of the alignment and rural nature of the area, it is believed that the motorists would travel at this speed.
- The alignment would place the roadway to the west of most of the Shiloh community.
- The rural typical section would place the edge of the roadway on the new alignment approximately 16.8 m (56 ft) from the right-of-way.

The disadvantages of Alignment R-E are as follows:

- The wider right-of-way for the rural roadway would displace approximately 2.15 ha (5.3 ac) of wetlands. This would be approximately 0.77 ha (1.9 ac) more than the urban alternative (U-K) that follows the same general alignment.
- Three businesses and fourteen residences would be estimated to be displaced.
- Because of the business impact, this alignment would have the highest right-of-way cost of the alignments studied in detail.

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- The alignment would introduce additional curves to place the roadway to the west side of the Shiloh community.

- This alignment would have a direct impact on the Dr. T.C. Maguire Estate.

Alignment R-F

The advantages of Alignment R-F are as follows:

- This alignment would avoid four residential displacements in the Shiloh community by introducing additional roadway curves.

- The rural roadway can be designed to provide safe recovery areas and horizontal and vertical alignments to allow this facility to be posted for a speed of 90 km/h (55 mph). Because of the alignment and rural nature of the area, it is believed that motorists would travel at this speed.

- The alignment would place the roadway to the west of most of the Shiloh community.

- The rural typical section would place the roadway on the new alignment approximately 16.8 m (56 ft) from the right-of-way.

- This alignment would avoid any direct impact on the Dr. T.C. Maguire Estate.

The disadvantages of Alignment R-F are as follows:

- Fourteen residences would be displaced. However, this number includes seven mobile homes used by migrant workers that can be relocated within the same farm property.

- This alignment has the maximum amount of wetland impact due to the alignment within the Pemberton Creek area.

- An urban roadway section with a design speed of 70 km/h (45 mph) was used for approximately 0.71 km (0.44 mi) north of I-4 through the Pemberton Creek area to reduce wetland impacts. The resulting design speed is believed to be too low to serve expected operating speeds.

- The alignment would be about 45.72 m (150 ft) from the western property line of the Dr. T.C. Maguire Estate.

- The project cost for this alignment would be the highest of those studied in detail.

- This alignment would be superelevated at Joe McIntosh Road, creating an undesirable grade difference at the intersection.

Alignment R-G

The advantages of Alignment R-G are as follows:

- The rural roadway can be designed to provide safe recovery areas and horizontal and vertical alignments to allow this facility to be posted for a speed of 90 km/h (55 mph). Because of the alignment and rural nature of the area, it is believed that the motorists would travel at this speed.
- The alignment would place the roadway to the west of most of the Shiloh community.
- The rural typical section would place the roadway on the new alignment approximately 16.8 m (56 ft) from the right-of-way.
- This alignment would avoid any direct impact on the Dr. T.C. Maguire Estate.
- The project cost would be the second-lowest of those studied in detail.

The disadvantages of Alignment R-G are as follows:

- Eighteen residences would be displaced. However, this number includes seven mobile homes used by migrant workers that can be relocated within the same farm property.
- The alignment would be about 45.72 m (150 ft) from the west property line of the Dr. T.C. Maguire Estate.
- This alignment would be superelevated at Joe McIntosh Road, creating an undesirable grade difference at the intersection.

Alignment R-H

The advantages of Alignment R-H are as follows:

- The rural roadway can be designed to provide safe recovery areas and horizontal and vertical alignments to allow this facility to be posted for a speed of 90 km/h (55 mph). Because of the alignment and rural nature of the area, it is believed that motorists would travel at this speed.

- The alignment would place the roadway to the west of most of the Shiloh community.
- The rural typical section would place the roadway on the new alignment approximately 16.8 m (56 ft) from the right-of-way.
- This alignment would place approximately 121.9 m (400 ft) of separation between the roadway right-of-way and the Dr. T.C. Maguire Estate.
- It would connect to S.R. 39 north of Joe McIntosh Road, providing the most desirable traffic operational design at the terminus of the Alexander Street Bypass of any of the rural alignments that were studied.

The disadvantages of Alignment R-H are as follows:

- Twenty-one residences would be displaced. However, this number includes seven mobile homes used by migrant workers that can be relocated within the same farm property.
- Because of the increased length of roadway on new alignment to avoid the Dr. T.C. Maguire Estate and to avoid intersection problems at Joe McIntosh Road, this alignment would have the second-highest wetland impacts and the third-highest project costs of the rural alignments.

8.4.3.2 Dr. T.C. Maguire Estate Matrix

Table 8-2 provides quantitative data for evaluating the project alignments developed to minimize impacts if S.R. 39 is widened in front of the Dr. T.C. Maguire Estate. For the purpose of this analysis, only that roadway segment in the immediate vicinity of the site has been considered.

Alignment A

The advantages of Alignment A are as follows:

- Minimizes right-of-way requirements from the Dr. T.C. Maguire Estate.

The disadvantages of Alignment A are as follows:

- Encroaches approximately 23.2 m (76 ft) into the estate.
- Provides only a 9.0 m (30 ft) recovery area instead of the desired 10.8 m (36 ft).
- Could require a closed drainage system in front of the Dr. T.C. Maguire Estate.

TABLE 8-2

DR. T.C. MAGUIRE ESTATE MATRIX

Factors	Alignment		
	A	B	C
Length (mi)	1.59	1.59	1.59
Design Speed (mph)	65	65	65
Relocations			
Business	6	6	6
Residential	3	3	3
Environmental			
Wetlands (ac)	3.54	3.54	3.54
Wetland Mitigation (ac)	14.16	14.16	14.16
Preliminary Estimated Costs x 1000			
R/W	$3,230	$3,232	$3,238
Wetland Mitigation	$779	$779	$779
Drainage	$543	$543	$498
Construction	$2,415	$2,415	$2,415
PE & CEI	$362	$362	$362
Total	$7,329	$7,331	$7,292

Alignment B

The advantages of Alignment B are as follows:

- Encroaches approximately 25.0 m (82 ft) into the Dr. T.C. Maguire Estate.
- Has the second least impact on the Dr. T.C. Maguire Estate.
- Provides a desirable 10.8 m (36 ft) recovery area.

The disadvantages of Alignment B are as follows:

- Could require a closed drainage system in front of the Dr. T.C. Maguire Estate.
- Has the highest estimated project cost due to right-of-way requirements and drainage.

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Alignment C

The advantages of Alternative C are as follows:

- Has the lowest estimated project cost due to use of an open drainage system.
- Provides a desirable 10.8 m (36 ft) recovery area.

The disadvantages of Alignment C are as follows:

- Has the most impact on the Dr. T.C. Maguire Estate.
- Encroaches approximately 31.1 m (102 ft) into the Dr. T.C. Maguire Estate.

8.4.3.3 Segments 2 and 3 Matrix

Table 8-3 provides quantitative data for evaluating the project alignments within Segment 2 and Segment 3.

Segment 2

Within Segment 2, Alignments A and B would provide a design speed of 110 km/h (65 mph). This design should allow the roadway to be posted at a speed of 90 km/h (55 mph), which would be appropriate for this rural area.

Alignment A would displace an estimated 44 homes and 8 businesses compared to 28 homes and 4 businesses for Alignment B. Wetland impacts are estimated to be about 25 percent higher for Alignment A and total costs are expected to be about 41 percent higher for Alignment A.

Segment 3

Within Segment 3, each alignment will provide a rural roadway design to a point approximately 304.8 m (1,000 ft) south of U.S. 301. This will permit the undeveloped area to have a design speed of 110 km/h (65 mph) with a posted speed limit of 90 km/h (55 mph).

TABLE 8-3

SEGMENTS 2 AND 3 MATRIX

Alignment	Typical Section	Lanes	Length (mi)	Design Speed (mph)	Relocations		Wetlands (a.c.)	Wetland Mitigation (a.c.)	Preliminary Estimated Costs x 1,000					
					Business	Residential			ROW	Wetland Mitigation	Drainage	Construction	PE & CEI	Total
SEGMENT 2														
A	1	4 New R	8.54	65	8	44	23.56	94.24	$11,245	$5,183	$3,418	$14,870	$2,974	$37,690
B	2	2 New R	8.54	65	4	28	18.87	75.48	$8,704	$4,151	$1,608	$10,221	$2,044	$26,728
SEGMENT 3														
A	1	4 New R	2.15	65	4	13	5.45	21.80	$4,685	$1,199	$954	$4,243	$849	$11,930
	4	4 New U	0.22	45										
B	2	2 New R	2.15	65	4	9	3.98	15.92	$4,012	$876	$498	$3,072	$614	$9,072
	4	4 New U	0.22	45										
C	1	4 New R	2.15	65	1	5	6.41	25.64	$2,638	$1,410	$954	$4,243	$849	$10,094
	4	4 New U	0.22	45										
D	3	2 New R	2.15	65	1	3	7.02	28.08	$2,116	$1,544	$498	$3,072	$614	$7,844
	4	4 New U	0.22	45										
E	1	4 New R	2.15	65	1	4	7.79	31.16	$3,582	$1,714	$954	$4,243	$849	$11,342
	4	4 New U	0.22	45										

Alignment A would require about 32.3 m (106 ft) of right-of-way on the west side of the existing roadway. This design would displace an estimated 13 homes and 4 businesses. This alignment would have the highest total project cost of the five alignments developed for Segment 3. The higher project cost results from the construction of four new lanes and the higher right-of-way costs.

Alignment B would also require right-of-way to the west of the existing roadway, but would utilize the existing two lanes and, therefore, would require only about 26.8 m (88 ft) of right-of-way. It is estimated that 9 homes and 4 businesses would be displaced with Alignment B. The total wetland displacement, right-of-way costs and total project costs are the second lowest. The lower project cost is due to only constructing two new lanes and a lower wetland mitigation requirement.

Alignment C would take approximately 16.8 m (56 ft) of right-of-way on both sides of the existing roadway and would require construction of four new lanes. One business and five homes are estimated to be displaced. Because of the cost of construction of four new lanes, Alignment C is estimated to have the third-highest total project cost of the five alignments developed for Segment 3.

Alignment D would utilize the existing two lanes and would acquire approximately 26.8 m (88 ft) of right-of-way to the east. Three homes and one business are estimated to be displaced with this alignment. The total project cost is the lowest of the five alignments developed for Segment 3 due to low right-of-way and low construction cost.

Alignment E would construct four new lanes with approximately 32.3 m (106 ft) of right-of-way acquired from the east of the existing roadway. Four homes and one business are expected to be displaced. This alignment would displace the maximum amount of wetlands and is estimated to be the second most costly to construct of the five alignments developed for this segment. The high cost is due to the construction of four new lanes, high right-of-way costs, and high wetland mitigation costs.

8.4.3.4 Knights School Alignments

Table 8-4 provides quantitative data for evaluating the project alignments developed to minimize impacts to Knights School. For the purpose of this analysis, only that roadway segment in the immediate vicinity of the site has been considered.

TABLE 8-4

KNIGHTS SCHOOL MATRIX

Factors	Alternative				
	A	B	C	D	E
Length (mi)	0.30	0.30	0.30	0.30	0.30
Design Speed (mph)	65	65	65	65	65
Relocations					
Business	3	3	3	4	3
Residential	1	2	2	2	1
Environmental					
Wetlands (ac)	0	0	0	0	0
Wetland Mitigation (ac)	0	0	0	0	0
Preliminary Estimated Costs x 1000					
R/W	$768	$788	$795	$980	$768
Wetland Mitigation	$0	$0	$0	$0	$0
Drainage	$118	$118	$118	$56	$128
Construction	$337	$359	$359	$359	$359
PE & CEI	$51	$54	$54	$54	$54
Total	$1,274	$1,319	$1,326	$1,449	$1,309

Alignment A

The advantages of Alignment A are as follows:

- No direct impact on Knights School.
- Minimum number of displacements.
- Lowest total project cost due to minimum right-of-way and construction costs.

The disadvantages of Alignment A are as follows:

- Provides a 9.0 m (30 ft) recovery area instead of the desirable 10.8 m (36 ft).
- No northbound right turn lane.
- Could require a closed drainage system adjacent to Knights School.

Alignment B

The advantages of Alignment B are as follows:

- Provides a northbound right turn lane.
- Provides a 10.8 m (36 ft) recovery area.
- Has minimal impact to Knights School.

The disadvantages of Alignment B are as follows:

- Could require a closed drainage system adjacent to Knights School.
- Encroaches approximately 5.4 m (18 ft) into the northeast corner of Knights School.

Alignment C

The advantages of Alignment C are as follows:

- Provides a 10.8 m (36 ft) recovery area.
- Provides a northbound right turn lane.

The disadvantages of Alignment C are as follows:

- Could require a closed drainage system adjacent to Knights School.
- Encroaches approximately 7.2 m (24 ft) into the northeast corner of the school property.

Alignment D

The advantages of Alignment D are as follows:

- Maintains an open drainage system and same typical section as remaining roadway in area.
- Provides a northbound right turn lane.

The disadvantages of Alignment D are as follows:

- Approximately 13.2 m (44 ft) of encroachment into the northeast corner of the school property would occur.
- Maximum number of displacements would occur.
- Results in largest project cost.

Alignment E

The advantages of Alignment E are as follows:

- Provides a northbound right turn lane.
- Has no direct impact on Knights School.
- Has the second lowest project cost.
- Has the lowest number of displacements.

The disadvantages of Alignment E are as follows:

- Could require a closed drainage system adjacent to Knights School.
- Could require a closed drainage system adjacent to the northbound right turn lane.
- Will require an easement from the CSX Railroad. (Preliminary correspondence from CSX Railroad indicates the easement would be acceptable.)

8.4.4 1993 Recommendation

Subsequent to the Public Workshop, a recommended alignment was selected to include the following:

- Segment 1: Alignment R-H
- Segment 2: Alignment B
- Knights School: Alignment E
- Segment 3: Alignment B and Alignment D

8.5 1999 STUDY OF TYPICAL SECTIONS AND ALIGNMENTS

8.5.1 1999 Typical Section Evaluation

Various alignments were developed using the typical sections described above and presented at the 1993 Public Workshop. Subsequent to the 1993 Public Workshop, the *Florida Department of Transportation's Plans Preparation Manual*[1] was updated, and a detailed profile grade line (see Appendix A) was developed from I-4 to Knights Griffin Road. Therefore, in order to meet current design standards, the recommended typical sections were updated to reflect these changes and are referred to as Typical Sections 6, 7, 8, 9, and 10, respectively. Using these typical sections, the recommended alignments were reviewed for geometrics, updated for cost, environmental, and land use impacts.

8.5.1.1 Typical Section 6

Typical Section 6 is a four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, a 16.2 m (54 ft) depressed median, 3.0 m (10 ft) outside shoulders with 1.5 m (5 ft) of the shoulder paved, 3.0 m (10 ft) inside shoulders, and 21.9 m (73 ft) borders to accommodate a fill height of 1.8 m (6 ft). The proposed design speed for this typical section is 110 km/h (70 mph). This typical section will require 80.4 m (268 ft) of right-of-way (see Figure 8-12). This typical section will be utilized along the Alexander Street Bypass from I-4 to Cason Street, a length of approximately 0.63 km (0.4 miles).

8.5.1.2 Typical Section 7

Typical Section 7 is a four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, a 16.2 m (54 ft) depressed median, 3.0 m (10 ft) outside shoulders with 1.5 m (5 ft) of the shoulder paved, 3.0 m (10 ft) inside shoulders, and 15.0 m (50 ft) borders to accommodate a fill height of 0.9 m (3 ft). The proposed design speed for this typical section is 110 km/h (70 mph). This typical section will require 66.6 m (222 ft) of right-of-way (see Figure 8-13). This typical section is proposed from Cason Street to S.R. 39, a length of approximately 3.18 km (2.0 miles).

8.5.1.3 Typical Section 8

Typical Section 8 is a four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, a 16.2 m (54 ft) depressed median, 3.0 m (10 ft) outside shoulders with 1.5 m (5 ft) of the shoulder paved, 3.0 m (10 ft) inside shoulders, and a 13.8 m (46 ft) border on the west side of the roadway to accommodate a fill height of 0.45 m (1.5 ft) and an 8.4 m (28 ft) minimum border on the east side of the roadway.

In addition, this typical section would share the ditch on the east side of the roadway with CSX Railroad and would require a design variance since the border width is less than 12.0 m (40 ft). The proposed design speed for this typical section is 110 km/h (70 mph). This typical section will require 58.8 m (196 ft) of right-of-way (see Figure 8-14). This typical section is proposed from S.R. 39 to Blount Avenue, a length of approximately 13.15 km (8.2 miles).

8.5.1.4 Typical Section 9

Typical Section 9 is a four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, a 16.2 m (54 ft) depressed median, 3.0 m (10 ft) outside shoulders with 1.5 m (5 ft) of the shoulder paved, 3.0 m (10 ft) inside shoulders, and 13.8 m (46 ft) borders to accommodate a fill height of 0.45 m (1.5 ft). The proposed design speed for this typical section is 110 km/h (70 mph). This typical section will require 64.2 m (214 ft) of right-of-way (see Figure 8-15). This typical section is proposed from Blount Avenue to Shady Oaks Drive, a length of approximately 3.60 km (2.2 miles).

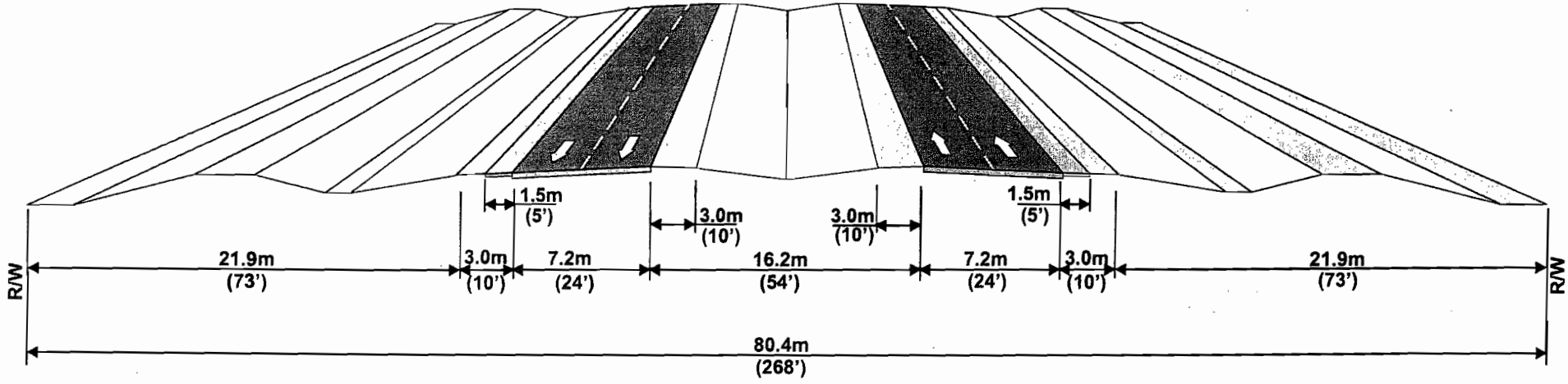
8.5.1.5 Typical Section 10

Typical Section 10 is a four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, 1.2 m (4 ft) bicycle lanes, a 16.2 m (54 ft) depressed median, Type E curb and gutter, and 1.5 m(5 ft) sidewalks. The proposed design speed for this typical section is 90 km/h (55 mph). This typical section will require 50.4 m (168 ft) of right-of-way (see Figure 8-16). This typical section will be utilized from Shady Oaks Drive to U.S. 301, since U.S. 301 is currently an urban facility, a length of approximately 0.35 km (0.2 miles).

8.5.2 1999 Alternative Alignments

Subsequent to the 1993 Recommendation, the counties updated their comprehensive plans to only include a portion of the roadway for construction. In doing so, the segment designations for Segments 1 and 2 were modified to include a logical termini for Segment 1 since Location and Design Concept Acceptance will only be granted by Florida Highway Administration (FHWA) for Segment 1. The following three study segments were used in developing the plans to be presented at the Public Hearing:

- Segment 1 The Alexander Street Bypass area from I-4 to north of Knights-Griffin Road, including the existing S.R. 39. This includes all of the Alexander Street Bypass alignments. In addition, alignment options were considered in the vicinity of the Dr. T.C. Maguire



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FROM I-4 TO CASON STREET

Based on 6' of Fill to Proposed PGL

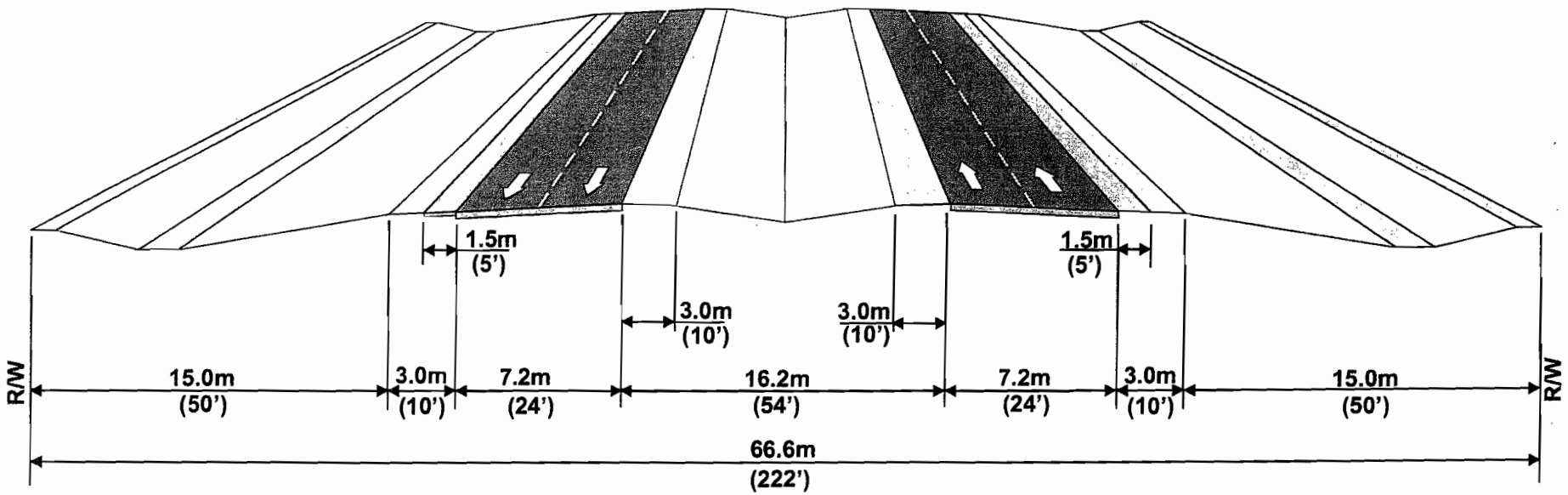
TYPICAL SECTION 6

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 8-12



FROM CASON STREET TO S.R. 39

Based on 3' of Fill to Proposed PGL

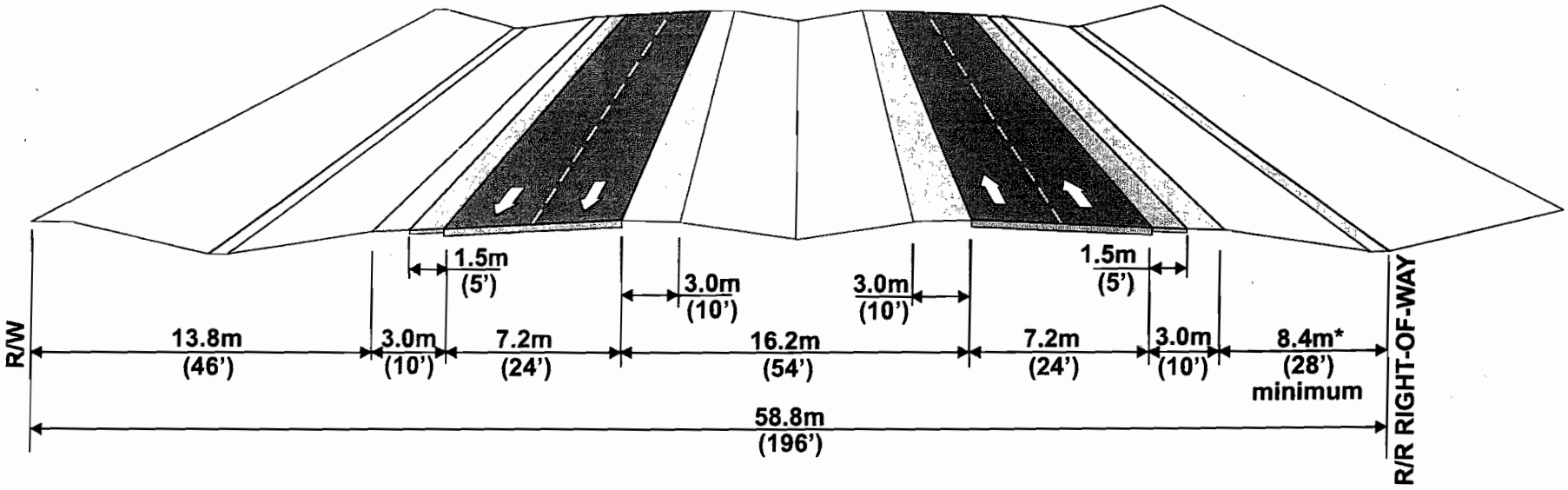
TYPICAL SECTION 7

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 8-13



FROM S.R. 39 TO BLOUNT AVENUE

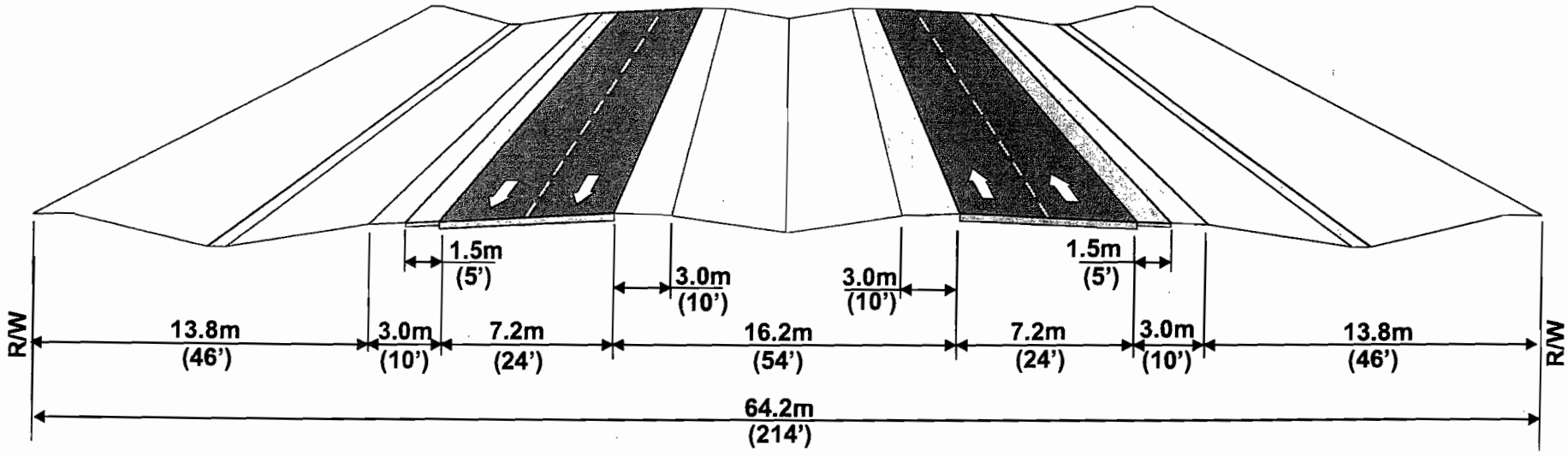
Based on 1.5' of Fill to Proposed PGL & Sharing R/R Right-of-Way

* Does Not Meet Border Criteria.
However, it does meet clear zone criteria.

TYPICAL SECTION 8

S.R. 39 FROM I-4 TO U.S. 301
WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 8-14



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FROM BLOUNT AVENUE TO SHADY OAKS DRIVE

Based on 1.5' of Fill to Proposed PGL

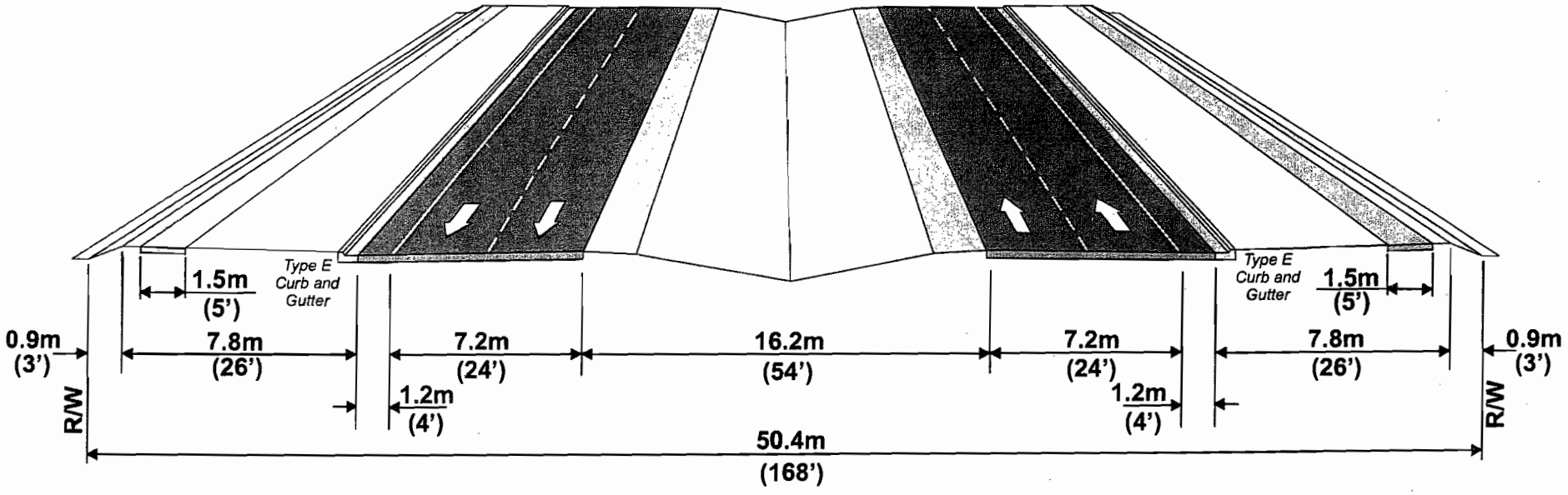
TYPICAL SECTION 9

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 8-15



FROM SHADY OAKS DRIVE TO U.S. 301

Based on 1.5' of Fill to Proposed PGL

TYPICAL SECTION 10

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 8-16

Estate and the Knights School since both are potentially eligible for listing on the NRHP.

- Segment 2 S.R. 39 from north of Knights-Griffin Road to Fredda Avenue in Crystal Springs (Pasco County). This includes S.R. 39 in the area adjacent to the CSX railroad.

- Segment 3 S.R. 39 from Fredda Avenue to U.S. 301. This includes S.R. 39 from where the roadway and railroad diverge to the end of the project at U.S. 301.

Using the alignments selected from the workshop, the revised segment boundaries, the updated typical sections per the Plans Preparation Manual and the line and grade evaluation, the recommended alignments were updated and are included in Appendix B. In reviewing the alignment in the area of Knights-Griffin Road, the alignment and typical section were modified in order to avoid impacts to the Knights School. The typical section in the area of Knights-Griffin Road will be similar to Typical Section 8 (Section 8.5.1.3, Figure 8-14) except that the median width will be reduced to 13.8 m (46 ft) in width with a retaining wall along the northwest corner of the intersection in order to avoid impacting the Knights School property. (See Sheet 7 in Appendix B for detail of the intersection.)

Table 8-5 details the impacts associated with the alignments to be presented at the Public Hearing.

8.6 RECOMMENDED ALTERNATIVE

A Public Hearing was held on April 10, 2000 from 4:30 p.m. to 7:30 p.m. at the Shiloh Baptist Church in Plant City, Florida. A total of 307 people signed the attendance sheets at the Public Hearing. During the Public Hearing, two (2) pre-hearing statements were taken by the court reporter, nine (9) statements were given verbally during the formal proceedings, and two (2) statements were taken by the court reporter after the formal proceedings. A total of twenty-four (24) written comments were received at the Public Hearing, and another twelve (12) comments were mailed and received during the 10-day comment period. Based on the number of people in attendance and the comments received, the following Build Alternative alignments were selected for each segment.

Segment 1: Alignment R-H (Alexander Street Bypass),

Segment 2: Alignment B (West Alignment), and

Segment 3: Alignment D (East Alignment).

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The Build Alternative would consists of the typical sections described in Section 8.5 of this report. These improvements will relocate 7 businesses, 1 non-profit (church), and 59 residences with a construction cost of $32.26 million, $6.45 million for engineering and inspection, $34.35 million for right-of-way acquisition, and $1.09 million for ponds (Alexander Street Bypass only) for a total of $74.15 million. See Appendix B for the recommended Build Alternative.

TABLE 8-5

ALTERNATIVES ALIGNMENT MATRIX

Factors	Segment			
	1	2	3	
	Alignment R-H	Alignment B	Alignment B	Alignment D
Length (mi)	2.58	8.54	2.37	2.37
Design Speed (mph)	65	65	65/50	65/50
Relocations				
Business	2	5	1	0
Residential	30	23	29	6
Environmental				
Wetlands (ac)	17.5	18.3	8.8	5.4
Noise Sensitive Sites	11	45	19	19
Contamination Sites	11	2	13	13
Farmlands (ac)	44.3	9.7	0	14.8
Preliminary Estimated Costs x 1000				
R/W	$14,759	$14,212	$7,558	$5,380
Drainage	$1,089	N/A	N/A	N/A
Construction	$7,841	$17,141	$7,281	$7,281
PE & CEI	$1,568	$3,428	$1,456	$1,456
Total	$25,257	$34,781	$16,295	$14,117

N/A: Pond Site Report was not prepared north of Knights Griffin Road.

8.7 REFERENCES

1. *Florida Department of Transportation's Plans Preparation Manual;* Florida Department of Transportation; Tallahassee, Florida; January 1998.

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SECTION 9.0
PRELIMINARY DESIGN ANALYSIS

After selecting a recommended alternative, the next step in the study process is to define the design parameters associated with the selected alternative, including intersection analysis, preliminary drainage design, and maintenance of traffic during construction. Defining these parameters allows for a more comprehensive and accurate evaluation of the impacts and costs.

9.1 DESIGN TRAFFIC VOLUMES

Existing and design year (2020) traffic analyses were conducted for this study and are discussed in Section 6.0 of this report. Design traffic data for the years 2005 and 2020 for the Build and No-Build Alternatives were provided by the District 7 Planning Office. The AADT volumes for the year 2010 (projected opening year) were interpolated from the year 2005 and year 2020 AADT volumes. Design hour segment volumes and AM and PM design hour turning movement volumes for the years 2010 and 2020 were estimated using the TURNS 4 software and the 1998, 2005, and 2020 AADT volume data. The results of the TURNS 4 analysis were used as a preliminary estimate, which was then manually adjusted to achieve a reasonable correlation with the distributions from the 2005 and 2020 AADT volumes provided by FDOT.

The analysis indicates that by the design year 2020, S.R. 39 will need to be improved to a four-lane facility in order to maintain an acceptable LOS.

9.2 TYPICAL SECTIONS

The recommended typical sections for the proposed improvements are detailed in Section 8.5 of this report and illustrated in Figures 8-12 through 8-16. These typical sections improve the existing two-lane facility to a divided four-lane facility with right-of-way widths varying from 80.4 m (268 ft) in the area of I-4 and the Alexander Street Bypass to 50.4 m (168 ft) in the area of S.R. 39 and U.S. 301. The proposed design speed for this facility will be 110 km/h (70 mph) from I-4 to Shady Oaks Drive and 90 km/h (55 mph) from Shady Oaks Drive to U.S. 301.

9.3 INTERSECTION CONCEPTS AND SIGNAL ANALYSIS

The concept plans located in Appendix B illustrate the recommended intersection geometry for the proposed improvements. A detailed analysis of each intersection is contained in the *Project Traffic and Intersection Analysis Technical Memorandum*[1] prepared for this project.

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9.4 ALIGNMENT AND RIGHT-OF-WAY NEEDS

Appendix B includes raster based plan sheets illustrating the preferred Build Alternative for the project and the anticipated ROW needs. As stated in Section 8.6, the preferred Build Alternative would consists of Alignment R-H (Alexander Street Bypass) for Segment 1, Alignment B (West Alignment) for Segment 2 and Alignment D (East Alignment) for Segment 3. The preferred Build Alternative avoided to the maximum extent possible disruption to the community in order to preserve the rural character of the corridor. ROW acquisition for the roadway project includes approximately 70.82 ha (175 ac) of land.

9.5 RELOCATIONS

The proposed improvement will result in 7 business relocations, 1 non-profit relocation (church), and 59 residential relocations. None of the businesses are minority owned and no special clientele is served by any of the businesses being displaced. At the current time, a sufficient amount of vacant land and business office buildings for sale or lease exist within 8 km (5 mi) of the project area to accommodate the business relocations associated with this project without discrimination. Several office/industrial parks are located within the Zephyrhills and Plant City areas that have available space for lease. Numerous incentives exist for retention and development of new businesses.

9.6 RIGHT-OF-WAY COSTS

Table 8-5 presented previously in this report, summarizes the estimated right-of-way cost by segment. These costs include right-of-way acquisitions for the Alexander Street Bypass, widening S.R 39 and the placement of stormwater ponds for the Alexander Street Bypass. The total estimated right-of-way acquisition cost for the preferred Build Alternative is $34.35 million for construction and $1.09 million for ponds for a total of $35.44 million. The right-of-way costs were determined using 1999 dollars.

9.7 CONSTRUCTION COST

Table 8-5, summarizes the estimated construction costs by segment. These costs were calculated with the use of the Department's LRE program. As shown, the estimated total construction cost is $32.26 million and was generated using 1999 dollars.

9.8 PRELIMINARY ENGINEERING AND CONSTRUCTION ENGINEERING COSTS

The cost of engineering (final design) and the cost of CEI were each estimated as 10.0 percent of the estimated $32.26 million construction cost. Therefore, these components are expected to cost approximately $6.45 million.

9.9 RECYCLING OF SALVAGEABLE MATERIALS

During construction of the project, recycling of re-usable materials will occur to the greatest extent possible. Where possible, the existing pavement will be salvaged and used as the proposed northbound lanes. This will help to reduce the volume of materials that need to be hauled and disposed of away from the project and reduce the cost of purchasing materials suitable for pavement construction. Other materials such as signs, will be salvaged and re-used for regular maintenance operations if they are deemed to be in good condition.

9.10 USER BENEFITS

Benefits will be realized by the public after the recommended alternative is constructed. Savings in travel time, reduced vehicle operating costs, and reduced traffic accident-related costs are the main benefits. Bicyclists will be able to share this facility with motorists safely and efficiently.

9.11 PEDESTRIAN AND BICYCLE FACILITIES

As described in Section 8.5 of this report, the proposed improvements from I-4 to Shady Oaks Drive, including the Alexander Street Bypass, will have 3.0 m (10 ft) outside shoulders with 1.5 m (5 ft) of the shoulder paved. Per the *FDOT Plan Preparation Manual*[2], the paved portion of the shoulder can be utilized as an undesignated bicycle lane.

The proposed improvements from Shady Oaks Drive to U.S. 301 will provide for a 1.2 m (4 ft) bicycle lane and a 1.5 m (5 ft) sidewalk on both sides of the roadway. Therefore, the proposed project will improve bicycle and pedestrian facilities.

9.12 SAFETY

The proposed improvements will upgrade S.R. 39 to a safer and more efficient transportation facility. The increased roadway capacity is expected to result in less congestion and, therefore, reduce the

probability for accidents. The depressed median will separate the northbound and southbound traffic and will reduce the potential for head-on vehicle collisions. The 1.5 m (5 ft) paved shoulder will allow bicyclists to share the roadway with motor vehicles while observing the rules of the road.

The design and alignment of the roadway will meet applicable safety standards. Adherence to design speed as it applies to establishing and setting minimum values on critical roadway design features will be closely followed. Roadway design elements including curvature, sight distance, width, and clearance will meet the applicable minimum roadway design standards. Access control techniques to promote safe and efficient traffic circulation will also be utilized.

9.13 ECONOMIC AND COMMUNITY DEVELOPMENT

As previously presented is Section 3.0 of this report, the proposed improvements were developed after thorough evaluation of the future population and development growth of the project area.

9.14 ENVIRONMENTAL IMPACTS

9.14.1 Land Use Data

The existing land use patterns along the S.R. 39 corridor are both urban and rural in character. At the southern terminus, the Plant City urban district extends northward from I-4 to the vicinity of Sam Allen Road. This area is primarily residential in nature with minor commercial development. The Memorial Park Cemetery is located in the northwest quadrant of I-4 and S.R. 39. Land uses in the central portion of the study area from Sam Allen Road north to the vicinity of Zephyrhills consist of agricultural uses, rural residential development, vacant parcels, and a few commercial/industrial uses. Based on the Hillsborough County and Pasco County Comprehensive Plans, development activity adjacent to, and in the vicinity of, the S.R. 39 corridor is converting from agricultural land use to residential, commercial, and industrial land use. At the northern portion of the project in Zephyrhills, the land uses are primarily residential development. The existing land use is consistent with the future land use designations and the project is not expected to have a negative effect on land use.

9.14.2 Community Cohesion

The recommended alignment for the Alexander Street Bypass was developed utilizing citizen input from the Shiloh community after the Public Workshop. This alignment extends along the western side of Shiloh thereby minimizing affects on the Shiloh community. No communities are divided or bisected by the recommended alignment. The Colonial Park and Shady Oaks in Segment 3 are situated totally on the west side of S.R. 39.

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9.14.3 Section 4(f) Lands

The anticipated need for right-of-way to widen S.R. 39 within the Blackwater Creek Preserve does not require evaluation under Section 4(f) (49 U.S.C. 303) since Hillsborough County and the FDOT have jointly and concurrently planned to develop the Preserve and the proposed S.R. 39 project.

9.14.4 Wetland Impact and Mitigation

The S.R. 39 project corridor is located entirely within the Hillsborough River Basin. The corridor crosses four drainage basins: Pemberton Creek, Hillsborough River, Blackwater Creek, and Big Ditch (also called Heron Branch Creek). There are bottomland hardwood swamps, marshes cypress domes, creeks, and sloughs adjacent to the existing roadway, most of which have already been impacted. Other wetland areas along the corridor include seasonal and semi-permanent marshes, shrub swamps, and farm ponds.

The CSX Railroad runs adjacent and parallel to the eastern side of S.R. 39 for approximately 18 km (11 mi). Due to the proximity of the railroad and S.R. 39, improvements and subsequent effects will take place primarily on the western side of the existing roadway to a point 4 km (2.5 mi) south of Zephyrhills. At Blackwater Creek, the CSX Railroad runs east of and parallel to S.R. 39. Because of ROW issues and potential drainage problems associated with the railroad, road and bridge improvements must occur to the west. On this western side, Blackwater Creek's floodplain lies predominantly to the north of the main channel.

In September 1995, the FDOT prepared a *Wetland Evaluation Report and Biological Assessment*[3]. Potential wetland impacts were identified for the two recommended alternatives and a WET 2.0 Analysis was performed. However, the changes in typical sections resulted in additional wetland impacts from the original study. An addendum to the *Wetland Evaluation Report and Biological Assessment*[3] was prepared by the Department in January 2000. The increase from 63 m (206 ft) to 82 m (268 ft) of ROW for the new alignment (I-4 to Cason Street) will be required due to the amount of fill necessary for the Pemberton Creek floodplain. Table 9-1 quantifies the estimated impacts to wetland areas along the recommended alternative. The estimated wetland impacts were generated from the conceptual design uncontrolled aerials.

TABLE 9-1

WETLAND IMPACT AREAS OF RECOMMENDED ALTERNATIVE

Segment	Classification		Total Hectares/Acres
	Emergent	Forested	
1	4.0 (10.0)	3.0 (7.5)	7.0 (17.5)
2	2.6 (6.5)	4.8 (11.8)	7.4 (18.3)
3	0.7 (1.7)	1.5 (3.7)	2.2 (5.4)

For the recommended alternative, it has been determined that there are no practical alternatives to construction in wetlands. All practicable measures will be used to reduce harm to wetlands during subsequent project phases. Short-term construction-related impacts will be minimized by the adherence to the FDOT's *Standard Specifications for Road and Bridge Construction 2000*[4]. Mitigation will be required for wetland impacts that result from roadway construction. Mitigative actions are defined by the National Environmental Policy Act and subsequent regulations as actions to avoid, minimize, rectify over time, or compensate for impacts by providing substitute resources.

For wetland impacts which cannot be avoided, the FDOT will utilize wetland mitigation through Senate Bill 1986. Through this bill, Chapter 373.4137 Mitigation Requirements was created. This Chapter states, in part, "... mitigation for the impact of transportation projects proposed by the Department of Transportation can be more effectively achieved by regional, long-range mitigation planning rather than on a project-by-project basis. It is the intent of the Legislation that mitigation to offset the adverse effects of these transportation projects be funded by the Department of Transportation and carried out by the Department of Environmental Protection (FDEP) and the water management districts, ...". As a result of this bill, the FDOT will provide funding to the SWFWMD for the construction of the new wetlands of equal or better function and value. The current funding is $75,000 per acre of impact. The FDOT may also mitigate project impacts without the use of this legislation.

9.14.5 Threatened and Endangered Species

Natural habitats identified in the project area include freshwater marshes, cypress domes, creek and slough systems, mixed hardwood swamps, pine flatwoods, palmetto scrub, mesic oak forest, and dry prairie. Significant wetland systems are associated with the Hillsborough River, Blackwater Creek, Bid Ditch (Heron Branch Creek), and Pemberton Creek. There are also significant upland habitats associated with these riverine corridors, particularly the Hillsborough River and Blackwater Creek. These systems are contiguous with the Hillsborough River State Park to the west and the Green Swamp to the northeast.

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The habitat found within the S.R. 39 project area is important to a wide variety of wildlife including a small population of black bears residing within the Hillsborough River floodplain region. This is also an area of ongoing land acquisition for protection purposes by Hillsborough County's ELAPP and SWFWMD's Save Our Rivers Program. Roughly 790 ha (1,950 ac) along the study corridor has been recently acquired under ELAPP.

Suitable habitat for federally listed species was investigated for presence or absence by qualified biologists in 1989, 1992, 1994, and 1995. In September 1995, the FDOT prepared a *Wetland Evaluation Report and Biological Assessment*[3]. It was noted that no federally threatened or endangered floral species were observed or were known to occur within the project corridor. The entire corridor was surveyed on numerous occasions and no listed were species were observed, strongly indicating the absence of these species. Faunal species that are federally classified as threatened or endangered that are present or have the potential to be present include the bald eagle (*Haliaeetus leucocephalus*) and eastern indigo snake (*Drymarchon corais couperi*). The report was submitted to the United States Fish and Wildlife Service (USFWS) for review and concurrence. Since this report was submitted to the USFWS, an addendum to the *Wetland Evaluation Report and Biological Assessment*[3] was prepared in January 2000. It was again noted that no federally threatened or endangered floral species were observed or are known to occur with the project corridor. New territory for a bald eagle has been identified since the 1995/1996 USFWS coordination. The nesting pair is located 1,561 m (5,121 ft) east of S.R. 39 in the vicinity of the Knights-Griffin intersection. The Florida Fish and Wildlife Conservation Commission has not assigned a nest designation to this territory at this time. Based on the nest's distance from the project, the proposed improvements will not affect the nest.

This project has been evaluated for impacts on threatened and endangered species. A literature review was conducted to determine those possible threatened or endangered species which may inhabit the project area. This search resulted in findings that no listed species would be affected by the proposed action. This determination was made after review of the advance notification responses and field survey of the project area by a biologist. Furthermore, the potential for impacts to critical habitat was assessed as to the relationship of the project to the USFWS's designated "Critical Habitat." The USFWS concurred with this determination on February 9, 2000.

9.14.6 Historic Sites/Districts and Archaeological Sites

In accordance with the procedures contained in 36 CFR, Part 800, a *Cultural Resources Assessment Survey (CRAS)* was conducted to locate and identify any prehistoric and historic period archaeological sites and historic structures associated with the project, and to assess the significance of the resources

in terms of eligibility for listing on the *NRHP*[5]. A *CRAS Report* prepared in April 1992 determined three historic structures to be potentially eligible for the *NRHP*[5]. These historic properties include the Dr. T.C. Maguire Estate (8HI5025) at 3849 S.R. 39, the Knights School (8HI5031) at 1402 Knights-Griffin Road, and the Blackwater Creek Overflow Bridge (8HI5042), now known as the Blackwater Creek Relief Structure.

In May 1995, the State Historic Preservation Officer (SHPO) concurred with the FHWA in the determination that the three resources were eligible for the *NRHP*[5]. A Section 106 Consultation Case Report was prepared to address the potential impacts to the three *NRHP*[5]-eligible historic properties. In June 1995, FHWA, in consultation with the Florida SHPO, determined that the proposed project would have no effect on the Dr. T.C. Maguire Estate or the Knights School, and an adverse effect on the Blackwater Creek Relief Structure.

In 1999, a *Cultural Resource Assessment Survey Update, Technical Memorandum* was performed to resurvey the project area, including 15 potential pond sites. This survey resulted in the updated evaluation of 52 previously recorded extant historic structures (two additional structures have been demolished) and 12 previously recorded archaeological sites. The survey also identified and evaluated 10 additional historic buildings. There were no new archaeological sites identified. No new structures were considered *NRHP*[5]-eligible. The SHPO concurred with these findings.

In February 2000, a Section 106 Consultation Technical Memorandum was prepared to document the evaluation of the proposed project's effects to the Knights School and the Dr. T.C. Maguire Estate. In accordance with the provisions of the National Historic Preservation Act of 1966, as amended, and Chapter 267, Florida Statutes, potential project impacts to these two *NRHP*[5]-eligible properties have been evaluated. The examples of adverse effect, as contained in 36 CFR 800.5(a)(1) and (2) were applied and found to be not applicable for this proposed project. The proposed improvements will not alter the historic associations or architectural integrity of the Knights School or Dr. T.C. Maguire Estate which qualify them for inclusion in the *NRHP*[5]. There will be no physical destruction or damage to all or part of either property; no removal of the properties from their historic location; or change in the character of use or of physical features within the properties' settings that contribute to their historic significance; no introduction of visual, atmospheric, or audible elements that diminish the integrity of the properties' significant historic features; and no neglect of the properties which causes their deterioration. Further, the project will not result in the transfer, lease or sale of either property. The FHWA, in consultation with the SHPO, has determined that the project will not constitute an adverse effect on the Dr. T.C. Maguire Estate and the Knights School.

The Blackwater Creek Relief Structure has been addressed in a separate Section 106 Consultation Technical Memorandum. Because of its projected structural deficiency (and that of the Blackwater Creek Bridge), the structures need to be improved ahead of the proposed S.R. 39 project. The Blackwater Creek bridges and approaches project is being evaluated separately.

9.14.7 Potential Hazardous Materials and Petroleum Products Contaminated Sites

The State of Florida has evaluated the proposed ROW and has identified potentially contaminated sites for the various proposed alternatives. Results of this evaluation will be utilized in the selection of a preferred alternative. When a specific alternative is selected for implementation, a site assessment will be performed during the design phase to the degree necessary to determine levels of contamination and, if necessary, evaluate the options to remediate along with the associated costs. Resolution of problems associated with contamination will be coordinated with appropriate regulatory agencies and, prior to ROW acquisition, appropriate action will be taken, where applicable.

A *Contamination Screening Evaluation Report*[6] dated June 1993 and revised November 1998 was prepared for the project. An Addendum to this report was prepared this year. Twenty-six sites were evaluated for potential contamination involvement. Of the 26 sites, six received "None" or "Low" risk ratings, 13 received "Medium" risk ratings, and seven received "High" risk ratings. Further environmental assessment is recommended for the 20 sites that received "Medium" or "High" risk ratings.

In Segment 1, 11 potential contamination sites will be avoided by constructing Alexander Street Bypass instead of widening existing S.R. 39 from I-4 to the vicinity of Joe McIntosh Road. A former pistol range with the potential for lead contamination is adjacent to the preferred alternative for the Alexander Street Bypass, which was selected because it minimizes neighborhood impacts to the Shiloh community. The former pistol range is located west of Shiloh and, therefore, the alternatives that minimize residential relocations are also the alternatives which place the alignment closer to the former pistol range. The site was evaluated as part of the update process for the PD&E Study and it was determined that the recommended alternative will not likely have contamination involvement associated with the former pistol range. The pistol range site is currently being renovated as part of a City of Plant City stormwater facility.

In Segment 2, the alternatives that were developed involve ROW acquisition from properties to the west of the existing S.R. 39 because the east is constrained by the railroad which parallels existing S.R. 39. Both alternatives that were evaluated would involve the same number of potential contamination sites. The difference would be the areal extent of potential contamination involvement

which would affect remediation costs. The recommended alternative minimizes the ROW requirements and, as a result, also minimizes potential contamination involvement.

In Segment 3, two alternatives are currently being evaluated. Alternative 3B is a westerly alignment and Alternative 3D is an easterly alignment. The five potential contamination sites that lie within Segment 3 would be a potential source of contamination involving either alternative. However, all five sites are on the west side of S.R. 39. Therefore, Alternative 3B would have a greater areal extent of potential contamination and, as a result, a greater potential remediation cost.

9.14.8 Noise Impacts

As part of the PD&E Study, a separate *Noise Study Report*[7] was prepared. The objective of the noise study was to identify noise sensitive sites adjacent to the project corridor, compare and evaluate the effects of traffic noise on these sites with and without the project, and evaluate the need for and the effectiveness of noise abatement measures. Additional objectives included the evaluation of construction noise and the prediction of future noise level contours adjacent to the corridor.

Results for the Design Year (2020) Build Alternative, using Segment 3 Alignment B, indicate that 75 residences may experience outdoor traffic noise levels that approach or exceed the Federal Highway Administration (FHWA) Noise Abatement Criteria (NAC) for Activity Category B. For the Build Alternative using Segment 3 Alignment D, the number of noise sensitive sites predicted to approach or exceed the NAC is also 75. Noise levels at the affected sites are predicted to range from 65 to 71 dBA. Predicted increases above existing noise levels range from 1 to 13 dBA. No noise sensitive sites are predicted to experience interior noise levels which approach or exceed the FHWA Noise Abatement Criteria for Activity Category E.

Noise abatement measures were evaluated for affected noise sensitive sites. Abatement measures considered include traffic system management, alignment modifications, property acquisition, land use controls, and noise barriers.

Noise barriers reduce noise levels by blocking the sound path between a roadway and noise sensitive sites. To be effective in reducing traffic induced noise, a noise barrier must be relatively long, continuous (with no intermittent openings), and sufficiently tall to provide the necessary reduction in noise levels. Noise barriers are most often used on high speed, limited access facilities where noise levels are high and there is adequate space for continuously long and sufficiently high barriers.

In order for a barrier to be considered feasible and economically reasonable it must meet the following minimum conditions:

1. Provide a minimum insertion loss (I.L.) or noise reduction of at least 5 dBA with a design goal of 8 to 12 dBA or more being desirable.

2. Cost not to exceed $30,000 per benefitted receiver unless a higher level of expenditure can be justified by other circumstances.

However, other important factors such as community desires, adjacent land uses, safety and barrier constructability and maintenance also play important roles. These criteria are evaluated more closely during the engineering design phase.

In order to analyze the effectiveness of noise barriers, the STAMINA companion computer program, OPTIMA, was utilized. The following discusses the feasibility and reasonableness of providing noise barriers at noise sensitive sites approaching or exceeding the NAC and describes the modeling results where applicable.

Within the new alignment portion of the project, Alexander Street Bypass from I-4 to S.R. 39 just south of Knights-Griffin Road, a total of 11 noise sensitive sites approaching or exceeding the NAC are isolated residences. Typically, noise barriers are not a reasonable abatement measure for isolated receivers because of the high cost per benefitted site. A noise barrier was analyzed for a representative receiver (R13W). At a predicted noise level of 65.0 dBA and a predicted increase above existing levels of 10.5 dBA, this receiver approaches the NAC and has one of the highest predicted increases. The lowest cost that could be achieved for a barrier that provided at least a 5 dBA reduction is $33,880. The barrier, located on the proposed ROW line, is 47 m (154 ft) long and 3.4 m (11 ft) high. The cost per benefitted receiver exceeds the FDOT guideline of $30,000. Based on these results, a noise barrier for receiver R13W, or any other isolated residence, would not be a cost reasonable abatement measure.

Within Segment 2, 45 noise sensitive sites exceed NAC. In Segment 3, 19 noise sensitive sites exceed NAC for both the western shift and the eastern shift alternative. Alignment B removes the front row of receivers at Colonial Park but opens up the rows behind them to the noise affects.

For the portion of the project following the existing S.R. 39 alignment, most noise sensitive sites have access drives which connect directly to S.R. 39. The access drives would require gaps in a noise barrier which would greatly reduce the amount of noise reduction. Therefore, noise barriers were not a feasible abatement measure for many of the sensitive sites affected by traffic noise. However, two

areas were identified where the number of required gaps in a noise barrier would be limited. These areas include Colonial Park and Shady Oaks.

Colonial Park is a residential area (mobile home park) with only one access drive to S.R. 39. A noise barrier could be designed for this area with only one gap to accommodate the drive. For Segment 3 Alignment B, a noise barrier was modeled along the proposed ROW line. Wall heights from 3.0 m (10 ft) to 4.6 m (15 ft) meet the minimum insertion loss of 5 dBA and are below the cost reasonable criteria of $30,000 per benefitted receiver. This alternative eliminates the front row of mobile homes, however, the noise wall is effective for the newly exposed second row of mobile homes.

For Segment 3 Alignment D, a noise barrier was also modeled along the proposed ROW line. Wall heights from 4.0 m (13 ft) to 4.6 m (15 ft) meet the minimum insertion loss of 5 dBA and are below the cost reasonable criteria of $30,000 per benefitted receiver. This alternative does not eliminate any of the mobile homes and the noise wall is effective for the existing front row of mobile homes.

Shady Oaks is a residential area (mobile home park) with only one access drive to S.R. 39. A barrier designed to abate traffic noise at the affected residences would not require any gaps for access drives. For Segment 3 Alignment B, a noise barrier was modeled along the proposed ROW line. Wall heights from 3.7 m (12 ft) to 4.6 m (15 ft) meet the minimum insertion loss of 5 dBA but exceed the cost reasonable criteria of $30,000 per benefitted receiver.

Based upon the noise analyses performed to date, there appears to be no apparent solutions available to mitigate the noise impacts at the locations identified in the *Noise Study Report*[7] with the exception of the Colonial Park effects.

The Florida Department of Transportation is committed to the construction of feasible noise abatement measures at the noise-effected locations at the Colonial Park residential area contingent upon the following conditions:

1. Detailed noise analyses during the final design process supports the need for abatement;
2. Reasonable cost analyses indicates that the economic cost of the barrier will not exceed the guidelines;
3. Community input regarding desires, types, heights, and locations of barriers has been solicited by the District Office;
4. Preferences regarding compatibility with adjacent land uses, particularly as addressed by officials having jurisdiction over such land uses has been noted;

5. Safety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed; and
6. Any other mitigating circumstances found in Section 17-4. 6.1 of the PD&E Manual have been analyzed.

Land use controls were identified as a measure to limit the effects of traffic noise in areas of future development. A copy of the final *Noise Study Report*[7] will be furnished to local officials to assist them in the development of compatible land uses for future development.

9.14.9 Air Quality

In accordance with the Clean Air Act Amendments (CAAA) of 1990 and FDOT's *PD&E Manual*[8], an air quality impact analysis was conducted to determine the effect of the proposed improvements. A separate *Air Quality Report*[9] was prepared as part of the PD&E Study. Based on the FDOT's air quality screening test (COSCREEN98), the proposed project will not cause violations of the National Ambient Air Quality Standards (NAAQS) for carbon monoxide. Therefore, this project will not have an impact on air quality.

9.14.10 Aquatic Preserves

There are no designated aquatic preserves in the S.R. 39 study area.

9.14.11 Water Quality Impacts

The impact of the proposed project on the surface water quality will be limited to the adverse effects of erosion during construction. These construction impacts are considered temporary and will be minimized by strict adherence to temporary erosion control features as provided in FDOT's *Standard Specifications for Road and Bridge Construction*[4], Section 104 and the EPA's NPDES Permit requirements. Therefore, no further mitigation for water quality impacts will be needed.

9.14.12 Outstanding Florida Waters

The S.R. 39 project corridor is located within the Hillsborough River Basin. The S.R. 39 corridor crosses Pemberton Creek, Hillsborough River, Blackwater Creek, and Big Ditch. The ultimate receiver of all stormwater is the Hillsborough River. Effective April 12, 1995, portions of the Hillsborough River and Blackwater Creek were designated as Outstanding Florida Waters. These waters are classified by FDEP as Class III Waters and receive special protection.

The proposed roadway improvements will include installation of a stormwater management system consisting of retention/detention ponds to treat stormwater runoff. The proposed stormwater facility will include, at a minimum, the water quantity requirements for water quality impacts as required by the SWFWMD in Chapters 40D-4, 40D-40, and 40D-400 of the Florida Administrative Code.

9.14.13 Wild and Scenic Rivers

A portion of the Hillsborough River is listed in the National Park Service Southeastern Rivers Inventory for Wild and Scenic Rivers. It has been determined that the project will not have an effect on the Hillsborough River. The designated limits are: the Hillsborough River from river mile 20 (S.R. 582A Bridge) to river mile 60 (the Hillsborough River headwaters) in Hillsborough and Pasco Counties. The existing S.R. 39 crosses this portion of the Hillsborough River and the proposed project will require additional ROW in this area. The Hillsborough River from Crystal Springs in Pasco County to Riverhills Park in Temple Terrace, a distance of 31 river miles, has been designated as the Hillsborough Canoe Trail and is part of the official Florida Canoe Trail.

Land located along the Hillsborough River and Blackwater Creek from U.S. 301 and S.R. 39 has been acquired by Hillsborough County under the ELAPP. The applicability of Section 4(f) to the ELAPP land is addressed in the EA.

9.14.14 Farmlands

Future adopted land use plans for the Hillsborough County portion of the project indicate that the planned uses are rural to low-density residential in most of the area with commercial development concentrated at intersections. In Pasco County a future development pattern of low-density residential is planned for the area west of S.R. 39 and light industrial uses are planned for the area to the east.

There are scattered patches of farmland throughout the project length. It is anticipated that in Segment 1 approximately 179,375 square meters (m^2) (44.32 ac) of farmland will be necessary for the project. This amount includes 36,250 m^2 (8.96 ac) necessary for retention ponds. Of the total farmland necessary in Segment 1, approximately 116,875 m^2 (28.88 ac) is strawberry lands and 62,500 m^2 (15.44 ac) is rangeland. The decision to move Segment 1 westward off of the existing roadway reduced relocations, Section 4(f) and 106 issues, and community cohesion concerns. Consequently, the new alignment affects more farmlands than if on the existing alignment.

In Segment 2, approximately 39,375 m^2 (9.73 ac) will be necessary for ROW. Of this total amount 35,000 m^2 (8.65 ac) is rangeland and 4,375 m^2 (1.08 ac) is citrus land.

The western alternative in Segment 3 would not require farmland acquisition. The eastern alternative would require approximately 60,000 m^2 (14.83 ac) of rangeland.

Development has been occurring along the existing roadway and loss of farmland adjacent to the roadway is inevitable, with or without the project. The acquisition of strips of land adjacent to the existing roadway should not interrupt the operation of the farmland.

9.15 UTILITY IMPACTS

As previously discussed in Section 4.1.14 of this report, several utility distribution lines are located within the existing S.R. 39 ROW, including aerial electrical distribution and transmission lines, aerial and buried telephone cables, aerial cable television lines, potable water mains, and gas mains. Depending on their location and depth, implementation of the recommended improvements for the project may require adjustment of some of these facilities. A set of plans identifying the preferred alternative was sent to the utility companies to provide utility relocation costs. Table 9-2 identifies the cost associated with utility relocations. These cost are not included in the total estimated project costs since they will be incurred by the utility owners.

TABLE 9-2

ESTIMATED COST OF RELOCATING EXISTING UTILITIES ALONG S.R. 39

Utility Company	Underground Relocation	Overhead Reduction
GTE Florida, Inc.	$2,340.000.00	
City of Plant City	$750,000.00*	
Tampa Electric Company		$1,500,000.00*
AT&T Communications	$100,000.00/mile	
MCI World Communications	$65,000.00	
FSN Cable Inc., LTD	$6,200.00	
Time Warner Communication		$150,000.00*
Adelphia Cable	$150,000.00*	
Florida Gas Transmission	$75,000.00*	

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9.16 TRAFFIC CONTROL PLAN

S.R. 39 provides access to residences and businesses along the corridor. Due to its importance, S.R. 39 should remain functional throughout the duration of the construction activities. The following conceptual construction sequence will help maintain traffic operations along S.R. 39.

- Relocate existing utilities within the ROW.
- Construct Alexander Street Bypass.
- Construct stormwater ponds.
- Utilize existing pavement for traffic and construct southbound travel lanes.
- Temporarily operate two-way traffic on the completed ultimate southbound lanes while reconstructing the existing pavement for the ultimate northbound lands.
- Shift northbound and southbound traffic to their respective, completed roadways.

9.17 RESULTS OF PUBLIC INVOLVEMENT PROGRAM

9.17.1 Advance Notification

Four Advance Notification (AN) packages were prepared for this project. The first AN package was submitted to the State Planning and Development Clearinghouse on November 18, 1988. The second AN was submitted to the Florida State Clearinghouse (FSC) on March 3, 1992. The third AN was submitted to the FSC on August 8, 1997; this submittal indicated that the project purpose had changed from alleviation of projected traffic congestion to the diversion of traffic from downtown Plant City. The 1997 AN also stated that the Blackwater Creek Bridge and overflow structure which was part of the previous AN submittal was being evaluated separately and would be subject to its own AN process. The fourth AN was submitted to the FSC on August 8, 1997, and addressed the Blackwater Creek Bridge and overflow structure. Only the two most recent AN packages are discussed in the following sections.

9.17.1.1 Agencies on Mailing List

In addition to the State agencies that receive the AN directly from the FSC, the following agencies received AN packages directly from FDOT. Agencies that responded to the AN are preceded by an asterisk:

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- Federal Highway Administration, Division Administrator
- Federal Emergency Management Agency - Natural Hazards Branch, Chief

- Federal Railroad Administration Office of Economic Analysis, Director
- U.S. Department of Interior - Bureau of Land Management, Eastern States Office
- U.S. Department of Housing and Urban Development, Regional Environmental Office
- U.S. Department of Interior - U.S. Geological Survey Chief
- *U.S. Environmental Protection Agency - Region IV, Regional Administrator
- U.S. Department of Interior - Fish and Wildlife Service, Field Supervisor, Jacksonville
- U.S. Army Corps of Engineers - Regulatory Branch, District Engineer
- *U.S. Department of Commerce - National Marine Fisheries Service (NMFS) - Habitat Conservation Division
- U.S. Department of Agriculture - Southern Region, Regional Forester
- U.S. Department of Interior - National Park Service - Southeast Regional Office
- U.S. Department of Commerce - National Oceanic and Atmospheric Administration
- *Federal Aviation Administration - Airports District Office
- U.S. Department of Health and Human Services - Center for Environmental Health and Injury Control
- U.S. Department of Interior - Bureau of Indian Affairs - Office of Trust Responsibilities
- Florida Game and Fresh Water Fish Commission - Office of Environmental Services, Director
- Tampa Bay Regional Planning Council, Executive Director
- SWFWMD - Executive Director
- Federal-Aid Program Coordinator
- Manager, Environmental Management Office

9.17.1.2 Summary of Responses

Comment: The National Marine Fisheries Service indicated that the resources affected are not ones for which they are responsible and, therefore, they have no comments to provide regarding the Alexander Street Bypass/S.R. 39 project and the Blackwater Creek Bridge and Overflow Structure project.

Response: No response necessary.

Comment: FAA had no objection to the S.R. 39 project.

Response: No response necessary.

Comment: The Florida Department of Community Affairs (DCA) determined that the Blackwater Creek Bridge and Overflow Structure project is consistent with its Florida Coastal Management Program (FCMP). It was noted that S.R. 39 is a designated evacuation route for Hillsborough County

and the statewide hurricane evacuation road network; project construction must not degrade or reduce the current level of service or number of lanes, especially during hurricane season. The bridge and approaches should also be built above the base flood elevation to prevent flooding. It was also noted that FDOT should coordinate the project design and construction activities with Hillsborough County to ensure compliance with the County's floodplain, wildlife, water quality, and wetland protection requirements.

Response: The bridge and approaches will be built above the base flood elevation. Because of its evacuation route status, the Environmental Assessment includes a commitment that maintenance of traffic plans must include provisions for maintaining current level of service and number of lanes, especially during hurricane season.

Comment: In responding to both of the 1997 AN submittals, Florida Department of Environmental Protection (FDEP) indicated that the project will impact Blackwater Creek's littoral zone. FDEP recommended that a binding wetland jurisdictional determination be obtained. Wetland impacts, especially to forested areas, should be minimized. An Environmental Resource Permit (ERP), issued by the SWFWMD will be required for any wetland alteration and for impervious surface, stormwater, and surface water management activity.

Response: Permitting will take place during the design phase. Appropriate permits will be obtained.

Comment: In responding to both of the 1997 AN submittals, the FGFWFC indicated that the area includes significant wildlife and freshwater fish habitat. Natural habitats include freshwater marsh, cypress dome, creek and slough systems, mixed hardwood swamp forest, pine flatwoods, scrub, mesic oak forest, and dry prairie. Several state-listed endangered, threatened, and species of special concern are present, or have the potential to be present in the proposed road corridor.

Response: Additional coordination will take place during the permitting and design phase.

Comment: The Florida Department of State indicates that the Blackwater Creek overflow structure is eligible for listing in the NRHP.

Response: The Blackwater Creek Relief Structure was addressed in a Section 106 Consultation Technical Memorandum.

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Comment: The Florida Department of Agriculture indicated that they had no comments regarding the Blackwater Creek Bridge and Overflow Structure.

Response: No response necessary.

Comment: Florida's Office of Tourism, Trade, and Economic Development indicated that they have no comments regarding the two projects.

Response: No response necessary.

Comment: Tampa Bay Regional Planning Council stated that an initial in-house review does not indicate the necessity for action by the Council and no further review will be required by the agency.

Response: No response necessary.

Comment: The Hillsborough County Planning Commission acknowledged receipt of the Blackwater Creek AN and indicated that they have no comments.

Response: No response necessary.

Comment: SWFWMD indicated that the project may require an ERP.

Response: Permitting will take place during the design phase. Appropriate permits will be obtained.

9.17.2 Coordination and Consultation

Coordination and consultation were accomplished through a series of meetings and correspondence over the course of the study to ensure all appropriate parties were apprised of the project status and provided ample opportunity to submit comments.

Through the MPO and PD&E coordination process, government agencies and departments (local, state, and federal) were contacted through correspondence and/or meetings to solicit their comments regarding the proposed project. Additionally, coordination activities with non-profit organizations, utility providers, and rail transport were conducted. To date, no adverse comments have been received from these entities regarding implementation of the proposed project.

9.17.2.1 Public Meetings and Community Coordination

A Public Workshop was held on February 18, 1993 and 184 persons attended. Based on input received from the Shiloh community, a focus meeting was held with the Shiloh Community Group on April 15, 1993. The public input from these meetings resulted in the development of new alternatives (R-E, R-F, R-G, and R-H) for Segment 1.

Following the April 15, 1993 meeting with the Shiloh Community Group, the Hillsborough County MPO and the City of Plant City met with FDOT to discuss the Shiloh Community Group issues.

A Public Hearing was held on Monday, April 10, 2000, from 4:30 to 7:30 p.m. at Shiloh Baptist Church. Three hundred fourteen persons attended the public hearing. Jeraldo Comellas, Jr., P.E., the Environmental Management Office Engineer, presided at the Hearing. The Hearing was advertised in the Tampa Tribune and the Florida Administrative Weekly. In addition, meeting notices were mailed to elected and appointed officials and property owners whose property lies within 91.44 meters (300 feet) of the centerline of any of the alternatives under consideration.

Conceptual alignments and project reports were available for public review prior to and after the Hearing beginning March 20, 2000, through April 20, 2000, at the Bruton Memorial Public Library in Plant City. The study materials were also available for public review at the Hearing. Information brochures/handouts were offered to those in attendance at the Public Hearing. The brochures included a description of the proposed improvements, the right of way acquisition and relocation program, an evaluation matrix, the status of the project in the Work Program, and a comment form.

The informal portion of the Hearing was from 4:30 p.m. to 6:00 p.m. Throughout the informal portion, a project video ran continuously and FDOT representatives were available for one-on-one questions and answers. The formal portion began at 6:00 p.m. and consisted of a presentation by FDOT on the proposed improvements followed by a public comment period. The proceedings of the formal portion were recorded by a court reporter. Nine persons either spoke or had written statements read into the record during the formal portion. The court reporter was also available to take one-on-one oral statements during the informal portion. Four people made oral statements to the court reporter during the informal portion. Twenty-eight written statements were received during the comment period.

The FDOT has responded to those written or oral statements that required a response. The FDOT has committed to additional evaluation when the northern segments are advanced to the design phase. Specific commitments are stated in Section 6.0 of this Comments and Coordination Report.

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9.18 VALUE ENGINEERING

This project was not selected for Value Engineering study by the Department. However, value engineering judgements were incorporated into the selection of the recommended alternative.

9.19 DRAINAGE

The proposed drainage improvements consisting of extending existing culverts and adding or replacing existing bridges to accommodate improvements within the S.R. 39 study corridor should not adversely affect the surrounding area. The existing flood zones fit the surrounding flat lowland terrain and should not change because of the widening. The area surrounding the corridor is urban and rural in nature with numerous wetlands. This improvement to existing facilities should have minimal effect on development in flood zones.

9.20 STRUCTURES

Blackwater Creek and Blackwater Creek Relief Structure

Blackwater Creek downstream of S.R. 39 is a floodplain. Upstream of the bridge is a broad floodplain that is extremely sensitive to changes in backwater elevations. To maintain historical elevations in both directions, replacement/rehabilitated structures are currently (October 1999) being designed to perform hydraulically equivalent to the existing structures. The existing S.R. 39 structure contains two narrow bridges in the Blackwater Creek area. The bridge over Blackwater Creek (Bridge #10036) will be lengthened from 49.33 m (161.8 ft) to 63.0 m (206.7 ft) with a replacement structure to improve hydraulic flow conditions. The Blackwater Creek Relief Structure (Bridge #100037) will be reconstructed/rehabilitated and maintain its current length of 21.4 m (70.2 ft). Details regarding these structures are contained in the Bridge Development Reports dated May 21, 1999 and August 1999.

Hillsborough River

The Hillsborough River, like the Blackwater Creek, is FEMA-regulated from S.R. 39 downstream. Upstream, the bridge design must meet Pasco County criteria requiring no increase in head loss above existing conditions.

It is proposed to replace the existing bridge (Bridge #140007), in kind, with a parallel bridge of the same length constructed for the two new lanes. Preliminary WSPRO analyses show that the water surface elevations will not vary upstream or downstream from the existing conditions for dual 97.54 m (320 ft) bridges. This will also meet the Pasco County requirement of no increase in head loss for new structures.

9.21 SPECIAL FEATURES

Currently, there are no special features to be constructed with the proposed improvements.

9.22 ACCESS MANAGEMENT

Access Class 3 facilities are controlled access roadways when direct access to abutting land is controlled to maximize the operation of the through traffic movement. This class is used where the probability of significant land use change is high in the near future or when existing land use and roadway sections have not completely built out to the maximum land use or roadway capacity. These highways are distinguished by existing or planned restrictive medians and maximum distance between traffic signals and driveway connections. Local land use planning, zoning, and subdivision regulations should be such to support the restrictive spacings of this designation. The Access Class 3 Standards can be found in Section 5.2 of this report.

The procedure used to develop the access management plan started with a review of the study corridor aerials to determine preliminary locations for median openings. The distance between the preliminary median openings were measured using the access management standards described in Section 5.2 of this report. The plan includes a summary of the proposed spacings.

TABLE 9-3

PROPOSED MEDIAN OPENINGS

Description	Distance		Meets Access Management Standards
	Measured[1]	Required	
Alexander Street Bypass from I-4 to Existing S.R. 39			
From I-4 interchange to station 31+70 for full median opening (FMO)	840 m (2756 ft)	800 m (2625 ft)	Yes
From station 31+70 (FMO) to station 35+30 for directional median opening (DMO)	380 m (1247 ft)	400 m (1320 ft)	No[2]
From station 35+30 (DMO) to Sam Allen Road for full signalized median opening (FMO)	380 m (1247 ft)	400 m (1320 ft)	No[2]
From Sam Allen Road (FMO) to station 43+30 for directional median opening (DMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 43+30 (DMO) to McGee Road for a full median opening (FMO)	397 m (1302 ft)	400 m (1320 ft)	No[2]
From McGee Road (FMO) to station 51+27 for a directional median opening (DMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 51+27 (DMO) to Joe McIntosh Road for a full median opening (FMO)	420 m (1378 ft)	400 m (1320 ft)	Yes
From Joe McIntosh Road (FMO) to station 59+47 for a directional median opening (DMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 59+47 (DMO) to station 63+47 for a full median opening (FMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 63+47 (FMO) to McLin Drive for a directional median opening (DMO)	495 m (1624 ft)	400 m (1320 ft)	Yes
From McLin Drive (DMO) to Knights Griffin Road for a full median opening (FMO)	318 m (1043 ft)	400 m (1320 ft)	No
Existing S.R.. 39 from Knights Griffin Road to U.S. 301			
From Knights Griffin Road (FMO) to station 75+60 for a directional median opening (DMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 75+60 (DMO) to station 79+60 for full median opening (FMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 79+60 (FMO) to Lanier Road for directional median opening (DMO)	438 m (1437 ft)	400 m (1320 ft)	Yes
From Lanier Road (DMO) to Hunter Road for full median opening (FMO)	402 m (1319 ft)	400 m (1320 ft)	Yes
From Hunter Road (FMO) to station 92+00 for directional median opening (DMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 92+00 (DMO) to station 96+00 for a full median opening (FMO)	400 m (1320 ft)	400 m (1320 ft)	Yes

TABLE 9-3 (CONTINUED)

PROPOSED MEDIAN OPENINGS

Description	Distance		Meets Access Management Standards
	Measured[1]	Required	
From station 96+00 (FMO) to station 100+00 for a directional median opening (DMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 100+00 (DMO) to station 104+00 for a directional median opening (DMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 104+00 (DMO) to Bruton Road for a full median opening (FMO)	445 m (1460 ft)	400 m (1320 ft)	Yes
From Bruton Road (FMO) to station 112+45 for a directional median opening (DMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 112+45 (DMO) to station 117+50 for a directional median opening (DMO)	505 m (1657 ft)	400 m (1320 ft)	Yes
From station 117+50 (DMO) to Moriczville Lane for a full median opening (FMO)	525 m (1722 ft)	400 m (1320 ft)	Yes
From Moriczville Lane (FMO) to station 126+75 for a directional median opening (DMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 126+75 (DMO) to station 130+75 for ful median opening (FMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 130+75 (FMO) to station 134+75 for directional median opening (DMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 134+75 (DMO) to station 138+75 for full median opening (FMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 138+75 (FMO) to Tollar Road for directional median opening (DMO)	670 m (2198 ft)	400 m (1320 ft)	Yes
From Tollar Road (DMO) to station 149+45 for a full median opening (FMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 149+45 (FMO) to station 154+35 for a directional median opening (DMO)	490 m (1608 ft)	400 m (1320 ft)	Yes
From station 154+35 (DMO) to CF Industries Gate No. 6 full median opening (FMO)	505 m (1657 ft)	400 m (1320 ft)	Yes
From CF Industries Gate No. 6 (FMO) to station 163+40 directional median opening (DMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 163+40 (DMO) to station 167+40 for a full median opening (FMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From station 167+40 (FMO) to station 173+30 for a directional median opening (DMO)	590 m (1936 ft)	400 m (1320 ft)	Yes
From station 173+30 (DMO) to County Line Road for a full median opening (FMO)	540 m (1772 ft)	400 m (1320 ft)	Yes
From County Line Road (FMO) to station 182+70 for a directional median opening (DMO)	400 m (1320 ft)	400 m (1320 ft)	Yes

TABLE 9-3 (CONTINUED)

PROPOSED MEDIAN OPENINGS

Description	Distance		Meets Access Management Standards
	Measured[1]	Required	
From station 182+70 (DMO) to Central Avenue for a full median opening (FMO)	433 m (1421 ft)	400 m (1320 ft)	Yes
From Central Avenue (FMO) to Covey Avenue for directional median opening (DMO)	407 m (1335 ft)	400 m (1320 ft)	Yes
From Covey Avenue (DMO) to Fig Street for directional median opening (DMO)	420 m (1378 ft)	400 m (1320 ft)	Yes
From Fig Street (DMO) to Jerry Road for a full median opening (FMO)	515 m (1690 ft)	400 m (1320 ft)	Yes
From Jerry Road (FMO) to station 206+45 for a directional median opening (DMO)	600 m (1969 ft)	400 m (1320 ft)	Yes
From station 206+45 (DMO) to Pattie Road for a full median opening (FMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From Pattie Road (FMO) to station 214+50 for a directional median opening (DMO)	405 m (1328 ft)	400 m (1320 ft)	Yes
From station 214+50 (DMO) to station 218+64 for a directional median opening (DMO)	414 m (1358 ft)	400 m (1320 ft)	Yes
From station 218+64 (DMO) to Chancey Road for a full median opening (FMO)	400 m (1320 ft)	400 m (1320 ft)	Yes
From Chancey Road (FMO) to Shady Oaks Drive for a directional median opening (DMO)	568 m (1864 ft)	400 m (1320 ft)	Yes
From Shady Oaks Drive (DMO) to U.S. 301 for a full median opening (FMO)	388 m (1272 ft)	400 m (1320 ft)	No[2]

[1]The equivalent distance in feet is a soft conversion of the measured distance in meters.

[2]Median openings fall within 10 percent required distance.

Five of the proposed median openings do not meet FDOT minimum Access Class 3 standards. Four of these five median openings fall within 10% of the required distance which is acceptable to the FDOT Access Management standards. However, the directional median opening at McLin Drive does not meet FDOT Access Management standards and falls 20.5% below the required distance.

The existing S.R. 39 from I-4 to U.S. 301 maintains an Access Class 3 designation. However, the existing S.R. 39 from I-4 north to south of Knights Griffin Road is expected to be a cul-de-sac. Since the Alexander Street Bypass is expected to be designated S.R. 39, the jurisdictional responsibility of the existing S.R. 39 from I-4 to south of Knights Griffin Road is not known at this time. As part of the development of the access management plan for the existing S.R. 39 from the Alexander Street

Bypass to U.S. 301, a field review was conducted to observe and locate high truck and residential traffic on the existing S.R. 39. Based on the information collected from the field and following the FDOT Access Management Standard Class 3 standards, the preliminary median openings from Knights Griffin Road to U.S. 301 were adjusted to accommodate the high traffic volume areas, and a proposed plan for the new corridor was developed. The resulting plan revealed that all of the proposed median openings meet FDOT Access Management Class 3 requirements within 10% of the required distance with the exception of one median opening.

9.23 REGIONAL TRANSIT LOCATIONS

There are currently no existing transit services provided along the S.R. 39 corridor. In addition, after the construction of S.R. 39, there are no proposed transit services.

9.24 AESTHETICS AND LANDSCAPING

The topography of the area is flat and provides open vistas. The proposed roadway will be raised slightly to correct drainage problems. However, it provides for wider, grassed borders which are visually pleasing. During the design phase, coordination will be conducted with Hillsborough and Pasco Counties and City of Plant City regarding aesthetic treatment opportunities within the Study corridor.

9.25 REFERENCES

1. *Project Traffic and Intersection Analysis Technical Memorandum*; Parsons Brinckerhoff Quade & Douglas, Inc.; Tampa, Florida; November 3, 1999.
2. *FDOT Plan Preparation Manual;* Florida Department of Transportation; Tallahassee, Florida; January 1998.
3. *Wetland Evaluation Report and Biological Assessment*; Florida Department of Transportation; Tampa, Florida; September 1995 and Addendum, January 2000.
4. *Florida Department of Transportation's Standard Specification for Road and Bridge Construction 2000*; Florida Department of Transportation; Tallahassee, Florida.
5. *National Register of Historic Places*, Division of Archives, History and Records Management; Tallahassee, Florida; 1972.
6. *Level I Update, Hazardous Materials Investigation*; OHM Remediation Services Corp.; November 1998.
7. *Noise Study Report*; Florida Department of Transportation; Tampa, Florida; January 2000.
8. *Project Development and Environment Manual*; Florida Department of Transportation; Tallahassee, Florida; February 1994.
9. *Air Quality Report*; Florida Department of Transportation; Tampa, Florida; January 2000.

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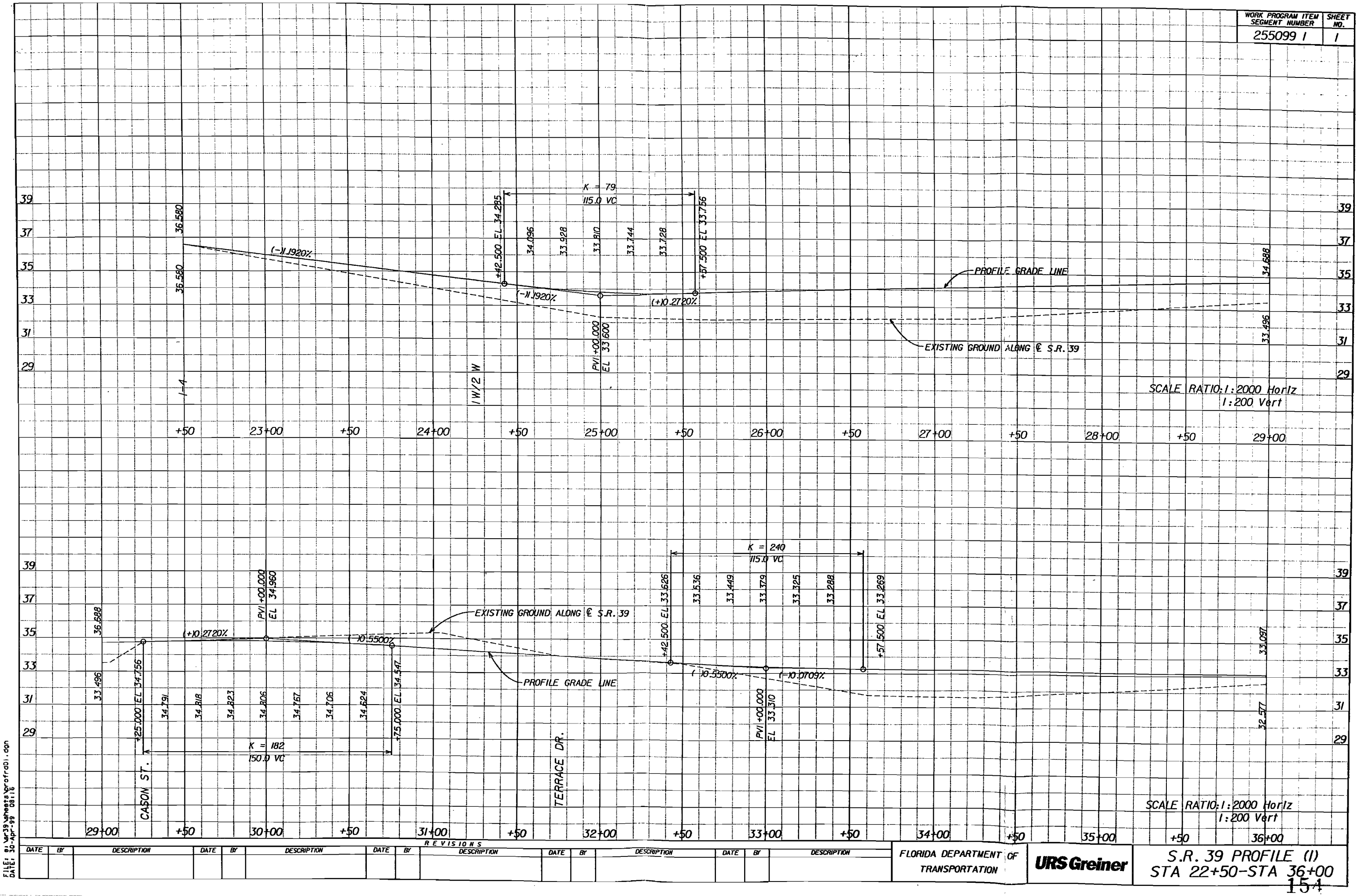
Appendix A
DETAILED PROFILE GRADE LINE

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NO.
255099 1	1



REVISIONS															
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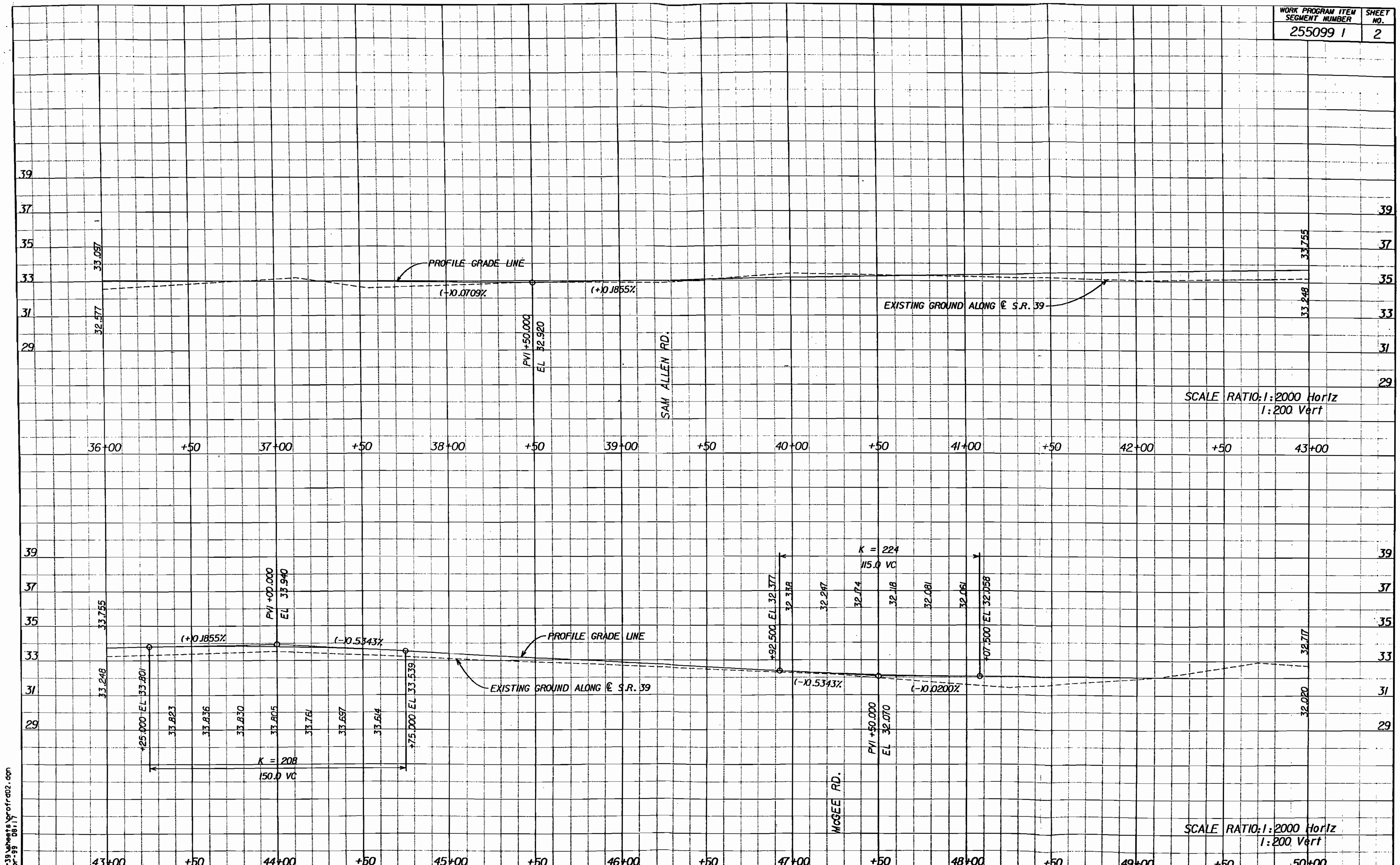
FLORIDA DEPARTMENT OF TRANSPORTATION

URS Greiner

S.R. 39 PROFILE (1)
STA 22+50-STA 36+00

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NO.
255099 1	2



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REVISIONS

FLORIDA DEPARTMENT OF TRANSPORTATION

URS Greiner

S.R. 39 PROFILE (2)
STA 36+00-STA 50+00

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WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NO.
255099 1	3

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115.0 VC

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+07.500 EL 32.788
32.001
32.008
32.028
32.060
32.105
32.163
32.717
32.020
(-)0.0200%
(+)0.3440%
PVI +50.000
EL 31.990
PROFILE GRADE LINE
(+)0.3440%
(+)0.0514%
PVI +00.000
EL 32.850
+25.000 EL 32.592
+75.000 EL 32.889
32.641
32.700
32.752
32.795
32.831
32.859
32.879
K = 513
150.0 VC
EXISTING GROUND ALONG ℄ S.R. 39
33.004
32.157

SCALE RATIO: 1:2000 Horiz
1:200 Vert

50+00 +50 51+00 +50 52+00 +50 53+00 +50 54+00 +50 55+00 +50 56+00 +50 57+00

PROFILE GRADE LINE
(+)0.0514%
(+)0.0653%
EXISTING GROUND ALONG ℄ S.R. 39
PVI +00.000
EL 33.210
33.004
32.157
33.406
32.980

SCALE RATIO: 1:2000 Horiz
1:200 Vert

57+00 +50 58+00 +50 59+00 +50 60+00 +50 61+00 +50 62+00 +50 63+00 +50 64+00

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FLORIDA DEPARTMENT OF TRANSPORTATION

URS Greiner

S.R. 39 PROFILE (3)
STA 50+00-STA 64+00

S.R. 39 PROFILE (4)
STA 64+00-STA 78+00

URS Greiner

FLORIDA DEPARTMENT OF TRANSPORTATION

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KNIGHTS GRIFFIN RD.
13B

EXISTING GROUND ALONG ℄ S.R. 39
PROFILE GRADE LINE

PVI +50.000
EL 33.700
K = 246
150.0 VC
+25.000 EL 33.378
+75.000 EL 33.654
33.318
33.415
33.495
33.559
33.607
33.659
33.655
(+)0.0653%
(-)0.5455%

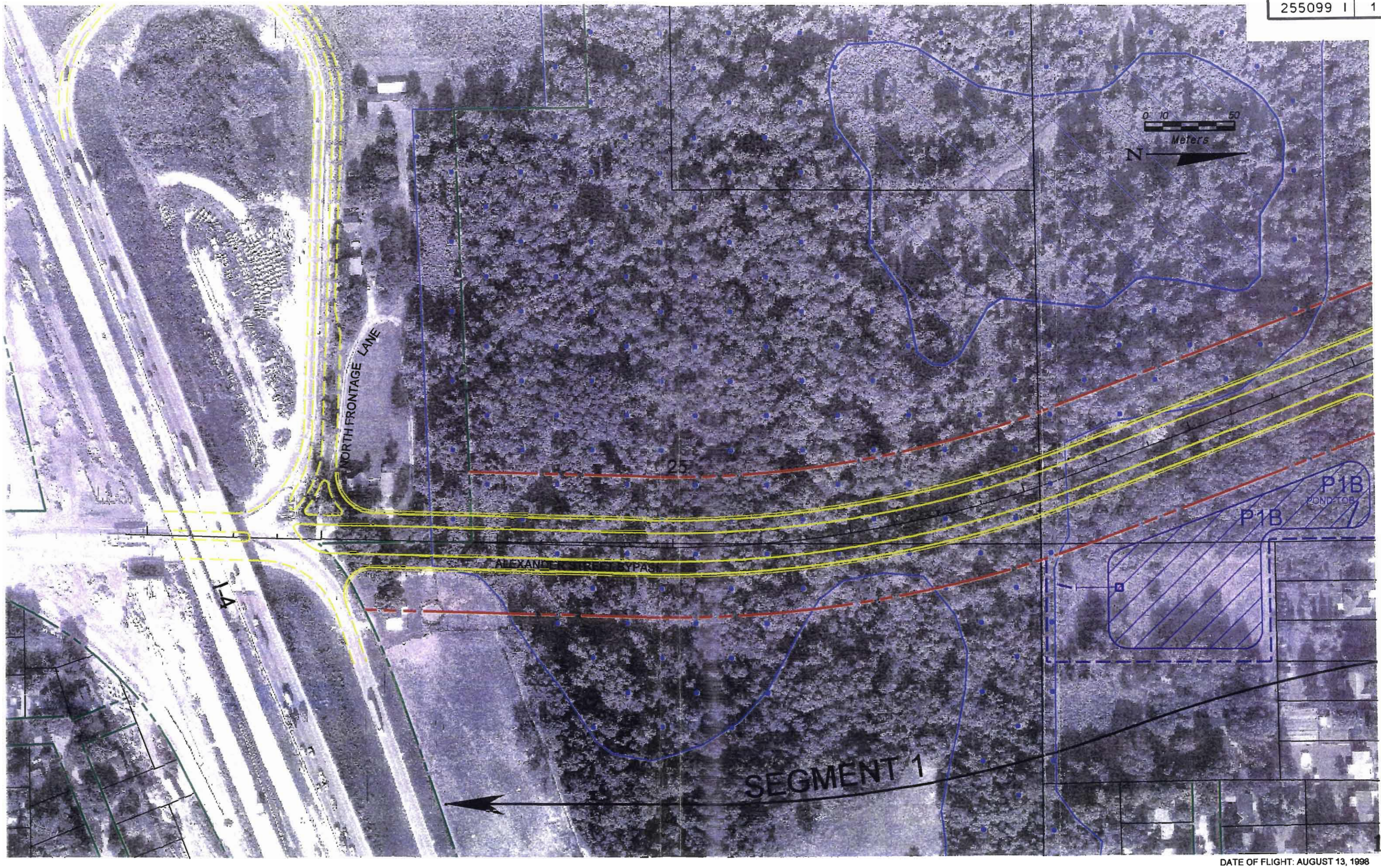
PVI +60.000
EL 34.100
K = 101
195.0 VC
+57.500 EL 33.022
+62.500 EL 33.318
33.202
33.371
33.500
33.590
33.640
33.650
33.622
33.557
33.445
(-)0.1163%
(+)0.8128%
(-)0.5455%
31.704
31.989
+82.500 EL 32.667
PW +25.000
EL 32.200
32.399
32.588
32.514
32.429
32.390
32.980
33.406

SCALE RATIO: 1:2000 Horiz
1:200 Vert

SHEET NO.	WORK PROGRAM ITEM SEGMENT NUMBER
4	2550991

Appendix B
RECOMMENDED ALTERNATIVE

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	1



DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	2

0 10 50
Meters

N

P2A

POND-TOB

35

30

R

3R

P1B

CASON STREET

TERRACE DRIVE

BARBOUR DRIVE

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE

PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE

WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION

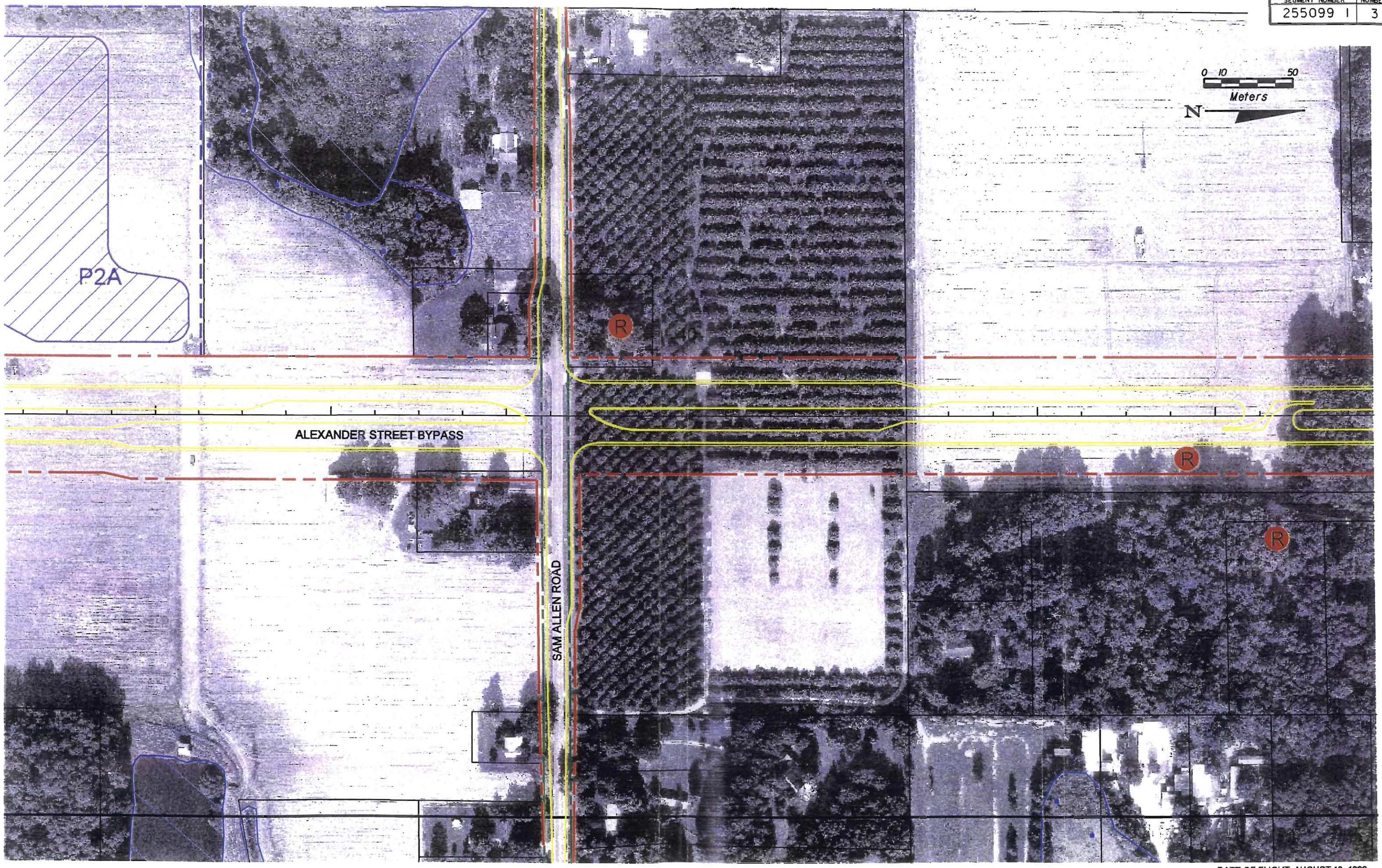
PROPOSED POND R/W ACQUISITION BOUNDARY

P1B RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	3



DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	4

JERRY RED ROAD

0 10 50
Meters

N

45

5R

50

R

R

MCGEE ROAD

SEGMENT 1

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE

PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE

WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION

PROPOSED POND R/W ACQUISITION BOUNDARY

P1B
RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	5

0 10 50
Meters
N

55

ALEXANDER STREET BYPASS

POND TOB

P3C

DRIVE

SPREADING DRIVE

DR T C MAGUIRE ESTATE

H

JOE MC INTOSH ROAD

S.R. 39

R

Ameristeel 5

Terra Florida Region Office 6

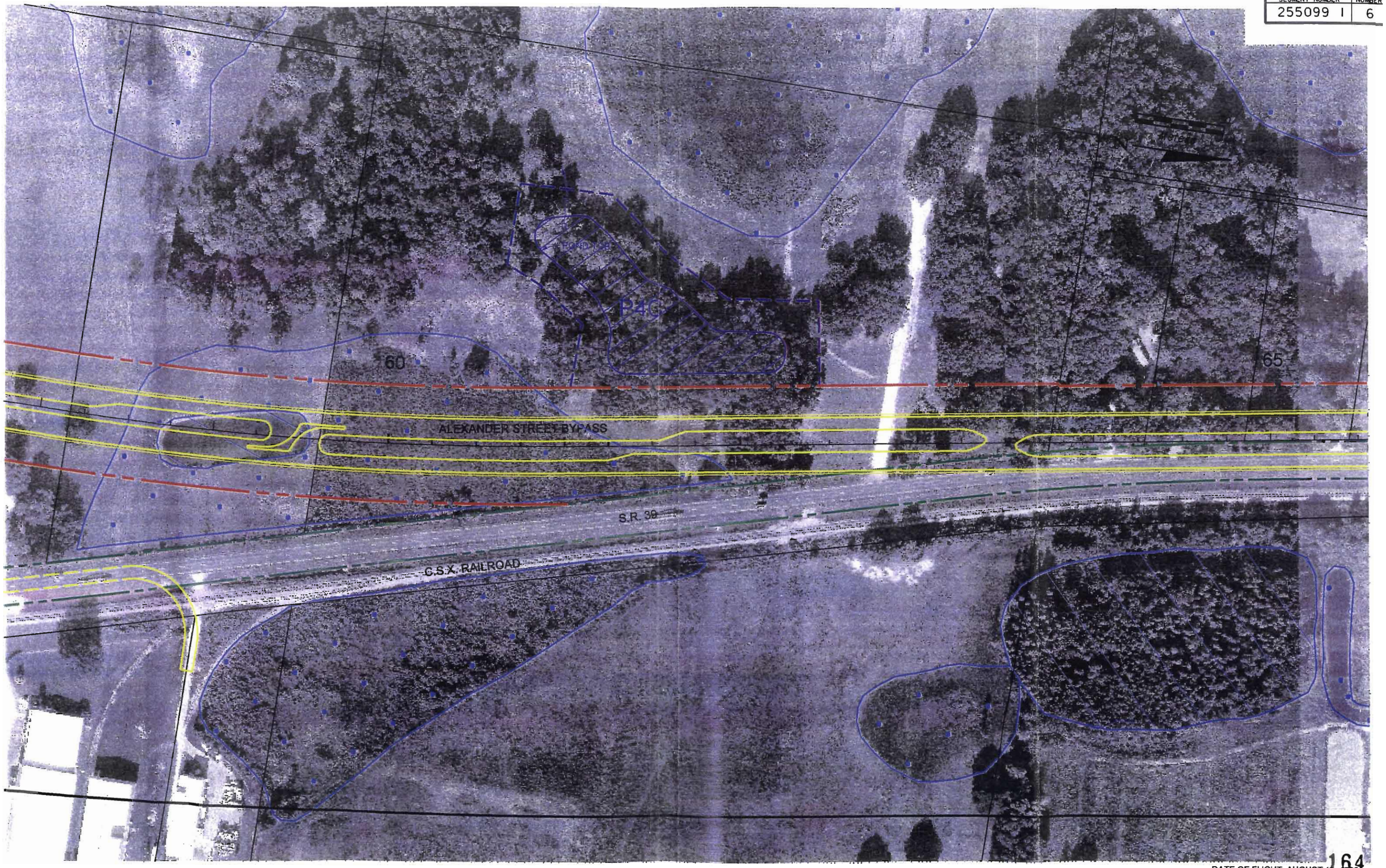
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
RESIDENTIAL RELOCATION
WETLAND BOUNDARY
BUSINESS RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B
RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	6



164

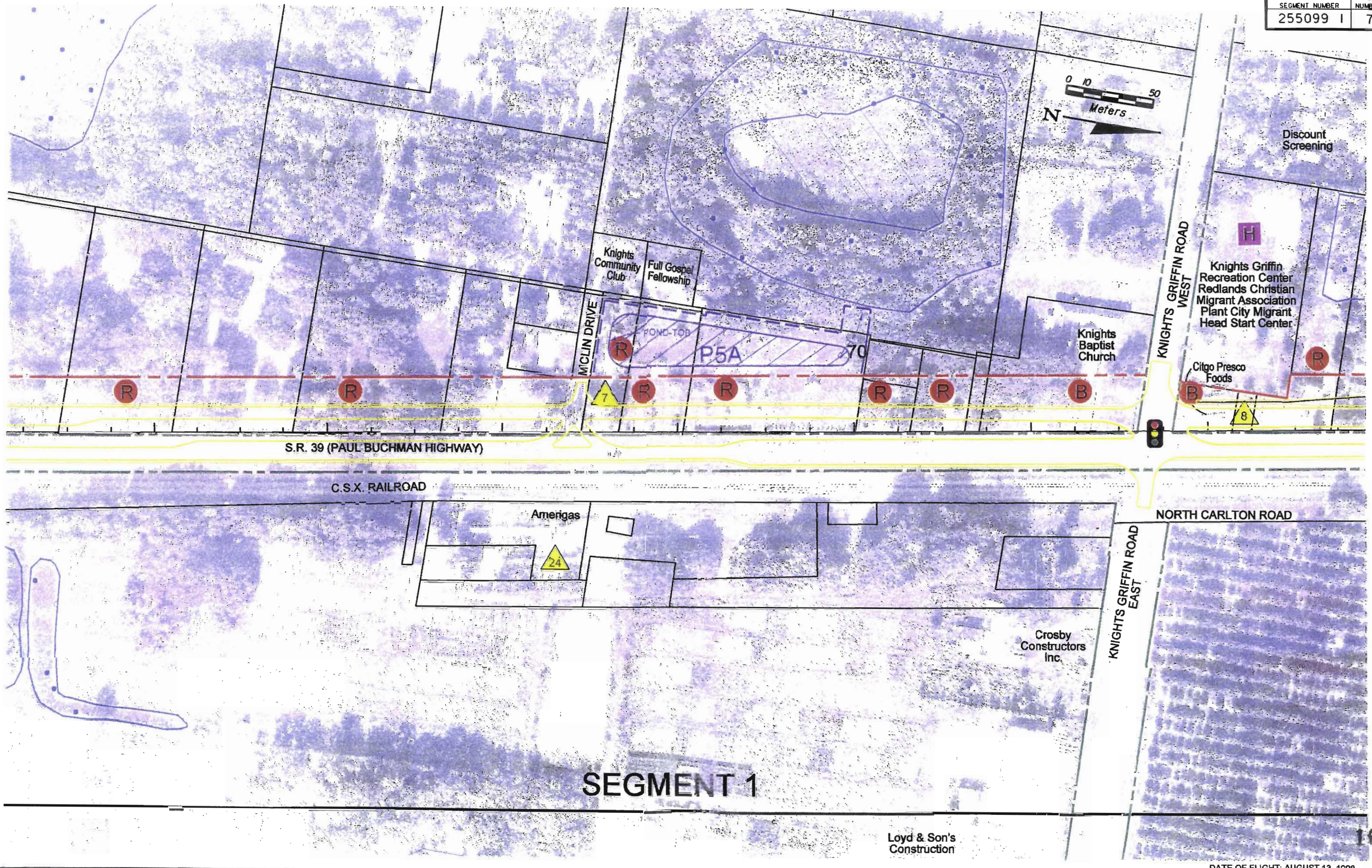
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
6 POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	7



DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	8

0 10 50
Meters
N

Count
reening

Swinson's
Bait, Tackle &
Boat Storage

75

80

Power Transmission
Line

Carlton Brothers
Inc.

28

SEGMENT 1

166

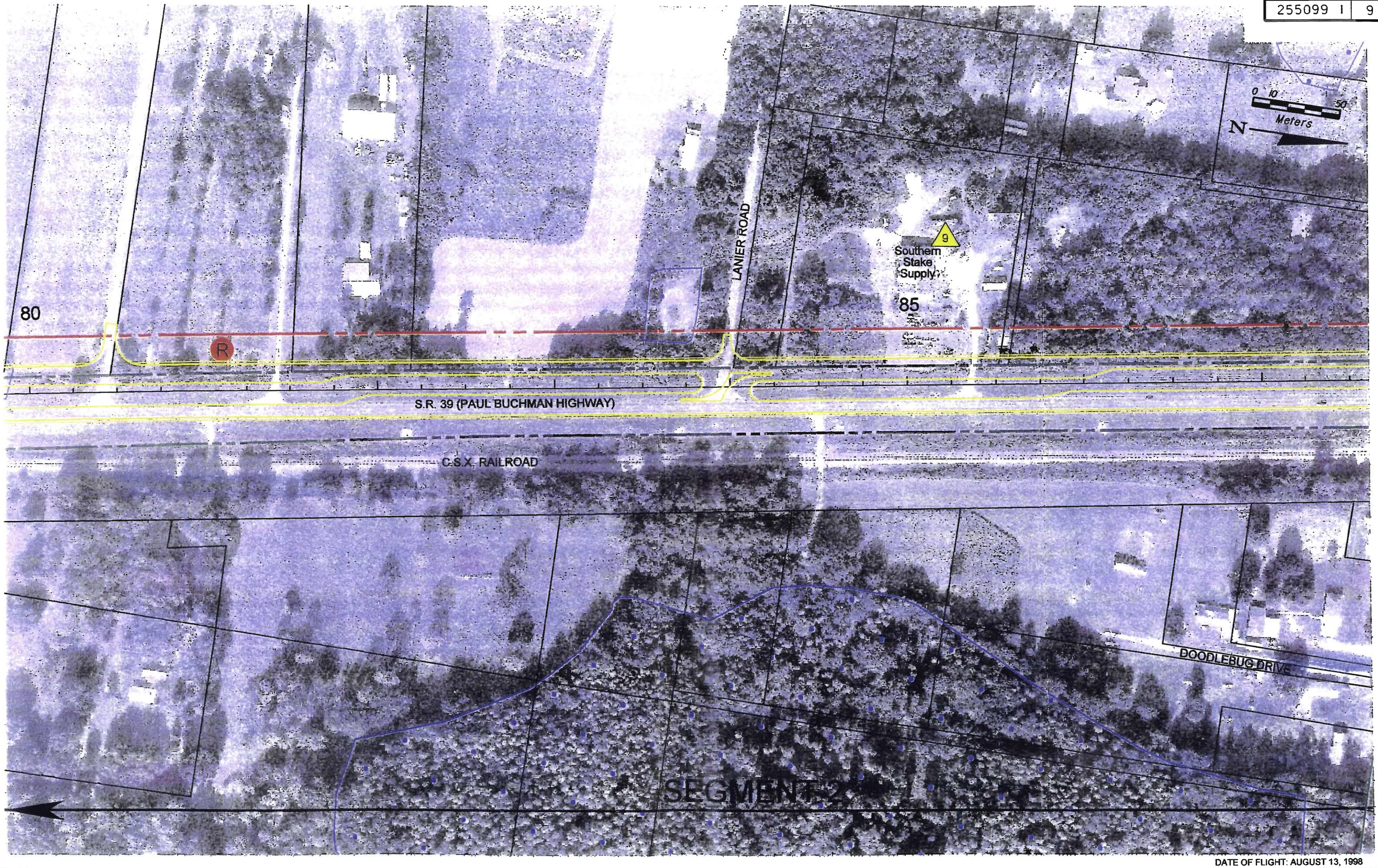
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	9



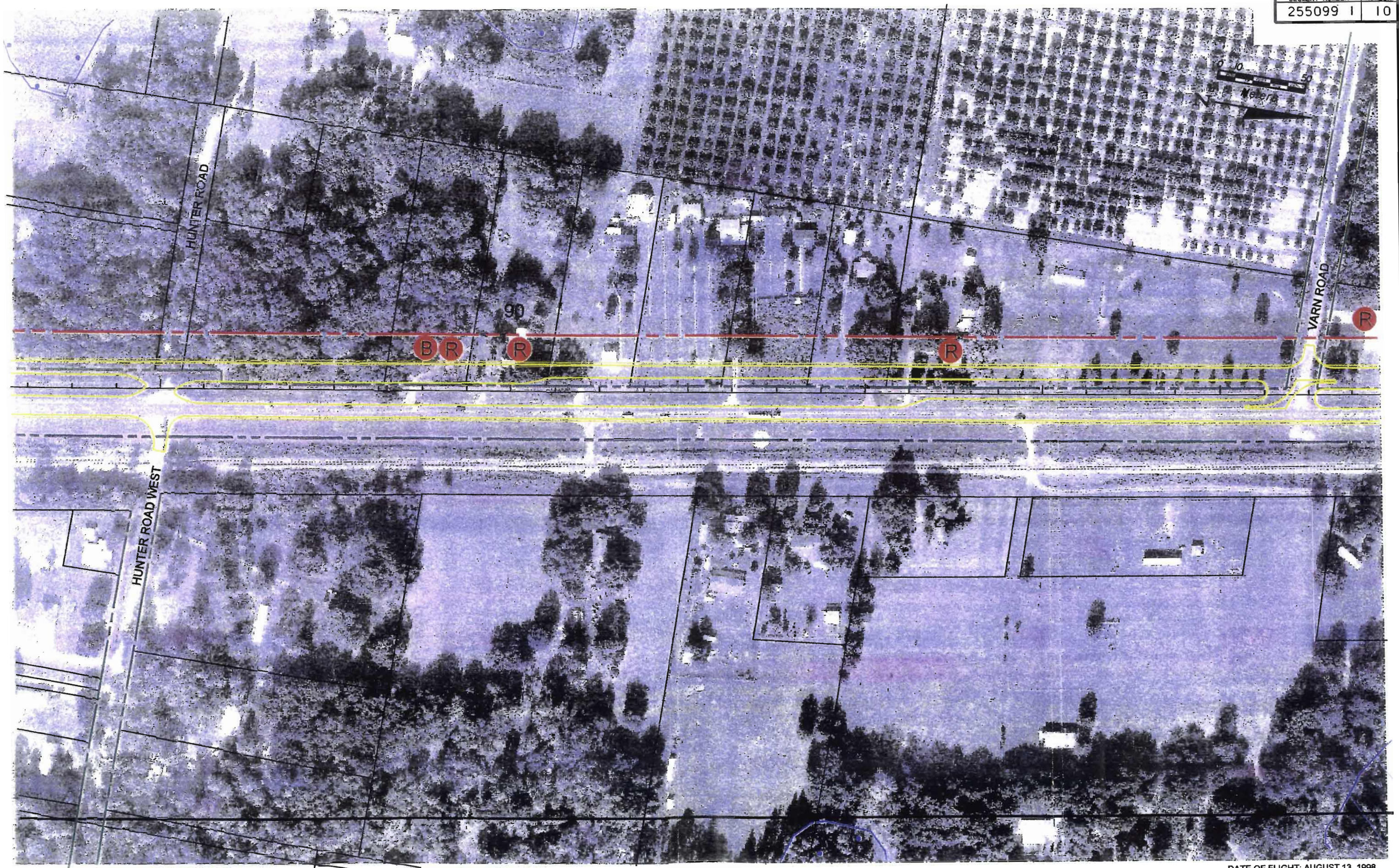
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P16 RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	10



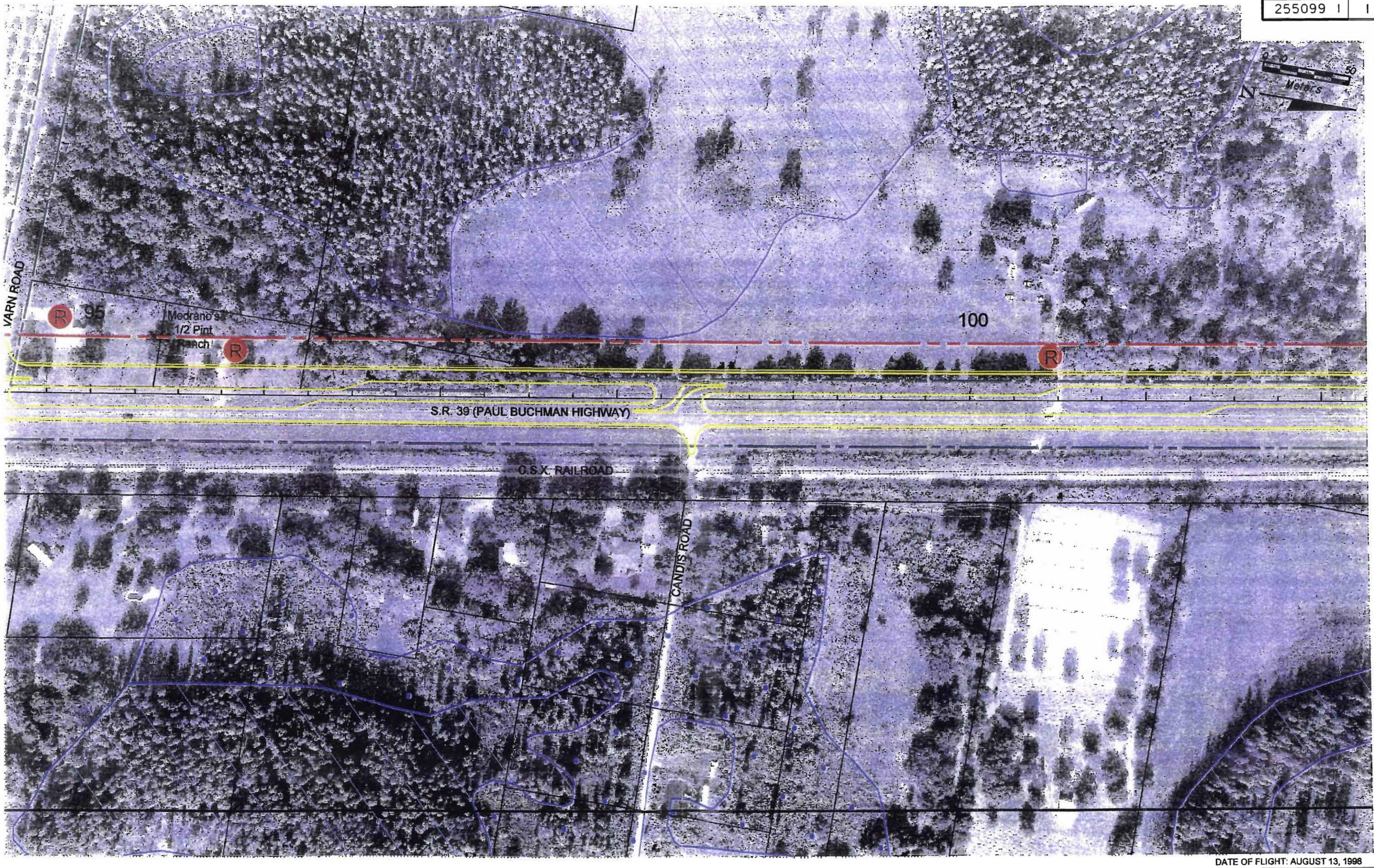
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	11



DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B
RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	12

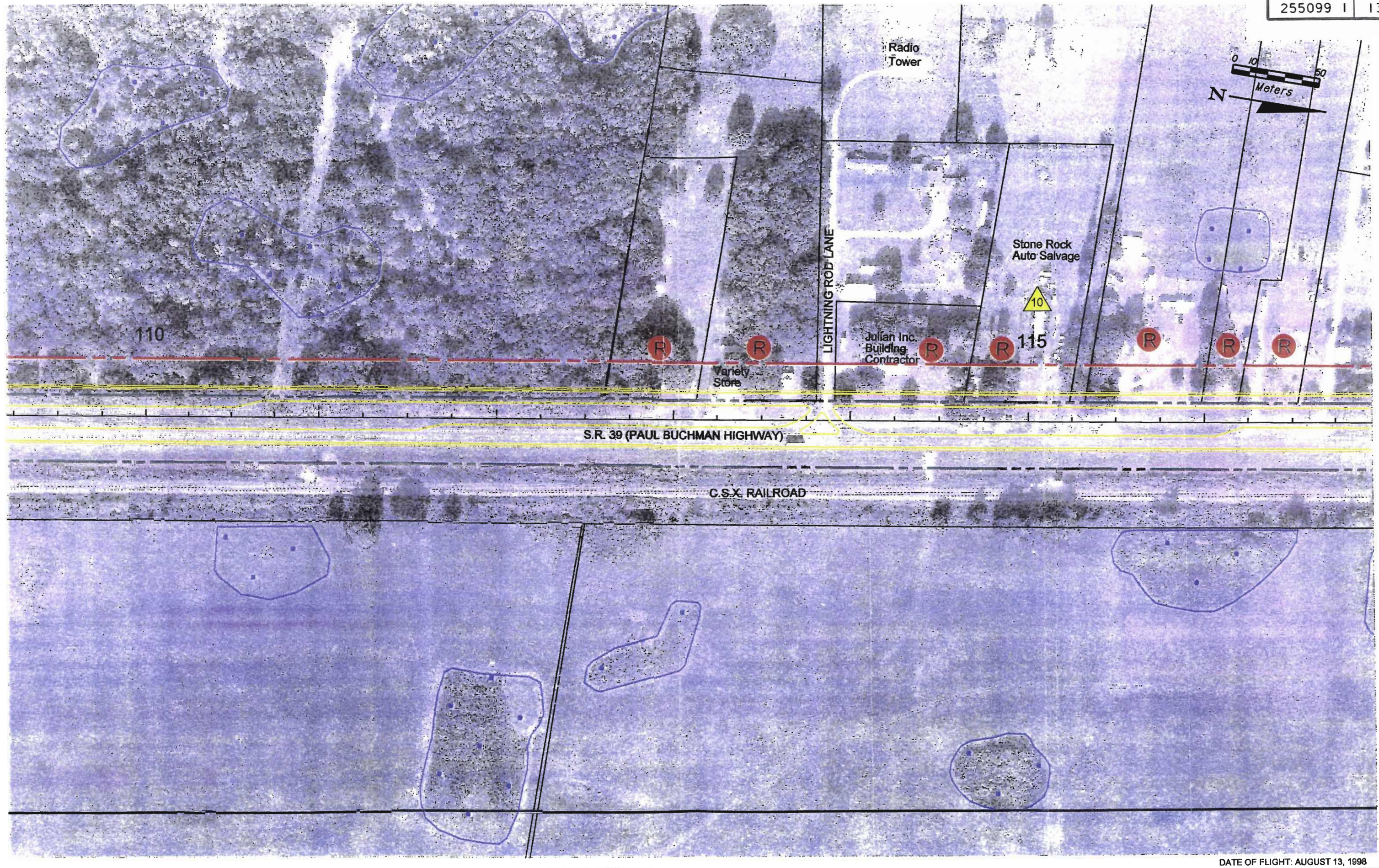
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	13



DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
BUSINESS RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B
RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	14

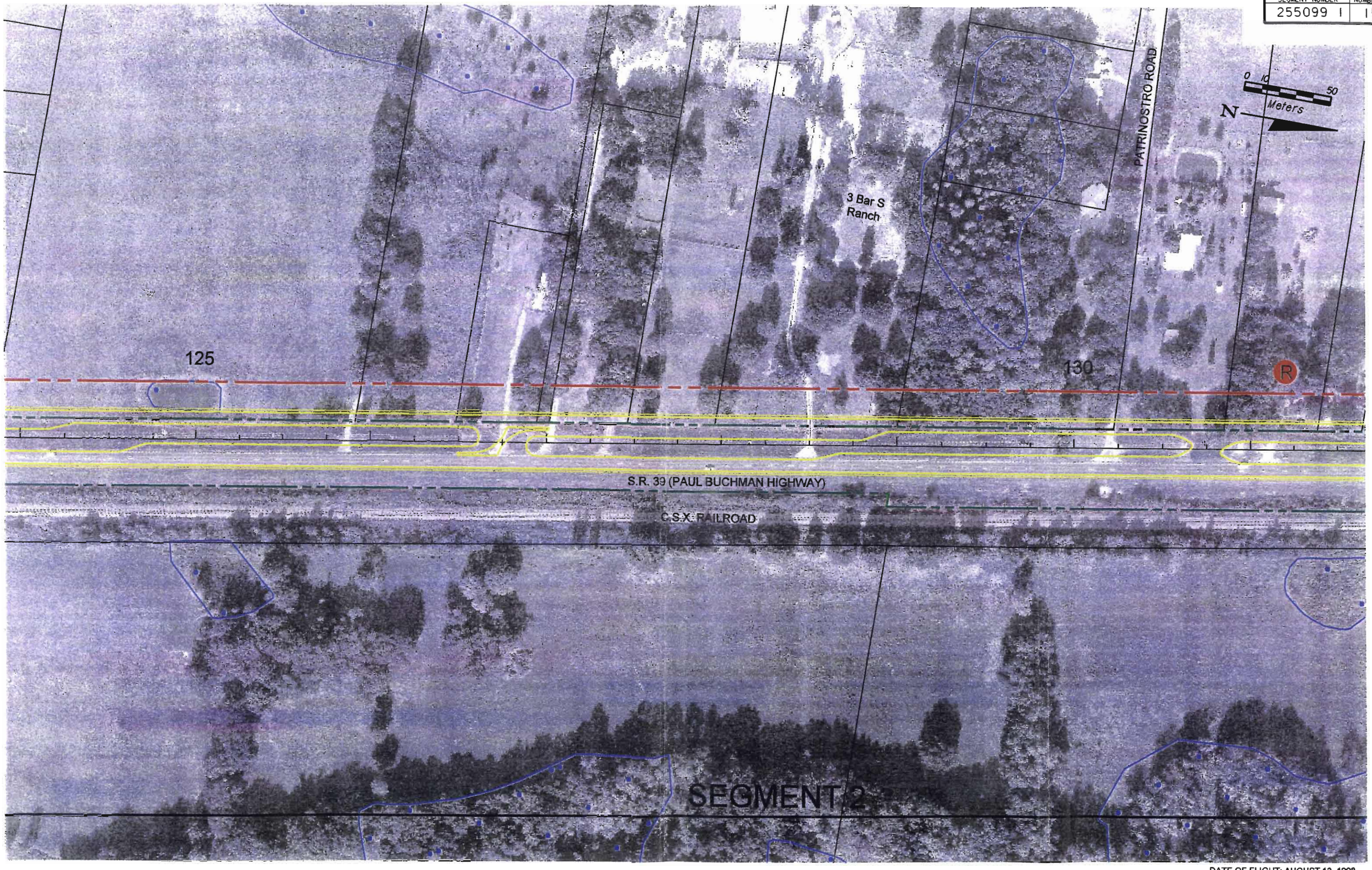
EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
6 POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

DATE OF FLIGHT: AUGUST 13, 1998

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	15



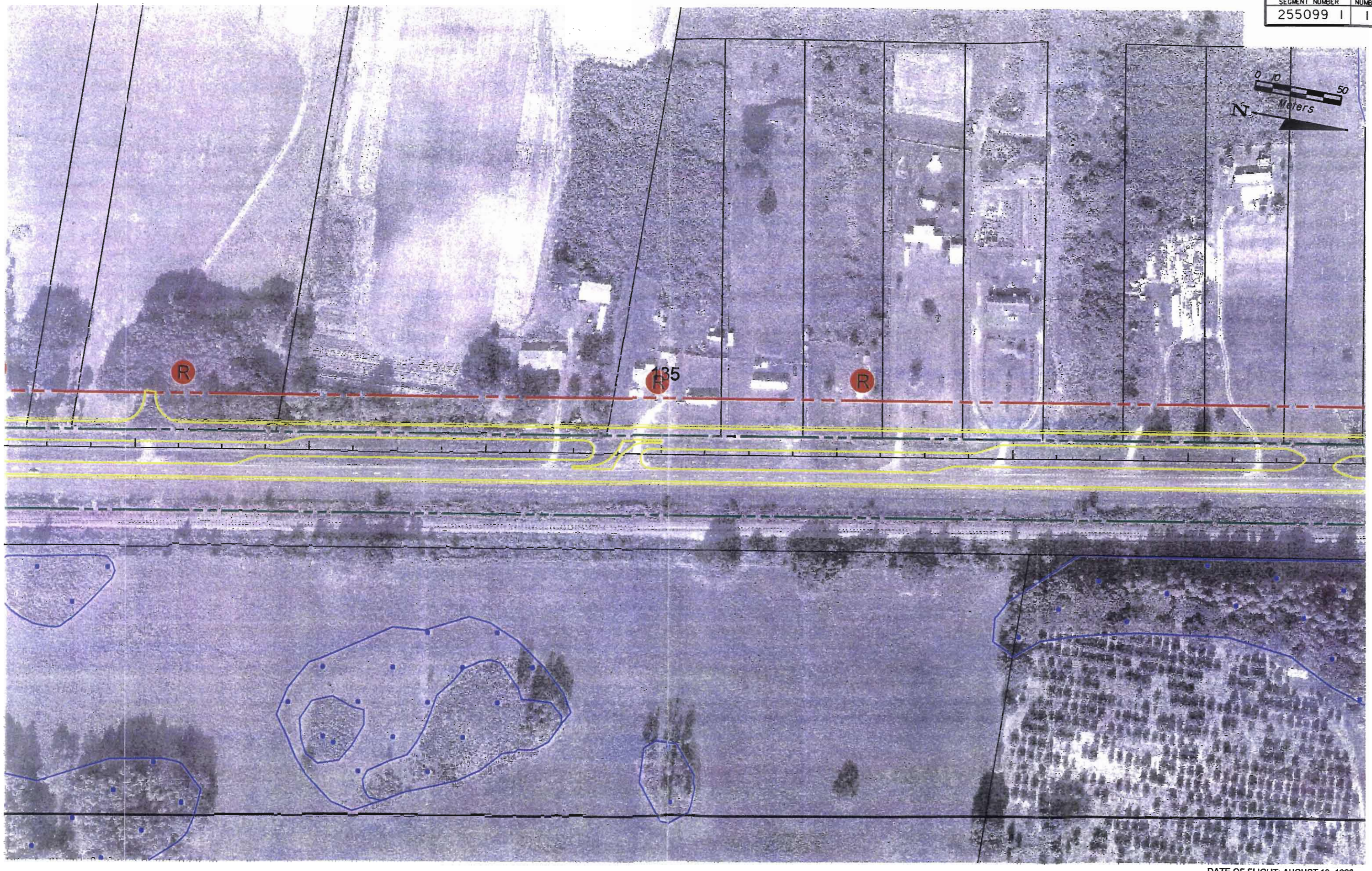
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B
RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	16



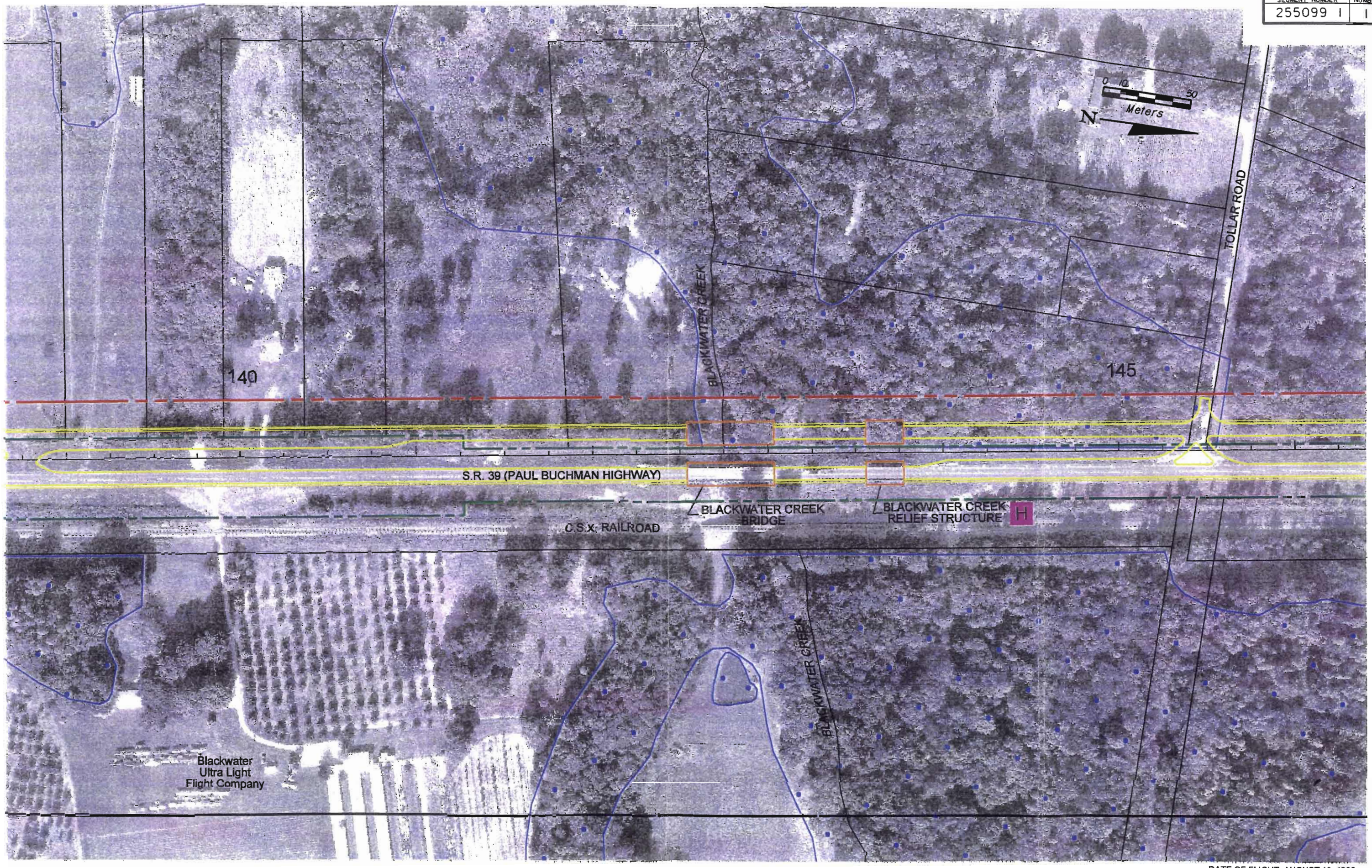
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
6 POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
BUSINESS RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	17



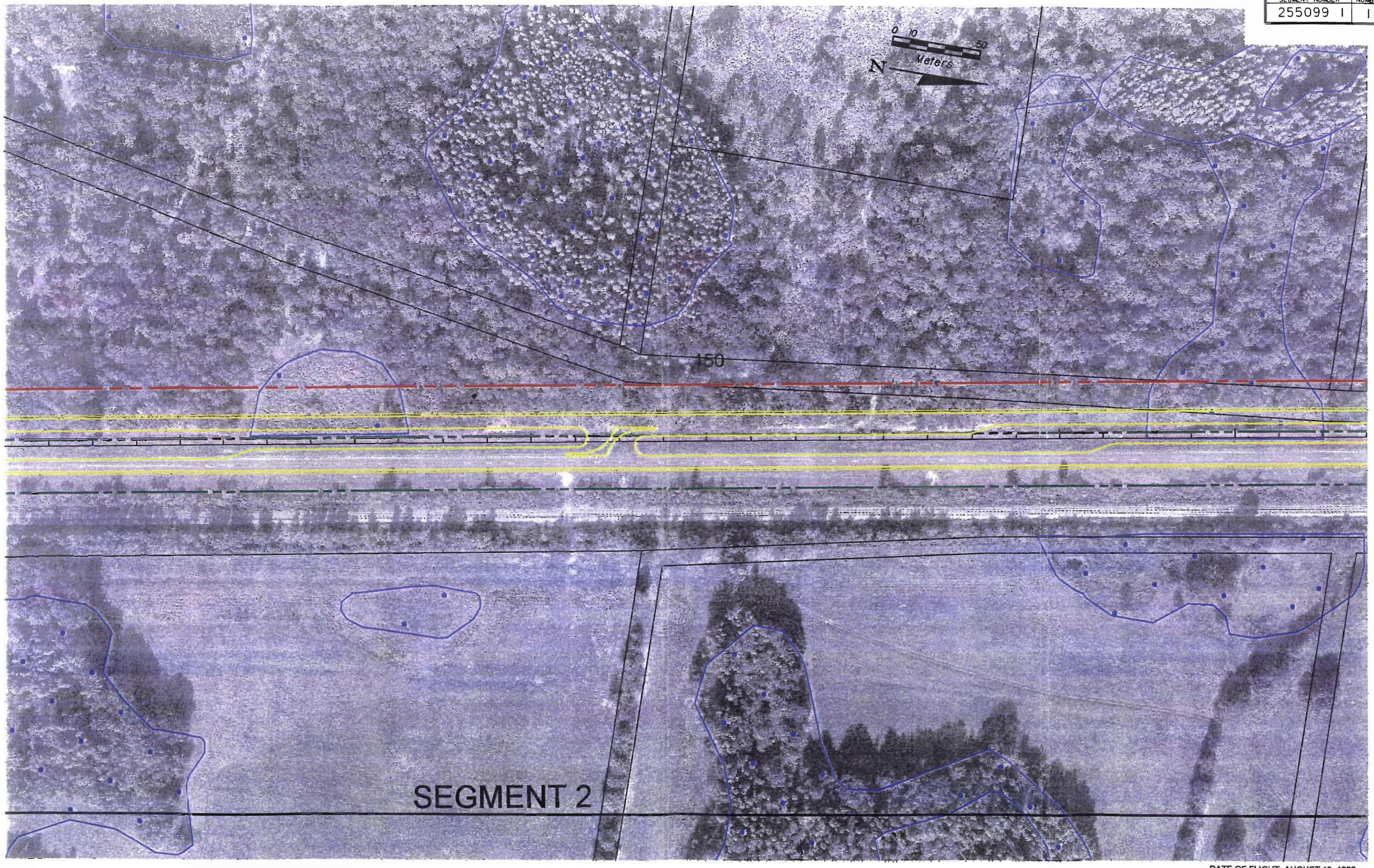
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
BUSINESS RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B
RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	18



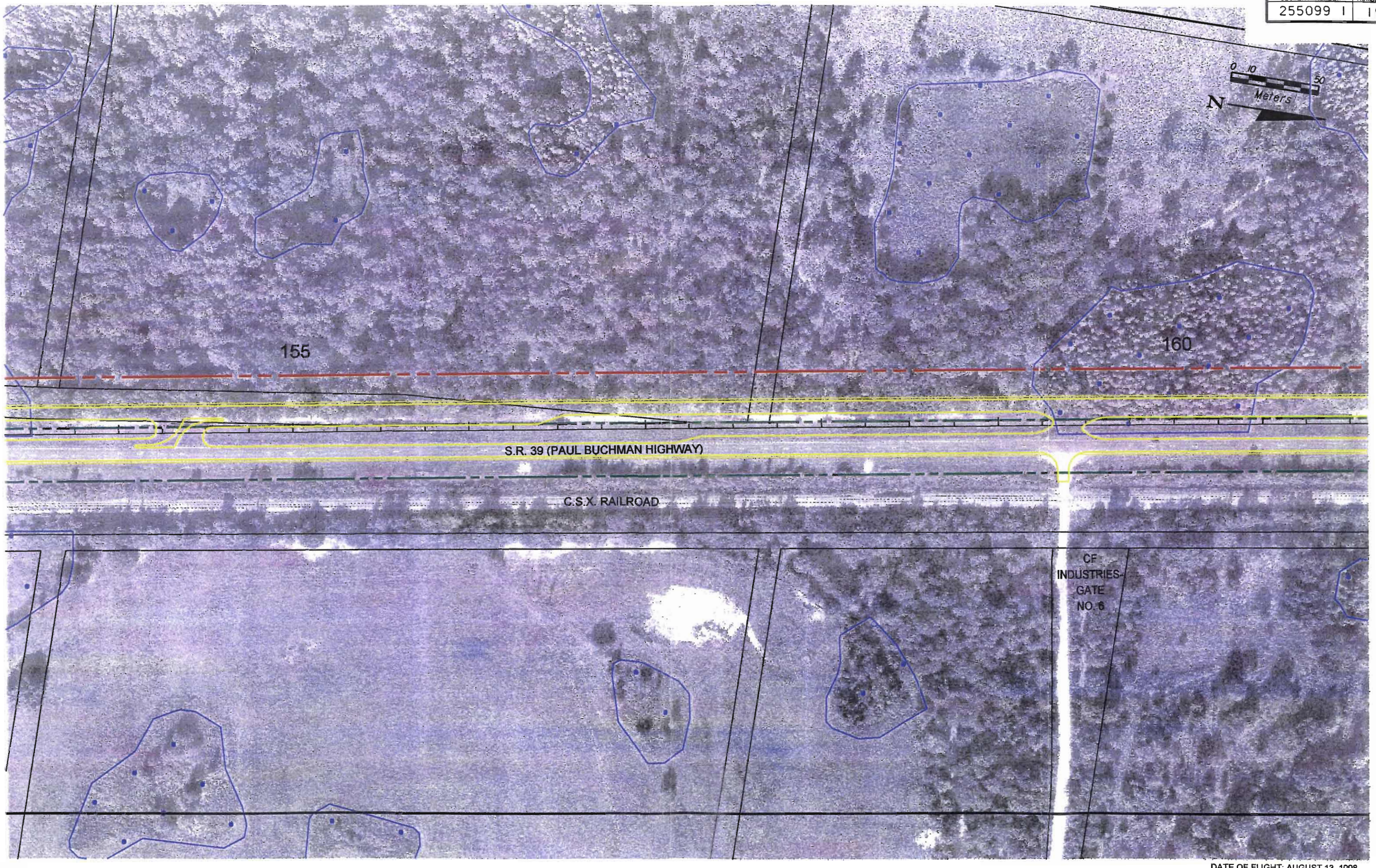
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
6 POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	19



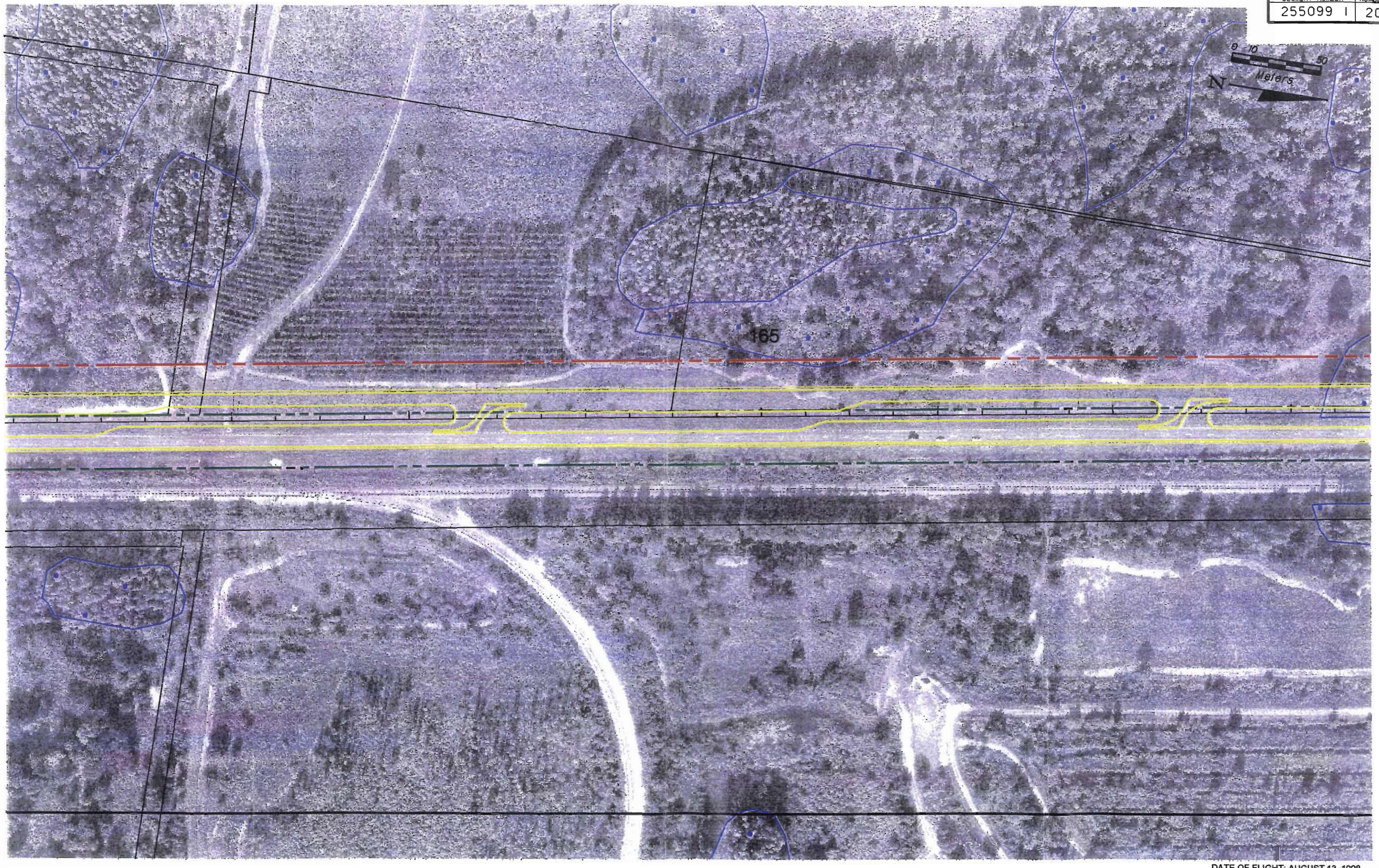
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
6 POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	20



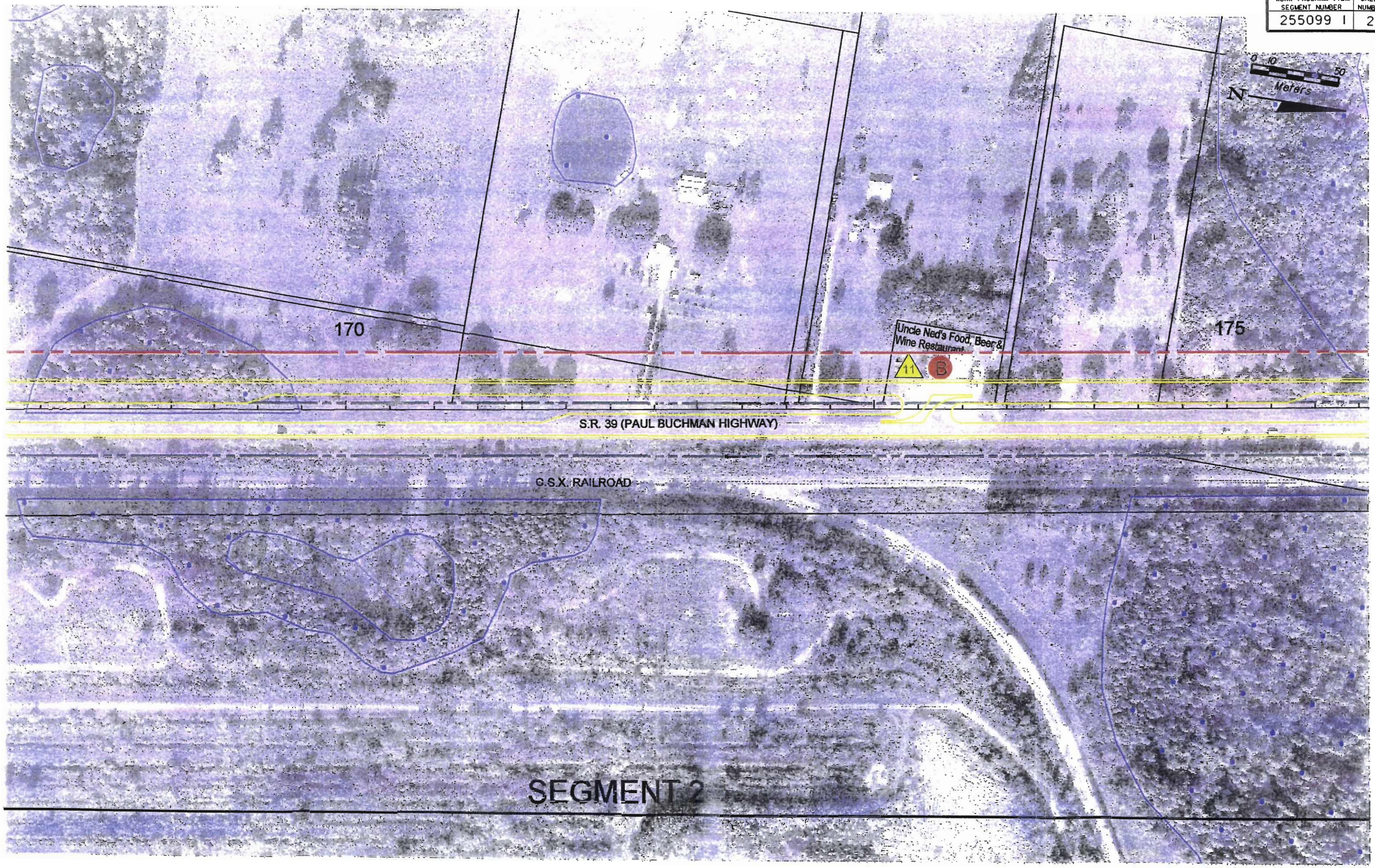
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
6 POTENTIAL CONTAMINATION SITE
H HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	21



179

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B
RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	22

0 10 50
Meters
N

COUNTY LINE ROAD

Glen's Bar
Vacant
Commercial

180

22

12

CF Industries

COUNTY LINE ROAD

180

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE

6 PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE

WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION

PROPOSED POND R/W ACQUISITION BOUNDARY

P1B RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	23

KILLDEER DRIVE
CENTRAL AVENUE
AMBER AVENUE
BAY AVENUE
U.S. Post Office
13
Circle K
Crystal Springs Produce Barn
Pasco County Fire Station 18
Crystal Springs Community Hall
185
190
PARTRIDGE BOULEVARD
S.R. 39
C.S.X. RAILROAD
BAY AVENUE
0 10 50 Meters
N

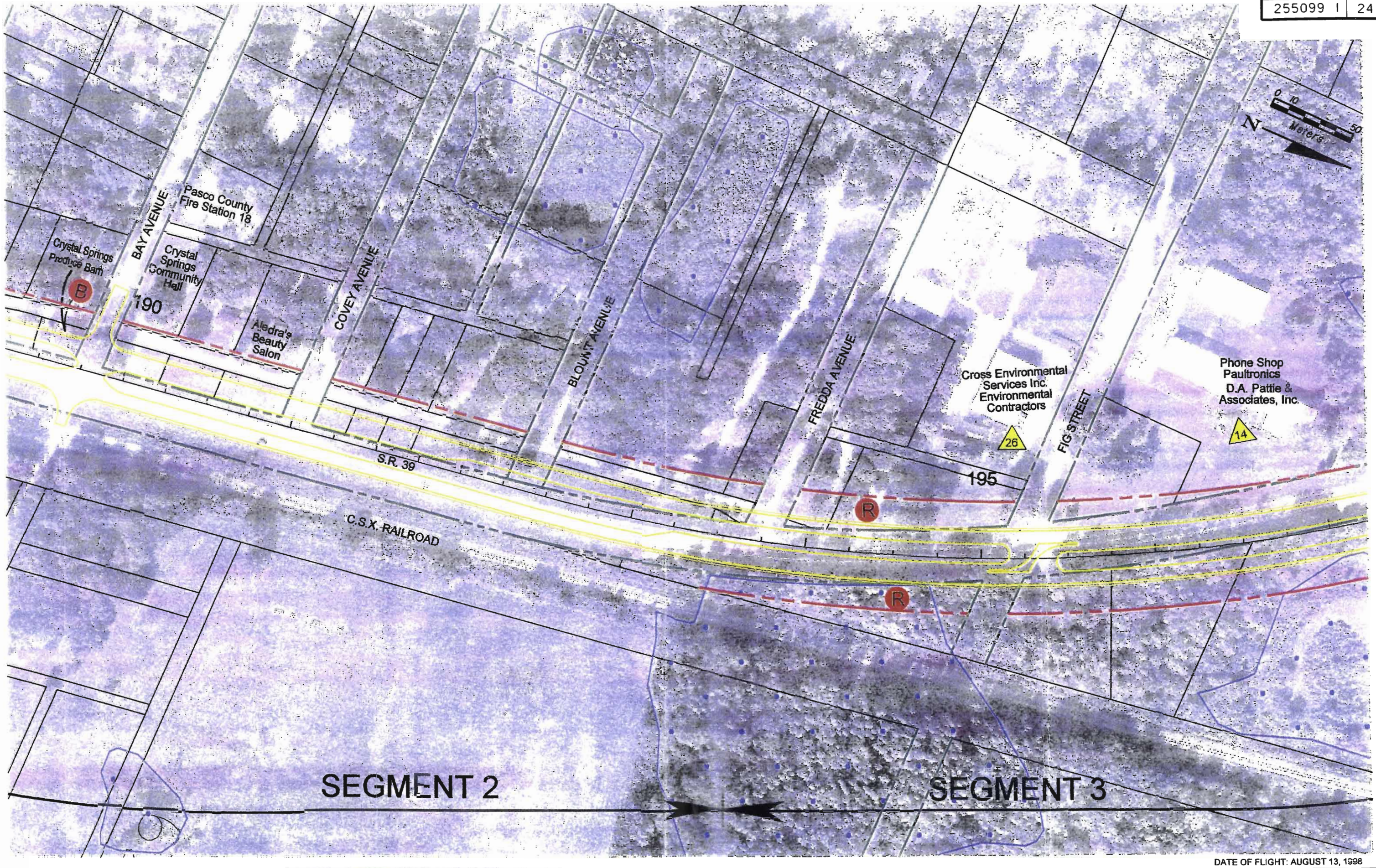
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B
RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	24



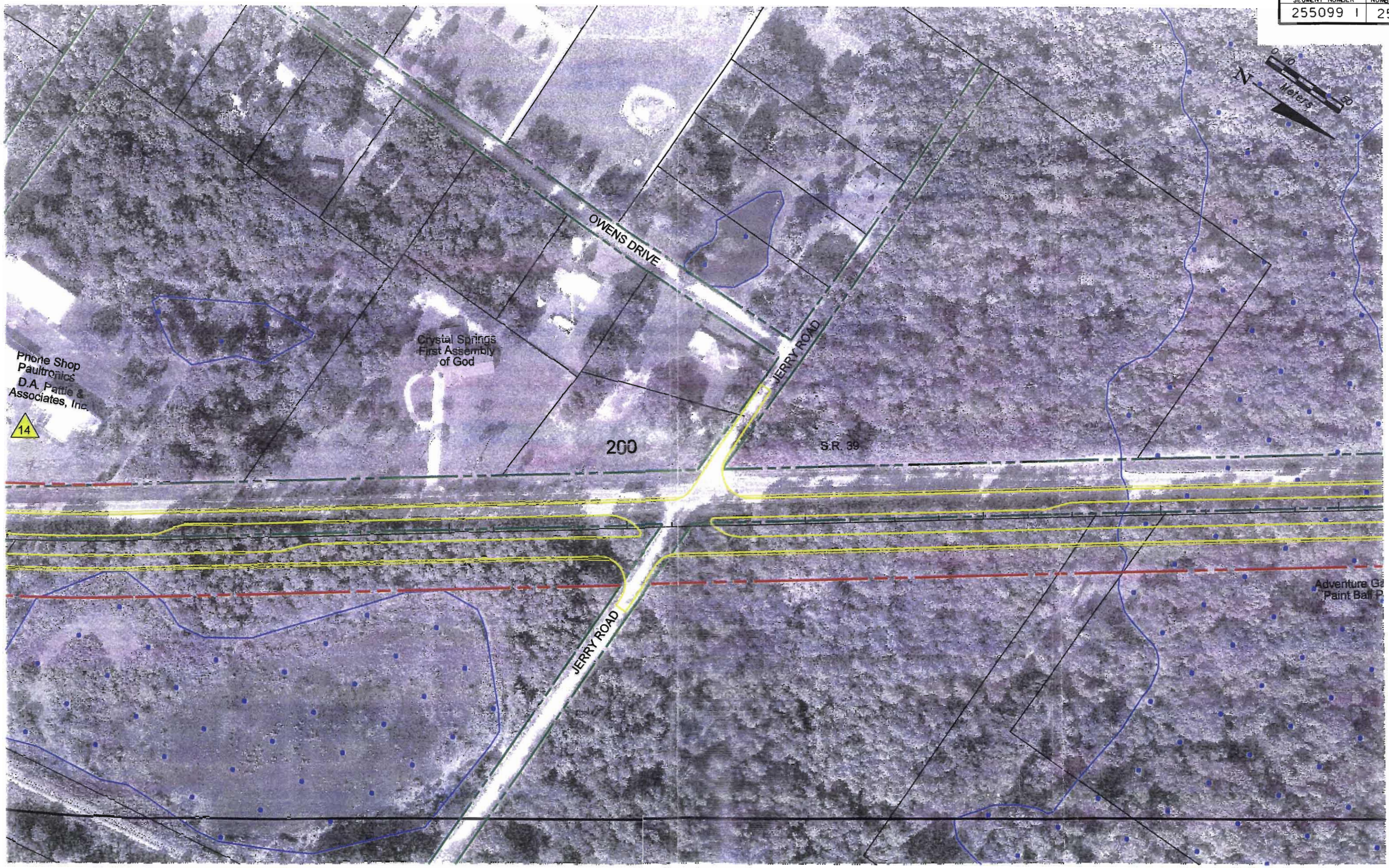
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P-1B
RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	25



DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
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RECOMMENDED POND SITE LOCATION
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FLORIDA DEPARTMENT OF TRANSPORTATION

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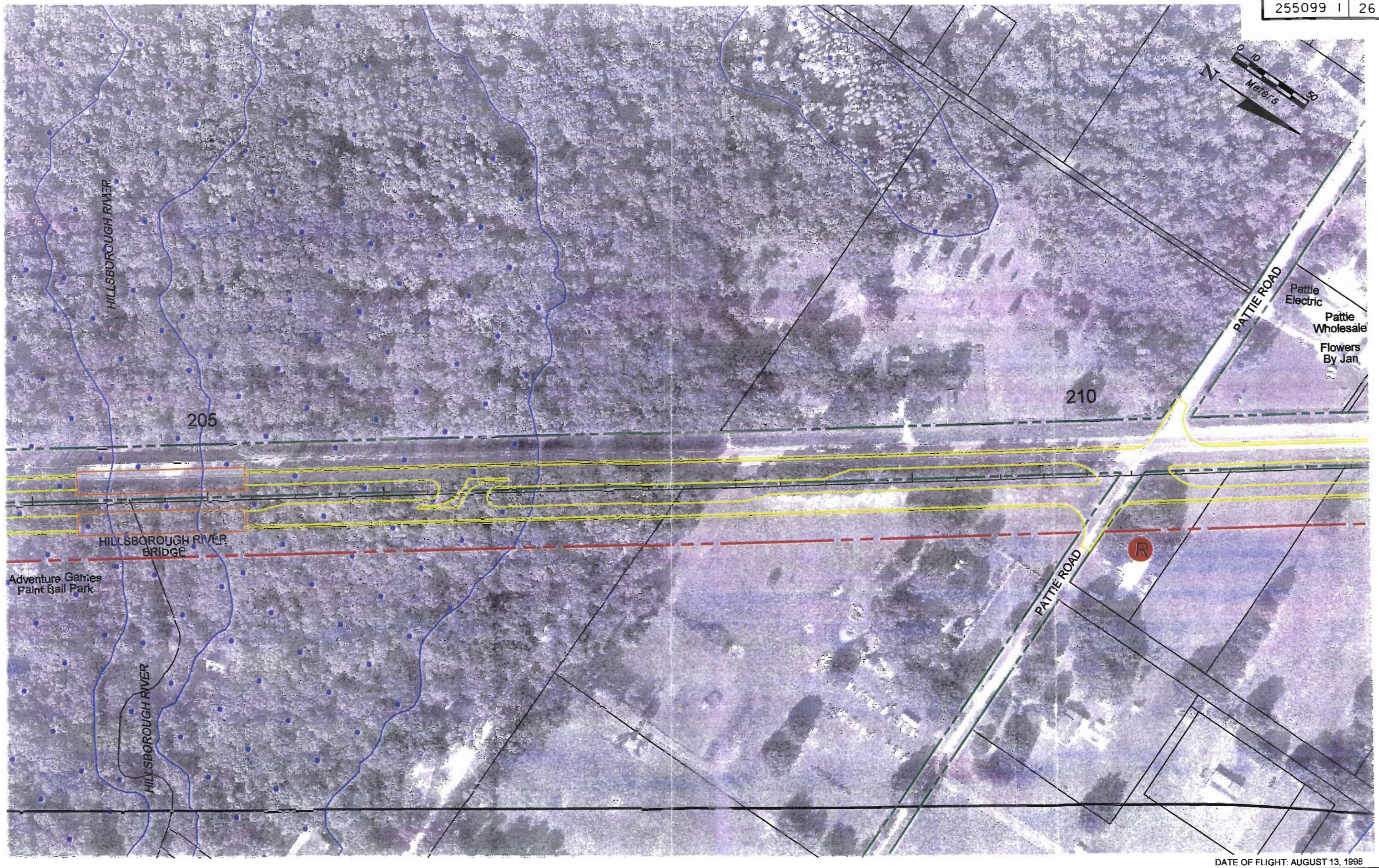
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	26



DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
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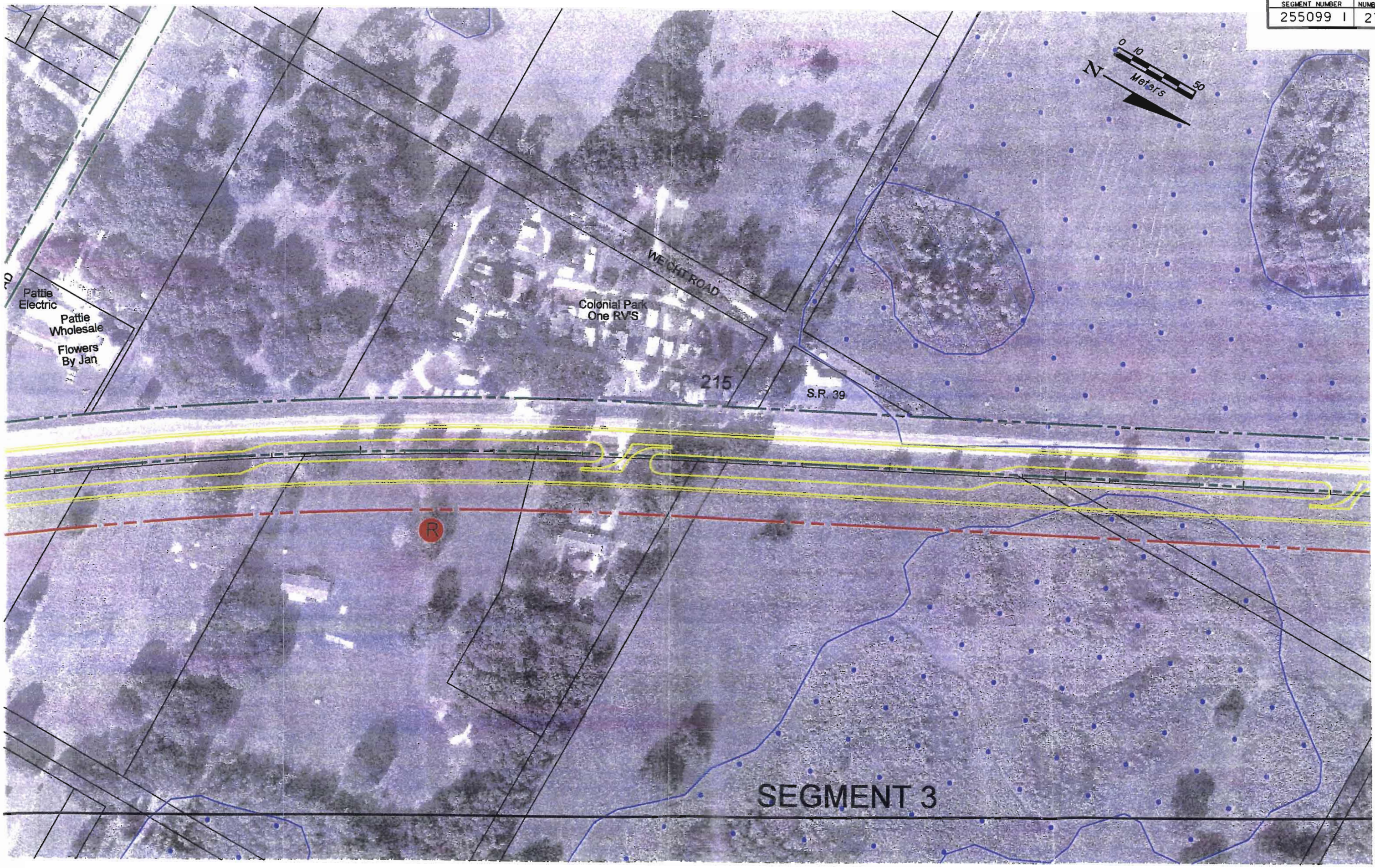
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	27



EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED BRIDGE STRUCTURE
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
HISTORIC STRUCTURE
WETLAND BOUNDARY
BUSINESS RELOCATION
RESIDENTIAL RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

DATE OF FLIGHT: AUGUST 13, 1998

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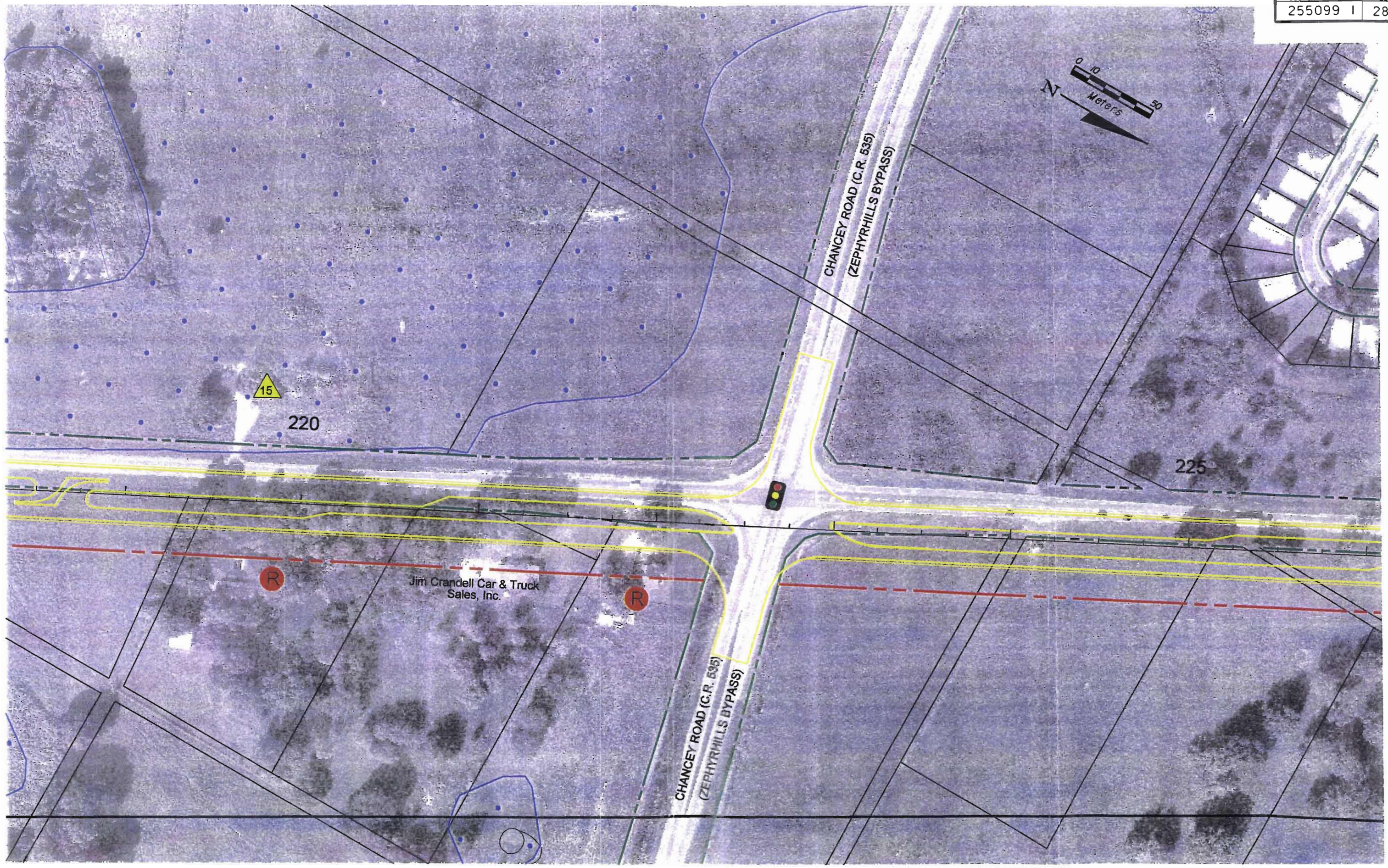
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	28



DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
BUSINESS RELOCATION
PROPOSED POND R/W ACQUISITION BOUNDARY
P1B
RECOMMENDED POND SITE LOCATION
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FLORIDA DEPARTMENT OF TRANSPORTATION

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PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	29

0 10 50 Meters

N

Shady Oaks

SHADY OAKS DRIVE

230

S.R. 39

Ramblewood Village

The Ramblewood Sales Center

OLD CRYSTAL SPRINGS ROAD

U.S. 301

Clyde's Cottages & RV's

CLYDE DRIVE

Art Gallery

Alan Chenkin Sales, Service, Parts

16

Cumberland Farms

17

S.R. 39

Cornerstone Business L.C.

VFW George R. Braxmann Post 8154

TUCKER ROAD

SEGMENT 3

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY

PROPERTY LINES
6 POTENTIAL CONTAMINATION SITE

WETLAND BOUNDARY
BUSINESS RELOCATION

PROPOSED POND R/W ACQUISITION BOUNDARY

P1B RECOMMENDED POND SITE LOCATION
POND OUTFALL LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

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WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	30

DIXON STREET
Zephyr Senior Mobile Park
lewood lage
Clyde's Cottages & RV's
CLYDE DRIVE
CRYSTAL SPRINGS ROAD
S. 301
TUCKER ROAD
Sullivan Auto Sales
PALM GROVE DRIVE
20
United 500
Plymale Appliance Inc.
Zephyr Radiator
COREY STREET
Vagabond Village RV Park
FIR AVENUE
OJ's Seafood
Barrentine's Fruit Stand
Repo Mart
VINSON AVENUE
0 10 50
Meters
N
U.S. 301 (GALL BOULEVARD)
Art Gallery
Alan Chenkin Sales, Service, Parts
16
Cumberland Farms
17
Rick's Fresh Stop Fruit Stand
S.R. 39
VFW George R. Braxmann Post 8154
Cornerstone Business L.C.
TUCKER ROAD
Vacant Commercial
Twilite Motel
Geno's Auto Repair Mid Florida Golf Cars
18
Suite Thing Auto Repair
19
Custom Auto Service
WP Johnston Trust
Statewide Cabinets
PALM GROVE DRIVE
Betty's Service
21
Produce
FIR AVENUE
Donnelly Auto Sales
1st RV and Refrigeration
D & A Antiques
CALVIN AVENUE
Citgo Sav-E-Ton

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
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