37A07

Federal Highway Administration
Region Four

ADMINISTRATIVE ACTION
ENVIRONMENTAL ASSESSMENT

U.S. Department of Transportation
Federal Highway Administration
and
Florida Department of Transportation
in Cooperation with
Pasco County

State Project No. 14504-1601
Federal Project No. RS-7810(4)
Work Program No. 7125920

SR 54 from Cypress Creek to Zephyrhills East Bypass/Chancey Road, Pasco County, Florida

This project considers the construction of a new 6-lane divided rural roadway for SR 54 in southern Pasco County, Florida. Project limits are from Cypress Creek located 1/4 mile west of I-75 to the Zephyrhills East Bypass/Chancey Road intersection on the east, a distance of approximately 14 miles. The project includes the construction of a new full diamond interchange for I-75 located 2 1/2 miles south of the existing I-75/SR 54A interchange.

Submitted Pursuant to 42 U.S.C. 4332(2)(c)

Approved for Public Availability

4/6/92
Date

Bobby W Blackburn
for Division Administrator
Federal Highway Administration

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1.0 DESCRIPTION OF THE PROPOSED ACTION

This study considers the location of a second east/west roadway south of the existing SR 54 (from here on referred to as SR 54A) corridor. Project limits for this study are from Cypress Creek at the western terminus to the Zephyrhills East Bypass at the eastern terminus, a distance of approximately 14 miles, which includes a 1-mile segment of U.S. 301 from the new SR 54 (to be constructed in the study corridor) to the Zephyrhills East Bypass/Chancey Road intersection.

Figure 1-1 is an area location map identifying the location of the project within Pasco County, Florida. Figure 1-2 shows the location of the study corridor. Because this is a new alignment, there is no existing highway. A multilane rural typical cross section that would ultimately provide for a 6-lane divided highway with a 50-foot grassed median in 250 feet of right-of-way was selected for evalution.

The project also proposes to improve the existing 2-lane rural facility of U.S. 301 to a 4-lane rural divided highway from the new SR 54 alignment intersection to the Zephyrhills East Bypass/Chancey Road, a distance of approximately 0.76 mile. In addition, the project includes the proposed construction of a new I-75 interchange for the proposed SR 54 project. The proposed interchange would be a full-diamond interchange located approximately 2.5 miles south of the existing SR 54A interchange and 1.5 miles north of the I-75/I-275 apex.

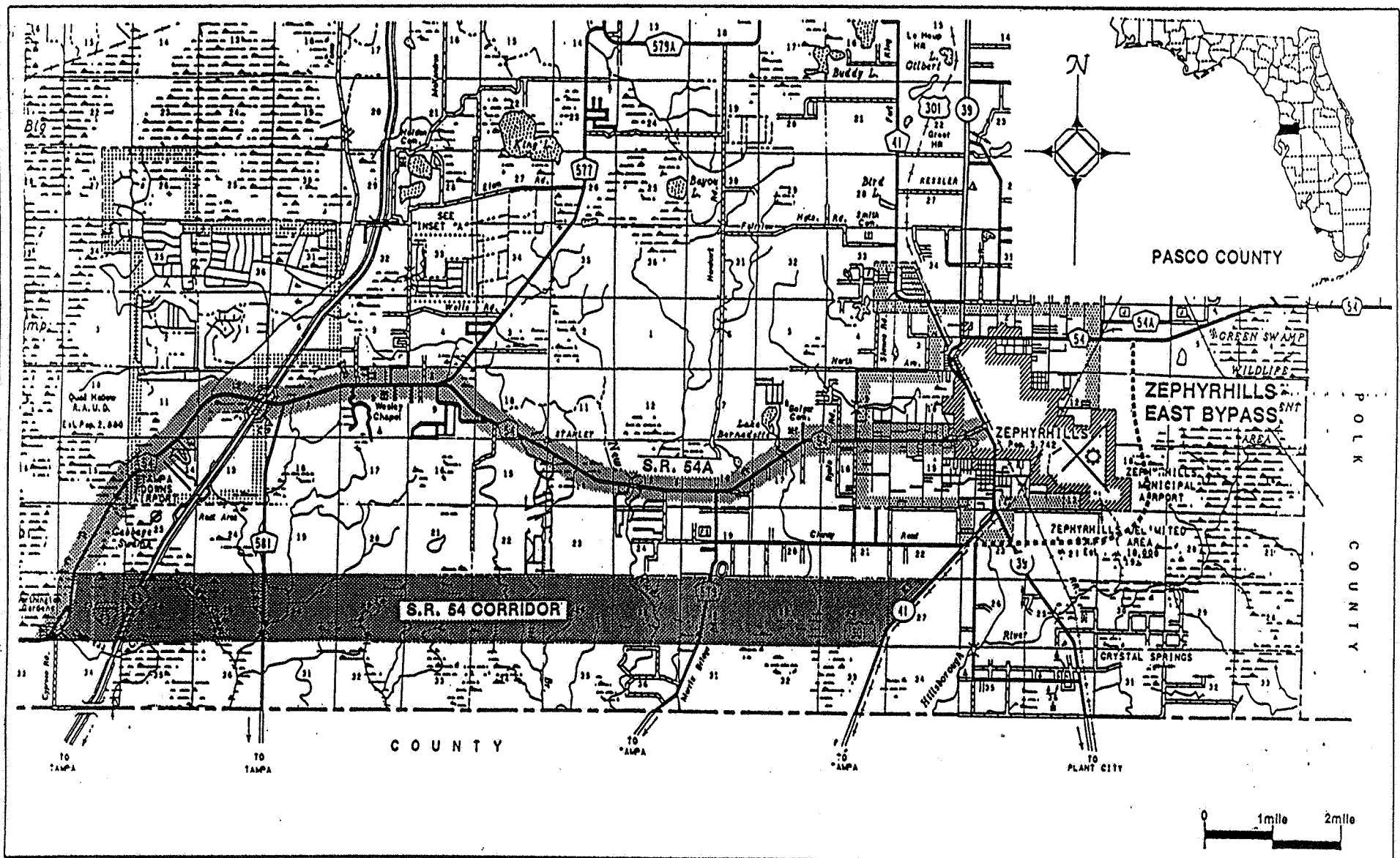


Figure 1-1

AREA LOCATION MAP

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

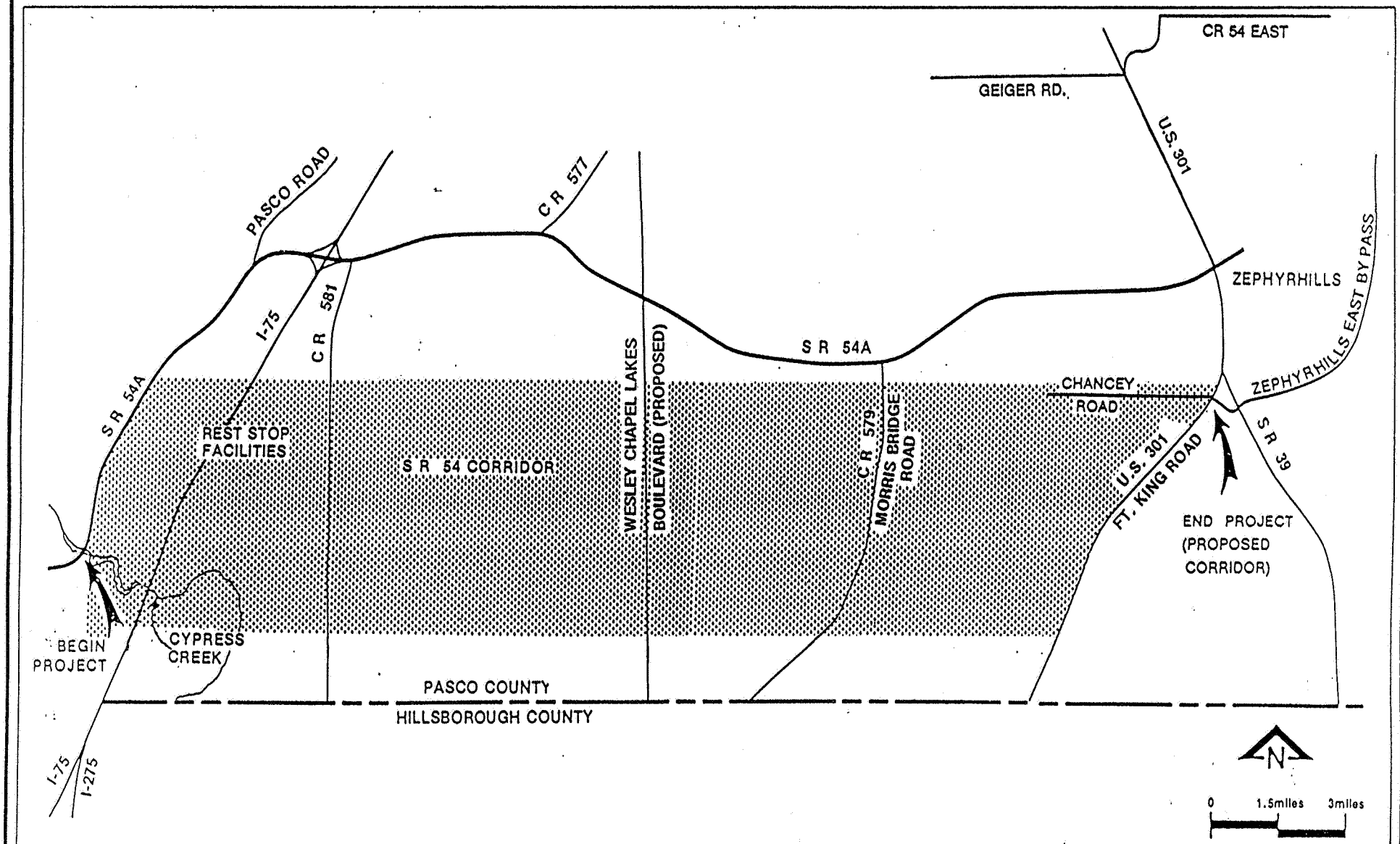


Figure 1-2
STUDY CORRIDOR

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

2.0 NEED

2.1 PLANNING BASIS FOR PROPOSED ACTION

Pasco County has recently experienced rapid suburban development, and this growth is expected to continue as the large amount of existing vacant land is developed and existing land use is improved for the highest and best use. Currently, there are six large developments either under construction or proposed for the area adjacent to I-75 and east to CR 579, a distance of approximately 6 miles (Figure 2-1). These developments include Saddlebrook Village, Northwood, Trout Creek, Wesley Chapel, Oak Lake Village, and Williamsburg. These existing or proposed developments will border the proposed roadway. These six developments cover approximately 9,000 acres and include the development of 17,300 homes with 3.1 million square feet (msf) of light industrial development and a large shopping center. The above-projected development within the project limits is in accordance with the Pasco County Land Use Element and the goals established in Pasco County's Draft Comprehensive Plan.

Pasco County updated their 1982 adopted Comprehensive Plan to be consistent with the 1985 Local Government Comprehensive Planning and Land Development Regulation Act, Chapter 163, Florida Statutes (FS). The proposed east/west roadway (SR 54) is consistent with the Future Land Use Element of the Updated Comprehensive Plan.

2.2 SYSTEMS LINKAGE

The proposed SR 54, a new east/west roadway for southern Pasco County, will provide an improved balance to the transportation systems network of southern Pasco County. The proposed roadway would be located approximately 2.5 miles south of the existing SR 54A and approximately 2.0 miles north of the Pasco/ Hillsborough County line. With the new SR 54, motorists will have alternate travel routes between I-75 and U.S. 301. The construction of a new interchange on I-75 located approximately 2.5 miles south of the existing I-75 interchange at SR 54A will provide an alternate access point for motorists in southern Pasco County. An Interchange Justification Report was approved by FHWA on July 10, 1990 which authorized the construction of a new I-75 interchange at SR 54.

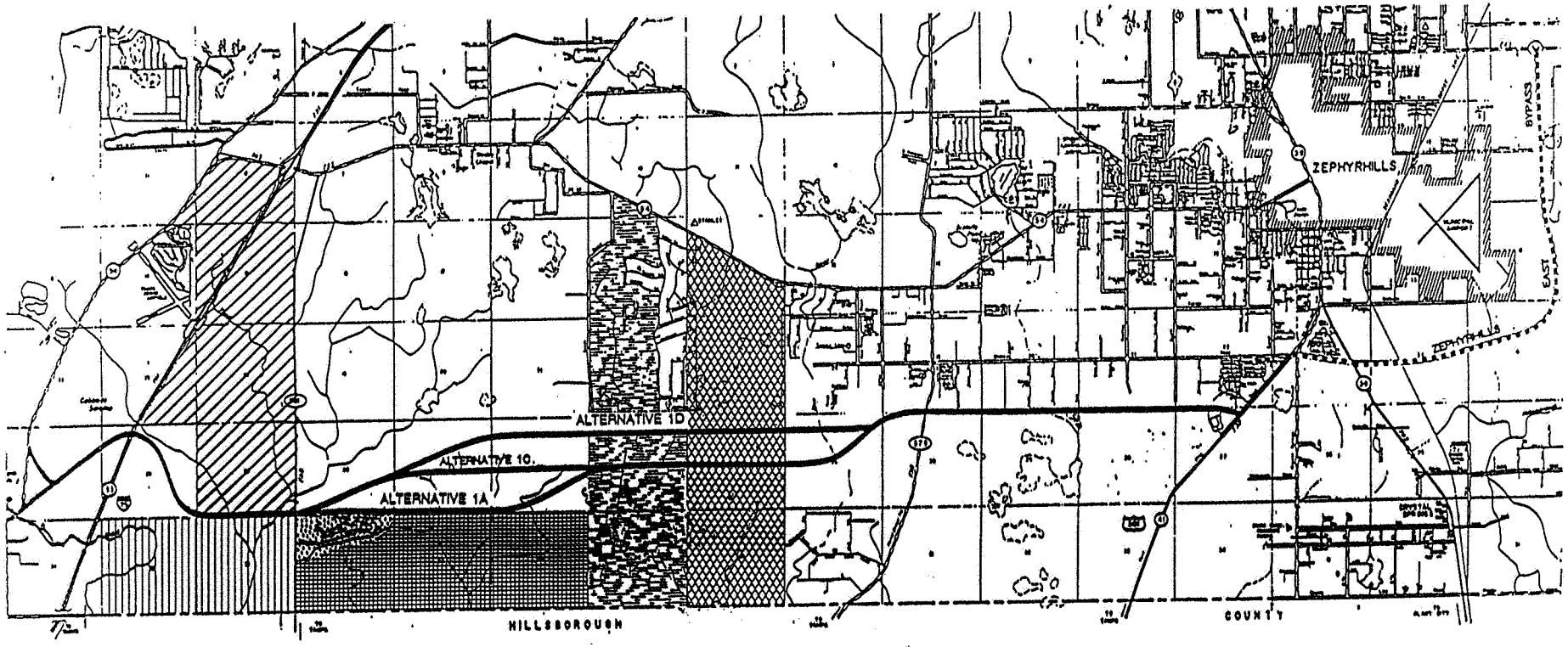


Figure 2-1
PLANNED DEVELOPMENT ADJACENT TO PROPOSED SR 54 CORRIDOR

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

Several proposed roadway improvements in Pasco County will affect the need for the new east/west roadway. The first improvement is the Zephyrhills East Bypass (Figure 2-1). The bypass, which was developed by Pasco County, was completed in May, 1991 from US 301 to CR 54 East. The bypass provides a 2-lane rural facility from U.S. 301 to SR 34A east of Zephyrhills. At U.S. 301, the bypass will form the eastern leg of the U.S. 301/Chancey Road intersection. The bypass is expected to divert through traffic from existing SR 54A in Zephyrhills to new SR 54 via U.S. 301.

A second improvement, U.S. 301 from Chancey Road north to SR 54 east, is under study by the City of Zephyrhills. A one-way pair system with two travel lanes in each direction is proposed for the majority of U.S. 301 in the downtown Zephyrhills area. To provide linkage with these proposed roadway improvements in the Zephyrhills area, the SR 54 study limits were expanded to include U.S. 301 from (proposed) SR 54 to Chancey Road. Required improvements for this section of U.S. 301 have been identified in this study. With the incorporation of this segment of U.S. 301 from proposed SR 54 to Chancey Road, an improved interconnected roadway network will be established for motorists to travel through or around Zephyrhills.

Within the project study area, there are a number of approved as well as proposed developments. Wesley Chapel Lakes is a proposed commercial/ residential development (see Figure 2-1). As a part of the proposed development, Wesley Chapel Lakes Boulevard would be constructed from the proposed SR 54 new alignment and would connect with a proposed extension of County Line Road. When completed, Wesley Chapel Lakes Boulevard would provide a North-South roadway from SR 54A south to the proposed County Line Road.

Improvements to SR 54 from U.S. 19 to the Cypress Creek Bridge has been approved. FHWA approved a Categorical Exclusion on May 10, 1991 to upgrade the existing 2-lane rural highway to a multilane divided highway. Cypress Creek Bridge, which is located approximately 1/4 mile west of I-75 and approximately 2.5 miles south of the existing I-75 interchange on SR 54A, is the common point for both studies. The implementation of the proposed improvements for both studies will result in the improvement of SR 54 from U.S. 19 to U.S. 301 to a major east/west arterial highway for southern Pasco County.

2.3 CAPACITY

A traffic study was conducted to determine year 2010 design year traffic conditions along existing SR 54A. The projected traffic volumes listed in Table 2-1 for SR 54A were calculated assuming the proposed SR 54 would not be constructed. As indicated in Table 2-1, most segments along SR 54A would need to be improved by the year 2010. Required improvements along SR 54A would include a 4-lane freeway from Cypress Creek to I-75, an 8-lane freeway from I-75 to CR 581, a 6-lane freeway from CR 581 to CR 577, a 4-lane freeway from CR 577 to Wesley Chapel Lakes Boulevard, a 6-lane divided highway from Wesley Chapel Lakes Boulevard to CR 579, and a 4-lane divided highway from CR 579 to U.S. 301 in Zephyrhills. The magnitude of the required improvements to the existing SR 54A are a direct result of the proposed developments planned for the relatively vacant area which currently exists between existing SR 54A and the Pasco/Hillsborough County line from I-75 to CR 579.

A traffic study was performed for this project which evaluated both corridors in place by the 2010 design year. Figure 2-2 identifies the projected daily traffic volumes on SR 54, SR 54A, and all major intersecting roadways within the project limits. The results of the traffic study indicated that a new east/west highway would reduce the required improvements to the existing SR 54A for the 2010 design year.

The level of service of a highway is an indicator of the general operating condition of the traffic flow and is based on factors such as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. Level of Service (LOS) A represents an ideal condition of free flow traffic. LOS B represents a slightly lower condition in which drivers experience a decline in the freedom to maneuver because interaction between vehicles is significant and a corresponding slower speed is experienced. LOS C represents a condition in which interaction between vehicles is significant and a corresponding slower speed is experienced. LOS D represents a high-

Table 2-1. Projected 2010 Traffic Conditions Along SR 54A, Without Improvements

Facility	Link	Existing Laneage	Projected AADT	Projected LOS Without Improvements	Laneage Required To Maintain LOS C Conditions
SR 54A	Cypress Creek to I-75	2L	57,100	F	4LF
	I-75 to CR 581	2L	104,100	F	8LF
	CR 581 to CR 577	2L	64,300	F	6LF
	CR 577 to Wesley Chapel Lakes Boulevard	2L	53,200	F	4LF
	Wesley Chapel Lakes Boulevard to CR 579	2L	49,000	F	6LD
	CR 579 to U.S. 301	2L	31,160	F	4LD

Note:
4LF = 4-lane freeway
6LD = 6-lane divided

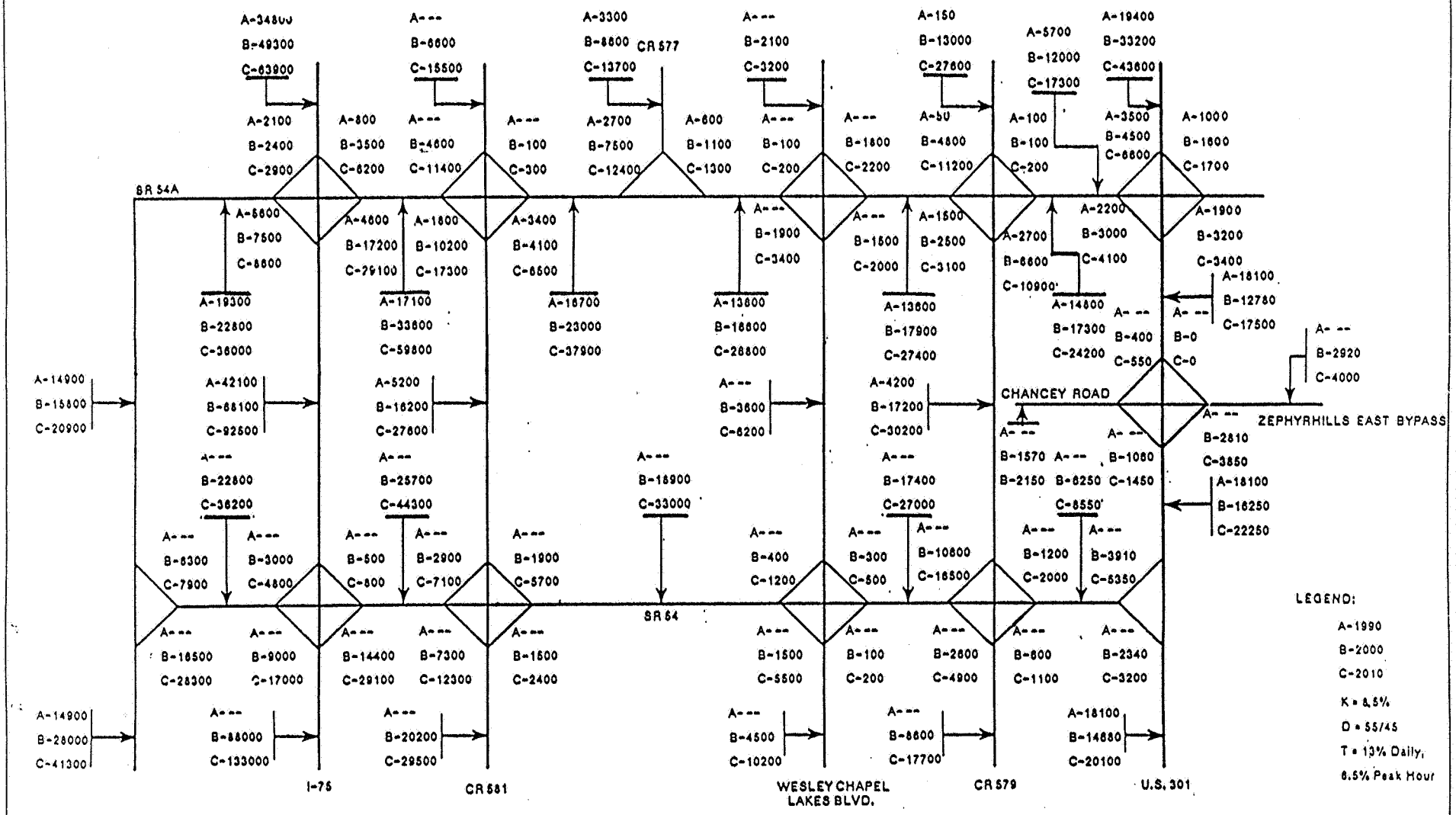


Figure 2-2
AVERAGE ANNUAL DAILY TRAFFIC VOLUMES
FOR 1990, 2000, AND 2010

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

density flow causing minor operational delays. LOS E represents a near-capacity condition in which maneuvering becomes extremely difficult. LOS F represents a breakdown flow condition in which long queues of traffic are formed causing an inconvenience to drivers.

A detailed arterial analysis was also performed for SR 54, SR 54A, and U.S. 301 using the 1985 Highway Capacity Manual (HCM) software and the FDOT Generalized Hourly Level of Service Maximum Volumes tables, dated 1988. The results of this analysis indicated that, even with construction of the proposed SR 54 facility, all arterial links along SR 54A are projected to operate at LOS F by the 2010 design year if no improvements are made. Therefore, SR 54A will need to be improved to a 4- to 6-lane divided roadway between Cypress Creek and U.S. 301 (Table 2-1).

SR 54 will need to be constructed as a 4-lane facility from existing SR 54 at Cypress Creek to I-75 and from CR 581 to CR 579, a 6-lane facility from I-75 to CR 581, and a 2-lane facility from CR 579 to U.S. 301 by year 2010. U.S. 301 will also need to be improved to a 4-lane divided roadway from the proposed SR 54 to the Zephyrhills East Bypass/Chancey Road intersection. Projected year 2010 traffic volumes and required laneage for SR 54 and U.S. 301 are shown in Table 2-2.

Results of a detailed intersection analysis (found in the Traffic Report, a separate report prepared for this study) indicated that several intersections along SR 54A and U.S. 301, and the proposed intersection along SR 54, will need to be improved in order to operate at an acceptable operating standard (LOS C or better) by the 2010 design year.

A complete analysis of the future needs and improvements for (existing) SR 54A is outside the scope of this study but will be addressed in a separate study at a later date.

2.4 CONSISTENCY WITH TRANSPORTATION PLAN

The proposed new east/west roadway for SR 54 has been determined to be consistent with the State Transportation Plan. The proposed construction of

Table 2-2. Projected 2010 Traffic Conditions Along SR 54A, SR 54, and U.S. 301 With Improvements

Facility	Link	Existing Laneage	Projected AADT	Projected LOS With Improvements	Laneage Required To Maintain LOS C Conditions
SR 54A	Cypress Creek to I-75	2L	20,900	C	4LD
	I-75 to CR 581	2L	59,800	C	6LD
	CR 581 to CR 577	2L	37,900	C	6LD
	CR 577 to Wesley Chapel Lakes Boulevard	2L	26,800	C	4LD
	Wesley Chapel Lakes Boulevard to CR 579	2L	27,400	C	4LD
	CR 579 to U.S. 301	2L	24,200	C	4LD
SR 54	Cypress Creek to I-75	N/A	36,200	C	4LD
	I-75 to CR 581	N/A	44,300	C	6LD
	CR 581 to CR 579	N/A	33,000	C	4LD
	CR 579 to U.S. 301	N/A	8,550	C	2L
U.S. 301	SR 54 to Chancey Road	2L	22,250	C	4LD

Note:
6LD = 6-lane divided

SR 54 has been determined to be in accordance with the Traffic Circulation Element of the Pasco County Comprehensive Plan, adopted by Pasco County Board of County Commissioners on June 16, 1989. The proposed project would provide a second east/west facility to carry the increased projected traffic resulting from commercial and residential development that is projected in the Pasco County Comprehensive Plan.

2.5 SOCIAL/ECONOMIC DEMAND

According to the University of Florida Bureau of Economic and Business Research (BEBR), Pasco County was the 15th fastest growing county in the state from 1976 to 1986. Pasco County had a 1986 population of 245,696 persons compared to its 1976 population of 149,400, which represents a 64.5 percent population increase. Population growth in Pasco County is expected to continue at a rapid rate. This projected growth will continue to cause an increase in traffic volumes on SR 54A, which will result in increased delays for motorists traveling on this roadway. Based on these factors, the need exists to construct a second east/west facility. In addition, the construction of a new roadway will have a positive impact on emergency response times. Pasco County's economic base is predominantly trade and services oriented.

2.6 FEDERAL, STATE, OR LOCAL GOVERNMENTAL AUTHORITY

The proposed east/west roadway for SR 54 has proceeded in cooperation with the goals and policies of federal, state, and local governmental authority. This cooperation has been facilitated through frequent communication and through meetings between members of the project team and involved agencies. An Advance Notification Package was mailed to the appropriate agencies, and written responses have been received. These responses are included in Appendix A of this document. Monthly meetings were held with Pasco County staff for the purpose of assuring continued coordination and input during the development of the project. In addition, a public informational meeting was held on January 19, 1989, for the purpose of presenting proposed alternatives to the general public for review and comment.

In an effort to assure effective coordination with respective permitting agencies, meetings were held with representatives from the United States Army Corps of Engineers (COE), Department of Environmental Regulation (DER), and the Southwest Florida Water Management District (SWFWMD). All comments received during the coordination meetings were taken into consideration in developing the recommended alternatives.

3.0 ALTERNATIVES CONSIDERED

3.1 CORRIDOR EVALUATION AND CONSTRAINTS

The study corridor (Figure 3-1) for the proposed SR 54 roadway traverses approximately 14 miles of undeveloped land. This study area encompasses approximately 26 square miles and is predominantly large tract ownership (see Figure 2-1). The evaluation of this corridor was based on the following criteria: 1) environmental impacts - wetland systems, floodplains, and wildlife, 2) socioeconomic impacts - relocation of existing residences, businesses, public buildings, and proposed and planned development, and 3) engineering design standards. Since the new roadway will traverse through mostly rural, undeveloped land, environmental impacts were critical to the evaluation of the corridor. A 250-foot rural typical cross section was used based upon the FDOT Manual of Uniform Minimum Standards For Design, Construction, and Maintenance For Streets and Highways (Green Book, 1986). Table 3-1 indicates the engineering design standards used for this corridor.

Several significant constraints were identified in the evaluation of the proposed corridor. On the western terminus of the corridor, these constraints included 1) the location of the I-75/I-275 junction, 2) the existing SR 54A/I-75 interchange, 3) the new rest stop facilities along I-75 south of the existing SR 54A interchange, 4) a roadway connection to existing SR 54A, and 5) an acceptable location for a new SR 54/I-75 interchange (see Figure 3-1).

Corridor impacts involving the I-75/I-275 junction, the SR 54A/I-75 interchange, and the rest stop facilities included potential weaving and merging/diverging lane conflicts between the corridor and these existing facilities. In addition, the location of the proposed SR 54/I-75 interchange within the corridor limits was also a significant issue in the evaluation of the corridor. The proposed interchange is constrained with respect to its proximity to the existing SR 54A interchange and the rest stop facilities located on I-75. The specific location of the SR 54/I-75 interchange was provided by the TIS team.

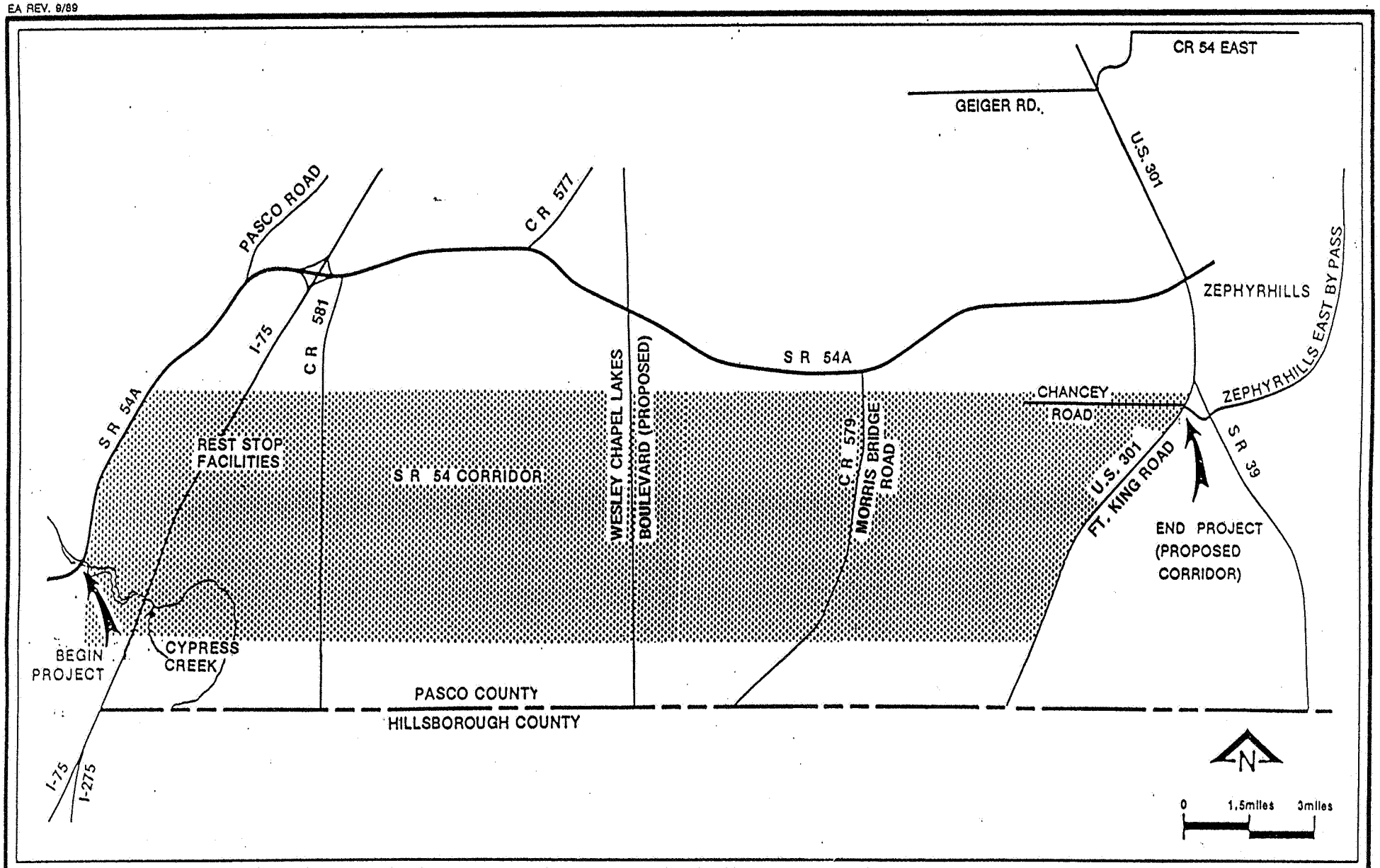


Figure 3-1
STUDY CORRIDOR

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

Table 3-1. Engineering Design Standards for the SR 54 Corridor

Type of Facility	Design Elements	Design Standards
Rural	Design Speed	70 mph
	Maximum Superelevation	0.10 foot per foot of roadway
	Maximum Horizontal Curvature	3 degrees 30 minutes
	Required Lateral Clearance	24 feet to 49 feet
	Maximum Grade	3 percent-flat terrain
	Maximum Change in Grade (without using vertical curve)	0.20 percent
	Minimum Stopping Sight Distance	625 feet to 850 feet

Sources: Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways (Green Book, 1986); Hunter, 1989.

The major constraints of the central section of the corridor included environmental factors, existing, proposed, or planned developments, and spacing between roadway facilities. As previously stated, the identification of wetland systems, wildlife resources, and drainage areas influenced the location of the proposed roadway. In addition, the existing Williamsburg development and several approved Development Orders (DOs), including the Saddlebrook Village and Northwood properties, were identified within the project limits (see Figure 2-1). Impacts to these developments were minimized during the development of the proposed facility. Spacing was considered between existing SR 54A and proposed SR 54 in order to establish a new roadway corridor a desirable distance apart from existing parallel roadways.

The major constraint on the eastern terminus involved the connection of SR 54 to the Zephyrhills East Bypass. This roadway extends south on the east side of Zephyrhills and turn west to connect with U.S. 301 at the Chancey Road intersection (see Figure 3-1).

Based on the evaluation of the above constraints, several specific alignments were developed within the selected corridor. These alignments are discussed in the following sections.

3.2 CORRIDOR ALIGNMENTS EVALUATED

Initially, three major alternative alignments (Alignments 1, 2, & 3) were identified within the defined study corridor as shown in Figure 3-2. Each alignment was evaluated using the corridor criteria established in Section 3.1 of this document. Each of these alignments was divided into several segments for the purpose of alternative identification. Information provided is in summary format. Detailed information regarding segment analysis is found in the Preliminary Engineering Report (PER), a separate document prepared for the study.

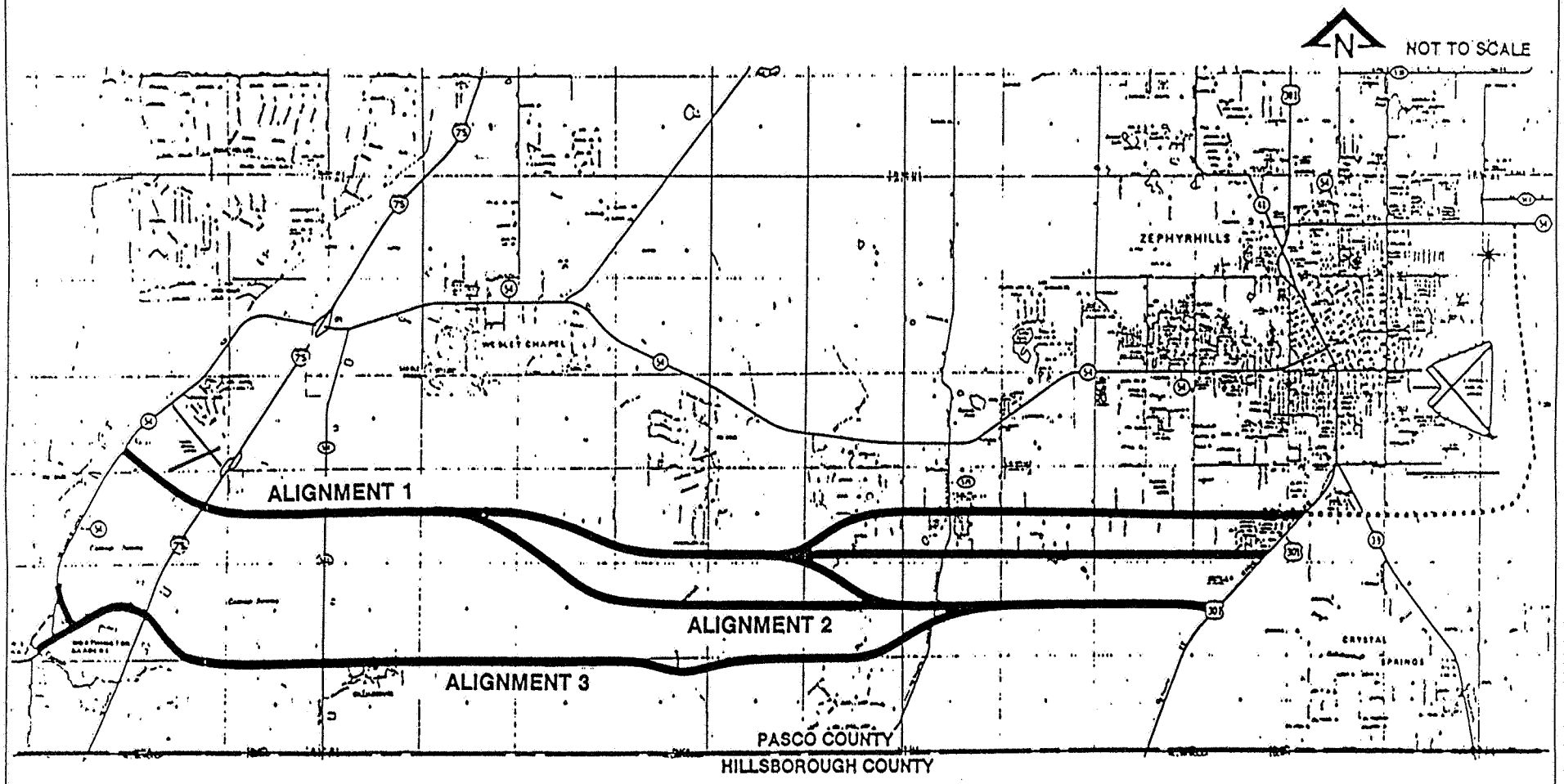


Figure 3-2
SR 54 PRELIMINARY ALIGNMENT ANALYSIS
ALIGNMENTS 1, 2, AND 3

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

3.2.1 Alignment 1

Alignment 1, the northernmost alignment evaluated, is from SR 54A to U.S. 301, and is located approximately 2 miles south of SR 54A. For purposes of evaluation, this alignment was divided into four segments as shown in Figure 3-3. The western terminus of Alignment 1 is located approximately halfway between Cypress Creek and the existing SR 54A/I-75 interchange. The proposed alignment crosses I-75 approximately 2 miles south of the existing SR 54A interchange and 1/2 mile south of the existing rest stops and proceeds generally in an easterly direction to U.S. 301 along Chancey Road.

3.2.2 Alignment 2

Alignment 2, from SR 54A to U.S. 301 (Figure 3-4), is a combination of Segments 1 and 2 of Alignment 1 and includes Segment 5, which begins approximately 1 1/4 miles east of CR 581 and extends to U.S. 301. Segment 5 is located south of Chancey Road.

3.2.3 Alignment 3

Alignment 3, from existing SR 54A to U.S. 301, was divided into Segments 6 and 7 as shown in Figure 3-5. Segment 6, from SR 54A to CR 581, includes the second proposed interchange location for SR 54 and I-75. Coordination with the TIS team determined that the proposed location of the interchange within Segment 6 was feasible.

3.2.4 Comparative Analysis of Segments

Nine segments were identified and an analysis was conducted to determine the feasibility of combining segments to develop viable alignments. Segments were evaluated based upon the following criteria:

- Systems linkage,
- Existing physical constraints on I-75,
- Existing development,
- Proposed development,
- Wetlands,

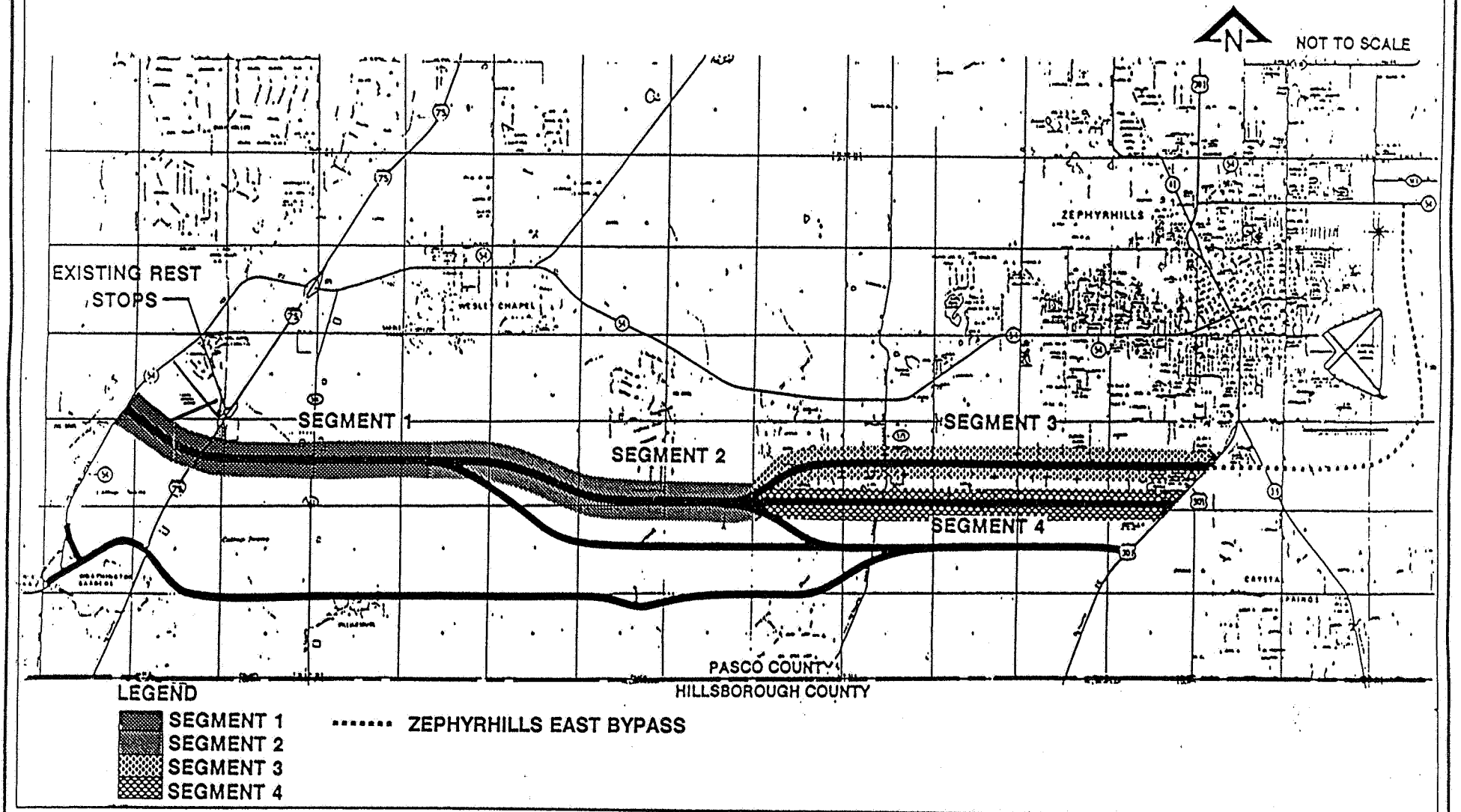


Figure 3-3
SR 54 PRELIMINARY ALIGNMENT ANALYSIS
ALIGNMENT 1

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

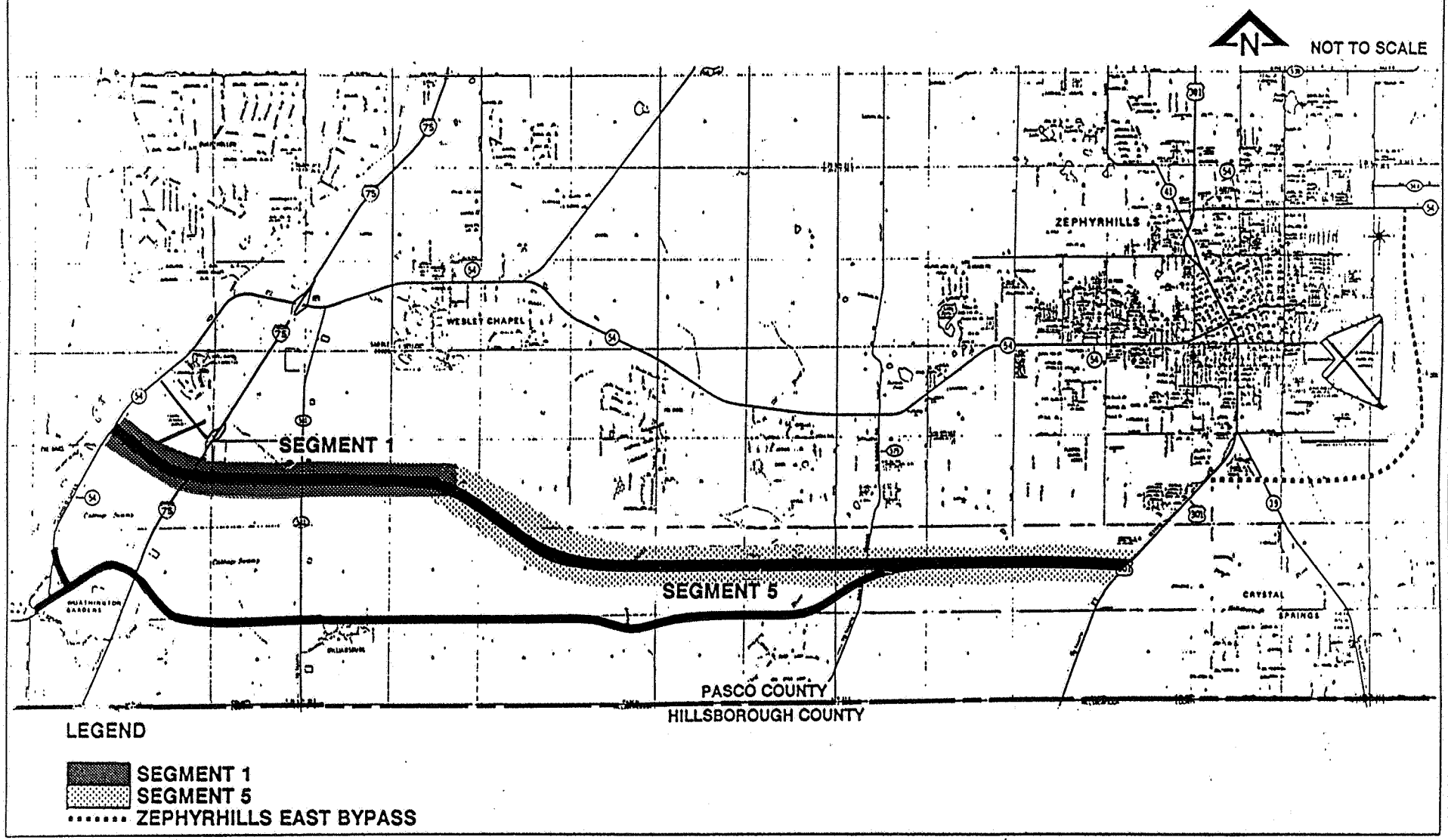


Figure 3-4
SR 54 PRELIMINARY ALIGNMENT ANALYSIS
ALIGNMENT 2

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

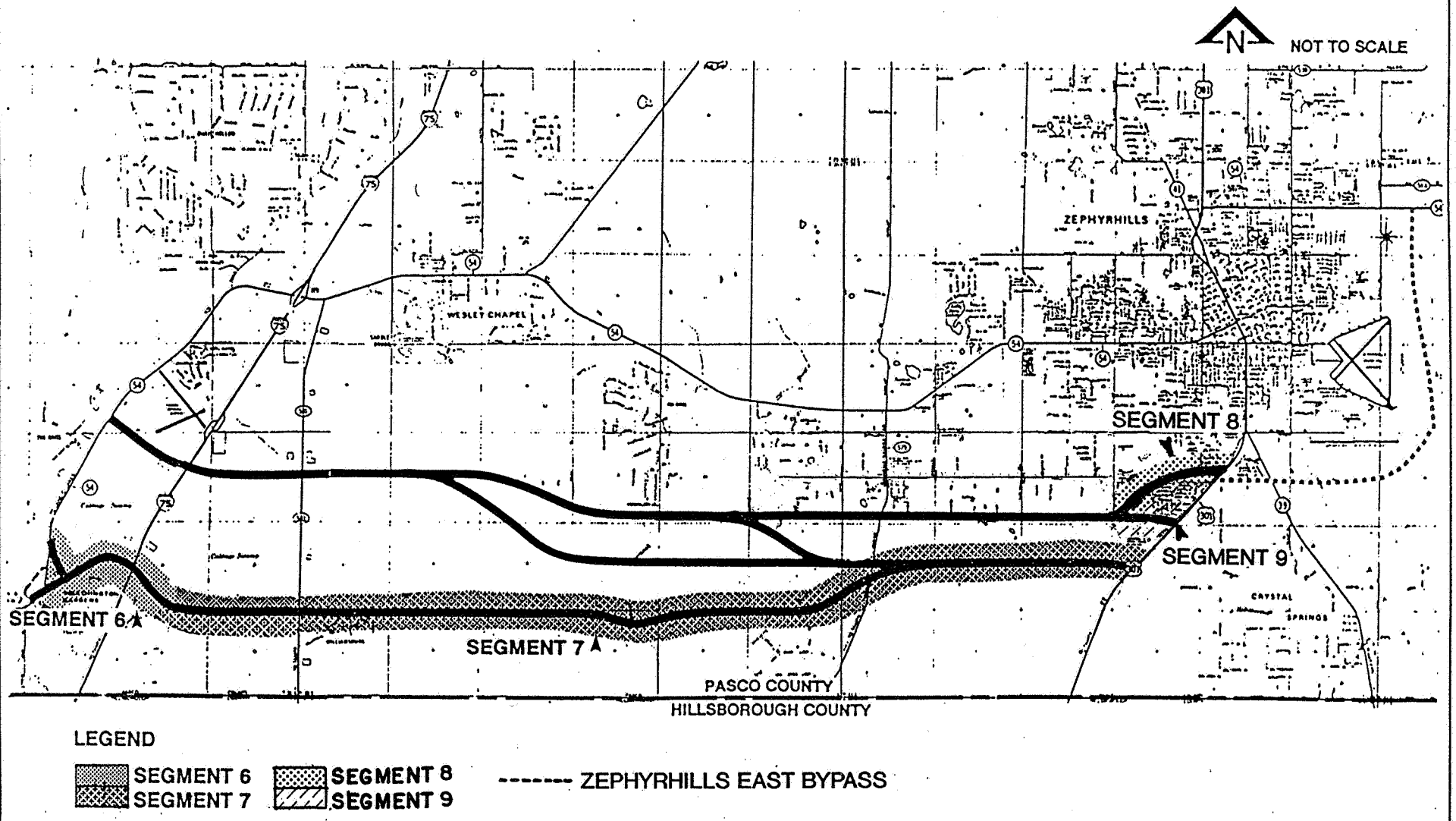


Figure 3-5
SR 54 PRELIMINARY ALIGNMENT ANALYSIS
ALIGNMENT 3

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

- Floodplains, and
- Relocations.

Segments 1 and 6 were compared to determine the best location for the connection to existing SR 54A, the location of the proposed I-75 interchange, and to provide a connection to the other viable segments. Segment 1 would require extensive modifications and possible elimination of the existing I-75 rest stops and require Saddlebrook Village to undergo major modifications to their approved DO. Segment 6 presented fewer impacts to the proposed developments of Saddlebrook Village and Northwood and to the floodplains/ wetlands located between I-75 and CR 581. In addition, the location of the proposed interchange on I-75 did not impact the existing I-275/I-75 interchange or the existing rest stop. For these reasons, Segment 1 was eliminated from further consideration and Segment 6 was retained as a viable segment.

A comparison of impacts was conducted for Segments 3 and 4. Segment 3 would incorporate 60 feet of right-of-way along Chancey Road. An additional 190 feet of right-of-way would be needed for a 6-lane divided highway in 250 feet of right-of-way. A substantial number of relocations would result if the proposed improvement was constructed using the Chancey Road alignment. In addition, residential communities located both north and south of Chancey Road would be bisected which would result in potential disruption of these communities. Segment 4 would require no relocations, have minimal floodplains/ wetland impacts, and would not disrupt community cohesion. For these reasons, Segment 3 was eliminated from future consideration and Segment 4 was retained for a possible combination with other viable segments.

Segment 8 would provide a direct connection of SR 54 to the proposed Zephyrhills East Bypass along Chancey Road. Segment 9 would connect SR 54 to U.S. 301 approximately 0.76 miles south of Chancey Road. Both Segments 8 and 9 were carried forward for comparison of impacts (see Figure 3-5).

Because of no potential relocations and minimal impacts to floodplains/ wetlands, Segments 2, 4, 5, 6, and 7 were retained as viable alignments. In addition, both Segments 8 and 9 were considered viable alignments and were carried forward. These segments were then combined to develop alternative alignments. When combining segments, consideration was given to systems linkage, spacing between segments, and directness of route between I-75 and U.S. 301.

3.2.5 Improvements to U.S. 301

Improvements to U.S. 301 from the intersection of Segment 4 and the intersection of Segment 7 to the Zephyrhills East Bypass/Chancey Road intersection were included in the respective alternative analyses. The City of Zephyrhills is developing a one-way pair system with two travel lanes in each direction for the majority of U.S. 301 in the downtown area. The proposed improvement would upgrade U.S. 301 from an existing 2-lane roadway to a 4-lane roadway that will include a one-way pair system with two lanes in each direction. The one-way pair would be constructed using existing U.S. 301 for the northbound lanes and 6th Street in Zephyrhills for the southbound lanes.

Improvements to U.S. 301 from the intersection of the proposed SR 54 to Chancey Road for the 2010 design year would require the construction of a 4-lane highway. This section is consistent with proposed improvements for U.S. 301 from Chancey Road to the apex of U.S. 301 and SR 39. The recommended typical cross section from Chancey Road to SR 39 is a 4-lane rural roadway with standard ditch sections for drainage within 206 feet of right-of-way.

3.3 ALTERNATIVES CONSIDERED FOR FURTHER STUDY

3.3.1 No-Build Alternative

Under the No-Build Alternative, the (new) SR 54 roadway would not be built and all projected traffic for SR 54 would then have to travel on existing SR 54A. The existing traffic volumes on SR 54A within the project limits vary from 8,100 to 14,300 vpd (Figure 2-2). This variation is due to the frequent

access drives to businesses and residential areas along the length of the project and intersecting roadways.

A traffic analysis was conducted along the existing SR 54A to determine 2010 conditions. The results of this analysis are shown in Table 3-2. By the design year 2010, 31,160 to 104,100 vpd are projected to use SR 54A within the project limits. Most segments along SR 54A would need to be improved to a 4- to 8-lane expressway to accommodate projected traffic volumes. Projected traffic volumes would greatly exceed the capacity of the existing facility and would cause severe delays to motorists traveling on SR 54A, resulting in higher fuel consumption and increased air pollution. Also, with the increased traffic volumes, a higher accident rate along SR 54A, within the project limits, would likely occur. In addition, the cost for the purchase of right-of-way relocatees and access rights to convert the existing SR 54A to an expressway would not be monetarily feasible. The No-Build Alternative will remain a viable alternative through the public hearing process.

3.3.2 Construction Alternatives

Segments which were evaluated and discussed above were combined to develop viable alternative alignments. Several viable alternative alignments were identified and considered for further study. Each alignment was evaluated regarding construction cost, right-of-way, relocation, and business damage costs, wetlands/floodplain impacts, and existing/planned development. The project cost also includes Wetland Mitigation Cost based upon a average ratio of 2.5:1 for forrested and 1.5:1 for nonforrested wetlands (see Table 3-3) for created wetland. This is an estimated cost and may vary at the time of obtaining the appropriate permits. Quantification of wetland impacts was assessed on a preliminary bases and used to eliminate alternatives from further study. Because of the method used (scaled versus planimeter quantities), the amount of wetlands impacted will vary from the amounts reflected in Section 4 of this document for the same alternatives. Consideration was also given to provide a roadway connection with the

Zephyrhills East Bypass. Complete documentation of these alignments are found in the PER.

3.3.2.1 Alternative Alignment 1A--For Alternative Alignment 1A, a 250-foot typical section was evaluated for the 13.66-mile alignment (Figure 3-6). Alignment 1A would require the purchase of 413.9 acres of right-of-way, no business or residential relocations, and the clearing of an estimated 39.45 acres of affected wetlands, consisting of 14.75 acres of forested and 24.7 acres of nonforested wetlands. The eastern terminus of this alternative (Segment 9) of Alignment 1 would connect SR 54 to U.S. 301 approximately 0.76 mile south of Chancey Road. This would require approximately 4,000 feet of improvements to U.S. 301 which includes upgrading the existing 2-lane roadway to a 4-lane divided roadway from the SR 54 intersection to the Zephyrhills East Bypass. Existing right-of-way along U.S. 301 is 100 feet. An additional 150 feet of right-of-way would be required. Proposed right-of-way to improve U.S. 301 would be acquired from the east and would result in no relocations.

3.3.2.2 Alternative Alignment 1C--Alternative Alignment 1C (Figure 3-7) was developed to alleviate potential noise and air impacts to the Williamsburg development. This alignment would move the proposed SR 54 highway further to the north of the Williamsburg subdivision. The primary concern of the residents pertained to potential noise impacts. A noise analysis was conducted to determine potential noise impacts for both Alternative 1A and 1C. The noise model indicated that Alternative Alignment 1C would have less noise impacts on the Williamsburg development than Alignment 1A. Results of the analysis are included in a separate noise report.

Alternative Alignment 1C would require the purchase of 414.2 acres of right-of-way, no relocations, and the clearing of an estimated 27.11 acres of affected wetlands, consisting of a combination of 9.55 acres of forested and 17.56 acres of nonforested wetlands. The eastern terminus of Alignment 1C

Table 3-2. Projected 2010 Traffic Conditions Along SR 54A

Facility	Link	Existing Laneage	Projected AADT	Laneage Required
SR 54A	Cypress Creek to I-75	2L	57,100	6LE
	I-75 to CR 581	2L	104,100	6-8LE
	CR 581 to CR 577	2L	64,300	6LE
	CR 577 to Wesley Chapel Lakes Boulevard	2L	53,200	4LE
	Wesley Chapel Lakes Boulevard to CR 579	2L	49,000	6LD
	CR 579 to U.S. 301	2L	31,160	4LD

Note:
6LE = 6-lane expressway
6LD = 6-lane divided

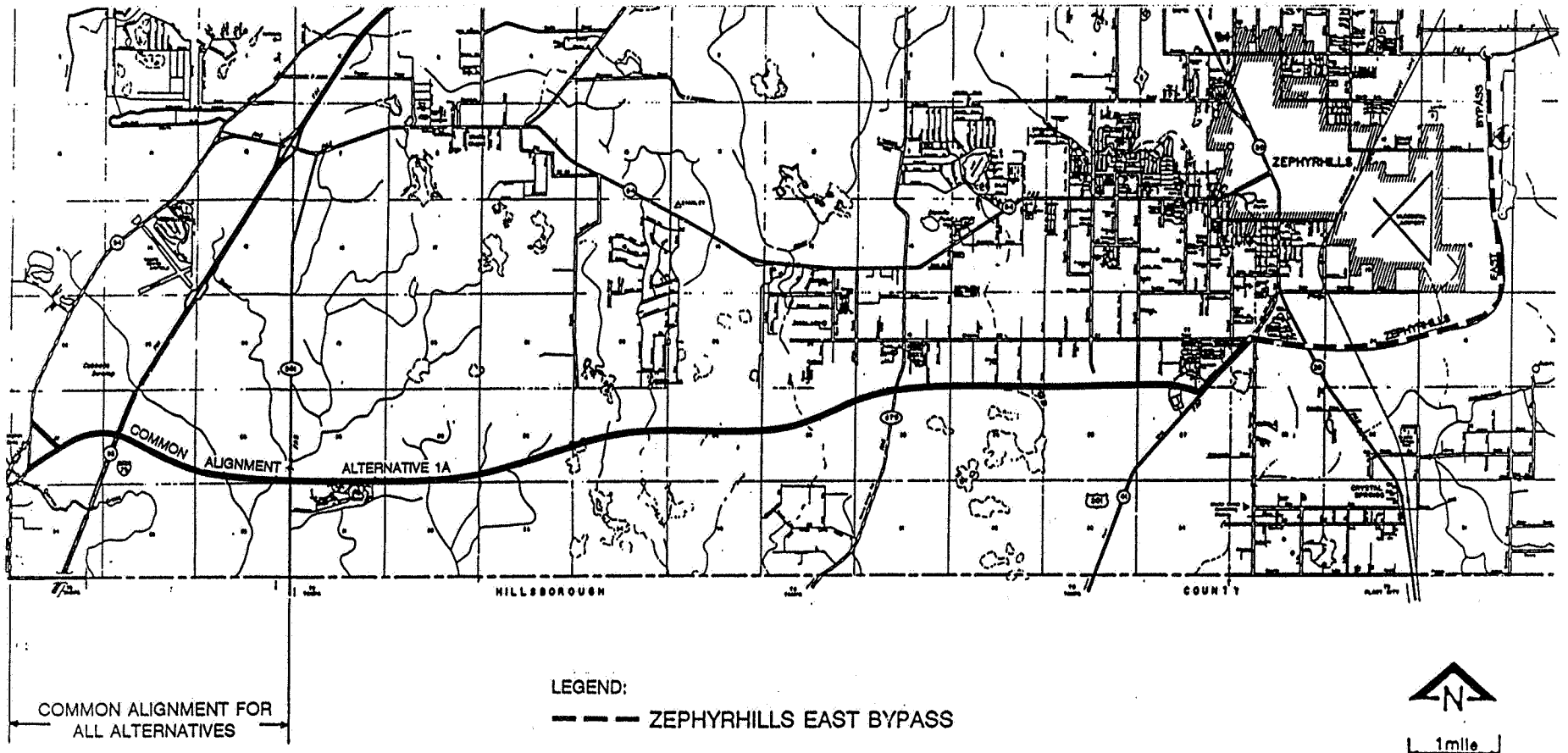


Figure 3-6
SR 54 PRELIMINARY ALIGNMENT ANALYSIS
ALIGNMENT 1A

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

would connect SR 54 to U.S. 301 approximately 0.76 miles south of Chancey Road. This would require approximately 4,000 feet of improvements to U.S. 301 which includes upgrading the existing two lane roadway to a 4 lane divided roadway from the SR 54 intersection to the Zephyrhills East Bypass. Existing right-of-way along U.S. 301 is 100 feet. An additional 150 feet of right-of-way would be required. Proposed right-of-way to improve U.S. 301 would be acquired from the last and would result in no relocations.

Alternative Alignment 1C was presented to the affected property owners on February 15, 1989. In a prior coordination meeting, an affected property owner expressed strong opposition to any alternative alignment which would bisect and disrupt a ranching operation. The owner again expressed strong opposition to Alternative Alignment 1C and expressed support for Alternative Alignment 1A because of the lower impacts to the ranching operation. The needfor grade separations and/or livestock crossings to allow access to the bisected ranch property has not been discussed. In the event that Alternative Alignment 1C is selected, the need for access to the bisected ranch property will be resolved during the right-of-way acquisition phase.

Alternative Alignment 1C was presented to residents of the Williamsburg subdivision in a meeting on February 15, 1989. Approximately 125 residents attended the meeting, which was held in the subdivision's clubhouse. Alternative Alignment 1C was met with less opposition than Alternative 1A. Because of the reduced noise impacts to the Williamsburg development and less wetland impacts, Alternative Alignment 1C was retained for further evaluation.

3.3.2.3 Alternative Alignment 1D--An additional alternative alignment was developed. Alternative Alignment 1D (Figure 3-8) was developed as a result of coordination with affected property owners. Alternative Alignment 1D was assessed based upon criteria established for this study (see Section 3.0). Alternative Alignment 1D would require the purchase of 409.10 acres of right-of-way, no relocations, and the clearing of an estimated 30.65 acres of

wetlands, consisting of a combination of 14.55 acres of forested and 16.1 of nonforested wetlands. In the event that Alternative Alignment 1D is selected, the need for access to the bisected ranch property will be resolved during the right-of-way acquisition phase. The eastern terminus of Alignment 1D would connect SR 54 to US 301 approximately 0.76 mile south of Chancey Road. This would require approximately 4,000 feet of improvements to US 301 which includes upgrading the existing 2 lane roadway to a 4 lane divided roadway from SR 54 intersection to the Zephyrhills East Bypass. Existing right-of-way along US 301 is 100 feet. An additional 150 feet of right-of-way would be required. Proposed right-of-way to improve US 301 would be acquired from the east and would result in no relocations.

3.3.3 Alternatives Evaluated But Eliminated

3.3.3.1 Alternative Alignment 1B--For Alternative Alignment 1B, a 250-foot typical section was evaluated for the 13.62-mile alignment (Figure 3-9). Some modification in the alignment was required to make the transitions from Segment 7 to Segment 5, Segment 5 to Segment 4, and Segment 4 to Segment 8. Alternative Alignment 1B would require the purchase of 412.7 acres of right-of-way, 16 single-family residences, and 1 business (for a total of 17 relocations), as well as clearing of an estimated 39.45 acres of affected wetlands, consisting of 14.75 acres of forested and 24.7 acres of nonforested wetlands. The eastern terminus would provide a direct connection of SR 54 to the Zephyrhills East Bypass along Chancey Road and would require the construction of only one major intersection of U.S. 301. This alternative would require no improvements along U.S. 301. Because of the number of businesses and residences impacted by this alternative, it was eliminated from further evaluations.

3.3.3.2 Alternative Alignment 1E--Alternative 1E was developed as a result of coordination with affected property owners (Figure 3-10). This alternative would require the purchase of 411.5 acres of right-of-way, no relocations, and the clearing of an estimated 42.55 acres of affected wetlands, consisting of

18.55 acres of forested and 24.0 acres of nonforested wetlands. This alternative requires the same improvements to US 301 as described for Alternatives 1A, 1C and 1D. Because of the large acreage of wetland impacts and the potential noise impacts to the Williamsburg Development, Alternative 1E was eliminated from further review.

3.3.3.3 Alternative Alignment 2--Alternative Alignment 2 is a combination of Segments 6 and 7 of the comparative analysis (Figure 3-11). The 250-foot typical section was evaluated for the 12.79-mile alignment. This alternative would require the purchase of 387.64 acres of right-of-way, no business or residential relocations, and the clearing of an estimated 38.65 acres of affected wetlands, consisting of 17.15 acres of forested and 21.5 acres of nonforested wetlands. This alternative would require 1.5 miles of improvements to U.S. 301 from the intersection of SR 54 to the Zephyrhills East Bypass. Within these limits, the existing 2-lane roadway would need to be improved to a 4-lane divided roadway. Because of the large acreage of wetland impacts and potential noise impacts to the Williamsburg development, this alternative was eliminated from further review.

3.3.4 Preliminary Design Concepts For Construction Alternatives

3.3.4.1 Design Traffic Volumes--Projected 2010 traffic volumes along SR 54 vary from 44,300 vpd between I-75 and CR 581 to 8,550 vpd between CR 579 and U.S. 301 (see Table 2-2). The magnitude of these volumes indicate that SR 54 will need to be constructed as a 2- to 6-lane facility throughout the project limits. The wide variation between the projected volumes near I-75 versus the volumes east of CR 579 can be attributed to proposed developments on the western section of the new roadway while little or no development is expected on the eastern section of SR 54 between CR 579 and U.S. 301.

3.3.4.2 Typical Cross Sections--The selection of a typical cross section for SR 54 was based upon the desire to develop a principle arterial highway using

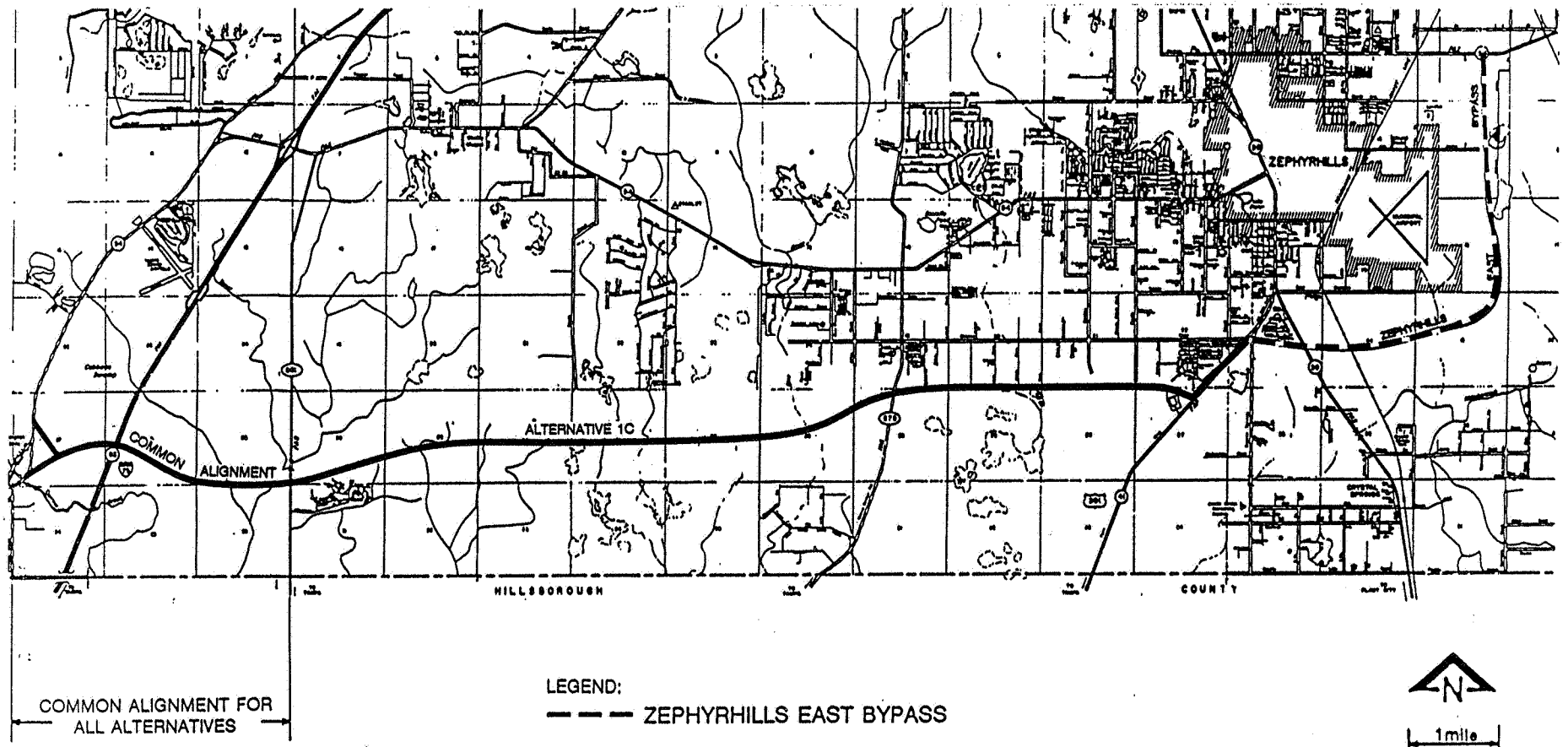


Figure 3-7
ALTERNATIVE ALIGNMENT 1C

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

desirable design standards. A 70-mph design speed was selected and used to establish desirable design standards based upon FDOT Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways (Green Book, 1986) (see Table 3-1). Utilizing FDOT desirable design standards for rural design, a 250-foot typical section was developed for all cross sections. The ultimate 6-lane section will be composed of three 12-foot travel lanes in each direction, a 50-foot grassed median, 10-foot-wide inside and outside shoulders, and a 54-foot ditch section for stormwater treatment and clear recovery area (Figure 3-12). No provisions have been made in the preliminary design of this roadway to accommodate pedestrian due to the lack of development along the existing corridor. Bicycle traffic can be accommodated through the use of the four-foot-wide paved portion of the outside shoulders (see Section 3.3.4.5).

SR 54 will be stage constructed based upon the number of lanes required to accommodate 2010 traffic volumes for each section of SR 54. For the segment of SR 54 from SR 54A to the I-75 West Ramps, CR 581 to CR 579, and along U.S. 301 from SR 54 to Chancey Road, a 4-lane rural cross section is required for projected 2010 traffic volumes. Figure 3-13 illustrates the proposed typical cross section. The next cross section developed was for the segment of SR 54 from the I-75 West Ramps to CR 581. 2010 traffic volumes require the construction of a 6-lane highway. Figure 3-12 depicts the proposed 6-lane rural cross section. For the segment of SR 54 from CR 579 to U.S. 301, a 2-lane rural cross section is required. Figure 3-14 shows this proposed cross section.

3.3.4.3 Intersection Concepts--Several proposed intersections along SR 54 and U.S. 301 were analyzed for 2010 conditions in order to determine appropriate geometry at each intersection. The following intersections with SR 54 were analyzed: SR 54A, I-75 Ramps, CR 581, CR 579, and U.S. 301. In addition, the intersection of U.S. 301 and Chancey Road was analyzed. The analysis of the

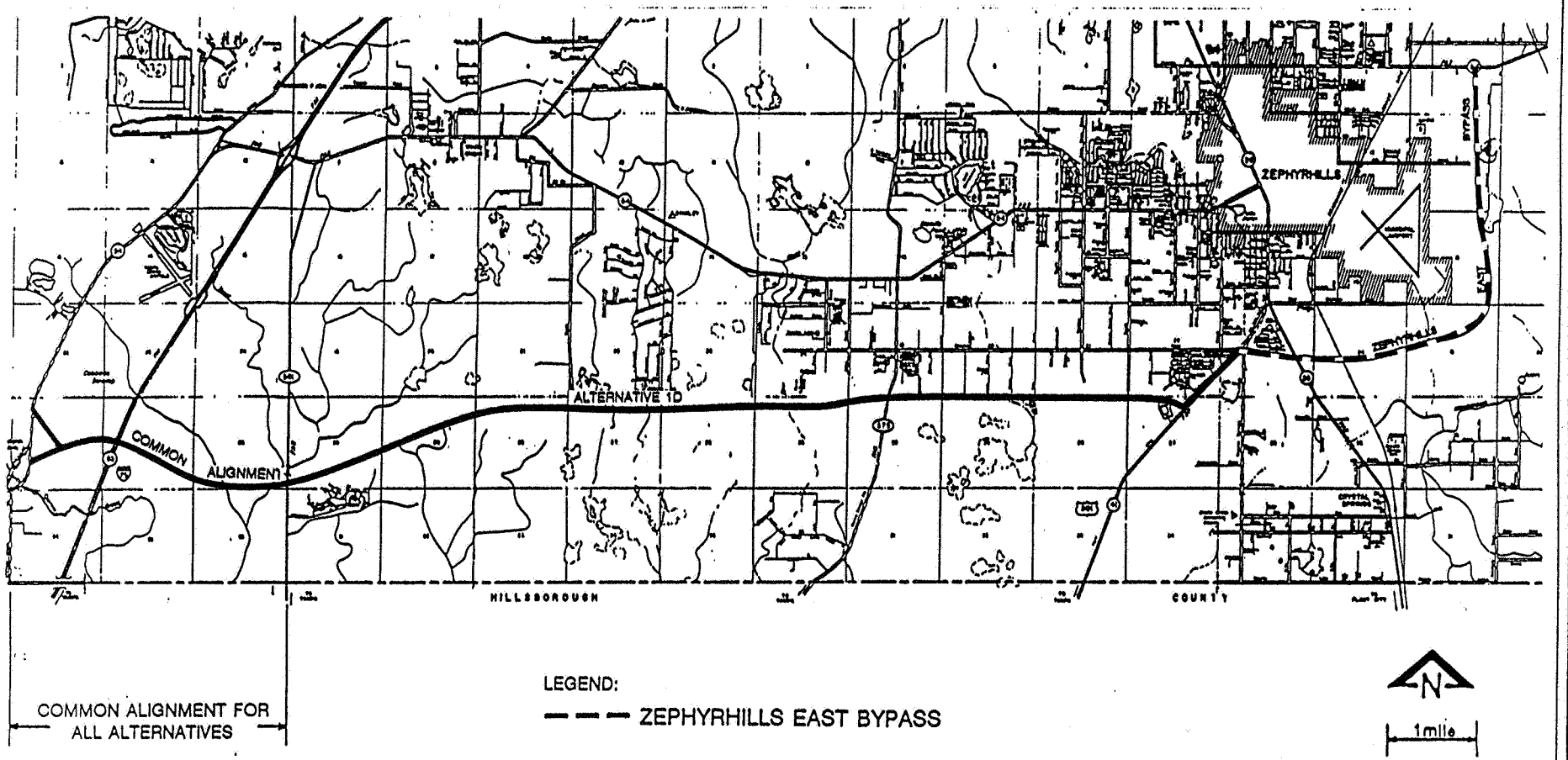


Figure 3-8
ALTERNATIVE ALIGNMENT 1D

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

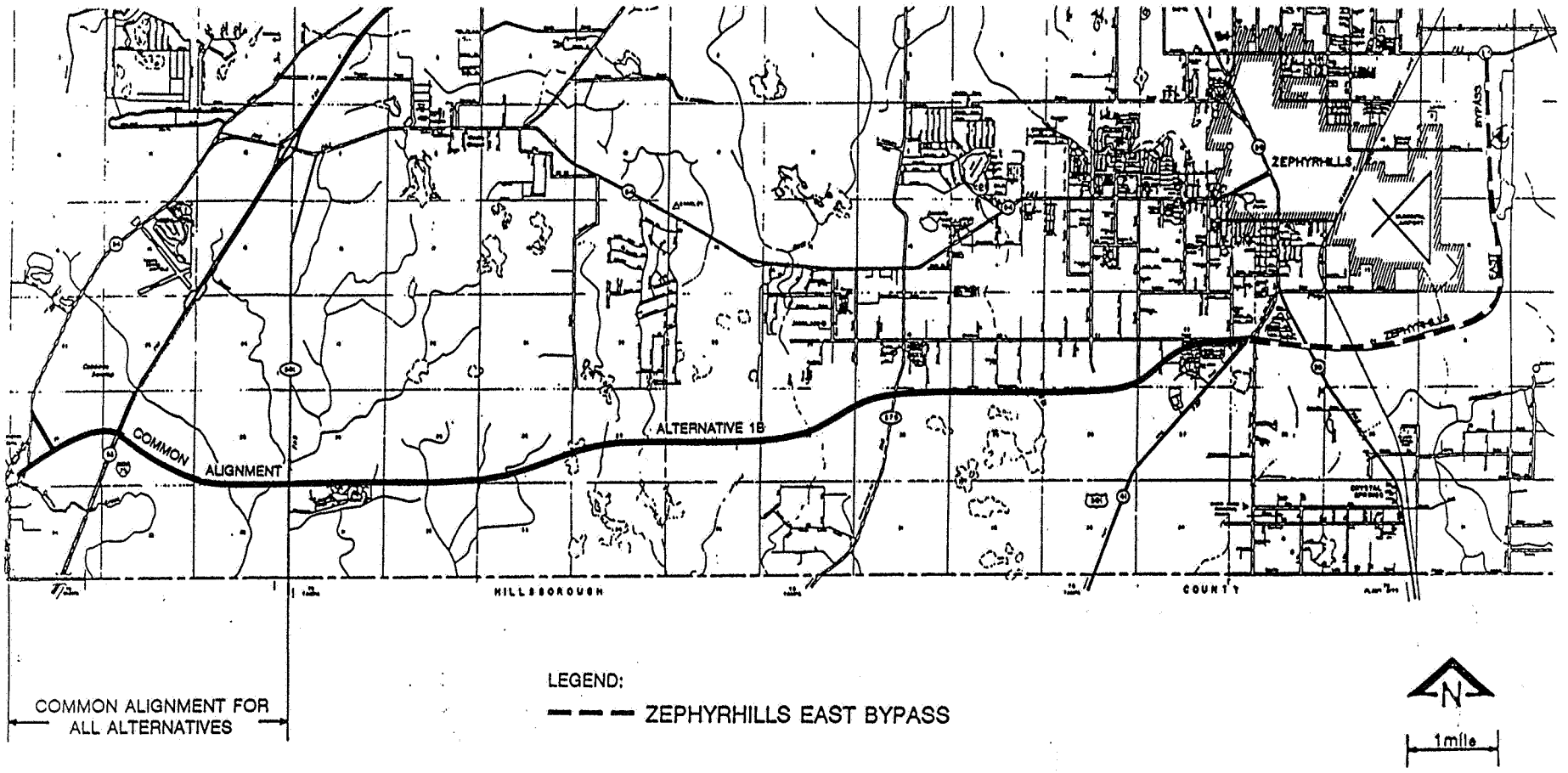


Figure 3-9
ALTERNATIVE ALIGNMENT 1B

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

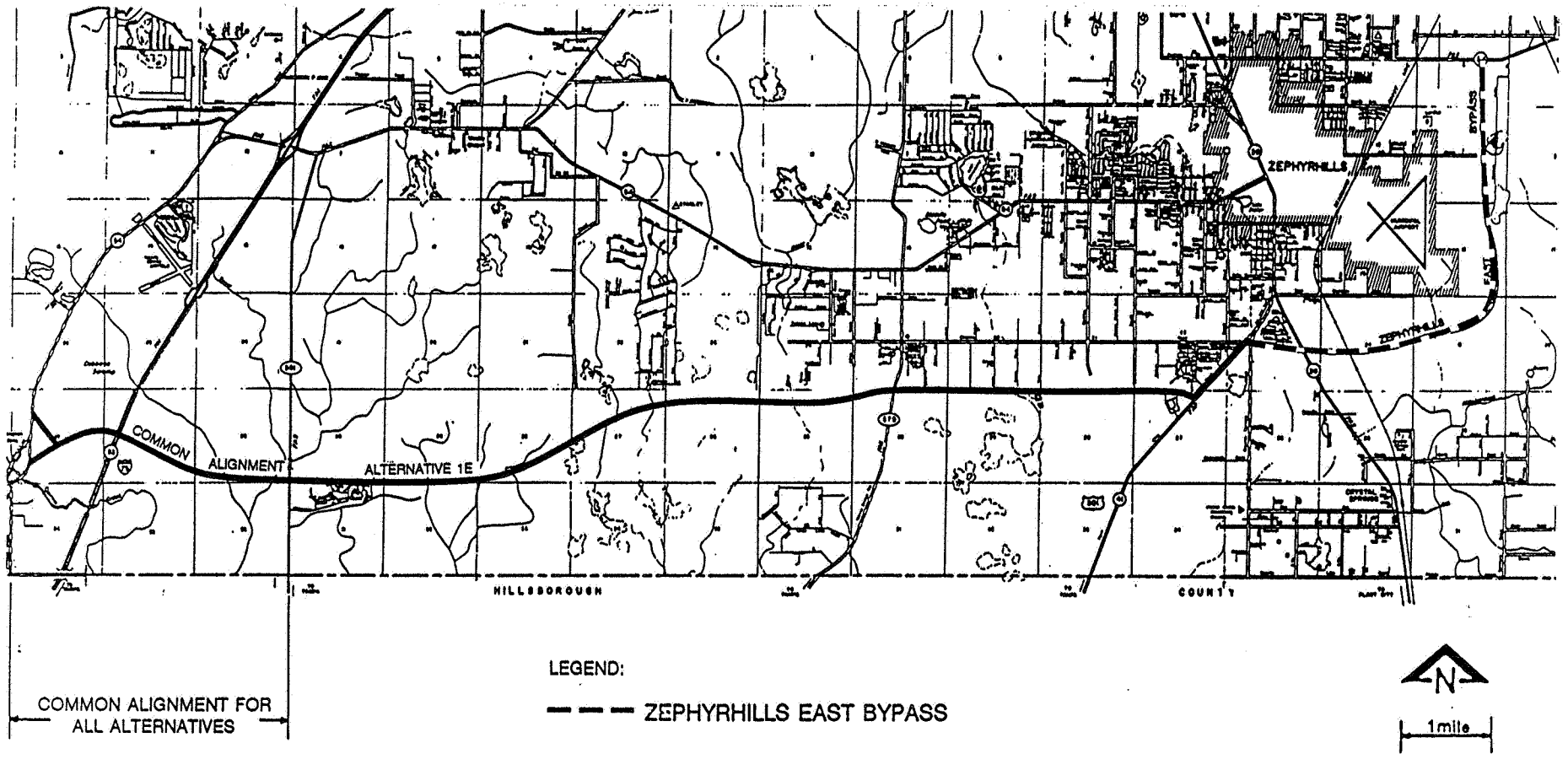


Figure 3-10
ALTERNATIVE ALIGNMENT 1E

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

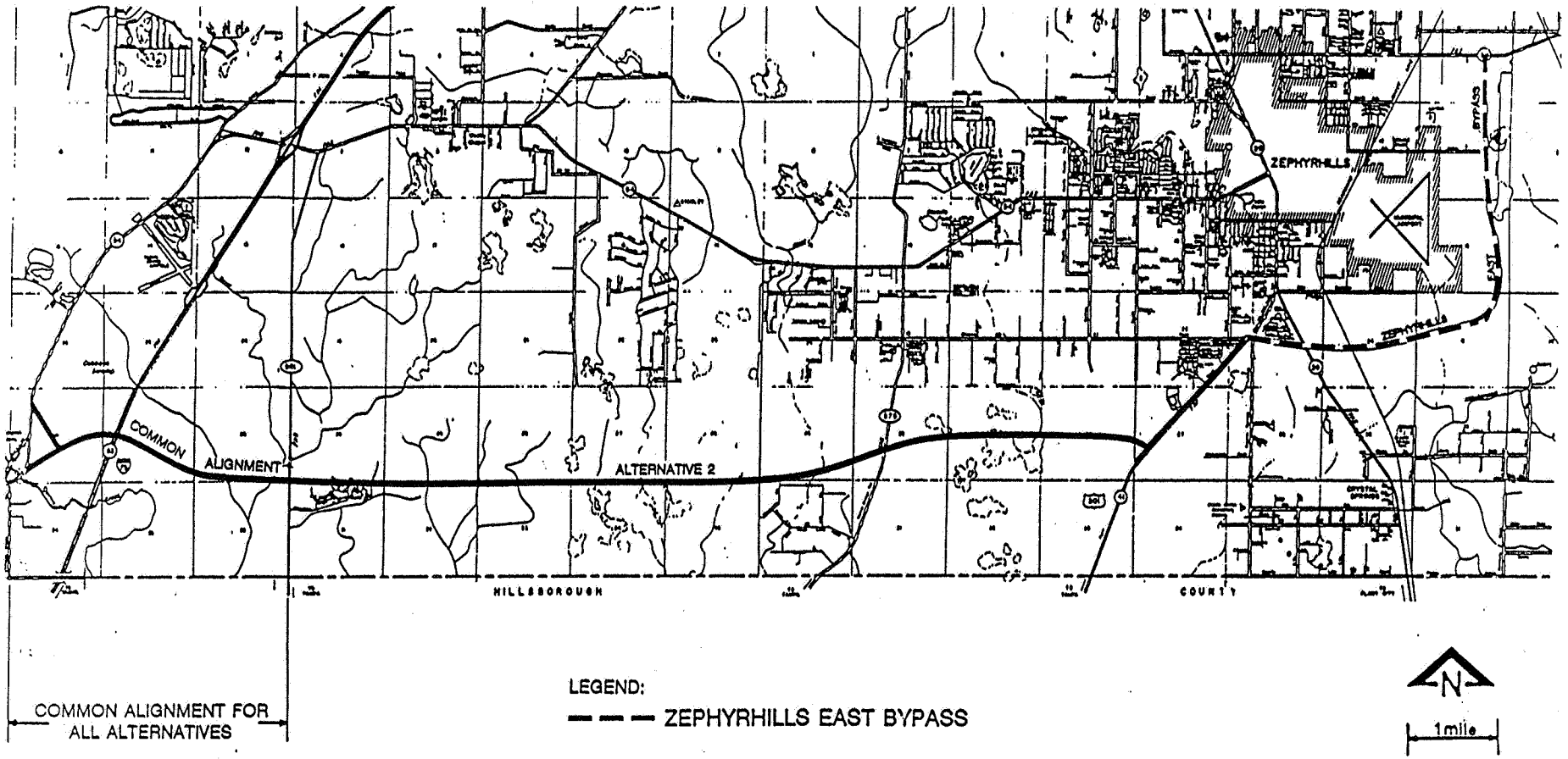


Figure 3-11
ALTERNATIVE ALIGNMENT 2

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

I-75 ramps at SR 54 was conducted in coordination with the TIS team, which is currently evaluating improvements to I-75 in southern Pasco County. The required geometry for each of these intersections is contained in the PER.

3.3.4.4 Preliminary Engineering, Right-of-Way, Construction, and Relocation Costs--Construction costs for the proposed SR 54 roadway were developed based on FDOT's 1988 cost-per-mile for Pasco County for 2-, 4-, and 6-lane new construction cost estimates. Cost estimates included preliminary engineering, construction, right-of-way, business/residential relocation and wetland mitigation (Table 3-3). Construction cost estimates were based upon lengths of 3.30 miles for the two lane typical section, 8.48 miles for the 4 lane typical section and 2.08 miles for the six lane typical section.

3.3.4.5 Pedestrian And Bicycle Facilities--SR 54 is expected to be a principal arterial highway. No provisions have been made in the preliminary design of this roadway to accommodate pedestrian or bicycle traffic. As the corridor becomes more urbanized, sidewalkss can be added to either or both sides of the roadway. The typical section has provisions to allow for the addition of sidewalks. However, bicycle traffic can be accommodated through the use of the four-foot-wide paved portion of the outside shoulders, adjacent to the outside through travel lane.

3.3.4.6 Maintenance Of Traffic--Since SR 54 will be constructed as a new facility, maintenance of traffic will only be significant at major connecting roadways along this facility. Maintenance of traffic for these connecting roadways will conform to FDOT's roadway and traffic design standards.

3.5 SUMMARY OF VIABLE ALTERNATIVE ALIGNMENTS

As discussed in Section 3.4, several viable alternative alignments were identified and evaluated for the new transportation facility in south Pasco County. The identification of alternative alignments was based on criteria set forth in Section 3.0 as well as coordination with affected property owners

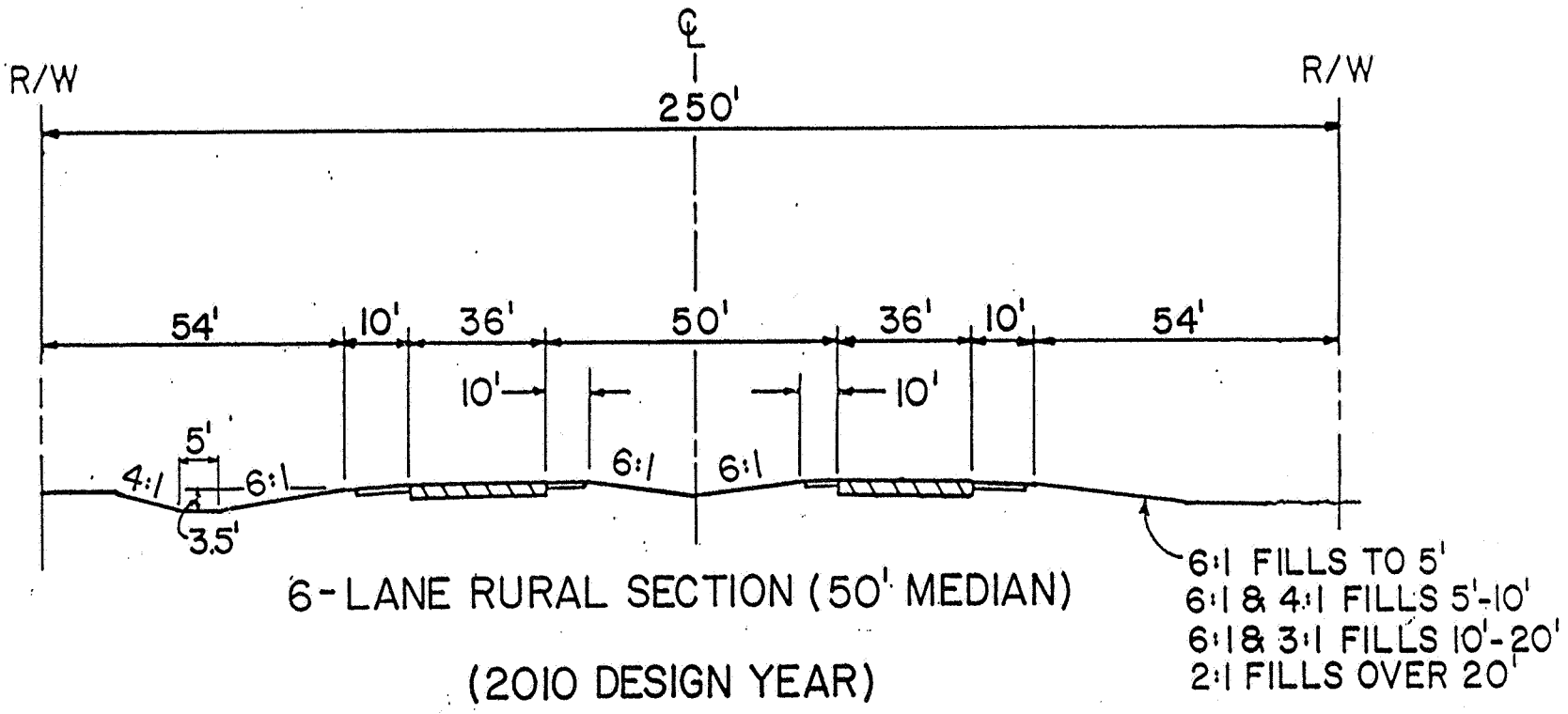
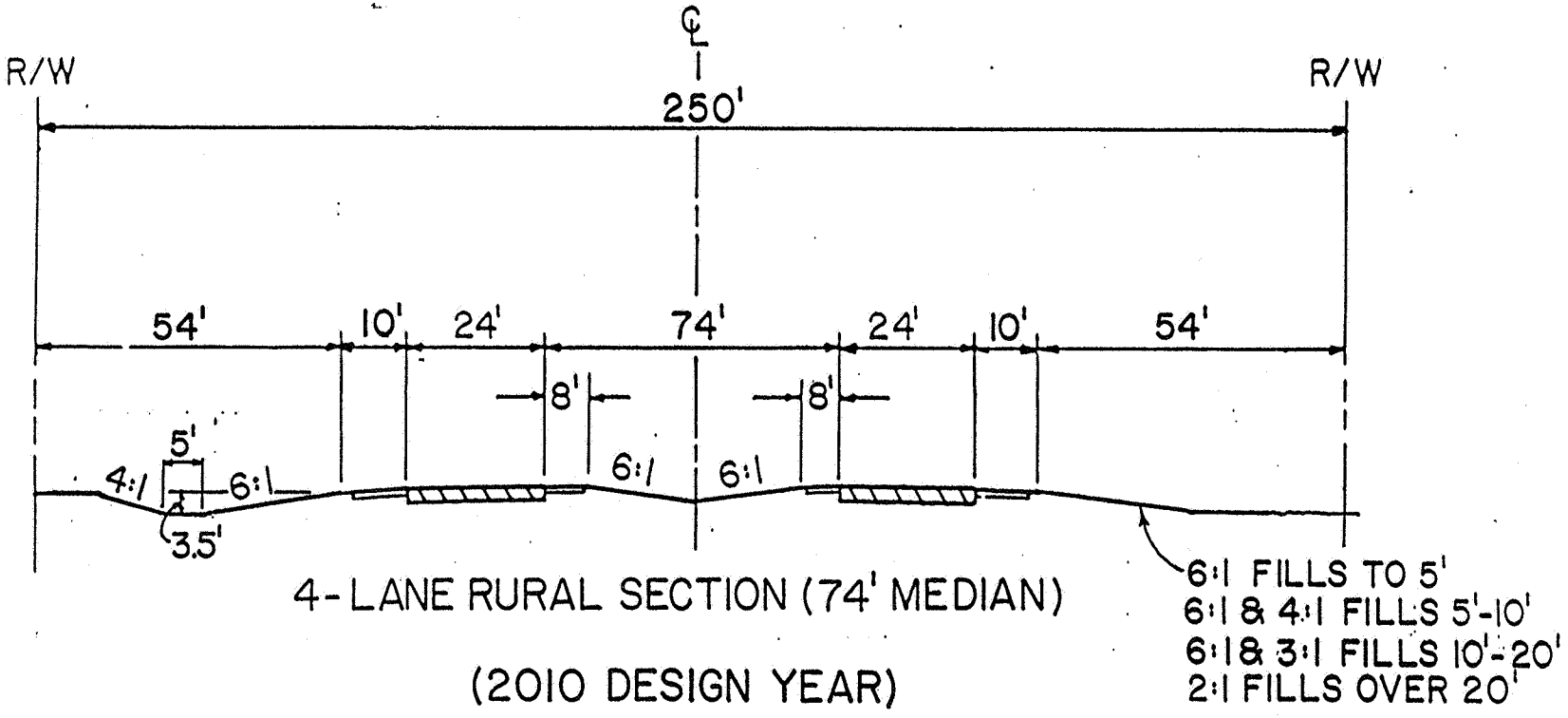


Figure 3-12
PROPOSED 6-LANE RURAL CROSS SECTION: FROM I-75 WEST RAMPS TO CR 581

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

PROPOSED TYPICAL CROSS SECTION (250' R/W)



4-LANE RURAL SECTION (74' MEDIAN)

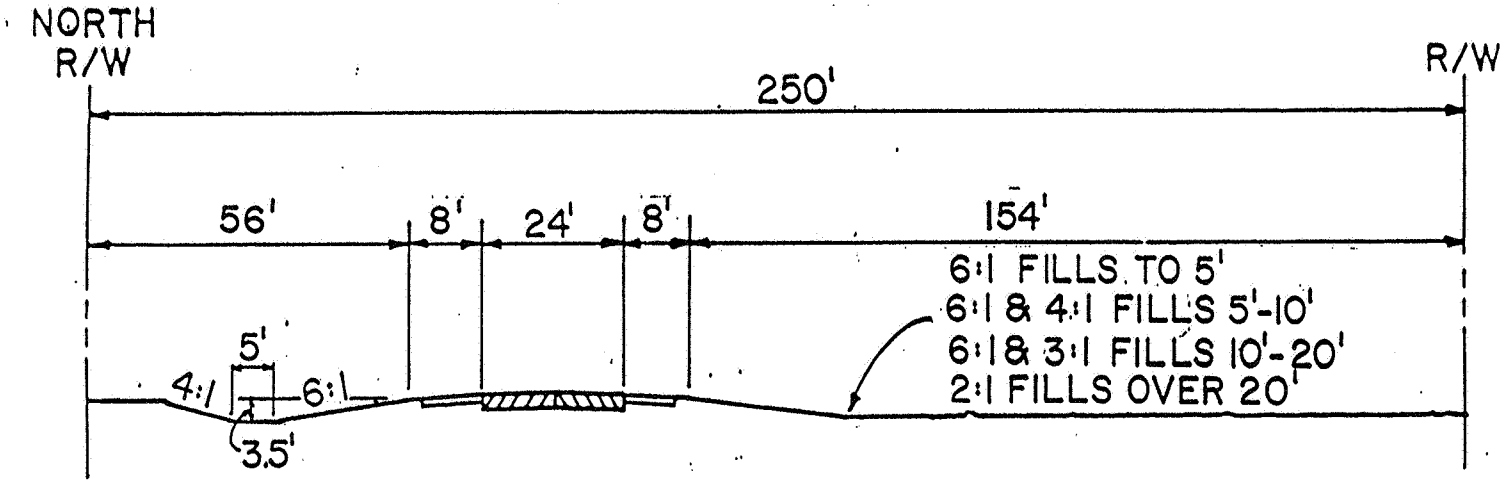
(2010 DESIGN YEAR)

Figure 3-13

PROPOSED 4-LANE RURAL CROSS SECTION: FROM SR 54A TO I-75 WEST RAMPS, FROM CR 581 TO CR 579, AND FROM SR 54 TO CHANCEY ROAD

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

PROPOSED TYPICAL CROSS SECTION (250' R/W)



2-LANE RURAL SECTION

Figure 3-14
PROPOSED 2-LANE RURAL CROSS SECTION: FROM CR 579 TO U.S. 301

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

and the general public. Table 3-3 summarizes associated impacts for all alternative alignments identified during the course of the study. It should be noted that the acreages of wetland impacts, and thus wetland mitigation costs, were approximate estimates made for the purpose of comparing alternatives. For the alternatives that were carried forward, more precise estimates based on ground-truthing and planimetry of areas on aerial photography were used. Those acreages are provided in Section 4.3.4.1 of this document.

Based on the information provided in Sections 3.2 and 3.3, Alternative Alignments 1A, 1C, and 1D (Figure 3-15) are recommended to be carried forward for further evaluation and environmental impact assessment. The No-Build Alternative will remain a viable alternative through the public hearing phase.

Table 3-3. Summary of Alternative Alignments for SR 54: From Cypress Creek to the Zephyrhills East Bypass, Pasco County, Florida.

Alternatives	Length (miles)	Const. Cost	Design Cost	Right-of-Way		Relocations	Created Wetland Acres*			Wetland Mitigation Cost†			Total Cost**
				Acres	Cost		Forested	Nonforested	Total	Forested	Nonforested	Total	
1A	13.66	23,033,000	2,303,000	413.9	11,686,400	0	36.87	37.05	73.92	1,825,300	1,667,200	3,492,500	40,514,900
1B	13.62	21,947,000	2,194,000	412.7	14,614,200	17	36.87	37.05	73.92	1,825,300	1,667,200	3,492,500	42,247,700
1C	13.67	23,052,800	2,305,000	414.2	11,282,700	0	23.87	26.34	50.21	1,181,800	1,185,300	2,367,100	39,008,600
1D	13.50	22,736,000	2,273,000	409.1	11,110,300	0	36.37	24.15	60.52	1,800,500	1,086,700	2,887,200	39.006,500
1E	13.58	22,874,600	2,287,000	411.5	11,686,300	0	46.37	36.0	82.37	2,295,500	1,620,000	3,915,500	40,763,400
2	12.79	23,910,200	2,391,000	387.6	13,536,000	0	42.87	32.25	75.12	2,122,300	1,451,200	3,573,500	43,410,700

*Created wetland mitigation is based on an average ratio of 2.5:1 for forested and 1.5:1 for nonforested wetlands.
†Mitigation is based on an average ratio of 2.5:1 for forested and 1.5:1 for nonforested. This is an estimated cost and may vary at the time of obtaining appropriate permits.
**Does not include the cost of noise abatement. Section 4.3.3., Noise, includes cost estimates for the noise abatement measures found feasible for those alternative alignments recommended to be carried forward (i.e., 1A, 1C, and 1D).

Source: RS&H, 1989.

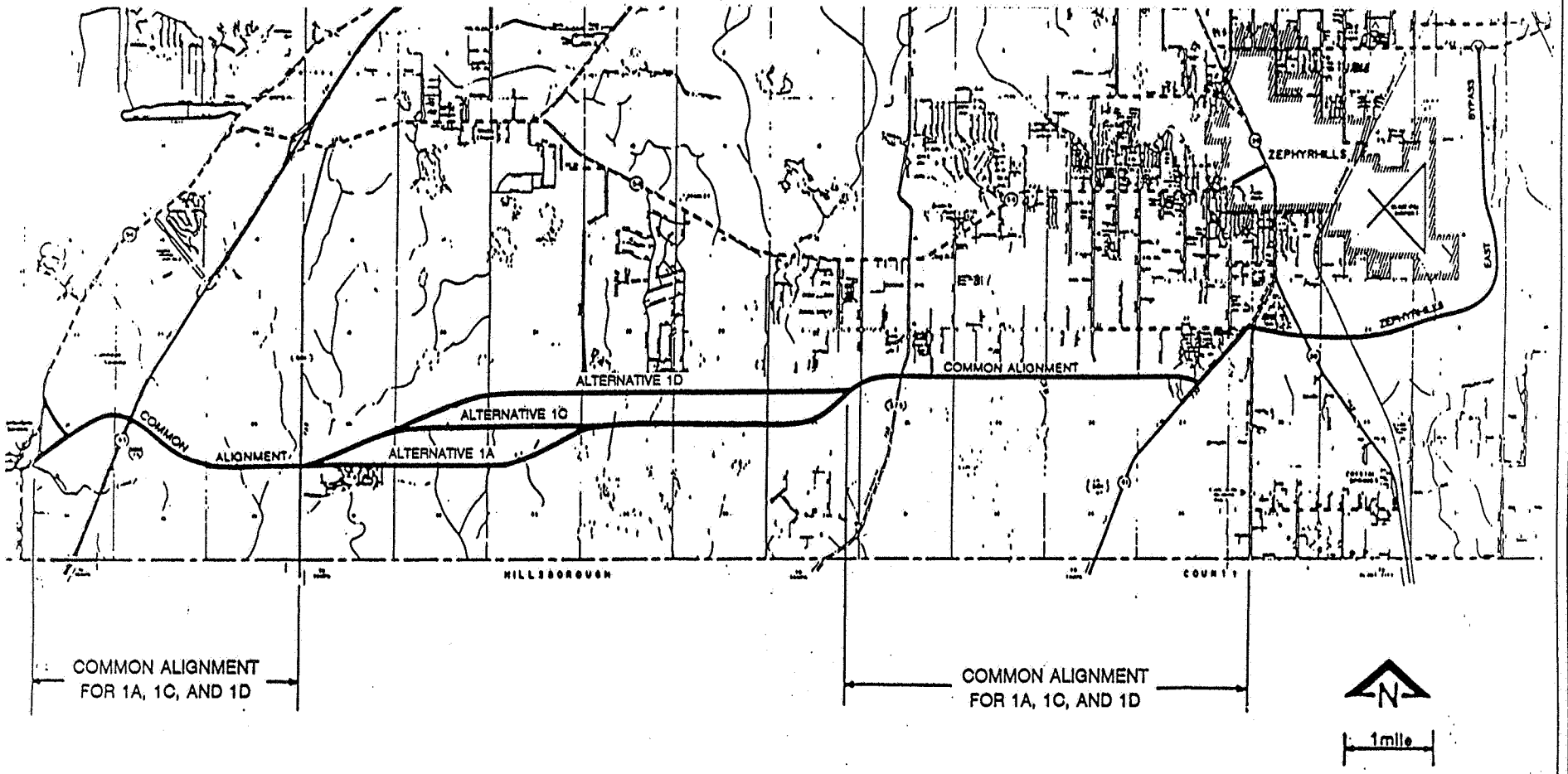


Figure 3-15
ALTERNATIVE ALIGNMENTS 1A, 1C, AND 1D

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

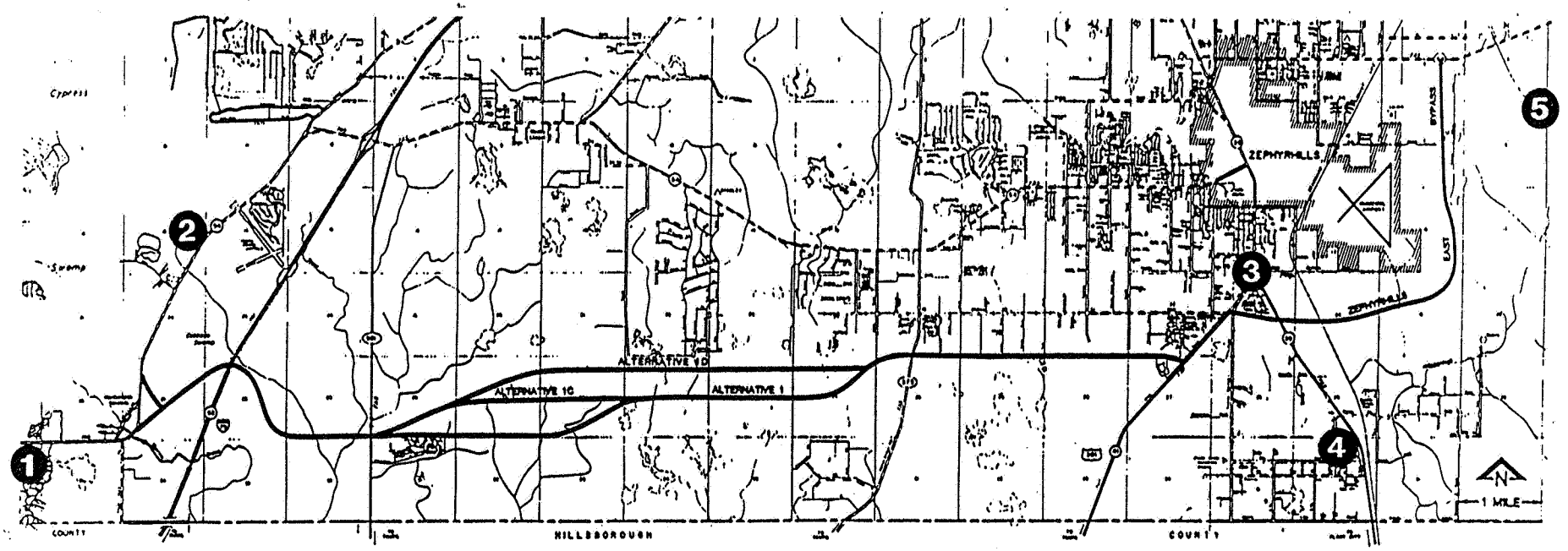
4.0 IMPACTS

4.1 SOCIOECONOMIC

4.1.1 Community Services

Educational Facilities--Currently, no educational facilities exist within 1 mile of the proposed roadway (SR 54). However, five educational facilities are located within 5 miles of the SR 54 corridor. These facilities, which are located within the eastern school district of Pasco County, include Quail Hollow, West Zephyrhills, and Woodlawn Elementary Schools, Raymond B. Stewart Junior High School, and Zephyrhills High School. Based on the location of these existing facilities to SR 54, no adverse impacts will occur to educational facilities.

Recreational Facilities--No recreational facilities exist within 1 mile of the proposed roadway. However, several Pasco County parks are located within 2 miles of the proposed alignment. These parks include Turtle Lakes, Land O' Lakes Community Park, and Crystal Springs (Figure 4-1). In addition to these parks, two neighborhood parks and five community parks are located near the project area. These facilities, which are located within the Zephyrhills city limits, include Lincoln Heights Park, Transplant Park, Abbott Park, Easy Acres, Krussen Field, Shepard Park, and Zephyr Park. A regional park and a community park have also been proposed near Zephyrhills. In addition, recreation areas have been proposed in the approved master plans for Saddlebrook and Northwood developments. Other non-Pasco county parks located within the project vicinity include the Upper Hillsborough Reservoir, owned by SWFWMD, and the Green Swamp Wildlife Management Area, which is managed by the Florida Game and Freshwater Fish Commission (FGFWFC). Based on the location of these existing and proposed facilities to SR 54, no adverse impacts will occur to recreational facilities.



1. TURTLE LAKES
2. LAND O' LAKES COMMUNITY PARK
3. UPPER HILLSBOROUGH RESERVIOR
4. CRYSTAL SPRINGS
5. GREEN SWAMP WILDLIFE MANAGEMENT AREA

Figure 4-1
PUBLICLY OWNED LANDS WITHIN VICINITY OF THE SR 54 CORRIDOR

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

Churches--Currently, no churches exist within 1 mile of the proposed roadway. Approximately 40 churches comprising more than 20 denominations, are located within 5 miles of the SR 54 corridor with over 90 percent of these churches located in the City of Zephyrhills. Based on the location of these churches in relationship to SR 54, no adverse impacts will occur.

Social Service Facilities--The state-operated Zephyrhills Correctional Institution is located on U.S. 301 within one mile of the proposed roadway. This minimum-security facility has a capacity of 556 inmates. Despite the proximity of the proposed roadway to this facility, no adverse impacts will occur. No other social service facility exists within two miles of the project area.

Medical Facilities--No medical facilities exist within one mile of the proposed roadway. The closest, full-service hospital is the East Pasco Medical Center located four miles north of the project area on U.S. 301. This 85-bed facility has an emergency room in operation 24 hours. The construction of a new roadway will have a positive impact on emergency response times to this hospital.

Community Centers--Currently, no community center exists within one mile of the proposed roadway. The Alice Hall Community Center is located within two miles of the SR 54 corridor in Zephyrhills. This facility, which is owned and operated by the city, is rented out to the general public on a daily basis. Based on the location of this facility relative to SR 54, no adverse impacts will occur.

Fire Protection--Fire protection for the area adjacent to the proposed roadway is handled through the City of Zephyrhills Fire Department and the Pasco County Fire Rescue Department.

The Pasco County Fire Rescue Department currently has two stations in proximity to the proposed roadway. However, only Station #16 is located within one mile of the SR 54 corridor. Station #16 is located on Chancey Road west of CR 579. In addition, a fire station has been proposed in the approved master plan for Saddlebrook. The addition of a second east-west roadway through south Pasco County will expedite the emergency response time of the fire rescue vehicles.

Police Protection--Police protection for the area adjacent to the proposed roadway is handled through the Zephyrhills Police Department (for the City of Zephyrhills), the Pasco County Sheriff's Department, and the Florida Highway Patrol (FHP). The Pasco County Sheriff's Department and the FHP provide law enforcement to the unincorporated area of the county outside Zephyrhills. Law enforcement near the proposed roadway has been divided into three sectors or zones. One deputy is assigned to each zone on a daily basis. Currently, no sheriff's station or FHP station exists near the proposed roadway, however, a police station has been proposed in the approved master plan for Saddlebrook. The construction of a new roadway in south Pasco County will have a positive impact on the emergency response time for law enforcement vehicles and personnel.

4.1.2 Community Cohesion

Differences in the alignment of the three alternatives will not alter the effects of the proposed roadway on communities within the region since the road will not bisect existing communities. As the rural areas of south Pasco County develop into more suburban communities, SR 54 will facilitate access among neighborhoods, institutions, and community facilities.

As most of the corridor to be traversed by the proposed SR 54 is currently in agricultural use, impacts to local communities will be minimal. No cross streets will be terminated; therefore, no neighborhoods will be split, no ethnic groups will be isolated, and the roadway is not expected to disrupt the

social structure of the region. The project will benefit social activity in the region by improving access among neighborhoods, shopping and business areas, and recreational areas such as parks. The roadway will not present a hindrance to elderly and handicapped persons, nondrivers, and transit-dependent individuals or minorities.

Due to the placement of the roadway along an undeveloped corridor, the project will not require displacement of institutions, businesses, employees, or houses. Therefore, employment opportunities and minority communities will not be affected.

This project has been developed in accordance with the Civil Rights Act of 1964 as amended by the Civil Rights Act of 1968.

4.1.3 Land Use

Existing land use in southeastern Pasco County is predominantly rural and agricultural in nature, with smaller residential, institutional/governmental, commercial, recreational, and undeveloped land uses. In future years, a significant amount of vacant and agricultural lands will be converted to commercial, industrial, service, and residential uses to accommodate population growth. The Pasco County Growth Management Plan indicates that most business-related growth is expected to occur along coastal areas of Pasco County including New Port Richey, with other pockets centered around Zephryhills, Dade City, and Land O' Lakes. Residential areas will spread outward from these business centers with the development of planned subdivisions and shopping centers.

Existing land uses within 200 feet of the entire proposed SR 54 corridor include agricultural, low- to medium-density residential, commercial, institutional, and open space (Figure 4-2). Residential developments and mobile home

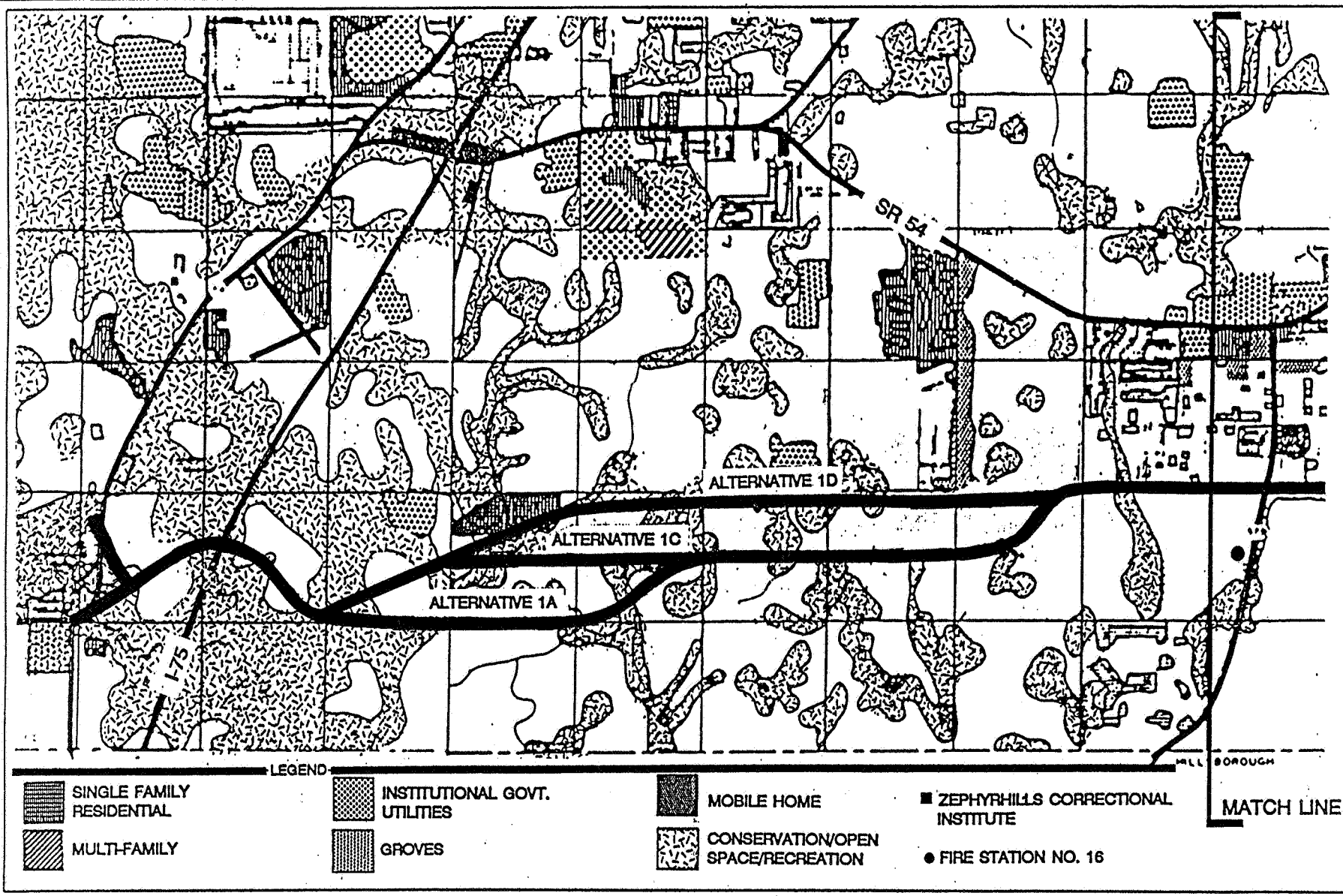


Figure 4-2 (1 of 2)
EXISTING LAND USE

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

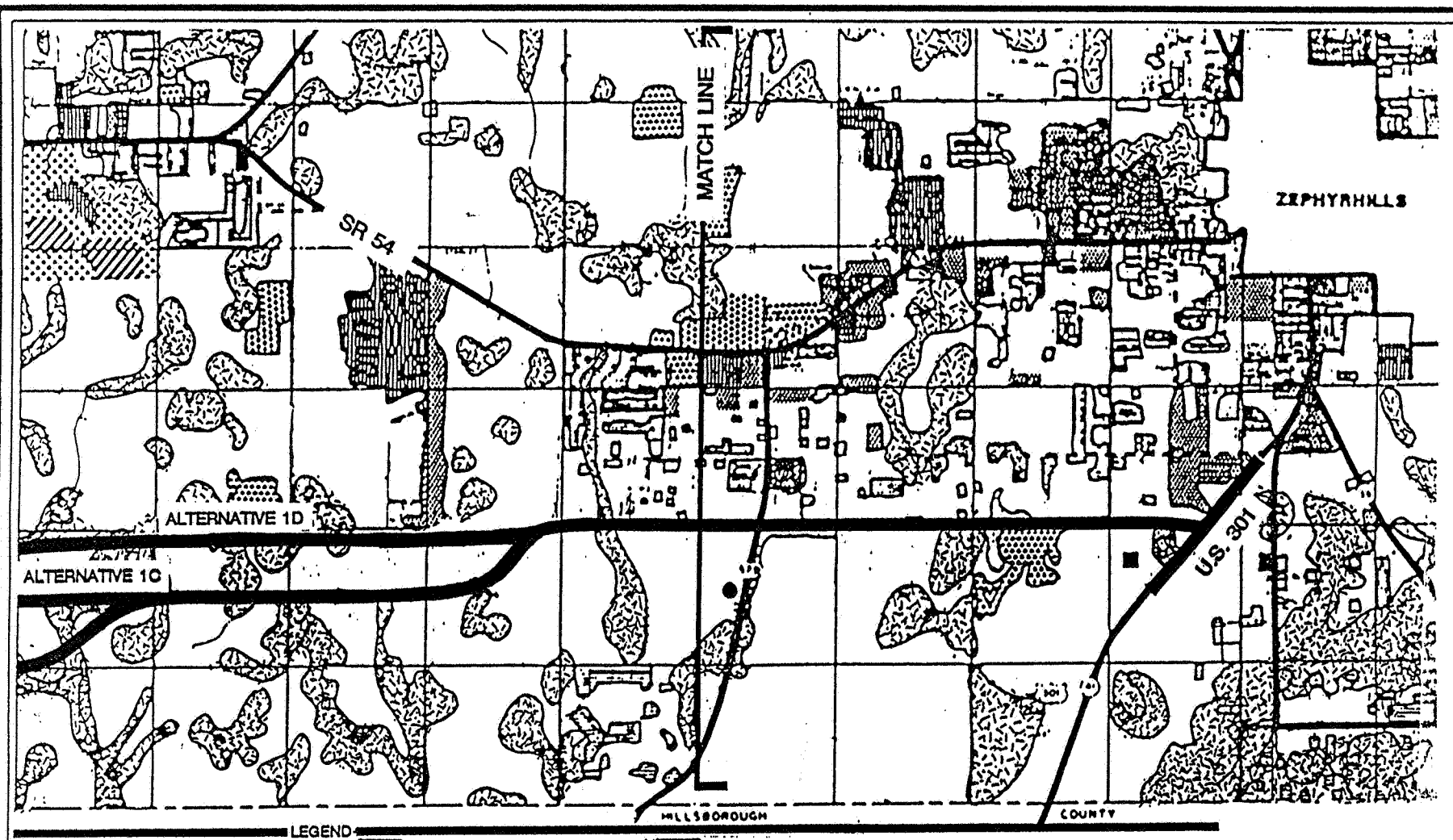


Figure 4-2 (2 of 2)
EXISTING LAND USE

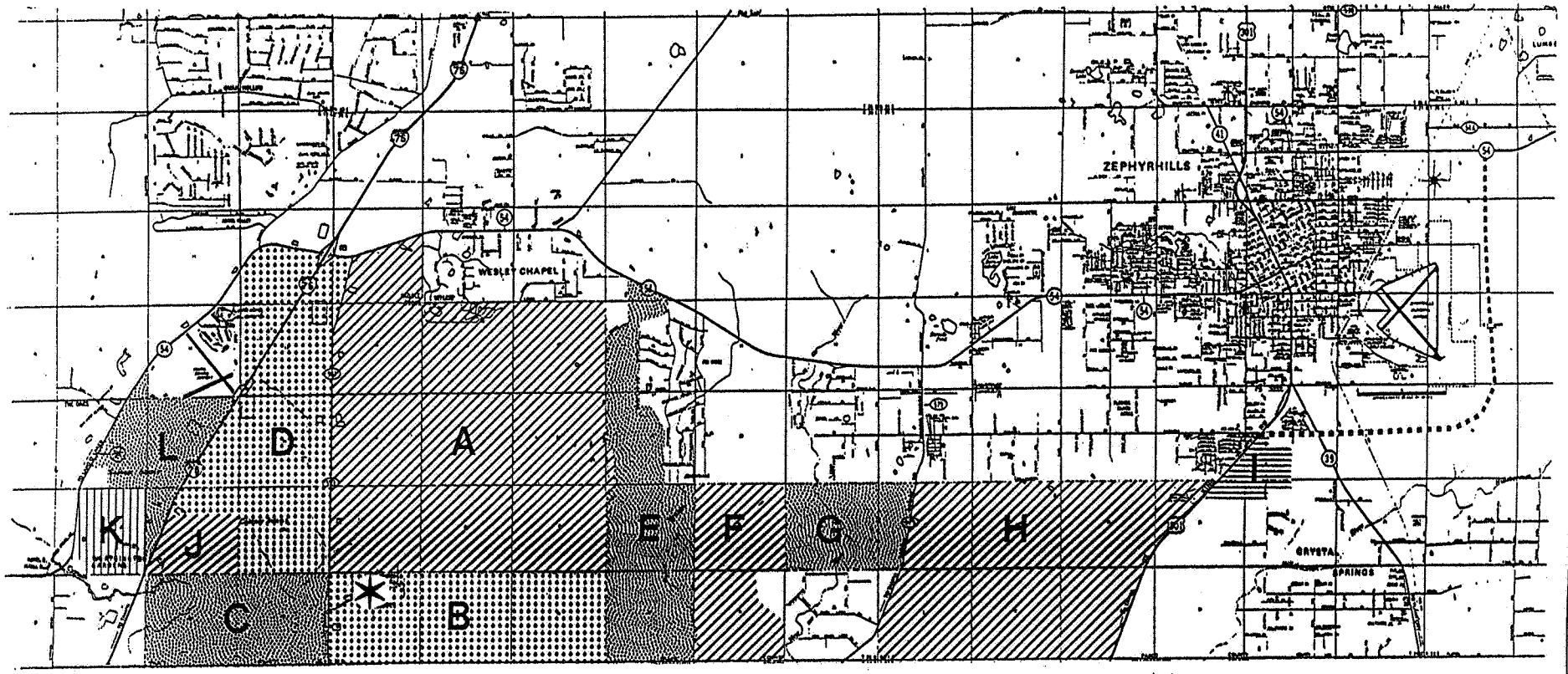
SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

parks bordering the proposed alignment include the Williamsburg Subdivision, Country Crossings at Foxwood, Fox Ridge Planned Mobile Home Community, Timber Lake Estates, Terrace Park Adult Mobile Homes, Village of Tippecanoe, Riverhaven Mobile Home Park, and Tropical Acre Estates.

The Wiregrass Ranch (Figure 4-3) is a privately owned and operated cattle ranch and a single family residence. The property outside the residential area is used as open grazing land for cattle. Within the study limits, there are no feed lots or structures on the property. Impacts to the Wiregrass Ranch would be limited to restricted access to property bisected by the proposed improvements. The property owner will be contacted to determine if cattle crossings should be provided.

Developments to be constructed along the project corridor and in the region at large indicate a trend toward clustered mixed use communities. Currently, six developments planned for the vicinity will border or intersect the new roadway (Figure 4-3). These developments include Wesley Chapel Lakes, Trout Creek, Oak Lake Village, Northwood, and Saddlebrook Village. At least 10 other such major residential, industrial, and commercial developments are planned in surrounding areas in southern Pasco County. These include Wyndtree, Trinity Communities, Mitchell Ranch, Stagecoach Village, Grand Oaks, West Pasco Industrial Park, Lake Padgett Pines, Willow Bend, Sable Ridge, and Le Dantec.

The status, scope, and size of each development is reported in Table 4-1. Projected development within the project limits is in accordance with the Pasco County Land Use Element and the goals established in Pasco County's Comprehensive Plan adopted in 1990 as well as the State Comprehensive Plan. The location and construction of SR 54 will influence design of developments planned for the corridor, but will not fundamentally change projected land use patterns anticipated for south Pasco County.



LEGEND

A - WIREGRASS RANCH, INC.*
B - TROUT CREEK
C - NORTHWOOD DEVELOPMENT
D - SADDLEBROOK VILLAGE DEVELOPMENT
E - WESLEY CHAPEL LAKES
F - OAK LAKE VILLAGE
✳ WILLIAMSBURG DEVELOPMENT
G - ZEPHYRHILLS EGG CO.
H - HICKORY HILLS LAND CO.
I - RUCKS
J - LOGAN, BLADLOCK, BLANCHARD, AND SKINNER
K - MARVIL AND KING
L - COPE
▪▪▪▪▪ ZEPHYRHILLS EAST BYPASS

N

1 MILE

* SINGLE OWNERSHIP NO PLANNED DEVELOPMENT

Figure 4-3
PLANNED DEVELOPMENTS ADJACENT TO PROPOSED SR 54 CORRIDOR

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

Table 4-1. Planned Developments Adjacent to or Near the Proposed SR 54 Corridor

Name	Status	Scope	Size
Saddlebrook Village	Planned	4,700 homes 3.1 million square-foot industrial park; shopping centers, hotel	2,300 acres
Northwood	Planned	3,400 homes	1,084 acres
Oak Lake Village	Plans Uncertain	Plans Uncertain	1,577 acres
Wesley Chapel Lakes	Planned	5,231 homes	2,100 acres
Trout Creek	Planned	4,130 homes	Approximately 1,920 acres
Wyndtree	Planned	800 homes	420 acres
Trinity Communities	Planned	9,700 homes Trinity College-new campus' commerce park, health care facilities.	3,600 acres (90 percent of it in Pasco County)
Mitchell Ranch	Planned	6,000 homes	1,718 acres
Stagecoach Village	Planned	1,300 homes	730 acres
Grand Oaks	Under Development	800 homes	483 acres
West Pasco Industrial Park	Planned	Industrial and Office Complex	212 acres
Lake Padgett Pines	Development halted in 1970's but may resume.	8,800 homes originally planned	3,355 acres
Willow Bend	Planned	950 homes, shopping center	740 acres

Table 4-1. Planned Developments Adjacent or Near the Proposed SR 54 Corridor (Continued, Page 2 of 2)

Name	Status	Scope	Size
Sable Ridge	Planned	990 homes	282 acres
Le Dantec	Planned	1,600 homes	1,166 acres

The new east-west roadway will serve as a parallel traffic reliever to the existing SR 54A and will have a balancing effect on future traffic projections. This same benefit will be recognized by the addition of a new interchange to I-75. A better level of service will be recognized at the existing SR 54A/I-75 interchange because motorists will have a second access point. Some motorists will experience shorter trip lengths due to the construction of the proposed roadway.

The construction of the proposed roadway will have minimal impact on approved development within the study limits. During the conceptual design phase, meetings were held with major property owners to assure compatibility with proposed development.

4.1.4 Relocations

The proposed project, as presently conceived, will not displace any residences or businesses within nearby communities. Should this change over the course of the project, FDOT will carry out a right-of-way and relocation program in accordance with FS 339.09 and the Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (Public Law 91-646). The brochures, which describe in detail the Department's relocation assistance program and right-of-way acquisition program, are "Your Relocation" and "Right-of-Way for Transportation." Both of these brochures are distributed at all public hearings and are made available upon request to any interested persons.

4.2 CULTURAL AND HISTORICAL RESOURCES

4.2.1 Historic and Archaeological

In accordance with procedures contained in 36 C.F.R., Part 800 and Chapter 267 F.S., a Cultural Resource Assessment, including background research and a field survey coordinated with the State Historic Preservation Officer (SHPO), was conducted for the project. As a result of the assessment, 27 prehistoric archaeological sites (8Pa356-8Pa382), two of which also contained historic components, were identified. No standing structures were identified in the

investigation. After application of the National Register Criteria of Significance, the FHWA found that the sites were not eligible for listing on the National Register of Historic Places. The SHPO rendered the same opinion. Based on the fact that no additional archaeological or historical sites or properties are expected to be encountered during subsequent project development, the FHWA, after consultation with SHPO, has determined that no National Register properties would be impacted. The SHPO coordination letter is shown in Appendix H.

4.2.2 Section 4(f) Lands

No Section 4(f) lands, including designated county parks, recreational lands, wildlife refuges, national or state forests, trails, preserves or parks, wild and scenic rivers, playgrounds, or publicly-owned lakes or rivers, will be acquired for construction of the roadway or right-of-way.

4.3 NATURAL AND PHYSICAL IMPACTS

4.3.1 Multi-Modal Systems

Currently, multi-modal systems along the eastern portion of existing SR 54 are limited to several tour or private chartered buses. In addition, no bikeways exist along this roadway and crosswalks/sidewalks are restricted to areas near schools. Due to the rural nature of SR 54, no county-operated mass transit systems exist along this facility and no plans have been made to provide service in the near future.

For the new SR 54 roadway, no mass transit systems have been planned for this roadway. However, the Hillsborough Area Regional Transit Authority (HART) has proposed a new park-n-ride facility on the new SR 54 roadway adjacent to the proposed SR 54/I-75 interchange. This facility will serve as a transit hub for people planning to travel to work from Pasco County to the downtown Tampa area or eastern Hillsborough County via I-75/I-275. In addition, since SR 54 is expected to be a partially controlled access roadway, no design provisions have been made to accommodate use of paved shoulders by pedestrian and bicycle

traffic. However, proposed major intersections along SR 54 (at CR 581, CR 579, and U.S. 301) may be designed to accommodate use of paved shoulders by pedestrian and bicycle traffic traveling across SR 54. Since the proposed construction will impact no existing bicycle facilities, the project complies with 23 USC 109(n).

4.3.2 Air

The major traffic facilities within the project limits were evaluated using the Air Quality Screening Test (Part 2, Chapter 16, of FDOT's, PD&E guidelines). The results indicated that all of the project Build Alternatives (1A, 1C, and 1D) passed the screening test. Therefore, this project will not have a significant adverse impact on air quality.

This project is in an area where the State Implementation Plan does not contain any transportation control measures. Therefore, the conformity procedures of 23 CFR 770 do not apply to this project. This project is in conformance with the State Implementation Plan because it will not cause violations of air quality standards and will not interfere with any transportation control measures.

4.3.3 Noise

In accordance with the Federal Aid Highway Manual, Volume 7, Chapter 7, Section 3 (FHPM 7-7-3), Procedures for Abatement of Highway Traffic Noise, a noise assessment was conducted for the SR 54 project. The purpose of this assessment was to determine the potential impacts to noise-sensitive sites and to evaluate measures for noise attenuation at sites with impacts. A noise study report, which contains the detailed methodology and results of the noise impact study, has been prepared and is available from FDOT District 7 office in Tampa. The results of this report are summarized below. Thirty-three receptor sites were selected to represent the noise-sensitive sites in the project area. Figure 4-4 depicts the location of each receptor site and Table 4-2 describes the location and the number of dwelling units each represents.

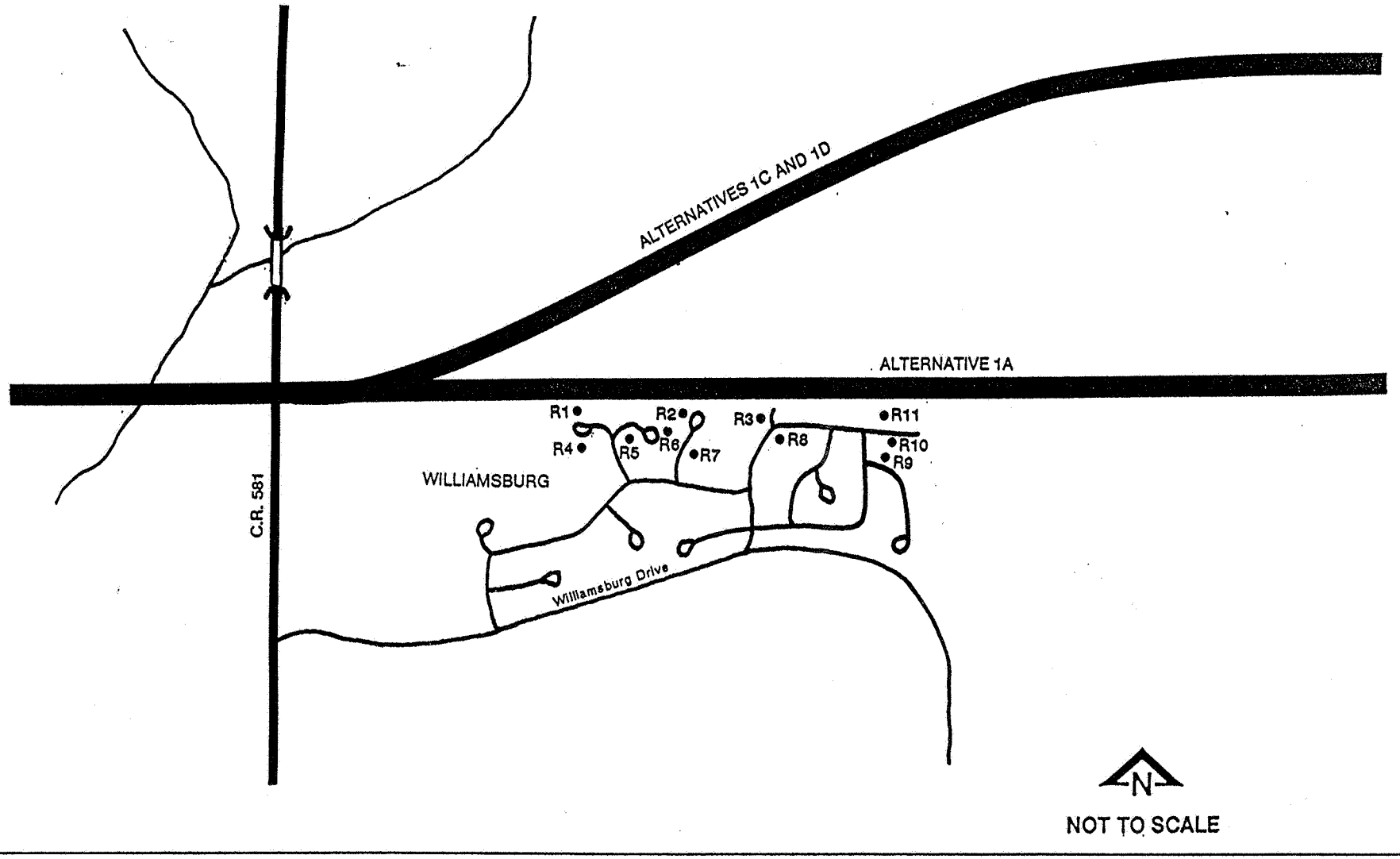


FIGURE 4-4
NOISE RECEPTOR SITES
(1 OF 4)

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

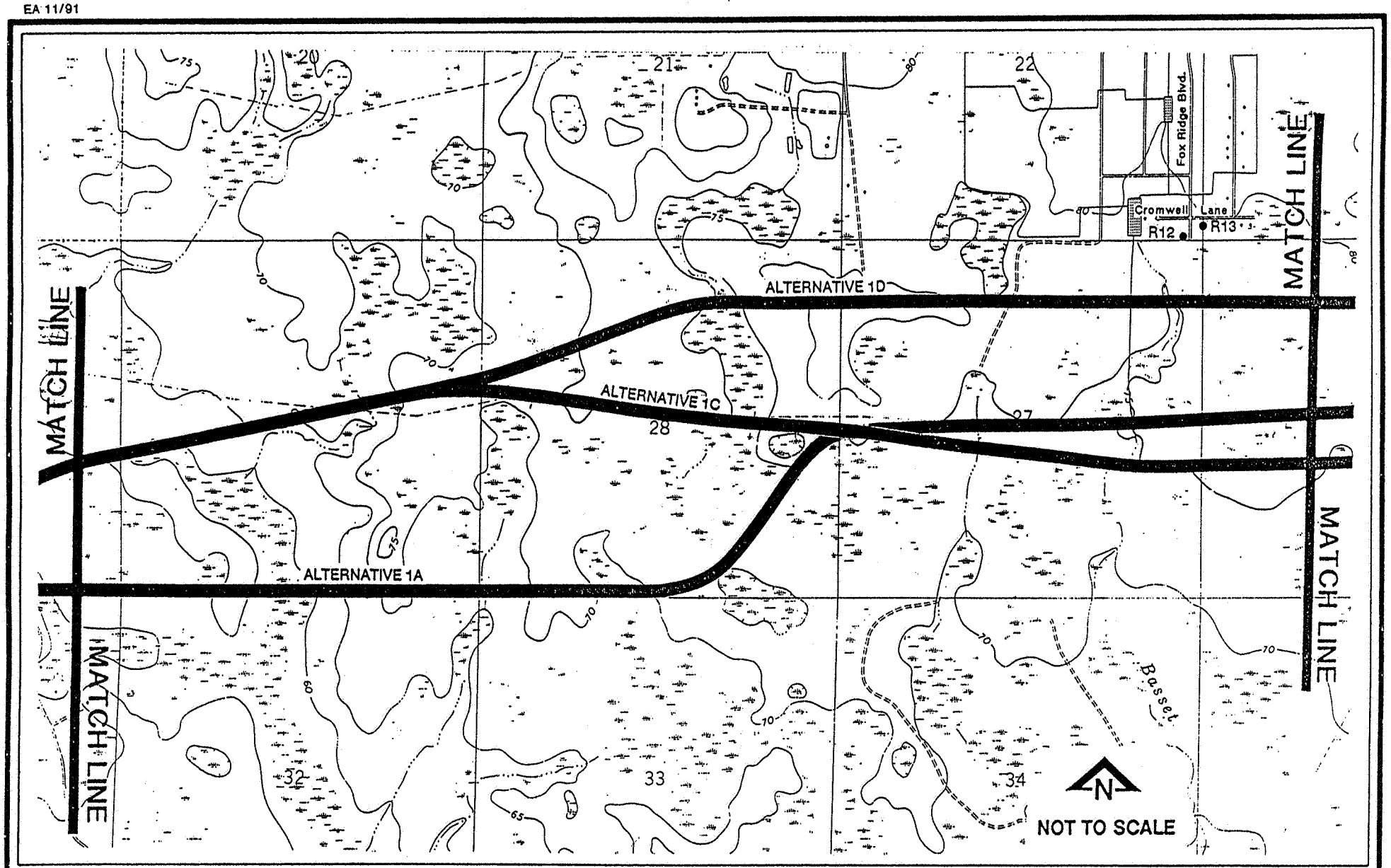


FIGURE 4-4
NOISE RECEPTOR SITES
(2 OF 4)

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

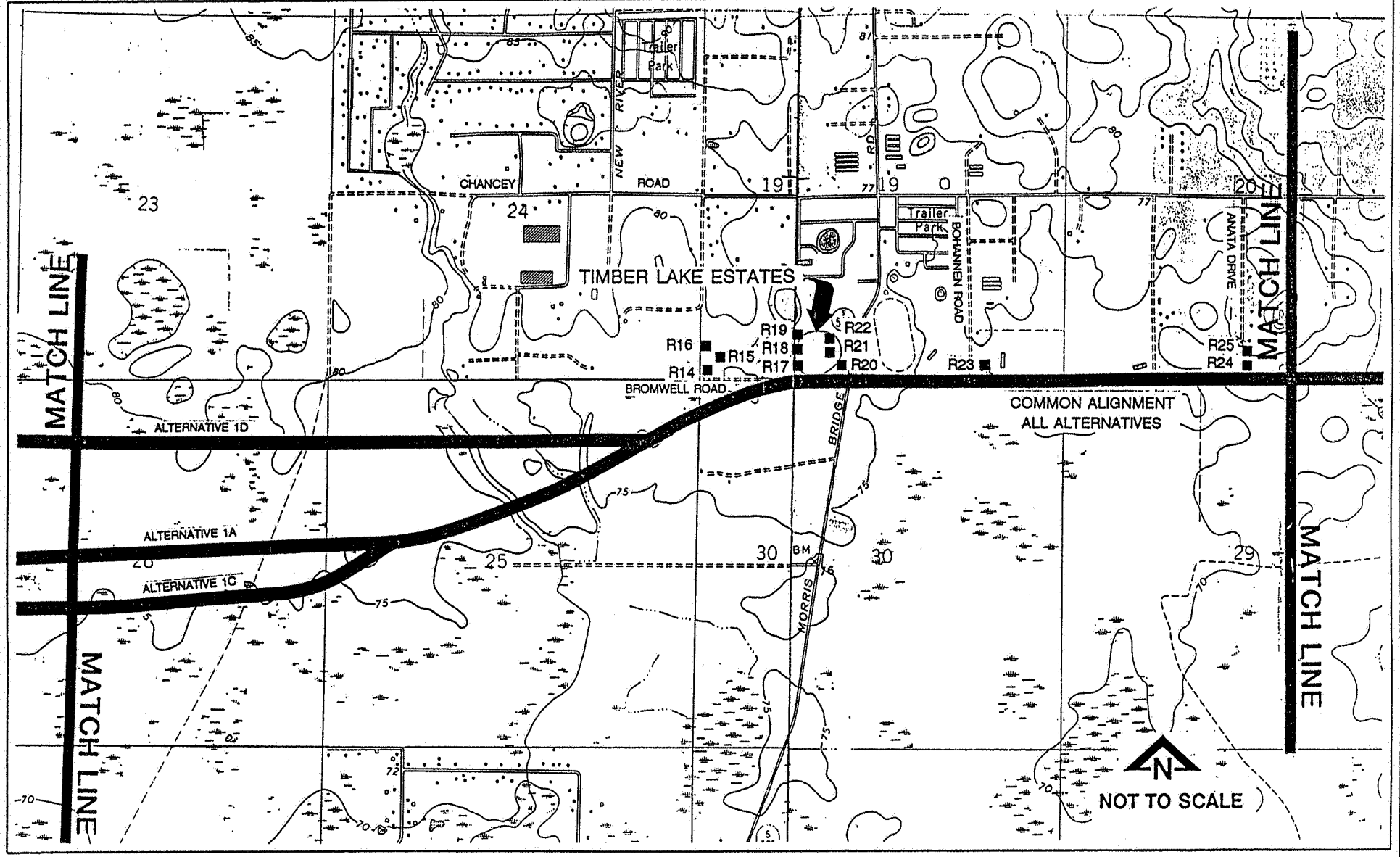


FIGURE 4-4
NOISE RECEPTOR SITES
(3 OF 4)

SR 54/SR 54A
FROM CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

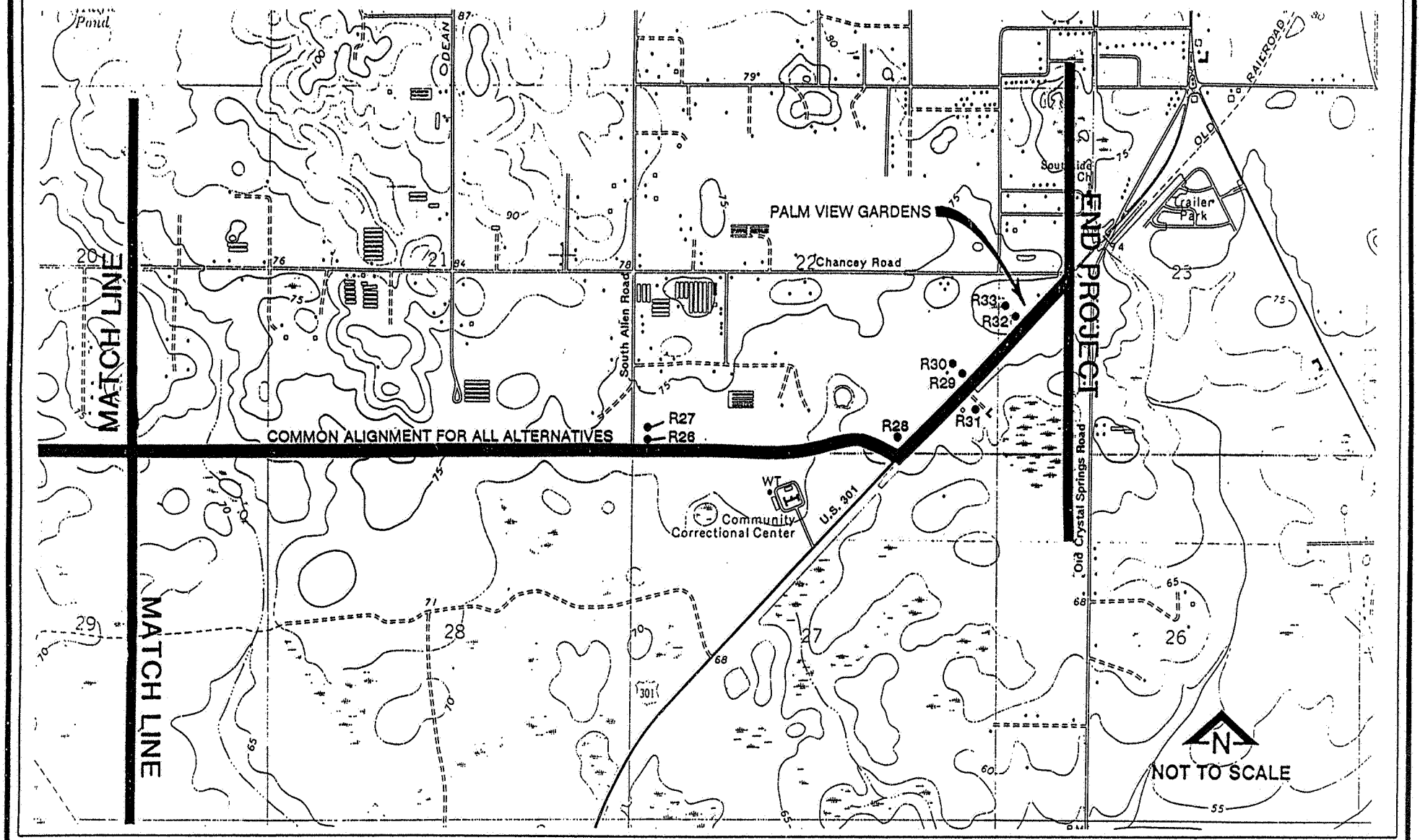


FIGURE 4-4
NOISE RECEPTOR SITES
(4 OF 4)

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

Table 4-2. Noise Receptor Sites

Receptor Number	Location	Distance to Roadway (feet)*					
		Build Alternative 1A		Build Alternative 1C		Build Alternative 1D	
		Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound
R1	Residence located 2,050 feet east of CR 581 and 1,310 feet north of Williamsburg Drive (back property line). Representative of 9 residences.	162	64	512	414	512	414
R2	Residence located 2,750 feet east of CR 581 and 1,120 feet north of Williamsburg Drive (back property line). Representative of 3 residences.	162	64	847	749	847	749
R3	Residence located 3,300 feet east of CR 581 and 1,010 feet north of Williamsburg Drive (back property line). Representative of 3 residences.	162	64	1,112	1,014	1,112	1,014
R4	Residence located 2,090 feet east of CR 581 and 1,110 feet north of Williamsburg Drive. Representative of 4 second-row residences.	392	280	722	624	722	624
R5	Residences located 2,355 feet east of CR 581 and 1,080 feet north of Williamsburg Drive. Representative of 2 second-row residences.	362	250	817	719	817	719
R6	Residence located 2,625 feet east of CR 581 and 1,040 feet north of Williamsburg Drive. Representative of 5 second-row residences.	312	210	922	824	922	824

Table 4-2. Noise Receptor Sites (Continued, Page 2 of 6)

Receptor Number	Location	Distance to Roadway (feet)*					
		Build Alternative 1A		Build Alternative 1C		Build Alternative 1D	
		Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound
R7	Residence located 2,850 feet east of CR 581 and 900 feet north of Williamsburg Drive. Representative of 3 second-row residences.	372	274	817	719	817	719
R8	Residence located 3,435 feet east of CR 581 and 810 feet north of Williamsburg Drive. Representative of 6 second-row residences.	367	269	922	824	922	824
R9	Residence located 4,100 feet east of CR 581 and 1,000 feet north of Williamsburg Drive. Representative of 3 third-row residences.	402	304	1,072	974	1,072	974
R10	Residence located 4,230 feet east of CR 581 and 1,050 feet north of Williamsburg Drive. Representative of 2 second-row residences.	362	264	1,732	1,634	1,732	1,634
R11	Residence located 4,130 feet east of CR 581 and 1,200 feet north of Williamsburg Drive (back property line). Representative of 8 residences.	162	64	1,522	1,424	1,522	1,424

Table 4-2. Noise Receptor Sites (Continued, Page 3 of 6)

Receptor Number	Location	Distance to Roadway (feet)*					
		Build Alternative 1A		Build Alternative 1C		Build Alternative 1D	
		Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound
R12	Residence located 55 feet west of Fox Ridge Boulevard and 115 feet South of Cromwell Lane (back property line). Representative of 9 residences.	2,574	2,672	3,044	3,142	824	922
R13	Residence located 85 feet east of Fox Ridge Boulevard and 115 feet south of Cromwell Lane. Representative of 4 residences.	2,736	2,834	3,208	3,306	989	1,087
R14	Residence located 2,100 feet west of CR 579 and 10 feet north of Bromwell Drive.	109	207	109	207	109	207
R15	Residence located 1,970 feet west of CR 579 and 190 feet north of Bromwell Drive. Representative of 3 second-row residences.	274	372	274	372	274	372
R16	Residence located 2,000 feet west of CR 579 and 290 feet north of Bromwell Drive. Representative of 7 third-row residences.	374	472	374	472	374	472
R17	Residence located 650 feet west of CR 579 and 10 feet north of Bromwell Road. Representative of 9 residences.	94	192	94	192	94	192

Table 4-2. Noise Receptor Sites (Continued, Page 4 of 6)

Receptor Number	Location	Distance to Roadway (feet)*					
		Build Alternative 1A		Build Alternative 1C		Build Alternative 1D	
		Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound
R18	Residence located 650 feet west of CR 579 and 100 feet north of Bromwell Road. Representative of 5 second-row residences.	184	282	184	282	184	282
R19	Third-row residence located 670 feet west of CR 579 and 160 feet west of Bromwell Road.	249	347	249	347	249	347
R20	Residence located 45 feet west of CR 579 and 30 feet north of Bromwell Road (back property line). Representative of 3 residences.	94	192	94	192	94	192
R21	Residence located 80 feet west of CR 579 and 90 feet north of Bromwell Road. Representative of 2 second-row residences.	174	272	174	272	174	272
R22	Residence located 85 feet west of CR 579 and 180 feet north of Bromwell Road. Representative of 5 third-row residences.	264	362	264	362	264	362
R23	Residence located 330 feet east of Bohannen Road and 70 feet north of proposed right-of-way line. Representative of 4 residences.	134	232	134	232	134	232

Table 4-2. Noise Receptor Sites (Continued, Page 5 of 6)

Receptor Number	Location	Distance to Roadway (feet)*					
		Build Alternative 1A		Build Alternative 1C		Build Alternative 1D	
		Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound
R24	Residence located 95 feet east of Anata Drive and 180 feet north of proposed right-of-way line. Representative of 3 residences.	254	352	254	352	254	352
R25	Residence located 30 feet east of Anata Drive and 395 feet north of proposed right-of-way line. Representative of 3 second-row residences.	489	587	489	587	489	587
R26	Residence located 160 feet east of South Allen Road and 2,570 feet south of Chancey Road. Representative of 3 residences.	94	192	94	192	94	192
R27	Second-row residence located 170 feet east of South Allen Road and 2,450 feet south of Chancey Road. Representative of 2 second-row residences.	224	322	224	322	224	322
R28	Residence located 270 feet northwest of U.S. 301 and 2,560 feet south of Chancey Road. Representative of 9 residences.	244/334	342/432	244/334	342/432	244/334	342/432
R29	Residence located 100 feet northwest of U.S. 301 and 1,590 feet south of Chancey Road. Representative of 1 resident.	164	262	164	262	164	262

Table 4-2. Noise Receptor Sites (Continued, Page 6 of 6)

Receptor Number	Location	Distance to Roadway (feet)*					
		Build Alternative 1A		Build Alternative 1C		Build Alternative 1D	
		Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound
R30	Residence located 200 feet northwest of U.S. 301 and 1,615 feet south of Chancey Road. Representative of 7 second-row residences.	264	362	264	362	264	362
R31	Residence located 300 feet southeast of U.S. 301 and 1,990 feet south of Chancey Road.	164	262	164	262	164	264
R32	Residence located 35 feet northwest of U.S. 301 and 790 feet south of Chancey Road. Representative of 42 residences in Palm View Gardens Trailer Park.	74	172	74	172	74	172
R33	Residence located 150 feet northwest of U.S. 301 and 770 feet south of Chancey Road. Representative of 24 second-row residences in Palm View Gardens Trailer Park.	164	262	164	262	164	262

* Distance measured from nearest pavement edge of proposed roadway or U.S. 301.

All sites are single-family residences and represent 196 dwelling units. These receptor sites represent exterior areas and are classified under Category B of the Federal Highway Administration Noise Abatement Criteria (FHWA-NAC) found in FHPM 7-7-3. The FHWA-NAC level for this category is in Leq(h) of 67 decibels (dB) measured on the A-weighted scale (dBA).

Computer projected noise levels were predicted at the 33 noise-sensitive receptor sites for the base year (1990) and the design year (2010). The FHWA Highway Traffic Noise Prediction Model, STAMINA 2.0, was used to predict noise levels. Noise levels were also monitored at nine sites along the project corridor to determine baseline noise levels and levels for the 2010 No-Build scenario. The results of the computer modeling and noise modeling are summarized in Table 4-3.

Without the project, noise levels for the base year (1990) and the design year (2010) at 32 of 34 receptor sites neither approached nor exceeded the FHWA-NAC. One receptor site with a projected noise level of 65 dBA approached the FHWA-NAC and one receptor site with a projected noise level of 72 dBA exceeded the FHWA of 67 dBA. Both of these sites are located along U.S. 301.

Noise impacts varied between Build Alternatives. Build Alternative 1A will impact 30 receptor sites representing 143 dwelling units (i.e., approach or exceed FHWA-NAC of 67 dBA). Build Alternative 1C will impact 18 receptor sites representing 102 residences. Build Alternative 1D will impact 19 receptor sites representing 111 residences.

Noise abatement measures were evaluated for each of the noise impacted sites. These receptor sites had projected noise levels that approached or exceeded FHWA-NAC of 67dBA or warrant abatement consideration based on projected noise level increases. For Build Alternative 1A, this included receptor sites R1 through R11, R14 through R27, R29, R31, and R32. For Build Alternative 1C, this included receptor sites R1, R14 through R27, R29, R31, and R32. For

Table 4-3. Computer-Projected Noise Levels (dBA) at Noise-Sensitive Sites for the Build Alternatives and FHWA Noise Abatement Criteria (FHWA-NAC)

Site	Existing Leq (h)	Build Alternative (Year 2010) 1A	1C	1D	FHWA-NAC
R1	47	71*	60*	60*	67
R2	47	71*	56	56	67
R3	47	71*	54	54	67
R4	47	61*	54	54	67
R5	47	61*	53	53	67
R6	47	64*	54	54	67
R7	47	61*	51	51	67
R8	47	60*	49	49	67
R9	47	62*	49	49	67
R10	47	63*	49	49	67
R11	47	70*	51	51	67
R12	43	46	44	56*	67
R13	43	45	43	55	67
R14	45	68*	68*	68*	67
R15	45	62*	62*	62*	67
R16	45	60*	60*	60*	67
R17	52	69*	69*	69*	67
R18	52	64*	64*	64*	67
R19	52	61*	61*	61*	67
R20	61	73*	73*	73*	67
R21	61	71*	71*	71*	67
R22	61	70*	70*	70*	67
R23	42	63*	63*	63*	67
R24	42	59*	59*	59*	67
R25	42	55*	55*	55*	67
R26	42	65*	65*	65*	67
R27	42	60*	60*	60*	67
R28	57	60	60	60	67
R29	65	65*	65*	65*	67
R30	59	59	59	59	67
R31	60	65*	65*	65*	67
R32	72	69*	69*	69*	67
R33	62	61	61	61	67

* Projected noise levels that approach or exceed the FHWA-WAC of 67 dBA or warrant abatement considerations based on projected noise level increases.

Build Alternative 1D, this included receptor sites R1, R12, R14 through R27, R29, R31, and R32. The evaluation indicated that noise abatement measures (noise barriers and/or vegetative barriers) were found feasible and could be provided at a reasonable cost at 119 of the 143 dwelling units impacted by Alternative 1A, at 78 of 102 dwelling units impacted by Alternative 1C, and at 87 of the 111 dwellings impacted by Alternative 1D. The noise abatement measures found feasible for Build Alternative 1A are estimated to cost $1,055,550 which is 30 percent of the $3,575,000 that could be spent on noise abatement. This amount was derived by multiplying the number of dwelling units impacted by $25,000 and represents the amount that can be used on noise abatement and be considered reasonable. The noise abatement measures found feasible for Build Alternative 1C are estimated to cost $690,050 which is 27 percent of the $2,550,000 that could be spent on noise abatement. The noise abatement measures found feasible for Build alternative 1D are estimated to cost $914,050 which is 33 percent of the $2,775,000 that could be spent on noise abatement. The 24 noise-sensitive sites that noise abatement measures were not considered feasible for each of the build alternatives would have unavoidable noise impacts.

Since noise abatement measures were found feasible, FDOT/Pasco County will consider the construction of feasible noise abatement measures at the noise-impacted locations identified in this analysis contingent upon the following conditions.

- Detailed noise analyses during the final design process;
- Cost-effectiveness analysis based on final design;
- Community input regarding desires, types, heights, and locations;
- Preferences regarding compatibility with adjacent land uses, particularly as addressed by officials having jurisdiction over such land uses; and
- Safety and engineering aspects as related to the roadway user and the adjacent property owner.

It is likely that the noise-abatement measures for the identified noise-impacted areas will be constructed if found to be feasible based on the contingencies listed above. If, upon evaluation during the final design phase of the contingency conditions listed above, it is determined that noise abatement is not feasible for a given location(s), such determination(s) will be made prior to granting approval of the reevaluation for construction advertisement. Commitments regarding the exact abatement measure locations, heights, and type (or approved alternatives) will be made before the construction advertisement is approved.

In accordance with Federal Aid Highway Program Manual, Volume 7, Chapter 7, Section 3 (FHPM 7-7-3), Procedures for Abatement of Highway Traffic Noise, copies of the noise study will be sent to Pasco County Department of Planning and local officials. The Noise Study Report provides generalized future noise levels for both developed and undeveloped lands or properties in the immediate vicinity of the project. It also provides information that may be useful to local communities to protect future land development from becoming incompatible with anticipated noise levels.

4.3.4 Wetlands

The proposed SR 54 alternatives extend approximately 14 miles through southeastern Pasco County. Throughout this vicinity, the majority of the landscape is dominated by a mosaic of upland rangeland/improved pasture, punctuated by numerous wetland systems. Most of these wetlands can be classified among the four following community types: freshwater marsh, cypress dome/strand, mixed swamp strand, and altered.

Within the study corridor, the location of potential alignments was restricted by required interchange spacing constraints and avoidance of impacts to regionally significant environmental and socioeconomic resources. During this stage, large significant wetland systems (e.g., creeks, sloughs, large

forested wetlands, etc.) were identified and the alignments were designed to avoid or minimize wetland impacts. Complete avoidance of such systems was not possible due to the abundance and configuration of wetlands and the required engineering design standards.

Once the alignments were positioned to minimize or avoid large impacts to significant wetlands, further refinements were implemented to avoid or minimize impacts to smaller but environmentally important wetlands. In this way, three viable alignments for further study and evaluation were developed.

Alignment development also included coordination with the environmental staff of federal, state, and regional agencies (see Section 5.2.2). Individual meetings were held with staff from COE, DER, and SWFWMD on January 23, 25, and February 7, 1989, respectively. Points of discussion included project justification and review of proposed alignments. In general, the agency representatives acknowledged that the least environmentally sensitive alternatives (i.e., those with fewer impacts) had been selected. Several modifications to minimize wetland impacts (e.g., shifting of alignment, modification of curves, etc.) which were suggested by the agency represetatives were incorporated into the project design. In addition, a Permit Coordination Report which describes the wetlands impacted by the proposed alternatives and the proposed mitigation measures to minimize impacts was prepared and sent to 11 review agencies in September 1989 for their review and comment (see Section 5.2.2). However, no pertinent comments were received.

In the analysis of the proposed wetland involvement, areal impacts to wetlands were calculated (by use of a planimeter) utilizing the entire area of wetlands located within the proposed 250 foot wide right-of-way. This approach was necessary due to the lack of survey grades and other information which will influence the final roadway design. As such, these calculations should be

considered as the maximum potential acreages of wetland involvement. The amount of wetland involvement at the final design stages will be reduced where possible by the implementation of practicable avoidance measures (e.g., reduction of median widths, use of steeper side slopes, elimination of swales, etc.). Proposed mitigation and compensatory measures are discussed in Section 4.3.4.2. The following summarizes the characteristics of the wetlands along the study alternatives and impacts to these systems. The location of the wetland sites are depicted in Figure 4-5. Appendix G provides additional information on the function and values of each wetland site. Wetland Evaluation Techniques Volume II (Wet 2.0) was used to develop a Level I assessment to evaluate both the social significance (values) and effectiveness and opportunity (functions) of each wetland that could be directly affected by the proposed project. Individual wetlands were classified under the U.S. Fish and Wildlife Service Classification System. A description of the classification codes used in Tables 4-4 through 4-9 are provided in Appendix E. A detailed description and analysis of the ecological attributes and impacts to each of 78 individual wetland sites is reported in the Permit Coordination Report for this project.

4.3.4.1 Wetland Involvement--All three alternatives have a common alignment, and thus common wetland involvement, from the western terminus of the project near the Cypress Creek Bridge to CR 581, and from CR 579 (Morris Bridge Road) to U.S. 301.

Alternative 1A would entail a total of 65.00 acres of wetland involvement at 41 wetland sites. The potential wetland involvement for each site has been itemized in Table 4-4 and the values of each affected wetland are presented in Table 4-5.

Alternative 1C will have identical wetland involvement as Alternative 1A at sites 1-11 and 33-40. Including these sites, Alternative 1C will impact a total of 56.68 acres of wetlands at 42 wetland sites. An itemization of the

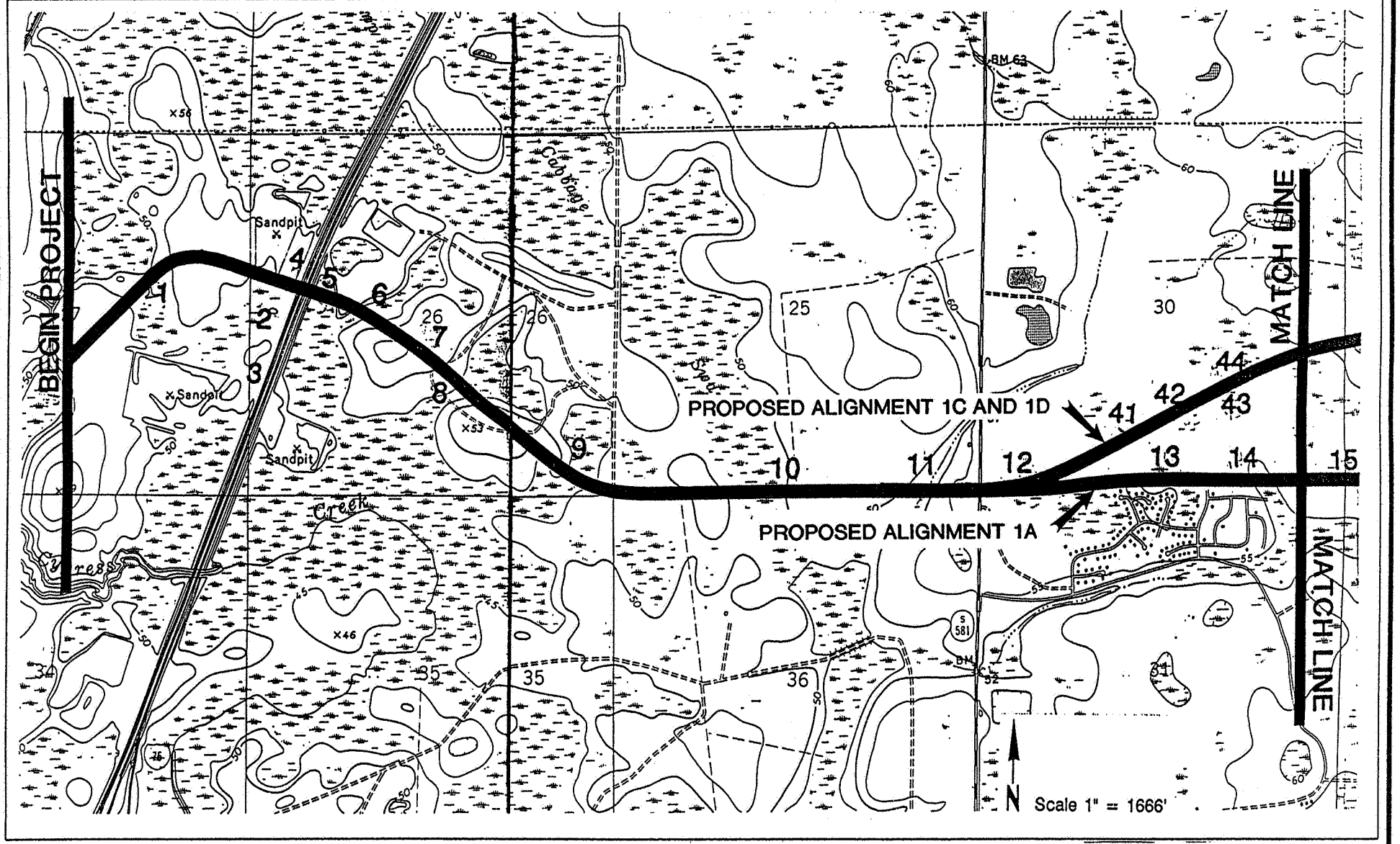


FIGURE 4-5 (SHEET 1 OF 4)
WETLAND INVOLVEMENT SITES

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

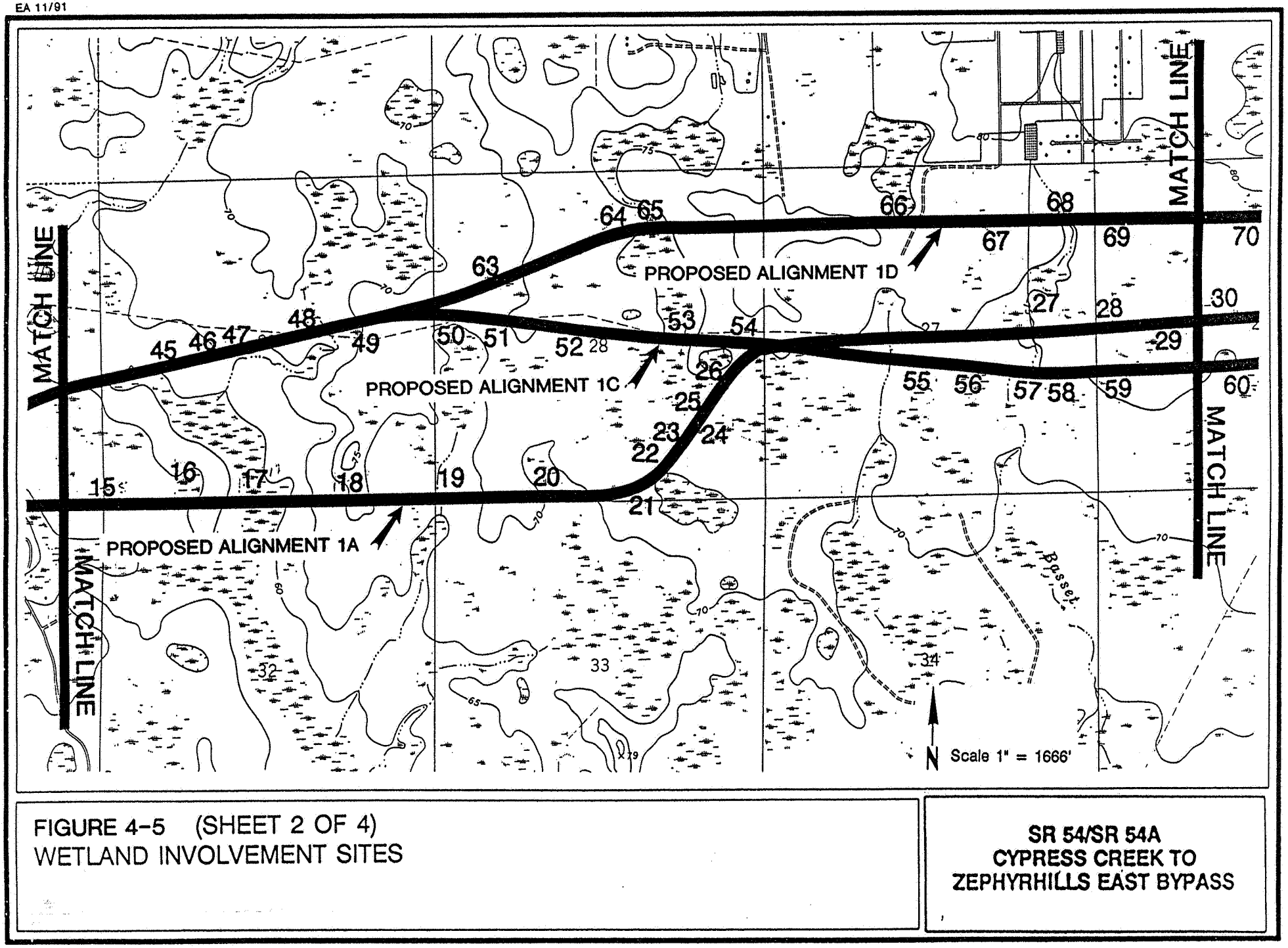


FIGURE 4-5 (SHEET 2 OF 4)
WETLAND INVOLVEMENT SITES

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

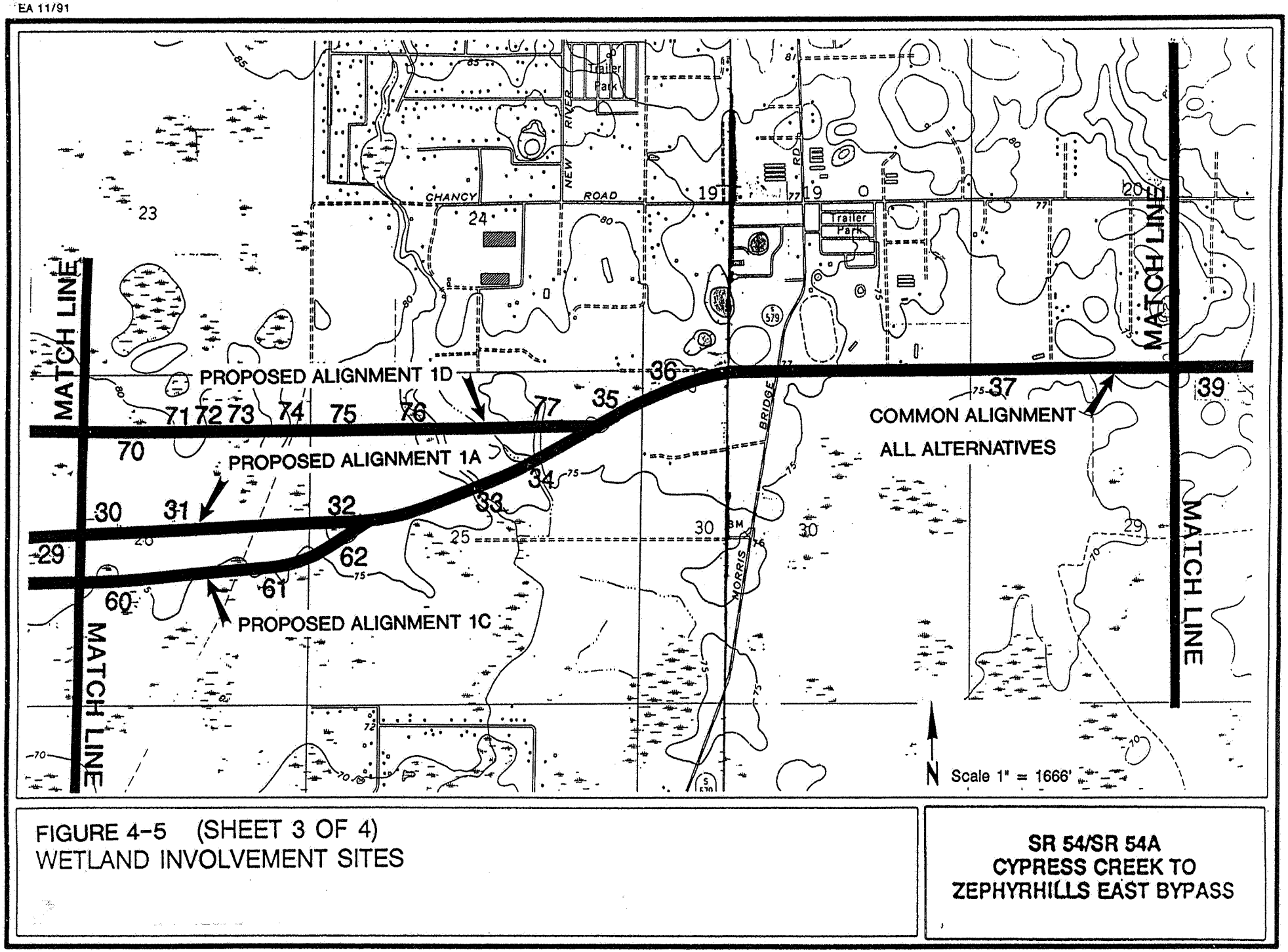


FIGURE 4-5 (SHEET 3 OF 4)
WETLAND INVOLVEMENT SITES

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

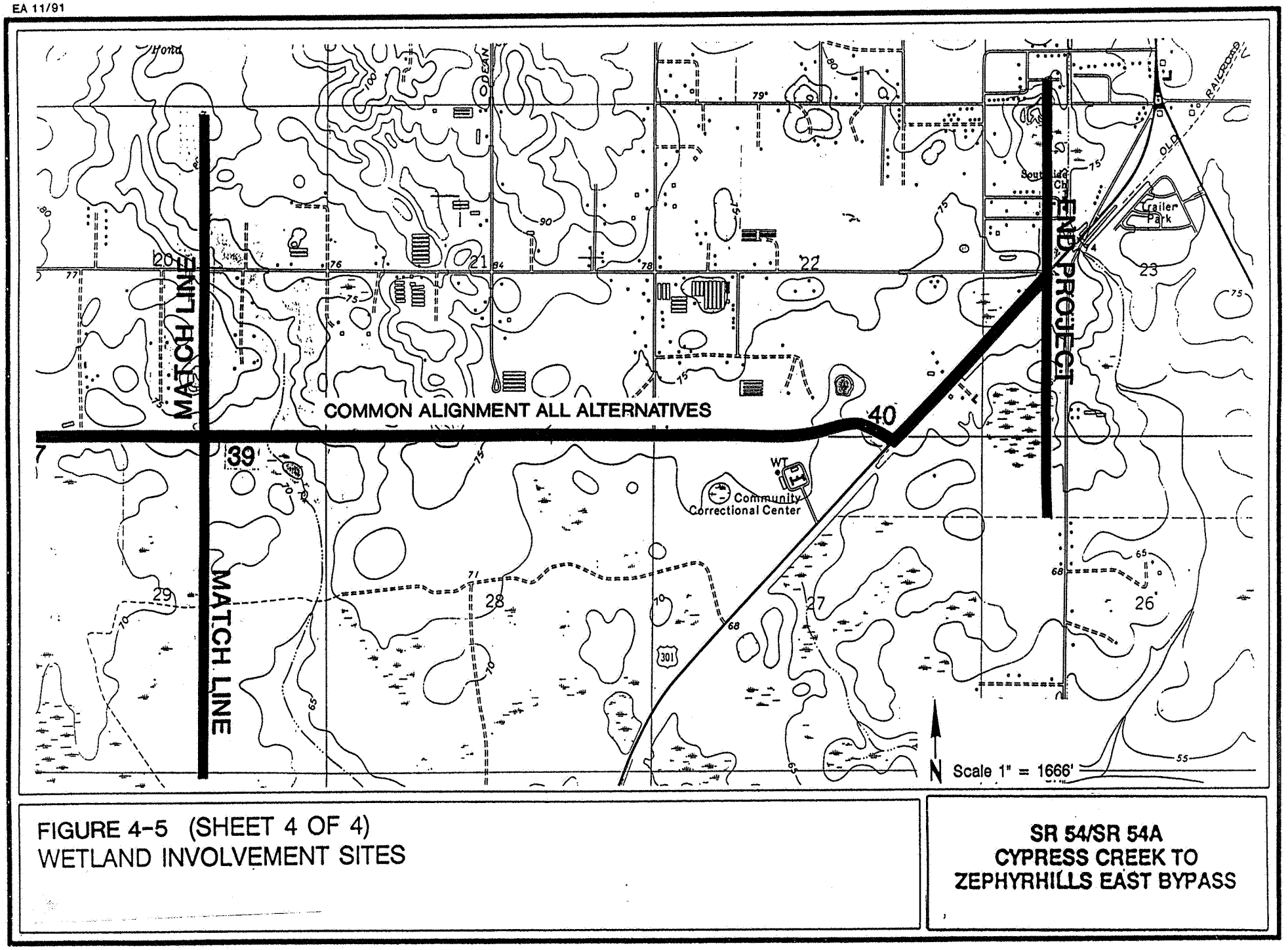


FIGURE 4-5 (SHEET 4 OF 4)
WETLAND INVOLVEMENT SITES

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

TABLE 4-4
WETLAND INVOLVEMENT BY ALTERNATIVE
SR54 ALTERNATIVE 1A

FWS NWI CLASS.	*WETLAND SITE #	SECTION	TOWNSHIP	RANGE	**TOTAL IMPACT ACRES	HERBACEOUS WETLAND IMPACT ACRES	FORESTED WETLAND IMPACT ACRES	***TOTAL SIZE OF SYSTEM ACRES	PERCENT IMPACT	HERBACEOUS WETLAND CREATION RATIOS	FORESTED WETLAND CREATION RATIOS	PROPOSED HERBACEOUS WETLAND CREATION	PROPOSED FORESTED WETLAND CREATION	TOTAL WETLAND CREATION
PF02	1	27	26	19	0.80	0.17	0.63	0.93	86.17%	1	1	0.17	0.63	0.80
PEM1	2	26	26	19	0.57	0.57	0.00	1.62	35.09%	0		0.00	0.00	0.00
PF02/SS3	3	26	26	19	0.43	0.23	0.20	13.99	3.05%	1	2	0.23	0.40	0.63
PF01/SS1	4	26	26	19	1.94	0.00	1.94	1.94	100.00%		2	0.00	3.88	3.88
PF02/EM1	5	26	26	19	3.65	0.31	3.34	NA	<1%	1	2	0.31	6.68	6.99
PF01/4	6	26	26	19	2.11	0.00	2.11	NA	<1%		2	0.00	4.22	4.22
PEM1	7	26	26	19	1.67	1.67	0.00	2.62	63.59%	1		1.67	0.00	1.67
PF01	8	26	26	19	2.09	0.00	2.09	NA	<1%		2	0.00	4.18	4.18
PF01	9	26	26	19	2.05	0.00	2.05	NA	<1%		2	0.00	4.10	4.10
PF01C	10	36	26	19	2.19	0.00	2.19	NA	<1%		2	0.00	4.38	4.38
PF01J	11	36	26	19	0.83	0.00	0.83	NA	<1%		2	0.00	1.66	1.66
PEM1/SS2C	12	31	26	20	4.17	3.40	0.77	7.34	56.70%	1	2	3.40	1.54	4.94
PEM1	13	31	26	20	1.51	1.51	0.00	1.79	84.13%	1		1.51	0.00	1.51
PEM1/PFO1C	14	31	26	20	1.52	0.84	0.68	NA	1.00%	1	2	0.84	1.36	2.20
PEM1/PF02C	15	32	26	20	2.69	1.78	0.91	4.30	62.66%	1	2	1.78	1.82	3.60
PEM1/PF02C	16	32	26	20	1.61	0.37	1.24	4.00	40.22%	1	2	0.37	2.48	2.85
PF01E	17	32	26	20	3.13	0.00	3.13	NA	<1%		2	0.00	6.26	6.26
PEM1/PFO1	18	32	26	20	3.63	3.63	0.00	4.11	88.24%	1		3.63	0.00	3.63
PF02C	19	30	26	20	1.18	0.06	1.12	NA	<1%		2	0.00	2.24	2.24
PF02	20	28	26	20	2.11	0.00	2.11	NA	<1%		2	0.00	4.22	4.22
PEM1	21	28	26	20	1.00	1.00	0.00	1.48	67.30%	1		1.00	0.00	1.00
PF02	22	28	26	20	0.30	0.09	0.21	NA	<1%	1	2	0.09	0.42	0.51
PEM1	23	28	26	20	1.45	1.45	0.00	1.61	90.26%	1		1.45	0.00	1.45
PEM1	24	28	26	20	0.09	0.06	0.03	1.25	6.56%	0.5	0.5	0.03	0.02	0.05
PEM1	25	28	26	20	0.16	0.16	0.00	0.46	34.38%	0.5		0.08	0.00	0.08
PF02C	26	28	26	20	0.41	0.00	0.41	NA	<1%		2	0.00	0.82	0.82
PEM1	26A	28	26	20	0.18	0.18	0.00	0.18	100.00%	0		0.00	0.00	0.00
PF02C	27	27	26	20	2.26	0.00	2.26	NA	<1%		2	0.00	4.52	4.52
PEM1	28	26	26	20	1.95	1.95	0.00	4.88	39.94%	1		1.95	0.00	1.95
PEM1	29	26	26	20	0.46	0.46	0.00	8.14	0.87%	1		0.46	0.00	0.46
PF02Wd	30	26	26	20	1.27	0.26	1.01	12.88	9.83%	1	1	0.26	1.01	1.27

TABLE 4-4
WETLAND INVOLVEMENT BY ALTERNATIVE
SR54 ALTERNATIVE 1A (Continued, Page 2 of 2)

FWS NWI CLASS.	*WETLAND SITE #	SECTION	TOWNSHIP	RANGE	**TOTAL IMPACT ACRES	HERBACEOUS WETLAND IMPACT ACRES	FORESTED WETLAND IMPACT ACRES	***TOTAL SIZE OF SYSTEM ACRES	PERCENT IMPACT	HERBACEOUS WETLAND CREATION RATIOS	FORESTED WETLAND CREATION RATIOS	PROPOSED HERBACEOUS WETLAND CREATION	PROPOSED FORESTED WETLAND CREATION	TOTAL WETLAND CREATION
PEM1W	31	26	26	20	0.20	0.20	0.00	0.20	100.00%	0		0.00	0.00	0.00
PEM1C	32	25	26	20	1.76	1.76	0.00	8.90	19.83%	1		1.76	0.00	1.76
R4SB2C	33	25	26	20	0.21	0.21	0.00	NA	<1%	0		0.00	0.00	0.00
PEM1/6Cdr	34	25	26	20	0.23	0.23	0.00	1.35	16.84%	0		0.00	0.00	0.00
PEM1	35	25	26	20	0.64	0.64	0.00	17.09	3.75%	1		0.64	0.00	0.64
PEM1	36	19	26	21	3.54	3.54	0.00	6.29	56.35%	1		3.54	0.00	3.54
PEM1	37	20	26	21	5.82	5.82	0.00	13.82	42.12%	1		5.82	0.00	5.82
PEM1	38	20	26	21	1.42	1.42	0.00	1.81	78.74%	1		1.42	0.00	1.42
PEM1	39	20	26	21	0.13	0.13	0.00	0.73	17.65%	1		0.13	0.00	0.13
PEM1/SS1Hr	40	22	26	21	1.64	1.64	0.00	3.94	41.52%	0		0.00	0.00	0.00
TOTALS					65.00	35.74	29.26					32.54	56.84	89.38

* Descriptions of wetland sites provided in Section 5.1
** Total Wetland Impacts = Herbaceous Wetland Impacts + Forested Wetland Impacts
*** NA System connected thus total size undefined

TABLE 4-5
WETLAND VALUES*
SR54 ALTERNATIVE 1A

									HABITAT VALUE							HYDROLOGIC VALUE				
SITE	WETLAND TYPE	FWS NWI CLASS. a	TOTAL SIZE (ACRE)	CON b	INTE-GRITY	STRU. DIV. c	HORIZ DIV. d	SPP DIV. e	EDGE f	AMPH/ REPT. g	TERR. BIRD h	WAD. BIRD i	RAPT. j	S.MA. k	L.MA. l	FLOOD WATER ATTEN. m	RECH. n	DISCH/ COVEY. o	WATER FILTRATION POLLUTION ABATEMENT	EROS. p
1	CYPRESS	PF02	0.9	I	M	M	L	L	L	M	M	L	L	L	L	M	M	N	L	N
2	MARSH	PEM1	1.6	I	L	L	L	L	L	L	L	L	L	L	L	L	L	N	L	N
3	CYPRESS	PF02/SS3	13.9	I	H	M	H	M	H	M	H	H	M	M	L	H	H	L	M	L
4	SWAMP	PF01/SS1	1.9	I	H	H	M	H	H	H	H	M	L	M	L	H	H	L	M	L
5	SWAMP	PF02/EM1	NA	C	H	M	H	H	H	M	H	L	L	H	M	M	M	H	H	M
6	SWAMP	PF01/4	NA	C	M	M	M	M	M	L	H	L	L	M	M	M	L	H	M	M
7	MARSH	PEM1	2.6	I	M	L	L	L	L	H	L	M	M	M	L	M	M	N	N	N
8	SWAMP	PF01	NA	C	M	M	L	M	M	L	H	L	L	M	M	M	L	H	M	M
9	SWAMP	PF01	NA	C	M	M	M	M	M	M	H	L	L	M	M	M	L	H	H	M
10	SWAMP	PF01C	NA	C	H	H	M	H	M	M	H	L	L	M	H	M	M	H	H	H
11	SWAMP	PF01J	NA	C	L	M	L	L	L	L	M	L	L	M	L	L	L	H	M	H
12	SHRUB	PEM1/SS2C	7.3	I	H	M	H	H	H	H	H	H	M	M	L	H	H	N	L	N
13	MARSH	PEM1	1.8	I	L	L	L	L	L	M	L	M	L	M	N	L	L	N	N	N
14	MARSH	PEM1/PF01C	NA	I	M	M	M	M	M	M	H	M	L	M	M	L	L	H	M	M
15	CYPRESS	PEM1/PF02C	4.2	I	H	M	H	M	H	H	H	H	M	L	L	H	H	L	L	N
16	CYPRESS	PEM1/PF02C	3.9	I	H	M	H	M	H	H	H	H	M	L	L	H	H	L	L	N
17	SWAMP	PF01E	NA	C	H	H	M	H	M	L	H	L	L	H	M	L	L	H	H	H
18	MARSH	PEM1/PF01	4.11	I	L	L	L	L	L	H	L	M	M	M	L	M	M	L	L	N
19	CYPRESS	PF02C	NA	C	M	M	L	L	L	M	M	L	L	M	M	L	L	M	M	M
20	CYPRESS	PF02	NA	C	M	M	L	L	L	M	M	L	L	M	M	L	L	M	M	M
21	MARSH	PEM1	1.48	I	M	L	M	M	M	H	M	H	L	M	L	M	M	L	L	N
22	CYPRESS	PF02	NA	C	M	M	M	M	L	M	M	L	L	M	L	M	M	M	M	L
23	MARSH	PEM1	1.6	I	L	L	L	M	L	M	L	M	L	M	L	M	M	L	L	N
24	MARSH	PEM1	1.25	I	L	L	L	M	L	M	L	M	L	M	L	M	M	L	L	N
25	MARSH	PEM1	0.45	I	L	L	L	M	L	M	L	M	L	M	L	M	M	L	L	N
26	CYPRESS	PF02C	NA	C	M	M	L	M	M	M	M	L	L	M	M	M	M	L	L	L
26A	MARSH	PEM1	0.18	I	L	L	L	L	L	L	L	L	L	L	N	L	L	N	L	N
27	CYPRESS	PF02C	NA	C	H	H	M	H	L	M	H	M	L	M	M	M	M	M	M	M
28	MARSH	PEM1	4.68	I	M	L	L	M	M	H	L	H	M	M	L	M	M	L	L	N
29	MARSH	PEM1	8.14	I	M	L	L	M	M	H	L	H	M	M	L	M	M	L	L	N
30	CYPRESS	PF02wd	12.68	C	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
31	MARSH	PEM1W	0.2	I	L	L	L	L	L	L	L	L	L	L	N	N	L	N	L	N
32	MARSH	PEM1C	8.9	I	M	L	L	L	L	H	M	H	M	L	L	M	M	N	L	L
33	STREAM	R4SB2C	NA	JC	M	L	L	L	L	H	L	M	L	L	M	L	N	H	L	L

TABLE 4-5
WETLAND VALUES*
SR54 ALTERNATIVE 1A (Continued, Page 2 of 2)

									HABITAT VALUE							HYDROLOGIC VALUE				
SITE	WETLAND TYPE	FWS NWI CLASS. a	TOTAL SIZE (ACRE)	CON b	INTE-GRITY	STRU. DIV. c	HORIZ DIV. d	SPP DIV. e	EDGE f	AMPH/ REPT. g	TERR. BIRD h	WAD. BIRD i	RAPT. j	S.MA. k	L.MA. l	FLOOD WATER ATTEN. m	RECH. n	DISCH/ COVEY. o	WATER FILTRATION POLLUTION ABATEMENT	EROS. p
34	DITCH	PEM1/6Cdr	1.35	JD	L	L	L	L	L	M	L	L	L	L	L	L	L	M	L	L
35	MARSH	PEM1	17	JD	M	L	L	L	L	H	L	H	L	M	L	L	M	L	M	L
36	MARSH	PEM1	6.28	I	M	L	L	L	L	M	L	M	L	M	L	L	M	L	L	L
37	MARSH	PEM1	13.8	I	L	L	L	L	L	M	L	M	L	L	N	L	M	N	L	N
38	MARSH	PEM1	1.81	I	L	L	L	L	L	M	L	M	L	L	N	L	M	N	L	N
39	MARSH	PEM1	0.78	I	L	L	L	L	L	L	L	L	L	L	N	L	L	L	L	L
40	POND	PEM1/SS1Hr	3.9	I	L	L	L	L	M	M	L	L	L	L	L	L	L	N	L	N

a - USFWS, NWI WETLANDS CLASSIFICATION CODE.
* VALUE CODES: H = HIGH; L - LOW; M - MEDIUM; N - NONE
b - CONTIGUITY (I) PERCHED OR ISOLATED FROM THE REGIONAL DRAINAGE SYSTEM, DRAINAGE SYSTEM.
(JC) JOINED TO A LOCAL CREEK OR LAKE SYSTEM BY AN INDISTINCT NATURAL CONNECTION ON A SMALL OR PARTLY OBSCURED DITCH.
(JD) JOINED TO REGIONAL DRAINAGE, SYSTEMS BY DISTINCT NATURAL CONNECTIONS OR WELL-DEFINED DITCH OR CANAL.
(C) CONTIGUOUS TO OR WITHIN ESTABLISHED DRAINAGE WAYS.
c - STRUCTURAL (VERTICAL) DIVERSITY
d - HORIZONTAL DIVERSITY
e - SPECIES DIVERSITY
f - EDGE OR ECOTONE VALUE
g - AMPHIBIAN AND REPTILE HABITAT
h - PASSERINE AND OTHER TERRESTRIAL, NON-WADING BIRDS.
i - WADING BIRDS
j - RAPTORS
k - SMALL MAMMALS
l - LARGE MAMMALS
m - FLOOD ATTENUATION
n - GROUNDWATER RECHARGE
o - SURFACE WATER DISCHARGE/CONVEYANCE
p - EROSION CONTROL

wetland involvement of Alternative 1C is provided in Table 4-6. An assessment of the wetland values and functions of each affected wetland are provided in Table 4-7.

Alternative 1D will result in identical wetland involvement as Alternatives 1A and 1C at Sites 1-11 and 36-40. In addition, this alignment will also have identical impacts to those of Alternative 1C at Sites 12-49. Including these sites, Alternative 1D will impact a total of 55.96 acres of wetlands at 42 sites. Tables 4-8 and 4-9 provide data regarding the wetland involvement and ecological values at each site for this alternative. A detailed assessment of each individual wetland and anticipated involvement has been provided in the SR 54 Permit Coordination Report.

4.3.4.2 Mitigation--Although wetlands of the project corridor vary with respect to quality and agency jurisdiction, it is expected that the majority will be subject to mitigation requirements at the permitting stage. Collective policy and regulations at the federal, state and regional level warrant preliminary mitigation ratios of 2:1 and 1:1 for forested wetland impacts and herbaceous wetland impacts, respectively. These ratios are subject to change based upon individual aspects of each wetland. Where possible, required wetland creation will be incorporated into stormwater facilities or into areas of required storage compensation for floodplain impacts.

As detailed earlier in this document, Alternative 1A is anticipated to involve unavoidable impacts to 65.00 acres of wetlands. Of this total, 35.74 acres are herbaceous wetlands while 29.26 acres are forested wetlands. Accordingly, approximately 89.38 acres of mitigation would be proposed.

Alternative 1C is anticipated to impact 37.94 acres of herbaceous wetlands and 18.74 acres of forested wetlands. As compensation for this unavoidable

TABLE 4-6
WETLAND INVOLVEMENT BY ALTERNATIVE
SR54 ALTERNATIVE 1C

FWS NWI CLASS.	*WETLAND SITE #	SECTION	TOWNSHIP	RANGE	**TOTAL IMPACT ACRES	HERBACEOUS WETLAND IMPACT ACRES	FORESTED WETLAND IMPACT ACRES	***TOTAL SIZE OF SYSTEM ACRES	PERCENT IMPACT	HERBACEOUS WETLAND CREATION RATIOS	FORESTED WETLAND CREATION RATIOS	PROPOSED HERBACEOUS WETLAND CREATION	PROPOSED FORESTED WETLAND CREATION	TOTAL WETLAND CREATION
PF02	1	27	26	19	0.80	0.17	0.63	0.93	86.17%	1	1	0.17	0.63	0.80
PEM1	2	26	26	19	0.57	0.57	0.00	1.62	35.09%	0		0.00	0.00	0.00
PF02/SS3	3	26	26	19	0.43	0.23	0.20	13.99	3.05%	1	2	0.23	0.40	0.63
PF01/SS1	4	26	26	19	1.94	0.00	1.94	1.94	93.38%		2	0.00	3.88	3.88
PF02/EM1	5	26	26	19	3.65	0.31	3.34	NA	<1%	1	2	0.31	6.68	6.99
PF01/4	6	26	26	19	2.11	0.00	2.11	NA	<1%		2	0.00	4.22	4.22
PEM1	7	26	26	19	1.67	1.67	0.00	2.62	63.59%	1		1.67	0.00	1.67
PF01	8	26	26	19	2.09	0.00	2.09	NA	<1%		2	0.00	4.18	4.18
PF01	9	26	26	19	2.05	0.00	2.05	NA	<1%		2	0.00	4.10	4.10
PF01C	10	36	26	19	2.19	0.00	2.19	NA	<1%		2	0.00	4.38	4.38
PF01J	11	36	26	19	0.83	0.00	0.83	NA	<1%		2	0.00	1.66	1.66
PEM1/SS2C	12	31	26	20	4.17	3.40	0.77	7.34	56.78%	1	2	3.40	1.54	4.94
R4SB2C	33	25	26	20	0.21	0.21	0.00	NA	<1%	0		0.00	0.00	0.00
PEM1/6Cdr	34	25	26	20	0.23	0.23	0.00	1.35	16.84%	0		0.00	0.00	0.00
PEM1	35	25	26	20	0.64	0.64	0.00	17.09	3.75%	1		0.64	0.00	0.64
PEM1	36	19	26	21	3.54	3.54	0.00	6.29	56.35%	1		3.54	0.00	3.54
PEM1	37	20	26	21	5.82	5.82	0.00	13.82	42.12%	1		5.82	0.00	5.82
PEM1	38	20	26	21	1.42	1.42	0.00	1.81	78.74%	1		1.42	0.00	1.42
PEM1	39	20	26	21	0.13	0.13	0.00	0.73	17.65%	1		0.13	0.00	0.13
PEM1/SS1Hr	40	22	26	21	1.64	1.64	0.00	3.94	41.52%	0		0.00	0.00	0.00
PEM1C	41	30	26	20	0.11	0.11	0.00	1.32	8.60%	1		0.11	0.00	0.11
PEM1C	42	30	26	20	1.45	1.45	0.00	3.29	44.16%	1		1.45	0.00	1.45
PEM1C	43	30	26	20	0.85	0.85	0.00	2.29	37.27%	1		0.85	0.00	0.85
PEM1C	44	29	26	20	1.01	1.01	0.00	7.83	12.91%	1		1.01	0.00	1.01
PEM1C	45	29	26	20	0.21	0.11	0.10	0.46	46.87%	1	1	0.11	0.10	0.21
PEM1C	46	29	26	20	0.76	0.53	0.23	0.94	80.31%	1	1	0.53	0.23	0.76
PEM1C	47	29	26	20	0.78	0.74	0.04	1.01	77.46%	0.5	0.5	0.37	0.02	0.39
PEM1W/Bdr	48	29	26	20	0.15	0.12	0.03	NA	<1%	0	0	0.00	0.00	0.00
PEM1W	49	29	26	20	0.33	0.33	0.00	0.57	57.51%	1		0.33	0.00	0.33
PEM1W	50	28	26	20	0.02	0.02	0.00	1.35	1.72%	0		0.00	0.00	0.00
PEM1W	51	28	26	20	0.61	0.61	0.00	1.96	31.16%	1		0.61	0.00	0.61
PF02J	52	28	26	20	0.30	0.00	0.30	0.30	100.00%		1	0.00	0.30	0.30

TABLE 4-6
WETLAND INVOLVEMENT BY ALTERNATIVE
SR54 ALTERNATIVE 1C (Continued, Page 2 of 2)

FWS NWI CLASS.	*WETLAND SITE #	SECTION	TOWNSHIP	RANGE	**TOTAL IMPACT ACRES	HERBACEOUS WETLAND IMPACT ACRES	FORESTED WETLAND IMPACT ACRES	***TOTAL SIZE OF SYSTEM ACRES	PERCENT IMPACT	HERBACEOUS WETLAND CREATION RATIOS	FORESTED WETLAND CREATION RATIOS	PROPOSED HERBACEOUS WETLAND CREATION	PROPOSED FORESTED WETLAND CREATION	TOTAL WETLAND CREATION
PF02Wd/PEM1r	53	28	26	20	0.84	0.00	0.84	NA	<1%		2	0.00	1.68	1.68
PEM1C	54	27	26	20	0.74	0.74	0.00	0.74	100.00%	1		0.74	0.00	0.74
PEM1C	55	27	26	20	0.44	0.27	0.17	1.88	23.46%	1	2	0.27	0.34	0.61
PEM1C	56	27	26	20	0.64	0.47	0.17	2.28	28.13%	1	2	0.47	0.34	0.81
PF02W	57	27	26	20	0.71	0.00	0.71	3.94	18.05%		2	0.00	1.42	1.42
PEM1C	58	27	26	20	0.71	0.71	0.00	2.41	29.59%	1		0.71	0.00	0.71
PEM1C	59	26	26	20	4.10	4.10	0.00	8.14	50.35%	1		4.10	0.00	4.10
PEM1C	60	26	26	20	0.43	0.43	0.00	12.13	3.52%	1		0.43	0.00	0.43
PEM1C	61	26	26	20	1.17	1.17	0.00	1.67	70.06%	1		1.17	0.00	1.17
PEM1C	62	25	26	20	4.19	4.19	0.00	8.90	47.12%	1		4.19	0.00	4.19
TOTALS					56.68	37.94	18.74					34.78	36.10	70.88

* Descriptions of wetland sites provided in Section 5.1

** Total Wetland Impacts = Herbaceous Wetland Impacts + Forested Wetland Impacts

*** NA System connected thus total size undefined

TABLE 4–7
WETLAND VALUES*
SR54 ALTERNATIVE 1C

									HABITAT VALUE							HYDROLOGIC VALUE				
SITE	WETLAND TYPE	FWS NWI CLASS. a	TOTAL SIZE (ACRE)	CON b	INTE-GRITY	STRU. DIV. c	HORIZ DIV. d	SPP DIV. e	EDGE f	AMPH/ REPT. g	TERR. BIRD h	WAD. BIRD i	RAPT. j	S.MA. k	L.MA. l	FLOOD WATER ATTEN. m	RECH. n	DISCH/ COVEY. o	WATER FILTRATION POLLUTION ABATEMENT	EROS. p
1	CYPRESS	PF02	0.9	I	M	M	L	L	L	M	M	L	L	L	L	M	M	N	L	N
2	MARSH	PEM1	1.6	I	L	L	L	L	L	L	L	L	L	L	L	L	L	N	L	N
3	CYPRESS	PF02/SS3	13.9	I	H	M	H	M	H	M	H	H	M	M	L	H	H	L	M	L
4	SWAMP	PF01/SS1	1.9	I	H	H	M	H	H	H	H	M	L	M	L	H	H	L	M	L
5	SWAMP	PF02/EM1	NA	C	H	M	H	H	H	M	H	L	L	H	M	M	M	H	H	M
6	SWAMP	PF01/4	NA	C	M	M	M	M	M	L	H	L	L	M	M	M	L	H	M	M
7	MARSH	PEM1	2.6	I	M	L	L	L	L	H	L	M	M	M	L	M	M	N	N	N
8	SWAMP	PF01	NA	C	M	M	L	M	M	L	H	L	L	M	M	M	L	H	M	M
9	SWAMP	PF01	NA	C	M	M	M	M	M	M	H	L	L	M	M	M	L	H	H	M
10	SWAMP	PF01C	NA	C	H	H	M	H	M	M	H	L	L	M	H	M	M	H	H	H
11	SWAMP	PF01J	NA	C	L	M	L	L	L	L	M	L	L	M	L	L	L	H	M	H
12	SHRUB	PEM1/SS2C	7.3	I	H	M	H	H	H	H	H	H	M	M	L	H	H	N	L	N
33	STREAM	R4SB2C	NA	JC	M	L	L	L	L	H	L	M	L	L	M	L	N	H	L	L
34	DITCH	PEM1/6Cdr	1.35	JD	L	L	L	L	L	M	L	L	L	L	L	L	L	M	L	L
35	MARSH	PEM1	17	JD	M	L	L	L	L	H	L	H	L	M	L	L	M	L	M	L
36	MARSH	PEM1	6.28	I	M	L	L	L	L	M	L	M	L	M	L	L	M	L	L	L
37	MARSH	PEM1	13.8	I	L	L	L	L	L	M	L	M	L	L	N	L	M	N	L	N
38	MARSH	PEM1	1.81	I	L	L	L	L	L	M	L	M	L	L	N	L	M	N	L	N
39	MARSH	PEM1	0.73	I	L	L	L	L	L	L	L	L	L	L	N	L	L	L	L	L
40	POND	PEM1/SS1Hr	3.9	I	L	L	L	L	M	M	L	L	L	L	L	L	L	N	L	N
41	MARSH	PEM1C	1.3	I	L	L	M	L	L	L	L	M	L	L	L	L	L	N	L	N
42	MARSH	PEM1C	3.3	I	M	L	M	L	M	M	M	M	L	L	L	L	L	N	L	N
43	MARSH	PEM1C	2.3	I	M	L	M	M	M	M	L	M	L	L	L	L	L	N	L	N
44	MARSH	PEM1C	7.8	I	M	L	M	M	M	H	L	M	L	M	L	L	M	N	L	L
45	MARSH	PEM1C	0.45	I	L	L	L	L	L	L	L	L	N	N	N	N	L	N	N	N
46	MARSH	PEM1C	0.9	I	L	L	L	L	L	L	L	L	N	N	N	N	L	N	N	N
47	MARSH	PEM1C	1.01	I	L	L	L	L	L	M	L	L	N	N	N	N	L	N	L	N
48	DITCH	PEM1W/Bdr	NA	C	L	M	M	M	M	M	M	M	M	L	L	L	M	L	L	L
49	MARSH	PEM1W	0.56	I	L	L	L	L	L	L	N	L	L	L	N	L	L	N	N	N
50	MARSH	PEM1W	1.35	I	L	L	L	L	L	L	N	M	L	L	N	L	L	N	N	N
51	MARSH	PEM1W	1.96	I	M	L	L	L	L	M	N	M	L	L	L	L	L	L	L	N
52	CYPRESS	PFO2J	0.3	I	L	M	L	L	L	L	L	N	L	L	N	L	L	N	L	N
53	CYPRESS	PF02Wd	NA	JD	M	M	M	M	L	M	M	L	L	L	L	M	M	M	L	L
54	MARSH	PEM1C	0.74	I	L	L	M	M	L	M	L	M	L	L	N	L	L	N	N	N

TABLE 4-7
WETLAND VALUES*
SR54 ALTERNATIVE 1C (Continued, Page 2 of 2)

									HABITAT VALUE							HYDROLOGIC VALUE				
SITE	WETLAND TYPE	FWS NWI CLASS. a	TOTAL SIZE (ACRE)	CON b	INTE-GRITY	STRU. DIV. c	HORIZ DIV. d	SPP DIV. e	EDGE f	AMPH/ REPT. g	TERR. BIRD h	WAD. BIRD i	RAPT. j	S.MA. k	L.MA. l	FLOOD WATER ATTEN. m	RECH. n	DISCH/ COVEY. o	WATER FILTRATION POLLUTION ABATEMENT	EROS. p
55	MARSH	PEM1C	1.88	I	M	L	M	M	L	M	L	M	L	M	L	L	L	N	L	N
56	MARSH	PEM1C	2.28	I	L	L	L	L	L	M	L	L	L	M	L	L	L	N	N	N
57	CYPRESS	PFO2W	3.94	C	L	L	L	L	L	L	L	L	L	L	L	M	L	M	L	N
58	MARSH	PEM1C	2.41	C	M	L	L	L	L	M	N	M	L	L	N	M	M	L	M	N
59	MARSH	PEM1C	8.14	I	M	L	L	L	L	M	N	M	L	L	N	M	M	N	M	N
60	MARSH	PEM1C	12.13	JD	L	L	L	L	L	L	N	N	N	L	N	N	L	N	L	N
61	MARSH	PEM1C	1.67	I	L	L	L	L	L	L	N	N	N	L	N	N	L	N	L	N
62	MARSH	PEM1Cd	8.9	JD	L	L	L	L	L	M	L	M	L	M	N	L	M	N	M	N

a - USFWS, NWI WETLANDS CLASSIFICATION CODE.
* VALUE CODES: H = HIGH; L - LOW; M - MEDIUM; N - NONE
b - CONTIGUITY (I) PERCHED OR ISOLATED FROM THE REGIONAL DRAINAGE SYSTEM.
DRAINAGE SYSTEM.
(JC) JOINED TO A LOCAL CREEK OR LAKE SYSTEM BY AN INDISTINCT NATURAL CONNECTION ON A SMALL OR PARTLY OBSCURED DITCH.
(JD) JOINED TO REGIONAL DRAINAGE, SYSTEMS BY DISTINCT NATURAL CONNECTIONS OR WELL-DEFINED DITCH OR CANAL.
(C) CONTIGUOUS TO OR WITHIN ESTABLISHED DRAINAGE WAYS.
c - STRUCTURAL (VERTICAL) DIVERSITY
d - HORIZONTAL DIVERSITY
e - SPECIES DIVERSITY
f - EDGE OR ECOTONE VALUE
g - AMPHIBIAN AND REPTILE HABITAT
h - PASSERINE AND OTHER TERRESTRIAL, NON-WADING BIRDS.
I - WADING BIRDS
j - RAPTORS
k - SMALL MAMMALS
l - LARGE MAMMALS
m - FLOOD ATTENUATION
n - GROUNDWATER RECHARGE
o - SURFACE WATER DISCHARGE/CONVEYANCE
p - EROSION CONTROL

TABLE 4-8
WETLAND INVOLVEMENT BY ALTERNATIVE
SR54 ALTERNATIVE 1D

FWS NWI CLASS.	*WETLAND SITE #	SECTION	TOWNSHIP	RANGE	**TOTAL IMPACT ACRES	HERBACEOUS WETLAND IMPACT ACRES	FORESTED WETLAND IMPACT ACRES	***TOTAL SIZE OF SYSTEM ACRES	PERCENT IMPACT	HERBACEOUS WETLAND CREATION RATIOS	FORESTED WETLAND CREATION RATIOS	PROPOSED HERBACEOUS WETLAND CREATION	PROPOSED FORESTED WETLAND CREATION	TOTAL WETLAND CREATION
PF02	1	27	26	19	0.80	0.17	0.63	0.93	86.17%	1	1	0.17	0.63	0.80
PEM1	2	26	26	19	0.57	0.57	0.00	1.62	35.09%	0		0.00	0.00	0.00
PF02/SS8	3	26	26	19	0.43	0.23	0.20	13.99	3.05%	1	2	0.23	0.40	0.63
PF01/SS1	4	26	26	19	1.94	0.00	1.94	1.94	93.38%		2	0.00	3.88	3.88
PF02/EM1	5	26	26	19	3.65	0.31	3.34	NA	<1%	1	2	0.31	6.68	6.99
PF01/4	6	26	26	19	2.11	0.00	2.11	NA	<1%		2	0.00	4.22	4.22
PEM1	7	26	26	19	1.67	1.67	0.00	2.62	63.59%	1		1.67	0.00	1.67
PF01	8	26	26	19	2.09	0.00	2.09	NA	<1%		2	0.00	4.18	4.18
PF01	9	26	26	19	2.05	0.00	2.05	NA	<1%		2	0.00	4.10	4.10
PF01C	10	36	26	19	2.19	0.00	2.19	NA	<1%		2	0.00	4.38	4.38
PF01J	11	36	26	19	0.83	0.00	0.83	NA	<1%		2	0.00	1.66	1.66
PEM1/SS2C	12	31	26	20	4.17	3.40	0.77	7.34	56.78%	1	2	3.40	1.54	4.94
PEM1	35	25	26	20	0.80	0.80	0.00	17.09	4.66%	1		0.80	0.00	0.80
PEM1	36	19	26	21	3.54	3.54	0.00	6.29	56.35%	1		3.54	0.00	3.54
PEM1	37	20	26	21	5.82	5.82	0.00	13.82	42.12%	1		5.82	0.00	5.82
PEM1	38	20	26	21	1.42	1.42	0.00	1.81	78.74%	1		1.42	0.00	1.42
PEM1	39	20	26	21	0.13	0.13	0.00	0.73	17.65%	1		0.13	0.00	0.13
PEM1/SS1Hr	40	22	26	21	1.64	1.64	0.00	3.94	41.52%	0		0.00	0.00	0.00
PEM1C	41	30	26	20	0.11	0.11	0.00	1.32	8.60%	1		0.11	0.00	0.11
PEM1C	42	30	26	20	1.45	1.45	0.00	3.29	44.16%	1		1.45	0.00	1.45
PEM1C	43	30	26	20	0.85	0.85	0.00	2.29	37.27%	1		0.85	0.00	0.85
PEM1C	44	29	26	20	1.01	1.01	0.00	7.83	12.91%	1		1.01	0.00	1.01
PEM1C	45	29	26	20	0.21	0.11	0.10	0.46	46.87%	1	1	0.11	0.10	0.21
PEM1C	46	29	26	20	0.76	0.53	0.23	0.94	80.31%	1	1	0.53	0.23	0.76
PEM1C	47	29	26	20	0.78	0.74	0.04	1.01	77.46%	0.5	0.5	0.37	0.02	0.39
PEM1W/Bdr	48	29	26	20	0.15	0.12	0.03	NA	<1%	0	0	0.00	0.00	0.00
PEM1W	49	29	26	20	0.33	0.33	0.00	0.57	40.00%	1		0.33	0.00	0.33
PEM1C	63	28	26	20	2.25	2.25	0.00	5.28	42.59%	1		2.25	0.00	2.25
PEM1C	64	28	26	20	0.13	0.13	0.00	0.20	64.27%	0		0.00	0.00	0.00
PF02C	65	28	26	20	1.52	0.30	1.22	1.52	<1%	1	2	0.30	2.44	2.74
PF02C	66	27	26	20	0.46	0.37	0.09	NA	<1%	1	2	0.37	0.18	0.55

TABLE 4-8
WETLAND INVOLVEMENT BY ALTERNATIVE
SR54 ALTERNATIVE 1D (Continued, Page 2 of 2)

FWS NWI CLASS.	*WETLAND SITE #	SECTION	TOWNSHIP	RANGE	**TOTAL IMPACT ACRES	HERBACEOUS WETLAND IMPACT ACRES	FORESTED WETLAND IMPACT ACRES	***TOTAL SIZE OF SYSTEM ACRES	PERCENT IMPACT	HERBACEOUS WETLAND CREATION RATIOS	FORESTED WETLAND CREATION RATIOS	PROPOSED HERBACEOUS WETLAND CREATION	PROPOSED FORESTED WETLAND CREATION	TOTAL WETLAND CREATION
PF02C	67	27	26	20	1.69	0.00	1.69	2.73	61.98%		2	0.00	3.38	3.38
PEM1Wdr	68	26	26	20	0.12	0.06	0.06	4.97	2.29%	0	0	0.00	0.00	0.00
PEM1C	69	26	26	20	0.95	0.95	0.00	1.14	83.74%	1		0.95	0.00	0.95
PEM1C	70	26	26	20	0.88	0.88	0.00	1.21	72.95%	1		0.88	0.00	0.88
PEM1C	71	26	26	20	0.13	0.13	0.00	0.20	64.00%			0.00	0.00	0.00
PEM1C	72	26	26	20	0.09	0.09	0.00	0.09	100.00%	0		0.00	0.00	0.00
PEM1/PF02C	73	26	26	20	1.06	0.70	0.36	1.88	56.06%	1	2	0.70	0.72	1.42
PEM1/PF02C	74	26	26	20	0.36	0.23	0.13	0.50	5.92%	1	2	0.23	0.26	0.49
PEM1Wf	75	25	26	20	0.33	0.33	0.00	1.44	22.77%	0		0.00	0.00	0.00
PEM5Cd	76	25	26	20	4.36	3.15	1.21	10.59	41.16%	1	2	3.15	2.42	5.57
PEM1Wdr	77	25	26	20	0.13	0.13	0.00	1.35	9.47%	0		0.00	0.00	0.00
TOTALS					55.96	34.65	21.31					31.08	41.42	72.50

* Descriptions of wetland sites provided in Section 5.1

** Total Wetland Impacts = Herbaceous Wetland Impacts + Forested Wetland Impacts

*** NA System connected thus total size undefined

TABLE 4-9
WETLAND VALUES*
SR54 ALTERNATIVE 1D

									HABITAT VALUE							HYDROLOGIC VALUE				
SITE	WETLAND TYPE	FWS NWI CLASS. a	TOTAL SIZE (ACRE)	CON. b	INTE-GRITY	STRU. DIV. c	HORIZ DIV. d	SPP DIV. e	EDGE f	AMPH/ REPT. g	TERR. BIRD h	WAD. BIRD i	RAPT. j	S.MA. k	L.MA. l	FLOOD WATER ATTEN. m	RECH. n	DISCH/ COVEY. o	WATER FILTRATION POLLUTION ABATEMENT	EROS. p
1	CYPRESS	PF02	0.9	I	M	M	L	L	L	M	M	L	L	L	L	M	M	N	L	N
2	MARSH	PEM1	1.6	I	L	L	L	L	L	L	L	L	L	L	L	L	L	N	L	N
3	CYPRESS	PF02/SS3	13.9	I	H	M	H	M	H	M	H	H	M	M	L	H	H	L	M	L
4	SWAMP	PF01/SS1	1.9	I	H	H	M	H	H	H	H	M	L	M	L	H	H	L	M	L
5	SWAMP	PF02/EM1	NA	C	H	M	H	H	H	M	H	L	L	H	M	M	M	H	H	M
6	SWAMP	PF01/4	NA	C	M	M	M	M	M	L	H	L	L	M	M	M	L	H	M	M
7	MARSH	PEM1	2.6	I	M	L	L	L	L	H	L	M	M	M	L	M	M	N	N	N
8	SWAMP	PF01	NA	C	M	M	L	M	M	L	H	L	L	M	M	M	L	H	M	M
9	SWAMP	PF01	NA	C	M	M	M	M	M	M	H	L	L	M	M	M	L	H	H	M
10	SWAMP	PF01C	NA	C	H	H	M	H	M	M	H	L	L	M	H	M	M	H	H	H
11	SWAMP	PF01J	NA	C	L	M	L	L	L	L	M	L	L	M	L	L	L	H	M	H
12	SHRUB	PEM1/SS2C	7.3	I	H	M	H	H	H	H	H	H	M	M	L	H	H	N	L	N
35	MARSH	PEM1	17	JD	M	L	L	L	L	H	L	H	L	M	L	L	M	L	M	L
36	MARSH	PEM1	6.26	I	M	L	L	L	L	M	L	M	L	M	L	L	M	L	L	L
37	MARSH	PEM1	13.6	I	L	L	L	L	L	M	L	M	L	L	N	L	M	N	L	N
38	MARSH	PEM1	1.81	I	L	L	L	L	L	M	L	M	L	L	N	L	M	N	L	N
39	MARSH	PEM1	0.73	I	L	L	L	L	L	L	L	L	L	L	N	L	L	L	L	L
40	POND	PEM1/SS1Hr	3.9	I	L	L	L	L	M	M	L	L	L	L	L	L	L	N	L	N
41	MARSH	PEM1C	1.3	I	L	L	M	L	L	L	L	M	L	L	L	L	L	N	L	N
42	MARSH	PEM1C	3.3	I	M	L	M	L	M	M	M	M	L	L	L	L	L	N	L	N
43	MARSH	PEM1C	2.3	I	M	L	M	M	M	M	L	M	L	L	L	L	L	N	L	N
44	MARSH	PEM1C	7.6	I	M	L	M	M	M	H	L	M	L	M	L	L	M	N	L	L
45	MARSH	PEM1C	0.45	I	L	L	L	L	L	L	L	L	N	N	N	N	L	N	N	N
46	MARSH	PEM1C	0.9	I	L	L	L	L	L	L	L	L	N	N	N	N	L	N	N	N
47	MARSH	PEM1C	1.01	I	L	L	L	L	L	M	L	L	N	N	N	N	L	N	L	N
48	DITCH	PEM1W/Bdr	NA	C	L	M	M	M	M	M	M	M	M	L	L	L	M	L	L	L
49	MARSH	PEM1W	0.56	I	L	L	L	L	L	L	N	L	L	L	N	L	L	N	N	N
63	MARSH	PEM1C	5.28	I	M	L	L	L	L	L	L	L	L	L	N	L	M	N	M	N
64	MARSH	PEM1C	0.19	I	M	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N
65	CYPRESS	PF02C	NA	C	H	M	M	L	H	H	L	H	M	M	L	M	M	M	M	M
66	CYPRESS	PF02C	NA	C	M	M	M	L	L	M	M	L	L	M	L	M	M	L	M	L
67	CYPRESS	PFO2C	2.73	I	M	L	L	L	L	M	L	L	L	L	N	N	L	N	L	N
68	DITCH	PEM1Wdr	4.97	JD	N	N	N	N	N	L	N	N	N	N	N	N	L	L	N	N
69	MARSH	PEM1C	1.14	I	L	L	L	L	L	L	N	L	L	L	N	L	L	N	N	N
70	MARSH	PEM1C	1.21	I	L	L	L	L	L	L	N	L	L	L	N	L	L	N	N	N

TABLE 4-9
WETLAND VALUES*
SR54 ALTERNATIVE 1D (Continued, Page 2 of 2)

									HABITAT VALUE							HYDROLOGIC VALUE				
SITE	WETLAND TYPE	FWS NWI CLASS. a	TOTAL SIZE (ACRE)	CON. b	INTE-GRITY	STRU. DIV. c	HORIZ DIV. d	SPP DIV. e	EDGE f	AMPH/ REPT. g	TERR. BIRD h	WAD. BIRD i	RAPT. j	S.MA. k	L.MA. l	FLOOD WATER ATTEN. m	RECH. n	DISCH/ COVEY. o	WATER FILTRATION POLLUTION ABATEMENT	EROS. p
71	MARSH	PEM1C	0.13	I	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N
72	MARSH	PEM1C	0.09	I	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N
73	CYPRESS	PFO2C	1.89	I	M	L	L	M	M	M	L	L	L	L	L	L	L	N	L	N
74	CYPRESS	PF02C	0.5	I	M	L	L	M	M	M	L	L	L	L	L	L	M	N	M	N
75	MARSH	PEM1Wf	1.44	I	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
76	MARSH	PEM5Cd	10.59	JC	L	L	L	L	M	M	L	M	L	L	L	L	L	M	L	L
77	DITCH	PEM1Wdr	1.35	JD	N	N	N	N	N	L	N	L	N	N	N	N	N	L	N	N

a - USFWS, NWI WETLANDS CLASSIFICATION CODE.
* VALUE CODES: H = HIGH; L - LOW; M - MEDIUM; N - NONE
b - CONTIGUITY (I) PERCHED OR ISOLATED FROM THE REGIONAL DRAINAGE SYSTEM.
DRAINAGE SYSTEM.
(JC) JOINED TO A LOCAL CREEK OR LAKE SYSTEM BY AN INDISTINCT NATURAL CONNECTION ON A SMALL OR PARTLY OBSCURED DITCH.
(JD) JOINED TO REGIONAL DRAINAGE, SYSTEMS BY DISTINCT NATURAL CONNECTIONS OR WELL-DEFINED DITCH OR CANAL.
(C) CONTIGUOUS TO OR WITHIN ESTABLISHED DRAINAGE WAYS.
c - STRUCTURAL (VERTICAL) DIVERSITY
d - HORIZONTAL DIVERSITY
e - SPECIES DIVERSITY
f - EDGE OR ECOTONE VALUE
g - AMPHIBIAN AND REPTILE HABITAT
h - PASSERINE AND OTHER TERRESTRIAL, NON-WADING BIRDS.
I - WADING BIRDS
j - RAPTORS
k - SMALL MAMMALS
l - LARGE MAMMALS
m - FLOOD ATTENUATION
n - GROUNDWATER RECHARGE
o - SURFACE WATER DISCHARGE/CONVEYANCE
p - EROSION CONTROL

impact, 34.78 acres of herbaceous wetland creation and 36.10 acres of forested wetland creation, yielding a total of 70.88 acres, would probably be required.

Approximately 56 acres of unavoidable wetland involvement is anticipated for Alternative 1D. By employing standard acceptable ratios, it is anticipated that 31.08 acres of herbaceous wetland creation and 41.42 acres of forested wetland creation, yielding a total of 72.50 acres, would be required. A quantitative synopsis of the proposed wetland involvement and mitigation is provided in Table 4-10.

4.3.5 Water Quality

The SR 54 corridor crosses several tributaries of the Hillsborough River. These tributaries include Cypress Creek, Trout Creek, Clay Gully, Bassett Branch, New River, and Indian River. All are intermittent streams and flow to the south. Wetlands adjacent to Cypress Creek include an area of ground water discharge.

The water of Cypress Creek is a calcium bicarbonate type. The calcium bicarbonate water represents seepage from the Floridan aquifer. At high streamflows, discharge from the Floridan aquifer is a negligible part of the stream flow, but at low flow the creek consists mainly of water from the Floridan Aquifer.

The proposed alignment and stream crossings of SR 54 are not expected to have significant impacts on the flow patterns or water quality of the water resources of the project area. The major concern is for the potentially adverse effects of stormwater runoff from the roadway. Typically, roadway drainage for the rural alternatives will be facilitated through the use of adjacent grassed swales located on each side of the roadway and in the median.

FDOT has coordinated with DER District stormwater personnel and SWFWMD, and has provided them with a Location Hydraulic Report and Permit Coordination

TABLE 4–10
SUMMARY OF WETLAND INVOLVEMENT AND MITIGATION
SR54 ALTERNATIVES 1A, 1C, AND 1D

ALTERNATIVE	**TOTAL IMPACT ACRES	HERBACEOUS WETLAND IMPACT ACRES	FORESTED WETLAND IMPACT ACRES	PROPOSED HERBACEOUS WETLAND CREATION	PROPOSED FORESTED WETLAND CREATION	TOTAL WETLAND CREATION
1A	65.00	35.74	29.26	32.54	56.84	89.38
1C	56.68	37.94	18.74	34.78	36.10	70.88
1D	55.96	34.65	21.31	31.08	41.42	72.50

** Total Wetland Impacts = Herbaceous Wetland Impacts + Forested Wetland Impacts

Report describing the conceptual design of the stormwater management system and wetland involvement for this project. As a result of that coordination, the Department is developing a stormwater treatment system for the project in accordance with Chapter 17-25, Florida Administrative Code (FAC). The Department will continue the coordination effort during subsequent project development stages to ensure compliance with Chapter 17-25, FAC. Coordination does not relieve the Department of the necessity to acquire permits under 17-25, FAC, nor does the preliminary review ensure a favorable permitting review.

Because of the state of the art in highway stormwater research, it is not possible at this time to determine the impact of this discharge on the stream crossings. The appropriate Best Management Practices will be used during the construction phase for erosion control and water quality considerations. Any additional stormwater treatment measures found necessary over and above Best Management Practices in order to obtain Chapter 17-25, FAC compliance will be state funded.

No public supply ground water wells are located within the proposed corridor for SR 54. A proposed West Coast Regional Water Supply Authority (WCRWSA) production well site is located in the north of the study corridor, just west of CR 581. However, this site is approximately 1 mile away from any proposed roadway alignment and therefore should not be involved with the project in any way.

A number of agricultural wells occur within the study corridor, particularly in the western portion between I-275 and SR 54. Once the final roadway alignment has been determined, any potential wells within the alignment will be accurately located.

The proposed SR 54 is not expected to have any significant impacts on ground water, recharge areas, or public water supplies. This will be effected by

adherence to Chapters 17-3 and 17-25, FAC and Section 104 of FDOT's "Standard Specifications for Road and Bridge Construction."

4.3.6 Hazardous Materials

A hazardous waste corridor survey was conducted as defined by Chapter 22 of FDOT's Project Development and Environmental (PD&E) Guidelines. Several facilities with relatively minor potential impact on the proposed roadway corridor were identified. These potential pollution sources include an abandoned foundation, formerly a cement plant, several dump sites containing household and building materials, ground water contamination emanating from the domestic wastewater treatment facility operated by the Zephyrhills Mobile Home Park on Morris Bridge Road, and the closed Calhoun Egg Farm on Coates Road. Of these potential pollution sources, only the Calhoun Egg Farm had been cited as a pollution site in the public record. None of these pollution sources appear serious; however, the potential ground water contamination sources which include the abandoned foundation, mobile home park treatment facility, and the poultry and egg farm are all located upgradient from the corridor and could affect dewatering operations during road construction. Further details are given in the Hazardous Waste Report prepared for this project. Copies of this report are available at the FDOT District 7 office in Tampa and the Pasco County Engineering Service Department in New Port Richey.

4.3.7 Wild and Scenic Rivers

The New River is not listed in the National Park Service Southeastern Rivers Inventory and, therefore, the coordination requirement for the Wild and Scenic Rivers Act does not apply to this project.

4.3.8 Floodplains

The extent of probable impacts associated with base floodplain encroachment was assessed for the proposed SR 54, within the project limits. A Location Hydraulic Report and Permit Coordination Report have been prepared for the

project and should be referred to for detailed information. Floodplain encroachment and flood hazard areas were determined by examination of the Federal Emergency Management Agency's Flood Insurance Rate Maps (FEMA's FIRMs) for Pasco County (Figure 4-6) and drainage maps of existing roadways in the vicinity. United States Geological Survey (USGS) quadrangle maps and aerial topographic mapping prepared for the Southwest Florida Water Management District (SWFWMD) were also examined. The Location Hydraulic Report prepared for this project demonstrated that the proposed SR 54 roadway would cause minimal changes in flood stage and flood limits. These changes would not result in any significant adverse impacts on the natural and beneficial floodplain values or any significant changes in flood risk/damages. The project does not involve a regulatory floodway. The proposed roadway alignments traverse through nine well-defined drainage areas. Six of the nine drainage areas were delineated by using USGS quadrangle maps, SWFWMD topography aerials, and field observations. Three drainage areas were based on SWFWMD Floodplain Reports for Trout Creek and New River, dated 1983 and 1979, respectively. The remaining drainage areas along the study corridor are less than 1 square mile in area, or are classified by FEMA FIRM maps as Zone "C," indicating areas of minimal flooding. SWFWMD reports utilized Log-Pearson Type III to produce discharge data and USGS E-431 Step Backwater program to predict 100-year flood elevations.

The SCS Technical Release 20 (TR20) project formulation computer model was used to generate the 100-year frequency discharge rates for each drainage area excluding the aforementioned SWFWMD floodplain studies. As a result of this analysis, each proposed drainage structure with respect to its drainage subbasin was identified and the estimated peak rainfall runoff flow rate was determined. The locations of these structures are at major crossings along the proposed SR 54 roadway.

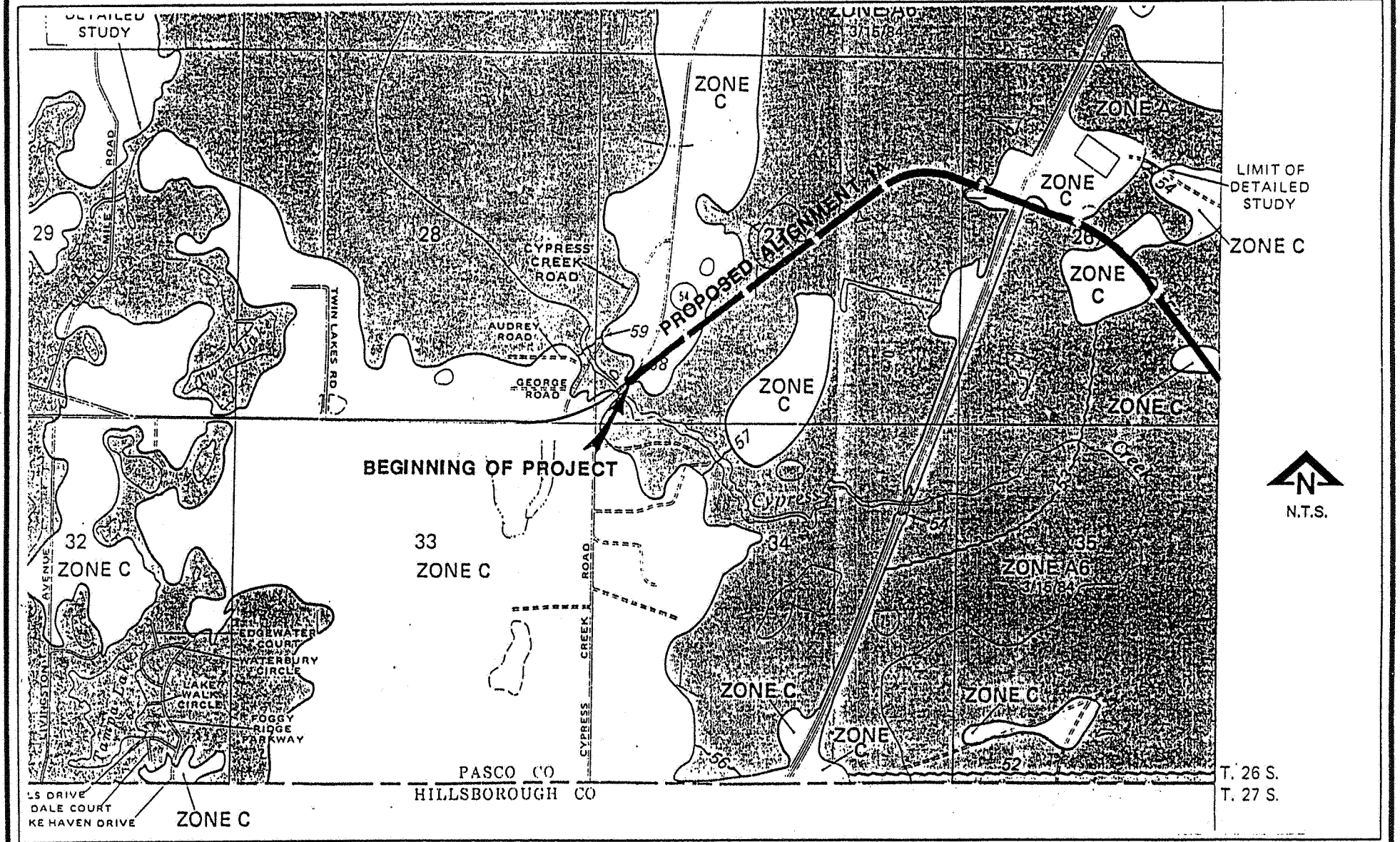


FIGURE 4-6
PROPOSED SR 54: FLOOD INSURANCE RATE MAP (PAGE 1 OF 5)

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

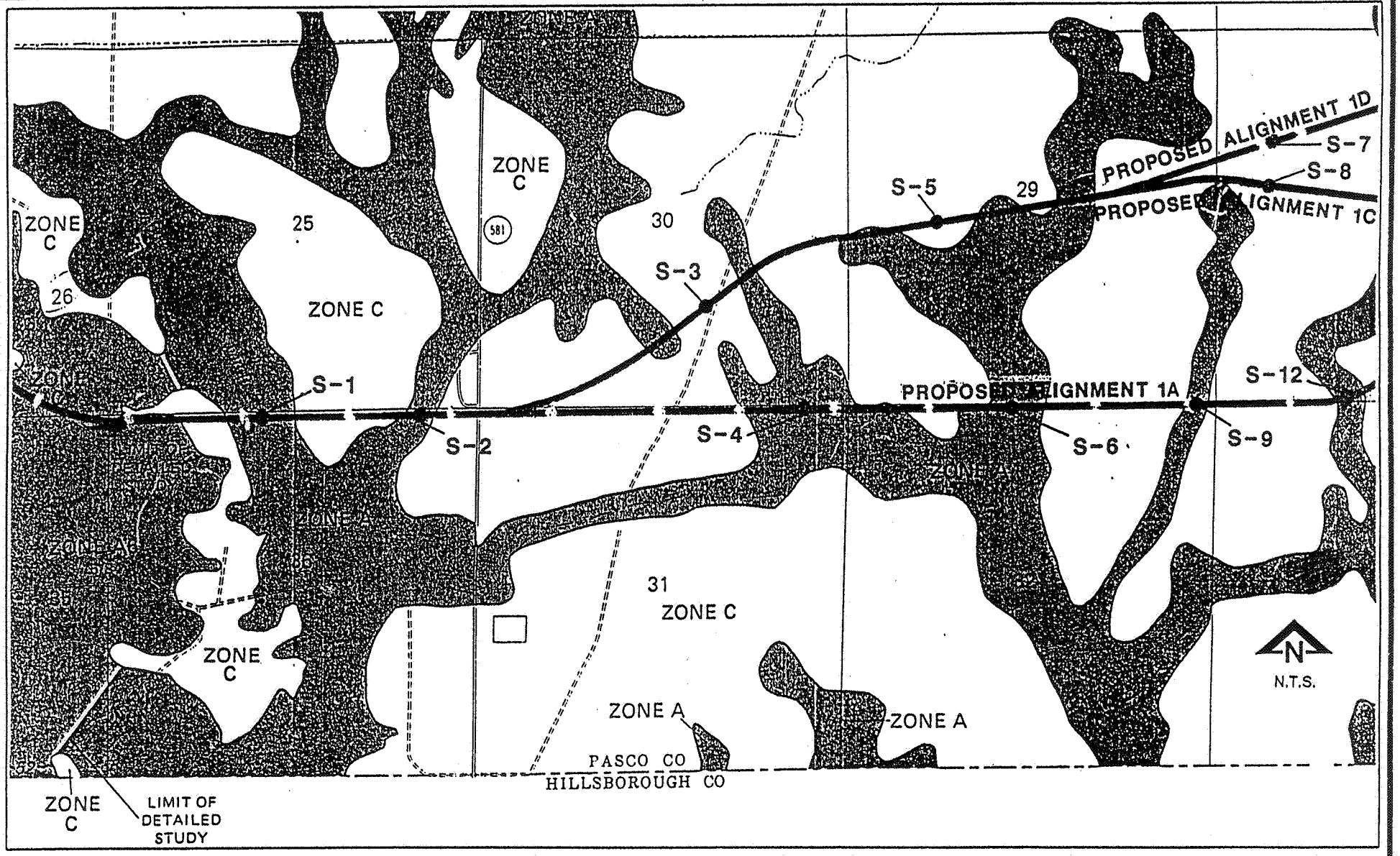


FIGURE 4-6
PROPOSED SR 54: FLOOD INSURANCE RATE MAP (PAGE 2 OF 5)

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

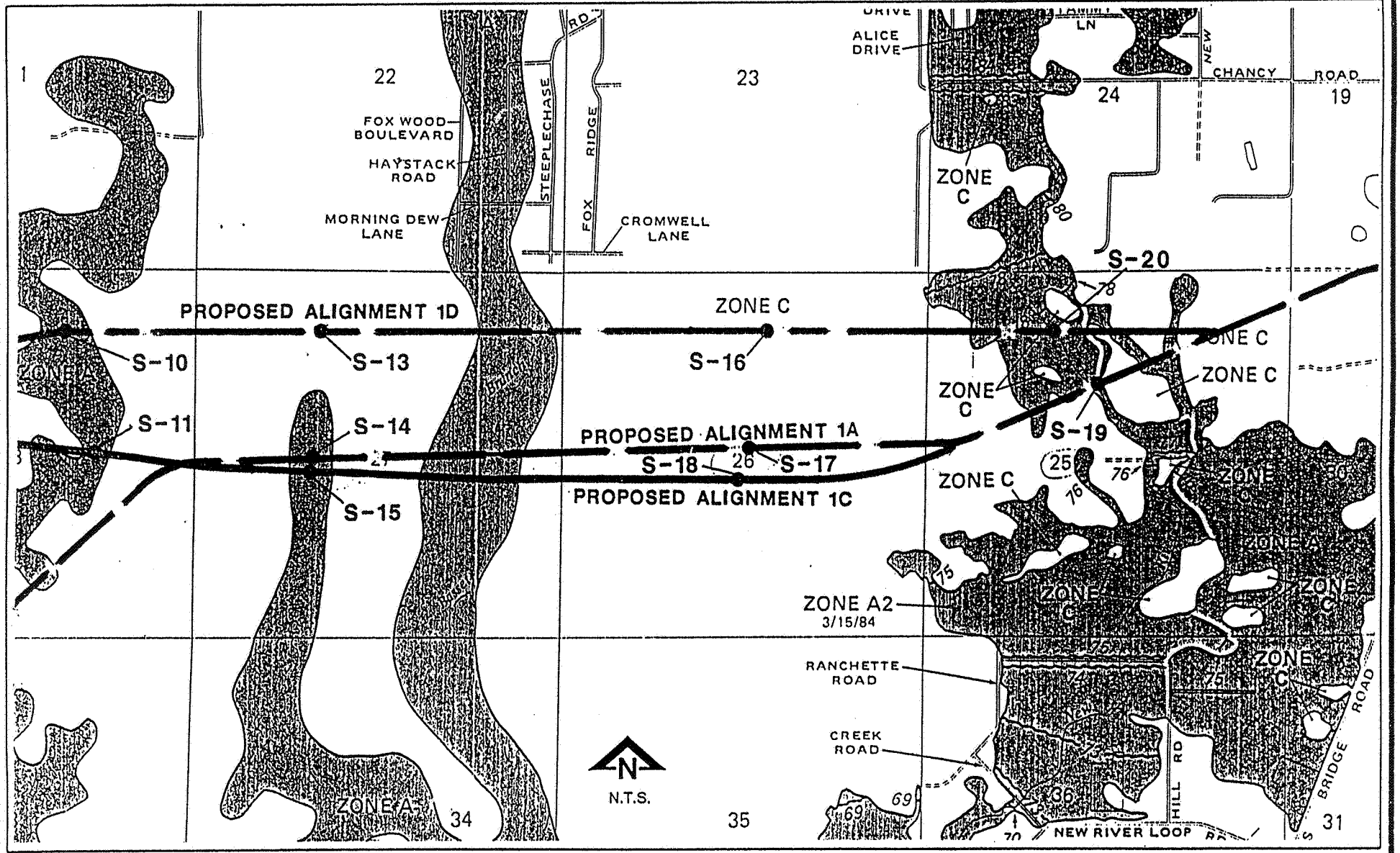


FIGURE 4-6
PROPOSED SR 54: FLOOD INSURANCE RATE MAP (PAGE 3 OF 5)

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

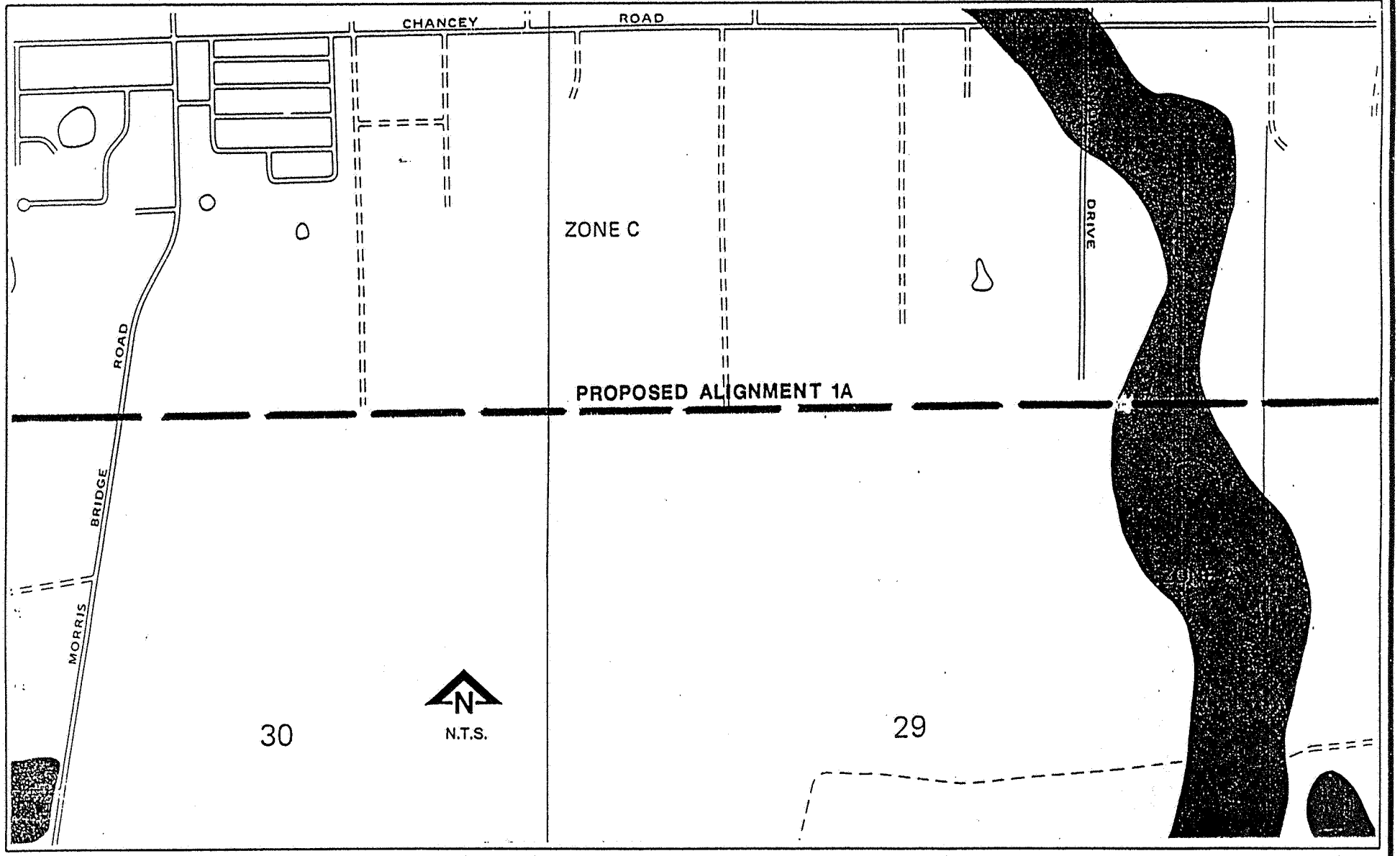


FIGURE 4-6
PROPOSED SR 54: FLOOD INSURANCE RATE MAP (PAGE 4 OF 5)

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

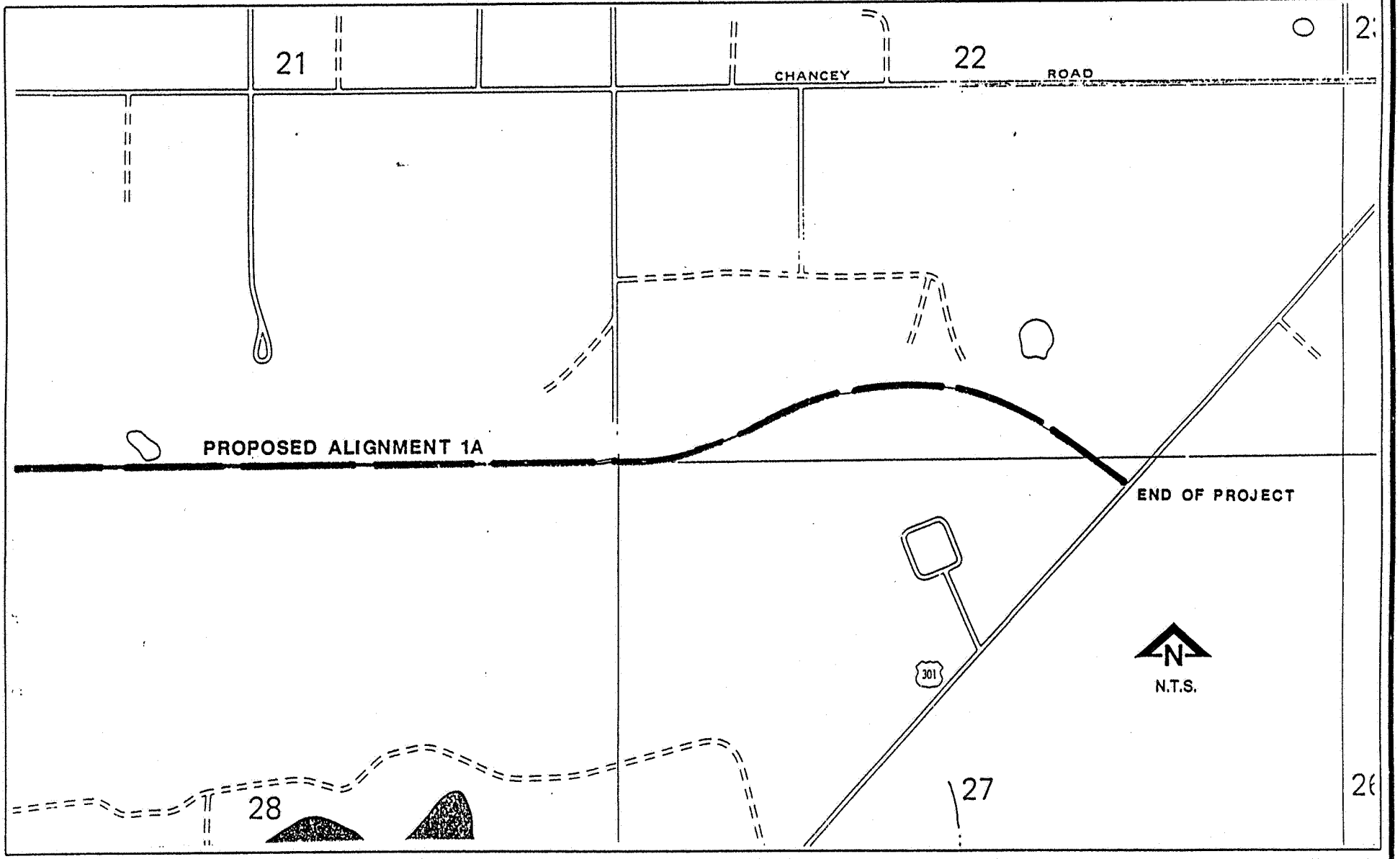


FIGURE 4-6
PROPOSED SR 54: FLOOD INSURANCE RATE MAP (PAGE 5 OF 5)

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

The proposed roadway will not involve any significant floodplain encroachment. Thus, this project can be classified into Category 6 which includes projects on new alignments, and projects on existing alignments with potentially significant changes in the 100-year flood elevation. Category 6 is one of the seven categories developed by FDOT for evaluating and classifying floodplain projects. The Department determines these categories on criteria established by FHWA. The hydraulic performance of the proposed structures is adequate. The headloss through each structure has been kept to a minimum. As a result, the construction of the drainage structures proposed for this project will cause only minor changes in the 100-year flood stage and flood limits. These changes will not result in any significant adverse impacts on the natural and beneficial floodplain values or any significant changes in flood risk or damage. The proposed roadway will increase accessibility for emergency service vehicles and provide an additional emergency evacuation route. Therefore, it has been determined that this encroachment is not significant.

WSPRO (HY-7) will be used during design to estimate the water surface elevations and all cross drains will include an evaluation of the one foot backwater structure.

4.3.9 Coastal Zone Consistency

The Office of Planning and Budget, Office of the Governor, has determined that this project is consistent with FCMP (see Appendix B).

4.3.10 Threatened and Endangered Species

In accordance with 50 CFR Part 402 and the Endangered Species Act of 1973, as amended, an assessment of threatened and endangered species involvement was conducted to evaluate impacts to listed wildlife and plant species. Federally listed wildlife species potentially occurring within the vicinity of the proposed SR 54 were determined through consideration of known species ranges

and habitat requirements, site reviews, literature searches, a computer database search, and consultation with the U.S. Fish and Wildlife Service (FSW) (see Appendix C), FGFWFC, and Florida Natural Area's Inventory (FNAI). From these sources, a list of protected wildlife species potentially occurring in the SR 54 corridor (Table 4-11) was derived.

Site reviews were conducted by a wildlife biologist on February 13, 20, 21, 23, 28, 1989, and May 2, 3, 4, and 12, 1989, in order to inventory each type of habitat present within the project corridor and assess its suitability for these species. Helicopter flyovers provided an aerial review of the corridor and surrounding areas.

Figure 4-7 and Table 4-12 identify xeric habitats located within the SR 54 project corridor. Five stands of xeric oak hammock could potentially be impacted by construction. These stands generally contain low-to-medium height scrubby oaks with scattered patches of palmetto and other shrubs, and open ground. No sandpine scrub or turkey oak communities were observed within the vicinity of the project corridor. Existing stands are of moderate-to-poor quality, as they have been disturbed by cattle and roadways. Section 4.3-4, Wetlands, identifies impacts to forested and nonforested wetlands located along the project corridor. Mitigative measures for these impacts to wildlife habitat are also addressed.

Federally Listed Species--The project corridor is not located in any area designated as critical habitat by the U.S. Department of Interior (DOI). No federally endangered or threatened plant species are known to occur within the project corridor or Pasco County. However, the project area lies within the historic range of nine wildlife species classified as endangered or threatened by FWS.

Table 4-11. Protected Wildlife Species Potentially Occurring in the SR 54 Corridor

Common Name	Scientific Name	Designated Status[1] FGFWFC[2]	FWS[3]	Potential Occurrence+
AMPHIBIANS				
Gopher Frog	Rana areolata	SSC	UR2	U
REPTILES				
American Alligator	Alligator mississippiensis	SSC	T(S/A)	P
Eastern Indigo Snake	Drymarchon corais couperi	T	T	P
Short-tailed Snake	Stilosoma extenuatum	T	UR2	U
Gopher Tortoise	Gopherus polyphemus	SSC	UR2	O
Florida Pine Snake	Pituophis melanoleucus mugitus	SSC	UR2	U
BIRDS				
Wood Stork	Mycteria americana	E	E	O
Southern Bald Eagle	Haliaeetus leucocephalus leucocephalus	T	E	--
Red-cockaded Woodpecker	Picoides borealis	T	E	U
Bachman's Warbler	Vermivora bachmanii	E	E	HU
Arctic Peregrine Falcon	Falco peregrinus tundrius	E	T	HU
Florida Scrub Jay	Aphelocoma coerulescens coerulescens	T	T	U
Southeastern American Kestrel	Falco sparverius paulus	T	UR2	P
Florida Sandhill Crane	Grus canadensis pratensis	T	--	O
Little Blue Heron	Egretta caerulea	SSC	--	P
Snowy Egret	Egretta thula	SSC	--	P
Tricolored Heron	Egretta tricolor	SSC	--	P
Limpkin	Aramus guarauna	SSC	--	P

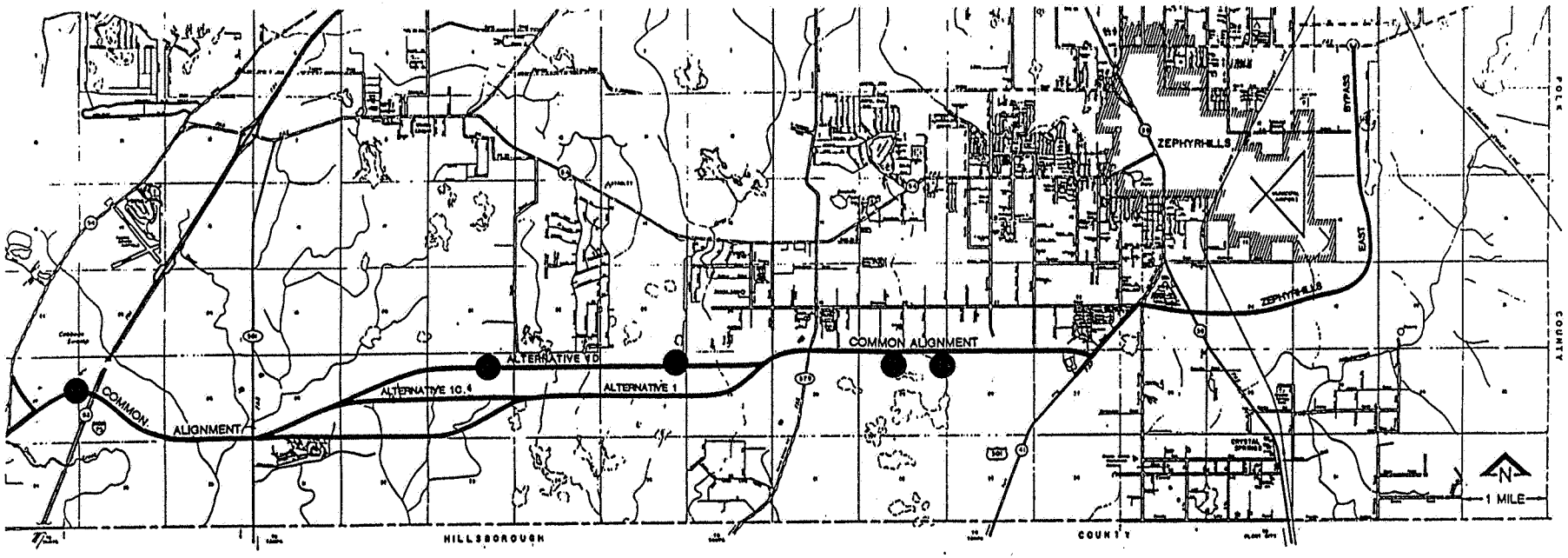
Table 4-11. Protected Wildlife Species Potentially Occurring in the SR 54 Corridor (Continued, Page 2 of 2)

Common Name	Scientific Name	Designated Status[1] FGFWFC[2]	FWS[3]	Potential Occurrence+
MAMMALS				
Florida Panther	Felis concolor coryi	E	E	HU
Sherman's Fox Squirrel	Sciurus niger shermani	SSC	UR2	U
Florida Mouse	Podomys floridanus	SSC	UR2	U

[1] E = Endangered, T = Threatened, T(S/A) = Threatened Due to Similarity of Appearance, SSC = Species of Special Concern
[2] Florida Game and Fresh Water Fish Commission (list published in Section 39-27.003-005, FAC)
[3] United States Fish and Wildlife Service (list published in List of Endangered and Threatened Wildlife and Plants, 50 CFR 17.11-12)
[+] HU = Highly Unlikely, U = Unlikely, P = Possible, O = Observed.

Table 4-12. Xeric Habitats Located Within Proposed SR 54 Right-of-Ways

Location	Habitat	Area (Ac)	Alignments Involved
T26S, R19E, S26	Xeric Oak Hammock	5.68	Common
T26S, R20E, S28	Xeric Oak Hammock	5.92	1D
T26S, R20E, S26	Xeric Oak Hammock	2.58	1D
T26S, R21E, S29	Xeric Oak Hammock	7.43	Common
T26S, R21E, S29/28	Xeric Oak Hammock	5.11	Common



R 19 E | R 20 E | R 21 E | R 22 E

FIGURE 4-7
XERIC HABITATS LOCATED WITHIN
PROPOSED RIGHT-OF-WAYS

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

The red-cockaded woodpecker establishes colonies in open, park-like stands of mature to overmature longleaf and slash pine, where these birds can excavate large cavities in trees weakened by red heart disease. No colonies are presently known to occur within the project corridor or adjacent areas. The only sign of past red-cockaded woodpecker activity observed was an old cavity in one tree. No other trees in the area showed signs of cavity excavation. Small, isolated stands of longleaf and slash pines occur within pastures along the project corridor; however, few trees are large enough for cavities. All trees potentially large enough for cavities that were within the proposed right-of-way were investigated for signs of cavity excavation. Based on these observations, it is concluded that the red cockaded woodpecker does not nest or forage within the project vicinity, and that construction of the roadway will not impact this species.

Bachman's warbler and the Artic peregrine falcon do not nest in Florida, but may fly over the project corridor during their winter migration through Florida. The project corridor is not an important staging area for these species; the last confirmed sighting of Bachman's warbler anywhere within its Florida range occurred in 1965, and the Arctic peregrine falcon utilizes coastal areas almost exclusively during migration. Therefore, it is extremely unlikely that these species would pass through the region during migration, and no impacts to these species are expected to result from this project. Pasco County falls within the historic range of the Florida panther. However, the current range of this species is restricted to the area from Highlands County south to the Everglades. In addition, habitat along the project corridor is unsuitable due to the prevalence of the agricultural fields and residential areas. Large, natural expanses of land are needed to sustain panthers. Therefore, the corridor does not contain suitable panther habitat, and this species will not be impacted by the project.

The southern bald eagle could potentially nest in pine trees in the vicinity of the project corridor. However, no nests were observed in the region. A review of FWS and FGFWFC maps of the area, together with a helicopter flyover of the region, revealed that no open water bodies large enough to support an adequate food base to a nesting pair of eagles are available within the region. Eagles nesting in southeastern Pasco County would be expected to build their nests near bodies of water such as the upper Hillsborough River where they could feed. The closest bald eagle nest is located over 6 miles to the south of the SR 54 corridor, in Hillsborough County (FGFWFC, 1989). Since the project corridor is not near suitable feeding habitat, impacts to bald eagles are not expected to result from construction of SR 54.

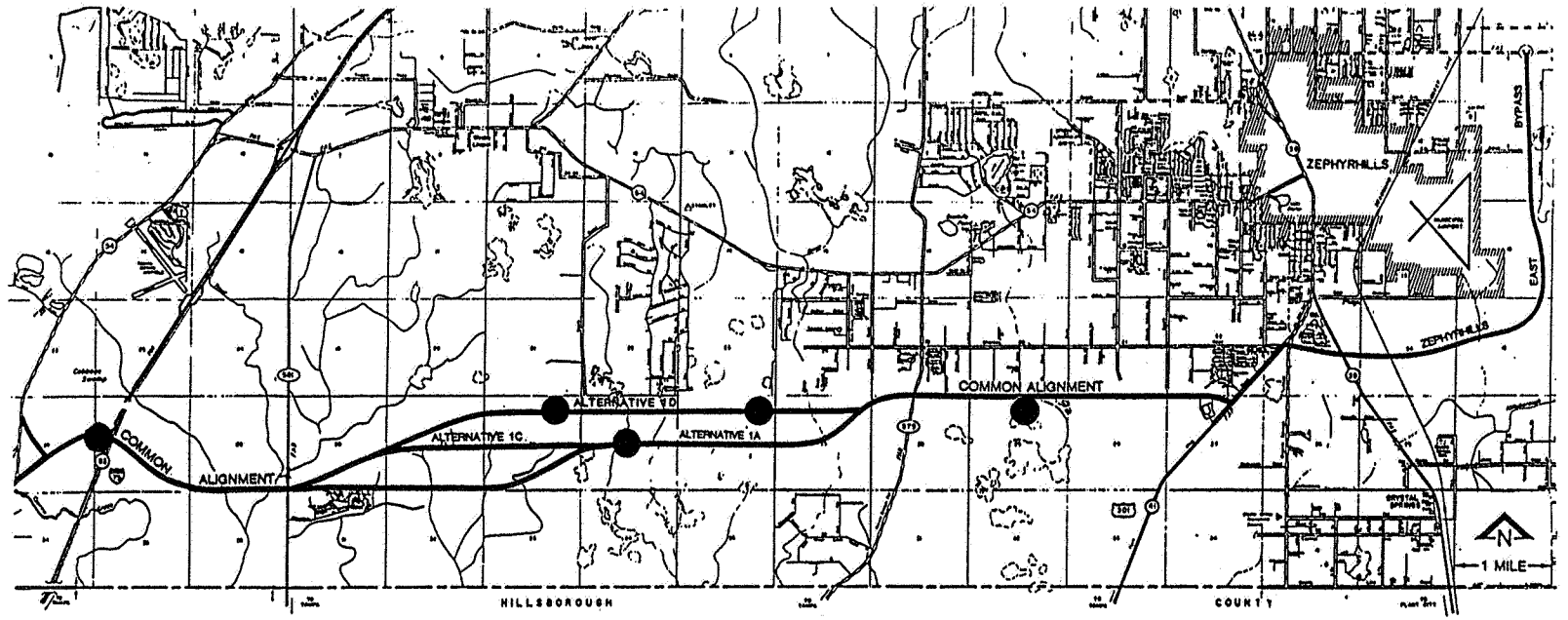
The wood stork was the only federally listed species observed in the project vicinity during field reviews. This species could potentially nest and feed in wetlands along the project corridor. During roadway design stages, viable alternatives which would minimize impacts to wetlands were selected. Unavoidable loss of wetlands will be mitigated to restore feeding areas displaced by the project. Although there are cypress stands and cypress domes located within and adjacent to the project corridor, no wood stork colonies were observed or are known to occur in these stands.

A large wood stork rookery is located at Little Gator Creek, a state-owned park approximately 7 miles to the east of the proposed roadway. Wood storks inhabiting southeastern Pasco County would be expected to nest in this protected rookery and fly to wetlands in surrounding areas to feed. The abundance of suitable feeding habitat available in the Green Swamp Wildlife Management Area, which is located between the rookery and the proposed roadway, together with the roadway design and wetland mitigation proposed, should ensure the continued availability of suitable feeding areas within the region. The project is not expected to reduce the wood stork population level in the region.

The eastern indigo snake may occur in wetlands and upland habitats along the project corridor, although the prevalence of open rangeland and residential areas within the region probably restricts utilization of habitats by this species. If it is present in the vicinity, it is likely to occur in areas where gopher tortoise burrows are available for shelter. Five gopher tortoise colonies are located within or adjacent to the proposed alternatives (Figure 4-8). Although this species is not yet federally listed, its burrows can provide shelter for numerous commensals including the eastern indigo snake. Impacts to the gopher tortoise warrant consideration and a pertinent review is included in the following section concerning state-listed wildlife. To minimize impacts to individual indigo snakes during construction, a special provision will be included in the contract to advise the contractor of the potential presence of this species and its protected status. If an indigo snake is sighted during construction, the contractor will be required to cease any operation(s) which might cause harm to the snake. If the snake does not move away from the construction area, FGFWFC will be contacted to capture and relocate it to other suitable habitat.

Due to the disturbed condition of the existing habitat, the abundance of habitats in state and Pasco County parks within the region, and the special provisions to protect transient individuals encountered during construction, the project is not expected to cause significant impacts to the indigo snake population within the region.

The American alligator may utilize certain wetland habitats situated within the project corridor and vicinity. Although the alligator population in Florida is no longer considered threatened, it is listed as such due to its similarity of appearance to the American crocodile. There are no American crocodiles in Pasco County, so there is no possibility of confusing the two and impacting the crocodile. Alligators were not observed during site



LEGEND:

● DENOTES COLONY LOCATION

FIGURE 4-8
GOPHER TORTOISE COLONIES LOCATED WITHIN PROPOSED RIGHT-OF-WAYS

SR 54/SR 54A
CYPRESS CREEK TO
ZEPHYRHILLS EAST BYPASS

reviews, and the proposed alignment does not intersect any nests or important population centers. Since impacted wetlands will be mitigated, the project is not expected to impact regional alligator populations.

The Florida scrub jay has very specific habitat requirements regarding constitution of the scrub it inhabits. All scrub habitats located within 1,000 feet of the proposed right-of-way were investigated to determine their suitability as scrub jay habitat. None of these scrub habitats contained the low, shrubby oak stands or suitable mosaic of scrub oak trees, open spaces, palmettos, and other shrubs characteristic of scrub jay habitat. This species avoids the type of scrubby forests with relatively large scrub oak trees and high canopies (over 4 meters tall) found along the project corridor. Since the scrub jay is unlikely to nest or forage within the project vicinity, the project is not expected to impact this species.

State-Listed Species--In addition to threatened and endangered species listed by FWS, FGFWFC lists and protects a number of species within the State of Florida. Table 4-2 includes twelve state-listed species with geographic ranges that include the project corridor.

The southeastern American kestrel is likely to utilize edge habitat along certain sections of the proposed corridor where tree stands and surrounding rangelands provide perches adjacent to open hunting areas. However, the majority of grazing lands along the corridor do not provide sufficient snags where kestrels can perch. This species readily adapts to urban conditions. Construction of SR 54 is not expected to decrease kestrel use of the area or otherwise impact the species.

The Florida sandhill crane typically nests in shallow emergent marshes and forages in low-lying cattle pastures and shallow wetlands. Impacts to habitats suitable for sandhill cranes are detailed in Section 4.3.4, Wetlands.

Mitigative measures are expected to create and protect wetlands displaced by construction, so that suitable nesting and foraging habitats will remain available within the region. No known nesting areas will be impacted by the project. Thus, no substantial impacts to this species are expected to occur.

Four species of wading birds, the little blue heron, snowy egret, tricolored heron, and limpkin, are likely to utilize a variety of nonforested and forested wetlands occurring within the project corridor. Impacts to all wetlands have been examined, and appropriate mitigation based on size and quality of each wetland has been recommended (see Section 4.3.4). Although wading bird habitat will be involved along the chosen corridor, wetland mitigation has been designed to replace and maintain suitable habitat along the corridor. The amount of wetlands involved is insignificant compared with the amount of wetland habitat available in the region. For these reasons, regional wading bird population levels are not expected to be impacted by the project.

The gopher tortoise is listed as a species of special concern by FGFWFC and is federally classified as UR2, meaning that it is under review for listing but substantial evidence of threat or biological vulnerability is lacking. Gopher tortoises inhabit well-drained, sandy upland areas with open canopies and a well-developed herbaceous stratum.

Potentially suitable areas of gopher tortoise habitat were identified by helicopter flyovers and ground inspections of upland areas within the project alternative alignments. Where burrows were encountered, a complete enumeration of all burrows within the area was performed and the location and activity status (active, inactive or abandoned) of burrows noted. The number of active and inactive burrows was used to compute an estimate of the population size at each site using FGFWFC's recommended method (FGFWFC Technical Report No. 4, 1987).

Gopher tortoise burrows occur in five small isolated upland areas of the project (Figure 4-8). Table 4-13 provides the numbers of burrows and tortoises that would be affected by facility construction. Alternatives 1A and 1C would each affect a maximum of 49 active and 15 inactive burrows, estimated to represent 39 tortoises. Alternative 1D presents somewhat higher impacts, with 55 active and 25 inactive burrows affected, estimated to involve about 49 tortoises.

Funnel trapping of burrows for listed, commensal species was conducted at the two sites with the higher population estimates. No listed species utilizing these burrows were detected. Thus, substantial impacts to species other than the gopher tortoise are not expected to occur.

The impacts to the gopher tortoise populations are unavoidable, since the occurrence of wetlands adjacent to colony sites precludes any shifting of alignments. However, these impacts are not considered substantial for any site or for the total project. Gopher tortoises are common in upland areas of the region and the loss of gopher tortoise habitat due to the project would be insignificant on a regional scale. Coordination with the FGFWFC will continue throughout the alternative selection and final design stages of the project. Relocation of any affected tortoises may be recommended. This relocation should take place immediately prior to the clearing of areas for roadway construction.

The short-tailed snake is restricted chiefly to longleaf pine/turkey oak associations, with loose, sandy soil suitable for burrowing. This habitat type does not occur within the vicinity of the proposed corridor, and no occurrence records for the short-tailed snake have been reported for the region. This species probably does not occur within the corridor.

Table 4-13. Gopher Tortoise Burrows Located Within Proposed SR 54 Alternative Right-of-Ways

Location	Gopher Tortoise Burrows			Population Size**	Habitat	Alignments Involved
	Active	Inactive	Abandoned			
T26S, R19E, S26*	24	5	7	18	Xeric Oak Hammock	Common
T26S, R20E, S28	4	0	0	2	Xeric Oak Hammock	1D
T26S, R20E, S27	13	5	0	11	Improved Pasture	1A, 1C
T26S, R20E, S26+	15	15	6	18	Xeric Oak Hammock	1D
T26S, R21E, S29	12	5	2	10	Xeric Oak Hammock	Common

* Two gopher tortoises observed.
+ One gopher tortoise and a clutch of four eggs observed.
** Estimated as (active and inactive burrows) x .681, per FGFWFC (1987) guidelines (Tech. Rpt. 4).

Sherman's fox squirrel also inhabits longleaf pine/turkey oak stands. There are no habitats along the project corridor which would meet the habitat needs of this species. No impacts to Sherman's fox squirrel are anticipated.

The Florida mouse occurs primarily in sandpine scrub and turkey oak associations, which are not located in the vicinity of the project corridor. Xeric oak hammocks within the proposed right-of-way are not large enough to support a Florida mouse population. No Florida mouse burrows or other signs were observed in any area of the project corridor. Since the area for which construction is proposed is not likely to be inhabited by the Florida mouse, no impacts to this species are expected.

The gopher frog occurs in various sandhill communities in northern Florida, but in central Florida it is restricted to the Lake Wales ridge and coastal xeric habitats. It is not expected to occur in xeric oak hammocks of eastern Pasco County; therefore, construction of SR 54 should have no impact on the gopher frog.

The Florida pine snake lives in sandy habitats, particularly longleaf pine/ turkey oak associations. Pine snakes are not expected to inhabit the isolated xeric oak stands in the project corridor due to their limited area and since no pocket gophers, the main food source of pine snakes, were observed.

Summary of Impacts to Wildlife

Table 4-14 lists acreages of impacts (loss) to wildlife habitats located within the right-of-way envelope for each alternative. At least 86 percent of each alternative consists of previously disturbed land currently in use as pasture or rangeland. These alternatives reflect the effort to identify those corridors that would minimize impacts to regional wildlife populations. The best effort was made to locate roadways within areas previously disturbed

Table 4-14. Summary of Habitat Impact Acreages for Alternative Alignments of SR 54

Alternatives	Length (miles)	Wetland Acres (Percentage of Total) Forested	Nonforested	Total	Xeric Oak Hammock Acres (Percentages of Total)	Pasture/Rangeland Acres (Percentage of Total)	Total
1A	13.66	29.25(7.1)	35.73(8.6)	64.98(15.7)	18.22(4.4)	330.70(79.9)	413.90
1C	13.67	23.82(5.8)	38.25(9.2)	62.07(15.0)	18.22(4.4)	333.91(80.6)	414.20
1D	13.50	26.68(6.5)	34.54(8.4)	61.22(15.0)	26.72(6.5)	321.16(78.5)	409.10

areas and to avoid areas of higher importance to wildlife. There are no substantial differences among the three alternatives with regard to anticipated overall wildlife impacts or habitat losses.

In conclusion, it has been determined that construction of the proposed roadway will not cause significant impacts to threatened and endangered wildlife populations potentially occurring in the vicinity. Appropriate coordination with FGFWFC and FWS will be maintained throughout final design and construction phases to ensure that disturbance of listed species is minimized or avoided.

4.3.11 Farmlands

Through coordination with the U.S. Soil Conservation Service (SCS), it has been determined that no farmlands as defined by 7 CFR 658 are located in the project vicinity (Appendix D).

4.3.12 Construction

Construction activities for the proposed SR 54 roadway will have air, noise, water quality, traffic flow, and visual impacts for those residents and travelers within the immediate vicinity of the project. The air quality impact will be temporary and will primarily be in the form of emissions from diesel-powered construction equipment and dust from embankment and haul road areas. Air pollution associated with the creation of airborne particles will be effectively controlled through the use of watering or the application of calcium chloride in accordance with FDOT's "Standard Specifications for Road and Bridge Construction" as directed by the FDOT resident engineer.

Noise generated by the construction of the proposed action may affect some land uses during the construction period. Noise and vibration impacts will be from the heavy equipment movement and construction activities such as pile driving and vibratory compaction of embankments. Noise control measures will

include those contained in FDOT's "Standard Specifications for Road and Bridge Construction." In the event that standard measures are not adequate to keep construction noise at an acceptable level (as determined by the engineer), the contractor may direct the use of other controls and measures. The contractor shall be informed of noise-sensitive sites as identified in this report, as well as the responsibility of the contractor to comply with federal, local, or state noise regulations and ordinances.

Water quality impacts resulting from erosion and sedimentation will be controlled in accordance with FDOT's "Standard Specifications for Road and Bridge Construction" and through the use of Best Management Practices.

Maintenance of traffic and sequence of construction will be planned and scheduled so as to minimize traffic delays throughout the project. Since SR 54 will be constructed as a new facility, maintenance of traffic will only be significant at major connecting roadways along this facility.

Signs will be used as appropriate to provide notice of road closures and other pertinent information to the traveling public. The local news media will be notified in advance of road closings and other construction-related activities which could excessively inconvenience the community so that motorists, residents, and business persons can plan travel routes in advance.

A sign providing the name, address, and telephone of a FDOT contact person will be displayed onsite to assist the public in obtaining immediate answers to questions and logging complaints about project activity.

For the residents living along the SR 54 right-of-way, some of the materials stored for the project may be displeasing visually; however, this is a temporary condition and should pose no substantial problems in the long term.

Construction of the roadway and bridges requires excavation of unsuitable material (muck), placement of embankments, and use of materials, such as limerock, 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. Disposal will be onsite in detention areas or offsite. 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 on 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 FDOT's Standard Specifications, Section 104, will consist of temporary grassing, sodding, mulching, sandbagging, slope drains, sediment basins, sediment checks, artificial coverings, and berms.

5.0 COMMENTS AND COORDINATION

A public involvement plan has been developed and is being carried out as an integral part of this project. The purpose of this program is to establish and maintain communication with individuals and agencies concerned with the project and its potential impacts. To ensure open communication and agency and public input, FDOT has provided an early notification package to state and federal agencies and other interested parties defining the project and describing anticipated issues and impacts. In addition, in order to expedite the project development, eliminate unnecessary work, and identify issues which may require attention, FDOT has provided other opportunities for local and regional agency involvement. This section of the document details FDOT's efforts to fully identify, address, and resolve all project-related issues identified through the public involvement program.

5.1 ADVANCE NOTIFICATION PROCESS

FDOT, through the advance notification process, informed a number of federal, state, and local agencies of the initiation of this project and its scope. An Advance Notification Package was distributed to the Office of Planning and Budgeting. Individual packages were also sent directly to local government. The following agencies/personnel received advance notification packages. Those agencies that responded to the package are indicated by an asterisk. The responses are included in Appendix A of this document.

Mailing List

Florida Planning and Environmental Clearinghouse, Office of the Governor
Federal Highway Administration (FHWA)
Bureau of Indian Affairs
Department of Agriculture (DOA)
Federal Emergency Management Agency (FEMA)
Department of Interior (DOI)
National Marine Fisheries Service
U.S. Geological Survey (USGS)
Bureau of Land Management
U.S. Department of Housing and Urban Development

U.S. Environmental Protection Agency (EPA)
U.S. Fish & Wildlife Service (FWS)
U.S. Army Corps of Engineers (COE)
National Park Services
Department of State - Environment, Health and Natural Resources
Federal Railroad Administration
National Oceanic and Atmospheric Administration (NOAA)
*Office of Cultural Resource Preservation - Historic Preservation
Federal Aviation Administration (FAA)
Department of Energy
Department of Health and Human Services
Commander - Seventh Coast Guard District
Marine Fisheries Commission
*Florida Department of Environmental Regulation (DER)
*Tampa Bay Regional Planning Council (TBRPC)
Southwest Florida Water Management District (SWFWMD)
Florida Recreational Council
Florida Game and Fresh Water Fish Commission (FGFWFC)
Florida Department of Natural Resources (DNR)

5.1.1 Government Agency Responses

Florida Department of Environmental Regulation.

Comment: Concerns were expressed regarding permitting, coordination with DER staff, and impacts to water quality and sensitive wildlife habitats.

Response: Appropriate DER permits will be applied for and obtained. A field inspection (with DER staff) of all the wetlands within the project corridor will be conducted prior to permit application submittal. The proposed project has been designed to minimize impacts to water quality and wildlife habitats to the greatest extent feasible.

Tampa Bay Regional Planning Council

Comment: Concerns were expressed regarding water quality, wetland and floodplain encroachment, and protection of sensitive wildlife habitats, and archaeological and historic resources.

Response: The proposed project has been designed to minimize impacts to water quality, wetlands, floodplains, wildlife habitats, and archaeological and historic sites to the greatest extent feasible.

5.2 PUBLIC INVOLVEMENT

A public involvement plan was developed and implemented at appropriate stages throughout development of the project. The plan involved the public through notification and meetings which included:

1. State, local, regional, and federal agencies, and public and private groups having a concern in the project being contacted at the outset of the project's study.
2. The local news media being utilized for carrying public notices and news releases concerning the project.
3. A public information workshop being held at a location near the project area.
4. Additional individual and group meetings being held as warranted.

Public coordination for this project was primarily directed towards three groups of individuals or agencies: Pasco County officials; regulatory and permitting agencies; and affected property owners. The following sections will discuss the meetings conducted with each group.

5.2.1 Coordination with Pasco County

Coordination with Pasco County representatives was conducted through regularly scheduled monthly project meetings with FDOT. These meetings allowed Pasco County representatives to participate in the decision-making process of this project. In addition to these meetings, presentations concerning the status of this project were made to several county organizations, including the Pasco County Technical Advisory Committee (TAC) on January 11, 1989, and to the

Pasco County Board of County Commissioners on February 28, 1989. No major comments were expressed by either organization concerning this project.

5.2.2 Coordination with Regulatory Agencies

During the early stage of this project, meetings were conducted with several regulatory agencies regarding potential environmental impacts which would result from this project. Each of these meetings are summarized below.

On January 25, 1989, Hunter Services, Inc. met with a COE representative to discuss the proposed project. After presentation and discussion of the proposed corridor, the COE representative provided the following comments:

- Expansion of the present 250-foot-wide typical section to incorporate frontage roads could result in additional wetland impacts, which should be minimized,
- The proposed, unavoidable crossing of the Cabbage Swamp/Trout Creek tributary (located west of SR 581) could interfere with wildlife movement. Provisions for adequate wildlife crossings would be recommended. Potentially, drainage provisions (e.g., large culverts, pilings, etc.) could be satisfactory for this purpose depending on their size and design,
- The roadway width should be constricted as much as possible at areas of major wetlands, and
- A field review with COE staff should be conducted for the proposed corridor prior to the submittal of the Permit Coordination Report.

On January 23, 1989, DER representatives met to discuss the proposed project. After a brief overview and status of the project, a discussion ensued concerning the environmental impacts along the corridor. Several comments made by DER representatives regarding impacts included the following items:

- Median widths should be reduced in those areas where culverts/bridge crossings would be required; and
- Consideration should be given to rehydration of wetlands from stormwater runoff from the project.

On February 7, 1989, SWFWMD representatives discussed the proposed project. After presentation and discussion of the proposed corridor, SWFWMD representatives provided the following comments:

- Consider narrow roadway width at areas of wetland crossings,
- Use large contiguous areas for mitigation purposes. If possible, mitigate adjacent to large systems proposed to be impacted,
- At the Cabbage Swamp crossing incorporate provisions for wildlife crossings,
- Mitigation areas should have provisions for sandhill crane and woodstork habitat,
- Mitigation within wet detention systems should not be considered due to the drastic change in water levels, and
- 100-year floodplain encroachment must be mitigated.

In September 1989, a Permit Coordination Report was prepared in order to identify potential sites that may require environmental and regulatory permits from federal and state agencies and to coordinate with local agencies. This report lists the various types of permits anticipated for the proposed project; describes the wetland involvement for each of the proposed alternatives and the proposed mitigative measures to minimize wetland impacts; and provides an assessment of the project impacts to federally listed plant and wildlife species. The agencies who were sent this report are listed below. Those agencies who responded are denoted with an asterisk (*).

Mailing List

- NMF, Environmental Assessment Branch
- EPA, Regional Administrator
- SWFWMD, Mr. John Post
- DER, Mr. Bob Stetler
- TBRPC, Assistant Director for Development Implementation*
- DNR, Regional Biologist
- FGFWFC, Executive Director
- COE, District Engineer
- FWS, Field Supervisor
- COE, Gulf Coast Area Office
- DNR, Bureau of Lands Management*

The responses are included in Appendix A. The pertinent comments from these responses are summarized below.

Tampa Bay Regional Planning Council

Comment: Concerns were expressed regarding wetlands, water quality, flora and fauna impacts, archaeological and historical resources floodplains, air pollution, noise levels, relocation and neighborhood disruption, property values, access to public facilities, Access Management Plan, Land Use Management Plan, and alternative modal investments. Recommended that the above concerns be considered during the project development to be consistent with the Council's Future of the Region, A Comprehensive Policy Plan for the Tampa Bay Region.

Response: The proposed project has been socioeconomically, environmentally and physically designed to minimize the project's impacts to the greatest extent feasible (see Section 4.0). Consistency with local Transportation Plans and Access Management Plans are addressed in Section 2.0 of the EA. Multi-modal System is addressed in Section 4.3.

Department of Natural Resources

Comment: State-owned lands in Sections 22 and 27, Township 26 South, Range 31 East would be traversed by the proposed route. There is insufficient evidence in our files to determine the sovereignty of the crossing site of the New River.

Response: None required.

5.2.3 Coordination With Affected Property Owners

On November 16, 1988, a meeting was held with large tract property owners located adjacent to the proposed corridor. Two alternative alignments (1 and 2) which would be presented at the January 19, 1989, public informational workshop, were shown to the affected property owners. Based on these

meetings, a majority of the property owners were in favor of constructing the new roadway. One property owner, Wiregrass Ranch, Inc., expressed strong opposition to the roadway because it would bisect and disrupt a ranching operation. Despite the overall agreement on the need for a new roadway, the property owners had several concerns regarding the alternative alignments. These concerns include the following:

- Impacts to existing cattle and ranching operations along the corridor,
- Impacts to existing utility facilities,
- Floodplain encroachment, and
- Current zoning impacts.

These comments were incorporated in the review of the alternative alignments prior to and after the public informational workshop.

5.3 PUBLIC INFORMATIONAL WORKSHOP

A public informational workshop concerning new SR 54 from Cypress Creek to U.S. 301 was held on Thursday, January 19, 1989, from 4:00 to 7:00 PM at the Alice Hall Community Center located in Zephyrhills, Florida. An open format was used in which residents and any interested parties were able to see the project displayed and talk with FDOT representatives who were available to answer any questions. Approximately 120 individuals attended the workshop. The attendees consisted mainly of residents and property and business owners who reside near the proposed project.

All persons attending the public informational workshop were afforded the opportunity to comment about the project and have their comments included in the official transcript of the public informational workshop. This could be achieved in three ways: 1) a court reporter was present at the hearing to record any oral comments, 2) comment sheets were provided for any written comments, and/or 3) interested parties could write a letter addressed to Mr. James G. Kennedy of FDOT concerning any comments about the project. All of these comments are included as a part of the official transcript of the public workshop. Oral and written comments from the public informational workshop are listed below:

MR. GEORGE SCHACK

Comment: "Again, DOT has shown very little compassion to the senior citizens of our area. Any half-wit can look at your proposed map of SR 54 and CR 581 and can easily see how the homeowners were ignored in favor of the big landowners..."

Response: The proposed project has been designed to minimize impacts, including environmental and socioeconomic, to the greatest extent feasible. Impacts to all property owners near the proposed corridor were considered in the conceptual design process.

MR. HANS J. CASTENDYK

Comment: "Please keep me informed on this DOT project and all meetings."

Response: The general public will be notified well in advance of any future meetings concerning this project.

MS. EDITH MOSKOVITZ AND MR. ARTHUR MOSKOVITZ

Comment: "...Surely moving the road 75-100 feet more to the north should not present too much of a hardship. This way we could have a berm and a wall and trees to keep the noise and air pollution levels down..."

Response: Consideration was given to moving the proposed roadway away from existing residences, resulting in the development of Alternatives 1C and 1D.

MR. JAMES J. NUTTALL

Comment: "With 3 1/2 miles of open farmlands between the Williamsburg development and SR 54, why do they have to make a 40° turn to the south after the interchange with I-75 in order to put the proposed

SR 54 Section 30-31-32, T26, R20 right on the northern border of Williamsburg..."

Response: The roadway has been designed to minimize encroachment to the Cabbage Swamp area. This area is considered the most sensitive of all large, wetland systems which this new roadway will cross. To receive the appropriate permits/approvals from regulatory agencies for this project, the roadway had to be designed to minimize environmental impacts.

MR. JOHN SOKOL

Comment: "I love the peace and quiet of my small Town of Zephyrhills. If this 6-lane roadway comes through our town it would change everything..."

Response: The purpose of constructing this 2- to 6-lane roadway is to relieve future traffic demand projected for existing SR 54 which runs through Zephyrhills. By accomplishing this, the new roadway will provide motorists an alternate route to travel in southeast Pasco County, and therefore, minimize the potential for high growth along existing SR 54 near Zephyrhills.

MR. STANLEY ORING

Comment: "...As a real estate salesman, I have been in the backyards of homes on Long Island that were this close to an expressway. Because of the traffic noise, conversation could not be held outdoors. These homes were eventually sold at a great loss. We will be looking forward to the same problem. Mine is the seventh house from the one closest to the new road. We will see it from our window, which is not the worst thing, but we will also be kept awake by the noise of trucks which travel 24 hours a day..."

Response: The proposed roadway has been designed to minimize impacts to the greatest extent feasible. A noise study was conducted to determine the noise impacts caused by the proposed project (see Section

4.3.3, Noise). Noise abatement measures were considered for all noise-sensitive sites that approach or exceed the Federal Highway Noise Abatement Criteria (see Noise Study Report).

MR. ROY T. HAZELWOOD

Comment: "I wish to express my extreme disapproval to the proposed SR 54 Section 30-31-32, T26, R20. This proposed roadway would pass within 110 feet of my residence in the Williamsburg subdivision along with several other residences. This would reduce the quality of life from quiet and peacefulness that we moved here for, to a noisy, tense, and polluted existence..."

Response: The roadway has been designed to minimize impacts to the greatest extent feasible. Air and noise studies were conducted to determine impacts caused by the proposed project. The results of the air quality study indicated that the project would not significantly impact air quality. Pollutant emissions were well below federal standards. Noise abatement measures have been considered for all noise-sensitive sites (see Noise Study Report).

MR. WILLIAM SOKOL

Comment: "Surely, there must be a better place to have this 6-lane road coming through Zephyrhills. I don't like any of the proposed plans!..."

Response: The purpose of constructing this 2- to 6-lane roadway is to relieve future traffic demand projected for existing SR 54 which runs through Zephyrhills. By accomplishing this, the new roadway will provide motorists an alternate route to travel in southeast Pasco County, and therefore, minimize the potential for high growth along existing SR 54 near Zephyrhills.

MR. JOHN R. SIERRA, JR.

Comment: "We own the east 3/4 of Section 27, Township 26, Range 19, Pasco County, basically, at the start of the proposed project. Our 600± acres would be cut in half by the proposed SR 54 realignment. We are very much in favor of the proposed road, provided our land (future development) will have access to the new road..."

Response: FDOT is currently developing an access management plan for the proposed project which would provide limited access to affected property owners. Prior to the design stage of this project, FDOT will contact property owners in order to discuss this plan.

MS. PAULINE K. CECICH

Comment: "...I am not against the road per se, only the uneven route which touches our backyards..."

Response: Consideration was given to moving the proposed roadway away from existing residences, resulting in the development of Alternatives 1C and 1D.

MS. JOANN SOKOL AND MR. JOHN SOKOL

Comment: "...You know as well as we do that there would be quick, tremendous growth in this area if this "new proposed highway" is passed. We don't want that to happen! We don't want this community to become a 'suburb' of Tampa! Why don't you people worry about widening and fixing the roads you already have...!!!"

Response: Significant growth is projected for the southern portion of Pasco County regardless of whether this roadway is constructed or not. Currently, there are five large planned developments either under construction or proposed for areas east of I-75. Due to this identified growth, a second east-west roadway will be required to handle this future traffic demand.

MS. SYBELLE K. BERLIN AND MR. PAUL D. BERLIN

Comment: "We wish to take exception to the proposed route of SR 54 Section 30-31-32, T26, R20 since it will pass within 25 feet of the northwest to east boundary of the Williamsburg development where we reside and will cause us a loss in the value of the property, as well as the inconvenience of the noise and pollution caused by the traffic generated in the future... If there is any way in which the proposed road could be moved further back or if an alternate way could be found to either widen the existing route 54 or in building a new road, it would mean more peace of mind, better health, and avoid the loss of our money, again due to depreciation of property in which we have invested our savings in good faith that it would bring us a home to relax in the final years of our life..."

Response: Consideration was given to moving the proposed roadway away from existing residences, resulting in the development of Alternatives 1C and 1D.

MR. CHARLES B. MALLON

Comment: "There is an old but indisputable mathematical principal to the effect that the shortest distance between two points is a straight line. In locating the route of the new, proposed SR 54 along the southerly border of the Porter property, which is also the northerly border of the Williamsburg development (on Route 581), the DOT has chosen to ignore that principal..."

Response: The roadway has been designed to minimize encroachment to the Cabbage Swamp area. This area is considered the most sensitive of all large wetland systems which this roadway will cross. To receive the appropriate permits/approvals from regulatory agencies for this project, the roadway had to be designed to minimize the environmental impacts.

MS. GRACE ERRICO AND MR. JOSEPH ERRICO

Comment: "We understand with the tremendous growth of Pasco County that projects like the improvement of SR 54 are necessary. We only ask that you take into consideration the problems that the new road will create for the people that live in the Williamsburg (Trout Creek) development. In Section 25, SR 54 proposed route makes a 40° turn to the south, then turns east and runs right along our community boundary line; passing within 109 feet of existing homes. This surely will cause intolerable noise pollution levels, coupled with a sizable depreciation in our property values..."

Response: The proposed roadway has been designed to minimize impacts to the greatest extent feasible. A noise study was conducted to determine impacts caused by the proposed project (see Section 4.3.3, Noise). Noise abatement measures were considered for all noise-sensitive sites that approach or exceed the Federal Highway Noise Abatement Criteria (see Noise Study Report).

MR. LEONARD P. BROWN

Comment: "...To disrupt a 5,000-acre wildlife preserve with another concrete highway to transport people is unthinkable. To create a possible flood condition in an already flood area is also hard to believe. To displace wildlife, to destroy a beautiful peaceful environment with more concrete is hard to understand..."

Response: The proposed roadway has been designed to minimize impacts to the greatest extent feasible. The project is traversing mostly rangeland, much of which is planned for residential or business development. No designated wildlife preserves will be affected by the project.

MS. ROSALIND KASS AND MR. JOSEPH KASS

Comment: "This letter is to protest the proposed route of SR 54, which takes the road 109 feet or 37 yards from homes in the senior village of Williamsburg. There is 3 miles of land from present route 54 to the proposed new route on which there are no homes. Why not use part of this land and not endanger the value of retirement homes of senior citizens?"

Response: Consideration was given to moving the proposed roadway away from existing residences, resulting in the development of Alternatives 1C and 1D.

The following property owners all shared similar views in regard to the proposed SR 54 alignment traversing adjacent to the Williamsburg development. Their comment is provided at the end of this list.

Mr. & Mrs. James H. Landis
Mr. Joseph R. Maggio
Ms. Margaret Maggio
Mr. Kenneth Maggire
Ms. Claire Maggire
Mr. Ralph E. Wallace
Ms. Lena H. Wallace
Mr. E. Kephart Emenheiser
Ms. Kathryn Emenheiser
Mr. Joseph J. Ray
Mr. James A. Mayberry
Ms. Martha H. Mayberry
Mr. & Mrs. Samuel Edwards
Mr. Earl Padonsky
Ms. Edythe Padonsky
Mr. & Mrs. Leonard Paster
Ms. Dorothy A. Boehning
Ms. Cecelia Lieberman
Mr. Ignazio Sciuto

Ms. Domenica Sciuto
Mr. Martin Winter
Ms. Laura Winter
Mr. Sheldon Rosenthal
Ms. Annette Rosenthal
Mr. Max Frouman
Ms. Rita Frouman
Mr. Harry A. DeBold
Ms. Bella E. DeBold
Mr. & Mrs. L.A. Gottesfeld
Mr. Murray R. Hersh
Mr. Thomas L. Rhodes
Ms. Mary M. Rhodes
Ms. Margaret Harloff
Mr. Allan S. Kane
Ms. Rhoda H. Kane
Ms. Mary E. Foley
Mr. W.V. Chilenski
Ms. Elizabeth P. McCooey
Ms. Virginia Partee
Mr. John D. Greaney
Mr. Michael Warocha
Mr. & Mrs. James H. Watts
Mr. & Mrs. George J. Kozlowski
Mr. Robert R. Larry
Mr. Leo Lichtenstein
Ms. Anna Lichtenstein
Mr. John Budd
Mr. William J. Kontoft
Ms. Anne L. Kontoft
Mr. Harold W. Knudson
Mr. & Mrs. Martin Hartman
Ms. Frances L. Rakow
Mr. Christopher Quinn
Mr. & Mrs. Harold DeBlaker
Mr. Jerome Wishner
Ms. Florence Wishner

Mr. & Mrs. H.R. Sankey
Ms. Shirley Chresman
Mr. David H. Hans
Ms. Dorothy L. Hans
Mr. David E. Wunderlin
Mr. Edwin J. Heathcoe
Mr. James R. Blachwell
Mr. Eugene Hufko
Ms. Evelyn Hufko
Mr. Roger Schlieder
Ms. Gerri Schlieder
Mr. & Mrs. Frank Tobar
Mr. Robert J. Englander
Ms. Ruth Feivelson
Mr. John T. Rauche
Ms. Nelda Rauche
Ms. Myrna Deutsch
Mr. Alexander Simmons
Mr. F.J. Foore
Mr. Charles Hazekamp

Comment: "The proposed route of SR 54, Section 30-31-32, T26, R20 will pass within 25 feet of the northwest to east boundary of the Williamsburg (Trout Creek) development. High speed traffic lanes will be 109 feet from existing homes. This will cause intolerable noise levels in these homes, especially for senior citizens. The close proximity of this road will cause a severe depreciation of the resale value, representing a large loss to the life's savings of these citizens who bought their homes in good faith for the peaceful enjoyment of their golden years. In Section 25, the road makes a 40° turn south, then east (unnecessary and possibly dangerous). The elimination of said turn in favor of a straight line would solve the problem. Williamsburg contains 231 lots and 178 homes have been completed with an assessed value totaling over $9,000,000. The land to the north is farmland. Also, what percentage of our losses would be reimbursed?"

Response: The above comments, as well as many others preceding it, were expressed by residents of the Williamsburg subdivision located east of CR 581 and south of the proposed alignment. Residents of Williamsburg expressed concern regarding potential air and noise pollution and potential depreciation of property value as a result of the construction of the highway adjacent to their subdivision. As a result of the comments received from residents of Williamsburg, an alternative alignment was developed which would reduce potential impacts to the subdivision.

5.4 ADDITIONAL MEETINGS WITH PROPERTY OWNERS

As stated above, a third Alternative Alignment (1C) was developed which would traverse farther north of the Williamsburg subdivision. Alternative Alignment 1C was presented to the affected property owners on February 15, 1989. Strong opposition was expressed in a prior coordination meeting with the affected property owner, Wiregrass Ranch, Inc., regarding any alternative alignment which would bisect and disrupt a ranching operation. The owner again expressed strong opposition to Alternative Alignment 1C and expressed support for Alternative Alignment 1A because of the lower impacts to the ranching operation.

Alternative Alignment 1C was presented to residents of the Williamsburg subdivision in a meeting on February 15, 1989. Approximately 125 residents attended the meeting, which was held in the subdivision's clubhouse. Hunter Services, Inc. and FDOT representatives presented the proposed Alternative Alignment 1C, which was met with less opposition than Alternative 1A.

As a result of the public informational workshop, two additional property owners subsequently expressed concern regarding the proposed alignment of Alternatives 1A (see Section 3.3.2) and 2 (see Section 3.3.3). Representatives from the Lee Arnold Trust and the New River, LTD properties met with representatives of Hunter to review the proposed alternative alignments. Both properties are located to the east of Wiregrass Ranch, Inc. and each represent approximately 1 mile of frontage on the proposed SR 54. Representatives of the Lee Arnold Trust indicated that a southern alignment (Alternative Alignment 2) would affect proposed residential and recreational development. Both property owners are involved in the early stages of their

DRIs, however, neither developer has an approved DRI. The Lee Arnold Trust property has been zoned for commercial and residential use for several years.

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APPENDICES

APPENDIX A

Agency Responses

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

October 17, 1988

Mr. Wylie Dassie, Government Analyst
Intergovernmental Coordination
Office of the Governor
413 Carlton Building
Tallahassee, FL 32399-0001

Dear Mr. Dassie:

RE: DOT AN
SAI: FL8809120337C, SR54 West, Pasco County
SAI: FL8809120338C, SR54 East, Pasco County

Based on the preliminary information provided in the advance notification, the proposed projects may require permits from the Department pursuant to Chapter 403, Florida Statutes, and water quality certification under Public Law 92-500. Project plans should be coordinated with our Southwest District Office in Tampa (813/623-5561). Early coordination may help prevent or eliminate problems in the permitting process.

The proposed funding, at the advance notification stage, is consistent with the Department's authority in the Florida Coastal Management Program. The project will affect Class III waters of the State. Projects located in or adjacent to wetlands or other sensitive habitat should be carefully designed so as to minimize potential adverse impacts on water quality and sensitive habitats. A reevaluation will be conducted during the environmental documentation stage of highway planning. Future consistency will be based, in part, on adequate consideration of comments offered in this and subsequent reviews.

If you have any questions, please contact Mickey Bryant, Intergovernmental Coordination Section (904/487-2477).

Sincerely,

Gary L. Shaffer

Gary L. Shaffer, Deputy Director
Division of Water Management

GLS/jmw

cc: Mickey Bryant

tampa bay
regional
planning
council

9455 Koger Boulevard
[illegible]rg. FL 33702-2491
[illegible]/Tampa 224-9380
Suncom 586-3217

October 21, 1988

Ms. Jean Dorzback
Florida Department of Transportation
4950 West Kennedy Boulevard
Ste. 404
Tampa, FL 33609

Dear Ms. Dorzback:

Subject: Clearinghouse Review, IC&R #256-88, SR 54 ADVANCE NOTIFICATION PACKAGE, PASCO COUNTY

The above-referenced item will be discussed at the next meeting of the Council's Clearinghouse Review Committee on October 31, 1988, at 9:30 a.m. in the Council conference room. Should you or your representative wish to attend, please feel free to do so.

If I can be of any further assistance, please do not hesitate to contact me at (813) 577-5151 regarding this matter.

Sincerely,

Mike Allgire
Project Manager
Intergovernmental Coordination & Review

MA/sp

Enclosure

[illegible] OCT 24 1988

tampa bay regional planning council

Clearinghouse Review

SR 54 ADVANCE NOTIFICATION PACKAGE, PASCO COUNTY

The Florida Department of Transportation (FDOT) has requested review and comment on its advance notification package for proposed improvements to SR 54. Location: Pasco County; Agency: FDOT.

The proposed project development and environmental study will examine both the existing SR 54 corridor from 1/4 mile west of the Cypress Creek bridge eastward to US 301, as well as a new alternative corridor alignment extending due east from the Cypress Creek bridge to US 301. The existing SR 54 corridor is approximately 17.5 miles long. The alternative corridor is approximately 12.3 miles long. Traffic along the SR 54 corridor between Zephyrhills and I-75 is currently operating at a marginal level of service. The corridor serves as the major link between these two points and significant development is anticipated to occur along this corridor.

Council Comments/Concerns

The Council supports the construction of improvements to SR 54, however the project is anticipated to impact wetlands in the area as well as the 100-year floodplain. The following concerns should be addressed by FDOT during project development:

- The protection of ground and surface water quality during all phases of construction.
- The avoidance and minimization of impact to wetland ares.
- All unavoidable impacts to the environment should be mitigated at a equal ratio and in-kind.
- The protection of endangered species and their habitats.
- The maintenance of the floodplain area.
- The maintenance of hurricane evacuation routes during all phases of construction.
- The protection of archaeological and historic resources.

Recommendation

The evaluation by FDOT should be supported for additional review. The Council also requests the opportunity for additional review during the permitting process.

Michael Cornell SK 54

State of Florida
DEPARTMENT OF NATURAL RESOURCES

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399

TOM GARDNER
Executive Director

PLEASE ADDRESS REPLY TO:

Sent to RSH 10/7/88

September 26, 1988

Mr. J. C. Kraft, Chief
Bureau of Environment
Florida Department of Transportation
605 Suwannee Street, M. S. 37
Tallahassee, Florida 32301

Dear Mr. Kraft:

State Project No. 14504-1601 and 14090-1516
Work Program No. 7125920 and 7115973

A review of the State land records on file within the Bureau of Survey and Mapping show that an easement will be required from the Trustees of the Internal Improvement Trust Fund of the State of Florida for the Anclote River Site. Due to a lack of records, we are unable at this time to determine if other sovereignty lands will be involved.

If we may be of further assistance, please advise.

Sincerely,

Gary F. Bishop, Supervisor
Title and Land Records Section
Bureau of Survey and Mapping

GFB/rf

cc: Ms. Jean Dorzback, P.E.

Project Development District 7 SEP 30 1988

FLORIDA DEPARTMENT OF STATE
Jim Smith
Secretary of State
DIVISION OF HISTORICAL RESOURCES
R.A. Gray Building
Tallahassee, Florida 32399-0250
(904) 488-1480

November 17, 1988

In Reply Refer To:
Robert C. Taylor
Historic Sites Specialist
(904) 487-2333

Director
State Planning and Development Clearinghouse
Executive Office of the Governor
Office of Planning and Budgeting
The Capitol
Tallahassee, Florida 32399-0001

RE: Your letters of October 3 & 24 1988, and November 4, 10, & 11, 1988
Cultural Resource Assessment Requests
Review of Advanced Notifications, Florida Department of Transportation
Projects (see list on page 2)

Dear Ms. McFarland:

In accordance with the provisions of the National Historic Preservation Act of 1966 as amended, which are implemented by the procedures contained in 36 C.F.R., Part 800, as well as the provisions contained in the revised Chapter 267, Florida Statutes, we have reviewed the Advanced Notifications of the Florida Department of Transportation road improvement projects listed below.

We note that each of these projects will have a cultural resources survey conducted. Therefore, conditioned upon the Florida Department of Transportation undertaking cultural resource surveys, and appropriately avoiding or mitigating project impacts to any identified significant archaeological or historic sites, the proposed project will have no effect on any sites listed, or eligible for listing, in the National Register of Historic Places, or otherwise of national, state, or local significance. We look forward to reviewing the resulting survey reports.

Archaeological Research (904) 487-2299 | Florida Folklife Programs (904) 397-2192 | Historic Preservation (904) 487-2333 | Museum of Florida History (904) 488-1484

ADVANCED NOTIFICATION PROJECT LISTINGS

PROJECT FILE NO.	SAI NO.	STATE PROJECT NO.
882474	FL8809120338C	14090-1516
882475	FL8809120337C	14504-1601
882682	FL8810040422	75140-1512
882683	FL8810040420	75002-1541
882705	FL8810170468C	93000-1667
882715	FL8810130481C	99005-1566
882769	FL8810250511	75270-1516

If you have any questions concerning our comments, please do not hesitate to contact us. Your interest and cooperation in helping to protect Florida's archaeological and historical resources are appreciated.

Sincerely,

George W. Percy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/rct

xc: J. C. Kraft

tampa bay regional planning council

9455 Koger Boulevard
St. Petersburg, FL 33702-2491
(813) 577-5151/Tampa 224-9380
Suncom 586-3217

7125920.20

December 28, 1989

Mr. David A. Twiddy, Jr., P.E.
District VII PD&E Administrator
Florida Department of Transportation
4950 W. Kennedy Blvd.
Suite 500
Tampa, Florida 33609

Re: Permit Coordination Report
SR 54/54A (EAST)
State Project Number: 14506-1601

Dear Mr. Twiddy:

Council staff has reviewed the permit coordination package for the above referenced project in an effort to identify issues and heighten interagency communication early in the planning process. The Council recognizes and supports your agency's effort to facilitate early project coordination and resolution of future permit issues and provides the subsequent recommendations for consideration.

The project is anticipated to create socio-economic, environmental and transportation impacts. The following concerns should be considered during project permitting process:

- Avoid or minimize impacts to wetland areas and mitigate for loss when necessary;
- Maintenance of water quality and circulation;
- Protection of protected plan and animal species and their habitat;
- Protection of archaeological and historic resources;
- Maintenance of floodplain areas;
- Identification of hurricane evacuation zones, floodprone areas and elevation of roadway bed above the 100-year flood plain;
- Noise levels, air pollution emissions and other health hazards;
- Relocation, neighborhood disruption and loss of community identity;
- Depreciation/increase of property values (equity);
- Access to public facilities including schools, recreational facilities, hospitals, etc.;

- An Access Management Plan for the transportation facility corridor
- Land Use Management Plan for the transportation facility corridor
- Strategies to encourage alternative modal investments, such as park and ride facilities, local public transit, HOV lanes, multi-use sidewalk/bike path.

The recommendations above should be reviewed by the applicant during project development to be consistent with the Council's adopted growth policy, Future of the Region, A Comprehensive Policy Plan for the Tampa Bay Region (FRCRPP). The Tampa Bay Regional Planning Council would appreciate the opportunity to provide additional comments during the permitting process.

If you have any questions or comments, please contact Ms. Betti C. Johnson of Council staff.

Sincerely,

Sheila Benz
Director of Planning

SB/bcj

7125920.2C

STATE OF FLORIDA
DEPARTMENT OF NATURAL RESOURCES

Marjory Stoneman Douglas Building • 3900 Commonwealth Boulevard • Tallahassee, Florida 32399
Tom Gardner, Executive Director

December 11, 1989

Mr. David A. Twiddy, Jr., P.E.
District VII PD&E Administrator
Florida Department of Transportation
4950 West Kennedy Boulevard, Suite 500
Tampa, Florida 33609

Dear Mr. Twiddy:

State Project Number 14506-1601
Cypress Creek to U.S.301/Zephyrhills East Bypass
Pasco County

A preliminary review of plans submitted by your office for the above referenced project indicates that State-owned lands in Sections 22 and 27, Township 26 South, Range 21 East would be traversed by the proposed route (see attached for descriptions).

There is insufficient evidence in our files to determine the navigability and therefore sovereignty of the crossing site of the New River in Section 25, Township 26 South, Range 20 East. There appears to be no other Trustees' title interest in uplands nor sovereignty interest in submerged lands that would be impacted by the proposed route.

If I may be of further assistance, please do not hesitate to contact me at the letterhead address or at (904)488-8123.

Sincerely,

Harry L. Michaels, Jr.

Harry L. Michaels, Jr., LMS
Title and Land Records Section

HLM/rf

APPENDIX B

Letter from the Office of Planning and Budget, Office of the Governor

STATE OF FLORIDA

Office of the Governor

THE CAPITOL
TALLAHASSEE, FLORIDA 32399-0001

BOB MARTINEZ
GOVERNOR

January 20, 1989

Mr. Jean Dorzback, District Project
Development and Environmental Engineer
Department of Transportation
4950 West Kennedy Boulvard
Suite 404
Tampa, Florida 33609

Re: State Project #14090-1516 - SR 54 Improvements from U. S. 19 to I-75 including bridge modification/reconstruction - Pasco County

SAI: FL8809120338C

Dear Ms. Dorzback:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 83-150, the Coastal Zone Management Act and the National Environmental Policy Act, has coordinated a review of your notification to apply for federal assistance for the above project.

The application for roadway improvements will be in accord with state plans, programs, procedures and objectives when consideration is given to the comments and requirements of our reviewing agencies. These comments are enclosed.

Specific attention should be given to the Department of State's request for a systematic, professional historical survey to locate and assess cultural resources that may be present.

Based on comments from our reviewing agencies, funding for roadway improvements and bridge modification/reconstruction along the existing alignment is consistent with the Florida Coastal Management Program (FCMP) at the advanced notification stage. Subsequent environmental documents will be reviewed to determine continued consistency with the FCMP as provided for in 15 CFR 930.39. These documents should provide thorough information regarding the location and extent of wetlands dredging and filling, if any, borrow sources, dredging or filling associated with bridge construction and stormwater management. Any environmental assessments prepared for this project should be submitted to this office in order to coordinate appropriate reviews.

Please enter the State Application Identifier (SAI) Number, shown above, in box 3a of Standard Form 424 and append a copy of this letter to your application. This will assure the federal agency of your compliance with Florida's review requirements, help ensure notification of federal agency action under the Federal Assistance Award Data System (FAADS) and reduce the chance of unnecessary delays in processing your application by the federal agency.

Sincerely yours,

Karen K. MacFarland

Karen K. MacFarland, Director
State Clearinghouse

KKM/mt

Enclosure

cc: DER
DOS
J. C. Kraft
Ted Hoehn

APPENDIX C

Letter from the U.S. Fish and Wildlife Service

United States Department of the Interior
FISH AND WILDLIFE SERVICE

3100 University Blvd. South
Suite 120
Jacksonville, Florida 32216

April 6, 1989

Ms. Cynthia Bell
Hunter/RS&H
P.O. Box 22003
1715 North Westshore Boulevard, Suite 500
Tampa, Florida 33607

Dear Ms. Bell:

This responds to your letter of March 20, 1989, requesting our comments on the proposed alignments for State Road 54, extending from Cypress Creek to US 301 in Pasco County.

The listed species that may be found along these alignments are red-cockaded woodpecker, bald eagle, wood stork, Florida scrub jay and eastern indigo snake. We do not have site specific information regarding these species. As stated in your letter, overflights of the alignments are planned to look for eagle nests and wading bird rookeries, which would include the wood stork. If wood storks are found in this area, small wetlands along the alignment will probably by used by these birds for feeding. Isolated wetland sites should also be considered in your assessment of impact of a particular alignment on listed species.

We appreciate the opportunity to provide our comments.

Sincerely yours,

David J. Wesley
Field Supervisor

FLORIDA NATURAL AREAS INVENTORY

254 East Sixth Avenue • Tallahassee, Florida 32303 • (904) 224-8207

October 18, 1988

Cynthia Bell
Reynolds, Smith and Hills
1715 N. Westshore Blvd., Suite 500
Tampa, FL 33607

DATA REQUEST REPLY

County Road (CR) 54, Pasco Co.

T26S R19,20,21E (in part)
U.S.G.S. 7.5 minute quads Zephyrhills, Wesley Chapel, Lutz

Information on known occurrences of Special Plants, Special Animals, and exemplary Natural Communities. We currently have no occurrences of special elements for this site in our data base. Many elements are known from the region and may possibly occur on-site.

Special Plants

Possible:

Asplenium auritum, auricled spleenwort (FNAI G?/S2; State-Endangered).. This plant is epiphytic on trunks of large trees, usually live oaks in hammocks/tropical hammocks. We have two occurrences near the road corridor. One occurs in T26S R19E in the Cypress Creek Wellfield area. The other occurs in T27S R19E south of the Pasco County line.

Special Animals

Possible:

Enneacanthus chaetodon, backbanded sunfish (FNAI G3/S3) is known from an area to the west, see enclosed excerpt from FCREPA.
Gopherus polyphemus, gopher tortoise (FNAI G2/S2; Federal-C2; State-LS).
Drymarchon corais couperi, eastern indigo snake (FNAI G4T3/S3; Federal-Threatened; State-Threatened), to the east (see enclosed EORs).
Stilosoma extenuatum, short-tailed snake (FNAI G3/S3; Federal-C2; State-Threatened).
Haliaeetus leucocephalus, bald eagle (FNAI G3/S2S3; Federal-Endangered; State-Threatened).
Grus canadensis pratensis, Florida sandhill crane (FNAI G5T2T3/S2S3; State-Threatened), large areas to the northwest and south and southeast of the site (see enclosed EORs).
Mycteria americana, wood stork (FNAI G5/S2; Federal- Endangered; State-Endangered).
Aramus guarauna, limpkin (FNAI G5/S3; State- LS).
Picoides borealis, red-cockaded woodpecker (FNAI G2/S2; Federal-Endangered; State-Threatened).

Sciurus niger shermani, Sherman's fox squirrel (FNAI G5T2/S2; Federal-C2; State listed as Species of Special Concern (LS)).
Ursus americanus floridanus, Florida black bear (FNAI G5T3/S3; Federal-C2; State-Threatened).
Neofiber alleni, round-tailed muskrat (FNAI G3?/S3?; Federal- C2).
Mustela frenata peninsulae, Florida weasel (FNAI G5T3/S3?; Federal-C2).

*Any of the herons, ibis, and egrets listed on the county list very likely use the site for feeding.

The quantity and quality of data collected by the Florida Natural Areas Inventory are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Florida have never been thoroughly surveyed. Records for new occurrences of plants and animals are continuously being added to the database and older occurrence records may change as new information is gathered. For these reasons, the FNAI cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of Florida. Florida Natural Areas Inventory reports summarize the existing information known to FNAI at the time of the request regarding the biological elements or locations in question. **They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.**

Information provided by this data base may not be published without prior written notification to the Florida Natural Areas Inventory and FNAI must be credited as an information source in these publications. FNAI data may not be resold for profit.

Sincerely,

Katy NeSmith
Data Manager

encls.
2808222,-23,-24

FLORIDA NATURAL AREAS INVENTORY - ELEMENT OCCURRENCE RECORD

09/06/88

scientific name: GRUS CANADENSIS PRATENSIS
common name: FLORIDA SANDHILL CRANE

date last observed: 1986-
county name: FLPASC
quad name: FIVAY JUNCTION, EHVEN, SAN ANTONIO, LUTZ
township and range: 025S018E section: 33 precision: M
town & range comments: +26S, R 16,17,19,20E

directions: EVENLY DISTRIBUTED THROUGHOUT W. CENTRAL PART OF PASCO COUNTY (SEE ATTACHED MAP).

general descr.: SCATTERED PASTURE POTHOLES.

EO data: CA. 25 PAIRS FROM CA. 1970 THROUGH 1986.

managed area code:
owner:
owner comments:
best source: NESBITT, STEVE. FL GAME & FRESH WATER FISH COMM., WILDLIFE RESEARCH LAB., 4005 S. MAIN ST. GAINESVILLE, FL 32601. (904) 376-6481

eo-code: .028
margnum: 2
data sens:

FLORIDA NATURAL AREAS INVENTORY - ELEMENT OCCURRENCE RECORD

09/06/88

scientific name: GRUS CANADENSIS PRATENSIS
common name: FLORIDA SANDHILL CRANE

date last observed: 1986-
county name: FLHILL FLPOLK
quad name: PLANT C W,THONOTOSASSA,ZEPHYRHLS,PLT C E
township and range: 027S021E section: 24 precision: M
town & range comments: +T28S, R20E,22E,23E

directions: N.E. PART OF COUNTY INCL. HILLSBOROUGH RIVER ST. PK. AND AREA TO E. (INCL. SMALL PORTION OF POLK CO.). SEE ATTACHED MAP.

general descr.: SMALL PERMANENT PONDS SCATTERED THROUGHOUT AREA.

EO data: CA. 12-15 PAIRS FROM EARLY 1970'S THROUGH 1986.

managed area code: FLSRPSPHILL1
owner: FLORIDA DNR AND MANY OTHERS
owner comments:
best source: NESBITT, STEVE. FL GAME & FRESH WATER FISH COMM., WILDLIFE RESEARCH LAB., 4005 S. MAIN ST. GAINESVILLE, FL 32601. (904) 376-6481

eo-code: .017
margnum: 1
data sens:

FLORIDA NATURAL AREAS INVENTORY - ELEMENT OCCURRENCE RECORD

09/06/88

scientific name: DRYMARCHON CORAIS COUPERI
common name: EASTERN INDIGO SNAKE

date last observed: 1970->
county name: FLPASC
quad name: ZEPHYRHILLS
township and range: 026S022E section: 20 precision: M
town & range comments:

directions: CA. 2 MI S.E. ZEPHYRHILLS; CA. 2 MI N.E. CRYSTAL SPGS; ALONG UNNAMED TRIBUTARY OF HILLSBOROUGH RIVER, CA 0.2 MI E. OF RIVER

general descr.:

EO data: INDIGO OBSERVED BY J.S. GODLEY OR MARTY MARTIN. POST-1970 (MOLER INTERVIEW OF GODLEY & MARTIN, 1982-03-27).

managed area code:
owner:
owner comments:
best source: MOLER, P.E. 1982. UNPUBLISHED LOCALITY RECORDS FOR DRYMARCHON CORAIS IN FLORIDA.

eo-code: .146
margnum: 7
data sens:

FLORIDA NATURAL AREAS INVENTORY - ELEMENT OCCURRENCE RECORD

09/06/88

scientific name: DRYMARCHON CORAIS COUPERI
common name: EASTERN INDIGO SNAKE

date last observed: 1970->
county name: FLPASC
quad name: ZEPHYRHILLS
township and range: 026S022E section: 30 precision: M
town & range comments:

directions: C.A. 1 MI N.E. CRYSTAL SPRINGS; CA. 0.6 MI E. HAWK LAKE

general descr.:

EO data: INDIGO OBSERVED BY J.S. GODLEY OR MARTY MARTIN POST-1970 (MOLER INTERVIEW OF GODLEY & MARTIN, 1982-03-27).

managed area code:
owner:
owner comments:
best source: MOLER, P.E. 1982. UNPUBLISHED LOCALITY RECORDS FOR DRYMARCHON CORAIS IN FLORIDA.

eo-code: .147
margnum: 8
data sens:

FLORIDA NATURAL AREAS INVENTORY

Element Rank Explanations

An element is any exemplary or rare component of the natural environment, such as a species, plant community, bird rookery, spring, sinkhole, cave, or other ecological feature. An element occurrence (EO) is a single extant habitat which sustains or otherwise contributes to the survival of a population or a distinct, self-sustaining example of a particular element. The major function of the Florida Natural Areas Inventory is to define the state's elements of natural diversity, then collect information about each element occurrence.

The Florida Natural Areas Inventory assigns 2 ranks for each element. The global element rank is based on a element's worldwide status; the state element rank is based on the status of the element in Florida. Element ranks are based on many factors, the most important ones being estimated number of element occurrences (EOs), estimated abundance (number of individuals for species; area for natural communities), range, estimated adequately protected EOs, relative threat of destruction, and ecological fragility.

Global Element Rank (priority)

- G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- G2 = Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some biological or man-made factor.
- G3 = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction because of other factors.
- G4 = apparently secure globally (may be rare in parts of range)
- G5 = demonstrably secure globally
- GH = of historical occurrence throughout range, may be rediscovered (e.g., ivory-billed woodpecker)
- GX = believed to be extinct throughout range
- G#? = Tentative rank (e.g., G2?)
- G#G# = range of rank; insufficient data to assign specific global rank (e.g., G2G3)
- G#T# = rank of taxonomic subgroup such as subspecies or variety; numbers have same definition as above (e.g., G3T1)
- G#Q = rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q)
- G#T#Q = same as above, but validity as subspecies or variety is questioned.
- GU = due to lack of information, no rank or range can be assigned (e.g., GUT2).
- G? = not yet ranked (temporary)

State Element Rank (priority)

Definition parallels global element rank: substitute "S" for "G" in above global ranks, and "in state" for "globally" in above global rank definitions.

Additional state element ranks:

- SA = accidental in Florida, i.e., not part of the established biota
- SE = an exotic species established in state; may be native elsewhere in North

FEDERAL/STATE LEGAL STATUS

FEDERAL

- LE = Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. An "Endangered Species" is defined as any species which is in danger of extinction throughout all or a significant portion of its range.
- PE = Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species.
- LT = Listed as Threatened Species. A "Threatened Species" is defined as any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
- PT = Proposed for listing as Threatened Species.
- C1 = Candidate Species for addition to the List of Endangered and Threatened Wildlife and Plants, Category 1. Taxa for which the U.S. Fish and Wildlife Service currently has substantial information on hand to support the biological appropriateness of proposing to list the species as endangered or threatened.
- C2 = Candidate Species, Category 2. Taxa for which information now in possession of the U.S. Fish and Wildlife Service indicates that proposing to list the species as endangered or threatened is possibly appropriate, but for which conclusive data on biological vulnerability and threat(s) are not currently available to support proposed rules at this time.
- 3A = Candidate Species, Category 3A. Taxa which are no longer being considered for listing as endangered or threatened because of persuasive evidence of extinction.
- 3B = Candidate Species, Category 3B. Taxa which are no longer being considered for listing as endangered or threatened because the names do not represent taxa meeting the Endangered Species Act's definition of "species".
- 3C = Candidate Species, Category 3C. Taxa that have proven to be more abundant or widespread than was previously believed and/or those that are not subject to any identifiable threat.
- AC = Agency Concern. Species which are not currently listed or candidates, but which are a matter of concern to the U.S. Fish and Wildlife Service.
- LTSA = Threatened due to similarity of appearance.
- N = Not currently listed, nor currently being considered for addition to the List of Endangered and Threatened Wildlife and Plants.

FLORIDA NATURAL AREAS INVENTORY 6/86

Element Occurrence Record *Explanation Sheet*

An element is any exemplary or rare component of the natural environment, such as a species, plant community, bird rookery, spring, sinkhole, cave or other ecological feature. An element occurrence (EO) represents the locational record of an element and is a single extant habitat which sustains or otherwise contributes to the survival of a population or a distinct, self-sustaining example of a particular natural community. The major function of the Florida Natural Areas Inventory is to define the state's elements of natural diversity, then collect locational information about where the elements occur throughout the state. The element occurrence record (EOR) is the form used to process and enter element occurrences into the computerized data base.

Scientific name:	scientific name or other formal name for this element, only from FNAI element classification
Common name:	common name of element, standardized for Florida
Last Observed Date:	date element last observed at this site (e.g. 1982-09-26)
County Name:	the two-letter abbreviation for the state, followed by first four letters of all county names; centroid/major county first
Quad Name:	USGS names of all USGS 7.5 minute quads this EO is on, centroid quad first
Township and Range:	township-range that EO centroid is in
Section:	section that EO centroid is in
Precision:	level of precision to which occurrence can be located on the quad map-- S=seconds (within ca. 250 ft. radius); M=minutes (within ca. 3/4 mi. radius); SC=confirmed S location; SO or MO=obscure S or M location, EO looked for but not found at mapped location; G=general, to quad or place name; U=unmappable.
Directions:	how to get to EO from readily identifiable landmarks
General Description:	general description of the setting for the EO
Element Occurrence Data:	description of the setting for the EO
Managed Area Code:	if EO is wholly or mostly on a managed area (MA), FNAI code for the smallest, most protected managed area EO is on
Owner:	name of principal owner (private only) of principal tract
Owner Comments:	comments about owner: address, intentions for land, etc.
Best Source:	the single best source of information on this EO, preferably a person
Eo-code:	unique alpha-numeric code for each element occurrence, FNAI staff use only
Data Sens:	Y in this field if this occurrence is of an element for which locational information should not be given to general users for various reasons

APPENDIX D

Letter from the U.S. Soil Conservation Service

United States Department of Agriculture
Soil Conservation Service
1504 Highway 52 West
Dade City, FL 33525
(904) 521-4260

4/17/89

Ms. Cynthia Bell
Hunter/RS&H
P. O. Box 22003
Tampa, FL 33607

Dear Ms. Bell,

Enclosed is a Pasco County Soil Survey which delineates all soils occuring in the proposed highway construction site.

The only soil occuring in Pasco County designated as Prime Farmland is named Micanopy fine sand, 2 to 5% slopes (#66 on the Pasco County Soil Survey Legend). Any mapping units mapped as #66 on the atlas sheets that cover the area your interested in are considered Prime Farmland in Pasco County.

Unique Farmland has a different definition in that it is land uniquely used for the production of specific high-value food crops. In Pasco County, established citrus groves are considered "Unique", as an extremely small portion of the soils in the United States are suitable for the culture of citrus. The aerial soil maps (atlas sheets) can aid in this determination, as citrus groves show up well in the pictures. There will likely be fewer groves now then when the Soil Survey Aerials were taken in 1979. The Soil Survey will give you an excellent estimate of general grove locations.

Please write or call if we can be of further assistance in this very important and necessary project.

Sincerely yours,

E. Darrell Williams

E. Darrell Williams
Soil Conservationist

Enc.

(iv) The soils either have no water table or have a water table that is maintained at a sufficient depth during the cropping season to allow cultivated crops common to the area to be grown; and,

(v) The soils can be managed so that, in all horizons within a depth of 40 inches (1 meter) or in the root zone if the root zone is less than 40 inches deep, during part of each year the conductivity of the saturation extract is less than 4 mmhos/cm and the exchangable sodium percentage (ESP) is less than 15; and,

(vi) The soils are not flooded frequently during the growing season (less often than once in 2 years); and,

(vii) The product of K (erodibility factor) x percent slope is less than 2.0, and the product of I (soils erodibility) x C (climatic factor) does not exceed 60; and

(viii) The soils have a permeability rate of at least 0.06 inch (0.15 cm) per hour in the upper 20 inches (50 cm) and the mean annual soil temperature at a depth of 20 inches (50 cm) is less than 59° F (15° C); the permeability rate is not a limiting factor if the mean annual soil temperature is 59° F (15° C) or higher; and,

(ix) Less than 10 percent of the surface layer (upper 6 inches) in these soils consists of rock fragments coarser than 3 inches (7.6 cm).

(b) Unique farmland.

(1) General. Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods. Examples of such crops are citrus, tree nuts, olives, cranberries, fruit, and vegetables.

(2) Specific characteristics of unique farmland.

(i) Is used for a specific high-value food or fiber crop.

(ii) Has a moisture supply that is adequate for the specific crop. The supply is from stored moisture, precipitation, or a developed irrigation system.

(iii) Combines favorable factors of soil quality, growing season, temperature, humidity, air drainage, elevation, aspect, or other conditions, such as nearness to market, that favor the growth of a specific food or fiber crop.

(3) Prepare a statewide list of:

(i) Soil mapping units that meet the criteria for prime farmland;

(ii) Soil mapping units that are farmlands of statewide importance if the criteria used were based on soil information; and

(iii) Specific high-value food and fiber crops that are grown and, when combined with other favorable factors, qualify lands to meet the criteria for unique farmlands. Copies are to be furnished to SCS Field Offices and to SCS Technical Service Centers (TSC's). (See 7 CFR 600.3, 600.6.)

(4) Coordinate soil mapping units that qualify as prime farmlands with adjacent States, including the States responsible for the soil series. Since farmlands of statewide importance and unique farmlands are designated by others at the State level, the soil mapping units and areas identified need not be coordinated among States.

(5) Instruct SCS District Conservationists to arrange local review of lands identified as prime, unique, and additional farmlands of statewide importance by Conservation Districts and representatives of local agencies. This review is to determine if additional farmland should be identified to meet local decisionmaking needs.

(6) Make and publish each important farmland inventory on a base map of national map accuracy at an intermediate scale of 1:50,000 or 1:100,000. State Conservationists who need base maps of other scales are to submit their requests with justification to the Administrator for consideration.

(b) Technical Service Centers. Field Representatives are to provide requested technical assistance to State Conservationists in inventorying prime and unique farmlands (see 7 CFR 600.2). This includes reviewing statewide lists of soil mapping units that meet the criteria for prime farmlands and resolving coordination problems that may occur among States for specific soil series or soil mapping units.

(c) National Office. The Assistant Administrator for Field Services (see 7 CFR 600.2) is to provide national leadership in preparing guidelines for inventorying prime farmlands and for national statistics and reports of prime farmlands.

§ 657.5 Identification of important farmlands.

(a) Prime farmlands.

(1) General. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water). It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity.

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*

Date Of Land Evaluation Request: April 25 1989

Name Of Project: 4506-1601, SR54 Cypress Creek to Zephyrhills Bypass

Federal Agency Involved: Federal Highway Administration

Proposed Land Use: residential, agriculture, commercial

County And State: Pasco County, Florida

PART II *(To be completed by SCS)*

Date Request Received By SCS: 26 APR 89 Bkft

Does the site contain prime, unique, statewide or local important farmland? Yes ☐ No ☒ *(If no, the FPPA does not apply – do not complete additional parts of this form)*

Acres Irrigated: —

Average Farm Size: —

Major Crop(s): —

Farmable Land In Govt. Jurisdiction: Acres: — %

Amount Of Farmland As Defined in FPPA: Acres: — %

Name Of Land Evaluation System Used: —

Name Of Local Site Assessment System: —

Date Land Evaluation Returned By SCS: 27 APR 89 Bkft

PART III *(To be completed by Federal Agency)*

	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	404.3	—	404.6	399.5
B. Total Acres To Be Converted Indirectly	—	—	—	—
C. Total Acres In Site	413.9	—	414.2	409.1

PART IV *(To be completed by SCS)* Land Evaluation Information

A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				

PART V *(To be completed by SCS)* Land Evaluation Criterion

Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*

PART VI *(To be completed by Federal Agency)*

Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government					
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS	160				

PART VII *(To be completed by Federal Agency)*

Relative Value Of Farmland *(From Part V)*	100				
Total Site Assessment *(From Part VI above or a local site assessment)*	160				
TOTAL POINTS *(Total of above 2 lines)*	260				

Site Selected: —

Date Of Selection: —

Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side)

Form AD-1006 (10-83)

APPENDIX E

Wetland Types and U.S. Fish and Wildlife Service Wetland Classifications

TABLE 1. WETLAND TYPES

FISH AND WILDLIFE WETLAND CLASSIFICATIONS

WETLAND TYPE	DESCRIPTION	WETLAND CLASSIFICATION
MARSH	PEM1	Palustrine, emergent, persistent
MARSH	PEM1C	Palustrine, emergent, persistent, seasonally flooded
MARSH	PEM1Cd	Palustrine, emergent, persistent, seasonally flooded, partially drained/ditched
MARSH	PEM1W	Palustrine, emergent, persistent, intermittently flooded/temporary
MARSH	PEM1W1	Palustrine, emergent, persistent, intermittently flooded/temporary, hyperhaline
DITCH	PEM1Wdr	Palustrine, emergent, persistent, intermittently flooded/temporary, partially drained/ ditched, artificial substrate
DITCH	PEM1W/Bdr	Palustrine, emergent, persistent, intermittently flooded/temporary/saturated, partially drained/ditched, artificial substrate
DITCH	PEM1/6Cdr	Palustrine, emergent, persistent/oligohaline, seasonally flooded, partially drained/ ditched, artificial substrate
MARSH	PEM1/PFO1	Palustrine, emergent, persistent, irregularly flooded, forested, broad-leaved deciduous

TABLE 1. WETLAND TYPES (cont.)

FISH AND WILDLIFE WETLAND CLASSIFICATIONS

WETLAND TYPE	DESCRIPTION	WETLAND CLASSIFICATION
MARSH	PEM1/PFO1C	Palustrine, emergent, persistent, irregularly flooded, forested, broad-leaved deciduous, seasonally flooded
CYPRESS	PEM1/PFO2C	Palustrine, emergent, persistent, irregularly flooded, forested, needle-leaved deciduous, seasonally flooded
POND	PEM1/SS1Hr	Palustrine, emergent, persistent, scrub-shrub, broad-leaved deciduous, permanently flooded, artificial substrate
SHRUB	PEM1/SS2C	Palustrine, emergent, persistent, scrub-shrub, needle-leaved deciduous, seasonally flooded
SWAMP	PFO1	Palustrine, forested, broad-leaved deciduous
SWAMP	PFO1C	Palustrine, forested, broad-leaved deciduous, seasonally flooded
SWAMP	PFO1E	Palustrine, forested, broad-leaved deciduous, seasonally flooded/saturated
SWAMP	PFO1J	Palustrine, forested, broad-leaved deciduous, intermittently flooded
SWAMP	PFO1/4	Palustrine, forested, broad-leaved deciduous/needle-leaved evergreen
SWAMP	PFO1/SS1	Palustrine, forested, broad-leaved deciduous/scrub-shrub, broad-leaved deciduous
CYPRESS	PFO2	Palustrine, forested, needle-leaved deciduous
CYPRESS	PFO2C	Palustrine, forested, needle-leaved deciduous, seasonally flooded

TABLE 1. WETLAND TYPES (cont.)

FISH AND WILDLIFE WETLAND CLASSIFICATIONS

WETLAND TYPE	DESCRIPTION	WETLAND CLASSIFICATION
CYPRESS	PFO2J	Palustrine, forested, needle-leaved deciduous, intermittently flooded
CYPRESS	PFO2W	Palustrine, forested, needle-leaved deciduous, intermittently flooded/temporary
CYPRESS	PFO2Wd	Palustrine, forested, needle-leaved deciduous, intermittently flooded/temporary, partially drained/ditched
SWAMP	PFO2/EM1	Palustrine, forested, needle-leaved deciduous/ emergent, persistent
CYPRESS	PFO2/SS3	Palustrine, forested, needle-leaved deciduous/scrub-shrub, broad-leaved evergreen
CYPRESS	PFO2Wd/PEM1r	Palustrine, forested, needle-leaved deciduous, intermittently flooded/temporary, partially drained/ditched; Palustrine, emergent, persistent, artificial substrate
STREAM	R4SB2C	Riverine, intermittent, streambed, rubble, seasonally flooded

APPENDIX F

Ecological Descriptions of Wetland Sites Impacted by the Proposed Project Alternatives

WETLAND SITE 1

Site 1 is a small 0.93 acre, relatively poor quality cypress dome surrounded on most sides by improved upland pasture. Canopy trees consist of 6- to 12-inch dbh cypress trees. Scattered patches of soft rush and sand cordgrass occur along the outer fringe. Other than a thick nutrient influenced green algae mat, herbaceous growth within the dome is sparse due to cattle grazing impacts. Cattle associated impacts have lowered its quality compared with typical cypress domes of the area. A qualitative assessment of functions provided by this wetland is provided in Table 4-5. Although this site is not a pristine, highly productive wetland, it still offers benefits such as floodwater attenuation and songbird habitat. The proposed alignments for Alternatives 1A, 1C, and 1D would result in an unavoidable but permanent elimination of 0.17 acre of herbaceous wetland and 0.63 acre of forested wetland. Any shifting of the alignment within this segment would result in much larger impacts to large high quality wetlands located to the north and/or south of the proposed alignment. As compensation for this loss of certain wetland functions, a 1:1 ratio of in-kind wetland creation is anticipated. The proposed wetland involvement and mitigation is quantified in Table 4-4.

WETLAND SITE 2

Located immediately west of the proposed I-75/SR 54 interchange is a small 1.62 acre isolated marsh. This system was created by the past fill excavation activities within an old sand ridge. Currently, the northern end of this marsh is vegetated by transitional species such as yellow tops and blue stem, while the southern end, which is slightly deeper, is vegetated by bloodroot and soft rush. The proposed alignment will eliminate 0.57 acre of the northern lobe of this manmade wetland.

The manmade origin, small size, and transitional nature of this site provide limited environmental benefits. As such, adequate compensation will be provided by the construction of stormwater conveyance ditches within the right-of-way. A review of this site's quantified impacts and wetland benefits is provided in Tables 4-4 and 4-5, respectively.

WETLAND SITES 3, 4, AND 5

The location of the proposed new SR 54/I-75 interchange location was severely restricted by the proximity of significant wetland systems as well as required distances from the existing SR 54 interchange to the north and the I-75 merge to the south. In general, the proposed interchange has been located in the only large upland area defined by the aforementioned required distances from existing interchanges. Although this location is the least environmentally sensitive location possible, it would result in the elimination of 6.02 acres of wetlands within Sites 3, 4, and 5.

Within Wetland Site 3 only a small lobe of 0.43 acre will be impacted. This area consists of a thin fringe (0.20 acre) of 8 inch dbh cypress trees peripheral to a shrub/herbaceous core comprised of coastal plain willow, wax myrtle, common cattail, maidencane, Virginia willow, pickerelweed, and lizard's tail. This lobe is a portion of a 14.0 acre cypress-ringed marsh extending to the southwest, which will not be impacted.

Wetland Site 4 is a small (1.94 acres) isolated, forested/shrub dominated wetland which will be completely eliminated by the proposed interchange. Species and structural diversity is relatively high within this system. A fringe of 6- to 8-inch dbh red maple, slash pine, swamp tupelo, and laurel oak occupy the perimeter, with a thick growth of coastal plain willow and Virginia willow dominating the core. Herbaceous growth is lush and comprised of a diverse assemblage of species including Virginia chain fern, royal fern, saw grass, floating bladderwort, and green arum. Avoidance of Wetland Sites 3 and 4 is not possible. Shifting the interchange location to the north or south would result in significant wetland impacts to high quality wetlands of Cabbage Swamp and Cypress Creek, respectively. Both of these sites are productive wetland systems which offer moderately high wildlife habitat as well as floodwater attenuation and filtration benefits. Site 4 would be eliminated in its entirety, while the majority of Site 3 would remain. To compensate for the anticipated permanent loss of 2.37 acres of wetlands and their associated benefits, wetland creation would be proposed. The relatively high quality of these sites warrants a 1:1 ratio of in-kind wetland creation for the 0.23 acre of marsh and a 2:1 ratio of in-kind wetland creation of the 2.14 acres of swamp.

Additional information regarding the proposed involvement and current quality of these systems is provided in Tables 4-4 and 4-5.

The eastern side of the proposed I-75/SR 54 interchange is located within a relatively open "window of uplands," situated between significant wetlands of Cabbage Swamp and Cypress Creek to the north and south, respectively. Any shifting of this interchange would result in substantially higher wetland impacts. Therefore, the interchange location as proposed is by far the most environmentally favorable design possible. Site 5 is collectively comprised of the southern edge of a cypress area that drains through a narrow sawgrass strand into the northern lobe of a hardwood swamp. Surrounding portions of this system are stands of healthy upland slash pine forest and mesic hardwood hammock. The diversity of the three wetland community types within this site, in conjunction with the surrounding forested uplands, provide a high quality edge effect/ecotone. Such conditions are suitable as foraging and nesting habitat for a wide variety of fauna including amphibians, reptiles, and avians. In addition, the habitat diversity and contiguity of this system serve as suitable habitat and travel corridors for a variety of large and small mammals. The relatively high quality of this system warrants a 1:1 and 2:1 ratio of in-kind wetland creation for the proposed impacts of 0.31 acre of marsh and 3.34 acre of swamp, respectively.

WETLAND SITE 6

This wetland site is a relatively narrow (200- to 400-foot wide) crossing of a tertiary tributary to Cypress Creek. Slash pine, sweet gum, red maple, swamp tupelo, cabbage palm and a few cypress comprise the canopy coverage, while wax myrtle, french mulberry and sweet gum saplings are found within the shrub stratum. Herbaceous coverage is provided by sawgrass, maidencane, maiden fern, and spike grass. This strand is a productive swamp which provides beneficial wetland functions including floodwater conveyance and wildlife

habitat. The qualitative rating of other specific wetland values are assessed in Table 4-5. Although the proposed location of this crossing is in the most environmentally favorable location possible, approximately 2.11 acres of wetlands would be permanently eliminated. Shifting of the alignment in this vicinity would result in higher impacts within this tributary and/or wetlands of the proposed interchange (e.g., Wetland Site 5). Remaining upstream and downstream wetlands would remain as a functional wetland system. Adequate hydrologic conveyance and preservation of existing hydroperiod will be provided by the stormwater/drainage design. Mitigation will consist of creation of in-kind wetlands on a 2:1 replacement ratio.

WETLAND SITE 7
This system is a small, 2.62 acre isolated herbaceous marsh. Maidencane is the dominant species, with lesser coverage provided by pickerelweed, yellow-eyed grass, floating hearts, bog buttons, penny-wort, mermaid weed and a few swamp tupelo saplings. Shifting of the alignment to avoid this small marsh would result in substantially higher impacts to large forested wetlands in the vicinity. Although this site is not a regionally critical wetland, it is a moderately productive, healthy marsh, that provides benefits including floodwater attenuation, ground water recharge, and habitat for amphibians and wading birds. The proposed common alignment would permanently impact 1.67 acres or 63.59 percent of this marsh. To compensate for this loss of beneficial wetland functions a 1:1 ratio of in-kind mitigation is proposed. Further information regarding the proposed involvement and integrity of the system is provided in Tables 4-4 and 4-5.

WETLAND SITES 8 AND 9
These sites are tributaries to Cypress Creek, and are hydrologically similar to Site 6. Vegetation of these sites is characterized by a relatively full canopy of red maple, stiff cornel dogwood, laurel oak, cabbage palm and sweetgum and moderately sparse herbaceous growth of beakrush and panic grass. In general, the locations of these two crossings are situated in the narrowest section of these tributaries. Shifting of the alignment within this vicinity would result in substantially higher impacts to these systems and other wetlands. A total of 4.14 acres of wetlands would be impacted at these sites.

These strands are hydrologically and ecologically important components of Cypress Creek. A detailed assessment of the wetland functions and anticipated involvement is provided in Tables 4-4 and 4-5. As compensation for the loss of 4.14 acres of productive wetlands, in-kind mitigation of a 2:1 ratio is expected.

WETLAND SITES 10 and 11
As conditions of the Saddlebrook Development Order and Northwood Development Order, a 240-foot wide corridor has been designated as right of way for the proposed SR 54. This right-of-way is located between the two projects and straddles the north section line of S36 T26 R19. Not only is this location the most favorable in terms of traffic geometry and socioeconomic/development constraints, it is also the most favorable (has least impact) to wetland resources. This section of the alignment would necessitate the unavoidable

crossing of two creek systems, Cabbage Swamp and Trout Creek located 13,200 feet and 800 feet west of CR 581, respectively. The combined width of these two creeks along this section totals less than any other potential crossing locations. In addition these two locations have incurred previous minor impacts from a 30-foot-wide cleared and partially filled haulroad/fence line that bisects them. Wetland Site 10 (Cabbage Swamp) is larger and of higher quality than Site 11. At Site 10, full canopy coverage is provided by mature red maple, American elm, laurel oak, sweet gum and a few cypress. The sparse herbaceous growth is predominantly comprised of panic grass (Panicum gymnocarpum) and sedge (Carex sp). This site is a major water conveyance system and is influenced by a hydroperiod of seasonal inundation and frequent saturation.

Wetland Site 11 (Trout Creek) is much narrower and has a steeper, more deeply incised creek bed. Inundation beyond the top of banks appears to occur relatively infrequently. Trees along the top of bank include red maple, laurel oak and cypress. The shrub stratum consists of scattered small cabbage palms while the herbaceous stratum is composed of occasional panic grass species. This system has experienced moderate past impacts from a cleared and partially filled haul road and fence line that bisects the creek. In addition, the continuity of wildlife habitat has been disrupted by CR 581 approximately 1,200 feet to the northeast. Although this system still provides limited wildlife habitat, its primary function is for hydrologic conveyance of runoff from upstream wetlands and uplands.

The proposed alignment would unavoidably impact 2.19 acres of wetland at Site 10 (Cabbage Swamp) and 0.83 acre of wetland at Site 11 (Trout Creek). In order to maintain the hydrologic conveyance of Cabbage Swamp, a bridge structure with an opening of 5,550 square feet is proposed. This structure will also serve to maintain the wildlife travel corridor through this system. The proposed structure at Wetland Site 11 will consist of three 8-foot x 8-foot box culverts.

Site 10 is the most regionally important wetland encountered by the proposed common alternative. A full assessment of its provided wetland benefits is summarized in Table 4-5 while a quantification of impacts is contained in Table 4-4. To compensate for the unavoidable impacts to 2.19 acre of this system, a minimum of a 2:1 ratio of in-kind wetland creation is anticipated.

Although Site 11 is less pristine and will incur less extensive impacts, it is still important for the hydrologic and biologic continuity of Trout Creek. A ratio of 2:1 in-kind wetland creation is anticipated for the 0.83 acre of unavoidable permanent wetland involvement.

WETLAND SITE 12
This wetland is a 7.34 acre lobe of an isolated wetland system, comprised of a wide marsh perimeter and a core of small trees and shrubs.

Herbaceous vegetation within the outer zone consists of St. Johns Wort, bog buttons, pickerelweed, maidencane, and mermaid weed. The core is composed of

4- to 8-inch dbh sweet bay, red maple and swamp bay trees with a shrub subcanopy of buttonbush, fetterbush and St. Johns wort. Parts of this system exhibit a long hydroperiod, with water levels ranging up to 18 inches deep during the February 1989 site inspection.

The long hydroperiod, and high species and horizontal diversity combine to provide a high quality level of wildlife habitat for amphibians, reptiles, song birds, raptors, and wading birds, as well as moderate levels of stormwater attenuation and ground water recharge. A qualitative assessment of wetland benefits and a quantitative estimate of proposed impacts and mitigation are provided in Tables 4-5 and 4-4.

The location of the proposed CR 581/SR 54 intersection is fixed due to previously discussed restraints located to the west (e.g., approved development orders, designated right of way and most favorable wetland crossings). In addition, traffic engineering geometry requires a minimum 500 foot length perpendicular approach on either side of CR 581. Wetland Site 12 is located only 70 to 250 feet east of the CR 581 right-of-way. Therefore, avoidance of this wetland is not possible. The proposed roadway will traverse through the center of this system, eliminating 4.17 acres of wetland. Approximately 43 percent of this wetland will remain within disjunct fringes on either side of the roadway. The southern fringe will continue to connect with a larger wetland lobe located within the northwest corner of the Williamsburg Development, and therefore retain much of its wetland functions. Due to it's proposed severance, the current benefits provided by the northern fringe will be diminished.

WETLAND SITE 13

Wetland Site 13 is a small (1.79 acre) herbaceous marsh located immediately north of the Williamsburg Subdivision. This marsh is characterized by an outer ring of St. Johns Wort and a core of pickerelweed and maidencane. Limited floodwater attenuation, ground water recharge, and amphibian habitat are the primary functions provided by this site. The majority of this marsh would be permanently eliminated by the proposed filling of 1.51 acres of this 1.79 acre marsh. Compensation for this unavoidable impact are anticipated to be provided by the 1:1 ratio creation of in-kind wetlands. Additional information regarding this wetland is provided in Tables 4-4 and 4-5.

WETLAND SITE 14

Wetland Site 14 is a secondary tributary associated with Clay Gulley. Affected wetlands at this site include a 0.84 acre sawgrass marsh and a 0.68 acre segment of mesic/hydric forest flood plain dominated by a canopy of 10 to 12 inch dbh laurel oak, sweet gum, sabal palm, stiff cornel dogwood and persimmon and a shrub stratum of dense, upright palmetto. Maintenance of the existing hydrologic conveyance of this system will be paramount in the design stage. The proposed 8-foot x 8-foot box culvert design will function not only to provide hydrologic conveyance but for wildlife crossing as well.

The primary functions provided by this system are floodwater conveyance and filtration and habitat for song birds and small mammals. As compensation for

the proposed permanent elimination of 0.84 acre of marsh and 0.68 acre of swamp, in-kind wetland creation of 1:1 and 2:1 ratio's respectively is anticipated. Additional details pertaining to these wetlands are provided in Tables 4-4 and 4-5.

WETLAND SITES 15 AND 16

Sites 15 and 16 are two highly similar, isolated, cypress ringed marsh systems (cypress doughnut domes) located along the south section line of S32 T26 R20. Both of these systems, which are each approximately 4.0 acres in size, are very high in species-, horizontal- and structural-diversity. The outer rings and internal cypress pockets of these two sites are comprised of dense stands of 6 to 10 inch dbh cypress trees. Lush dense herbaceous vegetation dominates the marsh zones, and is comprised of Tracy's beakrush, maidencane, pickerelweed, spikerush and carex sedge. Inspection of well defined, elevated lichen lines indicates this system has a seasonal high water of approximately 18 inches above grade. The proposed Alternative 1A alignment would create moderately severe impacts at these sites. This alignment would bisect wetland 15 and eliminate the south half of Wetland Site 16. Combined wetland impacts at Sites 15 and 16 would total 2.15 acres of marsh and 2.14 acres of cypress.

Although these two sites are not regionally significant systems they are both very productive wetlands. The primary benefits supplied by these wetlands include wildlife habitat for reptiles, amphibians, song birds, raptors,and wading birds, as well as floodwater attenuation and ground water recharge. Additional information regarding these wetlands is summarized in Tables 4-4 and 4-5. To compensate for unavoidable but moderately severe wetland impacts, it is anticipated that in-kind wetland creation will be proposed on a 1:1 and 2:1 ratio for the marsh and forested areas, respectively.

WETLAND SITE 17

Site 17 consists of a narrow creek channel and hydric/mesic flood plain forest associated with Clay Gulley. A diverse, mature hardwood canopy comprised of 10 to 30 inch dbh laurel oak, american elm, southern magnolia, hackberry, red maple, red cedar, cabbage palm, and pop ash dominate this system. The shrub and herb strata are relatively sparse and include scattered palmetto and cabbage palm, horned beakrush, lizard's tail, wild coffee, french mulberry, pepper vine and maiden fern. This system appears to be influenced by a normal hydroperiod, resulting in seasonal saturation and occasional inundation. Although a narrow (approximately 30 foot wide) dirt fill road and fence line has been constructed through this portion of Clay Gulley, the system is still a healthy, mature forested wetland. This system provides high levels of floodwater conveyance and filtration, as well as important wildlife habitat for songbirds, reptiles, and large and small mammals. Construction of Alternative 1A would result in the loss of 3.13 acres of forested wetland in Clay Gulley. Maintenance of sufficient hydrologic flow within this system will be a paramount factor in the design of this crossing. The proposed 8-foot x 8-foot culvert will function not only for hydrologic conveyance but also to provide for wildlife crossings. The productive nature of this wetland system warrants a 2:1 ratio of in-kind wetland creation as compensation for the proposed 3.13 acres of unavoidable impacts.

WETLAND SITE 18
Site 18 consists of two marshes dominated by St. Johns wort, maidencane, and bog button, which total 4.11 acres in size. The larger, most western marsh contains a cluster of approximately 100 10-inch dbh swamp tupelo trees with an understory of softrush. The primary benefits provided by these marshes are amphibian habitat and floodwater attenuation. Alignment 1A would impact 3.63 acres (88.24 percent) of these two marshes. The aforementioned swamp tupelo stand would be preserved outside the right-of-way in a narrow strand of remaining marsh. A maximum of 1:1 in-kind wetland creation will be proposed as compensation for the proposed permanent wetland loss of 3.63 acres.

WETLAND SITE 19
This system is a narrow cypress strand that eventually drains to Clay Gulley approximately 0.75 mile to the southeast. Flow to this strand is provided by a series of loosely organized marshes and cypress domes that extend 3,000 feet to the north. A canopy coverage of 12 inch dbh cypress and a few swamp tupelo dominate the site with a moderate coverage of panic grasses occupying the herbaceous stratum. Along the section line, a cleared fence line bisects this strand. Inspection of lichen lines indicates this system is influenced by a slightly reduced hydroperiod relative to other cypress systems in the project vicinity. Due to the lower hydroperiod and fence line disturbance, this wetland is assessed as only fair quality. Beneficial wetland functions provided by this system include song bird habitat and floodwater filtration and transport. The proposed construction of Alignment 1A would result in a loss of 1.12 acres of cypress and 0.06 acre of marsh. In addition, a degree of system fragmentation would occur by the bisecting of this system. Adequate hydrologic conveyance and wildlife crossings will be maintained by the proposed 8-foot x 8-foot box culvert crossing design. As compensation for the proposed unavoidable but permanent loss of 1.18 acres of productive wetlands, a 2:1 ratio of in-kind wetland creation will be proposed.

WETLAND SITE 20
Site 20 is a 2.11 acre segment of a loosely organized and intermittently connected cypress strand. Principle canopy associates are 8- to 12-inch dbh cypress and swamp tupelo. Moderately sparse herbaceous coverage is provided by creeping rush, camphorweed and Virginia chain fern. Table 4-5 summarizes the wetland functions and benefits associated with this system. Adequate hydrologic conveyance will be maintained by the triple 9-foot x 9-foot box culverted roadway crossing drainage design. Construction of Alternative 1A would result in the permanent elimination of 2.11 acres of productive cypress forested wetland. As compensation for this unavoidable impact, a 2:1 ratio of in-kind wetland creation will be proposed.

WETLAND SITE 21
Wetland Site 21 is an 1.48 acre marsh with approximately 60 scattered 2- to 4-inch dbh and 20 8- to 10-inch dbh cypress trees. The vegetative zones of this system transition from an outer ring of St. Johns Wort and Tracy's beakrush through an inner band of maidencane, to a core of pickerelweed and grass-leaf arrow-head. Although this system is relatively small, it supports a high species diversity and is influenced by a normal hydroperiod. This

system provides habitat for amphibians and wading birds, as well as floodwater attenuation and ground water recharge. The proposed construction of Alignment 1A would result in the permanent elimination of 1.0 acre of herbaceous wetland with scattered cypress trees. Approximately 0.48 acre of this system located south of the right-of-way will be preserved. Compensation is anticipated to be provided by the 1:1 ratio of in-kind wetland creation.

WETLAND SITE 22
This system is an extremity of the loosely organized cypress strand discussed in Wetland Site 20. The area of proposed impact consists of a 15 foot fringe of St. Johns Wort, bog buttons and beakrush surrounding a stand of 6 to 10 inch dbh cypress trees with a Virginia chain fern understory. An assessment of the integrity, diversity, wildlife habitat, and hydrologic values associated with this system was conducted and is presented in Table 4-5. A total of 0.21 acre of cypress swamp and 0.09 acre of herbaceous fringe would be permanently eliminated by Alignment 1A. Compensation will be provided by a 2:1 ratio of in-kind wetland creation.

WETLAND SITES 23, 24, AND 25
These wetland sites are three small herbaceous marshes, which are relatively common along this section of the corridor. Avoidance of these three small marshes is not possible without creating greater impacts to forested wetlands located on each side of the proposed right-of-way. Wetland 23 is the largest (1.61 acres) and highest quality of these three systems. Common associates of this marsh include St. Johns Wort, yellow-eyed-grass, bantam-buttons, pickerelweed and maidencane. Wetland Sites 24 and 25 are drier and have been more impacted by previous disturbance relative to Wetland Site 23. The prevalence of bluestem, which is listed as a facultative species, and the low elevation of lichen lines on a small clump of cypress, suggests Wetland Site 24 has a reduced hydroperiod relative to other marshes of the area. Wetland Site 25 is characterized by a narrow outer ring of St. John's Wort, an inner ring of yellow-eyed grass, camphorweed and maidencane, and a core of creeping rush, camphorweed and scattered St. Johns Wort. A total of 1.69 acres of predominantly herbaceous wetlands will be impacted within Wetland Sites 23, 24, and 25 by Alignment 1A.

Tables 4-5 and 4-4 summarize the wetland functions and proposed wetland involvement/mitigation of these systems.

WETLAND SITE 26
This wetland appears to be a normally isolated cypress dome that may occasionally connect hydrologically with the parent cypress strand of Wetland Sites 20 and 22 during extreme flood events. A moderate canopy coverage is provided by 4- to 10-inch cypress trees. Herbaceous constituents of this system include maidencane, Virginia chain fern, bog buttons, sphagnum moss, camphorweed and bugle weed. Inspection of elevated lichen lines on cypress trunks indicates this system is influenced by a normal hydroperiod.

This system is expected to provide productive wildlife habitat for song birds and aquatic reptiles and amphibians, as well as beneficial hydrologic

functions such as floodwater attenuation. The construction of proposed Alternative 1 would permanently eliminate a 0.41 acre fringe of relatively good quality cypress forested wetland within this system. Compensation for this unavoidable impact will be provided by the 2:1 ratio of in-kind wetland creation.

WETLAND SITE 26A

This system is an extremely small (0.18 acre) St. Johns Wort marsh situated in an expanse of upland rangeland. Approximately 11 stunted 3 to 4 inch dbh swamp tupelo trees occupy the core, with maidencane and sphagnum moss comprising the herbaceous stratum.

Routine disturbance by cattle grazing and rangeland burning has adversely affected the quality of this system. Proposed Alignment 1 would eliminate 100 percent of this small, low quality system. Based upon its small size and poor quality, no mitigative measures are proposed for this system.

WETLAND SITE 27

This system is a large productive headwater of a cypress strand leading to Basset Branch, an eventual tributary to the Hillsborough River. Dense canopy coverage is provided by large buttressed 6- to 14-inch dbh cypress trees and several 10- to 12-inch swamp tupelo trees. Buttonbush provides a moderate coverage within the shrub stratum, with creeping rush, grass-leaf arrowhead, pickerelweed, saw-toothed fern, Virginia chain fern, and camphorweed comprising the herbaceous stratum. This system is influenced by an optimal hydroperiod for a cypress wetland, and was assessed as being of very high quality due to its large size, mature trees, favorable hydroperiod and moderately high species diversity. This system is expected to provide high quality wildlife habitat as well as hydrologic benefits. Due to the design restrictions resulting from the previous transition of Alignment 1A from the south section line, incorporation of another shift or curve to avoid this site would not meet sound traffic engineering design and safety requirements. Proposed Alignment 1A would therefore result in the unavoidable, but permanent elimination of 2.26 acres of high quality cypress forested wetland. In addition, a moderate degree of habitat fragmentation would result from the bisection of this strand. To compensate for this moderately severe wetland impact, in-kind wetland creation will be proposed at a 2:1 ratio.

WETLAND SITE 28

Located east of the Basset Branch strand are several large irregular shaped marsh/wet prairies surrounded by upland pasture and rangeland. Wetland Site 28 is a 4.88 acre marsh, typical of this area. This relatively healthy marsh is characterized by scattered St. Johns Wort shrubs and dense herb coverage of maidencane, blue maidencane, bog buttons, soft rush and mermaid-weed. Primary functions provided by this system include reptile/amphibian habitat and flood water attenuation. Alternative 1A would bisect this marsh, eliminating 1.95 acres of herbaceous wetland. Wetland involvement and proposed mitigation is quantified in Table 4-4.

WETLAND SITE 29
Wetland Site 29 consists of two marshes similar in nature to Site 28. Both of these marshes are influenced by normal hydroperiods and support healthy wetland vegetation including maidencane, pickerelweed and bog buttons. Functions provided by these marshes include floodwater attenuation and wildlife habitat for aquatic reptiles and amphibians, and foraging areas for wading birds. Alternative 1A would impact the northern fringes of these two marshes, permanently eliminating a total of 0.46 acre of herbaceous wetland. Compensation will be provided by a 1:1 ratio of in-kind wetland creation.

WETLAND SITE 30
Wetland Site 30 is a small, poor quality cypress dome that connects via a ditch to a larger cypress/marsh/wet pasture mosaic to the south. During the February 1989 site inspection, most sites in this area were deeply inundated (see Appendix for photos of Wetland Sites 29 and 31). However, Site 30 was completely dry at that time, probably due to the dewatering effects of the aforementioned ditch. Due to routine cattle grazing and its reduced hydroperiod, this system is regarded as poor in quality. Table 4-5 summarizes the wetland functions and benefits associated with this system. Alignment 1A would eliminate 0.26 acre of herbaceous fringe and 1.01 acres of this dewatered cypress dome. The relatively low quality of this forested wetland warrants only a 1:1 ratio of in-kind wetland creation.

WETLAND SITE 31
This site is a very small (0.20 acre) depression, situated within an expanse of upland pasture/rangeland. Currently this disturbed system is used as a cattle pond during periods of inundation. Vegetation is composed of two swamp tupelo trees and several clumps of soft rush. Proposed Alternative 1A would eliminate 100 percent of this poor quality system.

The small size and disturbed condition of this wetland combine to provide only limited wetland benefits. Compensation for this unavoidable impact can be adequately accomplished by the functions provided by created roadside ditches.

WETLAND SITE 32
Wetland Site 32 is the northern lobe of an 8.9 acre pickerelweed and soft rush marsh. Although the edges have been slightly impacted by sod farming activities and the dumping of grass cuttings, the central region of this marsh is influenced by a normal hydroperiod and supports lush aquatic macrophytes. Favorable habitat is provided for numerous aquatic reptiles and amphibians as well as wading birds. In addition, beneficial floodwater attenuation and ground water recharge is provided. Shifting of the alignment to either the north or south would result in similar impacts to other marsh ares. Although the current alignment would result in an elimination of 1.76 acres of marsh, the remaining 7.14 acres (80.17 percent) of the marsh would remain as a functional wetland system. Compensation for this unavoidable wetland impact is anticipated be accomplished by the creation of in-kind wetlands on a 1:1 replacement ratio.

WETLAND SITE 33
This site is the proposed crossing of a channelized segment of the headwaters of New River. This section has been historically altered and is currently relatively straight with steeply graded, grassy banks. Dominant species along the lower banks include torpedo grass, smartweed and several clumps of soft rush. The upper banks are high and support scattered slash pines with an understory of mowed bahia grass. Although this system is not a pristine wetland it does provide beneficial water conveyance, aquatic habitat and an aquatic corridor. Displacement of wetlands by this crossing will be minimal (i.e., 0.21 acre of culverting and fill). The installation of triple 7-foot x 7-foot box culverts will maintain both the hydrologic flow and the contiguity of the aquatic habitat of this system. Mitigation activities are not warranted by this wetland involvement.

WETLAND SITE 34
This site appears to be a manmade ditch constructed to serve as an outfall from a 17-acre marsh located north of the proposed right-of-way, to New River. Dominant herbaceous vegetation within this narrow ditch is comprised of soft rush, maidencane, smartweed and water hyacinth. Only 0.23 acre of this manmade system will be impacted by culverting and/or filling. The wetland benefits provided by this wetland are negligible. Compensation activities are not warranted by this unavoidable wetland involvement.

WETLAND SITE 35
Wetland Site 35 is a narrow protrusion from the marsh referenced in the Wetland Site 34 discussion. The vegetation of this area is dominated by maidencane, with lesser amounts of pickerelweed and smartweed. To obtain the proper design geometry at the proposed SR 54/Morris Bridge Road intersection to the east, this wetland involvement will be unavoidable. Although a total of 0.64 acre of marsh will be eliminated, the remaining 16.44 acres (96.25 percent) of the marsh located to the north will continue to be a productive functional wetland.

Wetland benefits provided by the 0.64 acre of marsh proposed for elimination include habitat for reptiles, amphibians, and wading birds, as well as floodwater attenuation. Compensation for this unavoidable wetland involvement is expected to be accomplished by the creation of in-kind wetlands on a 1:1 replacement ratio.

WETLAND SITE 36
This system is an isolated 6.29 acre marsh located in the northwest corner of Section 19 Township 26 Range 21 and approximately 2,200 feet west of CR 579 (Morris Bridge Road). Wetland Site 36 is characterized by dense herbaceous coverage consisting predominantly of maidencane, soft rush and pickerelweed. Other associates include meadow beauty, smartweed and minor amounts of water hyacinth and primrose willow. Hydrologically, this system is influenced by a hydroperiod normal for a shallow marsh system. This system provides moderate habitat benefits for aquatic reptiles and amphibians as well as foraging areas for wading birds. As previously discussed for Wetland Site 35, in order to provide the proper perpendicular intersection configuration at CR 579, this

impact will be unavoidable. In addition, any shift of this alignment to the south would result in increased impacts at the beginning of this curve (e.g., Wetland Site 32). The proposed construction of SR 54 would result in the elimination of 3.54 acres of this marsh. To replace the benefits provided by this wetland area, in-kind wetland creation will be provided on a 1:1 replacement ratio.

WETLAND SITE 37

This wetland is a 13.82 acre wet pasture/marsh located along the south section line of Section 20 Township 26 Range 21, approximately 3,000 to 5,000 feet east of CR 579. Surrounding this system lies predominately improved upland pasture. Wetland quality ranges from fair within the eastern and wetland extremities, which are wetter and support more lush vegetation, to poor within the relatively high, drier disturbed center. Dominant vegetation of this marsh includes maidencane, soft rush, bluestem, and smartweed. This system appears to be frequently subjected to ranching associated impacts including mowing and cattle grazing, thereby reducing its overall quality. The low quality of the surrounding uplands decreases its value as an ecotone for community interaction. However, in addition to providing moderate stormwater attenuation, this system provides seasonal amphibian habitat and foraging areas for wading birds. The path of the proposed alignment along the property line (and also the section line) was selected for several reasons, including; functional design geometry, reduced impacts to property owners, reduced socioeconomic impacts and minimizing wetland impacts. In this regard a shift to the north would impact several properties, existing facilities and residences, while a shift to the south would result in larger impacts to wetlands. Therefore, even though the proposed project would result in an elimination of 5.82 acres of marginal quality wetlands at Site 37, it is the most environmentally favorable design possible. The remaining 8.0 acres (57.9 percent) of this wet pasture/marsh will remain as a functional wetland, providing benefits similar to the current system. Compensation for this unavoidable loss of moderately productive wetlands will be accomplished by the creation of in-kind wetlands on a 1:1 replacement ratio. Potentially this mitigation could be incorporated within a shallow wet detention system.

WETLAND SITES 38 AND 39

Although much smaller than the previous site, Wetland Sites 38 and 39 are similar floristically and hydrologically. Justifications for the unavoidable involvement of 1.55 acres of these systems are as discussed for Wetland 37.

An environmental characterization and assessment of areal impacts and mitigation for these sites are supplied in Tables 4-5 and 4-4, respectively. Adequate compensation for these impacts can be accomplished within shallow wet detention systems.

WETLAND SITE 40

The final area of wetland involvement for Alternative 1A would occur at Wetland Site 40, which is a 3.94-acre manmade pond. Cattail and primrose willow are the dominant vegetation within this poor quality system. Numerous governing factors including socioeconomic, traffic design geometry and

avoidance of wetlands restrict the location of this section of the roadway. Paramount of these are proper intersection design at U.S. 301, avoidance of existing residences to the north, avoidance of a correctional facility to the immediate south, and avoidance of numerous natural wetlands located further to the south.

An ecological and hydrological characterization of this site is provided in Table 4-5. The proposed alignment would displace 1.64 acres of this poor quality wetland. Based upon the manmade origin and low quality of this wetland, compensation is not warranted.

WETLAND SITES 41, 42 AND 43
These sites are a series of small isolated herbaceous marshes ranging from 1.3 to 3.3 acres in size. Wetland systems similar to these are scattered along this vicinity of the corridor, thereby rendering complete avoidance impossible. Common associates of these seasonally inundated systems include maidencane, bog buttons, bluestem, beakrush, and St. Johns Wort. Occasional shrubs and trees include coastal plain willow, swamp tupelo, swamp bay and slash pine. A total of 2.41 acres of the herbaceous marshes would be eliminated by the construction of this alignment.

Site 41 is a small, low integrity, 1.3 acre marsh primarily providing moderate quality habitat for amphibians, reptiles, and wading birds (Table 4-7). Only 8.6 percent of this system would be eliminated by Alternative 1C. The remaining marsh should continue to provide habitat and remain a viable marsh. Mitigation is proposed as shown in Table 4-6. Forty-four percent of the 3.3 acre marsh at Site 42 would be unavoidably eliminated. This moderate integrity system mainly provides moderate quality habitat for amphibians and reptiles, terrestrial, and wading birds (Table 4-7). This moderate impact is proposed to be mitigated (Table 4-6). Site 43 would involve the elimination of 37 percent of a moderate quality 2.29 acre marsh which provides moderate quality habitat for wading birds, amphibians, and reptiles. This impact is considered minor and will be offset through mitigation (Table 4-6).

WETLAND SITE 44
Wetland Site 44 is a 7.82 acre, oblong shaped isolated marsh. Principle floristic constituents of the 1.01 acre area of proposed impact are sawgrass, bog button, arrowroot, and taper-leaf bugleweed. In addition, wax myrtle, coastal plain willow, button bush and stunted swamp tupelo are scattered sporadically throughout the marsh. Avoidance of this system would result in similar or greater impacts to other wetlands of the vicinity. This system is of moderate integrity and provides moderate quality habitat for wading birds and small mammals, high quality amphibian habitat, and moderate ground water recharge value. However, only 13 percent of this system will be eliminated and the remainder should continue to function normally. The impact presented is regarded as moderate, to be mitigated as shown in Table 4-6.

WETLAND SITES 45, 46, AND 47
Located within an expanse of improved upland pasture are three similar small marsh/swamp tupelo heads (e.g., Sites 45, 46, and 47). These wetlands, which

range from 0.45 acre to 1.01 acre in size, are characterized by small clumps of stunted swamp tupelo surrounded by herbaceous growth of maidencane, smartweed, pennywort, and scattered clumps of soft rush. Heavy grazing by cattle is apparent throughout these systems. Avoidance of these three sites would result in substantially higher impacts either to Clay Gulley to the south or to a cypress doughnut to the northeast. A total of 1.74 acres of wetlands would be impacted by fill at these three sites. All three wetlands are small and of low integrity and quality, providing limited habitat values and restricted recharge functions. The impacts are considered extremely minor for Site 45 and minor for Sites 46 and 47.

WETLAND SITE 48
The alignment in this segment has been carefully positioned between a high quality cypress doughnut to the north and cypress dome to the south, thereby avoiding impacts to productive wetlands. To achieve this favorable configuration, a manmade ditch and associated small clump of disturbed wetlands totalling 0.15 acre would be impacted by fill. The functions and values provided by this site are generally negligible; the ditch conveys water and is expected to occasionally provide limited habitat for amphibians and wading birds. No wetlands mitigation is proposed.

WETLAND SITES 49, 50, AND 51
The chief environmental concern in the design of this section of the alignment, was to position the planned roadway through the "window" between the cypress systems to the west and through the narrowest portions of a large cypress strand to the east. Whereas these wetland resources are the most crucial to avoid, several smaller and lower quality wetlands would then be unavoidably impacted. Along this section a total of 0.96 acre of predominantly herbaceous wetlands would be impacted by fill. These systems range in size from 0.57 to 1.96 acres and are characterized by chalky bluestem, grass-leafed arrowhead, Virginia chain fern, bog buttons, creeping rush, sedge, creeping primrose, maidencane, and St. Johns Wort. Two of the systems contain several small stunted cypress and swamp tupelo trees. Impacts at Sites 49 and 50 are considered to be extremely minor. Proposed mitigation is shown in Table 4-6.

WETLAND SITE 52
Site 52 is another small isolated wetland along this segment which would be unavoidably impacted in order to minimize impacts to large, high quality forested wetlands. This wetland is a 0.30 acre isolated cypress head surrounded by upland rangeland. Cypress trees of 4- to 8-inch dbh comprise the canopy, with taper-leaf bugleweed, bog buttons and sphagnum moss occupying the ground cover. The hydroperiod of this system appears reduced relative to surrounding cypress areas, with lichen lines being only 6 to 8 inches above grade. This entire wetland would be eliminated by this alignment.

This low quality system provides only limited wildlife habitat and ground water recharge, due in part to its small size. The impacts presented by the elimination of this system will be extremely minor. Proposed mitigation is summarized in Table 4-6.

WETLAND SITE 53
This site is the southern lobe of a large cypress strand system and narrow, potentially manmade cypress fringed ditch. Alignment 1C would impact a total of 0.84 acre of this system. Although the ditch is a poor quality wetland, which primarily provides water conveyance, the attached cypress strand is assessed as fair to good quality. Moderate canopy coverage is provided by 10- to 12-inch dbh cypress while wax myrtle and fetterbush on raised hammocks occupy the shrub stratum. Numerous herbs including saw-toothed fern, Virginia chain fern, pickerelweed, taper-leaf bugleweed, water spangles, panic grass (Panicum gymnocarpum), smartweed, soft rush as well as filamentous algae comprise a relatively dense coverage of the herb stratum. The hydroperiod of this lobe appears slightly reduced relative to other cypress wetlands of the vicinity, possibly as a result of draining effects by the aforementioned ditch. The dense herb coverage with constituents including filamentous algae and water spangles may indicate poor water quality due to high nutrient levels. Probable sources of nutrients are likely to be runoff from surrounding rangeland and from citrus groves located approximately 0.75 mile to the north. Although this alignment will eliminate 0.84 acre of moderately good quality wetland, it is situated in the most environmentally favorable area possible. The crossing of this strand is at the narrowest area possible. Shifting of the roadway to the north would result in substantially larger impacts to the main section of the strand. Similarly a shift to south would result in large impacts to two other cypress areas. Table 4-7 summarizes the functions and benefits of this wetland system. Because only 0.84 acre of this large wetland system would be permanently cleared, the impacts are considered minor and the remaining system should not be affected by roadway construction or operation. Mitigation proposed for this site is shown in Table 4-6.

WETLAND SITE 54
This system is a small 0.74 acre, isolated, herbaceous marsh that would be completely eliminated by Alternative 1C. Avoidance of this site is impossible without incurring substantially larger, more severe impacts to surrounding cypress areas detailed in the Wetland Site 53 description. An outer fringe of chalky bluestem, yellow-eyed grass, bog button and St. Johns Wort with an inner core of pickerelweed characterize this marsh.

This small, low quality system is expected to function mainly to provide moderate quality amphibian and reptile habitat and occasional foraging habitat for wading birds, and would provide only limited ground water recharge. The impacts of eliminating this system are considered minor. Proposed mitigation is summarized in Table 4-6.

WETLAND SITES 55 AND 56
The primary wetland concerns along this section of the alignment are the avoidance of a large cypress system to the south and minimizing impacts to a large cypress strand to the east. To accomplish this, 1.08 acres of isolated wetlands will be impacted at Wetland Sites 55 and 56. Of this total, 0.74 acre of impact will involve herbaceous wetlands while 0.34 acre of impact will involve forested wetlands. These two systems are similar in nature, both being characterized as maidencane/pickerelweed marshes with 1 small clump of

small cypress and swamp tupelo trees. Approximately 75 percent of these two systems will remain outside the right-of-way as functional marshes. Impacts are considered minor due to the low value of both systems for most wetland functions and values, and are unavoidable as noted above. Proposed mitigation is given in Table 4-6.

WETLAND SITE 57
Wetland Site 57 is a relatively narrow strand associated with Site 27. However, unlike Site 27, which is wide, supports large mature cypress, and is influenced by an optimal obligative hydroperiod, Site 57 is narrow, dominated by small 2 to 6 inch dbh cypress trees and is subjected to a much more reduced hydroperiod. Interspersed between the small cypress are occasional wax myrtle shrubs and a ground cover of pennywort, smartweed, sedge (Carex sp), and creeping primrose. Alternative 1C would eliminate 0.71 acre of this system. Shifting of the alignment to the north or south would result in larger, more severe wetland impacts to this strand or a cypress ringed marsh located to the southwest. The installation of three 10-foot x 10-foot box culverts will maintain the hydrologic and ecological connection of this system. The primary function of this system is in water conveyance. It is of limited wildlife value.

Table 4-7 summarizes the ecological condition of this system. The loss of 0.71 acre of this 3.94 acre low-quality system is considered to be a minor impact. Mitigation proposed for the permanent removal this forested area is detailed in Table 4-6.

WETLAND SITES 58, 59, 60, and 61
Along this section of the alignment are numerous freshwater marshes grading into upland pasture and rangeland. Further to the south is a large cypress mosaic that is important to avoid if possible. To accomplish this avoidance and maintain the favorable crossing location at Site 57, four areas of marsh, totalling 6.41 acres, would be impacted.

Sites 58 and 59 are of a higher quality and influenced by a longer hydroperiod than Sites 60 and 61. Vegetation of these two marshes consists primarily of St. Johns Wort, pickerelweed and maidencane. Sites 60 and 61 are much more transitional and are vegetated by chalky bluestem, beakrush, soft rush and carpet grass.

The ecological function and value ratings for these systems are shown in Table 4-7. Site 58 is a contiguous wetland of moderate quality. Its primary values are in providing moderate quality wading bird foraging habitat, flood control, recharge, and water filtration. The loss of 29 percent of this system is not a substantial impact and the remaining wetland should continue to provide these functions. Mitigation is proposed for this impact (Table 4-6). Site 59 is similar to Site 58 in quality and functions, and the impact created by the elimination of 50 percent of this system is regarded as moderate. Mitigation is proposed to offset this unavoidable impact, as shown in Table 4-6. Site 60 is joined (by a ditch) with another wetland, but is of low integrity. It mainly provides limited amphibian and reptile habitat, and

limited ground water recharge and water filtration. Only 3.5 percent of this system would be cleared for roadway construction. The impacts of the project on this system are considered extremely minor. Proposed mitigation plans are shown in Table 4-6.

Site 61 is also of low quality and provides limited values which are similar to those of Site 60. This alternative would unavoidably impact 70 percent of this isolated 1.67-acre marsh. Due to the low quality and small size of this system, this impact is considered minor, and is proposed to be offset by mitigation (Table 4-6).

WETLAND SITE 62
Spanning the section line between Sections 25 and 26 is an 8.9 acre, hour-glass shaped marsh. This site, which is located at the same wetland system described in the Wetland Site 32 discussion of Alternative 1 is vegetated predominantly by pickerelweed, maidencane, and clumps of soft rush. Alternative 1C would result in the elimination of 4.19 acres or 47.12 percent of this system.

As indicated in Table 4-7, this site is of low integrity, but provides moderate values of habitat for amphibians, reptiles, wading birds, and small mammals, as well as water treatment and recharge. The impact to this system is considered unavoidable and substantial and is proposed to be offset by mitigation (Table 4-6).

WETLAND SITE 63
This 5.28 acre isolated marsh consists of an outer fringe of St. Johns Wort and an inner core of maidencane. Alternative 1D will bisect this system, impacting 2.25 acres (42 percent) of this herbaceous wetland. This system is of moderate quality, providing mainly moderate ground water recharge and water filtration, but only limited wildlife habitat. The impact of the loss of 42 percent of this system is considered moderate, and will be mitigated as detailed in Table 4-8.

WETLAND SITE 64
Site 64 is a small St. Johns Wort marsh, similar to numerous marshes of this region. Alternative 1D would eliminate 0.13 acre of this 0.20 acre marsh.

This marsh is of moderate integrity, but due to its extremely small size it performs virtually no hydrologic functions and presents very limited wildlife habitat values. The unavoidable impact of the loss of 64 percent of this 0.2 acre marsh is extremely minor.

WETLAND SITES 65 AND 66
This segment of Alternative 1D was designed to minimize environmental impacts to two large cypress wetland strands, located in the northeast corner of Section 28 and the north center of Section 27 of Township 26 Range 20. A shift of proposed Alternative 1D to the north would result in increased impacts to Site 66, while a shift to the south would result in increased impacts to Wetland Site 65. In general, the present alignment crosses at the

narrowest portions possible, thereby reducing combined impacts to these systems to the greatest extent practicable. Site 65 is situated at the northern lobe of a large strand. The 250 foot wide area of crossing is characterized by a full canopy of mature 10- to 18-inch dbh cypress surrounding a small herbaceous opening. Lichen lines about 2 1/2 foot above grade were observed along the opening, indicating this system is influenced by a long hydroperiod. The integration of the mature swamp and lush marshy opening, combine to provide substantial wetland benefits. This site is of high integrity, providing habitat of high value for wetland dependent amphibians and reptiles, water fowl and wading birds, and moderate valued hydrologic benefits (Table 4-9). The elimination of 1.5 acres of high quality forested and herbaceous wetlands will cause moderate impacts to this site. To compensate for these unavoidable impacts, mitigation is proposed (Table 4-8).

Site 66 is contiguous with the southern end of a large, irregular shaped cypress head that straddles the south section line of Section 22 Township 26 Range 20. This wetland transitions from upland pasture through a small zone of carpet grass and beakrush into the cypress stand dominated by 4- to 13-inch dbh cypress. Understory constituents include pickerelweed, maidencane, creeping rush and camphorweed. Approximately 0.46 acre of wetlands will be impacted at this site. This system is of moderate integrity, providing moderate habitat for amphibians and reptiles, small birds and mammals, and moderate values for hydrologic benefits (Table 4-9). The loss of 0.45 acre of this system constitutes a minor impact that is proposed to be offset by mitigation as indicated in Table 4-8.

WETLAND SITE 67

This system is a relatively small, 2.73 acre isolated cypress head. Canopy coverage is predominantly provided by 6- to 13-inch dbh cypress trees with a few 4 inch dbh swamp tupelos. The herb stratum is comprised of taper-leafed bugleweed, Virginia chain fern, creeping rush and soft rush. Alternative 1D would bisect this wetland, eliminating 1.69 acres of cypress. Shifting of the alignment to the north or south would result in equal or larger impacts to adjacent wetlands. Impacts to this moderate integrity, isolated head are considered minor due to the small area that will be cleared and the limited values and benefits this system provides. Proposed mitigation is detailed in Table 4-8.

WETLAND SITE 68

Two narrow ditches comprise this site. The western ditch is a manmade outfall to a retention facility. The eastern ditch appears to be an old swale constructed to drain pasture areas. A few cypress have colonized the eastern ditches' banks. Alternative 1D would require the culverted crossing of the west ditch and the filling of 0.11 acre of the terminus of the east ditch.

Due to the low integrity of these manmade drainage features, their negligible value in providing wetlands benefits, and the limited involvement of the project by culvert crossing and minor filling, no mitigation is considered.

WETLAND SITES 69, 70, 71, AND 72
Scattered throughout Section 26 are numerous small isolated depressions surrounded by improved pasture and rangeland. Along this segment, Alternative 1D would impact 2.05 acres of wetlands at four sites. In general these systems are seasonally inundated marshes vegetated by maidencane, pickerelweed, marsh pennywort and creeping primrose.

These low integrity systems provide only extremely limited, to negligible, wetland values for wildlife and hydrologic functions. The collective loss of 2.05 acres of these systems is considered an extremely minor impact, to be mitigated for as proposed in Table 4-8.

WETLAND SITES 73 AND 74
These two sites are small isolated cypress systems located near the northeast corner of Section 26. Both sites are predominantly vegetated by cypress, with marshy lobes or perimeters vegetated by maidencane, blue maidencane and St. Johns Wort. A total of 0.49 acre of cypress and 0.93 acre of marsh would be impacted by Alternative 1D. Shifting the alignment to the south would result in increased undesirable impacts to Site 73, while shifting to the north would result in increased impacts to numerous scattered marshes as well as Sites 75 and 35.

These sites are of moderate integrity, but their small size limits their functional values for wildlife and hydrology (Table 4-9). Site 73 will be more affected (56 percent system loss) than Site 74 (6 percent loss), and accordingly impacts are regarded as moderate and minor, respectively. Proposed mitigation is shown in Table 4-8.

WETLAND SITE 75
Site 75 is a small soft rush depression surrounded by sod farming land. A total of 0.33 acre of relatively poor quality marsh will be impacted by the proposed roadway.

Due to the negligible wetland functional values of this small isolated area (Table 4-9) the impacts from the loss of 23 percent (0.33 acre) of this 1.44 acre depression are considered extremely minor and do not warrant mitigation.

WETLAND SITE 76
Located near the north section line of Section 25, is a large marsh associated with the headwaters of New River. Slash pine uplands grade into a perimeter of slash pine dominated wetlands with an understory of Virginia chain fern and maidencane. Interior to this zone is a marsh opening, dominated by maidencane, soft rush and smartweed. Although some minor ditching activities have occurred within this marsh, it still provides some valuable wildlife habitat and hydrologic functions. The crossing of this wetland would incorporate three 7-foot x 7-foot box culverts to maintain the hydrologic conveyance through this system. Even though these culverts would also serve to provide a crossing for wildlife, the bisection of this marsh and the associated loss of 4.36 acres of wetlands will degrade this wetland.

Mitigation, as shown in Table 4-8 is proposed to offset the impact of bisecting this system and the associated loss of 4.35 acres of this marsh.

WETLAND SITE 77

This system is an extension of the manmade ditch described in the discussion of Wetland Site 34. The proposed roadway alignment of Alternative 1D would involve the filling or culverted crossing of 0.13 acre of this wetland. This ditch provides for water conveyance only. No wetland mitigation is proposed due to the negligible impact associated with crossing 0.13 acre of this ditch.

APPENDIX G

Wetland Evaluation Techniques (WET)
Volume II Analysis

WET II ANALYSIS

Wetland functions and values were determined by the Wetland Evaluation Technique Volume II (WET 2.0). A Level I assessment was completed for both social significance (values) and effectiveness and opportunity (functions) for each wetland that will be directly affected by the proposed improvements. Wet 2.0 was developed for the Federal Highway Administration using the "Adamus Method". The following parameters were evaluated by Wet 2.0:

- Ground water recharge and discharge
- Floodflow alteration
- Sediment stabilization
- Nutrient removal/transformation
- Sediment/toxicant retention
- Production export
- Wildlife diversity and abundance for breeding, migration and wintering
- Aquatic diversity and abundance
- Uniqueness/heritage
- Recreation

Wet 2.0 evaluates those parameters in terms of (1) social significance, (2) effectiveness and (3) opportunity. Social Significance addresses the value of a wetland to society due to its

special features and designations, potential economic values and strategic location. Effectiveness addresses the capability of a wetland to perform a function due to its physical, chemical and biological characteristics. Opportunity addresses the chance a wetland has to perform this function given the conditions in the area that allow or preclude such a function from occurring. Social significance, effectiveness and opportunity are rated as high, moderate or low for each of the eleven functions.

Most of the 77 affected wetlands within this corridor are located in open rangeland mainly used for cattle grazing.

SOCIAL SIGNIFICANCE

Most wetlands rated moderate to low for floodflow alteration, sediment stabilization, sediment toxicant retention, nutrient removal transformation, wildlife diversity/abundance, and uniqueness heritage. All wetlands rated low for recreation due to not having public access.

Wetlands 1, 3, 4, 15, 16, 20, 26, 29, 52, 67, 73 and 74 all rated high in groundwater recharge and discharge. This was due to a combination of factors such as the large overall size of the wetland as compared to the watershed and the occurrence of a sole source aquifer.

EFFECTIVENESS

Groundwater discharge - All wetlands rated low due to most being isolated with no permanent flow.

Groundwater recharge - Wetlands 1, 4, 26, 29, 52,67, 33, 34, 48, 58, 59, 68, 76, 77, 3, 15, 16, 20, 73 and 74 all rated high in discharge due to varying reasons which include: 1) large size, 2) lacking inlets but having outlets and 3) stable seasonal water level fluctuations.

Floodflow alteration - Most of the wetlands rated high in floodflow alteration due to their isolation. These wetlands act as stormwater management creating a lag time in floodflows.

Sediment stabilization - Wetland numbers 18, 23, 24, 25, 10 and 11 all rated high in sediment stabilization due to their forested nature and a large unsheltered area adjacent to them. All other wetlands rated moderate for this parameter.

Wetland numbers 6, 8, 9, 17, 18, 23, 24 and 25 all rated low because of the presence of outlets, and lack of vegetation.

Wildlife diversity/abundance for breeding - Many of the isolated wetlands with long hydroperiods rated high in this parameter. Specifically those wetland numbers are 2, 3, 5, 16, 20, 26, 31, 32, 35, 36, 21, 22, 37, 38, 39-43, 45-47, 49-51, 54, 60-54, 69-75, 6, 8, 9, 17, and 19. The remaining parameters rated low to moderate.

OPPORTUNITY

Floodflow alteration - Most of the affected wetlands rated high for this parameter. These wetlands in general have a large watershed in relation to their size. They include numbers 2, 3, 6-9, 15-22, 23-25, 31-43, 45-51, 54, 58-64, 68-73, 75-77.

Sediment toxicant retention - All of the wetlands in the corridor except for 12, 13, 28, 44, 55 and 56 exhibit a high opportunity for the above parameter.

Nutrient removal transformation - Approximately 1/2 of the wetlands have high opportunity due to the presence of cattle grazing areas. The other 1/2 have a low opportunity due to absence of grazing areas and a large forested watershed.

:wet2a

APPENDIX H

Florida Department of State
Division of Historical Resources
Cultural Resource Assessment Review Letter

FLORIDA DEPARTMENT OF STATE
Jim Smith
Secretary of State

DIVISION OF HISTORICAL RESOURCES
R.A. Gray Building
500 South Bronough
Tallahassee, Florida 32399-0250
Director's Office (904) 488-1480
Telecopier Number (FAX) (904) 488-3353

July 15, 1991

Mr. C. Leroy Irwin
Environmental Office
Department of Transportation
Hayden Burns Building, MS# 37
605 Suwannee Street
Tallahassee, Florida 32399-0450

In Reply Refer To:
Susan Hammersten
Historic Sites
Specialist
(904) 487-2333
Project File No. 911891

RE: Cultural Resource Assessment Review Request
Cultural Resource Assessment Survey of the Proposed Alignment Corridors for State Road 54, Cypress Creek to the Zephyrhills Bypass (US 301), Pasco County, Florida.
SPN: 14504-1601 WPIN: 7125920 FAPN: RS-7810(4)
Piper Archaeological Research, Inc. June, 1991

Dear Mr. Irwin:

In accordance with the provisions of the National Historic Preservation Act of 1966, as amended, which are implemented by the procedures contained in 36 C.F.R., Part 800; as well as the provisions contained in Section 267.061, Florida Statutes, we have reviewed the above referenced report, and find it to be complete and sufficient.

We note that 27 previously unrecorded prehistoric sites were encountered during the survey. We concur with the archaeologists in concluding that none of the recorded sites is eligible for listing on the National Register. Therefore, it is the opinion of this agency that the proposed State Road 54 project is unlikely to affect any sites listed, or eligible for listing, in the National Register, or otherwise of national, state, or local significance. The project may proceed without further involvement with this agency.

If you have any questions concerning our comments, please do not hesitate to contact us. Your interest in protecting Florida's archaeological and historic resources is appreciated.

Sincerely,

Suzanne P. Walker
for George W. Percy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/slh