



FINAL PRELIMINARY ENGINEERING REPORT

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

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

This project evaluates adding through lanes on U.S. 301 from S.R. 39 to C.R. 54 through Zephyrhills. A one-way pair system using 6th Street and U. S. 301 is recommended.
The approximate length of the project is 2.6 miles.



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SECTION 1.0

SUMMARY

1.1 COMMITMENTS

Construction

In addition to the provisions detailed in the Florida Department of Transportation's (FDOT's) "*Standard Specifications for Roads and Bridge Construction*" and to minimize impacts to the human and natural environment, the Florida Department of Transportation is committed to the following special measures to minimize construction noise:

1. Where the project engineer determines that noise-sensitive sites exist at the time of construction, the contractor may be required to use static rollers for compaction of embankment, subgrade, base, asphalt, etc.
2. Screen all stationary equipment such as pumps, compressors, generators, etc., from noise sensitive receivers if that equipment is to operate beyond normal working hours. If it is feasible, screen this equipment during normal working hours to reduce noise.

Other construction-related commitments to be provided in the design plans or contractual documents for the proposed project are:

Restriction of operating hours for lighting the construction areas will be determined and required of the contractor prior to beginning construction activities that require lighting.

Coordination with the local media and law enforcement agencies will be undertaken prior to commencing construction activities to ensure that construction-related impacts are minimized or adequately mitigated when work during non-daylight hours is required.

Coordination with S.R. 39 project

A past PD&E Study on S.R. 39 from I-4 to U.S. 301 (WPI Seg. No. 255099 1 and No. 256298 1) recommended widening S.R. 39 from two lanes to four lanes. It also recommended realigning the S.R. 39 intersection with U.S. 301, which currently connects at an acute angle, to a “T” intersection with a traffic signal for safety reasons. The realignment proposed would result in a section of existing S.R. 39 becoming a cul-de-sac with access from the north only off U.S. 301. A connection between the existing S.R. 39 and the new S.R. 39 alignment will be investigated in the Design phase of this project due to the number of trucks currently accessing businesses on this section of existing S.R. 39. If this project is constructed before the S.R. 39 project, the intersection realignment should be constructed along with this U.S. 301 project to increase the capacity and enhance safety at this intersection.

Coordination with Local Governments

The side streets between 6th Street and U.S. 301 are expected to carry additional traffic when the one-way pair system is constructed. The FDOT will resurface all local connecting streets between 6th Street and U.S. 301 as part of this project.

The City of Zephyrhills currently owns the section of 6th Street from “C” Avenue to where it connects with U.S. 301 just south of Geiger Road. Pasco County owns the section of 6th Street south of “C” Avenue. These sections will become a part of the State roadway system when this project is constructed, as Southbound U.S. 301. The FDOT is in the process of preparing a Joint Transfer Agreement with the City of Zephyrhills and Pasco County for these roadway sections. Additionally, there is a section of existing S.R.39, which will become a local street when the S.R. 39 intersection with U.S. 301 is realigned (see above section, Coordination with S.R. 39 project.) This section of existing S.R. 39 is expected to be transferred from the State to Pasco County. The transfer of Right-of Way (ROW) for these sections will take effect upon completion of construction.

There are businesses along U.S. 301 with limited parking spaces that are currently using the existing ROW on U.S. 301 for parking. This project's improvements will require the use of most of the existing ROW for widening to three lanes on U.S. 301, reducing the amount of parking available for some businesses. The FDOT will coordinate with the City of Zephyrhills, Pasco County and property owners on U.S. 301 to create additional parking wherever feasible on side streets near the businesses affected.

1.2 RECOMMENDATIONS

The Recommended Alternative is a one-way pair system using 6th Street southbound and U.S. 301 northbound. In this alternative, 6th Street and U.S. 301 will be three lane urban streets. The urban section for both of these streets has three 11 foot travel lanes, a four-foot bicycle lane and five-foot sidewalks on each side. The lane widths were narrowed to 11 feet to allow for a wider border width, making it easier to connect to existing grade at the back of sidewalk. The FDOT Design Department recommended this change, noting the design speed of 40 mph and the low truck traffic (24 hr T = 5.5%). An underground pipe system is proposed to convey storm water to retention ponds. See Figure 8-3.

The Recommended Alternative requires 60 feet of ROW on 6th Street and U.S. 301. Although the proposed one-way typical sections fit inside the existing ROW for U.S. 301 and 6th Street, ROW is needed to connect 6th Street with U.S. 301 at the south end of the project. In order to allow for a continuous flow of traffic on 6th Street to U.S. 301 at the south end of the project, smooth transitions with reverse curves are planned, beginning just north of the existing S.R. 39 intersection. The curves were designed to minimize the environmental affects and ROW costs. ROW is also required for pond sites. See plan sheets in Appendix B for proposed ROW requirements to extend 6th Street to U.S. 301. The preferred pond sites are shown on Figure 9-1.

Since the Recommended Alternative is a one-way pair system, there are no restrictive medians proposed for most of the project's length. There is, however, a raised median proposed from the new SR 39 intersection to Fir Avenue, where U.S. 301 transitions from a four lane divided road to the one-way pair. At a meeting of the Median Review Committee on May17, 2001 it was

agreed that there would be full median openings at Tucker Road and Palm Grove Avenue, to allow for left turns and U-turns in this four lane section of U.S. 301.

Special Features

It is recommended that additional pavement be added on the northeast corner of Palm Grove Avenue to allow for cars and small trucks to make U-turns. See plan sheet 2 in Appendix B.

SECTION 2.0

INTRODUCTION

2.1 OVERVIEW

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study for the improvement of U.S. 301 (S.R. 41) between S.R. 39 and C.R. 54, in Pasco County, Florida a distance of approximately 2.6 miles. Figure 2-1 illustrates the location and limits of the project and its relationship to the regional highway system.

The objective of the PD&E Study is to provide documented information and analyses which will help the FDOT and the Federal Highway Administration (FHWA) reach a decision on the type, design and location of the necessary improvements along U.S. 301 to accommodate the future traffic demand in a safe and efficient manner. The PD&E Study satisfies the requirements of the National Environmental Policy Act (NEPA) and other federal and state requirements in order to qualify the future design, Right of Way acquisition, and construction phases of the project for federal funding and implementation.

This report documents the information necessary to confirm the need for this project and develops and evaluates various improvement alternatives as they relate to the transportation facility. Information relating to the engineering and environmental characteristics essential for alignment criteria were set and alternatives were developed. Comparison of alternatives was based on a variety of parameters using a matrix format. This analytical process identifies the alternative that would have the least impact while providing the necessary improvements. The design year of the analysis is Year 2025. The No-Build Alternative is considered a viable alternative throughout this PD&E Study.

2.2 PURPOSE

This report identifies the current and future deficiencies that should be expected along U.S. 301 if the existing geometric characteristics are maintained, and presents feasible improvement alternatives that will meet future traffic demands. This report documents the development of all

improvement alternatives after consideration of socioeconomic, cultural and environmental effects. This Final draft presents the Recommended Alternative and the reasons for its selection.

2.3 PROJECT DESCRIPTION

The U.S. 301 (S.R. 41) corridor is a north/south principal arterial facility that traverses through Tampa, Zephyrhills, Dade City, and continues north. The location and limits of the project are shown in Figure 2-1. Appendix A of this report includes copies of roadway maps and the Department's straight line diagrams illustrating all intersecting streets and roadways. The project is located partly in unincorporated Pasco County, from S.R. 39 to C Avenue. The section from C Avenue north to C.R. 54 is in the City of Zephyrhills.

The existing roadway is a two lane rural road with four foot paved shoulders. A one-way pair was created in 1996 by the City of Zephyrhills using 6th and 7th Streets as an alternate route to U.S. 301. The City's one-way pair system begins at A Avenue for northbound traffic on 7th Street and ends at C Avenue for southbound traffic on 6th Street. This Study considered the extension of the one-way streets, continuing 6th and/or 7th Street one-way to S.R. 39.

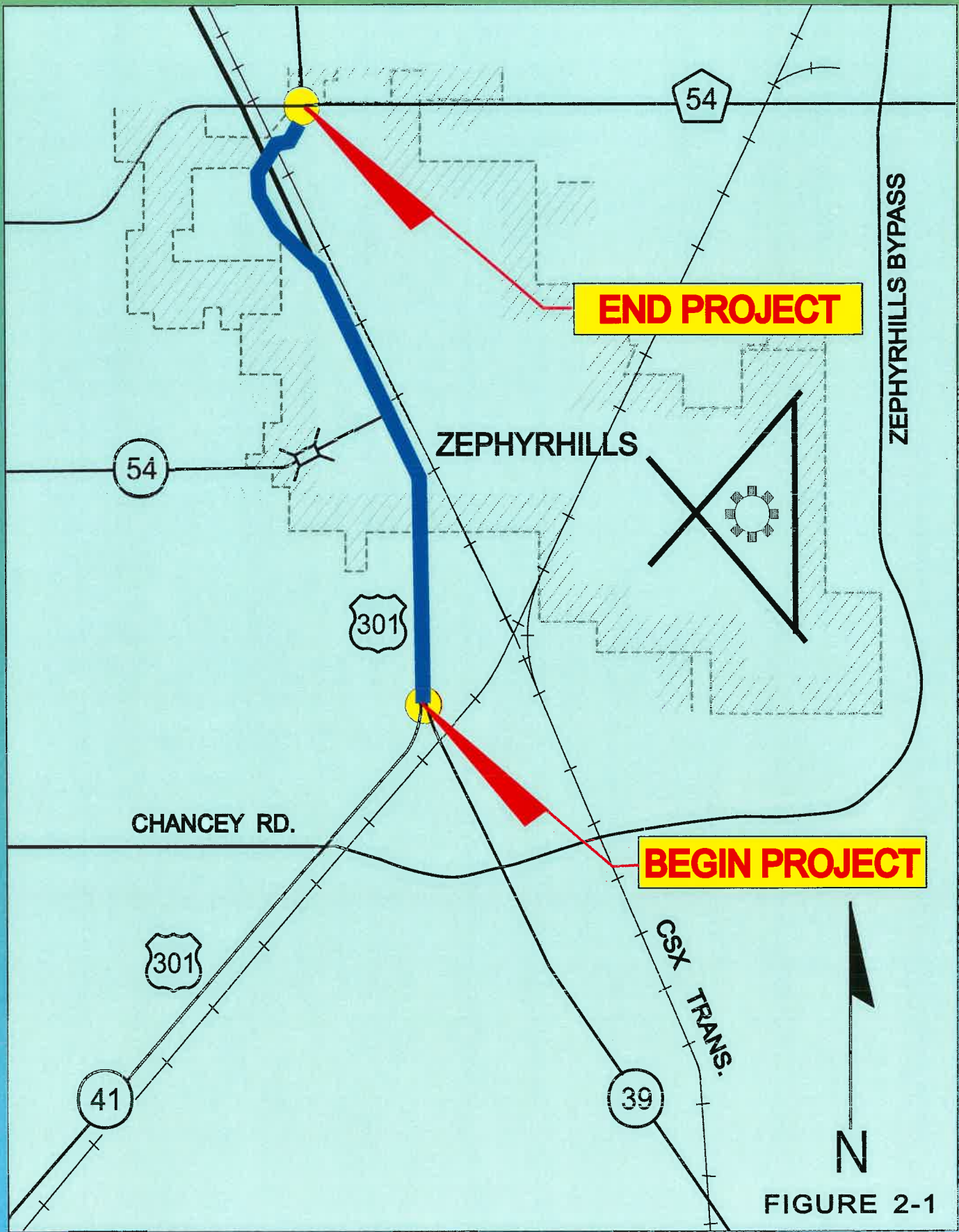


FIGURE 2-1



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

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



SECTION 3.0

NEED FOR IMPROVEMENT

3.1 DEFICIENCIES

U.S. 301 between S.R. 39 and C.R. 54 is a two lane roadway, which has operated since its construction without any major improvements. The project begins at the apex with S.R. 39 where S.R. 39 and U.S. 301 (each currently two lanes) merge into one, two lane roadway. Traffic on S.R. 39 is also expected to increase. A PD&E Study was recently completed on S.R. 39 from I-4 to U.S. 301 (WPI Seg. No. 255099 1 and No. 256298 1), with FHWA approval received on Nov.17, 2000. The S.R. 39 Study recommended widening from two lanes to four lanes.

The Average Annual Daily Traffic (AADT) for the year 2000 along U.S. 301 was 17,300. The existing one-way pair system of 6th and 7th Streets currently has an AADT of 10,000 for a total of 27,300 for the three roads. The projected year 2025 AADT for the one-way pair system of 6th Street and U.S. 301 is 38,200 with three lanes in each direction.

To accommodate the expected continued growth in traffic, this section of U.S. 301 will require six travel lanes, three in each direction. For a more detailed explanation of traffic volumes and analysis, see Section 6 of this report, which summarizes the Traffic Technical Memorandum for this project.

3.2 SAFETY

The high traffic volumes in this section of U.S. 301 currently exceed the capacity of the two lane roadway, which increases the probability of crashes. Currently, there are approximately 2.5 crashes per million vehicle miles, which is above the statewide average of 0.7 crashes per million vehicle miles for similar two lane roadways. By the year 2025, the entire project length will be operating at a Level of Service (LOS) E, which is below the minimum desired LOS standard of C for a "Transitioning Urbanized Area".

For the years 1993-1997 there were a total of 63 crashes on this section of U.S. 301. Rear-end collisions accounted for 25 of the 63 crashes. Improving the LOS to lessen congestion should reduce the number of rear-end collisions.

(See Section 4.1.9 for a summary of crash data.)

3.3 CONSISTENCY WITH TRANSPORTATION PLAN

The Pasco County Metropolitan Planning Organization (MPO) has the responsibility of developing a Long Range Transportation Plan (LRTP) for the county to serve the needs of the metropolitan area over the next 20 to 25 years. The adopted 2020 LRTP, updated in 1999, has identified 6th Street and/or 7th Street to be extended as one-way roads with two lanes in each direction. The LRTP calls for 6th Street to be extended south from C Avenue (where the existing road becomes two-way) to connect with U.S. 301 just north of S.R. 39. The LRTP also calls for 7th Street to be extended south from A Avenue (where the existing road ends) to connect with U.S. 301 just north of S.R. 39.

The Department has requested that the Pasco County MPO amend their Plan to change the northern limit from A Avenue to C.R. 54. Although 6th and 7th Streets are already two lane, one-way roads north of A Avenue, the sections from A Avenue north to C.R. 54 will have to be improved to handle the additional traffic volumes and truck traffic anticipated after the one-way roads are extended. The PD&E Study was extended to C.R. 54 to evaluate the effects of the additional traffic on 6th and 7th Streets.

3.4 SOCIAL/ECONOMIC DEMANDS

According to population projections from Pasco County and the regional traffic model developed by FDOT's Planning Department, travel demand is expected to continue to grow in this area. Most of the land on both sides of U.S. 301 is zoned as mixed-use, which allows commercial, industrial, and residential uses. The future land use of this area is planned to be mixed use.

The entire area of East Pasco County is growing, including the City of Zephyrhills and surrounding areas. The City of Zephyrhills is considering annexing property to the north of its current boundaries.

The City of Zephyrhills is also planning a number of road improvement projects to improve traffic flow. To accommodate a manufacturing plant (United Auto) to be built on Tucker Road, 20th Street is to be extended south to Chancey Road. This will allow trucks to reach the plant using U.S. 301, S.R. 39 and Chancey Road without traveling through U.S. 301 in the City limits. The City is also planning on creating an alternate north/south route to U.S. 301 using 7th Street, Fort King Highway, and Green Slope Drive by extending it to Fort King Highway. These projects will help improve traffic flow in their respective areas of the City of Zephyrhills. However, the effect of these improvements will have only a slight effect on the traffic volumes on U.S. 301.

3.5 MODAL INTERRELATIONSHIPS

There are no rail, mass transit, or High Occupancy Vehicle (HOV) lanes planned for U.S. 301. Zephyrhills Municipal Airport, located about one mile east of U.S. 301 in Zephyrhills, serves small private aircraft. The improvement of this section of U.S. 301 will also improve travel to and from the airport, since U.S. 301 is the principal north/south roadway in the Zephyrhills area.

SECTION 4.0

EXISTING CONDITIONS

4.1 EXISTING ROADWAY CHARACTERISTICS

4.1.1 Functional Classification

Based on AASHTO's functional classification, U.S. 301/S.R. 41 is classified as an urban principal arterial.

Classifications of other important roads in the study area are:

S.R. 39: Rural Minor Arterial

S.R. 54: Minor Arterial

4.1.2 Typical Sections

Throughout the project limits, U.S. 301 is currently a two lane rural roadway with 12 ft wide lanes, 4 ft paved shoulders, and drainage ditches. The existing Typical Section is shown in Figure 4-1. Both 6th and 7th Streets are currently 2 lane local streets with 10-12 ft lanes. A section of 6th Street from Vinson Avenue to Alston Avenue is unpaved.

4.1.3 Pedestrian and Bicycle Facilities

There are no existing pedestrian facilities on U.S. 301, 6th, or 7th Streets. The existing 4 foot paved shoulders on U.S. 301 are available for bicycle use.

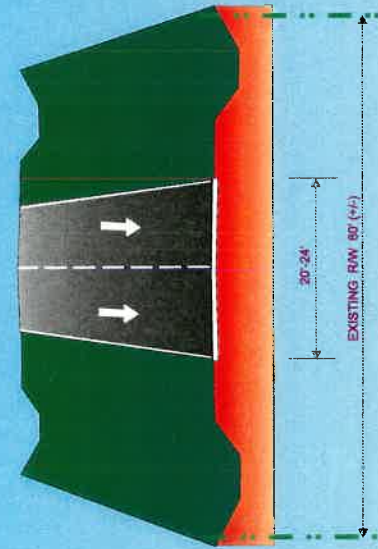
4.1.4 Right of Way

The existing ROW width was obtained from FDOT ROW maps, Redi-Maps and Plat books. The existing ROW is approximately 60 feet for both 6th and 7th Streets. U.S. 301 also has approximately 60 ft of ROW for the majority of the project, from Palm Grove Street to 12th Avenue (See Figure 4-1). From Palm Grove South to the apex of S.R. 39 and U.S. 301, the ROW widens to about 100 feet. On the north end of the project, the ROW widens to 200 feet as U.S. 301 transitions to a four lane divided road north of Geiger Road.

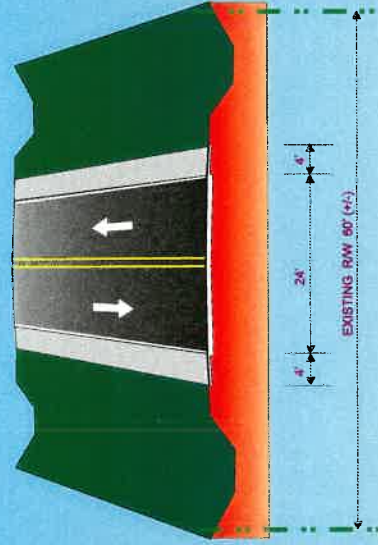
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IN ZEPHYRHILLS
FROM S.R. 39 TO C.R. 54**

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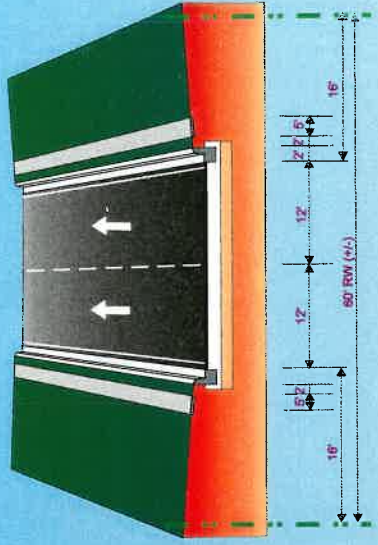
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6TH STREET



U.S. 301



7TH STREET

**EXISTING
TYPICAL SECTIONS**



FIGURE 4 - 1

4.1.5 Horizontal Alignment

Table 4-1 summarizes the existing horizontal alignment characteristics of the project based on information obtained from FDOT ROW maps and a baseline alignment survey completed in November 1998.

**TABLE 4-1
EXISTING HORIZONTAL ALIGNMENT CHARACTERISTICS ALONG U.S. 301**

CURVE P.I. BASELINE STATION	DEGREE OF DEFLECTION	TANGENT BEARING	RADIUS (Feet)	DIRECTION OF DEFLECTION
350 + 00				
		N 42° 39' 32" E		
385 + 87.17	42° 45' 26"		2521.76	Left
		N 00° 05' 54" W		
448 + 21.53	25° 17' 25"		739.30	Left
		N 25° 23' 19" W		
493 + 24.82	19° 25' 04"		3819.72	Left
		N 44° 48' 23" W		
503 + 96.67				

4.1.6 Vertical Alignment

Vertical Alignment information was obtained from as-built construction plans for a previous project on U.S. 301. A summary of the vertical alignment is provided in Table 4-2.

All vertical curves meet the minimum requirements for sight distance and Plans Preparation Manual Standards for minimum curve length.

TABLE 4-2
EXISTING VERTICAL ALIGNMENT ALONG U.S. 301

OLD PROJECT STA. NO.	APPROX. STA. NO.	PERCENT GRADE	VPI ELEVATION (FT)	CURVE LENGTH (FT)
730 +20				400
		- 0.09		
228 + 50	373 + 04.37		72.50'	400
		+0.19		
239 + 00	383 + 54.37		81.50'	400
		+0.19		
248 + 00	392 + 54.37		77.87'	400
		+0.374		
254 + 00	398 + 54.37		78.97'	400
		+0.191		
260 + 00	404 + 54.37		80.65'	400
		+0.28		
267 + 00	411 + 54.37		81.28'	400
		+0.09		
273 + 00	417 + 54.37		83.56'	400
		+0.98		
279 + 00	423 + 54.37		82.48'	400
		-0.18		
10 + 41.78	433 + 54.37		84.18'	450
		+0.17		
16 + 50	439 + 65.24		82.96'	400
		+0.0618		

OLD PROJECT STA. NO.	APPROX. STA. NO.	PERCENT GRADE	VPI ELEVATION (FT)	CURVE LENGTH (FT)
31 + 50	454 + 65.24		88.50'	400
		+0.5474		
38 + 70	460 + 85.24		93.60'	300
		+0.8226		
43 + 00	466 + 15.24		89.00'	400
		-0.5479		
47 + 90	471 + 05.24		94.78'	300
		+1.1796		
57 + 80	480 + 65.24		81.50'	440
62 + 00		-1.3111		
	485 + 15.24		86.80'	400
		+1.1905		

4.1.7 Drainage

A Draft Location Hydraulic Report (LHR)¹ has been prepared for the U.S. 301 PD&E Study. This section presents a summary of findings from these efforts.

4.1.7.1 Soils Information

The Soils Conservation Service (SCS) Soil Survey of Pasco County (see Figure 4-2) was used to identify the soils within the project corridor. The table below summarizes the soils within the project limits. Most of the soil type is Tavares-Urban Land Complex, which is characterized by heavy urbanization. In general, the soils are uplands, nearly level to sloping, moderately to well-drained soils that are sandy throughout. All of the soil types within the project are type A soil,

¹ Location Hydraulic Report; FDOT Drainage Report, February 2000

which have high infiltration rates (low runoff potential). The water table is expected to be relatively deep (seasonal high at a depth of 3.5 feet or greater).

Table 4-3
Summary of Pasco County USDA / SCS Soil Survey

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

4.1.7.2 Base Floodplains

The 100-year (base) floodplain has been established for the Lake Zephyr Watershed and is shown in Figures 4-3a and b. The Lake Zephyr floodplain is located adjacent to Zephyr Creek and extends eastward to U.S. 301. Flood profiles along Zephyr Creek have been developed and can be seen in the Pasco County Flood Insurance Study (revised 1992).

Although not identified by the Federal Flood Insurance Administration as a floodplain, the area east of U.S. 301 can also be considered floodplain. The area is characterized by isolated closed basins with no positive outfall. Therefore, encroachment into these basins, (especially with the alternative that involves 7th Street) could be considered mitigatable as well. The extent of floodplain encroachment on basins associated with 7th Street would greatly depend on where the 7th Street extension traverses the basin. If the extension traverses the basin's low point thereby removing storage the encroachment would be greater and loss of volume would need to be

provided in a pond. If the extension traverses the outer limits of the basin and avoids the low point, then the encroachment into to the basin's floodplain would be minimal or none. The amount of encroachment within the floodplain varies depending on which typical section alternative is used. Filling of the floodplain would occur longitudinally in the floodplain on the west side of U.S. 301 and transversely on the east side of U.S. 301.

The project will not support base floodplain development that is incompatible with existing floodplain management programs. It is anticipated that compensating storage ponds will likely be required to offset the impact.

4.1.7.3 Regulated Floodways

There is no regulatory floodway involvement on the proposed project.

4.1.7.4 Existing Stormwater Management Facilities

Presently, three stormwater management facilities are located within the project limits. All three ponds are owned and operated by the City of Zephyrhills. The first pond is located adjacent to 7th Street, east of U.S. 301 between A Avenue and South Avenue. The pond was constructed in 1995 in conjunction with the City of Zephyrhills one-way pair extension of 7th Street. The pond accepts runoff from the improved 7th Street and adjacent property only. The dry pond has no outfall and a high infiltration rate. Double ring infiltrometer (DRI) test results indicate an average infiltration rate of 17 feet per day.

The second pond is located near the middle of the project, north of 6th Avenue, east of U.S. 301 (across from The Clock Family Restaurant). The pond accepts runoff from approximately 40 acres of surrounding area. The pond is owned and operated by the City of Zephyrhills whose City Hall is located due east of the pond. The pond is equipped with a pump station and force main which discharges west to Lake Zephyr. The City of Zephyrhills has expressed a desire to increase the pumping capacity of the pond to help alleviate some flooding problems associated with the pond. No Southwest Florida Water Management District (SWFWMD) permit exists for this pond as it was constructed prior to SWFWMD permitting requirements in the 1960's.

A third pond is located at Zephyrhills Elementary School west of U.S. 301 at 14th Avenue. The pond receives runoff from east of U.S. 301 and pumps to Lake Zephyrhills. This pond was originally a Pasco County pond but has since been modified and is now permitted through SWFWMD with the City of Zephyrhills as owner and operator.

4.1.7.5 Existing Cross Drains

Field reviews were performed to examine each cross drain. Existing cross drain information was taken from original construction plans or old drainage maps and is summarized in Table 2 below.

Any proposed modifications to existing cross drains will result in no changes to floodplain flood levels. All drainage features will be developed in accordance with FDOT drainage standards and procedures.

**Table 4-4
Existing Cross Drain Information**

Structure No.	Approx. Location	Size/ Description	Length (ft)	Invert Elevations		Flow Direction	Area of Basin (ac)
				West (ft)	East (ft)		
S-1	U.S. 301/ Fir Ave.	1 - 24" RCP	57.0	75.0	75.0	W-E	8.0
S-2	U.S. 301/ 11 th Ave.	1 - 18" RCP	39.0	81.92	81.56	W-E	9.0
S-3	U.S. 301/ 14 th Ave. / Ft. King Rd	1 - 12" RCP	50.0	81.53	81.64	E-W	60.0

4.1.8 Geotechnical Data

In the design phase of the project, it is recommended that a geotechnical investigation be performed at each recommended pond site. The SCS Soil Survey (see section 4.1.7.1) was used

to approximate the depth to seasonal high water table, since no soil borings were performed. For the purposes of preliminary pond site analysis a depth of 3.5 feet was assumed for the seasonal high water table.

4.1.9 Crash Data

The most recent five-year crash history for the project corridor was reviewed to determine if there is a significant crash problem. The Department's crash files indicated 7 crashes in 1993, 9 crashes in 1994, 11 crashes in 1995, 16 crashes in 1996, and 20 crashes in 1997. The 63 crashes included 25 rear end, 13 angle, 5 left turn, 4 sideswipe, 4 bicycles, 3 head-on, 3 others, 2 overturned, 2 right turn, and 1 pedestrian, and 1 backed into.

Seventy-seven percent of the crashes occurred during the day and 90 percent occurred on a dry pavement. Seventy-nine percent of the crashes resulted in injuries. The breakdown of the crash analysis is as follows:

**TABLE 4-5
Crash Data Summary**

Section 14050, S.R. 39, U.S. 301, from apex of S.R. 39 (M.P. 3.774) to "A" Avenue (M.P. 4.583)												
Number of Crashes Involving												
YEAR	REAR END	RIGHT ANGLE	LEFT TURN	SIDE- SWIPE	HIT BIKE	HEAD ON	OVER- TURNED	RIGHT TURN	OTHERS	TOTAL	INJURY	FATALITY
1993	1	1	0	1	1	2	0	0	1	7	6	0
1994	4	2	0	1	0	0	1	0	1	9	7	0
1995	3	2	2	1	0	1	0	1	1	11	5	0
1996	8	5	2	0	0	0	0	0	1	16	13	0
1997	9	3	1	1	3	0	1	1	1	20	19	0
TOTAL	25	13	5	4	4	3	2	2	5	63	50	0

For the five-year period investigated, the most common type of crash was rear end collisions (25 total). This type of crash commonly occurs on road segments, which are operating above capacity, with traffic backups causing the need for sudden stops and slow speeds. Relieving the traffic congestion by adding through lanes proposed on this project should reduce the number of rear end crashes.

4.1.10 Traffic Signals, Locations and Intersection Design

There are six traffic signals within the project limits: at South Avenue, S.R. 54 (5th Avenue), 12th Avenue, North Avenue, Ft. King Highway, and C.R. 54. Turning movement counts were taken at each of these signalized intersections to perform a detailed analysis. See Section 6 of this report for traffic data and analysis. The existing intersection lane configurations are shown on Figure 4-4.

4.1.11 Lighting

There is no existing overhead street lighting on U.S. 301, 6th, or 7th Streets within the project limits.

4.1.12 Utilities

A *Utility Assessment Package* (FDOT District 7 Utilities, May 2001) was completed for this project. In order to ultimately evaluate potential utility conflicts associated with the most feasible improvements alternative, all available information must be obtained concerning the location and characteristics of major existing or proposed utilities with the U.S. 301 corridor.

Description of Utilities

A description of the existing facilities indicated by the utility owners are summarized below:
(Plans showing the location of existing utilities are in the *Utility Assessment Package*.)

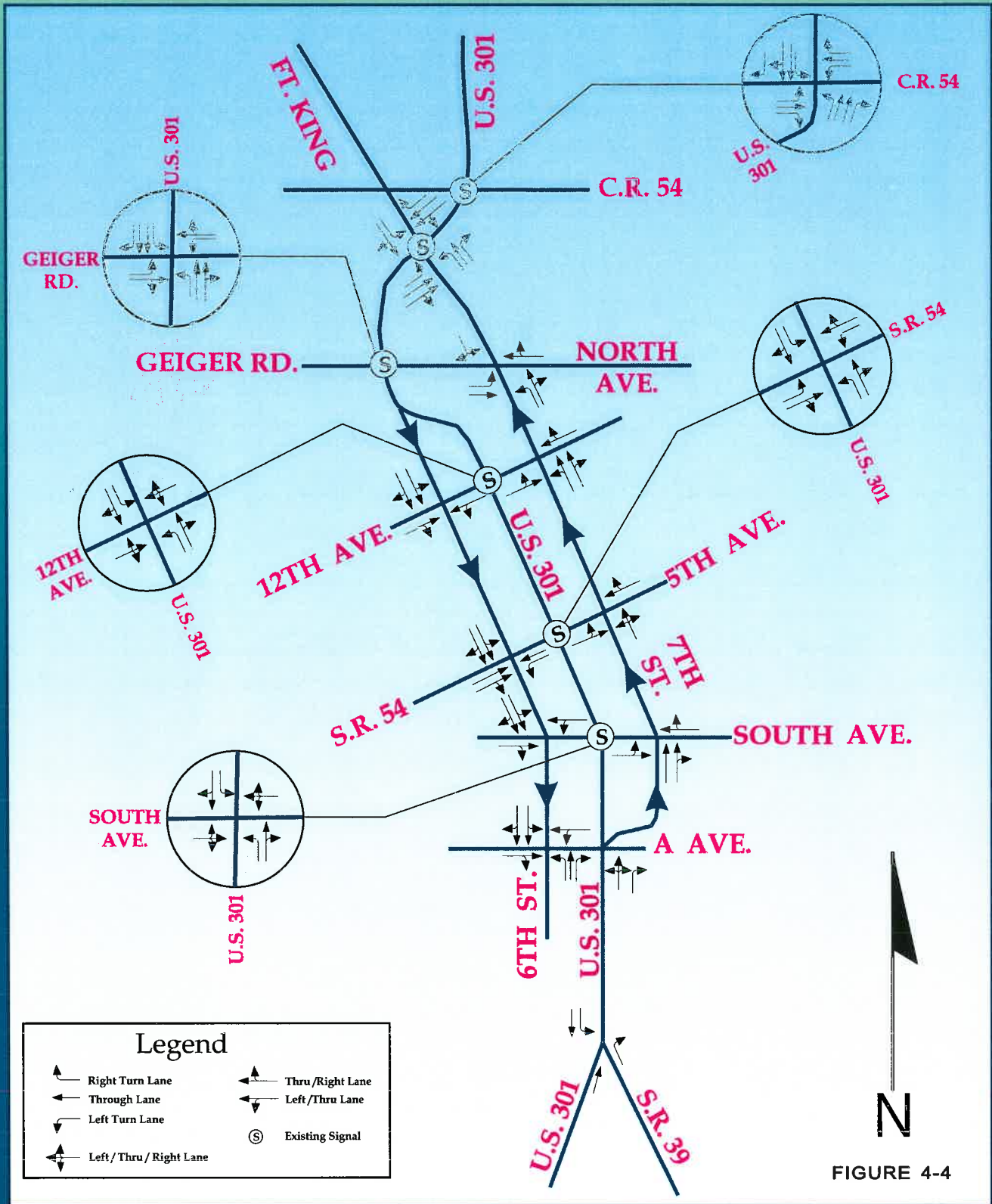


FIGURE 4-4



EXISTING INTERSECTION
LANE CONFIGURATIONS



Florida Power Corporation: Distribution

There are distribution lines through out the project on US 301 and 6th Street with numerous lines connecting side streets and service drops to businesses and residences.

Zephyrhills Bottled Water:

While not a utility Zephyrhills Bottled Water has a 10” stainless steel water line that comes from Crystal Springs to their water plant on 20th Street. The line is buried along the old US 301 in front of Zephyr Senior Mobile Home Park, it crosses US 301 and SR 39 at Tucker Road and proceeds East down Tucker to 20th Street.

Moffat Communications: Cable TV

There is aerial and buried cable throughout the project on US 301 and 6th Street. The buried lines typically run parallel to the roads the aerials are typically crossings.

Verizon Florida: Telephone

There are multiple buried cables, fiber optic lines and conduit/manhole systems throughout the project, there is a 16-way conduit system feeding into the Verizon building at A Ave. and US 301. There is one run of aerial cables on the right side of US 301 from the junction with SR 39 to just north of the Firestone Tire store.

TECO Peoples Gas:

TECO Peoples Gas has a 6” PE line on the right side of SR 39 placed 24’ off the C/L roadway, between Tucker Road and the junction with US 301 a 4” PE line crosses over to US 301 and runs South on the right side of the road. The 6” PE line continues North maintaining 24’ off C/L roadway to 7th Street were it turns and follows 7th Street north. There is a 2” PE line crossing at 6th Ave. The 6” line reenters the DOT right-of-way at the NE corner of North Ave. and US 301.

City of Zephyrhills: Water Mains

US 301: The city has short runs of 2” WM parallel with the road at United 500/Plymale to Fir Ave., Stebbins Ave. to Justin Ave., Big A Auto Parts to B Ave., 3rd Ave. to Moody’s Hardware,

Town Centre to 6th Ave. and 10th Ave. to 11th Ave. There is a 2” WM crossing at Vinson Ave., a 4” WM at South Ave., 6” WM crossings at Fir Ave., Alston Ave., B Ave., 7th Ave. and 16th Ave. There are 8” WM crossings at 5th Ave. and 12th Ave.

6th Street: The bulk of the city utilities affected by the project area on this street. On the right side there is a 2” WM from Vinson Ave. to a tee at B Ave., from the tee a 6” WM goes to 3rd Ave. where it crosses 6th Street and turns West on 3rd Street. A 2” Wm continues from 3rd Ave. to a connection at 5th Ave., from this connection a 6” WM goes to a tee at 7th Ave. where it turns and goes E/W on 7th. Beginning at a tee at 11th Ave. a 2” WM to a connection at 16th Ave. Beginning at 5th Ave. there is an 8” WM on the left side of the road to 15th Ave. where it turns West on 15th.

City of Zephyrhills: Sewer Mains

There is one 8” FM crossing US 301 and 6th Street on the North side of 5th Ave.

Utility Relocation Cost Estimate

Several utility distribution lines are located within the existing U.S. 301 ROW, including aerial and buried power lines, aerial and buried telephone cables, aerial cable television lines, potable water mains, force mains, and gas mains. Depending on their location and depth, implementation of the recommended improvements for the project may require adjustment of some of these facilities. The utility companies below provided an estimate of utility relocation costs.

City of Zephyrhills:

The bulk of the city’s system in the project limits is on 6th Street and would be reimbursable. The facilities on US 301 that would carry an impact to the city consists of 2” service lines parallel to the road and 4”, 6”, and 8” crossings.

Facility	Linear Feet	Costs	Totals
2” Pipe	2230	\$11.17	\$24,909.10

4" Pipe	80	\$12.00	\$ 960.00
6" Pipe	420	\$10.50	\$4,410.00
8" pipe	310	\$62.19	\$19,278.90
Pipe Removal	3,565	\$6.49	\$23,136.85
		Total	\$72,694.85

TECO Peoples Gas:

Costs are taken from State bid.

Facility	Linear Feet	Costs	Totals
4" Pipe	620	\$18.90	\$11,718.00
6" Pipe	4,420	\$25.00	\$110,500.00
Pipe Removal	5,040	\$6.49	\$32,709.60
		Total	\$154,927.60

Moffat Communications: Cable TV

Moffat provided approximate costs for relocation of \$6.50 per foot for buried cable, \$5.00 per foot for aerial cable, this would put total relocation costs of the existing cables in the neighborhood of \$160,000.

Verizon Florida: Telephone:

No response to costs request.

Florida Power Corporation:

No response to costs request.

Recommendations

The only utility facility out of the ordinary in the project limits is Verizon's central office building at US 301 and A Avenue. The type and amount of cable and fiber optic lines tied into the Central Office would make relocation efforts extremely expensive, careful coordination with Verizon in the design phase could help alleviate some of these costs.

4.1.13 Structural and Operational Conditions

Sixth Street is currently a two lane road, which diverts some southbound traffic away from U.S. 301 through downtown Zephyrhills. It has one-way southbound traffic from its connection with U.S. 301 near 16th Avenue to C Avenue, where it becomes a two-way road from C Avenue south to Vinson Avenue, where it ends. If 6th Street is to be used as part of a one-way pair system, additional ROW will be required from Vinson Avenue south to connect to U.S. 301.

Seventh Street was changed to a one-way northbound roadway by the City of Zephyrhills in 1995 to divert traffic off U.S. 301 in the downtown area. It connects with U.S. 301 at A Avenue north of the GTE building with a two lane curb and gutter section, and reconnects with U.S. 301 near Ft. King Highway. If 7th Street were to be used as part of a one-way pair, additional ROW would be required from A Avenue south. Extending 7th Street south would result in many residential relocations at a Mobile Home Park and single-family homes.

A Streetscape project on 5th Avenue in downtown Zephyrhills was recently completed. This project improves the landscaping and parking along 5th Avenue, which is the center of the downtown area.

4.1.14 Railroad Crossings

There are no railroad crossings within the project limits.

4.1.15 Posted Speed Limits

The existing posted speed limit for U.S. 301 is 35 mph. Sixth and Seventh Streets are local streets with a maximum speed of 30 mph.

4.2 EXISTING BRIDGES

There are no bridges within the project limits.

4.3 ENVIRONMENTAL CHARACTERISTICS

4.3.1 Land Use Data

The existing land use along U.S. 301 is mixed, with predominantly commercial use and some residences. The proposed future land use in the Pasco County Local Government Comprehensive Plan (LGCP) is to remain mixed. The City of Zephyrhills existing land use plan shows predominately commercial use along U.S. 301. The City's Future land use plan is for mixed use, to allow flexibility in development, such as high density residential use.

Maps of the existing and planned usage from the Pasco County LGCP are shown in Figures 4-5 and 4-6.

4.3.2 CULTURAL FEATURES

For a summary of the Cultural Resource Assessment Survey (CRAS) see Section 9.14.3 "Archaeological and Historical Resources" in this report.

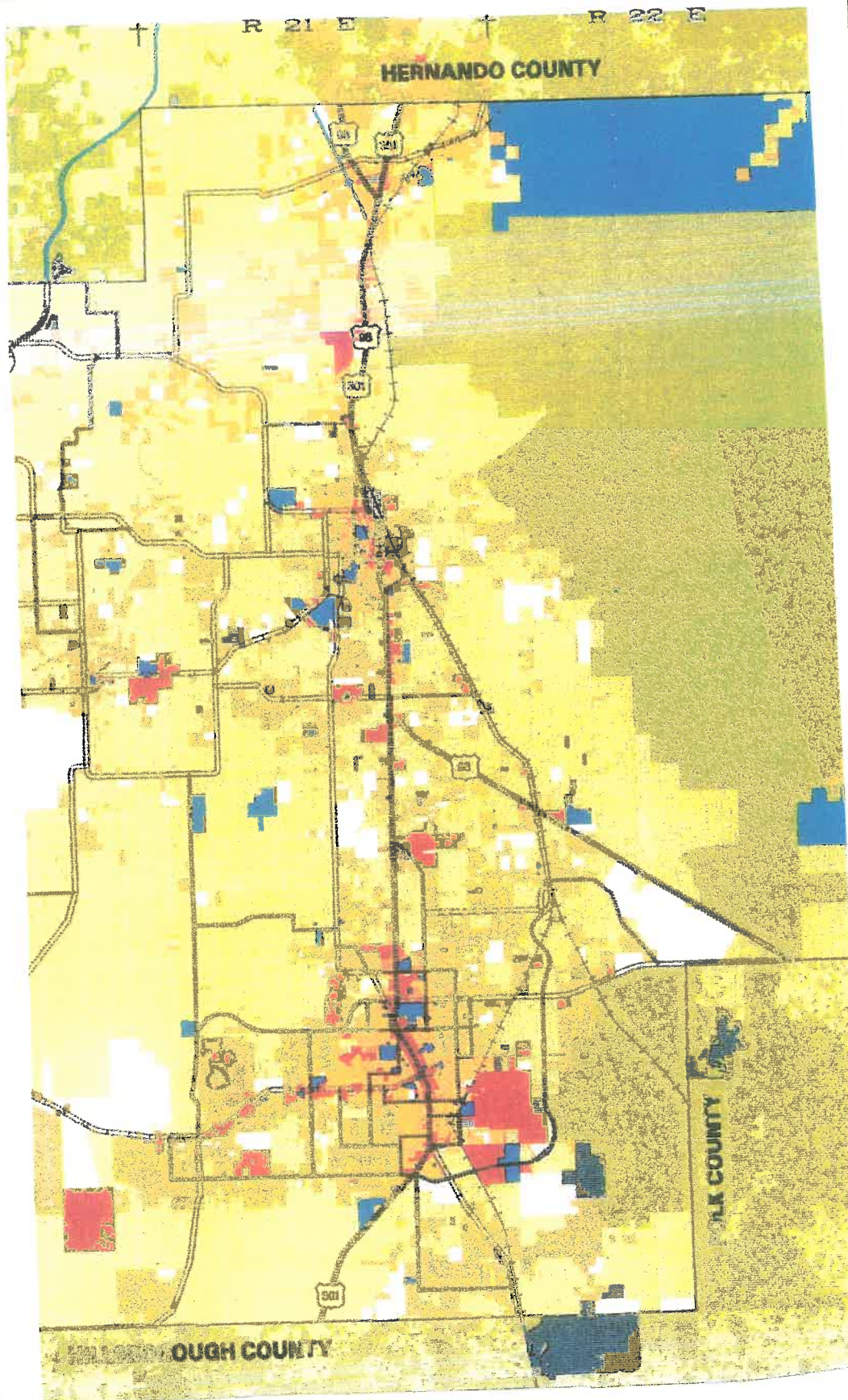
4.3.3 Natural and Biological Features

A Wetland Evaluation report and Biological Assessment was completed for this project in August 2000. This section summarizes the report. Suitable habitats for federally listed species were investigated by FDOT staff. The project corridor was mapped adhering to *Florida Land Use, Cover and Forms Classification System* (FDOT 1985). Surveys were then conducted in each habitat type for species known to occur or utilize the classified habitats. These surveys were performed in March of 2000.

The proposed improvements are located in an urbanized area of Zephyrhills. No native habitat exists along the Study corridor. No listed species were encountered during the field reconnaissance, nor are any species known to occur in the area.

FEDERAL SPECIES INVOLEMENT SUMMARY

The project has been evaluated for impacts on federally protected threatened and endangered species. A literature review was conducted to determine those possibly threatened or endangered



**THE COMPREHENSIVE PLAN
OF UNINCORPORATED
PASCO COUNTY**

**MAP # 2-10
GENERALIZED EXISTING
LAND USE
1995**












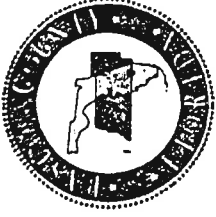
-  VACANT
-  SINGLE FAMILY
-  MOBILE HOME
-  MULTI FAMILY
-  COMMERCIAL
-  OFFICE
-  INDUSTRIAL
-  PUBLIC / SEMI PUBLIC
-  MINING
-  GENERAL AGRICULTURE
-  OPEN SPACE / WETLANDS

FIGURE 4-5

SOURCES:
ADJACENT LAND USES - SWFWMD - 1993
PASCO COUNTY PROPERTY APPRAISER - 1995



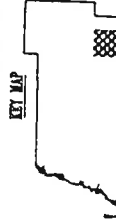
THE COMPREHENSIVE PLAN
OF UNINCORPORATED
PASCO COUNTY

FUTURE LAND USE MAP
T 26 S - R 21 E
SHEET 23

LEGEND

MI	MIXED USES
RE	RETAIL OFFICE/RESIDENTIAL
RES-1A	RESIDENTIAL-1A 2 1/4 ac/lot
RES-2	RESIDENTIAL-2 2 1/4 ac/lot
RES-3	RESIDENTIAL-3 1/2 ac/lot
RES-4	RESIDENTIAL-4 1/2 ac/lot
RES-5	RESIDENTIAL-5 1/2 ac/lot
RES-6	RESIDENTIAL-6 1/2 ac/lot
RES-7	RESIDENTIAL-7 1/2 ac/lot
RES-8	RESIDENTIAL-8 1/2 ac/lot
RES-9	RESIDENTIAL-9 1/2 ac/lot
AG	AGRICULTURE/GENERAL 2 1/4 ac/lot
AC	AGRICULTURE 1/2 ac/lot
CL	COASTAL LAND RES 1/2 ac/lot
AT	BLANK ATTRACTORS
CO	CONSERVATION LANDS
IR	INDUSTRIAL-HEAVY
IL	INDUSTRIAL-LIGHT
FP	BLANK PUBLIC/OPEN SPACE
OS	BLANK RESIDENTIAL/OPEN SPACE

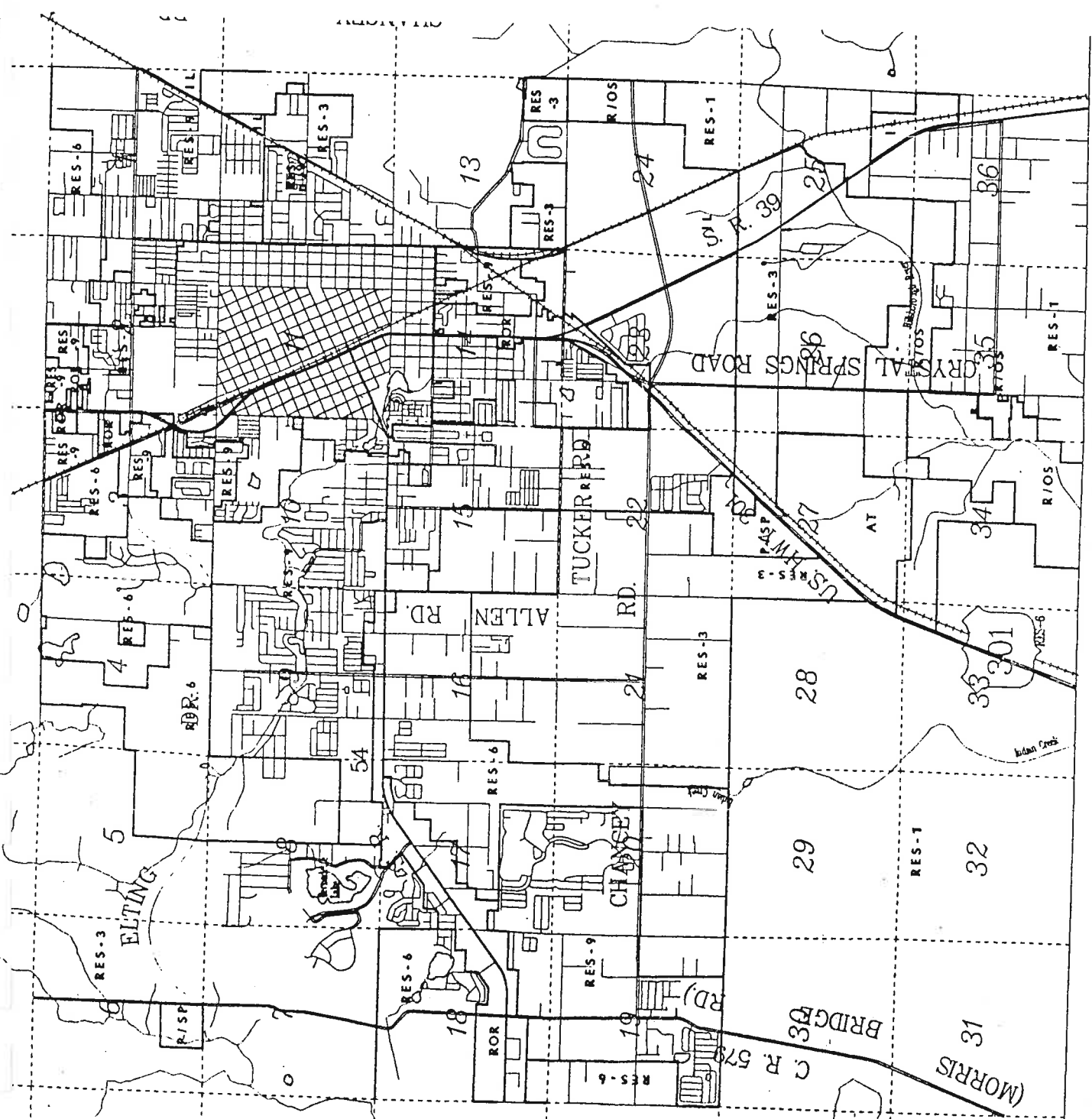
* ac/lot - Acreage units per gross acre



DATE ADOPTED 6/15/90
ORDINANCE # 90-13

REVISIONS:

DATE	BY	REVISION
11/23/90	SP-H	4/2/92



HILLSBOROUGH COUNTY

FIGURE 4-6

species, which may inhabit the project area.

Based on the above results of the literature review and the field surveys conducted for the proposed roadway improvements, the Department has determined that no federally listed threatened or endangered species will be affected by the project. Furthermore, the proposed project is not located in an area designated as critical habitat by the U.S. Department of the Interior. Therefore, FDOT on behalf of the Federal Highway Administration has determined that the proposed project will have "No Involvement" with any federally protected threatened or endangered species.

4.3.4 Hazardous Materials Sites

A Level I environmental site assessment was conducted along U.S. 301 from the apex at S.R. 39 to C.R. 54 in Zephyrhills, Pasco County, Florida. A Level I environmental site assessment was performed for properties along the proposed alignment and alternative alignments.

U.S. 301 from the apex at S.R. 39 to North Avenue is a two laned road situated in areas zoned as retail/office/residential north to C Avenue, then general commercial/community commercial to the project end (just north of C.R. 54 at Market Square Drive). The alternative alignments (6th Street and 7th Street) are zoned medium-density residential and community/general commercial respectively.

A number of alternatives were investigated. Some of the alternatives involve widening U.S. 301 to four lanes, two in each direction. A four lane divided section and a five lane section are being considered. These widening alternatives would require additional right-of-way between S.R. 39 and C.R. 54, from the east and/or west side of U.S. 301.

Two alternative alignments, 6th and 7th Streets are also being considered, using a one-way pair system instead of adding lanes to U.S. 301. The 6th Street alternative branches off U.S. 301 near Palm Grove Road and connects to the existing 60 feet of right-of-way of 6th Street near Alston Avenue. The 7th Street alternative branches off U.S. 301 near Palm Grove Road and connects to

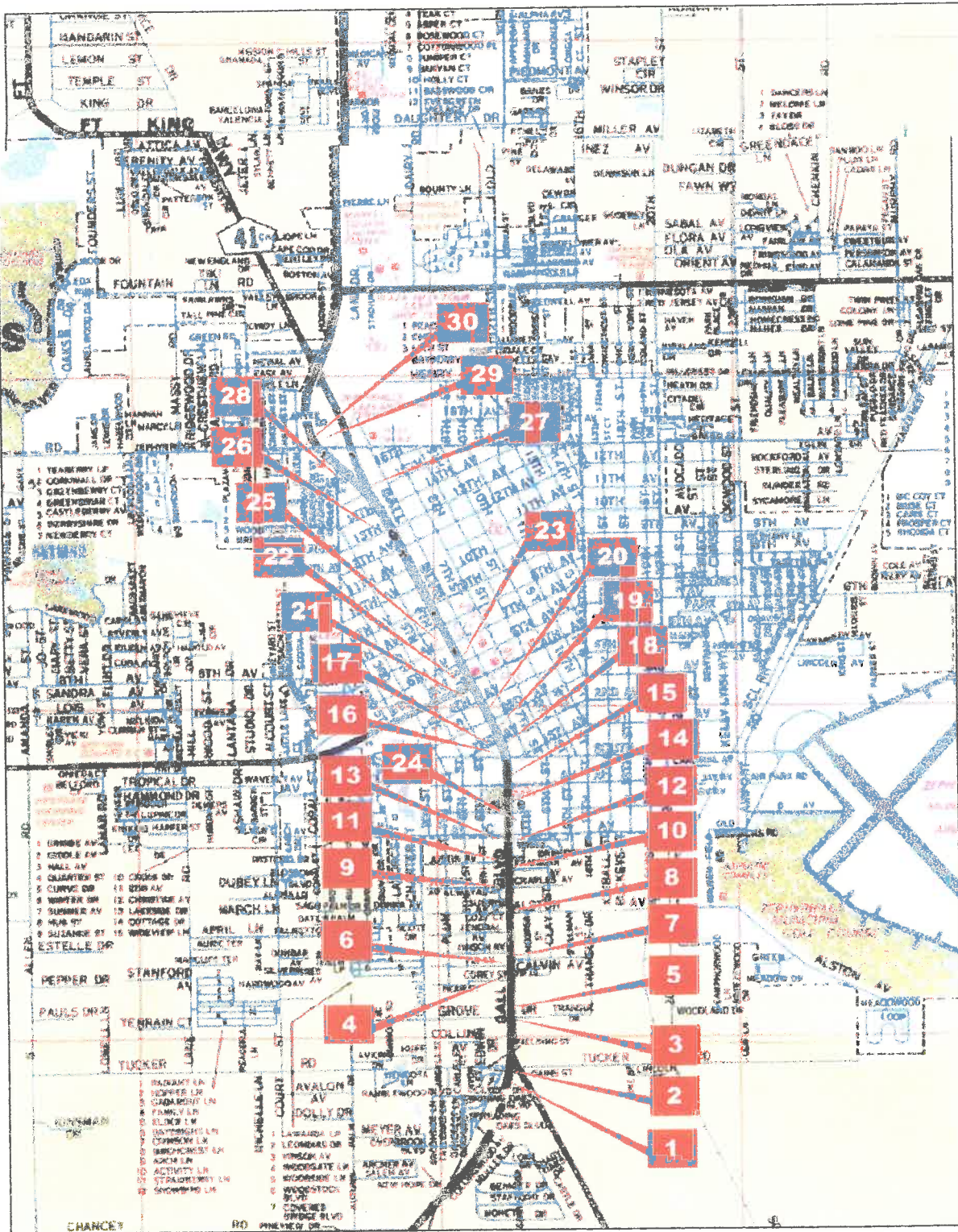
7th Street near Calvin Avenue. Additional right-of-way is also needed for the 7th Street alternative between Alston Avenue and C Avenue.

Several gas stations, former gas stations, auto support businesses, mobile home sales, auto sales, and restaurants are located along U.S. 301. Several potential sites of environmental concern were observed, and each site was visually assessed during the site inspection. Small quantities of debris, such as paper, bottles, and cans, were observed along the corridor. Power poles, overhead electrical lines, and drainage ditches were observed along most of the corridor.

Few of the sites along the existing U.S. 301 corridor would be likely to require remediation for improvements within the existing right-of-way. However, several properties that may be acquired along the proposed new alignments of 6th and 7th Streets would require further assessment. These properties include several mobile homes, Betty's Service Station, single-family residences, Vagabond Village R.V. Park, O.J.'s Restaurant and adjacent fruit stand, Donnelly Auto Sales, Zephyr Egg Company and numerous other commercial businesses. Since the majority of the properties located south of C Avenue use private wells and septic systems, a survey of each individual property to be acquired should be conducted.

Thirty sites were evaluated. Of the 30 sites, 5 received "Low" risk ratings, 23 received "Medium" ratings, and 2 received "High" ratings. For details, see Table 4-6. A map showing the location of the sites evaluated is on Figure 4-7.

Because of observed conditions during the site inspections and/or information obtained from regulatory personnel and database and file searches, further environmental assessment is recommended during the project's future design phase for the sites which scored "Medium" or "High" risk evaluation ratings.



MAP OF INVESTIGATED SITES
 U.S. 301 FROM THE APEX AT S.R.39 TO C.R.54
 ZEPHYRHILLS, FLORIDA
 Source: Rand McNally, 1991.



NOT TO SCALE

FIGURE 4-7

TABLE 4-6
Contamination Risk Evaluation Summary
U.S. 301 from the Apex of S.R. 39 to C.R. 54
Zephyrhills, Pasco County, Florida

Site No	Site Name	Site Address	SIC Code	ID Number	Contamination Concerns	Storage Tanks	Distance from proposed ROW (m/ft)	Evaluation Rating
1	Alan Chenkin Power Equipment	3918 Gall Boulevard (U.S. 301)	7699	NA	Fuel, waste oil, hydraulic oil, metals, solvents	N	15/50 E	Medium
2	Cumberland Farms Number 1401	3944 Gall Boulevard	5541	518519836	Petroleum	Y	12-18/40-60 E	Medium
3	Sure Thing Auto Repair	4112 Gall Boulevard	7538	NA	Fuel, waste oil	N	3/10 E	Medium
4	United 500 Number 559	4127 Gall Boulevard	5541	518519811	Petroleum	Y	Within ROW	High
5	Betty's Service Station	4218 Gall Boulevard	5541	518630307	Petroleum	N	Within ROW	Medium
6	Fruit Stand (former gas station)	NW corner of Gall Bldv/ Fir Avenue	5541	NA	Petroleum	Unknown	<3/10 W	Medium
7	Sav-a-Ton (Citgo)	4334 Gall Boulevard	5541	518626558	Petroleum	Y	Within ROW	Medium
8	Former Texaco Station	4444 Gall Boulevard	5541	518515076	Petroleum	Y	30.5/100 E	Medium

9	Dale's Firestone	4552 Gall Boulevard	7538	NA	Waste oil	N	12/40 E	Low
10	Zephyr Egg Co.	4622 Gall Boulevard	2099	518520066	Petroleum	Y	30.5/100 E	Medium
11	Norm's Tire Service (former gas station)	4644 Gall Boulevard	7534, 5541	519103284	Petroleum	N	6/20 E	Low
12	L&G Hood Company	4724 Gall Boulevard	7699	518630269	Petroleum, waste oil	N	7.6/25 E	Low
13	Upholstery Shop (former gas station)	4723 Gall Boulevard	7641, 5541	NA	Petroleum, solvents	Unknown	<3/10 E	Medium
14	Factory R. V. In-Park Service (former gas station)	4932 Gall Boulevard	7539, 5541	NA	Petroleum	Suspected	10.7/35 E	Medium
15	Fina Gas	4946 Gall Boulevard	5541	518520022	Petroleum	Y	6/20 E	Medium
16	The Doghouse (former gas station)	5009 Gall Boulevard	5541	NA	Petroleum	Suspected	6/20 W	Medium
17	D.J.'s Drive-In (former gas station)	5017 Gall Boulevard	5541	NA	Petroleum	Suspected	15/50 W	Medium
18	Strip Plaza (former gas station)	5014 Gall Boulevard	5541	NA	Petroleum	Suspected	21/70 E	Medium
19	Cumberland Farms Number 1015	5046 Gall Boulevard	5541	518519840	Petroleum	Y	9/30 E	Medium
20	Butterfield's Aluminum (former	5117 Gall Boulevard	5211, 5511	518520050	Petroleum	Suspected	<6/20 W	Medium

	car dealership)											
21	C. Fred Developers (former gas station)	5151 Gall Boulevard	5541	518519850	Petroleum	Suspected	7.6/25 W	Medium				
22	Champagne Sound (former gas station)	5233 Gall Boulevard	5541	518630085	Petroleum	N	<6/20 W	Low				
23	Don Olson Firestone (former gas station)	5240 Gall Boulevard	7538, 5541	519100970	Petroleum	N	10.7/35 E	Low				
24	GTE	704 A Avenue	4911	NA	Petroleum	Y	9/30 W	Medium				
25	Jo-Bob Sport Grill (former gas station)	5347 Gall Boulevard		NA	Petroleum	N	9/30 W	Medium				
26	Chris Bahr Plumbing	5729 Gall Boulevard		NA	Petroleum	Suspected	6.1/20 W	Medium				
27	Liberty Pawn and Coin	38050 15 th Avenue		NA	Petroleum	Suspected	9/30 W	Medium				
28	Circle K Number 0180	1507 Gall Boulevard		518519799	Petroleum	Y	Within ROW	High				
29	Hess Number 09415	6026 Gall Boulevard		518519846	Petroleum	Y	6.1/20 E	Medium				
30	Devco Number 428	1591 U.S. 301 North		518519669	Petroleum	N	24.4/80 W	Medium				

SECTION 5.0

DESIGN STANDARDS AND CRITERIA

5.1 DESIGN STANDARDS

Design Year: 2025 Design Period: 20 years

Flexible pavement design: Document 625-010-002

Design speed: 40 mph

Design Vehicle: WB-50

Lane widths: 11 feet (reduced from 12 feet May 21, 2001)

Cross Slopes: 0.02 standard

Superelevation: 0.05 Maximum

Vertical Alignment and curvature: Minimum length of curve = 300 feet
Minimum "K" value = 70 for crest curves
Minimum "K" value = 60 for sag curves (Not less than 3 X Design speed in mph expressed in feet)

Grades: Minimum 0.3 percent

Horizontal Alignment: Minimum length of curve = 15 X Design Speed = 600 feet
Minimum curve radius = 400 feet
Minimum curve radius using normal cross slopes (0.02) = 1528 feet (3°45' curve maximum)
Minimum radius in reverse cross slopes (0.02) = 533 feet (10° 45' curve maximum)

Major Intersections Control radii: 75 feet (Design vehicle WB-50)

Pedestrian and Bicyclist needs: 4 foot bicycle lane for bicyclists.
5 foot sidewalks for pedestrians.

Utilities: See Utility Accommodation Guide

Traffic Control Devices: See Manual on Uniform Traffic Control Devices (MUTCD)

Design Exceptions and Variances: No exceptions or variances are proposed.

5.2 DESIGN CRITERIA

This report was prepared consistent with the current edition of the following publications:

1. Roadway Design Geometric and Criteria found in Volume I, Plans Preparation Manual, FDOT, 625-000-005 (Metric), January 1998.
2. A Policy on Geometric Design of Highways and Streets, Washington, D.C., AASHTO.
3. Manual on Uniform Traffic Control Devices (MUTCD), FHWA, Washington D.C.
4. Highway Capacity Manual, Transportation Research Board, Washington, D.C.
5. Bicycle Facilities Planning and Design Manual, FDOT.
6. Drainage Manual, FDOT, and Supplements, Topic # 625-040-001.
7. Flexible Pavement Design Manual, FDOT, Topic # 625-010-002.
8. Rigid Pavement Design Manual, FDOT, Topic # 625-010-006.
9. Utility Accommodation Guide, FDOT, Topic # 710-020-001.
10. Pavement Type Section Manual, FDOT, Topic # 625-010-005.
11. Life-Cycle Cost Analysis for Transportation Projects, FDOT.
12. FDOT Standard Specifications for Road and Bridge Construction.
13. Computer-Aided Design and Drafting (CADD) Roadway standards Manual, FDOT, Topic # 625-010-007.
14. Computer Aided Design and Drafting (CADD) Structures Standard Manual, FDOT.
15. Roadway and Traffic Design Standards, FDOT, Topic # 625-010-003.
16. Guide for Selecting, Locating, and Designing Traffic Barriers, AASHTO.
17. Roadside Design Guide, AASHTO.
18. Florida Highway Landscape Guide, FDOT.
19. Facilities Access for Persons with Disabilities, FDOT Procedure Topic # 625-010-015.
20. Major Urban Corridor Studies Policy, FDOT, Topic # 000-725-010.
21. Environmental Policy, FDOT, Topic #000-625-001.
22. Maximum Number of Lanes on the State Highway System to be Provided by Department Funds Policy, FDOT, Topic # 000-525-040.
23. Median Opening Decision Process, FDOT, Topic # 625-010-020.

SECTION 6.0

TRAFFIC

The traffic data and analysis in this section was taken from the Traffic Technical Memorandum (by FDOT District 7 EMO) for this project.

6.1 EXISTING CONDITIONS

U.S. 301 is currently a two lane rural roadway, with swales to handle stormwater runoff. It transitions to a four lane divided roadway at North Ave/Geiger Rd. Four foot paved shoulders were added on a recent resurfacing project within the project corridor. The land use is primarily commercial with many small businesses along the project. There are also a number of mobile home parks with access to U.S. 301.

Sixth Street is currently a two lane road which diverts some southbound traffic away from U.S. 301 through downtown Zephyrhills. It has one-way southbound traffic from its connection with U.S. 301 near 16th Avenue to C Avenue, where it becomes a two-way road from C Avenue south to Vinson Avenue, where it ends. If 6th Street is to be used as part of a one-way pair system, additional ROW will be required from Vinson Avenue south to connect to U.S. 301.

Seventh Street was changed to a one-way northbound roadway by the City of Zephyrhills in 1995 to divert traffic off U.S. 301 in the downtown area. It connects with U.S. 301 at A Avenue north of the GTE building with a two lane curb and gutter section, and reconnects with U.S. 301 near Ft. King Highway. If 7th Street were to be used as part of a one-way pair, additional ROW would be required from A Avenue south. Extending 7th Street south would result in many residential relocations at a mobile home park and single family homes.

There are five traffic signals within the project limits: at South Avenue, S.R. 54 (5th Avenue), 12th Avenue, North Avenue, and Ft. King Highway. (C.R. 54 was not included in the analysis since the proposed improvements end south of C.R. 54 where US 301 becomes a four lane divided roadway.) Turning movement counts were taken at each of these signalized intersections

to perform a detailed analysis. There are no railroad crossings or pedestrian facilities within the project limits. The existing posted speed limit for U.S. 301 is 35 mph. Sixth and Seventh Streets are local streets with a maximum speed of 30 mph.

As mentioned previously, this project (the section from S.R. 39 to A Avenue) is designated for improvement in the Pasco County MPO's LRTP. Additional lanes are anticipated to accommodate future traffic conditions along this roadway project. The majority of the existing land use along the road is expected to remain the same, mostly commercial with some industrial and residential.

Access Management

This section of U.S. 301 is categorized as an access Class 7 facility. This Class is assigned only to roadway segments where there is little intended purpose of providing for high speed travel. A high emphasis is placed on providing access to adjacent properties. The minimum recommended signal spacing for this classification is ¼ mile.

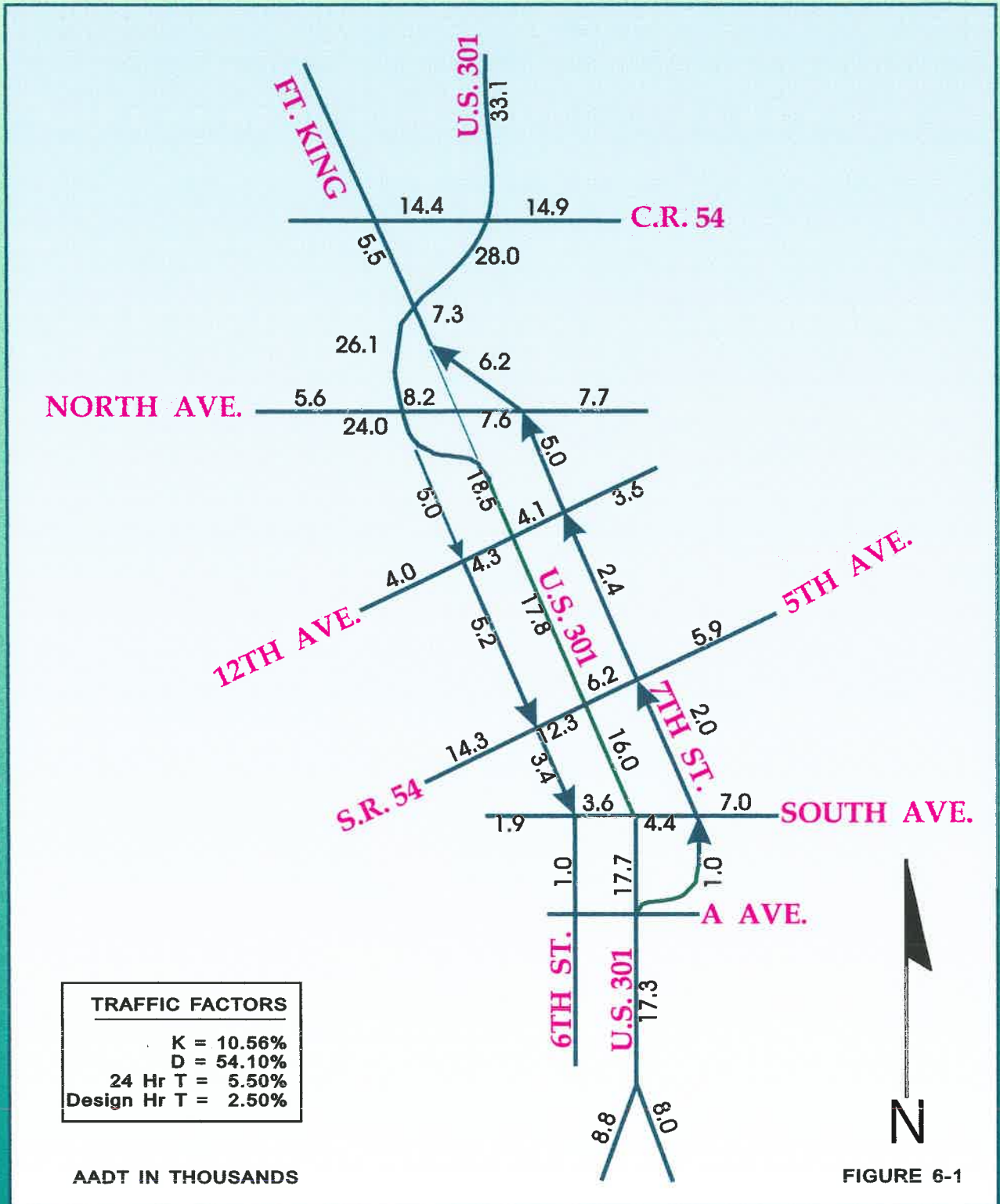
6.2 TRAFFIC ANALYSIS ASSUMPTIONS

The FDOT Planning Department has developed a Regional Planning Transportation Analysis Model for District Seven to arrive at the projected 2020 traffic.

The following steps were used to develop the 2005 and the 2025 traffic:

- 1) The 2020 Model outputs of the Tampa Bay Regional Planning Model (TBRPM) were reviewed.
- 2) The model volumes were smoothed, and factored to Annual Average Daily Traffic (AADT).
- 3) The 2005 traffic was interpolated between 1997 and 2020 traffic.
- 4) The 2025 traffic was extrapolated from 2005 and 2020 traffic.

The 2000 AADT traffic volumes are shown on Figure 6-1. The Design Year 2025 AADT volumes are shown on Figures 6-2 and 6-3 for the Recommended Alternative and the No-Build Alternative, respectively.



EXISTING TRAFFIC DATA (AADT)



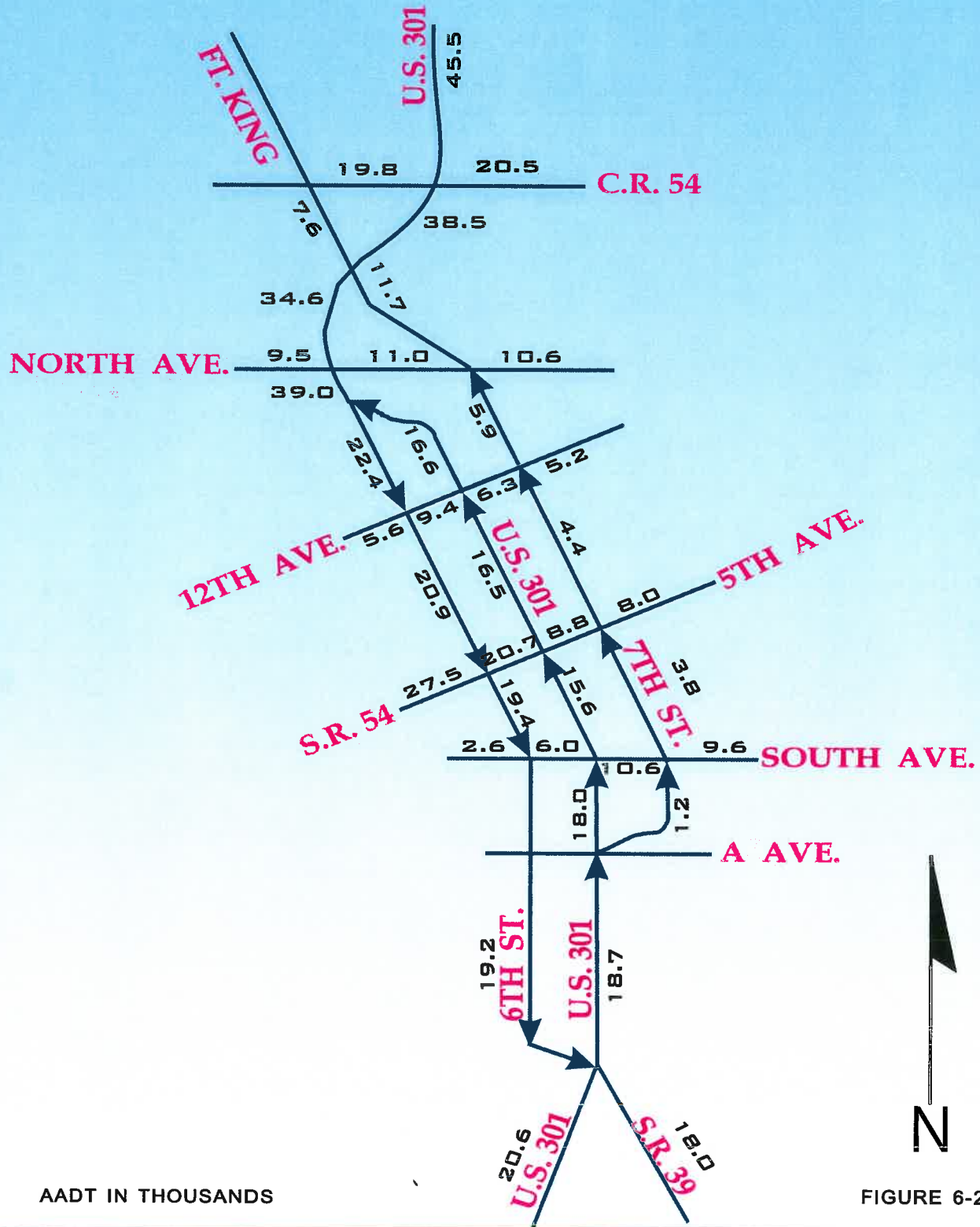


FIGURE 6-2



DESIGN YEAR
RECOMMENDED ALTERNATIVE
TRAFFIC DATA (AADT)



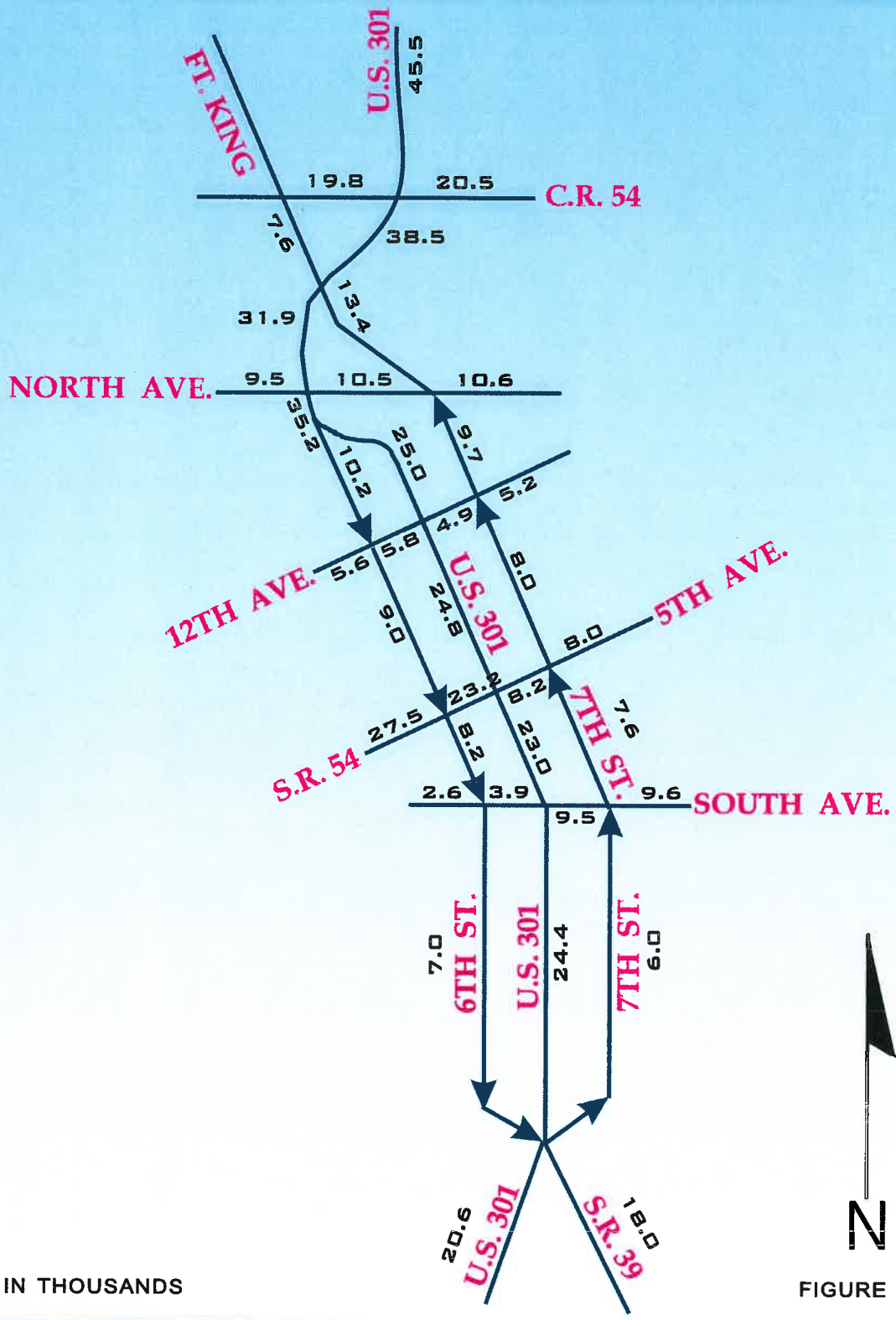


FIGURE 6-3



DESIGN YEAR
NO BUILD
TRAFFIC DATA (AADT)



The actual turning movement counts at each intersection were adjusted with the TURNS 4 program to obtain design hour movement volumes for the design year 2025. The TURNS 4 program uses AADT volumes, K and D factors along with the actual counts to arrive at balanced turning movement volumes.

The design hour traffic (2025) conditions were determined for the existing roadway and for each of the proposed alternatives. The design hour factors used for the highway capacity analysis were provided by the FDOT Planning Department. A K_{30} factor of 10.56 percent and a D (Directional) of 54.10 percent was used in the analysis.

The Highway Capacity Software (HCS-3) was used to determine existing operating conditions within the project limits. Since the majority of the U.S. 301 is currently a two lane undivided roadway, the HCS two lane highway options was used to evaluate the existing roadway.

The Highway Capacity Manual (HCM) definition for level terrain is any combination of horizontal and vertical alignments that permits heavy vehicles to maintain approximately the same speed as passenger cars. Given the existing characteristics of this roadway facility, the level terrain option was selected as the most appropriate.

The entire project length of U.S. 301 is contained within a FHWA Transitioning Urbanized Area Boundary. The minimum Level of Service for an "Transitioning Urbanized Area" is LOS C, according to the 1998 Level of Service Handbook, published by the FDOT Systems Planning Office.

6.3 EXISTING TRAFFIC VOLUMES

The 2000 AADT's, K, D, and T factors from FDOT's Planning Department are shown on Figure 6-1.

6.4 TRAFFIC VOLUME PROJECTIONS

The projected 2005 Opening Year and 2025 Design Year AADT Volumes for the No-Build and Recommended Alternative are shown on Figures 6-2 and 6-3. For a description of the Recommended Alternative, see Section 8.5 and Figure 8-3.

6.5 LEVEL OF SERVICE

6.5.1 Arterial Analysis

The Arterial Level of Service for the Recommended and No-Build Alternatives is shown in the Table below.

TABLE 6-1

Arterial Level of Service Summary				
	Construction Year 2005		Design Year 2025	
Alternative	U.S. 301	6 th	U.S. 301	6 th
No-Build	E	---	F	---
Rec. Alternative	C	C	C	C

The Recommended Alternative creates a one-way pair using 6th Street southbound and U.S. 301 northbound. LOS C is met in the Design year, using three lanes in each direction.

6.5.2 Intersection Analysis

Existing Conditions

The signalized intersections were analyzed to determine the current Level of Service using the Highway Capacity software program. Turning movement counts taken in 1999 and 2000 were used for the intersection analysis. The existing lane configurations are shown in Figure 4.1. A summary of the results of the HCS analysis is shown in Table 6-2.

Proposed Design

The TURNS 4 program was used to project the turning movement counts to the 2025 Design Year. The AADT volumes from the FDOT Planning Department were input into the TURNS 4 program for the projection.

The No-Build Alternative had a LOS F in the design year 2025, which is unacceptable. The intersections of 6th Street with South Avenue, S.R. 54 and 12th Avenue are not signalized at present, but are anticipated to require signalization due to the projected additional traffic on 6th Street. The LOS for each intersection with the Recommended Alternative in the design year is shown in Table 6-2.

Table 6-2

Intersection LOS Summary			
U.S. 301 & Sidestreet	1999 Existing	2025 No-Build	2025 Build
South Avenue	B	F	B
S.R. 54	B	F	B
12 th Avenue	B	F	B
North/Geiger Rd.	B	F	B
6th Street & Sidestreet	1999 Existing	2025 No-Build	2025 Build
South Avenue	N/A	F	B
S.R. 54	N/A	F	C
12 th Avenue	N/A	F	B

6.6 REFERENCES

1. Traffic Technical Memorandum; District Seven PD&E Department, revised May 2000.
2. Florida's Level of Service Handbook; FDOT Planning Department; Tallahassee, FL; 1995
3. 2020 Long Range Transportation Plan; Pasco County Metropolitan Planning Organization (MPO); Tampa, FL; Adopted on January, 1999.
4. Highway Capacity Manual; Transportation Research Board, Washington, D.C., 1994.

SECTION 7.0

CORRIDOR ANALYSIS

7.1 EVALUATION OF ALTERNATIVE CORRIDORS

The section of U.S. 301 being studied is the principal north/south route through Zephyrhills. There are a number of different types of travel demands on U.S. 301 in this area, including:

- Through traffic from Tampa and Plant City south of Zephyrhills to Dade City and destinations further north.
- Access to businesses along U.S. 301 serving the needs of local residents in the Zephyrhills area.
- Access to residences, including mobile home parks in the area.

There is a large population of seasonal residents in the Zephyrhills area who live there only in the winter months. During the winter the area's population and traffic volumes are 2 or 3 times higher than the rest of the year.

A number of alternative corridors have been considered during this Study. The principal alternatives to widening U.S. 301 considered using 6th and or 7th Streets as one-way pairs, creating 2 or 3 through lanes in each direction.

Sixth Street is currently a two lane road, which diverts some southbound traffic away from U.S. 301 through downtown Zephyrhills. It has one-way southbound traffic from its connection with U.S. 301 near 16th Avenue to C Avenue, where it becomes a two-way road from C Avenue south to Vinson Avenue, where it ends. If 6th Street is to be used as part of a one-way pair system, additional ROW will be required from Vinson Avenue south to connect to U.S. 301.

Seventh Street was changed to a one-way northbound roadway by the City of Zephyrhills in 1995 to divert traffic off U.S. 301 in the downtown area. It connects with U.S. 301 at A Avenue

north of the GTE building with a two lane curb and gutter section, and reconnects with U.S. 301 near Ft. King Highway. If 7th Street were to be used as part of a one-way pair, additional ROW would be required from A Avenue south.

Both 6th and 7th Streets were considered as viable alternative corridors to widening U.S. 301. The use of these streets in Alternatives 1, 2, and 3 is discussed in further detail in Section 8 of this report.

Other alternative corridors included:

Chancey Road

Chancey Road (Zephyrhills Bypass) is available as an alternate route for through traffic around the City of Zephyrhills. It is used by trucks to avoid congestion in the City of Zephyrhills. However, it is not signed at the intersection of U.S. 301 as a bypass route. The Traffic Operations Department of FDOT is planning on adding signs to direct travelers to inform them of the availability of this alternate thru route. This should help reduce some of the through traffic northbound in downtown Zephyrhills. However, it is not a viable alternative to improving U.S. 301 since much of the traffic in peak months is local traffic.

Eiland Boulevard (C.R. 54)

Another alternate route that allows traffic to bypass the downtown area of Zephyrhills on U.S. 301 is Eiland Boulevard (C.R. 54). This is not a true alternative to north-south traffic on U.S. 301, rather it is a way for traffic traveling on S.R. 54 east to U.S. 301 north to avoid the downtown area of U.S. 301. Eiland Boulevard splits off from S.R. 54 about 4 miles west of U.S. 301, and connects with U.S. 301 about 2 miles north of S.R. 54. This Study recommends that Eiland Boulevard be properly signed as a northbound bypass route for traffic headed east on S.R. 54 towards U.S. 301. This signing should also help reduce the traffic congestion on U.S. 301 in downtown Zephyrhills.

7.2 SELECTION OF VIABLE ALTERNATIVES

Both 6th and 7th Streets were considered to be viable alternative corridors for the following reasons. They are both adjacent to the existing U.S. 301, making them ideal as one-way pairs. They have already been partly improved, with sections in the City of Zephyrhills already functioning as one-way streets. Currently, however, less than 30 percent of the traffic uses these alternative streets. One reason for that is 6th and 7th Streets do not extend all the way south to S.R. 39. If 6th and/or 7th Streets are extended throughout the project limits as one-way streets and improved to state standards, it is anticipated that most of the traffic currently on U.S. 301 will shift to these alternative routes.

The inclusion of 6th and 7th Streets in Alternatives 1, 2, and 3 is discussed in the next section of this report.

SECTION 8.0

ALTERNATIVE ALIGNMENT ANALYSIS

To develop an improved roadway facility for U.S. 301 that is in the best overall public interest, engineering, environmental, and economic factors as well as social/cultural conditions must be taken into consideration. The improved facility should be designed to safely and efficiently accommodate the projected design-year vehicular traffic as well as bicycle and pedestrian traffic. The design and alignment of the improved facility must consider sensitive environmental conditions and areas. Sites potentially contaminated with hazardous and/or petroleum materials should be avoided. The alignment should be placed so as to optimize the possibilities for construction staging and maintenance of traffic. Access control techniques to promote safe and efficient operations should be used. These criteria have a direct bearing on the selection of the preferred preliminary design concepts.

Included in the following sections are the roadway improvement alternative concepts developed for U.S. 301 from S.R. to C.R. 54, preceded by the "No-Build" Alternative.

8.1 NO BUILD ALTERNATIVE

The No-Build Alternative consists of canceling the project or postponing improvement of U.S. 301 beyond the Design Year 2025. Certain advantages and disadvantages would be associated with the implementation of the No-Build Alternative.

The advantages of the No-Build Alternative include:

- No new construction costs.
- No temporary disruption to traffic due to construction activities.
- No ROW acquisitions.
- No business and residential relocations.
- Minimal environmental effects.

The disadvantages of the No-Build Alternative include:

- Unacceptable levels of service on the existing roadway network (see Section 6).
- Increased traffic congestion causing increased road user costs due to travel delay.
- Deterioration of air quality caused by traffic congestion.
- Further deterioration of the existing safety deficiencies due to the traffic increases; increase of economic losses due to increase in vehicle collisions.
- Increased roadway maintenance costs.
- No improved stormwater management via stormwater attenuation and treatment.

Postponement of the project may jeopardize its future economic feasibility due to escalation of construction and ROW costs. During the time that the project's development is delayed, land development could occur that would escalate land values and increase potential business damages.

The No-Build Alternative will remain under consideration throughout the alternatives evaluation process and Public Hearing stage.

8.2 TRANSPORTATION SYSTEM MANAGEMENT

The objective of Transportation System Management (TSM) is to create additional capacity without constructing additional through lanes. This is accomplished by measures such as adding turn lanes at intersections, changing signal timing and phases and removing on-street parking. The possibility of using TSM as an alternative to adding through lanes was considered and rejected for the following reason.

The traffic analysis (see Section 6) showed that at least six through lanes were required to meet the projected demand of the year 2025. Since six lanes are needed to meet the required arterial LOS, intersection improvements alone will not suffice.

8.3 STUDY ALTERNATIVES

The PD&E Study for U.S. 301 began in February of 1999. Initially, detailed information was collected, documented, and evaluated on the environmental, socioeconomic, land use, archaeological, and historical features for the area. This information was then used to develop the conceptual design and alternatives analysis for the project. Seven "Build" Alternatives were developed and are discussed in the first draft of this report. Of the seven, three of the "Build" Alternatives were determined to be viable and were shown at the Alternatives Public Workshop held on April 13th, 2000. The three viable alternatives are described below:

Alternative 1 uses both 6th and 7th Streets as a one-way pair, leaving the existing U.S. 301 as a two lane, two-way road for local traffic. See Figure 8-2.

Alternative 2 creates a one-way pair using 6th Street southbound and U.S. 301 northbound. (Alternative 2 was selected as the Recommended Alternative.) See Figure 8-3.

Alternative 3 creates a one-way pair using U.S. 301 southbound and 7th Street northbound. See Figure 8-4.

The reasoning for the selection of the Recommended Alternative is discussed in Section 8.5. The "No-Build" Alternative remains viable throughout the alternatives evaluation process and Public Hearing stage.

8.4 EVALUATION MATRIX

The evaluation matrix comparing the three viable Alternatives and the No-Build Alternative is shown in Figure 8-1.

8.5 RECOMMENDED ALTERNATIVE

After a thorough analysis of the viable Alternatives 1,2, and 3, including environmental and social impacts, costs of construction and ROW, Alternative 2 has been selected as the Recommended Alternative.

The Recommended Alternative is a one-way pair system using 6th Street southbound and U.S.

U.S. 301 ZEPHYRHILLS PD&E STUDY ALTERNATIVES EVALUATION MATRIX

POTENTIAL EFFECTS		ALTERNATIVES			
Evaluation Factors	Criteria Ranking	No - Build	ALT. 1	ALT. 2	ALT. 3
COSTS					
Right of Way	Cost (in millions)	0	\$ 15.7	\$ 8.2	\$ 10.5
Design	Cost (in millions)	0	\$ 1.3	\$ 1.4	\$ 1.4
Construction	Cost (in millions)	0	\$ 8.7	\$ 9.5	\$ 9.5
C.E.I.	Cost (in millions)	0	\$ 1.3	\$ 1.4	\$ 1.4
TOTAL	Cost (in millions)	0	\$ 27.0	\$ 20.5	\$ 22.8
SOCIAL					
Residential Relocations	Number	0	52	30	27
Business Relocations	Number	0	7	4	3
Parks & Public Properties	Number Involved	0	0	0	0
TOTAL	Number	0	59	34	30
ENVIRONMENTAL					
Wetlands	Hectares (Acres) Affected	0	0	0	0
Floodplains	Number Involved	0	1	1	1
Noise	Number of Sites	19	159	101	67
Contamination	Number of Sites	0	30	30	30
CULTURAL RESOURCES					
Historic Sites	Number	0	1	0	1
Historic Districts	Number	0	1	0	1
Archaeological Sites	Number	0	0	0	0

FIGURE 8-1



U.S. 301 PD&E STUDY
(S.R.39 TO C.R.54)
PASCO COUNTY
W.P.I. SEG. No. 256422 1
F.A.P. No. 1455-001-U

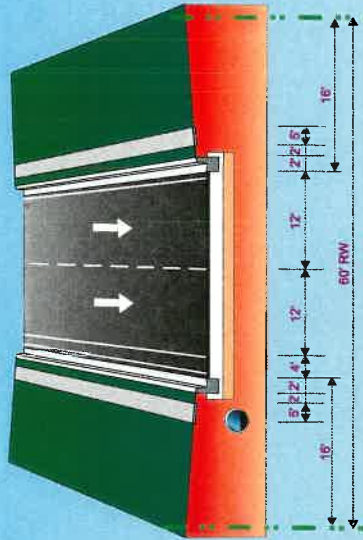


U.S. 301 ZEPHYRHILLS PD&E STUDY FROM S.R. 39 TO C.R. 54

W.P.I. SEG. 256422 1

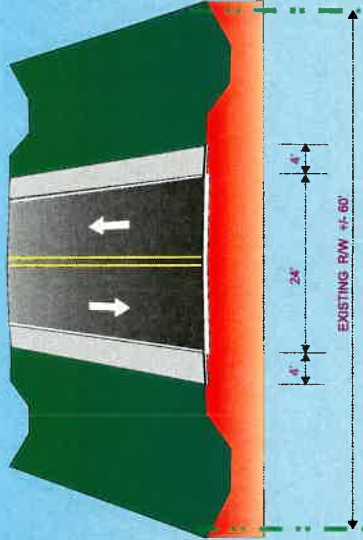
FEDERAL AID NO. 1455-001-U

PROPOSED TWO LANE
ONE WAY
TYPICAL SECTION



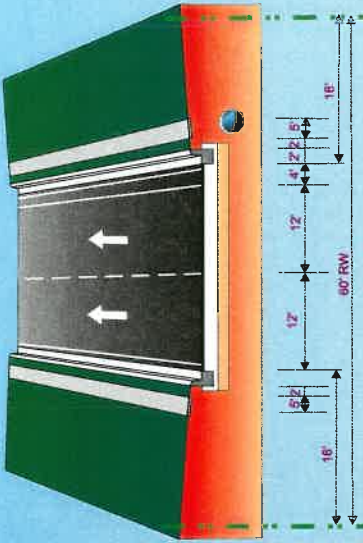
6TH STREET

EXISTING
TYPICAL SECTION



U.S. 301

PROPOSED TWO LANE
ONE WAY
TYPICAL SECTION



7TH STREET



ALTERNATIVE 1

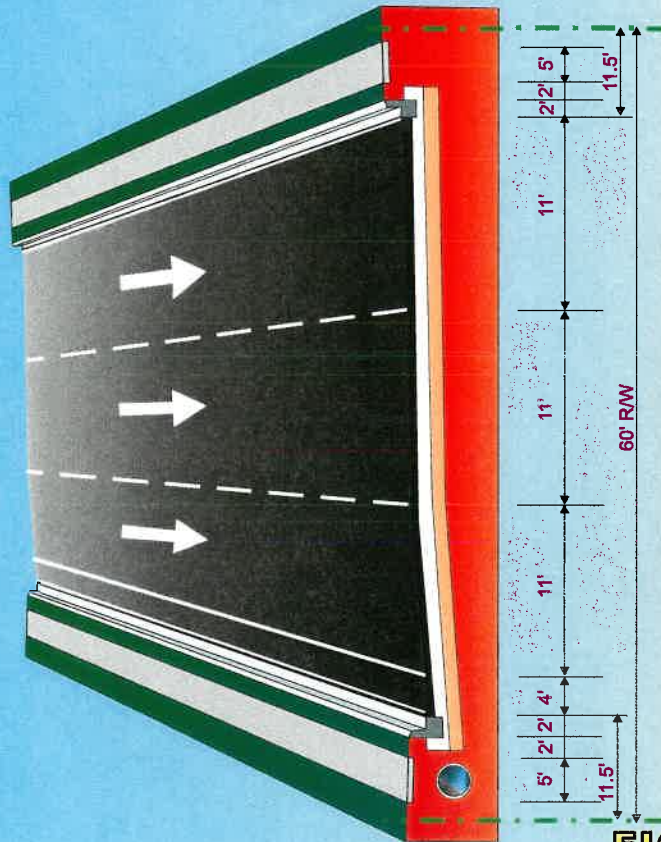
FIGURE 8-2

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

W.P.I. SEC. 256422 1

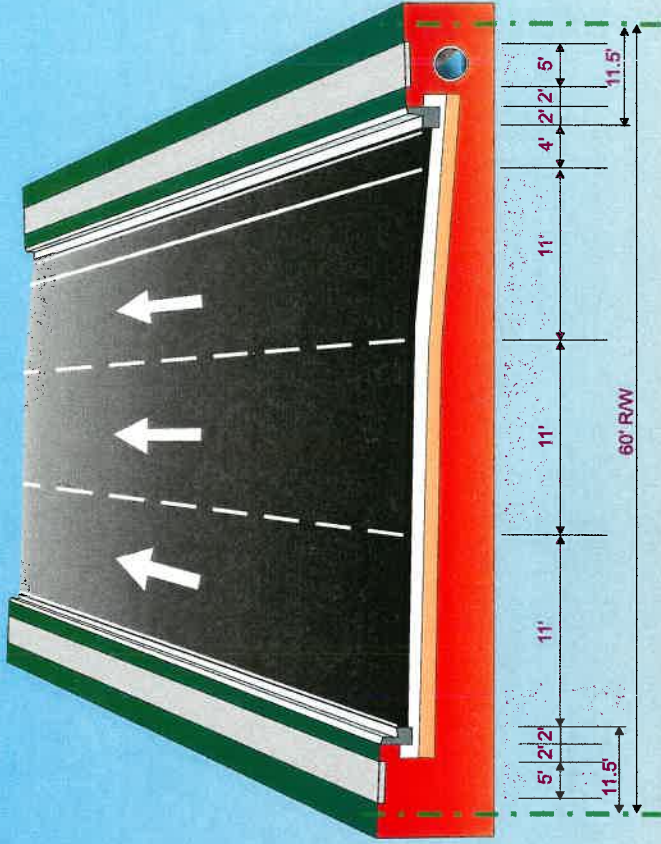
FEDERAL AID NO. 1455-001-U

PROPOSED THREE LANE ONE WAY
TYPICAL SECTION



6TH STREET

PROPOSED THREE LANE ONE WAY
TYPICAL SECTION



U.S. 301



**RECOMMENDED
ALTERNATIVE**

FIGURE 8-3

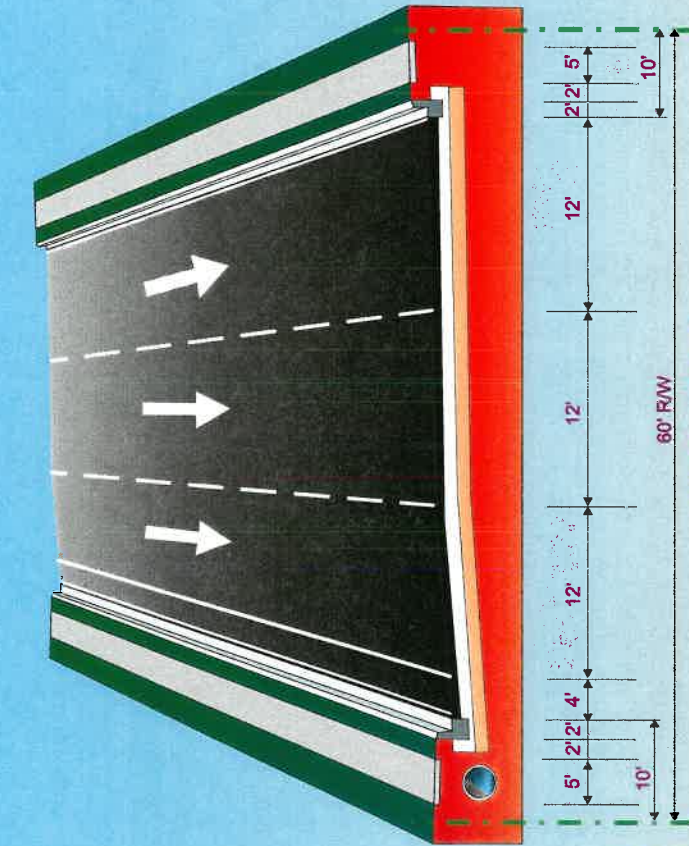
**U.S. 301 ZEPHYRHILLS PD&E STUDY
FROM S.R. 39 TO C.R. 54**

W.P.I. SEG. 2564221

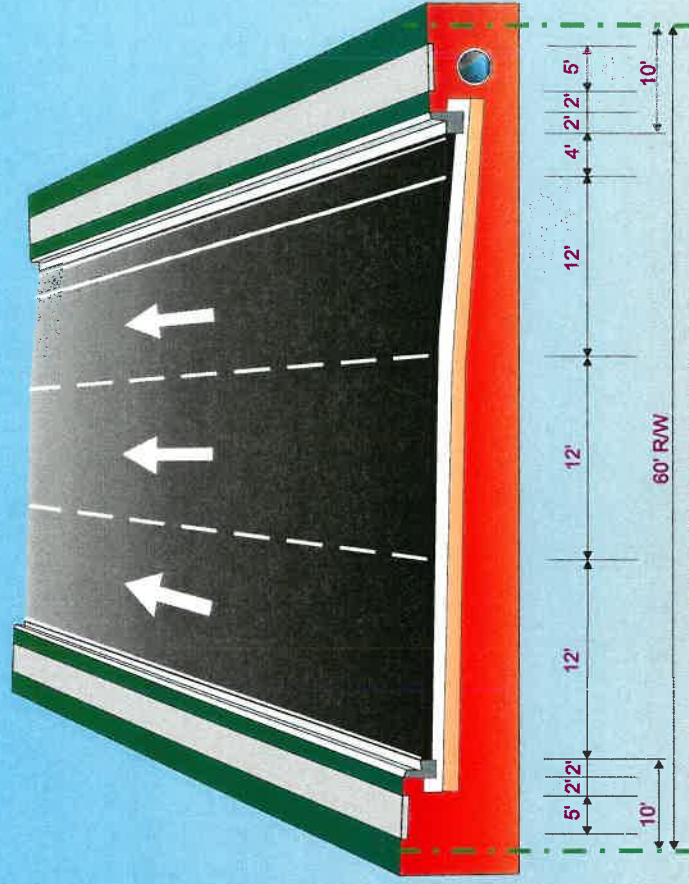
FEDERAL AID NO. 1455-001-U

**PROPOSED THREE LANE ONE WAY
TYPICAL SECTION**

**PROPOSED THREE LANE ONE WAY
TYPICAL SECTION**



U.S. 301



7TH STREET



ALTERNATIVE 3



FIGURE 8-4

301 northbound. In this alternative, 6th Street and U.S. 301 will be three lane urban streets. The urban section for both of these streets has three 11 foot travel lanes, a four-foot bicycle lane and five-foot sidewalks on each side. The lane widths were narrowed to 11 feet to allow for a wider border width, making it easier to connect to existing grade at the back of sidewalk. The FDOT Design Department recommended this change, noting the design speed of 40 mph and the low truck traffic (24 hr T = 5.5%). An underground pipe system would be used to convey storm water to retention ponds. See Figure 8-3.

Alternative 2, using 6th Street and US 301 was chosen as the Recommended Alternative because it had the least overall community impacts, considering residents and businesses, historical sites, community facilities. Alternative 2 also had the lowest total cost, including R/W and construction costs, of any of the viable alternatives.

The other two viable alternatives, 1 and 3 were not selected for the following reasons:

Alternatives 1 and 3 used 7th Street as the northbound roadway. The potential NHRP Historic District defined by Quatrefoil Consulting for the City of Zephyrhills (see section 9.14.3) has a western boundary primarily along the alley between 7th and 8th Streets. The proximity of this potential Historic District was one consideration against the selection of Alternatives 1 and 3.

The entrance to the Zephyrhills Post Office is on 7th Street between North Ave. and US301. Converting it from two-way to one-way northbound traffic would require Post Office customers to detour one-half mile, since there are no side streets on 7th Street between North Avenue and US 301.

Using the 7th Street alignment would result in splitting the Fairview Mobile Estates (a large Mobile Home Park). The 7th Street alignment would require a minimum of eleven residential relocations in this Mobile Home Park and cut through an internal private road, which loops inside it. This would leave four mobile homes isolated from the rest of the community, separated by the new 7th Street. Or, alternatively the properties could be acquired, resulting in four

additional relocations.

Alternative 1, in addition to the above disadvantages, requires almost twice as many relocations and double the row cost as Alternative 2, since it involves new alignments on both 6th and 7th Streets.

SECTION 9.0

PRELIMINARY DESIGN ANALYSIS

9.1 DESIGN TRAFFIC VOLUMES

The Design Traffic Volumes are detailed in Section 6, Traffic.

9.2 TYPICAL SECTION

The typical section for the Recommended Alternative (#2) is on Figure 8-3.

9.3 INTERSECTION CONCEPTS AND SIGNAL ANALYSIS

Each of the signalized intersections was analyzed using HCS software to determine what improvements are needed to maintain at least LOS C in the design year, 2025. The intersection analysis and the proposed improvements were previously summarized in Section 6.6.

The existing lane configurations are shown in Figure 4-4. The proposed improvements to three lanes in each direction will result in at least a LOS C at all signalized intersections in the design year. Redesign of the signalized intersection's signal placement and timing will be part of the final design phase of this project. The proposed improvements are shown on the plan sheets in Appendix B.

9.4 ALIGNMENTS AND RIGHT OF WAY NEEDS

The Recommended Alternative, which calls for 6th Street to become a three lane one-way southbound road and U.S. 301 to become three lanes northbound, requires 60 feet of ROW on 6th Street and U.S. 301. Although the proposed one-way typical sections fit inside the existing ROW for U.S. 301 and 6th Street, ROW was needed to connect 6th Street with U.S. 301 at the south end of the project. In order to allow for a continuous flow of traffic on 6th Street to U.S. 301 at the south end of the project, smooth transitions with reverse curves are planned, beginning just north of the existing S.R. 39 intersection. The curves were designed to minimize the environmental affects and ROW costs. ROW is also required for pond sites. See plan sheets in

Appendix B for proposed ROW requirements to extend 6th Street to U.S. 301. The preferred pond sites are shown on Figure 9-1.

9.4.1 Vertical Alignment

The proposed profile grade is expected to be about the same elevation as the existing grade, for both U.S. 301 and 6th Street. Since there is only approximately 2 ½ feet between the proposed back of sidewalk and the existing ROW line, retaining walls may be required in some locations along with some driveway reconstruction.

9.5 RELOCATIONS

The relocations for the Recommended Alternative are presented in section 8.4, in the Evaluation matrix. There are 25 residential and 4 business relocations with the Recommended Alternative to extend 6th Street south to U.S. 301. An additional 5 residential relocations would be required for the preferred pond sites, for a total of 30 residential relocations for the project.

A Conceptual Stage Relocation Plan (CSRP) has been prepared for this project in compliance with FHWA's 49 CFR, Part 24, Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally Assisted Programs, and the State of Florida Department of Transportation Right of Way Procedures, Chapter 9, Section 1, Rule Chapter 14-66, Florida Administrative Code.

The objective of the CSRP is to identify the residential and business entities displaced and assess the community impact, if any, caused by the proposed project. It should be noted displacements occur not only from acquiring structures, but may be from significant loss of parking, close proximity to the ROW, as well as ingress/egress problems.

9.6 RIGHT OF WAY COSTS

The Alternatives Evaluation Matrix in section 8.4 summarized the estimated ROW costs for the project. These estimates include costs of ROW acquisition needed to connect 6th Street and/or

7th Street to U.S. 301 just north of S.R. 39. Pond sites and floodplain mitigation sites are also included in these totals.

The estimated ROW cost to extend 6th Street south to U.S. 301 is \$5.2 million. Pond sites for the Recommended Alternative are estimated at \$3.0 million, raising the total R/W cost to \$8.2 million.

9.7 CONSTRUCTION COSTS

The Alternatives Evaluation Matrix in section 8.4 summarized the estimated construction costs for each alternative. The costs were calculated with the use of the Departments' Long Range Estimate (LRE) method.

The construction cost for the Recommended Alternative is \$9.5 million.

9.8 PRELIMINARY ENGINEERING AND CONSTRUCTION ENGINEERING COSTS

The costs of engineering (final design) and Construction, Engineering and Inspection (CEI) were each estimated as 15 percent of the construction costs for each alternative.

9.9 RECYCLING OF SALVAGEABLE MATERIALS

During construction of the project, recycling of re-useable materials will occur to the greatest extent possible. Where possible, milling of the existing pavement to use in the new pavement will be considered to reduce the volume of the materials that need to be hauled and disposed of away from the project and to reduce the cost of purchasing materials suitable for pavement construction.

9.10 USER BENEFITS

Numerous benefits will be realized by the public after the preferred build alternative is constructed. Savings in travel time and vehicle operating costs and traffic accident reduction are the main benefits. The proposed improvements are expected to reduce traffic accident types

such as head-on, rear-end, and angle-type collisions due to separating opposing traffic with a one-way pair system.

Other benefits expected to be realized by the public include better access to the Zephyrhills Municipal Airport and other community facilities and greater comfort for motorists, as traffic operations will become more efficient.

9.11 PEDESTRIAN AND BICYCLE FACILITIES

To accommodate pedestrians, the Recommended Alternative includes 5 foot sidewalk on each side of the roadway between the curb and the ROW line. Pedestrian signals and crosswalks are to be constructed at the signalized intersections as part of this project. All proposed pedestrian facilities will meet the standards of the Americans with Disabilities Act (ADA).

A four foot wide bicycle lane will be included on the right side of each of the one-way roads.

9.12 SAFETY

The proposed improvements are anticipated to upgrade U.S. 301 to a safe and efficient transportation facility. The increased roadway capacity is expected to result in less congestion therefore reducing the probability for accidents. Separation of northbound and southbound traffic to a one-way pair system is expected to reduce head-on vehicle collisions. The four-foot bicycle lanes will allow bicyclists to share the roadway with motor vehicles while observing the rules of the road. The placement of sidewalks, crosswalks at signalized intersections and other safety provisions will provide safe pedestrian circulation.

The design and alignment of the roadway will meet applicable safety standards. Adherence to the design speed as it applies to establishing and setting minimum values on critical roadway design features will be closely followed. Roadway design elements including curvature, sight distance, width and clearance will meet or exceed FDOT's minimum roadway design standards.

9.13 ECONOMIC AND COMMUNITY DEVELOPMENT

As previously presented in section 3, transportation plans developed by the Pasco County MPO call for creating a one-way pair system for U.S. 301 in Zephyrhills to improve the traffic capacity. This transportation plan was developed after thorough evaluation of the future population and development growth in the region of the project. The proposed U.S. 301 improvements, developed through the process previously described in Section 8, respond to and fully accommodate the projected need for upgrading U.S. 301 to maintain the desired LOS.

The improved traffic flow through the City of Zephyrhills will allow easier access to businesses and residential communities along U.S. 301.

9.14 ENVIRONMENTAL IMPACTS

9.14.1 Land Use

The future land uses in the vicinity of the project were previously shown in Figure 4-6. Since, as discussed in Section 4.3, the proposed improvements of U.S. 301 are consistent with the long range planning for this region of Pasco County, they supplement the future land use plans.

9.14.2 Community Cohesion

The proposed improvements of U.S. 301 should have minimal adverse effect on community cohesion. The proposed improvements will not divide or separate neighborhoods or other community areas from one another. The project will not isolate an ethnic group or neighborhoods, separate residences from community facilities or substantially change travel patterns. The project is not anticipated to adversely affect elderly persons, handicapped individuals, transit-dependent individuals, low income or minority populations.

9.14.3 Archaeological and Historical Resources

A Cultural Resource Assessment Survey (CRAS) report (Revised September 2000) was completed for this project consisting of four Volumes.

Volume 1 contains the roadway CRAS report text, whereas the appendices are contained in Volumes 2, 3 and 4. Volume 2 contains Appendix A consisting of newly recorded and updated FSF forms for the roadway CRAS. Volume 3 contains Appendix B consisting of photocopies of the previously recorded FSF forms and Appendix C consisting of the roadway CRAS Survey Log Sheet. Volume 4 contains Appendix D consisting of a separate CRAS technical memorandum prepared for 25 proposed pond site alternatives for the Recommended build Alternative (6th Street and U.S. 301 pair).

The roadway CRAS identified and evaluated one previously unrecorded prehistoric archaeological site, 64 previously recorded historic structures, and 37 previously unrecorded historic structures. One of the previously recorded historic structures is no longer extant. Neither the archaeological site, nor the newly recorded historic structures were considered to be eligible for listing in the National Register of Historic Places (NRHP).

Seven previously recorded historic structures (8PA912, -913, -1044, -1045, -1068, -1090, and -1091), however, were originally considered to be contributing to a potential NRHP historic district as defined previously by Quatrefoil Consulting as a result of their City of Zephyrhills Historic Preservation Survey conducted in 1999. Quatrefoil Consulting was hired by the City of Zephyrhills to prepare a NRHP nomination application for this proposed historic district; therefore, a request for a Determination of Eligibility (DOE) form was not prepared as part of this CRAS. Recent discussion with Quatrefoil Consulting revealed that the proposed NRHP boundaries have been revised. The revised western boundary primarily runs north-south along the alley between 7th and 8th Streets and extends westward toward 7th Street to include only three of the above listed previously recorded historic structures (8PA1045, -1068, and -1090).

One historic structure, the former City Hall at 38416 5th Avenue (8PA1045), was considered by Quatrefoil Consulting to be potentially eligible for individual listing in the NRHP, pending further research. Research performed as part of this CRAS has indicated that alterations have diminished the original architectural integrity to the extent that it would not be individually eligible for the NRHP but would, however, contribute to the proposed historic district. An

updated FSF form was prepared to include the additional information gathered and to reflect the change in NRHP eligibility.

The survey for the proposed pond site alternatives identified and evaluated one previously recorded archaeological site (8PA1206), 24 previously recorded historic structures and 4 newly recorded historic structures (8PA1283-1286), located within 12 of the 25 proposed pond site alternatives. The one previously recorded archaeological site was found to extend into two proposed pond sites, therefore an updated FSF form was prepared. None of the archaeological or historic sites is considered eligible for listing in the NRHP. In a letter dated March 27, 2001 the SHPO has concurred that none of the historic structures appear to meet the criteria for listing in the National Register.

9.14.4 Section 4(f) Properties

There is one park, in the project limits adjacent to U.S. 301, Shepard Park. The park is owned and maintained by the city of Zephyrhills. The park is one city block in size, between 6th Street and US 301 to the west and east, and between A Avenue and B Avenue north and south. The park contains a basketball court, swing set and restroom facilities. The planned improvements will not require ROW from the park.

9.14.5 Wetlands

No wetlands will be impacted by the current proposed improvements with the Recommended Alternative. There are no naturally occurring wetlands within the project area.

9.14.6 Water Quality Impacts

A Water Quality Impact Evaluation (WQIE) has been completed for this project to identify surface water and ground water impacts resulting from storm water runoff. The additional pavement constructed will create more runoff, which will be conveyed in ditches to stormwater ponds for treatment.

The proposed Storm Water facility design will include, at minimum, the water quantity requirements for water quality impacts as required by the SWFWMD in Rule(s) Chapters 40D-4, 40D-40, 40D-400, F.A.C. Therefore, no further mitigation for water quality impacts will be needed.

9.14.7 Threatened and Endangered Species

The Biological Assessment section of the combined Wetland Evaluation and Biological Assessment Report was summarized previously in section 4.3.3. Based on literature review and field surveys the Department has determined that no federally listed threatened or endangered species will be affected by the project, including the preferred pond site locations.

9.14.8 Potential Hazardous Materials Sites

The findings of Hazardous Materials investigations for this project were summarized in section 4.3.4. A total of 30 sites along the U.S. 301 corridor with a potential for having an impact on the project were identified and evaluated. Five of these sites were rated as Low risk, with no further environmental assessment recommended. The remaining 25 sites were rated as Medium or High risk, with a Level II soil and groundwater investigation recommended for these sites.

The 25 Alternate pond sites were also investigated for hazardous material contamination. A Level I assessment was completed, and the results of this report were used in the selection of the preferred pond site locations. The preferred pond sites 2-3,6 and 15A had a Low or No risk rating, with no further environmental assessment recommended. The preferred pond site 2-24 has a medium risk rating due to its close proximity to a cemetery, so further investigation is recommended when the design phase of the project begins. See Figure 9-1 for recommended pond site locations.

9.14.9 Noise Effects

A Noise Study Report was completed for this project in January 2001. It evaluated noise level changes and presents possible noise abatement considerations for the proposed improvements. The results of this Report are summarized below.

For the design year (2025) Build Alternative, 101 noise sensitive sites are predicted to experience outdoor traffic noise levels that approach, meet, or exceed the FHWA Noise Abatement Criteria (NAC) for Activity Category B. Noise levels at the affected sites are predicted to range from 66.0 to 74.8 dBA. Predicted increases above existing noise levels range from 0.6 to 14.5 dBA. Three noise sensitive sites adjacent to the existing S.R.39 and U.S. 301 apex are predicted to have 1.1 to 2.5 dBA decrease in noise levels with the proposed realignment of S.R. 39 (Financial Project Numbers 255099 and 256289). No noise sensitive sites are predicted to experience interior noise levels that approach or exceed the FHWA NAC for Activity Category E.

Noise abatement measures were evaluated for the affected noise sensitive sites. Abatement measures considered include traffic management, alignment modifications, property acquisition, land use controls and noise barriers. Noise barriers were determined to not be feasible and cost reasonable due to numerous driveway openings and side streets along the project limits. Noise effects have been determined to be an unavoidable consequence of the proposed project. A copy of the final Noise Study Report will be furnished to the City of Zephyrhills and Pasco County to assist them in development of compatible land uses for future development after FHWA approval.

9.14.10 Air Quality Effects

In accordance with the Clean Air Act Amendments (CAAA) of 1990 and the FDOT Project Development and Environment (PD&E) Manual, an air quality analysis was conducted to determine the air quality effect of the proposed improvements on U.S. 301 (S.R. 41) from S.R. 39 to C.R. in Pasco County, Florida. Based on the FDOT's air quality screening test (COSCREEN 98), the proposed project will not cause violations of the National Ambient Air Quality Standards (NAAQS) for carbon monoxide. Therefore, this project will not have a significant impact on air quality.

9.15 UTILITY IMPACTS

As previously discussed in section 4.1.12, a number of utility distribution lines are located in the existing ROW of U.S. 301. Construction of this project may require relocation of some utilities. The estimated cost of relocating utilities is included in the Utility Accommodation Package.

9.16 TRAFFIC CONTROL PLAN

U.S. 301 is a major arterial that provides a primary north/south route in eastern Pasco County. U.S. 301 also provides access to numerous commercial businesses as well as mobile home parks and other residences. Local traffic should be maintained for these businesses and residents during construction. Because of the large increase in traffic during the peak season (winter), construction should be avoided during the months of December through March.

The following construction sequence is recommended to maintain traffic along U.S. 301 and 6th Street:

- Phase 1 Relocate any drainage structures or utilities, limiting lane closures to off-peak or nighttime hours only. Construct the transition from 6th Street to U.S. 301 on the newly acquired ROW and the intersection improvements at S.R. 39 if not already constructed on the S.R. 39 project (PD&E Study FP No. 256298 1 and 255099 1).
- Phase 2 Construct 6th Street, maintaining one lane southbound for local traffic only. Because of the limited ROW width (60 ft), this will have to be done in two steps, first building two lanes and then shifting the local traffic to the new pavement to build the rest of the proposed pavement.
- Phase 3 Shift all southbound traffic to the newly built 6th Street. Construct U.S. 301, maintaining one lane northbound at all times. Seventh Street should be converted to a two-way local road to allow for better access to businesses along 7th Street and U.S. 301.

9.17 RESULTS OF PUBLIC INVOLVEMENT PROGRAM

A comprehensive Public Involvement Program was developed and implemented as part of this Study. The purpose of this Program was to inform and solicit responses from all interested parties including local residents, public officials, agencies, and business owners. The program included a Kickoff meeting, an Advance Notification Package, a Public Alternatives Workshop, and a Public Hearing. The Public Involvement Program and the results of its implementation are documented in the Comments and Coordination Report. A brief summary of the major steps in this process is presented in this section.

9.17.1 Kick-off Meeting

On March 23, 1999, from 10am to 12pm, the project's Kickoff Meeting was held at the Alice B. Hall Community Center. Local public officials and local government staff were invited to attend. The purpose of this meeting was to introduce the project and to obtain comments regarding issues and concerns. A total of 24 people attended. Representatives from the City of Zephyrhills Chamber of Commerce, City Council and Planning Commission were present. A number of business owners and representatives also attended. The proposed project was in general well received, with strong support expressed in favor of the project's improvements and advancing the project's construction if possible.

9.17.2 Advance Notification

In accordance with the PD&E Manual, an Advance Notification (AN) package was mailed to the Department of Community Affairs (DCA) on March 25, 1999. The AN Package was resubmitted with the northern project limit extended to County Road 54 on November 1, 1999. Responses from the agencies were collected by the DCA and sent to the Department on December 13, 1999.

9.17.3 Alternatives Public Workshop

An Alternatives Public Workshop was held by FDOT on April 13, 1999 from 4:30p.m. to 7:30 p.m. at St. Joseph's Catholic Church Parish Center, located at 38750 5th Avenue, Zephyrhills, Florida. The meeting was an informal workshop and consisted of a video, display of the feasible

alternatives on aerial photos, and presentation of reports and other materials completed up to that date on the subject project. FDOT study team staff were available to explain the presented information and answer questions.

Over 200 people signed in at the Workshop. Comments were solicited from the public on a form which was attached to an informational handout distributed at the meeting. Numerous comments were received, with residents and businesses concerned about possible acquisitions of their property and the effects of the project on businesses along U.S. 301. Most residents along 6th Street were relieved to find out that ROW would not have to be acquired along the entire length of 6th Street to construct the project for any of the viable alternatives. Business owners in general were concerned about the reduction in number of vehicles driving by adversely affecting their business.

9.17.4 Public Hearing

A Public Hearing was held on April 24, 2001, from 4:30 p.m. to 7:30 p.m. at the St. Joseph's Catholic Church Parish Center, 38750 5th Avenue, Zephyrhills, Florida. Elected officials, and various agency representatives were notified of the meeting by first class mail at least 25 to 30 days prior. Per Florida Statute and the Department's PD&E Manual, property owners within 300 feet of any of the alternatives under study were notified of the meeting by first class mail at least 21 days prior. The meeting was advertised in the Florida Administrative Weekly on April 6, 2001, and in the Tampa Tribune, Pasco Edition on April 3 and 17, 2001.

The meeting consisted of an informal session and a formal session. The informal session began at 4:30 p.m. and lasted until 6:00 p.m. During that time, the public could view a continuously looped project video, view the conceptual plans and project documents on display, speak to the court reporter in a one-on-one setting, or ask questions from Department representatives. Project handouts were available to all attendees. At 6:00 p.m., the Department gave a formal presentation regarding the project and its associated environmental effects. An opportunity to provide formal public comment followed the presentation. The court reporter transcribed the

entire formal portion. Following the formal portion of the Public Hearing, the informal portion resumed until 7:30 p.m.

“Build” Alternative 2 and the “No Build” Alternative were presented for consideration at the Public Hearing.

Approximately 127 people attended the Public Hearing. Four people gave statements to the court reporter during the informal portion of the Hearing, and four spoke during the formal portion of the Public Hearing. A total of 12 written comments were received either at the Public Hearing or in the mail. Comments were equally divided between those for the Recommended “Build” Alternative, and those against it or for the “No Build” Alternative.

9.17.5 Other Public Meetings and Presentations

Department representatives have also attended several community meetings, in an effort to provide information about the project and to gather feedback from interested citizens.

Some of the meetings that have been attended are as follows: Kiwanis Club; Zephyrhills Chamber of Commerce Board of Directors; Rotary Club of Zephyrhills; Mobile Home Owners Association; the Pasco County Metropolitan Organization (MPO) Board, and the MPO’s Technical Advisory Committee (TAC) and the Citizens Advisory Committee (CAC).

By attending these meetings the Department has gathered valuable information about how the public views the project, and any ideas they may have about how the project could help to enhance their community.

The Department attended the Zephyrhills Air and Car Show on November 6, 1999. There was a booth to display information about this project and other PD&E projects that are in the East Pasco County area. The Department felt that participation at this event was a huge success, and was well received by the public.

9.18 VALUE ENGINEERING

A Value Engineering (V.E.) Study (#97-07-02) for this project was completed in February 2001. The V.E. Team endorsed the Recommended Alternative using 6th Street and U. S. 301 as a one-way pair and had no suggestions to add value to the project.

9.19 DRAINAGE

A Location Hydraulic Report (LHR) and Pond Siting Report were prepared to determine the drainage requirements for this project.

The LHR findings were summarized in Section 4.1.7.

The Final Conceptual Pond Siting Report (by FDOT Drainage Dept., May 2001) addresses the storm water management facilities (SMF) required for this project and include a pond site alternative analysis. The study recommends pond locations that are both hydraulically functional and environmentally permissible based on the best available information. A total of 18 Pond site locations were analyzed and evaluated for cultural resources such as historic structures and archaeological sites; environmental impacts including wetlands, upland habitat, and protected species involvement; petroleum and hazardous materials contamination; economic factors including construction cost and acquisition of ROW; and hydrology [soil types and seasonal high water table (SHWT) and hydraulics].

Table 9-1 summarizes the recommended sites. Figure 9-1 is a plan sheet showing the location of the recommended sites. The Table indicates whether the pond site is located within the floodplain or not, the right-of-way cost, and its Hazmat rating. More detail as to the reasoning for the selection of pond sites is included in Section 7, *Conclusions and Recommendations* of the Conceptual Pond Siting Report.

TABLE 9-1
SUMMARY OF RECOMMENDED POND SITES

Pond Site No.	Basin No.	Area (acre)	R/W Cost \$	Hazmat Risk Rating
2-3	1	2.45	729,800	Medium
2-6	2	1.20	745,700	Low
2-15A	3	1.20	932,600	Low
2-24	4,5,6	5.00	622,400	Medium

The FDOT has recently completed a PD&E Study south of the project along S.R. 39 from I-4 to the apex of S.R. 39 and U.S. 301. The FDOT Financial Project Number is FPN 256289 1 / 255099 1. Coordination with the section to the south will be required for pond location and tie-ins when the design phase of this project begins.

9.20 BRIDGE ANALYSIS

There are no bridges, existing or proposed within the project limits

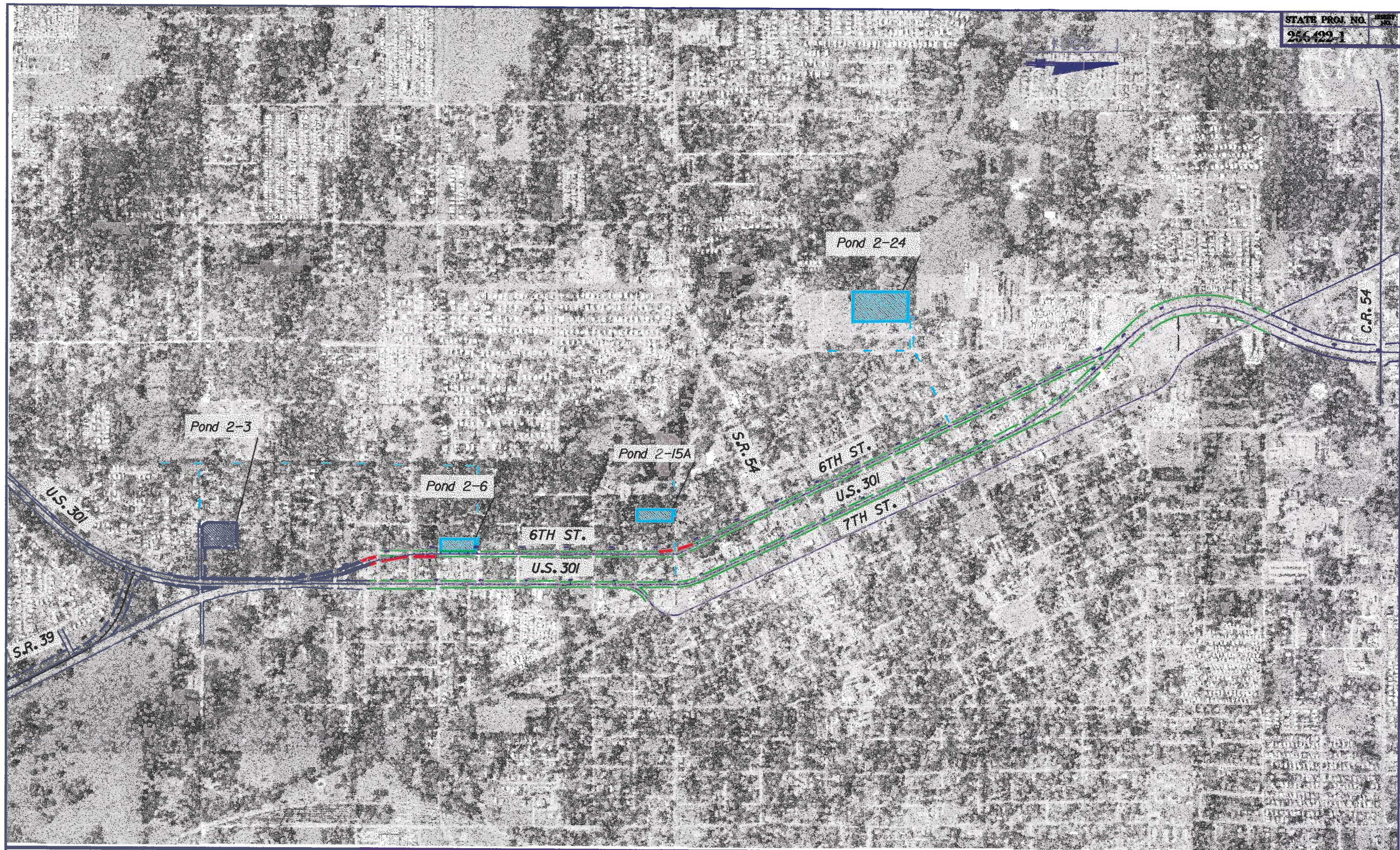
9.21 SPECIAL FEATURES

It is recommended that additional pavement be added on the northeast corner of Palm Grove Avenue to allow for cars and small trucks to make U-turns. See plan sheet 2 in Appendix B.

9.22 ACCESS MANAGEMENT

The section of U.S. 301 from SR 39 to Geiger Road is classified as an access Class 7 facility. A roadway is designated as access Class 7 in urbanized areas, which are already developed. Greater emphasis is placed on access needs of adjoining properties compared to the higher classes. The FDOT access management criteria are documented in a report entitled:

Rules of the Department of Transportation Chapter 14-97, State Highway System Access Management Classification System and Standards¹ (Rule 14-97).



REVISIONS

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**RECOMMENDED
POND SITES**

FLORIDA DEPARTMENT OF
TRANSPORTATION

**US 301 PD&E STUDY FROM SR 39 TO CR 54
FIGURE 9-1**

9.22.1 Median Openings

Since the Recommended Alternative is a one-way pair system, there are no restrictive medians proposed for most of the project's length. There is, however, a raised median proposed from the new SR 39 intersection to Fir Avenue, where U.S. 301 transitions from a four lane divided road to the one-way pair.

At a meeting of the Median Review Committee on May17, 2001 it was agreed that there would be full median openings at Tucker Road and Palm Grove Avenue. This section of U.S. 301 has an Access Classification of 7, which has a minimum recommended spacing between full openings of 0.125 miles or 660 feet. The proposed spacing is greater than the minimum required.

9.23 AESTHETICS AND LANDSCAPING

There is no special landscaping planned for this project at this time. Landscaping may be added, with construction cost of up to 1 ½ percent of the total construction cost of the project, if Pasco County or the City of Zephyrhills will agree to maintain the landscaping after it is constructed.

APPENDIX A

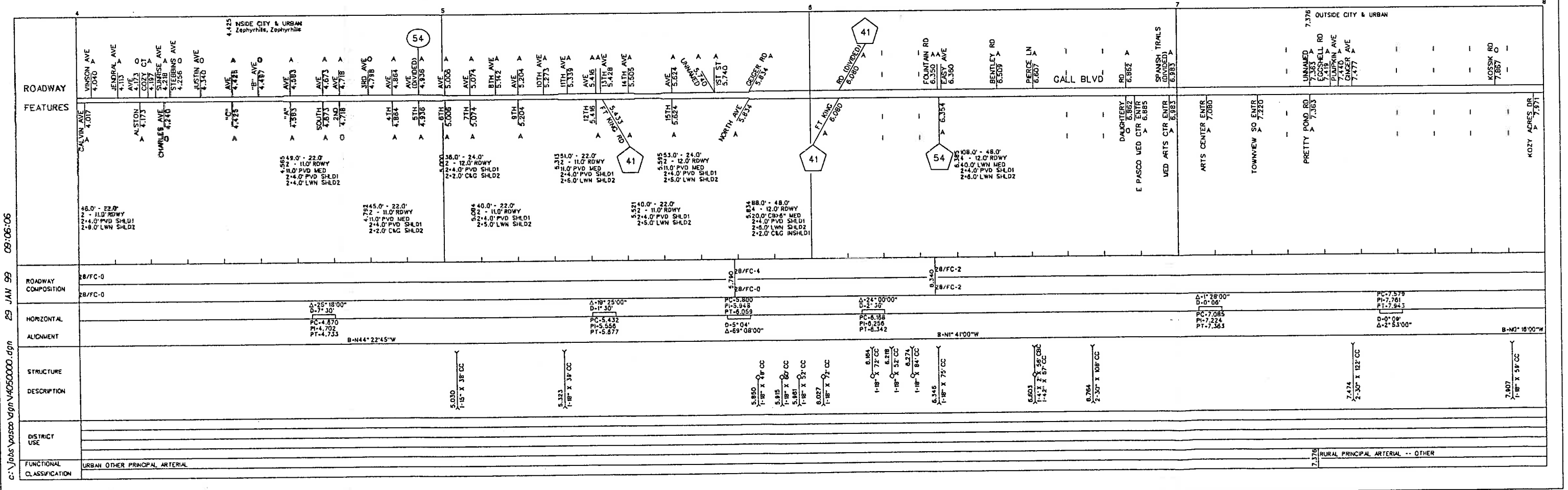
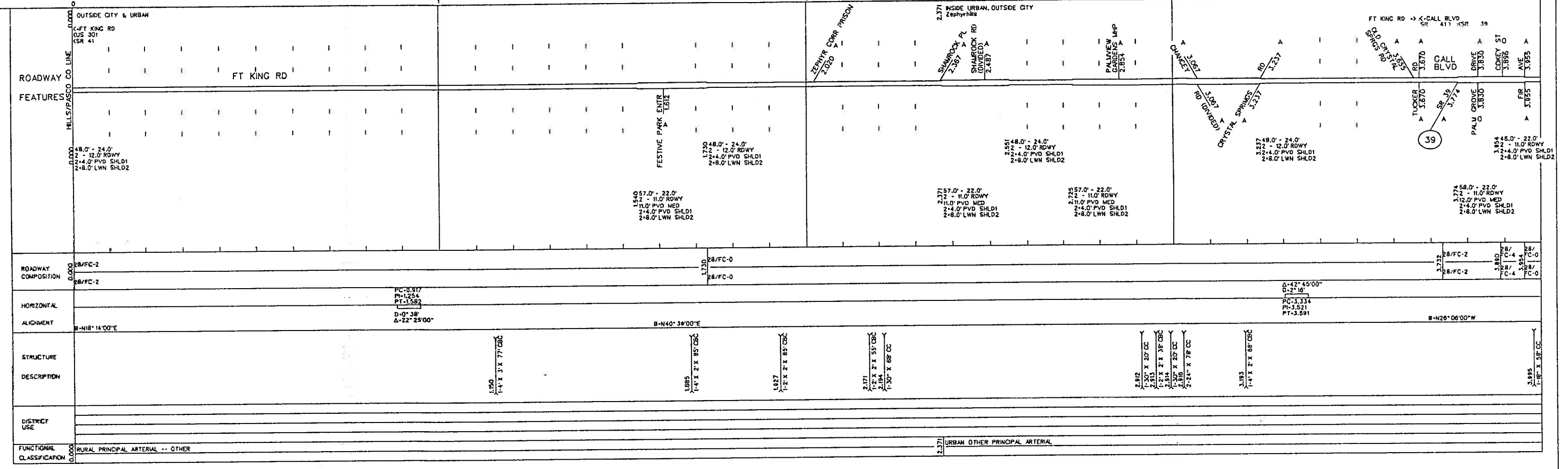
Straight Line Diagrams and Street Maps

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT SEVEN PLANNING STATISTICS OFFICE

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DATE	8/27/98	DATE	10/15/98	DATE	12/17/98
BY	MAP	BY	TBE/EMB	BY	FTE/DHB

MT. OF US ROUTE NO.	STATE ROAD NO.	COUNTY	SECTION	SHEET NO.
US 301	SR 41	PASCO	14050000	1
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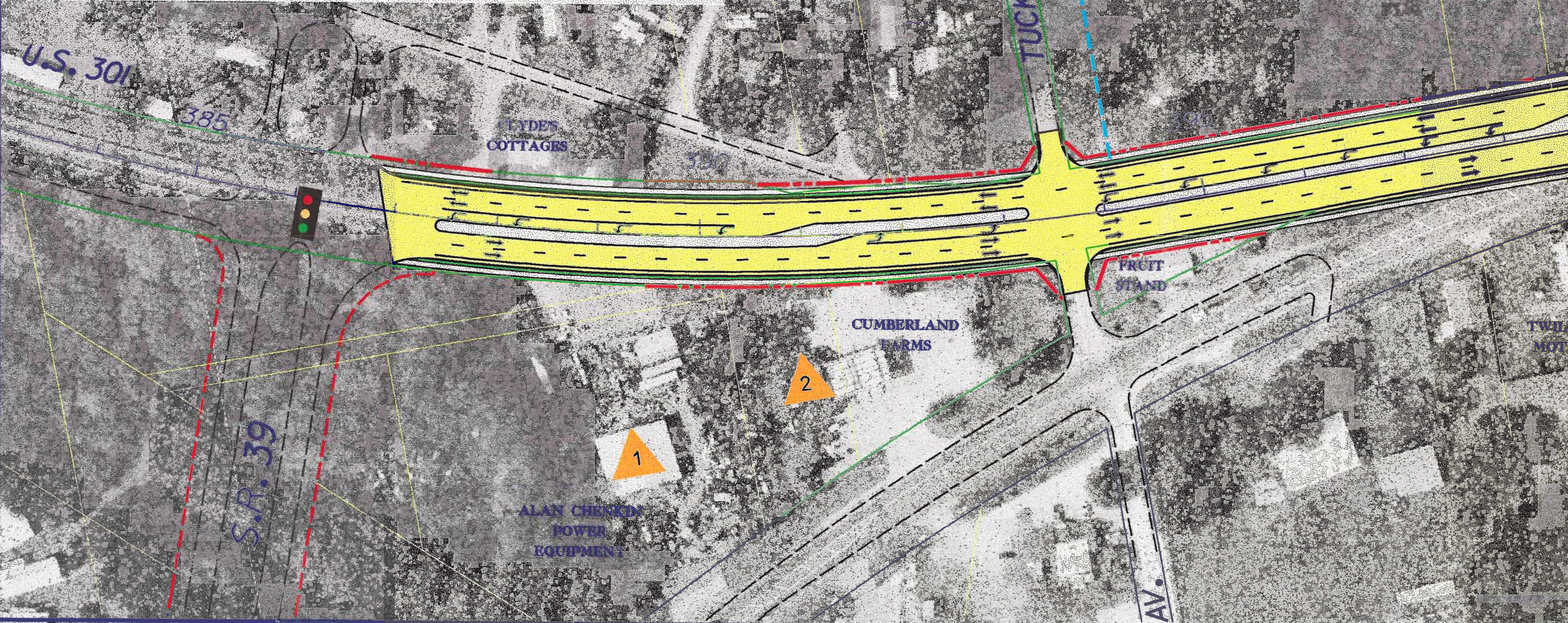
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APPENDIX B

Recommended Alignment Shown on Aerial Images

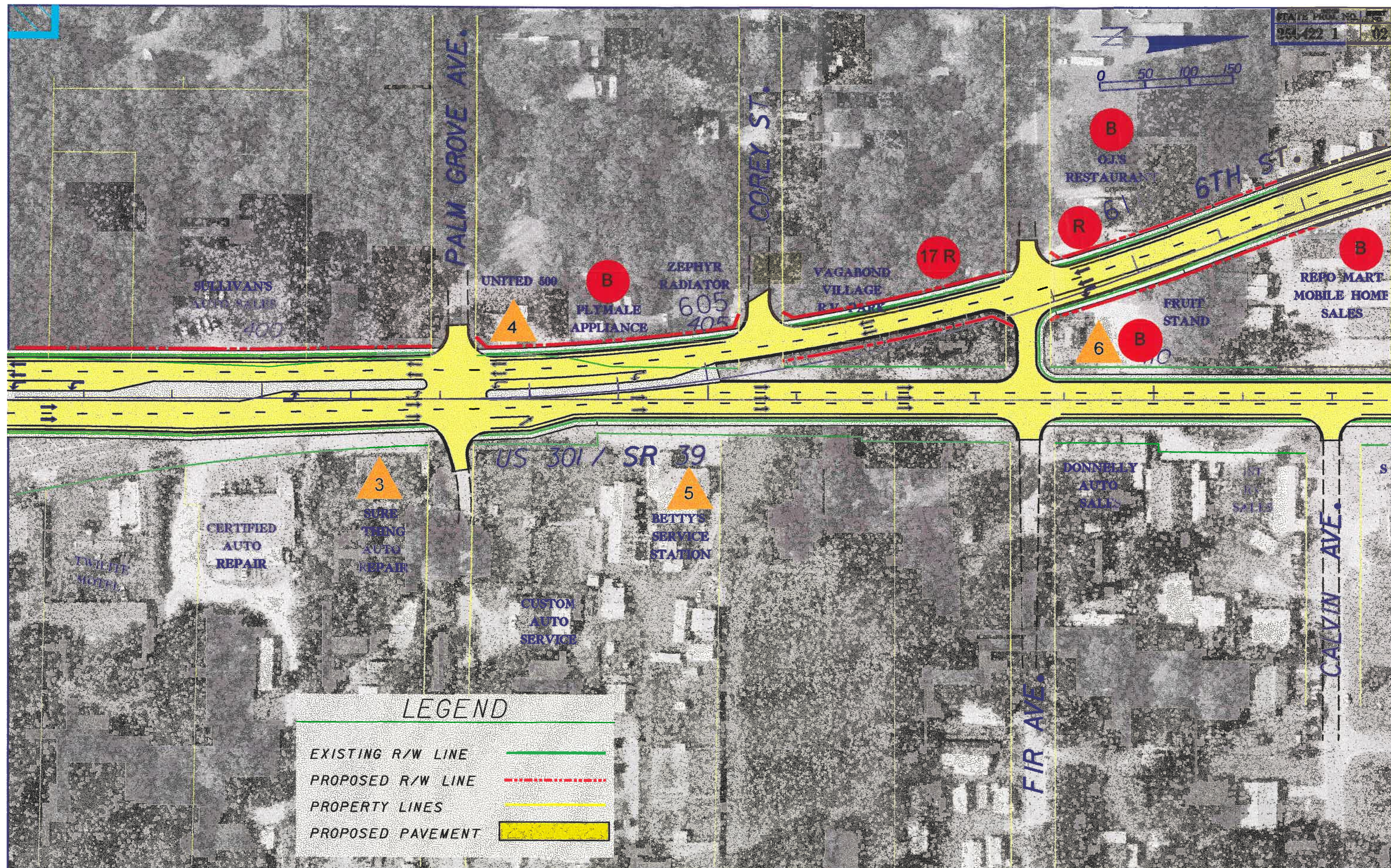
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| PROPOSED PAVEMENT | | HISTORIC DISTRICT | |
| SIDESTREET RESURFACING | | HISTORIC SITE | |
| EXISTING R/W | | POTENTIAL RESIDENTIAL RELOCATION | |
| PROPOSED R/W | | POTENTIAL BUSINESS RELOCATION | |
| PROPERTY LINES | | POTENTIAL POND SITE | |
| TRAFFIC SIGNAL | | POND INFLOW / OUTFLOW PATH | |
| POTENTIAL CONTAMINATION SITE | | | |



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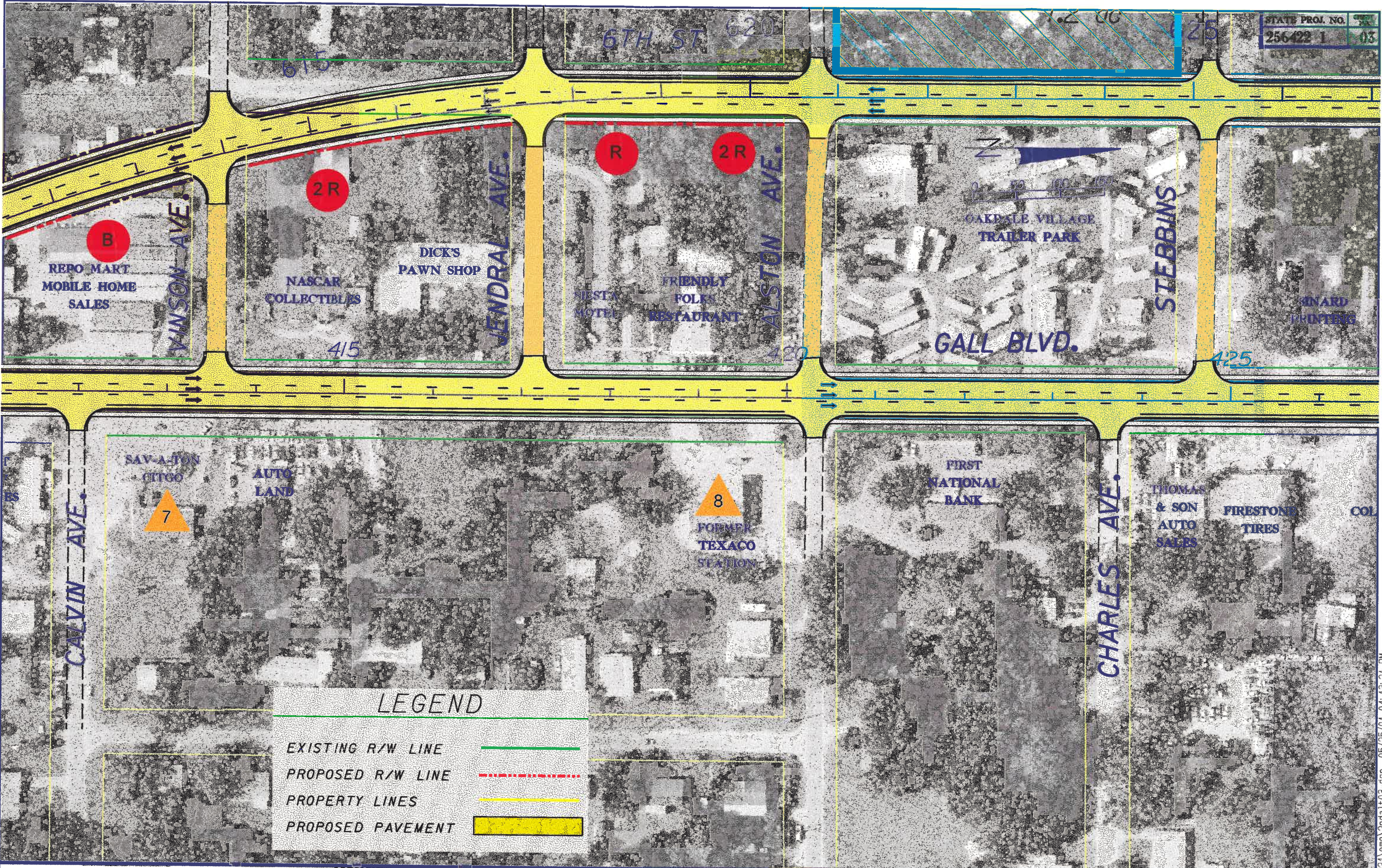
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FLORIDA DEPARTMENT OF
TRANSPORTATION

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



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



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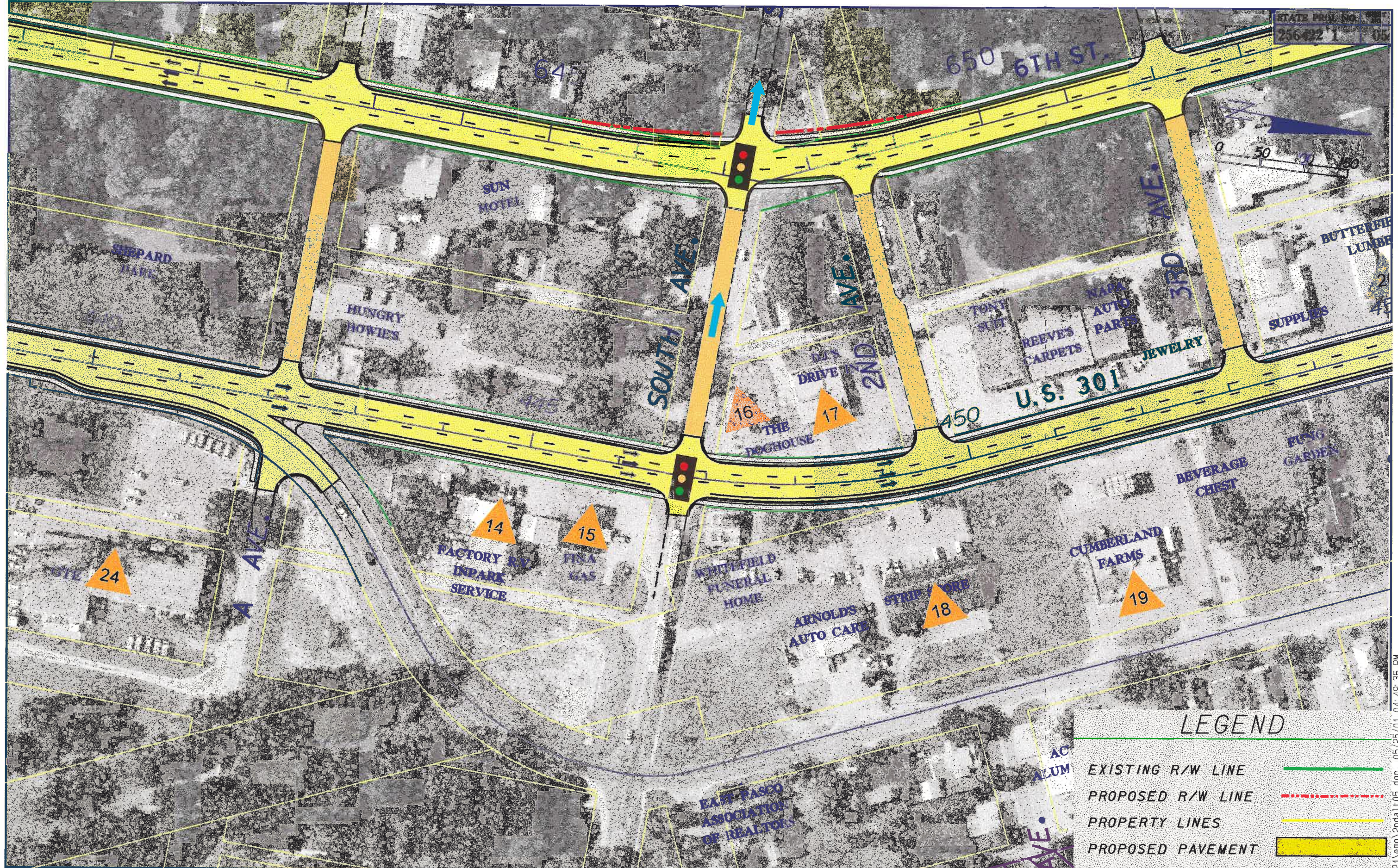
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U.S. 301 PD&E STUDY FROM S.R. 39 TO C.R. 54



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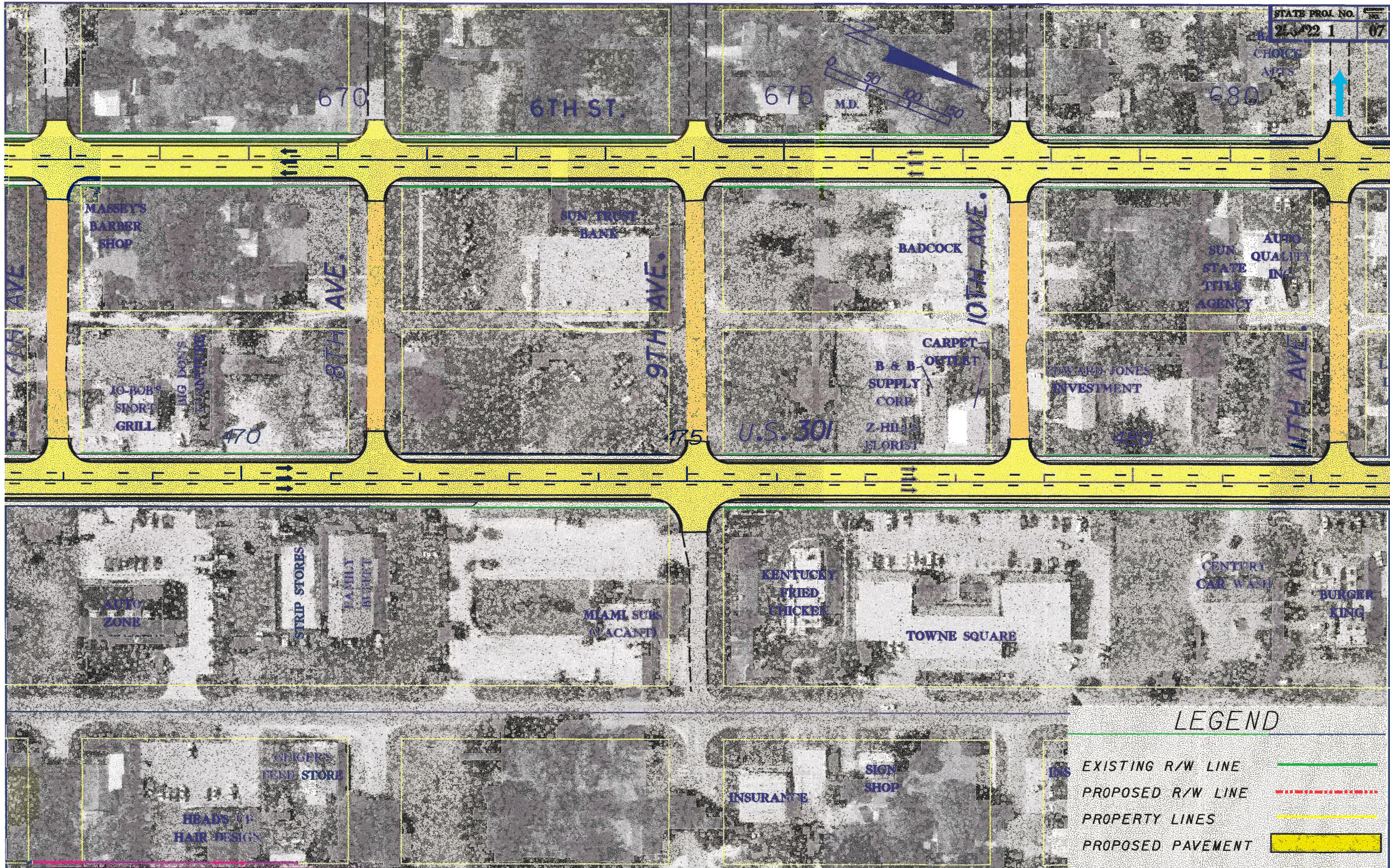
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FLORIDA DEPARTMENT OF TRANSPORTATION

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



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FLORIDA DEPARTMENT OF
TRANSPORTATION

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



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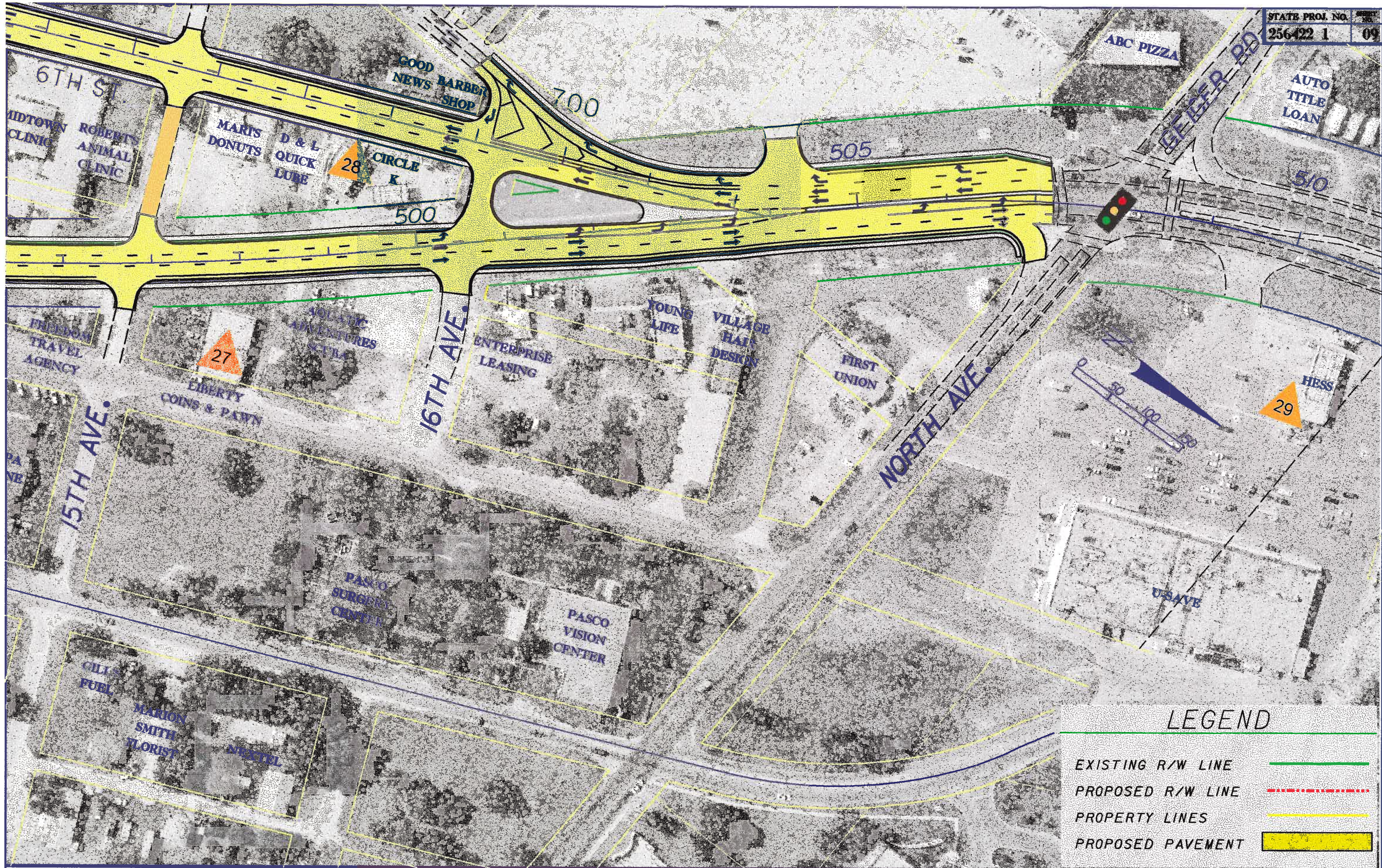
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FLORIDA DEPARTMENT OF
TRANSPORTATION

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



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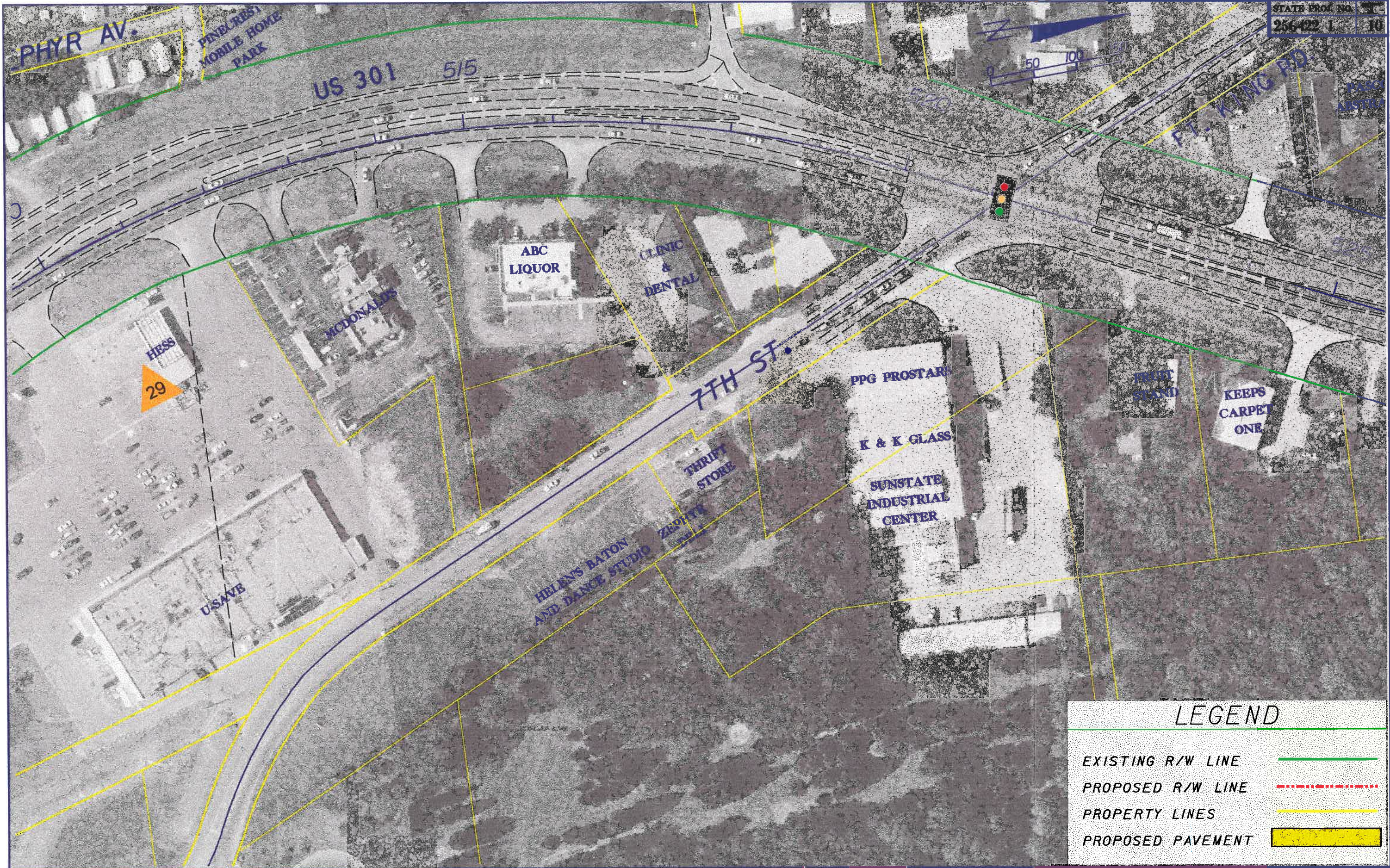
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FLORIDA DEPARTMENT OF
TRANSPORTATION

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

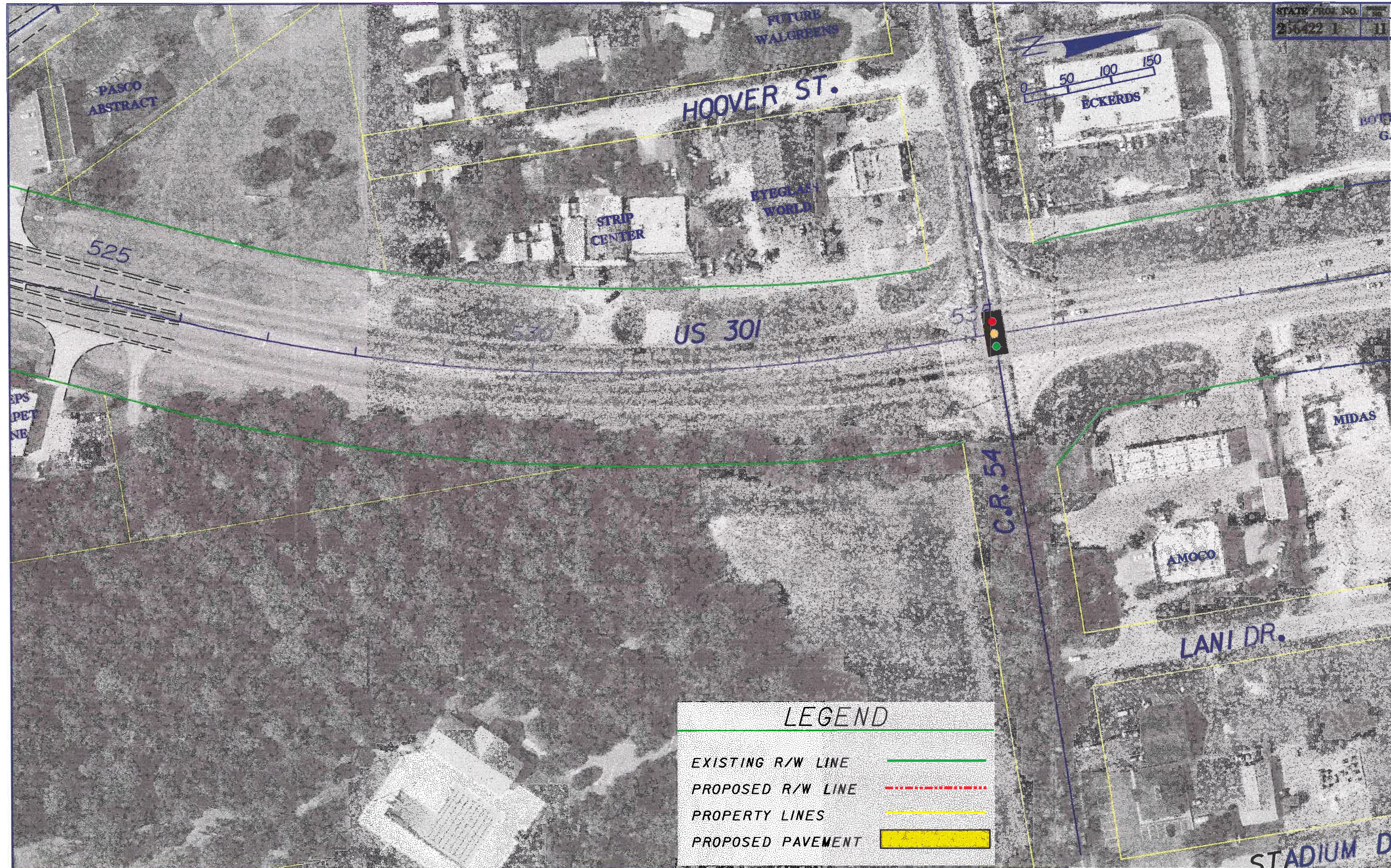


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FLORIDA DEPARTMENT OF TRANSPORTATION

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



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