

FINAL PRELIMINARY ENGINEERING REPORT

**State Project Number: 10030-1536
Work Program Item Number: 7113842
Federal Aid Project Number: MAF-212-1(34)**

**US 92 (SR 600)
From Garden Lane to County Line Road
Hillsborough County, Florida**

This project evaluates the widening of US 92 (SR 600) from Garden Lane to County Line Road in Hillsborough County, Florida.
The approximate length of the project is 18 miles.

Post, Buckley, Schuh & Jernigan, Inc.

Prepared by

(Name and Title of Engineer)

(Name and Title of Responsible Officer)

(P.E. Number)

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Post, Buckley, Schuh & Jernigan, Inc.

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February 1994

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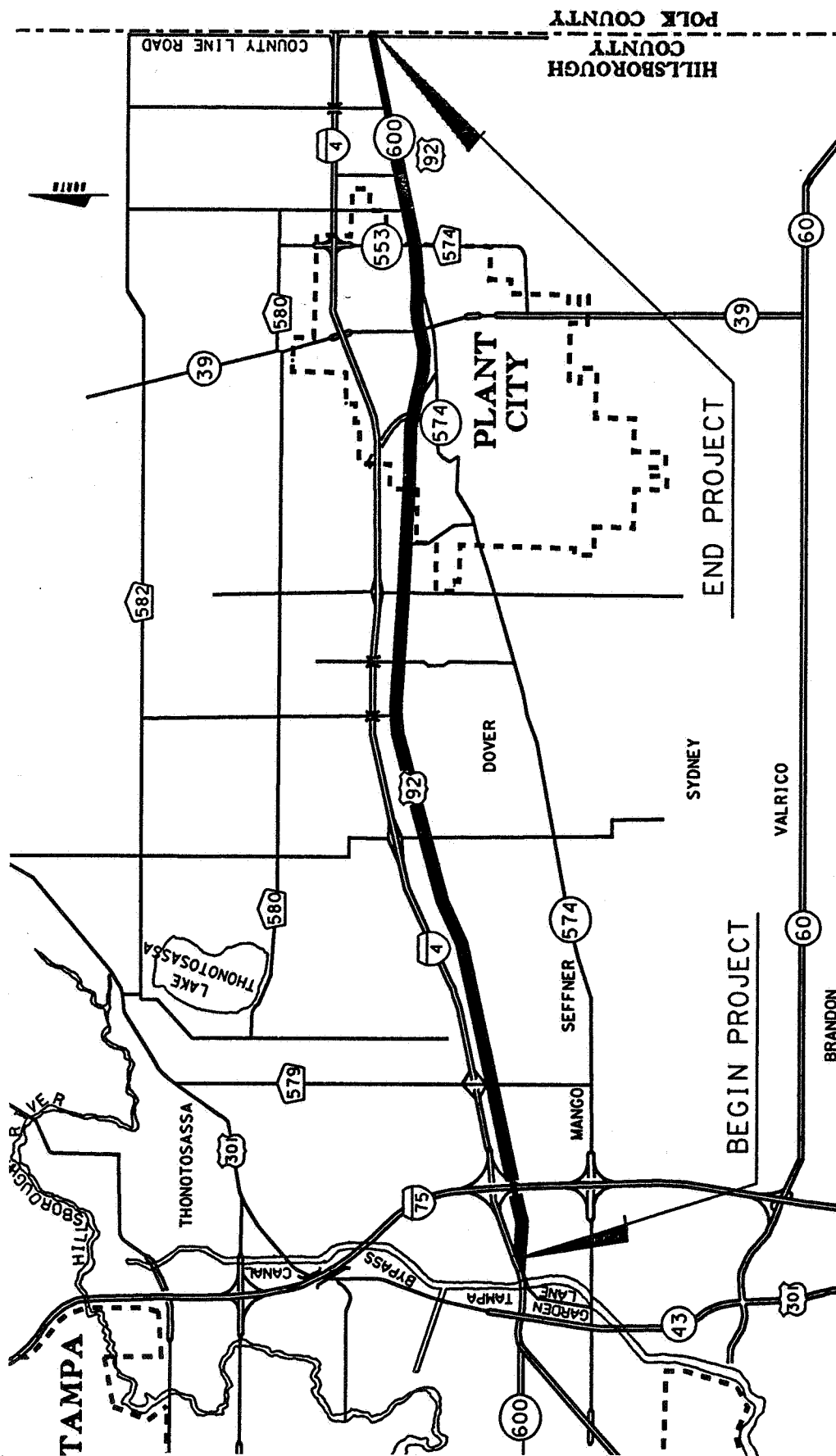
SECTION 1

ABSTRACT

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) study for the improvement of the US Highway 92 (US 92)/State Road 600 (SR 600) corridor between Garden Lane (milepost 6.583) and County Line Road (milepost 24.593), in Hillsborough County, Florida. Figure 1-1 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 FDOT reach a decision on the type, design and location of the necessary improvements along US 92 to accommodate the future traffic demand in a safe and efficient manner. The PD&E study also satisfies the requirements of the National Environmental Policy Act (NEPA) and the Federal Highway Administration (FHWA) in order to receive federal funding for the design, right-of-way acquisition, and construction of the project.

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 and analytical decisions was collected. Once sufficient data were available, 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 identified the alternative that would have the least impact while providing the necessary improvements. The design year of the analysis was Year 2015.



US 92 (SR 600) PD&E STUDY
 HILLSBOROUGH COUNTY
 FROM GARDEN LANE TO COUNTY LINE ROAD

PROJECT LOCATION MAP

FIGURE
 1-1

SECTION 2

INTRODUCTION

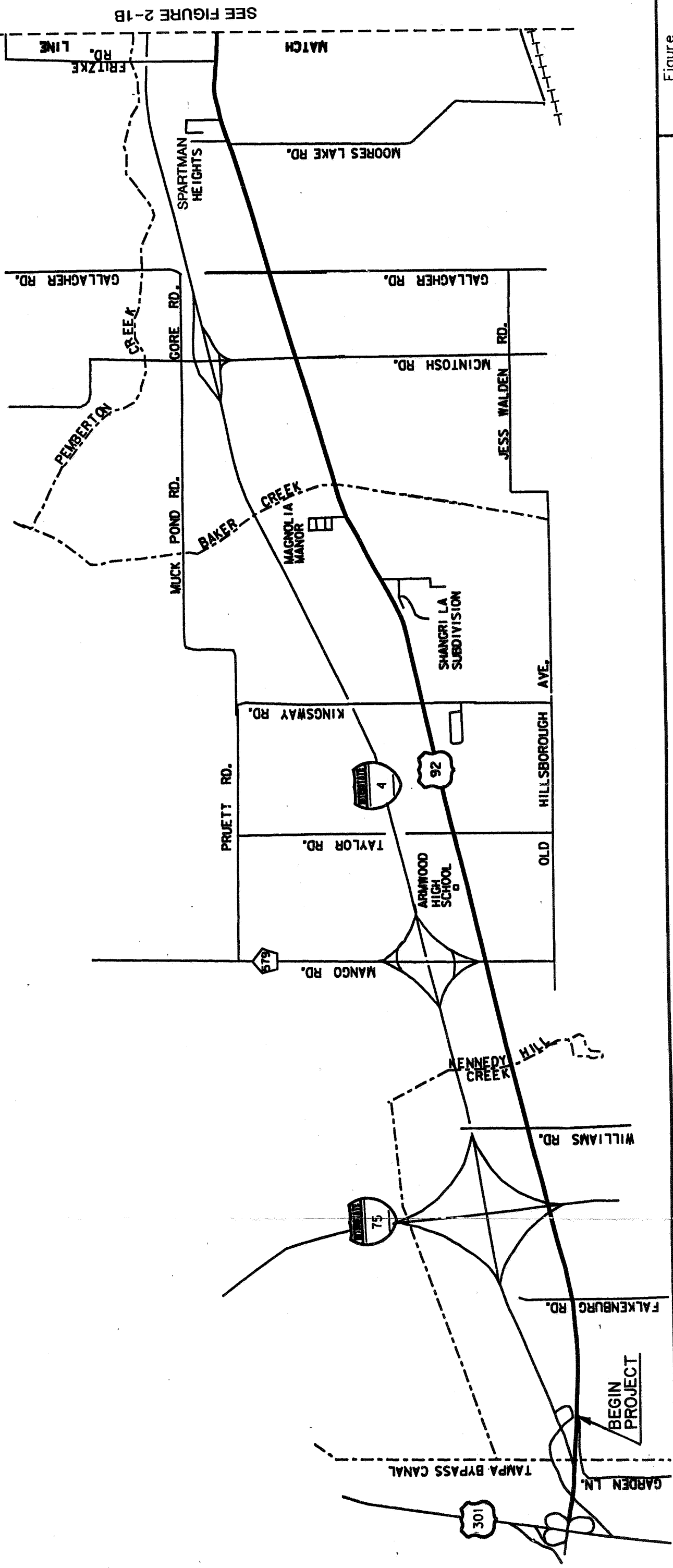
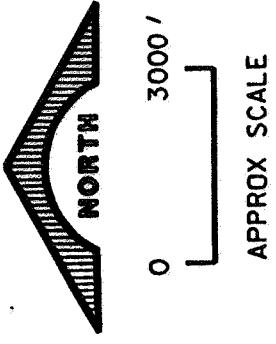
2.1 PURPOSE

This report identifies the current and future deficiencies that should be expected along US 92 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 impacts, identifies the most viable alternative, and presents the reasons for rejecting other alternatives.

2.2 PROJECT DESCRIPTION

US 92 (SR 600) is an east/west primary arterial facility that, within the project limits, runs approximately parallel to Interstate 4 (I-4). The location and limits of the approximately 18-mile-long project were previously shown in Figure 1-1. Figure 2-1 (A and B) presents a more detailed map including key roadways that will be referenced throughout this report. Appendix A of this report includes copies of roadway maps and the Department's straight line diagrams illustrating all intersecting streets and roadways. Part of the project is located within the city of Plant City while the remainder of the project is located in unincorporated Hillsborough County.

US 92 is currently a two-lane rural roadway from Garden Lane to just east of Thonotosassa Road. Approximately 650 feet east of Thonotosassa Road near Mobley Street, US 92 is divided and forms a one-way pair system using Thonotosassa Road and Reynolds Street for eastbound travel and Baker Street for westbound travel. Both the eastbound and westbound segments of the one-way pair consist of two travel lanes. Segments of Reynolds Street also provide curbside parking on both sides.

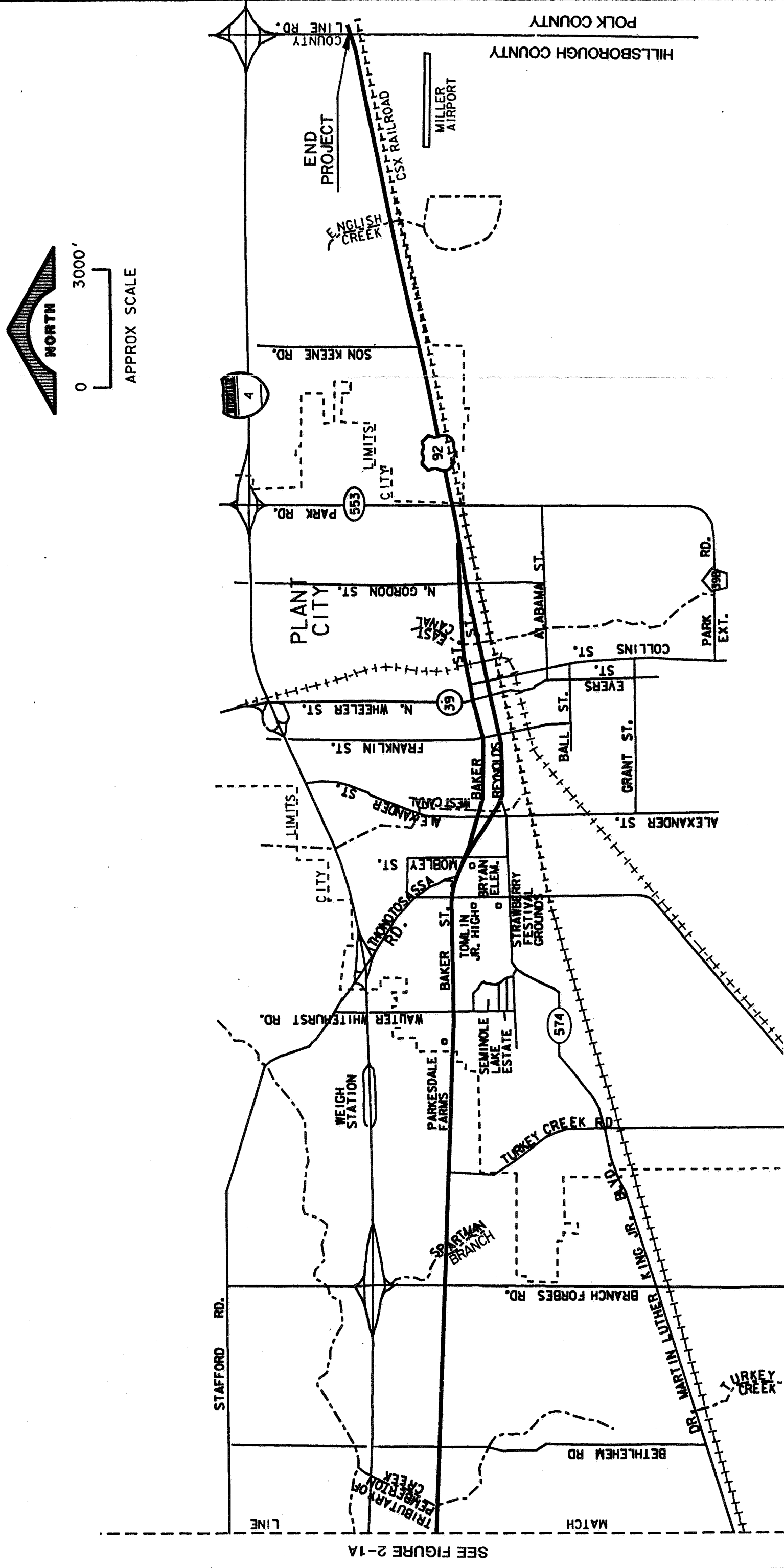


U.S. 92 (S.R. 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

EXISTING ROADWAY NETWORK

Figure

2-1A



U.S. 92 (S.R. 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

EXISTING ROADWAY NETWORK

Figure

B-1-2

The one-way pair system extends for approximately two miles through downtown Plant City and converges near Gordon Street. East of Gordon Street to Park Road, US 92 is a four-lane, urban, divided facility. East of Park Road, US 92 is a two-lane rural facility. The existing speed limits along US 92 vary from 30 mph in downtown Plant City to 55 mph along the rural segments.

SECTION 3

EXISTING CONDITIONS

3.1 EXISTING ROADWAY CHARACTERISTICS

3.1.1 Functional Classification

Based on AASHTO functional classifications, U.S. Highway 92 (US 92)/State Road 600 (SR 600) is classified as a rural and urban principal arterial.

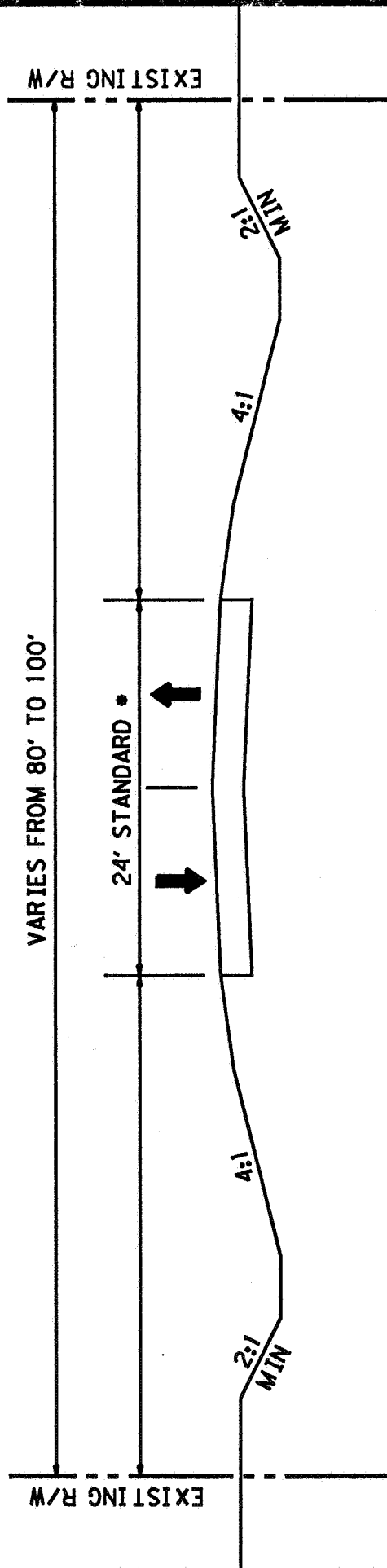
Classifications of the other roads in the study area are:

- Interstate 4 (I-4): Urban Interstate west of Forbes Road; Rural Interstate east of Forbes Road
- US 301: Urban Principal Arterial
- Interstate 75 (I-75): Urban Interstate
- Park Road: Urban Minor Arterial Highway

3.1.2 Typical Sections

Throughout the project limits, US 92 currently displays a number of different typical cross sections. As shown in Figure 3-1, from the start of the project at Garden Lane to Mobley Street, a distance of approximately 13 miles, US 92 is generally a two-lane roadway with 12-foot-wide lanes, grass shoulders, and drainage ditches.

In downtown Plant City, as discussed previously in the project description section, US 92 is divided and consists of a one-way pair system from Mobley Street to Gordon Street. Thonotosassa Road and Reynolds Street accommodate the eastbound traffic on US 92 and



US 92 FROM GARDEN LANE TO THONOTOSASSA ROAD

• 48' MAX. WHEN AUXILIARY LANES ARE PROVIDED

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

EXISTING TYPICAL SECTIONS
US 92 WEST OF PLANT CITY

FIGURE
3-1

Baker Street accommodates the westbound traffic. This section runs for approximately 2.5 miles. Figure 3-2 (A, B, & C) presents the existing typical cross sections along Thonotosassa Road and Reynolds Street. Figure 3-3 presents the existing typical cross sections along Baker Street.

Figure 3-4 presents the existing typical sections of US 92 from east of downtown Plant City to County Line Road. From Gordon Street to Park Road, an approximately 0.5-mile-long segment, US 92 is a four-lane divided roadway with a 17-foot-wide grassed median and concrete curb and gutters. Sidewalks are not provided along this segment. The through travel lanes are 11.5 to 12.0 feet wide. East of Park Road to County Line Road, US 92 becomes a rural facility with two 12-foot-wide lanes and with grass shoulders and drainage ditches on both sides. This segment is approximately three miles long.

3.1.3 Pedestrian and Bicycle Facilities

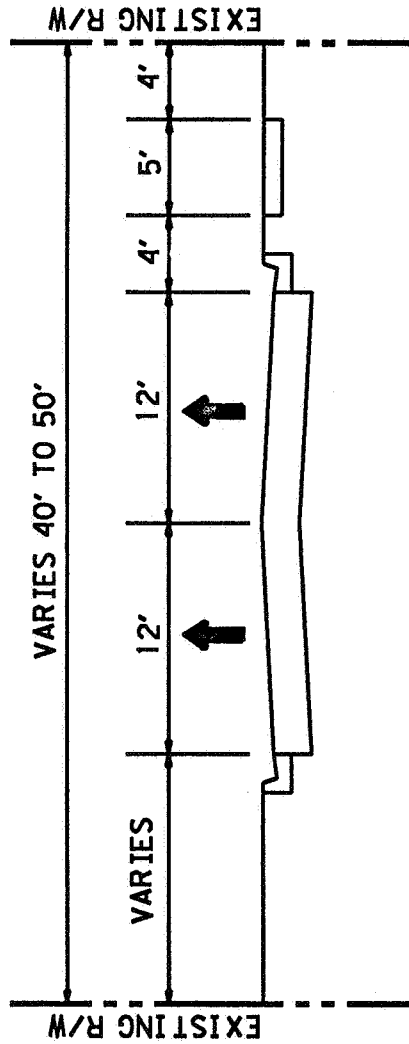
The existing pedestrian facilities in the study area are limited. Sidewalks are provided along Thonotosassa Road, Reynolds Street, and Baker Street between Mobley and Gordon streets, and on some of the cross streets in downtown Plant City. There are no existing bicycle facilities on US 92 or any of the cross streets. Table 3-1 shows which of the signalized intersections in the study area provide crosswalks and/or pedestrian push buttons.

3.1.4 Right-of-Way

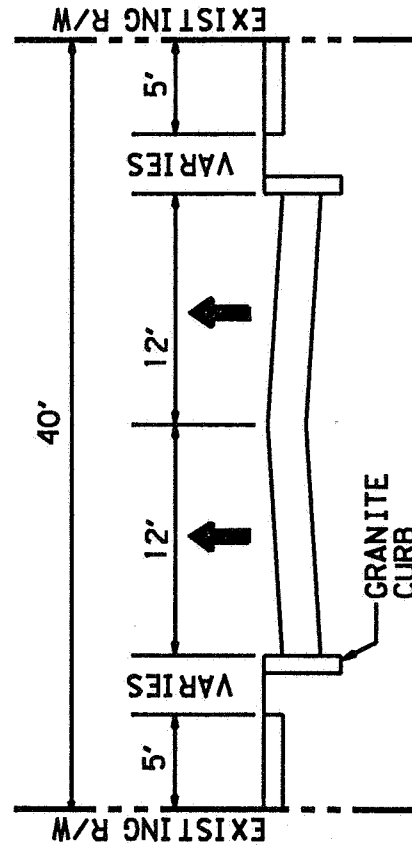
Existing right-of-way (ROW) width information was obtained from the Hillsborough County Property Appraiser maps and CSX railroad company. Table 3-2 summarizes the existing ROW widths along the project.

3.1.5 Horizontal Alignment

Table 3-3 summarizes the existing horizontal alignment characteristics of the project based on



THONOTOSASSA ROAD FROM MOBLEY STREET TO REYNOLDS STREET



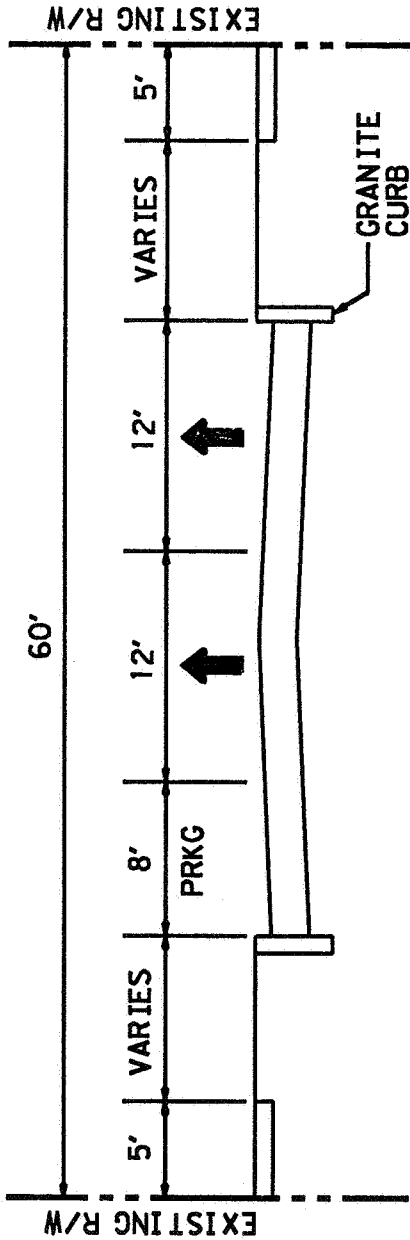
REYNOLDS STREET FROM THONOTOSASSA ROAD TO FRANKLIN STREET

NOT TO SCALE

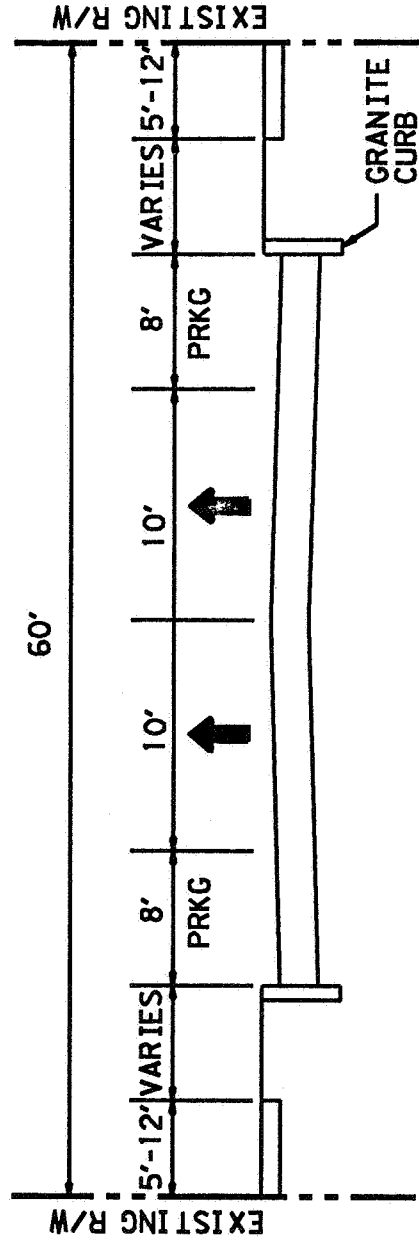
US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

EXISTING TYPICAL SECTIONS
US 92 ONE-WAY EASTBOUND

FIGURE
3-2A



REYNOLDS STREET FROM FRANKLIN STREET TO WHEELER STREET



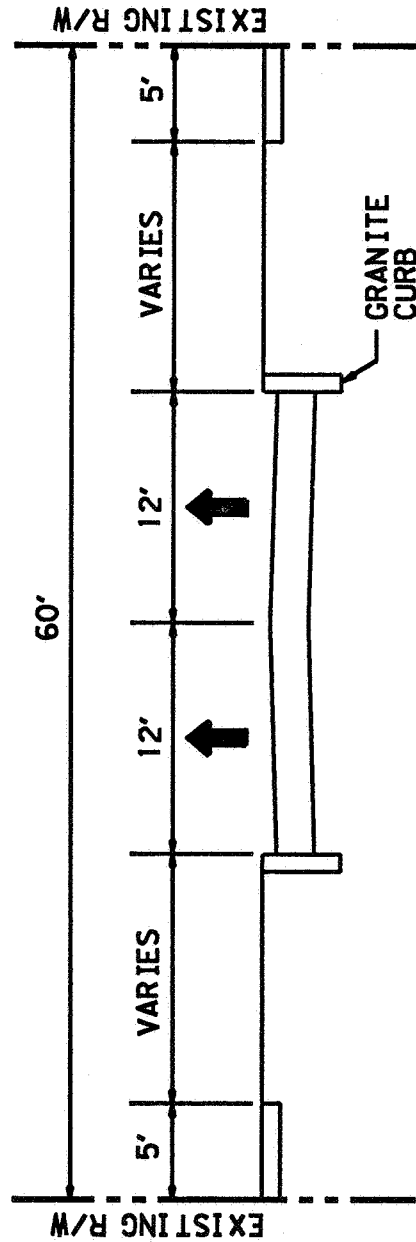
REYNOLDS STREET FROM WHEELER STREET TO CSX R/R CROSSING

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

EXISTING TYPICAL SECTIONS
US 92 ONE-WAY EASTBOUND

FIGURE
3-2B



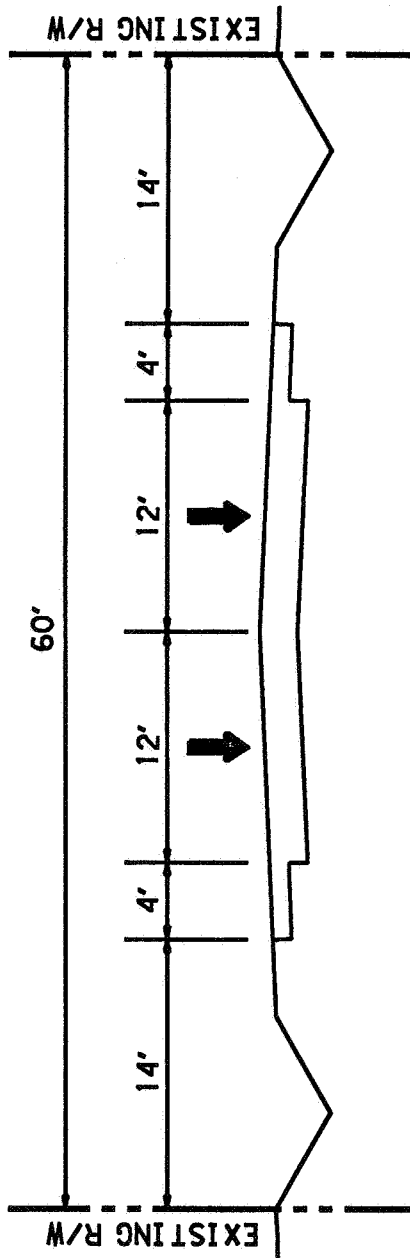
REYNOLDS STREET FROM CSX R/R CROSSING TO GORDON STREET

NOT TO SCALE

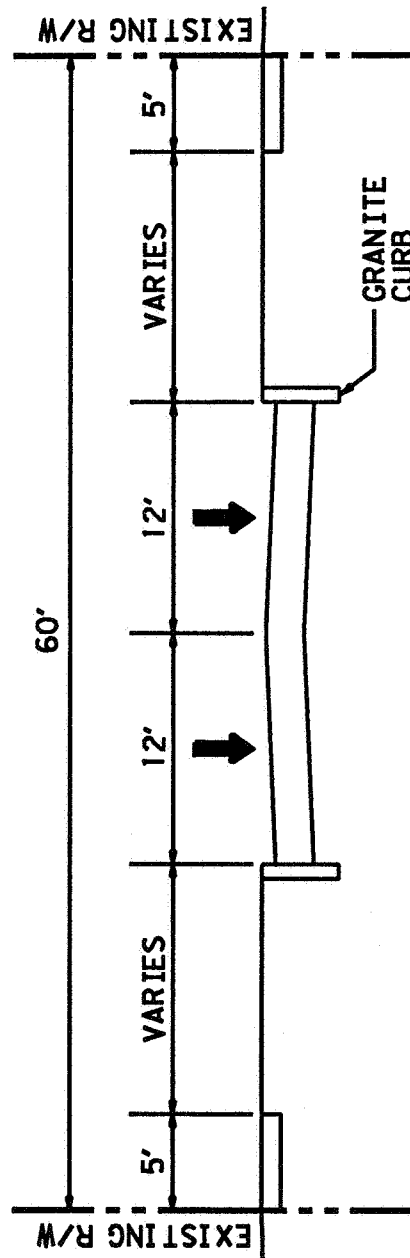
US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

EXISTING TYPICAL SECTIONS
US 92 ONE-WAY EASTBOUND

FIGURE
3-2C



BAKER STREET FROM MOBLEY STREET TO WHITEHALL STREET



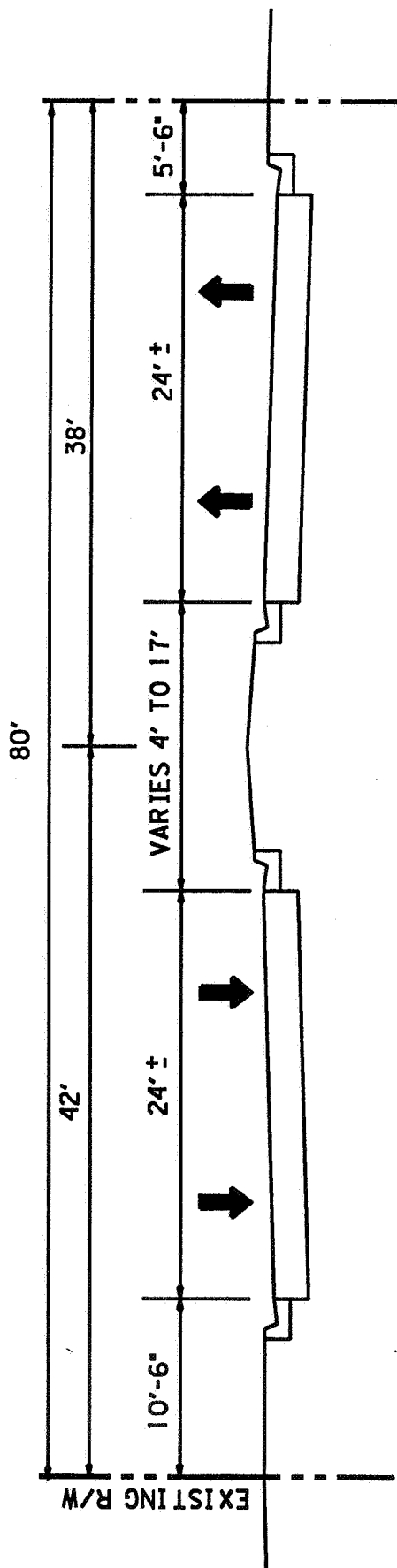
BAKER STREET FROM WHITEHALL STREET TO GORDON STREET

NOT TO SCALE

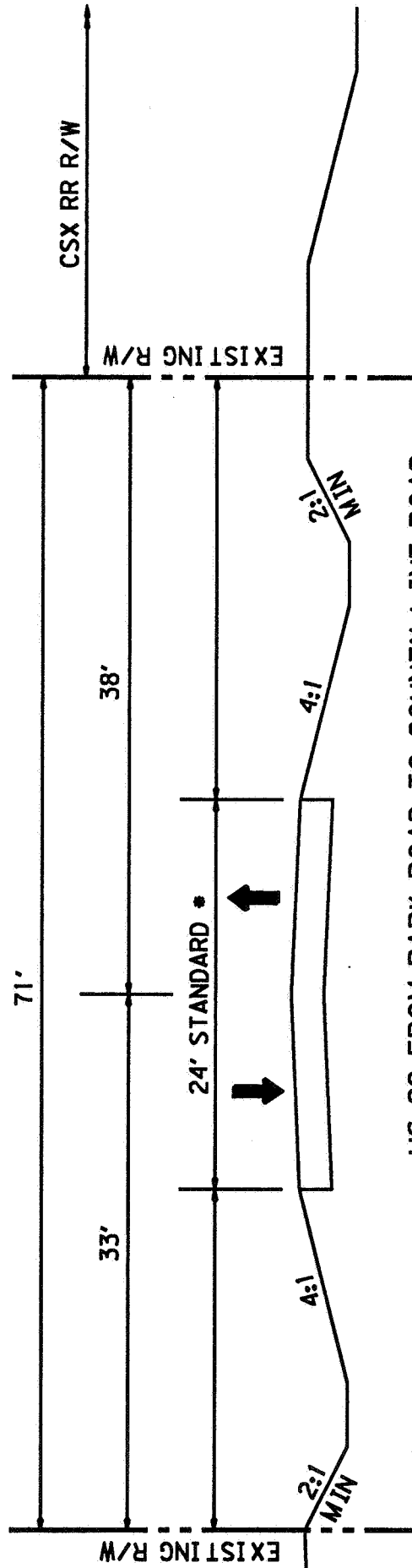
US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

EXISTING TYPICAL SECTIONS
US 92 ONE-WAY WESTBOUND

FIGURE
3-3



US 92 FROM GORDON STREET TO PARK ROAD



US 92 FROM PARK ROAD TO COUNTY LINE ROAD

• 36' MAX. WHEN AUXILIARY LANES ARE PROVIDED

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
 HILLSBOROUGH COUNTY
 FROM GARDEN LANE TO COUNTY LINE ROAD

EXISTING TYPICAL SECTIONS
 US 92 EAST OF PLANT CITY

FIGURE
3-4

TABLE 3-1
EXISTING SIGNALIZED INTERSECTIONS ALONG US 92 AND
PEDESTRIAN FACILITIES

<u>CROSS STREET</u>	<u>CROSSWALK</u>	<u>PEDESTRIAN PUSH BUTTON</u>
Two-way US 92		
Falkenburg Road	Yes	Yes
Williams Road	No	No
Mango Road (CR 579)	No	No
Peach Street	No	No
Pine Street	Yes	Yes
Parsons Avenue	No	No
Kingsway Road	No	No
McIntosh Road	No	No
Forbes Road	No	No
Thonotosassa Road	Yes	Yes
Maryland Avenue	Yes	Yes
Park Road	No	No
County Line Road	No	No
Eastbound US 92 at the One-way Pair (Thonotosassa Road and Reynolds Street)		
Alexander Street	Yes	Yes
North Wheeler Street	Yes	Yes
North Evers Street	Yes	Yes
North Collins Street	Yes	Yes
North Palmer Street	Yes	Yes
Railroad Crossing east of Palmer Street	No*	No
Westbound US 92 at the One-way Pair (Baker Street)		
Alexander Street	Yes	Yes
Franklin Street	No	No
North Wheeler Street	Yes	Yes
North Collins Street	Yes	Yes
Railroad Crossing east of Palmer Street	No*	No

* The existing sidewalks along US 92 are interrupted at the railroad tracks.

**TABLE 3-2
EXISTING RIGHT-OF-WAY WIDTH SUMMARY***

ROADWAY SEGMENT	RIGHT-OF-WAY WIDTH
US 92 from Garden Lane to approximately 1200' east of Garden Lane	Transitions from 120' to 80'
US 92 from approximately 1200' east of Garden Lane to 230' east of Pickron Street	80'
US 92 from 230' east of Pickron Street to west of Falkenburg Road	100'
US 92 from east of Falkenburg Road to 300' east of Thonotosassa Road	80'
US 92 from 300' east of Thonotosassa Road to 180' east of Mobley Road	Ranges from 100' to 250'
Thonotosassa Road from 180' east of Mobley Street to west of Alexander Street	50'
Thonotosassa Road from east of Alexander Street to north of Reynolds Street	40'
Reynolds Street from Thonotosassa Road to 150' west of Franklin Street	40'
Reynolds Street from 150' west of Franklin Street to west of Evers Street	Ranges from 60' to 65'
Reynolds Street from east of Evers Street to west of Warnell Street	60'
Reynolds Street from east of Warnell Street to 110' west of Gordon Street	Ranges from 75' to 110'
Baker Street from 180' east of Mobley Street to west of Plant Avenue	80'
Baker Street from just east of Plant Avenue to 180' east of Plant Avenue	Transitions from 80' to 60'
Baker Street from 180' east Plant Avenue to 110' west of Gordon Street	60'
US 92 from 110' west of Gordon Street to 180' east of Gordon Street	Transitions from 170' to 80'
US 92 from 180' east of Gordon Street to west of County Line Road	80'

Source: Hillsborough County Assessor Maps and CSX Railroad right-of-way plans.

* This table references several roadways that are not shown in the Project Location Map and Roadway Network figures presented previously. For the location of these roadways in relation to the project please refer to Appendix A which provides SLD diagrams and street maps.

**TABLE 3-3
EXISTING HORIZONTAL ALIGNMENT CHARACTERISTICS ALONG US 92***

P.I. MILEPOST	VINICITY OF	DEGREE OF DEFLECTION	DEGREE OF CURVATURE	DIRECTION OF DEFLECTION
10.233	Parsons Avenue	00 deg 01 min 00 sec	N/A**	Left
11.246	Knights Street	13 deg 49 min 00 sec	02 deg 00 min 00 sec	Left
11.946	Pasadena Drive	11 deg 29 min 00 sec	01 deg 00 min 00 sec	Right
13.450	Gallagher Road	00 deg 09 min 30 sec	N/A	Left
14.556	Fritzsche Road	17 deg 43 min 00 sec	01 deg 00 min 00 sec	Right
18.194	Whitehurst Road	02 deg 50 min 00 sec	00 deg 17 min 00 sec	Left
18.866	Woodrow Wilson Boulevard	12 deg 19 min 00 sec	02 deg 00 min 00 sec	Right
19.167	Mobley Road	16 deg 37 min 00 sec	N/A	Right
19.456	Alexander Street	00 deg 09 min 45 sec	N/A	Right
19.631	Dort Street	29 deg 35 min 00 sec	N/A	Left
19.989	Davis Road	13 deg 10 min 00 sec	N/A	Left
20.956	Warnell Street	20 deg 00 min 00 sec	N/A	Left
21.026	Gordon Street	24 deg 25 min 50 sec	N/A	Right
21.398	Park Road	10 deg 11 min 00 sec	02 deg 00 min 00 sec	Left

Source : FDOT Straight Line Diagram

* This table references several roadways that are not shown in the Project Location Map and Roadway Network figures presented previously. For the location of these roadways in relation to the project please refer to Appendix A which provides SLD diagrams and street maps.

** N/A : Not Available

information obtained from the Straight Line Diagrams (SLD) provided by FDOT. Copies of the SLD are included in Appendix A. As-built plans providing horizontal alignment information for the project could not be found.

3.1.6 Vertical Alignment

As-built plans providing vertical alignment information for the project could not be found. Aerial photography, provided by Southwest Florida Water Management District (SWFWMD), United States Geological Survey (USGS) maps and field observations were used to compile the information presented in Table 3-4. The existing vertical alignment information in Table 3-4 is broken down in three sections:

- between Garden Lane and Mobley Street, west of Plant City
- one-way pair streets in downtown Plant City, and
- between Gordon Street and County Line Road.

As shown in the table, several urban segments of US 92 (in Plant City) presently provide grades equal or less than the minimum standard grade of 0.3 percent. Table 3-4 also indicates high point locations where, based on review of the available information, stopping sight distance deficiencies might exist. The existence of these deficiencies will be verified during the final design phase and remedial measures will be implemented (if necessary) to provide standard stopping sight distances.

3.1.7 Drainage

A Location Hydraulic Report (LHR)^{1*} has been prepared for the US 92 (SR 600) PD&E Study. This section presents a summary of findings from these efforts.

* Reference numbers correspond to the numbers listed at the end of this section in the References chapter.

TABLE 3-4
EXISTING VERTICAL ALIGNMENT CHARACTERISTICS ALONG US 92*
(1 of 2)

LOCATION	APPROXIMATE MILEPOST	POINT TYPE**	APPROXIMATE POINT ELEVATION	GRADE TO THE NEXT POINT
BETWEEN GARDEN LANE AND MOBLEY STREET				
At Garden Lane	6.58	LP	28.3	+2.6%
800' west of Falkenburg Road	6.97	HP^	68.5	-1.1%
1570' west of Williams Road	7.87	LP	28.7	+1.5%
260' west of Williams Road	8.12	HP	38.5	-0.5%
2190' east of Williams Road	8.59	LP	28.8	+1.3%
2360' west of Mango Road	8.73	HP	35.8	-0.3%
2200' west of Mango Road	8.76	LP	35.2	+2.8%
1040' east of Mango Road	9.41	HP^	104.9	-2.1%
At Pine Street	9.69	LP	78.4	+1.4%
600' east of Taylor Road	10.06	HP^	104.2	-1.6%
870' west of Kingsway Road	10.55	LP	83.1	+0.3%
560' east of Kingsway Road	10.82	HP	83.7	-1.9%
490' west of Shangri La Drive	11.46	LP	43.4	+0.8%
1370' west of Pasadena Drive	11.72	HP	48.5	-0.1%
700' west of Pasadena Drive	11.85	LP	47.9	+0.1%
1120' east of Pasadena Drive	12.20	HP	49.2	-0.1%
1840' east of Pasadena Drive	12.33	LP	48.2	+0.3%
2990' east of Gallagher Road	13.91	HP	77.2	-1.1%
350' west of Moores Lake Road	14.06	LP	73.1	+3.4%
750' west of Fritzke Road	14.49	HP^	121.0***	-2.1%***
1600' east of Fritzke Road	14.93	LP	85.0***	+2.0%***
850' west of Bethlehem Road	15.22	HP	101.0***	-0.1%
1140' east of Forbes Road	16.60	LP	100.1	+0.0%
2580' west of Whitehurst Road	17.72	PGC	106.0	+1.2%
At Whitehurst Road	18.21	HP	131.6	-1.4%
2670' west of Thonotosassa Road	18.56	LP	112.7	+1.2%
300' west of Thonotosassa Road	19.01	HP	128.5	-1.0%
At Mobley Street	19.17	PGC	120.0	-0.2% +
				-0.5% ++

Source: Southwest Florida Water Management District (SWFWMD) 1"=200' aerial photos except where it is otherwise indicated (see note below).

* This table references several roadways that are not shown in the Project Location Map and Roadway Network figures presented previously. For the location of these roadways in relation to the project please refer to Appendix A which provides SLD diagrams and street maps.

** High point (HP) or low point (LP) or point of grade change (PGC).

*** Area not mapped yet by SWFWMD. Elevations and grades were derived from USGS 1"=2000' scale maps.

+ Grade to Thonotosassa Road.

++ Grade to Baker Street.

^ High point locations with potential sight distance deficiencies.

TABLE 3-4
EXISTING VERTICAL ALIGNMENT CHARACTERISTICS ALONG US 92*
(2 of 2)

LOCATION	APPROXIMATE MILEPOST	POINT TYPE**	APPROXIMATE POINT ELEVATION	GRADE TO THE NEXT POINT
EASTBOUND US 92 AT THE ONE-WAY PAIR - THONOTOSASSA ROAD & REYNOLDS STREET				
450' west of Dort Street	19.52	LP	113.2	+0.6%
730' east of Carey Street	19.88	PGC	123.0	+0.2%
1430' west of Wheeler Street	20.02	PGC	124.0	+1.4%
400' west of Wheeler Street	20.21	HP	128.0	-0.3%
170' east of Lake Street	20.62	LP	123.5	+0.5%
250' west of Gordon Street	20.98	PGC	129.0	+0.1%
WESTBOUND US 92 AT THE ONE-WAY PAIR - BAKER STREET				
190' east of Dort Street	19.64	LP	135.5	+0.3%
840' east of Dort Street	19.76	PGC	118.9	+0.2%
510' west of Wheeler Street	20.19	PGC	127.0	+3.2%
At Wheeler Street	20.29	HP	140.5	-1.0%
120' east of Lake Street	20.62	LP	123.5	+0.5%
290' west of Gordon Street	20.90	PGC	129.0	+0.1%
BETWEEN GORDON STREET AND COUNTY LINE ROAD				
580' east of Gordon Street	21.14	PGC	130.0	+0.7%
70' west of Park Road	21.50	PGC	144.0	+0.1%
1260' east of Wilder Road	22.28	HP	148.0	-0.2%
470' west of Thrasher Road	23.00	LP	142.7	+0.0%
60' east of Taylor Road	23.58	LP	142.7	+0.0%
1890' west of County Line Road	24.23	PGC	144.0	+0.6%

Source: Southwest Florida Water Management District (SWFWMD) 1"=200' aerial photos except where it is otherwise indicated (see note below).

- * This table references several roadways that are not shown in the Project Location Map and Roadway Network figures presented previously. For the location of these roadways in relation to the project please refer to Appendix A which provides SLD diagrams and street maps.
- ** High point (HP) or low point (LP) or point of grade change (PGC).

3.1.7.1 Soils Information

The Soil Survey of Hillsborough County, Florida² was reviewed to identify the soil types along the project. A map of the soil types in the study area and soils descriptions are provided in Appendix B. In general, soils are sandy and range from poorly to excessively drained. More information on the soils types and characteristics is provided in Section 3.1.8.

3.1.7.2 Base Floodplains

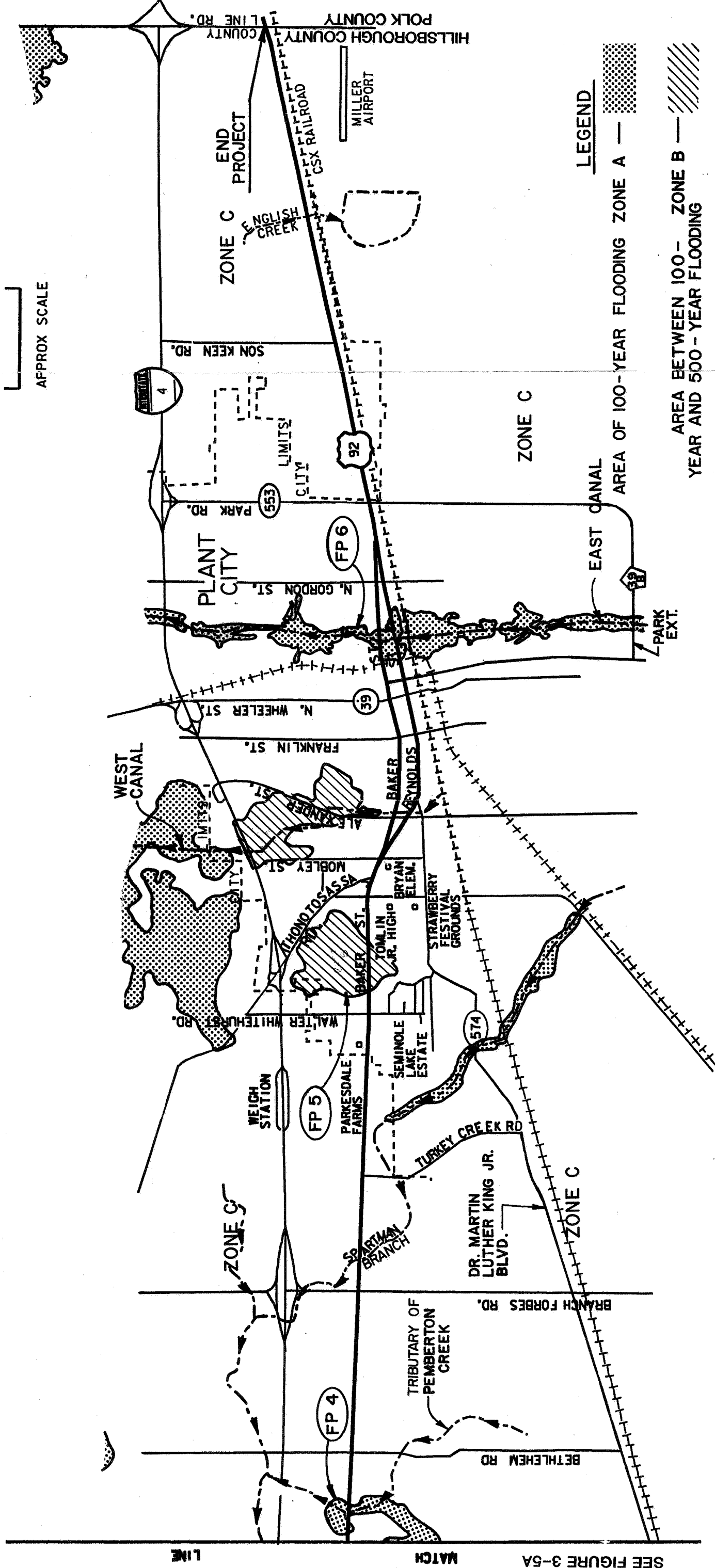
Figure 3-5 (A and B) illustrates the existing floodplains within the project limits according to the Flood Insurance Rate Maps (FIRM) compiled by the Federal Emergency Management Agency (FEMA). A brief description of the existing floodplains follows.

- Floodplain No. 1 - The area surrounding the I-75 interchange between Carmack Road* and Anna Road is located within the floodplain limits shown on FIRM panel number 120112 0380E, dated August 15, 1989.
- Floodplain No. 2 - The Kennedy Hill Creek crossing is located within the floodplain limits shown on FIRM panel number 120112 0385E, dated August 15, 1989.
- Floodplain No. 3 - The Baker Creek crossing is located within the floodplain limits shown on FIRM panel number 120112 0245C, dated April 17, 1984.
- Floodplain No. 4 - The Pemberton Creek crossing between Lindsey Loop and Meadow Oaks Drive is located within the floodplain limits shown on FIRM panel number 120112 0275C, dated April 17, 1984.
- Floodplain No. 5 - The area between Coleman Drive and Edwards Street is located within the floodplain limits shown on FIRM panel number 120113 0005B, dated April 29, 1983. The floodplain is crossed in a transverse manner. The floodplain is rated as a Zone B and contains very little development. The encroachments consist of US 92 and a few smaller streets.

* Several roadways mentioned in this discussion are not shown in the graphics for graphic clarity reasons. The milepost and location of these roadways can be found by using the Straight Line Diagrams and street maps provided in Appendix A.



0 3000 /
APPROX SCALE



SEE FIGURE 3-5A

MATCH LINE

LEGEND

- AREA OF 100-YEAR FLOODING ZONE A — [stippled pattern]
- AREA BETWEEN 100- YEAR AND 500- YEAR FLOODING ZONE B — [diagonal lines]
- AREA OF MINIMAL FLOODING ZONE C — [horizontal lines]

U.S. 92 (S.R. 600) PD&E STUDY HILLSBOROUGH COUNTY FROM GARDEN LANE TO COUNTY LINE ROAD	FLOODPLAIN LIMITS	Figure 3-5B
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- Floodplain No. 6 - The area surrounding Michigan Avenue and Johnson Street is located within the floodplain limits shown on FIRM panel number 120113 0005B, dated April 29, 1983. The floodplain is crossed in a transverse manner. The floodplain is rated as a Zone C and is well developed. The encroachments consist of existing US 92, an active railroad line, other streets, and commercial and residential buildings.

3.1.7.3 Regulated Floodways

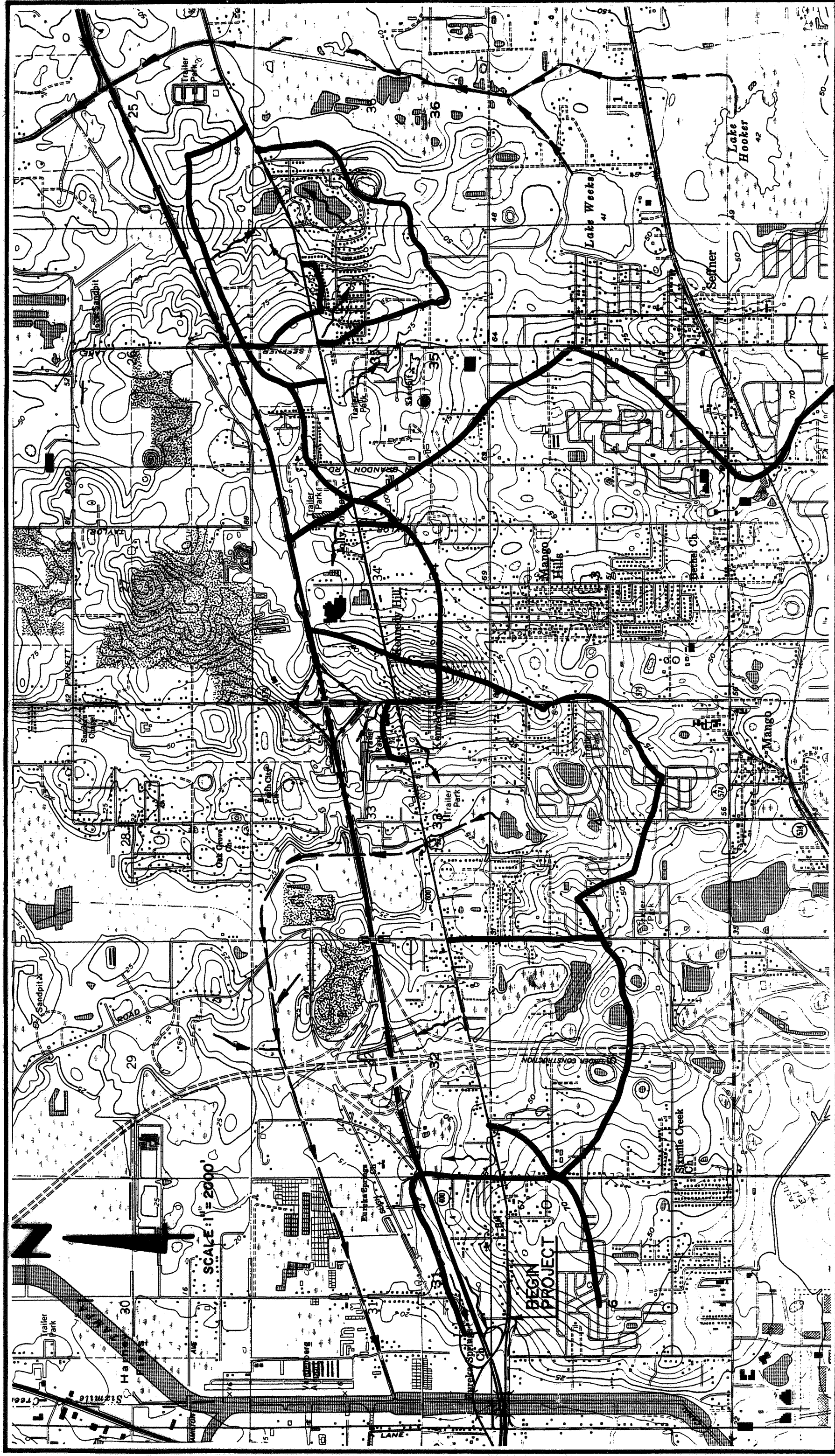
According to the FEMA flood boundary and floodway maps, regulated floodways do not exist within the project limits.

3.1.7.4 Drainage Patterns

The existing drainage patterns and basin limits were determined using several sources including USGS quadrangle maps, SWFWMD aerial photography (1 inch = 200 feet) with one-foot contour intervals, and field inspection.

Figure 3-6 (A, B and C) depicts the existing drainage patterns within the project limits. These patterns are as follows:

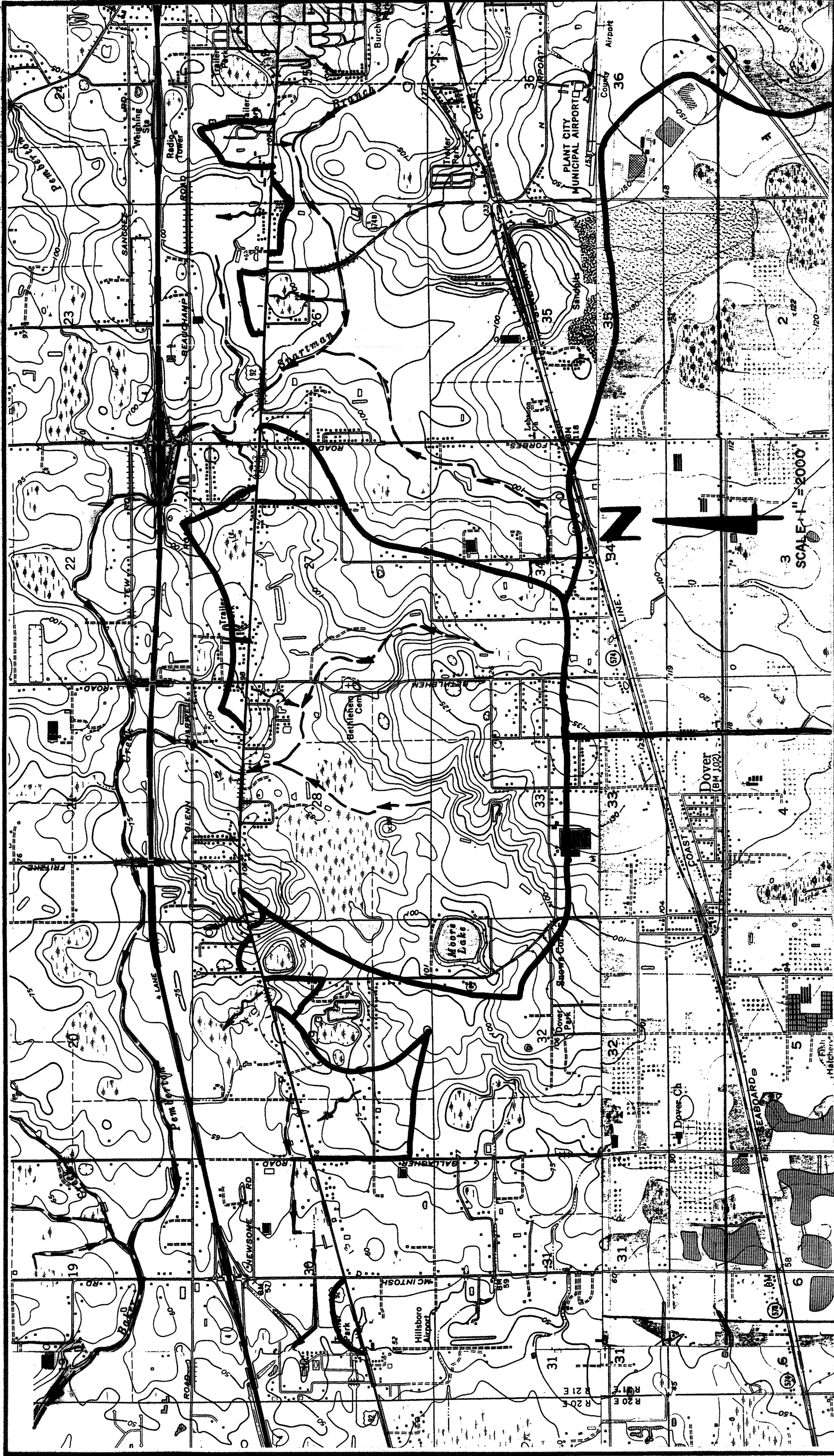
- The runoff from Pickron Street to Garden Lane is conveyed via roadside swales westward to the Tampa Bypass Canal, and eventually outfalls to Tampa Bay.
- The runoff from Pickron Street to Peach Avenue is conveyed through a combination of storm sewer and roadside swales to Kennedy Hill Creek which outlets to the Tampa Bypass Canal, and eventually outfalls to Tampa Bay.
- The runoff from the area from Peach Avenue to the east of Taylor Road drains via roadside ditches to a concrete box culvert west of Pine Street and flows south to a depressional area surrounding Mango Lake.
- The runoff from east of Taylor Road to Lynn Oaks Circle is conveyed via roadside ditches to Baker Creek which drains north to Lake Thonotosassa.



U.S. 92 (S.R. 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

EXISTING DRAINAGE PATTERNS

Figure
3-6A



U.S. 92 (S.R. 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

EXISTING DRAINAGE PATTERNS

Figure

3-6B

- The runoff from the area east of Lynn Oaks Circle to Forbes Road drains via roadside ditches to Pemberton Creek which flows north and outfalls to Lake Thonotosassa.
- The runoff from the area from Forbes Road to Whitehurst Road/Walter Drive is conveyed via roadside swales to Spartman Branch, a tributary of Pemberton Creek. Pemberton Creek flows northwest to Lake Thonotosassa.
- West of Whitehurst/Walter Drive to Woodrow Wilson Street, the runoff drains to a box culvert that crosses US 92 at milepost 18.615, and eventually combines with the West Side Canal north of US 92.
- From Woodrow Wilson Street to North Wheeler Street, the runoff drains east to the West Side Canal which feeds a tributary of Pemberton Creek.
- The runoff from the area between North Wheeler Street and Park Road drains to the East Side Canal.
- The runoff from Park Road to east of Wilder Road drains north through two box culverts located at mileposts 21.663 and 21.964 and continues, joining with the East Side Canal north of US 92.
- From east of Wilder Road to west of Thrasher Road the runoff drains south through a box culvert at milepost 22.944 and continues to English Creek.
- From west of Thrasher Road to east of Wiggins Road the runoff drains through a box culvert located at milepost 23.392 and continues to English Creek.
- From east of Wiggins Road to and beyond the eastern project terminus at the Hillsborough/Polk County line the runoff drains north through two box culverts located at mileposts 24.194 and 24.234.

3.1.7.5 Hydraulic Adequacy of Existing Drainage Crossings

Table 3-5 summarizes the existing drainage structures that cross US 92 within the project limits.

The Kennedy Hill Creek crossing is located between East Mobile Villa Drive and Black Dairy Road. The existing structure is a bridge. The discharge through the structure was determined using the Modified Rational Method.

**TABLE 3-5
EXISTING DRAINAGE STRUCTURES**

LOCATION MILEPOST*	ADJACENT INTERSECTION	STRUCTURE TYPE	LENGTH (FEET)
7.225	EAST OF FALKENBURG ROAD	2' X 2' CBC	68
7.839	EAST OF ANNA DRIVE	7' X 5' CBC	60
8.140	WEST OF WILLIAMS ROAD	2' X 2' CBC	94
8.569	EAST OF MOBILE VILLA DRIVE	BRIDGE	47
9.103	WEST OF MANGO ROAD	24" RCP	57
9.187	WEST OF MANGO ROAD	30" RCP	99
9.654	WEST OF PINE STREET	2' X 2' CBC	73
9.960	EAST OF TAYLOR ROAD	2' X 2' CBC	32
10.506	EAST OF BRIANWOOD ROAD	2' X 2' CBC	54
10.710	WEST OF KINGSWAY ROAD	24" RCP	100
11.055	WEST OF KNIGHT PLACE	2' X 2' CBC	53
11.365	EAST OF SHANGRI LA DRIVE	2' X 2' CBC	66
12.059	EAST OF PASADENA DRIVE	BRIDGE	56
12.618	WEST OF McINTOSH ROAD	48" RCP	48
13.555	EAST OF GALLAGHER ROAD	6' X 4' CBC	54
14.082	WEST OF MOORES LAKE ROAD	2' X 2' CBC	67
14.160	EAST OF EDMUND COURT	3' X 3' CBC	52
14.384	EAST OF REOLA ROAD	2' X 2' CBC	50
15.010	WEST OF W. MEADOW OAKS DRIVE	BRIDGE	34
15.380	WEST OF BETHLEHEM ROAD	2' X 2' CBC	52
15.930	WEST OF TANNER ROAD	2' X 2' CBC	54
16.342	WEST OF FORBES ROAD	2' X 2' CBC	70
16.640	EAST OF WHITELAW ROAD	BRIDGE	33
17.038	EAST OF HAGGARD ROAD	4' X 2' CBC	56
17.461	WEST OF FLETCHER LANE	2' X 2' CBC	57
17.729	EAST OF FLETCHER LANE	30" RCP	56
18.605	WEST OF RITTER ROAD	4' X 4' CBC	58
19.516	EAST OF ALEXANDER STREET	10' X 5' CBC	62
20.622	EAST OF LAKE STREET **	DBL 10' X 6' CBC	62
21.663	EAST OF PARK ROAD	4' X 3' CBC	64
21.964	WEST OF WILDER ROAD	5' X 2' CBC	60
22.526	WEST OF SON KEEN ROAD	5' X 3' CBC	60
22.994	EAST OF GREENWAY DRIVE	5' X 3' CBC	60
23.392	WEST OF CHARLIE TAYLOR ROAD	DBL 6' X 4' CBC	60
24.094	WEST OF WEBB ROAD	4' X 2' CBC	68
24.234	WEST OF WEBB ROAD	8' X 2.5' CBC	60
0.373	WEST OF VERMONT AVENUE***	DBL 10' X 6' CBC	86
1.462	EAST OF ALEXANDER STREET***	10' X 5' CBC	48

* Mileposts are approximate. They were obtained from the FDOT Straight Line Diagrams and roadway design plans where available. The Straight Line Diagrams are provided in Appendix A.

** This structure is located under a building.

*** Milepost measured on westbound US 92 (one-way pair) in Plant City.

There is a 2.0-foot-wide by 2.0-foot-high concrete box culvert crossing located west of Pine Street. The discharge through this structure was determined using the Rational Equation.

The Baker Creek crossing is located between Pasadena Drive and Castlewood Road. The existing structure is a bridge. The discharge through this structure was determined using the USGS Regression Equation Method.

The Pemberton Creek crossing is located between Lindsey Loop and Meadow Oaks Drive. The existing structure is a bridge. The discharge through the structure was determined using the Modified Rational Method.

The Spartman Branch crossing is located between Whitelaw Road and Haggard Road. The existing structure is a bridge. The discharge through the structure was determined using the Modified Rational Equation Method.

3.1.7.6 Drainage Problems

The FDOT Maintenance Department, Hillsborough County, and SWFWMD were contacted to obtain information concerning existing flooding problems in the vicinity of US 92. Below follows a list of problems noted by the agencies.

The FDOT Maintenance Department noted the following drainage problems:

- Milepost 7.839: Drainage structure is blocked on its south side.
- Milepost 8.569: Outflow drainage structure from the existing pond into the ditch is plugged.
- Milepost 11.075: The ditch capacity is inadequate to drain off the lake located south of US 92 to the pond located on the north side of US 92.
- Milepost 13.595: Water in the existing ditch backs up.

- Milepost 16.42: The area surrounding the outfall does not drain away. No positive outfall exists and the water ponds up.
- Mileposts 20.545 through 20.684 (Reynolds Street): The existing inlets are inadequate causing the roadway to retain water.
- Milepost 20.821 (Reynolds Street): The existing inlets are inadequate causing the roadway to retain water.
- Milepost 0.315 (Baker Street): The existing inlets are inadequate causing the roadway to retain water.
- Milepost 1.041 (Baker Street): The existing inlets are inadequate causing the roadway to retain water.
- Milepost 22.558: Ditches back up.
- Milepost 23.392: The outfall of the existing drainage structure is blocked on the south side of US 92 and the north side of US 92 floods.

Hillsborough County Drainage Department and SWFWMD noted problems associated with the 1988 flooding of I-4 between Mango and McIntosh roads in the vicinity of Baker Creek, but nothing specific to US 92.

3.1.8 Geotechnical Data

The soil conditions along the project were evaluated based on a comprehensive data collection program consisting of review of published literature and past projects, field reconnaissance, and soils sampling with borings. The findings from the soils evaluation were summarized in the Geotechnical Services report³ prepared for this project.

3.1.8.1 Geology

The geologic formations of interest at the subject site range from the Holocene to Pleistocene and Pliocene to the Eocene in age. In general, the project site is underlain by a sequence of carbonate rocks that are covered by undifferentiated deposits.

Undifferentiated deposits of the Holocene, Pleistocene and Pliocene series are found to the range of elevations of approximately +14 to +70 feet MSL. These series consist of clayey and pebbly sand; clay, marl, shell and phosphate soils.

Beneath the Holocene, Pleistocene and Pliocene series is the Hawthorne formation of the Miocene age. This formation extends to the range of elevations of approximately -43 to -35 feet MSL. The Hawthorne formation consists of dolomite, sandy, clay and limestone; silty and phosphatic soils.

The Tampa limestone of the Miocene age lies beneath the Hawthorne formation and extends to the range of elevation of -114 to -110 feet MSL. The Tampa Limestone consists of limestone, sandy phosphatic and fossiliferous materials, sand and clay in the lower part in some areas.

Underlying the Tampa limestone to the range of elevation of about -260 to -300 MSL is the Suwannee Limestone of Oligocene age. The Suwannee limestone consists of limestone, sandy limestone and fossiliferous materials.

Beneath the Suwannee limestone is the Ocala limestone of Eocene age. The Ocala limestone extends to the range of elevation of about -657 to -550 MSL and consists of limestone, chalky for a mineral and dolomitic materials near the bottom.

Underlying the Ocala limestone is the Avon Park Formation of the Eocene age. The Avon Park Formation consists of limestone and hard brown dolomite; intergranular evaporite in the lower part in some areas. This formation extends deeper than -900 feet MSL.

3.1.8.2 Soils

Review of the Hillsborough County USDA Soil Survey Maps indicates that the shallow soil profiles can be sorted into three soil groups. The most predominantly mapped group is fine sand. The rest of the mapped groups are organic and clayey soils. Tables B-1 through B-3 in Appendix B describe the soil profiles for the three groups.

3.1.8.3 Soils Sampling and Testing

To evaluate the soils along the project, 24 standard penetration test (SPT) borings (10 to 75 feet deep) were obtained near the bridge and culvert crossings. Sixty-two shallow (5 feet deep) auger borings were obtained along the roadway to assess seasonal high groundwater table and soil stratigraphy.

The recovered soil samples were subjected to a number of tests including wash gradation, Atterberg plastic and liquid limits, and natural water content. The results of these tests are detailed in the Geotechnical Services report³.

According to the borings, organic soils exist near the surface along the project between Turkey Creek Road and Mobley Street, and between Gordon Street and Park Road. Muck was encountered to a depth of 5.0 feet at boring locations along these segments. In addition, auger borings between Falkenburg Road and Taylor Road and between McIntosh Road and Turkey Creek Road revealed that clayey sands exist near the surface.

Auger borings taken along the project between Falkenburg Road and Mobley Street and between Gordon Street and County Line Road indicate that the seasonal high water tables are at approximately the existing grades. The USDA Soil Survey of Hillsborough County locates some project areas where the seasonal high water table is in the range of 2.0 feet above to 1.0 foot below the existing ground surface.

Further subsurface investigations need to be performed for the bridge over Pemberton Creek to evaluate the feasibility of suitable foundation. Drainage structures at all other locations could use conventional shallow foundations. If expansion of the I-75 bridge crossings over US 92 is desired in the future, the expansion areas need to be supported on pile foundations.

3.1.9 Accident Data

Annual accident reports were obtained from the FDOT records for the section of US 92 between US 301 and County Line Road for the years 1986 through 1990. A summary of these reports is presented in Table 3-6. Since the data are collected by different milepost segments each year, comparison of the accident rates at a particular location from one year to the next is difficult. The ratio between the Actual and the Critical (Rate Ratio) provides an indication of whether accidents along US 92 are occurring at a higher or lower rate than the statewide average. If the rate ratio is below one, then the accidents along US 92 are occurring at a lower rate than the statewide average. Likewise, if the rate ratio is above one, then the accidents along US 92 are occurring at a higher rate than the statewide average.

According to Table 3-6, during 1990, 7.9 miles (43.6 percent) of the project experienced rates higher than the statewide average accident rate. During 1988, the worst year of the five-year period researched, 12.5 miles (69.0 percent) of the project experienced rates higher than the statewide average rate. The following segments consistently experienced high accident rates and at least once during the five-year period their actual accident rate was higher than the statewide average rate:

- US 92 in the vicinity of Williams Road
- US 92 in the vicinity of Mango Road
- US 92 between Kennedy Hill Drive and Pine Street
- US 92 between McIntosh Road and Turkey Creek Road
- US 92 between Thonotosassa Road and Gordon Street
- US 92 in the vicinity of Park Road
- US 92 between Wilder Road and County Line Road

TABLE 3-6
ACCIDENT RATES AND ECONOMIC LOSSES
YEARS 1986 THROUGH 1990
(1 of 4)

YEAR	SEGMENT MILEPOSTS		LENGTH (Miles)	AADT	NUMBER OF CRASHES	CRASH SEVERITY			ACTUAL ACCIDENT RATE (A)+	CRITICAL ACCIDENT RATE (C)+	A/C RATE RATIO	ECONOMIC LOSS
	FROM	TO				F*	I**	P***				
1986	6.519	8.085	1.566	12777	31	1	40	11	4.244	4.755	0.893	\$868,000
	8.085	8.378	0.293	11415	13	2	10	4	10.655	9.045	1.178	\$291,200
	8.378	9.130	0.752	11006	14	1	14	3	4.635	5.787	0.801	\$392,000
	9.130	9.294	0.164	6469	10	1	5	6	25.839	12.615	2.048	\$224,000
	9.294	9.419	0.125	6469	1	0	0	1	3.389	11.214	0.302	\$28,000
	9.419	9.812	0.393	6469	5	0	5	2	5.393	9.759	0.553	\$112,000
	9.812	12.137	2.325	6469	23	1	29	5	4.190	5.045	0.831	\$644,000
	12.137	17.121	4.984	7464	51	3	51	21	3.756	1.460	2.573	\$3,814,800
	17.121	19.001	1.880	7731	17	0	12	8	3.204	5.082	0.630	\$476,000
	19.001	19.154	0.153	8025	3	0	1	2	6.696	12.706	0.527	\$59,400
	19.154	21.011	1.857	6998	35	0	22	19	7.379	5.208	1.417	\$980,000
	21.011	21.499	0.488	11634	7	0	8	2	3.378	6.470	0.522	\$182,000
1987	21.499	21.757	0.258	9481	4	0	3	2	4.484	9.866	0.454	\$89,600
	21.757	22.021	0.264	9481	1	0	0	1	1.095	7.993	0.137	\$28,000
	22.021	24.593	2.572	9481	28	3	23	11	3.146	1.548	2.032	\$2,094,400
	YEAR TOTAL				243	12	223	98				\$10,283,400
	6.133	6.636	0.503	13494	5	0	3	3	2.018	7.739	0.261	\$112,000
	6.636	8.081	1.445	13494	32	1	37	8	4.496	4.581	0.981	\$896,000
	8.081	8.286	0.205	11789	25	0	15	13	28.344	10.144	2.794	\$560,000
	8.286	9.139	0.853	11126	10	0	12	3	2.886	5.376	0.537	\$280,000
	9.139	9.249	0.110	7055	17	0	16	6	60.070	14.198	4.231	\$380,800
	9.249	9.437	0.188	6801	2	0	0	2	4.291	9.408	0.456	\$56,000
	9.437	9.837	0.400	6801	7	0	0	7	7.056	9.812	0.719	\$156,800
	9.837	12.026	2.189	6801	21	0	10	14	3.865	4.849	0.797	\$588,000
	12.026	17.070	5.044	7972	51	2	44	25	3.475	1.465	2.372	\$3,814,800

Source: Florida Department of Transportation accident records.

* Number of fatalities.

** Number of injuries.

*** Number of crashes that caused property damage only.

+ Number of accidents per million-vehicle-miles.

Segment with an actual-to-critical accident rate ratio of more than 1.0.

TABLE 3-6
ACCIDENT RATES AND ECONOMIC LOSSES
YEARS 1986 THROUGH 1990
(2 of 4)

YEAR	SEGMENT MILEPOSTS		LENGTH (Miles)	AADT	NUMBER OF CRASHES	CRASH SEVERITY			ACTUAL ACCIDENT RATE (A)+	CRITICAL ACCIDENT RATE (C)+	A/C RATE RATIO	ECONOMIC LOSS
	FROM	TO				F*	I**	P***				
1987	17.070	19.022	1.952	8361	26	0	26	9	4.364	4.754	0.918	\$728,000
	19.022	19.114	0.092	8564	1	0	1	0	3.484	16.826	0.207	\$19,800
	19.114	21.151	2.037	7681	32	1	23	14	5.604	4.797	1.168	\$896,000
	21.151	21.509	0.358	12404	6	0	4	2	3.703	6.713	0.552	\$156,000
	21.509	21.782	0.273	10456	14	1	11	7	13.448	9.682	1.389	\$313,600
	21.782	21.996	0.214	10456	1	0	1	0	1.225	7.955	0.154	\$28,000
YEAR TOTAL			18.460		295	5	245	132	4.540	1.544	2.940	\$3,366,000
1988	6.520	8.107	1.587	14982	30	2	24	14	3.457	4.340	0.797	\$840,000
	8.107	8.283	0.176	11785	10	0	5	6	13.210	10.049	1.315	\$224,000
	8.283	9.057	0.774	11430	14	0	25	3	4.335	5.393	0.804	\$392,000
	9.057	9.285	0.228	7988	16	0	10	8	24.096	10.437	2.309	\$358,400
	9.285	9.407	0.122	6841	2	0	1	1	6.578	10.564	0.623	\$56,000
	9.407	9.795	0.388	6841	15	0	11	8	15.495	9.365	1.655	\$336,000
	9.795	12.242	2.447	6841	29	0	17	18	4.746	4.661	1.018	\$812,000
	12.242	16.939	4.697	8241	43	0	46	17	3.043	1.489	2.044	\$3,216,400
	16.939	19.033	2.094	8468	18	1	19	5	2.781	4.604	0.604	\$504,000
	19.033	19.114	0.081	8786	3	0	1	2	11.583	17.507	0.662	\$594,000
	19.114	21.102	1.988	8208	29	0	20	15	4.869	4.686	1.039	\$812,000
	21.102	21.416	0.314	12775	6	0	5	2	4.098	6.832	0.600	\$156,000
1989	21.416	21.716	0.300	10066	9	0	7	5	8.166	9.033	0.904	\$201,600
	21.716	22.032	0.316	10066	6	0	6	3	5.167	7.088	0.729	\$168,000
	22.032	24.593	2.561	10066	45	1	59	16	4.782	1.574	3.038	\$3,366,000
	YEAR TOTAL				275	4	256	123				\$12,036,400

Source: Florida Department of Transportation accident records.

* Number of fatalities.

** Number of injuries.

*** Number of crashes that caused property damage only.

+ Number of accidents per million-vehicle-miles.

Segment with an actual-to-critical accident rate ratio of more than 1.0.

TABLE 3-6
ACCIDENT RATES AND ECONOMIC LOSSES
YEARS 1986 THROUGH 1990
(3 of 4)

YEAR	SEGMENT MILEPOSTS		LENGTH (Miles)	AADT	NUMBER OF CRASHES	CRASH SEVERITY			ACTUAL ACCIDENT RATE (A)+	CRITICAL ACCIDENT RATE (C)+	A/C RATE RATIO	ECONOMIC LOSS
	FROM	TO				F*	I**	P***				
1989	6.071	6.559	0.488	11319	4	0	1	3	1.984	5.377	0.369	\$89,600
	6.559	8.058	1.499	11319	29	1	24	10	4.682	5.000	0.936	\$812,000
	8.058	8.242	0.184	11637	10	0	16	1	12.804	7.065	1.812	\$224,000
	8.242	9.043	0.801	11773	12	0	11	4	3.486	5.698	0.612	\$336,000
	9.043	9.237	0.194	5944	9	0	12	2	21.428	8.516	2.516	\$201,600
	9.237	9.418	0.181	5944	5	0	3	2	12.755	10.440	1.222	\$140,000
	9.418	9.793	0.375	5944	11	0	11	4	13.530	6.981	1.938	\$246,400
	9.793	12.071	2.278	5944	18	1	18	5	3.642	5.246	0.694	\$504,000
	12.071	17.083	5.012	9268	50	3	57	17	2.949	1.612	1.829	\$3,740,000
	17.083	19.001	1.918	9330	20	0	18	9	3.062	4.946	0.619	\$560,000
1990	19.001	19.168	0.167	9050	2	0	2	1	3.629	8.055	0.451	\$39,600
	19.168	21.024	1.856	8242	34	0	21	19	6.089	5.110	1.192	\$952,000
	21.024	21.398	0.374	13158	6	0	5	3	3.340	6.629	0.504	\$156,000
	21.398	21.818	0.420	9416	13	0	9	8	9.009	5.903	1.526	\$291,200
	21.818	22.150	0.332	9416	3	1	2	2	2.629	7.611	0.345	\$84,000
	22.150	24.593	2.443	9416	39	0	47	14	4.645	1.766	2.630	\$2,917,200
	YEAR TOTAL					265	6	257	104			\$11,293,600
	6.164	6.667	0.503	15894	5	0	5	1	1.713	4.132	0.415	\$112,000
	6.667	7.907	1.240	15894	13	2	14	4	1.807	4.351	0.415	\$364,000
	7.907	8.226	0.319	15266	6	3	8	3	3.376	4.739	0.712	\$134,400
1990	8.226	9.030	0.804	12126	12	1	9	3	3.372	5.096	0.662	\$336,000
	9.030	10.360	1.330	7589	44	0	44	20	11.943	3.887	3.073	\$985,600
	10.360	10.602	0.242	7257	1	0	0	1	1.560	8.186	0.191	\$28,000
	10.602	11.021	0.419	7257	5	0	0	5	4.508	5.438	0.829	\$112,000
	11.021	12.171	1.150	7257	5	0	3	2	1.641	5.294	0.310	\$140,000

Source: Florida Department of Transportation accident records.

* Number of fatalities.

** Number of injuries.

*** Number of crashes that caused property damage only.

+ Number of accidents per million-vehicle-miles.

Segment with an actual-to-critical accident rate ratio of more than 1.0.

TABLE 3-6
ACCIDENT RATES AND ECONOMIC LOSSES
YEARS 1986 THROUGH 1990
 (4 of 4)

YEAR	SEGMENT MILEPOSTS		LENGTH (Miles)	AADT	NUMBER OF CRASHES	CRASH SEVERITY			ACTUAL ACCIDENT RATE (A)+	CRITICAL ACCIDENT RATE (C)+	A/C RATE RATIO	ECONOMIC LOSS
	FROM	TO				F*	I**	P***				
1990	12.171	12.622	0.451	7257	2	0	2	1	1.657	1.805	0.918	\$149,600
	12.622	13.400	0.778	9731	9	1	5	4	3.257	1.080	3.016	\$417,600
	13.400	13.882	0.482	9731	2	0	1	1	1.168	1.704	0.685	\$149,600
	13.882	14.232	0.350	9731	3	0	1	2	2.413	1.215	1.986	\$139,200
	14.232	15.237	1.005	9731	12	0	16	2	3.632	1.501	2.420	\$897,600
	15.237	15.775	0.538	9731	2	0	2	1	1.047	1.146	0.914	\$92,800
	15.775	17.121	1.346	9731	8	0	10	3	1.673	1.428	1.172	\$598,400
	17.121	17.297	0.176	9731	6	0	6	2	9.600	6.463	1.485	\$134,400
	17.297	18.055	0.758	9731	3	0	3	0	1.114	5.462	0.204	\$84,000
	18.055	18.511	0.456	9527	6	0	1	5	3.785	4.897	0.773	\$134,400
	18.511	19.006	0.495	9322	5	0	2	3	2.969	5.931	0.501	\$130,000
	19.006	19.202	0.196	9322	6	0	2	4	9.009	7.056	1.277	\$118,800
	19.202	21.234	2.032	8454	18	1	12	8	2.870	4.478	0.641	\$504,000
	21.234	21.514	0.280	13553	1	0	0	1	0.722	6.265	0.115	\$26,000
	21.514	21.638	0.124	10679	6	0	7	3	12.422	6.985	1.778	\$134,400
21.638	22.032	0.394	10679	2	0	3	0	1.302	6.347	0.205	\$56,000	
22.032	24.498	2.466	10679	26	1	29	8	2.704	1.277	2.117	\$1,944,800	
24.498	24.593	0.095	10679	13	0	14	5	35.135	1.166	30.133	\$603,200	
YEAR TOTAL			18.429		221	9	199	92				\$8,526,800
FIVE-YEAR TOTAL			18.429		1299	36	1180	549				\$54,492,000

Source: Florida Department of Transportation accident records.

* Number of fatalities.

** Number of injuries.

*** Number of crashes that caused property damage only.

+ Number of accidents per million-vehicle-miles.

Segment with an actual-to-critical accident rate ratio of more than 1.0.

As shown in Table 3-6, a total of 1,299 vehicle collisions were reported within the project limits during the period between January 1, 1986 and December 31, 1990. These collisions resulted in 36 fatalities and 1,130 injuries. 549 collisions caused only property damages. The total economic loss due to all crashes is estimated to be \$54,492,000.

3.1.10 Traffic Signals, Locations and Intersection Design

The locations of the existing traffic signals along US 92 within the project limits were presented earlier in Table 3-1. Figure 3-7 graphically illustrates the existing intersection lane geometry at each signalized intersection.

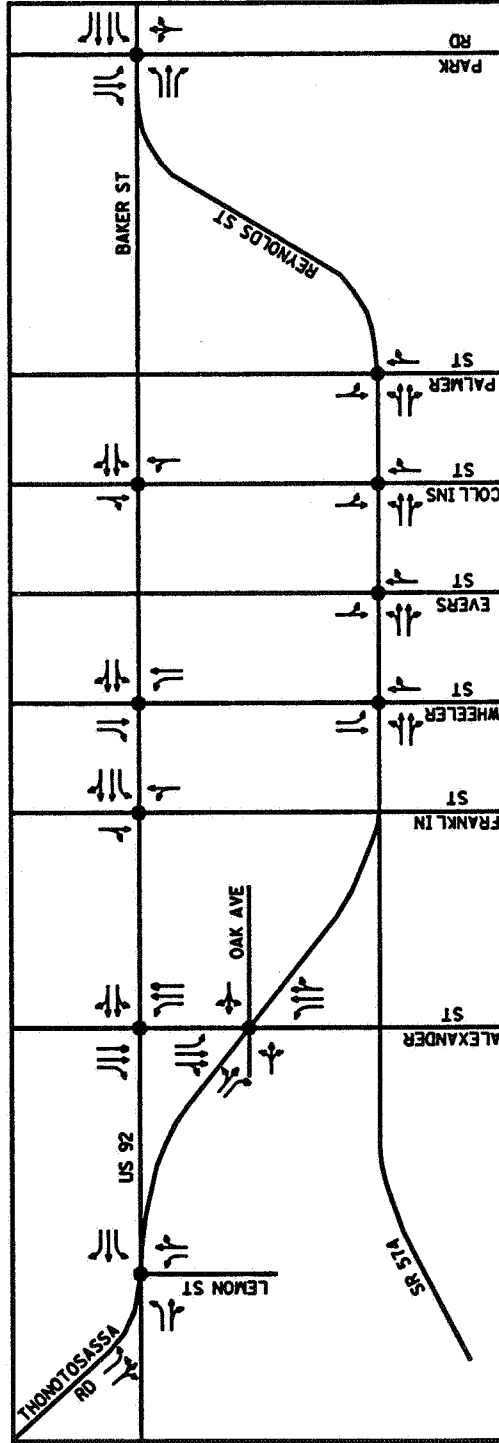
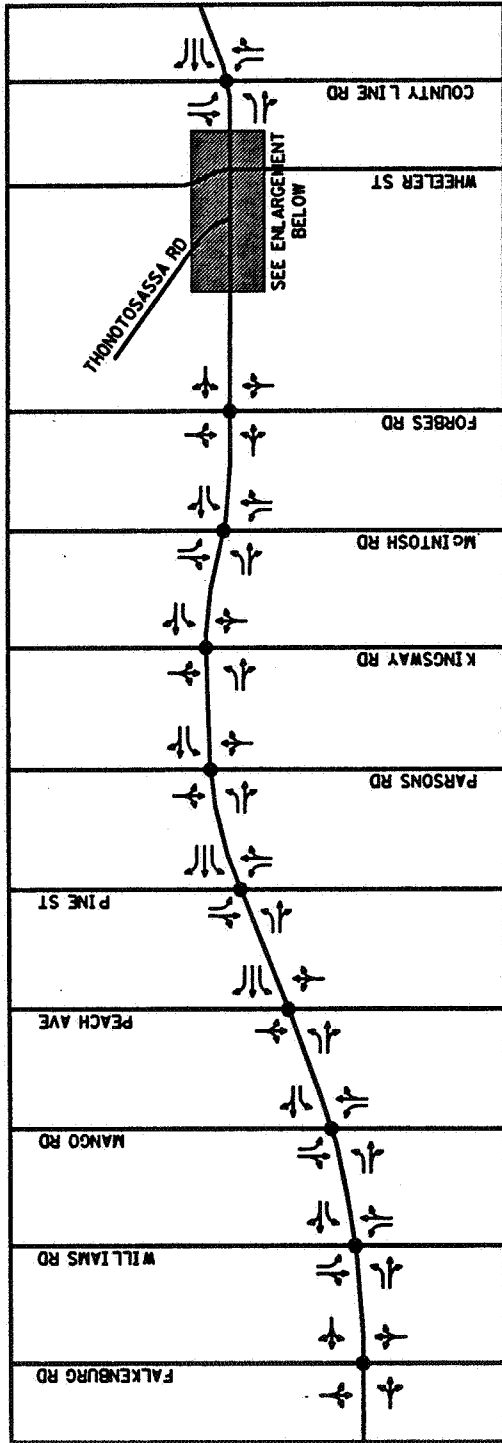
The traffic signals that exist within the limits of the city of Plant City are maintained by the city. The traffic signals that exist outside the city limits are maintained by Hillsborough County.

3.1.11 Lighting

Overhead street lighting is provided along US 92 only within the city limits of Plant City, from approximately 500 feet west of Thonotosassa Road to Park Road. Within these limits, street lighting is provided either along the north or the south side of the roadways (Thonotosassa Road, Reynolds Street, and Baker Street), except between Gordon Street and Park Road where lighting is provided along both sides. Lighting maintenance is performed by Tampa Electric Company (TECO) under an agreement with the City.

3.1.12 Utilities

The ownership, type and approximate location of the existing utilities within the project corridor are summarized in Table 3-7. As shown in this table, a number of utility distribution lines including telephone, electric, cable, gas and water lines are located within the existing right-of-way of several segments of US 92. TECO currently operates a power substation on the southeast corner of the intersection of Peach Avenue and US 92, which provides power to the surrounding community. No major additional facilities are being proposed to be placed in the study area in the future.



LEGEND
 + SIGNALIZED INTERSECTION
 T TRAVEL LANE

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
 HILLSBOROUGH COUNTY
 FROM GARDEN LANE TO COUNTY LINE ROAD

EXISTING SIGNALIZED
 INTERSECTION LANE GEOMETRY

FIGURE
 3-7

TABLE 3-7
EXISTING UTILITIES
(1 of 2)

OWNER	UTILITY	AERIAL (A) BURIED (B)	SIDE	APPROXIMATE LOCATION
WILTEL	FIBER OPTIC CABLE	B	SOUTH OF R/R	PARK ROAD TO COUNTY LINE ROAD
AT&T	FIBER OPTIC CABLE	B	NORTH/SOUTH	CROSSING AT MANGO ROAD
TAMPA ELECTRIC COMPANY	13 KV TRANS. LINE	A	SOUTH	GARDEN LANE TO FALKENBURG ROAD
		A	NORTH	FALKENBURG ROAD TO I-75
		B	NORTH	AT I-75 BRIDGE
		A	NORTH	I-75 TO THONOTOSASSA ROAD
		A	SOUTH	THONOTOSASSA ROAD TO MOBLEY STREET
		A	NORTH	MOBLEY STREET TO FRANKLIN STREET (EB US 92)
		A	SOUTH	FRANKLIN STREET TO R/R CROSSING (EB US 92)
		A	NORTH	CSX R/R CROSSING TO COUNTY LINE ROAD
		A	SOUTH	CAREY STREET TO GORDON STREET (WB US 92)
		A	NORTH	MANGO ROAD TO PEACH AVENUE
		A	NORTH	WALTER ROAD TO WOODROW WILSON STREET
		N/A	SOUTH	EAST OF PEACH AVENUE
		A	SOUTH	GARDEN LANE TO I-75
GTE	POWER SUBSTATION TELEPHONE CABLE	B	SOUTH	AT I-75 BRIDGE
		A	SOUTH	I-75 TO EAST OF TAYLOR ROAD
		A	SOUTH	KINGSWAY ROAD TO BAKER CREEK
		A	SOUTH	McINTOSH ROAD TO FRITZKE ROAD
		A	NORTH	FRITZKE ROAD TO WEST OF BETHLEHEM ROAD
		A	NORTH	BETHLEHEM ROAD TO THONOTOSASSA ROAD
		A	SOUTH	GORDON STREET TO COUNTY LINE ROAD
		A	NORTH	GARDEN LANE TO I-75
		B	NORTH	AT I-75
		A	NORTH	I-75 TO MANGO ROAD
		A	SOUTH	MANGO ROAD TO PEACH AVENUE
		A	NORTH	TAYLOR ROAD TO ENTERPRISE STREET
		A	SOUTH	BARANCA STREET TO WALKER STREET (ALONG REYNOLDS STREET AND BAKER STREET)
PARAGON CABLE	DISTRIBUTION LINES	A	NORTH	PARK ROAD TO COUNTY LINE ROAD

TABLE 3-7
EXISTING UTILITIES
(2 of 2)

OWNER	UTILITY	AERIAL (A) BURIED (B)	SIDE	APPROXIMATE LOCATION
FLORIDA GAS TRANSMISSION COMPANY	NATURAL GAS MAIN	B	NORTH/SOUTH	CROSSING AT FALKENBURG ROAD
		B	SOUTH OF R/R	PARK ROAD TO WILDER ROAD
CENTRAL FLORIDA PIPELINE	6" HIGH PRESSURE JET FUEL LINE	B	SOUTH	PARK ROAD TO COUNTY LINE ROAD
	10" HIGH PRESSURE GASOLINE LINE	B	SOUTH	PARK ROAD TO COUNTY LINE ROAD
PLANT CITY UTILITIES	2" WATER MAIN	B	SOUTH	CAREY STREET TO PARK ROAD (WB US 92)
	6" WATER MAIN	B	SOUTH	MOBLEY STREET TO PARK ROAD (EB US 92)
	SEWER	B	NORTH	LAKEWOOD AVENUE TO LAKE STREET (EB US 92)
		B	SOUTH	MOBLEY STREET TO RISK STREET (WB US 92)
		B	NORTH	CAREY STREET TO WHEELER STREET (WB US 92)
		B	SOUTH	ILLINOIS STREET TO MERRIN STREET (WB US 92)
		B	NORTH	GORDON STREET TO PARK ROAD

NOTES: 1. US SPRINT, TAMPA PIPELINE LIMITED, CARGILL FERTILIZER, PEOPLE'S GAS, AND TAMPA BAY PIPELINE COMPANY WERE ALSO CONTACTED. ALL INDICATED THAT THEY HAD NO FACILITIES WITHIN THE PROJECT CORRIDOR.

SOURCE: INFORMATION AS PROVIDED BY THE INDIVIDUAL UTILITY COMPANIES.

3.1.13 Structural and Operational Conditions

The results of the pavement condition survey, conducted by FDOT along US 92 in September 1989, are presented in Table 3-8. As illustrated in the table, the pavement condition of approximately 70 percent of US 92, along the western section of the project, was rated as very good. The condition of the pavement through downtown Plant City and the eastern end of the project is rated from poor to very poor.

It should be noted that FDOT is currently undertaking pavement resurfacing along US 92 from Thonotosassa Road to County Line Road (State Project Number 10030-1509). With this project, which is expected to be completed by the end of 1993, the pavement condition along the whole length of the project is expected to be rated from average to very good.

The condition of the existing traffic operations (traffic volumes and levels of service) along the project are discussed in Section 6 of this report.

3.1.14 Railroad Crossings

Table 3-9 summarizes the characteristics of the existing railroad crossings along US 92 within the project limits. As shown, three crossings exist in the study area, all of which are located within the City of Plant City limits. All crossings either are or will be in good condition after the improvements planned by FDOT and Consolidated Minerals Incorporated (CMI) are completed. With these improvements adequate signage and signalization will also be provided.

3.1.15 Posted Speed Limits

Speed limits vary throughout the project length. Table 3-10 summarizes the existing speed limits along US 92.

TABLE 3-8
PAVEMENT CONDITION SURVEY RESULTS*

SEGMENT		LENGTH (mi.)	RATINGS			PAVEMENT CONDITION PER RATING
LIMITS (from/to)			DEFECT	RIDE	BASIC	
Garden Lane/Mobley Street		12.6	95	85	90	Very Good
Mobley Street/Alexander Street		0.4	78	62	70	Average
Alexander Street/Gordon Street		1.5	63	43	52	Very Poor
Gordon Street/Park Road		0.6	63**	50**	56	Very Poor
Gordon Street/Park Road		0.6	58***	54***	56	Very Poor
Park Road/County Line Road		2.9	63	68	65	Below Average (Poor)
TOTAL		18.0				

* Based on the FDOT pavement condition survey conducted in September 1989.

** Eastbound US 92 ratings.

*** Westbound US 92 ratings.

**TABLE 3-9
RAILROAD CROSSING DATA**

RAILROAD CROSSING	CROSSING LOCATION		
	Baker Street east of Palmer Street	Reynolds Street east of Palmer Street	US 92 east of Park Road
National Grade Crossing No.	624409-E	624411-F	624312-H
US 92 Milepost	20.476	20.476	21.595
Railroad Milepost	S-822.92	S-822.02	A-860.09 (SPUR)
Type of Crossing	Existing: wood/ rubber Proposed: full depth rubber	Existing: wood/ rubber Proposed: full depth rubber	Existing full depth rubber to remain
Existing Traffic Control Equipment	C, FL, G, B Signs, Markings	C, FL, B Signs, Markings Gates to be added*	Signs, Markings C, FL, G, B to be added**
Condition	Good	Good	Good
Average No. of Trains (per day)	15	15	2 per Week
Average Speed (mph)	10	10	10
Average Train Length (cars)	100	100	4
Average Crossing Duration (min)	10 for thru trains, 5 for switchers	10 for thru trains, 5 for switchers	3

C = Cantilevers, FL = Flashing Lights, G = Gates, B = Bells

* Under WPI #7113946 (Signal Safety Project).

** Permitted crossing; C, FL, G & B to be added by CMI (presently under construction).

*** Average train speed, length, and crossing duration are based on the CSX Railroad Company records.

TABLE 3-10
POSTED SPEED LIMITS ALONG US 92

SEGMENT (from/to)	SPEED LIMIT (mph)*
6.6 East of Garden Lane/East of Knight Place 11.1	45 4.5
11.1 East of Knight Place/East of Castlewood Drive 12.4	55 1.3 mi
12.4 East of Castlewood Drive/East of McIntosh Road 12.8	45 4.4 4 mi
12.8 East of McIntosh Road/West of Tarner Road 16.3	50 3.5 3.4 mi
16.3 West of Tarner Road/East of Branch Forbes Road 16.4	45 .1 mi
16.4 East of Branch Forbes Road/West of Sugar Creek Road	50
West of Sugar Creek Road/West of Alexander Street 19.0	45
West of Alexander Street/West of Franklin Street	35 Eastbound 40 Westbound
West of Franklin Street/East of Wheeler Street	35
East of Wheeler Street/West of Pennsylvania Avenue	30 Eastbound 35 Westbound
West of Pennsylvania Avenue/West of Gordon Street	35 Eastbound 40 Westbound
West of Gordon Street/East of Maryland Avenue	40
East of Maryland Avenue/East of Park Road 21.5	45
East of Park Road/County Line Road 24.5	55

*Bi-directional speed limits unless otherwise specified.

3.2 EXISTING BRIDGES

There are eight bridge structures within the project limits. Four of these bridges are associated with the crossing of northbound and southbound I-75 (mainline and ramps) over US 92, while the remaining four bridges span an equal number of creeks crossing US 92. All creeks are non-navigable waterways. A discussion of the existing condition of each bridge, their inventory ratings, remaining life spans and suitability for improvements is presented below.

3.2.1 Bridges Associated with the I-75 Crossing Over US 92

- I-75 Southbound Bridge over US 92 - Bridge No. 100414
- I-75 Northbound Bridge over US 92 - Bridge No. 100415
- I-75 Ramp "A" Bridge over US 92 - Bridge No. 100422
- I-75 Ramp "B" Bridge over US 92 - Bridge No. 100424

All four I-75 bridges consist of three spans, cast-in-place non-composite, concrete deck with concrete wearing surface and supported by prestressed AASHTO beams.

The structure of each bridge consists of pile-supported end bents with shallow pile-supported wingwalls, and piers comprised of concrete caps and columns supported by concrete pile foundation. Span length for each structure and the number and length of individual spans are summarized in Table 3-11.

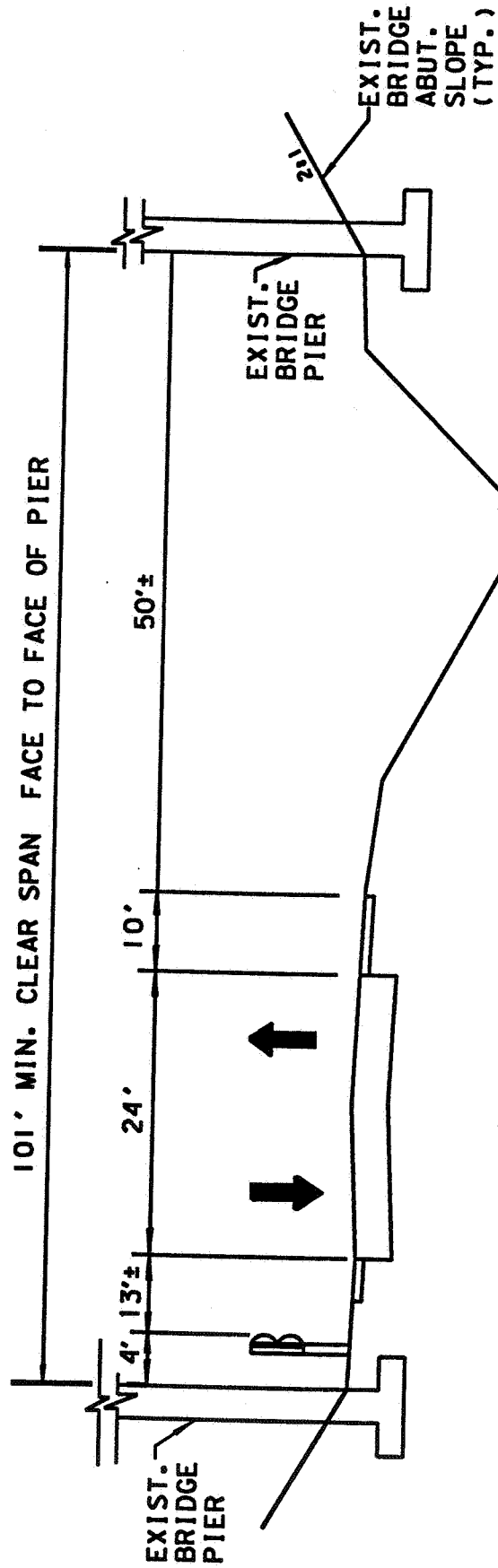
The existing span arrangement provides sufficient width on the center span (106-foot minimum width) to accommodate the widening of US 92. Figure 3-8 illustrates the existing typical section of US 92 under the I-75 bridges. No physical structural modifications need to be made to the existing structures. Figures 7-4 through 7-6 in Section 7 of this report illustrate the improved typical sections considered for US 92 under the I-75 bridges.

TABLE 3-11
SUMMARY OF BRIDGE INSPECTION

	Bridge Number							
	100414	100415	100422	100424	100024	100025	100097	100098
General Data:								
Year Constructed	1983	1983	1983	1983	1930	1930	1930	1930
Year Reconstructed	N/A	N/A	N/A	N/A	1943	1943	1943	1943
Dates Inspected	2/7/91	2/7/91	2/7/91	2/7/91	6/23/92	8/3/92	9/22/92	9/22/92
Overall Length	190 ft.	190 ft.	206 ft.	188.5 ft.	47 ft.	56 ft.	33 ft.	34 ft.
Length Span 1	41.5 ft.	41.5 ft.	45 ft.	41 ft.	24 ft.	28 ft.	33 ft.	34 ft.
Length Span 2	107 ft.	107 ft.	116 ft.	106 ft.	23 ft.	28 ft.	N/A	N/A
Length Span 3	41.5 ft.	41.5 ft.	45 ft.	41.5 ft.	N/A	N/A	N/A	N/A
Numerical Condition Rating:								
Substructure	8	8	8	8	7	7	7	7
Superstructure	8	8	8	8	8	8	8	8
Deck	8	8	8	7	8	8	8	8
Approach Roadway	8	8	8	8	8	7	8	7
Channel	N/A	N/A	N/A	N/A	8	8	8	8

Note:

1. Overall length and Span length for Structures 100414, 100415, and 100422 and 100424 were calculated from contract drawings.
2. Overall length and Span length for Structures 100024, 100025, 100097 and 100098 were taken from bridge inspection report and structure inventory appraisals.



NOT TO SCALE

EXISTING TYPICAL SECTION OF
US 92 UNDER I-75

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

FIGURE

3-8

The bridges were inspected in February 1991. The results of this inspection are summarized in Table 3-11. Based on the inspection reports, all bridges are in good structural condition and require only minor cosmetic and maintenance repairs. These structures have a remaining life of 44 years and satisfy the HS20 Inventory Rating. Expansion of US 92 will not reduce the existing vertical clearance.

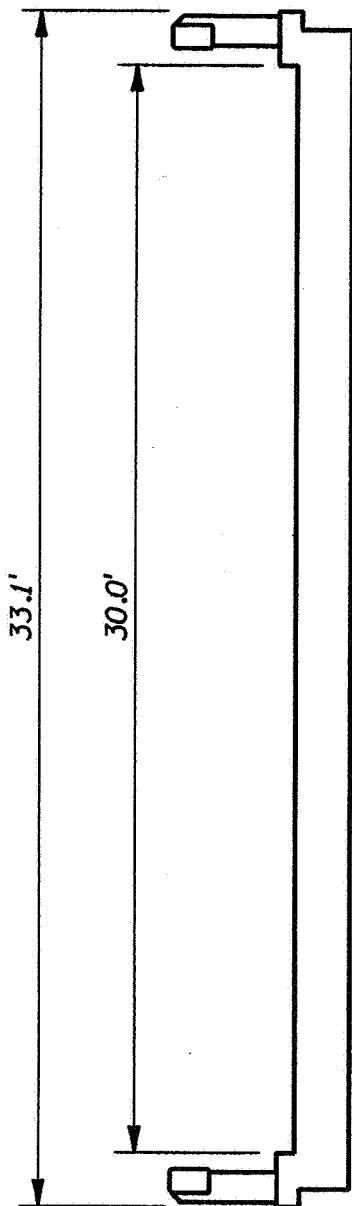
3.2.2 US 92 Bridge Over Kennedy Hill Creek - Bridge No. 100024

This stream crossing structure is a two-span concrete slab bridge with a bituminous wearing surface on the bridge deck.

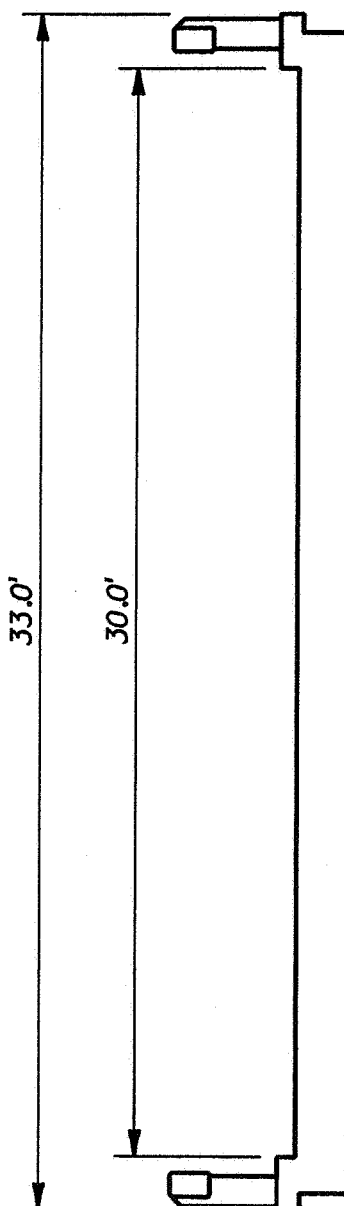
Based on the Structural Inventory and Appraisal (SIA), the bridge has a roadway width (curb to curb) of 30.0 feet and an overall deck width of 33.1 feet. The typical section of the existing bridge is presented in Figure 3-9. This structure, which was built in 1930 and reconstructed in 1943, carries one 12-foot-wide travel lane in each direction. On each side of the bridge there is a 1.5-foot-wide curb.

The substructure of the bridge consists of two end abutments and one intermediate pier support. Span length, number and length of individual spans are summarized in Table 3-11.

The vertical clearance (minimum distance) between the top of the bridge rail and the mudline at the time of inspection on June 23, 1992 was 7.8 feet. The results of this inspection are summarized in Table 3-11. Based on the inspection report, the inventory rating is sufficient but the bridge is deemed functionally obsolete. After consideration of a number of factors, which are discussed in Section 8.21, it was recommended that the structure be replaced with a new structure. Section 8.21 also presents the alternatives considered and recommendations for the new bridge structure.



BR. No. 100024 (US 92 OVER KENNEDY HILL CREEK)



BR. No. 100025 (US 92 OVER BAKER CREEK BRANCH)

**US 92 (SR 600) PD & E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD**

**EXISTING BRIDGE TYPICAL SECTIONS
KENNEDY HILL CREEK AND BAKER CREEK BRANCH**

**FIGURE
3-9**

3.2.3 US 92 Bridge Over Baker Creek Branch - Bridge No. 100025

This stream crossing structure is a two-span concrete slab bridge with a bituminous wearing surface on the bridge deck.

Based on the SIA, the bridge has a roadway width (curb to curb) of 30.0 feet with an overall deck width of 33.0 feet. A typical section of the existing bridge is presented in Figure 3-9. This structure, which was built in 1930 and reconstructed in 1943, carries one 12-foot-wide travel lane in each direction. On each side of the bridge there is a 1.5-foot-wide curb.

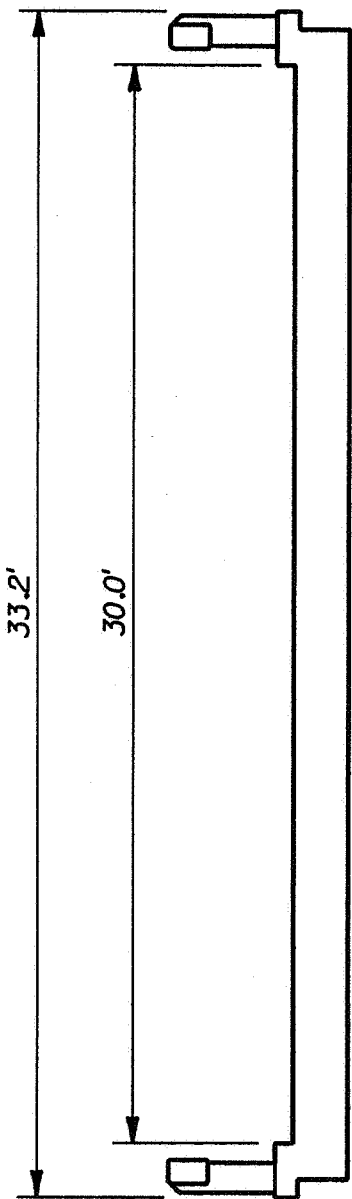
The substructure of the bridge consists of two end abutments and one intermediate pier support. Span length number and length of individual spans are summarized in Table 3-11.

The vertical clearance (minimum distance) between the top and the bridgerail to the mudline was 10.7 feet during the most recent inspection on August 3, 1992. The results of this inspection are summarized in Table 3-11. Based on the inspection report, the inventory rating is sufficient but the bridge is deemed functionally obsolete. After consideration of a number of factors which are discussed in Section 8.21, it was recommended that this structure be replaced with a new structure. Section 8.21 also presents the alternatives considered and recommendations for the new bridge structure.

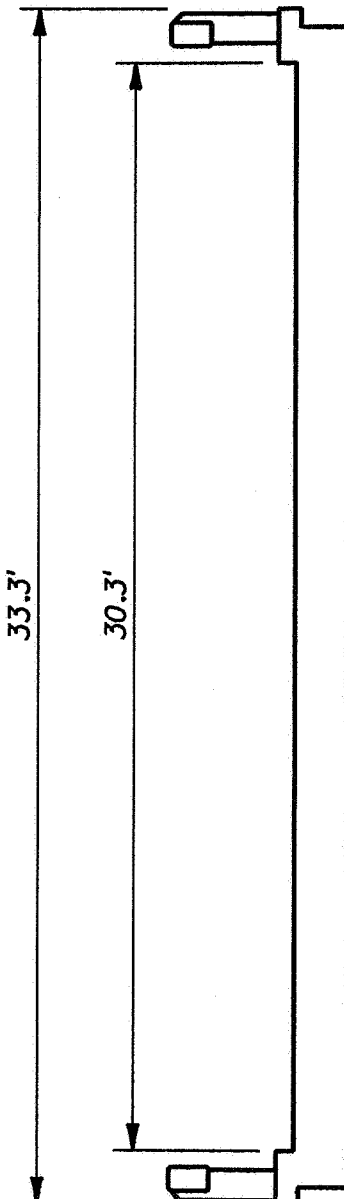
3.2.4 US 92 Bridge Over Pemberton Creek - Bridge No. 100097

This stream crossing structure is a single-span concrete slab bridge with a concrete wearing surface.

Based on the SIA, the bridge has a roadway width (curb to curb) of 30.0 feet and an overall width of 33.2 feet. A typical section of the existing bridge is presented in Figure 3-10.



BR. No. 100097 (US 92 OVER PEMBERTON CREEK)



BR. No. 100098 (US 92 OVER PEMBERTON CREEK SLOUGH)

**US 92 (SR 600) PD & E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD**

**EXISTING BRIDGE TYPICAL SECTIONS
PEMBERTON CREEK
AND PEMBERTON CREEK SLOUGH**

**FIGURE
3-10**

This structure, which was built in 1930 and reconstructed in 1943, carries one 12-foot-wide travel lane in each direction. On each side of the bridge there is a 1.5-foot-wide curb. The substructure of the bridge consists of two end abutments. The bridge consists of a single, 33-foot-long span.

The vertical clearance (minimum distance) between the top of the bridgerail and the mudline was 9.0 feet when the bridge was last inspected on September 22, 1992. The results of this inspection are summarized in Table 3-11. Based on the inspection report, the inventory rating is sufficient but the bridge is deemed functionally obsolete. After consideration of a number of factors which are discussed in Section 8.21 of this report, it was recommended that this structure be replaced with a new structure. Section 8.21 also presents the alternatives considered and recommendations for the new bridge structure.

3.2.5 US 92 Bridge Over Pemberton Creek Slough - Bridge No. 100098

This stream crossing structure is a single-span concrete slab bridge with a bituminous wearing surface.

Based on the SIA, the bridge has a roadway width (curb to curb) of 30.3 feet and an overall width of 33.3 feet. The typical section of the existing bridge is presented in Figure 3-10. This structure which was built in 1930 and reconstructed in 1943, carries one 12-foot-wide travel lane in each direction. On each side of the bridge there is a 1.5-foot-wide curb.

The substructure of the bridge consists of two end abutments. The bridge consists of a single, 34-foot-long span.

The bridge was last inspected on September 22, 1992. The results of this inspection are summarized in Table 3-11. Based on the inspection report, the inventory rating is sufficient but the bridge is deemed functionally obsolete. After consideration of a number of factors which are discussed in Section 8.21 of this report, it was recommended that this structure be replaced with a new structure. Section 8.21 also presents the alternatives considered and recommendations for the new bridge structure.

3.3 EXISTING ENVIRONMENTAL CHARACTERISTICS

3.3.1 Land Use Data

Existing development patterns, as well as those anticipated for the future, were considered before alternative typical sections were developed for US 92. This section presents the existing land use within the study area, future land use designations, and approved planned developments in the area.

More detailed information on the land uses, existing and future, within the project limits can be found in the Data Collection Summary⁴.

3.3.1.1 Existing Land Use

Existing land uses along US 92 within the study area vary significantly between Garden Lane and County Line Road. They are described below.

The area from Garden Lane to Taylor Road comprises a mix of land uses and is nearly completely developed. Residential uses include single-family residences and mobile homes. Commercial uses include highway retail, service stations and motels. In addition, there are a number of offices and some industrial land uses such as salvage yards. The area also includes Armwood High School.

Between Taylor Road and Turkey Creek Road, US 92 becomes more rural with open fields, citrus groves and rural residential housing. There are scattered commercial uses including motels, tractor sales and service stations.

Between Turkey Creek Road and Plant City, a transition to more urban uses, including multi-family residential uses, begins. The landmark Parksdale Farms and Tomlin Jr. High are located within this area. In addition, a large high-quality wetland, Pemberton Slough, is located on both

sides of US 92.

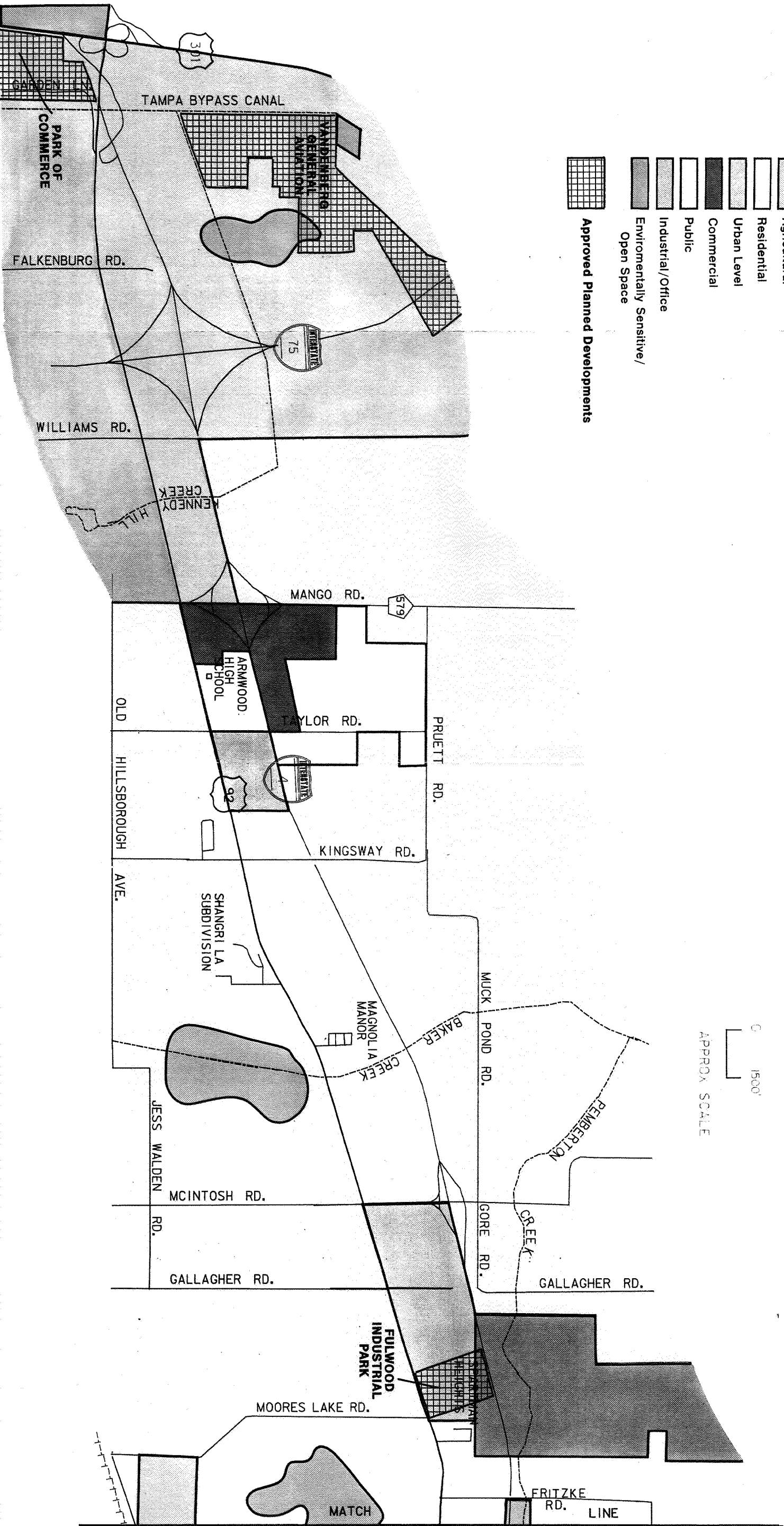
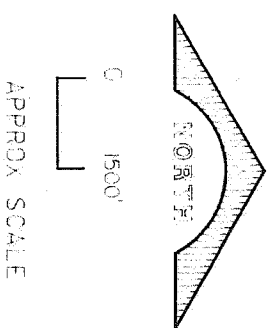
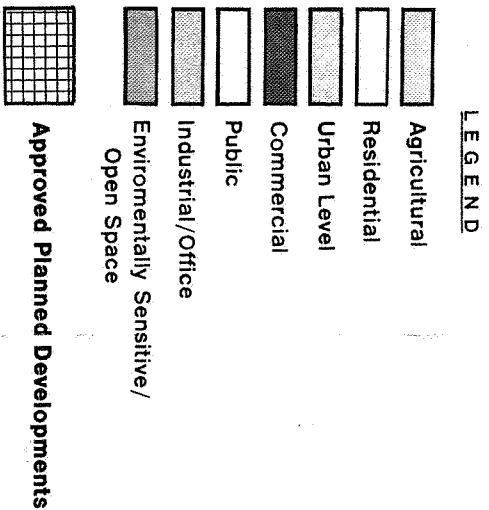
Plant City is predominantly developed for single-family residential uses. The development pattern for Plant City was influenced by both the railroad, in the early days, and the agricultural economy throughout the past and present. Diversification in the economy has redirected growth to the south and southeast. The downtown still remains the office and financial center although commercial uses are moving south. There is a significant amount of vacant land within the city limits that is not expected to be developed because of environmental constraints.

From downtown Plant City and to the east, CSX railroad runs contiguous to US 92. Land uses within vary and include industrial and manufacturing uses, mobile home parks and vacant land. Highway commercial uses and scattered agricultural uses also exist east of the project's terminus at County Line Road.

3.3.1.2 Future Land Use

Future land use information for the US 92 study area is presented in Figure 3-11 (A and B). This information is particularly important in order to understand how existing vacant parcels as well as parcels with agricultural or low intensity uses are expected to develop in the future in terms of both, type of land use and density. The project study area is divided in two jurisdictions: unincorporated Hillsborough County and Plant City. Each jurisdiction has prepared its own comprehensive plan.

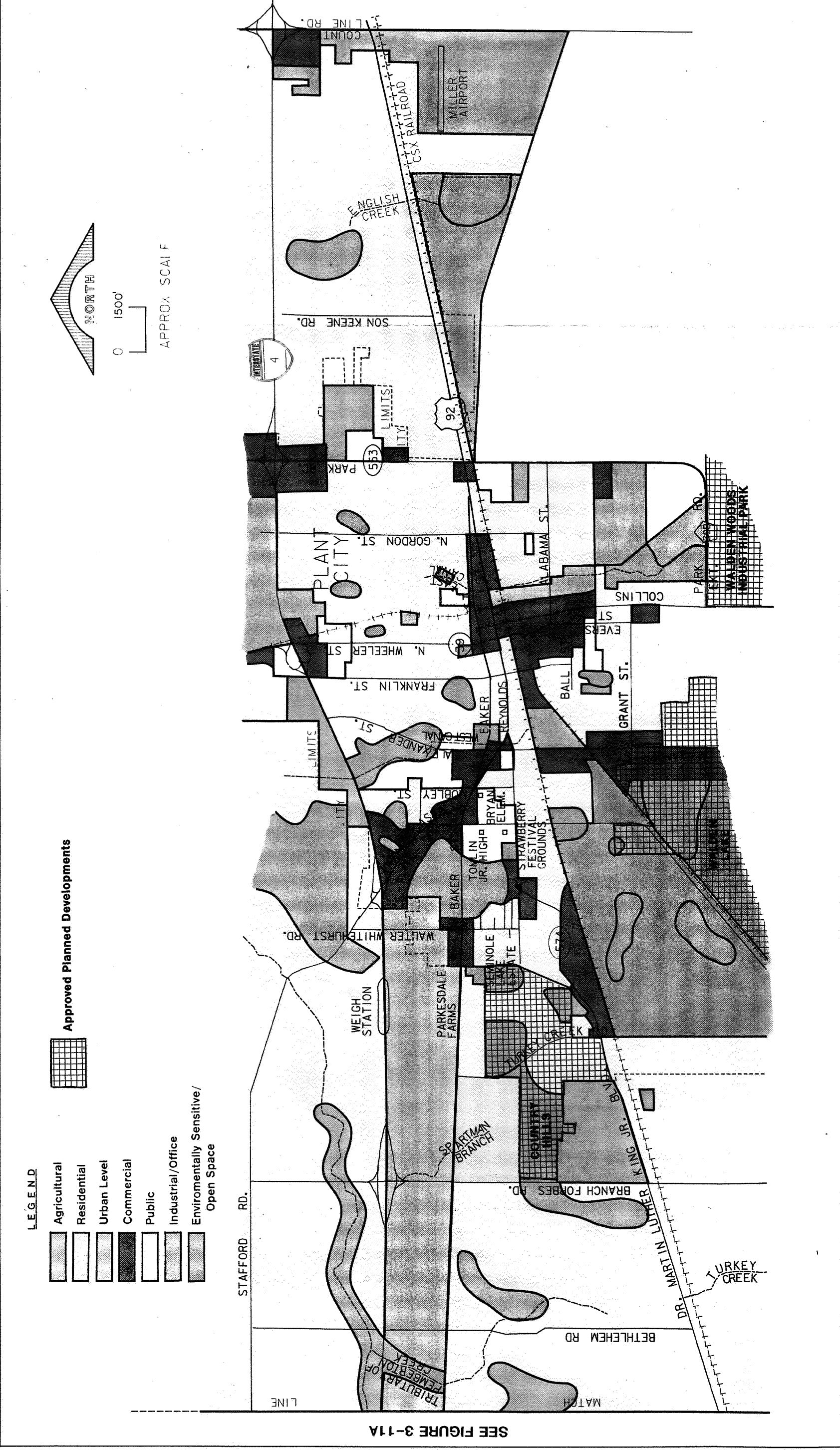
In Hillsborough County, the long range planning efforts are the responsibility of the Hillsborough County City-County Planning Commission (HCCCPC). The HCCCPC staff has developed the Future of Hillsborough County Comprehensive Plan which was adopted in July 1989. Revisions of this plan were adopted on December 18, 1990. The planning horizon is 2010. This plan proposes a land use pattern that will target growth into the "nodes" (areas of concentrated activity such as Plant City) with strong corridor connections between the nodes.



US 92 (SR 600) PD & E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

FUTURE LAND USE WITHIN THE STUDY AREA

FIGURE
3-11A



US 92 (SR 600) PD & E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

FUTURE LAND USE WITHIN THE STUDY AREA

FIGURE 3-11B

Two corridor connections identified in the plan fall within the study area boundaries. The I-75 corridor width extends between I-75 and US 301 and the I-4 corridor width extends between I-75 and the Hillsborough/Polk County line from I-4 to US 92.

Future land use patterns in the city of Plant City are addressed in the Comprehensive Plan for the City of Plant City, Florida⁶. This plan emphasizes the desire of Plant City to promote downtown activity and preserve its historic character. Figure 3-11B illustrates the future land use designations for Plant City.

3.3.1.3 Approved Planned Developments

Several major developments are currently being planned for construction on parcels located along or in the vicinity of US 92. Generally, these projects are proposed on vacant land and have received conceptual site plan approval for future development.

As shown in Figure 3-11 (A and B), six developments are planned to occur in the vicinity of US 92, four of which will be constructed on sites adjacent to the existing US 92 alignment. The latter are: Fulwood Industrial Park, Park of Commerce (formerly known as Arvida Corporate Park), Country Hills, and Consolidated Minerals. Although not a planned development, it is helpful to note that Rooms to Go is constructing a facility in the southwest quadrant of I-4 and Mango Road (CR 579). Access to this facility is planned to be provided by way of US 92. As design options were developed for the proposed improvements along US 92, the approved site plans for these five projects were reviewed in order to determine impacts.

Specific information collected for these planned developments including project description, applicant, type of development approval, construction status, and development program is provided in the Data Collection Summary⁴.

3.3.2 Cultural Features and Community Services

3.3.2.1 Cultural Features

Literature review and field surveys were performed along US 92 (SR 600) from Garden Lane to the Hillsborough/Polk County line in Hillsborough County to locate and identify any cultural resources within the project impact zone and to assess their significance in terms of eligibility for listing in the National Register of Historic Places. The historical/architectural component of the survey was conducted between December 1991 and April 1992; the archaeological survey in July and August of 1992. The findings of the literature review and the field surveys were summarized in the Cultural Resource Assessment Survey⁷ and presented below.

- Section 4(f) Lands

The proposed project will not use any land from a publicly-owned park, recreation area or wildlife and waterfowl refuge, or land from a site with national, state or local historic significance. Therefore, this project does not involve any Section 4(f) properties.

- Historic Sites/Districts

A Cultural Resource Assessment, including background research and field survey coordinated with the State Historic Preservation Officer (SHPO), was performed for the project. As a result of the assessment, 164 historic structures were identified along the project corridor, with the majority located in Plant City. Exclusive of a cluster of historic structures situated in Plant City proper, the buildings recorded represent typical examples of their type for the Hillsborough County area. None of these structures display unusual or unique architectural characteristics, nor are they associated with events or lives of persons presenting historic significance. Therefore, by these criteria these structures do not meet the

criteria for listing in the National Register of Historic Places (NR).

Twelve of the identified historic structures, between Mobley Street and Gordon Street, have previously been included as contributing structures within the proposed National Register Historic District: the Plant City Main Street District. Twelve other historic structures, identified in the same segment, have been included as contributing structures within the proposed National Register Historic District: the Reynolds-Mahoney Street Residential District. The Florida Division of Historical Resources and the study team feel that 58 additional structures also qualify and therefore should be included in this proposed historic district. Figure 3-12 depicts both districts. These properties are not currently NR listed as part of a district, and none appear to be eligible for listing as individual structures.

The project is not anticipated to effect either of these historic districts. In a letter dated October 11, 1993, the SHPO states that there is "no effect" from this project. This letter is included in the Categorical Exclusion document.

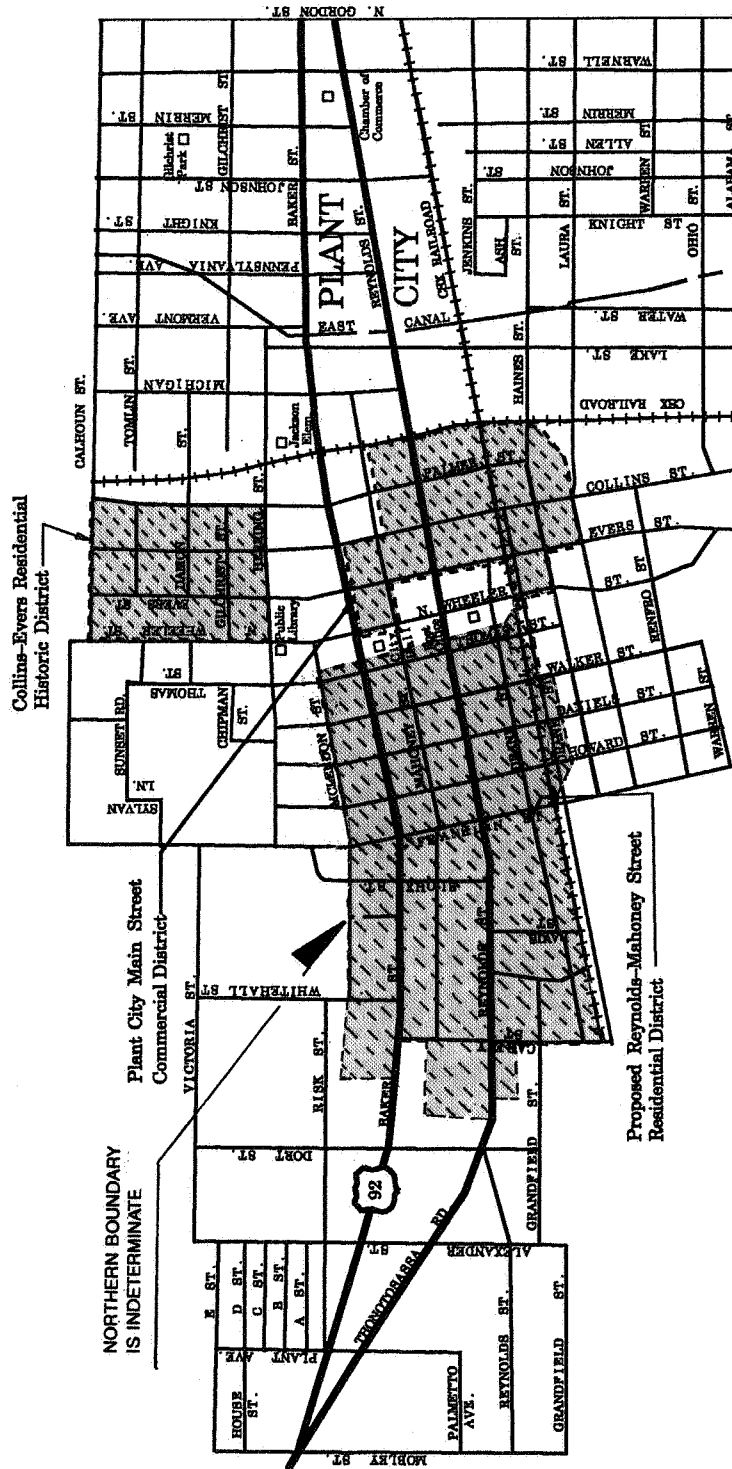
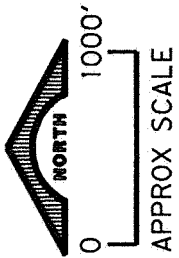
- Archaeological Sites

Thirteen archaeological sites were identified (Florida Master Site File Numbers 8Hi5329 through 8Hi5341) by the Cultural Resource Assessment. The majority are classified as lithic scatters and artifact scatters. All are commonly occurring types of sites for the region and deemed to have limited research potential. Hence, none appear to be eligible for listing in the National Register.

In a letter dated October 11, 1993, the SHPO states that there is "no effect" from this project.

LEGEND

COMMERCIAL OR RESIDENTIAL HISTORIC DISTRICTS



US 92 (SR 600) PD & E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

PROPOSED NATIONAL REGISTER
HISTORIC DISTRICTS IN PLANT CITY

FIGURE
3-12

3.2.2.2 Community Facilities

Community facilities not only serve the needs of the surrounding areas, but also provide points of cohesion for adjacent neighborhoods and communities. Churches and other religious institutions, public and private schools, parks and other recreational areas, fire stations, police stations, medical and emergency treatment facilities, cemeteries, and public buildings and facilities are considered to be community facilities.

This definition was used in collecting information for the study area. Sources of information that were used included: local government department files, road surveys, the Hillsborough County School Board, local planning files, the Plant City Chamber of Commerce, and the local planner's knowledge of the area. The following discussion focuses on schools, existing community facilities, and anticipated future community facilities.

- Schools

The project study area is located within the Hillsborough County public school district. There are 27 primary schools within the study area, of which 23 are public and 4 are private. These schools are listed in Table 3-12, and are mapped in Figure 3-13 (A and B).

Of the 23 public schools, 15 are elementary schools, 6 are junior high schools and 2 are senior high schools. Generally, bus service is not provided to students living within two miles of the school they attend. Three of the elementary school sites are located on either side of US 92 or in its vicinity, and therefore students will need to cross US 92 on their trips to and from school. These schools are: Bryan Elementary, Jackson Elementary, and Lincoln Elementary.

TABLE 3-12
SCHOOLS SERVING THE STUDY AREA

The following is a list of schools, private as well as public, serving the students within the project study area. While not all of these facilities are located within the study area, their service boundaries are.

PUBLIC SCHOOLS

Elementary

Bryan Elementary School
Burney-Simmons Elementary School
Colson Elementary School
Cork Elementary School
Dover Elementary School
Stonewall Jackson Elementary School
Kenly Elementary School
Lincoln Elementary School
Lopez Elementary School
McDonald Elementary School
Mango Elementary School
Seffner Elementary School
Springhead Elementary School
Walden Elementary School
Wilson Elementary School

Junior High

Greco Junior High School
McLane Junior High School
Mann Junior High School
Marshall Junior High School
Tomlin Junior High School
Turkey Creek Junior High School

Senior High

Armwood Senior High School
Plant City Senior High School

PRIVATE SCHOOLS

P.C. Dees School
School of Hope for Emotional Children
Seffner Christian Academy
Tampa Bay Vocational School

COMMUNITY COLLEGES

Hillsborough Community College,
Plant City Campus
Hillsborough Community College,
Brandon Campus

NOTE: This information was compiled for the 1991-1992 school year.

Source: Hillsborough County School Board

- (C) PLACES OF WORSHIP**
1. FIRST ASSEMBLY OF GOD
 2. ST. GREGORY'S GREEK ORTHODOX CHURCH
 3. FAITH BAPTIST CHURCH
 4. FREEMILL BAPTIST CHURCH
 5. CHURCH OF THE LIVING GOD
 6. BIBLE BAPTIST CHURCH
 7. GODS CHURCH
 8. MANTOSH CHRISTIAN CHURCH
 9. JEHOVAH'S WITNESS CHURCH
 10. FIRST BAPTIST CHURCH OF DOVER
 11. METHODIST CHURCH
 12. PENTECOSTAL HOLINESS CHURCH

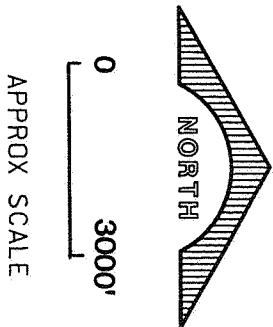
- ★ GOVERNMENT BUILDINGS**
1. HILLSBOROUGH COUNTY RECREATION CONSTRUCTION OFFICE
 2. HILLSBOROUGH COUNTY DETENTION CENTER
 3. HILLSBOROUGH COUNTY AGRICULTURAL BUSINESS CENTER
 4. DOVER POST OFFICE
- △ SCHOOLS**
1. SEFFNER CHRISTIAN ACADEMY
 2. ARMWOOD SENIOR HIGH SCHOOL
 3. McDONALD ELEMENTARY SCHOOL
 4. LOPEZ ELEMENTARY SCHOOL

- (P) PARKS & RECREATION**
1. FLORIDA STATE FAIRGROUNDS
 2. SHANGRI LA PARK

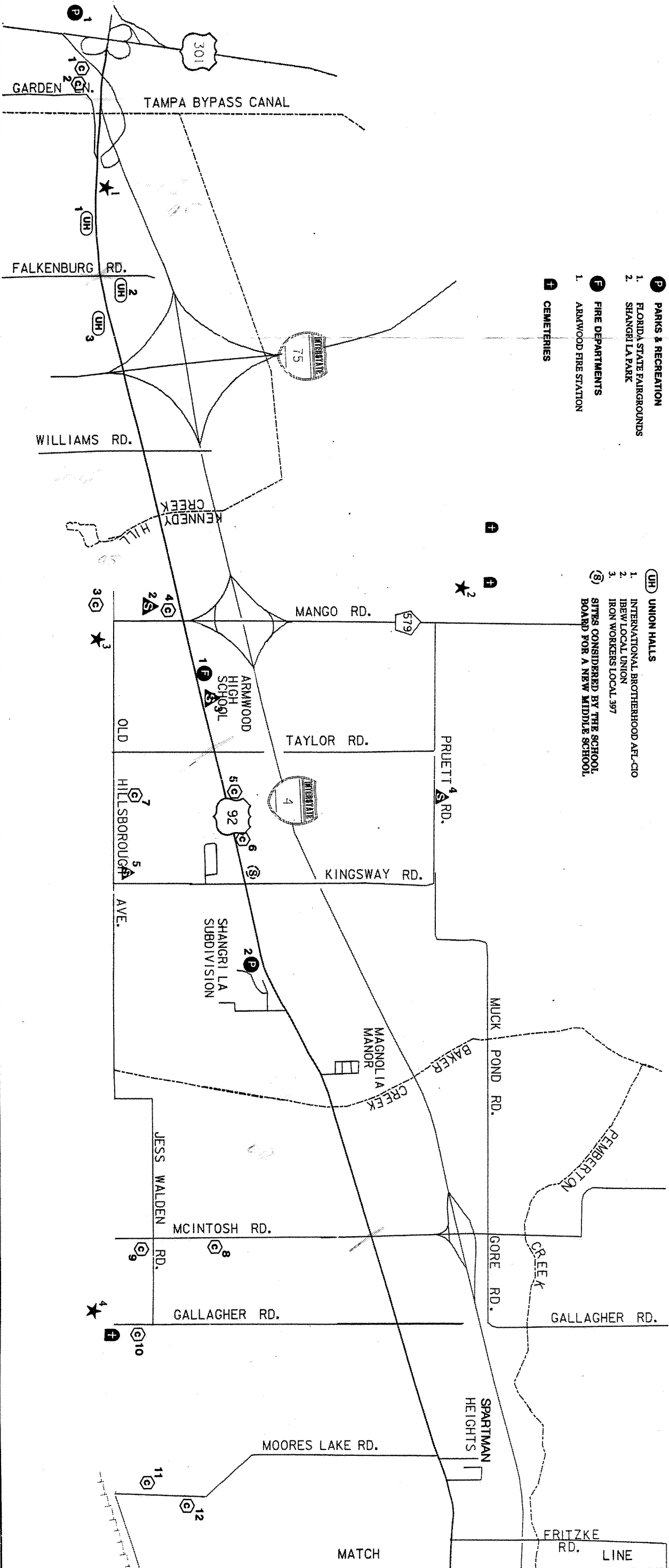
- (F) FIRE DEPARTMENTS**
1. ARMWOOD FIRE STATION

- (+) CEMETERIES**

- (UH) UNION HALLS**
1. INTERNATIONAL BROTHERHOOD AFL-CIO
 2. IBEW LOCAL UNION
 3. IRON WORKERS LOCAL 397
- (S) SITES CONSIDERED BY THE SCHOOL BOARD FOR A NEW MIDDLE SCHOOL.**



SEE FIGURE 3-13B



US 92 (SR 600) PD & E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

COMMUNITY FACILITIES SERVING THE STUDY AREA

FIGURE
3-13A

LEGEND

PARKS & RECREATION

- 3. STRAWBERRY FESTIVAL PARK
- 4. ROWENA MAY'S PARK
- 5. GILCHRIST PARK
- 6. MIKE SANSONE COMMUNITY PARK
- 7. OTIS A. ANDREWS SPORTS COMPLEX
- 8. HAINES STREET RECREATION CENTER
- 9. CINCINNATI REDS SPRING TRAINING COMPLEX
- 10. PLANT CITY STADIUM
- 11. PLANT CITY GOLF AND COUNTRY CLUB
- 12. PLANT CITY YMCA

FIRE DEPARTMENTS

- 2. PLANT CITY FIRE STATION #2
- 3. MIDWAY VOLUNTEER FIRE STATION

SCHOOLS

- 6. TOMLIN JR. HIGH SCHOOL
- 7. BRYAN ELEMENTARY SCHOOL
- 8. WILSON ELEMENTARY SCHOOL
- 9. P.C. DEES SCHOOL
- 10. BURNIE-SIMMONS ELEMENTARY SCHOOL
- 11. STONEWALL JACKSON ELEMENTARY SCHOOL
- 12. LINCOLN ELEMENTARY SCHOOL
- 13. HILLSBOROUGH COMMUNITY COLLEGE PLANT CITY
- 14. MARSHALL JR. HIGH SCHOOL
- 15. CORK ELEMENTARY SCHOOL

HOSPITALS & MEDICAL FACILITIES

- 1. SOUTH FLORIDA BAPTIST HOSPITAL
- 2. HILLSBOROUGH COUNTY MEDICAL CENTER

GOVERNMENT BUILDINGS

- 5. NATIONAL GUARD ARMORY
- 6. STATE OF FLORIDA INSPECTION CENTER
- 7. PLANT CITY POLICE DEPARTMENT
- 8. PLANT CITY NEIGHBORHOOD SERVICE CENTER
- 9. PLANT CITY POST OFFICE
- 10. PLANT CITY CITY HALL
- 11. PLANT CITY LIBRARY
- 12. HILLSBOROUGH COUNTY OFFICE BUILDING
- 13. INSTITUTE OF FLORIDA STUDIES

CIVIC ORGANIZATIONS

- 1. AMERICAN LEGION

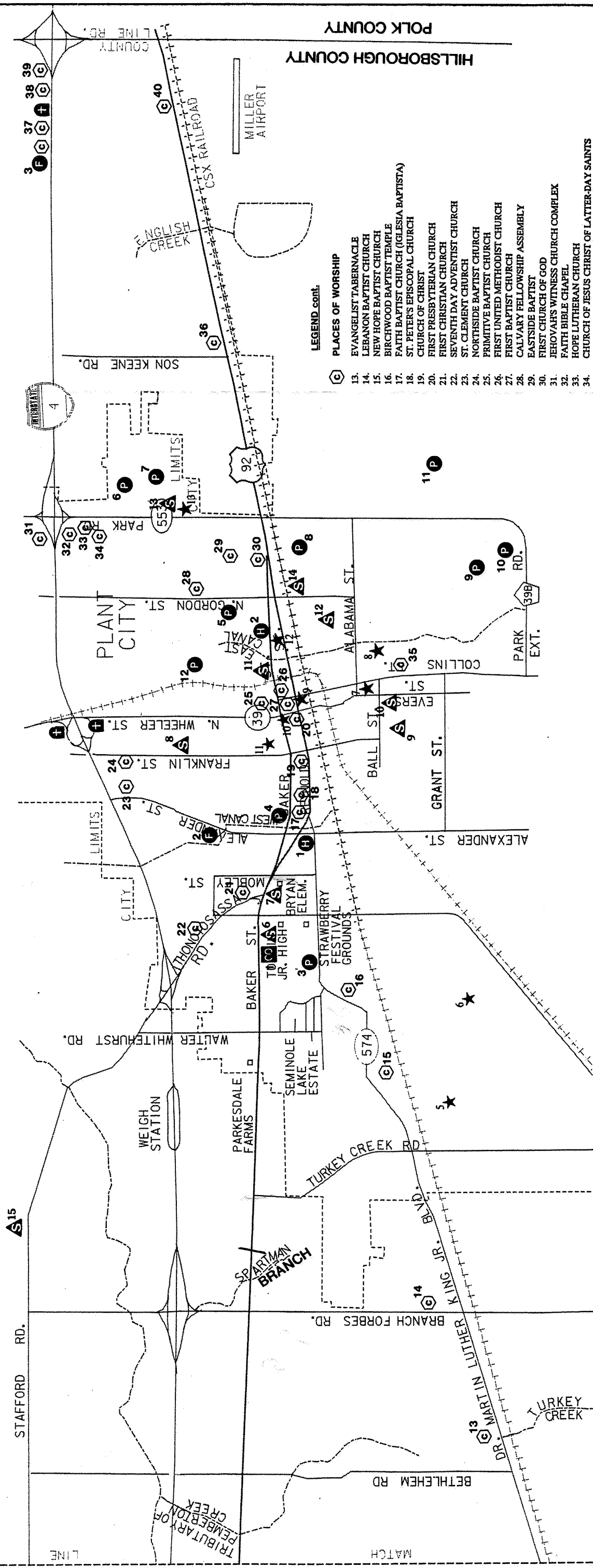
CEMETERIES

PLACES OF WORSHIP

- 13. EVANGELIST TABERNACLE
- 14. LEBANON BAPTIST CHURCH
- 15. NEW HOPE BAPTIST CHURCH
- 16. BIRCHWOOD BAPTIST TEMPLE
- 17. FAITH BAPTIST CHURCH (IGLESIA BAPTISTA)
- 18. ST. PETER'S EPISCOPAL CHURCH
- 19. CHURCH OF CHRIST
- 20. FIRST PRESBYTERIAN CHURCH
- 21. FIRST CHRISTIAN CHURCH
- 22. SEVENTH DAY ADVENTIST CHURCH
- 23. ST. CLEMENT CHURCH
- 24. NORTHSIDE BAPTIST CHURCH
- 25. PRIMITIVE BAPTIST CHURCH
- 26. FIRST UNITED METHODIST CHURCH
- 27. FIRST BAPTIST CHURCH
- 28. CALVARY FELLOWSHIP ASSEMBLY
- 29. EASTSIDE BAPTIST
- 30. FIRST CHURCH OF GOD
- 31. JEHOVAH'S WITNESS CHURCH COMPLEX
- 32. FAITH BIBLE CHAPEL
- 33. HOPE LUTHERAN CHURCH
- 34. CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS
- 35. SOUTHSIDE BAPTIST CHURCH
- 36. CHURCH OF NAZARENE
- 37. MT. EVON PRIMITIVE BAPTIST CHURCH
- 38. ORTHODOX PRIMITIVE BAPTIST CHURCH
- 39. FAITH TABERNACLE ASSEMBLY OF GOD
- 40. YOUNG MAN'S PRAISE & WORSHIP CENTER



APPROX SCALE



SEE FIGURE 3-13A

US 92 (SR 600) PD & E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

COMMUNITY FACILITIES SERVING THE STUDY AREA

FIGURE
3-13B

Three schools, two public and one private, are located adjacent to the existing US 92. The public schools are: (1) Armwood Senior High School, located on the north side of US 92 between Peach and Pine streets, and (2) Tomlin Junior High School, located at the southwest intersection of Woodrow Wilson Boulevard and US 92. The private school is the Seffner Christian Academy, located at the southwest corner of US 92 and Mango Road (CR 579). A number of students attending each of the above three schools walk across US 92 daily during school hours.

Hillsborough Community College (HCC) has two campuses located within or in the vicinity of the study area. The Plant City campus is located on the east side of Park Road, just south of the interchange with I-4. The Brandon campus is located south of SR 574, between Falkenburg Road and US 301.

The recreational facilities of the schools are not available to the general public per Hillsborough County School Board policy. Therefore, this project does not involve Section 4(f) properties associated with the schools in the study area.

- Other Community Facilities

Community facilities adjacent to US 92 are shown in Figure 3-13 (A and B). Community facilities, such as government buildings, union halls, civic organizations, hospitals and medical facilities, places of worship, fire stations, and parks and recreation facilities, serve as focal points for a community.

Churches and other places of worship are the dominant type of community facilities found within the study area. Several prominent recreation facilities are also located within the study area, such as: Cincinnati Reds Spring Training Complex, and Plant City Strawberry Festival Grounds, along with numerous neighborhood and community parks. However, only two parks are adjacent to the

existing US 92. Shangri La Park, a private park, is located south of US 92, just west of Shangri La Drive, and is owned and maintained by the Shangri La Park Home Owners Association. The park has a covered picnic table and grill, as well as a basketball court. Rowena Mays Park is located at the northeast corner of Baker and Alexander Streets. This tennis facility is a part of the City's recreation program.

- Future Facilities

The parcel located on the northwestern corner of the US 92 and Kingsway Road intersection has been purchased by the Hillsborough County Board of Education for the construction of a new middle school.

3.3.3 Natural and Biological Features

According to the Wetlands Evaluation and Permit Coordination Package⁸ some isolated wetlands, as well as floodplain wetlands associated with Baker Creek, Pemberton Creek and Spartman Branch will be impacted by the proposed multi-laning of US 92. Large (greater than ten acres), undisturbed upland forests are relatively scarce along the project corridor.

3.3.3.1 Wetland Identification and Delineation

As part of the coordination process, the U.S. Fish and Wildlife Service (USFWS), the Florida Game and Fresh Water Fish Commission (FGFWFC), the Florida Natural Area Inventory (FNAI), the Florida Department of Environmental Protection (FDEP), the United States Army Corps of Engineers (USACOE), and the Southwest Florida Water Management District (SWFWMD) were contacted regarding the proposed improvements to US 92.

All wetlands within 200 feet of the existing centerline of US Highway 92 were identified using the criteria set forth in the Federal Manual for Identifying and Delineating Jurisdictional

Wetlands⁹. The classification of wetlands is in accordance with The Classification of Wetlands and Deepwater Habitats of the United States¹⁰. The location of each wetland is shown in Figure 3-14 (A and B). Table 3-13 gives a brief description of their characteristics. The USACOE, SWFWMD, and FDEP have inspected the wetland areas in the field and established their jurisdictional boundaries. Areas of impact were estimated for each of the improvement alternatives for comparison purposes. Table 7-3 in Section 7 summarizes the total area of wetland impacts under each alternative. Section 8.15.3 presents the impacts and proposed mitigation for the recommended improvement alternative.

3.3.3.2 Threatened and Endangered Species

The USFWS, FGFWFC, FNAI, SCS, and FDOT were contacted, and from the information gathered, the list shown in Table 3-14 was generated to serve as a comprehensive guide for the field study conducted in April and October 1992. The species included are determined to have the greatest probabilities of occurrence within the project limits.

The primary impacts of the project to wildlife are expected to result from the loss of native upland and wetland communities which provide cover, nesting, feeding, and roosting habitat for a variety of non-listed species. The protected species surveys conducted in April and October of 1992 focused primarily on the federally listed wetland-dependent species due to the lack of suitable undisturbed uplands. Since upland species are absent near the existing roadway, it is expected that wetland-dependent species have a greater potential to be impacted by the roadway improvements than most upland species. No critical or unusual upland or wetland habitats were found within the project boundaries.

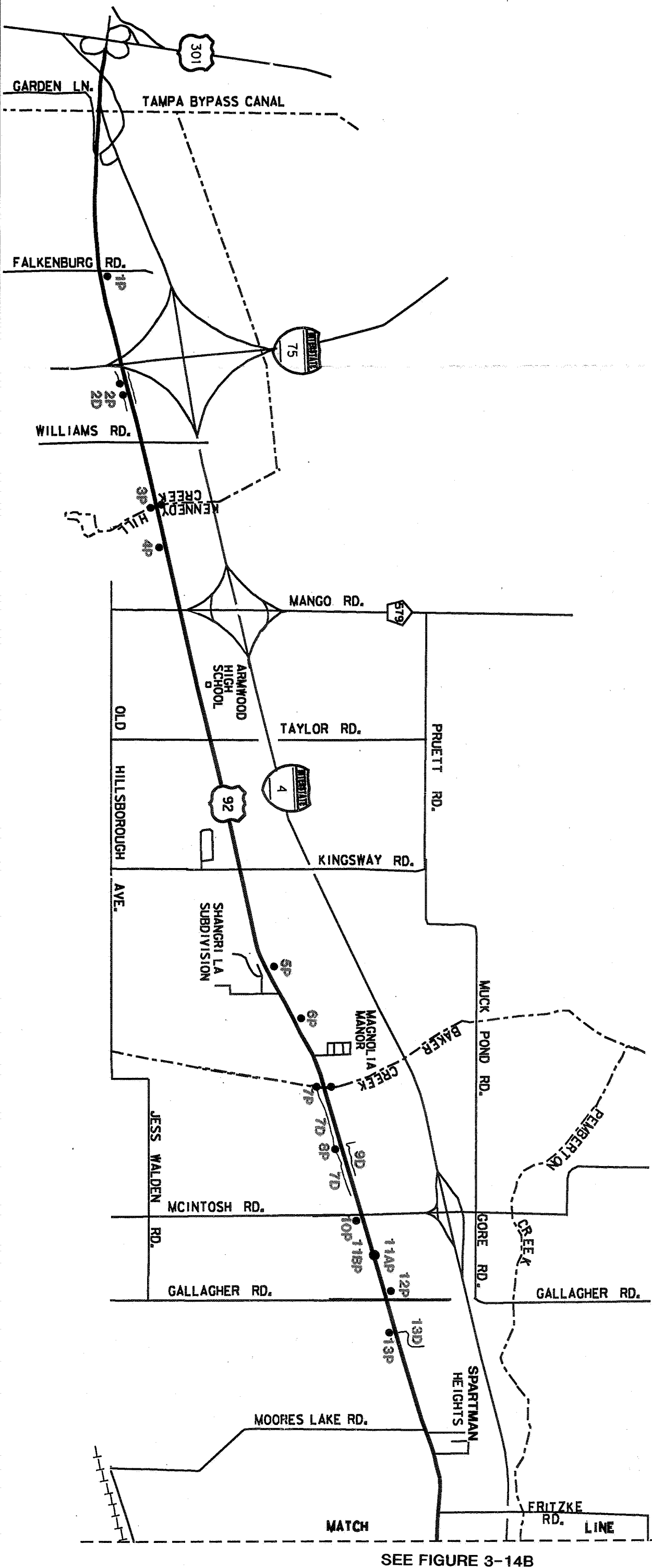
Two of the species listed above have been confirmed by FNAI to exist in the region, however, well beyond the study area. A gopher frog sighting has been confirmed near Lake Thonotosassa and a bald eagle nesting site is located approximately two and one-half miles south of the project boundaries and therefore, well outside all impact boundaries (1500 feet) for construction equipment disturbance and noise.

LEGEND

- WETLAND LOCATION
- WETLAND CONNECTED TO A DITCH OR CREEK



0 3000 /
APPROX SCALE



SEE FIGURE 3-14B

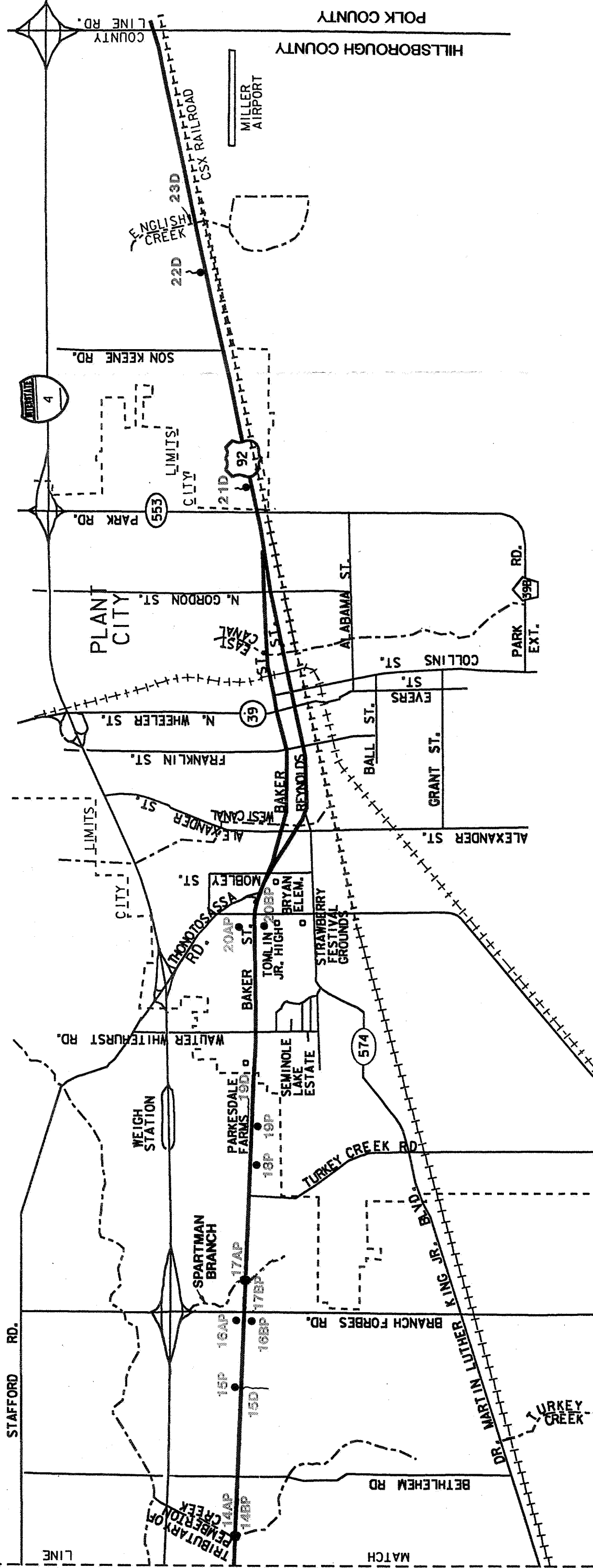
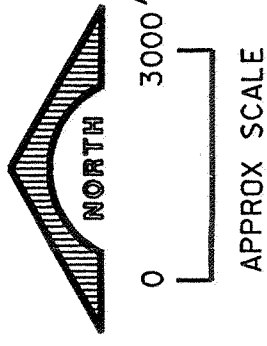
US 92 (SR 600) P D & E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

JURISDICTIONAL WETLANDS LOCATIONS

FIGURE
3-14A

LEGEND

- WETLAND LOCATION
- WETLAND CONNECTED TO A DITCH OR CREEK



SEE FIGURE 3-14A

US 92 (SR 600) P D & E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

JURISDICTIONAL WETLANDS LOCATIONS

FIGURE
3-14B

TABLE 3-13
SUMMARY OF WETLAND CHARACTERISTICS
(1 of 2)

Wetland Site No.*	System	Class	SubClass	Wetland Drainage Criteria	Dominant Plant Species	Total Size of Wetland (Acres)
1P	Palustrine	Forested	Broad-leaved Deciduous	Isolated	Red maple, Sweetbay, Laurel oak, Virginia chainfern	2.66
2P	Palustrine	Forested	Broad-leaved Deciduous	Contiguous	Red maple, Sweetbay, Wax myrtle, Virginia chainfern	1.26
2D	Palustrine	Aquatic Bed	Rooted Vascular	Contiguous	Parrot-feather, Cattail, Smartweed, Spatterdock	0.62
3P	Palustrine	Forested	Broad-leaved Deciduous	Contiguous	Coastal-plain willow, Primrose willow, Alligator weed	**
4P	Palustrine	Forested	Broad-leaved Deciduous	Isolated	Coastal-plain willow, Primrose willow, Maidencane	0.24
5P	Palustrine	Emergent	Persistent	Isolated	Pickereelweed, Spatterdock, Duck potato, Smartweed	3.29
6P	Palustrine	Forested	Broad-leaved Deciduous	Isolated	Red maple, Sweetbay, Wax myrtle, Virginia willow	1.84
7P	Riverine	Unconsolidated Bottom		Contiguous	Maidencane, Smartweed, Cattail	**
7D	Palustrine	Emergent	Persistent	Contiguous	Maidencane, Primrose willow, Marsh penny-wort	0.62
8P	Palustrine	Forested/ Emergent	Broad-leaved Deciduous	Contiguous	Red maple, Smartweed, Foxtail	2.54
9D	Palustrine	Forested/ Emergent	Broad-leaved Deciduous	Contiguous	Red maple, Maidencane, Marsh penny-wort	**
10P	Palustrine	Forested	Broad-leaved Deciduous	Isolated	Red maple, Sweetbay, Laurel oak, Virginia chainfern	0.96
11AP	Palustrine	Forested	Broad-leaved Deciduous	Contiguous	Red maple, Sweetbay, Laurel oak, Virginia chainfern	2.52
11BP	Palustrine	Forested	Broad-leaved Deciduous	Contiguous	Red maple, Sweetbay, Laurel oak, Cinnamon fern	0.69
11CP	Palustrine	Emergent	Persistent	Isolated	Cattail, Duck potato, Marsh penny-wort	0.27
12P	Palustrine	Forested	Broad-leaved Deciduous	Contiguous	Red maple, Sweetbay, Laurel oak, Virginia chainfern	3.2
13P	Palustrine	Forested	Broad-leaved Deciduous	Contiguous	Red maple, Sweetbay, Laurel oak, Cinnamon fern	1.38
13D	Palustrine	Emergent	Persistent	Contiguous	Primrose willow, Cattail, Smartweed, Marsh pennywort	**
* The numbers shown correspond to the numbers in Figure 3-14 (A and B). "P" denotes Palustrine or Riverine wetlands while "D" indicates ditch wetlands. Wetlands with the same number and distinguished with "A" and "B" exist on the north and south side of US 92, respectively, and they are potentially connected. ** Indeterminant -- streams and ditches longer than one mile.						

TABLE 3-13
SUMMARY OF WETLAND CHARACTERISTICS
(2 of 2)

Wetland Site No.*	System	Class	SubClass	Wetland Drainage Criteria	Dominant Plant Species	Total Size of Wetland (Acres)
14AP	Palustrine	Forested	Broad-leaved Deciduous	Contiguous	Red maple, Sweetbay, Red bay, Virginia chainfern	11.81
14BP	Palustrine	Forested	Broad-leaved Deciduous	Contiguous	Red Maple, Sweetbay, Red bay, Cinnamon fern	3.30
15AP	Palustrine	Forested	Broad-leaved Deciduous	Isolated	Red maple, Sweetbay, Red bay, Virginia chainfern	10.90
15BP	Palustrine	Emergent	Persistent	Isolated	Cattail, Marsh penny-wort, Pickerelweed	0.09
16AP	Palustrine	Forested	Broad-leaved Deciduous	Isolated	Red maple, Bald cypress, Laurel oak, Sweetbay	4.11
16BP	Palustrine	Forested	Broad-leaved Deciduous	Isolated	Red maple, Maidencane, Sedges	0.17
17AP	Palustrine	Forested	Broad-leaved Deciduous	Contiguous	Red maple, Sweetbay, Dogfennel	1.38
17BP	Palustrine	Forested	Broad-leaved Deciduous	Contiguous	Red maple, Sweetbay, Virginia chainfern, Royal fern	6.21
18P	Palustrine	Scrub-shrub	Broad-leaved Deciduous	Isolated	Coastal-plain willow, Maidencane, Smartweed	0.66
19P	Palustrine	Forested	Broad-leaved Deciduous	Contiguous	Red maple, Sweetbay, Virginia chainfern, Royal fern	4.75
19D	Palustrine	Emergent	Persistent	Contiguous	Maidencane, Marsh penny-wort, Smartweed, Barnyard grass	0.08
20AP	Palustrine	Forested	Broad-leaved Deciduous	Contiguous	Red maple, Sweetbay, Virginia willow, Royal fern	93.3
20BP	Palustrine	Forested	Broad-leaved Deciduous	Contiguous	Red maple, Sweetbay, Virginia willow, Royal fern	32.1
21D	Palustrine	Emergent	Persistent	Contiguous	Wax myrtle, Primrose willow, Beggar-tick, Marsh penny-wort	**
22D	Palustrine	Schrub-shrub	Broad-leaved Deciduous	Contiguous	Wax myrtle, Primrose willow, Marsh penny-wort	**
23D	Palustrine	Schrub-shrub	Broad-leaved Deciduous	Contiguous	Primrose willow, Wax Myrtle, Beggar-tick, Marsh pennywort	**
* The numbers shown correspond to the numbers in Figure 3-14 (A and B). "P" denotes Palustrine or Riverine wetlands while "D" indicates ditch wetlands. Wetlands with the same number and distinguished with "A" and "B" exist on the north and south side of US 92, respectively, and they are potentially connected. ** Indeterminant -- streams and ditches longer than one mile.						

TABLE 3-14
LIST OF THREATENED AND ENDANGERED SPECIES
WITH POTENTIAL OCCURRENCE IN THE STUDY AREA*

SPECIES	LEGAL STATUS**	
	FEDERAL	STATE
Plants:		
auricled spleenwort, <u>Asplenium auritum</u>	NL	E
Tampa vervain, <u>Verbena tampensis</u>	C1	E
Curtiss' milkweed, <u>Asclepias curtissii</u>	NL	E
Florida golden aster, <u>Chrysopsis floridana</u>	E	E
Avian Species:		
roseate spoonbill, <u>Ajaia ajaja</u>	NL	SSC
bald eagle, <u>Haliaeetus leucocephalus</u>	E	T
little blue heron, <u>Egretta caerulea</u>	NL	SSC
reddish egret, <u>Egretta rufescens</u>	C2	SSC
snowy egret, <u>Egretta thula</u>	NL	SSC
tricolored heron, <u>Egretta tricolor</u>	NL	SSC
wood stork, <u>Mycteria americana</u>	E	E
red-cockaded woodpecker, <u>Picoides borealis</u>	E	E
Florida scrub jay, <u>Aphelocoma coerulescens coerulescens</u>	T	T
southeastern American kestrel, <u>Falco sparverius paulus</u>	C2	T
Florida sandhill crane, <u>Grus canadensis pratensis</u>	NL	T
Reptiles and Amphibians:		
gopher tortoise, <u>Gopherus polyphemus</u>	C2	SSC
American alligator, <u>Alligator mississippiensis</u>	T (S/A)	SSC
eastern indigo snake, <u>Drymarchon corais couperi</u>	T	T
short-tailed snake, <u>Stilosoma extenuatum</u>	C2	T
gopher frog, <u>Rana aerolata</u>	C2	SSC

* Source: Florida Game and Fresh Water Commission (FGFWFC) Official Lists of Endangered and Potentially Endangered Fauna and Flora in Florida; November 1, 1992

** Abbreviations of legal status designations are as follows:

- E Endangered
- T Threatened
- NL Not Listed
- C1 Candidate for listing by U.S. Fish and Wildlife Service; substantial information on biological vulnerability or threats to support listing
- C2 Candidate for listing by the U.S. Fish and Wildlife Service: evidence of vulnerability, but not enough data to support listing. (Note: C1 and C2 species are not protected under the Endangered Species Act).
- SSC Species of Special Concern according to FGFWFC
- T(S/A) Threatened due to similarity of appearance

During the course of the field investigation two state-listed species were encountered. Three Florida sandhill cranes were observed in Wetland 5P and an active gopher tortoise burrow was observed near Wetland 16BP, outside the proposed right-of-way limits of all improvement alternatives.

Other federally-listed threatened or endangered species with potential occurrence in or near the project area are the Florida golden aster, wood stork, eastern indigo snake, red-cockaded woodpecker, Florida scrub jay, and the American alligator. Because of habitat limitations for these animals along the project corridor and the limited width of proposed impact, there is no indication that the project will affect these species. Although no eastern indigo snakes were observed within the study area during any of the field surveys, the prevalence of potential habitat within the corridor indicates potential involvement of the eastern indigo snake. To minimize impacts to individual eastern indigo snakes during construction, a special provision will be included in the contract to advise the contractor of the potential presence of this species and its protected status. If an eastern indigo snake is sighted during construction, the contractor will be required to cease all operations which might cause harm to the snake. If the snake does not move away from the construction area, FGFWFC will be contacted to capture and relocate the snake to suitable habitat either adjacent to the project corridor or off-site.

Information gathered indicates that the proposed construction will not affect any of the listed species (state and federal). The Wetland Evaluation and Permit Coordination Package⁷ was reviewed by the wildlife agencies which have concurred that the project will not adversely affect the survival and/or critical habitat of any federally-listed species. A "no adverse effect" determination was received from the USFWS.

3.3.4 Hazardous Materials and Petroleum Contaminated Sites

A Contamination Screening Evaluation Report¹¹ was prepared for this PD&E study. A summary of the preliminary findings of this evaluation is presented in this section.

The first phase of the hazardous materials/petroleum evaluation of properties along US 92 from Garden Lane to the Hillsborough/Polk County line, consisted of a data collection program. The data collection phase included a review of regulatory information for the parcels along the corridor, review of business directories, review of aerial photographs (flown in 1938, 1966 and 1979) and site inspection. The second and final phase of the data collection program consisted of more in-depth, on-site research and surveys.

Through the contamination screening evaluation, 66 properties were identified where conditions pose potential impacts to the US 92 project. Three (3) of these are potentially contaminated with hazardous waste, fifty (50) are affected by petroleum products, and thirteen (13) are potentially contaminated by both hazardous waste and petroleum materials. All of these sites are contiguous to the project corridor. Table 3-15 summarizes the following information for the sites of concern: property name and address, facility identification numbers, standard industrial codes (SIC) for the current or most recent business occupant, the type of contamination which is of concern, whether storage tanks are present, the distance of the suspect/known contamination from the edge of existing pavement, and the contamination evaluation rating. Figure 3-15 (A and B) illustrates the approximate location of these sites.

Based on current knowledge, none of the sites described above appear to warrant a change in the proposed alignments for the US 92 project. Generally, the potential contamination impacts of the project, including liability for exacerbating existing contamination, can be managed through design and construction practices.

TABLE 3-15
POTENTIALLY CONTAMINATED SITES

(1 of 2)

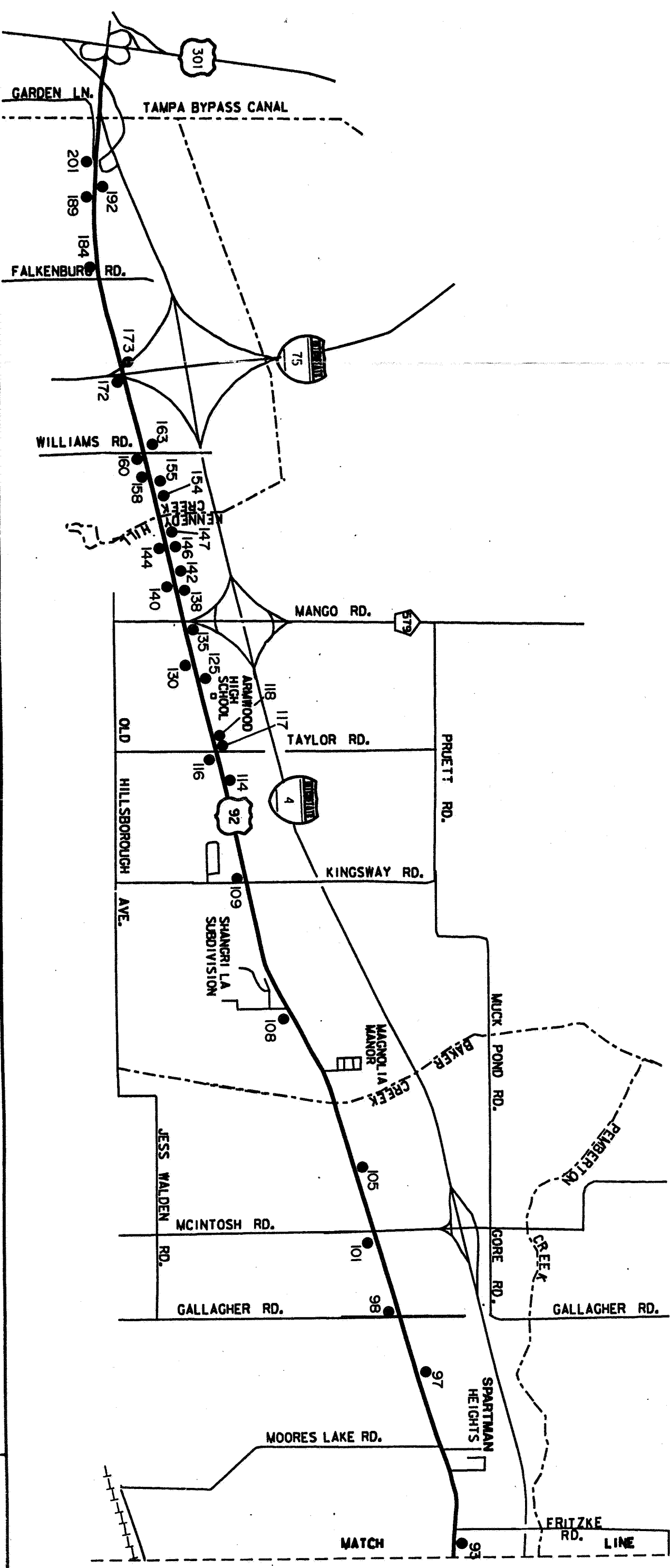
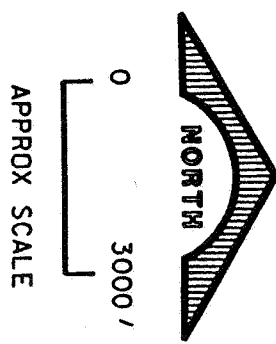
SITE I.D.#	STREET ADDRESS	FACILITY NAME	CONTAMINATION EVALUATION	STANDARD INDUSTRIAL CODE	FACILITY IDENTIFICATION NUMBER	MATERIAL OF INTEREST*	TANKS*	DISTANCE FROM EDGE OF PAVEMENT
201	9605 E. Hwy. 92	The Ross Co. (Out of Bus.)	High	In Review	298624804	P	U	U
192	9802 E. Hwy. 92	J. D. Road & Tire Service	Medium	7549	In Review	H	N	N/A*
189	9811 E. Hwy. 92	Priced - Rite Motor Sales	Medium	5521	In Review	H	N	N/A
184	5320 Falkenburg Road	Foodmart & Gas	Medium	5541/5491	In Review	P	E	75' S/65' W
173	10414 E. Hwy. 92	Accent Marine Boats & Repair	Medium	5551	In Review	P	R	In Review
172	10611 E. Hwy. 92	Junkyard (Steins)	High	5599	In Review	P/H	U	U
163	10826 E. Hwy. 92	Fina Service Station	High	5541	In Review	P	E	50' N/65' W
160	10907 E. Hwy. 92	Stop N Go/Gas	High	5541	298736874	P	E	60' S/115' W
158	10909 E. Hwy. 92	Power Play Marine Service	Medium	5551	In Review	H	U	U
155	11104 E. Hwy. 92	Camp Knox - Motel	Medium	7011/5541	Not Registered	P	U	U
154	11110 E. Hwy. 92	Auto Repair	Medium	7531	In Review	P/H	U	U
147	11302 E. Hwy. 92	Zaccari's Auto Repair & Body Shop	Medium	7531	In Review	P/H	N	N/A
146	11314 E. Hwy. 92	Auto Body Shop/Eastside Tire	High	7531/7535	298625812	P	E	20' N
144	11307 E. Hwy. 92	Coastal Mart #699	High	5171	299046595	P	E	70' S
142	11324 E. Hwy. 92	Interstate Used Auto Parts	Medium	5599	298736588	P/H	E	In Review
140	11501 E. Hwy. 92	92 Speedy Wash	Medium	7215	Not Registered	P	U	U
138	11508 E. Hwy. 92	Pub Ninety Two	Medium	5831	Not Registered	P	U	U
135	6009 S.R. 579	Texaco Gas Station # 137	High	5541	FLD984173609	H		50' N/100' E
130	11807 E. Hwy. 92	Gulf Coast Quality Fence	Medium	1799	NR	P/H	U	U
125	11826 W. Hwy. 92	Hillsborough County Fire Dept.	Medium	9224	298624888	P	E	130' N
118	1003 W. Hwy. 92	Snapper Sales Service/Flower King	Medium	5251/5261	N/A	P	N	N
117	1003 W. Hwy. 92	Flower King/Gas Station	High	5261/5541	In Review	P	A	55' N/25' W
116	930 W. Hwy. 92	Spur Gas Station/Food Mart	High	5541/5499	298625446	P	E	50' S/50' E
114	713 W. Hwy. 92	Building for sale	High	5541	In Review	P	U	U
109	102 W. Hwy. 92	Farmstore	High	5411	FLD984185983	H		
108	901 E. Hwy. 92	Construction & Equipment Yard	High	1511	298627487	P	E	40' S/100' W
105	12712 E. Hwy. 92	Giant Recreation World	High	7032	In Review	P/H	E	In Review
101	12901 E. Hwy. 92	Short Stop (BP Gas Station)	High	5499/5541	298624858	P	E	25' S/135' E
98	13095 E. Hwy. 92	Parts Plus Auto Store	High	5531	298509021	P	R	In Review
97	13262 E. Hwy. 92	Wilson's Wholesale Nursery, Inc.	High	0181	298628050	P	R	240' N
93	13606 E. Hwy. 92	Three Brothers Grocery	High	5411	298625247	P	E	40' N/30' E
91	5914 W. Hwy. 92	Prahl's Mobile Home Park & RV	High	5271/5561	Not Registered	P	U	U
88	5825 W. Hwy. 92	Catalina Inn	High	7011	Not Registered	P	U	U

* E: Existing; R: Removed; A: Abandoned; P: Petroleum; U: Unknown; N: None; N/A: Not Applicable; H: Hazardous Material/Waste.

TABLE 3-15
POTENTIALLY CONTAMINATED SITES
(2 of 2)

SITE I.D.#	STREET ADDRESS	FACILITY NAME	CONTAMINATION EVALUATION	STANDARD INDUSTRIAL CODE	FACILITY IDENTIFICATION NUMBER	MATERIAL OF INTEREST*	TANKS*	DISTANCE FROM EDGE OF PAVEMENT
85	5413 W. Hwy. 92	Family Motors/Auto Sales	Medium	5521	Not Registered	P	U	U
83	5340 W. Hwy. 92	Tractor World	Medium	5599	In Review	P/H	U	U
80	5112 W. Hwy. 92	Bennett's Service Station (Exxon)	High	5541	298625492	P	E	35' N/80' E
78	5107 W. Hwy. 92	Presto Food Store (Citgo)	Medium	5499/5983	In Review	P	E	40' S/110' E
77	1106 N. Forbes Rd.	Hy-Tech Petroleum Maintenance	High	5171	In Review	P/H	E	In Review
64	3501 W. Baker St.	Presto Food Store #15	Medium	5541/5411	In Review	P	E	40' S/55' E
63	3502 W. Hwy. 92	Hahn's Fina & Tire Service	High	5014	298624810	P	A	45' N/75' W
62	3409 W. Baker St.	Clyde Williams Auto Sales	High	5511	In Review	P/H	N	N/A*
56	2302 W. Baker St.	Palm Court Motel	High	7011	Not Registered	P	E	200'
52	2102 W. Baker St.	Oakwood Mobile Home Park	Medium	7033	Not Registered	P	U	U
51	2101 W. Hwy. 92	Hardee's Restaurant	High	5812	Not Registered	P	U	U
48	2009 W. Baker St.	TP Beverage Drive Thru #1	High	5813	298735708	P	E	50' S/20' E
45	1320 E. Baker St.	Puerto Rico Auto Repair	High	7531	298624940	P	E	20' N/25' E
43	1305 E. Baker St.	Ybor City Cuban Sandwich	Medium	5812	In Review	P	E	35' S/70' E
42	1306 E. Baker St.	Thermal Storage Equipment	Medium	3795	N/A	P	N	N/A
41	1311 E. Baker St.	Cambell's Auto Mart	Medium	5521	In Review	P	N	N/A
40	1312 E. Hwy. 92	Plant City R.V. Center	High	5561	In Review	P	E	180' N
36	1409 E. Baker St.	Big "E" Economy Auto Parts	Medium	5531	In Review	P/H	A	In Review
35	1410 E. Baker St.	Imperial Chateau Wines	Medium	5499	In Review	P	U	U
33	1505 E. Baker St.	Alert Tire Service, Inc.	Medium	5014	In Review	P	A	In Review
31	1601 E. Baker St.	Shannon Carley Auto Repairs	High	7531	In Review	P	R	70' N/20' E
30	1602 E. Baker St.	Farm Store	High	5431	FLD984185959	H		
					298625249	P	E	In Review
27	1706 E. Baker St.	Royal Oak Motel	High	7011	Not Registered	P	U	U
25	1904 E. Hwy. 92	Shell Gas Station	High	5541	298509080	P	E	85' N/60' W
24	2004 E. Hwy. 92	Plant City Steel Co.	High	3316	298625271	P	E	In Review
20	2604 E. Hwy. 92	Consolidated Fab., Inc.	High	5084	299045603	P/H	E	In Review
18	2680 E. Hwy. 92	Rinker Materials	High	3273	298625077	P	E	160' N/70' E
15	3308 E. Hwy. 92	Lambert's Auto, Truck & Equip. Sales	High	5521	In Review	P/H	U	U
14	3406 E. Hwy. 92	Construction Equip. Attachments, Inc.	High	5082	298944883	P	R	In Review
11	3604 E. Hwy. 92	Country Corner Store	Medium	5399	298625774	P	E	30' N/20' E
6	3801 E. Hwy. 92	Tom's Tire & Auto Repair	High	7531	298840669	P	R	In Review
4	3910 E. Hwy. 92	Omega Fab. & Construction, Inc.	High	1511	In Review	P	R	550' S
1	4350 E. Hwy. 92	Fasson Truck Parts	High	5599	In Review	P	A	In Review

* E: Existing; R: Removed; A: Abandoned; U: Unknown; N: None; N/A: Not Applicable; H: Hazardous Material/Waste.

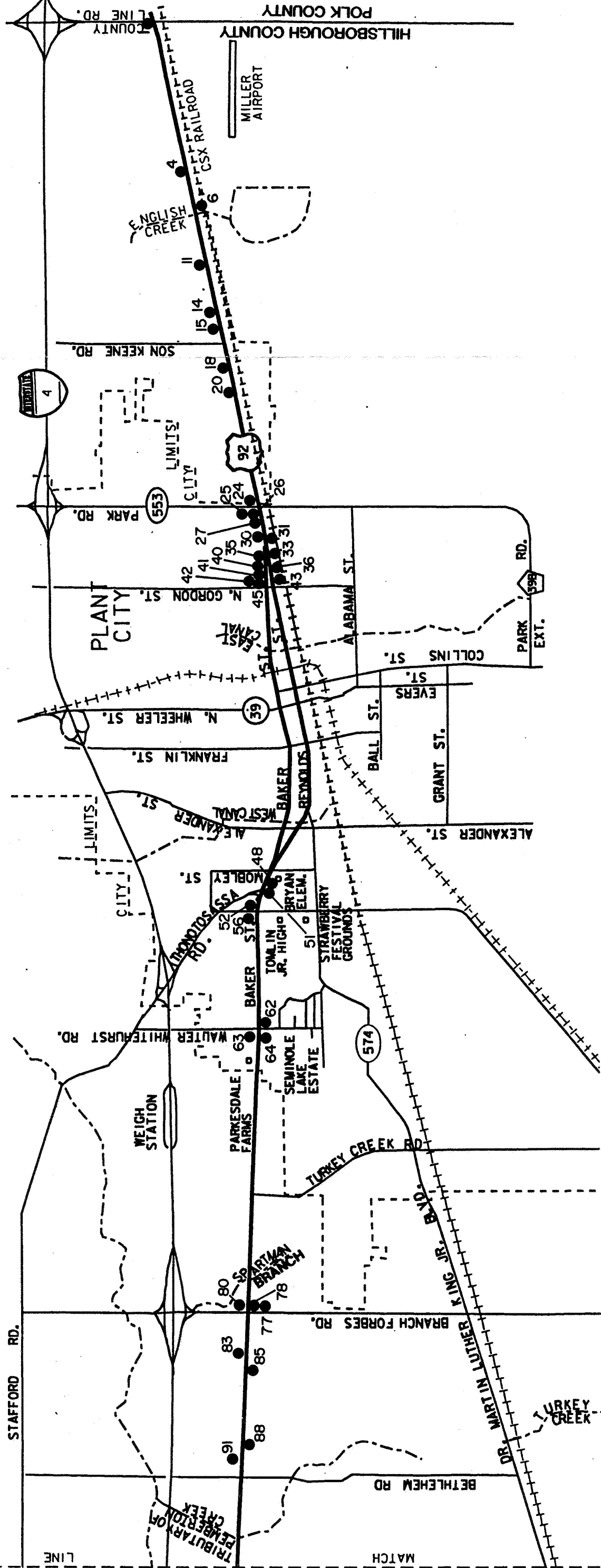
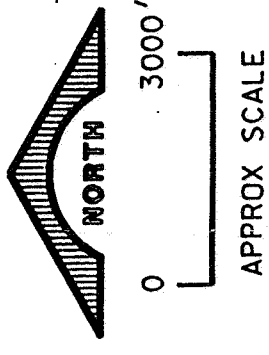


SEE FIGURE 3-15B

US 92 (SR 600) PD&E STUDY
 HILLSBOROUGH COUNTY
 FROM GARDEN LANE TO COUNTY LINE ROAD

POTENTIAL CONTAMINATION SITES MAP

FIGURE
3-15A



US 92 (SR 600) PD&E STUDY
 HILLSBOROUGH COUNTY
 FROM GARDEN LANE TO COUNTY LINE ROAD

POTENTIAL CONTAMINATION SITES MAP
FIGURE 3-15B

3.4 REFERENCES

1. Location Hydraulics Report; Post, Buckley, Schuh & Jernigan, Inc.; Tampa, Florida; September 1993.
2. Soil Survey of Hillsborough County, Florida; United States Department of Agriculture, Soil Conservation Service; Washington, D.C.; 1989.
3. Geotechnical Services; Professional Service Industries, Inc.; November 1993.
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6. Comprehensive Plan for the City of Plant City, Florida; Plant City, Florida; revised on May 28, 1991.
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9. Federal Manual for Identifying and Delineating Jurisdictional Wetlands; U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and USDA Soil Conservation Service; Washington, D.C.; Cooperative Technical Publication; 1987.
10. The Classification of Wetlands and Deepwater Habitats of the United States; Cowardin, L.M., et al; Washington, D.C.; 1979.
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SECTION 4

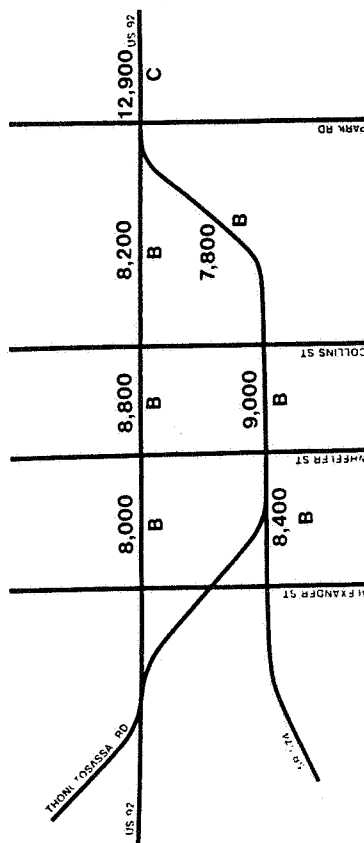
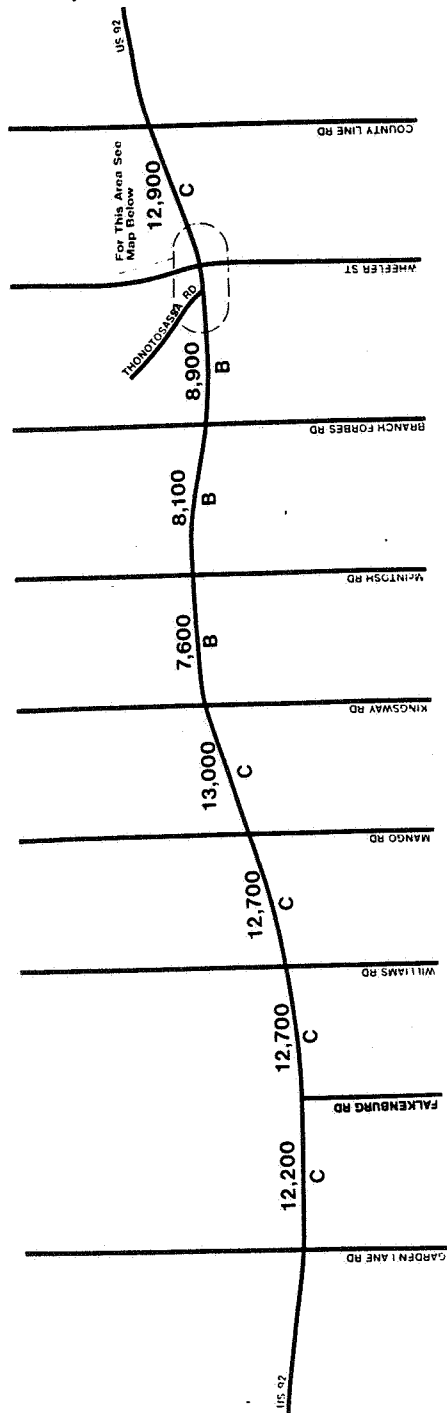
NEED FOR IMPROVEMENT

4.1 CAPACITY DEFICIENCIES

The current FDOT standards on the quality of traffic operations along facilities similar to US 92 require that level-of-service (LOS) C or better should be provided along the project corridor except within the city of Plant City where LOS D or better should be provided.

The level of service was determined for links along US 92, from Garden Lane to County Line Road, based on existing and Year 2015 average daily traffic volumes (ADTs). This information is presented in Figures 4-1 and 4-2. Currently, all links are operating at or better than LOS C. However, it is anticipated that without improvements along US 92, virtually all links from Garden Lane to Mobley Street and from Park Road to County Line Road will be deficient by 2015. With improvements along US 92, all links along US 92 are expected to operate with acceptable levels of service.

Likewise, the level of service was determined for the signalized intersections along US 92, from Garden Lane to County Line Road, based on the existing traffic volumes and the projected volumes for 2015. This information is presented in Table 4-1 for the existing conditions and in Table 4-2 for the year 2015 conditions. Based on this information, all but two intersections are currently operating at LOS C or better during the morning and evening peak hours. The intersection of US 92 with Mango Road is operating at LOS D during the morning peak hour and the intersection of US 92 with Kingsway Road is operating at LOS D during the evening peak hour. It is anticipated that by 2015, nine intersections will be deficient if improvements are not constructed along the project, while no intersections will be deficient if the project improvements recommended in Section 7 are implemented.



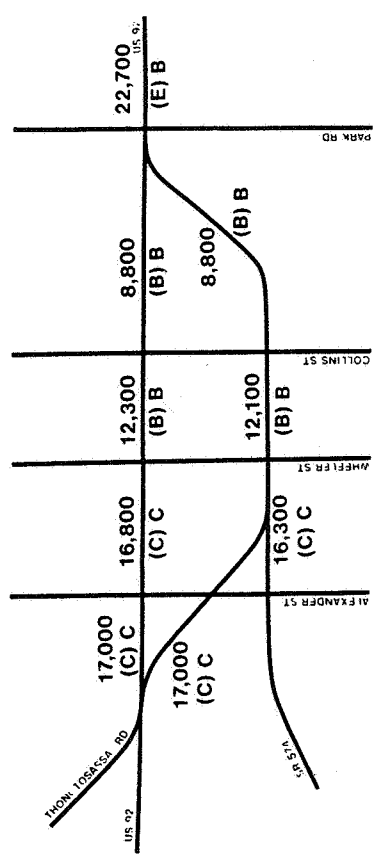
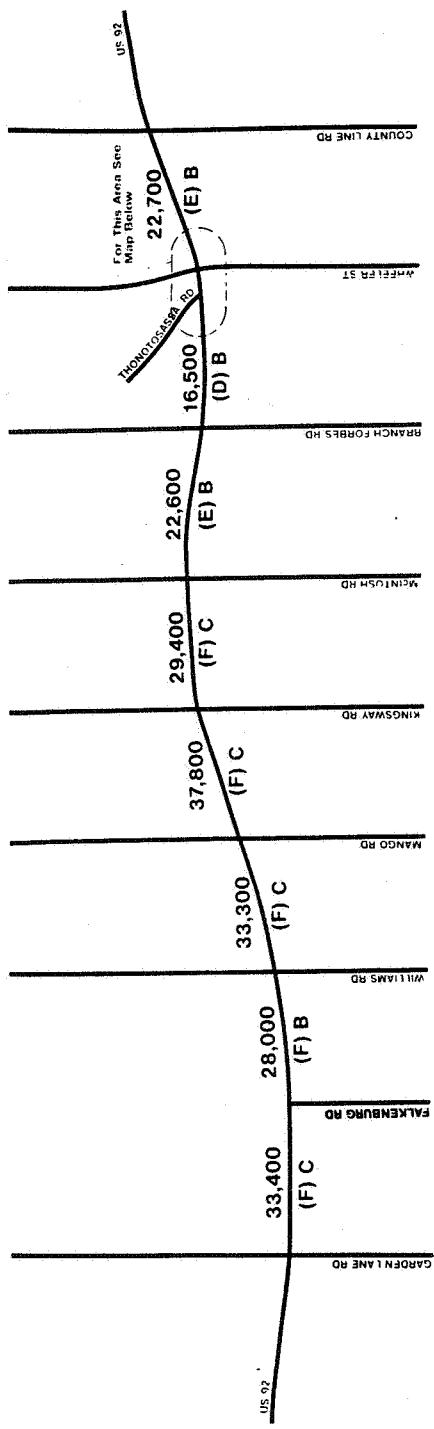
Legend
 12,200 1991 Daily Traffic Volumes
 B 1991 Level Of Service

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
 HILLSBOROUGH COUNTY
 FROM GARDEN LANE TO COUNTY LINE ROAD

**EXISTING AADT VOLUMES
 AND LEVEL OF SERVICE ESTIMATION**

**FIGURE
 4-1**



Legend
 33,000 Year 2015 Daily Traffic Projections
 (F) LOS Without Improvements
 C LOS With Recommended Improvements

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

YEAR 2015 AADT VOLUME PROJECTIONS
AND LEVEL OF SERVICE ESTIMATION

FIGURE 4-2

TABLE 4-1
EXISTING LEVELS OF SERVICE FOR
SIGNALIZED INTERSECTIONS ALONG US 92

Intersecting Roadway With US 92	AM Peak	PM Peak
Falkenburg Road	B	C
Williams Road	C	C
Mango Road	D	C
Peach Avenue	C	B
Pine Street	B	C
Parsons Avenue	B	B
Kingsway Road	B	D
McIntosh Road	B	C
Thonotosassa Road	C	C
Alexander Street (Baker Street)	C	C
Wheeler Road (Baker Street)	C	C
Wheeler Road (Reynolds Street)	C	C
Collins Street (Baker Street)	B	C
Collins Street (Reynolds Street)	B	C
Park Road	C	C
County Line Road	C	C

TABLE 4-2
YEAR 2015 LEVELS OF SERVICE FOR
SIGNALIZED INTERSECTIONS ALONG US 92

Intersecting Roadway With US 92	2015 No-Build		2015 Build	
	AM Peak	PM Peak	AM Peak	PM Peak
Falkenburg Road	F	F	C	C
Williams Road	F	F	C	D
Mango Road	F	F	C	D
Kingsway Road	F	F	D	D
McIntosh Road	F	F	C	C
Forbes Road	F	F	C	C
Thonotosassa Road	F	F	B	D
Alexander Street (Baker Street)	C	D	C	D
Wheeler Road (Baker Street)	D	D	D	D
Wheeler Road (Reynolds Street)	D	D	D	D
Collins Street (Baker Street)	C	D	C	D
Collins Street (Reynolds Street)	C	D	C	D
Park Road	F	F	C	C
County Line Road	F	F	C	D

4.2 SAFETY

Accident data were reviewed for US 92 for the five-year period between January 1, 1986 and December 31, 1990, as presented in Section 3.1.9 of this report. This information includes the actual accident rate along US 92 and the statewide accident rate for similar facilities (Critical Accident Rate).

As previously shown in Table 3-6 in Section 3, a significant portion of the project experienced deficient accident rates throughout the five-year period. During 1990, 7.9 miles (43.6 percent) of the project experienced rates higher than the statewide average accident rate. During 1988, the worst year of the five-year period researched, 12.5 miles (69.0 percent) of the project experienced rates higher than the statewide average rate. The following segments consistently experienced high accident rates and at least once, during the five-year period, exceeded the statewide average rate:

- US 92 in the vicinity of Williams Road
- US 92 in the vicinity of Mango Road
- US 92 between Kennedy Hill Drive and Pine Street
- US 92 between McIntosh Road and Turkey Creek Road
- US 92 between Thonotosassa Road and Gordon Street
- US 92 in the vicinity of Park Road
- US 92 between Wilder Road and County Line Road

A total of 1,299 vehicle collisions were reported within the project limits during the five-year period. These collisions caused 36 fatalities and 1,180 injuries. 549 collisions caused only property damages. The total economic loss due to the accidents is estimated to be \$54,492,000.

If no improvements are constructed along US 92 it is expected that the anticipated traffic growth along this corridor will cause further deterioration in the safety of the traffic operations. Even though the accident severity may be reduced (due to the reduction in travel speeds), accident rates should be expected to rise.

4.3 CONSISTENCY WITH TRANSPORTATION PLANS

The Tampa Urban Area Metropolitan Planning Organization (MPO)^{1, 2*}, Plant City³, and Unincorporated Hillsborough County⁴ have included parts of or the entire study area in their transportation plans for the year 2010. The PD&E study team has contacted and coordinated with all responsible agencies that maintain these plans. Communication memorandums and correspondence, documenting the coordination between the team and the agencies, are included in Appendix C of this report.

Table 4-3 summarizes the recommendations of each transportation plan and of this PD&E study on US 92. As shown, the recommendations of this PD&E study are consistent with the recommendations of each of the applicable transportation plans for the entire length of the project except for the 0.6-mile segment of US 92 between Garden Lane and Falkenburg Road. The MPO and Unincorporated Hillsborough County plans recommend widening this segment to four lanes while this PD&E study recommends widening to six lanes. As discussed in the FDOT Application For Change in the Year 2010 Long Range Transportation Plan, dated November 22, 1993 and included in Appendix C, the Tampa Interstate Study recommends as part of the I-4 interchange improvements in the vicinity of US 301 the construction of a collector/distributor (C/D) system. The C/D system entering and leaving the interchange includes three travel lanes in each direction of US 92 which are transitioned into four lanes approximately 1,800 feet east of Garden Lane at Baptist Church Road. The US 92 study proposes to continue the third travel lane for approximately 1,300 feet to Falkenburg Road. The intersection of US 92 with Falkenburg Road is a better location for a lane drop because of its existing signalization and the function of Falkenburg Road as a major arterial connecting to State Road 60.

On February 1, 1994 the MPO approved the recommendations of the PD&E study for US 92 with the condition that a Plan Amendment and multi-modal corridor analysis will be necessary before additional future widening from four to six lanes takes place.

* Reference numbers correspond to the numbers listed at the end of this section in the References chapter.

TABLE 4-3
US 92 (SR 600) IMPROVEMENT RECOMMENDATIONS

SEGMENT OF US 92 (From - To)	HILLSBOROUGH COUNTY METROPOLITAN PLANNING ORGANIZATION*	UNINCORPORATED HILLSBOROUGH COUNTY COMPREHENSIVE PLAN**	PLANT CITY COMPREHENSIVE PLAN***	US 92 PD&E STUDY
Garden Lane - Falkenburg Road	Planned widening to four lanes	Planned widening to four lanes	N/A^	Widen to six lanes
Falkenburg Road - Parsons Avenue	Planned widening to four lanes	Planned widening to four lanes	N/A	Widen to four lanes^^
Parsons Avenue - Forbes Road	Planned widening to four lanes	Planned widening to four lanes	N/A	Widen to four lanes^^
Forbes Road - Plant City Limits^^^	Planned widening to four lanes	Planned widening to four lanes	N/A	Widen to four lanes^^
Plant City Limits - Thonotosassa Road	Planned widening to four lanes	N/A	Planned widening to four lanes	Widen to four lanes^^
Thonotosassa Road - Gordon Street	Widen one-way pair to provide three lanes in each direction	N/A	Widen one-way pair to provide three lanes in each direction	Maintain one-way pair with existing two lanes in each direction
Gordon Street - Park Road	Planned widening to six lanes	N/A	Planned widening to six lanes	Widen to four lanes
Park Road - County Line Road	Planned widening to six lanes	Planned widening to six lanes	Planned widening to six lanes	Widen to four lanes^^

* Source: 2010 Long Range Transportation Plan; Hillsborough County Metropolitan Planning Organization (MPO); Tampa, Florida; Last revised on September 10, 1991.

** Source: Future of Hillsborough County Comprehensive Plan; Hillsborough County Planning Department; Tampa, Florida; Last revised on December 18, 1990.

*** Source: Comprehensive Plan for the City of Plant City, Florida; Plant City, Florida; Last revised on May 28, 1991.

^ N/A: Not applicable

^^ The recommended typical section allows future expansion to six lanes.

^^^ Just east of Turkey Creek Road.

4.4 SOCIOECONOMIC DEMAND

According to the Comprehensive Plan for the City of Plant City, Florida³, and the Future of Hillsborough County Comprehensive Plan⁴, the eastern half of Hillsborough County will continue to grow during the next 20 years. With downtown Plant City remaining as the town center for the area, the travel patterns are anticipated to continue to and from the downtown for financial and government services as well as shopping. Consequently, it is anticipated that travel demand in this area will continue to grow as well.

4.4.1 Population Statistics

The study area is located within the City of Plant City as well as unincorporated Hillsborough County, Florida. Hillsborough County is located within the Tampa-St. Petersburg-Clearwater Metropolitan Statistical Area (MSA). The MSA designation is given to an area based on population size and economic ties to surrounding communities. This MSA includes the economic ties to surrounding communities. This MSA includes the following counties: Hernando, Hillsborough, Pasco, and Pinellas.

According to the figures presented in Table 4-4, during the ten year period between 1980 and 1990, the population of Plant City grew by 15.4 percent to an estimated total of 22,754 people. During the same period the population of Hillsborough County has grown by 28.9 percent to a total of 835,000 people. The population growth rate of Hillsborough County is slightly higher than the overall growth rate of the MSA and below the state-wide growth rate.

Based on population projections for the future, it is anticipated that Plant City's population will increase by 21.7 percent from 1990 to 2010. Likewise, Hillsborough County's population is expected to grow by 33.8 percent from 1990 to 2010. This projected growth rate for Hillsborough County is lower than the anticipated growth rate for the MSA and the state.

TABLE 4-4
SUMMARY OF DEMOGRAPHIC CHARACTERISTICS

Region	Current Population Data		Future Population Data		Growth Rates			
	1980	1990	2010	2020	1980-1990	1990-2010	1990-2020	
Plant City	19,720	22,754	27,700	31,600	15.4%	21.7%	38.9%	
Hillsborough County	646,939	834,054	1,116,200	1,233,700	28.9%	33.8%	47.9%	
MSA*	1,613,600	2,067,959	2,779,900	3,076,700	28.2%	34.4%	48.8%	
State of Florida	9,746,961	12,937,926	18,096,600	20,260,200	32.7%	39.9%	56.6%	

* MSA: Tampa-St. Petersburg-Clearwater Metropolitan Statistical Area. It includes the Hernando, Hillsborough, Pasco, and Pinellas counties.

Source: Hillsborough County City-County Planning Commission (HCCCCPC) and the Florida Statistical Abstract, 1991.

These figures are consistent with the anticipation of continued growth in the study area expressed in the Comprehensive Plan for the City of Plant City, Florida³ and the Future of Hillsborough County Comprehensive Plan⁴. In addition, downtown Plant City will remain as the town center for the area. Travel patterns to and from the downtown for financial and government services and shopping are anticipated to continue. Consequently, it is anticipated that travel demand in this area will continue to grow as well.

4.5 REFERENCES

1. 2010 Long Range Transportation Plan; Tampa Urban Area Metropolitan Planning Organization (MPO); Tampa, Florida; revised on September 10, 1991.
2. Cost Affordable Plan; Tampa Urban Area Metropolitan Planning Organization; Tampa, Florida; July 16, 1991.
3. Comprehensive Plan for the City of Plant City, Florida; Plant City, Florida; revised May 28, 1991.
4. Future of Hillsborough County Comprehensive Plan; Hillsborough County Planning Department; Tampa, Florida; revised November 18, 1991.

SECTION 5

CORRIDOR ANALYSIS

5.1 EVALUATION OF ALTERNATIVE CORRIDORS

The project boundaries extend along US 92 between Interstate 4 (I-4) and SR 574, from Garden Lane eastward to the Hillsborough/Polk county line. Based on origin and destination surveys that were completed for this study, most of the trips along US 92 are short (less than three miles) and medium (three to six miles) distance, local trips. It is anticipated that these trips will remain local in nature for the next 20 years. Consequently, three alternatives were identified which could possibly serve the project travel demand through the study area:

- Diversion of traffic from US 92;
- Initiation of transit service within the US 92 corridor; and
- Improvements based on the existing US 92 alignment.

5.2 CORRIDOR SELECTION

The appropriate corridor focus should be on improving US 92 in order to meet the growing travel demand within the study area, for the following reasons:

- I-4 (approximately one-quarter mile north of and parallel to the existing US 92) is the only other transportation facility capable of serving the projected travel patterns. Of the traffic using US 92, only a small percentage (6.0 to 7.0 percent) uses it for longer distance trips extending between the Tampa and Lakeland areas. Consequently, the need to increase the capacity on US 92 would not be eliminated even if 100 percent of the longer distance trips were diverted to I-4.
- The Hillsborough County Traffic Forecasting Model Program included a transit

element which assigns a certain number of trips to transit facilities in the development of the Year 2015 design hour volumes. Since only a few trips would be eliminated through use of transit, there still is a need to increase the capacity of US 92.

- Improving US 92 is the only available route alternative for serving the typical short distance local trips which are projected to constitute the majority of future travel along US 92.

Details of the corridor analysis can be found in the Corridor Analysis Report¹.

5.3 REFERENCES

1. Corridor Analysis Report; Glatting, Jackson, Kercher, Anglin, Lopez, Rinehart; Orlando, Florida; April 1992.

SECTION 6

TRAFFIC

This section presents key information excerpted from the Traffic Technical Memorandum^{1*}.

6.1 EXISTING CONDITIONS

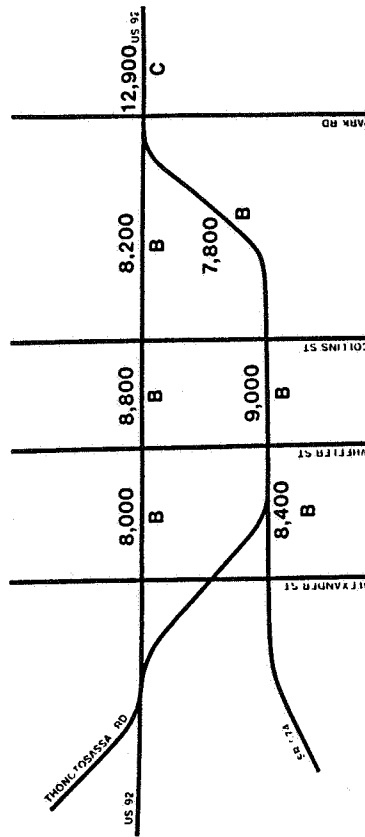
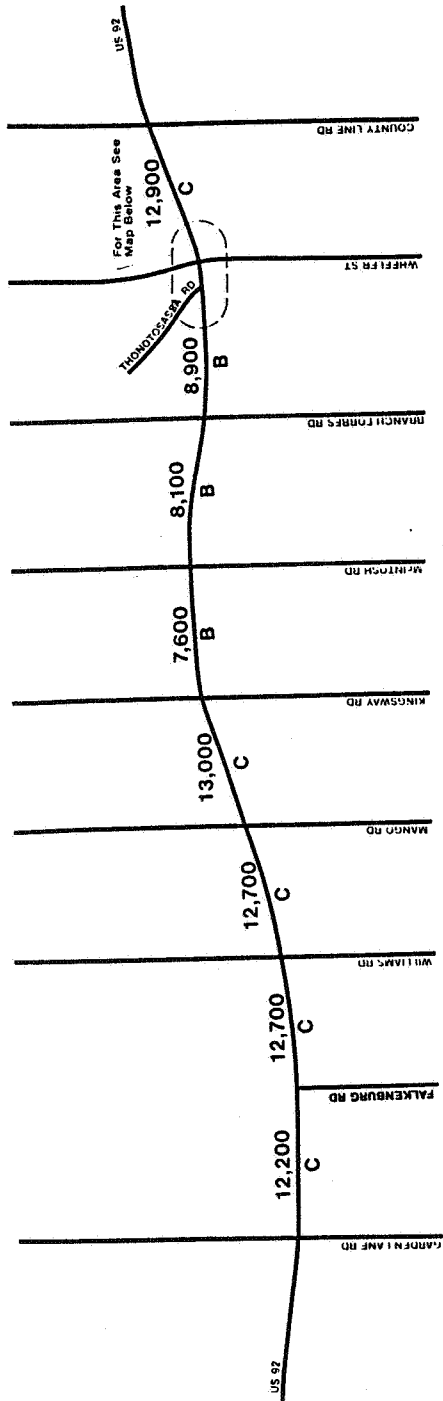
To determine the current levels of service (LOS) along the project, US 92 was divided into three sections based on the FDOT Generalized Level-of-Service Guidelines². This division was necessary because the functional characteristics of US 92 vary throughout the study area. These sections are the following:

- Section 1 - Garden Lane to Thonotosassa Road: Transitioning Area, Interrupted Flow, Arterial Group B
- Section 2 - Thonotosassa Road to Park Road: Transitioning Area, Interrupted Flow One-Way Pair, Arterial Group C
- Section 3 - Park Road to County Line Road: Transitioning Area, Interrupted Flow, Arterial Group B

Based on this classification, the level of service was determined for each link and is shown in Figure 6-1, along with the ADT volumes. As shown, all links along the project currently operate at or better than LOS C.

A signalized intersection analysis was also performed based on the existing morning and evening peak hour volumes. Table 6-1 summarizes the existing morning and evening peak hour levels of service at all signalized intersections along US 92. As shown all intersections along US 92 currently operate at LOS C or better during both peak hours, except the intersection with Mango Road which operates at LOS D during the morning peak hour and the intersection with Kingsway Road which operates at LOS D during the evening peak hour.

* Reference numbers correspond to the numbers listed at the end of this section in the References chapter.



Legend

12,200 1991 Daily Traffic Volumes

B 1991 Level Of Service

NOT TO SCALE

US 92 (SR 600) PD&E STUDY

HILLSBOROUGH COUNTY

FROM GARDEN LANE TO COUNTY LINE ROAD

EXISTING AADT VOLUMES

AND LEVEL OF SERVICE ESTIMATION

FIGURE

6-1

**TABLE 6-1
EXISTING LEVELS OF SERVICE FOR
SIGNALIZED INTERSECTIONS ALONG US 92**

Intersecting Roadway With US 92	AM Peak	PM Peak
Falkenburg Road	B	C
Williams Road	C	C
Mango Road	D	C
Peach Avenue	C	B
Pine Street	B	C
Parsons Avenue	B	B
Kingsway Road	B	D
McIntosh Road	B	C
Thonotosassa Road	C	C
Alexander Street (Baker Street)	C	C
Wheeler Road (Baker Street)	C	C
Wheeler Road (Reynolds Street)	C	C
Collins Street (Baker Street)	B	C
Collins Street (Reynolds Street)	B	C
Park Road	C	C
County Line Road	C	C

6.2 MULTI-MODAL TRANSPORTATION SYSTEM CONSIDERATIONS

A review of the comprehensive plans for unincorporated Hillsborough County³, Plant City⁴ and publications including the 2010 Long Range Transportation Plan⁵, the Hillsborough County Mass Transit Corridor Alternatives Analysis Study⁶, and the Commuter Rail Study⁷ was undertaken to determine the effect local transit plans would have on the US 92 corridor. Review of these sources indicates that:

- None of the plans reviewed identified the US 92 corridor as a viable light rail corridor;
- The existing rail line, paralleling SR 574 from downtown Tampa to the Hillsborough/Polk County line, has been identified as a potential rail line which should be evaluated during the upcoming Mass Rail Study. This rail line parallels US 92 from Plant City to the Hillsborough/Polk County line; and
- The City of Plant City currently does not participate in the existing bus service program; however, there are recommendations for an express bus between Plant City and downtown Tampa as well as for local service.
- The Interstate 4 (I-4) improvement plans, currently under design, consider the use of its median for a high-speed commuter rail line.

6.3 TRAFFIC ANALYSIS ASSUMPTIONS

The MPO-adopted Hillsborough County socioeconomic data (SE data) and Year 2010 Cost Affordable Roadway Network were used for all model runs without modification. The requirements of the Florida Standard Urban Transportation Model Structure (FSUTMS) were followed in the execution of each run. The Year 2015 traffic volume estimates were developed by increasing the Year 2010 volume projections by a factor of 5.0 percent, for the five-year

period between 2010 and 2015. The forecasting methodology is described in more detail in the Traffic Technical Memorandum¹.

6.4 EXISTING TRAFFIC VOLUMES

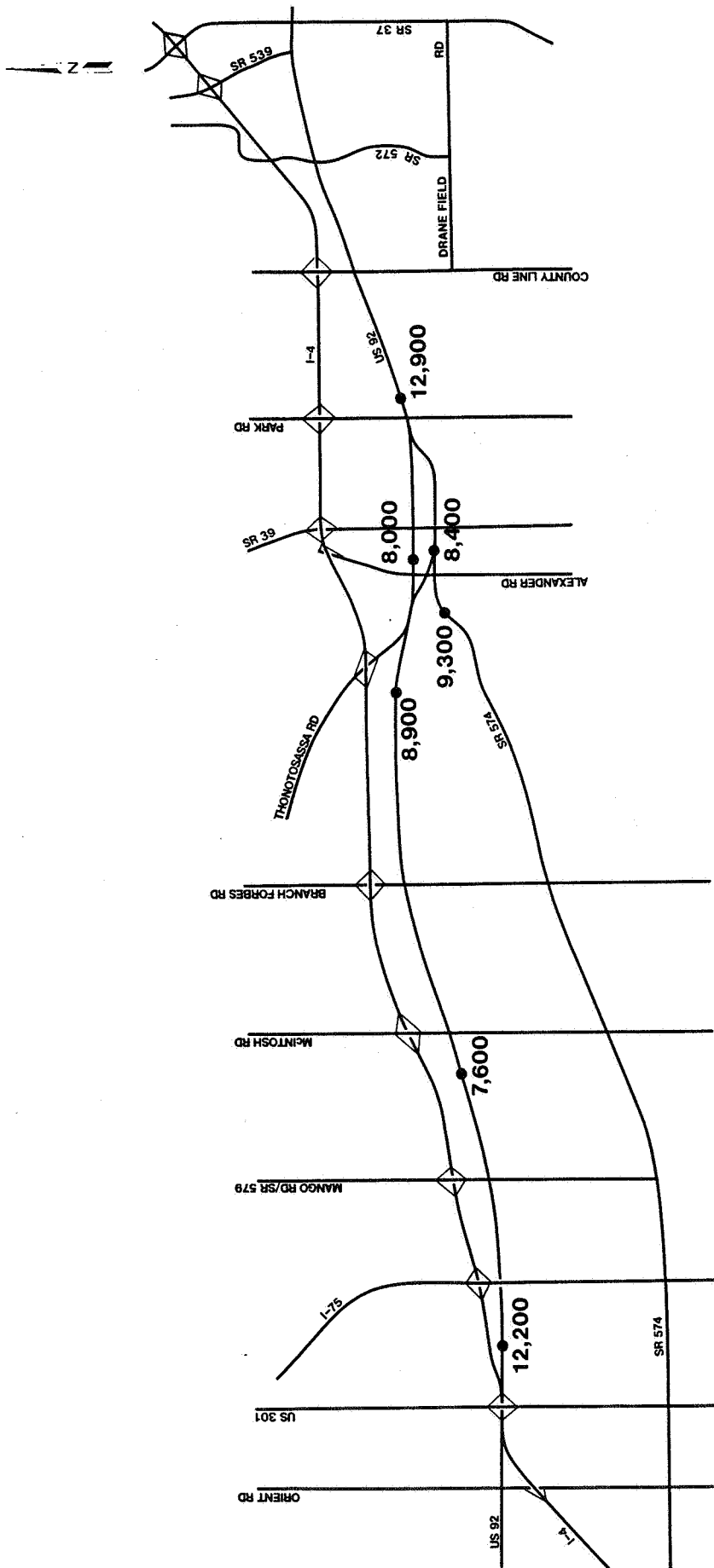
The existing traffic demand within the project limits was established through a combination of 24-hour, 7-day, and peak-period turning movement traffic counts, coupled with two origin and destination surveys. Pedestrian and bicycle data were also collected to complement the traffic data. The Traffic Technical Memorandum¹ provides a detailed description of the data collection procedures and includes the actual data in Appendices A through D. This section presents a summary of the results of these efforts.

6.4.1 Traffic Counts

Twenty-four hour traffic volumes were recorded at 38 locations within the study area during typical mid-week days in October 1991. The observed one-way volumes ranged in magnitude from 3,178 vehicles at Whitehurst Road to 13,158 vehicles at Thonotosassa Road.

Seven-day traffic counts were obtained at seven locations within the study area. The average daily volumes recorded at each location are presented in Figure 6-2. The raw seven-day volumes are presented in Table 6-2. The peak-to-daily traffic volume ratios and the peak-hour directional volume distributions obtained at each station are presented in Table 6-3. These factors were used to convert the Year 2015 daily traffic projections to directional design hour volumes (DDHV).

Peak-hour turning movement counts were taken during both the morning and evening peak periods at key intersections along US 92.



NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

SEVEN DAY MACHINE COUNT

FIGURE 6-2

TABLE 6-2
SEVEN-DAY TRAFFIC COUNTS

Count Station	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	ADT*
US 92 West of Falkenburg Road	** 7,281	12,104	11,975	11,943	12,639	13,327	9,837	12,186
US 92 West of McIntosh Road	5,266	7,737	7,633	7,597	7,509	8,502	6,960	7,580
SR 574 West of Alexander Street	5,356	9,613	9,282	8,988	9,506	9,928	7,025	9,259
US 92 West of Thonotosassa Road	5,301	9,477	9,600	8,913	8,110	8,870	6,816	8,874
Baker Street East of Alexander Street	4,837	8,158	7,997	7,962	7,972	8,618	6,319	7,977
Reynolds Street East of Alexander Street	4,856	8,466	13,268	8,330	8,462	9,293	6,443	8,399
US 92 East of Park Road	6,312	11,356	13,268	13,157	12,263	11,921	9,215	12,896

* ADT represents the three-day average Tuesday through Thursday.

** Vehicles-per-day.

TABLE 6-3
DESIGN HOUR FACTORS
AT THE SEVEN-DAY TRAFFIC COUNT LOCATIONS

Count Station	Peak-to-Daily Factor (K)	Peak-Directional Factor (D)
US 92 West of Falkenburg Road	9.9%	68.1%
US 92 West of McIntosh Road	8.5%	65.4%
SR 574 West of Alexander Street	8.4%	58.5%
US 92 West of Thonotosassa Road	8.6%	64.7%
Baker Street East of Alexander Street	8.5%	*
Reynolds Street East of Alexander Street	8.4%	*
US 92 East of Park Road	8.1%	59.0%

* One-way street.

6.4.2 Pedestrians and Bicycles

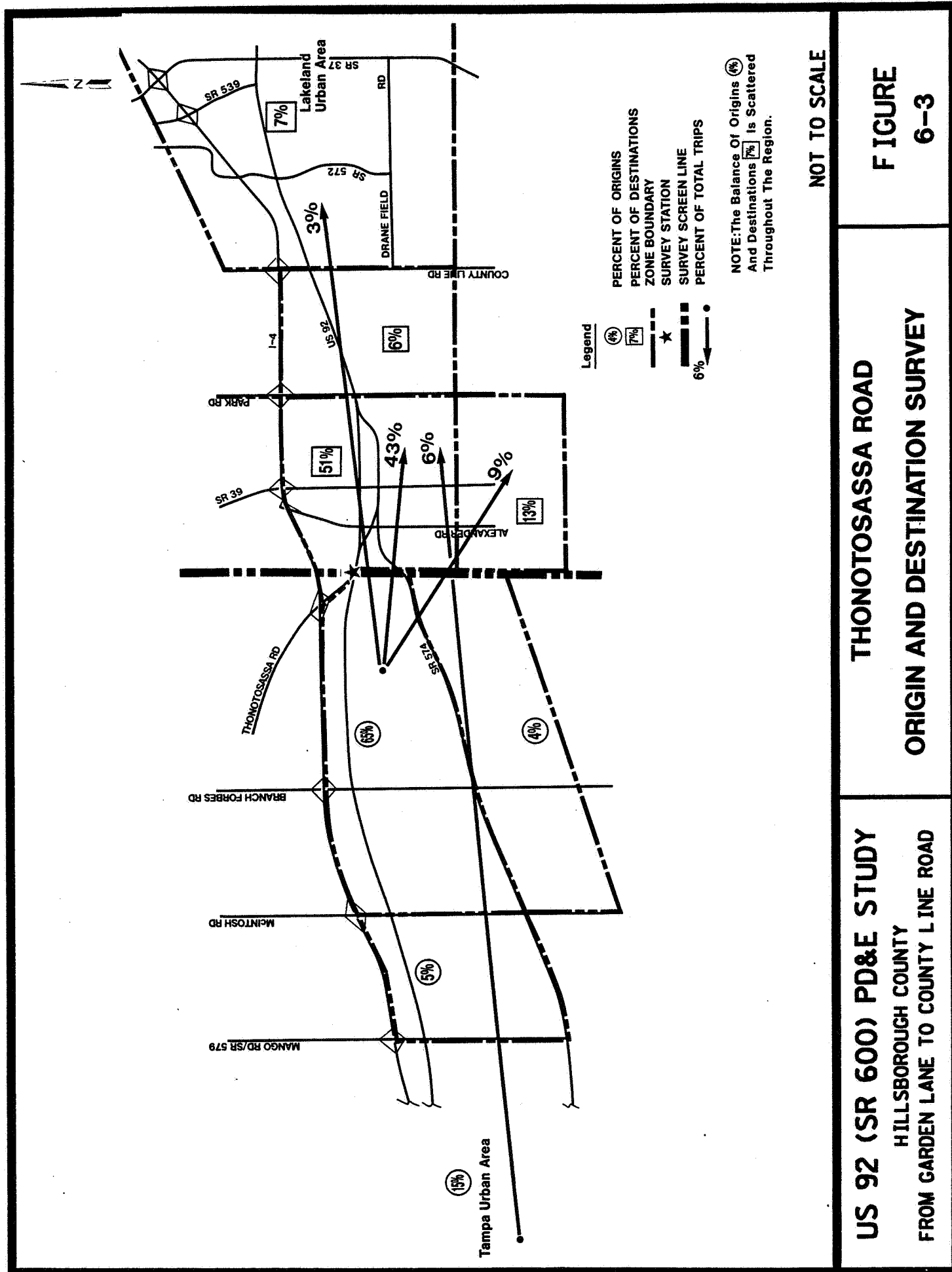
Pedestrian and bicycle volumes were recorded during the morning and evening peak periods at 23 intersections concurrent with the turning movements. Ten intersections were revisited on a Saturday and a Sunday to obtain weekend pedestrian and bicycle counts. These weekend counts were taken between the hours of 9:00 A.M. and 1:00 P.M. The pedestrian volumes recorded during the weekday peak periods were insignificant. The weekend volumes, however, are substantial at the downtown Plant City intersections.

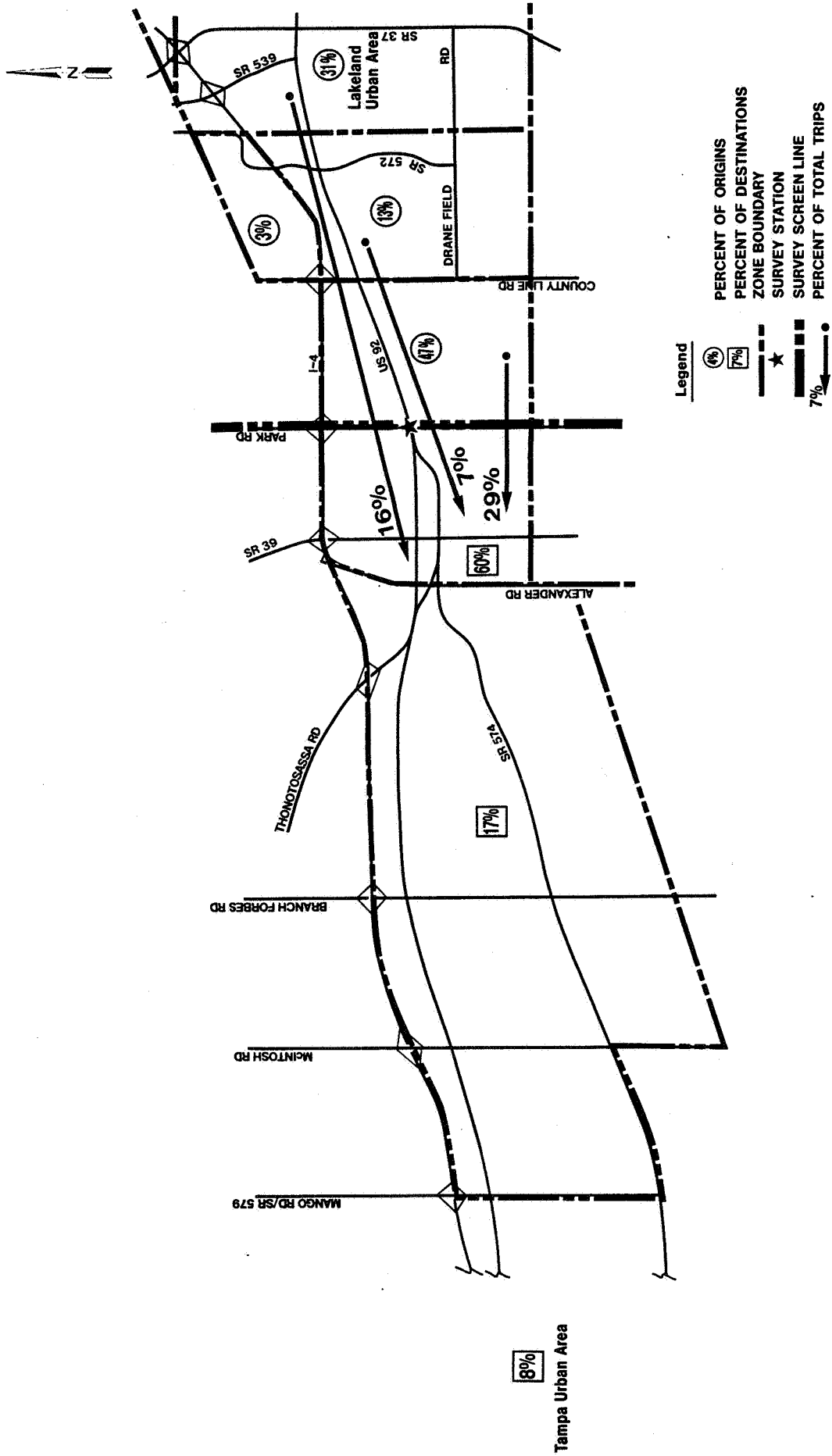
6.4.3 Origin and Destination Surveys

Origin and destination (O&D) surveys were conducted in October 1991 between 7:00 A.M. and 6:00 P.M. at two intersections of US 92 with Park Road and Thonotosassa Road to determine the travel patterns currently experienced on US 92 in eastern Hillsborough County. These patterns were used forecast the Year 2015 traffic volumes. Figures 6-3 and 6-4 summarize the results of these surveys.

The surveys showed the following:

- Approximately 65 percent of the motorists at Thonotosassa Road and 47 percent at Park Road began their trips along US 92 within four to six miles of the observation stations.
- The downtown Plant City, South Florida Baptist Hospital and Walden Lake areas accounted for about 64.0 percent of the stated destinations. Other measurable destinations included eastern Hillsborough County and Lakeland.
- Most of the trips on US 92 were short-distance (less than three miles) and medium-distance (three to six miles) local trips. The percentage of long-distance (more than six miles) interregional trips was minimal.





NOT TO SCALE

PARK ROAD **ORIGIN AND DESTINATION SURVEY**

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

FIGURE
6-4

More detail on the O&D surveys is provided in the Traffic Technical Memorandum¹.

6.5 TRAFFIC VOLUME PROJECTIONS

The Year 2010 traffic projections generated by the Hillsborough County Traffic Forecasting Model and the information gathered through the origin and destination surveys provided the basis for the Year 2015 traffic projections. The procedures and analyses used to forecast the Year 2015 traffic volumes are described in the Traffic Technical Memorandum¹.

The projected Design Year 2015 traffic volumes were presented to and approved by the Metropolitan Planning Organization (MPO).

6.5.1 Design Year Daily Traffic Demand Forecasts

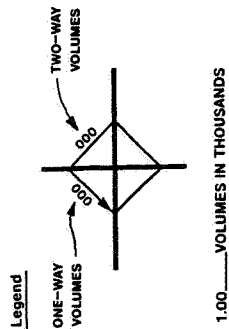
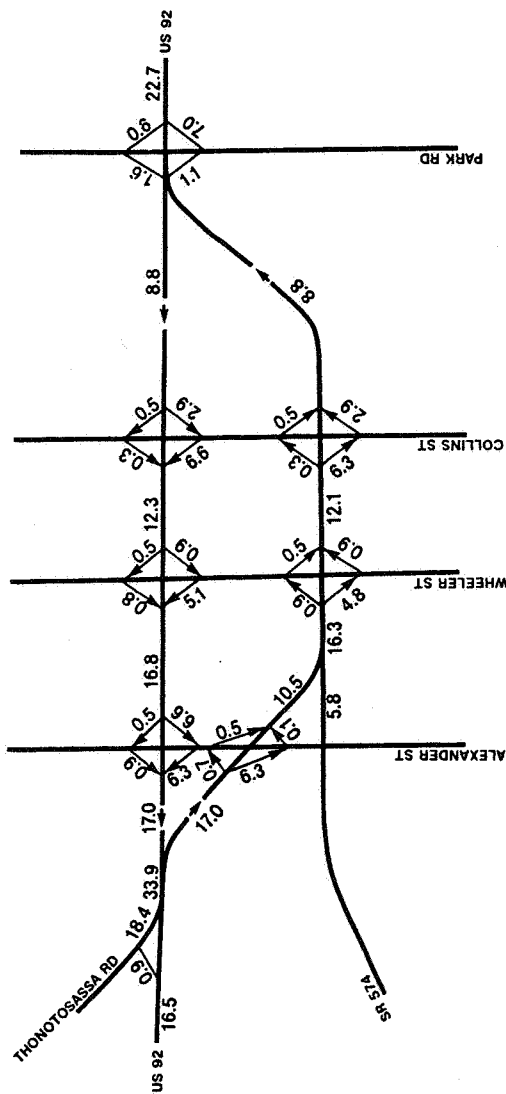
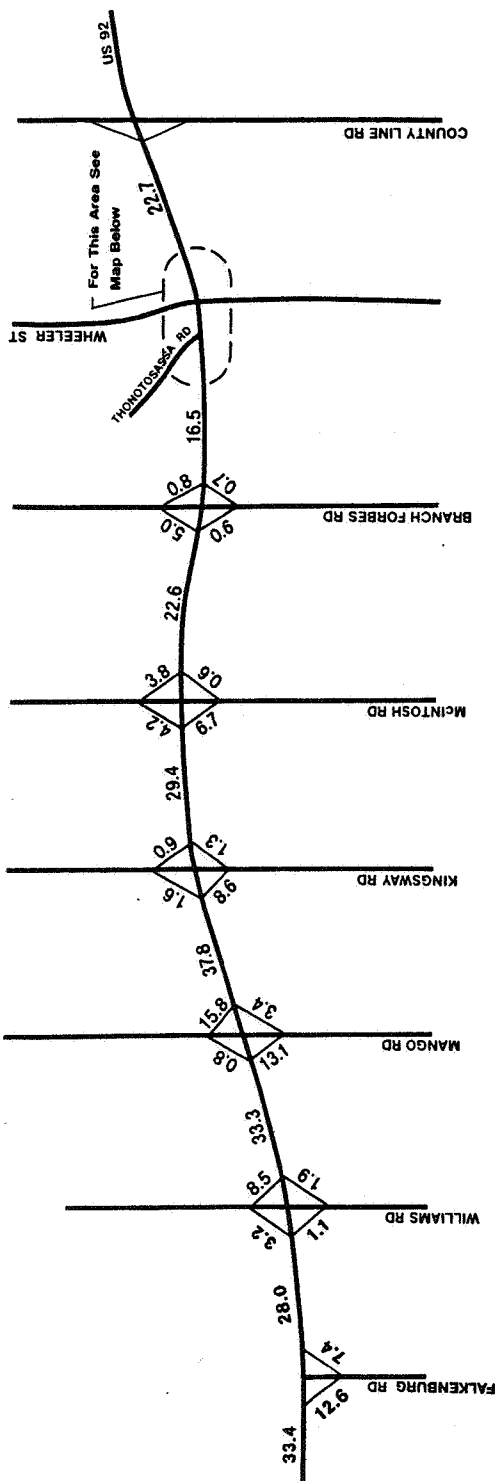
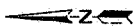
The Year 2015 average daily traffic volumes (ADT) were estimated by using the Year 2010 volume projections and an average annual traffic growth rate of 1.0 percent for the five-year period. This growth rate is reasonable considering that the development projected to occur within the study corridor will be approaching completion by 2015. Figure 6-5 presents the Year 2015 daily traffic volume estimates for US 92.

6.5.2 Directional Design Hour Traffic Volumes

The Year 2015 Average Daily Traffic (ADT) volumes were reduced to Year 2015 Directional Design Hour Volumes (DDHV) with use of appropriate K and D factors as follows:

- **K factor**

A K factor of 8.5 percent was used in developing design hour traffic volumes. The K factor is used to convert annual average daily traffic to peak hour traffic volumes.



NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

YEAR 2015 AADT VOLUME PROJECTIONS

FIGURE
6-5

- **D factor**

The D factor represents the directional distribution of the peak hour volume. A D factor of 65 percent was used in the traffic analysis.

- **T factor**

The T factor represents the percentage heavy vehicles in the peak hour traffic volume. A T factor of 4.0 percent was used in the traffic analysis.

These design factors were derived from the current distributions observed at the seven-day count stations and presented earlier in Section 6.4. Figure 6-6 presents the estimated Year 2015 DDHVs.

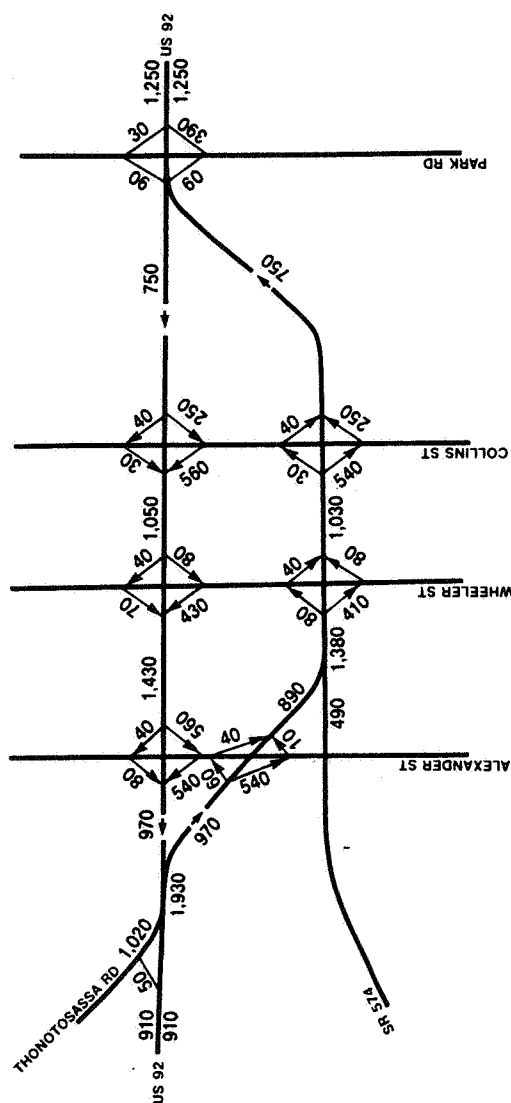
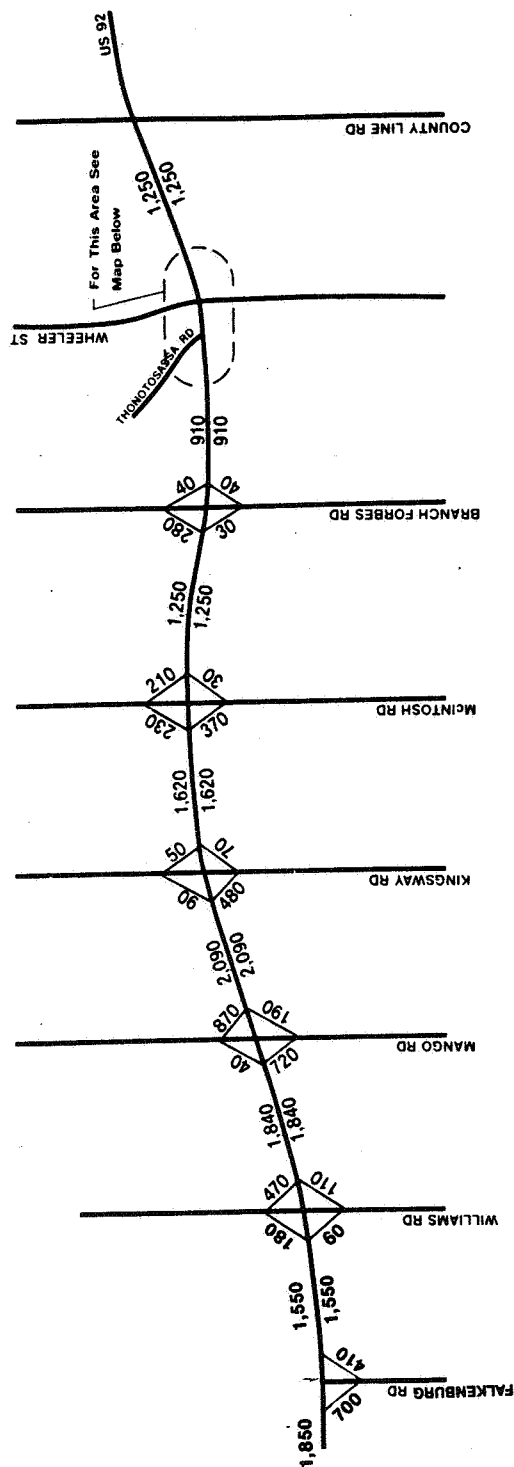
6.5.3 Year 2015 Lane Requirements

Based on the FDOT generalized level-of-service guidelines for planning², the Year 2015 DDHVs show the need to provide a four-lane divided facility within the US 92 study area. The results of this analysis show that the upgrading of US 92 is the most reasonable alternative. The DDHVs for all two-way sections of US 92, east and west of the one-way pair in downtown Plant City, exceed the FDOT generalized peak-hour level of service maximum volumes for two-lane arterials. Virtually all volumes, however, fall within the LOS A category for four-lane divided arterials. Therefore, it is recommended that all two-lane sections of US 92 east of the Falkenburg Road intersection be upgraded to four-lane divided facilities. The section of US 92 between Garden Lane and Falkenburg Road should be upgraded to a six-lane divided facility to provide consistency with the six-lane typical section that will be provided on US 92 west of Gordon Lane as a result of the Interstate 4 (I-4) improvements.

FIGURE 6-6

**YEAR 2015 DIRECTIONAL
DESIGN HOUR VOLUMES**

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD



NOT TO SCALE

The projected volumes for the one-way pair in Plant City, consisting of Reynolds and Baker streets and extending from Thonotosassa Road to Gordon Street, can be adequately served at an acceptable level of service by the existing facilities; therefore, no need to widen these roads is anticipated.

6.6 LEVEL OF SERVICE

The existing levels of service, by link and by intersection, were discussed in Section 6.1 of this report. The link levels of service, expected to be provided along the project in 2015 with and without the project improvements were previously shown in Figure 4-2.

The recommended intersection lane-geometry and the expected design hour levels-of-service are discussed in detail in Section 8.4 of this report.

6.7 REFERENCES

1. Traffic Technical Memorandum; Glatting, Jackson, Kercher, Anglin, Lopez, Rinehart; Orlando, Florida; May 1992.
2. Florida's Level of Service Standards and Guidelines Manual for Planning; Florida Department of Transportation; Tallahassee, Florida; April 1992.
3. Future of Hillsborough County Comprehensive Plan; Hillsborough County Planning Department; Tampa, Florida; revised on November 18, 1991.
4. Comprehensive Plan for the City of Plant City, Florida; Plant City, Florida; revised on May 28, 1991.
5. 2010 Long Range Transportation Plan; Tampa Urban Area Metropolitan Planning Organization (MPO); Tampa, Florida; revised on September 10, 1991.
6. Hillsborough County Mass Transit Corridor Alternatives Analysis Study; Bechtel Civil, Inc. et al; Tampa, Florida; July 1989.
7. Commuter Rail Study; currently under preparation by Wilbur Smith Associates for the Tampa Bay Commuter Rail Authority (TBCRA); Orlando, Florida.

SECTION 7

ALTERNATIVE ALIGNMENT ANALYSIS

To develop an improved roadway facility for US 92 (SR 600) that is in the best overall public interest, engineering, environmental, and economic factors as well as urban development 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. Historically and archaeologically significant structures and sites, as well as 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 design concepts.

Included in the following sections are the roadway and structure improvement alternative concepts developed for US 92 from Garden Lane to County Line Road, preceded by the "No-Project" alternative.

7.1 NO PROJECT ALTERNATIVE

As discovered through the origin and destination (O&D) surveys and reported in both the Corridor Analysis Report^{1*} and the Traffic Technical Memorandum², most trips observed on US 92 originate and/or terminate at locations along the US 92 corridor. It was further documented that there are currently no alternative facilities that can adequately serve this travel pattern. It is expected that the existing travel patterns will continue in the future. No new facilities are planned for construction in the region that could serve the future traffic volumes.

* Reference numbers correspond to the numbers listed at the end of this section in the References chapter.

The No-Project alternative consists of cancelling the project or postponing improvement of US 92 beyond the Design Year 2015. Certain advantages and disadvantages would be associated with the implementation of the No-Project alternative.

The advantages of the No-Project alternative include:

- No new construction costs.
- No disruption to the existing land uses due to construction activities.
- No disruption to traffic due to construction activities.
- No right-of-way acquisitions.
- No business and residential relocations.
- No environmental impacts.

The disadvantages of the No-Project 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.
- Emergency service response time increases.
- Deceleration of economic growth.
- Increased roadway maintenance costs.

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

The No-Project alternative was considered and presented as a viable alternative at the project's public hearing in September 1993.

7.2 STUDY ALTERNATIVES

According to the traffic analyses presented in the previous section of this report, in order to provide acceptable levels of service along US 92 during the Design Year 2015, four through travel lanes are necessary throughout the project length. Six lanes are recommended between Garden Lane and Falkenburg Road to provide lane continuity with the segment of US 92 west of Garden Lane which is being designed as a six-lane facility as part of the I-4 improvements. Auxiliary turning lanes will be needed at a number of intersections.

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

- In Step One, the project was divided into eight segments based on the existing land use patterns and roadway typical cross sections.
- In Step Two, alternative typical cross sections were generated for each segment based on roadway design standards and the recommendations of the traffic analyses. Selection of the type and dimensions of the typical section for each segment considered socioeconomic and environmental impacts.
- In Step Three, alternative improvement alignments were generated for each segment based on the typical cross sections (developed in Step Two) and the assumption that the additional right-of-way can be acquired on the north side, south side, or from both sides of US 92.

The engineering design criteria and a segment-by-segment description of the alternative alignments are presented in the following sections.

7.2.1 Roadway Design Criteria

The roadway design criteria for the development of the project alignments are based on the FDOT highway design guidelines³ and the AASHTO recommendations⁴. Table 7-1 summarizes these criteria.

7.2.2 Project Segments, Typical Sections, and Alignments

Table 7-2 summarizes the segment limits, and the types of typical cross sections and alignment alternatives considered for each segment. A brief description of each segment follows.

7.2.2.1 Segment 1

Segment 1 of US 92 extends from the beginning of the project, at Garden Lane, to Falkenburg Road.

Due to the density of the adjacent land use, rural typical sections were eliminated and only urban-type cross sections were considered for this segment to minimize right-of-way impacts. A six-lane urban typical section is proposed for this segment to provide continuity with the improvements planned to occur west of the project as a result of the Tampa Interstate Study⁵. This typical cross section, illustrated in Figure 7-1, provides a 22-foot-wide median and requires 122 feet of right-of-way (ROW). The design speed along this segment is expected to be 45 miles per hour (mph).

**TABLE 7-1
ROADWAY DESIGN CRITERIA**

Functional Classification		
Principal Arterial		
Type Access		
Partial Control		
Design Speed		
Rural Divided 4-Lane	(Existing Posted 50-55 mph)	60 mph
Urban Divided 4-Lane	(Existing Posted 40 mph)	45 mph
Plant City 2-Lane, 1 Way	(Existing Posted 30-35 mph)	35 mph
Horizontal Alignment	45 mph	60 mph
Rural D _c (Max)	N/A	5° 15'
Urban D _c (Max)	6° 00'	N/A
Vertical Alignment		
Minimum Vertical Curve Length (Sag)	135'	180'
Minimum "K" (Sag)	70	120
Minimum Vertical Curve Length (Crest)	135'	180'
Minimum "K" (Crest)	80	190
Maximum Grade	4.5%	3%
Maximum Change in Grade w/o Vertical Curve	0.7%	0.4%
Minimum Grade	0.3%	0.0%
Sight Distance		
Stopping — Minimum	325'	525'
Stopping — Desirable	400'	650'

TABLE 7-2
SUMMARY OF SEGMENT CHARACTERISTICS

SEGMENT NUMBER	SEGMENT LIMITS (from/to)	LENGTH (miles)	PROPOSED TYPICAL CROSS SECTION				DESIGN SPEED	WIDENING DIRECTION*	ALTERNATIVE CODE NAME
			TYPE	NO. OF LANES	MEDIAN WIDTH	ROW WIDTH			
1	Garden Lane/Falkenburg Road	0.555	Urban	6	22'	122'	45 mph	N,C,S	1-N,1-C,1-S
2	Falkenburg Road/Taylor Road	2.807	Urban	4	22'	98'	45 mph	N,C,S	2-N,2-C,2-S
			Urban	4	46'	122'	45 mph	N,C,S	2-NE,2-CE,2-SE**
3	Taylor Road/McIntosh Road	2.883	Rural	4	46'	198'	60 mph	N,C,S	3-N,3-C,3-S
4	McIntosh Road/Turkey Creek Road	4.331	Rural	4	46'	198'	60 mph	N,C,S	4-N,4-C,4-S
5	Turkey Creek Road/Mobley Street	2.010	Urban	4	22'	98'	45 mph	N,C,S	5-N,5-C,5-S
6	Mobley Street/Gordon Street***	1.360	Urban	4+	N/A++	Existing	35 mph	N/A	6-EX,6-N,6-S+++
7	Gordon Street/Park Road	0.489	Urban	5	N/A	Existing	45 mph	N/A	7-EX^
			Urban	4	22'	98'	45 mph	N,C,S	7-N,7-C,7-S
8	Park Road/County Line Road	3.075	Urban	4	46'	122'	45 mph	N	8-U
			Hybrid	4	22'	136'	45 mph	N	8-H
			Rural	4	46'	198'	60 mph	N	8-R

* Refers to the direction that the existing ROW is expanded. N denotes expansion to the north, S denotes expansion to the south, and C denotes expansion on both sides of the existing ROW.

** Alignments 2-NE, 2-CE, 2-SE represent the expandable from four- to six-lane urban typical section. designation 2-NE, for instance, denotes Segment 2 is to be widened on the north side (N) and provide adequate ROW for the expandable (E) urban typical cross section.

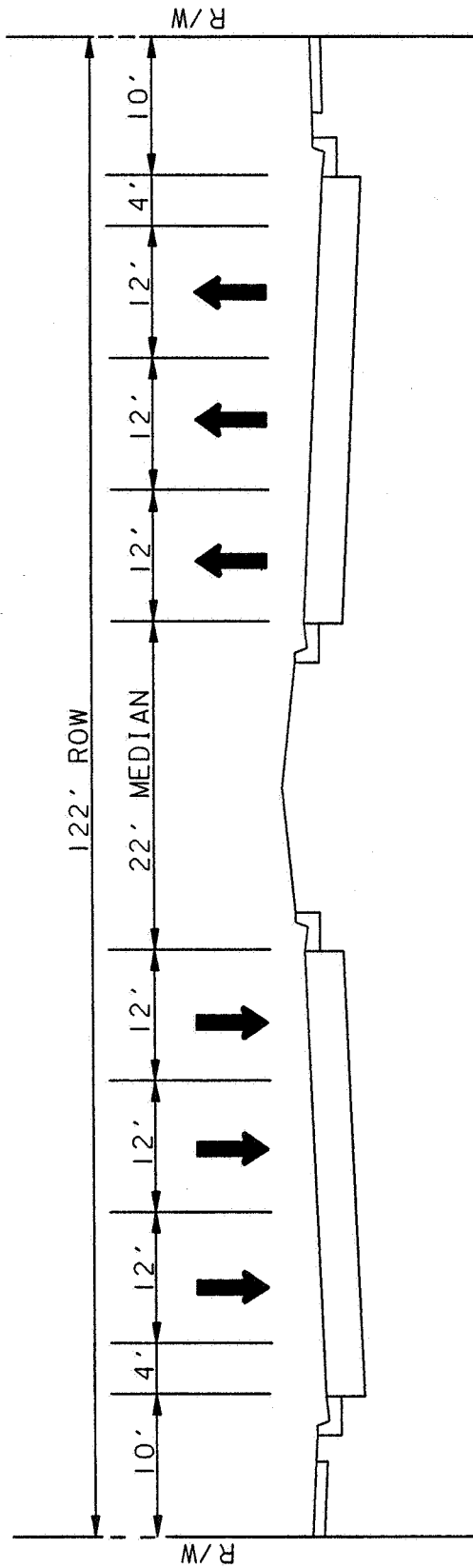
*** This segment consists of the one-way pair system, Reynolds Street and Baker Street, which traverses downtown Plant City. No significant roadway improvements are expected along this segment.

+ Four lanes are the total number of travel lanes provided by the one-way pair system. Reynolds Street and Barker Street provide two travel lanes each.

++ Not applicable.

+++ With exception of minor alignment modifications, Segment 6 follows the existing (EX) alignment. Alternatives 6-N and 6-S are different from alternative 6-EX with regard to the improvement whereas Alternatives 6-N and 6-S realign Baker Street to the north and south, respectively.

^ Alternative 7-EX maintains the existing ROW and replaces the existing raised median with a continuous, two-way left turn lane. It also adds sidewalk along the north side of US 92.



APPLICABLE TO SEGMENT:

1. GARDEN LANE ROAD TO FALKENBURG ROAD

45 MPH DESIGN SPEED

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

SIX-LANE URBAN
TYPICAL SECTION ALTERNATIVE

FIGURE
7-1

Three alignment alternatives were evaluated in this study with regards to widening Segment 1:

- Alignment 1-N - Maintain the existing ROW boundary on the south side of the facility and widen to the north.
- Alignment 1-C - Maintain the current ROW centerline and widen along both sides of the existing ROW.
- Alignment 1-S - Maintain the existing ROW boundary on the north side of the facility and widen to the south.

7.2.2.2 Segment 2

Segment 2 of US 92 extends from Falkenburg Road to east of Pine Street (to approximately Taylor Road).

Although land use adjacent to Segment 2 is not as intense as the land use adjacent to Segment 1, urban-type typical cross sections are recommended for this segment (instead of rural-type) due to the anticipated future intensification of land uses and in order to allow for the provision of sidewalks and lower design speed along US 92 in the vicinity of Armwood High School.

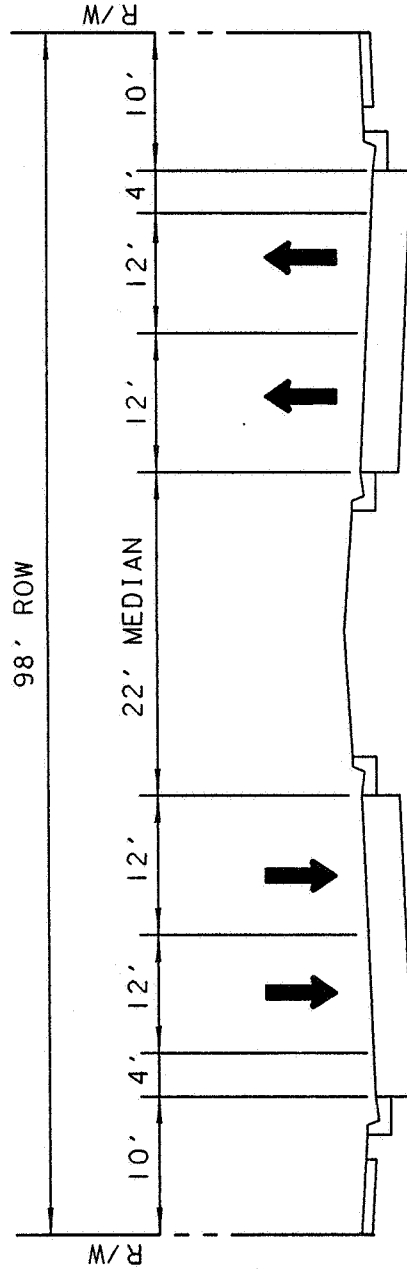
Two alternative typical cross sections were studied for this segment:

- A four-lane urban cross section that provides a 22-foot-wide median and requires 98 feet of ROW, and
- A four-lane urban cross section that provides a 46-foot-wide median and can be expanded to six-lanes in the future. This cross section requires 122 feet of ROW.

The four-lane urban typical section with the 22-foot-wide median is shown in Figure 7-2 and the four-lane urban typical section with the 46-foot-wide median is shown in Figure 7-3. Segment 2 also includes the I-75 bridge crossing over US 92. The existing span between the piers is approximately 101 feet wide and could accommodate both, the four-lane urban and the four-lane expandable to six lanes, typical sections without bridge widening. Figures 7-4 and 7-5 illustrate typical section concepts for US 92 under the I-75 bridge. Figure 7-4 illustrates a non-expandable four-lane typical section while Figure 7-5 illustrates a four-lane typical section that allows future expansion to six lanes. The design speed for these typical cross sections is expected to be 45 mph.

Similar to Segment 1, the required ROW widenings along this segment under both typical cross sections could be acquired to the north or south of the existing ROW or could be centered along both sides of the existing ROW. Therefore, six different alignment alternatives exist for Segment 2 depending on which cross section is used and where the ROW widening is taking place:

- Alignment 2-N - Use the typical section requiring 98-foot-wide ROW and widen along the north side while maintaining the existing ROW line on the south side.
- Alignment 2-C - Use the typical section requiring the 98-foot-wide ROW and widen equally along both sides of the existing ROW while maintaining the ROW centerline.
- Alignment 2-S - Use the typical section requiring the 98-foot-wide ROW and widen along the south side while maintaining the existing ROW line on the north side.
- Alignment 2-NE - Use the typical section requiring the 122-foot-wide ROW and widen along the north side while maintaining the existing ROW line of the south side.



APPLICABLE TO SEGMENTS:

2. FALKENBURG ROAD TO TAYLOR ROAD
5. TURKEY CREEK ROAD TO MOBLEY STREET
7. GORDON STREET TO PARK ROAD

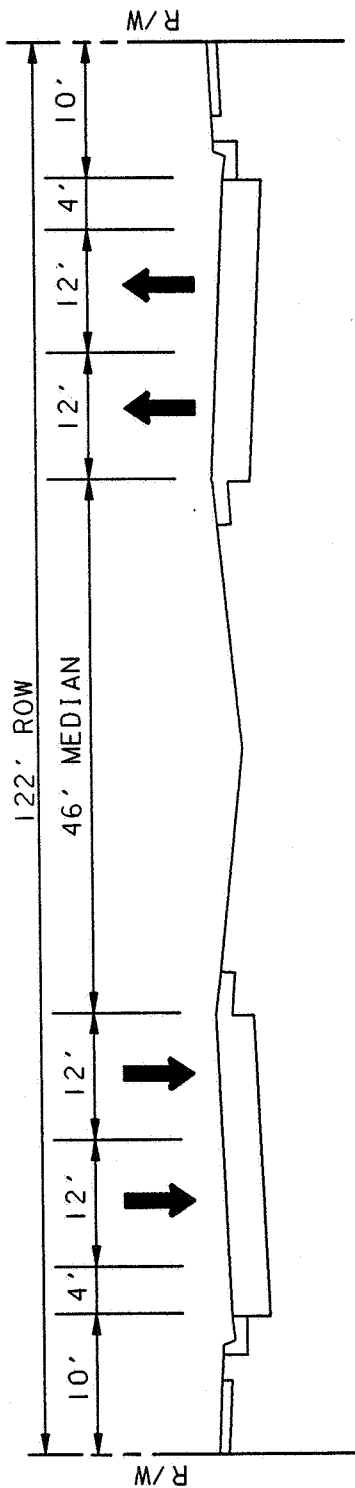
45 MPH DESIGN SPEED

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

FOUR-LANE URBAN
TYPICAL SECTION ALTERNATIVE

FIGURE
7-2



APPLICABLE TO SEGMENTS:

- 2. FALKENBURG ROAD TO TAYLOR ROAD
- 8. PARK ROAD TO COUNTY LINE ROAD

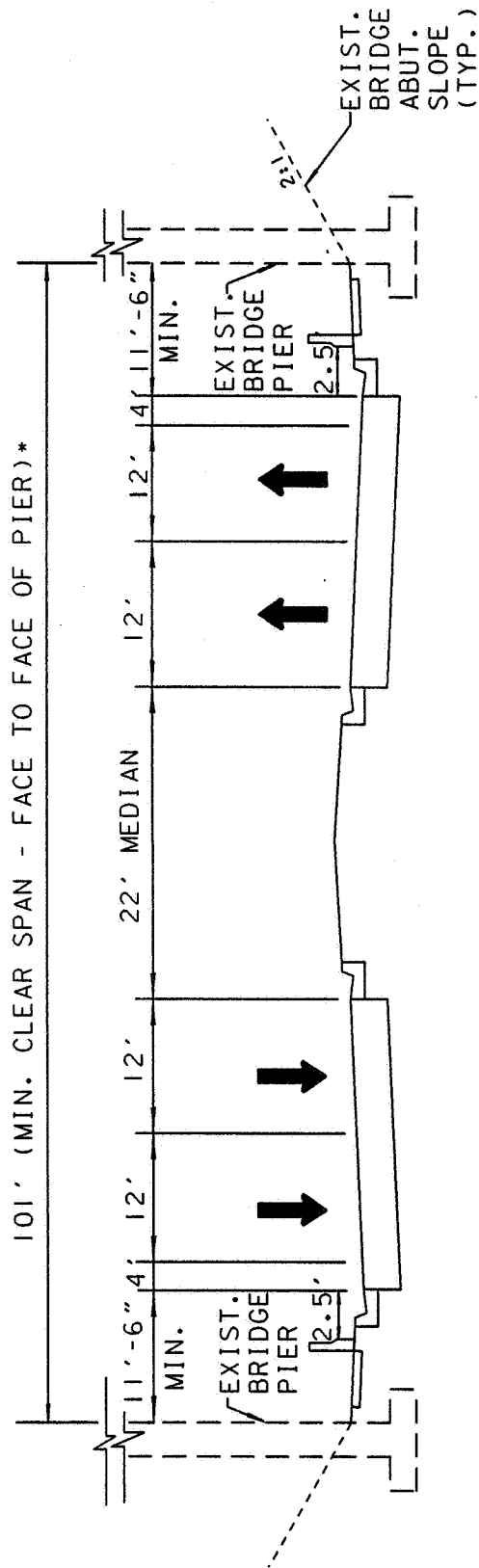
DESIGN SPEED 45 MPH

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

FOUR-LANE URBAN
TYPICAL SECTION ALTERNATIVE
(EXPANDABLE TO SIX-LANES)

FIGURE
7-3



APPLICABLE TO SEGMENT 2 UNDER I-75 OVERPASS STRUCTURES

*USING MIN. CENTER SPAN LENGTH OF BRIDGE NO.'s 100414, 100415, 100422, AND 100424. ESTIMATED SKEW ANGLES, AND ASSUMING 4'Ø PIERS.

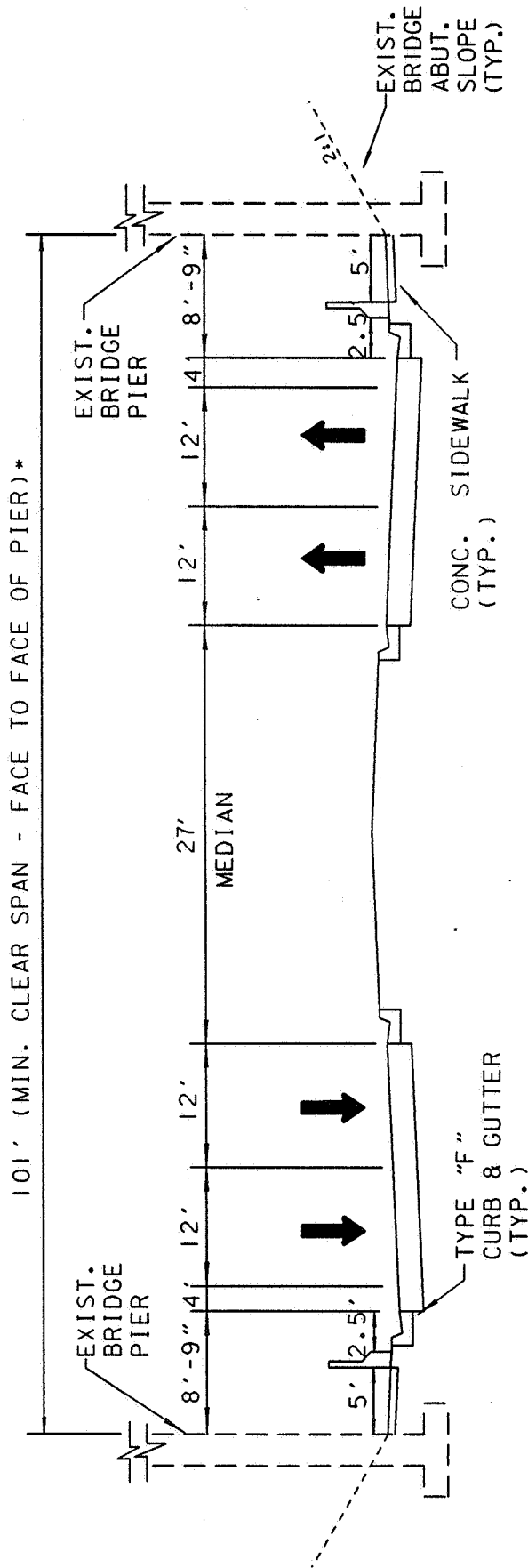
45 MPH DESIGN SPEED

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

PROPOSED FOUR-LANE URBAN
TYPICAL SECTION (NON-EXPANDABLE)
ALTERNATIVE UNDER I-75

FIGURE
7-4



APPLICABLE TO SEGMENT 2 UNDER I-75 OVERPASS STRUCTURES

*USING MIN. CENTER SPAN LENGTH OF
BRIDGE NO.'s 100414, 100415, 100422,
AND 100424. ESTIMATED SKEW
ANGLES, AND ASSUMING 4'Ø PIERS.

45 MPH DESIGN SPEED

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

PROPOSED FOUR-LANE DIVIDED URBAN
TYPICAL SECTION (EXPANDABLE TO 6-LANES)
ALTERNATIVE UNDER I-75

FIGURE
7-5

- Alignment 2-CE - Use the typical section requiring the 122-foot-wide ROW and widen along both sides while maintaining the existing ROW centerline.
- Alignment 2-SE - Use the typical section requiring the 122-foot-wide ROW and widen along the south side while maintaining the existing ROW line on the north side.

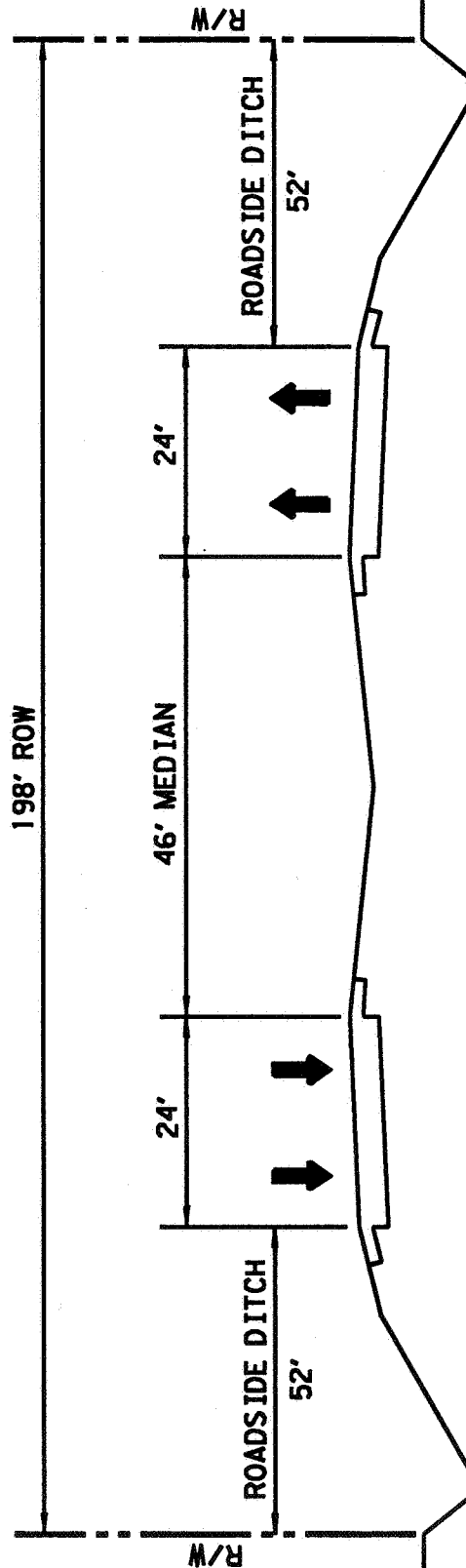
7.2.2.3 Segment 3

Segment 3 of US 92 extends from Taylor Road to McIntosh Road. Land use adjacent to this segment is predominantly agricultural and undeveloped land.

A four-lane rural typical cross section is proposed for this segment. This typical section, illustrated in Figure 7-6, provides drainage ditches on both sides of the proposed facility and a 46-foot-wide median. It requires 198 feet of ROW. The design speed along this segment is expected to be 60 mph.

Three alignment alternatives were examined in this study for Segment 3:

- Alignment 3-N - Widen along the north side while maintaining the existing ROW line on the south side.
- Alignment 3-C - Widen along both sides while maintaining the existing ROW centerline.
- Alignment 3-S - Widen along the south side while maintaining the existing ROW line on the north side.



APPLICABLE TO SEGMENTS:

- 3. TAYLOR ROAD TO MCINTOSH ROAD
- 4. MCINTOSH ROAD TO TURKEY CREEK ROAD
- 8. PARK ROAD TO COUNTY LINE ROAD

60 MPH DESIGN SPEED

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
 HILLSBOROUGH COUNTY
 FROM GARDEN LANE TO COUNTY LINE ROAD

**FOUR-LANE RURAL
 TYPICAL SECTION ALTERNATIVE**

**FIGURE
 7-6**

7.2.2.4 Segment 4

Segment 4 of US 92 extends from McIntosh Road to Turkey Creek Road. Segment 4 exhibits similar characteristics with regard to existing land use, right-of-way, and typical section as Segment 3. Instead of treating the total length of Segments 3 and 4 as one segment, Segments 3 and 4 were created in order to allow for a change of alignment mid-point if this is shown by the alignment evaluation process to be appropriate. McIntosh Road was chosen as the dividing point between the two segments because of the slight change in land use patterns at this location.

A four-lane typical cross section is proposed for this segment, same as the typical section proposed for Segment 3. This typical section was previously shown in Figure 7-6. The design speed along this segment is expected to be 60 mph.

Three alignment alternatives were examined in this study for Segment 4:

- Alignment 4-N - Widen along the north side while maintaining the existing ROW on the south side.
- Alignment 4-C - Widen along both sides while maintaining the existing ROW centerline.
- Alignment 4-S - Widen along the south side while maintaining the existing ROW line on the north side.

7.2.2.5 Segment 5

Segment 5 of US 92 extends from Turkey Creek Road to Mobley Street. Land use along US 92 east of Turkey Creek Road is dense and expected to become more urbanized as development expands west of Plant City. A four-lane urban typical cross section is proposed for this segment. It provides a 22-foot-wide median and requires 98 feet of ROW. This typical section has been previously presented in Figure 7-2. The design speed for this segment is expected to be 45 mph.

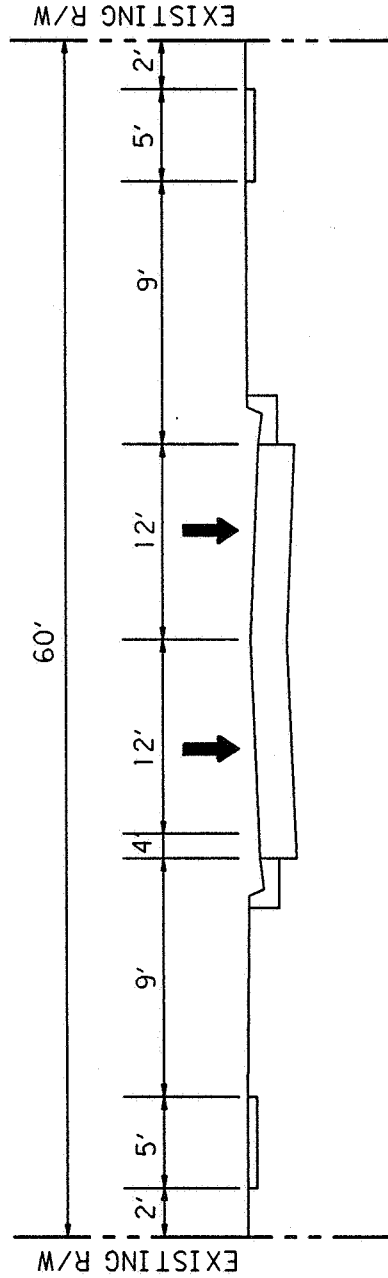
Three alignment alternatives were considered in this study for Segment 5:

- Alignment 5-N - Widen along the north side while maintaining the existing ROW line on the south side.
- Alignment 5-C - Widen along both sides while maintaining the existing ROW centerline.
- Alignment 5-S - Widen along the south side while maintaining the existing ROW line on the north side.

7.2.2.6 Segment 6

Segment 6 of US 92 extends from Mobley Street to Gordon Street and consists of the one-way pair system traversing downtown Plant City. Thonotosassa Road and Reynolds Street accommodates the eastbound US 92 traffic while Baker Street accommodates the westbound US 92 traffic.

Since this segment presently provides four travel lanes, two travel lanes on Thonotosassa Road and Reynolds Street and two lanes on Baker Street, it already meets the laneage requirements for the design-year traffic demands. Although changes could be made to the typical sections to provide desirable travel-lane and parking-lane widths, the existing lane-geometry and cross sections will be maintained along this segment in the future to avoid impacts except along Baker Street from Mobley Street to Whitehall Street. This segment of Baker Street, is the only segment of US 92 with a rural typical section within the City limits and provides no sidewalks. Since this segment provides access to Rowena May's Park, provision of sidewalks is deemed important. Sidewalks can be provided on both sides of this segment within the existing 60-foot-wide ROW if the typical cross section is converted from rural to urban, which is recommended. Figure 7-7 illustrates the recommended urban typical section for Baker Street between Mobley Street and Whitehall Street.



APPLICABLE TO SEGMENT:

6. BAKER STREET FROM MOBLEY STREET TO WHITEHALL STREET

35 MPH DESIGN SPEED

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

TWO-LANE ONE-WAY
TYPICAL SECTION ALTERNATIVE

FIGURE
7-7

At the request of City representatives, the potential to improve the alignment of Baker Street at its intersection with Franklin Street was examined. In addition to the existing alignment (Alternative 6-EX), two other alternatives were developed for this intersection:

- Alternative 6-N flattens the existing reverse curves at the intersection by realigning Baker Street to the north. This alignment impacts a vacant old gas station which is located in the northeastern corner of the intersection and which is part a historic district.
- Alternative 6-S flattens the existing reverse curves at the intersection by realigning Baker Street to the south. This alignment impacts a number of large oak trees located in the southwestern corner of the intersection. The City of Plant City has adopted a tree ordinance that protects large trees.

Due to the extent of the impacts of the Alternatives 6-N and 6-S, the necessity to realign Baker Street was more carefully evaluated. The existing geometry of Baker Street was compared with current FDOT standards and was found to be acceptable. In addition, accident records were researched for the past five-year period to identify any accident patterns that could be attributed to the intersection alignment. It was found that accident occurrence at this intersection is low and without any discernable patterns.

No other significant improvements are anticipated along this segment of US 92 except minor intersection widenings and realignments. Therefore, the only alignment considered for this segment is the existing alignment (Alignment 6-EX). The design speed for this segment is 35 mph. The existing typical sections along this segment have been previously discussed in Section 3.

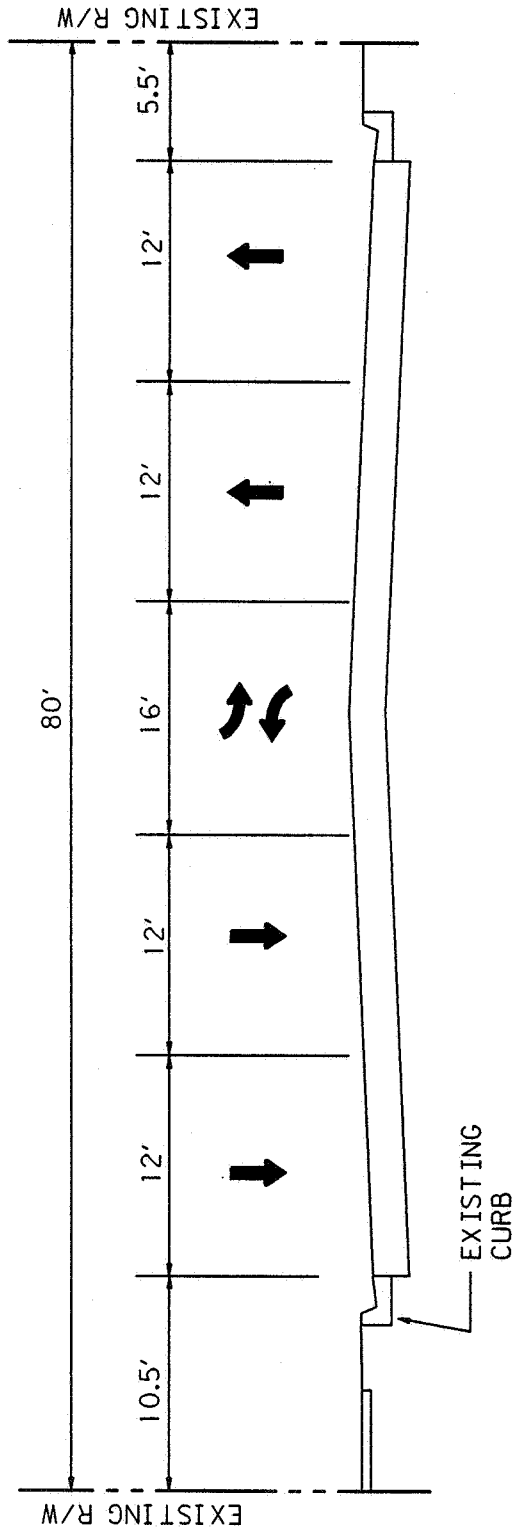
7.2.2.7 Segment 7

Segment 7 extends from Gordon Street to Park Road. Land use along Segment 7 is highly urbanized. Two typical cross sections were considered for this segment as follows:

- A typical section that would use the presently available 80-foot-wide ROW. This typical section would replace the existing raised median with a continuous two-way left-turn lane and would provide four standard width travel lanes and sidewalk along the north side. Figure 7-8 illustrates this typical section. The design speed of this typical section would be 40 mph.
- A four-lane urban typical cross section which provides a 22-foot-wide median and requires 98 feet of ROW. An illustration of this typical section has been previously presented in Figure 7-2. The design speed of this typical section would be 45 mph.

Four alignment alternatives were evaluated in this study for Segment 7:

- Alignment 7-EX - Replace the existing raised median with a continuous, two-way left-turn lane and construct sidewalk along the north side of US 92. No ROW widenings will be required under this alternative.
- Alignment 7-N - Widen along the north side while maintaining the existing ROW line of the south side to provide the 98-foot-wide typical section.
- Alignment 7-C - Widen along both sides while maintaining the existing ROW centerline to provide the 98-foot-wide typical section.
- Alignment 7-S - Widen along the south side while maintaining the existing ROW line on the north side to provide the 98-foot-wide typical section.



FIVE-LANE URBAN TYPICAL SECTION

APPLICABLE TO SEGMENT:

7. GORDON STREET TO PARK ROAD

40 MPH DESIGN SPEED

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

FIVE-LANE URBAN
TYPICAL SECTION ALTERNATIVE

FIGURE
7-8

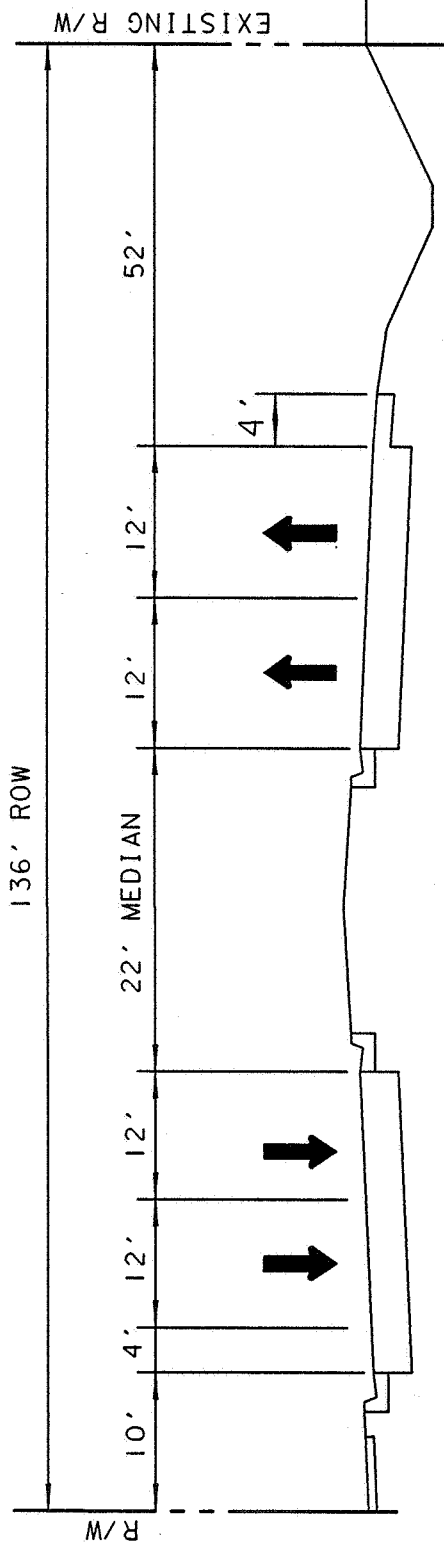
7.2.2.8 Segment 8

Segment 8 extends from Park Road to County Line Road and is contiguous to the existing CSX railroad tracks on its south side. On the north side of Segment 8 there is a mix of undeveloped land, residences, and commercial and light industrial developments.

Three alternative typical cross sections were studied for this segment:

- An urban four-lane typical cross section that provides a 46-foot-wide median to allow for future expansion to six lanes. This typical section requires 122 feet of ROW. Figure 7-3, presented previously, illustrates this typical section. The design speed on this typical section is expected to be 45 mph.
- A "hybrid" four-lane typical cross section that provides a 22-foot wide median and requires 136 feet of ROW. Figure 7-9 illustrates the "hybrid" typical section. The design speed on this typical section is expected to be 45 mph.
- A rural four-lane typical cross section that provides a 46-foot wide median, requires 178 feet of ROW and uses the existing drainage ditch which is located on the south side of US 92 between the existing pavement and the railroad tracks. Figure 7-10 illustrates the rural typical section. The design speed on this typical section is expected to be 60 mph.

Due to the existing railroad tracks on the south side of US 92, ROW widenings required to accommodate each of the above typical sections are anticipated to be acquired on the north side of US 92. Therefore, three alignment alternatives are considered for Segment 8 equal to the number of the typical sections; Alignments 8-U, 8-H and 8-R correspond to the urban, "hybrid" (drainage ditch on the south side and curb and gutter on the north side), and rural typical sections, respectively.



APPLICABLE TO SEGMENT:
8. PARK ROAD TO COUNTY LINE ROAD

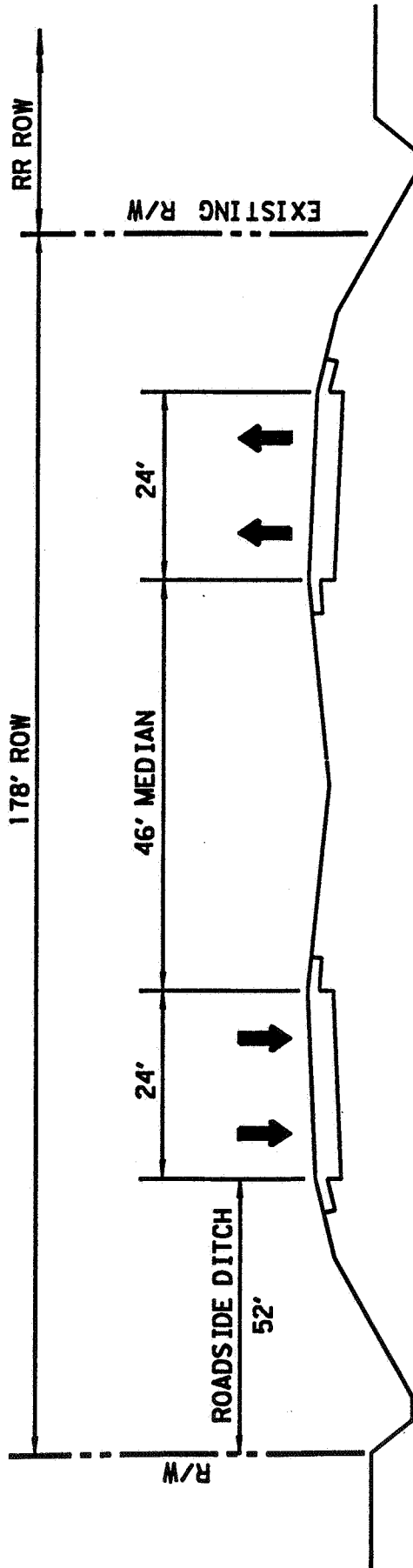
45 MPH DESIGN SPEED

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

FOUR-LANE HYBRID
TYPICAL SECTION ALTERNATIVE

FIGURE
7-9



APPLICABLE TO SEGMENT
 8. PARK ROAD TO COUNTY LINE ROAD

60 MPH DESIGN SPEED

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
 HILLSBOROUGH COUNTY
 FROM GARDEN LANE TO COUNTY LINE ROAD

**FOUR-LANE RURAL
 TYPICAL SECTION ALTERNATIVE**

**FIGURE
 7-10**

7.3 ALTERNATIVES EVALUATION MATRIX

In order to evaluate competing alternative alignments for the eight geographical segments along US 92, an evaluation matrix was prepared. The matrix contains evaluation criteria from a multitude of categories such as socioeconomic, environmental, cultural, hazardous material/petroleum contamination impacts, and costs (right-of-way, construction, and engineering). A brief description of these criteria is given below.

7.3.1 Business Impacts

The number of businesses expected to be seriously impacted and need to be relocated was identified for each alignment alternative with use of the 1" = 100' scale aerial photos and field verified. Other business impacts such as parking loss, etc., expected to be sustained by businesses which will not need to be relocated were considered in the right-of-way acquisition cost estimates.

7.3.2 Residential Impacts

The project impacts on existing residences along the project were assessed by using two different categories. The first category consisted of the number of residences that exist within the proposed ROW of the particular alignment alternative and which will have to be relocated if this alternative is implemented. The second category quantifies the number of residences that will be left within 300 feet of the ROW boundary of an alignment alternative if this alternative is implemented.

7.3.3 Community Facility Impacts

The project impacts on existing community facilities such as churches, schools, hospitals, fire stations, etc., were assessed. Similar to the residential impacts the number of the impacted community facilities was grouped into two categories: community facilities within the proposed

right-of-way of the alignment alternative, and community facilities within 300 feet of the ROW boundary of the alignment alternative.

7.3.4 Noise-Sensitive Sites

Noise-sensitive sites are sites associated with rest, recreation, concentration, and communication. Such sites include residences, schools, churches, hospitals, nursing homes, libraries, public assembly halls, lodgings and parks. The number of the existing noise-sensitive sites that are impacted by each alignment alternative were determined for each segment by using the STAMINA model.

7.3.5 Impacts on Cultural/Historic Resources

As previously presented in Section 3, a thorough investigation was undertaken to identify historically and archaeologically significant sites and structures along the project. Similarly, the location of existing and proposed public parks was determined. The number of the historic sites/structures and the number of public parks that are located within the proposed boundary of the proposed ROW of each alignment alternative were counted.

7.3.6 Impacts on the Natural Environment

Impacts on the natural environment include impacts on wetlands, uplands, floodplains and floodways. The acreage of each of these natural environment areas that falls within the right-of-way limits of each alignment alternative was determined by segment. For a more accurate evaluation of the project impacts on wetlands, wetland impacts were separated into impacts on undisturbed wetlands and disturbed wetlands. The distinction between undisturbed and disturbed wetlands was based on a preliminary empirical field evaluation.

7.3.7 Hazardous Material and Petroleum Contaminated Sites

As presented in Section 3, numerous hazardous material and petroleum contaminated sites exist along the project. Avoidance of such sites minimizes the effort to clean up the sites prior to the construction of the project and dispose of the disturbed soil, and protects the health of construction workers in the vicinity of these sites. The number of contaminated sites along each segment and within the ROW boundaries of each alignment alternative were grouped into two categories; hazardous material sites and petroleum contaminated sites.

7.3.8 Right-of-Way Impacts

Private property impacts were quantified for each alignment alternative and segment with two measures; number of parcels being impacted and acreage of private property to be taken. The number of parcels impacted is directly related to the administrative effort that is required to obtain the needed land. The acreage of private property to be taken and the number of parcels to be impacted affect the ROW acquisition costs.

7.3.9 Project Costs

Preliminary cost estimates were prepared for each alignment alternative of each segment. The estimates included separate estimates of the right-of-way acquisition, engineering, construction, and construction engineering and inspection costs.

The right-of-way acquisition cost includes the cost of business and residence relocations, private property purchase, and reimbursement cost for miscellaneous business damages.

The construction cost of each alternative was calculated using the Long Range Estimate (LRE) method of the FDOT. The engineering (final design) and the construction engineering and inspection costs were calculated as a percentage (10.0 percent) of the construction cost.

7.3.10 Evaluation Matrix

Table 7-3 presents the evaluation criteria used and the corresponding values for each segment and alignment.

7.4 SELECTION OF THE PREFERRED ALIGNMENT ALTERNATIVE

7.4.1 Alternatives Evaluation Process

The process for selecting the preferred alignment alternative was described in detail in the Alternatives Analysis Report⁶ which was prepared for this PD&E Study.

This section provides a brief description of the selection process. The matrix presented in Table 7-3 was divided into separate evaluating matrices for each segment. In addition to the numerical values for each evaluation factor, the new matrices provided a ranking of each applicable alternative on each evaluation factor based on comparison with the other applicable alternatives for the same segment; rank 1 for a particular evaluation factor was given to the alternative with the least impacts, rank 2 was given to the alternative with the least impacts immediately after the rank 1 alternative, etc. The total of the rank numbers for all evaluation factors was used as an indicator of the preferred alternative. Critical impacts such as number of relocations, wetland impacts and right-of-way and construction costs were carefully reviewed after selection of the preferred alternative to verify that this alternative did not cause any significantly higher impacts in these categories than the other alternatives despite its lower overall rank number. A set of the segment evaluation matrices is included in Appendix D.

TABLE 7-3

US 92 PD&E STUDY
PRELIMINARY ALTERNATIVES EVALUATION MATRIX

SEGMENT NUMBER SEGMENT LIMITS (FROM-TO)	SEGMENT 1 GARDEN LN-FALKENBURG RD										SEGMENT 2 FALKENBURG RD-TAYLOR RD										SEGMENT 3 TAYLOR RD-MINTOSH RD										SEGMENT 4 MINTOSH RD-TURKEY CREEK RD										SEGMENT 5 TURKEY CREEK RD-MOBLEY ST										SEGMENT 6 MOBLEY ST-GORDON ST										SEGMENT 7 GORDON ST-PARK RD										SEGMENT 8 PARK RD-COUNTY LINE RD																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
	BY-LANE URBAN					FOUR-LANE URBAN					EXPANDABLE TO SIX-LANE					FOUR-LANE RURAL					FOUR-LANE URBAN					ONE-WAY PAIR					FOUR-LANE URBAN					FOUR-LANE URBAN					HYBRID					RURAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
	North 1-N	Center 1-C	South 1-S			North 2-N	Center 2-C	South 2-S			North 2-NE	Center 2-CE	South 2-SE			North 3-N	Center 3-C	South 3-S			North 4-N	Center 4-C	South 4-S			Existing 4-EX	North 4-N	Center 4-C	South 4-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C	South 7-S			Existing 7-EX	North 7-N	Center 7-C

7.4.2 Alternatives Evaluation Results

During the comparative analysis it was found that the center alignment alternative in every segment impacted a greater number of parcels and in all but the four-lane expandable (to six lanes) alternative for Segment 2 had higher total impacts and costs than either the north or south alignment alternatives. In addition, the center alignment alternative would be the most difficult to implement with regards to maintenance of traffic during construction. For these reasons, the center alignment was eliminated from further consideration in the initial steps of the evaluation process.

The rationale behind the selection between the north and south alternatives for each segment was discussed in the Alternatives Analysis Report⁶. According to this rationale the preferred alternative should consist of the following combination of segment alignments and typical sections:

- Segment 1: North alternative (1-N); six-lane urban,
- Segment 2: South alternative (2-SE); four-lane expandable to six-lane urban,
- Segment 3: North alternative (3-N); four-lane rural,
- Segment 4: South alternative (4-S); four-lane rural,
- Segment 5: North alternative (5-N); four-lane urban,
- Segment 6: Existing alternative (6-EX); existing typical sections,
- Segment 7: Existing alternative (7-EX); four-lane with a continuous left-turn lane urban,
- Segment 8: Urban alternative (8-U); four-lane expandable to six lanes.

7.4.3 Preferred Alignment Refinement

As shown in the previous section, the set of the preferred alignments for the eight segments includes both north and south alignments. This condition and the fact that typical sections change from urban to rural or vice versa between certain segments required transitions in order

to create a continuous alignment for the whole project. The transitions were designed to meet current design standards and to minimize impacts such as relocations, hazardous material and/or contaminated sites, and right-of-way acquisition. Through this process it was also found that certain revisions in the alignments would further reduce the project impacts and therefore, were adopted in the final recommendations of the preferred alignment alternative. These revisions were the following:

- Segment 2 and its four-lane (expandable to six lanes) urban typical section was extended east beyond Taylor Road to Kingsway Road replacing the four-lane rural typical section. This revision reduces impacts at the intersection of US 92 with Taylor Road and along the north side of US 92 just east of Taylor Road, and provides sidewalks along this segment of US 92. As previously discussed in Section 3.2.2.2, the parcel located in the northwestern corner of US 92 and Kingsway Road intersection is planned to be used by the Hillsborough County Board of Education for a new middle school site. The urban typical section of US 92 along this site will allow for easier student access due to the provision of sidewalks and the lower (than the rural typical) design speeds.

To reduce impacts to the Freewill Baptist Church and the Seffner Christian Academy, both located in the southwestern corner of the US 92 and Mango Road intersection, the centered and north alignments were considered for this location. Impacts analysis revealed that the centered alignment would limit impacts to this property while not causing substantial disturbance to the properties on the north side of US 92. Therefore, the alignment of approximately 3,500 feet of US 92 in the vicinity of Mango Road was shifted to follow the centered alignment.

- As discussed in Section 8.18 of this report, after comments received at the Public Hearing, the study team re-evaluated the preferred alignment recommendation for the 1.0-mile long section of Segment 4 that extends from just west of Fritzke Road to just east of Bethlehem Road. Based on consideration of impacts along the

entire Segment 4, the south alignment was recommended. After requests at the Public Hearing, the study team evaluated the potential to transition to the centered alignment within the above specified section of Segment 4. Review of the impacts revealed that the centered alignment would decrease the residential locations by five households, or approximately 5.5 percent of the total residential relocations for this project. The centered alignment would cost, however, approximately \$0.77 million more than the south alignment, mainly due to right-of-way acquisition administrative costs from the 36 parcel increase and the relocation of two additional businesses.

The shift to the centered alignment provides for greater community cohesion in this predominantly rural residential area. Several of the comments received noted that most of the homes are set back from the roadway and the centered alignment provides a more equitable distribution of impacts. Acquiring property and removing most of the housing from one side of the road also has the potential to increase requests for commercial rezoning, and decrease the number of residential units and the feel of a community within the area.

The potential to revise the preferred alignment along the subject section of Segment 4 was communicated to the affected property owners on both sides of US 92. Since most of the comments received on this change were in favor, the preferred alignment between Fritzke and Bethlehem roads was revised to follow the centered alignment.

- Segment 5 and its four-lane urban typical section was extended west beyond Turkey Creek Road to Forbes Road replacing the four-lane rural typical section. This revision reduces impacts at the intersection of US 92 and Forbes Road and provides a better location for the transition between the rural and urban typical sections than Turkey Creek Road, since Forbes Road interchanges to I-4.

As noted in Section 8.19 of this report, one of the suggestions of the Value Engineering review was to evaluate the impacts of the expandable-to-six-lanes urban typical section (see Figure 7-3) for Segment 5. This recommendation was developed after consideration of the fact that if Alignment 5-N is implemented, Segment 5 would be the only segment of US 92 west of Plant City that would not allow for future widening to six lanes if such need arises. Due to the high potential of development growth and urbanization occurring along Segment 5 during the design horizon of this project, it was felt that sufficient land should be preserved for future improvements early on rather than later when the number of relocations and property acquisition costs could be much higher. The socioeconomic and environmental impacts of the north (5-NE) and south (5-SE) alignments of the expandable-to-six-lanes typical section were estimated and compared. It was determined that Alignment 5-NE would have less impact than Alignment 5-SE. Compared to the non-expandable Alignment 5-N, Alignment 5-NE would cause 14 additional relocations (6 residential and 8 business), impact 15 more parcels, and cost approximately \$4.5 million more. After consideration of these impacts, it was decided that the expandable typical section alternative 5-NE should be pursued as part of this project.

- Effective January 29, 1993, FDOT adopted a new policy on median design for multi-lane roadways. According to this policy, all multi-lane roadways except four-lane roadways with a design speed of 40 mph or less should provide raised/restrictive type medians. This change in policy impacts directly the selection of the preferred alignment for Segment 7. Since this segment has a design speed of 45 mph, Alignment 7-EX is no longer acceptable. After consideration of the impacts of the raised-median alternatives (7-N, 7-C, 7-S), Alignment 7-N was chosen as the preferred alignment.

7.4.4 Preferred Alignment Impacts

Revised impact data were generated for the preferred alignment. Table 7-4 presents a summary of those expected impacts. This summary includes data for the transitions and the segment length revisions noted in the previous section. Therefore, the impacts shown for each segment or the total impacts do not match the impacts previously shown in Table 7-3.

**TABLE 7-4
PREFERRED ALIGNMENT IMPACTS**

EVALUATION FACTORS	IMPACTS PER SEGMENT								TOTAL IMPACTS
	1-N*	2-SE*	3-N	4-S*	5-NE*	6-EX*	7-N	8-U*	
BUSINESS IMPACTS:									
Number of businesses expected to be relocated	3	10	4	11	15	0	1	6	50
RESIDENTIAL IMPACTS:									
Number of residences expected to be relocated	5	12	5	52	7	0	0	10	91
COMMUNITY FACILITY IMPACTS:									
Community facilities within ROW:									
-Number of churches	0	1	1	0	0	0	0	1	3
-Number of schools	0	1	0	0	0	0	0	0	1
-Number of nursing homes	0	0	0	0	0	0	1	0	1
-Number of hospitals	0	0	0	0	0	0	0	0	0
-Number of cemeteries	0	0	0	0	0	0	0	0	0
-Number of other public services	0	0	0	0	0	0	0	0	0
NOISE SENSITIVE RECEIVERS:									
Number of noise sensitive receivers	9	36	44	63	41	0	0	51	244
IMPACTS ON CULTURAL/HISTORIC RESOURCES AND PUBLIC PARKS:									
Number of historic sites/structures within ROW	0	0	0	0	0	0**	0	0	0
Number of public parks within ROW	0	0	0	0	0	0	0	0	0
NATURAL ENVIRONMENT IMPACTS:									
Wetlands within ROW:									
-Area of undisturbed wetlands (acres)	0.00	0.27	0.32	3.32	0.07	0.00	0.00	0.00	3.98
-Area of disturbed/man-made wetlands (acres)	0.00	1.06	0.38	1.35	1.18	0.00	0.00	0.07	4.04
-Total possible wetland mitigation area (acres)***	0.00	2.67	1.85	15.31	2.04	0.00	0.00	0.11	21.98
Floodplain and floodway encroachment:									
-Area of base floodplain encroachment (acres)	0.00	0.79	2.35	0.75	1.52	0.00	0.00	0.00	5.41
-Area of base floodway encroachment (acres)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POTENTIAL HAZARDOUS MATERIAL AND PETROLEUM CONTAMINATED SITES:									
Number of potential hazardous material sites	1	3	1	1	0	0	1	2	9
Number of potential petroleum contaminated sites	0	5	2	8	3	0	8	8	34
UTILITY IMPACTS									
Cost of utilities relocation (thousand \$)	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	50
RIGHT OF WAY IMPACTS:									
Number of parcels impacted	21	77	32	112	55	3	15	54	381
Area of ROW to be acquired (acres)	2.1	13.8	40.8	52.2	13.3	0.1	0.9	14.3	137.5
ESTIMATED PROJECT COSTS (Present value in million \$):									
ROW acquisition cost	1.47	9.51	9.03	16.41	7.34	0.13	1.11	7.74	52.74
Engineering cost	0.11	0.46	0.36	0.54	0.35	0.02	0.08	0.49	2.41
Roadway construction cost	1.07	4.63	3.64	5.38	3.48	0.15	0.76	4.88	23.99
Construction engineering and inspection	0.11	0.46	0.36	0.54	0.35	0.02	0.08	0.49	2.41
TOTAL COST	2.76	15.06	13.39	22.87	11.52	0.32	2.03	13.60	81.55

* N: Right-of-way (ROW) acquisition only along the north side of US 92; S: ROW acquisition only along the south side of US 92; EX: Use only the presently available ROW; SE: South four-lane alternative with the potential to be expanded to six lanes; NE: North four-lane alternative with the potential to be expanded to six lanes; U: Urban typical section alternative.

** Segment 6 travels through two historic districts.

*** The total wetland mitigation area was calculated based on a 4:1 ratio for undisturbed wetlands and a 1:1.5 ratio for the disturbed wetlands.

7.5 REFERENCES

1. Corridor Analysis Report; Glatting, Jackson, Kercher, Anglin, Lopez, Rinehart; Orlando, Florida; April 1992.
2. Traffic Technical Memorandum; Glatting, Jackson, Kercher, Anglin, Lopez, Rinehart; Orlando, Florida; May 1992.
3. Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways; Florida Department of Transportation; 1989
4. A Policy on Geometric Design of Highways and Streets; American Association of State Highway and Transportation Officials (AASHTO); Washington, D.C.; 1990.
5. Tampa Interstate Study (TIS); Greiner, Inc., Tampa, Florida; June 1989.
6. Alternatives Analysis Report; Post, Buckley, Schuh & Jernigan, Inc.; Tampa, Florida; January 1992

SECTION 8

PRELIMINARY DESIGN ANALYSIS

After selection of the preferred typical sections and alignment alternatives for each segment of the project, the next step in the study process is to define/refine the design parameters associated with these choices, including intersection design, drainage design, maintenance of traffic during construction, and special features (noise barriers, drainage structures, retaining walls, etc.). Definitions of these parameters enabled the study team to perform a more comprehensive and accurate evaluation of the project impacts and costs.

8.1 DESIGN TRAFFIC VOLUMES

The average daily and directional design hour traffic volumes, AADT and DDHV respectively, were presented previously in Sections 6.5.1 and 6.5.2 and in Figures 6-5 and 6-6 of this report. Based on the DDHV and after consideration of the existing turning patterns and the impacts of future developments on traffic flow, design hour turning traffic volumes were developed for key signalized intersections along the project. Figure 8-1 depicts the design hour turning traffic volumes.

8.2 DESIGN ALTERNATIVES

The design alternatives for the various segments of this project were previously discussed in Section 7.4 of this report.

8.3 TYPICAL SECTIONS

The preferred typical section for each segment of the project was previously discussed in Section 7.4.2. A set of the preferred typical sections is provided in Appendix E.

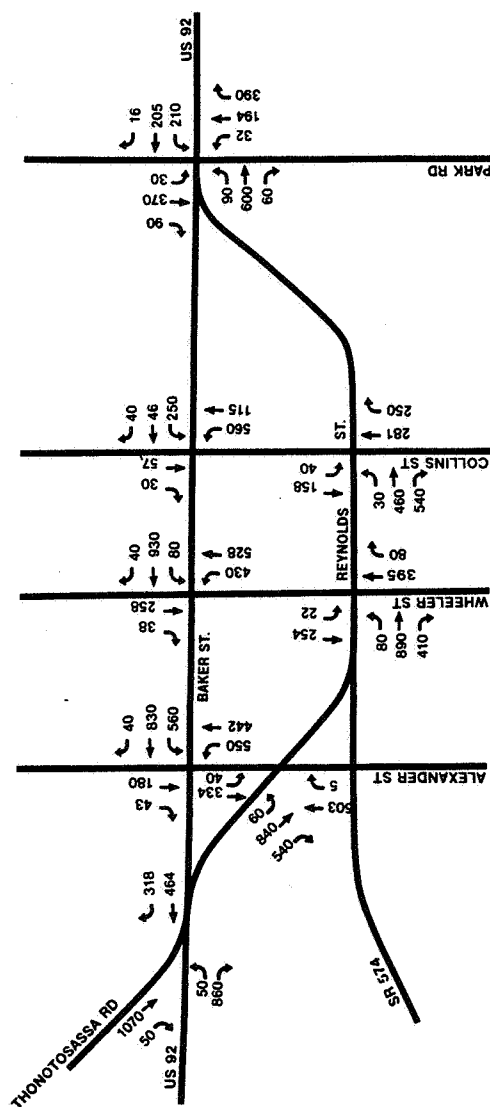
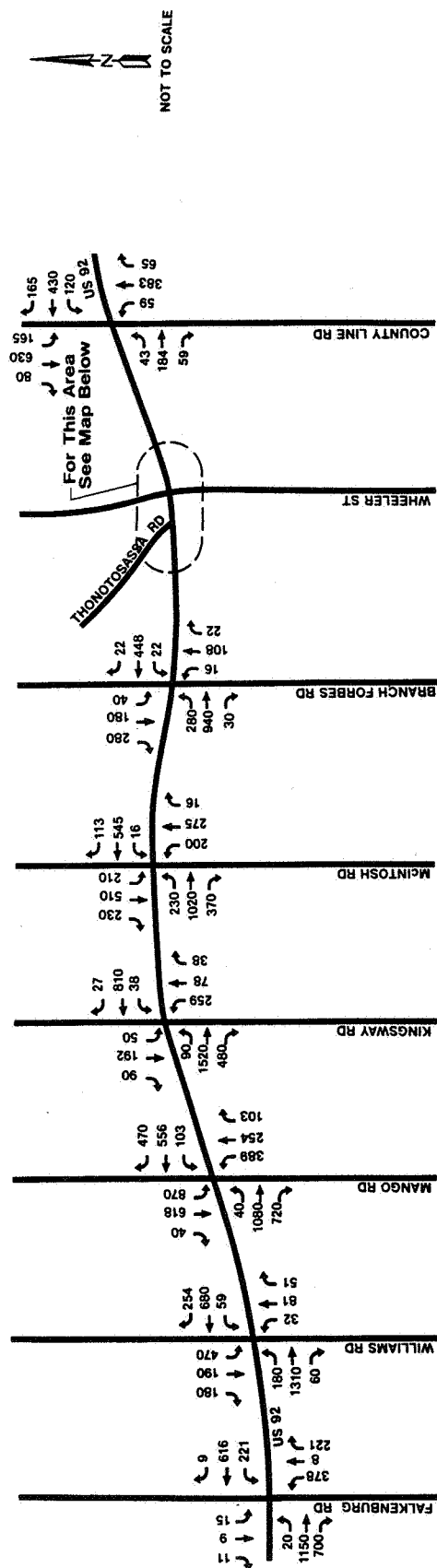


FIGURE 8-1

YEAR 2015 DESIGN HOUR

**US 92 (SR 600) PD & E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD**

The recommended typical sections of the proposed new bridges over the creek crossings are discussed in Section 8.21.

8.4 INTERSECTION CONCEPTS AND SIGNAL ANALYSIS

Figure 8-2 illustrates the recommended intersection lane geometry. Table 8-1 provides detailed information about the operation of each signalized intersection during the design hour and the expected average vehicle-queue lengths. As shown in this table, during the design year 2015, with the recommended lane geometry, all intersections in the study area are expected to provide overall LOS D or better.

8.5 ALIGNMENT AND RIGHT-OF-WAY NEEDS

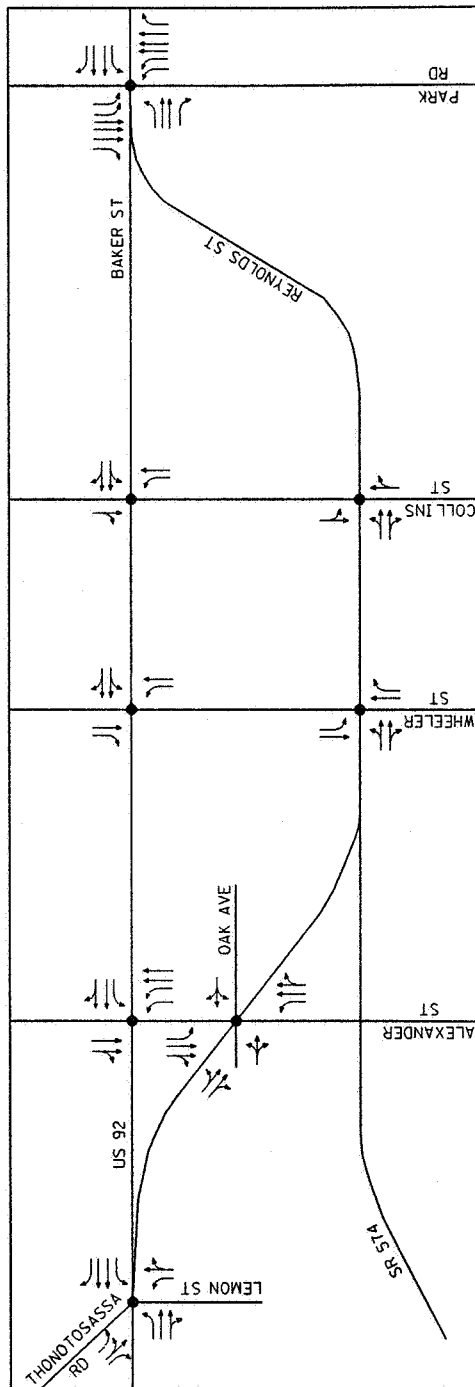
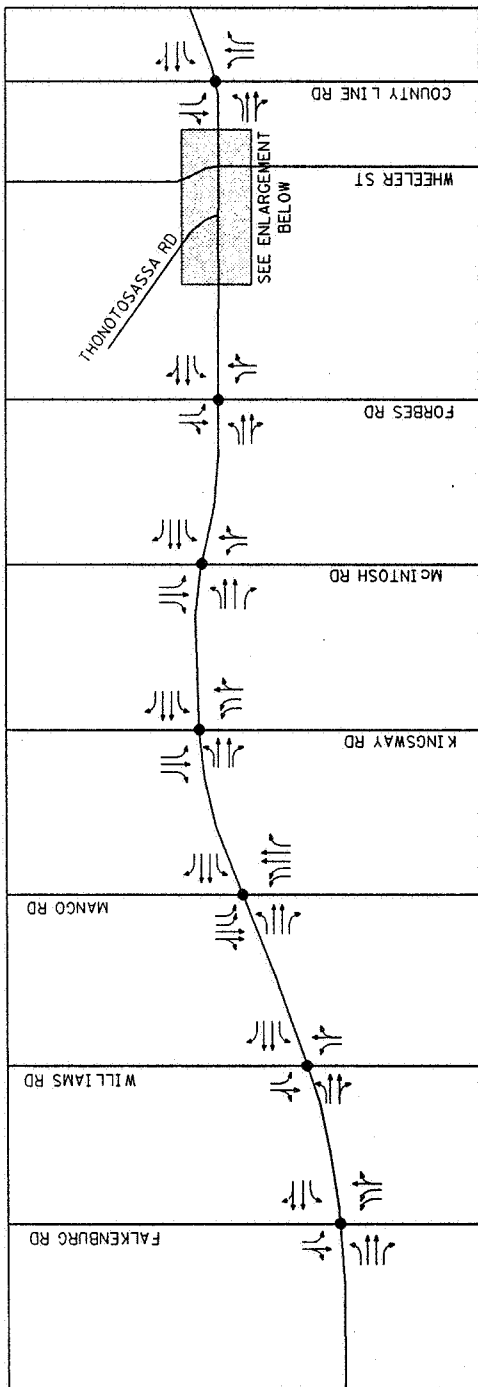
Appendix F includes reduced aerial photos illustrating the preferred alignment throughout the project and the anticipated right-of-way needs. Table 7-4, presented previously, indicates that a total of approximately 138 acres of right-of-way will be acquired in order to build the recommended improvement alternative of US 92.

8.6 RELOCATIONS

As presented earlier in Table 7-4, construction of the preferred alignment alternatives is estimated to cause the relocation of 91 residences and 50 businesses.

A Conceptual Stage Relocation Report¹* has been prepared to address the business and residence relocations.

* Reference numbers correspond to the numbers listed at the end of this section in the References chapter.



LEGEND
 + SIGNALIZED INTERSECTION
 — TRAVEL LANE

NOT TO SCALE

RECOMMENDED SIGNALIZED INTERSECTION LANE GEOMETRY FOR THE YEAR 2015

US 92 (SR 600) PD&E STUDY
 HILLSBOROUGH COUNTY
 FROM GARDEN LANE TO COUNTY LINE ROAD

FIGURE
 8-2

TABLE 8-1

(1 of 3)

**SIGNALIZED INTERSECTION CAPACITY ANALYSIS RESULTS
YEAR 2015 BUILD ALTERNATIVE**

Intersection	Approach	Lane Group	Measure of Effectiveness			Vehicle Queue Length (ft/ln)
			V/C*	Delay**	LOS***	
US 92 at Falkenburg Road	EB	L	0.083	15.2	C	50
		2T	0.869	23.4	C	450
		R	0.581	3.1	A	200
	WB	L	0.692	17.9	C	125
		T+TR	0.347	8.2	B	175
	NB	2L	0.489	28.0	D	200
		TR	0.288	22.2	C	225
	SB	L	0.118	38.7	D	50
		TR	0.163	33.1	D	50
	Overall		0.668	16.6	C	
US 92 at Williams Road	EB	L	0.055	9.2	B	125
		T+TR	1.003	36.7	D	525
	WB	L	0.055	9.2	B	50
		2T	0.495	15.3	C	250
		R	0.217	1.0	A	50
	NB	L	0.047	16.3	C	50
		TR	0.308	21.9	C	150
	SB	L	0.790	35.7	D	375
		TR	0.878	36.7	D	375
	Overall		0.851	27.4	D	
US 92 at Mango Road	EB	L	0.071	15.5	C	50
		2T	1.035	50.6	E	475
		R	0.598	1.6	A	125
	WB	L	0.327	18.0	C	100
		2T	0.533	20.8	C	250
		R	0.390	0.9	A	75
	NB	2L	0.639	33.8	D	225
		2T	0.384	26.1	D	150
		R	0.118	5.4	B	50
	SB	2L	1.004	54.3	E	425
		T+TR	0.705	24.9	C	325
	Overall		1.056	29.8	D	
US 92 at Kingsway Road	EB	L	0.071	9.6	B	75
		2T	1.066	53.2	E	550
		R	0.399	0.9	A	75
	WB	L	0.071	9.6	B	50
		2T	0.568	15.3	C	300
		R	0.022	0.5	A	50
	NB	2L	0.369	28.4	D	150
		TR	0.304	23.7	C	125
	SB	L	0.219	34.1	D	75
		T	0.798	40.8	E	250
		R	0.094	3.7	A	50
	Overall		0.753	31.6	D	

* Volume-to-capacity ratio

** Average delay in seconds per entering vehicle

*** Level of Service

TABLE 8-1
(2 of 3)
SIGNALIZED INTERSECTION CAPACITY ANALYSIS RESULTS
YEAR 2015 BUILD ALTERNATIVE

Intersection	Approach	Lane Group	Measure of Effectiveness			Vehicle Queue Length (ft/ln)
			V/C*	Delay**	LOS***	
US 92 at McIntosh Road	EB	L	0.058	10.4	B	150
		2T	0.635	13.3	B	325
		R	0.351	0.1	A	50
	WB	L	0.294	17.8	C	50
		2T	0.421	15.5	C	225
		R	0.120	0.8	A	50
	NB	L	0.050	14.3	B	150
		TR	0.710	25.7	D	275
	SB	L	0.050	14.3	B	175
		T	0.987	47.7	E	475
		R	0.249	1.1	A	50
	Overall		0.681	16.8	C	
US 92 at Forbes Road	EB	L	0.051	11.3	B	200
		T+TR	0.814	23.4	C	400
	WB	L	0.051	11.3	B	50
		T+TR	0.396	17.1	C	200
	NB	L	0.051	13.7	B	50
		TR	0.243	18.4	C	125
	SB	L	0.051	13.7	C	50
		TR	0.924	37.6	D	425
	Overall		0.690	22.8	C	
US 92 at Thonotosassa Road	EB	L	0.079	18.4	C	50
		T+TR	0.927	31.8	D	425
	WB	L	0.079	18.4	C	50
		2T	0.495	22.6	C	225
		R	0.236	0.1	A	50
	NB	L	0.146	32.5	D	50
		TR	0.400	29.3	D	125
	SB	L+LT	0.948	30.4	D	475
		R	0.047	1.9	A	50
	Overall		0.777	25.9	D	
Baker Street (US 92) at Alexander Street	WB	L	0.818	29.4	D	450
		T+TR	0.774	21.1	C	350
	NB	2L	0.922	39.7	D	450
		2T	0.369	16.8	C	200
	SB	T+TR	0.531	31.6	D	150
	Overall		0.818	26.4	D	
Thonotosassa Road (US 92) at Alexander Street	EB	LT+TR	0.993	33.3	D	500
	NB	T+TR	0.624	25.8	C	250
	SB	L	0.131	30.0	D	50
		2T	0.574	28.4	D	200
	Overall		1.000	30.8	D	

* Volume-to-capacity ratio

** Average delay in seconds per entering vehicle

*** Level of Service

TABLE 8-1
(3 of 3)
SIGNALIZED INTERSECTION CAPACITY ANALYSIS RESULTS
YEAR 2015 BUILD ALTERNATIVE

Intersection	Approach	Lane Group	Measure of Effectiveness			Vehicle Queue Length (ft/ln)
			V/C*	Delay**	LOS***	
Baker Street (US 92) at Wheeler Street	WB	LT+TR	0.999	41.8	E	475
	NB	L	0.806	32.4	D	375
		T	0.941	38.3	D	475
	SB	T	0.643	27.9	D	275
		R	0.046	6.4	B	50
	Overall		0.884	37.2	D	
Reynolds Street (US 92) at Wheeler Street	EB	LT+TR	1.004	35.9	D	500
	NB	T	0.924	42.2	E	400
		R	0.079	2.7	A	50
	SB	L	0.069	29.0	D	50
		T	0.760	34.0	D	275
	Overall		0.928	35.5	D	
Baker Street (US 92) at Collins Street	WB	LT	0.458	20.5	C	200
		TR	0.144	14.8	B	75
	NB	L	0.865	31.4	D	450
		T	0.169	13.8	B	100
	SB	TR	0.508	33.3	D	125
	Overall		0.647	25.9	D	
Reynolds Street (US 92) at Collins Street	EB	LT+TR	0.980	37.4	D	450
	NB	TR	0.950	37.0	D	425
	SB	LT	0.788	39.4	D	225
	Overall		0.935	37.5	D	
US 92 at Park Road	EB	L	0.035	12.4	B	75
		2T	0.620	23.2	C	275
		R	0.055	1.6	A	50
	WB	L	0.035	12.4	B	150
		2T	0.212	19.4	C	100
		R	0.015	1.6	A	50
	NB	2L	0.018	12.3	B	50
		3T	0.140	18.9	C	75
		R	0.358	2.2	A	125
	SB	2L	0.018	12.3	B	50
		3T	0.267	19.8	C	125
		R	0.083	1.7	A	50
	Overall		0.508	15.3	C	
US 92 at County Line Road	EB	L	0.044	16.7	C	50
		T+TR	0.310	22.8	C	125
	WB	L	0.044	16.7	C	100
		T+TR	0.762	28.4	D	300
	NB	L	0.044	8.8	B	50
		T	0.551	16.9	C	300
		R	0.057	1.1	A	50
	SB	L	0.044	8.8	B	100
		TR	1.039	53.2	E	550
	Overall		0.839	29.9	D	

* Volume-to-capacity ratio

** Average delay in seconds per entering vehicle

*** Level of Service

8.7 RIGHT-OF-WAY COSTS

Table 7-4, presented previously, summarized the estimated right-of-way acquisition costs by segment. These costs do not include right-of-way acquisitions for the placement of drainage retention ponds. Right-of-way acquisition costs for drainage retention ponds are discussed in Section 8.20 of this report. As shown in Table 7-4, the total estimated right-of-way acquisition cost (excluding right-of-way for retention ponds) is 52.7 million dollars.

8.8 CONSTRUCTION COST

Table 7-4, shown in Section 7, summarized the estimated construction costs by project segment. These costs were calculated with the use of the Department's Long-Range Estimate (LRE) method. As shown, the estimated total construction cost is 24.0 million dollars. This cost includes the construction cost of the four bridge replacements (at the creek crossings), but does not include the cost of special features such as noise barriers. The cost of the noise barriers is discussed in Section 8.15.6 of this report.

8.9 PRELIMINARY ENGINEERING AND CONSTRUCTION ENGINEERING COSTS

The costs of engineering (final design), and construction engineering and inspection were each estimated as 10.0 percent of the estimated 24.0 million-dollar construction cost. Therefore, these two efforts are expected to cost approximately a total of 4.8 million dollars.

8.10 RECYCLING OF SALVAGEABLE MATERIALS

During construction of the project, recycling of re-usable 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. Other materials, such as guardrail, signs, drainage concrete pipes, etc., will also be salvaged and re-used for regular maintenance operations if they are deemed to be in good condition.

8.11 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. Table 8-2 summarizes the total travel time savings per year at key signalized intersections. As shown, a total of approximately 435,600 hours of travel time is estimated to be saved during 2015 at the nine signalized intersections along the project. In addition, travel time savings will be experienced during travel between these intersections.

Based on statistical data developed from research on "before and after" studies² of roadways that experienced similar type of improvements as those proposed for US 92, it is expected that accident rates along US 92 will drop by as much as 65 percent. The proposed improvements are expected to eliminate or reduce traffic accident types such as head-on, rear-end, and angle-type collisions.

Other benefits expected to be realized by the public include better access to schools and other community facilities, improved emergency-vehicle response time and greater comfort for motorists as traffic operations will become more efficient.

8.12 PEDESTRIAN AND BICYCLE FACILITIES

Pedestrian facilities (sidewalks, crosswalks, handicap ramps, etc.) will be provided along all segments of US 92 expected to experience pedestrian activity. As shown in Appendix E, urban typical sections with 5-foot wide sidewalks on both sides are proposed along the following segments of US 92:

- From Garden Lane to Kingsway Road
- From Forbes Road to Mobley Street
- From Mobley Street to Whitehall Street along Baker Street
- From Gordon Street to County Line Road

TABLE 8-2
TRAVEL TIME SAVINGS IN THE YEAR 2015

Intersection With US 92	Delay Per Year In Hours		Savings In Delays Per Year (Hours)
	Without Improvement	With Improvement	
Falkenburg Road	165,277	6,223	159,054
Williams Road	52,292	12,700	39,592
Mango Road	77,738	12,092	65,646
Kingsway Road	61,471	19,246	42,225
McIntosh Road	47,178	6,531	40,647
Forbes Road	82,370	6,112	76,258
Thonotosassa Road	12,564	7,135	5,429
Park Road	6,184	3,911	2,273
County Line Road	6,470	2,019	4,451
TOTAL	511,544	75,969	435,575

Presently, sidewalks and other pedestrian facilities (crosswalks, push buttons, etc.) are provided in downtown Plant City between Mobley Street and Gordon Street. These facilities will be maintained and upgraded, if necessary.

Bicyclist needs will also be accommodated throughout the length of the project except for approximately 2.4 miles in downtown Plant City. As discussed previously in Section 7, to minimize right-of-way impacts and/or impacts on historic districts in Plant City, the existing typical section width will be maintained on Baker Street between Whitehall Street and Gordon Street; on Thonotosassa Road between Mobley Street and Reynolds Street; and on Reynolds Street between Thonotosassa Road and Gordon Street. The existing typical sections along these segments do not provide bicycle facilities. However, numerous local roadways carrying low traffic volumes, such as Risk Street, Malendon Street, Mahoney Street, etc., run parallel to US 92. These roadways could be used by bicyclists to bypass the heavily traveled US 92 in downtown Plant City.

Outside of downtown Plant City, as shown in Appendix E, standard four-foot-wide shoulders are proposed along the segments with the improved urban typical sections and rural typical sections for use by the bicyclists.

8.13 SAFETY

The proposed improvements will upgrade US 92 to a safe and efficient transportation facility. The increased roadway capacity is expected to result in less congestion and, therefore, reduce the probability for accidents. Provision of a median separator between the eastbound and westbound traffic will reduce head-on vehicle collisions. Addition of a second lane in each direction will allow for easy and safe passing of slow-moving vehicles. The four-foot-wide paved shoulders will allow bicyclists to share the roadway with motor vehicles while observing the rules of the road. The placement of sidewalks, crosswalks, pedestrian signal flashers 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 FDOT's minimum roadway design standards. Access control techniques to promote safe and efficient traffic circulation will also be used.

According to "before and after" safety studies² performed on facilities that have undergone the same type of improvements, widening of US 92 according to the above-described standards could result in a reduction of traffic accidents by as much as 65 percent. The reduced traffic accident types include head-on, rear-end, and angle-type collisions.

8.14 ECONOMIC AND COMMUNITY DEVELOPMENT

As previously presented in Section 4, transportation plans developed separately by the Tampa Urban Area Metropolitan Planning Organization (MPO), Plant City, and Unincorporated Hillsborough County call for extensive improvements along US 92 within the project limits. These transportation plans were developed after thorough evaluation of the future population and development growth in the region of the project. The proposed US 92 improvements, developed through the process previously described in Section 7, respond to and fully accommodate the projected need for upgrading US 92 to a multi-lane facility. As noted in Section 4.3 of this report, on February 1, 1994 the MPO approved the recommendations of the US 92 PD&E study with the condition that a Plan Amendment and multi-modal corridor analysis will be necessary before additional widening of US 92 from four to six lanes takes place.

Improved connection with the City of Tampa and the resulting reduction of travel times will draw new private development in the City of Plant City area and enhance the attractiveness of its residential opportunities. New employment opportunities will be generated and the tax base will be enlarged, both to the benefit of the area's economy.

8.15 ENVIRONMENTAL IMPACTS

8.15.1 Land Use

The future land uses in the vicinity of the project were previously shown in Figure 3-10 (A and B). Since, as discussed in Section 4.3, the proposed improvements of US 92 are consistent with the long-range planning for this region of Hillsborough County, they supplement the future land use plans without substantial adverse impacts.

8.15.2 Community Cohesion

Impacts from the proposed improvements of US 92 on community cohesion could occur in one of the following two ways:

- Relocation of individual residences within an area of rural residential housing fronting US 92.
- Impacts along the fringe of an established neighborhood. In this case, the neighborhood will continue to function with minimal disruption.

Since there are only a few established neighborhoods along the project in addition to downtown Plant City which serves as the core of the community, most of the residences to be relocated are individual homes. As described earlier in Section 7, no extensive improvements and/or right-of-way takings are proposed in downtown Plant City between Mobley Street and Park Street.

8.15.3 Wetland Impacts and Mitigation

Pursuant to Executive Order 11990, dated May 23, 1977, guidelines have been established to avoid long-term and short-term adverse impacts to wetland resources and to avoid new construction in wetlands whenever there is a practicable alternative. First, it must be

demonstrated that avoidance of wetland areas has been accomplished to a reasonable extent. Second, minimization techniques must be employed before mitigation of wetland loss will be considered.

Adverse impacts to wetland areas have been avoided completely or minimized by shifting the road alignment. However, unavoidable losses of wetlands will likely result from improvements to US 92. As previously shown in Table 7-4, a total of approximately 4.0 acres of undisturbed wetland and 4.0 acres of disturbed or man-made wetlands should be expected to be impacted from the construction of the proposed US 92 improvements. No pristine wetlands exist in the vicinity of the project.

It is anticipated that a Department of the Army, Section 404, individual permit will be required by the USACOE for wetland impacts. In addition, it is anticipated that permits will be required by FDEP/SFWMD, with wetland mitigation required as a condition of the permit. The Wetland Evaluation Technique (WET 2.0) was used to analyze the function of the wetlands encountered along the project. After completion of this evaluation, mitigation measures for wetland impacts were recommended. The primary approach of the study team will be to mitigate for wetland impacts within the respective drainage basin. Because the configuration of the project is long and linear, and is traversing three major drainage basins, it may not be possible to mitigate for all project impacts in one location, although this option should be considered. Several restoration sites (drained or filled wetlands) have been identified along the project corridor and are being investigated for their suitability for restoration. Restoration is expected to entail backfilling of any existing ditching or removing fill and re-vegetation of the sites with hydrophytic vegetation.

A complete description of the proposed mitigation areas will be submitted at pre-application meetings with FDEP and SFWMD. The proposed plan will be consistent with comments received during the review of this permit coordination package and with other comments received during the course of the study from the permitting and permit review agencies.

The following is a preliminary list of mitigative options along the project corridor:

1. Construction of roadside ditches where practicable (entire project).
2. Widening of Baker Creek (north of US 92) and planting of wetland vegetation.
3. Enhancement opportunities south of US 92 along Baker Creek (old peat farm).
4. Improvements to all "riverine" systems (removal of nuisance species, bank stabilization, removal of sedimentation around bridge, single spans, etc).
5. Enhancements along Spartman Branch (Wetland 17P) near US 92 (removal of berms, re-establishment of hydroperiod in affected areas, re-vegetation).
6. Re-establishment of hydroperiod at Wetland 16A and possible hydrologic connection to Spartman Branch (an historical connection is likely).
7. Most of the drained wetlands are currently being actively farmed, however, augmentation of disturbed wetlands needs to be explored further.
8. Planting of appropriate wetland vegetation along the littoral fringe of project stormwater ponds.
9. Creation of wetland along upland boundary of Wetland 5P (emergent wetland).
10. Creation of wetlands in disturbed upland areas within appropriate watershed.

Calculating a 4:1 compensation ratio for relatively undisturbed systems and 1.5:1 for disturbed systems, a total of approximately 22.0 acres may be required for compensatory mitigation. These ratios are estimates only and are subject to negotiation.

There are no practical alternatives for this project that avoid impacts on wetlands. All reasonable measures will be taken to minimize harm to the wetlands. Short-term construction related impacts will be minimized by adherence to the FDOT "Standard Specifications for Road and Bridge Construction."

8.15.4 Threatened and Endangered Species

After extensive research including literature review and field surveys by biologists and

representatives of the responsible environmental agencies, it was determined that no listed species (threatened nor endangered) exist in the vicinity of the project area. The United States Fish and Wildlife Service (USFWS) has concurred with this finding and in a letter dated August 17, 1993 has stated that "...the proposed project is not likely to adversely affect federally listed threatened or endangered species."

8.15.5 Hazardous Materials and Petroleum Contaminated Site Impacts

As previously shown in Table 7-4, the preferred alignment alternative will impact a total of 9 sites with potential hazardous material contamination and 34 sites with potential petroleum contamination. A Level II contamination assessment is to be performed on these sites prior to the right-of-way acquisition phase of the project.

8.15.6 Noise Impacts

As previously shown in Table 7-4, a total of 244 first and second row noise-sensitive receivers are impacted by the preferred alignment alternative. Most of the noise-sensitive receivers are residences scattered throughout the length of the project. The number of the receivers reflects the efforts of the study team to minimize residential relocations. Many remaining homes will be exposed only to minor noise level increases.

According to the noise barrier analysis presented in the Noise Study Report², noise barriers are recommended at the following two locations:

- Shangri-La subdivision at Kings Row, and
- Shangri-La subdivision at Queens Court.

Noise barriers at these locations will provide abatement for a total of 15 first-row receivers. The other locations analyzed did not meet the current FDOT criteria for economic reasonableness and barrier effectiveness. According to the noise analysis, an eight-foot-high barrier will achieve

adequate insertion loss at both locations. It is estimated that the total cost of the barrier walls should be approximately \$0.25 million.

In addition to the long-term noise impacts, short-term noise impacts may occur along US 92 due to the operation of the construction equipment and vehicles. Construction noise will be controlled by requiring the contractor(s) to adhere to the controls listed in the FDOT "Standard Specifications for Road and Bridge Construction."

8.15.7 Air Quality Impacts

The project alternatives were subjected to the graphical Air Quality Screening Test for Urban Areas. The screening test makes various conservative worst-case assumptions about the meteorology, traffic and site conditions. It uses the assumptions in the MOBILE4.1 and CALINE3 models to produce a series of curves that can be used to determine critical distance. The critical distance is the closest distance a receptor can be to a given intersection without any chance of a significant air quality impact. The results of the analyses were presented in the Air Quality Report⁴.

The intersection of Mango Road and US 92 was modeled because it represented the worst-case intersection. The areas adjacent to this intersection consist primarily of commercial land uses. No sensitive receptors are within the critical distance, which was calculated by the screening test to be less than ten feet. Therefore, this project will not have a significant impact on air quality.

This project is in an air quality non-attainment area which has transportation control measures in the State Implementation Plan (SIP) approved by the U. S. Environmental Protection Agency (EPA) on June 15, 1981. The Federal Highway Administration (FHWA) has determined that both the transportation plan and the transportation improvement program conform to the SIP. The FHWA has determined that this project is included in the Hillsborough County Transportation Improvement Plan (TIP); therefore, this project conforms to the SIP.

8.15.8 Water Quality Impacts

The proposed project will have minimal impact on water resources in the project area. The primary concern is the potential for adverse effects of stormwater due to vehicular-related pollutants possibly associated with highway runoff. Drainage along the project will be conveyed via roadside swales and various collection systems to several streams before discharging to the Tampa Bypass Canal, the Hillsborough River and the Alafia River.

The impacts of this discharge have been determined according to the guidelines contained in FHWA publications, Constituents of Highway Runoff (1981), Effects of Highway Runoff on Receiving Waters (1987) and Pollutant Loadings and Highway Stormwater Runoff (1990). The appropriate stormwater management practices contained in FHWA publications, Management Practices for Mitigation of Highway Stormwater Runoff Pollution (1985) and Retention, Detention, and Overland Flow for Pollutant Removal from Highway Stormwater Runoff: Interim Guidelines for Management Measures (1988) will be used to mitigate stormwater runoff impacts.

With the exception of the existing one-way pair in Plant City, the proposed project will necessitate the complete replacement of the existing roadway drainage system with new stormwater management systems designed to meet current standards. Stormwater management will be provided in accordance with Chapters 40D-4 and 40D-40, Rules of the Southwest Florida Water Management District (SWFWMD) and FDOT Rule 14-86, Florida Administrative Code (F.A.C.) (critical duration analysis). Water quality will be provided in accordance with Chapter 17-25 F.A.C., Rules of SWFWMD.

The impacts of the proposed project on surface water quality will essentially be limited to the adverse effects of erosion during construction. These potentially adverse effects of construction are considered temporary and minimal. This project is not expected to have any affect on groundwater, recharge areas, or public water supplies. This will be affected by adherence to Chapters 17-3 and 17-25, F.A.C. and Section 104 of the FDOT "Standard Specifications for Road and Bridge Construction."

8.16 UTILITY IMPACTS

As previously discussed in Section 3.1.12 and summarized in Table 3-7 of this report, a number of utility distribution lines are located within the existing right-of-way of US 92. Implementation of the recommended alignment of the US 92 improvements will require relocation of some utilities. Table 8-3 summarizes the affected utilities.

In addition to the utilities summarized in Table 8-3, two utility crossings exist along US 92. One of these crossings is located at Mango Road and consists of buried fiber optic cable owned by Wintel. The second utility crossing is located at Falkenburg Road and consists of a buried natural gas main owned by the Florida Gas Transmission Company.

As stated in Section 3.1.14, three railroad crossings exist along US 92, all in Segment 6. These crossings have been recently upgraded as part of the US 92 resurfacing project from Thonotosassa Road to County Line Road. Since no major improvements are proposed along Segment 6 as part of this project, the railroad crossings will not be affected.

8.17 MAINTENANCE OF TRAFFIC

US 92 is a major arterial that, in addition to Interstate 4 (I-4), provides an alternative route in connecting the City of Tampa with the City of Plant City and the eastern region of Hillsborough County. US 92 also provides access to numerous residences as well as private businesses, schools, and other community facilities. Due to its importance, US 92 should remain functional throughout the duration of the construction activities. The existing number of travel lanes should be maintained to the maximum extent possible. Selection of the south or north alignments and rejection of the center alignment for all segments minimizes the amount of temporary pavement construction which is required to keep US 92 functional. The following construction sequence will help maintain traffic operations along US 92:

**Table 8-3
Utilities Impacted by the Preferred Alignment**

Owner	Utility	Aerial (A) or Buried (B)	Side of US 92	Approximate Location
Tampa Electric Company (TECO)	13kv trans. line	B	north	at I-75 bridge
		A	north	Parsons Road to Gallagher Road
		A	north	Fritzke Road to 1,500 east of Bethlehem Road
	69kv trans. line	A	north	Haggard Road to Thonotosassa Road
		A	north	Gordon Street to County Line Road
		A	north	Walter Road to Woodrow Wilson Street
GTE	Power Substation *	N/A	south	East of Peach Avenue
	telephone cable	A	south	Falkenburg Road to I-75
		B	south	I-75
		A	south	I-75 to east of Taylor Road
		A	south	McIntosh Road to Fritzke Road
		A	north	Fritzke Road to Bethlehem Road
Paragon Cable	distribution lines		north	Haggard Road to Thonotosassa Road
		A	north	Garden Lane to Falkenburg Road
		B	north	I-75
		A	south	Mango Road to Peach Avenue
		A	north	Parsons Road to Gallagher Road
		A	north	Fritzke Road to 1,500 feet east of Bethlehem Road
Plant City Utilities	2" water main 6" water main sewer	A	north	Haggard Road to Enterprise Street
		A	north	Park Road to County Line Road
		B	south	Gordon Street to Park Road
		B	south	Gordon Street to Park Road
		B	north	Gordon Street to Park Road

* The TECO power substation is located outside the existing right-of-way line. After coordination with TECO representatives, it was determined that the required right-of-way acquisition from the substation's parcel will not result in the substation's relocation. It was estimated that the equipment relocation within the TECO substation would cost \$50,000.

1. Relocate existing utilities within the right-of-way.
2. Construct temporary pavement as necessary.
3. Construct ponds and stormwater sewer system, if necessary, including partial culvert and bridge crossings along the portions of the roadway that is contiguous to the new right-of-way line.
4. Construct the new roadway portion (ditches, sidewalks, curb and gutter, travel lanes, etc.) in the portion of the roadway that is contiguous to the new right-of-way line.
5. Divert traffic to the completed travel lanes of the new roadway and construct the remaining portion of the project.

Section 8.21.2.4 of this report presents considerations to maintain US 92 functional while replacing the bridges at four creek crossing locations.

8.18 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 and agencies, and business owners. The program included a kickoff meeting, an Advance Notification Package, an Alternatives Public Meeting, a Public Hearing, and numerous meetings with civic groups. The public involvement program and the results of its implementation are documented in the Comments and Coordination Report⁶. A brief summary of the major steps in this process is presented in this section.

8.18.1 Kick-Off Meeting

On November 6, 1991, local public officials and local government staff were invited to attend the project kick-off meeting. The purpose of this meeting was to introduce the project and to obtain comments regarding issues and concerns.

Approximately 15 people attended the meeting, representing Plant City (Engineering and Police Departments), Hillsborough County (Public Utilities and Planning), and the Tampa Urban Area Metropolitan Planning Organization. A list of the comments expressed at the meeting is provided in Appendix G.

8.18.2 Advance Notification

In accordance with the PD&E guidelines, an Advance Notification package was distributed for this project on November 20, 1991. A list of the agencies that received the Advance Notification package and the comments of the three agencies that responded (the Florida State Clearinghouse Executive Office of the Governor, the Florida Department of Environmental Regulation, and the Department of State Division of Historical Resources) are provided in Appendix G.

8.18.3 Alternatives Public Meeting

An Alternatives Public Meeting was held by FDOT on October 15, 1992 from 5:00 to 8:00 P.M. at the Tomlin Junior High School, 501 North Woodrow Wilson Boulevard, Plant City, Florida. The meeting was an informal workshop and consisted of a slide show, 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 and study team staff were available to explain the presented information and answer questions.

Three hundred people registered as attending the workshop. Comments were solicited from the public on a form which was attached to an informational handout distributed at the meeting. Written comments were received from 64 people. A memo provided in Appendix G summarizes the comments by segment number. As shown in the memo, no discernable patterns were indicated by the comments in terms of favoring or opposing specific alternatives. Only five comments (8 percent) favored the No-Project alternative, while four comments requested copies of specific aerial photos and alternatives.

8.18.4 Public Hearing

The Public Hearing was held on September 21, 1993, at the Plant City High School Auditorium, 1 Raider Place, Plant City, Florida, from 5:00pm to 8:00pm. The following techniques were used to notify the public about the meeting: letters to property owners within 300 feet of the centerline of the preferred "build" alternative, letters to elected and appointed officials, two display ads in **The Courier** (August 25, and September 15, 1993), one advertisement in the **Florida Administrative Weekly** (August 27, 1993), one display ad in the **Tampa Tribune** (September 12, 1993), a press release dated September 7, 1993, and a newsletter.

From 5:00pm to 6:30pm, a project slide show was available for viewing in addition to displays of project information. Department and study team staff were available to explain the information and respond to questions. At 6:30pm, a formal presentation regarding the project was made, followed by the opportunity for the public to formally make statements about the project.

Over 200 people attended the hearing. Six people made comments at the Public Hearing during the formal public testimony period and five people made statements to the court reporter before and after the formal presentation. Thirty-eight written comments were submitted at the Public Hearing and through October 1, 1993, the closing date for comments to be included in the official Public Hearing transcript. The comments and the FDOT responses are summarized in the Comments and Coordination Report⁵.

Generally, comments about the proposed improvements along US 92 related to:

- Access and specifically the location of proposed median openings;
- Impacts to remaining parcels, including residences and business operations; and
- Environmental impacts.

During the comment period, one of the public meeting attendees suggested that the centered

alignment along the section of Segment 4 between Fritzke Road and Bethlehem Road would be more appropriate (instead of the proposed southern alignment) because it would reduce residential relocations. The study team evaluated this suggestion and found that this revision reduces residential relocations by five households. The centered alignment increases the cost by approximately \$0.77 million (mainly administrative costs due to the increase in the number of properties involved) and requires the relocation of two additional businesses.

The shift to the centered alignment provides for greater community cohesion in this predominantly rural residential area. Several of the comments received noted that most of the homes are set back from the roadway and the centered alignment provides a more equitable distribution of impacts. Acquiring property and removing most of the housing from one side of the road also has the potential to increase requests for commercial rezoning, and decrease the number of residential units and the feel of a community within the area.

FDOT communicated the potential to revise the preferred alignment of US 92 between Fritzke and Bethlehem roads to the owners of the adjacent properties. Letters and plans describing the change were sent to the affected property owners located within 300 feet on both sides of US 92 on December 3, 1993, and a comment period was held open until December 15, 1993. Thirteen comments were received, of which six were in favor of the change, two opposed the change, and one was undecided. The remaining comments were requests for more information. As a result of these responses, FDOT decided to incorporate the centered alignment for this section in the preferred alternative set.

8.19 VALUE ENGINEERING

The study team recommendations on the type and location of the US 92 improvements were reviewed by a Value Engineering (VE) review team formed by FDOT staff. The VE review was performed from December 3, 1992 to May 18, 1993.

The VE team concurred with the study team's recommendations for all segments except Segment

8 (from Park Road to County Line Road). For this segment, the VE team recommended that the four-lane hybrid typical section that would share the existing drainage ditch on the south side of US 92 with the CSX Railroad should be implemented in lieu of the four-lane urban typical section. According to VE team cost estimates, savings of approximately \$946,000 could be realized by this change. The proposal of a hybrid typical section with shared use of the drainage ditch was presented to CSX Railroad, which responded that such a plan is unacceptable. After this response, the VE team withdrew its recommendation.

As a result of comments by the VE team, the study team re-evaluated its recommendation regarding the typical section for Segment 5. As proposed prior to the VE team review, Segment 5 (from Forbes Road to Mobley Street) would be improved to provide an urban divided four-lane typical section in a 98-foot-wide ROW. As such, Segment 5 would be the only segment of US 92 west of Plant City that would not allow expansion to six lanes if the need arose in the future. Given the high potential for urbanization and development occurring along Segment 5, especially after construction of the improvements, it was decided to provide the expandable-to-six-lanes urban typical section (122-foot-wide ROW). This change would eliminate future ROW acquisitions when both property values and the number of relocations would be much higher. Section 7.4.3 of this report discusses in detail the impacts of providing the expandable typical section along Segment 5.

8.20 DRAINAGE

A preliminary evaluation of the stormwater attenuation system needs was performed for this project after the selection of the preferred typical section and alignment for each segment was finalized.

Existing high and low points along the roadway were used to determine basin boundaries. These basin boundaries were then used to find potential pond sites and to determine the anticipated hydrology needs of the pond sites.

Runoff hydrographs were developed for a mile of the various typical sections. The hydrographs are based on on-site area only. The hydrographs were developed using the following criteria:

- 25 year/24 hour storm intensity (in open basins)
- 100 year/24 hour storm intensity (in closed basins)
- SCS Type II Modified hydrograph
- 256 hydrograph shape factor
- FDOT rainfall depth isohyets
- Antecedent moisture condition 2
- TR55 generated curve numbers
- TR55 generated time of concentration

The different hydrographs were created for both the proposed typical section and the existing typical section. The runoff curve numbers for the hydrographs varied according to the different soil types. In Segments 2 and 3, where there is a closed basin, additional hydrographs were created for the 100-year storm criteria.

The net difference in the runoff volumes generated by the hydrographs was calculated for each soil group and typical section. The attenuation volume was then calculated by the sum of the percent of soil type multiplied by the runoff generated by that typical in that soil type. That volume was then multiplied by the actual length of the roadway in miles. The general equation used is:

$$V_{\text{Total}} = L_{\text{Actual}} \times [\%_A V_A + \%_C V_C + \%_D V_D]$$

where,

V_{Total}	=	Total runoff generated by the basin in question
L_{Total}	=	Actual length in miles of the basin
$\%_{A,C,D}$	=	Percent of soil types A, C, and D in basin
$V_{A,C,D}$	=	Increase of runoff generated in A, C, and D soils per mile

In addition, a treatment volume was calculated based on 1" of runoff on all of the proposed pavement. This treatment volume was then added to the attenuation volume to determine the volume requirements of the potential pond. The volumes calculated are in units of acre-feet.

It is anticipated that if an off-line pond system is used at some locations, compensatory treatment can be utilized to avoid purchasing additional pond sites for direct treatment.

The selection of potential pond sites was based on the following:

- availability of land
- avoidance of wetlands
- avoidance of potentially contaminated sites
- proximity to an outfall

Appendix F illustrates on aerial photography the preliminary locations of the stormwater retention ponds. Table 8-4 provides a summary of the volume and right-of-way costs of each of the 23 retention ponds that constitute the stormwater attenuation system for this project. It should be noted that the locations of these ponds were selected based on preliminary data and should be re-evaluated based on detailed drainage analysis during the final design phase.

8.21 STRUCTURES

As discussed in Section 3.2 of this report, there are eight bridge structures within the project limits. Four of these bridges are associated with the crossing of northbound and southbound I-75 (mainline and ramps) over US 92, while the remaining four bridges span an equal number of creeks crossing US 92.

Table 8-4
STORMWATER RETENTION PONDS SUMMARY

Pond Number*	Segment Number	Volume (acre-feet)	Right-of-Way Cost (\$)
1	1	1.71	254,000
2	2	4.53	235,000
3	2	5.57	288,000
4	2	1.52	173,000
5	2	2.01	200,000
6	2	2.63	219,000
7	3	3.11	507,000
8	3	0.70	238,000
9	3	0.59	683,000
10	3	1.31	163,000
11	4	0.51	206,000
12	4	1.73	333,000
13	4	2.17	367,000
14	4	2.76	813,000
15	4	1.94	264,000
16	5	2.88	371,000
17	5	0.62	193,000
18	5	0.81	114,000
19	8	0.84	249,000
20	8	0.80	129,000
21	8	0.42	375,000
22	8	0.12	167,000
23	8	0.99	168,000
TOTAL		40.27	6,709,000

* Pond numbers correspond to the numbers shown on the aerial photographs in Appendix F

8.21.1 I-75 Bridges

The widening of US 92 is not expected to affect the I-75 bridges. As presented in Section 7.2, there is adequate clearance under all four bridges to accommodate either a four-lane non-expandable or a four-lane expandable to six lanes typical section for US 92.

Since Segment 2 (where the four I-75 bridges are located) will provide an expandable to six lanes typical section, it is recommended that for consistency the expandable typical section, which is depicted on Figure 7-5, be provided under these bridges.

8.21.2 Creek Crossing Bridges

The locations of the four creek crossing bridges are as follows:

- Kennedy Hill Creek (Bridge No. 100024) at milepost 8.569 (Segment 2)
- Baker Creek Branch (Bridge No. 100025) at milepost 12.059 (Segment 3)
- Pemberton Creek Slough (Bridge No. 100098) at milepost 15.010 (Segment 4)
- Pemberton Creek (Bridge No. 100097) at milepost 16.640 (Segment 5)

A Bridge Concept Report⁶ has been prepared, which describes the existing condition of these bridges, evaluates replacement alternatives, and concludes with recommendations of the appropriate improvements.

As noted in Section 3.2, the inventory rating of all bridges is currently sufficient. Evaluation of four factors, however, led to the recommendation for replacement of all creek crossing bridges. These factors are as follows:

1. According to the approved Location Hydraulics Report⁷, replacement of the existing structures is required in order to span the proposed bottom channel and stabilized side slope, and to provide adequate maintenance area.

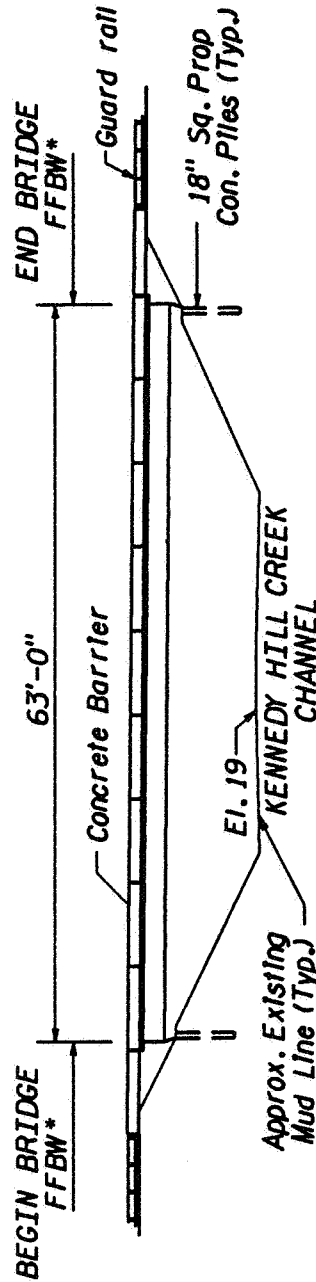
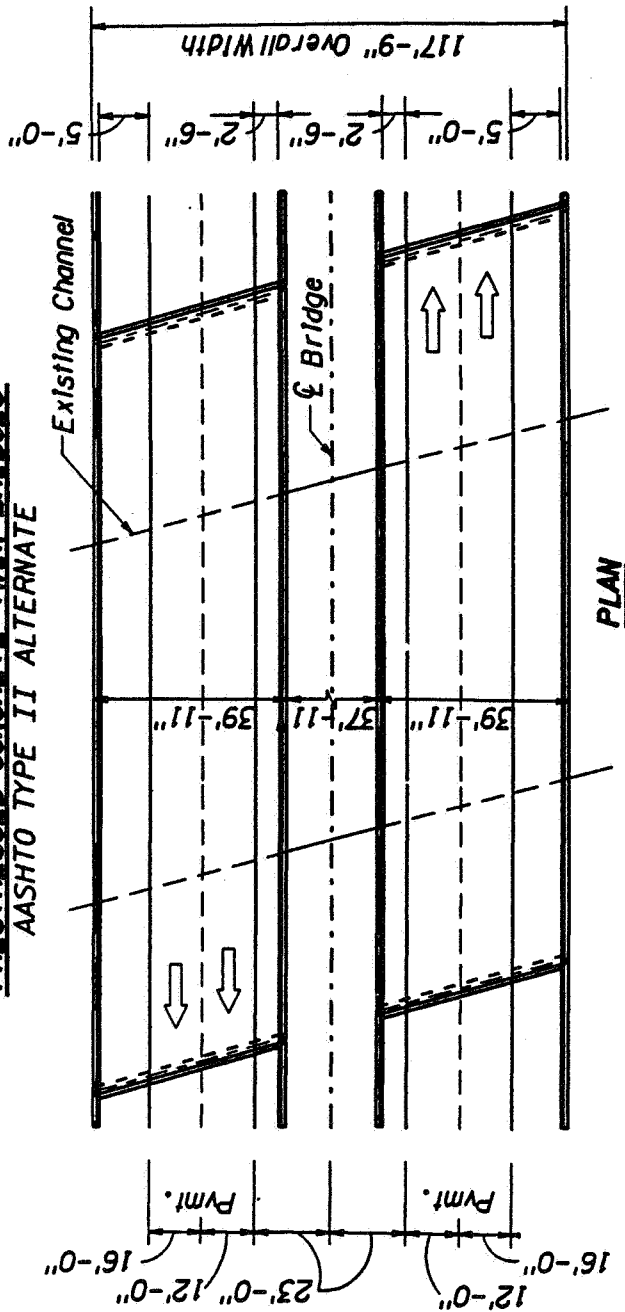
2. These structures were built in 1930 and reconstructed in 1943. For a major widening project of this nature, it is not recommended to widen the existing structures when the existing structures make up a minor portion of the total improvements. In addition, according to the inspection reports, all bridges are deemed functionally obsolete due to substandard handrails and clear zones.
3. Some of the existing structures are placed normal to the roadway alignment while the channel is running with a skew angle. Widening of these structures will encroach upon the channel cross section.
4. The centerline of the proposed improvements along US 92, due to the widening, will be offset by a considerable distance from the centerline of the existing bridges.
5. The remaining expected life of the bridges after completion of this project will be minimal.

8.21.2.1 Design Considerations

All proposed bridges are non-navigable waterway crossing structures. Basic criteria and assumptions in determining bridge lengths were: 1) the approved final Location Hydraulics Report⁷ which establishes that the bridge length should span the proposed channel and stabilized side slope and allow for adequate maintenance area, and 2) provide a minimum of six feet of clearance over annual high water elevation at the centerline of the channel. The latter will be verified during final design based on more detailed analyses. Design was performed in accordance with currently accepted standards which include "Florida Department of Transportation Design Guidelines" and "AASHTO Standard Specifications for Highway Bridges".

All proposed bridge cross sections include two lanes in each direction. Sidewalks are provided on both sides for the Kennedy Hill Creek Channel and Spartman Creek Channel, and raised median is proposed for the bridge at Spartman Creek Channel. The proposed typical sections for all four bridges are shown on Figures 8-3A through 8-6B.

PRESTRESSED CONCRETE TWIN BRIDGES
AASHTO TYPE II ALTERNATE

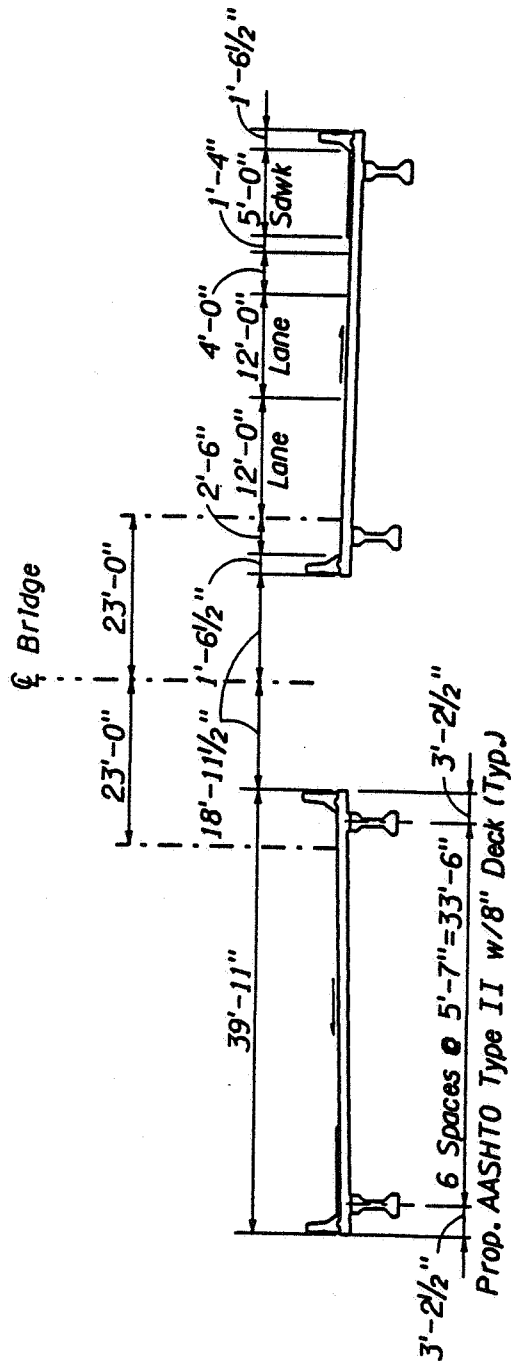


* FRONT FACE BACK WALL

US 92 (SR 600) PD&E STUDY
 HILLSBOROUGH COUNTY
 FROM GARDEN LANE TO COUNTY LINE ROAD

PROPOSED BRIDGE TYPICAL SECTION
 KENNEDY HILL CREEK CHANNEL

FIGURE
 8-3A



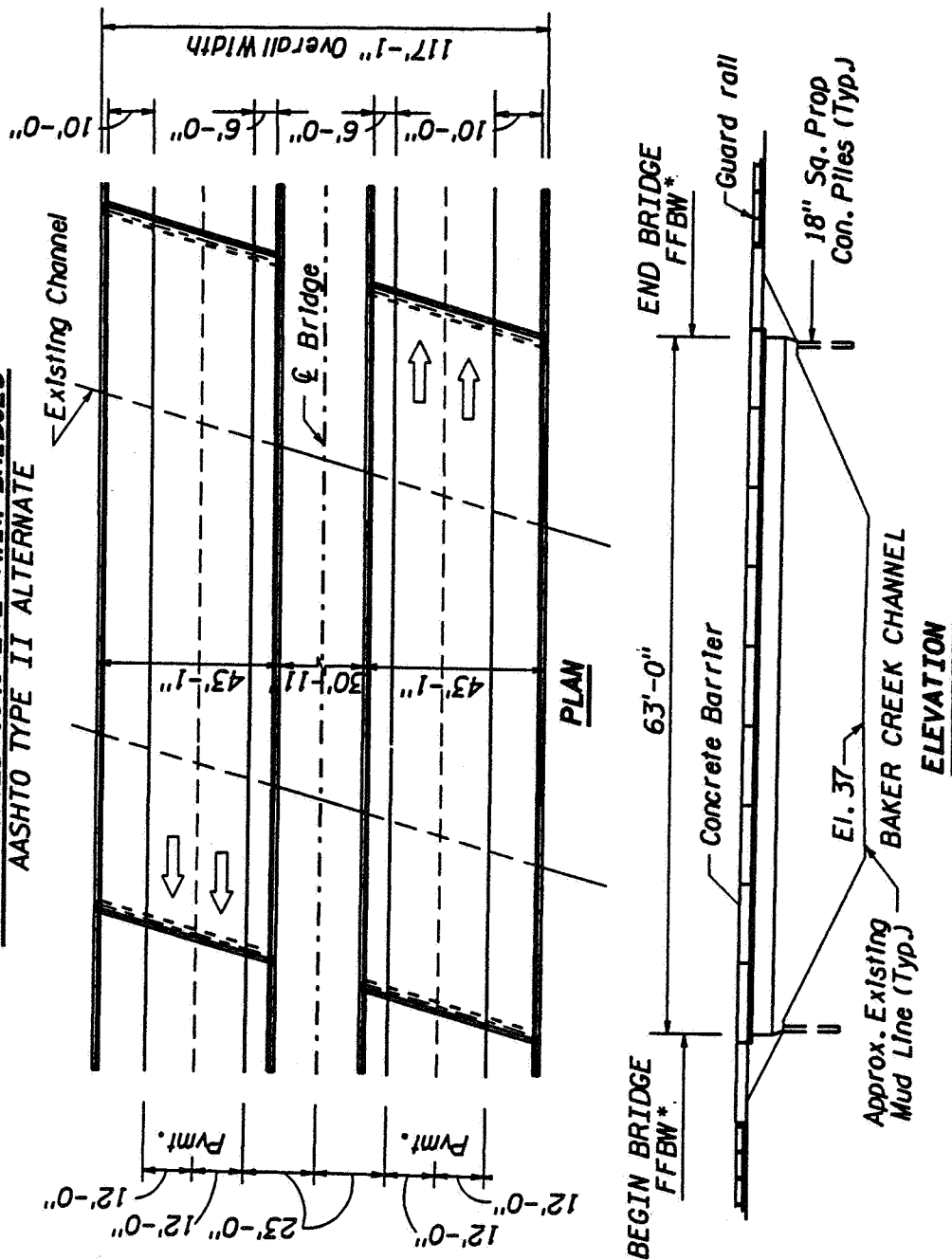
TYPICAL SECTION

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

PROPOSED BRIDGE TYPICAL SECTION
KENNEDY HILL CREEK CHANNEL

FIGURE
8-3B

PRESTRESSED CONCRETE TWIN BRIDGES
AASHTO TYPE II ALTERNATE

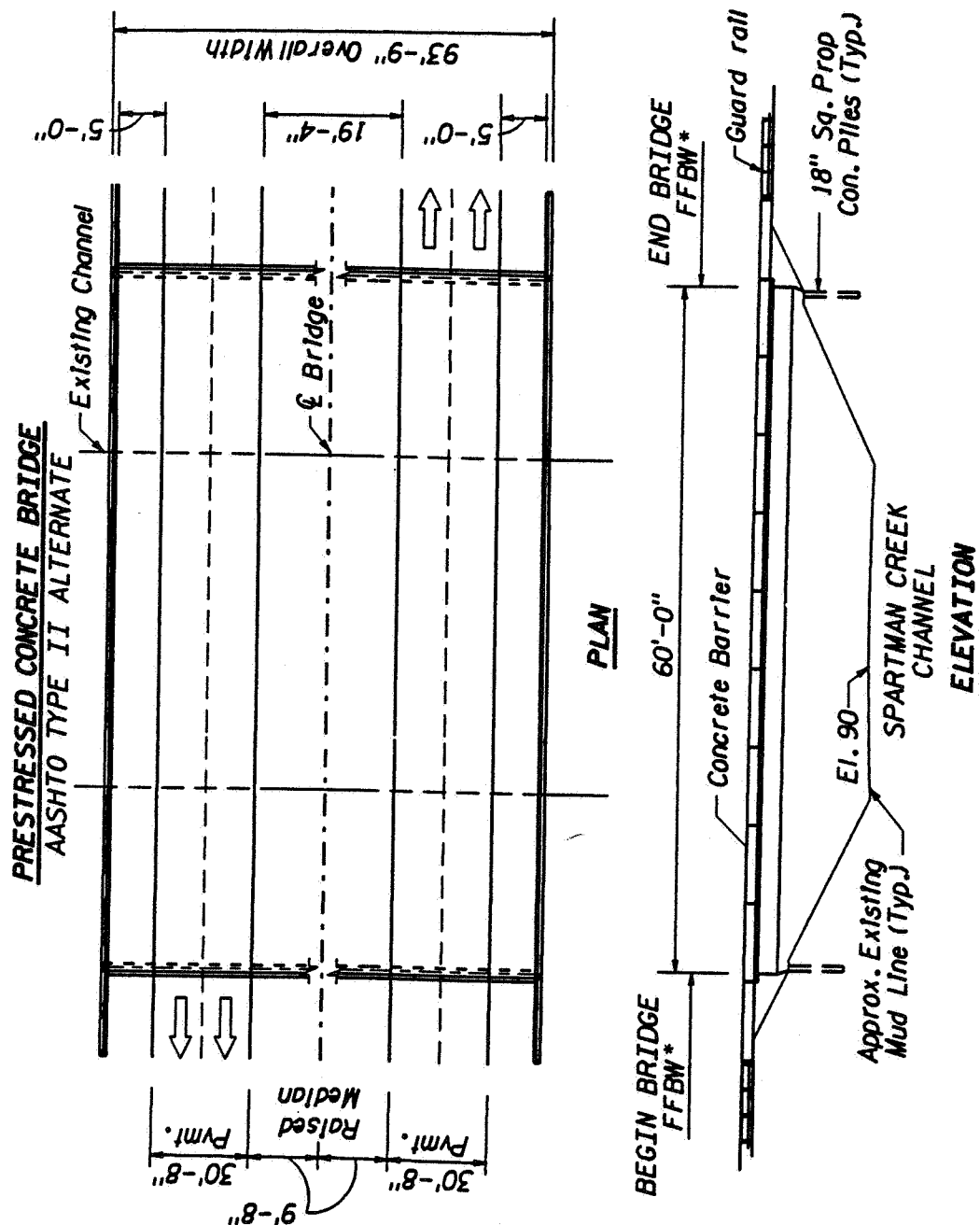


* FRONT FACE BACK WALL

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

PROPOSED BRIDGE TYPICAL SECTION
BAKER CREEK CHANNEL

FIGURE
8-4A

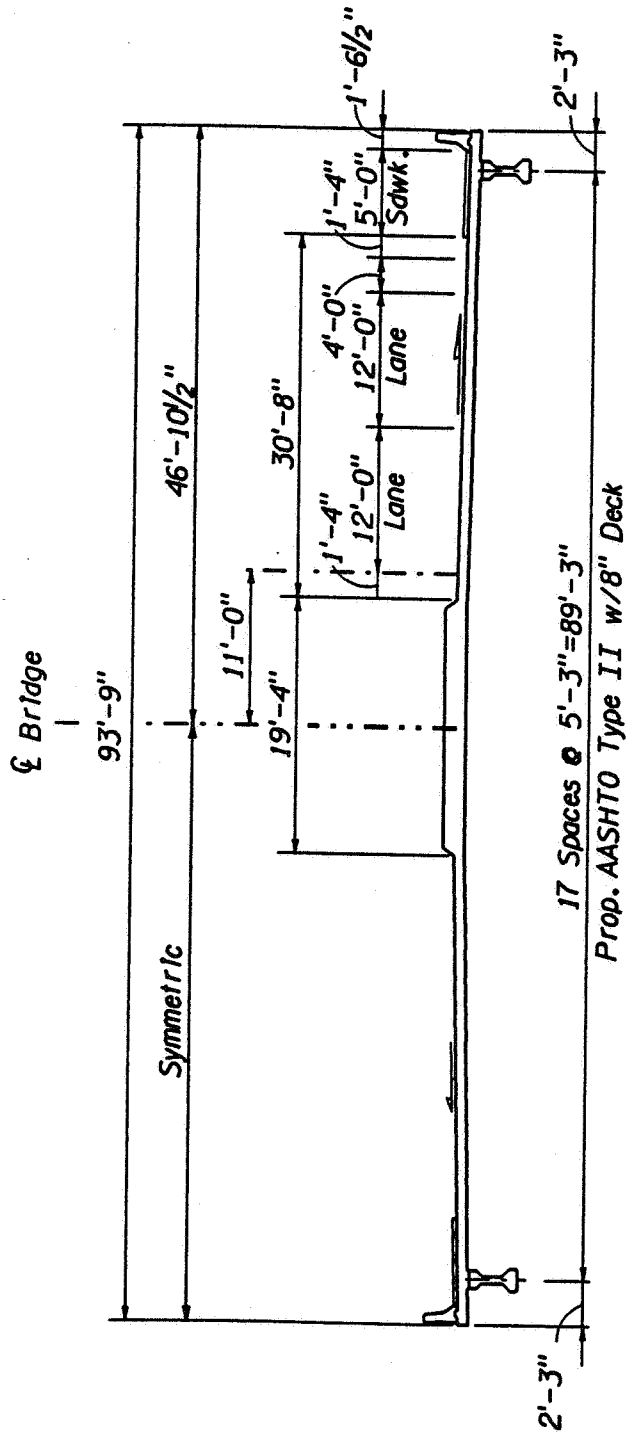


* FRONT FACE BACK WALL

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

PROPOSED BRIDGE TYPICAL SECTION
SPARTMAN CREEK CHANNEL

FIGURE
8-5A

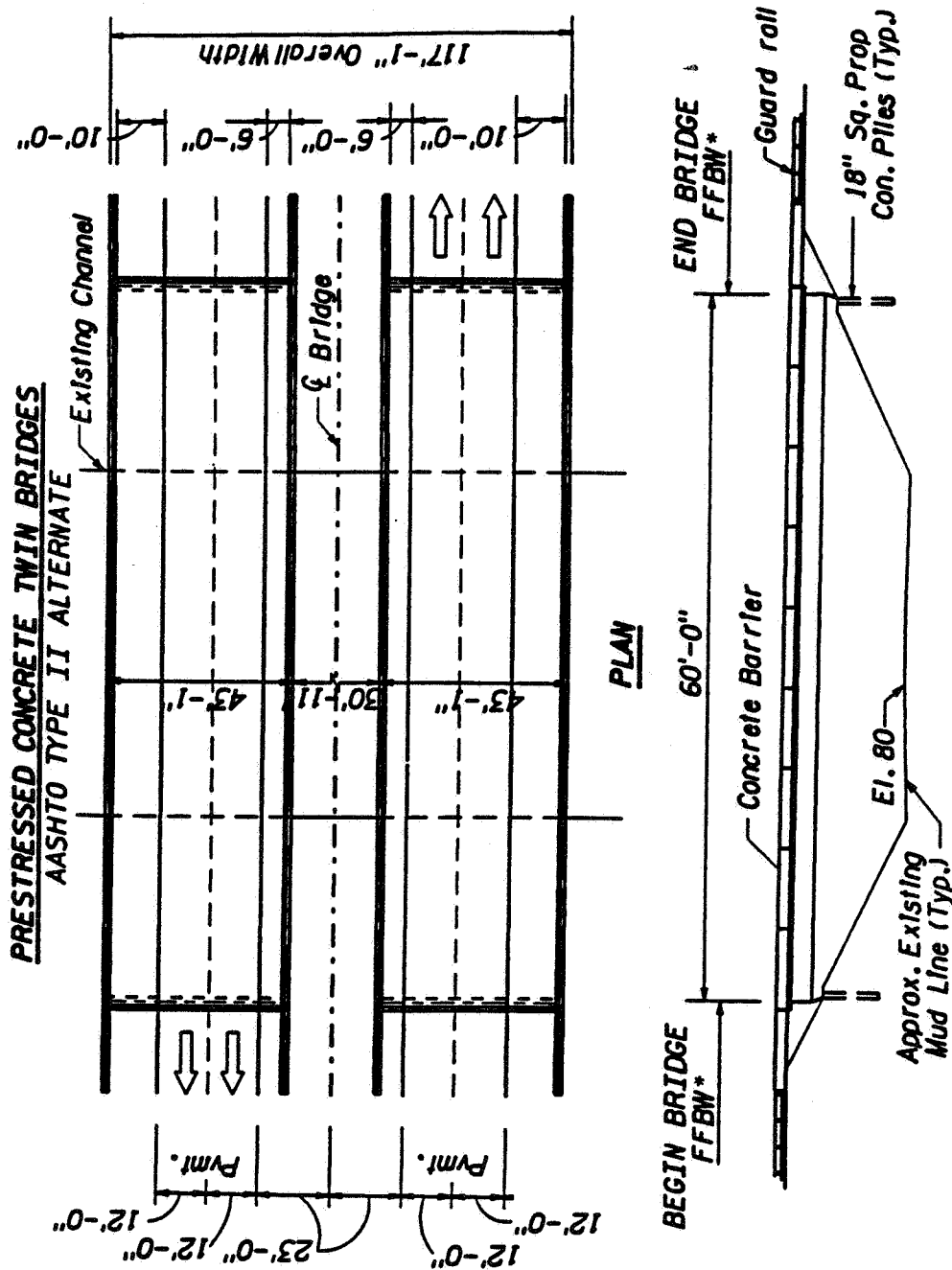


TYPICAL SECTION

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

PROPOSED BRIDGE TYPICAL SECTION
SPARTMAN CREEK CHANNEL

FIGURE
8-5B

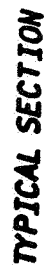


*** FRONT FACE BACK WALL**

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

PROPOSED BRIDGE TYPICAL SECTION
TRIBUTARY OF PEMBERTON CREEK CHANNEL

FIGURE
8-6A



TYPICAL SECTION

PROPOSED BRIDGE TYPICAL SECTION
TRIBUTARY OF PEMBERTON CREEK CHANNEL

FIGURE
8-6B

The bridges over Kennedy Hill Creek Channel, Baker Creek Channel, and the tributary of Pemberton Creek Channel are dual structures symmetric about the centerline of construction. Because separate structures would result in an open space of less than 20 feet between bridges, which is the minimum required for maintenance and inspection purposes, the bridge over Spartman Creek Channel will have a raised median having a continuous deck according to FDOT Structures Design Guidelines.

Section 3.18.3 has indicated that according to the borings, organic soils and clayey sands may exist near the surface along US 92 between Falkenburg Road and Taylor Road (clayey sands); McIntosh Road and Turkey Creek Road (clayey sands); Turkey Creek Road and Mobley Street (muck); and between Gordon Street and Park Road (muck). Based on these findings, Section 3.18.3 suggested the need for further subsurface investigations to be performed to evaluate a suitable foundation design for the bridge over Pemberton Creek. This suggestion will be considered during final design, however, it should be noted that review of design plans and notes for the existing bridge did not indicate any abnormalities regarding the soils in the vicinity of the bridge.

8.21.2.2 Superstructure Alternatives

Three superstructure design alternatives were evaluated for use in replacing the creek crossing bridges; the cast-in-place concrete slab bridge, AASHTO Type II pre-stressed beam bridge, and the FDT30 precast concrete double tee bridge design. Table 8-5 provides a summary of the estimated costs for each bridge and alternative. As shown, the AASHTO Type II pre-stressed beam alternative is the least expensive and therefore, the preferred construction alternative for all bridges.

Table 8-5
TOTAL ESTIMATE OF PROBABLE CONSTRUCTION COSTS

Bridge No.	Area (Sq. Ft.)	Total Estimate of Probable Construction Cost		
		Cast-in-Place Concrete Slab Bridge	AASHTO Type II Prestressed Beam	FDT 30 Precast Concrete Double Tee
100024	4,790	\$303,204	\$181,848	\$229,175
100025	5,170	\$327,438	\$189,575	\$235,179
100097	5,625	\$325,602	\$192,679	\$234,567
100098	5,170	\$318,115	\$183,933	\$226,873

In addition to the above alternatives, AASHTO Beam Type III design was considered. To maintain the required minimum vertical clearance of six feet over the mean annual flood or control water elevation with Type III beams, it would be necessary to raise the roadway vertical profile over each of the water crossing structures. The cost difference between Type II and Type III became negligible, and therefore, Type III beams were eliminated from further consideration.

8.21.2.3 Sub-structure Alternatives

Spread footings and pile-supported foundations are generally acceptable. The use of spread footings is not recommended due to anticipated settlements, possible scour undermining, and the excavation that would be required in the streams and wetland areas. The use of trestle bents is economical and preferred for low-level wetlands and stream crossings. This type of foundation causes minimum disturbance of the natural area. Piles can be driven directly into the ground

without excavation and then capped at the cut-off elevation to support the superstructure. Prestressed concrete piles are recommended due to their cost and durability.

8.21.2.4 Maintenance of Traffic During Construction

As shown on Figures 8-3A, 8-4A, and 8-6A, separate structures are proposed for each direction of traffic at Kennedy Hill Creek, Baker Creek, and the Tributary of Pemberton Creek. The location of the proposed centerline of construction will facilitate the construction on one bridge structure, while maintaining traffic on the existing structure. After completion of the bridge, traffic can be shifted to the new structure, and the existing structure will be removed while the remaining half of the bridge is constructed. Therefore, no construction phasing will be required for the structures at the above mentioned locations.

Construction phasing will be required at Spartman Creek due to the type of proposed structure and the location of the construction centerline (see Figure 8-5A). For AASHTO beams, half of the structure can be built while maintaining traffic on the existing structure. For double tees with traverse post-tensioning, construction phasing can be staged with couplers and bar tendons. After completion of the eastbound bridge lanes, traffic can be shifted, the existing traffic can be removed, and the westbound bridge lanes can be constructed.

8.22 ACCESS MANAGEMENT

In accordance with the State Highway System Access Management Act, Florida Statute 335.18, implemented in July 1988 and revised in 1992, US 92 has been functionally classified as follows:

- from 56th Street (west of Garden lane) to Thonotosassa Road: Class 5,
- from Thonotosassa Road to Park Road: Class 7, and
- from Park Road to County Line Road: Class 5.

Class 5 facilities can provide directional median openings every 660 feet or more and full median openings every 2,640 feet or more. For design speeds of 45 mph or less, the spacing of full median openings could be reduced to 1,320 feet. The minimum traffic signal spacing for Class 5 facilities is 2,640 feet although for speeds of 45 mph or less, this spacing can be reduced to an absolute minimum of 1,320 feet.

Class 7 facilities can provide directional median openings spaced at least 330 feet apart and full median openings spaced at least 660 feet apart. Traffic signals can be spaced at least 1,320 feet apart regardless of design speed.

Based on review of the existing traffic patterns, future traffic projections, land use, long range transportation plans, and the overall regional network system continuity, a number of locations were identified which meet the Class 5 or Class 7 criteria (whichever is applicable at the specific segment) for providing traffic signals and/or full median openings. Table 8-6 summarizes these locations.

The recommended full median opening and traffic signal locations will be reviewed during the design phase. Also during this phase, additional locations for full median openings, directional median openings, and traffic signals will be identified.

Table 8-6
Proposed Locations for Full Median Openings and Traffic Signals

Intersection of US 92 at:	Type of Median Opening and Traffic Control
Falkenburg Road	full median opening and traffic signal
Williams Road	full median opening and traffic signal
Mango Road	full median opening and traffic signal
Pine Street	full median opening and traffic signal
Taylor Road	unsignalized full median opening
Parsons Avenue	full median opening and traffic signal
Kingsway Road	full median opening and traffic signal
McIntosh Road	full median opening and traffic signal
Gallagher Road	unsignalized full median opening
Moore's Lake Road	unsignalized full median opening
Fritzke Road	unsignalized full median opening
Bethlehem Road	unsignalized full median opening
Forbes Road	full median opening and traffic signal
Turkey Creek Road	unsignalized full median opening
Walter Drive	unsignalized full median opening
Thonotosassa Road	full median opening and traffic signal
Gordon Street	unsignalized full median opening
Maryland Avenue	full median opening and traffic signal
Park Road	full median opening and traffic signal
Wilder Road	unsignalized full median opening
Wiggins Road	unsignalized full median opening
County Line Road	full median opening and traffic signal

8.23 SPECIAL COMMITMENTS

As presented in Sections 7 and 8, the study team has fulfilled the objectives of this PD&E study which were to identify and recommend the appropriate improvements for US 92 that will accommodate the Design Year 2015 traffic conditions. During the process of this study and while evaluating the appropriate improvements for US 92 to accommodate the Design Year 2015 traffic conditions, the study team committed that two issues should be considered and resolved during the design phase of this project. These issues are the following:

- During the Public Hearing the owners of Harwell Farms requested that the location of Pond 16 be re-evaluated. As shown in Appendix F, Sheet No. 19, based on the recommendations of this PD&E study, Pond 16 would occupy most of the land owned by Harwell Farms. The owners of Harwell Farms indicated at the Public Hearing that other vacant parcels with no specific use exist in the vicinity of Harwell Farms that could be just as suitable for a stormwater retention pond. FDOT explained to the Harwell Farms owners that all pond locations are preliminary and will be re-evaluated based on more detailed analyses during the design phase. However, a note is made in this section to re-examine the location of Pond 16 during the design phase in the event that no other ponds are re-evaluated.
- As discussed in Section 3, Reynolds Street in downtown Plant City consists of two 10-foot-wide travel lanes and two curbside 8-foot-wide parking lanes. This condition represents minimum design standards. The option to eliminate one of the parking lanes in order to provide standard 12-foot-wide travel lanes was considered, however, it was rejected after opposition from the City officials and local merchants who deemed that such design would adversely affect the character of downtown Plant City and impact local businesses. To maintain safety without increasing the width of the travel lanes, the study team recommended that through truck traffic be eliminated from the downtown one-way pair (Reynolds and Baker

streets) between Alexander Street and Park Road. This recommendation was presented to the City Commission on September 27, 1993, which unanimously agreed "...to forward a letter indicating approval of the proposed elimination of through truck traffic from segments of US 92 between Alexander Street and Park Road if it should become necessary." A copy of the meeting minutes is provided in Appendix C. During the design phase, a thorough evaluation should be made of the through truck traffic in downtown Plant City in order to determine its impacts on safety. It should be noted that Plant City has recently designated a downtown by-pass truck route by way of Park Road Extension, US 39, and Alexander Street. This route, however, is seldomly used due to the directness of US 92.

8.24 REFERENCES

1. Conceptual Stage Relocation Report; Glatting Jackson Kercher Anglin Lopez Rinehart, Inc.; February 1994.
2. Accident Reduction Factors for Use in Calculating Benefit/Cost; Department of Civil Engineering, College of Engineering, University of Florida; Gainesville, Florida; November 1988.
3. Noise Study Report; Post, Buckley, Schuh & Jernigan, Inc.; January 1993.
4. Air Quality Report; Post, Buckley, Schuh & Jernigan, Inc.; January 1993.
5. Comments and Coordination Report; Glatting Jackson Kercher Anglin Lopez Rinehart, Inc.; February 1994.
6. Bridge Concept Report; Post, Buckley, Schuh & Jernigan, Inc.; February 1994.
7. Location Hydraulics Report; Post, Buckley, Schuh & Jernigan, Inc.; September 1993.

APPENDIX A:	Straight Line Diagrams and Street Maps
APPENDIX B:	Soils Descriptions
APPENDIX C:	Communication Memorandums and Correspondence with the Planning Agencies
APPENDIX D:	Alternatives Evaluation Matrices
APPENDIX E:	Preferred Typical Cross Sections
APPENDIX F:	Preferred Alignments Shown on Aerial Photographs
APPENDIX G:	Summary of Comments Received from the Public Workshop and Advance Notification Notice

APPENDIX G: Summary of Comments Received from the Public Workshop and Advance Notification Notice

APPENDIX A:

Straight Line Diagrams and Street Maps

59.4

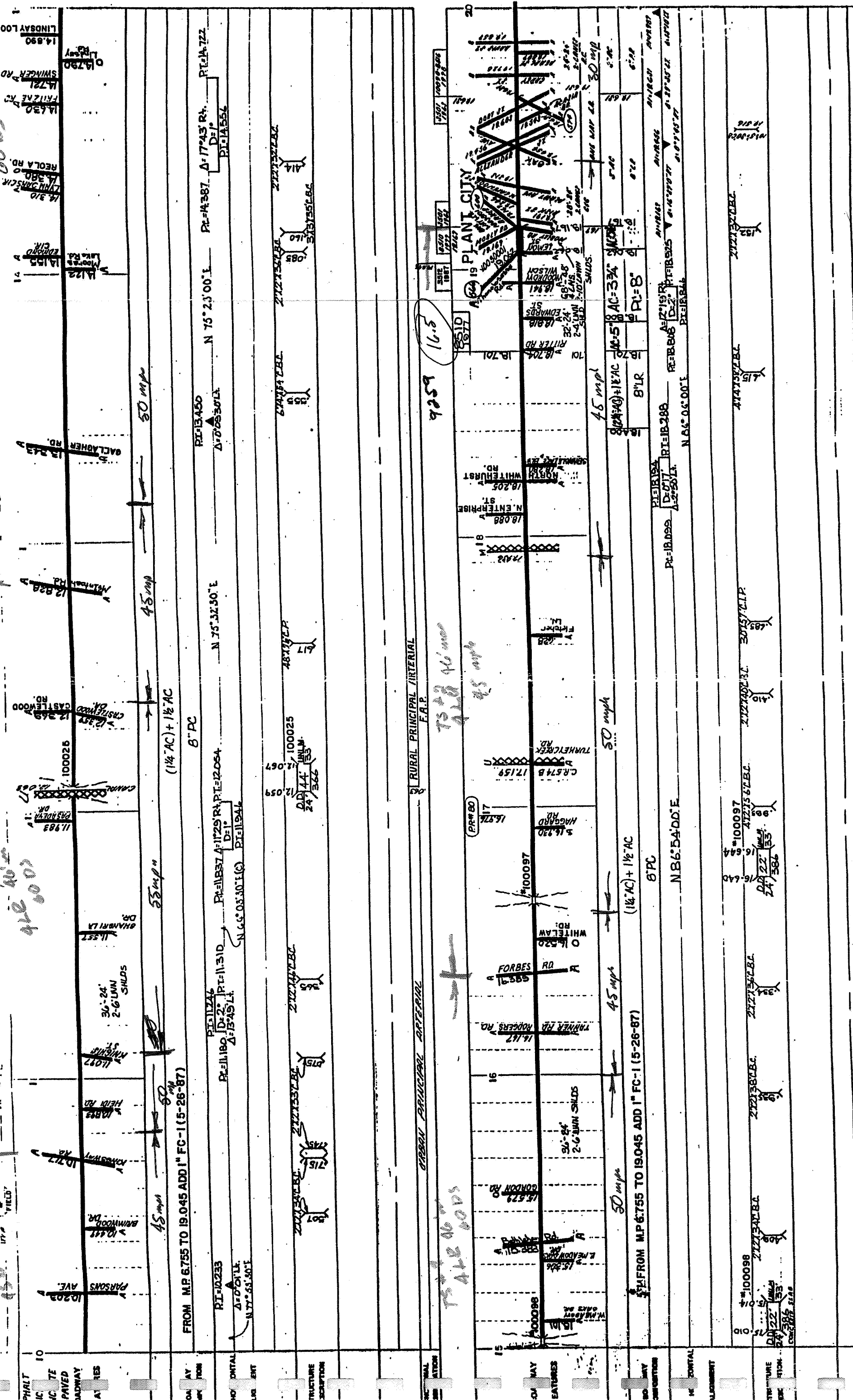
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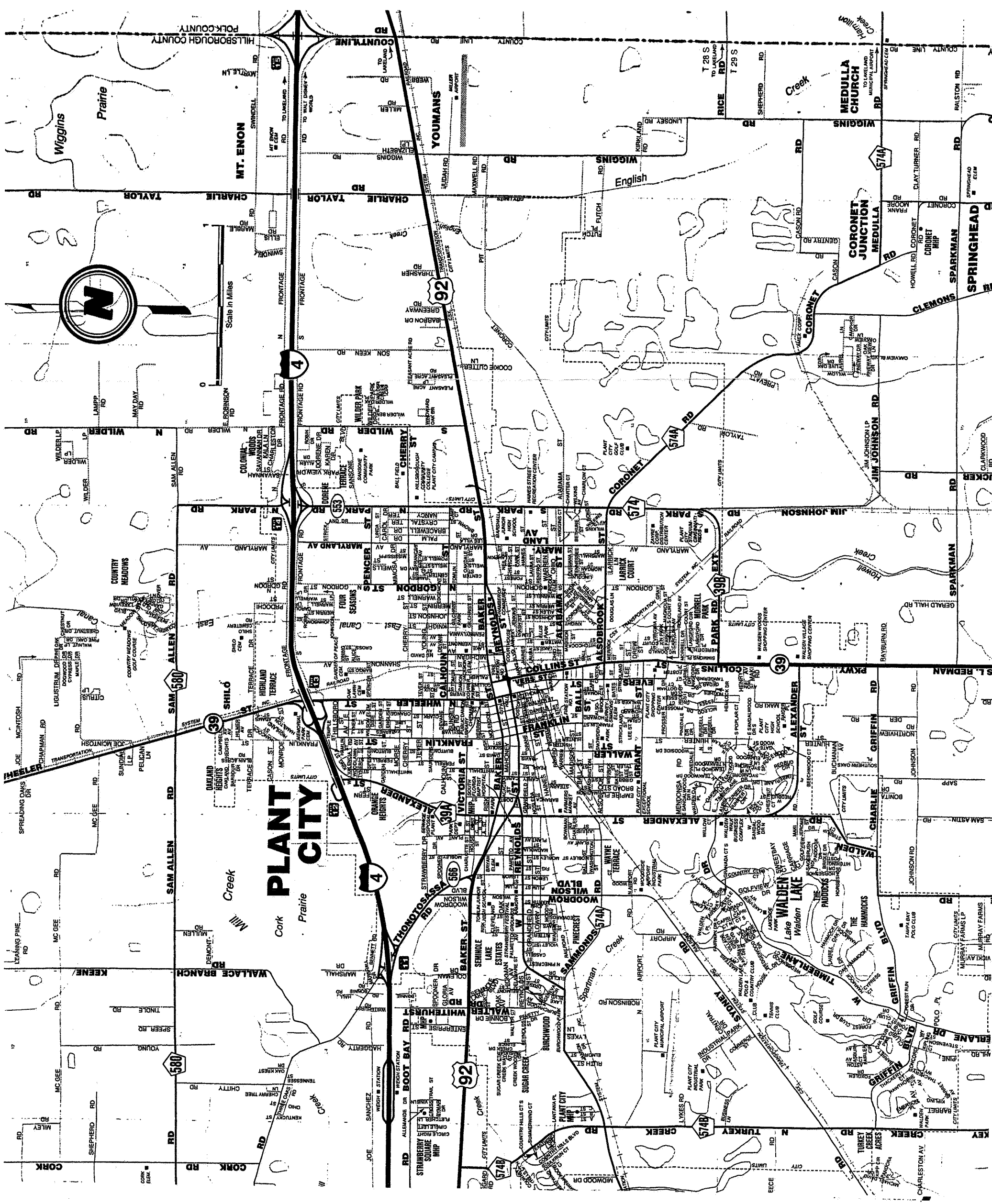
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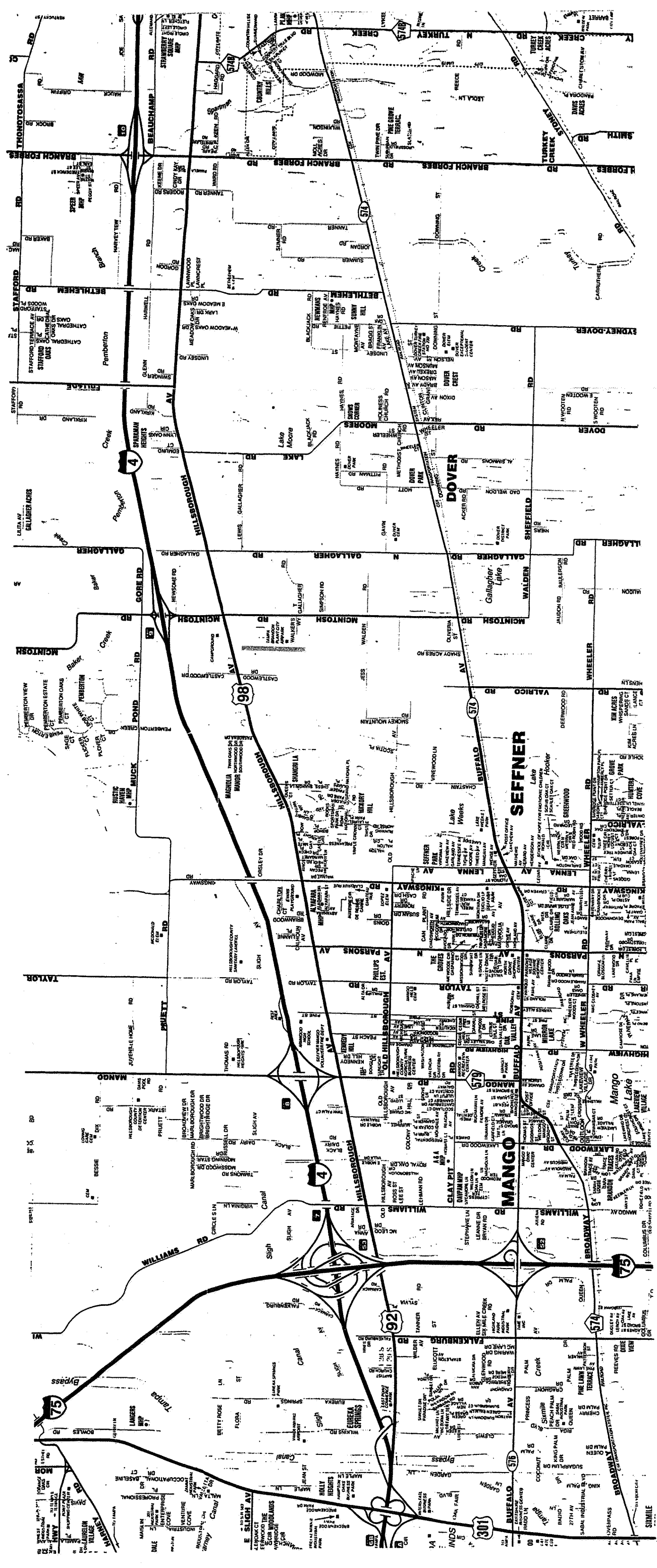
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APPENDIX B:

Soils Descriptions

MAP UNIT DESCRIPTIONS

#2 Adamsville fine sand

This nearly level, somewhat poorly drained soil is on broad ridges within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer is very dark gray fine sand about 6 inches thick. The underlying material to a depth of about 80 inches is brown fine sand in the upper 24 inches and pale brown, mottled fine sand in the lower 50 inches. In places the lower part of the underlying material is very dark grayish brown or dark grayish brown.

#3 Archbold fine sand

This nearly level, moderately well drained soil is on low ridges within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer is light gray fine sand about 2 inches thick. The underlying material to a depth of about 80 inches is white fine sand. In places, a black or very dark brown subsoil is in the lower part.

#4 Arents, nearly level

This map unit consists of nearly level heterogenous soil materials that have been removed from other soils, reworked, and shaped by earth moving equipment. Arents occur near urban centers, phosphate mining operations, major highways, and sanitary landfills. Arents do not have an orderly sequence of soil layers. This map unit is not associated with or confined to a particular kind of soil. Arents are variable and contain discontinuous lenses, pockets, or streaks of black, gray, grayish brown, brown, or yellowish brown sandy or loamy fill material. Thickness of the fill material ranges from 30 to 80 inches or greater.

#5 Basinger, Holopaw, and Samsula soils, depressional

These nearly level, very poorly drained soils are in swamps and depressions within flatwoods areas. Generally, the Basinger soil is on exterior areas of swamps or in shallow depressions; Holopaw and Samsula soils are on interior areas of swamps or in deeper depressions. Undrained areas are frequently ponded for very long periods. Slope is 0 to 2 percent.

Typically, the surface layer of the Basinger soil is black fine sand about 7 inches thick. The subsurface layer is gray fine sand about 21 inches thick. The next layer is brown and grayish brown fine sand about 14 inches thick. The underlying material to a depth of about 80 inches is light brownish gray fine sand.

Typically, the surface layer of the Holopaw soil is black mucky fine sand about 6 inches thick. The subsurface layer is fine sand about 46 inches thick. It is dark gray in the upper 6 inches, light gray in the next 30 inches, and grayish brown in the lower 10 inches. The subsoil, to a depth of about 80 inches, is gray, mottled sandy loam in the upper 12 inches.

Typically, the surface layer of Samsula soil is muck about 34 inches thick. It is black in the upper part and dark reddish brown in the lower part. The next layer is black fine sand about 6 inches thick. The underlying material to a depth of 80 inches is light brownish gray fine sand.

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#6 Broward-Urban land complex

This map unit consists of nearly level, somewhat poorly drained Broward soils and areas of Urban land on low-lying coastal areas. Slope is 0 to 2 percent. Typically, the surface layer of the Broward soil is very dark gray fine sand about 4 inches thick. The underlying material is fine sand about 22 inches thick over limestone. It is gray in the upper 6 inches, grayish brown in the next 4 inches, and very pale brown in the lower 12 inches. The Urban land part of this complex is covered by concrete, asphalt, buildings, or other impervious surfaces that obscure or alter the soils so that their identification is not feasible.

#7 Candler fine sand, 0 to 5 percent slopes

This nearly level to gently sloping, excessively drained soil is on uplands. Typically, the surface layer is dark gray fine sand about 6 inches thick. The subsurface layer is fine sand about 66 inches thick. It is light yellowish brown in the upper 29 inches and very pale brown in the lower 37 inches. The next layer, to a depth of about 80 inches, is very pale brown fine sand with strong brown loamy sand lamellae that are about 1/16 to 1/4 inches thick and 2 to 6 inches long.

#8 Candler fine sand, 5 to 12 percent slopes

This sloping and strongly sloping, excessively drained soil is on uplands. Typically, the surface layer is dark gray fine sand about 6 inches thick. The subsurface layer is fine sand about 68 inches thick. It is yellow in the upper part and very pale brown in the lower part. The next layer to a depth of about 80 inches is very pale brown fine sand with yellowish brown loamy sand lamellae that are about 1/16 inches thick and 2 to 4 inches long.

#9 Candler-Urban land complex, 0 to 5 percent slopes

This map unit consists of nearly level to gently sloping, excessively drained Candler soils and areas of Urban land on uplands. Typically, the surface layer is dark gray fine sand about 6 inches thick. The subsurface layer is fine sand about 70 inches thick. It is brownish yellow in the upper 20 inches and very pale brown in the next 50 inches. The next layer to a depth of about 80 inches is very pale brown fine sand with yellowish brown loamy sand lamellae that are about 1/16 to 1/4 inches thick and 2 to 6 inches long. In places, the soil does not have lamellae. The urban land part of this complex is covered by concrete, asphalt, buildings or other impervious surfaces that obscure or alter the soils so that their identification is not feasible.

#10 Chobee loamy fine sand

This nearly level, very poorly drained soil is in low lying flats within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer is black loamy fine sand about 16 inches thick. The subsoil is about 33 inches

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thick. It is dark gray sandy loam in the upper 17 inches; and grayish brown, mottled sandy clay loam in the lower 16 inches. The underlying material to a depth of about 80 inches is light gray, mottled loamy sand.

#11 Chobee muck, depressional

This nearly level, very poorly drained soil is in the broad depressions. This soil occurs principally in Harney Flats. Large ditches and canals equipped with water control structures dissect the unit in most places. Undrained areas are ponded for very long periods. Slopes are less than 1 percent. Typically, the surface layer is about 12 inches thick. It is black muck in the upper 9 inches, and black loamy fine sand in the lower 3 inches. The subsoil, to a depth of about 48 inches, is very dark gray sandy clay loam in the upper 24 inches and gray sandy clay loam in the lower 12 inches. The underlying material, to a depth of about 80 inches, is light gray, mottled sandy loam.

#12 Chobee sandy loam, frequently flooded

This nearly level, very poorly drained soil is bottom lands principally along the Hillsborough River and Blackwater Creek. This soil is flooded for very long periods following prolonged high intensity rains. Slope is dominantly less than 1 percent. Typically, the surface layer is black sandy loam about 15 inches thick. The subsoil, to a depth of about 60 inches, is very dark gray, mottled sandy clay loam in the upper part and gray, mottled sandy clay loam in the lower part. The underlying material to a depth of about 80 inches is light gray, mottled loamy sand.

#13 Eaton fine sand

This nearly level, poorly drained soil is on sloughs within the flatwoods. It occurs principally in the northeastern part of the county. Slope is 0 to 2 percent. Typically, the surface layer is black fine sand about 5 inches thick. The subsurface layer is light brownish gray fine sand about 17 inches thick. The subsoil, to a depth of about 80 inches, is dark grayish brown, mottled sandy clay in the upper 6 inches; and light brownish gray, mottled sandy clay in the lower 52 inches.

#14 Eaton mucky sand, depressional

This nearly level, very poorly drained soil is in depressions within the flatwoods. Undrained areas are ponded for very long periods. Slope is 0 to 2 percent. Typically, the surface layer is black mucky sand about 8 inches thick. The subsurface layer is light gray, mottled fine sand about 14 inches thick. The subsoil is about 26 inches thick. It is dark grayish brown, mottled sandy clay in the upper part; and dark gray, mottled sandy clay in the lower part. The underlying material, to a depth of about 80 inches is gray, mottled sandy clay.

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#15 Felda fine sand

This nearly level, poorly drained soil is on broad sloughs within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer is very dark gray fine sand about 5 inches thick. The subsurface layer is about 11 inches thick. It is dark gray, mottled fine sand in the upper 13 inches and dark grayish brown, mottled fine sand in the lower 4 inches. The subsoil is light brownish gray, mottled sandy clay loam about 23 inches thick. The underlying material to a depth of about 80 inches is light gray loamy sand and contains many shell fragments.

#16 Felda fine sand, occasionally flooded

This nearly level, poorly drained soil is on low terraces of major rivers and streams. This soil is flooded for very long periods following prolonged high intensity rains. Slope is 0 to 2 percent. Typically, the surface layer is dark gray fine sand about 6 inches thick. The subsurface layer is about 16 inches thick. It is grayish brown fine sand in the upper 6 inches and light gray, mottled fine sand in the lower 10 inches. The subsoil is gray, mottled sandy clay loam about 16 inches thick. The underlying material, to a depth of about 80 inches, is light brownish gray, mottled loamy sand.

#17 Floridana fine sand

This nearly level, very poorly drained soil is on sloughs and swales within the flatwoods. Slopes is 0 to 2 percent. Typically, the surface layer is black fine sand about 12 inches thick. The subsurface layer is gray fine sand about 16 inches thick. The subsoil, to a depth of about 80 inches, is dark gray, mottled sandy clay loam in the upper 15 inches; gray, mottled sandy clay loam in the next 17 inches; and gray, mottled sandy loam in the lower 20 inches.

#18 Fort Meade loamy fine sand, 0 to 5 percent slopes

This nearly level to gently sloping, well drained soil is on uplands. Typically, the surface layer is about 26 inches thick. It is very dark gray loamy fine sand in the upper 7 inches and very dark grayish brown loamy sand in the lower 19 inches. The underlying material, to a depth of about 80 inches, is yellowish brown loamy sand in the upper 46 inches and light yellowish brown loamy sand in the lower 8 inches.

#19 Gainesville loamy fine sand, 0 to 5 percent slopes

This nearly level to gently sloping, well drained soil is on uplands. Typically, the surface layer is very dark grayish brown loamy fine sand about 9 inches thick. The underlying material to a depth of about 80 inches is brown loamy fine sand in the upper 29 inches and strong brown loamy fine sand in the lower 42 inches.

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#20 Gypsum land

This miscellaneous area consists of moderately steep to very steep mounds of gypsum. Gypsum is a product of acid manufacturing plants associated with phosphate mining operations. The material occurs in mounds thirty to sixty feet high.

#21 Immokalee fine sand

This nearly level, poorly drained soil is on broad plains within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer is very dark gray fine sand about 8 inches thick. The subsurface layer is light gray fine sand about 28 inches thick. The subsoil, to a depth of about 80 inches, is black fine sand in the upper 10 inches; dark reddish brown fine sand in the next 6 inches; and dark brown fine sand in the lower 28 inches.

#22 Immokalee-Urban land complex

This map unit consists of nearly level, poorly drained Immokalee soil and areas of Urban land within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer of the Immokalee soil is black fine sand about 5 inches thick. The subsurface layer is fine sand about 30 inches thick. It is grayish brown in the upper 8 inches and light gray in the lower 22 inches. The subsoil is about 25 inches thick. It is black fine sand in the upper 5 inches; dark reddish brown fine sand in the next 7 inches; and dark brown fine sand in the lower 13 inches. The underlying material to a depth of about 80 inches is light brownish gray fine sand. The Urban land part of this complex is covered by concrete, asphalt, buildings, or other impervious surfaces that obscure or alter the soils so that their identification is not feasible.

#23 Kendrick fine sand, 2 to 5 percent slopes

This gently sloping, well drained soil is on uplands. Typically, the surface layer is grayish brown fine sand about 4 inches thick. The subsurface layer is light yellowish brown fine sand about 31 inches thick. The subsoil, to a depth of about 80 inches, is brownish yellow, mottled sandy loam in the upper 34 inches and yellowish brown, mottled sandy clay loam in the lower 12 inches.

#24 Kesson muck, frequently flooded

This level, very poorly drained soil is in tidal swamps. This soil is subject to shallow flooding by the highest of normal tides. It is also subject to occasional deep flooding by storm tides. Slope is dominantly less than 1 percent. Typically, the surface layer is black muck about 5 inches thick. The underlying material to a depth of about 80 inches is gray, mottled fine sand in the upper 33 inches and light olive gray, mottled fine sand in the lower 42 inches.

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#25 Lake fine sand, 0 to 5 percent slopes

This nearly level to gently sloping, excessively drained soil is on upland. Typically, the surface layer is dark grayish brown fine sand about 4 inches thick. The underlying material, to a depth of about 80 inches, is strong brown fine sand in the upper 24 inches; reddish yellow fine sand in the next 40 inches; and strong brown fine sand in the lower 12 inches.

#26 Lochloosa-Micanopy fine sands, 0 to 5 percent slopes

This map unit consists of nearly level to gently sloping, somewhat poorly drained soils on the uplands. Typically, the surface layer of the Lochloosa soil is dark gray fine sand about 7 inches thick. The subsurface layer is about 21 inches. It is very pale brown fine sand in the upper 8 inches and pale brown fine sand in the lower 13 inches. The subsoil is 41 inches thick. It is light yellowish brown fine sandy loam in the upper 7 inches, yellowish brown mottled sandy clay loam in the next 5 inches, and gray mottled sandy clay loam in the lower 29 inches. The underlying material to a depth of about 80 inches is gray sandy clay loam.

Typically, the surface layer of the Micanopy soil is very dark gray fine sand 5 inches thick. The subsurface layer is brown fine sand about 10 inches thick. The subsoil, to a depth of about 80 inches, is mottled yellowish brown sandy clay loam in the upper 10 inches and gray mottled sandy clay and clay in the lower 55 inches.

#27 Malabar fine sand

This nearly level, poorly drained soil is on low lying sloughs, and shallow depressions within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer is dark gray fine sand about 4 inches thick. The subsurface layer is light brownish gray fine sand about 8 inches thick. The upper subsoil is brownish yellow fine sand about 18 inches thick. The next layer is pale brown fine sand about 20 inches thick. The lower subsoil is gray, mottled fine sandy loam about 16 inches thick. The underlying material, to a depth of about 80 inches, is grayish brown fine sand.

#28 Millhopper-Urban land complex, 0 to 5 percent slopes

This map unit consists of nearly level to gently sloping, moderately well drained Millhopper soil and areas of Urban land on uplands. Typically, the surface layer of the Millhopper soil is very dark gray fine sand about 5 inches thick. The subsurface layer is about 52 inches thick. It is brown fine sand in the upper 17 inches and pale brown fine sand in the lower 35 inches. The subsoil, to a depth of about 80 inches, is light yellowish brown, mottled sandy loam in the upper 7 inches and gray, mottled sandy clay loam in the lower 16 inches.

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#29 Myakka fine sand

This nearly level, poorly drained soil is on broad plains within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer is very dark gray fine sand about 5 inches thick. The subsurface layer is gray fine sand about 15 inches thick. The subsoil is about 18 inches thick. It is black fine sand in the upper 5 inches; dark reddish brown fine sand in the next 5 inches; brownish yellow fine sand in the lower 8 inches. The underlying material to a depth of about 80 inches, is very pale brown fine sand in the upper 17 inches and dark grayish brown fine sand in the lower 25 inches.

#30 Myakka fine sand, frequently flooded

This level, very poorly drained soil is in tidal areas. This soil is subject to shallow flooding by the highest of normal tides. It is also subject to occasional deep flooding by storm tides. There are many small ponds and tidal channels. Slope is dominantly less than 1 percent. Typically, the surface layer is very dark gray fine sand about 5 inches thick. The subsurface layer is grayish brown fine sand about 17 inches thick. The subsoil is very dark grayish brown fine sand about 18 inches thick. The underlying material to a depth of about 80 inches is brown fine sand.

#32 Myakka-Urban land complex

This map unit consists of nearly level, poorly drained Myakka soils and areas of Urban land on broad plains within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer of the Myakka soil is dark gray fine sand about 5 inches thick. The subsurface layer is light gray fine sand about 15 inches thick. The subsoil is about 24 inches thick. It is very dark grayish brown fine sand in the upper 4 inches; dark brown fine sand in the next 6 inches; and yellowish brown fine sand in the lower 14 inches. The underlying material, to a depth of about 80 inches, is pale brown fine sand.

#33 Ona fine sand

This nearly level, poorly drained soil is on broad plains within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer is very dark gray fine sand about 4 inches thick. The subsoil is about 18 inches thick. It is black fine sand in the upper 4 inches; and very dark brown fine sand in the lower 14 inches. The underlying material, to a depth of about 80 inches, is light gray fine sand.

#34 Ona-Urban land complex

This map unit consists of nearly level, poorly drained Ona soils and areas of urban land on flatwoods. Slope is 0 to 2 percent. Typically, the

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surface layer of the Ona soil is black fine sand about 4 inches thick. The subsoil is dark reddish brown fine sand about 14 inches thick. The underlying material to a depth of about 80 inches is grayish brown, mottled fine sand in the upper 22 inches and light gray fine sand in the lower 40 inches.

#35 Orlando fine sand, 0 to 5 percent slopes

This nearly level to gently sloping well drained soil is on uplands. Typically, the surface layer is about 20 inches thick. It is black fine sand in the upper 8 inches and very dark gray fine sand in the lower 12 inches. The next layer is dark grayish brown fine sand about 12 inches thick. The underlying material, to a depth of about 80 inches, is yellowish brown fine sand in the upper 28 inches and pale brown fine sand in the lower 20 inches.

#36 Orsino fine sand, 0 to 5 percent slopes

This nearly level to gently sloping, moderately well drained soil is on uplands and along slope breaks to stream channels. Typically, the surface layer is gray fine sand about 2 inches thick. The subsurface layer is about 29 inches thick. It is light gray fine sand in the upper 13 inches and white fine sand in the lower 16 inches. The subsoil is brownish yellow and very dark grayish brown fine sand about 17 inches thick. The next layer is yellow, mottled fine sand about 24 inches thick. The underlying material to a depth of about 80 inches is pale brown fine sand.

#36 Paisley fine sand, depressional

This level, very poorly drained soil is in depressions and sloughs. Undrained areas are frequently ponded for very long periods. Slope is dominantly less than 1 percent. Typically, the surface layer is very dark gray fine sand about 2 inches thick. The subsurface layer is grayish brown fine sand about 2 inches thick. The subsoil, to a depth of about 80, is gray, mottled sandy clay in the upper 20 inches, and light gray, mottled sandy clay in the lower 56 inches.

#38 Pinellas fine sand

This nearly level, poorly drained soil is on broad plains within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer is black fine sand about 4 inches thick. The subsurface layer is light gray fine sand about 7 inches thick. The next layer is calcareous, light gray, mottled fine sand about 11 inches thick. The subsoil, to a depth of about 27 inches, is light olive gray, mottled sandy clay loam. The underlying material to a depth of about 80 inches is greenish gray very shelly loamy sand.

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#39 Arents, very steep

This map unit consists of mounds of very steep heterogenous soil materials. These areas result from phosphate mining operations. This map unit is not associated with or confined to a particular kind of soil. Arents do not have an orderly sequence of soil layers. Arents are variable and contain discontinuous lenses, pockets, or streaks of black, gray, grayish brown, brown, or yellowish brown sandy or loamy excavated material. Thickness of the excavated material ranges from 3 to 15 feet or greater.

#41 Pomello fine sand, 0 to 5 percent slopes

This nearly level to gently sloping, moderately well drained soil is on low ridges within the flatwoods. Typically, the surface layer is very dark gray fine sand about 3 inches thick. The subsurface layer is light gray fine sand about 40 inches thick. The subsoil is about 12 inches thick. It is dark brown fine sand in the upper 3 inches; and brown fine sand in the lower 9 inches. The underlying material, to a depth of about 80 inches, is grayish brown fine sand.

#42 Pomello-Urban land complex, 0 to 5 percent slopes

This map unit consists of nearly level to gently sloping, moderately well drained Pomello soils and areas of Urban land on low ridges within the flatwoods. Typically, the surface layer of the Pomello soil is dark gray fine sand about 5 inches thick. The subsurface layer is white fine sand about 37 inches thick. The subsoil, to a depth of about 54 inches, is very dark brown fine sand in the upper 6 inches and brown fine sand in the lower 6 inches. The underlying material to a depth of about 80 inches is white fine sand.

#43 Quartzipsamments, nearly level

This nearly level, moderately well drained to excessively drained soils have formed in accumulations of sand from phosphate mining operations. Quartzipsamments are generally confined to areas within specially constructed basins. Sands, a by-product of phosphate mining operations, have been pumped into these basins and allowed to dry. The color and thickness of these soils vary from one area to another, but one of the more common profiles has a surface layer of mixed dark gray, gray, and light gray fine sand about 15 inches thick. Below this is pale brown fine sand 40 inches thick. Below this, and extending to a depth of more than 80 inches, is light brownish yellow fine sand.

#44 St. Augustine fine sand

This nearly level, somewhat poorly drained soil is on flats and ridges bordering Tampa Bay. These soils are subject to flooding for very brief

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periods during hurricanes. Slope is 0 to 2 percent. Typically, the surface layer is dark gray fine sand about 3 inches thick. The underlying material to a depth of about 80 inches, is light brownish gray fine sand in the upper 9 inches; light gray, mottled fine sand containing balls of sandy clay in the next 18 inches; and gray fine sand in the lower 50 inches.

#45 St. Augustine-Urban land complex

This map unit consists of nearly level, somewhat poorly drained St. Augustine soils and areas of Urban land on flats and slight ridges bordering Tampa Bay. This map unit is subject to flooding for very brief periods during hurricanes. Slope is 0 to 2 percent. Typically, the surface layer of the St. Augustine soil is dark gray fine sand about 3 inches thick. The underlying material to a depth of about 80 inches is brown fine sand in the upper 17 inches; light brownish gray, mottled fine sand in the next 17 inches; and gray, mottled fine sand in the lower 43 inches. The Urban land part of this complex is covered by concrete, asphalt, building, or other impervious surfaces that obscure or alter the soils so that their identification is not feasible.

#46 St. Johns fine sand

This nearly level, poorly drained soil is on low lying plains within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer is about 12 inches thick. It is black fine sand in the upper 6 inches and very dark grayish brown fine sand in the lower 6 inches. The subsurface layer is light brownish gray fine sand about 17 inches thick. The subsoil is about 17 inches thick. It is black fine sand in the upper 7 inches; and dark reddish brown fine sand in the next 10 inches. The next layer is dark yellowish brown fine sand about 4 inches thick. The underlying material, to a depth of about 80 inches, is light brownish gray fine sand.

#47 Seffner fine sand

This nearly level, somewhat poorly drained soil is on the rims of depressions, and on broad low ridges within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer is about 13 inches thick. It is very dark gray fine sand in the upper 9 inches and very dark gray, mottled fine sand in the lower 4 inches. The next layer is dark gray, mottled fine sand about 8 inches thick. The underlying material, to a depth of about 80 inches, is very pale brown, mottled fine sand in the upper 14 inches; light gray, mottled fine sand in the next 28 inches; and white, mottled fine sand in the lower 17 inches.

#50 Slickens

This miscellaneous area consists of level, very poorly drained accumulation of fine textured materials from phosphate mining operations. Slickens are

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generally confined within specially constructed basins or holding ponds. The basins are designed so that water will flow through a series of holding ponds and allow the slickens to settle out. These areas are ponded for very long periods. Slope is less than 1 percent. Slickens do not have an orderly sequence of soil layers. Typically, the slickens are gray or light gray clay with mottles.

#51 Haplaquents, clayey

This nearly level, very poorly drained soil formed in accumulations of fine textured materials from phosphate mining operations. Haplaquents are confined within specially constructed basins which are surrounded by short, steep dikes. Undrained areas are ponded for very long periods. Slope is less than 1 percent. Typically, the surface layer is dark grayish brown clay about 3 inches thick. The underlying material, to a depth of about 80 inches, is gray, mottled clay.

#52 Smyrna fine sand

This nearly level, poorly drained soil is on broad low lying convex swells within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer is very dark gray fine sand about 4 inches thick. The subsurface layer is gray fine sand about 8 inches thick. It is dark brown fine sand in the upper 3 inches; and very dark grayish brown fine sand in the lower 5 inches. The underlying material; to a depth of about 80 inches, is light brownish gray, mottled fine sand in the upper 25 inches and brown fine sand in the lower 35 inches.

#53 Tavares-Millhopper fine sands, 0 to 5 percent slopes

These nearly level to gently sloping, moderately well drained soils are on lower lying areas of uplands and on low ridges within the flatwoods. Typically, the surface layer of the Tavares soil is dark grayish brown fine sand about 6 inches thick. The underlying material, to a depth of about 80 inches, is pale brown fine sand in the upper 26 inches; very pale brown fine sand in the next 8 inches; and light gray fine sand in the lower 40 inches.

Typically, the surface layer of the Millhopper soil is dark gray fine sand about 4 inches thick. The subsurface layer is about 53 inches thick. It is brown fine sand in the upper 5 inches, light yellowish brown fine sand in the next 16 inches and light gray, mottled fine sand in the lower 23 inches. The subsoil, to a depth of about 80 inches, is very pale brown, mottled sandy clay loam in the upper 5 inches and gray, mottled sandy clay loam in the lower 18 inches.

#54 Tavares-Millhopper fine sands, 5 to 8 percent slopes

These sloping, moderately well drained soils are on upland areas which border ponds, lakes, and streams. The Tavares soil is on summit and lower side slopes. The Millhopper soil is on upper side slopes. Typically, the

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surface layer of the Tavares soils is very dark gray fine sand about 3 inches thick. The underlying material to a depth of about 80 inches is light yellowish brown fine sand in the upper 18 inches; pale brown fine sand in the next 19 inches; and pale brown, mottled fine sand in the lower 40 inches.

Typically, the surface layer of the Millhopper soil is dark grayish brown fine sand about 5 inches thick. The subsurface layer is about 49 inches thick. It is light yellowish brown fine sand in the upper 21 inches; very pale brown, mottled fine sand in the next 12 inches, and white fine sand in the lower 16 inches. The subsoil, to a depth of about 80 inches, is light yellowish brown, mottled loamy fine sand in the upper 10 inches and pale brown mottled fine sandy loam in the lower 12 inches.

#55 Tavares-Urban land complex, 0 to 5 percent slopes

This map unit consists of nearly level to gently sloping, moderately well drained Tavares soils and areas of Urban land on low lying areas of upland and on low ridges within the flatwoods. Typically, the surface layer of the Tavares soil is very dark gray fine sand about 6 inches thick. The underlying material to a depth of about 80 inches is light yellowish brown fine sand in the upper 12 inches; very pale brown fine sand in the next 28 inches; and white, mottled fine sand in the lower 34 inches. The urban land part of this complex is covered by concrete, asphalt, buildings or other impervious surfaces that obscure or alter the soils so that their identification is not feasible.

#56 Urban land

This miscellaneous area consists of areas covered by concrete, asphalt, buildings, or other impervious surfaces that obscure or alter the soils so that identification is not feasible. Slope is dominantly less than 2 percent, but it ranges to 5 percent.

#57 Wabasso fine sand

This nearly level, poorly drained soil is on plains within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer is very dark gray fine sand about 7 inches thick. The subsurface layer is gray fine sand about 22 inches thick. The upper subsoil is about 9 inches thick. It is black fine sand in the upper 3 inches; and dark brown fine sand in the lower 6 inches. The lower subsoil is about 22 inches thick. It is light gray sandy clay loam in the upper 8 inches and light greenish gray, mottled sandy clay loam in the lower 14 inches. The underlying material to a depth of about 80 inches is gray loamy sand.

#58 Wabasso-Urban land complex

This map unit consists of nearly level, poorly drained Wabasso soils and areas of Urban land on broad plains within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer of the Wabasso soil is very dark gray

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fine sand about 5 inches thick. The subsurface layer is light brownish gray fine sand about 16 inches thick. The upper subsoil is black fine sand about 10 inches thick. The lower subsoil is about 17 inches thick. It is gray, mottled sandy clay loam in the upper 6 inches; and brown, mottled clay loam in the lower 16 inches. The underlying material, to a depth of about 80 inches, is light gray, mottled loamy fine sand. The Urban land part of this complex is covered by concrete, asphalt, buildings or other impervious surfaces that obscure or alter the soils so that their identification is not feasible.

#59 Winder fine sand

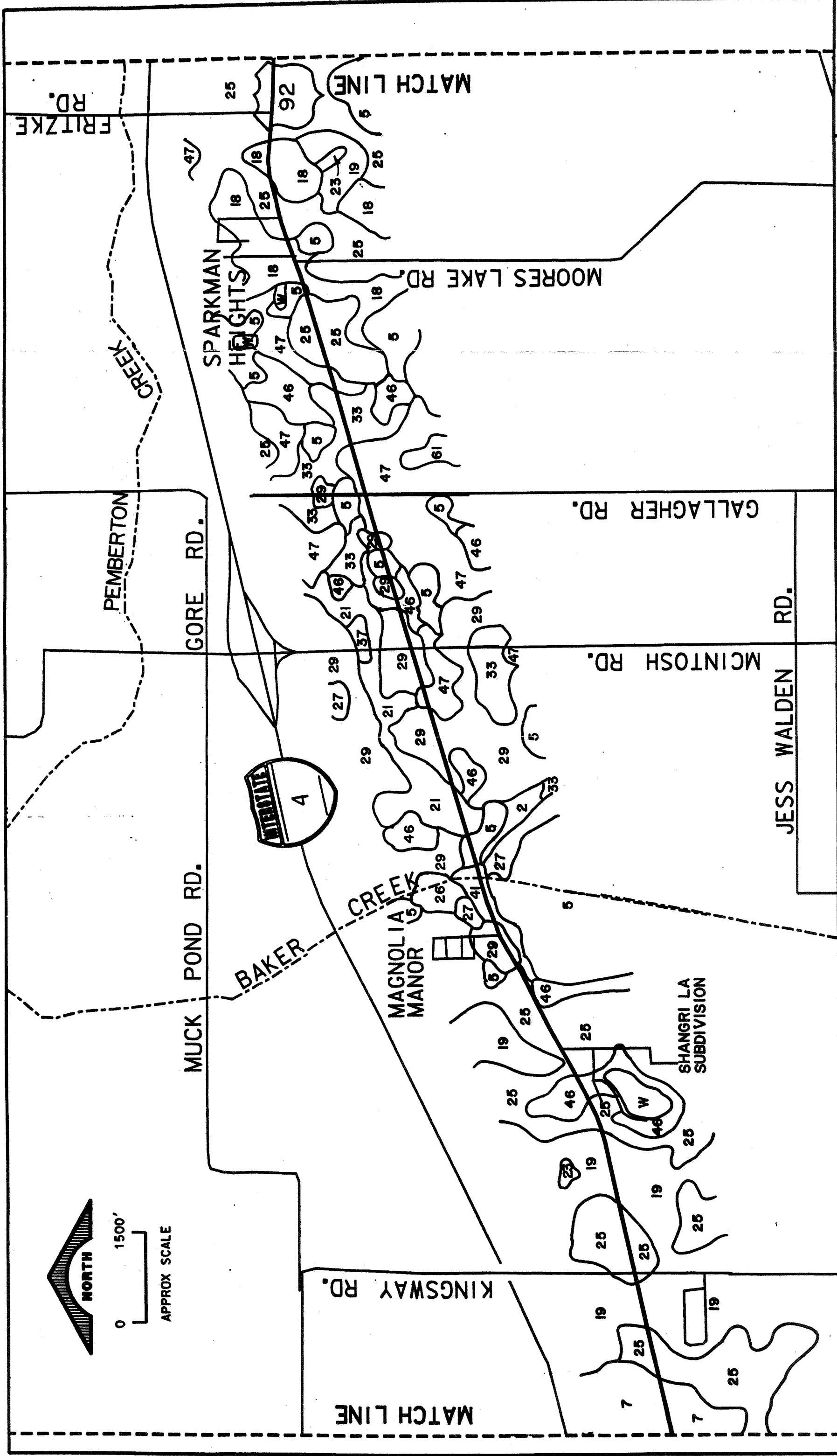
This nearly level, poorly drained soil is on hammocks within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer is very dark gray fine sand about 4 inches thick. The subsurface layer is grayish brown fine sand about 6 inches thick. The next layer is dark grayish brown, mottled sandy loam and gray fine sand about 4 inches thick. The subsoil is gray sandy clay loam about 16 inches thick. The underlying material, to a depth of about 80 inches, is light gray, mottled sandy clay loam in the upper 28 inches and gray sandy loam in the lower 22 inches.

#60 Winder fine sand, frequently flooded

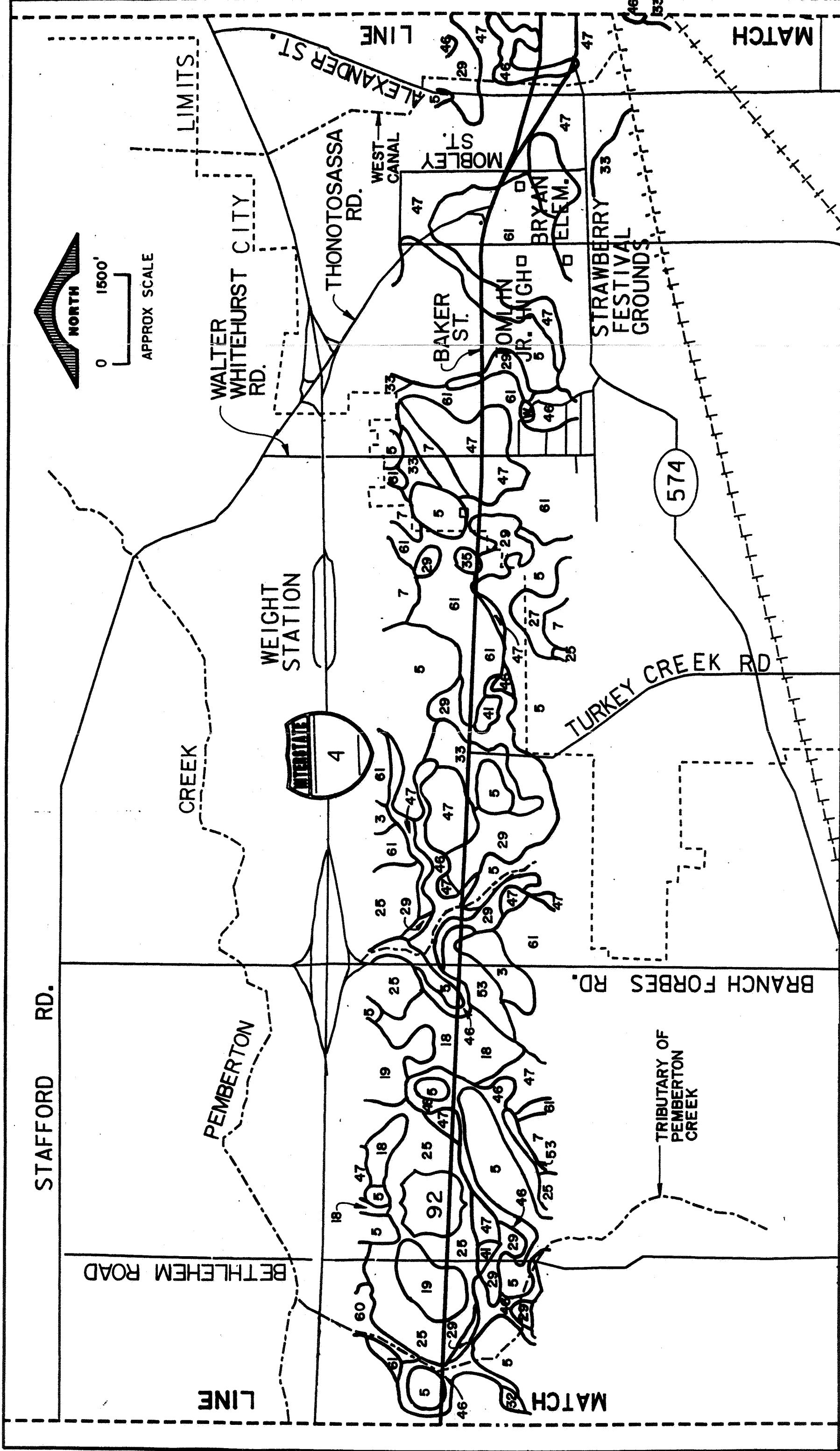
This nearly level, poorly drained soil is on flood plains. This soil is flooded for very long periods following prolonged high intensity rains. Many areas are isolated by stream channels and steep escarpments. Slope is 0 to 2 percent. Typically, the surface layer is black fine sand about 5 inches thick. The subsurface layer is grayish brown fine sand about 9 inches thick. The next layer is gray sandy clay loam and white fine sand about 4 inches thick. The subsoil is grayish brown, mottled sandy clay loam about 16 inches thick. The underlying material, to a depth of about 80 inches, is light brownish gray fine sand.

#61 Zolfo fine sand

This nearly level, somewhat poorly drained soil is on broad low ridges within the flatwoods. Slope is 0 to 2 percent. Typically, the surface layer is very dark gray fine sand about 3 inches thick. The subsurface layer is about 57 inches thick. It is grayish brown, mottled fine sand in the upper 12 inches; light gray, mottled fine sand in the next 36 inches; and grayish brown fine sand in the lower 9 inches. The subsoil, to a depth of about 80 inches, is dark brown fine sand.



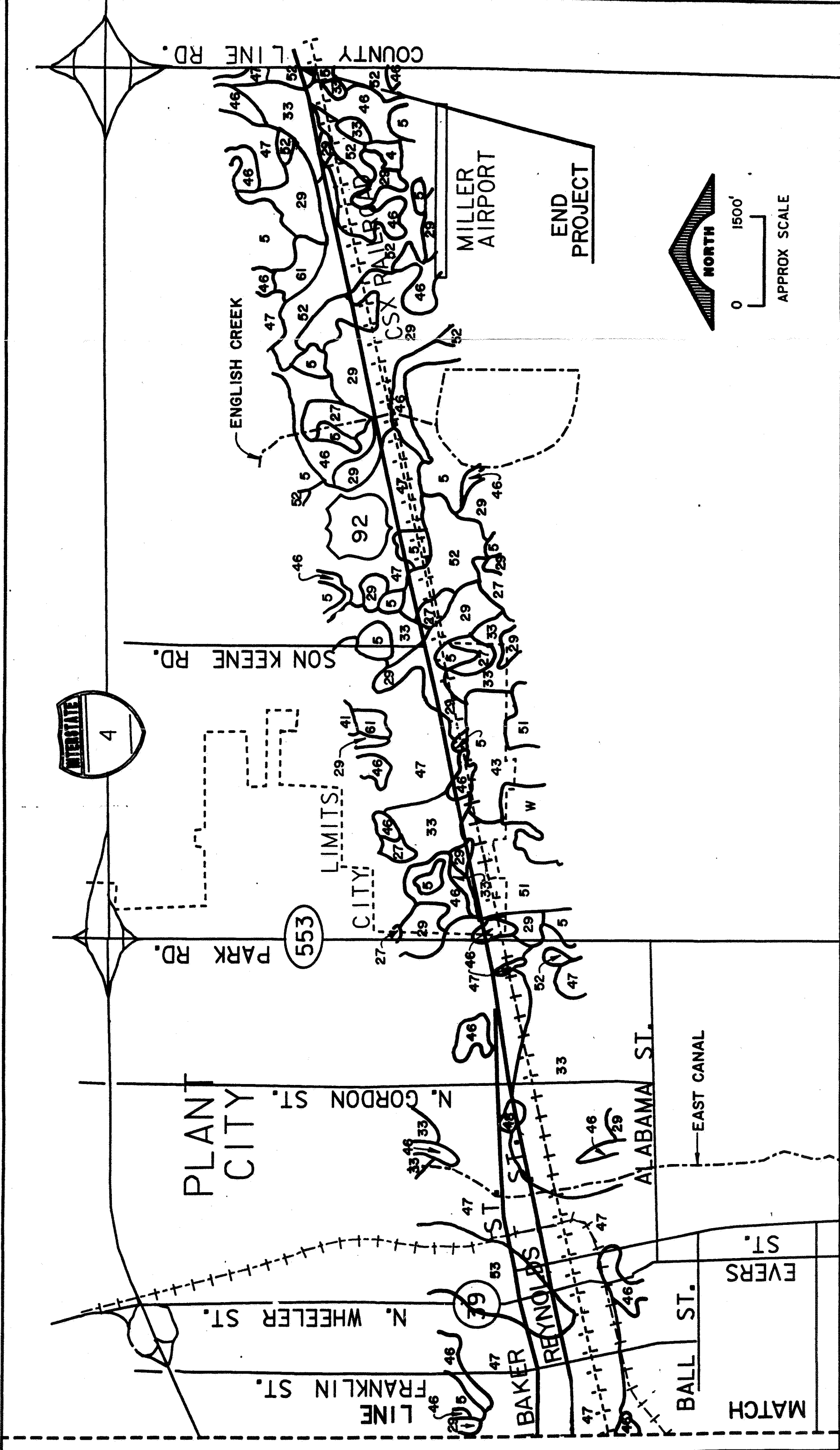
US 92 (SR 600) PD&E STUDY HILLSBOROUGH COUNTY FROM GARDEN LANE TO COUNTY LINE ROAD	SOILS MAP	Figure
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US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

SOILS MAP

Figure



US 92 (SR 600) PD&E STUDY HILLSBOROUGH COUNTY FROM GARDEN LANE TO COUNTY LINE ROAD	SOILS MAP	Figure
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TABLE B-1: ORGANIC SOILS

SOIL NAME AND MAP SYMBOL	DEPTH (INCHES)	SOIL DESCRIPTION	SHWT (FEET)
Basinger Soils (5)	0-7	Black fine sand/mucky fine sand	+2 - 1.0
	7-28	Gray fine sand	
	28-42	Brown and grayish brown fine sand	
	42-80	Light brownish gray fine sand	
Holopaw Soils (5)	0-6	Black mucky fine sand	+2 - 1.0
	6-12	Dark gray fine sand	
	12-42	Light gray fine sand	
	42-52	Grayish brown fine sand	
	52-64	Grayish brown fine sand	
	64-80	Gray, mottled sandy loam	
Samsula Soils (5)	0-10	Black muck	+2 - 1.0
	10-34	Dark reddish brown muck	
	34-40	Black fine sand	
	40-80	Light brownish gray fine sand	
Eaton Mucky Sand (14)	0-8	Black mucky sand	+2 - 1.0
	8-22	Light gray, mottled fine sand	
	22-48	Dark grayish brown to dark gray, mottled sandy clay	
	48-80	Gray, mottled sandy clay	
Immokalee Fine Sand (21)	0-8	Very dark gray fine sand	0-1.0
	8-36	Light gray fine sand	
	36-46	Black fine sand with organic matter	
	46-52	Dark reddish brown fine sand with organic matter	
	52-80	Dark brown fine sand	

TABLE B-2: CLAYEY SOILS

SOIL NAME AND MAP SYMBOL	DEPTH (INCHES)	SOIL DESCRIPTION	SHWT (FEET)
Lochloosa Fine Sands (26)	0-7	Dark gray fine sand	2.5 - 5.0
	7-15	Very pale brown fine sand	
	15-28	Pale brown fine sand	
	28-35	Light yellowish brown fine sandy loam	
	35-40	Yellowish brown, mottled sandy clay loam	
	40-69	Gray, mottled sandy clay loam	
	69-80	Gray, sandy clay loam	
Micronopy Fine Sands (26)	0-5	Very dark gray fine sand	1.5 - 2.5
	5-15	Brown fine sand	
	15-25	Mottled yellowish brown sandy clay loam	
	25-80	Gray, mottled sandy clay	
Millhopper Fine Sands (53)	0-4	Dark gray fine sand	3.5 - 6.0
	4-9	Brown fine sand	
	9-25	Light yellowish brown fine sand	
	25-48	Light gray, mottled fine sand	
	48-57	Light gray fine sand	
	57-62	Very pale brown, mottled sandy clay loam	
	62-80	Gray, mottled sandy clay loam	

TABLE B-3: FINE SANDS

SOIL NAME AND MAP SYMBOL	DEPTH (INCHES)	SOIL DESCRIPTION	SHWT (FEET)
Candler Fine Sands (7)	0-6	Dark gray fine sand	>6.0
	6-35	Light yellowish brown fine sand	
	35-72	Very pale brown fine sand	
	72-80	Very pale brown fine sand with strong brown loamy sand lamellae	
Fort Meade Loamy Fine Sands (18)	0-7	Very dark gray loamy fine sand	>6.0
	7-26	Very dark grayish brown loamy sand	
	26-58	Yellowish brown loamy sand	
	58-80	Light yellowish brown loamy sand	
Gainesville Loamy Fine Sands (19)	0-9	Very dark grayish brown loam fine sand	>6.0
	9-29	Brown loamy fine sand	
	29-80	Strong brown loamy fine sand	
Lake Fine Sands (25)	0-4	Dark grayish brown fine sand	>6.0
	4-24	Strong brown fine sand	
	24-64	Reddish yellow fine sand	
	64-80	Strong brown fine sand	
Malabar Fine Sands (27)	0-4	Dark gray fine sand	0 - 1.0
	4-12	Light brownish gray fine sand	
	12-30	Brownish yellow fine sand	
	30-50	Pale brown fine sand	
	50-66	Gray, mottled fine sand	
	66-80	Grayish brown fine sand	

TABLE B-3: FINE SANDS (CONT.)

SOIL NAME AND MAP SYMBOL	DEPTH (INCHES)	SOIL DESCRIPTION	SHWT (FEET)
Myakka Fine Sands (29)	0-5	Very dark gray fine sand	0 - 1.0
	5-20	Gray fine sand	
	20-25	Black fine sand	
	25-30	Dark reddish brown fine sand	
	30-38	Brownish yellow fine sand	
	38-55	Very pale brown fine sand	
	55-80	Dark grayish brown fine sand	
Ona Fine Sands (33)	0-4	Very dark gray fine sand	0 - 1.0
	4-8	Black fine sand	
	8-22	Very dark brown fine sand	
	22-80	Light gray fine sand	
Pomello Fine Sands (41)	0-3	Very dark gray fine sand	2.0 - 3.5
	3-43	Light gray fine sand	
	43-46	Dark brown fine sand	
	46-55	Brown fine sand	
	55-80	Grayish brown fine sand	
St. Johns Fine Sands (46)	0-6	Black fine sand	0 - 1.0
	6-12	Very dark grayish brown fine sand	
	12-29	Light brownish gray fine sand	
	29-36	Black fine sand	
	36-46	Dark reddish brown fine sand	
	46-50	Dark yellowish brown fine sand	
	50-80	Light brownish gray fine sand	

TABLE B-3: FINE SANDS (CONT.)

SOIL NAME AND MAP SYMBOL	DEPTH (INCHES)	SOIL DESCRIPTION	SHWT (FEET)
Seffner Fine Sands (47)	0-9	Very dark gray fine sand	1.5 - 3.5
	9-13	Very dark gray, mottled fine sand	
	13-21	Dark gray, mottled fine sand	
	21-35	Very pale brown, mottled fine sand	
	35-63	Light gray, mottled fine sand	
	63-80	White, mottled fine sand	
Smyrna Fine Sands (52)	0-4	Very dark gray fine sand	0 - 1.0
	4-12	Gray fine sand	
	12-15	Dark brown fine sand	
	15-20	Very dark grayish brown fine sand	
	20-45	Light brownish gray, mottled fine sand	
	45-80	Brown fine sand	
Tavares (53)	0-6	Dark grayish brown fine sand	3.5 - 6.0
	6-32	Pale brown fine sand	
	32-40	Very pale brown fine sand	
	40-80	Light gray fine sand	
Zolfo Fine Sands (61)	0-3	Very dark gray fine sand	2.0 - 3.5
	3-15	Grayish brown, mottled fine sand	
	15-51	Light gray, mottled fine sand	
	51-60	Grayish brown fine sand	
	60-80	Dark brown fine sand	

APPENDIX C:

Communication Memorandums and Correspondence with the Planning Agencies



July 23, 1992

Mr. Rich Clarendon
Hillsborough County City-County Planning Commission
201 East Kennedy Boulevard
Suite 600
Tampa, FL 33602

SUBJECT: US 92 PD&E Study, Garden Lane to County Line Road
State Project No. 10030-1536
WPI No. 7113842
FAP No. MAF-212-1(34)
Hillsborough County

Dear Mr. Clarendon:

Laura Turner spoke with you earlier to schedule a meeting about the US 92 project. This letter confirms that the meeting will be at 10:00 AM on Tuesday, August 25, 1992 at your office. The purpose of the meeting is to give an overview of the above referenced project and its progress.

As you know, the Florida Department of Transportation (FDOT) is conducting a Project Development and Environmental (PD&E) Study for US 92, from Garden Lane (just east of U.S. 301) to County Line Road. We have completed data collection for the project and are now beginning the preliminary evaluation of conceptual design alternatives and their impacts in preparation for a public workshop.

We would like to present this work to your staff as well as provide an overview of the project schedule. We believe it would be helpful to have members of the transportation department (e.g., MPO staff) as well as members of the urban design department attend the meeting.

In addition, we would like to determine if we should make a presentation to the MPO at their board meeting on September 15, 1992. We anticipate holding the public workshop in October 1992 and would like to provide an overview of the information that will be presented to the public.



GLATTING JACKSON KERCHER ANGLIN LOPEZ RINEHART

August 4, 1992

William J. Anglin, Jr.
Jack F. Glatting
Timothy T. Jackson
William C. Kercher, Jr.
S. Raymond Lopez
John F. Rinehart

David L. Barth
Bruce C. Hall
Carey S. Hayo
Jay R. Hood
Walter Kulash
Sharon K. Lamantia
John J. Moore, III
John Percy
Mary T. Raulerson
Julie A. Scofield
Nathan P. Silva
Laura K. Turner
Ronald L. Urbaniak

Ms. Sharon Phillips
Post, Buckley, Schuh & Jernigan, Inc.
5300 West Cypress Street
Suite 300
Tampa, Florida 33607

RE: U.S. 92 (S.R. 600) PD&E Study, Hillsborough County
State Project Number 10030-1536
W.P.I. Number 7113842
F.A.P. Number MAF-212-1(34)
Plant City Multi Modal Study Advisory Group Meeting
GJ #4289.04

Dear Sharon:

The Hillsborough County City-County Planning Commission (HCCCPC) is preparing a Transportation/Transit Plan for the Plant City area. As a part of this process a meeting of the advisory group was held on July 30, 1992 which I attended. The following items highlight the meeting.

- o The study will be completed in two months. There will be a draft Transportation/Transit Plan for Plant City by September 30, 1992.
- o Mr. Frank Kalpakis, Project Manager for the study, reviewed the programmed improvements as well as on going studies within the Plant City area.
- o A loop system for Plant City will be considered.
- o Two issues were identified, which are: (1) truck traffic going through the city since they are avoiding the weigh station on Interstate 4 and (2) vehicle delay times due to the railroad activity.

COMMUNITY PLANNING

33 East Pine Street, Ellis Building, Orlando, Florida, USA 32801
Phone (407) 843-6552 • FAX (407) 839-1789

THE PLANNING COMMISSION

1 October 1992

Laura K. Turner, AICP
Glatting Jackson Kercher Anglin Lopez Rinehart
33 East Pine Street, Ellis Building
Orlando, Florida 32801

RECEIVED

OCT 5 1992

Glatting Jackson Kercher
Anglin Lopez Rinehart, Inc.

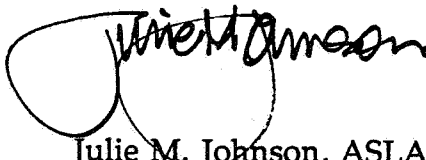
Dear Laura,

At the August 25 meeting on US 92 improvements with Metropolitan Planning Organization and Planning Commission staff, you had requested a copy of the Guidelines for Landscaping Hillsborough County Roadways. We have just printed a final version of these guidelines, and I enclose a copy for your use.

This report was created to guide the design of County roadway landscaping. Following endorsement of the Livable Roadways report, the Hillsborough County Board of County Commissioners designated funds for landscaping improved as well as existing roadways.

As the report's Executive Summary states, the guidelines are to be used by designers, project managers, citizens, and county staff for landscaping projects occurring in County road rights-of-way. While US 92 is not a County-maintained road, I appreciate your interest in understanding County goals for roadway landscaping. If you have any questions about the guidelines, feel free to call me at 813-272-5940.

Sincerely,



Julie M. Johnson, ASLA, AICP
Comprehensive Planning and Urban Design

attachment

cc: Ramond A. Chiaramonte, AICP
Director, Comprehensive Planning and Urban Design



May 14, 1992

A. Lynn Hybarger
Florida Department of Transportation
District VII
4950 W. Kennedy Boulevard, Suite 500
Tampa, Florida

Dear Ms. Hybarger

Subject: US 92 PD&E Study
Hillsborough County

As per your letter dated April 27, 1992, staff has reviewed the Final Traffic Technical Memorandum for the subject project.

As you will recall from our previous comments, we pointed out a discrepancy between the 2010 volumes projected by our 2010 Long Range Transportation Plan and your study on US 92 east of Plant City.

Prior to the September 1991 update to the 2010 Plan, we were predicting 22,900 vpd (in 2010) on US 92 at the County Line. During the update, this figure was revised upward (to 36,400 vpd) based on more recent estimates developed as part of the Tampa Interstate Study. This decision is reflected in the document "2010 Update Technical Memorandum Number 5 - External Trip Development". We believe that this higher external station volume is largely responsible for the higher volumes predicted for this segment in our 2010 Plan.

In light of the fact that your estimate of 25,000 vpd is close to our original estimate, we are in general agreement with the findings and conclusions of your study.

A copy of the above referenced Technical Memorandum is enclosed for your information. Thank you for letting us review the above traffic report. Should you have any question on this matter, please call me at 272-5940.

Sincerely,

Lucilla L. Ayer, AICP
Director of Transportation Planning

JZ:sjm

Enclosure

Commissioner Ed Turanchik
Chairman

Mayor Bob Woodard
Vice Chairman

Laura Blain, Chairman
Expressway Authority

Commissioner Joe Chilura
Hillsborough County

Mayor Sandra Freedman
City of Tampa

Commissioner Pam Iorio
Hillsborough County

Councilman John King
HARTline

Commissioner Bill Menwether
City of Plant City

Councilman Scott Paine
City of Tampa

Councilwoman Linda Saul-Sena
City of Tampa

Commissioner Ed Turanchik
Hillsborough County

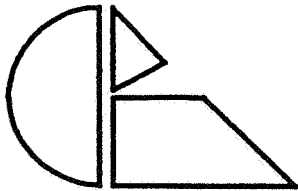
Mayor Bob Woodard
City of Temple Terrace

Bill McDaniel, P.E. (Ex-Officio)
FDOT District Secretary

Jan T. Smith (Ex-Officio)
The Planning Commission

Thomas L. Thomson, P.E., AICP
Executive Director

Tampa Urban Area
Metropolitan Planning Organization
201 E. Kennedy, Suite 600
Tampa, Florida 33602-5117
813/272-5940
FAX NO. 813-272-6258



TELEPHONE & CONVERSATION REPORTING FORM

GLATTING LOPEZ KERCHER ANGLIN, INC.

Contact Person: Laura Turner
33 East Pine Street
Orlando, Florida 32801
(407) 843-6552

Hillsborough Avenue (US 92/SR 600) PD&E Study

Name: Jim Barrington Date: 4/2/92
Company: Hills. Co. Comm. Dev. State Project No.: 10030-1536
Work Project No.: 7113842
Address: _____ Federal Aid No.: MAF-212-1(34)
GLKA No.: 6293.04
Telephone #: 813/272-5384

Copies to: Greg Jones

Conversation Notes: _____

LKT met w/ Mr. Barrington on 4/1/92 to review CDBG
targeted neighborhoods in the vicinity of US92

* targeted neighborhoods are not adjacent to US92

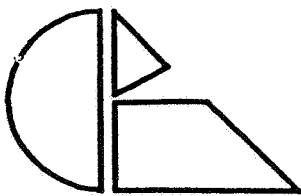
- Dover - south of 574
- Thimotossassa - north of I-4
- Plant City (census tract 126) - south of 574

note definitions (med. income is 80% or less of
median income of the MSA) are based on
1980 census figures & manipulations provided by
HUD; will not receive figures from HUD, based on
1990 census, until 2-3 years from now.

• received copies of work program, census info., relocation housing
program info. (generally if unit(s) is delapidated and
needs to be demolished & rebuilt; attempt to replace w/ same
neighborhood, and at least the same census tract)

• Plant City Community Dev. Director: Jim McDaniel 752-3125
P.O. Box
Plant City 34289-9003

* info. rec'd is in pocket file (6293.04)



TELEPHONE & CONVERSATION REPORTING FORM

GLATTING LOPEZ KERCHER ANGLIN, INC.

Contact Person: Laura Tumer
33 East Pine Street
Orlando, Florida 32801
(407) 843-6552

Hillsborough Avenue (US 92/SR 600) PD&E Study

Name: Bob Young Date: 5/8/92
Company: Director, Economic Development Council State Project No.: 10030-1536
Address: Greater Plant City, Chamber of Commerce, P.O. Box 33564 Work Project No.: 7113842
Telephone #: 813/754-1745 9021 Federal Aid No.: MAF-212-1(34)
Copies to: Greg Jones, Sharon Phillips GLKA No.: 6293.04

Conversation Notes:

On May 7, 1992, LKT met with Bob Young to introduce the US92 project and to understand potential concerns (especially for downtown) as a result of this project. The following items highlight the discussion.

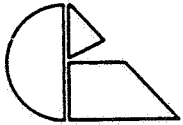
- LKT reviewed the PD&E process and provided an overview of the project
- major concern re: circulation is the role of the railroad; difficulties in providing ^{timely ambulance} services to the Hospital due to train delays; not as much of a problem for fire protection with several stations scattered around the city.

concern w/ speed through downtown; will character of the road remain or will it have higher speeds?

some activity with adult tricycles, motorized wheelchairs, etc. traveling ~~within~~ on the local roads

* Downtown Redevelopment Plan — putting one together is in being discussed; in the process of developing a RFP.

- will check on availability of parking studies; left with the impression there is ample space downtown; just developed lot next to The Savannah restaurant; next targeted area is the train station area. (parking discussed in the Community Redevelopment Plan, dated Jan. 1992; first done in 1983).



William J. Anglin, Jr.
Jack F. Glatting
Timothy T. Jackson
William C. Kercher, Jr.
S. Raymond Lopez
John F. Rinehart

David L. Barth
Carey S. Hayo
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John Percy
Nancy Prine
Julie A. Scofield
Nathan P. Silva
Laura K. Turner
Ronald L. Urbaniak

GLATTING LOPEZ KERCHER ANGLIN

MEMORANDUM

DATE: May 27, 1992

TO: Greg Janes

FROM: Laura Turner *Laura*

RE: US 92 PD&E Study - Hillsborough County, Florida
WPI No. 7113842
State Project No. 10030-1536
FAP No. MAF-212-1(34)
Meeting with Kathy Gonsalves (City Engineer) and Bob
Bedell (Utilities Director)
GLKA #6293.04

On May 27, 1992, Julie Scofield and Laura Turner met with Kathy Gonsalves and Bob Bedell to provide an overview of the US 92 PD&E Study. The following highlight the discussion.

- o FDOT has sent the City a set of design plans for US 92, from Thontosassa Road to the Hillsborough/Polk County line. The City has been requested to note utility locations and relocation schedules. The FDOT has indicated that the this section of US 92 will be resurfaced, add sidewalks, and add shoulders from Gordon Street to the County line. The FDOT Project Manager for this work is Randy Sanborn. Ms. Turner will check on how this work effort will relate to the PD&E Study and call Ms. Gonsalves with the results.
- o Mr. Bedell would like to coordinate the schedule for US 92 improvements with FDOT, especially if there is an opportunity for utilities to be replaced simultaneously with the improvement so that disruption occurs only once.
- o The City has heard rumors that the improvements to US 92 will be made so traffic can be directed along US 92 while I-4 is being improved. If this is true, the City is concerned with the traffic being diverted through the middle of downtown. The preference would be to divert traffic around the City.

POST.
BUCKLEY.
SCHUH &
JERNIGAN, INC.

ENGINEERING
PLANNING
ARCHITECTURE

MEMORANDUM

RECEIVED

SEP 4 1992

TO: Lynn Hybarger

FROM: Sharon M. Phillips

DATE: August 28, 1992

RE: U.S. 92 PD&E Study, from Garden Lane Road to
County Line Road, Hillsborough County
State Project No. 10030-1536
W.P.I. No. 7113842
F.A.P. No. MAF-212-1(34)
August 25, 1992 Meeting with HCCCPC Staff

Glatting Jackson Kercher
Anglin Lopez Rinehart, Inc.

On August 25, 1992, a meeting was held with the Hillsborough County City-County Planning Commission staff to review the status of the U.S. 92 Project Development and Environmental (PD&E) Study. The agenda and handout are attached. The following people attended the meeting.

Rich Clarendon, HCCCPC
Lucie Ayer, HCCCPC
Frank Kalpakis, HCCCPC
Julie Johnson, HCCCPC
Roc King, HCCCPC
Lynn Hybarger, Florida Department of Transportation (FDOT)
Sharon Phillips, Post, Buckley, Schuh & Jernigan, Inc. (PBS&J)
Aled Daas, PBS&J
Nathan Silva, Glatting Jackson
Laura Turner, Glatting Jackson

PROJECT DESCRIPTION

Sharon Phillips provided an overview of the PD&E Study. The purpose of the study is to identify the appropriate improvement along the existing U.S. 92, from Garden Lane Road to County Line Road. The project is located within Plant City as well as unincorporated Hillsborough County, Florida. The results of the traffic analysis indicate that U.S. 92 should

QUESTIONS/DISCUSSION

Frank Kalpakis mentioned that if the number of lanes proposed is less than what the MPO Long Range Plan has identified, there will be no need for an amendment to the MPO Plan. However, if the proposed laneage is greater than what has been identified, an amendment will be needed. For the U.S. 92 project, the only area affected would be Section 1 from Garden Lane Road to Falkenburg Road. This issue will be reviewed by the MPO staff.

Julie Johnson indicated a need to be aware of the mobility of bicyclists and pedestrians as we proceed with the study. Existing and sidewalk locations were discussed at length. In addition, the Planning Commission will be looking for planting and landscaping opportunities associated with this project. The Liveable Roadways sub-committee of the MPO may be interested in a project presentation later on.

Roc King was interested in obtaining some of the project technical reports, especially the historic and archaeologically significant information. HCCCPC will begin in October to develop urban design guidelines for S.R. 39 in Plant City. It is anticipated that these guidelines will be applied to other roadways in the Plant City area, including U.S. 92. Mr. King will keep the project team informed as to the progress of developing the urban design guidelines.

Lucie Ayer sees this project as a catalyst for redevelopment along U.S. 92. In addition, the MPO is interested in this project receiving a higher priority so that construction could begin as soon as possible so U.S. 92 can act as M.O.T. for I-4 construction.

Rich Clarendon was interested in the effect, if any, the removal of the Crosstown Extension would have on the traffic along U.S. 92. It anticipated that there would be little impact since most of the trips along U.S. 92 either originate along or are destined to U.S. 92. Lucie Ayer requested the data from the MPO model run without the Crosstown Extension (not on official run) be reviewed to determine the effect of absence of that roadway on U.S. 92.

Roc King was interested in learning about any roadway projects just east of the Polk County Line. A PD&E Study for U.S. 92, east of this project, is scheduled to begin in two years. A PD&E study is currently underway along U.S. 92 in Polk County, from Wabash Avenue to Gary Road, at the southern shore of Lake Parker. In addition, Mr. King was interested in whether or not other road improvements and approved projects were included in the analysis. They were and are identified in the Data Summary Report.

Rich Clarendon raised the issue of consistency with RTA (Regional Transportation Analysis). The origin and destination study was described by Nathan Silva. It was noted few trips travel the length of U.S. 92, as most are destined for sites along U.S. 92. It was noted by staff that U.S.

**Metropolitan
Planning
Organization**

October 1, 1993 93 OCT -6 PM 1:15

Mr. William H. McDaniel, Jr., P.E.
Attn: Mr. Michael J. Coleman, P.E.
Project Development and Environment
Florida Department of Transportation
11201 North Malcolm McKinley Road
MS 7-500
Tampa, Florida 33612-6043

Dear Mr. McDaniel:

Re: US 92 Project Development and Environment Study

Thank you for the opportunity to comment on the above referenced study. Staff has reviewed the proposed improvements along US 92 from Garden Lane to County Line Road. This project may be discussed at the October 5, 1993 MPO Board meeting, so we are respectfully requesting an extension to submit final comments. In the meantime, we would like to provide you with our preliminary comments for your consideration.

We are pleased with the Florida Department of Transportation's (FDOT) effort to provide for bicycle and pedestrian amenities along this corridor. We are also encouraged that the Federal Highway Administration is considering restricting truck traffic on the one-way pairs of Baker and Reynolds Streets through Plant City, and encourage the FDOT to join this effort.

However, the following should be considered for the "Preferred Build Alternative".

The six-laning of Segment One, Garden Lane to Falkenburg Road, is inconsistent with the adopted 2010 Long Range Transportation Plan which identifies this segment as a four-lane divided roadway. An amendment to the Long Range Transportation Plan will be required to address the inconsistency if the additional lanes are acceptable to the MPO.

Also, we question the necessity of future expansion to six-lane divided roadway sections on Segments Two, Three, Four, and Five. According to the Traffic Technical Memorandum for this study, Year 2015 design hour volumes indicate the need for four lanes on these roadway segments.

RECEIVED
DISTRICT SECRETARY
DISTRICT SEVEN

7113842.07
Lynn Hybarger
FYI: E - Have you
approached MPO re: need
to modify CRTP in
Garden Lane area?
DAN

93 OCT -8 PM 1:17

RECEIVED
DISTRICT PLANNING & PROGRAMS
DISTRICT SEVEN

Commissioner Ed Turanchik
Chairman

Mayor Bob Woodard
Vice Chairman

Laura Blain, Chairman
Expressway Authority

Commissioner Joe Chillura
Hillsborough County

Mayor Sandra Freedman
City of Tampa

Commissioner Randy L. Larson, P.E.
City of Plant City

Commissioner Lydia Miller
Hillsborough County

Councilman Scott Paine
City of Tampa

Councilwoman Linda Saul-Sena
City of Tampa

Commissioner Ed Turanchik
Hillsborough County

George Wise
HARTline

Mayor Bob Woodard
City of Temple Terrace

Bill McDaniel, P.E. (Ex-Officio)
FDOT District Secretary

Jan T. Smith (Ex-Officio)
The Planning Commission

Thomas L. Thomson, P.E., AICP
Executive Director

Hillsborough County
Metropolitan Planning Organization
201 E. Kennedy, Suite 600
Tampa, Florida 33602-5117
813/272-5940
FAX NO: 813/272-6258

RECEIVED PD&E



Metropolitan Planning Organization

RECEIVED PD&E
93 NOV 12 PM 2:05

November 8, 1993

Mr. William H. McDaniel, Jr., P.E.
Attn: Mr. Michael J. Coleman, P.E.
Project Development and Environment
Florida Department of Transportation
11201 North Malcolm McKinley Road
MS 7-500
Tampa, Florida 33612-6043

Commissioner Ed Turanchik
Chairman

Mayor Bob Woodard
Vice Chairman

Dear Mr. McDaniel:

Re: US 92 Project Development and Environment Study

Laura Blain, Chairman
Expressway Authority

Commissioner Joe Chillura
Hillsborough County

Mayor Sandra Freedman
City of Tampa

Commissioner Randy L. Larson, P.E.
City of Plant City

Commissioner Lydia Miller
Hillsborough County

Councilman Scott Paine
City of Tampa

Councilwoman Linda Saul-Sena
City of Tampa

Commissioner Ed Turanchik
Hillsborough County

George Wise
HARTline

Mayor Bob Woodard
City of Temple Terrace

Bill McDaniel, P.E. (Ex-Officio)
FDOT District Secretary

Jan T. Smith (Ex-Officio)
The Planning Commission

Thomas L. Thomson, P.E., AICP
Executive Director

Thank you for the opportunity to submit additional comments on the above referenced study. Our initial comments were submitted in an October 1, 1993 letter prior to the October 5, 1993 MPO Board meeting. At this meeting, the Board discussed and acted on issues relating to this project.

After some discussion involving a change in MPO policy relating to the possible future reallocation of funds from highway projects to transit and rail projects, the MPO Board made a motion that carried unanimously to

"request the Florida Department of Transportation to notate the right-of-way acquisition phase for US 92 from Garden Lane to McIntosh Road contingent upon the possibility of funding a commuter rail project in that corridor, in part, through those funds and the possibility of moving those projects forward as early as the 1995/96 year. Then, in one year, when additional information from the rail studies are available, the MPO will revisit this issue and decide whether to defer those funds to a commuter rail line and postpone the US 92 project."

The point of this motion is that the Department should consider the findings of future rail analysis before committing funds for an expanded roadway in this transportation corridor.

In addition, we have some questions regarding the conclusions of the Traffic Memorandum for this study which indicates the need for four lanes on Segments Two, Three, Four, and Five by the year 2015. Was the

Hillsborough County
Metropolitan Planning Organization
201 E. Kennedy, Suite 600
Tampa, Florida 33602-5117
813/272-5940
FAX NO: 813/272-6258

FLORIDA

LAWTON CHILES
GOVERNOR



7113842.06
DEPARTMENT OF TRANSPORTATION

BEN G. WATTS
SECRETARY

PD&E Department, MS 7-500
11201 N. McKinley Drive
Tampa, FL 33612-6403
November 19, 1993

Mr. Thomas L. Thomson, P.E.
Executive Director
Hillsborough County Metropolitan Planning Organization
201 East Kennedy Blvd., Suite 600
Tampa, Florida 33602-5117

RE: State Project No. 10030-1536
Work Program Item No. 7113842
US 92 PD&E Study
Hillsborough County

Dear Mr. Thomson:

Pursuant to your letter of October 1, 1993, enclosed is an Application For Change in the Year 2010 Long Range Plan. The request for change is within Segment 1 of the project; US 92 between Garden Lane and Falkenburg Road, approximately 3100 feet in length. The request is for a change in the plan from 4 to 6 lanes.

Due to time constraints and funding commitments, the Department would request that this item be included as an action item on the agenda for the December meetings of the Technical Advisory Committee and Citizens Advisory Committee. We would request that it be presented to the MPO for action at the January meeting.

If you have any questions please call me at (813) 975-6435.

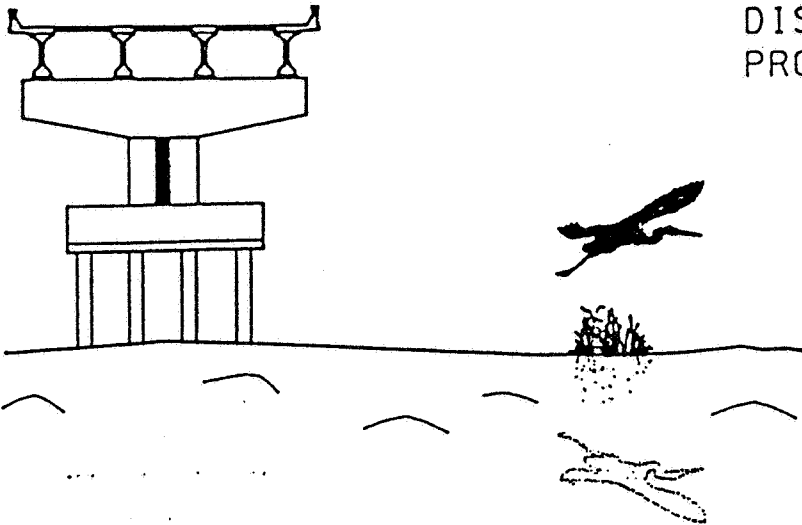
Sincerely,

David A. Twiddy, Jr., P.E.
District Director Planning and Programs

Enclosure

cc: William H. McDaniel, Jr.
Lynn Hybarger

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
DISTRICT SEVEN
PROJECT DEVELOPMENT & ENVIRONMEN



FACSIMILE TRANSMITTAL

DATE: 11-22-93

TO: JOE ZAMBITO

COMPANY: PLANNING COMMISSION

FAX NUMBER: 272-6258

FROM: LYNN HYBARGER

PHONE: 975-6454

NO. OF PAGES INCLUDING COVER: 4

COMMENTS: THIS IS THE AMENDMENT REQUEST FOR
US 92. COULD YOU PLEASE REVIEW
AND LET ME KNOW IF YOU HAVE ANY
COMMENTS. I INTEND TO HAVE IT
SIGNED & IN THE MAIL TODAY. THANKS.

Purpose of Change(s) (3) (continued):

The US 92 study proposes to continue this third travel lane to Falkenburg Road. Falkenburg Road is a logical termini because of its function as a major arterial and as a connection to State Road 60. The intersection at Falkenburg Road and US 92 is also signalized and is shown as a four lane facility on the 2010 Long Range Transportation Plan.

Traveling eastbound on US 92 the I-4 improvement will construct the third travel lane to Baptist Church Road, approximately 1800 feet east of Garden Lane. This is the first intersection east of Garden Lane and the first location the lane drop can safely occur. Therefore, the US 92 improvements would extend the six lane section for an additional 1300 feet.

Special Considerations (4): None

Land Development: The predominate land uses fronting US 92 between Garden Lane and Falkenburg Road are a mixture of industrial, commercial, offices, and residences. Industrial uses include a rock and gravel pit, a salvage yard and several small manufacturers. Office uses are both low rise service industries and converted residential structures. Commercial uses are typical highway retail and service. Residential uses include single family homes and rental mobile home parks. Deep lots fronting on US 92 are generally residential uses. The proposed improvements will facilitate access to the commercial land uses which front along US 92.

Traffic Volume and Capacity: The area between Garden Lane and Falkenburg Road has an existing AADT (1991) of 12,200. This is a LOS of "C" on the 2 lane roadway. The 2015 No Build traffic projections indicate a projected volume of 33,400 or a LOS of "F". The 2015 Build projection for this 6 lane improvement from Garden Lane to Falkenburg is LOS C.

Land Use: The area of US 92 between Garden Lane and Falkenburg Road is proposed as Urban Land 1 and 2 (UL-1 & UL-2) in the Hillsborough County Comprehensive Plan adopted in 1990. North of US 92 and east of US 301 the proposed land use category is UL-1. The UL-1 land use category is used to designate those areas that are located within 3 miles from I-75. In accordance with the adopted Hillsborough County Comprehensive Plan, these areas are best suited for suburban uses with development occurring as the provision and timing of transportation and public services to support these uses are available. Non-residential development intensities up to 0.5 floor area ratio and residential densities up to 12 dwelling units per acre are permitted in this area.

FLORIDA

LAWTON CHILES
GOVERNOR



DEPARTMENT OF TRANSPORTATION

BEN G. WATTS
SECRETARY

PD&E Department, MS 7-500
11201 N. McKinley Drive
Tampa, FL 33612-6403
December 2, 1993

Mr. Thomas L. Thomson, P.E.
Executive Director
Hillsborough County
Metropolitan Planning Organization
201 East Kennedy Blvd., Suite 600
Tampa, FL 33602-5117

RE: WPI No. 7113842 206
State Project No. 10030-1536
FAP No. MAF-212-1(34)
US 92 PD&E Study
Hillsborough County

Dear Mr. Thomson:

The Department appreciates your comments on the US 92 PD&E project and offers the following responses and clarifications.

As an initial step in a Project Development and Environment (PD&E) study, a Traffic Technical Memorandum is prepared using the approved MPO regional traffic model. This report discusses existing and projected traffic volumes and conditions which need to be considered during the development of the project alternatives.

A Traffic Technical Memorandum was prepared for the above referenced project and submitted to the MPO staff for review and concurrence. Concurrence from Lucy Ayre was received on June 23, 1992. This document summarizes the results of Origin and Destination Surveys performed for the project, existing count information and designates the number of lanes necessary for the facility to operate at an acceptable level of service in the project's design year, 2015. The existing facility operates at level of service C or better. If no improvements are made to US 92, it is expected to operate at level of service F, except the Plant City one-way pair system which will continue operating at an acceptable LOS.

Mr. Thomas Thomson
State Project No. 10030-1536
December 2, 1993
Page 3

All analyses and evaluations completed will be completely documented in the final engineering report and the environmental documentation for the project.

If you have any further questions or comments, feel free to contact me or Lynn Hybarger at 975-6454.

Sincerely,

Donald J. Skelton for

Michael J. Coleman, P.E.
District VII PD&E Engineer

MJC/ck

Attachment

cc: L. Hybarger

:7118342.06



RECEIVED
DISTRICT PLANNING & PROGRAMS
DISTRICT SEVEN

94 FEB -9 PM 3: 15

RECEIVED PD&E
01 FEB 18 AM 8: 20

February 2, 1994

Mr. David Twiddy P.E.
Director, Planning and Programs
Florida Department of Transportation
District Seven Office
11201 North McKinley Drive
Tampa, Florida 33612

Dear Mr. Twiddy:

Subject: Request for LRTP Amendment - US 92

Staff has reviewed your recent request to amend the adopted 2010 Long Range Transportation Plan. Your request was to change US 92 between I-4 and Falkenburg Road from a four land divided roadway to a six lane divided roadway.

Upon further discussion with Department PD&E staff, we felt that the proposed cross-section for this segment was consistent with the 2010 Plan. More specifically, the six lane section is proposed because there are three lanes going onto and coming off I-4 where it connects to US 92. By the time the road tapers back to four lanes, it will almost reach the point where it has to start widening again for the auxiliary lanes at the Falkenburg Road & US 92 intersection. At this point the outside eastbound lane will become a "right turn only" lane. In order to avoid the short (approx. 800') section of four lane roadway, the PD&E Study is suggesting that the six lane section be carried to Falkenburg and dropped at that point.

The MPO staff believes that, because the 5th and 6th lanes are not "through lanes" but rather auxiliary lanes, FDOT's proposal is consistent with the Long Range Transportation Plan. This information was presented to both the Technical and Citizen's Advisory Committees who also concurred that the proposed configuration should be considered consistent with the 2010 Plan.

The TAC, CAC, and staff recommendations were taken to the MPO at its meeting of February 2, 1994. At that meeting, the MPO concurred with the staff recommendation that the

Mayor Bob Woodard
Chairman

Councilman Scott Paine
Vice Chairman

Laura Blain, Chairman
Expressway Authority

Commissioner Joe Chillura
Hillsborough County

Mayor Sandy Freedman
City of Tampa

Commissioner Randy L. Larson, P.E.
City of Plant City

Commissioner Lydia Miller
Hillsborough County

Councilman Scott Paine
City of Tampa

Councilwoman Linda Saul-Sena
City of Tampa

Commissioner Ed Turanchik
Hillsborough County

George Wise
HARTline

Mayor Bob Woodard
City of Temple Terrace

Bill McDaniel, P.E. (Ex-Officio)
FDOT District Secretary

William Connors (Ex-Officio)
Hillsborough Co. Aviation Authority

Joseph Garcia (Ex-Officio)
Tampa Port Authority

Jan T. Smith (Ex-Officio)
The Planning Commission

Thomas L. Thomson, P.E., AICP
Executive Director

Hillsborough County
Metropolitan Planning Organization
201 E. Kennedy, Suite 600
Tampa, Florida 33602-5117
813/272-5940
FAX NO: 813/272-6258

Mr. David Twiddy P.E.
February 2, 1994
Page 2

proposed US 92 PD&E Study is consistent with the adopted Year 2010 Long Range Transportation Plan. In addition, the MPO stipulated that prior to additional future widening to 6 through lanes, an amendment to the MPO's Adopted Long Range Transportation Plan, together with a multi modal corridor analysis may be necessary.

Sincerely,

A handwritten signature in cursive script, reading "Thomas L. Thomson". The signature is written in dark ink and is positioned above the printed name and title.

Thomas L. Thomson
Executive Director

APPENDIX D:

Alternatives Evaluation Matrices

**ALTERNATIVES EVALUATION MATRIX SEGMENT 1
(SIX-LANE URBAN TYPICAL SECTION)**

EVALUATION FACTORS	ACTUAL IMPACTS PER ALTERNATIVE			ALTERNATIVES RANKING**		
	North	Center	South	North	Center	South
	1-N*	1-C	1-S	1-N	1-C	1-S
BUSINESS IMPACTS:						
Number of businesses expected to be relocated	1	2	4	1	2	3
RESIDENTIAL IMPACTS:						
Number of residences expected to be relocated	6	1	1	2	1	1
COMMUNITY FACILITY IMPACTS:						
Community facilities within ROW:						
-Number of churches	0	0	0	0	0	0
-Number of schools	0	0	0	0	0	0
-Number of nursing homes	0	0	0	0	0	0
-Number of hospitals	0	0	0	0	0	0
-Number of cemeteries	0	0	0	0	0	0
-Number of other public services (fire stations, etc.)	0	2	2	1	2	2
NOISE SENSITIVE RECEIVERS:						
Number of noise sensitive receivers	9	10	10	1	2	2
IMPACTS ON CULTURAL/HISTORIC RESOURCES AND PUBLIC PARKS:						
Number of historic sites/structures within ROW	0	0	0	0	0	0
Number of public parks within ROW	0	0	0	0	0	0
NATURAL ENVIRONMENT IMPACTS:						
Wetlands within ROW:						
-Area of undisturbed wetlands (acres)	0.00	0.00	0.00			
-Area of disturbed/man-made wetlands (acres)	0.00	0.00	0.00			
-Total wetland mitigation area (acres)^	0.00	0.00	0.00	0	0	0
Floodplain and floodway encroachment:						
-Area of base floodplain encroachment (acres)	0.00	0.00	0.00	0	0	0
-Area of base floodway encroachment (acres)	0.00	0.00	0.00	0	0	0
POTENTIAL HAZARDOUS MATERIAL AND PETROLEUM CONTAMINATED SITES:						
Number of potential hazardous material sites	1	2	1	1	2	1
Number of potential petroleum contaminated sites	0	2	2	1	2	2
RIGHT OF WAY IMPACTS:						
Number of parcels impacted	21	36	19	2	3	1
Area of ROW to be acquired (acres)	2.1	2.2	2.2	1	2	2
ESTIMATED PROJECT COSTS (Present value in million \$):						
ROW acquisition cost	1.47	2.17	1.54	1	3	2
Engineering cost	0.11	0.11	0.11	1	1	1
Roadway construction cost excluding bridge improvements	1.07	1.07	1.07	1	1	1
Construction engineering and inspection	0.11	0.11	0.11	1	1	1
TOTAL COST	2.76	3.46	2.83	***	***	***
TOTAL RANKING				14	22	19

Segment 1 length 0.555 miles

- * North: Right-of-way (ROW) acquisition only along the north side of US 92.
Center: Right-of-way (ROW) acquisition along both sides of US 92.
South: Right-of-way (ROW) acquisition only along the south side of US 92.

- ** Impacts were ranked from 1 to 3 for the lowest and highest impacts, respectively.

- *** Since the difference in the total costs is due only to the right-of-way acquisition costs, ranking was not assigned for the total cost to avoid "double-counting" of impacts.

- ^ The total wetland mitigation area was calculated based on a 4:1 ratio for undisturbed wetlands and a 1:1 ratio for the disturbed wetlands.

ALTERNATIVES EVALUATION MATRIX SEGMENT 2
(FOUR-LANE NON-EXPANDABLE URBAN TYPICAL SECTION)

EVALUATION FACTORS	ACTUAL IMPACTS PER ALTERNATIVE			ALTERNATIVES RANKING**		
	North	Center	South	North	Center	South
	2-N*	2-C	2-S	2-N	2-C	2-S
BUSINESS IMPACTS:						
Number of businesses expected to be relocated	2	0	0	2	1	1
RESIDENTIAL IMPACTS:						
Number of residences expected to be relocated	0	0	0	0	0	0
COMMUNITY FACILITY IMPACTS:						
Community facilities within ROW:						
-Number of churches	1	1	1	1	1	1
-Number of schools	2	2	1	2	2	1
-Number of nursing homes	0	0	0	0	0	0
-Number of hospitals	0	0	0	0	0	0
-Number of cemeteries	0	0	0	0	0	0
-Number of other public services (fire stations, etc.)	2	2	0	2	2	1
NOISE SENSITIVE RECEIVERS:						
Number of noise sensitive receivers	28	28	30	1	1	2
IMPACTS ON CULTURAL/HISTORIC RESOURCES AND PUBLIC PARKS:						
Number of historic sites/structures within ROW	0	0	0	0	0	0
Number of public parks within ROW	0	0	0	0	0	0
NATURAL ENVIRONMENT IMPACTS:						
Wetlands within ROW:						
-Area of undisturbed wetlands (acres)	0.06	0.04	0.00			
-Area of disturbed/man-made wetlands (acres)	0.85	0.90	0.99			
-Total wetland mitigation area (acres)^	1.09	1.14	0.99	2	3	1
Floodplain and floodway encroachment:						
-Area of base floodplain encroachment (acres)	0.48	0.43	0.46	3	1	2
-Area of base floodway encroachment (acres)	0.00	0.00	0.00	0	0	0
POTENTIAL HAZARDOUS MATERIAL AND PETROLEUM CONTAMINATED SITES:						
Number of potential hazardous material sites	3	6	3	1	2	1
Number of potential petroleum contaminated sites	11	16	5	2	3	1
UTILITY IMPACTS						
Cost of utilities relocation (thousand dollars)	0.0	20.0	20.0	1	2	2
RIGHT OF WAY IMPACTS:						
Number of parcels impacted	83	130	75	2	3	1
Area of ROW to be acquired (acres)	7.0	6.8	6.8	2	1	1
ESTIMATED PROJECT COSTS (Present value in million \$):						
ROW acquisition cost	5.83	7.29	5.24	2	3	1
Engineering cost	0.38	0.38	0.38	1	1	1
Roadway construction cost excluding bridge improvements	3.83	3.83	3.83	1	1	1
Construction engineering and inspection	0.38	0.38	0.38	1	1	1
TOTAL COST	10.42	11.88	9.83	***	***	***
TOTAL RANKING				26	28	19

Segment 2 length 2.807 miles

* North: Right-of-way (ROW) acquisition only along the north side of US 92.

Center: Right-of-way (ROW) acquisition along both sides of US 92.

South: Right-of-way (ROW) acquisition only along the south side of US 92.

** Impacts were ranked from 1 to 3 for the lowest and highest impacts, respectively.

*** Since the difference in the total costs is due only to the right-of-way acquisition costs, ranking was not assigned for the total cost to avoid "double-counting" of impacts.

^ The total wetland mitigation area was calculated based on a 4:1 ratio for undisturbed wetlands and a 1:1 ratio for the disturbed wetlands.

**ALTERNATIVES EVALUATION MATRIX SEGMENT 2
(FOUR-LANE, EXPANDABLE-TO-SIX-LANE URBAN TYPICAL SECTION)**

EVALUATION FACTORS	ACTUAL IMPACTS PER ALTERNATIVE			ALTERNATIVES RANKING**		
	North	Center	South	North	Center	South
	2-NE*	2-CE	2-SE	2-NE	2-CE	2-SE
BUSINESS IMPACTS:						
Number of businesses expected to be relocated	10	0	8	3	1	2
RESIDENTIAL IMPACTS:						
Number of residences expected to be relocated	4	0	0	2	1	1
COMMUNITY FACILITY IMPACTS:						
Community facilities within ROW:						
-Number of churches	1	1	1	1	1	1
-Number of schools	2	2	1	2	2	1
-Number of nursing homes	0	0	0	0	0	0
-Number of hospitals	0	0	0	0	0	0
-Number of cemeteries	0	0	0	0	0	0
-Number of other public services (fire stations, etc.)	2	2	0	2	2	1
NOISE SENSITIVE RECEIVERS:						
Number of noise sensitive receivers	26	29	26	1	2	1
IMPACTS ON CULTURAL/HISTORIC RESOURCES AND PUBLIC PARKS:						
Number of historic sites/structures within ROW	0	0	0	0	0	0
Number of public parks within ROW	0	0	0	0	0	0
NATURAL ENVIRONMENT IMPACTS:						
Wetlands within ROW:						
-Area of undisturbed wetlands (acres)	0.21	0.12	0.05			
-Area of disturbed/man-made wetlands (acres)	0.88	1.00	1.12			
-Total wetland mitigation area (acres)^	1.72	1.48	1.32	3	2	1
Floodplain and floodway encroachment:						
-Area of base floodplain encroachment (acres)	0.60	0.56	0.79	2	1	3
-Area of base floodway encroachment (acres)	0.00	0.00	0.00	0	0	0
POTENTIAL HAZARDOUS MATERIAL AND PETROLEUM CONTAMINATED SITES:						
Number of potential hazardous material sites	3	6	3	1	2	1
Number of potential petroleum contaminated sites	11	16	5	2	3	1
UTILITY IMPACTS						
Cost of utilities relocation (thousand dollars)	0.0	20.0	50.0	1	2	3
RIGHT OF WAY IMPACTS:						
Number of parcels impacted	81	129	77	2	3	1
Area of ROW to be acquired (acres)	12.6	12.8	13.8	1	2	3
ESTIMATED PROJECT COSTS (Present value in million \$):						
ROW acquisition cost	10.12	9.52	8.37	3	2	1
Engineering cost	0.45	0.45	0.45	1	1	1
Roadway construction cost excluding bridge improvements	4.46^^	4.46^^	4.46^^	1	1	1
Construction engineering and inspection	0.39	0.39	0.39	1	1	1
TOTAL COST	15.48	14.88	13.73	***	***	***
TOTAL RANKING				29	29	24

Segment 2 length 2.807 miles

- * North: Right-of-way (ROW) acquisition only along the north side of US 92.
Center: Right-of-way (ROW) acquisition along both sides of US 92.
South: Right-of-way (ROW) acquisition only along the south side of US 92.

** Impacts were ranked from 1 to 3 for the lowest and highest impacts, respectively.

*** Since the difference in the total costs is due only to the right-of-way acquisition costs, ranking was not assigned for the total cost to avoid "double-counting" of impacts.

^ The total wetland mitigation area was calculated based on a 4:1 ratio for undisturbed wetlands and a 1:1 ratio for the disturbed wetlands.

^^ The construction cost estimate assumes grassed median without curb and gutter.

**ALTERNATIVES EVALUATION MATRIX SEGMENT 3
(FOUR-LANE RURAL TYPICAL SECTION)**

EVALUATION FACTORS	ACTUAL IMPACTS PER ALTERNATIVE			ALTERNATIVES RANKING**		
	North	Center	South	North	Center	South
	3-N*	3-C	3-S	3-N	3-C	3-S
BUSINESS IMPACTS:						
Number of businesses expected to be relocated	4	4	4	1	1	1
RESIDENTIAL IMPACTS:						
Number of residences expected to be relocated	35	34	44	2	1	3
COMMUNITY FACILITY IMPACTS:						
Community facilities within ROW:						
-Number of churches	1	0	0	2	1	1
-Number of schools	0	0	0	0	0	0
-Number of nursing homes	0	0	0	0	0	0
-Number of hospitals	0	0	0	0	0	0
-Number of cemeteries	0	0	0	0	0	0
-Number of other public services (fire stations, etc.)	0	0	0	0	0	0
NOISE SENSITIVE RECEIVERS:						
Number of noise sensitive receivers	54	45	28	3	2	1
IMPACTS ON CULTURAL/HISTORIC RESOURCES AND PUBLIC PARKS:						
Number of historic sites/structures within ROW	0	0	0	0	0	0
Number of public parks within ROW	0	0	0	0	0	0
NATURAL ENVIRONMENT IMPACTS:						
Wetlands within ROW:						
-Area of undisturbed wetlands (acres)	0.25	0.30	0.53			
-Area of disturbed/man-made wetlands (acres)	0.94	0.38	0.33			
-Total wetland mitigation area (acres)^	1.94	1.58	2.45	2	1	3
Floodplain and floodway encroachment:						
-Area of base floodplain encroachment (acres)	2.35	3.64	4.86	1	2	3
-Area of base floodway encroachment (acres)	0.00	0.00	0.00	0	0	0
POTENTIAL HAZARDOUS MATERIAL AND PETROLEUM CONTAMINATED SITES:						
Number of potential hazardous material sites	1	2	1	1	2	1
Number of potential petroleum contaminated sites	2	5	3	1	3	2
RIGHT OF WAY IMPACTS:						
Number of parcels impacted	32	103	85	1	3	2
Area of ROW to be acquired (acres)	40.8	40.7	39.7	3	2	1
ESTIMATED PROJECT COSTS (Present value in million \$):						
ROW acquisition cost	9.03	14.71	13.94	1	3	2
Engineering cost	0.35	0.35	0.35	1	1	1
Roadway construction cost excluding bridge improvements	3.46	3.46	3.46	1	1	1
Construction engineering and inspection	0.35	0.35	0.35	1	1	1
TOTAL COST	13.19	18.87	18.10	***	***	***
TOTAL RANKING				21	24	23

Segment 3 length 2.883 miles

- * North: Right-of-way (ROW) acquisition only along the north side of US 92.
Center: Right-of-way (ROW) acquisition along both sides of US 92.
South: Right-of-way (ROW) acquisition only along the south side of US 92.

- ** Impacts were ranked from 1 to 3 for the lowest and highest impacts, respectively.

- *** Since the difference in the total costs is due only to the right-of-way acquisition costs, ranking was not assigned for the total cost to avoid "double-counting" of impacts.

- ^ The total wetland mitigation area was calculated based on a 4:1 ratio for undisturbed wetlands and a 1:1 ratio for the disturbed wetlands.

**ALTERNATIVES EVALUATION MATRIX SEGMENT 4
(FOUR-LANE RURAL TYPICAL SECTION)**

EVALUATION FACTORS	ACTUAL IMPACTS PER ALTERNATIVE			ALTERNATIVES RANKING**		
	North	Center	South	North	Center	South
	4-N*	4-C	4-S	4-N	4-C	4-S
BUSINESS IMPACTS:						
Number of businesses expected to be relocated	13	16	7	2	3	1
RESIDENTIAL IMPACTS:						
Number of residences expected to be relocated	78	67	53	3	2	1
COMMUNITY FACILITY IMPACTS:						
Community facilities within ROW:						
-Number of churches	0	0	0	0	0	0
-Number of schools	0	0	0	0	0	0
-Number of nursing homes	0	0	0	0	0	0
-Number of hospitals	0	0	0	0	0	0
-Number of cemeteries	0	0	0	0	0	0
-Number of other public services (fire stations, etc.)	0	0	0	0	0	0
NOISE SENSITIVE RECEIVERS:						
Number of noise sensitive receivers	74	85	60	2	3	1
IMPACTS ON CULTURAL/HISTORIC RESOURCES AND PUBLIC PARKS:						
Number of historic sites/structures within ROW	1	1	0	2	2	1
Number of public parks within ROW	0	0	0	0	0	0
NATURAL ENVIRONMENT IMPACTS:						
Wetlands within ROW:						
-Area of undisturbed wetlands (acres)	4.70	6.14	6.45			
-Area of disturbed/man-made wetlands (acres)	0.08	0.65	0.44			
-Total wetland mitigation area (acres)^	18.88	25.21	26.24	1	2	3
Floodplain and floodway encroachment:						
-Area of base floodplain encroachment (acres)	2.14	1.39	0.75	3	2	1
-Area of base floodway encroachment (acres)	0.00	0.00	0.00	0	0	0
POTENTIAL HAZARDOUS MATERIAL AND PETROLEUM CONTAMINATED SITES:						
Number of potential hazardous material sites	1	2	1	1	2	1
Number of potential petroleum contaminated sites	5	11	6	1	3	2
RIGHT OF WAY IMPACTS:						
Number of parcels impacted	73	150	79	1	3	2
Area of ROW to be acquired (acres)	54.0	58.5	56.7	1	3	2
ESTIMATED PROJECT COSTS (Present value in million \$):						
ROW acquisition cost	20.09	22.79	17.98	2	3	1
Engineering cost	0.52	0.52	0.52	1	1	1
Roadway construction cost excluding bridge improvements	5.20	5.20	5.20	1	1	1
Construction engineering and inspection	0.52	0.52	0.52	1	1	1
TOTAL COST	26.33	29.03	24.22	***	***	***
TOTAL RANKING				22	31	19

Segment 4 length 4.331 miles

- * North: Right-of-way (ROW) acquisition only along the north side of US 92.
Center: Right-of-way (ROW) acquisition along both sides of US 92.
South: Right-of-way (ROW) acquisition only along the south side of US 92.

** Impacts were ranked from 1 to 3 for the lowest and highest impacts, respectively.

*** Since the difference in the total costs is due only to the right-of-way acquisition costs, ranking was not assigned for the total cost to avoid "double-counting" of impacts.

^ The total wetland mitigation area was calculated based on a 4:1 ratio for undisturbed wetlands and a 1:1 ratio for the disturbed wetlands.

**ALTERNATIVES EVALUATION MATRIX SEGMENT 5
(FOUR-LANE URBAN TYPICAL SECTION)**

EVALUATION FACTORS	ACTUAL IMPACTS PER ALTERNATIVE			ALTERNATIVES RANKING**		
	North	Center	South	North	Center	South
	5-N*	5-C	5-S	5-N	5-C	5-S
BUSINESS IMPACTS:						
Number of businesses expected to be relocated	0	1	3	1	2	3
RESIDENTIAL IMPACTS:						
Number of residences expected to be relocated	3	4	7	1	2	3
COMMUNITY FACILITY IMPACTS:						
Community facilities within ROW:						
-Number of churches	0	0	0	0	0	0
-Number of schools	0	1	1	1	2	2
-Number of nursing homes	0	0	0	0	0	0
-Number of hospitals	0	0	0	0	0	0
-Number of cemeteries	0	0	0	0	0	0
-Number of other public services (fire stations, etc.)	0	0	0	0	0	0
NOISE SENSITIVE RECEIVERS:						
Number of noise sensitive receivers	34	36	35	1	3	2
IMPACTS ON CULTURAL/HISTORIC RESOURCES AND PUBLIC PARKS:						
Number of historic sites/structures within ROW	0	0	0	0	0	0
Number of public parks within ROW	0	0	0	0	0	0
NATURAL ENVIRONMENT IMPACTS:						
Wetlands within ROW:						
-Area of undisturbed wetlands (acres)	0.72	0.71	0.62			
-Area of disturbed/man-made wetlands (acres)	0.00	0.00	0.14			
-Total wetland mitigation area (acres)^	2.88	2.84	2.62	3	2	1
Floodplain and floodway encroachment:						
-Area of base floodplain encroachment (acres)	0.65	0.64	0.62	3	2	1
-Area of base floodway encroachment (acres)	0.00	0.00	0.00	0	0	0
POTENTIAL HAZARDOUS MATERIAL AND PETROLEUM CONTAMINATED SITES:						
Number of potential hazardous material sites	0	2	2	1	2	2
Number of potential petroleum contaminated sites	3	7	4	1	3	2
RIGHT OF WAY IMPACTS:						
Number of parcels impacted	40	81	41	1	3	2
Area of ROW to be acquired (acres)	4.0	4.2	4.2	1	2	2
ESTIMATED PROJECT COSTS (Present value in million \$):						
ROW acquisition cost	2.99	4.63	3.33	1	3	2
Engineering cost	0.33	0.33	0.33	1	1	1
Roadway construction cost excluding bridge improvements	3.31	3.31	3.31	1	1	1
Construction engineering and inspection	0.33	0.33	0.33	1	1	1
TOTAL COST	6.96	8.60	7.30	***	***	***
TOTAL RANKING				18	29	25

Segment 5 length 2.010 miles

- * North: Right-of-way (ROW) acquisition only along the north side of US 92.
Center: Right-of-way (ROW) acquisition along both sides of US 92.
South: Right-of-way (ROW) acquisition only along the south side of US 92.

** Impacts were ranked from 1 to 3 for the lowest and highest impacts, respectively.

*** Since the difference in the total costs is due only to the right-of-way acquisition costs, ranking was not assigned for the total cost to avoid "double-counting" of impacts.

^ The total wetland mitigation area was calculated based on a 4:1 ratio for undisturbed wetlands and a 1:1 ratio for the disturbed wetlands.

**ALTERNATIVES EVALUATION MATRIX SEGMENT 6
(EXISTING ONE-WAY PAIR)**

EVALUATION FACTORS	ACTUAL IMPACTS PER ALTERNATIVE			ALTERNATIVES RANKING**		
	Existing*	North*	South*	Existing*	North*	South*
	6-EX	6-N	6-S	6-EX	6-N	6-S
BUSINESS IMPACTS:						
Number of businesses expected to be relocated	0	1	0	1	2	1
RESIDENTIAL IMPACTS:						
Number of residences expected to be relocated	0	0	0	0	0	0
COMMUNITY FACILITY IMPACTS:						
Community facilities within ROW:						
-Number of churches	0	0	0	0	0	0
-Number of schools	0	0	0	0	0	0
-Number of nursing homes	0	0	0	0	0	0
-Number of hospitals	0	0	0	0	0	0
-Number of cemeteries	0	0	0	0	0	0
-Number of other public services (fire stations, etc.)	0	0	0	0	0	0
NOISE SENSITIVE RECEIVERS:						
Number of noise sensitive receivers	0	0	0	0	0	0
IMPACTS ON CULTURAL/HISTORIC RESOURCES AND PUBLIC PARKS:						
Number of historic sites/structures within ROW	0**	1**	0**	1	2	1
Number of public parks within ROW	0	0	0	0	0	0
NATURAL ENVIRONMENT IMPACTS:						
Wetlands within ROW:						
-Area of undisturbed wetlands (acres)	0.00	0.00	0.00			
-Area of disturbed/man-made wetlands (acres)	0.00	0.00	0.00			
-Total wetland mitigation area (acres)***	0.00	0.00	0.00	0	0	0
Floodplain and floodway encroachment:						
-Area of base floodplain encroachment (acres)	0	0.00	0.00	0	0	0
-Area of base floodway encroachment (acres)	0	0.00	0.00	0	0	0
POTENTIAL HAZARDOUS MATERIAL AND PETROLEUM CONTAMINATED SITES:						
Number of potential hazardous material sites	0	0	0	0	0	0
Number of potential petroleum contaminated sites	0	0	0	0	0	0
RIGHT OF WAY IMPACTS:						
Number of parcels impacted	4	8	7	1	3	2
Area of ROW to be acquired (acres)	0.1	0.1	0.2	1	1	2
ESTIMATED PROJECT COSTS (Present value in million \$):						
ROW acquisition cost	0.13	0.36	0.24	1	3	2
Engineering cost	0.02	0.03	0.03	1	2	2
Roadway construction cost excluding bridge improvements	0.15	0.30	0.30	1	2	2
Construction engineering and inspection	0.02	0.03	0.03	1	2	2
TOTAL COST	0.32	0.72	0.60	1	3	2
TOTAL RANKING				9	20	16

Segment 6 length 1.360 miles

- * Existing: Maintain the existing alignment of Baker Street at its intersection with Franklin Street.
North: Realign Baker Street at its intersection with Franklin Street to the north.
South: Realign Baker Street at its intersection with Franklin Street to the south.
- ** Impacts were ranked from 1 to 3 for the lowest and highest impacts, respectively.
- *** The total wetland mitigation area was calculated based on a 4:1 ratio for undisturbed wetlands and a 1:1 ratio for the disturbed wetlands.

ALTERNATIVES EVALUATION MATRIX SEGMENT 7 (FOUR-LANE URBAN TYPICAL SECTION)

EVALUATION FACTORS	ACTUAL IMPACTS PER ALTERNATIVE				ALTERNATIVES RANKING**			
	Existing*	North*	Center*	South*	Existing*	North*	Center*	South*
	7-EX	7-N	7-C	7-S	7-EX	7-N	7-C	7-S
BUSINESS IMPACTS:								
Number of businesses expected to be relocated	0	0	0	1	0	0	0	1
RESIDENTIAL IMPACTS:								
Number of residences expected to be relocated	0	0	0	0	0	0	0	0
COMMUNITY FACILITY IMPACTS:								
Community facilities within ROW:								
-Number of churches	0	0	0	0	0	0	0	0
-Number of schools	0	0	0	0	0	0	0	0
-Number of nursing homes	0	1	1	1	1	2	2	2
-Number of hospitals	0	0	0	0	0	0	0	0
-Number of cemeteries	0	0	0	0	0	0	0	0
-Number of other public services (fire stations, etc.)	0	0	0	0	0	0	0	0
NOISE SENSITIVE RECEIVERS:								
Number of noise sensitive receivers	0	0	0	0	0	0	0	0
IMPACTS ON CULTURAL/HISTORIC RESOURCES AND PUBLIC PARKS:								
Number of historic sites/structures within ROW	0	0	0	0	0	0	0	0
Number of public parks within ROW	0	0	0	0	0	0	0	0
NATURAL ENVIRONMENT IMPACTS:								
Wetlands within ROW:								
-Area of undisturbed wetlands (acres)	0.00	0.00	0.00	0.00				
-Area of disturbed/man-made wetlands (acres)	0.00	0.00	0.00	0.00				
-Total wetland mitigation area (acres)***	0.00	0.00	0.00	0.00	0	0	0	0
Floodplain and floodway encroachment:								
-Area of base floodplain encroachment (acres)	0.00	0.00	0.00	0.00	0	0	0	0
-Area of base floodway encroachment (acres)	0.00	0.00	0.00	0.00	0	0	0	0
POTENTIAL HAZARDOUS MATERIAL AND PETROLEUM CONTAMINATED SITES:								
Number of potential hazardous material sites	0	0	1	1	1	1	2	2
Number of potential petroleum contaminated sites	0	8	12	4	1	3	4	2
RIGHT OF WAY IMPACTS:								
Number of parcels impacted	0	15	20	12	1	3	4	2
Area of ROW to be acquired (acres)	0.0	0.9	1.2	1.1	1	2	4	3
ESTIMATED PROJECT COSTS (Present value in million \$):								
ROW acquisition cost	0.00	1.11	1.51	1.26	1	2	4	3
Engineering cost	0.03	0.08	0.08	0.08	1	2	2	2
Roadway construction cost excluding bridge improvements	0.27	0.76	0.76	0.76	1	2	2	2
Construction engineering and inspection	0.03	0.08	0.08	0.08	1	2	2	2
TOTAL COST	0.33	2.03	2.43	2.18	1	2	4	3
TOTAL RANKING					10	21	30	24

Segment 7 length 0.489 miles

- * Existing: Maintain the existing right-of-way (ROW) and replace the existing median with a continuous, two-way left-turn lane.
North: Right-of-way (ROW) acquisition only along the north side of US 92.
Center: Right-of-way (ROW) acquisition along both sides of US 92.
South: Right-of-way (ROW) acquisition only along the south side of US 92.
- ** Impacts were ranked from 1 to 4 for the lowest and highest impacts, respectively.
- *** The total wetland mitigation area was calculated based on a 4:1 ratio for undisturbed wetlands and a 1:1 ratio for the disturbed wetlands.

ALTERNATIVES EVALUATION MATRIX SEGMENT 8

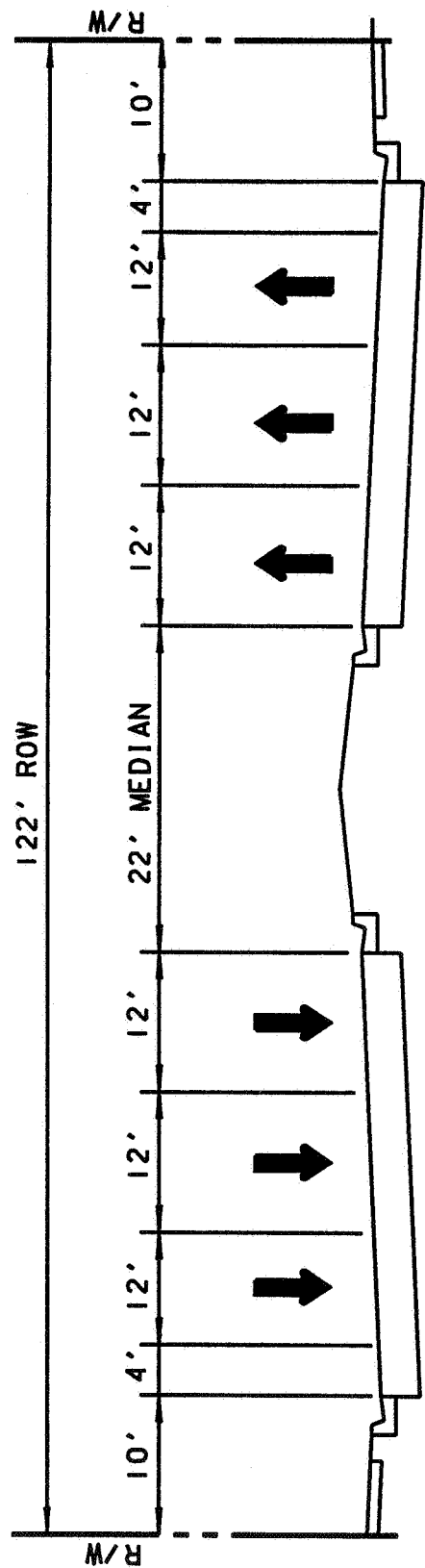
EVALUATION FACTORS	ACTUAL IMPACTS PER ALTERNATIVE			ALTERNATIVES RANKING**		
	URBAN TYPICAL*	HYBRID TYPICAL	RURAL TYPICAL	URBAN TYPICAL	HYBRID TYPICAL	RURAL TYPICAL
	8-U	8-H	8-R	8-U	8-H	8-R
BUSINESS IMPACTS:						
Number of businesses expected to be relocated	4	9	16	1	2	3
RESIDENTIAL IMPACTS:						
Number of residences expected to be relocated	9	18	29	1	2	3
COMMUNITY FACILITY IMPACTS:						
Community facilities within ROW:						
-Number of churches	1	1	1	1	1	1
-Number of schools	0	0	0	0	0	0
-Number of nursing homes	0	0	0	0	0	0
-Number of hospitals	0	0	0	0	0	0
-Number of cemeteries	0	0	0	0	0	0
-Number of other public services (fire stations, etc.)	0	0	0	0	0	0
NOISE SENSITIVE RECEIVERS:						
Number of noise sensitive receivers	51	46	27	3	2	1
IMPACTS ON CULTURAL/HISTORIC RESOURCES AND PUBLIC PARKS:						
Number of historic sites/structures within ROW	0	0	0	0	0	0
Number of public parks within ROW	0	0	0	0	0	0
NATURAL ENVIRONMENT IMPACTS:						
Wetlands within ROW:						
-Area of undisturbed wetlands (acres)	0.00	0.00	0.00			
-Area of disturbed/man-made wetlands (acres)	0.03	0.04	0.08			
-Total wetland mitigation area (acres)***	0.03	0.04	0.08	1	2	3
Floodplain and floodway encroachment:						
-Area of base floodplain encroachment (acres)	0.00	0.00	0.00	0	0	0
-Area of base floodway encroachment (acres)	0.00	0.00	0.00	0	0	0
POTENTIAL HAZARDOUS MATERIAL AND PETROLEUM CONTAMINATED SITES:						
Number of potential hazardous material sites	0	2	2	1	2	2
Number of potential petroleum contaminated sites	1	8	9	1	2	3
RIGHT OF WAY IMPACTS:						
Number of parcels impacted	54	63	63	1	2	2
Area of ROW to be acquired (acres)	14.3	18.7	38.0	1	2	3
ESTIMATED PROJECT COSTS (Present value in million \$):						
ROW acquisition cost	7.74	9.68	16.61	1	2	3
Engineering cost	0.49	0.51	0.37	2	3	1
Roadway construction cost excluding bridge improvements	4.88***	5.12	3.71	2	3	1
Construction engineering and inspection	0.49	0.51	0.37	2	3	1
TOTAL COST	13.60	15.82	21.06	1	2	3
TOTAL RANKING				19	30	30

Segment 8 length 3.075 miles

- * All alternatives propose expansion of the right of way to the north. All typical sections are expandable to an ultimate six-lane urban typical section.
- ** Impacts were ranked from 1 to 3 for the lowest and highest impacts, respectively.
- *** The total wetland mitigation area was calculated based on a 4:1 ratio for undisturbed wetlands and a 1:1 ratio for the disturbed wetlands.

APPENDIX E:

Preferred Typical Cross Sections



APPLICABLE TO SEGMENT:

1. GARDEN LANE ROAD TO FALKENBURG ROAD
FROM MILEPOST 6.583 TO MILEPOST 7.138

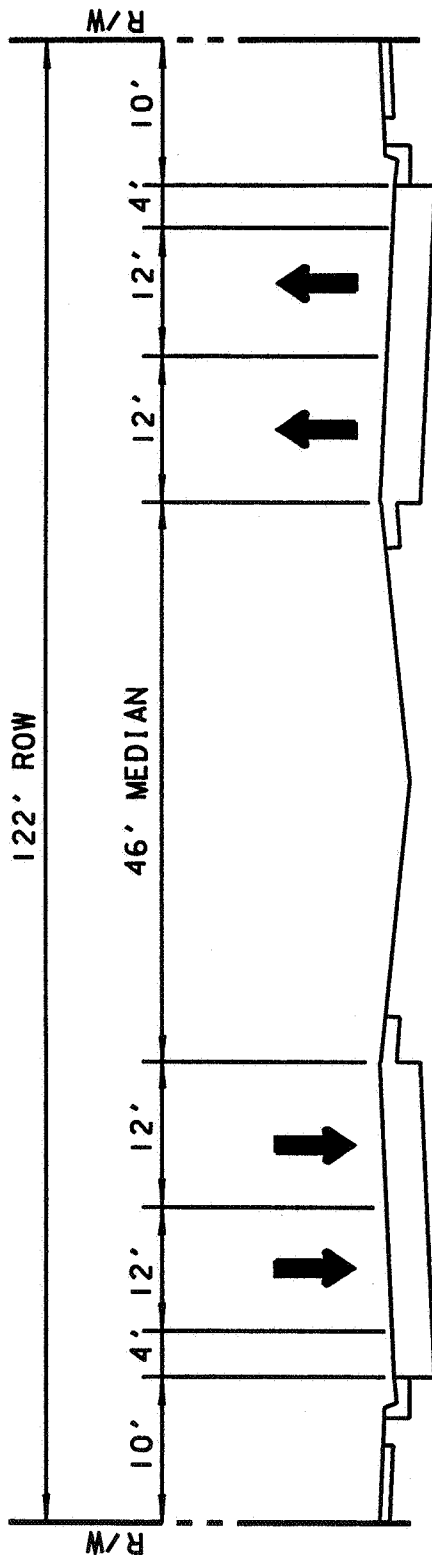
DESIGN SPEED 45 MPH

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

**SIX-LANE URBAN
TYPICAL SECTION ALTERNATIVE**

FIGURE



APPLICABLE TO SEGMENTS:

- 2. FALKENBURG ROAD TO KINGSWAY ROAD
FROM MILEPOST 7.138 TO MILEPOST 10.717
- 5. FORBES ROAD TO MOBLEY STREET
FROM MILEPOST 16.389 TO MILEPOST 19.169
- 8. PARK ROAD TO COUNTY LINE ROAD
FROM MILEPOST 21.518 TO MILEPOST 24.593

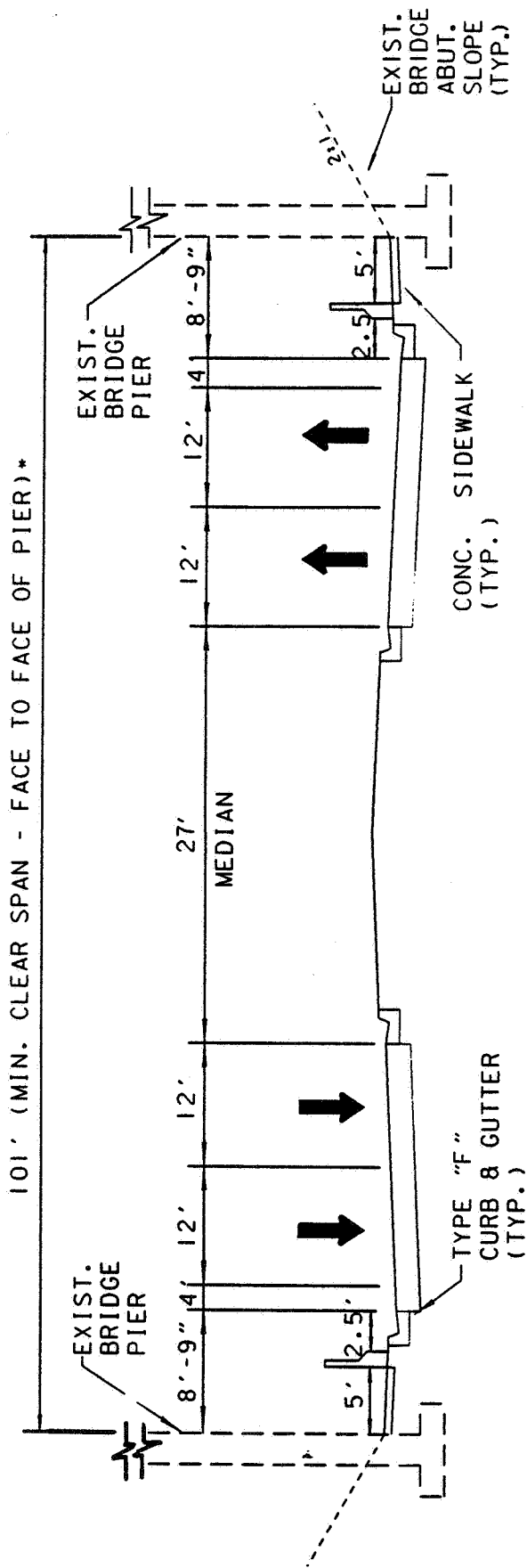
DESIGN SPEED 45 MPH

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

**FOUR-LANE URBAN
TYPICAL SECTION ALTERNATIVE
(EXPANDABLE TO SIX-LANES)**

FIGURE



APPLICABLE TO SEGMENT 2 UNDER I-75 OVERPASS STRUCTURES

*USING MIN. CENTER SPAN LENGTH OF
BRIDGE NO.'S 100414, 100415, 100422,
AND 100424. ESTIMATED SKEW
ANGLES, AND ASSUMING 4'Ø PIERS.

45 MPH DESIGN SPEED

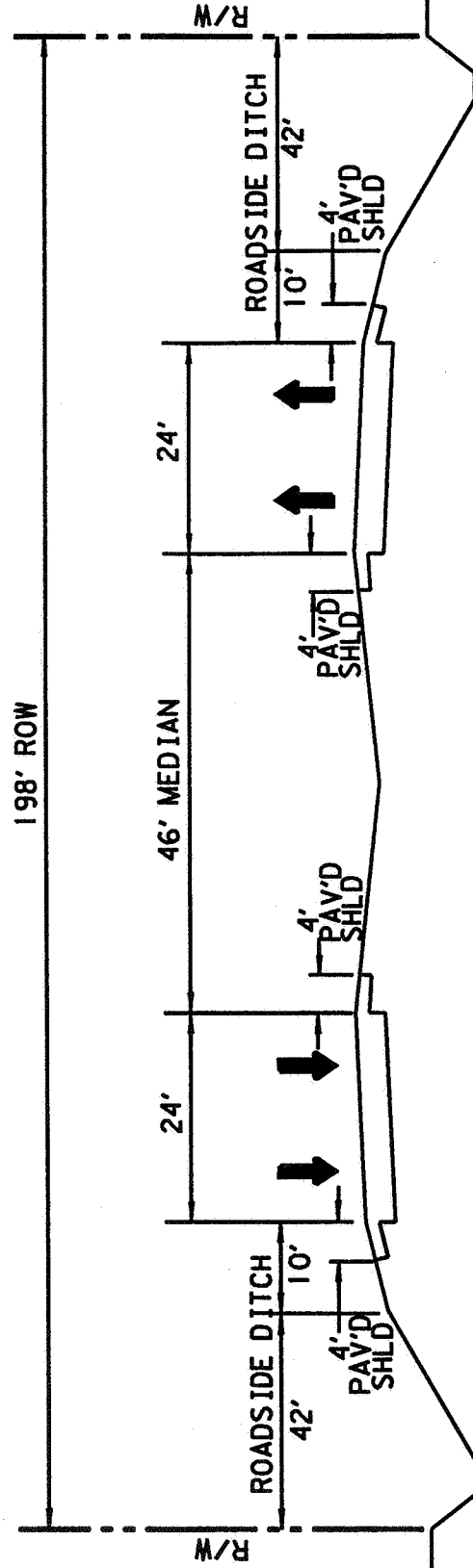
NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

PROPOSED FOUR-LANE DIVIDED URBAN
TYPICAL SECTION (EXPANDABLE TO 6-LANES)
ALTERNATIVE UNDER I-75

FIGURE

23



APPLICABLE TO SEGMENTS:

3. KINGSWAY ROAD TO MCINTOSH ROAD
FROM MILEPOST 10.717 TO MILEPOST 12.828
4. MCINTOSH ROAD TO FORBES ROAD
FROM MILEPOST 12.828 TO MILEPOST 16.389

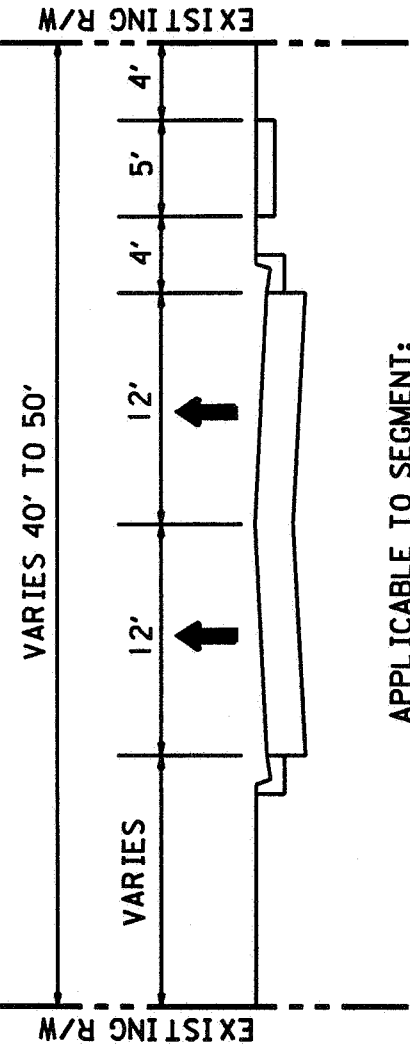
DESIGN SPEED 60 MPH

NOT TO SCALE

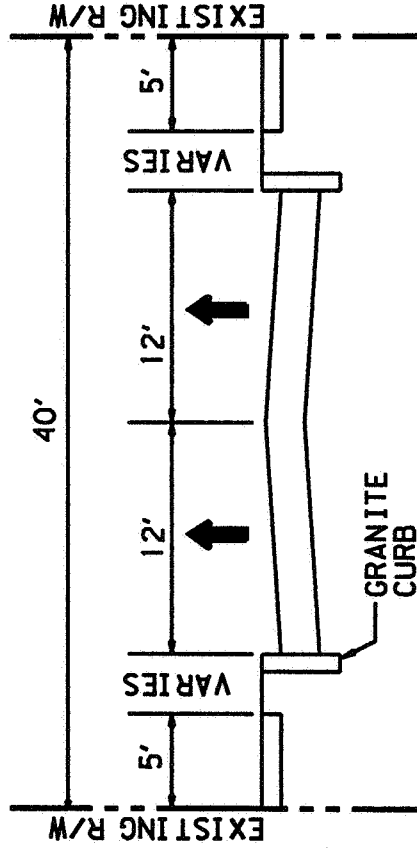
US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

FOUR-LANE RURAL
TYPICAL SECTION ALTERNATIVE

FIGURE
4



6. THONOTOSASSA ROAD FROM MOBLEY STREET TO REYNOLDS STREET
FROM MILEPOST 19.169 TO MILEPOST 19.728



APPLICABLE TO SEGMENT:

6. REYNOLDS STREET FROM THONOTOSASSA ROAD TO FRANKLIN STREET
FROM MILEPOST 19.062 TO MILEPOST 20.009

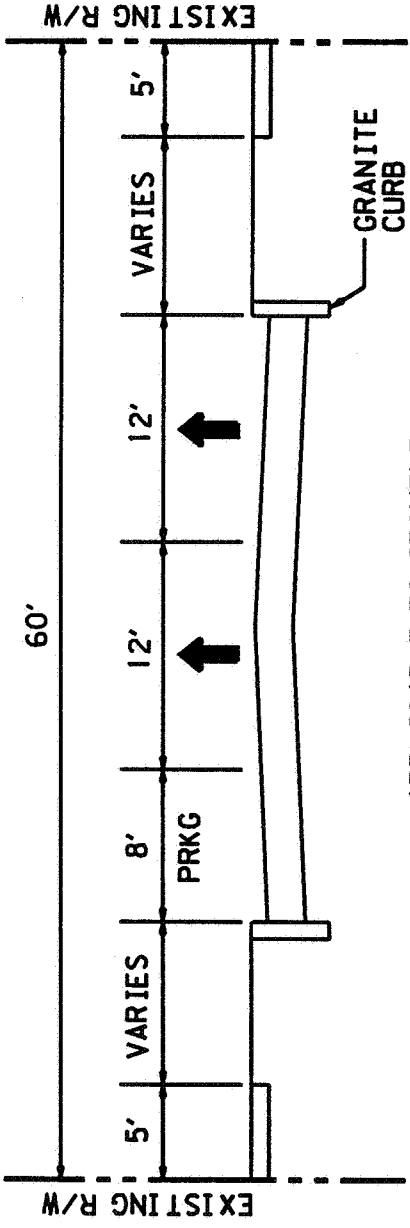
DESIGN SPEED 35 MPH

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

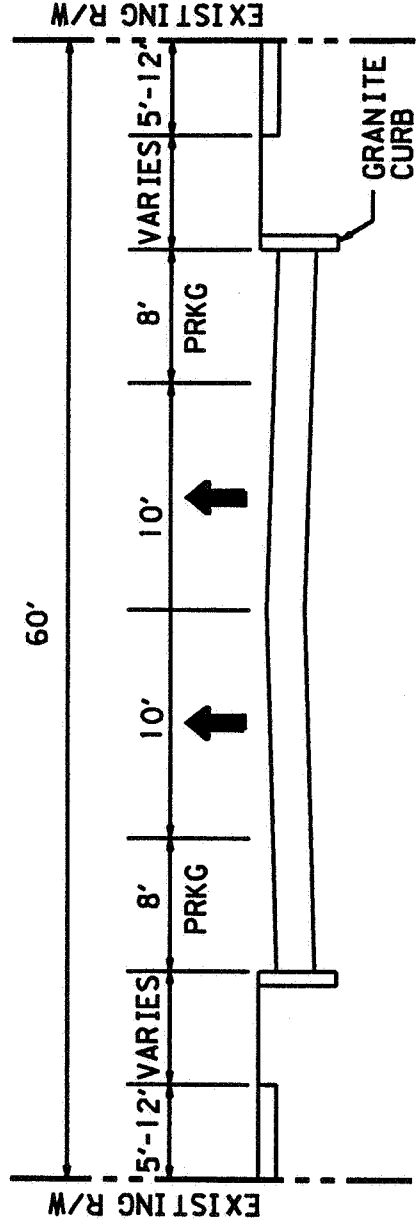
ONE-WAY TYPICAL SECTIONS
ALONG EASTBOUND US 92

FIGURE 5



APPLICABLE TO SEGMENT:

6. REYNOLDS STREET FROM FRANKL IN STREET TO WHEELER STREET
FROM MILEPOST 20.009 TO MILEPOST 20.370



APPLICABLE TO SEGMENT:

6. REYNOLDS STREET FROM WHEELER STREET TO CSX R/R CROSSING
FROM MILEPOST 20.370 TO MILEPOST 20.545

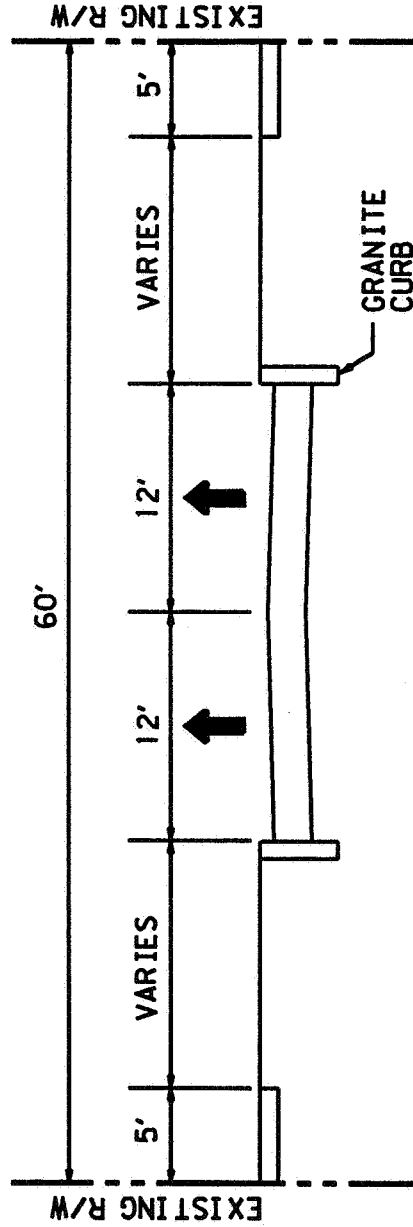
DESIGN SPEED 35 MPH

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

FIGURE

ONE-WAY TYPICAL SECTIONS
ALONG EASTBOUND US 92



EXISTING TYPICAL SECTION
US 92 ONE-WAY EASTBOUND

APPLICABLE TO SEGMENT:

6. REYNOLDS STREET FROM CSX R/R CROSSING TO GORDON STREET
FROM MILEPOST 20.270 TO MILEPOST 21.029

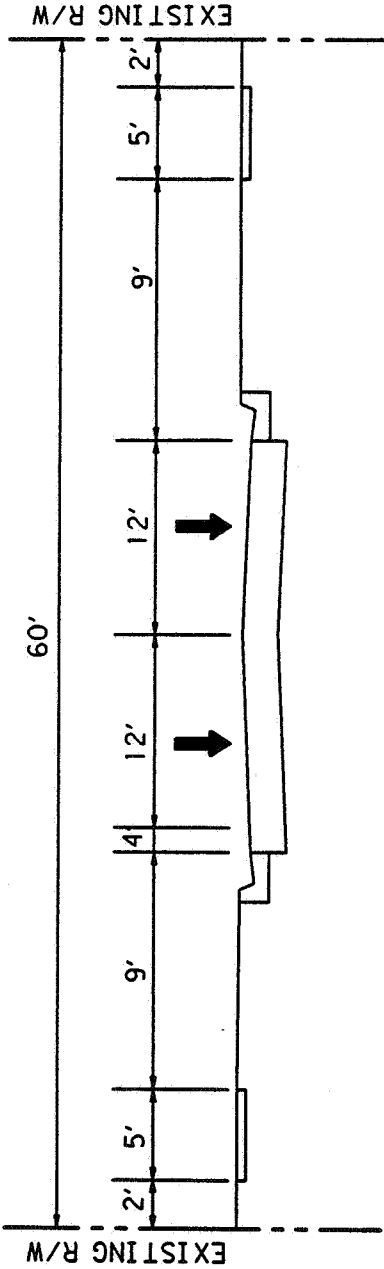
DESIGN SPEED 35 MPH

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

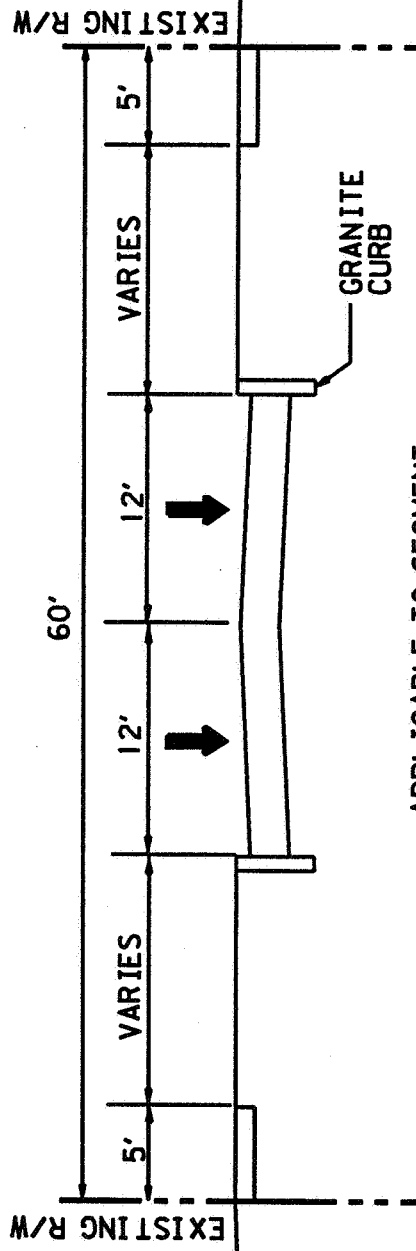
ONE-WAY TYPICAL SECTIONS
ALONG EASTBOUND US 92

FIGURE 7



APPLICABLE TO SEGMENT:

6. BAKER STREET FROM MOBLEY STREET TO WHITEHALL STREET
FROM MILEPOST 19.169 TO MILEPOST 19.800



APPLICABLE TO SEGMENT:

6. BAKER STREET FROM WHITEHALL STREET TO GORDON STREET
FROM MILEPOST 19.800 TO MILEPOST 21.029

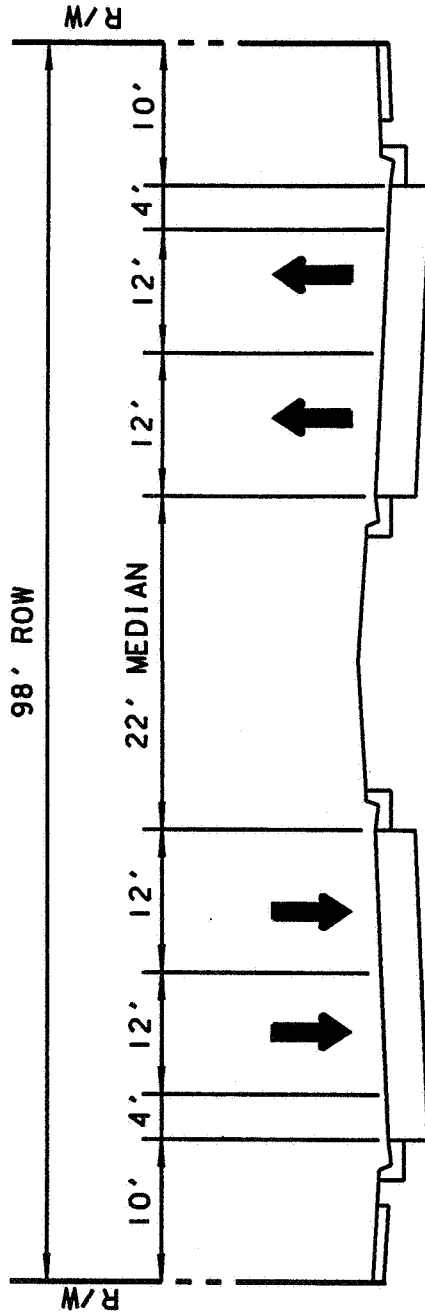
DESIGN SPEED 35 MPH

NOT TO SCALE

US 92 (SR 600) PD&E STUDY
HILLSBOROUGH COUNTY
FROM GARDEN LANE TO COUNTY LINE ROAD

ONE-WAY TYPICAL SECTIONS ALONG
WESTBOUND US 92

FIGURE



APPLICABLE TO SEGMENT:
 7. GORDON STREET TO PARK ROAD
 FROM MILEPOST 21.029 TO MILEPOST 21.518

DESIGN SPEED 45 MPH

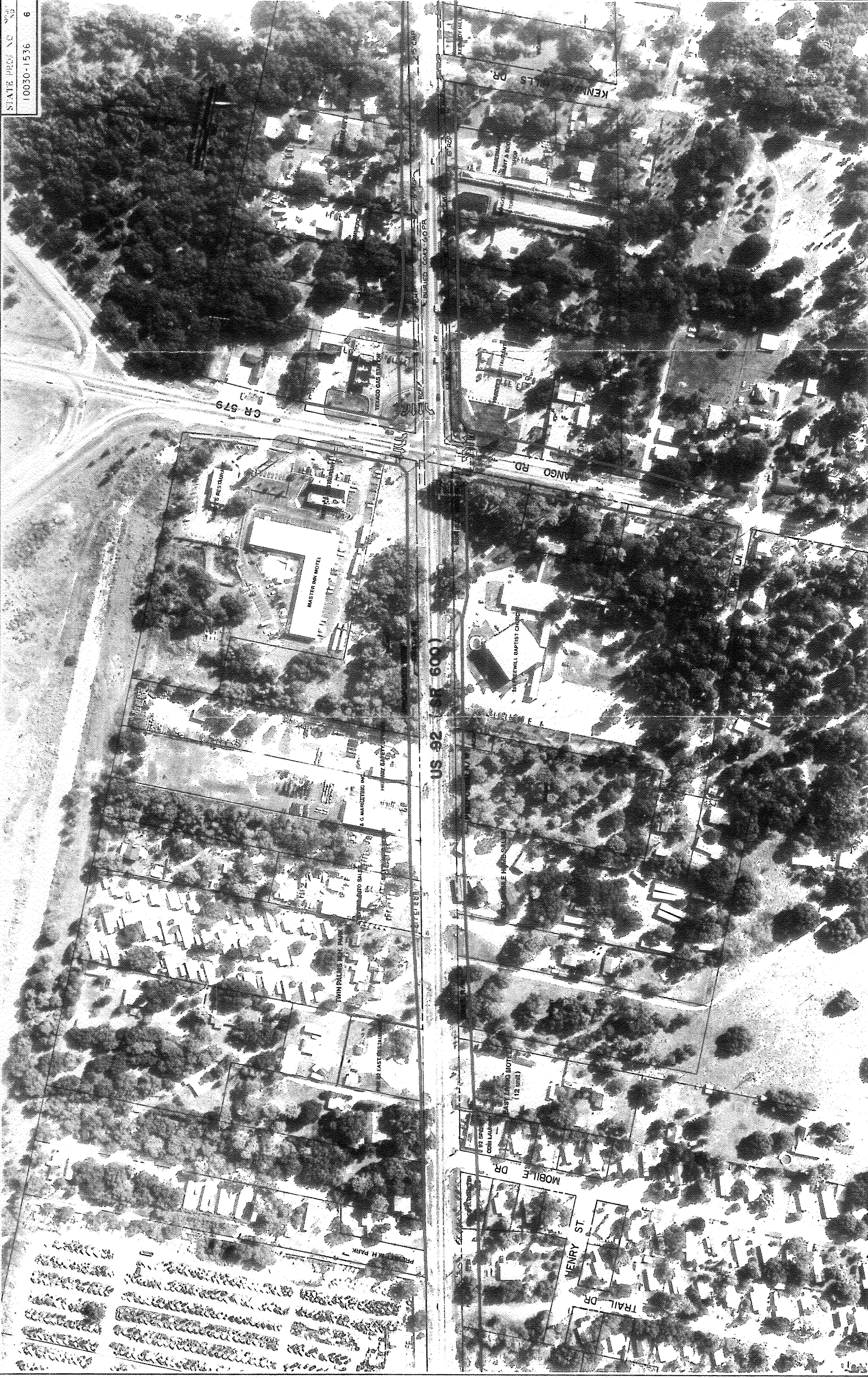
NOT TO SCALE

US 92 (SR 600) PD&E STUDY
 HILLSBOROUGH COUNTY
 FROM GARDEN LANE TO COUNTY LINE ROAD

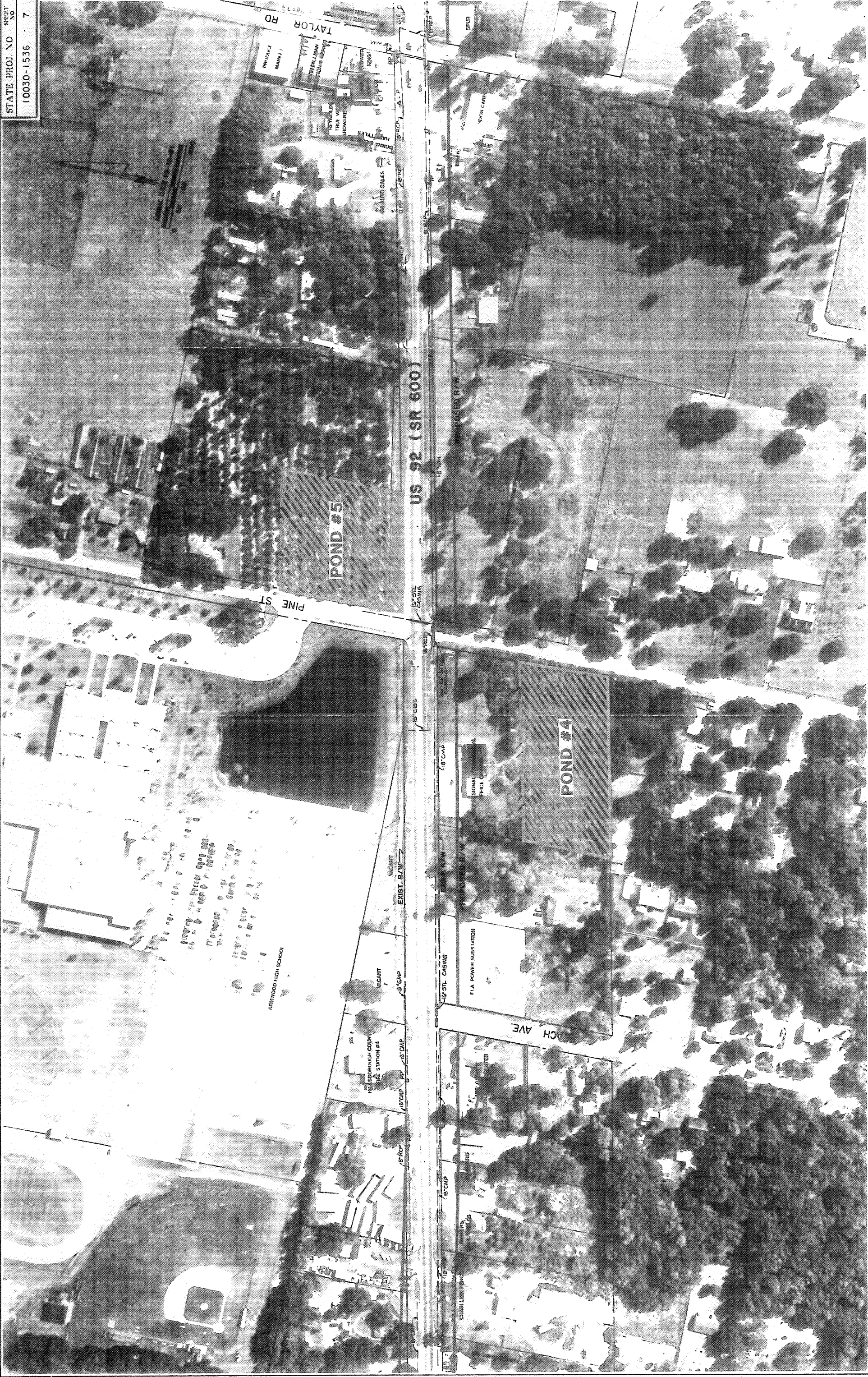
FOUR-LANE URBAN
 TYPICAL SECTION ALTERNATIVE

FIGURE
 2

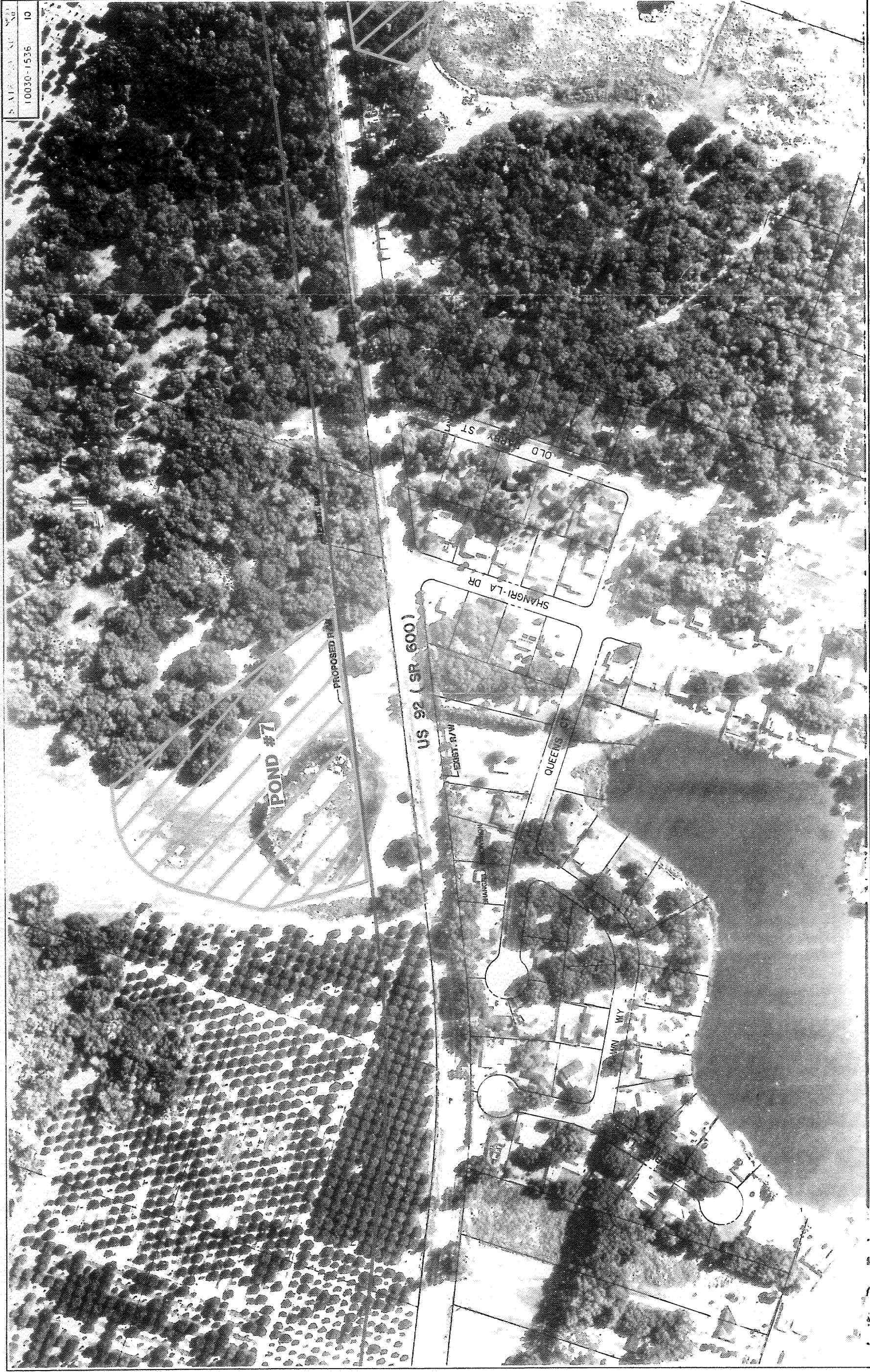


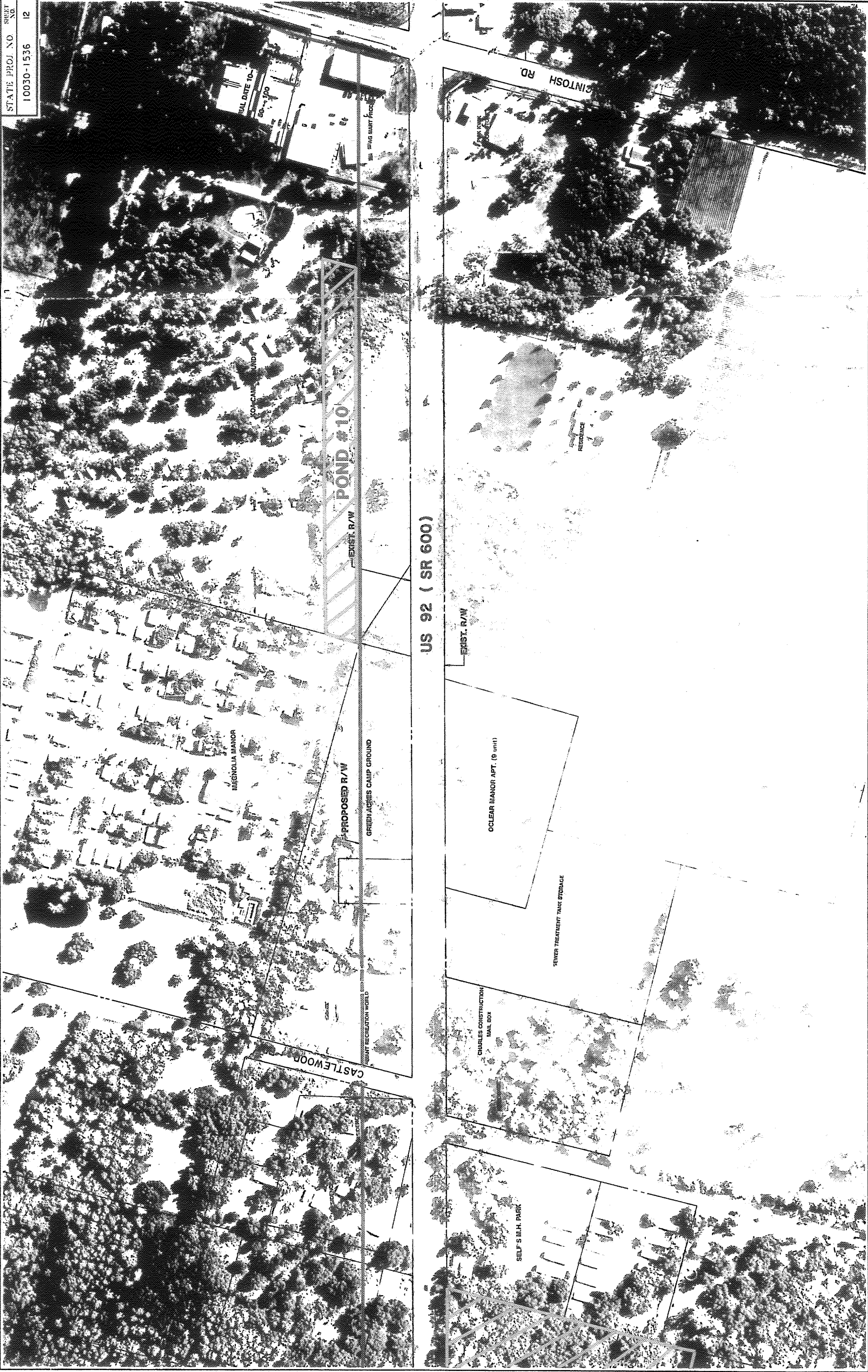


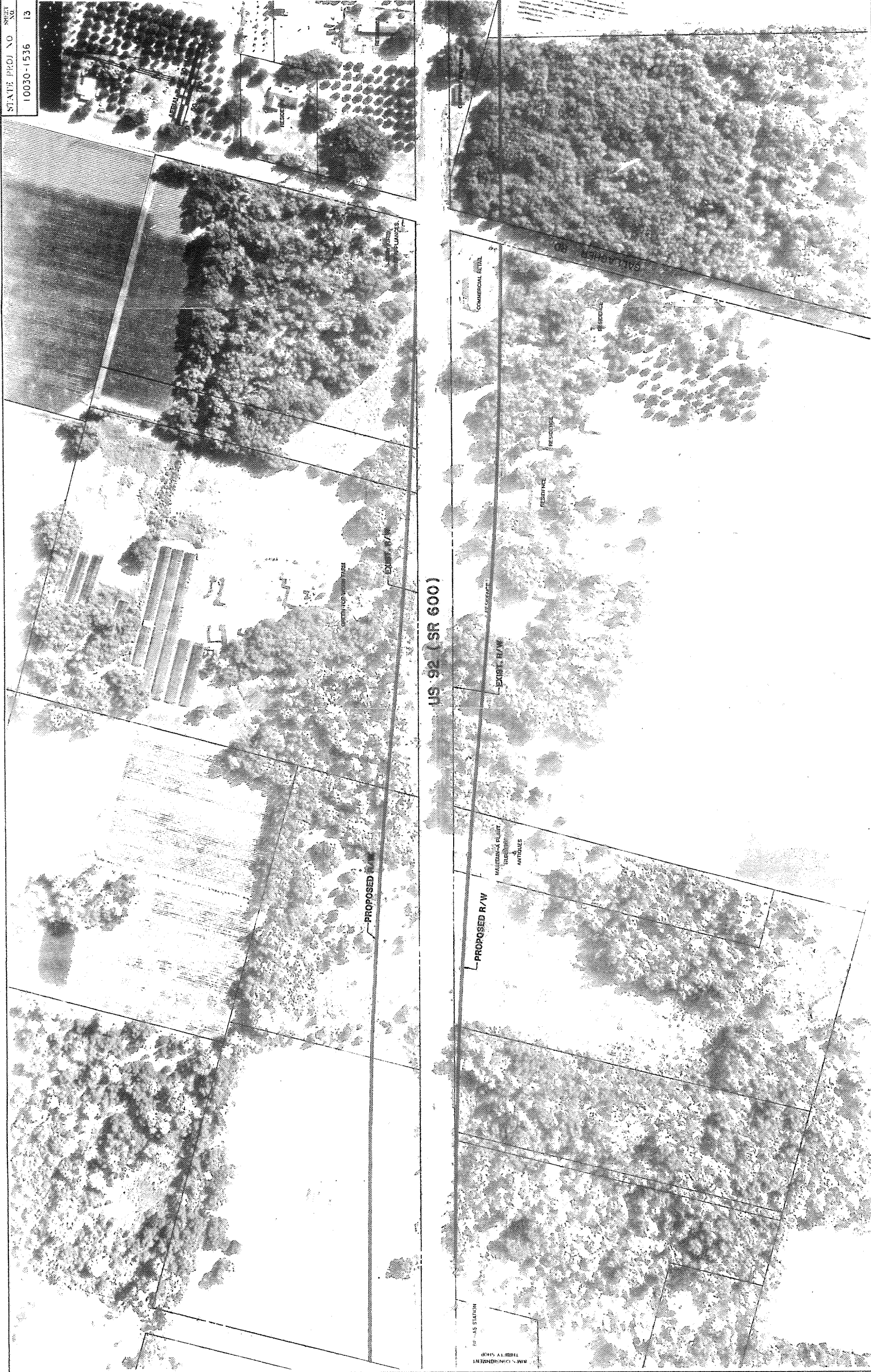
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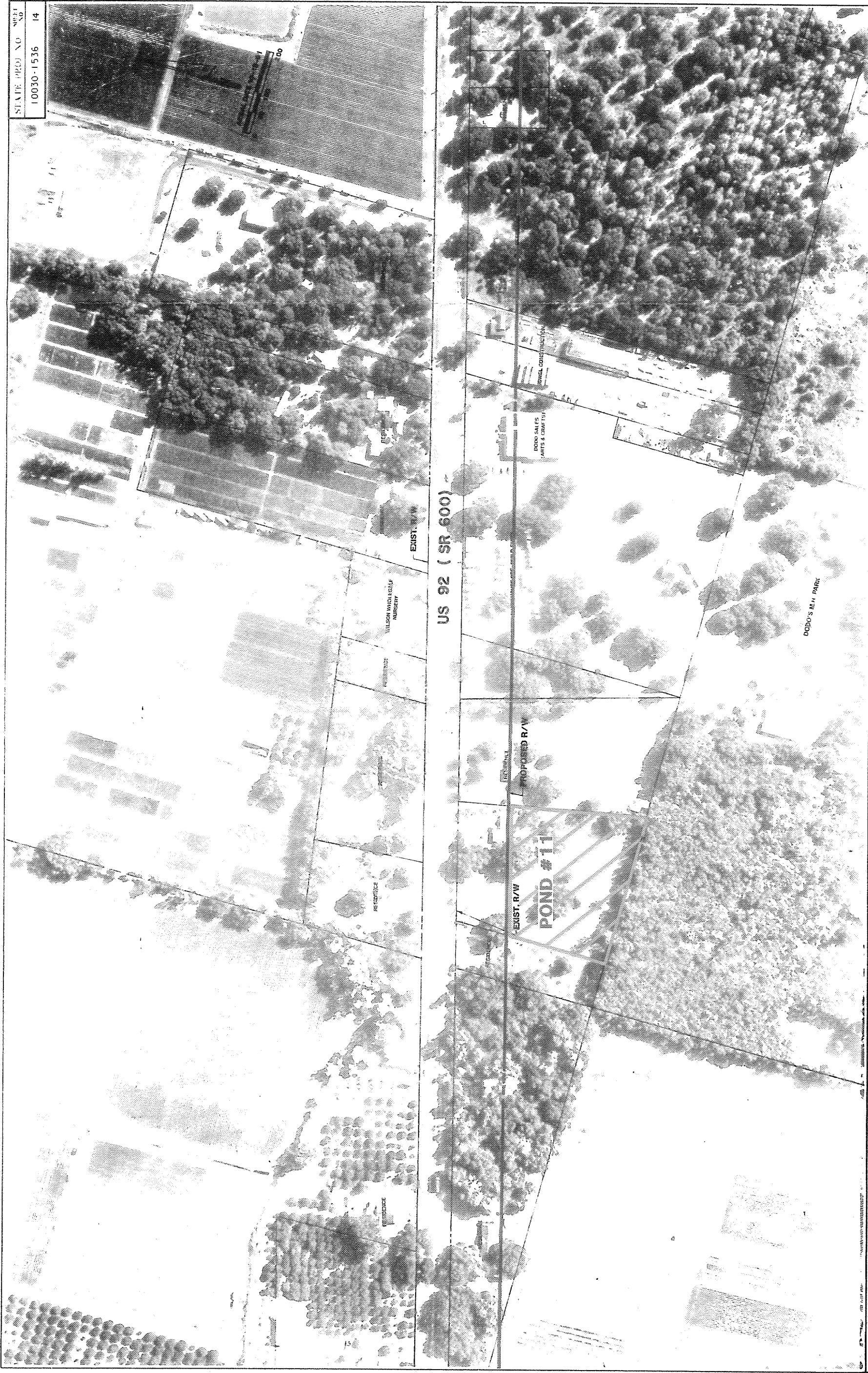


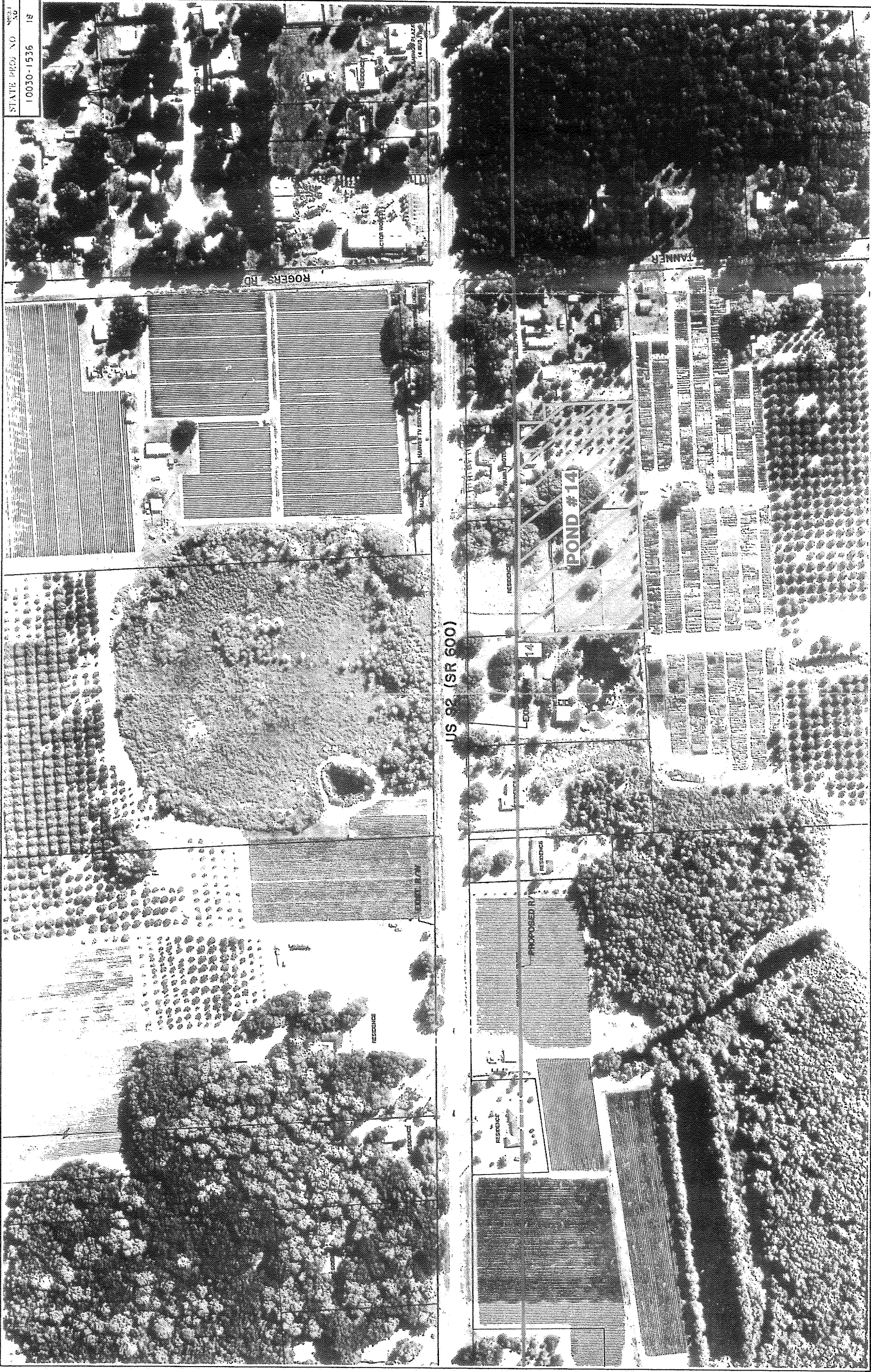
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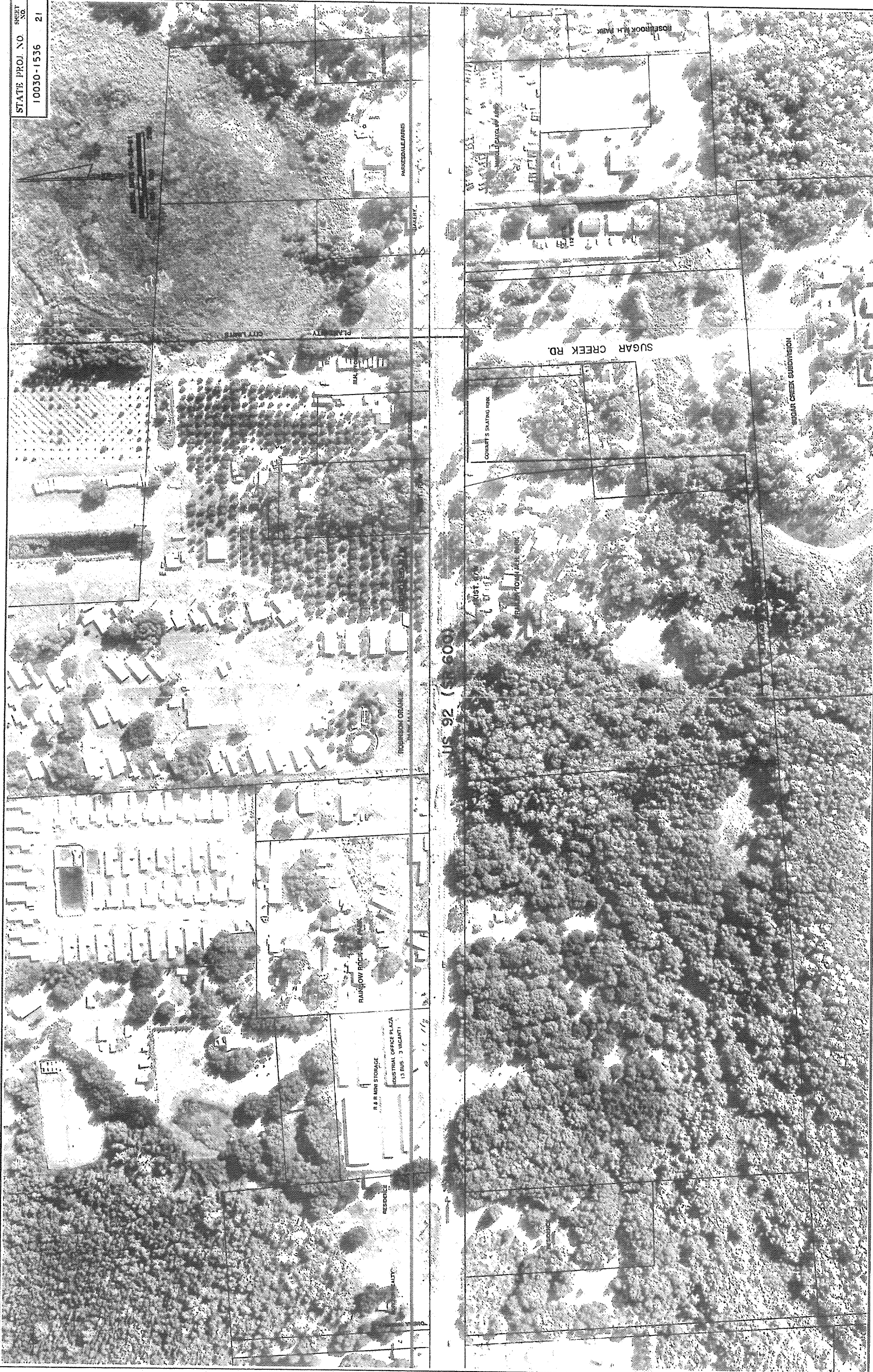






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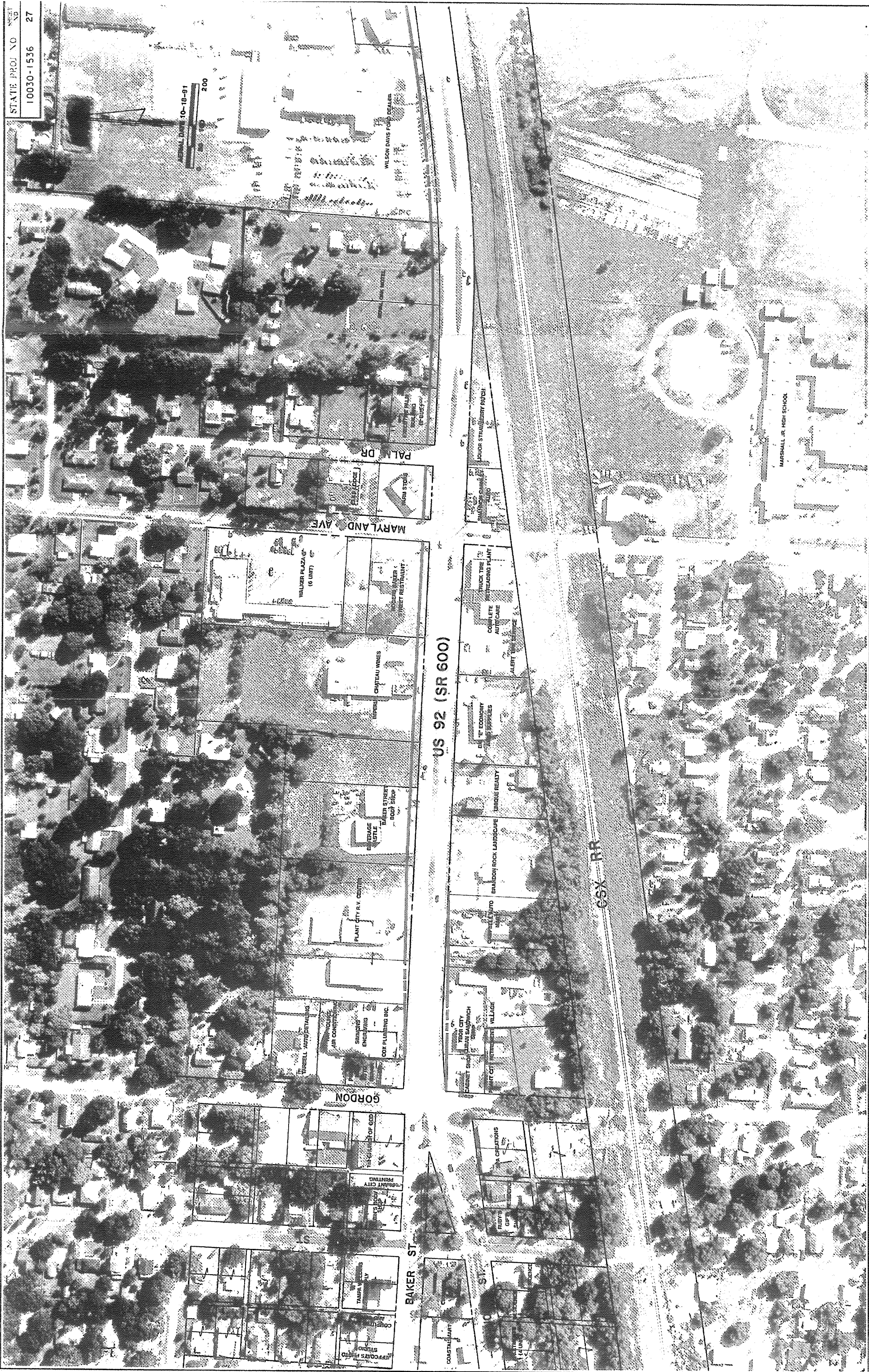
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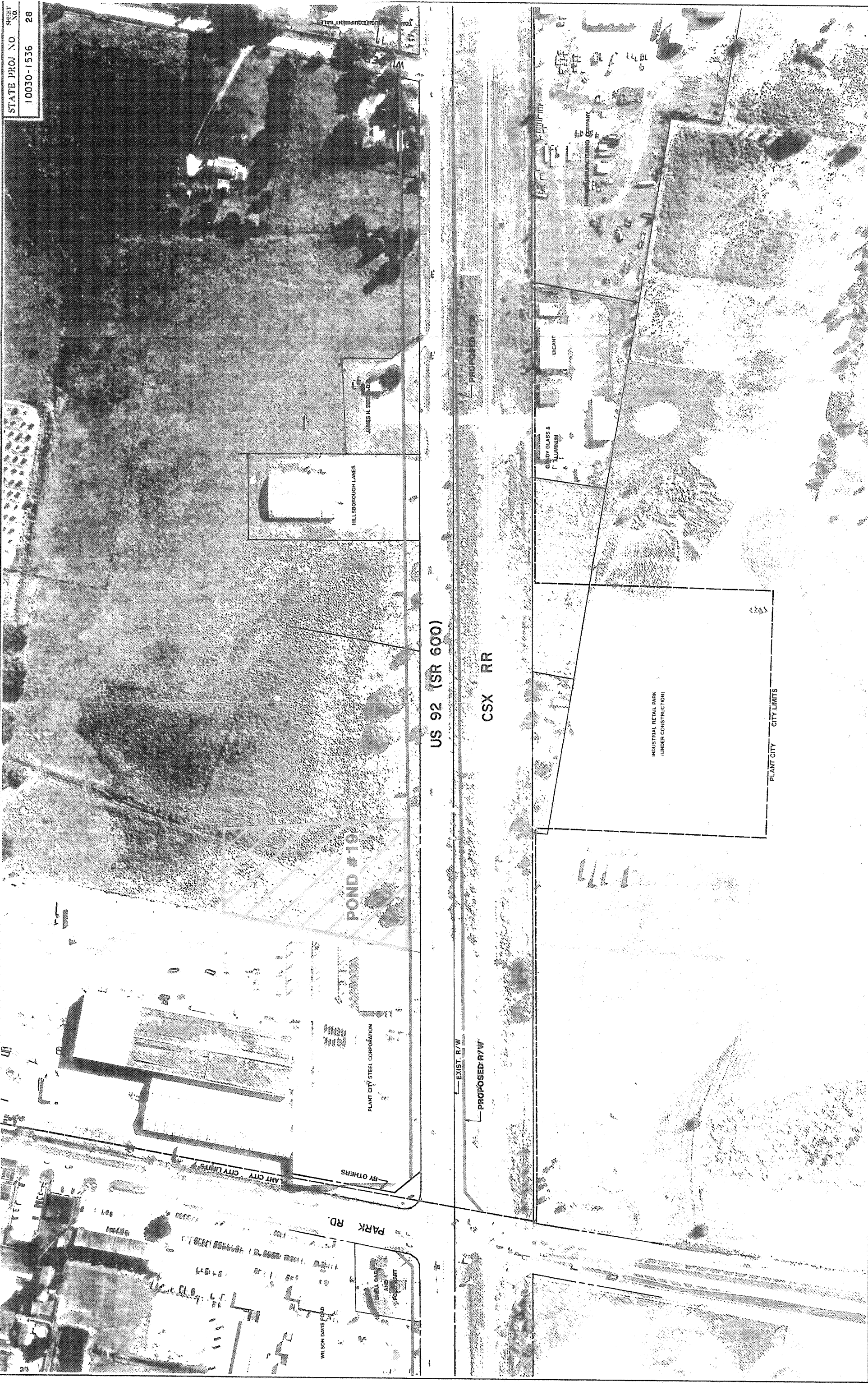


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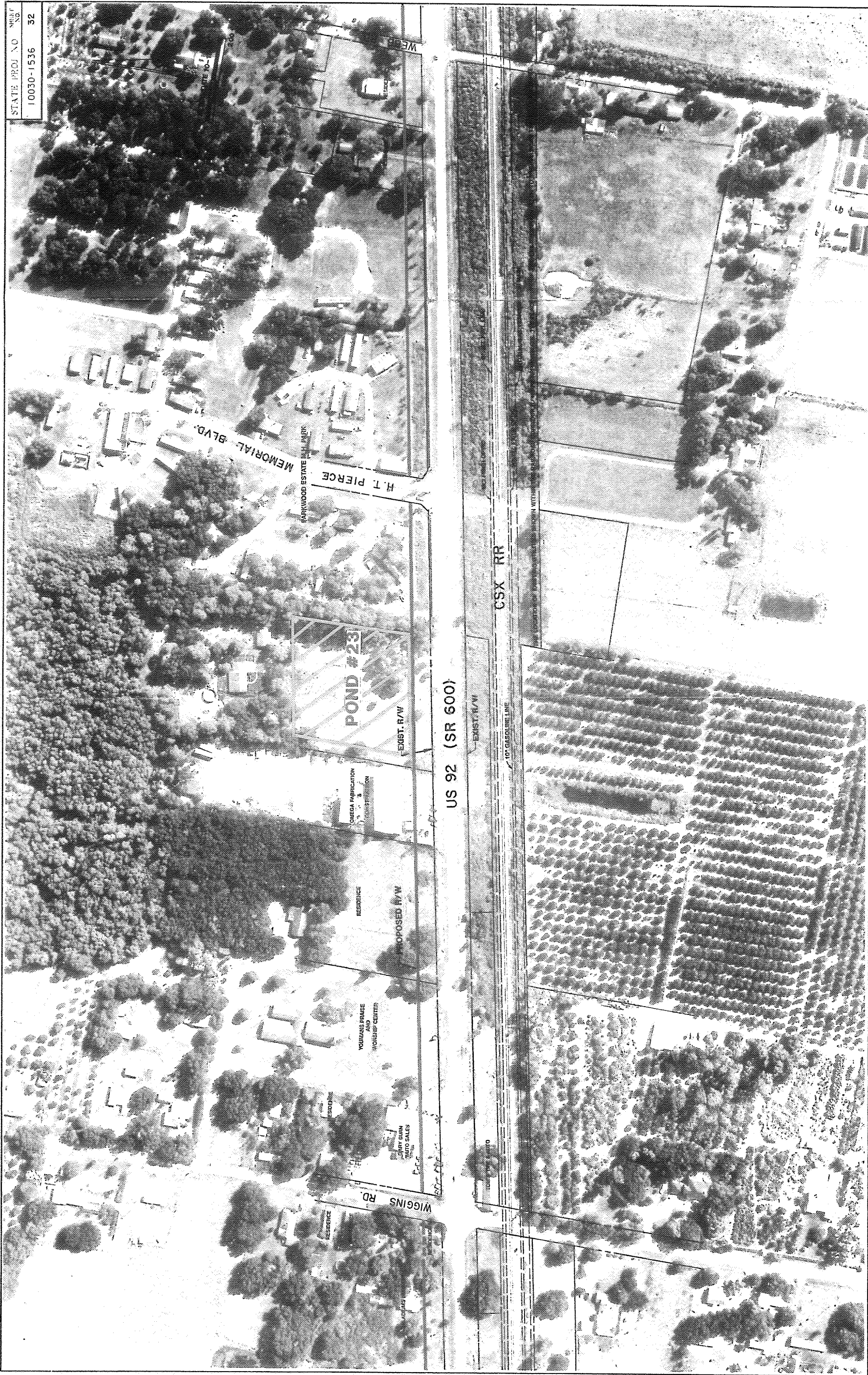




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APPENDIX G:

**Summary of Comments Received from the Public Workshop
and Advance Notification Notice**

RESPONSES ON THE ADVANCE NOTIFICATION PACKAGE

An Advance Notification Package was distributed on November 20, 1991, to the following state and federal agencies, notifying them of the US 92 PD & E Study:

Federal Highway Administration - Division Administrator

Federal Emergency Management Agency - Natural Hazards Branch, Chief

National Marine Fisheries - Area Supervisor

Federal Railroad Administration - Office of Economic Analysis, Director

U.S. Director of Interior - Bureau of Land Management, Eastern States Office

U.S. Department of Housing and Urban Development, Regional Environmental Officer

U.S. Department of Interior - U.S. Geological Survey Chief

U.S. Environmental Protection Agency - Region IV, Regional Administrator

U.S. Department of Interior - U.S. Fish and Wildlife Service, Field Supervisor

U.S. Army Corps of Engineers - Regulatory Branch, District Engineer

U.S. Department of Commerce - National Marine Fisheries Service - Habitat Conservation Division

U.S. Department of Agriculture - Southern Region, Regional Forester

U.S. Department of Interior - National Park Service - Southeast Regional Office

U.S. Department of Commerce - National Oceanic and Atmospheric Administration

Federal Aviation Administration - Airports District Office

U.S. Department of Energy - Office of Environmental Compliance, Director

U.S. Department of Health and Human Services - Center for Environmental Health and Injury Control

U.S. Department of Interior - Bureau of Indian Affairs - Office of Trust Responsibilities

Florida Department of Natural Resources - Marine Fisheries Commission

Florida Department of Natural Resources - Office of Land Use Planning and Biological Services

Florida Department of Natural Resources - West Central Florida Field Office

Florida Game and Fresh Water Fish Commission

Florida Recreational Trails Council

Tampa Bay Regional Planning Council

Central Florida Regional Planning Council

Southwest Florida Water Management District, Director

Florida Department of Environmental Regulation - Southwest District Office

Mr. A. B. Burke, Federal-Aid Program Coordinator, FDOT

Mr. Leroy Irwin, Manager, Environmental Management Office, FDOT

Comments were received from three agencies. The following is a summary of these comments with responses as appropriate.

AGENCY: State of Florida, Office of the Governor
State Clearinghouse

Comment: "Pursuant to Presidential Executive Order 12372, the project will be in accord with State plans, programs, procedures and objectives; and approved for submission to the federal funding agency when consideration is given to the enclosed agency comments (Florida Department of Environmental Regulation and Florida Department of State, Division of Historical Resources)."

Response: None needed.

AGENCY: Florida Department of Environmental Regulation

Comment: "As described in the Advanced Notification, the wetland areas within the Spartman Branch, Pemberton Creek, and Baker Creek drainage areas contain sensitive forested and herbaceous wetland habitat. Activities within these areas must be minimized to the greatest extent possible."

Response: These concerns have been noted and will be considered as the PD & E Study progresses.

AGENCY: Florida Department of State, Division of Historical Resources

Comment: "We note that the project area is to be surveyed for cultural resources prior to construction. Conditioned upon the Florida Department of Transportation conducting an historic structure and/or archaeological survey and appropriately avoiding or mitigating project impacts to any identified significant sites or structures, the proposed project will have no adverse effect on cultural resources sites listed, or eligible for listing, in the National Register, or otherwise of natural, state, or local significance."

Response: None needed.

Copies of these responses can be found in the Comments and Coordination Report.



GLATTING LOPEZ KERCHER ANGLIN

William J. Anglin, Jr.
Jack F. Glatting
J. Scott Henderson
Timothy T. Jackson
William C. Kercher, Jr.
S. Raymond Lopez
John F. Rinehart

David L. Barth
Carey S. Mayo
Jay R. Hood
Walter Kulash
Sharon K. Lamantia
John J. Moore, III
John Percy
Nancy Prine
Julie A. Scofield
Nathan P. Silva
Laura K. Turner
Ronald L. Urbaniak
Florine Walters

MEMORANDUM

DATE: November 7, 1991

TO: Greg Janes

FROM: Laura Turner *Laura / Lkh*

RE: November 6, 1991 Kick-Off Meeting
Hillsborough Avenue (US 92/SR 600) PD & E Study
Work Program Number 7113842
State Project Number 10030-1536
Federal Aid Project Number N/A
Hillsborough County
GLKA #6293.06

On Wednesday, November 6, 1991 at 1:30 pm, a Kick-Off Meeting was held for the Hillsborough Avenue (US 92/SR 600) PD & E study. The purpose of the meeting was to introduce the project to area elected officials.

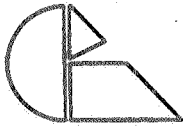
The following people attended the meeting, representing the project:

Katherine Creamer, Florida Department of Transportation
Mike Coleman, Florida Department of Transportation
Bob Hillier, Florida Department of Transportation
Greg Janes, Brown & Root-Genesis Engineering, Inc.
Tim Jackson, Glatting Lopez Kercher Anglin, Inc.
Laura Turner, Glatting Lopez Kercher Anglin, Inc.
Sharon Phillips, Post Buckley Schuh & Jernigan, Inc.

About 15 people attended the meeting, representing the following agencies: Plant City (Engineering and Police Departments), Hillsborough County (Public Utilities and Planning), and the Tampa Urban Area Metropolitan Planning Organization. A reporter from the Tampa Tribune also attended.

After introducing the project team, a brief overview of the study was provided. A question and answer session followed. The following items highlight the concerns expressed.

- o The traffic information, especially the results of the origin/destination survey work, should be made available to the City of Plant City.



Mr. Greg Janes
November 7, 1991
Page Two

- o Need to be aware of other roadway improvements in the area as well as other studies.
- o Need to accommodate pedestrian and bicycle patterns in the final design of the proposed improvement.
- o Will the improvement through downtown Plant City involve widening or will a by-pass be considered? (At this point, an improvement to the existing facility is anticipated. However, should a by-pass become the proper solution it will be studied.)
- o What is the time frame for meetings? (An Alternatives Public Meeting is tentatively scheduled for April 1992 and a Public Hearing anticipated in March 1993.)
- o What will be the scale of the aerial photography used for the study? (New photography has been flown for this project and will be at a scale of 1" = 400'.)

A copy of the Sign-In Sheet is attached for reference.

LKT/llh

Attachment

c: Tim Jackson



William J. Anglin, Jr.
Jack F. Glatting
Timothy T. Jackson
William C. Kercher, Jr.
S. Raymond Lopez
John F. Rinehart

David L. Barth
Bruce C. Hall
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Laura K. Turner
Ronald L. Urbaniak

GLATTING JACKSON KERCHER ANGLIN LOPEZ RINEHART

December 3, 1992

Ms. Sharon Phillips
Post, Buckley, Schuh & Jernigan, Inc.
5300 West Cypress Street
Suite 300
Tampa, Florida 33607

RECEIVED	
DEC 07 1992	
P.B. SHARP, INC.	
TAMPA	
FILE	

RE: U.S. 92 (S.R. 600) PD&E Study, Hillsborough County
State Project Number 10030-1536
W.P.I. Number 7113842
F.A.P. Number MAF-212-1(34)
Comments Received at October 15, 1992 Alternatives Public Meeting
GJ #4289.06

Dear Sharon:

On October 15, 1992 an Alternatives Public Meeting was held at Tomlin Junior High School, 501 North Woodrow Wilson Boulevard, Plant City, Florida. The meeting was an informal workshop setting, with information on display for public viewing and comment from 5:00 pm to 8:00 pm. In addition, a slide show presentation provided a project overview.

About 300 people attended the meeting, with 64 submitting written comments through November 9, 1992. The following information provides a summary of those comments, by segment. The comment is stated by the number of times it was made. Underneath the comments are reasons for the statements made about the alternative alignment(s).

Generally, the comments relate to potential impacts to individual parcels and businesses.

SEGMENT 1

Three comment forms were received with the following information.

- o Opposes 1-N (1)
Potential disruption to business (Seffner Rock and Gravel)
- o Favors 1-N and 1-C (1)
Fewer residential and business relocations
- o Opposes 1-S (1)
Reduces future uses of property

COMMUNITY PLANNING

33 East Pine Street, Ellis Building, Orlando, Florida, USA 32801
Phone (407) 843-6552 • FAX (407) 839-1789



GLATTING JACKSON KERCHER ANGLIN LOPEZ RINEHART

Ms. Sharon Phillips
December 3, 1992
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SEGMENT 2

Four comment forms were received with the following information.

- o Concerned with 2-N and 2-NE (1)
Potential impacts to retention pond at Armwood Senior High School
- o Favors 2-CE (1)
No extreme impacts
- o Against 2-SE (1)
Impacts on Mango Mini Storage
- o Prefers No Widening; prefers 2-N if widening occurs (1)
Concerned with potential drop in property values as well as restricted access to property as a result of widening

SEGMENT 3

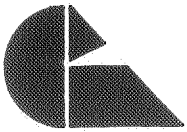
Seven comment forms were received with the following information.

- o Favors 3-N (4)
Away from individuals' homes
- o Favors 3-S (1)
Takes the individual's home; concerned about the following issues: potential drop in property values, safety, zoning change potential, noise, and traffic
- o Favors 3-C and 3-S (1)
Potential impacts to businesses
- o Favors Alternative Alignment #3 (1)

SEGMENT 4

Seventeen comment forms were received with the following information.

- o Favors 4-C (4)
Concern regarding placement of traffic signals, speed limits, and option is fairest
- o Favors 4-C and Against 4-N (1)
Potential impacts to business (Hillsboro Armature Works)
- o Against 4-C and 4-S (2)
Potential impacts to individuals' homes, noise, and against 60 mph speed limit
- o Favors 4-S and second choice is 4-C (1)
Less impacts
- o Favors "No Build", 4-N if must select option (1)
Widening I-4 should be enough



GLATTING JACKSON KERCHER ANGLIN LOPEZ RINEHART

Ms. Sharon Phillips
December 3, 1992
Page Three

SEGMENT 4 (continued)

- o Favors "No Build", 4-S if must select option (1)
Reduces noise impacts
- o Favors 4-C (1)
- o Against 4-C (1)
Destroys too many homes
- o Favors 4-N (1)
- o Concern about the noise and potential impact to well at U.S. 92 and Fritzke Road (1)
- o Comment on 4-C and 4-S regarding quantified business impacts (2)
- o Concern regarding potential impacts to property (1)

SEGMENT 5

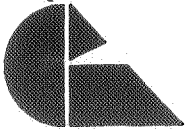
Five comment forms were received with the following information.

- o Favors 5-C (2)
Concern about drainage at business (May Animal Hospital)
- o Favors 5-N (1)
Potential impacts to businesses
- o Comment regarding the location of a log cabin build in the 1800's at 4902-2945 U.S. Highway 92 (1)
- o Widen U.S. 92 (1)

SEGMENT 6

Seven comment forms were received with the following information.

- o Favors 6-EX (3)
- o 1st choice is 6-EX; 2nd choice is 6-N (1)
Save large oak trees
- o Against 6-SE (1)
Potential impacts to Mango Mini Storage
- o Concerned about dangerous intersection at Baker and Walker Streets (1)
- o Concerned that proposed sidewalk would block access to parking lot of business (1)
- o Interested if the following will be addressed in downtown Plant City: sidewalk improvements, street lighting, and planting of trees (1)



GLATTING JACKSON KERCHER ANGLIN LOPEZ RINEHART

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SEGMENT 7

Four comment forms were received with the following information.

- o Favors 7-EX (2)
Potential impacts to Tooth Caboose
- o Favors 7-N or 7-EX; Against 7-C and 7-S (1)
Potential impacts to Strawberry Patch Lounge
- o Traffic problems only during the Strawberry Festival and Spring Training of the Reds

SEGMENT 8

Five comment forms were received with the following information.

- o Favors 8-R (1)
- o Against 8-R (1)
Potential business impacts
- o Against 8-U (1)
Unsafe
- o Favors the best option that will improve the traffic situation (1)
- o Concern about impacts to Yarbrough Equipment Company (1)
- o Widen U.S. 92 (1)

REQUESTS FOR INFORMATION

Four requests for information were received asking for the following information.

- o One copy of the six alternatives within Segment 2 (1)
- o Leave a set of aerial photos at City Hall - Plant City (1)
- o One copy of Sheet 28 (1)
- o One copy of Sheet 32 for Alternative 8-R

GENERAL COMMENTS, NOT SEGMENT SPECIFIC

Eight comment forms were received with the following information.

- o Leave U.S. 92 as it is and widen I-4 instead (3)
- o Don't widen U.S. 92 (2)
Focus efforts on other modes such as light rail and a bus system (1)
Segments 1, 2, 3, 4 (1)
- o Coordinate the U.S. 92 improvements with I-4 improvements to reduce waste (1)
- o Favors widening of U.S. 92; however, concerned about the maintenance of traffic (1)



GLATTING JACKSON KERCHER ANGLIN LOPEZ RINEHART

Ms. Sharon Phillips
December 3, 1992
Page Five

Please feel free to call me should you have any questions.

Sincerely,

Laura K. Turner, AICP
Senior Planner

LKT/llh

c: Tim Jackson