FLORIDA DEPARTMENT OF TRANSPORTATION

INTERCHANGE MODIFICATION PROPOSAL
REVIEW CHECKLIST AND CERTIFICATION STATEMENT

Interchange Location: Mainline: Interstate 75 Crossroad: State Road 52

DOT District: Seven District Contract: C-6227

Applicant: FDOT District Seven, Environmental Management Office

Contact: Mr. Kirk Bogen, P.E., District Project Development Engineer

EXCEPTIONS (POLICY, PROCEDURE, STANDARDS):

CERTIFICATION:

This document has been reviewed to ensure consistency with Federal and Department Policies, Procedures and Standards (except as noted above). The document is complete and consistent with the factors, analysis techniques and documentation requirements as agreed to in the Methodology Letter of Understanding.

_____ _____
District Planning Manager Date

_____ _____
District Interchange Review Coordinator Date

_____ _____
District Secretary Date

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SECTION 1
INTRODUCTION

1.1 BACKGROUND

The I-75 and S.R. 52 Interchange Modification Report (IMR) is being prepared as part of an on-going Project Development and Environment (PD&E) Study for I-75 in Pasco County (from south of the proposed S.R. 56 to north of S.R. 52). The PD&E Study addresses the need to widen I-75 from four to six lanes, which is consistent with the Pasco County Metropolitan Planning Organization's (MPO)'s 2020 Long Range Transportation Plan (LRTP). As part of the PD&E Study process, a loop ramp was recommended for the northwest quadrant of the I-75 and S.R. 52 interchange to improve the westbound S.R. 52 to southbound I-75 movement. The loop ramp improvement would also be of benefit in reducing delays from other movements at the interchange and was also recommended to safely and efficiently accommodate future travel demand at the interchange.

The introduction of the proposed loop ramp requires modification to the existing interchange geometry. Federal and State guidelines require that an IMR be prepared for modifications to existing interchanges on the Florida Intrastate Highway System (FIHS) limited-access facilities. All requests for new connections to the FIHS limited-access facilities or modifications to an existing interchange must be fully justified, documented, reviewed and processed for approval by the Florida Department of Transportation (FDOT) and the Federal Highway Administration (FHWA). The IMR process has been developed to ensure that these intrastate facilities are maintained to provide the highest level of service in terms of safety and mobility. These high standards are achieved primarily through strict regulation of access to the facilities. Because one of the proposed southbound loop ramp alternatives creates an additional access point along I-75, an IMR is required.

1.2 PURPOSE

The purpose of the I-75 and S.R. 52 IMR is to justify the need for a loop ramp modification to the existing interchange. To fully justify the need for the loop ramp, the IMR will recommend an alternative, which achieves the following objectives consistent with guidelines set forth in the Interchange Request Development and Review Manual (IRDRM)[1]:

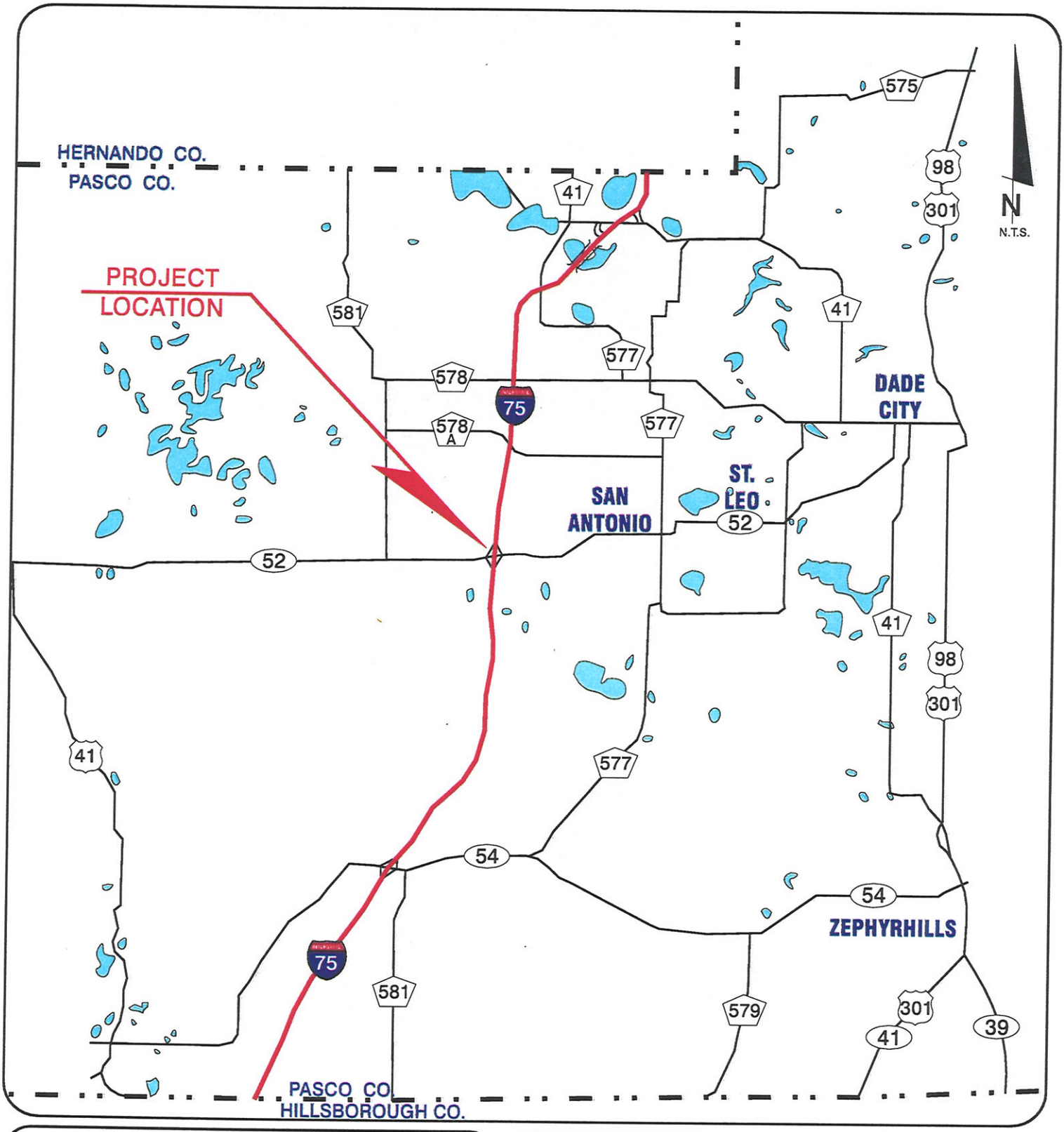
1. Improves existing operational conditions at the interchange and on the mainline;
2. Improves safety conditions at the interchange and on the mainline;
3. Accommodates future travel demand at an acceptable level of service on both the arterial and interstate components;
4. Provides a cost affordable alternative with minimal negative impacts to the surrounding environment; and,
5. Does not degrade the operational conditions of the interstate mainline or ramps.

1.3 PROJECT LOCATION

The I-75 and S.R. 52 interchange is located in northeast Pasco County, Florida. Specifically, the IMR addresses the portion of I-75, section number 14140000, from M.P. 11.550 to M.P. 11.975. The study interchange falls within the unincorporated area of the County, providing direct interstate access for the adjacent Cities of San Antonio, St. Leo and Dade City. These municipalities, along with the surrounding unincorporated area, are considered as bedroom communities to the larger Tampa-Hillsborough County metropolitan area. St. Leo's College is also located along S.R. 52 approximately five (5) miles east of the interchange. Figure 1-1 identifies the project location.

1.3.1 Area of Influence

As specified in the IRDRM, the area of influence for a limited-access facility such as I-75 must include, at a minimum, an interchange in both directions from the project



LEGEND

- County Road
- State Road
- U.S. Highway
- Interstate

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I-75 & S.R. 52
INTERCHANGE MODIFICATION REPORT
Pasco County, Florida

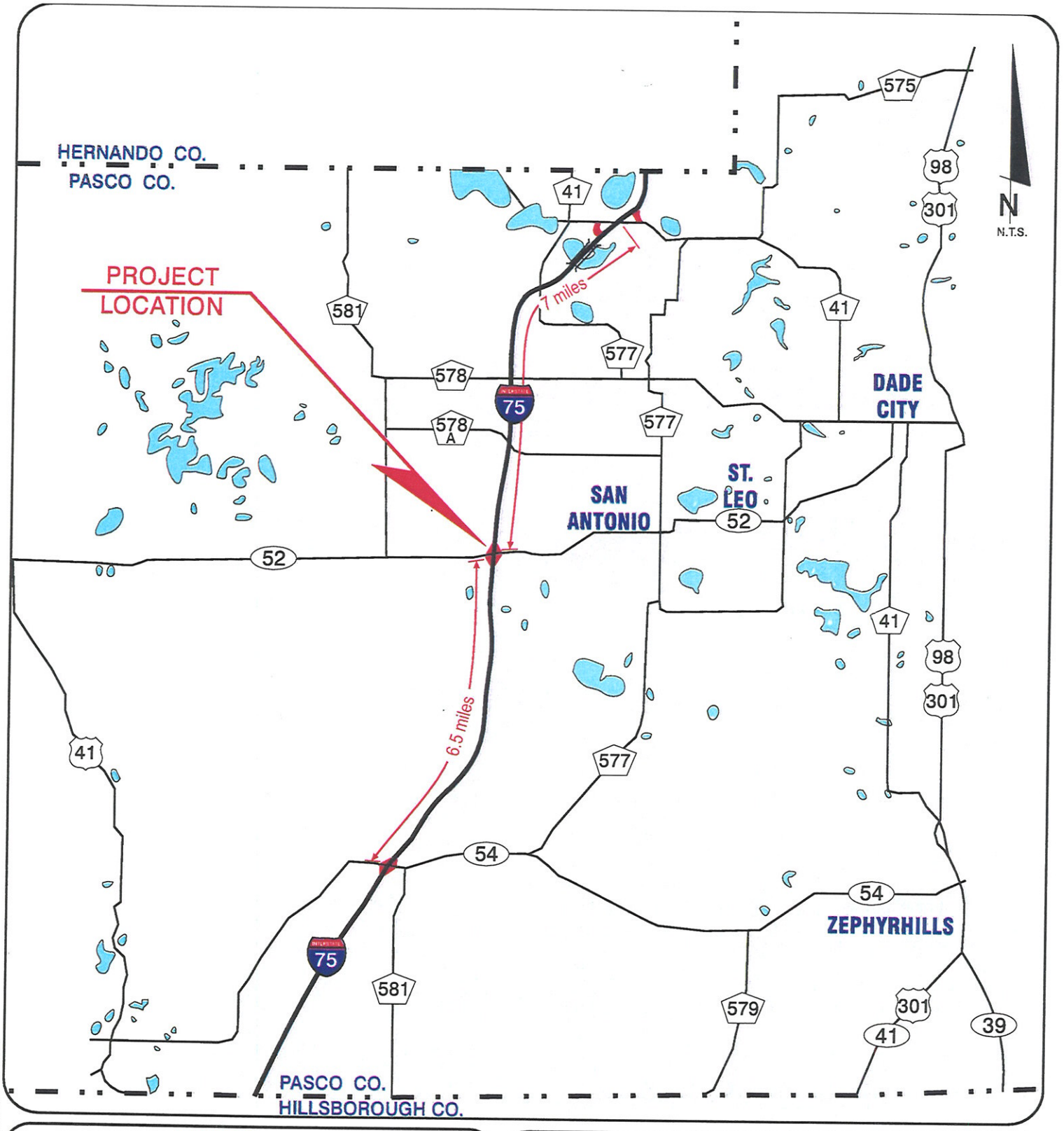
PROJECT LOCATION MAP

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 1-1

interchange. However, the IRDRM guidelines do not apply in this instance, due to the fact that the I-75 interchanges directly north and south of the project interchange are located over six (6) miles from the project interchange. As illustrated in Figure 1-2, the C.R. 41 interchange is located approximately seven (7) miles to the north and the S.R. 54 interchange is located approximately six and one-half (6.5) miles to the south. Both interchanges are not anticipated to be impacted by the proposed interchange modification or trips generated by surrounding land uses. Conversely, modifications to the outlying interchanges will not impact traffic operations at the project interchange. No parallel adjacent facilities exist which could potentially divert traffic from the study interchange to the adjacent interchanges. The area of influence for the I-75 and S.R. 52 IMR will include I-75 from the south exit and entrance ramp weaves and merges to the north exit and entrance ramp weaves and merges. Figure 1-3 illustrates the area of influence for the IMR.

For the cross street, S.R. 52, a minimum of one-half (1/2) mile in both directions is necessary for inclusion within the area of influence. At the time of this analysis, no additional traffic signals were present within the area of influence to necessitate the extension of the area for coordination purposes. In accordance with the guidelines, the limits of the IMR shall include S.R. 52 from east of Old Pasco Road to west of McKendree Road/Corporate Lake Boulevard. Currently, no Developments of Regional Impact (DRIs) exist within the area of influence.



LEGEND

- County Road
- State Road
- U.S. Highway
- Interstate

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52

INTERCHANGE MODIFICATION REPORT

Pasco County, Florida

INTERCHANGE SPACING

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 1-2

COREL \ PD&E \ I-75PASCO \ REPORTS \ IMR \ FIG_1-2.CDR \ 11-15-99

LEGEND

Area of Influence

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52

INTERCHANGE MODIFICATION REPORT

Pasco County, Florida

AREA OF INFLUENCE

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FIGURE 1-3

COREL \ PD&E \ I-75PASCO \ REPORTS \ IMR \ FIG_1-3.CDR \ 11-15-99

1.4 APPLICANT INFORMATION

The applicant for the I-75 and S.R. 52 Interchange Modification Report is the Florida Department of Transportation, District Seven, Environmental Management Office. This document has been prepared in coordination with the FDOT, District Seven, District Interchange Review Committee. For information regarding the I-75 and S.R. 52 IMR, please contact the FDOT Project Manager at the following address and telephone number:

Mr. Kirk Bogen, P.E
Florida Department of Transportation
District Seven, Environmental Management Office
11201 N. McKinley Drive
Tampa, FL 33612-6403
(813) 975-6448

SECTION 2
METHODOLOGY

The following text documents the scope, approach and methodologies used to develop the IMR as identified and agreed to in the Pre-Application Proposal and Methodology Letter of Understanding.

2.1 ANALYSIS YEARS

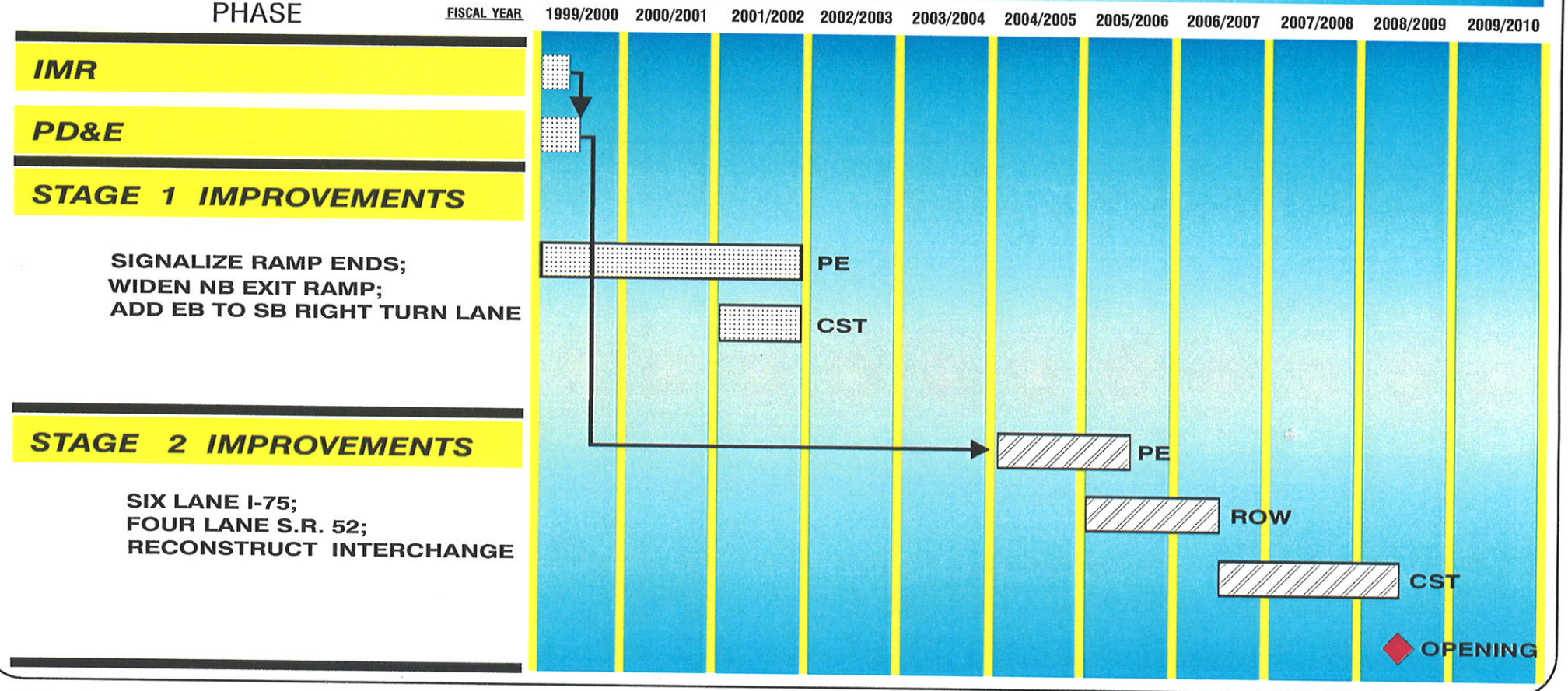
The analysis years considered for this study are as follows:

- Existing Year: 1997
- Staged Opening Year: 2001
- Opening Year: 2008
- Design Year: 2028

In addition, the travel demand model used to develop traffic forecasts has a base year validation of 1995 and a planning horizon year of 2020.

Staged opening year improvements include the signalization of the ramp termini at S.R. 52, the widening of the northbound exit ramp for an additional left turn lane, and the addition of an eastbound to southbound right turn lane. These improvements are currently programmed in the Department's Work Program (1999/2000 – 2003/2004) as identified in Figure 2-1. However, the ramp termini were recently signalized in advance of the roadway and ramp widening. The ramp widening and additional turn lane are still scheduled for construction in the Work Program. The opening year improvements include the proposed six laning of I-75, the four laning of S.R. 52 and the reconstruction of the interchange. The year 2028 was selected as the design year because it is twenty (20) years in the future from the opening year 2008, which includes major widening of the Interstate. The 20-year time frame is consistent with standards identified in the FDOT Design Traffic Handbook [2].

I-75 & S.R. 52 IMR
PROJECT PRODUCTION SCHEDULE



2-2

LEGEND

On Going

Proposed

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52
INTERCHANGE MODIFICATION REPORT
Pasco County, Florida

INTERCHANGE PROJECT PRODUCTION SCHEDULE

WPI Seg No. 258736 1
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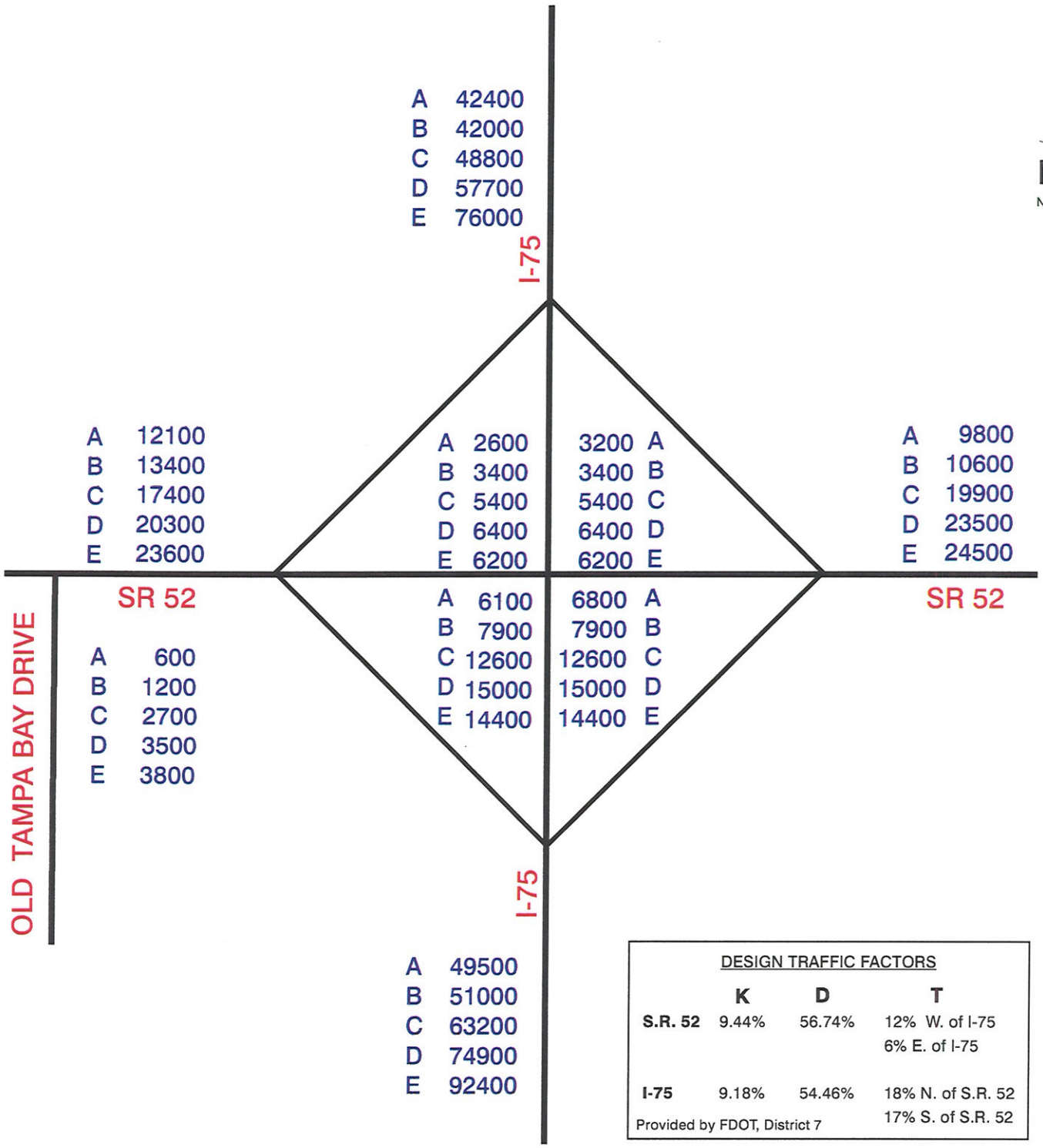
FIGURE 2-1



DESIGN TRAFFIC FACTORS

	K	D	T
S.R. 52	9.44%	56.74%	12% W. of I-75 6% E. of I-75
I-75	9.18%	54.46%	18% N. of S.R. 52 17% S. of S.R. 52

Provided by FDOT, District 7

LEGEND

A	1997	Existing AADT Volumes
B	2001	Design Year AADT Volumes
C	2008	Design Year AADT Volumes
D	2020	Design Year AADT Volumes
E	2028	Design Year AADT Volumes

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52
INTERCHANGE MODIFICATION REPORT
Pasco County, Florida

EXISTING AND FORECASTED AADT VOLUMES USED IN THE IMR

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 2-2

2.2 DATA COLLECTION

Data collected for the existing conditions analysis was derived from the existing traffic data utilized in the I-75 PD&E Study – Revised Draft Traffic Report (October 1997) [3]. The data collected for the Report includes:

Traffic Counts

- 7-day traffic counts on I-75 - field count, conducted in 1997
- 8-hour turning movement counts at S.R. 52 and I-75 northbound and southbound entrance and exit ramps - field count, conducted in 1997
- FDOT daily traffic count data for S.R. 52 - FDOT, conducted in 1996 factored to 1997
- Historical Count Data – FDOT, District 7
- Traffic counts at Old Tampa Bay Drive, conducted April, 1999.

Traffic Factors

- Seasonal Adjustment Factors - FDOT Seasonal Adjustment Factors for I-75
- Axle Adjustment Factor - FDOT Weekly Axle Factor Category Report for I-75
- K30 Factor - FDOT permanent count station data, 1997 Florida Traffic Information
- D30 Factor - FDOT permanent count station data, 1997 Florida Traffic Information
- T24 and DHT Factors - FDOT permanent count station data , 1997 Florida Traffic Information
- Model Output Conversion Factors - 1997 Florida Traffic Information
- Also, the above referenced factors and counts are compared with the latest factors and counts provided by FDOT for reasonableness.

Land Use

- Pasco County Comprehensive Plan

Demographics

- 1995 Validated Tampa Bay Regional Planning Model (TBRPM)
- Pasco County Annual Demographic Report

Environmental

- Air Quality – Traffic Data
- Contamination – Site Search Database
- Wetlands – National Wetlands Inventory, Field Verification
- Noise Sensitive Sites – Field Measurements
- Historical or Archeological Sites – State Historic Preservation Officer
- Endangered Species – Literature Search, U.S. Fish and Wildlife Service

Transportation Systems Data

- Florida Intrastate Highway System – FDOT
- Functional Classification – Pasco County Comprehensive Plan, Traffic Circulation Element
- Crash Summaries – FDOT
- Pasco County MPO Long Range Transportation Plan, December, 1998.

2.3 TRAVEL DEMAND FORECASTING

The travel demand forecasting portion of the IMR was prepared by the FDOT, District 7, Planning Department in accordance with the guidelines set forth in the IRDRM. This section includes the Project Model Validation Report and the Future Travel Demand Report.

2.3.1 Project Model Validation Report

The FDOT has evaluated the IMR project area consisting of the north and south segments of Interstate 75 and the east and west segments of State Road 52 at their interchange in Pasco County. The evaluation consisted of a comparison of the base year 1995 observed daily traffic counts, adjusted to Peak Season Weekday Average Daily Traffic (PSWADT), to the model assigned link volumes.

The Tampa Bay Regional Planning Model (TBRPM), version 3.1, is the most current Florida Standard Urban Transportation Model in place for use by the Department and local MPOs in District 7. This is a regional model for all five counties in the District including Hillsborough, Pinellas, Pasco, Hernando and Citrus Counties as well as the influencing areas of western Polk County with the City of Lakeland and northern Manatee County with the Interstate 275/75 corridor. The TBRPM, v3.1, was recently validated to the 1995 base year. The Network Model Validation Letter is included in Appendix B of this report, which certifies the validation of the project network as part of the overall network model validation.

This model was reviewed in the area of influence using the guidelines identified in Section 5.3 of the IRDRM. The assigned validated network (1995 base year) volumes are compared to the observed PSWADT volumes in Table 2-1. The highway network includes two facilities: Interstate 75 coded as a Group 2 Freeway (FT 12) and State Road 52 as an Undivided Arterial (FT 32).

Table 2-1
1995 Volume to 1995 PSWADT Count Comparison

Network Segment	1995 Assigned Volume	1995 PSWADT Count	Volume to Count Ratio
Interstate 75, North	31,800	34,800	0.91
Interstate 75, South	38,100	42,800	0.89
State Road 52, West	13,000	12,100	1.07
State Road 52, East	10,600	9,700	1.09

The volume over count ratios fall within acceptable standards for network validation. The model underestimates Interstate 75 by approximately 10% and overestimates State Road 52 by almost 10%. These variations can be adjusted through the use of standard smoothing applications based on NCHRP 255 and extrapolated historic traffic trends.

2.3.2 Future Travel Demand Report

The FDOT has evaluated the project area for the Interchange Modification Report at the Interstate 75 and the State Road 52 interchange in Pasco County, Florida. The area of influence consists of the north and south segments of Interstate 75 and the east and west segments of State Road 52 at their interchange. The evaluation analyses consisted of 1995 and 2020 model assignment volumes, historic traffic trends, existing traffic counts, interpolations and extrapolations of the data, and smoothing techniques.

The TBRPM, v3.1, was used to forecast travel demand at the interchange for the year 2020 (Alternative "20i"). The network included the Pasco County MPO 2020 Cost Affordable Long Range Transportation Plan (LRTP)[4] as adopted in December, 1998. S.R. 52 east and west of the interchange was identified as a four lane divided arterial and I-75 north and south of the interchange was included as a six lane freeway. The projected socioeconomic data used in the study area was discussed and displayed in the Pre-Application Proposal IMR document (March, 1999). The 2020 model assignment volumes were smoothed using techniques identified in NCHRP Report No. 255. The forecasts were adjusted to AADT using techniques in the Design Traffic Handbook. Appendix C contains a worksheet, which steps through the adjustment process.

The 2020 forecasted traffic volumes were examined for reasonableness through a trend analysis of historical traffic counts. The counts were analyzed for trends using all available historical counts as well as incremental time period growth rates. Regression analyses for each interchange leg and the resulting growth rates can be found in Appendix D. 1997 and 2020 model volume forecasts were used to develop an area wide growth rate of 3.4% annually. The 3.4% simple annual growth rate was applied to the

1997 volumes to develop the 2020 forecasted volumes presented in Table 2-2. It was determined that the model forecast volumes and the trend analysis for the segment of S.R. 52 east of the interchange did not appear to reflect the potential for high growth along this corridor. Several planned developments have been identified east of the interchange and this corridor serves the cities of San Antonio, St. Leo and Dade City as their western access route to the interstate. Therefore, an annual growth rate of approximately 6% was applied to the existing count for this segment, which more closely reflects the anticipated growth on the eastern portion of this study area. This 6% growth rate was used for this portion of SR 52 based upon: 1) professional judgement; 2) recent knowledge of the above mentioned development which is not accounted for in the model socioeconomic data; and, 3) a second regression analysis using 1999 AADTs, which yielded a 5% growth rate along this segment and again does not consider recent development information.

The opening year (2008) forecast volumes were interpolated from the 1997 Average Annual Daily Traffic (AADT) volumes and the 2020 adjusted traffic volumes. The design year (2028) forecast volumes were extrapolated from the 1997 AADT volumes, the 2008 estimated volumes, and the adjusted 2020 traffic volumes.

For ramps, the same growth rate as estimated on Interstate 75, north of S.R. 52, was applied to the existing ramp counts to obtain the 2008, 2020 and 2028 forecasts. These volumes were balanced to S.R. 52 and Interstate 75 south of the interchange.

Table 2-2 lists the existing and forecasted AADT volumes on the roadway segments forecasts from the recent 1995 model validation.

Table 2-2
Existing and Forecasted AADT Volumes
(From Model Revalidation)

Facility	Location	1997 Existing	Design Year		
			2008 [1]	2020 [1]	2028
Interstate 75	N. of S.R.52	42,400	50,800	66,000	76,000
	S. of S.R. 52	49,500	61,800	80,200	92,400
I-75 Ramps	NB Exit	6,800	9,600	12,500	14,400
	NB Entrance	3,200	4,100	5,400	6,200
	SB Exit	2,600	4,100	5,400	6,200
	SB Entrance	6,100	9,600	12,500	14,400
State Road 52	East of I-75	9,800	14,000	20,400	24,500
	West of I-75	12,100	16,100	20,600	23,600

(1) These volumes were not used in the IMR analyses. The 2008 and 2020 volumes developed in the I-75 PD&E Study were used for consistency purposes.

Although the 1995 model validation interim year and design year AADT volumes were prepared for the IMR, the 2028 volumes were the only volumes used in the design build analysis. This was due to the fact that the on-going I-75 PD&E Study contained 2008 and 2020 AADT volumes based upon the 1990 validated model. In order to remain consistent with this study, 2008 model volumes provided by FDOT for the PD&E study were used for the IMR. In addition, 2001 model volumes for the staged opening year were also provided by FDOT. The actual 1997, 2001, 2008 and 2028 AADT volumes used in the IMR analyses are included in Figure 2-2.

2.4 DEVELOPMENT OF DESIGN TRAFFIC

The design year AADT volumes developed by the District were then used to calculate directional design hour volumes (DDHVs) for the staged opening, opening and design year. This exercise was completed for each year and for each proposed alternative.

As identified in the Pre-Application Proposal, the traffic factors presented in Table 2-3 were used to develop the DDHVs. These factors were provided by the District Planning Department for use in the design traffic analyses.

Table 2-3
Design Hour Factors

Roadway	K Factor[1]	Acceptable Range For K[2]	D Factor[1]	Acceptable Range For D[2]	T_{24} Factor[1]	Acceptable Range For T_{24}[2]
S.R. 52	9.44%	9.4 – 15.6%	56.74%	51.1 – 79.6%	12.0% West of I-75 6.0% East of I-75	8.0 – 20.0%
I-75	9.18%	9.6 – 14.6%	54.46%	52.3 – 57.3%	18.0% North of S.R. 52 17.0% South of S.R. 52	8.0 – 20.0%

Source: [1] FDOT, District Seven Planning Department, I-75 Project Development and Environment Study, Revised Draft Traffic Report, October, 1997.
[2] Acceptable Ranges for Rural Freeway and Arterial Design Hour Factors as identified in the Interchange Request Development and Review Manual, Unit 5, February 1998.

A review of Table 2-3 reveals that the design factors fall within the acceptable ranges for each category of factor, with the exception of the K_{30} for the interstate facility and the T_{24} for S.R. 52 east of the interchange. The recommended K_{30} factor of 9.18 is low compared to the recommended 9.60 minimum K_{30} factor specified for interstate facilities. A review of the historical K_{30} factors measured for this portion of I-75 indicates that the K_{30} factor has historically been low, ranging from 9.13 to 9.21 during the past several years. Also, a comparison of the peak hour traffic resulting from the use of the 9.60 minimum K_{30} factor and the 9.18 K_{30} factor for I-75 reveals a difference of 48 vehicles in the peak direction, which is not anticipated to significantly affect level of service results for the facility. The use of the 9.18 K_{30} factor is consistent with the Revised Traffic Report; PD&E Study I-75, Pasco County.

The T_{24} factor identified for S.R. 52 east of the interchange is also low. However, a review of historic T_{24} factors provided by FDOT for this location indicates that the factor has been consistently low for the past several years, ranging from 6.2 to 7.5 from 1996 to 1998. Also, as noted in the I-75 PD&E Study, the T_{24} factors for the interstate design year are lower than those calculated from the existing traffic count data. This reduction in the T_{24} factors for the interstate is attributed to build out of the area. As the Pasco County area becomes more urbanized, the percentage of trucks within the general stream

of traffic is expected to decrease and the percentage of automobiles is expected to increase over time. Table 2-4 compares the existing and design year T_{24} factors for the IMR study.

Table 2-4
Comparison of T_{24} Factors for I-75

I-75 Location	1997 RCI Database	Design Traffic (1)
North of SR 52	22.3 %	18.0%
South of SR 52	20.9%	17.0%

(1) Provided by FDOT District Seven Planning Department, April 1997.

These design factors were applied to the forecasted AADT volumes to prepare the DDHVs. These volumes were used in the no-build and build traffic analyses. The resulting design hour volumes for each alternative are included in Figures 2-3 to 2-11.

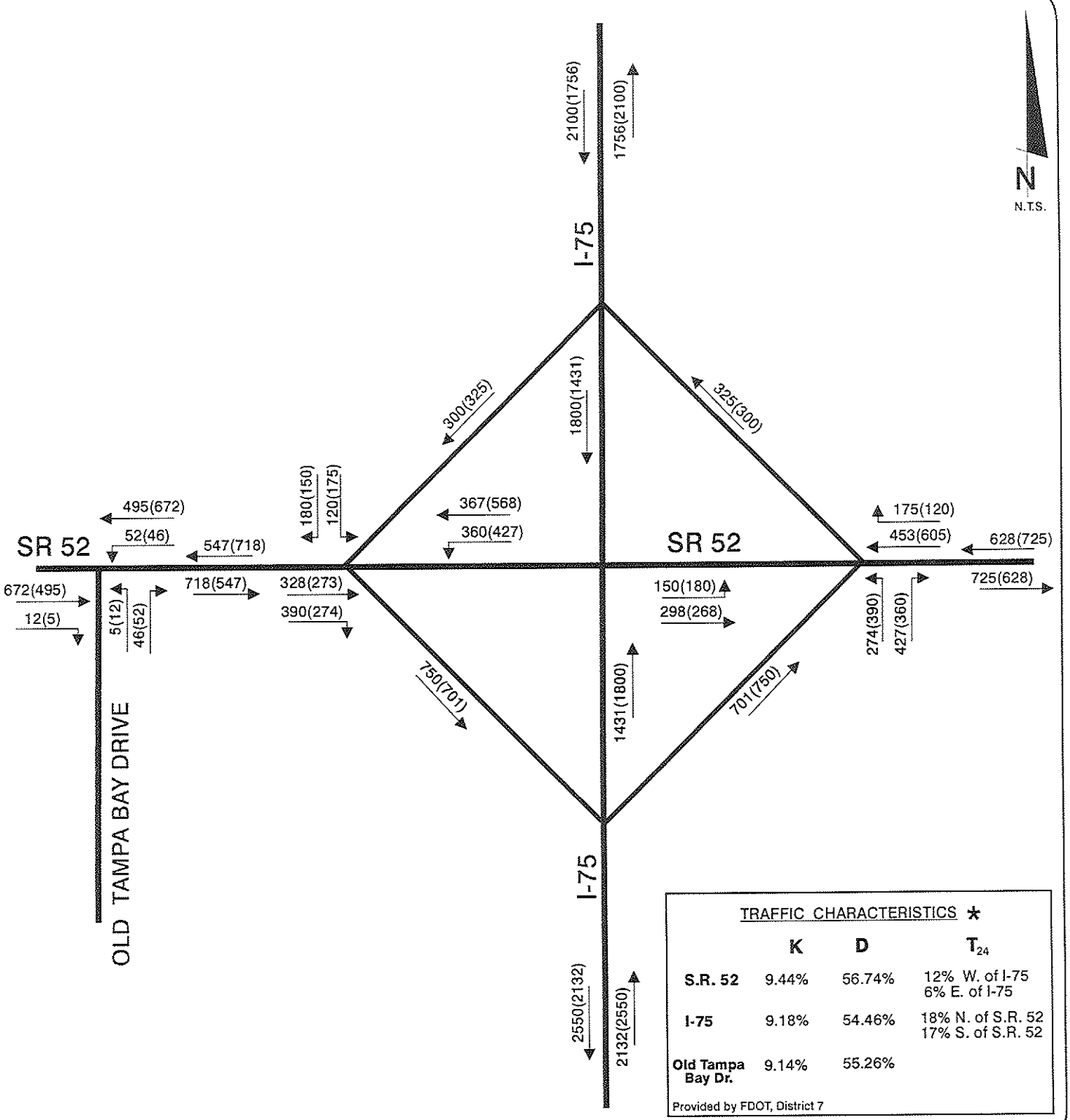
2.5 EXISTING OPERATIONAL CONDITIONS

Existing operational conditions for the individual element operational analyses (IEOA) were performed using Highway Capacity Software, HCS versions 2.1d[5] consistent with the analysis procedures identified in the 1994 Highway Capacity Manual[6].

The existing operating conditions were derived from the Revised Traffic Report prepared for the on-going PD&E Study for I-75 in Pasco County. The existing volumes, traffic characteristics, and design traffic factors were derived from the report and used in the IMR for consistency with the PD&E Study.

2.6 DOCUMENTATION REQUIREMENTS

This IMR was prepared using the single Interchange Proposal process. Individual technical memoranda were not prepared due to the short time frame of the project, the existing PD&E Study, and the fact that the Department has prepared the model validation report and the design traffic report.



TRAFFIC CHARACTERISTICS *

	K	D	T_{24}
S.R. 52	9.44%	56.74%	12% W. of I-75 6% E. of I-75
I-75	9.18%	54.46%	18% N. of S.R. 52 17% S. of S.R. 52
Old Tampa Bay Dr.	9.14%	55.26%	

Provided by FDOT, District 7

LEGEND

376 A.M. Peak Vehicles Per Hour

(659) P.M. Peak Vehicles Per Hour

→ Direction of Flow

* These are Initial Traffic Characteristics used to Develop the Design Hour Volumes. Due to Smoothing, the Characteristics were Varied Slightly to Balance the Volumes

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52

INTERCHANGE MODIFICATION REPORT

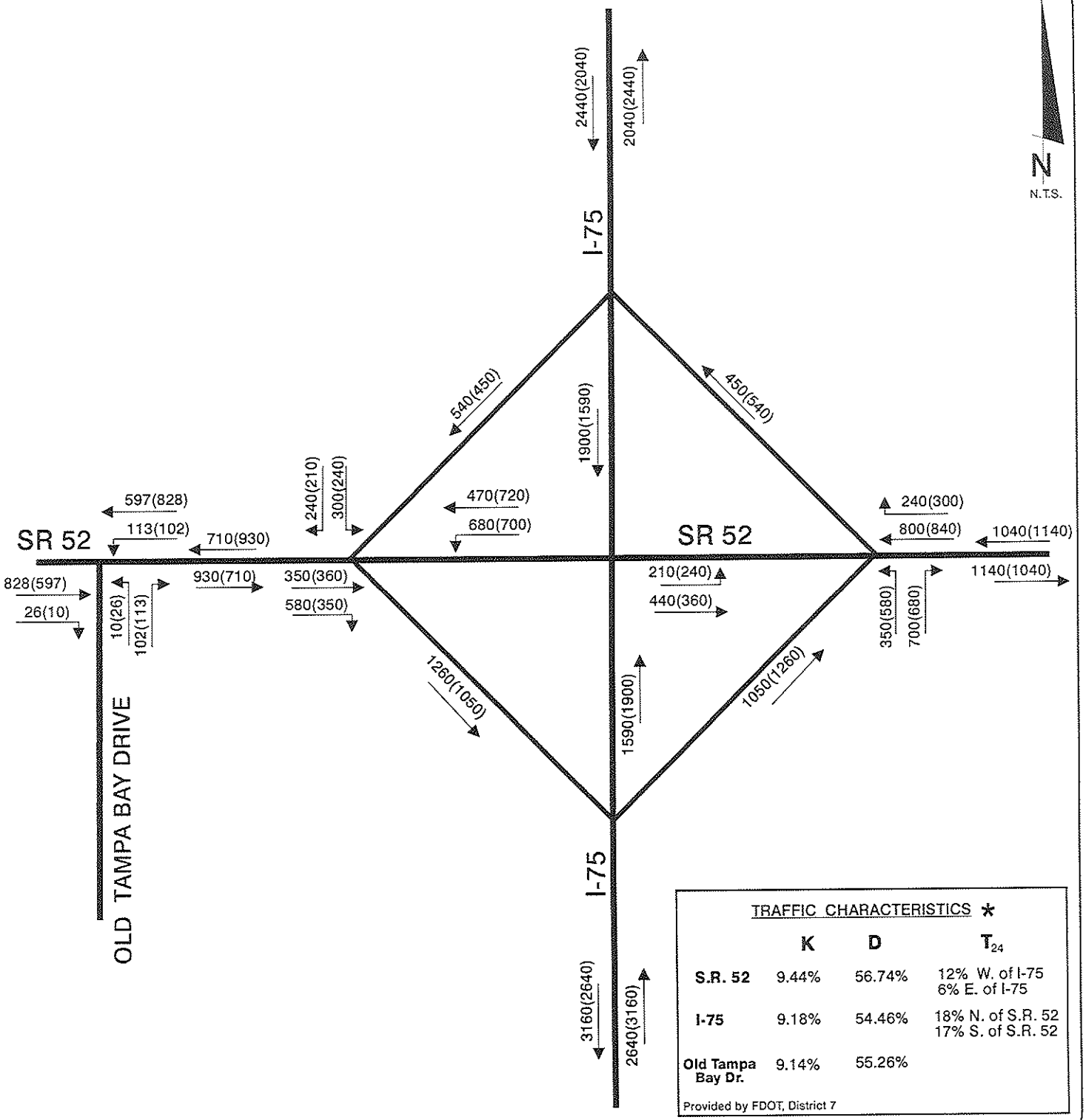
Pasco County, Florida

STAGED OPENING YEAR (2001) PEAK HOUR VOLUMES

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 2-3

COREL \ PD&E \ Dist_7 \ I-75PASCO \ REPORTS \ IMR \ FIG_2-3.CDR \ 11-16-99



TRAFFIC CHARACTERISTICS *

	K	D	T_{24}
S.R. 52	9.44%	56.74%	12% W. of I-75 6% E. of I-75
I-75	9.18%	54.46%	18% N. of S.R. 52 17% S. of S.R. 52
Old Tampa Bay Dr.	9.14%	55.26%	

Provided by FDOT, District 7

LEGEND

376 A.M. Peak Vehicles Per Hour

(659) P.M. Peak Vehicles Per Hour

→ Direction of Flow

* These are Initial Traffic Characteristics used to Develop the Design Hour Volumes. Due to Smoothing, the Characteristics were Varied Slightly to Balance the Volumes

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52

INTERCHANGE MODIFICATION REPORT

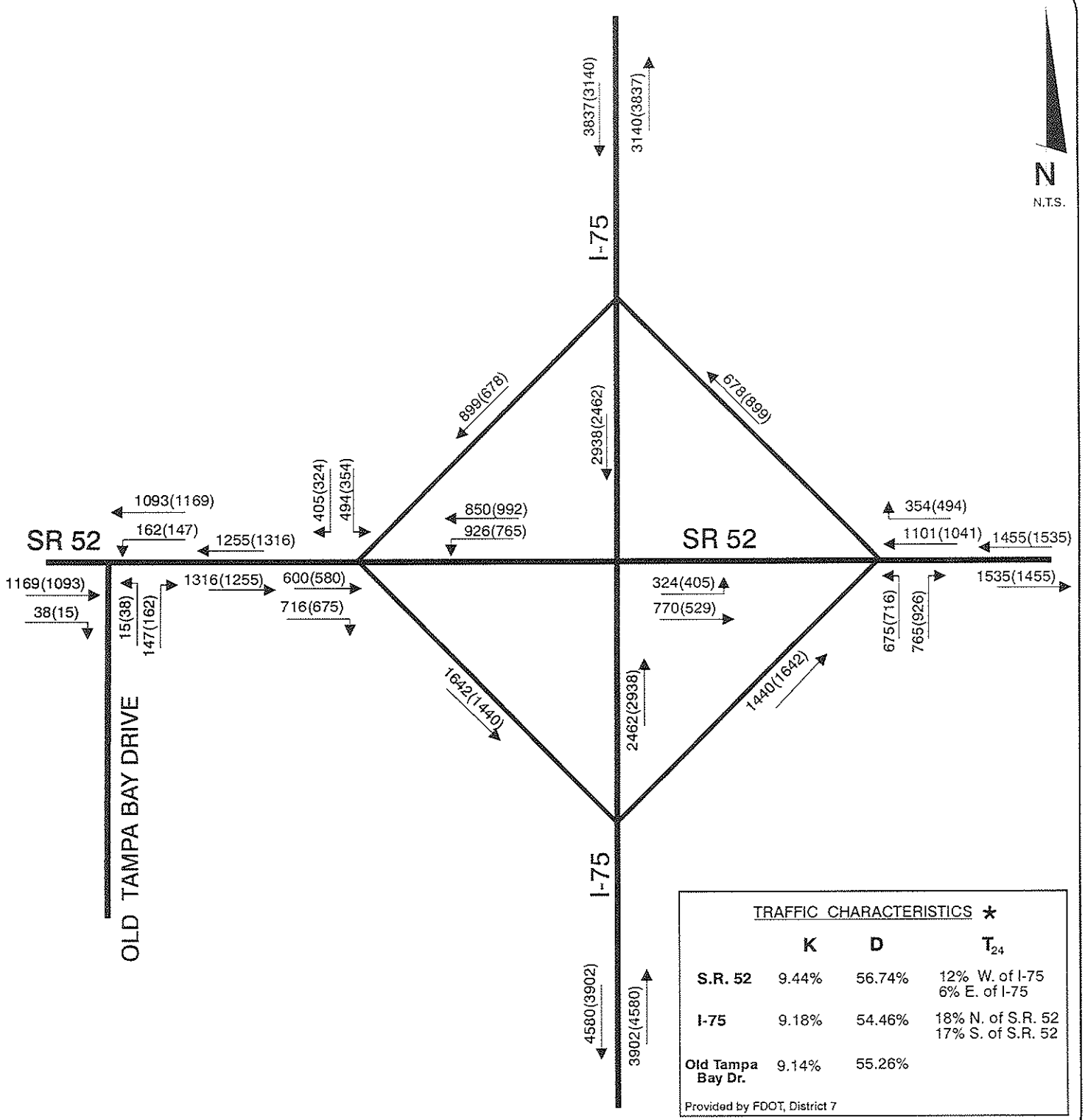
Pasco County, Florida

OPENING YEAR (2008) PEAK HOUR VOLUMES

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 2-4

COREL \ PD&E \ Dist_7 \ I-75PASCO \ REPORTS \ IMR \ FIG_2-4.CDR \ 11-16-99



TRAFFIC CHARACTERISTICS *

	K	D	T_{24}
S.R. 52	9.44%	56.74%	12% W. of I-75 6% E. of I-75
I-75	9.18%	54.46%	18% N. of S.R. 52 17% S. of S.R. 52
Old Tampa Bay Dr.	9.14%	55.26%	

Provided by FDOT, District 7

LEGEND

376 A.M. Peak Vehicles Per Hour

(659) P.M. Peak Vehicles Per Hour

→ Direction of Flow

* These are Initial Traffic Characteristics used to Develop the Design Hour Volumes. Due to Smoothing, the Characteristics were Varied Slightly to Balance the Volumes

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52

INTERCHANGE MODIFICATION REPORT

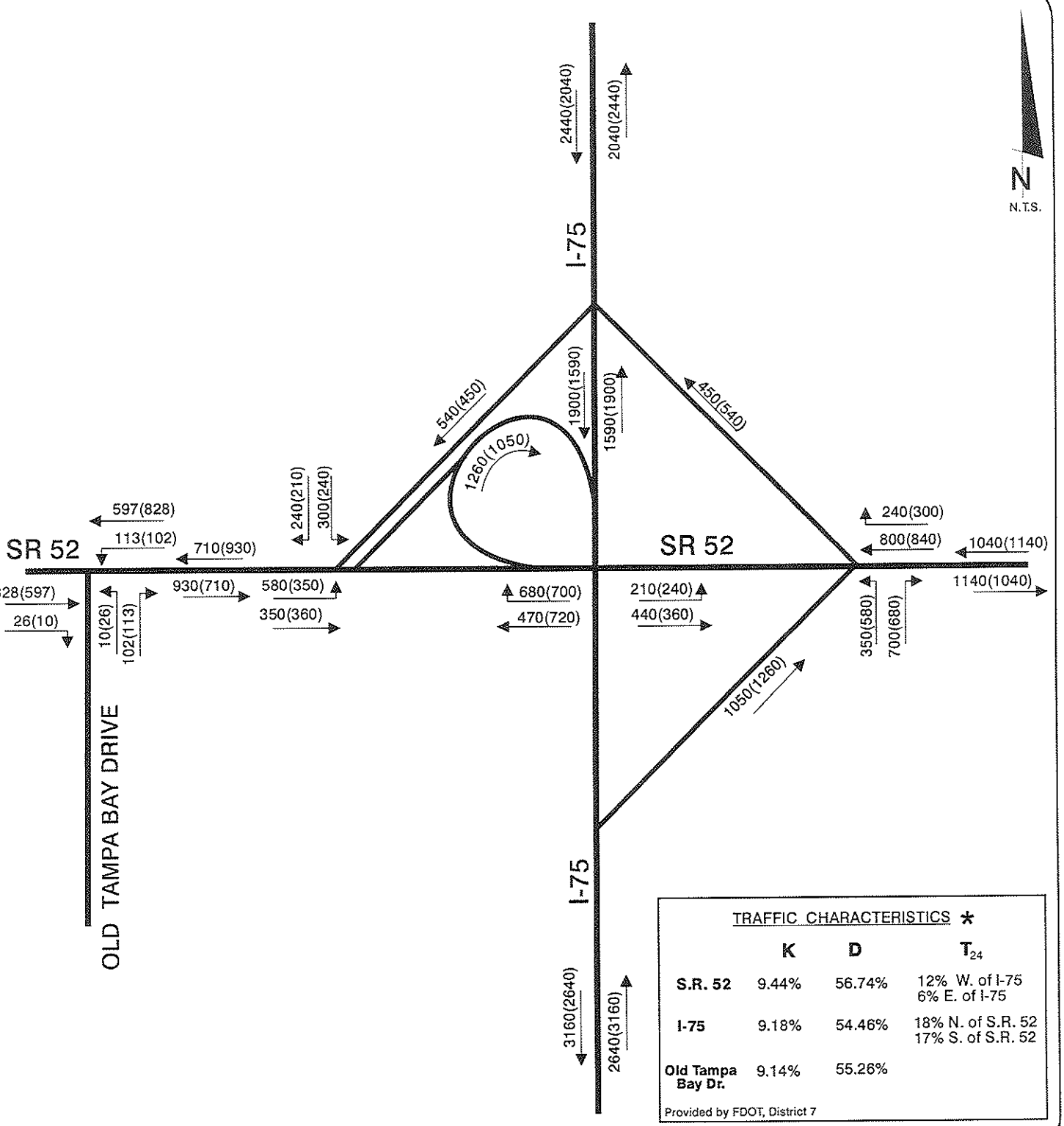
Pasco County, Florida

DESIGN YEAR (2028) PEAK HOUR VOLUMES

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 2-5

COREL \ PD&E \ Dist_7 \ I-75PASCO \ REPORTS \ IMR \ FIG_2-5.CDR \ 11-16-99



LEGEND

376	A.M. Peak Vehicles Per Hour
(659)	P.M. Peak Vehicles Per Hour
→	Direction of Flow
*	These are Initial Traffic Characteristics used to Develop the Design Hour Volumes. Due to Smoothing, the Characteristics were Varied Slightly to Balance the Volumes

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52

INTERCHANGE MODIFICATION REPORT

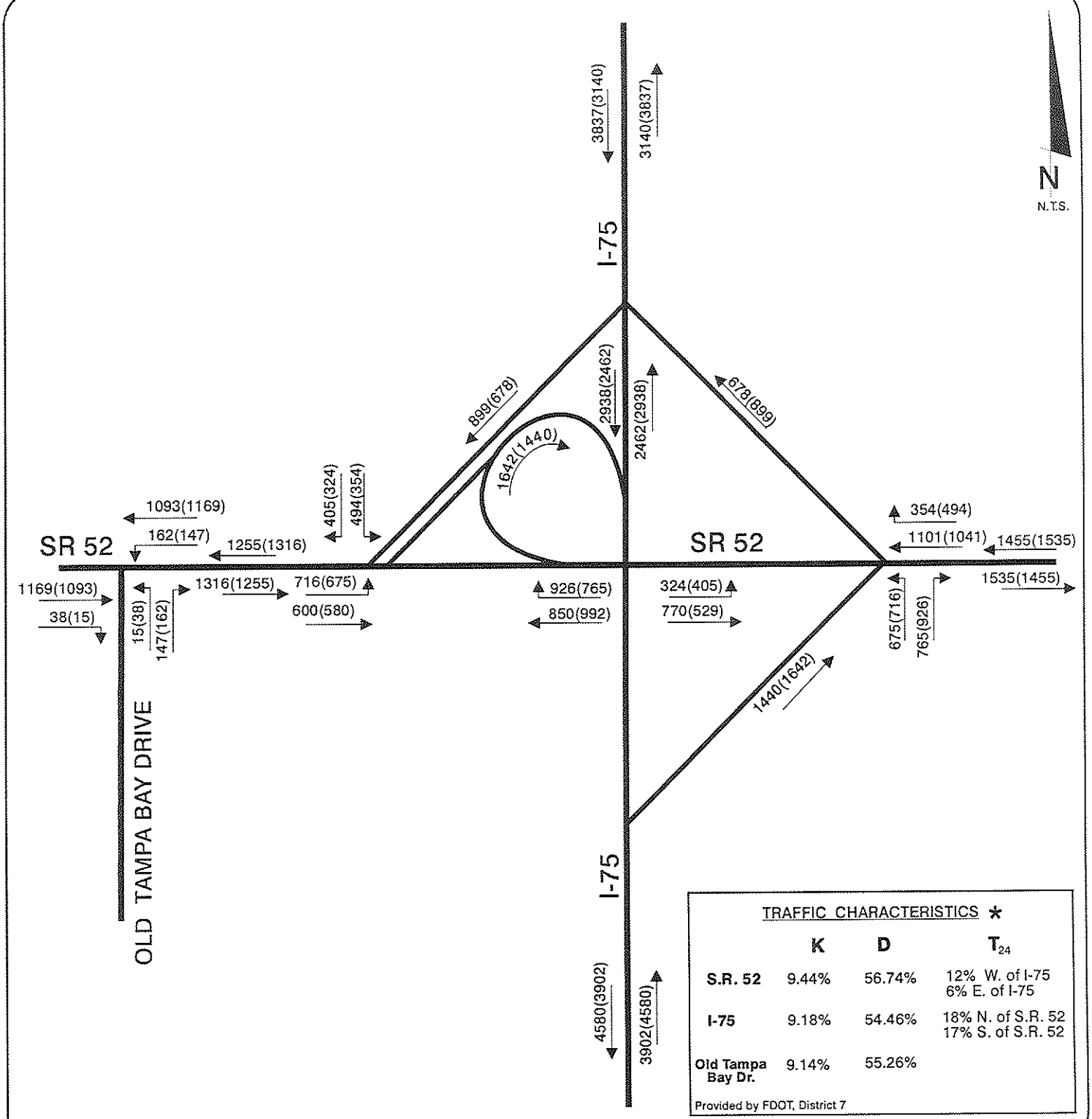
Pasco County, Florida

OPENING YEAR (2008) PEAK HOUR VOLUMES - LOOP RAMP ALTERNATIVE 1

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 2-6

COREL \ PD&E \ Dist_7 \ I-75PASCO \ REPORTS \ IMR \ FIG_2-6.CDR \ 11-16-99



TRAFFIC CHARACTERISTICS *

	K	D	T_{24}
S.R. 52	9.44%	56.74%	12% W. of I-75 6% E. of I-75
I-75	9.18%	54.46%	18% N. of S.R. 52 17% S. of S.R. 52
Old Tampa Bay Dr.	9.14%	55.26%	

Provided by FDOT, District 7

LEGEND

376 A.M. Peak Vehicles Per Hour

(659) P.M. Peak Vehicles Per Hour

→ Direction of Flow

* These are Initial Traffic Characteristics used to Develop the Design Hour Volumes. Due to Smoothing, the Characteristics were Varied Slightly to Balance the Volumes

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52

INTERCHANGE MODIFICATION REPORT

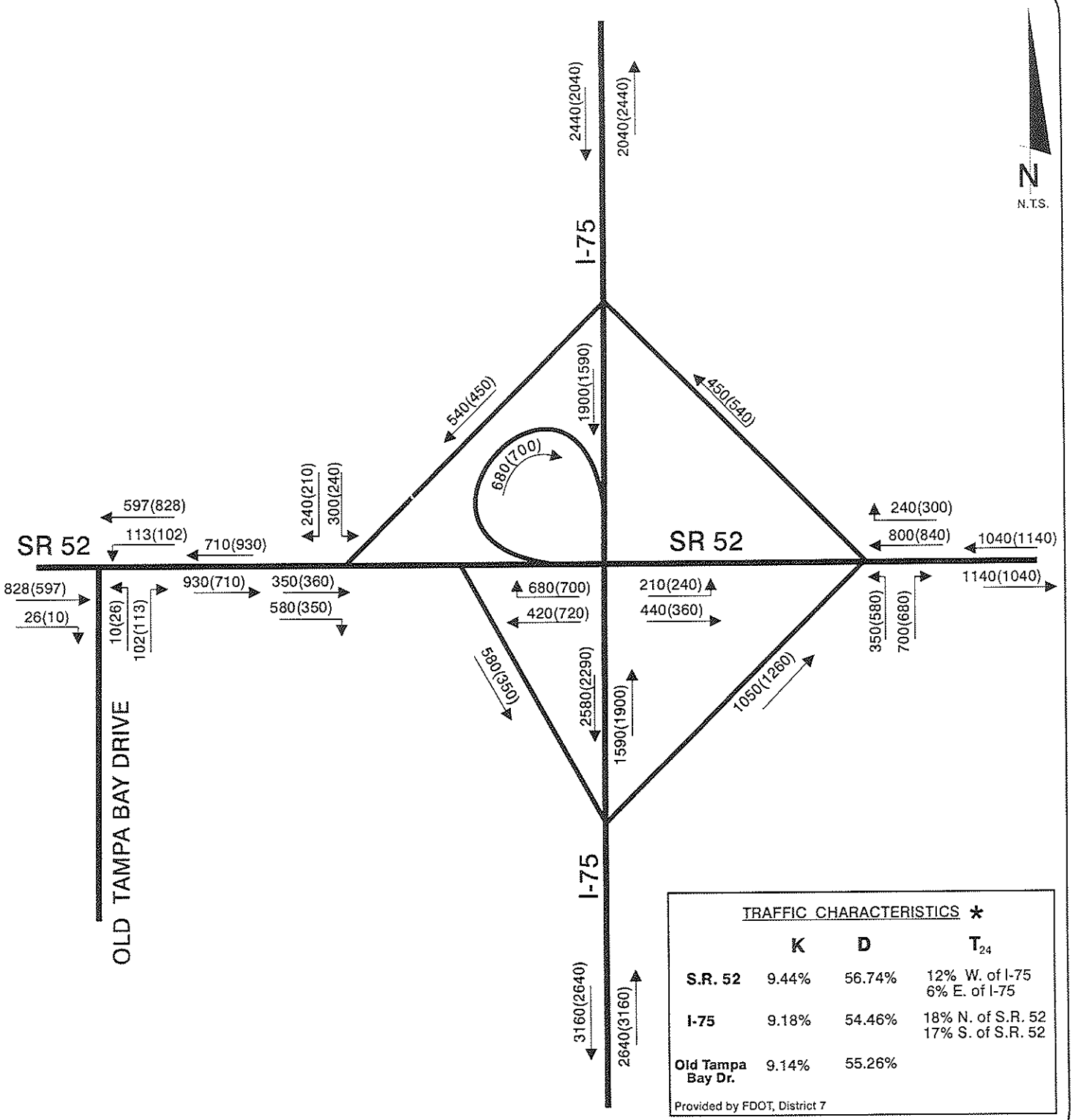
Pasco County, Florida

DESIGN YEAR (2028) PEAK HOUR VOLUMES - LOOP RAMP ALTERNATIVE 1

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 2-7

COREL \ PD&E \ Dist_7 \ I-75PASCO \ REPORTS \ IMR \ FIG_2-7.CDR \ 11-16-99



TRAFFIC CHARACTERISTICS *

	K	D	T_{24}
S.R. 52	9.44%	56.74%	12% W. of I-75 6% E. of I-75
I-75	9.18%	54.46%	18% N. of S.R. 52 17% S. of S.R. 52
Old Tampa Bay Dr.	9.14%	55.26%	

Provided by FDOT, District 7

LEGEND

376 A.M. Peak Vehicles Per Hour

(659) P.M. Peak Vehicles Per Hour

→ Direction of Flow

* These are Initial Traffic Characteristics used to Develop the Design Hour Volumes. Due to Smoothing, the Characteristics were Varied Slightly to Balance the Volumes

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52

INTERCHANGE MODIFICATION REPORT

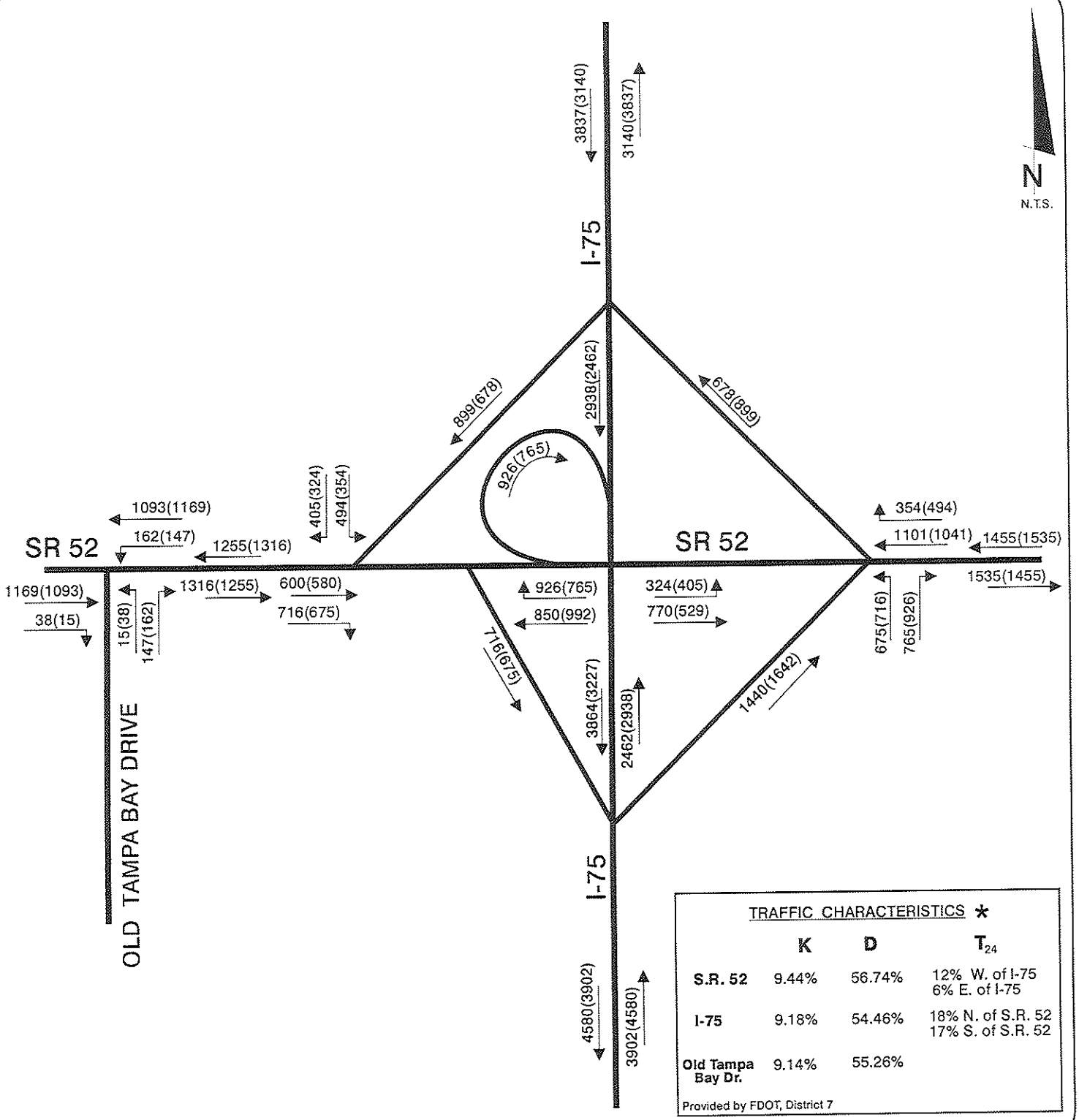
Pasco County, Florida

OPENING YEAR (2008) PEAK HOUR VOLUMES - LOOP RAMP ALTERNATIVE 2

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 2-8

COREL \ PD&E \ Dist_7 \ I-75PASCO \ REPORTS \ IMR \ FIG_2-8.CDR \ 11-16-99



TRAFFIC CHARACTERISTICS *

	K	D	T_{24}
S.R. 52	9.44%	56.74%	12% W. of I-75 6% E. of I-75
I-75	9.18%	54.46%	18% N. of S.R. 52 17% S. of S.R. 52
Old Tampa Bay Dr.	9.14%	55.26%	

Provided by FDOT, District 7

LEGEND

376 A.M. Peak Vehicles Per Hour

(659) P.M. Peak Vehicles Per Hour

→ Direction of Flow

* These are Initial Traffic Characteristics used to Develop the Design Hour Volumes. Due to Smoothing, the Characteristics were Varied Slightly to Balance the Volumes

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52

INTERCHANGE MODIFICATION REPORT

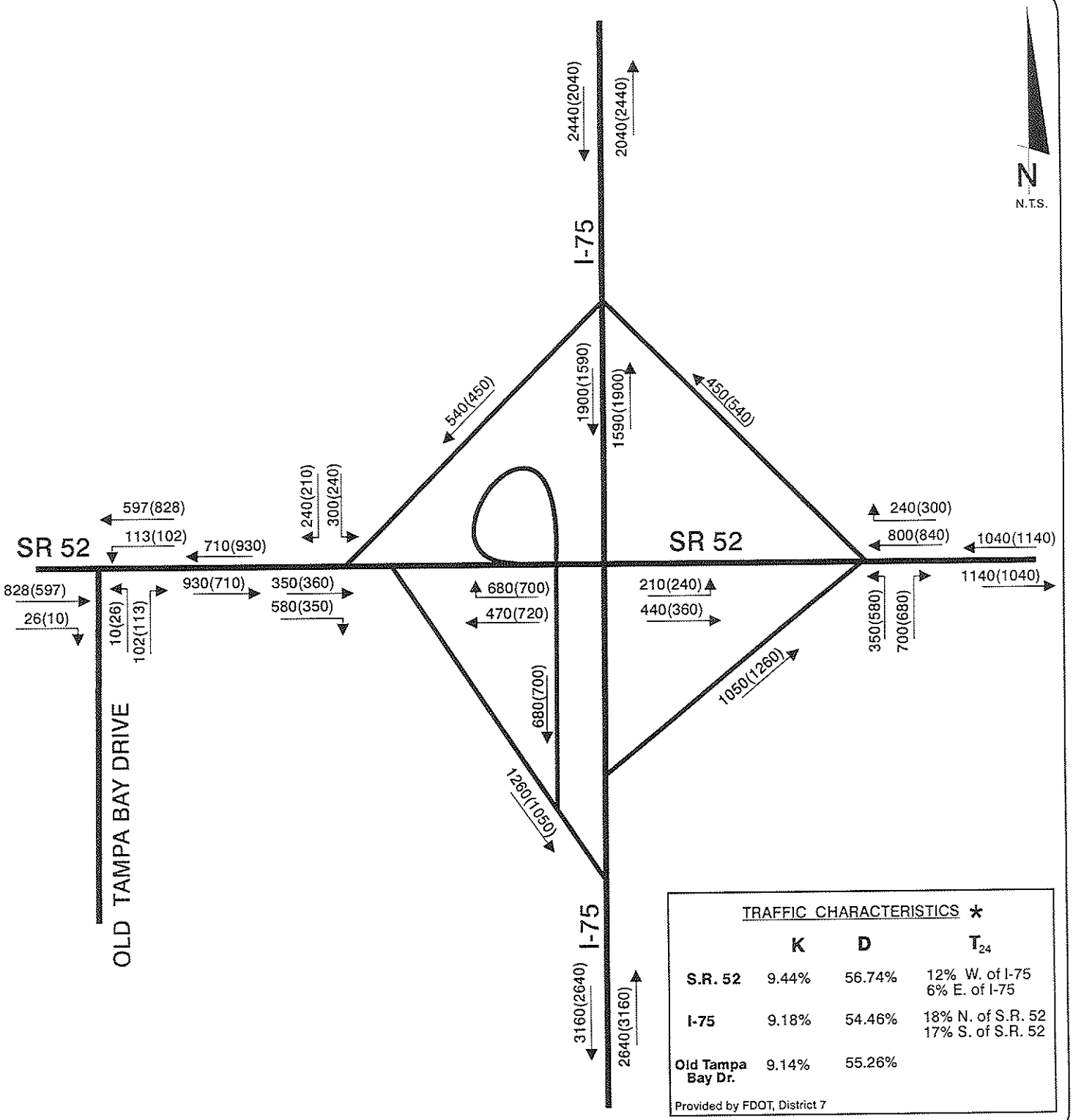
Pasco County, Florida

DESIGN YEAR (2028) PEAK HOUR VOLUMES - LOOP RAMP ALTERNATIVE 2

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 2-9

COREL \ PD&E \ Dist_7 \ I-75PASCO \ REPORTS \ IMR \ FIG_2-9.CDR \ 11-16-99



TRAFFIC CHARACTERISTICS *

	K	D	T_{24}
S.R. 52	9.44%	56.74%	12% W. of I-75 6% E. of I-75
I-75	9.18%	54.46%	18% N. of S.R. 52 17% S. of S.R. 52
Old Tampa Bay Dr.	9.14%	55.26%	

Provided by FDOT, District 7

LEGEND

376 A.M. Peak Vehicles Per Hour

(659) P.M. Peak Vehicles Per Hour

→ Direction of Flow

* These are Initial Traffic Characteristics used to Develop the Design Hour Volumes. Due to Smoothing, the Characteristics were Varied Slightly to Balance the Volumes

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52

INTERCHANGE MODIFICATION REPORT

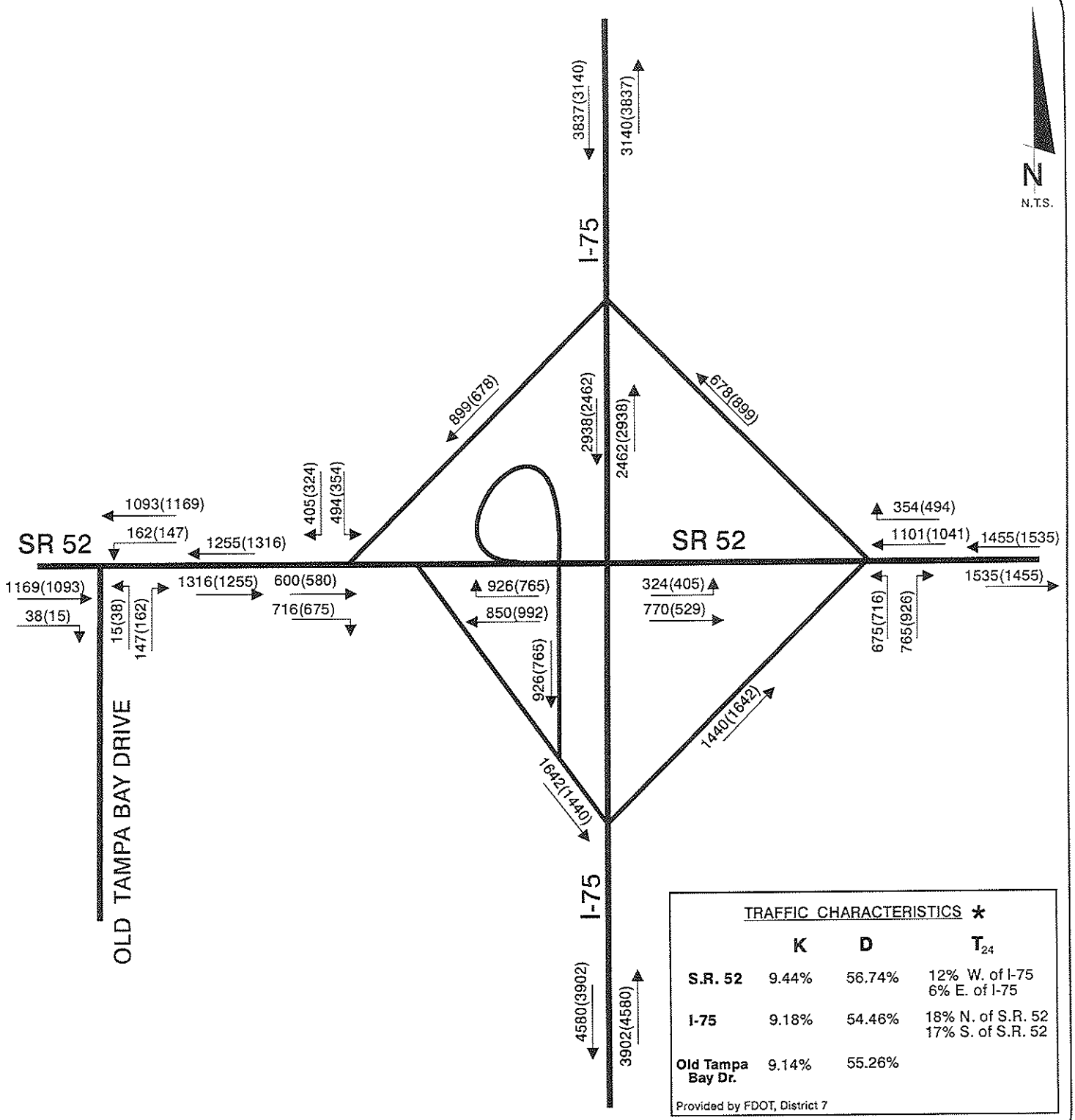
Pasco County, Florida

OPENING YEAR (2008) PEAK HOUR VOLUMES - LOOP RAMP ALTERNATIVE 3

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 2-10

COREL \ PD&E \ Dist_7 \ I-75PASCO \ REPORTS \ IMR \ FIG_2-10.CDR \ 11-16-99



TRAFFIC CHARACTERISTICS *

	K	D	T_{24}
S.R. 52	9.44%	56.74%	12% W. of I-75 6% E. of I-75
I-75	9.18%	54.46%	18% N. of S.R. 52 17% S. of S.R. 52
Old Tampa Bay Dr.	9.14%	55.26%	

Provided by FDOT, District 7

LEGEND

376 A.M. Peak Vehicles Per Hour

(659) P.M. Peak Vehicles Per Hour

→ Direction of Flow

* These are Initial Traffic Characteristics used to Develop the Design Hour Volumes. Due to Smoothing, the Characteristics were Varied Slightly to Balance the Volumes

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52

INTERCHANGE MODIFICATION REPORT

Pasco County, Florida

DESIGN YEAR (2028) PEAK HOUR VOLUMES - LOOP RAMP ALTERNATIVE 3

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 2-11

COREL \ PD&E \ Dist_7 \ I-75PASCO \ REPORTS \ IMR \ FIG_2-11.CDR \ 11-16-99

SECTION 3
EXISTING CONDITIONS

3.1 DEMOGRAPHICS

The study interchange falls within the unincorporated area of Pasco County, as identified in Pasco County Comprehensive Plan[7]. The area surrounding the interchange south of S.R. 52 is currently designated as a transitioning urban area. The area north of S.R. 52 along I-75 is designated as rural.

A review of the projected socioeconomic data developed for the recently validated Tampa Bay Regional Planning Model (TBRPM) indicates that the area directly adjacent to the interchange is expected to significantly intensify over a 25 year time period. Table 3-1 and Figure 3-1 identify the existing 1995 and projected 2020 socioeconomic data in the interchange area. The 1995 permanent population within the study area is estimated at 7,400 persons and the 1995 employment is estimated at 1,100 employees. These estimates are expected to increase to 13,000 and 3,400, respectively, by the year 2020.

Table 3-1
Projected Socioeconomic Data for S.R. 52 and I-75 Interchange
From the Tampa Bay Regional Planning Model

Category (units)	1995	2020	Projected Increase (1995 to 2020)
Employment (employees)	1,100	3,400	209%
Population (persons)	7,400	13,000	76%

Source: 1995 Validated Tampa Bay Regional Planning Model

For long range planning purposes, the area surrounding the interchange has been identified as a potentially high growth area by the County. Based upon the Pasco County Future Land Use Map (contained in Appendix E), this anticipated population and employment growth will be generated primarily through large mixed use developments located along S.R. 52 east and west of the interchange, and major retail and commercial development within the influence of the interchange. The land use intensification and

RTA Model 1995 and 2020 Population and Employment Totals

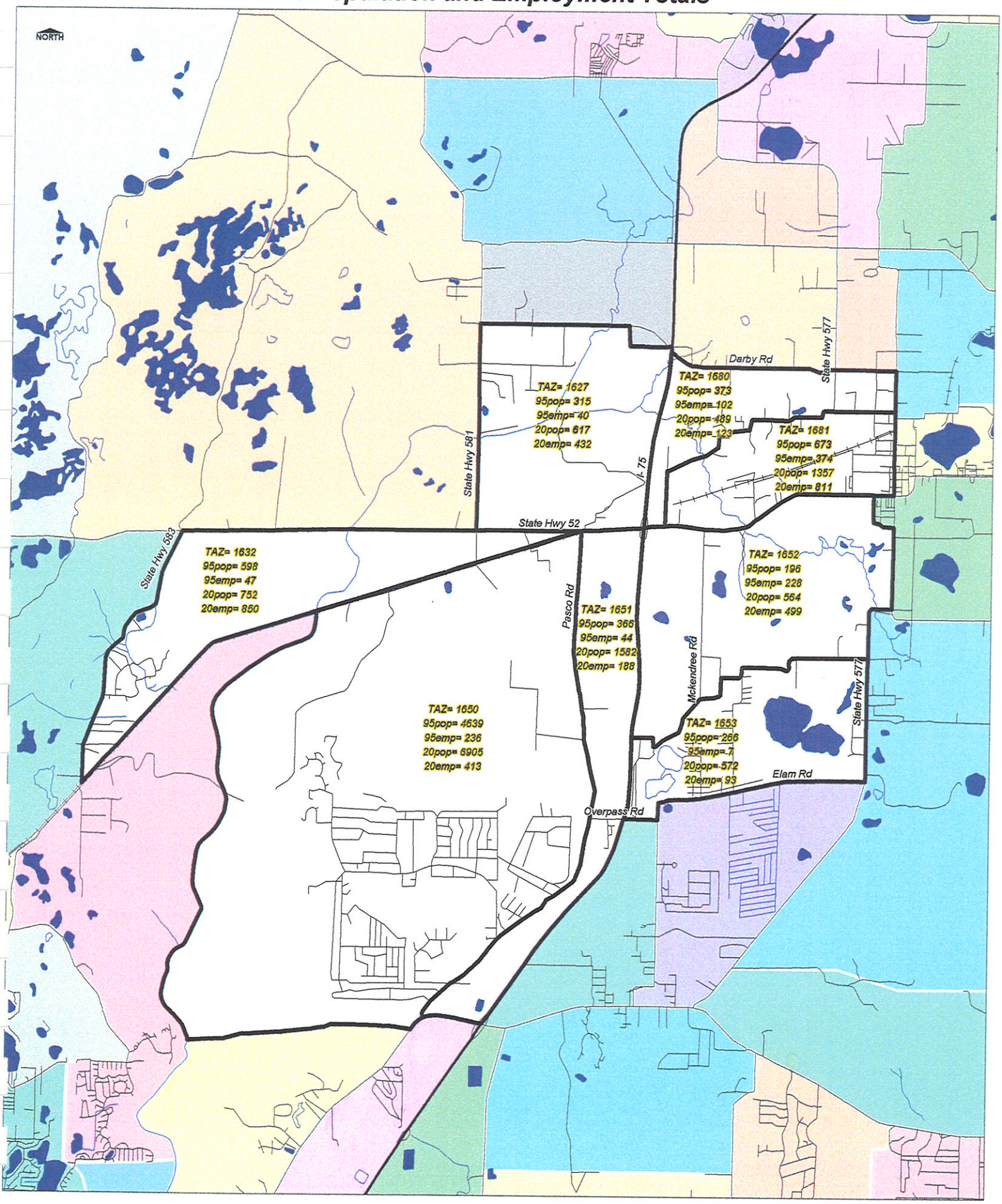


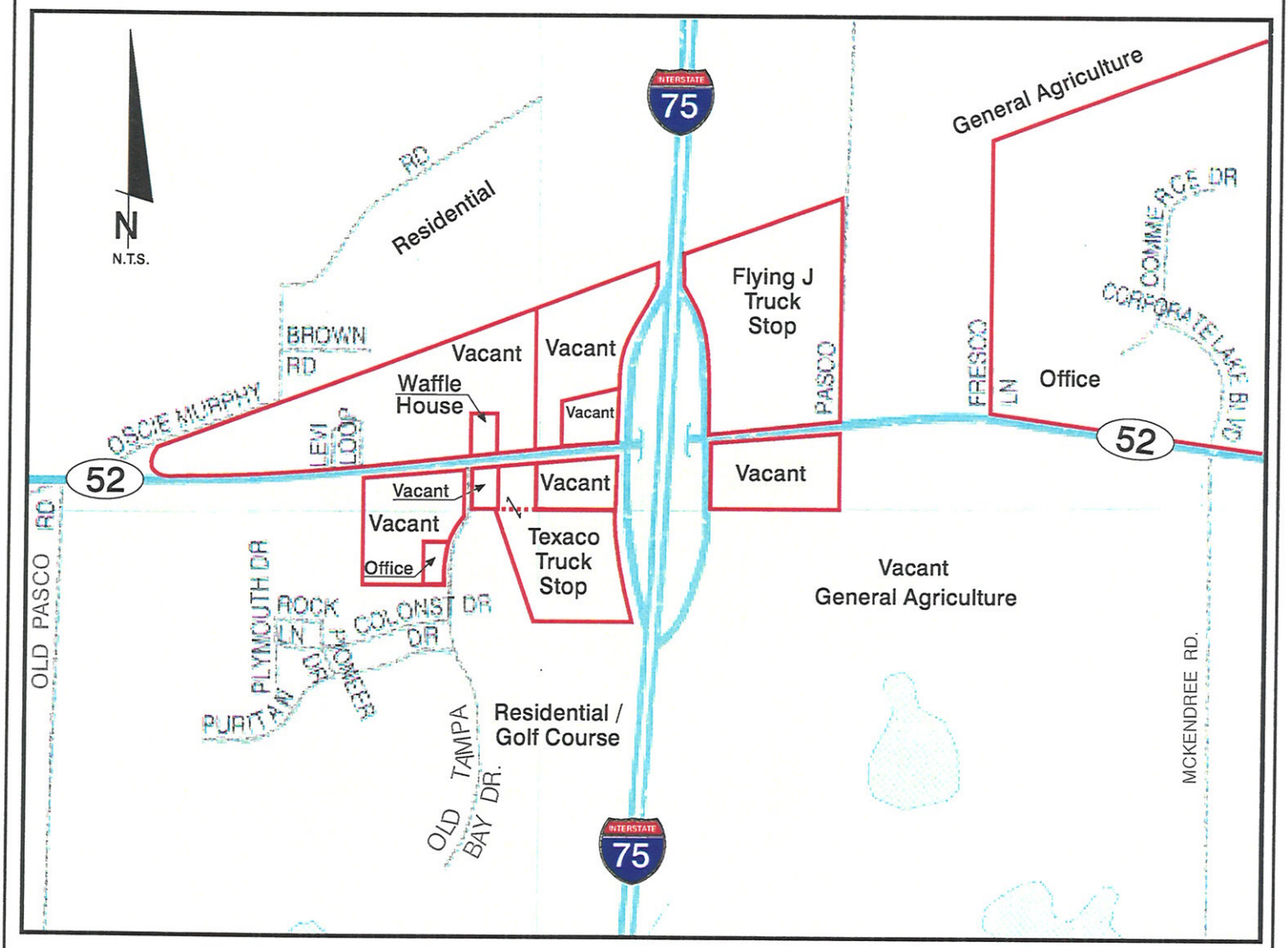
FIGURE 3-1

resulting socioeconomic expansion is expected to directly affect the operations of the I-75 and S.R. 52 interchange, warranting improvements to the existing geometry.

Although no new DRI's or large-scale developments have been identified within the area of influence, several large multi-use developments are planned along S.R. 52 east of the interchange area in the City of San Antonio. These planned developments include One Pasco Center, a 201 acre development containing industrial, office, retail and hotel land uses, and Cannon Ranch, a 2,005 acre development containing commercial, retail, and residential uses. These developments are expected to be built-out by the years 2001 and 2015, respectively.

3.2 EXISTING YEAR LAND USE

The existing land use surrounding the project interchange is characterized as predominately agricultural, with scattered low-density residential and commercial property. Two of the four quadrants directly adjacent to the interchange are currently occupied by commercial businesses. High-volume truck stops/travel plazas are located in both the northeast and southwest quadrants of the interchange and a residential/golf course community is located south of the truck plaza in the southwest quadrant. This residential community is a Planned Unit Development (PUD) called the Tampa Bay Golf and Tennis Club. The PUD is 730 acres and is approved for 1,525 single family homes and 190,000 gross square feet of commercial/office development. The golf course abuts the I-75 corridor in this area potentially limiting possible right-of-way options for several proposed alternatives. The northwest and southeast quadrants of the project interchange are currently vacant. An abandoned gasoline station is located in the northwest quadrant, and the southeast quadrant is zoned for a mixed-use facility. Figure 3-2 illustrates the existing land use surrounding the project interchange.



LEGEND

Commercial Property

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52

INTERCHANGE MODIFICATION REPORT

Pasco County, Florida

EXISTING LAND USE

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 3-2

COREL \ PD&E \ I-75PASCO \ REPORTS \ IMR \ FIG_3-2.CDR \ 11-15-99

3.3 EXISTING TRANSPORTATION NETWORK

3.3.1 Roadway Network

The Pasco County Comprehensive Plan, Traffic Circulation Element[7] indicates that the I-75 study corridor is located in the unincorporated area of the County and is classified as a controlled access highway. It is currently a four-lane freeway within the study corridor. The Traffic Circulation Element also indicates level of service (LOS) C is the acceptable standard along this facility. However, the I-75 roadway corridor is also designated on the Florida Intrastate Highway System (FIHS). The FIHS standards are LOS C for the transitioning area south of the interchange and LOS B for the rural undeveloped area north of the interchange. These FIHS standards are applicable for this IMR.

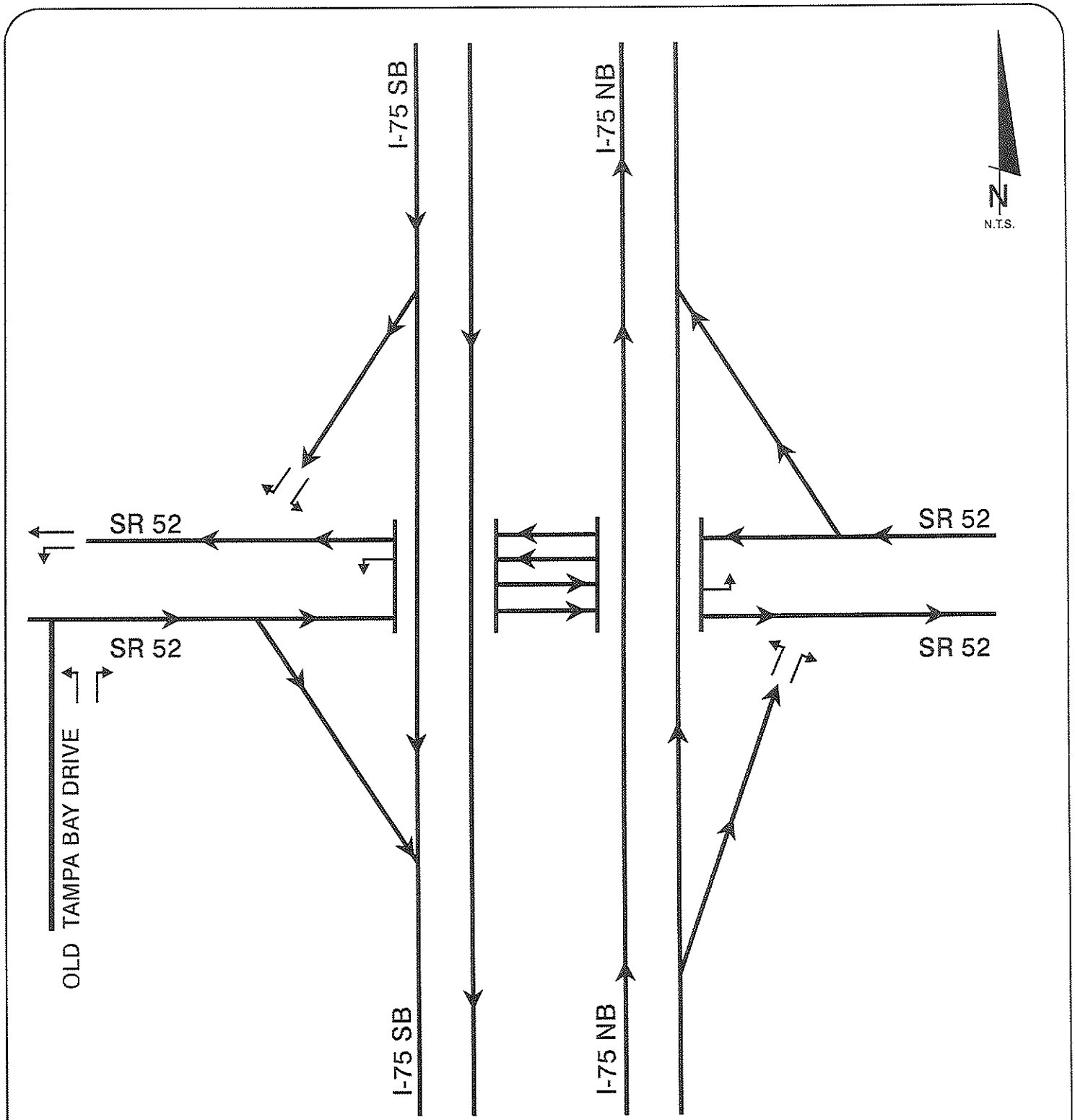
The S.R. 52 facility is a two-lane undivided roadway and is functionally classified as an arterial in the Pasco County Comprehensive Plan. Maintenance of LOS E standard along S.R. 52 in the vicinity of I-75 is indicated in the Traffic Circulation Element of the Plan. However, the 1998 Level of Service Handbook[8] standard for a two-lane state road is LOS C, which is applicable for this IMR.

3.3.2 Alternative Travel Modes

Currently, no alternative travel modes such as local transit service, bicycle and pedestrian facilities are provided in the I-75 and S.R. 52 interchange area.

3.3.3 Existing Interchanges

As mentioned in Section 1.3 of this report, the only interchange to be considered within the area of influence for the IMR is the I-75 and S.R. 52 study interchange. The existing interchange is a diamond configuration with single lane exit and entrance ramps. I-75 is currently a four lane divided facility and S.R. 52 is an undivided two lane facility. Figure 3-3 illustrates the existing geometry.



LEGEND

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52
INTERCHANGE MODIFICATION REPORT

Pasco County, Florida

EXISTING GEOMETRY

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 3-3

COREL \ PD&E \Dist_7 \ I-75PASCO \ REPORTS \ IMR \ FIG_3-3.CDR \ 11-15-99

The Preliminary Engineering Report 2nd Draft of the PD&E Study for I-75 in Pasco County[9] identifies several components of the I-75 and S.R. 52 interchange which exhibit substandard design features including: ramp deceleration lengths, and vertical clearance from S.R. 52 to the interstate bridges. Proposed improvements to the interchange will ensure consistency with the most recent geometric design standards as summarized in Section 5.2 of this report.

3.4 EXISTING OPERATIONAL PERFORMANCE

Section 5.2 of the IRDRM outlines the process for evaluating existing conditions for the IMR. According to this process the following information is documented in this section:

- Existing Year Traffic Volume Data
- Existing Operating Conditions

3.4.1 Existing Year Traffic Volume Data

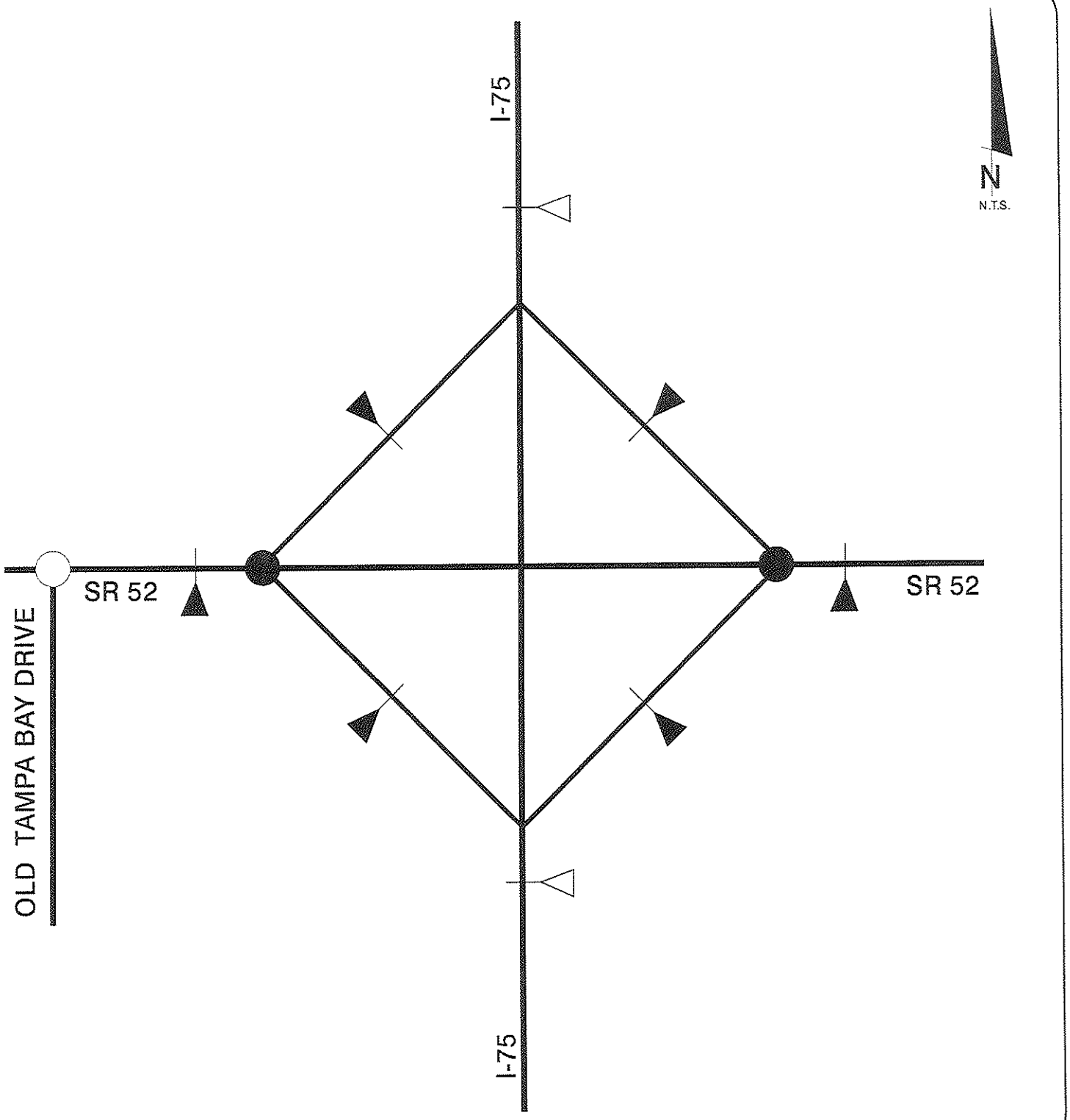
The existing traffic volume data described in the following subsections were obtained from the Revised Traffic Report prepared for the PD&E Study.

3.4.1.1 Traffic Count Data

Traffic counts were conducted at the S.R. 52 and I-75 interchange. These counts were conducted during the second week in May 1997 (May 6 through May 12). The type and location of the traffic counts are described below. In addition, the traffic count locations are displayed on Figure 3-4.

7-Day Traffic Counts

- I-75 South of S.R. 52
- I-75 North of S.R. 52



LEGEND

- Daily Traffic Count (1997)
- FDOT Daily Traffic Count (1996)
- Turning Movement Traffic Count (1997)
- Turning Movement Traffic Count (1999)

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52

INTERCHANGE MODIFICATION REPORT

Pasco County, Florida

TRAFFIC COUNT LOCATIONS

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 3-4

COREL \ PD&E \ D-7 \ I-75PASCO \ REPORTS \ IMR \ FIG_3-4.CDR \ 11-15-99

8-Hour Turning Movement Counts (Passenger Cars and Trucks)

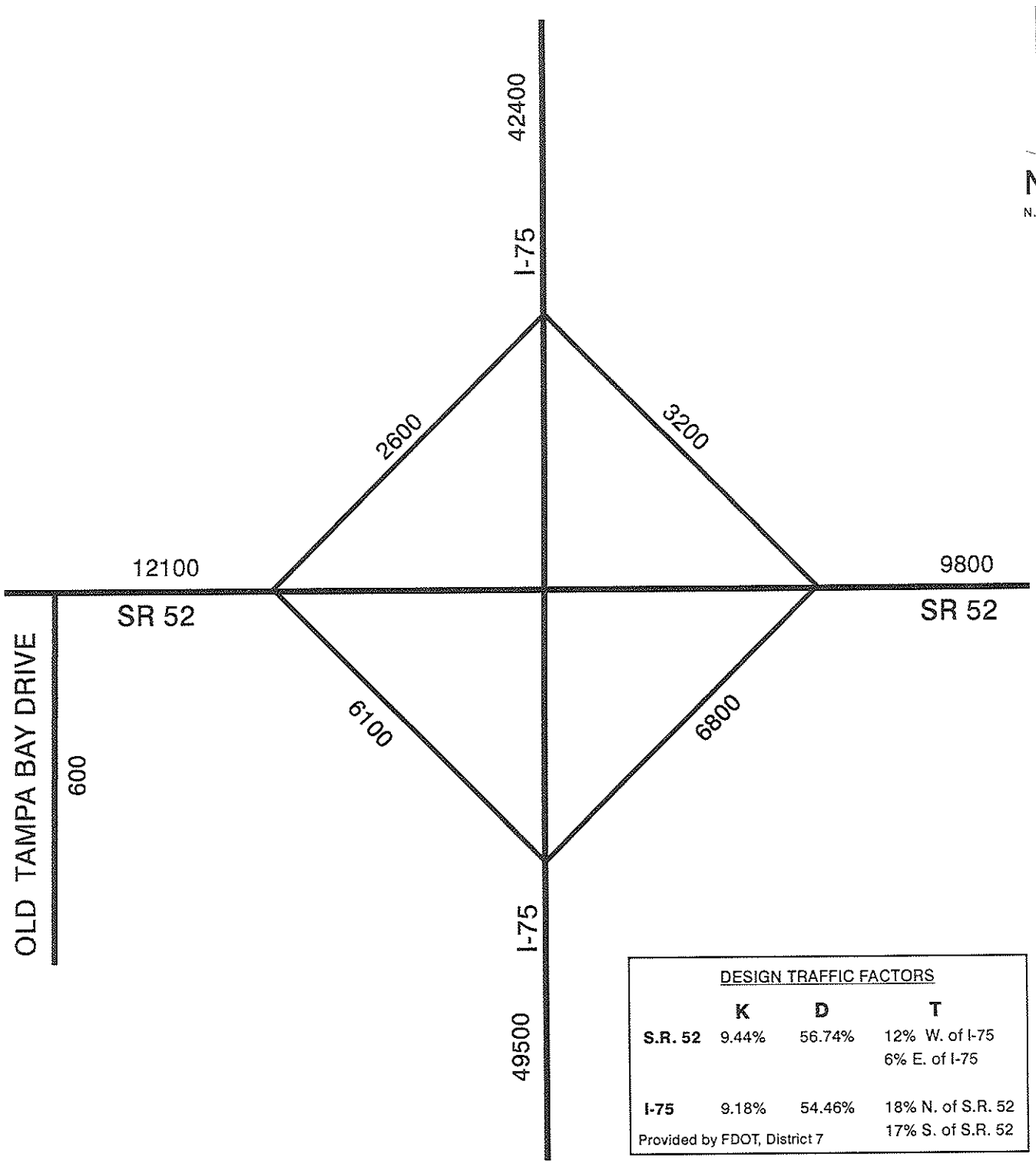
- S.R. 52 at I-75 Northbound Exit/Entrance Ramps
- S.R. 52 at I-75 Southbound Exit/Entrance Ramps

The raw traffic count data are provided in Appendix F. In addition, the FDOT provided 1996 annual average daily traffic (AADT) volumes for several locations within the study corridor.

Since the IMR area of influence includes the intersection at Old Tampa Bay Drive, turning movement counts were recently conducted at this location to determine the amount of traffic entering and exiting the retirement community during the peak hours. The counts were conducted in April 1999 by PBS&J staff during the A.M. and P.M. peak hours. Only turning movements were counted at this intersection. No through movements were counted since minimal development is located between the I-75 southbound ramp termini at S.R. 52 and the intersection of Old Tampa Bay Drive and S.R. 52. Therefore, the through movements at the S.R.52/Old Tampa Bay Drive intersection were estimated from the turning movement counts conducted at the I-75 southbound ramp termini at S.R. 52.

3.4.1.2 Annual Average Daily Traffic Volumes

The existing (1997) AADT volumes were developed from the raw traffic count data discussed previously. The AADT volumes were calculated by averaging the 7-day traffic count data collected and applying the 1996 FDOT seasonal and axle adjustment factors to the averaged raw traffic counts. Copies of these factors are included in Appendix G. The 1996 seasonal adjustment factor for I-75 in Pasco County is 1.06 for the week starting May 6th. The 1996 axle adjustment factor is 0.86 for the same week in May. The calculations to determine the AADT volumes are also provided in Appendix G. The existing (1997) AADT volumes developed from the current traffic count data collected are displayed on Figure 3-5.



DESIGN TRAFFIC FACTORS

	K	D	T
S.R. 52	9.44%	56.74%	12% W. of I-75 6% E. of I-75
I-75	9.18%	54.46%	18% N. of S.R. 52 17% S. of S.R. 52

Provided by FDOT, District 7

LEGEND

600 Vehicles Per Day

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52

INTERCHANGE MODIFICATION REPORT

Pasco County, Florida

EXISTING (1997) YEAR AADT VOLUMES

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 3-5

COREL \ PD&E \ I-75PASCO \ REPORTS \ IMR \ FIG_3-5.CDR \ 11-15-99

The 1996 AADT volumes provided by the FDOT were adjusted to reflect the current analysis year (1997) as identified in Appendix F. The FDOT recommended using a 4.0 percent growth rate to estimate 1997 traffic volumes. Therefore, the 1996 AADT volumes were factored by 1.04 to estimate the 1997 AADT volumes.

Since only 1999 peak hour turning movement counts were conducted at the intersection of S.R. 52 and Old Tampa Bay Drive the AADT volumes were estimated for Old Tampa Bay Drive. The raw peak hour counts did not require seasonal adjustment since the counts were conducted on April 21, 1999 and the 1998 FDOT seasonal adjustment factor for this date is 1.00 (see Appendix G). A two step process was used to estimate the 1997 AADT volumes from the 1999 turning movement counts for Old Tampa Bay Drive. First the 1999 raw peak hour volumes were reduced by eight (8) percent to estimate raw 1997 peak hour volumes. Then, the raw 1997 peak hour volumes were divided by the K_{30} factor of 0.0944 to obtain the 1997 AADT volumes. The K_{30} factor was obtained from the FDOT Roadway Characteristics Inventory (RCI).

3.4.1.3 Peak Hour Volumes

The existing peak hour volumes at the I-75 ramp intersections and S.R. 52 were developed from the 8-hour turning movement counts. Review of the data revealed that the peak hours vary slightly for each intersection. The actual peak hour for each intersection location is provided in Table 3-2.

Table 3-2
Peak Hours Based on Existing Turning Movement Counts

Turning Movement Count Location	A.M. Peak Hour	P.M. Peak Hour
S.R. 52 at I-75 NB Exit/Entrance Ramp	7:00 A.M. to 8:00 A.M.	4:45 P.M. to 5:45 P.M.
S.R. 52 at I-75 SB Exit/Entrance Ramp	6:45 A.M. to 7:45 A.M.	5:00 P.M. to 6:00 P.M.

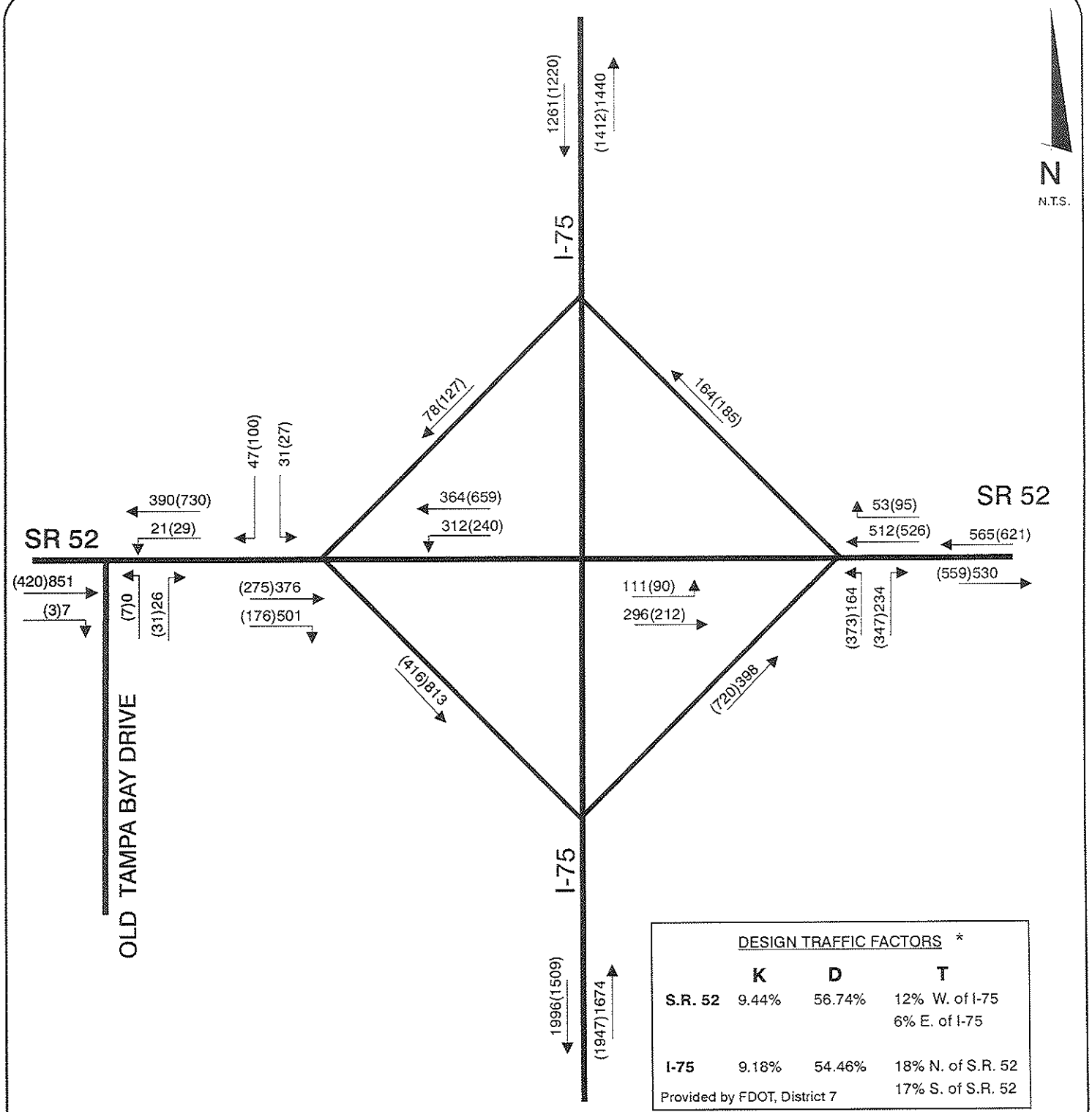
The turning movement counts also required seasonal adjusting. The peak hour turning movement counts were adjusted to reflect seasonal conditions by applying the seasonal adjustment factor of 1.06 to the raw turning movement counts. Appendix G displays the calculations for the development of the adjusted peak hour volumes. Figure 3-6 displays the existing (1997) A.M. and P.M. peak hour turning movement volumes for the intersections located in the area of influence. These volumes were smoothed to balance volumes entering and exiting the interchange.

3.4.1.4 Historical Year Counts

Historical AADT volumes were obtained from the 1998 Florida Traffic Information Compact Disk [10] and were reviewed for reasonableness. The historical AADT volumes were collected for the following locations and years:

- I-75 North of S.R. 52 for years 1970 to 1998
- I-75 South of S.R. 52 for years 1970 to 1998
- S.R. 52 East of I-75 for years 1970 to 1998
- S.R. 52 West of I-75 for years 1991 to 1998

Printouts of the data from the compact disk are provided in Appendix H. A regression analysis was conducted based on each set of historical data. The results of the regression analyses are also provided in Appendix H. The regression analysis indicates that the 1997 traffic volumes developed for the Existing Conditions Analysis are reasonable. A comparison was made with the 1998 traffic volumes for the study area as provided by FDOT. This comparison revealed that overall, the volumes are within +/- 10% of the 1998 volumes, indicating little or no traffic growth has occurred within the interchange area during the past year. It is assumed that level of service results would be similar using both the 1997 and 1998 volumes.



DESIGN TRAFFIC FACTORS *

	K	D	T
S.R. 52	9.44%	56.74%	12% W. of I-75 6% E. of I-75
I-75	9.18%	54.46%	18% N. of S.R. 52 17% S. of S.R. 52

Provided by FDOT, District 7

LEGEND

376 A.M. Peak Vehicles Per Hour
(659) P.M. Peak Vehicles Per Hour
→ Direction of Flow

* These are Initial Traffic Characteristics used to Develop Design Hour Volumes. Due to Smoothing the Characteristics were Slightly Varied to Balance the Volumes.

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 & S.R. 52
INTERCHANGE MODIFICATION REPORT
Pasco County, Florida

EXISTING (1997) A.M. AND P.M. PEAK HOUR VOLUMES

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 3-6

COREL \ PD&E \ D-7 \ I-75PASCO \ REPORTS \ IMR \FIG_3-6.CDR \ 11-15-99

3.4.1.5 Existing Traffic Factors And Roadway Characteristics

Existing traffic factors were determined from the existing (1997) traffic count data discussed previously and were also obtained from the FDOT Roadway Characteristics Inventory (RCI) database. The existing roadway characteristics were determined from the Pasco County Comprehensive Plan and the FDOT. The following paragraphs describe the traffic factors and characteristics determined for the roadway segments and intersections located within the area of influence.

3.4.1.6 Factors for Roadway Segments

The FDOT RCI database was used to obtain the design hour factor (K_{30}-factor) for the roadway segments within the area of influence. The K_{30} -factor is the percentage of daily traffic volume occurring during the peak hour for the 30th highest hour. In addition, the average directional distribution factor (D-factor) and the twenty-four-hour truck (T_{24}) factors were also obtained from the RCI database. The existing truck percentages were also obtained from FDOT for design hour trucks (DHT), design hour medium trucks (DH2) and design hour heavy trucks (DH3). As shown in Table 3-3, these traffic characteristics were collected for I-75 north and south of the I-75/S.R. 52 interchange.

Table 3-3
Existing Traffic Characteristics for I-75 Segments

Segment Locations	Traffic Characteristics					
			Trucks			
	K_{30}	Avg. D	T_{24}	DHT	DH2	DH3
I-75 South of S.R. 52	9.18%	54.46%	20.90%	10.45%	1.53%	8.92%
I-75 North of S.R. 52	9.18%	54.46%	22.30%	11.15%	1.29%	9.86%

A review of these traffic factors indicates that all fall within the acceptable ranges for traffic factors listed in the IRDRM, with the exception of the 9.18 K_{30} factor specified for the interstate facility. This factor is low compared to the recommended 9.40 minimum K_{30} factor specified for interstate facilities. A review of the recent historical K_{30} factors

measured for this portion of I-75 indicates that the K_{30} factor has historically been low, ranging from 9.13 to 9.21 during the past several years. Also, a comparison of the peak hour traffic resulting from the use of the 9.4 minimum K_{30} factor and the 9.18 K_{30} factor for I-75 reveals a difference of 48 vehicles in the peak direction, which is not anticipated to significantly affect level of service evaluation results for the facility. The use of the 9.18 K_{30} factor is consistent with the Revised Traffic Report; PD&E Study I-75, Pasco County.

The 7-day traffic counts conducted May 6-12, 1997 were used to determine the average peak hour factor (PHF) along I-75 within the study area. The PHF is a measure of traffic demand fluctuation within the peak hour. These factors were used for the capacity analyses conducted for freeway and ramp junctions. The PHFs for the freeway segments are displayed in Table 3-4.

Table 3-4
Existing PHF for I-75 Segments

Segment Locations	Avg. PHF[a]			
	Northbound		Southbound	
	A.M.	P.M.	A.M.	P.M.
I-75 South of S.R. 52	0.94	0.96	0.95	0.96
I-75 North of S.R. 52	0.94	0.95	0.94	0.95

Note:
[a]Determined from 7-Day Counts

In addition, the 7-day traffic counts were used to determine the dominant direction of traffic flow along I-75 and S.R. 52 during the A.M. and P.M. peak hours. The dominant direction of traffic flow on I-75 south of S.R. 52 during the A.M. peak hour is the southbound direction. However, north of S.R. 52 the dominant direction of traffic flow is northbound during the A.M. peak hour. During the A.M. peak hour along S.R. 52 west of I-75, the dominant direction of travel is eastbound, and east of I-75 the dominant direction of travel is westbound. However, for S.R. 52 east and west of I-75, the dominant direction of travel is westbound during the P.M. peak.

3.4.1.7 Factors for Intersections

Traffic characteristics were also determined from the 8-hour turning movement counts conducted within the study corridor. Truck traffic was counted separately during the collection of the 8-hour turning movement count data. Therefore, the turning movement counts were used to determine the peak hour truck percentages for each intersection movement. The peak hour truck counts and percent of total traffic for each intersection movement are provided in Appendix G.

Table 3-5
Existing Peak Hour Turning Movement Truck Percentages

Count Location and Approach	Movement	Existing Truck Percentages	
		A.M. Peak Hour	P.M. Peak Hour
S.R. 52 at I-75 NB Exit/Entrance Ramps			
Westbound	Thru	17%	4%
	Right	46%	54%
Eastbound	Left	7%	19%
	Thru	9%	14%
Northbound	Left	17%	6%
	Right	10%	16%
S.R. 52 at I-75 SB Exit/Entrance Ramps			
Westbound	Left	10%	6%
	Thru	21%	5%
Eastbound	Thru	4%	11%
	Right	7%	13%
Southbound	Left	48%	60%
	Right	20%	5%

Review of this information revealed that there are significant variations in the peak hour truck percentages at each intersection. The truck percentages determined from the existing turning movement counts are summarized in Table 3-5 for each intersection movement.

The 8-hour turning movement counts were also evaluated to determine the existing PHFs for the S.R. 52 arterial as shown in Table 3-6. These PHFs were also used for the existing capacity analyses.

Table 3-6
S.R. 52 PHF Determined from Existing Turning Movement Counts

Turning Movement Count Location	Existing PHF	
	A.M.	P.M.
S.R. 52 at I-75 NB Exit/Entrance Ramp		
Westbound	0.77	0.89
Eastbound	0.91	0.90
Northbound	0.88	0.90
S.R. 52 at I-75 SB Exit/Entrance Ramp		
Westbound	0.85	0.94
Eastbound	0.93	0.94
Southbound	0.79	0.88

3.4.2 Level of Service

An Individual Element Operation Analysis (IEOA) was conducted to evaluate existing operating conditions of the I-75/S.R. 52 interchange. According to the IRDRM the operational analysis conducted for the IEOA consists of the following elements:

- Freeway Elements
- Ramp Elements
- Ramp Queue Analysis
- Weaving Areas
- Crossroad and Related Intersections

The IEOA was conducted according to the guidelines provided in Section 5.5.5 of the IRDRM. The Highway Capacity Software, Release 2.1d (HCS) based on the 1994 Highway Capacity Manual, Special Report 209 (HCM) was used for the analyses of the individual elements to remain consistent with the PD&E Study. The following

subsections describe the assumptions and findings for the individual elements listed above. The majority of the information was excerpted from the Revised Draft Traffic Study for the I-75 PD&E Study. The one exception is the analysis conducted for the unsignalized intersection at S.R. 52 and Old Tampa Bay Drive.

As mentioned earlier the LOS standards vary for the roadways located in the area of influence. Since I-75 is designated FIHS, the operating standards for this type facility is maintenance of LOS B and C conditions north and south of the interstate. The operating standard for a two-lane state road is LOS C.

3.4.2.1 Freeway Elements

According to Section 5.5.5.3 of the IRDRM, the analysis of the freeway element includes evaluation of the following: 1) the basic freeway segments; 2) the ramp merge or diverge locations (e.g., ramp junctions); 3) and any other lane change along the freeway. Currently, there are no weaving areas on I-75 within the area of influence. Therefore, operational analyses were only conducted for the freeway segments north and south of the interchanges and the corresponding ramp junctions.

Analyses of Basic Freeway Segments

The HCS - Freeway Module was used to analyze existing operating conditions for basic freeway segments. The capacity analyses were completed for the A.M. and P.M. peak hour using the peak hour volumes displayed in Figure 3-6. The results of the freeway segment analyses are shown in Table 3-7. Review of Table 3-7 reveals that currently, all freeway segments located in the vicinity of the I-75/S.R. 52 interchange are operating at or better than the FDOT LOS B and C standards. The HCS outputs are provided in Appendix I.

Table 3-7
Existing I-75 Level of Service
Freeway Segments

Segment Locations	Existing LOS			
	Northbound		Southbound	
	A.M.	P.M.	A.M.	P.M.
I-75 South of S.R. 52	B	B	B	B
I-75 North of S.R. 52	B	B	B	A

Analyses of Ramp Junctions

The assumptions and results of these analyses are provided in the following subsection.

3.4.2.2 Ramp Elements

According to Section 5.5.5.3 of the IRDRM, the analysis of the ramp element includes evaluation of the following: 1) the ramp segments and the freeway ramp terminal (i.e., ramp junctions); and 2) the ramp terminals at the crossroad (i.e. unsignalized intersections at S.R. 52 and I-75 exit/entrance ramps). The following subsections describe the operational analyses for these ramp elements.

Analyses of Ramp Junctions

The HCS Ramps Module was used to analyze existing operating conditions of ramp junctions. The capacity analyses were completed for the A.M. and P.M. peak hours using the peak hour volumes displayed in Figure 3-6. The results of the ramp junction analyses are shown in Table 3-8. Review of Table 3-8 reveals that all ramp junctions are operating above the FDOT LOS C standard. The HCS outputs for the ramp analyses are provided in Appendix I.

Table 3-8
Existing I-75 Level of Service
Freeway Ramp Junctions

Freeway Ramp Junction	Existing LOS	
	A.M.	P.M.
I-75 Northbound		
at S.R. 52 Exit Ramp	B	B
at S.R. 52 Entrance Ramp	B	B
I-75 Southbound		
at S.R. 52 Exit Ramp	B	B
at S.R. 52 Entrance Ramp	B	B

Analyses of Unsignalized Intersections at S.R. 52 and I-75 Entrance/Exit Ramps

During the time the analysis was conducted, the intersections located at S.R. 52 and the I-75 ramp termini were unsignalized. Therefore, the HCS Unsignalized Intersection Module was used for the existing capacity analysis. The existing A.M. and P.M. peak hour turning movement volumes shown in Figure 3-6 were used for this analysis. The results of the analysis are summarized in Table 3-9. The HCS outputs for the unsignalized intersection analyses are provided in Appendix I.

Review of the results reveal that there are two movements operating below the FDOT standard of LOS C for this type roadway. These results reveal that the northbound left-turn movement at the intersection of S.R. 52 and the I-75 northbound ramps is operating at LOS F during the A.M. and P.M. peak hours. In addition, the I-75 southbound exit ramp left-turn movement at S.R. 52 is operating at LOS F during the A.M. peak hour and LOS E during the P.M. peak hour.

Table 3-9
S.R. 52/I-75 Unsignalized Intersections
Existing Conditions - HCS Analyses

Approach	Lane Group	A.M. Peak Hour		P.M. Peak Hour	
		Delay[a]	LOS	Delay[a]	LOS
S.R. 52 at I-75 Northbound Exit/Entrance Ramps					
NB	Left	134.3	F	423.1	F
	Right	5.5	B	5.7	B
EB	Left	5.7	B	5.2	B
OVERALL		17.5	C	97.6	F
S.R. 52 at I-75 Southbound Exit/Entrance Ramps					
SB	Left	210.4	F	38.0	E
	Right	4.6	A	7.4	B
WB	Left	16.8	C	4.9	A
OVERALL		7.3	B	2.0	A

Note:
[a]Delay is average total delay in seconds per entering vehicle

3.4.2.3 Ramp Queue Analysis

Based on the result of the unsignalized intersection analyses, it was determined that field observations should also be conducted to examine the actual operating conditions during peak hours. Both the morning and evening peak hours were observed on June 18, 1997. The intersections were observed from 6:45 A.M. to 7:45 A.M. and 5:00 P.M. to 6:00 P.M. During the field visit, the queuing characteristics were observed for the S.R. 52 intersections at the I-75 northbound and southbound ramps. The field visit data collected for the average queuing characteristics during the A.M. and P.M. peak hours is included in Appendix J.

During the A.M. peak hour, the observations revealed heavy eastbound through traffic on S.R. 52. This eastbound movement affects the westbound left-turn queue length at the I-75 southbound ramp at S.R. 52 during the A.M. peak hour. A maximum queue length of ten (10) vehicles for the westbound left-turn movement was recorded twice during the hour of observation. This queue length extended beyond the S.R. 52 intersection at the northbound I-75 ramps. This maximum queue length did not allow the I-75 northbound

exit ramp traffic to turn left. This situation did not however, result in the formation of excessive vehicle queues on the northbound exit ramp. This westbound left-turn queue length also prevented the S.R. 52 left-turns to travel onto the I-75 northbound entrance ramp.

The comparison of the field observations to the HCS results reveals that the eastbound left-turn movement at the northbound I-75 entrance ramp appears to be operating worse than the LOS C condition reported by HCS. In addition, during the A.M. peak hour the S.R. 52 westbound left-turn movement at the I-75 southbound entrance ramp appears to be operating worse than the LOS C condition reported by HCS. As the field observations revealed during the A.M. peak hour, the heavy eastbound movement prevented the westbound left-turn vehicles from traveling to the I-75 southbound entrance ramp. This condition then caused the westbound left-turn vehicles to queue into the S.R. 52 intersection with the I-75 northbound ramps. No gaps were available for vehicles to make certain turning movements at the S.R. 52 intersection with the I-75 northbound ramps. These movements included the eastbound left-turn vehicles traveling to the I-75 northbound entrance ramp or the vehicles turning left from the I-75 northbound exit ramp to travel westbound on S.R. 52.

During the majority of the P.M. peak hour, the I-75 northbound exit ramp traffic was backing up from the S.R. 52 intersection to the ramp gore area. The northbound exit ramp left-turn queue reached a maximum of twenty-six (26) vehicles and averaged eighteen (18) vehicles during the hour of observation. The field data provided in Appendix J indicated that a queue greater than twenty (20) vehicles occurred five times during the observed P.M. peak hour. The field observations revealed that the northbound exit ramp was over capacity during the majority of the peak hour and all other movements appeared to be operating at acceptable conditions. A comparison of the results reveals that the HCS outputs are consistent with the field observations.

3.4.2.4 Weaving Areas

No weaving areas are located within the area of influence.

3.4.2.5 Crossroad and Related Intersections

The existing I-75 ramp termini at S.R. 52 were not signalized during the existing conditions analyses. The operational analyses for the ramp termini are discussed in Section 3.4.2.2 of this report. In addition, the area of influence includes the unsignalized intersection at S.R. 52 and Old Tampa Bay Drive. The HCS Unsignalized Intersection Module was used to evaluate the existing operating conditions at this intersection. The results of the analysis are provided in Table 3-10. The analysis revealed that the intersection of S.R. 52 and Old Tampa Bay Drive is currently operating at LOS A during the A.M. and P.M. peak hours. The HCS outputs are provided in Appendix I.

Table 3-10
S.R. 52/ Old Tampa Bay Road Unsignalized Intersections
Existing Conditions – HCS Analyses

Approach	Lane Group	A.M. Peak Hour		P.M. Peak Hour	
		Delay[a]	LOS	Delay[a]	LOS
S.R. 52 at Old Tampa Bay Road					
NB	Left	21.4	D	20.0	C
	Right	8.1	B	4.7	A
WB	Left	6.0	B	3.7	A
OVERALL		0.3	A	0.3	A

Note:
[a]Delay is average total delay in seconds per entering vehicle

3.4.3 Existing Accident Data

During the PD&E phase of the project, crash data were collected for the segment of I-75 within the area of influence (segment location) and at the S.R. 52 and I-75 interchange (spot location). These data were collected for the years 1991 through 1995. Safety ratios for the locations were also calculated to identify areas in need of potential safety improvements. Safety ratios above 1.00 indicate that the segment or spot locations experience vehicle collisions above average and, therefore, traffic safety at these

locations may need to be improved. Table 3-11 illustrates the results of the crash data analysis for the I-75 and S.R. 52 interchange.

As indicated by the results of the crash summary, the segment of I-75 at the S.R. 52 interchange experiences a total of 27 crashes over the five year period, with the majority occurring in the year 1995. No fatalities were reported, however, in 1995, 22 injuries were reported. The predominant type of crash occurring at this location is the rear end crash, primarily due to careless driving. Safety ratios for the years 1994 and 1995 exceed the 1.00 threshold, indicating the need for safety improvements along this segment of I-75.

The spot crash summary reveals that the total number of crashes over the five year period for S.R. 52 at the interchange was 25. No fatalities occurred, however, a total of 36 injuries were reported for this location. The predominant type of crashes occurring at this location were right angle crashes, with left-turn crashes being the second most common type of accident. The majority of these crashes were primarily due to failing to yield the right-of-way. The safety ratio threshold of 1.00 was exceeded in all five years of the crash summary indicating a definite need to improve safety conditions along S.R. 52 at the interchange.

The planned six laning of the interstate may improve congestion and reduce the number of rear end crashes, while signalization of the ramp termini will assist in reducing the number of angular accidents occurring along S.R. 52. The loop ramp alternative will assist in reducing left-turn accidents by eliminating the westbound to southbound left-turn movement.

Table 3-11
Crash Summary for I-75 and S.R. 52 Interchange

Accident Characteristics	Segment Location S.R. 52 Interchange (MP 11.5-12.0)						Spot Location S.R. 52 at I-75 (23.317-23.490)					
	1991	1992	1993	1994	1995	Total	1991	1992	1993	1994	1995	Total
Type of Accident												
Rear End	-	-	-	1	8	9	-	-	1	-	2	3
Left-turn	-	-	-	-	-	-	1	2	1	-	3	7
Right-Turn	-	-	-	-	-	-	-	-	-	-	-	-
Angle	-	-	-	-	-	-	3	2	1	1	5	12
Sideswipe	1	-	-	1	2	4	-	-	-	-	-	-
Head-On	-	-	-	-	-	-	-	-	-	-	-	-
Overturned	-	1	1	1	-	3	-	-	-	-	-	-
Hit Pedestrian/Bicyclist	-	-	-	-	-	-	-	-	-	-	-	-
Other	1	2	2	1	5	11	-	2	-	1	-	3
Cause of Accident												
Careless Driving	-	-	1	2	9	12	-	-	1	-	2	3
Disregard Traffic Control	1	-	-	-	-	1	-	-	-	-	-	-
Failed to Yield ROW	-	1	-	1	1	3	4	3	1	1	6	15
Exceeded Safe Speed	-	-	-	-	-	-	-	-	-	-	-	-
Following too Closely	-	-	-	-	-	-	-	-	-	-	-	-
Alcohol and/or Drugs	-	-	-	1	1	2	-	-	1	-	1	2
Improper Maneuver	1	1	1	-	3	6	-	1	-	-	-	1
Other	-	1	1	-	1	3	-	2	-	1	1	4
Pavement Condition												
Dry	1	3	3	3	10	20	4	5	3	1	9	22
Wet	1	-	-	1	5	7	-	1	-	1	1	3
Slippery	-	-	-	-	-	-	-	-	-	-	-	-
Light Condition												
Daylight	2	2	2	2	10	18	3	6	3	1	9	22
Night	-	1	1	2	4	8	1	-	-	1	-	2
Dawn/Dusk	-	-	-	-	1	1	-	-	-	-	1	1
Time of Day												
7:00 - 8:59 a.m.	-	1	1	-	-	2	-	-	1	-	2	3
4:00 - 5:59 p.m.	1	-	-	-	2	3	-	1	-	-	1	2
Other	1	2	2	4	13	22	4	5	2	2	7	20
Severity of Accident												
Injury*	2	3	4	4	22	35	4	13	5	3	11	36
Fatality	-	-	-	-	-	-	-	-	-	-	-	-
Property Damage	1	-	1	2	3	7	1	1	-	-	3	5
Safety Ratio	**0.6**	**0.9**	**0.8**	**1.0**	**4.4**	**-**	6.8	7.7	3.4	2.9	12.	-
Economic Loss**	**1.4**	**2.1**	**2.1**	**2.8**	**10.**	**19.2**	1.8	2.7	1.3	0.9	4.6	11.6
Total	**2**	**3**	**3**	**4**	**15**	**27**	**4**	**6**	**3**	**2**	**10**	**25**

Notes: * More than one injury per accident may occur.
**Figures are in the 100,000 dollars.

Also, as part of the PD&E process specific interchange safety issues were identified through field observation. One of the more significant safety issues is sight distance. The sight distance at the ramp termini approaching S.R. 52 is inadequate due to the existing location of the overpass structure. The overpass piers obstruct the view of the turning vehicles at the exit ramp termini. The proposed interchange and ramp system modifications (i.e. redesign and widening of the interstate structures) will assist in eliminating sight distance problems.

In addition, the truck plaza located in the northeast quadrant of the project interchange produces a large number of truck trips on a daily basis. The majority of these trucks are class type eight (8) or larger. Several of the existing trucks experience difficulty accessing the westbound to southbound left turn lane from the truck plaza. The trucks must enter the travel stream and weave into the westbound to southbound queue over a short distance. This maneuver, combined with the mix of heavy traffic in the peak periods poses potential safety problems. The loop ramp configuration will eliminate the westbound to southbound weaving movement for the trucks, providing free-flow movement to the southbound entrance ramp from the right lane and assist in reducing the high number of left turn accidents.

3.5 EXISTING ENVIRONMENTAL CONSTRAINTS

Review of the existing environmental characteristics identified in Section 4 of the 2nd Draft of the I-75 Preliminary Engineering Report revealed the following:

3.5.1 Cultural Features

There are no archaeological sites or historical sites located within the area influence.

3.5.2 Community Facilities

There are no cemeteries, schools, churches, public facilities or medical facilities located within the area of influence.

3.5.3 Wetlands

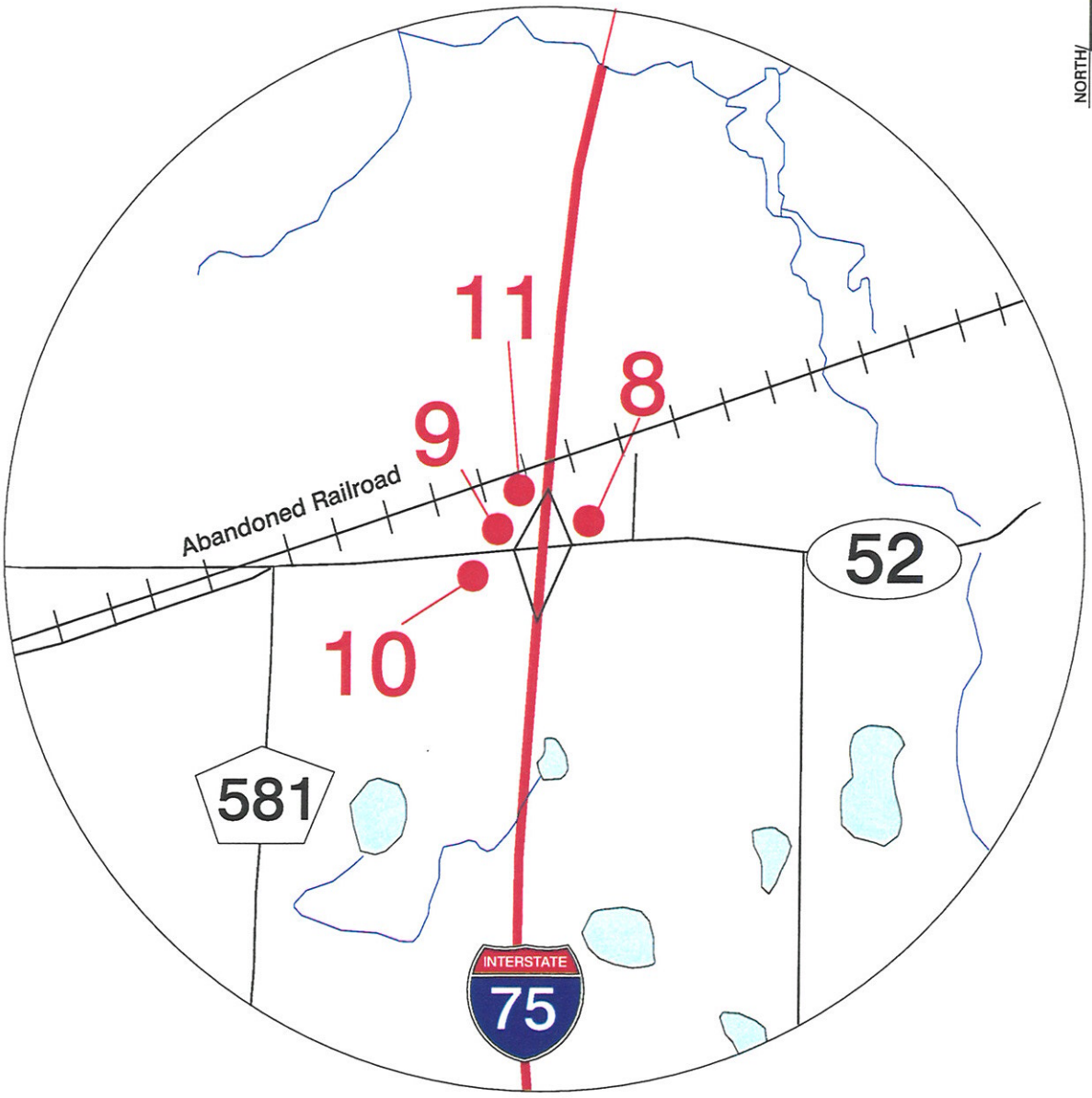
The proposed impact areas represent moderate to high quality wetland in terms of function and effectiveness. Habitat limitations in the potential impact areas are due in part to the dominance of nuisance and/or exotic species in many wetlands. The estimated wetland impact acreage will be based on the preferred alternative within the project area boundary. It is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action will include all practical measures to minimize harm to wetlands which may result from such use.

3.5.4 Threatened and Endangered Species

Information gathered from a literature review and field survey indicate no listed species inhabiting the potentially affected wetland areas or uplands adjacent to the proposed pond sites (considering preferred habitat types and known geographical ranges). The proposed project is not located in an area designated as "Critical Habitat" by the U.S. Department of the Interior Fish and Wildlife Service. Through Best Management Practices the FDOT has determined that the proposed improvements will have "No Effect" on any federally-listed threatened or endangered species.

3.5.5 Potential Hazardous Materials and Petroleum Contamination Sites

Through the contamination screening evaluation, four (4) properties were identified where conditions pose potential impacts to the area of influence. None of these sites have potential hazardous waste contamination, while all four (4) sites are potentially contaminated with petroleum products. Figure 3-7 illustrates the approximate location of these sites. Among the four (4) sites, two (2) received a "high" risk rating, one (1) received a "medium" rating, and one (1) was rated "low". None of the four (4) sites received a "no" rating. The following is a discussion of the four (4) sites with the name, address, facility identification number, type of contamination concern, and contamination evaluation risk rating for each of the suspect sites.



LEGEND

● Potential Hazardous Material Sites

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POTENTIAL HAZARDOUS MATERIAL SITES

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FIGURE 3-7

COREL \ PD&E \Dist_7 \ I-75PASCO \ REPORTS \ IMR \ FIG_3-7.CDR \ 11-15-99

APPENDIX A

Build Alternatives Proposed Geometry

Site No. 8 Chevron #47132 (Facility I.D. #518515028, I-75 and S.R. 52)

The site is located in the northeast quadrant of S.R. 52 and I-75. Three 37,854 liter (10,000-gallon) underground petroleum storage tanks were excavated and removed from this inactive station in 1991. The Tank Closure Assessment was performed by Delta Environmental Consultants on March 3, 1991. No contamination was found during the assessment. The risk rating is "low." This site is the current location of the Flying J Truck Plaza.

Site No. 9 Mobil #02-DHQ (Facility I.D. #518519953, I-75 and S.R. 52 West)

The site is located in the northwest quadrant of S.R. 52 and I-75. Five underground petroleum storage tanks were removed from the property in 1991. Approximately 62.29 cm (2,200 cubic yards) of excessively contaminated soil were removed from the property as part of the initial remedial action. A Contamination Assessment Report (CAR) was completed by Missimer and Associates and approved by the FDEP in January 1992. Groundwater flow was identified in the CAR as moving towards the south-southeast. The site is eligible for reimbursement under the revised tanks program at FDEP. The risk rating is "high."

Site No. 10 Roberts and Associates (Facility I.D. #518520041,8611 S.R. 52)

The site is located in the southwest quadrant of S.R. 52 and I-75. This facility has been closed since late 1990. FDEP determined that this site is not eligible for clean up under the revised tanks program. No additional information was available at the FDEP district office or Pasco County. The risk rating is "high." This site is the current location of the Texaco station.

Site No. 11 Pasco Fuel and Food Shoppe (Stuckeys), (Facility I.D. #518630460, I-75 and S.R. 52)

The site is located in the northwest quadrant of S.R. 52 and I-75. Groundwater contamination was revealed at this site in 1988. A CAR written by Gurr Omega in 1995 recommended a Monitoring Only Plan due to the limited extent of contamination. The CAR was approved by FDEP in April 1996. The risk rating is "medium."

Generally, the potential contamination impacts of the project, including liability for exacerbating existing contamination, can be managed through design and construction management practices.

SECTION 4
NO-BUILD CONDITIONS

4.1 CHANGES IN DEMOGRAPHICS

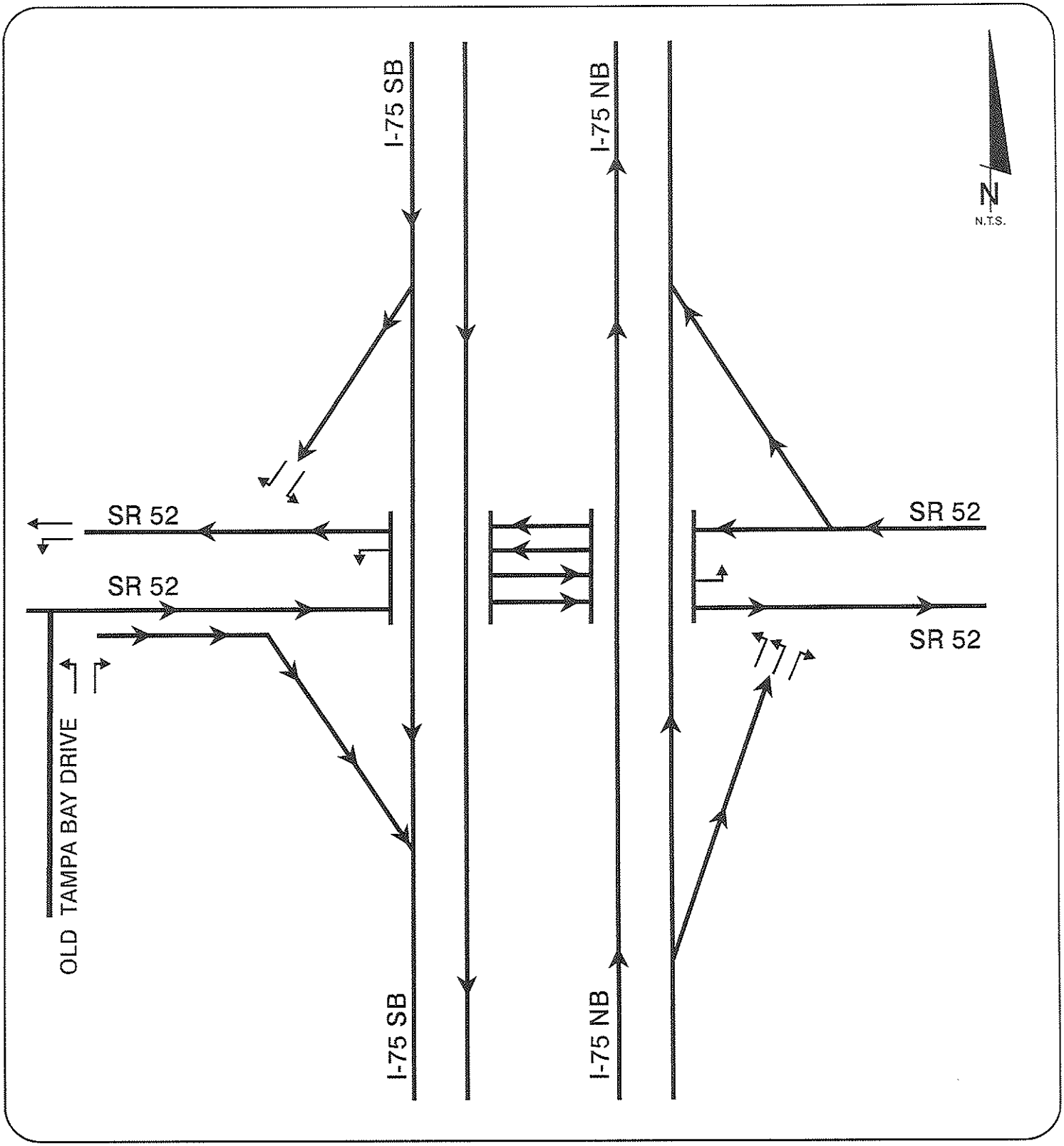
Section 3.1 of this IMR discusses the socioeconomic growth forecasted for the IMR area of influence. Socioeconomic data obtained from The Tampa Bay Regional Planning Model (TBRPM) ZDATA 1 and ZDATA 2 files for the study area was presented to illustrate the estimated population growth of 76% and employment growth of roughly 209%. The land use intensification and resulting socioeconomic expansion is expected to directly affect the operations of the I-75 and S.R. 52 interchange, warranting improvements to the existing geometry. No changes to the existing environmental factors are expected to occur.

4.2 INDIVIDUAL ELEMENT OPERATION ANALYSIS (IEOA)

An IEOA was conducted to evaluate operating conditions of the I-75 and S.R. 52 interchange for the no-build and no-build with Transportation System Management (TSM) improvements. The no-build alternative assumes that no improvements will be made to the existing geometry of the interchange. The no-build with TSM improvements considers the existing geometry with the addition of planned and programmed improvements. The planned and programmed improvements include:

- The signalization of the ramp termini at S.R. 52, the addition of a second left turn lane on the northbound exit ramp, and the addition of a new right turn lane in the eastbound to southbound direction. These improvements are programmed for construction in the FDOT Five Year Work Program for FY 2001/2002.

The expansion of S.R. 52 from two to four lanes at the interchange is identified in the Pasco County 2020 Long Range Transportation Plan for construction during FY 2004 to 2010. It was assumed that the arterial expansion would be in conjunction with the interchange build improvements and not part of the TSM improvements due to the lack of ROW to expand SR 52 to four lanes under the existing I-75 bridges. Figure 4-1 illustrates the no-build with TSM interchange geometry.



LEGEND

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INTERCHANGE MODIFICATION REPORT

Pasco County, Florida

NO-BUILD WITH TSM INTERCHANGE ALTERNATIVE

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FIGURE 4-1

According to the IRDRM the operational analysis conducted for the IEOA consists of the following elements:

- Freeway Elements
- Ramp Elements
- Ramp Queue Analysis
- Weaving Areas
- Crossroad and Related Intersections

The IEOA was conducted according to the guidelines provided in Section 5.5.5 of the IRDRM. The Highway Capacity Software, Release 2.1d (HCS) based on the 1994 Highway Capacity Manual, Special Report 209 (HCM) was used for the analyses of the individual elements. In addition, for the no-build with TSM improvements alternative, PASSER III-90 was run to identify the LOS for the S.R. 52 arterial. This program is specifically designed to evaluate the traffic operations at a diamond interchange and considers coordination of the signals at the ramp termini. TRANSYT-7F, release 7.1, was used to conduct the queue length analyses for the off-ramps and crossroad intersections. This version of TRANSYT-7F was used for consistency with the I-75 PD&E Study. The queue lengths derived from the TRANSYT-7F program were converted to 90 percentile queues for the ramp queue length analyses in accordance with the IRDRM.

The following measures of effectiveness (MOEs) were used to evaluate the operational performance of the individual elements:

- LOS as defined in the 1994 HCM;
- Effective deceleration length at the mainline ramp terminals, and
- Queue spill back effects onto crossroad ramp terminals from related intersections.

As mentioned earlier the LOS standards vary for the roadways located in the area of influence. Since I-75 is designated FIHS, the operating standards for this type facility is maintenance of LOS B and C conditions. However, it is assumed that the 2000 decennial census will reveal a

change in the transitioning area boundaries, thus creating LOS C standard conditions for the entire mainline area. The operating standard for a two-lane state road is LOS C.

The following subsections describe the assumptions and findings for the individual elements listed above. A figure identifying the existing no-build geometry is contained in Appendix K.

4.2.1 Freeway Elements

According to Section 5.5.5.3 of the IRDRM, the analysis of the freeway element includes evaluation of the following: 1) the basic freeway segments; 2) the ramp merge or diverge locations (e.g., ramp junctions); 3) and any other lane change along the freeway. Table 4-1 illustrates the results of the operational analyses for the northbound direction and Table 4-2 illustrates the results of the operational analysis for the southbound direction. Figure 4-2 provides a schematic of the interchange ramps system for reference purposes.

Analyses of Basic Freeway Segments

The HCS - Freeway Module was used to analyze operating conditions for basic freeway segments in the years 2001, 2008 and 2028. The capacity analyses were completed for the A.M. and P.M. peak hour using the peak hour volumes displayed in Figures 2-3 through 2-11. The results of the freeway segment analyses are shown in Table 4-1 and 4-2. Review of the Tables reveals that the freeway segments located in the vicinity of the I-75/S.R. 52 interchange operate at LOS C or better until the year 2008 for both alternatives. The HCS outputs are provided in Appendices L and M.

Analyses of Ramp Junctions

The assumptions and results of these analyses are provided in the following subsection.

4.3 RAMP ELEMENTS

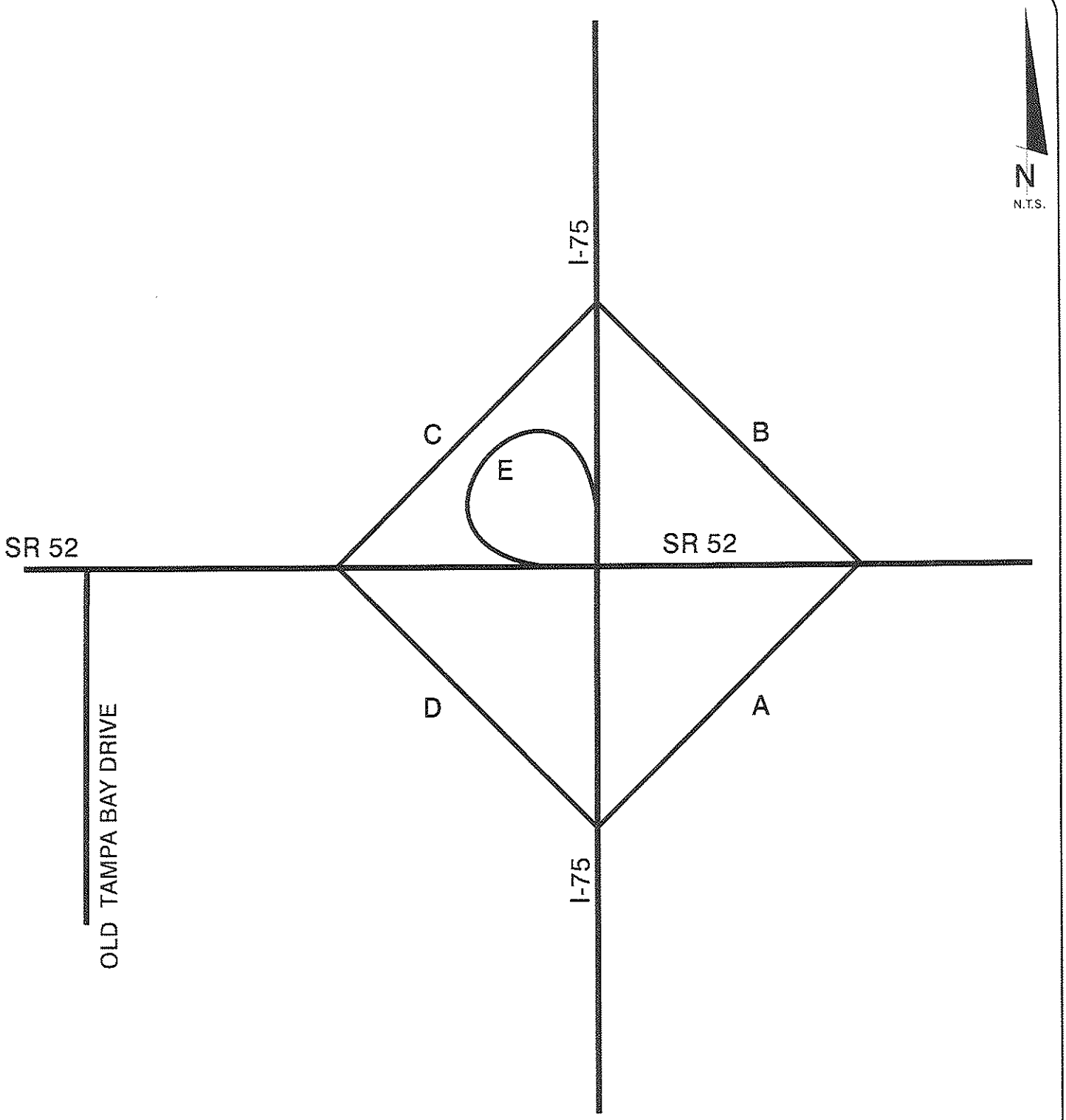
According to Section 5.5.5.3 of the IRDRM, the analysis of the ramp elements includes evaluation of the following: 1) the ramp segments and the freeway ramp terminal (i.e., ramp junctions); and 2) the ramp terminals at the crossroad (i.e. unsignalized and signalized intersection at S.R. 52 and I-75 exit/entrance ramps). The following subsections describe the operational analyses for these ramp elements.

4.3.1 Analyses of Ramp Junctions

The HCS Ramps Module was used to analyze existing operating conditions of ramp junctions. The capacity analyses were completed for the A.M. and P.M. peak hours using the peak hour volumes displayed in Figures 2-3 through 2-11. The results of the ramp junction analyses are shown in Tables 4-1 and 4-2. Review of the Tables reveals that all ramp junctions are operating above the FDOT LOS C standard until the year 2008 for both the no-build and no-build with TSM alternatives. The HCS outputs for the ramp analyses are provided in Appendices L and M.

4.3.2 Analyses of Unsignalized and Signalized Intersections at S.R. 52 and I-75 Entrance/Exit Ramps

As mentioned earlier, the intersections located at S.R. 52 and the I-75 ramp termini were analyzed as unsignalized intersections for the existing conditions scenario. However, as part of the no-build TSM improvements these ramp junctions have been signalized. Therefore, the HCS Unsignalized Intersection Module was used for the no-build ramp termini capacity analyses and PASSER III-90 was used to analyze the signalized operating conditions at the ramp termini for the no-build TSM alternative. The A.M. and P.M. peak hour turning movement volumes shown in Figures 2-3 through 2-11 were used for this analysis. The results of the analysis are summarized in Tables 4-1 and 4-2. The HCS outputs for the unsignalized intersection analyses are provided in Appendix L along with the PASSER III-90 outputs and LOS conversion table provided in Appendix L.



LEGEND

A - Ramp A
B - Ramp B
C - Ramp C
D - Ramp D
E - Ramp E

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OPERATIONAL ANALYSES INTERCHANGE SCHEMATIC

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FIGURE 4-2

A review of the results reveals that the unsignalized intersections contained in the no-build scenario fail for all three analysis years. The signalized intersection analysis in the TSM alternative also reveals unacceptable LOS for all three analysis years for the ramp termini intersections with S.R. 52.

Table 4-1
Operational Analyses Results for the No-Build and No-Build TSM Alternatives
Northbound Direction

ELEMENT	FROM	TO	2001		2008		2028	
			ALT 1	ALT 2	ALT 1	ALT 2	ALT 1	ALT 2
			No-Build	No-Build w/TSM	No-Build	No-Build w/TSM	No-Build	No-Build w/TSM
I-75 Freeway Segments								
I-75 Mainline	S. of Ramp A	Ramp A	C(C)	C(C)	C(D)	D(D)	D(F)	D(F)
I-75 Mainline	Ramp A	Ramp B	B(B)	B(B)	B(B)	B(B)	C(C)	C(C)
I-75 Mainline	N. of Ramp B		B(C)	B(C)	C(C)	C(C)	D(E)	D(E)
Freeway Ramp Terminals								
Off-Ramp A Diverge	I-75	SR 52	C(C)	C(C)	C(D)	C(D)	E(F)	E(F)
On-Ramp B Merge	SR 52	I-75	B(B)	B(B)	B(C)	B(C)	C(D)	C(D)
SR 52 Crossroad Ramp Terminals								
Off-Ramp A								
Northbound Left	I-75	SR 52 WB	F(F)	C(D)	F(F)	F(F)	F(F)	F(F)
Northbound Right	I-75	SR 52 EB	B(B)	C(D)	F(C)	F(F)	F(F)	F(F)
Eastbound Left	SR 52	I-75 NB	B(B)	C(C)	C(F)	F(F)	F(F)	F(F)
Eastbound Through	SR 52	SR 52 EB	*	A(A)	*	A(A)	*	A(A)
Westbound Right	SR 52	I-75 NB	*	*	*	*	*	*
Westbound Through	SR 52	SR 52 WB	*	D(D)	*	F(F)	*	F(F)

*Delay for these movements is not measured, as they are not stop controlled movements
A - LOS for A.M. Peak Hour
(A) - LOS for P.M. Peak Hour

Table 4-2
Operational Analyses Results for the No-Build and No-Build TSM Alternatives
Southbound Direction

ELEMENT	FROM	TO	2001		2008		2028	
			ALT 1	ALT 2	ALT 1	ALT 2	ALT 1	ALT 2
			No-Build	No-Build w/TSM	No-Build	No-Build w/TSM	No-Build	No-Build w/TSM
I-75 Freeway Segments								
I-75 Mainline	N. of Ramp C	Ramp C	C(C)	C(B)	C(C)	C(C)	E(D)	E(D)
I-75 Mainline	Ramp C	Ramp D	B(B)	B(B)	B(B)	B(B)	C(C)	C(C)
I-75 Mainline	S. of Ramp D		C(B)	C(C)	D(C)	D(C)	F(E)	F(E)
Freeway Ramp Terminals								
Off-Ramp C Diverge	I-75	SR 52	B(C)	B(B)	C(B)	C(B)	E(D)	E(D)
On-Ramp D Merge	SR 52	I-75	C(B)	C(C)	D(C)	D(C)	F(E)	F(E)
SR 52 Crossroad Ramp Terminals								
Off-Ramp C								
Southbound Left	I-75	SR 52 EB	F(F)	D(D)	F(F)	F(E)	F(F)	F(F)
Southbound Right	I-75	SR 52 WB	B(B)	D(D)	B(C)	F(E)	F(F)	F(F)
Westbound Left	SR 52	I-75 SB	C(B)	A(A)	F(F)	E(A)	F(F)	F(F)
Westbound Through	SR 52	SR 52 WB	*	A(A)	*	A(A)	*	A(A)
Eastbound Right	SR 52	I-75 SB	*	*	*	*	*	*
Eastbound Through	SR 52	SR 52 EB	*	C(C)	*	F(D)	*	F(F)

* Delay for these movements is not measured, as they are not stop controlled movements
A - LOS for A.M. Peak Hour
(A) - LOS for P.M. Peak Hour

4.4 RAMP QUEUE ANALYSIS

Queue analyses were performed to determine the residual effective deceleration distance of the off-ramps for the no-build scenarios. A queue analysis for the no-build alternative was not performed, as the ramps are unsignalized. Queue length calculations were performed for the no-build TSM improvements using the TRANSYT-7F software. The results of the queue analyses (using the 90 percentile queues) for all the proposed alternatives is contained in Appendix N. These queue lengths were then used to determine the residual effective deceleration distance for the off-ramps. Tables 4-3 and 4-4 illustrate the results of the ramp analyses.

Table 4-3
Year 2008
Effective Deceleration Distance

Off Ramp	Mainline Design Speed (mph)	Ramp Design Speed (mph)	Residual Effective Deceleration Distance (% of AASHTO minimum)*
		No-Build w/ TSM	No-Build w/ TSM
A	70	45	-244%
90 Percentile Queues (feet)			400
C	70	45	49%
90 Percentile Queues (feet)			152

* AASHTO minimum deceleration length for this design speed under stopped conditions is 615 feet.

Table 4-4
Year 2028
Effective Deceleration Distance

Off Ramp	Mainline Design Speed (mph)	Ramp Design Speed (mph)	Residual Effective Deceleration Distance (% of AASHTO minimum)*
		No-Build w/ TSM	No-Build w/ TSM
A	70	45	-260%
90 Percentile Queues (feet)			2700
C	70	45	-146%
90 Percentile Queues (feet)			1200

* AASHTO minimum deceleration length for this design speed under stopped conditions is 615 feet.

As illustrated in Tables 4-3 and 4-4, the no-build with TSM alternative exhibits residual effective deceleration distances far below the required minimum American Association of State Highway and Transportation Officials (AASHTO) standards.

4.5 WEAVING AREAS

No weaving areas exist on the I-75 mainline within the area of influence.

4.6 CROSSROAD AND RELATED INTERSECTIONS

4.6.1 Level of Service

The area of influence for the IMR includes the unsignalized intersection at S.R. 52 and Old Tampa Bay Drive. The HCS unsignalized intersection module was used to evaluate the operating conditions at this intersection for the years 2001, 2008 and 2028. The results of the analysis are provided in Table 4-5. The analysis revealed that, overall, the intersection of S.R. 52 and Old Tampa Bay Drive operates at LOS A during the A.M. and P.M. peak hours through the years 2008. During the design year 2028, the intersection operates at LOS B during the A.M. peak period and LOS D during the P.M peak period. However, the northbound left turn movement fails during the 2008 and 2028 design years. The HCS outputs are provided in Appendix L.

Table 4-5
S.R. 52/ Old Tampa Bay Road Unsignalized Intersections
No-Build HCS Analyses

Approach	Lane Group	2001				2008				2028			
		A.M. Peak		P.M. Peak		A.M. Peak		P.M. Peak		A.M. Peak		P.M. Peak	
		Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS
S.R. 52 at Old Tampa Bay Drive													
NB	Left	21.1	D	21.4	D	42.3	E	46.6	F	673.4	F	*	F
	Right	6.5	B	5.2	B	9.4	B	6.7	B	22.6	D	20.6	D
WB	Left	5.0	A	4.0	A	7.1	B	4.9	A	15.1	C	11.8	C
OVERALL		0.5	A	0.6	A	1.3	A	1.5	A	5.8	B	32.1	D

Note:
[a] Delay is average total delay in seconds per entering vehicle
[b] Delay is greater than 999.9 seconds

4.6.2 Intersection Queue Analysis

Queue analyses were also performed for the no-build with TSM alternative for the crossroad intersections. This analysis is required to determine if the intersection queues along S.R. 52 spill

back into the upstream signalized intersections, potentially affecting the operations of the interstate ramps. These analyses were performed using the average queues as specified in the IRDRM. The average queue analyses for each alternative is presented in Appendix N of this report. The results of the arterial average queue analysis are illustrated in Table 4-6 and 4-7.

Table 4-6
2008 Arterial Intersection Queue Length Analysis

Approach	Movement	2008 A.M. Peak Hour						2008 P.M. Peak Hour				
		# of Lanes	Queue Length		Distance between intersections		Spill Back	Queue Length		Distance between intersections		Spill Back
			Feet	Meters	Feet	Meters		Feet	Meters	Feet	Meters	
No-Build TSM												
SR 52 WB	Thru	1	25	8	354	108	NO	50	15	354	108	NO
to SB I-75	Left	1	200	61	354	108	NO	300	91	354	108	NO
SR 52 EB to	Thru	1	250	76	354	108	NO	200	61	354	108	NO
NB I-75	Left	1	175	53	354	108	NO	200	61	354	108	NO

Table 4-7
2028 Arterial Intersection Queue Length Analysis

Approach	Movement	2028 A.M. Peak Hour						2028 P.M. Peak Hour				
		# of Lanes	Queue Length		Distance between intersections		Spill Back	Queue Length		Distance between intersections		Spill Back
			Feet	Meters	Feet	Meters		Feet	Meters	Feet	Meters	
No-Build TSM												
SR 52 WB	Thru	1	300	91	354	108	NO	375	114	354	108	YES
to SB I-75	Left	1	825	251	354	108	YES	675	206	354	108	YES
SR 52 EB to	Thru	1	375	114	354	108	YES	250	76	354	108	NO
NB I-75	Left	1	200	61	354	108	NO	600	183	354	108	YES

The results of the arterial analyses indicate that the no-build TSM alternative does not exhibit spill back into the upstream intersections (at the interstate ramp termini) during the year 2008. However, by the design year 2028, the left turn movements begin to impact traffic operations at the northbound and southbound interstate off-ramps.

Table 4-8 provides a summary of the design year (2028) operational analyses for the no-build alternatives. Based upon the results of the operational analyses and the previously identified measures of effectiveness for the individual elements, the no-build and no-build TSM alternatives do not satisfy the objectives of the IMR and do not adequately accommodate the forecasted travel demand at the study interchange.

Table 4-8
No-Build Alternatives Operational Analysis Summary
For Design Year 2028

Measure of Effectiveness	No-Build	No-Build with TSM Improvements
Mainline:		
Number of Segments below LOS C	4	4
Number of Segments below LOS D	4	4
Ramps:		
Number of Merges and Diverges below LOS C	4	4
Number of off-ramps w/ substandard deceleration distances	2	2
Number of crossroad terminal intersection movements below LOS C	6	8
Crossroads:		
Number of crossroad movements below LOS C	2	4
Number of intersections with movements below LOS C	1	1

SECTION 5
NEED FOR THE INTERCHANGE MODIFICATION

The conceptual analysis presented will determine why the existing interchange and the arterial highway system cannot handle the anticipated additional traffic volumes expected at I-75 and S.R. 52. Section 5.2.3 of the IRDRM indicates the conceptual analysis should consider the following:

- No-Build Alternative Operational Conditions
- Substandard Design Elements
- Proximity to the next existing or approved interchanges upstream and downstream from the project interchange.
- Availability of existing or proposed parallel facilities to carry traffic to the interchanges.
- Feasibility of adding additional facilities or adding capacity to existing facilities.
- Feasibility of an overpass option in lieu of or as a part of a phased interchange development.
- Existing interchanges and arterial system's ability to adequately handle the additional traffic in lieu of the proposed interchange.
- Known environmental issues that could stop, significantly delay or require significant mitigation costs for the interchange proposal.

In addition to the items listed above the following issues also support the need for the interchange modification proposal:

- Potential safety or operational problems caused by or relieved by the interchange proposal, and
- Limited right-of-way (ROW) within the area of influence.

The following subsections address the items listed above.

5.1 NO-BUILD ALTERNATIVE OPERATIONAL CONDITIONS

As presented in Section 4 of this IMR, the no-build and no-build with TSM alternatives were analyzed using 2001, 2008 and 2028 design year traffic. The results of the analyses revealed that neither alternative was able to adequately accommodate the forecasted travel demand for the interchange.

5.2 SUBSTANDARD DESIGN ELEMENTS

The Preliminary Engineering Report for the I-75 PD&E Study identifies several components of the I-75 and S.R. 52 interchange which exhibit substandard design features including: ramp deceleration lengths and vertical clearance from S.R. 52 to the interstate bridges. These deficiencies are based on a 70 mph design speed for the mainline. Currently, the exit ramp deceleration lengths are 350 feet shorter that existing design standards. These insufficient exit ramp lengths effectively reduce the mainline design speed to 50 mph and can potentially cause queuing onto the mainline. Vertical clearances of the interstate bridges over S.R. 52 are deficient in the eastbound direction by as much as 6 inches. FDOT/AASHTO minimum vertical clearance is 16.40 ft. and the lowest point on the southbound I-75 bridge is 15.85 ft. If S.R. 52 is to be widened to four lanes in the future, the interstate bridges over S.R. 52 will need to be replaced to address this deficiency. The proposed build alternatives for the interchange will ensure the consistency with the most recent FDOT/AASHTO design standards for all elements.

5.3 PROXIMITY TO THE NEXT EXISTING OR APPROVED INTERCHANGE UPSTREAM AND DOWNSTREAM FROM THE PROJECT INTERCHANGE

The I-75 interchange located north of the project interchange is the I-75 and C.R. 41 interchange. It is located approximately seven (7) miles north of the I-75 and S.R. 52 interchange. The I-75 and S.R. 54 interchange is located approximately six and one-half (6.5) miles south of the I-75 and S.R. 52 interchange. Figure 1-2 displays the distance between interchanges. The adjacent interchanges are not anticipated to be impacted by the proposed interchange modification. Also, due to the distance between interchanges, the future development traffic projected along S.R. 52 is not expected to impact the adjacent interchanges. Conversely, modifications to the adjacent interchanges will not impact traffic operations at the project interchange.

5.4 AVAILABILITY OF EXISTING OR PROPOSED PARALLEL FACILITIES TO CARRY TRAFFIC TO THE INTERCHANGES

As mentioned previously, there are two existing parallel facilities that currently connect to I-75. C.R. 41 is located approximately seven (7) miles north of S.R. 52 and S.R. 54 is located approximately six and one-half (6.5) miles south of S.R. 52 interchange. Therefore, diversion of traffic from S.R. 52 to C.R. 41 or S.R. 54 is unlikely due to the circuitous route the traveler would need to take to access I-75. Therefore, there are no existing facilities parallel to I-75 that can carry traffic between the S.R. 54 and S.R. 52 interchanges.

5.5 FEASIBILITY OF ADDING ADDITIONAL FACILITIES OR ADDING CAPACITY TO EXISTING FACILITIES

The Pasco County MPO's 2020 Long Range Transportation Plan identifies the need to multi-lane S.R. 52 east and west of the project interchange. It also addresses the need to add lanes to I-75, making it a six-lane facility throughout the study area. Alternative improvements are being evaluated in the PD&E Study currently being conducted for I-75 from south of the proposed S.R. 56 to north of S.R. 52 in Pasco County. Based on the additional capacity that is planned for the S.R. 52 arterial and the I-75 freeway facility the existing interchange will not be able to handle the traffic expected to be generated from the arterial and freeway improvement.

5.6 FEASIBILITY OF AN OVERPASS OPTION IN LIEU OF OR AS A PART OF A PHASED INTERCHANGE DEVELOPMENT

The feasibility of an overpass option is not applicable since this interchange proposal is for the modification of the existing I-75/S.R. 52 interchange.

5.7 EXISTING INTERCHANGES AND ARTERIAL SYSTEM'S ABILITY TO ADEQUATELY HANDLE THE ADDITIONAL TRAFFIC IN LIEU OF THE PROPOSED INTERCHANGE

Based on the existing conditions operational analyses, the I-75/S.R. 52 interchange currently operates at a deficient LOS. A freeway and ramp junction analysis indicates that the mainline freeway operates satisfactorily, however, at the ramp termini approaching S.R. 52, the northbound and southbound left turns operate below LOS D in the A.M. and P.M. peak hours.

Additionally, a heavy eastbound through movement was observed during the A.M. peak hour, affecting the westbound left-turn queue at the S.R. 52 and I-75 southbound ramp causing the queue to extend east of the northbound exit ramp. The northbound exit ramp also experiences delays due to the inability to turn left.

5.8 KNOWN ENVIRONMENTAL ISSUES THAT COULD STOP, SIGNIFICANTLY DELAY OR REQUIRE SIGNIFICANT MITIGATION COSTS FOR THE INTERCHANGE PROPOSAL

The environmental issues regarding the subject interchange were discussed previously in Section 3.5 of this report. Currently, there are no known environmental issues that could stop or significantly delay the project. Significant mitigation costs are not anticipated.

5.9 POTENTIAL SAFETY OR OPERATIONAL PROBLEMS CAUSED BY OR RELIEVED BY THE INTERCHANGE PROPOSAL

Crash data summaries for the I-75 segment at the interchange and for the spot location on S.R. 52 at the interchange were previously provided and discussed in Section 3.4.3 of this report. As indicated in the text, signalization of the ramp termini, reconstruction of the interstate structures and the construction of a loop ramp at the study interchange will all serve to alleviate identified safety problems.

5.10 LIMITED RIGHT-OF-WAY (ROW) WITHIN THE AREA OF INFLUENCE

Due to existing development, ROW is currently limited in two of the four interchange quadrants. This limited ROW is anticipated to affect the feasibility of several alternatives. However, the interchange modification alternatives being considered may prove more viable, in that, land in the northwest quadrant is currently vacant and available for construction of the new interchange ramp system.

SECTION 6
ALTERNATIVES TO BE CONSIDERED

Seven (7) alternatives were analyzed as part of the I-75 and S.R. 52 Interchange Modification Proposal. The following two (2) No-Build and five (5) Build alternatives are documented in this report:

No-Build

- No-Build Alternative
- TSM Alternative

Build

- Enhanced Diamond Alternative
- Loop Ramp Alternative 1
- Loop Ramp Alternative 2
- Loop Ramp Alternative 3
- Revised Loop Ramp Alternative 3

The following analyses years were evaluated for each alternative:

- Staged Opening Year: 2001
- Opening Year: 2008
- Design Year: 2028

A brief description of each alternative is provided in the following subsections.

6.1 NO-BUILD ALTERNATIVE

This is the "do-nothing" alternative. This alternative assumes that no improvements will be made to the existing interchange geometry. The planned and programmed improvements identified for the interchange area are TSM improvements and are therefore contained in the no-build TSM alternative.

6.2 NO-BUILD TSM ALTERNATIVE

This alternative assumes no-build geometry with programmed arterial TSM and multi-modal improvements. These TSM improvements include:

- The signalization of the ramp termini at S.R. 52, the addition of a second left turn lane on the northbound exit ramp, and the addition of a new right turn lane in the eastbound to southbound direction. These improvements are programmed for construction in the FDOT Five Year Work Program for FY 2001/2002.

No transit, Transportation Demand Management (TDM), or Intelligent Transportation Systems (ITS) strategies were identified as programmed for implementation within the study area.

However, as part of the Long Range Transportation Plan (LRTP), a new transit route connecting east and west Pasco County was identified for future implementation. The proposed service would operate on weekdays with sixty-minute headways. Although the new local service would provide an alternative travel choice for the east-west intra-county trips, it will not sufficiently reduce travel demand at the interchange for the interstate northbound and southbound trips. The LRTP also identifies the need for a four-foot paved bicycle lane and a five-foot sidewalk from Old Pasco Road to McKendree Road (Boyette Road). These facilities may eliminate a few short local trips on S.R. 52, but will not significantly affect interstate travel demand at the I-75 and S.R. 52 interchange. These alternatives were not assumed to significantly reduce travel demand for the IMR analyses.

6.3 ENHANCED DIAMOND ALTERNATIVE

This alternative assumes the typical diamond interchange configuration with enhancements such as the six-laning of I-75 to add capacity and improve traffic flow conditions on the mainline, and bridge replacement, which will assist in alleviating sight distance problems. The TSM improvements including the addition of a second northbound exit ramp left turn lane, the addition of an eastbound to southbound right turn lane, the widening of S.R. 52 from two to four lanes and the signalization of the ramp termini were also evaluated to improve overall operations at the interchange ramps. Additional improvements including a second northbound to eastbound

right turn lane, and a second southbound to eastbound left turn lane were added to accommodate demand. Figure 6-1 displays the lane configuration of this alternative.

6.3.1 Structural Considerations

In order to accommodate the widening of S.R. 52, eliminate the sight distance problems at the ramp termini, and meet minimum vertical clearance heights, reconstruction of the interstate bridges would be required.

6.3.2 Landscaping

No landscaping has been considered as part of this build alternative.

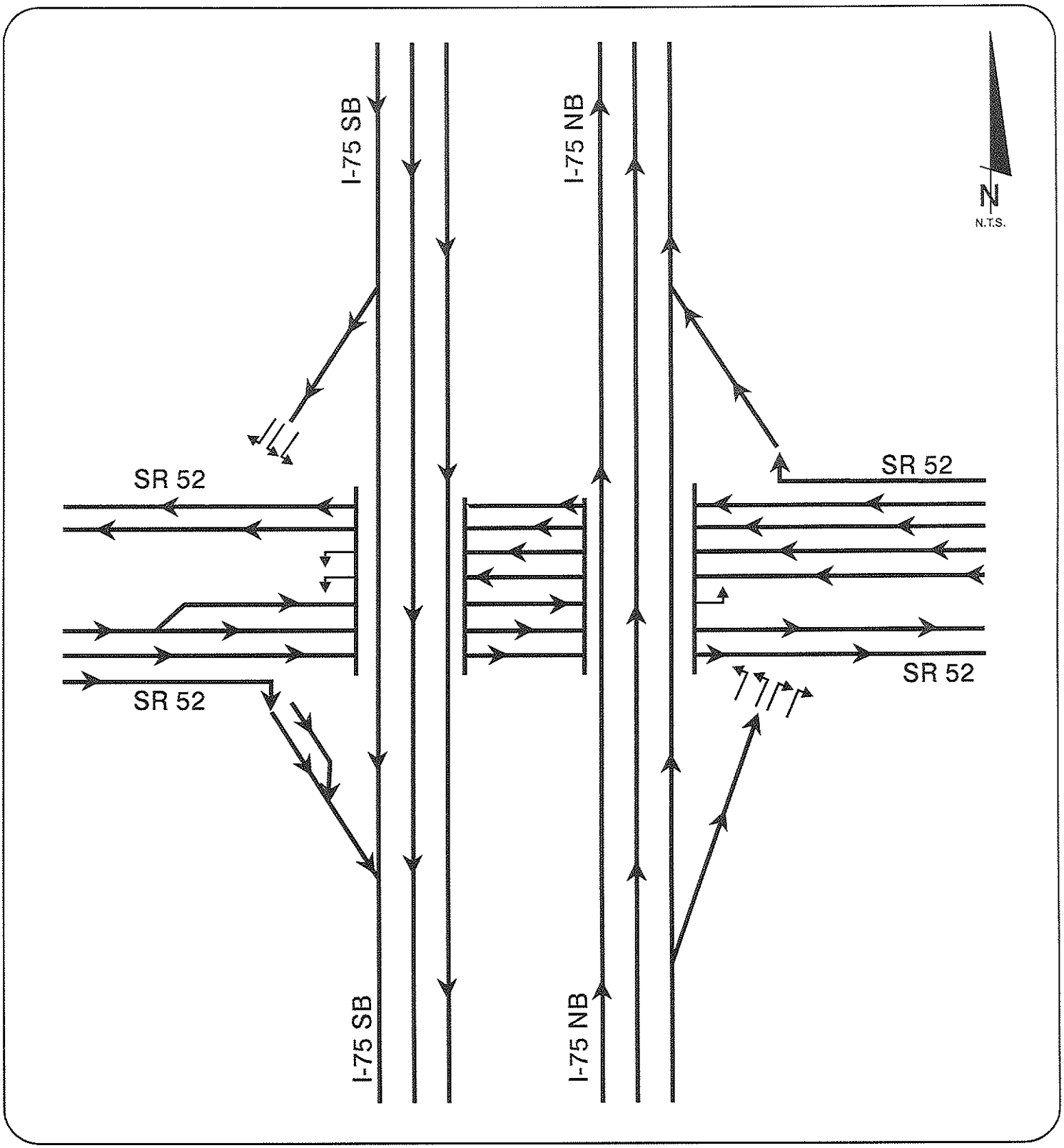
6.3.3 Schedule

Funding for this project will include state and federal funds. The PD&E phase of the project is currently being completed. The right-of-way, design and construction phases will be programmed in a future Department's Five Year Work Program. The District is developing a 2020 FIHS Cost Feasible Plan, in which the interchange improvements are identified in the 2010-2020 time frame. The District will be pursuing options to advance the project into the 2000-2010 time frame.

6.3.4 Cost Estimates

Cost estimates for the enhanced diamond alternative are:

ROW Acquisition	$14,138,400
Engineering	$ 452,580
Construction	$ 3,017,204
Construction Engineering and Inspection	$ 452,580
Total Estimated Cost	**$18,060,764**



LEGEND

FLORIDA DEPARTMENT OF TRANSPORTATION

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INTERCHANGE MODIFICATION REPORT

Pasco County, Florida

ENHANCED DIAMOND INTERCHANGE ALTERNATIVE

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 6-1

COREL \ PD&E \Dist_7 \ I-75PASCO \ REPORTS \ IMR \ FIG_6-1.CDR \ 11-15-99

6.4 LOOP RAMP ALTERNATIVE 1

This alternative includes all of the above mentioned interchange geometric and operational improvements and eliminates the existing westbound to southbound left-turn movement with the addition of a westbound to southbound on-ramp (loop ramp) in the northwest quadrant of the interchange. Figure 6-2 displays the lane configuration of this alternative.

The addition of the loop ramp will assist in improving the westbound to southbound movement, and will serve to reduce potential conflicts by eliminating the weave movement and providing free-flow conditions for heavy vehicles traveling from the adjacent truck plaza. This alternative will also eliminate the eastbound to southbound right turn movement and replaces it with a left turn movement and combines this movement with the westbound to southbound movement on the loop ramp. This scenario eliminates the existing at-grade southbound entrance point on I-75 and shifts it further north to the loop ramp interstate entrance location. The benefit of this alternative is that it serves to improve access conditions at the ramp entrances and does not introduce an additional entrance point to the interstate, but shifts it northward.

6.4.1 Structural Considerations

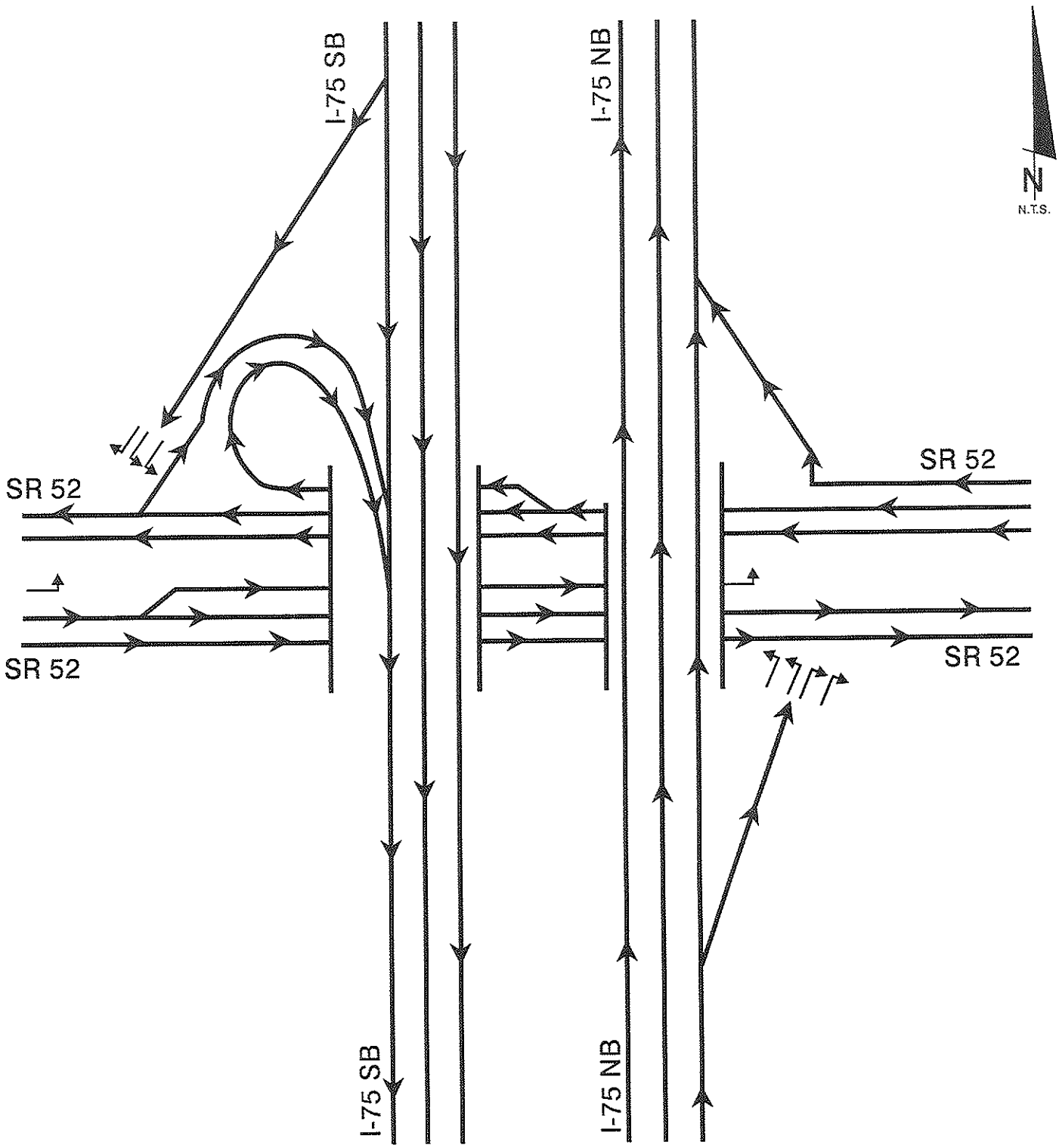
In order to accommodate the widening of S.R. 52, eliminate the sight distance problems at the ramp termini, and meet minimum vertical clearance heights, reconstruction of the interstate bridges would be required.

6.4.2 Landscaping

No landscaping has been considered as part of this build alternative.

6.4.3 Schedule

Funding for this project will include state and federal funds. The PD&E phase of the project is currently being completed. The right-of-way, design and construction phases will be programmed in a future Department's Five Year Work Program. The District is developing a



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LOOP RAMP ALTERNATIVE 1

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 6-2

COREL \ PD&E \Dist_7 \ I-75PASCO \ REPORTS \ IMR \ FIG_6-2.CDR \ 11-15-99

2020 FIHS Cost Feasible Plan, in which the interchange improvements are identified in the 2010-2020 time frame. The District will be pursuing options to advance the project into the 2000-2010 time frame.

6.4.4 Cost Estimates

Cost estimates for the Loop Ramp 1 alternative are:

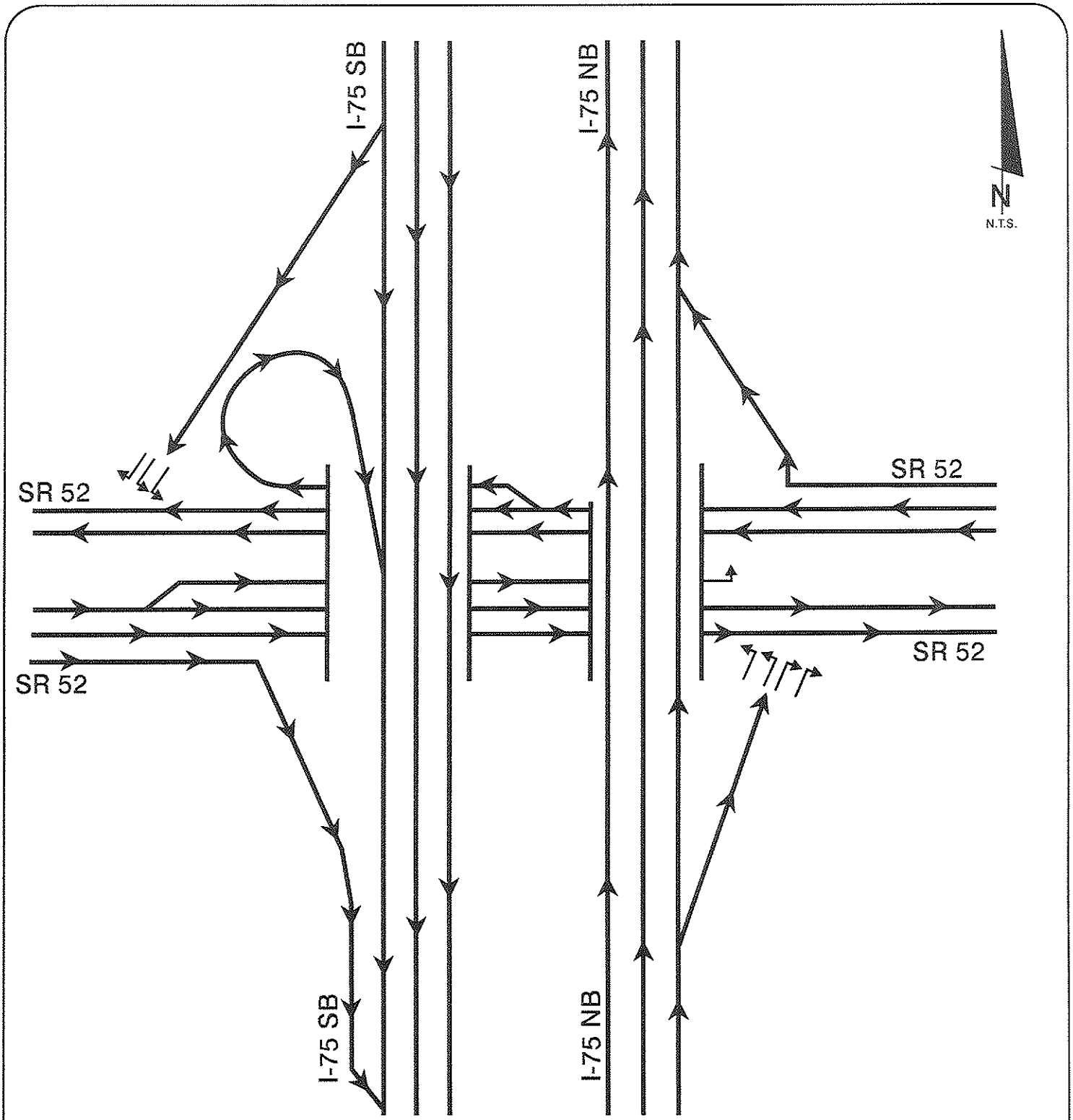
ROW Acquisition	$30,949,100
Engineering	$ 742,873
Construction	$ 4,952,485
Construction Engineering and Inspection	$ 742,873
Total Estimated Cost	**$37,387,331**

6.5 LOOP RAMP ALTERNATIVE 2

The second loop ramp alternative will include the geometric and operational improvements identified in Section 6.3 with the addition of a westbound to southbound on-ramp (loop ramp) in the northwest quadrant of the interchange. The existing westbound to southbound left turn movement will also be eliminated. The addition of the loop ramp will assist in improving the westbound to southbound movement, and will serve to reduce potential conflicts by eliminating the weave movement and providing free-flow conditions for heavy vehicles traveling from the adjacent truck plaza. Figure 6-3 displays the lane configuration of this alternative.

6.5.1 Structural Considerations

In order to accommodate the widening of S.R. 52, eliminate the sight distance problems at the ramp termini, and meet minimum vertical clearance heights, reconstruction of the interstate bridges would be required.



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LOOP RAMP ALTERNATIVE 2

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FIGURE 6-3

COREL \ PD&E \Dist_7 \ I-75PASCO \ REPORTS \ IMR \ FIG_6-3.CDR \ 11-15-99

6.5.2 Landscaping

No landscaping has been considered as part of this build alternative

6.5.3 Schedule

Funding for this project will include state and federal funds. The PD&E phase of the project is currently being completed. The right-of-way, design and construction phases will be programmed in a future Department's Five Year Work Program. The District is developing a 2020 FIHS Cost Feasible Plan, in which the interchange improvements are identified in the 2010-2020 time frame. The District will be pursuing options to advance the project into the 2000-2010 time frame.

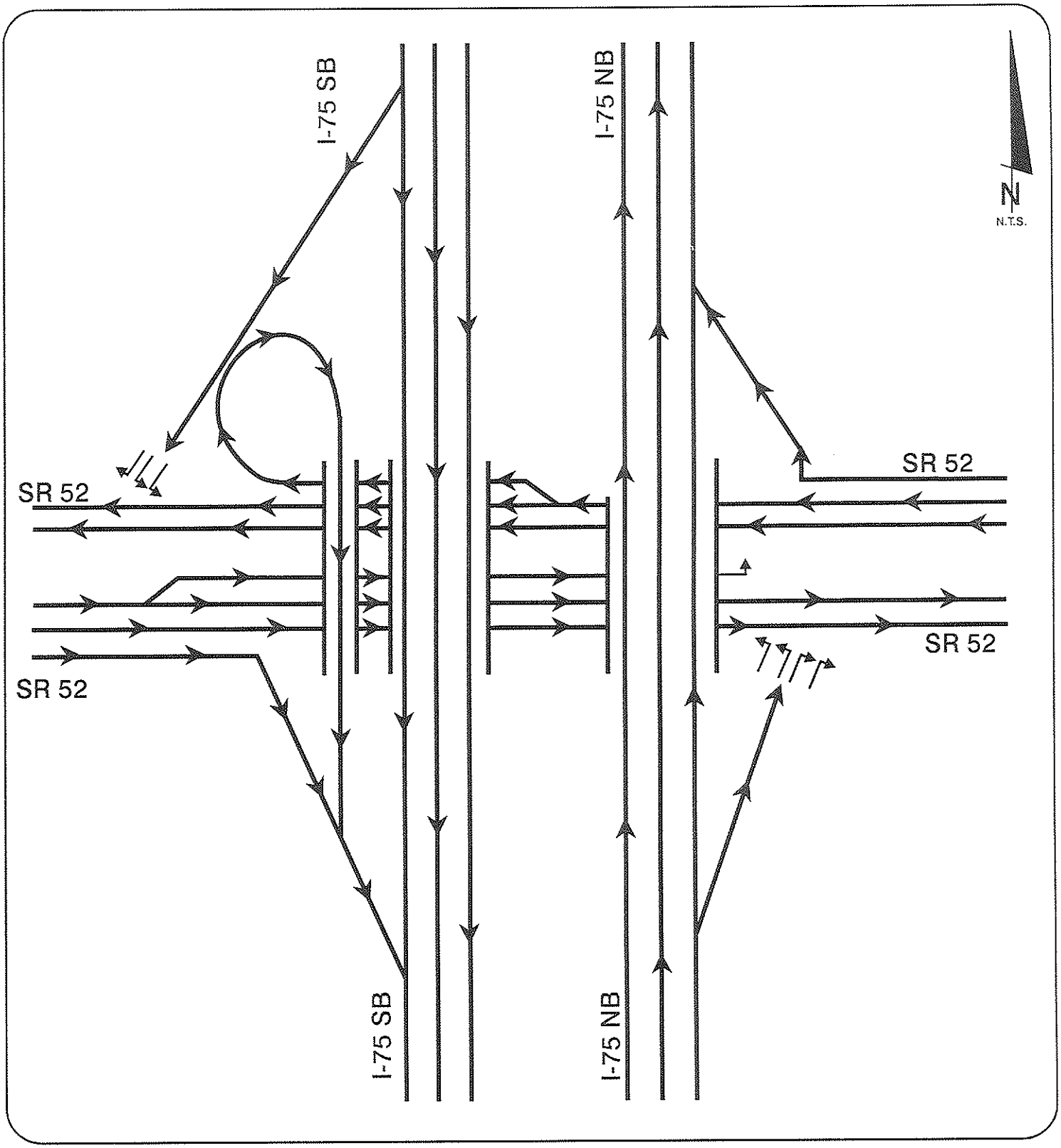
6.5.4 Cost Estimates

Cost estimates for the Loop 2 alternative are:

ROW Acquisition	$30,492,000
Engineering	$ 732,705
Construction	$ 4,884,702
Construction Engineering and Inspection	$ 732,705
Total Estimated Cost	**$36,842,112**

6.6 LOOP RAMP ALTERNATIVE 3

The third build alternative, Loop Ramp Alternative 3, includes the geometric and operational improvements discussed in Section 6.3 with the addition of a loop ramp for the westbound to southbound movement. The existing westbound to southbound left turn movement will also be eliminated. Figure 6-4 displays the lane configuration of this alternative. This loop ramp alternative provides a different scenario from the loop ramp 2 alternative, in that, the loop ramp will not create an additional entrance point to the interstate, but will exist as a separate structure which combines with the eastbound to southbound on-ramp prior to the existing



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LOOP RAMP ALTERNATIVE 3

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 6-4

COREL \ PD&E \Dist_7 \ I-75PASCO \ REPORTS \ IMR \ FIG_6-4.CDR \ 11-15-99

entrance point on to the interstate. The benefit of this alternative is that it will not create an additional access point on I-75. It will also alleviate unsafe conditions created by heavy vehicles weaving into the westbound to southbound left turn lanes by providing free flow access to the southbound on-ramp.

6.6.1 Structural Considerations

In order to accommodate the widening of S.R. 52, eliminate the sight distance problems at the ramp termini, and meet minimum vertical clearance heights, reconstruction of the interstate bridges would be required. An additional structure over S.R. 52 will be required for the westbound to southbound loop ramp.

6.6.2 Landscaping

No landscaping has been considered as part of this build alternative

6.6.3 Schedule

Funding for this project will include state and federal funds. The PD&E phase of the project is currently being completed. The right-of-way, design and construction phases will be programmed in a future Department's Five Year Work Program. The District is developing a 2020 FIHS Cost Feasible Plan, in which the interchange improvements are identified in the 2010-2020 time frame. The District will be pursuing options to advance the project into the 2000-2010 time frame.

6.6.4 Cost Estimates

Cost estimates for the Loop 3 alternative are:

ROW Acquisition	$31,701,400
Engineering	$ 775,415
Construction	$ 5,169,434
Construction Engineering and Inspection	$ 775,415
Total Estimated Cost	**$38,421,664**

6.7 REVISED LOOP RAMP ALTERNATIVE 3

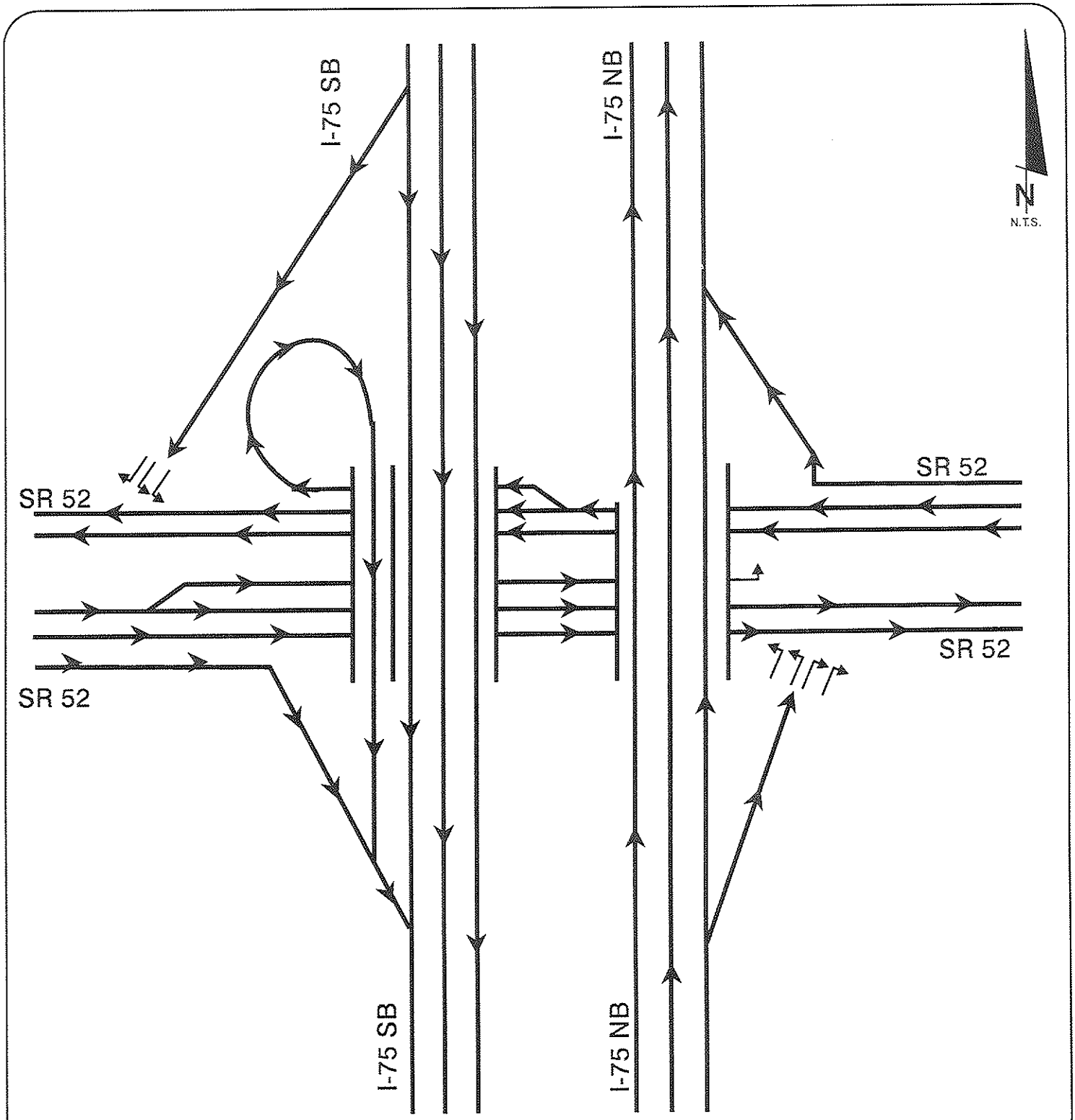
The final build alternative, Revised Loop Ramp Alternative 3, is a modified version of the Loop Ramp Alternative 3. This alternative contains similar geometric elements and design, however, it has been modified by relocating the loop on-ramp closer to the mainline bridges which "brings in" or "tightens" the limited access right-of-way lines. The shift in the right-of-way lines lessen the impacts to the golf course and Texaco Truck Stop located in the southwest quadrant. In addition, the westbound to northbound right turn lane located in the northeast quadrant has been shifted west, alleviating potential problems with the Flying J Travel Plaza driveway. It was also recommended that the bridges be designed without pier supports (adding straight walls) so that future expansion of the SR 52 facility can be easily accommodated. This scenario will lessen the need for additional right-of-way and reduce the associated impacts to the surrounding area. Figure 6-5 conceptually illustrates the Revised Loop Alternative 3. For the operational analyses, it is assumed that the Loop Ramp Alternative 3 and the Revised Loop Ramp Alternative 3 functional geometry and projected traffic are identical, so a separate operational analysis was not conducted.

6.7.1 Structural Considerations

In order to accommodate the widening of S.R. 52, eliminate the sight distance problems at the ramp termini, and meet minimum vertical clearance heights, reconstruction of the interstate bridges would be required. An additional structure over S.R. 52 will be required for the westbound to southbound loop ramp.

6.7.2 Landscaping

No landscaping has been considered as part of this build alternative.



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INTERCHANGE MODIFICATION REPORT
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REVISED LOOP RAMP ALTERNATIVE 3

WPI Seg No. 258736 1
FAP No. NH-75-1(91)275

FIGURE 6-5

COREL \ PD&E \Dist_7 \ I-75PASCO \ REPORTS \ IMR \ FIG_6-4.CDR \ 11-15-99

6.7.3 Schedule

Funding for this project will include state and federal funds. The PD&E phase of the project is currently being completed. The right-of-way, design and construction phases will be programmed in a future Department's Five Year Work Program. The District is developing a 2020 FIHS Cost Feasible Plan, in which the interchange improvements are identified in the 2010-2020 time frame. The District will be pursuing options to advance the project into the 2000-2010 time frame.

6.7.4 Cost Estimates

Cost estimates for the Revised Loop 3 alternative are:

ROW Acquisition	$27,178,900
Engineering	$ 775,415
Construction	$ 5,169,434
Construction Engineering and Inspection	$ 775,415
Total Estimated Cost	**$ 33,899,164**

Figures illustrating the proposed build geometry overlaid on the existing aerials for each build alternative are included in Appendix A of this report.

SECTION 7
ALTERNATIVES ANALYSIS

This section presents the findings of the alternatives analyses and evaluations based upon conformance with existing Master Plans and Long Range Plans, policies, traffic operations, environmental impacts, and the objectives of the IMR.

7.1 CONFORMANCE WITH THE MASTER PLAN

The six lane I-75 mainline included in all of the Build Alternatives is in conformance with the recommendations identified in the I-75 Master Plan from the Georgia State Line to Alligator Alley, November, 1989. The recommendations from the IMR will also be incorporated into the on-going I-75 PD&E Study for Pasco County, Florida.

7.2 COMPLIANCE WITH POLICIES AND ENGINEERING STANDARDS

The proposed build alternatives comply with all known requirements of the FDOT and FHWA for engineering and operational performance.

7.3 COORDINATION

The build alternatives include the six laning of I-75 and the four laning of S.R. 52, which are consistent with the Pasco County MPO 2020 Cost Affordable LRTP and the recently updated Comprehensive Plan, Traffic Circulation Element (June 2000). The improvements are also consistent with the District Seven FIHS Needs Plan, that identifies the need to six-lane the I-75 mainline and implement interchange improvements at I-75 and S.R. 52. A preliminary concept of the interchange loop ramp for the I-75 and S.R. 52 interchange was presented at a PD&E public workshop, in December 1997. The Revised Loop 3 Alternative was presented at a recent PD&E public hearing held on July 27, 2000.

7.4 SYSTEM PERFORMANCE

Measures of system wide performance were not determined as part of this IMR, however, the benefits of this project included the alleviation of congestion and improvement of safety and operational conditions at the interchange.

7.5 OPERATIONAL PERFORMANCE

An IEOA was conducted to evaluate anticipated operating conditions of the I-75 and S.R. 52 interchange for the four build alternatives as described in Section 6 of this report. Because the Revised Loop 3 Alternative does not significantly modify the geometry of the Loop 3 alternative exit and entrance ramp and the design traffic forecast for each alternative is identical, the results of the operational analyses for the Loop 3 alternative were assumed for the Revised Loop 3 Alternative.

According to the IRDRM, the operational analysis conducted for the IEOA consists of the following elements:

- Freeway Elements
- Ramp Elements
- Ramp Queue Analysis
- Weaving Areas
- Crossroad and Related Intersections

The IEOA was conducted according to the guidelines provided in Section 5.5.5 of the IRDRM. The Highway Capacity Software, Release 2.1d (HCS) based on the 1994 Highway Capacity Manual, Special Report 209 (HCM) was used for the analyses of the ramp and freeway elements. For the enhanced diamond alternative, the PASSER III-90 software was used to identify the LOS for the S.R. 52 arterial. TRANSYT-7F was used to conduct the crossroad signalized intersection analyses for the loop ramp alternatives. The results of the TRANSYT-7F analyses were entered into the HCS signalized module to determine level of service for each movement. TRANSYT-7F was also used to calculate queue lengths for the off-ramps and crossroad intersections. The

queue lengths derived from the TRANSYT-7F program were converted to 90 percentile queues for the ramp queue length analyses in accordance with the IRDRM.

The following measures of effectiveness (MOEs) were used to evaluate the operational performance of the individual elements:

- LOS as defined in the 1994 HCM Manual
- Effective deceleration length at the mainline ramp terminals, and
- Queue spill back effects onto crossroad ramp terminals from related intersections

As mentioned earlier the LOS standards vary for the roadways located in the area of influence. Since I-75 is designated FIHS, the operating standard for this type facility is maintenance of LOS C conditions, assuming the entire mainline is located in a transitioning urban area after the year 2000. The operating standard for a two-lane state road is LOS C.

The following subsections describe the assumptions and findings for the individual elements listed above. Figures identifying the proposed build alternative geometries are contained in Appendix A.

7.5.1 Freeway Elements

According to Section 5.5.5.3 of the IRDRM, the analysis of the freeway element includes evaluation of the following: 1) the basic freeway segments; 2) the ramp merge or diverge locations (e.g., ramp junctions); 3) and any other lane change along the freeway. Table 7-1 illustrates the results of the operational analyses for the northbound direction and Table 7-2 illustrates the results of the operational analysis for the southbound direction. Figure 4-2 provides a schematic of the interchange ramp system for reference purposes.

Table 7-1
Operational Analyses Results for the Build Alternatives
Northbound Direction

ELEMENT	FROM	TO	2008 Alternative				2028 Alternative			
			Enhanced Diamond	Loop Ramp 1	Loop Ramp 2	Loop Ramp & Revised Loop Ramp 3	Enhanced Diamond	Loop Ramp 1	Loop Ramp 2	Loop Ramp & Revised Loop Ramp 3
I-75 Freeway Segments										
I-75 Mainline	S. of Ramp A	Ramp A	B(C)	B(C)	B(C)	B(C)	C(D)	C(D)	C(D)	C(D)
I-75 Mainline	Ramp A	Ramp B	A(A)	A(A)	A(A)	A(A)	B(B)	B(B)	B(B)	B(B)
I-75 Mainline	N. of Ramp B		B(B)	B(B)	B(B)	B(B)	C(C)	C(C)	C(C)	C(C)
Freeway Ramp Terminals										
Off-Ramp A Diverge	I-75	SR 52	B(C)	B(C)	B(C)	B(C)	C(D)	C(D)	C(D)	C(D)
On-Ramp B Merge	SR 52	I-75	A(B)	A(B)	A(B)	A(B)	B(C)	B(B)	B(B)	B(B)
SR 52 Crossroad Ramp Terminals										
Off-Ramp A										
Northbound Left	I-75	SR 52 WB	C(C)	C(C)	C(C)	C(C)	D(D)	C(D)	C(C)	C(C)
Northbound Right	I-75	SR 52 EB	C(C)	C(C)	C(B)	C(C)	D(D)	B(B)	B(B)	B(B)
Eastbound Left	SR 52	I-75 NB	C(B)	A(C)	B(C)	B(C)	C(E)	C(D)	C(C)	C(C)
Eastbound Through	SR 52	SR 52 EB	A(A)	A(B)	B(B)	B(B)	A(A)	B(C)	B(C)	B(C)
Westbound Right	SR 52	I-75 NB	*	A(B)	B(B)	B(B)	*	B(D)	C(C)	C(C)
Westbound Through	SR 52	SR 52 WB	C(C)	B(B)	B(B)	B(B)	C(E)	C(D)	C(C)	C(C)

* Delay for these movements is not measured, as they are not stop controlled movements
A - LOS for A.M. Peak Hour
(A) - LOS for P.M. Peak Hour

Table 7-2
Operational Analyses Results for the Build Alternatives
Southbound Direction

ELEMENT	FROM	TO	2008 Alternative				2028 Alternative			
			Enhanced Diamond	Loop Ramp 1	Loop Ramp 2	Loop Ramp & Revised Loop Ramp 3	Enhanced Diamond	Loop Ramp 1	Loop Ramp 2	Loop Ramp & Revised Loop Ramp 3
I-75 Freeway Segments										
I-75 Mainline	N. of Ramp C	Ramp C	B(B)	B(B)	B(B)	B(B)	C(C)	C(C)	C(C)	C(C)
I-75 Mainline	Ramp C	Ramp D	A(B)	A(A)[1]	A(A)[1]	A(A)	B(B)	B(B)[1]	B(B)[1]	B(B)
			-	C(B)[2]	B(B)[2]	-	-	D(C)[2]	C(C)[2]	-
I-75 Mainline	S. of Ramp D		C(B)	C(B)	C(B)	C(B)	D(C)	D(C)	D(C)	D(C)
Freeway Ramp Terminals										
Off-Ramp C Diverge	I-75	SR 52	B(B)	B(B)	B(B)	B(B)	C(C)	C(C)	C(C)	C(C)
On-Ramp D Merge	SR 52	I-75	B(B)	-	B(B)	C(B)	C(C)	-	C(C)	D(C)
Loop On-Ramp E Merge	SR 52	I-75	-	C(B)	B(A)	-	-	D(C)	B(B)	-
SR 52 Crossroad Ramp Terminals										
Off-Ramp C										
Southbound Left	I-75	SR 52 EB	D(D)	D(C)	C(C)	C(C)	F(E)	D(D)	C(C)	C(C)
Southbound Right	I-75	SR 52 WB	D(D)	B(B)	B(B)	C(C)	F(E)	B(B)	C(C)	C(C)
Westbound Left	SR 52	I-75 SB	B(A)	-	-	-	E(C)	-	-	-
Westbound Through	SR 52	SR 52 WB	A(A)	B(B)	B(B)	B(B)	A(A)	D(C)	B(B)	B(B)
Eastbound Right	SR 52	I-75 SB	*	*	*	*	*	*	*	*
Eastbound Left	SR 52	I-75 SB	-	C(C)	-	-	-	D(D)	-	-
Eastbound Through	SR 52	SR 52 EB	C(C)	A(A)	A(A)	A(A)	E(D)	A(A)	A(A)	A(A)

* Delay for these movements is not measured, as they are not stop controlled movements
A - LOS for A.M. Peak Hour (A) - LOS for P.M. Peak Hour
(1) Ramp C to E (2) Ramp E to D

Analyses of Basic Freeway Segments

The HCS - Freeway Module was used to analyze operating conditions for basic freeway segments in the years 2001, 2008 and 2028. The capacity analyses were completed for the A.M. and P.M. peak hour using the peak hour volumes displayed in Figures 2-3 through 2-11. A review of Tables 7-1 and 7-2 indicates that all the mainline elements contained in the build alternatives operate at acceptable levels of service for the interim year 2008. However, in 2028, a few of the elements fail to operate at acceptable levels of service. For the I-75 mainline, a LOS D is projected for the interstate segment south of the interchange during the A.M. peak period. This is due to the high volumes on the link. Design traffic estimates provided by the District show an estimated AADT of 92,400 vehicles, which results in a peak direction hourly volume of 4580 vehicles. For a six lane interstate with a design speed of 70 mph, a maximum of 4450 vehicles in the peak direction is allowed for a LOS C. Based on the design traffic estimates, this segment of interstate should operate at LOS C until the year 2026. All of the Build alternatives were measured at LOS D south of the interchange. The HCS outputs are provided in Appendices O, P, Q, and R.

Analyses of Ramp Junctions

The assumptions and results of these analyses are provided in the following subsection.

7.5.2 Ramp Elements

According to Section 5.5.5.3 of the IRDRM, the analysis of the ramp elements includes evaluation of the following: 1) the ramp segments and the freeway ramp terminal (i.e., ramp junctions); and 2) the ramp terminals at the crossroad (i.e., signalized intersections at S.R. 52 and I-75 exit/entrance ramps). The following subsections describe the operational analyses for these ramp elements.

Analyses of Ramp Junctions

The HCS Ramps Module was used to analyze existing operating conditions of ramp junctions. The capacity analyses were completed for the A.M. and P.M. peak hours using the peak hour

volumes displayed in Figures 2-3 through 2-11. The results of the ramp junction analyses are shown in Tables 7-1 and 7-2. Review of the Tables reveals that all ramp junctions are operating above the FDOT LOS C standard for the year 2008. However, in the year 2028, the northbound off-ramp exhibits a LOS D for all build alternatives. This again is due to the estimated high volumes for the interstate south of the interchange in the northbound direction. These high interstate volumes yield a high number of exiting vehicles in the northbound direction during the A.M. peak period. In addition, the Loop 1 alternative exhibits a LOS D on the loop ramp during the A.M. peak period and the Loop 3 and Revised Loop 3 alternatives exhibit a LOS D for the southbound on-ramp during the A.M. peak period. Based on this analysis, it appears that the Loop 2 alternative is slightly more effective in accommodating anticipated travel demand. The HCS outputs for the ramp analyses are provided in Appendices O, P, Q, and R.

Analyses of Signalized Intersections at S.R. 52 and I-75 Entrance/Exit Ramps

PASSER III-90 was used to analyze the signalized operating conditions at the ramp termini for the Enhanced Diamond alternative. TRANSYT-7F, in combination with the HCS signalized intersection module was used to determine LOS for the Loop Ramp alternatives. The A.M. and P.M. peak hour turning movement volumes shown in Figures 2-3 through 2-11 were used for this analysis. The results of the analysis are summarized in Tables 7-1 and 7-2. The PASSER III-90, TRANSYT-7F and HCS outputs for the signalized intersection analyses are provided in Appendices O, P, Q, and R.

According to the FDOT Level of Service Manual, maintenance of LOS C is the standard for the S.R. 52 arterial and LOS C is the standard for the interstate components.

A review of the results reveals that the signalized intersections contained in the build alternatives operate satisfactorily for the interim year 2008 with the exception of the southbound off ramp for the Enhanced Diamond and Loop Ramp 1 Alternative. In the design year 2028, the Enhanced Diamond and Loop Ramp 1 alternatives exhibit a substandard LOS for the southbound and northbound exit ramp movements, in addition to the eastbound and westbound through and left movements. The remaining loop ramp alternatives operate satisfactorily.

7.5.3 Ramp Queue Analysis

Queue analyses were performed to determine the residual effective deceleration distance of the off-ramps for the build scenarios. Queue length calculations were performed using the TRANSYT-7F software. The results of the queue analyses (using the 90 percentile queues) for all the proposed alternatives are contained in Appendix N. These queue lengths were then used to determine the residual effective deceleration distance for the off-ramps. Tables 7-3 and 7-4 illustrate the results of the ramp analyses.

Table 7-3
Year 2008
Effective Deceleration Distance

Off Ramp	Mainline Design Speed (mph)	Ramp Design Speed (mph)				Residual Effective Deceleration Distance (% of AASHTO minimum)*			
		Enhanced Diamond	Loop 1	Loop 2	Loop 3 and Revised Loop 3	Enhanced Diamond	Loop 1	Loop 2	Loop 3 and Revised Loop 3
A	70	45	45	45	45	239%	240%	240%	236%
90 Percentile Queues (feet)						400	425	425	450
C	70	45	45	45	45	233%	330%	317%	322%
90 Percentile Queues (feet)						300	250	300	300

* AASHTO minimum for this design speed under stopped conditions is 615 feet.

Table 7-4
Year 2028
Effective Deceleration Distance

Off Ramp	Mainline Design Speed (mph)	Ramp Design Speed (mph)				Residual Effective Deceleration Distance (% of AASHTO minimum)*			
		Enhanced Diamond	Loop 1	Loop 2	Loop 3 and Revised Loop 3	Enhanced Diamond	Loop 1	Loop 2	Loop 3 and Revised Loop 3
A	70	45	45	45	45	202%	220%	216%	212%
90 Percentile Queues (feet)						625	550	575	600
C	70	45	45	45	45	87%	281%	292%	289%
90 Percentile Queues (feet)						1200	550	450	500

* AASHTO minimum for this design speed under stopped conditions is 615 feet.

As illustrated in Tables 7-3 and 7-4, the build alternatives exhibit residual effective deceleration distances above the required minimum American Association of State Highway and Transportation Officials (AASHTO) standards for the years 2008 and 2028, with the exception of the Enhanced Diamond alternative. Ramp C, the I-75 southbound off-ramp, for this alternative falls short of the required standards by 7% in the year 2028.

7.5.4 Weaving Areas

No weaving areas exist on the I-75 mainline within the area of influence.

7.5.5 Crossroad and Related Intersections

Level of Service

The area of influence for the IMR includes the unsignalized intersection at S.R. 52 and Old Tampa Bay Drive. The HCS unsignalized intersection module was used to evaluate the build operating conditions at this intersection for the years 2008 and 2028. The build conditions assume the four laning of S.R. 52 at this location. The unsignalized intersection analysis was performed only once as a general build alternative, as the design traffic estimated at the Old Tampa Bay Drive intersection is the same for each build alternative.

The results of the analysis are provided in Table 7-5. The analysis revealed that, overall, the intersection of S.R. 52 and Old Tampa Bay Drive operates at LOS A during the A.M. and P.M. peak hours through the years 2008. During the design year 2028, the intersection operates at LOS B during the A.M. peak period and LOS F during the P.M peak period. However, the northbound left turn movement fails during both the 2008 and 2028 design years. The HCS outputs are provided in Appendix O.

Table 7-5
S.R. 52/ Old Tampa Bay Road Unsignalized Intersection Build HCS Analyses

Approach	Lane Group	2008				2028			
		A.M. Peak		P.M. Peak		A.M. Peak		P.M. Peak	
		Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS
S.R. 52 and Old Tampa Bay Drive									
NB	Left	57.1	F	65.0	F	*	F	*	F
	Right	5.0	B	4.3	A	7.1	B	6.9	B
WB	Left	8.3	B	5.5	B	21.3	D	15.3	C
OVERALL		1.2	A	1.6	A	11.8	B	65.9	F

Note:
a Delay is average total delay in seconds per entering vehicle
b Delay is greater than 999.9 seconds

7.5.6 Intersection Queue Analysis

Queue analyses were also performed for the build alternative crossroad intersections. These analyses are required to determine if the intersection queues along S.R. 52 spill back into the upstream signalized intersections, potentially affecting the operations of the interstate ramps. These analyses were performed using the average queues as specified in the IRDRM. The average queue analyses for each alternative is presented in Appendix N of this report. The results of the arterial average queue analysis are illustrated in Table 7-6 and 7-7.

Table 7-6
2008 Arterial Intersection Queue Length Analysis

Approach	Movement	2008 A.M. Peak Hour						2008 P.M. Peak Hour				
		# of Lanes	Queue Length		Distance between intersections		Spill Back	Queue Length		Distance between intersections		Spill Back
			Feet	Meters	Feet	Meters		Feet	Meters	Feet	Meters	
Enhanced Diamond												
SR 52 WB	Thru	2	25	8	538	164	NO	38	11	538	164	NO
to SB I-75	Left	2	200	61	538	164	NO	138	42	538	164	NO
SR 52 EB to	Thru[c]	2	50	15	538	164	NO	25	8	538	164	NO
NB I-75	Left	1	50	15	538	164	NO	75	23	538	164	NO
Loop 1												
SR 52 EB to	Thru	2	38	11	906	276	NO	38	11	906	276	NO
SB I-75	Left	1	125	38	906	276	NO	50	15	906	276	NO
SR 52 WB	Thru[c]	2	25	8	1516	462	NO	25	8	1516	462	NO
to SBI-75	Right	1	175	53	1516	462	NO	125	38	1516	462	NO
SR 52 EB to	Thru	2	38	11	1516	462	NO	38	11	1516	462	NO
NB I-75	Left	1	50	15	1516	462	NO	50	15	1516	462	NO
Loop 2												
SR 52 WB	Thru[c]	2	25	8	906	276	NO	25	8	906	276	NO
to SB I-75	Right	1	150	46	906	276	NO	125	38	906	276	NO
SR 52 EB to	Thru	2	63	19	1246	380	NO	63	19	1246	380	NO
NB I-75	Left	1	50	15	1246	380	NO	50	15	1246	380	NO
Loop 3 and Revised Loop 3												
SR 52 WB	Thru[c]	2	25	8	906	276	NO	25	8	906	276	NO
to SB I-75	Right	1	200	61	906	276	NO	125	38	906	276	NO
SR 52 EB to	Thru	2	50	15	1246	380	NO	63	19	1246	380	NO
NB I-75	Left	1	50	15	1246	380	NO	75	23	1246	380	NO

c No queue reported; therefore, assumed minimum queue of one (1) vehicle at 25 feet per vehicle.

Table 7-7
2028 Arterial Intersection Queue Length Analysis

Approach	Movement	2028 A.M. Peak Hour						2028 P.M. Peak Hour					
		# of Lanes	Queue Length		Distance between intersections		Spill Back	Queue Length		Distance between intersections		Spill Back
			Feet	Meters	Feet	Meters		Feet	Meters	Feet	Meters	
Enhanced Diamond												
SR 52 WB to SB I-75	Thru	2	88	27	538	164	NO	88	27	538	164	NO
	Left	2	500	152	538	164	NO	300	91	538	164	NO
SR 52 EB to NB I-75	Thru	2	163	50	538	164	NO	100	30	538	164	NO
	Left	1	150	46	538	164	NO	125	38	538	164	NO
Loop 1												
SR 52 EB to SB I-75	Thru	2	50	15	906	276	NO	38	11	906	276	NO
	Left	1	475	145	906	276	NO	950	290	906	276	YES
SR 52 WB to SB I-75	Thru[c]	2	25	8	1516	462	NO	25	8	1516	462	NO
	Right	1	250	76	1516	462	NO	50	15	1516	462	NO
SR 52 EB to NB I-75	Thru	2	75	23	1516	462	NO	88	27	1516	462	NO
	Left	1	225	69	1516	462	NO	225	69	1516	462	NO
Loop 2												
SR 52 WB to SB I-75	Thru[c]	2	25	8	906	276	NO	25	8	906	276	NO
	Right	1	250	76	906	276	NO	100	30	906	276	NO
SR 52 EB to NB I-75	Thru	2	138	42	1246	380	NO	375	114	1246	380	NO
	Left	1	200	61	1246	380	NO	375	114	1246	380	NO
Loop 3 and Revised Loop 3												
SR 52 WB to SB I-75	Thru[c]	2	25	8	906	276	NO	25	8	906	276	NO
	Right	1	250	76	906	276	NO	200	61	906	276	NO
SR 52 EB to NB I-75	Thru	2	125	38	1246	380	NO	113	34	1246	380	NO
	Left	1	225	69	1246	380	NO	325	99	1246	380	NO

c No queue reported; therefore, assumed minimum queue of one (1) vehicle at 25 feet per vehicle.

The results of the arterial analyses indicate that none of the queue lengths for the Build Alternatives are projected to spill back into the upstream intersections during the interim and design years 2008 and 2028, with the exception of the Loop Ramp 1 Alternative. The eastbound left turn movement spills back to Old Tampa Bay Drive.

Table 7-8 provides a summary of the operational analyses for the build alternatives. Based upon the results of the operational analyses and the previously identified measures of effectiveness for the individual elements, the Enhanced Diamond and Loop 1 alternative are projected to operate the least effectively. A comparison of the Loop 2, Loop 3, and Revised Loop 3 alternatives reveals that the Loop 2 alternative operates the most effectively, with only one less deficient movement.

Table 7-8
Build Alternatives Operational Analysis Summary
For Design Year 2028

Measure of Effectiveness	Enhanced Diamond	Loop Ramp 1	Loop Ramp 2	Loop Ramp and Revised Loop Ramp 3
Mainline:				
Number of Segments below LOS C	2	3	2	2
Number of Segments below LOS D	0	0	0	0
Ramps:				
Number of Merges and Diverges below LOS C	1	2	1	2
Number of off-ramps w/ substandard deceleration distances	1	0	0	0
Number of crossroad terminal intersection movements below LOS C	4	2	0	0
Crossroads:				
Number of crossroad movements below LOS C	4	5	0	0
Number of intersections with movements below LOS C	1	1	1	1

7.6 ENVIRONMENTAL IMPACTS

Existing potential environmental impacts were previously discussed in Section 3.5 of this report. This section identified minor potential wetland impacts along with potential hazardous material and petroleum contamination sites. No cultural, archeological, noise sensitive sites, or community sites were identified within the area of influence. In addition, the area exhibited no presence of threatened or endangered species or navigable waterways. The study interchange is currently located within an air quality attainment area.

As part of the alternatives evaluation process, the environmental impacts for each alternative were evaluated based upon a three point rating scale. The identified scale assigns the following points to the associated impacts:

Three Point Rating Scale
0 - No Effect
1 - Minimal Effect
2 - Known Effect

The alternatives with the highest scores exhibited the most potential environmental effects, while those with the lowest ranking exhibited the least amount of potential environmental effects. Table 7-9 illustrates the results of the environmental and cultural analysis.

Table 7-9
Environmental and Cultural Impacts

	No-Build	No-Build w/ TSM	Enhanced Diamond	Loop Alt. 1	Loop Alt. 2	Loop Alt. 3	Revised Loop Alt. 3
Air Quality	2	1	0	0	0	0	0
Contamination	0	0	2	2	2	2	2
Navigation	-	-	-	-	-		-
Wetlands	0	0	2	2	1	2	1
Public Lands	-	-	-	-	-	-	-
Noise Sensitive Sites	-	-	-	-	-	-	-
Historical or Archaeological Sites	-	-	-	-	-	-	-
Impact to Residents	0	0	0	2	1	1	-
Total	**2**	**1**	**4**	**6**	**4**	**5**	**3**

- Denotes where no effects were identified

A review of Table 7-9 reveals that the no-build alternatives are the least environmentally disruptive alternatives. The Revised Loop Ramp 3 alternative is the least environmentally disruptive of the four (4) build alternatives, as the right-of-way has been reduced due to modifications in the loop ramp design. Loop Ramp alternatives 1 and 3 were determined to have a greater potential of negatively impacting the surrounding environmental area, as they require more right-of-way to build the proposed geometric improvements.

7.7 SAFETY

As presented in Section 3.4 of this report, the existing crash data revealed that the interstate mainline and crossroad intersections exhibit a relatively high number of crashes, as indicated by the high safety ratios.

The lengthening and widening of the interchange ramps will reduce ramp queuing and alleviate the occurrence of rear-end crashes. The recent signalization of the ramp termini will assist in reducing the number of angular accidents occurring along S.R. 52. The implementation of the loop ramp alternative will assist in reducing the large number of left turn accidents by eliminating the westbound to southbound left turn movement. This movement was observed to be difficult for the large amount of heavy vehicles exiting the Flying J Plaza and weaving into the existing congested traffic to access the westbound left turn lane. The implementation of the build loop ramp alternatives will serve to improve safety conditions at the interchange.

7.8 ACHIEVEMENT OF APPLICANTS OBJECTIVES

As outlined in Section 1 of this report, the purpose of this IMR is to recommend a preferred alternative that achieves the following objectives:

1. Improves existing operational conditions at the interchange and on the mainline;
2. Improves safety conditions at the interchange and on the mainline;
3. Accommodates future travel demand at an acceptable level of service on both the arterial and interstate components;
4. Provides a cost affordable alternative with minimal negative impacts to the surrounding environment; and,

5. Does not degrade the operational conditions along the interstate mainline or ramps.

This document has presented evidence that the no-build alternatives are not sufficient in achieving the specified traffic operational or safety objectives. These interchange alternatives do, however, serve as cost affordable alternatives that do not negatively impact the surrounding environment.

Of the build alternatives, the enhanced diamond and Loop 1 alternative were determined to be the least effective in improving operational conditions along the mainline and crossroad. These alternatives also contributed to the degradation of the interstate components. Although the enhanced diamond alternative is cost effective and does not negatively impact the surrounding environment to the degree that the loop ramp alternatives do, it does not improve the safety conditions at the interchange or serve to improve operational conditions along the interstate mainline.

The Loop Ramp 2, Loop Ramp 3 and Revised Loop Ramp 3 alternatives were found to effectively accommodate the projected travel demand at the interchange for the design year and are not anticipated to degrade the interstate operations. With regards to cost feasibility and environmental impacts, the Revised Loop 3 alternative was found to be the most feasible and the least disruptive to the surrounding environment compared with the other loop ramp alternatives.

ACCESS MANAGEMENT

FDOT access management guidelines stipulate that the limited access ROW for rural interchanges will extend to a point 295 ft. from the end of the acceleration or deceleration taper. If the points are not opposite each other along the cross road, the point furthest from the interchange will serve as the control point and the limited access ROW on both sides of the cross road will extend to that point. Each of the proposed build alternatives has been designed in accordance with this regulation, as illustrated in the build alternative design drawings contained in Appendix A.

Other applicable FDOT access management regulations include those that regulate median openings at interchanges. In order to minimize potential conflicts with interchange traffic movements, median opening locations along the cross road shall be a minimum of ¼ mile (1320 ft.) from the end of the taper of the exit ramp. FDOT access management guidelines also address the placement of driveways along the crossroad, where, driveway locations shall not be within the influence of an exclusive right turn lane.

A review of the study build alternatives reveals that the Enhanced Diamond alternative meets the access management criteria, with the exception of the Flying J Travel Plaza driveway located on the southeast side of the property. This driveway is primarily used for heavy vehicle (trucks) and is situated in the taper of the westbound to northbound right turn lane. The location of this driveway may create traffic conflicts between vehicles exiting or entering the truck plaza and those accessing the interstate in the northbound direction. Because the Flying J Travel Plaza has a second driveway located further east along the property, which will be served by a full median opening, it is recommended that the west driveway be closed for safety reasons and the east driveway remain open for heavy vehicles and passenger cars. A full median opening is not recommended for the Texaco Station located in the southwest quadrant of the interchange, due to the location of the ramp and distance from the interchange ramp(s).

The Loop Ramp 1 alternative also meets the access management guidelines with the exception of the Flying J Travel Plaza driveway located in the taper of the westbound to northbound right turn lane. This scenario would also require the closure of the west driveway. In addition, a full median opening was added at the Loop Ramp terminus with S.R. 52. This median opening includes an eastbound to southbound left turn lane for vehicles entering the loop ramp. It also allows exiting vehicles access to S. R. 52 in the eastbound direction. In order to avoid conflict with vehicles exiting and entering the interstate, it was recommended that the existing Old Tampa Bay Drive be relocated approximately 900 ft. to the west. This relocation will meet median opening spacing standards for interchanges. A full median opening is not recommended for the Texaco Station located in the southwest quadrant of the interchange due to the ramp location, and for safety reasons. An access road or other solutions will be explored in the design phase.

The Loop Ramp 2 alternative also meets the access management guidelines with the exception of the Flying J Travel Plaza driveway located in the taper of the westbound to northbound right turn lane. This scenario would also require the closure of the west driveway. To comply with minimum median opening spacing criteria, Old Tampa Bay Drive is recommended to be relocated approximately 900 ft. to the west.

The Loop Ramp 3 alternative also meets the access management guidelines with the exception of the Flying J Travel Plaza driveway located in the taper of the westbound to northbound right turn lane. This scenario would also require the closure of the west driveway. In addition, a full median opening was added at the loop ramp terminus with S.R. 52. This median provides direct access from the southbound interstate exit ramp to S.R. 52 in the eastbound direction. FDOT will maintain control of access along S.R. 52 within the identified limited access ROW. Final access determination to adjacent properties will be identified in the design stage of the project, however, the I-75 PD&E Public Hearing conducted on July 27, 2000 identified the Texaco property as a potential total take. To comply with minimum median opening spacing criteria, Old Tampa Bay Drive is recommended to be relocated approximately 900 ft. to the west.

The Revised Loop Ramp 3 alternative was modified to combine the interstate southbound loop ramp and mainline structures and narrow the distance between the interstate mainline northbound exit and entrance ramps. These modifications cause the westbound to northbound right turn lane to shift further west, thus alleviating the impacts to the Flying J Travel Plaza west driveway. This shift allows the driveway to remain operational. In addition, a full median opening was added at the loop ramp terminus with S.R. 52. This median provides direct access from the southbound interstate exit ramp to S.R. 52 in the eastbound direction. FDOT will maintain control of access along S.R. 52 within the identified limited access ROW. Final access determination to adjacent properties will be identified in the design stage of the project, however, the I-75 PD&E Public Hearing conducted on July 27, 2000 identified the Texaco property as a potential total take. To comply with minimum median opening spacing criteria, Old Tampa Bay Drive is recommended to be relocated approximately 900 ft. to the west. The Revised Loop Ramp 3 alternative presents the best case access management scenario of the build alternatives.

7.10 ALTERNATIVES COMPARISON

Table 7- 10 provides a summary of the build alternative analyses findings presented in this IMR document. The evaluation matrix illustrates that all build alternatives are consistent with the Master Plan, FDOT policies and standards, and FHWA requirements. The Loop Ramp 2 Alternative is slightly better in satisfying the traffic operational criteria, however, the Loop 3 and Revised Loop Ramp 3 alternatives also satisfy the criteria and can adequately accommodate future travel demand at the interchange. All of the loop ramp alternatives will provide safe travel conditions along the mainline interstate and for heavy vehicles exiting and entering the interchange. The Revised Loop Ramp 3 Alternative is the most cost effective alternative and is less disruptive to the surrounding environment because it requires the least amount of ROW of the loop alternatives. Revised Loop Ramp 3 also provides the best access management scenario, in that access to adjacent properties is not significantly affected.

Table 7-10
Alternatives Comparison Matrix

Criteria	Enhanced Diamond	Loop Ramp 1	Loop Ramp 2	Loop Ramp 3	Revised Loop Ramp 3
Conformance with Master Plan and FDOT Policies and Standards	Yes	Yes	Yes	Yes	Yes
Compliance with FHWA Requirements	Yes	Yes	Yes	Yes	Yes
Traffic Operational Performance (See Table 7-8)	Fair	Fair	Good	Good	Good
Environmental (See Table 7-9)					
Air Quality	No	No	No	No	No
Potential Contamination Sites	3	3	3	3	2
Noise Sites	No	No	No	No	No
Navigation	No	No	No	No	No
Wetlands	3	2	3	3	3
Public Lands	No	No	No	No	No
Historical or Archaeological Sites	No	No	No	No	No
Impact to Residents	No	Yes	No	No	No
Achievement of Applicants Objectives	Partial	Partial	Full	Full	Full
Project Costs	$18,060,764	$37,387,331	$36,842,112	$38,421,664	$33,899,164

7.11 VIABLE ALTERNATIVES

Based upon the information presented in the alternative evaluation matrix, the Revised Loop Ramp 3, build alternative has been determined to be the most viable alternative for the I-75 and S.R. 52 IMR. This alternative satisfies the objectives of the IMR, is consistent with all local, state and federal standards and requirements, meets all engineering and operational standards for the interchange and interstate mainline and is cost affordable. This Revised Loop Ramp 3 alternative is selected as the recommended alternative and is recommended for further funding and implementation.

SECTION 8
FUNDING PLAN

The funding for this project is identified in the 2020 FIHS Cost Feasible Plan between the years 2010 and 2020. The District will be pursuing options to advance the project into the early stages of the time frame.

SECTION 9
RECOMMENDATIONS

The Revised Loop Ramp 3 Alternative was recommended as most cost effective alternative which meets the objectives of the IMR. This alternative accommodates future travel demand, maintains an acceptable level of service, and by eliminating the need for an additional interstate access location, does not degrade the operations of the interstate mainline. Queuing on the northbound exit ramp will also be reduced and the implementation of the Revised Loop Ramp 3 improvements will improve safety along the interstate mainline. This alternative provides safe operational conditions for heavy vehicles accessing adjacent land uses and eliminates the congested westbound to southbound movement, while providing easy access to the southbound interstate for heavy vehicles. The Revised Loop Ramp 3 alternative requires the least amount of ROW of the loop ramp alternatives and thus, is the least expensive alternative and has the least potential of impacting the surrounding environment. It provides sufficient access to adjacent properties and improves traffic operations for the local cross street and cross street intersections.

It is recommended that the Revised Loop Ramp Alternative 3 be incorporated in to the on-going PD&E study. Opportunities for advanced funding for the mainline and interchange improvements will continue to be explored.

SECTION 10
REFERENCES

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6. Highway Capacity Manual, Special Report 209, Third Edition; Transportation Research Board; Washington, DC; 1994.

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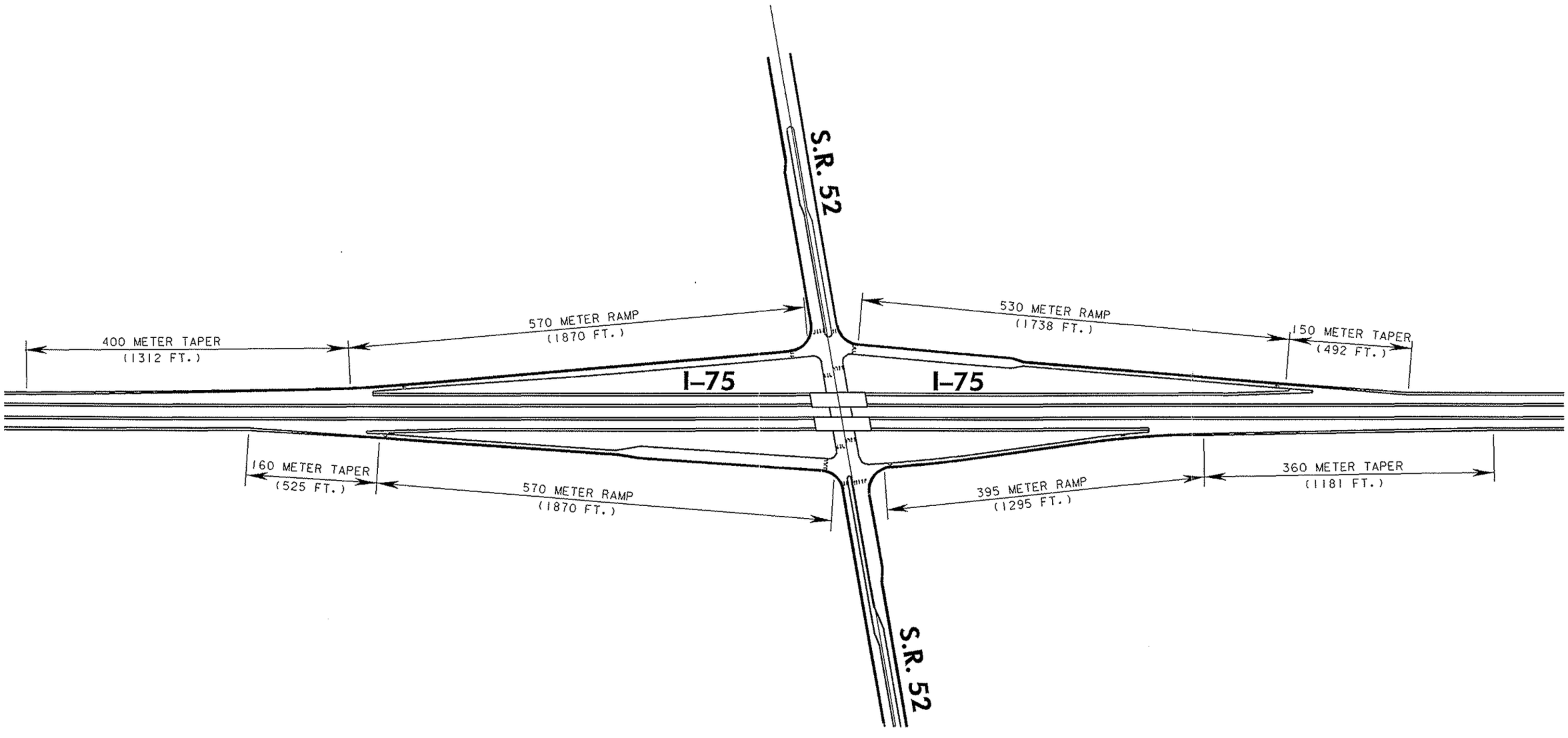
9. Preliminary Engineering Report 2nd Draft; PD&E Study I-75 (S.R. 93 from South of S.R. 56 to North of S.R. 52, Pasco County; Prepared by PBS&J, Inc.; Tampa, FL; April 1999.

10. 1998 Florida Traffic Information Compact Disk; Florida Department of Transportation; Transportation Statistics Office; Tallahassee, FL.

WPI SEGMENT NO.	SHEET NO
258736 1	



RAMP DISTANCES AND WEAVING SECTION LENGTHS

ENHANCED DIAMOND INTERCHANGE

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

PBSJ
POST, BUCKLEY, SCHUH & JERNIGAN INC.
ENGINEERING, PLANNING & SURVEYING
5300 W. CYPRESS STREET, SUITE 300
TAMPA, FLORIDA 33607-1706

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

10-OCT-2000 16:36
q:\projects\I75\figure13.dgn

WPI SEGMENT NO.	SHEET NO
258736 1	26A

OLD TAMPA BAY DRIVE

S.R. 52

WAFFLE HOUSE

ENHANCED DIAMOND INTERCHANGE ALTERNATIVE

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

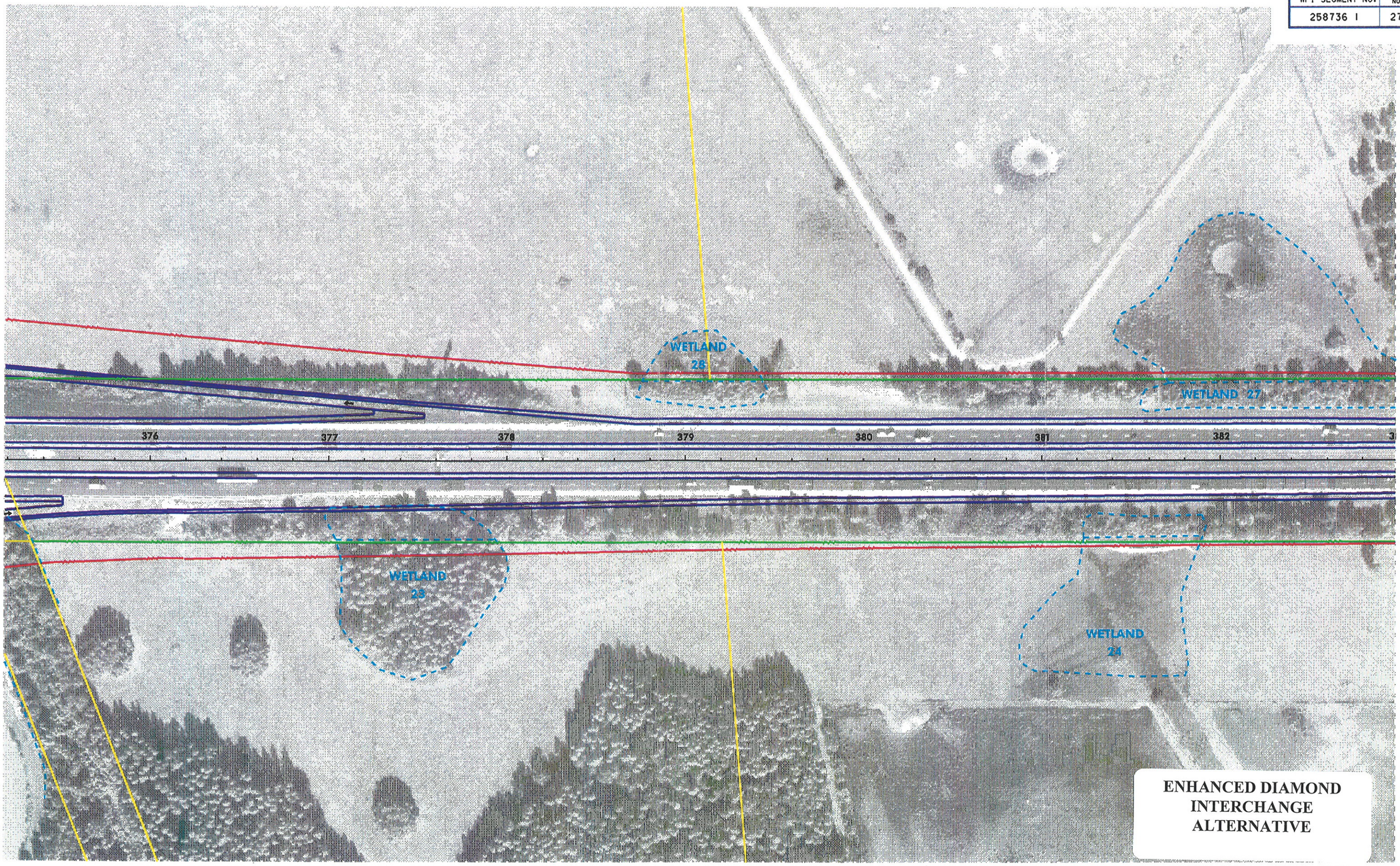
PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

10-OCT-2000 16:02
q:\projects\175\fig9d.dgn

WPI SEGMENT NO.	SHEET NO
258736 1	27



ENHANCED DIAMOND INTERCHANGE ALTERNATIVE

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

10-OCT-2000 16:01
q:\projects\175\fig9c.dgn

WPI SEGMENT NO.	SHEET NO
258736 1	26A

OLD TAMPA BAY DRIVE

S.R. 52

WAFFLE HOUSE

ENHANCED DIAMOND INTERCHANGE ALTERNATIVE

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

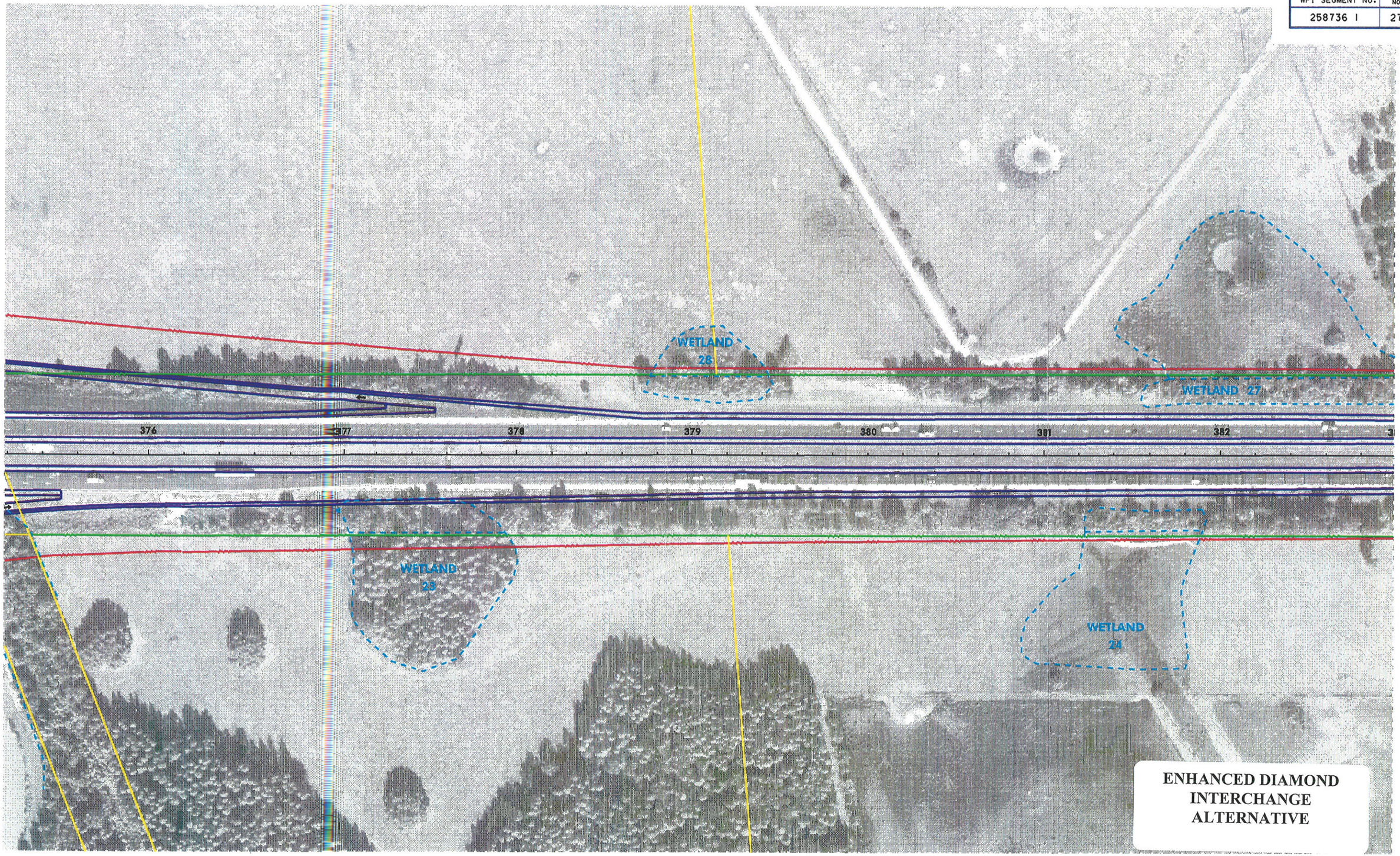
PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

10-OCT-2000 16:02
d:\projects\175\flg9d.dgn

WPI SEGMENT NO.	SHEET NO
258736 1	27



ENHANCED DIAMOND INTERCHANGE ALTERNATIVE

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

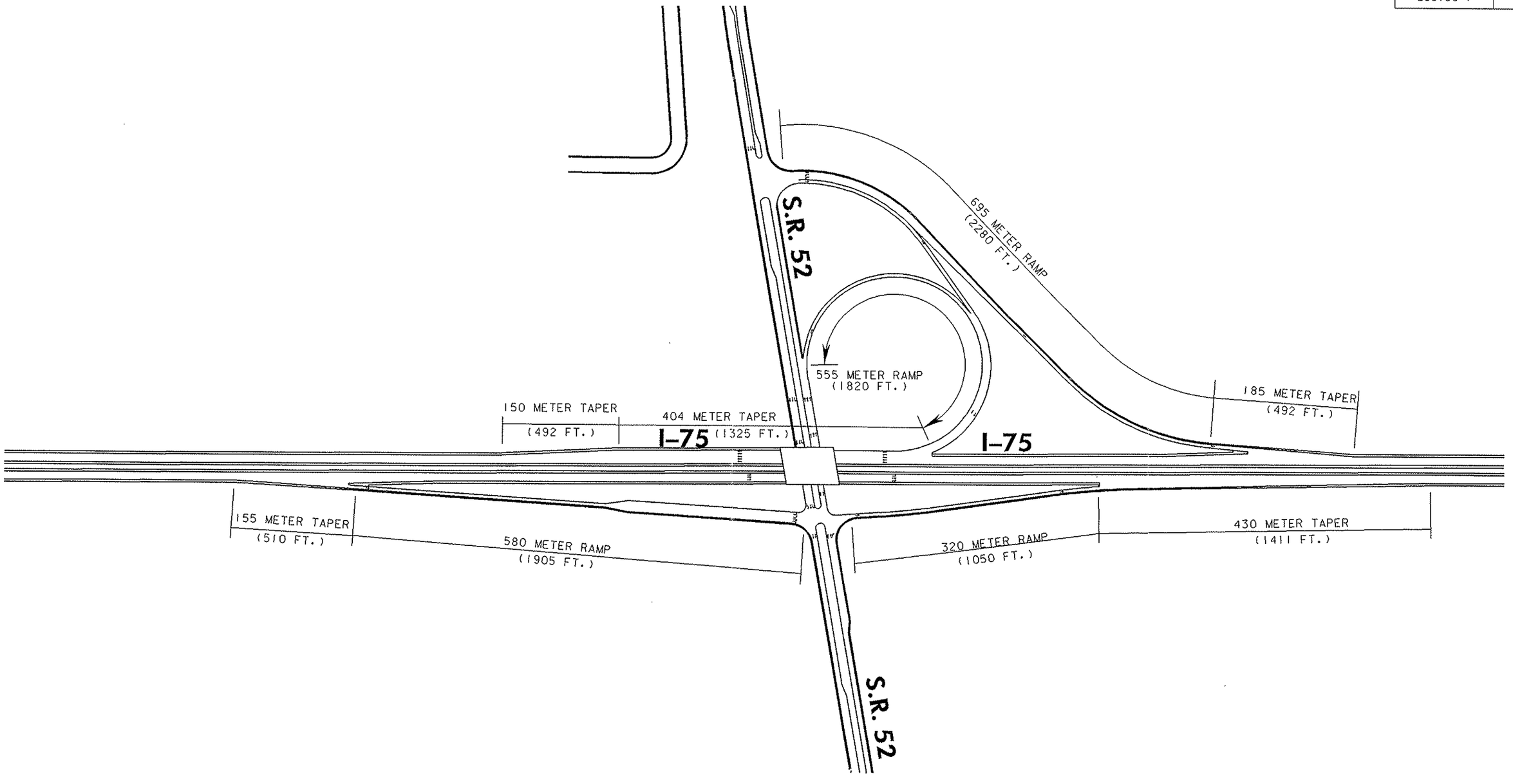
PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

10-OCT-2000 16:01
d:\projects\175\fig9c.dgn

WPI SEGMENT NO.	SHEET NO
258736 1	



RAMP DISTANCES AND WEAVING SECTION LENGTHS

LOOP RAMP ALTERNATIVE 1

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

PBSJ
POST, BUCKLEY, SCHUH & JERNIGAN INC.
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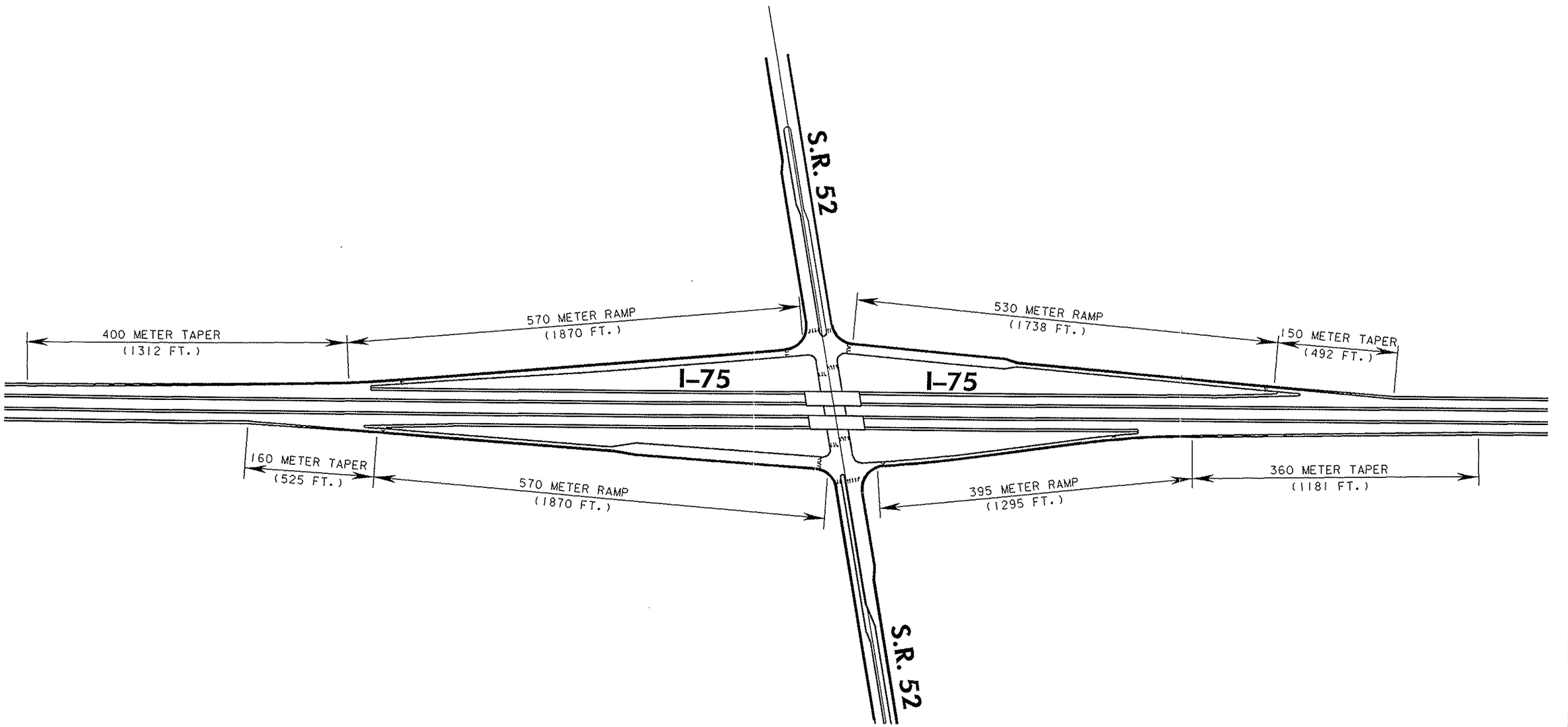
TAMPA, FLORIDA 33607-1656

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

10-OCT-2000 16:36
q:\projects\175\figure14.dgn

WPI SEGMENT NO.	SHEET NO
258736 1	



RAMP DISTANCES AND WEAVING SECTION LENGTHS

ENHANCED DIAMOND INTERCHANGE

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

PBSJ
POST, BUCKLEY, SCHUH & JERNIGAN INC.
ENGINEERING, PLANNING & SURVEYING
5300 W. CYPRESS STREET, SUITE 300
TAMPA, FLORIDA 33607-1606

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

10-OCT-2000 16:36
d:\projects\175\figure13.dgn

WPI SEGMENT NO.	SHEET NO
258736 1	25

TAMPA BAY
GOLF AND TENNIS

WETLAND 31

361 362 363 364 365 366 367

WETLAND
20

WETLAND
21

ENHANCED DIAMOND INTERCHANGE ALTERNATIVE

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

10-OCT-2000 15:54
g:\projects\175\fig9a.dgn

WPI SEGMENT NO.	SHEET NO
258736 1	26

TEXACO

P10

TAMPA BAY GOLF AND TENNIS

TEXACO TRUCK STOP

WETLAND 30

S.R. 52

SUN RV SUPERSTORE

P11

P9

WETLAND 29

EXISTING BRIDGES TO BE REMOVED

ABANDONED RAILROAD

368 369 370 371 372 373 374 375

FULL REPLACEMENT BRIDGE

SUNCOAST FACTORY SHOPS LIMITED PARTNERSHIP (PROPOSED)

WETLAND 32

WETLAND 22A

P8

FLYING "J" TRAVEL PLAZA

ENHANCED DIAMOND INTERCHANGE ALTERNATIVE

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

10-OCT-2000 15:59
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WPI SEGMENT NO.	SHEET NO
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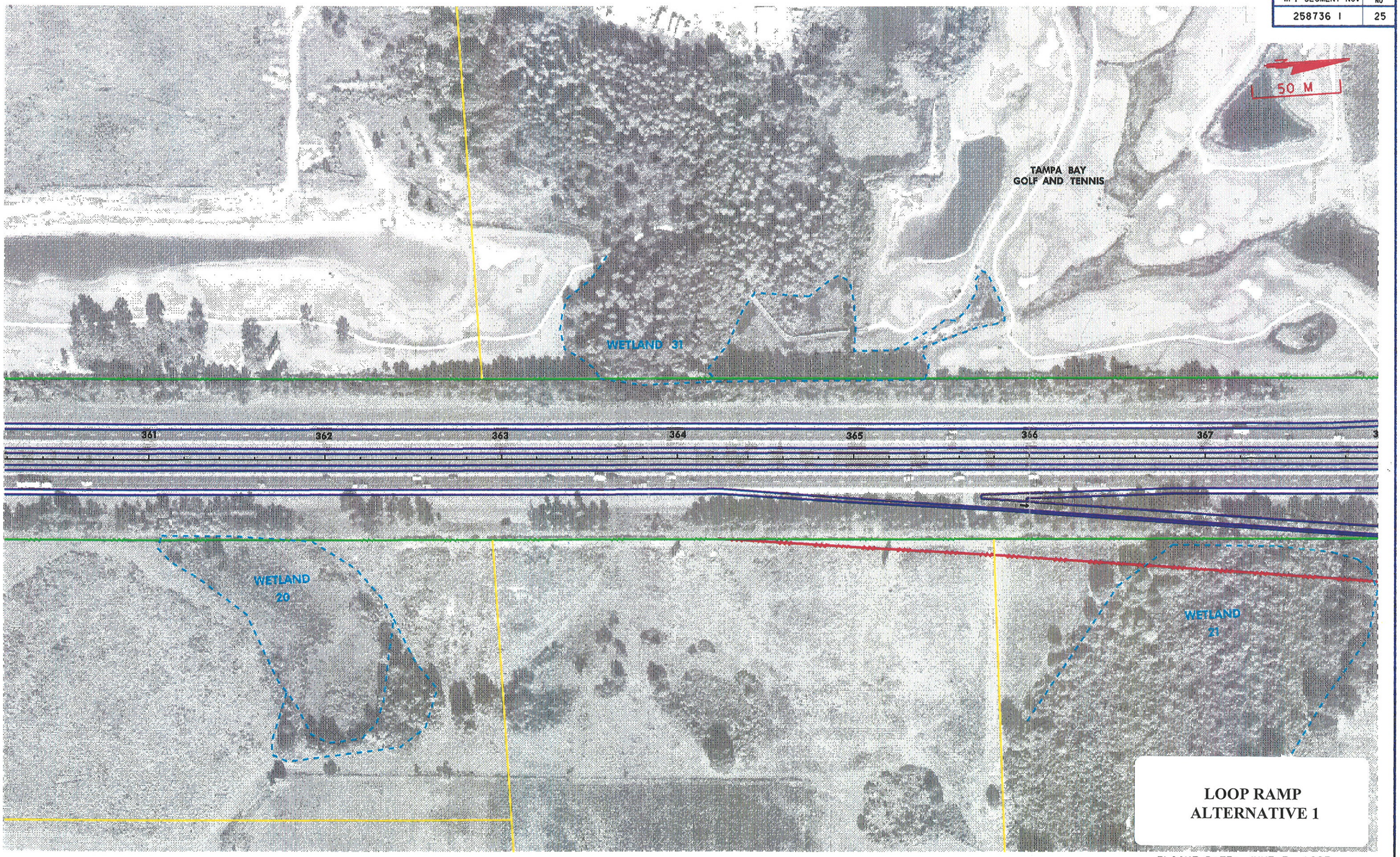


LOOP RAMP ALTERNATIVE 1

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

07-AUG-2000 08:54
d:\projects\I75\FIG10A.DGN

WPI SEGMENT NO.	SHEET NO
258736 1	26

50 M

TEXACO

S.R. 52

SUN RV SUPERSTORE

ABANDONED RAILROAD

TAMPA BAY GOLF AND TENNIS

TEXACO TRUCK STOP

WETLAND 30

WETLAND 29

EXISTING BRIDGES TO BE REMOVED

368 369 370 371 372 373 374 375

FULL REPLACEMENT BRIDGE

WETLAND 22

WETLAND 22A

ABANDONED RAILROAD

SUNCOAST FACTORY SHOPS LIMITED PARTNERSHIP (PROPOSED)

FLYING "J" TRAVEL PLAZA

END PROPOSED LIMITED ACCESS RIGHT OF WAY

END PROPOSED LIMITED ACCESS RIGHT OF WAY

S.R. 52

LOOP RAMP ALTERNATIVE 1

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

07-AUG-2000 12:21
d:\projects\175\FIG108.DGN

WPI SEGMENT NO.	SHEET NO
258736 1	26A

50 M

OLD TAMPA BAY DRIVE

END PROPOSED LIMITED ACCESS RIGHT OF WAY

END PROPOSED LIMITED ACCESS RIGHT OF WAY

S.R. 52

WAFFLE HOUSE

LOOP RAMP ALTERNATIVE 1

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

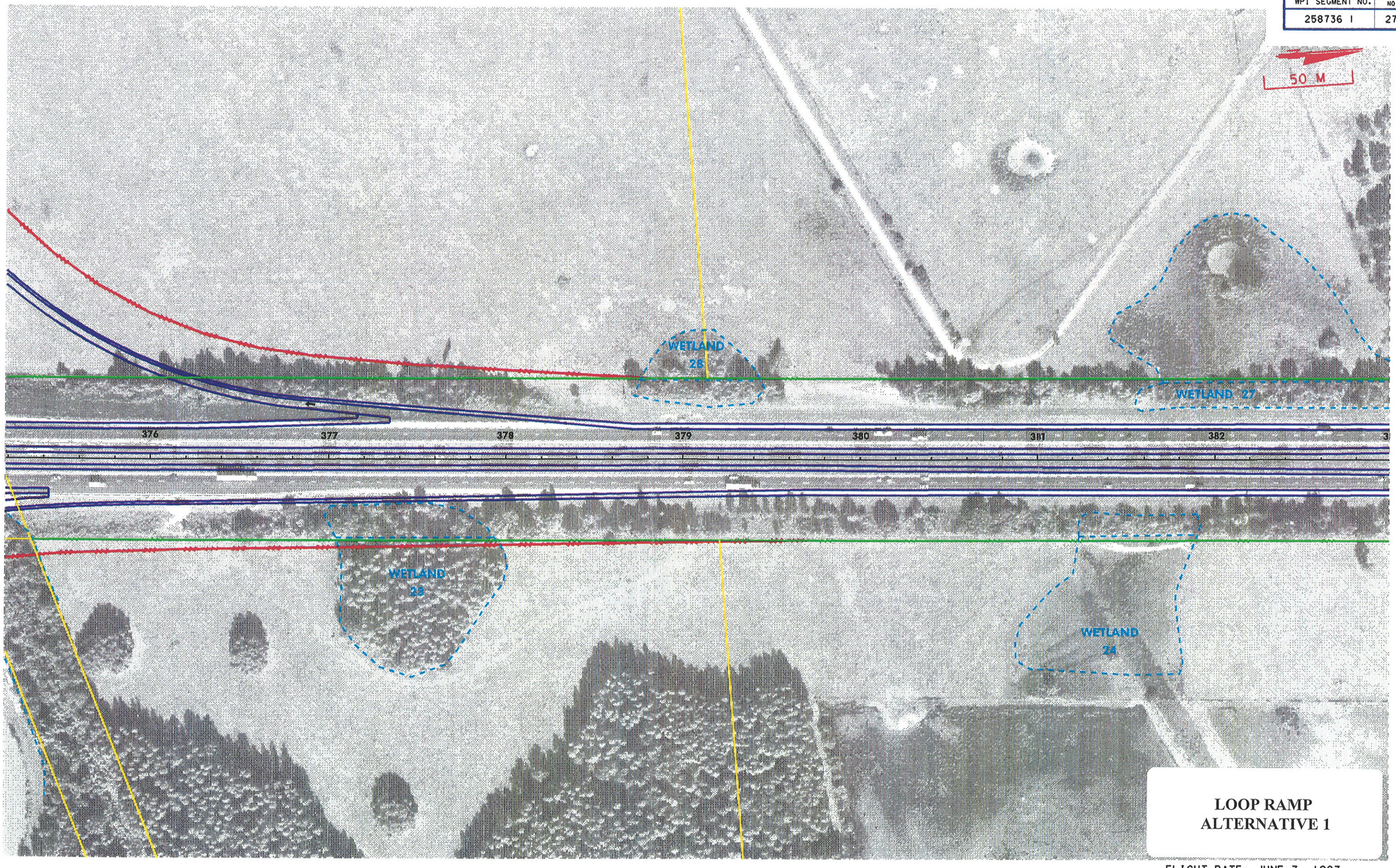
PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

07-AUG-2000 09:58
d:\projects\I75\FIG10D.DGN

WPI SEGMENT NO.	SHEET NO
258736 1	27



LOOP RAMP ALTERNATIVE 1

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

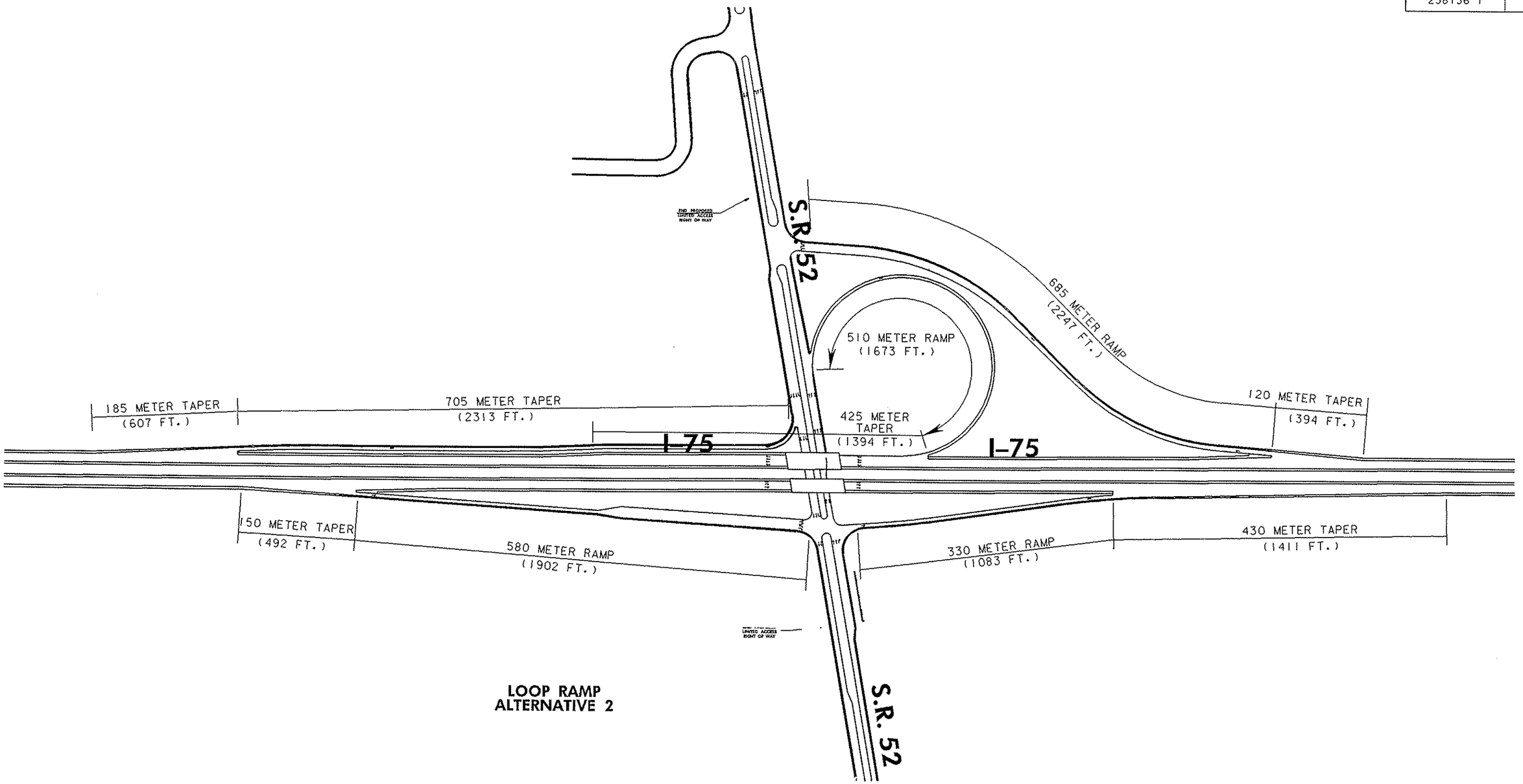
PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

07-AUG-2000 09:22
s:\projects\175\FIG10C.DGN

WPI SEGMENT NO.	SHEET NO
258736 1	



LOOP RAMP ALTERNATIVE 2

RAMP DISTANCES AND WEAVING SECTION LENGTHS

LOOP RAMP ALTERNATIVE 2

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

PBSJ POST, BUCKLEY, SCHUH & JERNIGAN INC.
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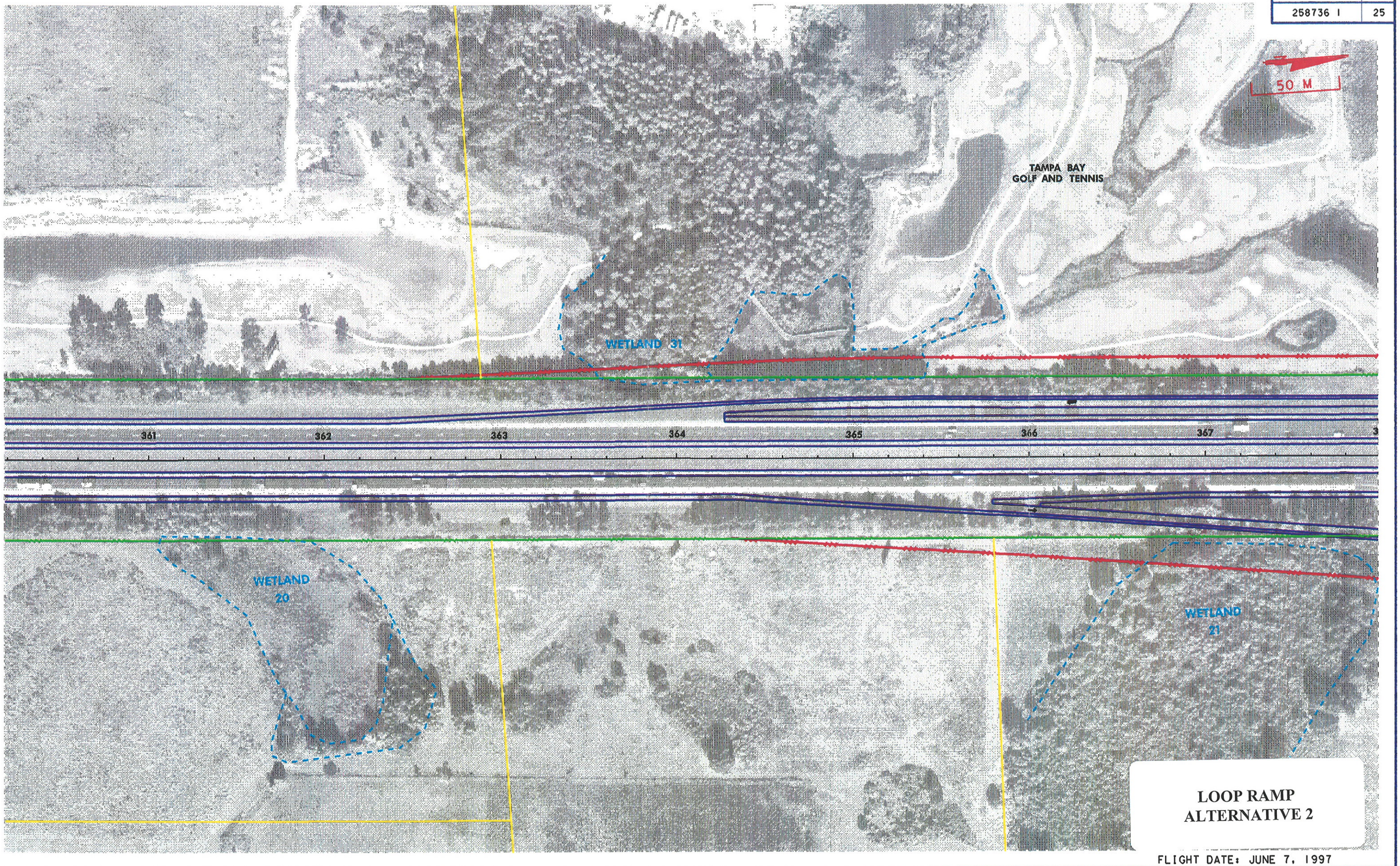
TAMPA, FLORIDA 33607-1656

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

10-OCT-2000 16:42
d:\projects\175\Figure15.dgn

WPI SEGMENT NO.	SHEET NO
258736 1	25



LOOP RAMP ALTERNATIVE 2

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

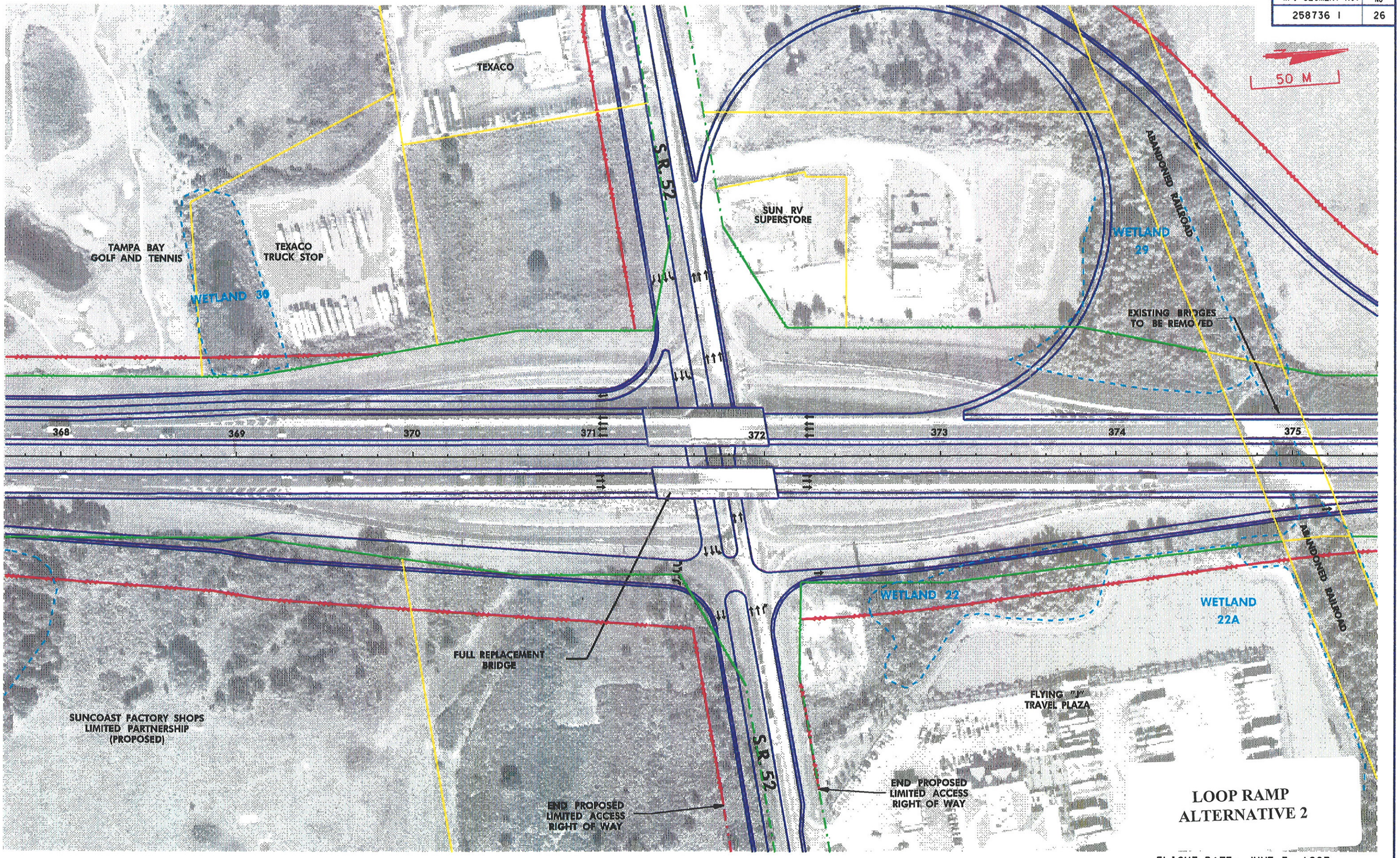
PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

07-AUG-2000 10:16
d:\projects\I75\FIGIIA.DGN

WPI SEGMENT NO.	SHEET NO
258736 1	26



FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

26-SEP-2000 13:25
q:\projects\175FIG11B.DGN

WPI SEGMENT NO.	SHEET NO
258736 1	26A

50 M

OLD TAMPA BAY DRIVE

END PROPOSED LIMITED ACCESS RIGHT OF WAY

END PROPOSED LIMITED ACCESS RIGHT OF WAY

S.R. 52

WAFFLE HOUSE

LOOP RAMP ALTERATIVE 2

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

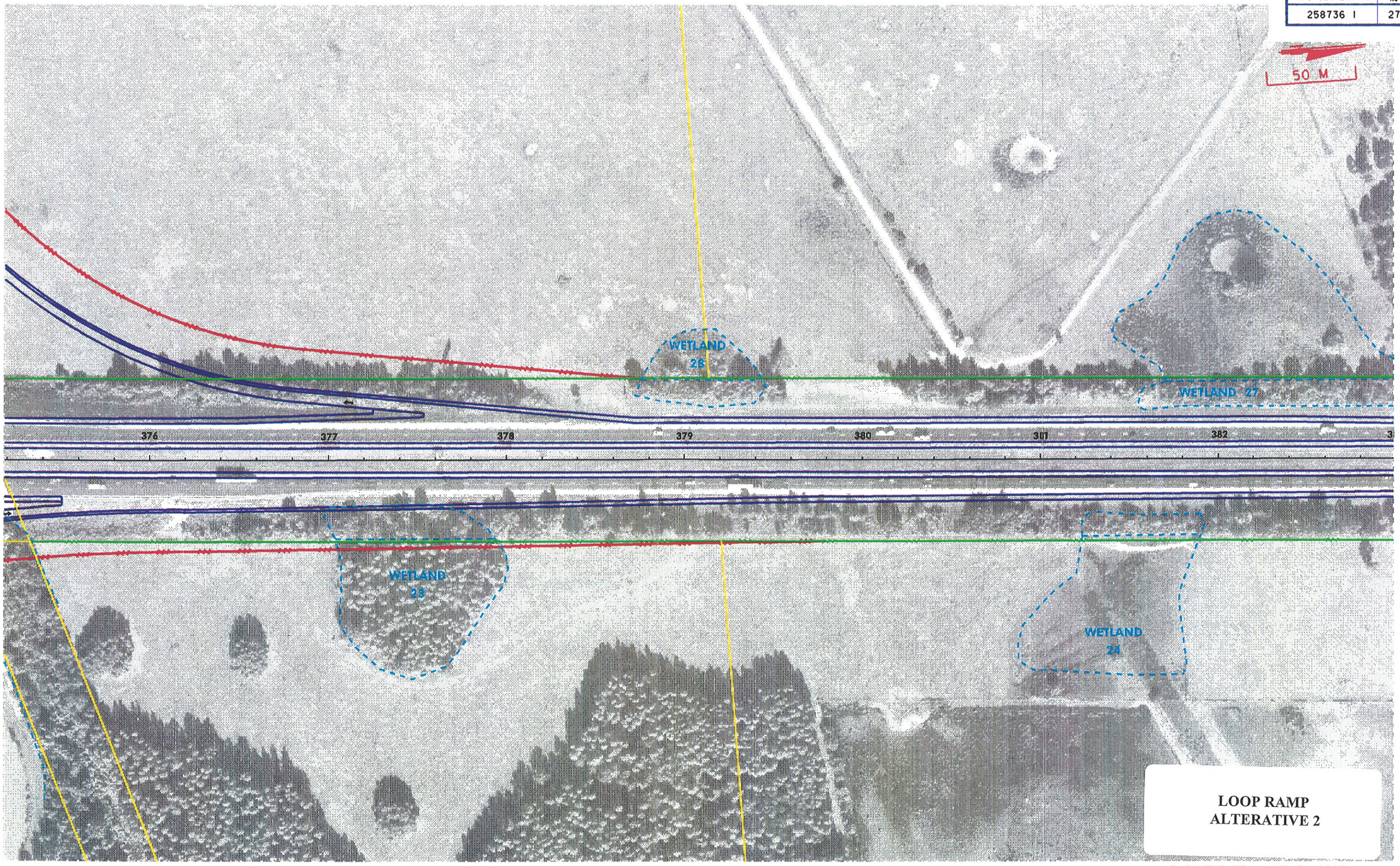
PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

07-AUG-2000 10:41
d:\projects\175\FIGIID.DGN

WPI SEGMENT NO.	SHEET NO
258736 1	27



LOOP RAMP
ALTERATIVE 2

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

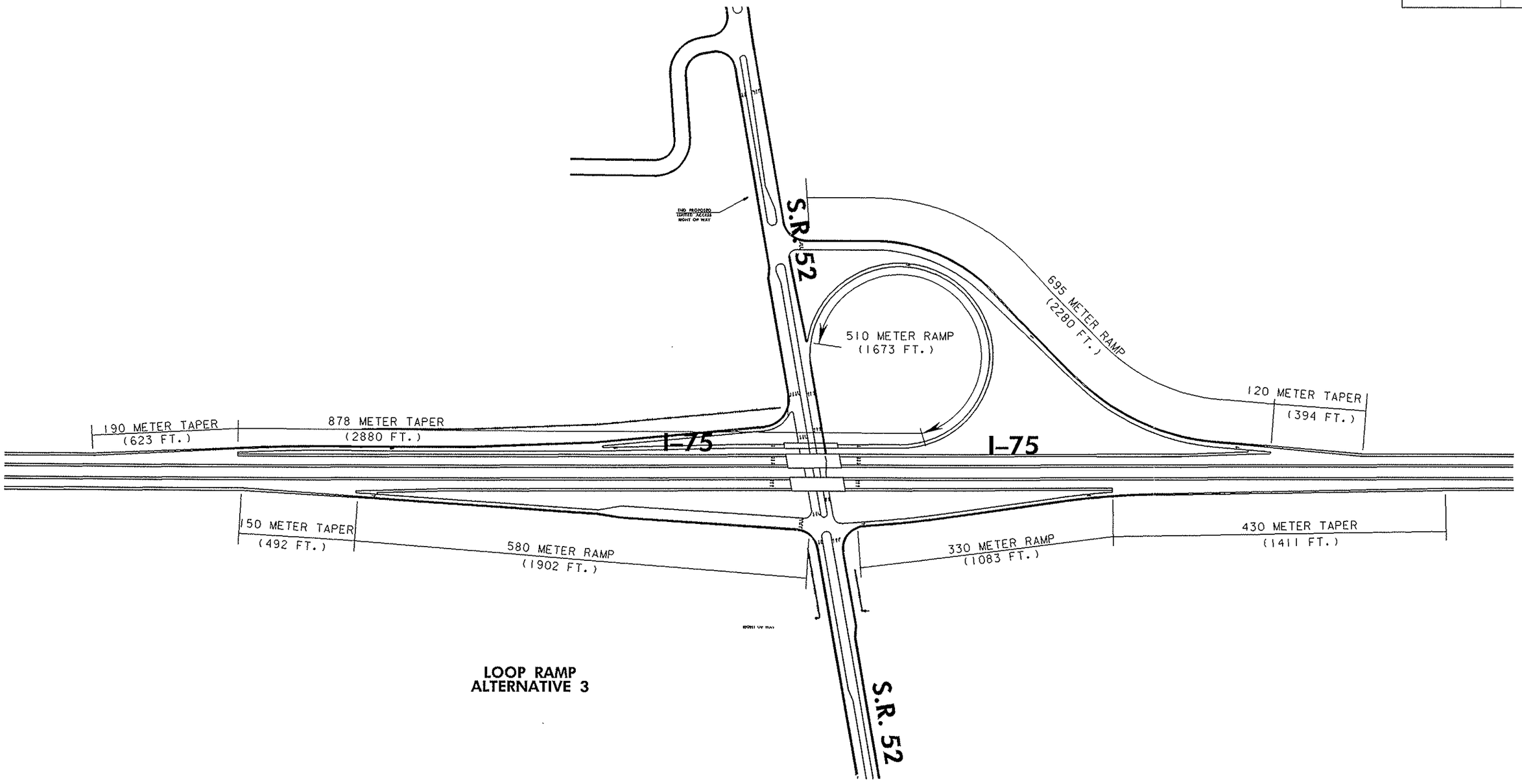
PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

07-AUG-2000 10:32
d:\projects\175\FIG11C.DGN

WPI SEGMENT NO.	SHEET NO
258736 1	



LOOP RAMP ALTERNATIVE 3

RAMP DISTANCES AND WEAVING SECTION LENGTHS

LOOP RAMP ALTERNATIVE 3

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

PBSJ
POST, BUCKLEY, SCHUH & JERNIGAN INC.
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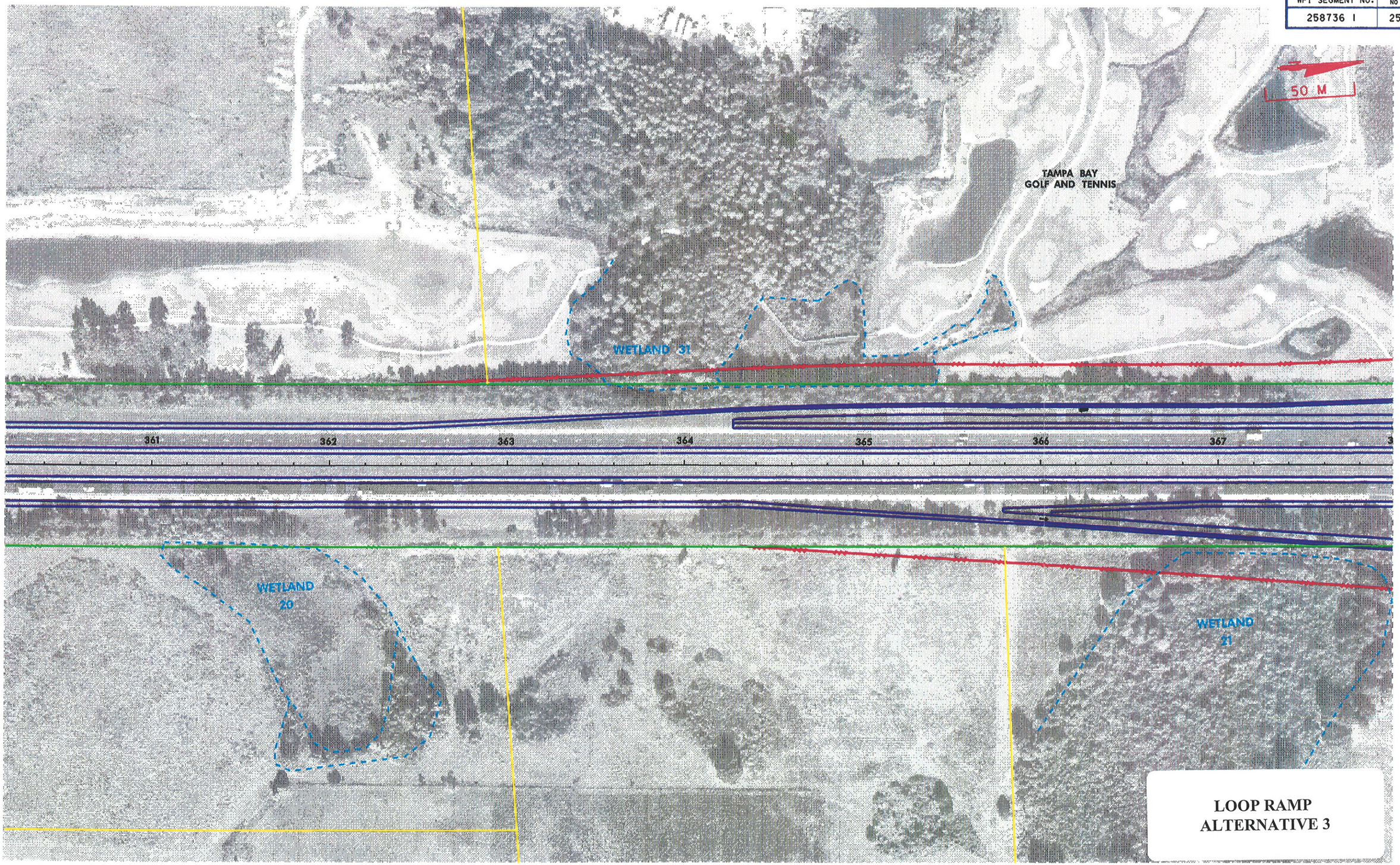
5300 W. CYPRESS STREET, SUITE 300
TAMPA, FLORIDA 33607-1656

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

10-OCT-2000 16:42
q:\projects\175\figure16.dgn

WPI SEGMENT NO.	SHEET NO
258736 1	25



FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

07-AUG-2000 11:11
d:\projects\175\FIG12A.DGN

WPI SEGMENT NO.	SHEET NO
258736 1	26

50 M

TEXACO

TAMPA BAY GOLF AND TENNIS

TEXACO TRUCK STOP

WETLAND 30

S.R. 52

SUN RV SUPERSTORE

WETLAND 29

ABANDONED RAILROAD

EXISTING BRIDGES TO BE REMOVED

368 369 370 371 372 373 374 375

FULL REPLACEMENT BRIDGE

SUNCOAST FACTORY SHOPS LIMITED PARTNERSHIP (PROPOSED)

END PROPOSED LIMITED ACCESS RIGHT OF WAY

WETLAND 22

WETLAND 22A

FLYING "J" TRAVEL PLAZA

END PROPOSED LIMITED ACCESS RIGHT OF WAY

S.R. 52

ABANDONED RAILROAD

LOOP RAMP ALTERNATIVE 3

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

26-SEP-2000 11:24
q:\projects\175\FIG128.DGN

WPI SEGMENT NO.	SHEET NO
258736 1	26A

50 M

OLD TAMPA BAY DRIVE

END PROPOSED LIMITED ACCESS RIGHT OF WAY

END PROPOSED LIMITED ACCESS RIGHT OF WAY

S.R. 52

WAFFLE HOUSE

LOOP RAMP ALTERNATIVE 3

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

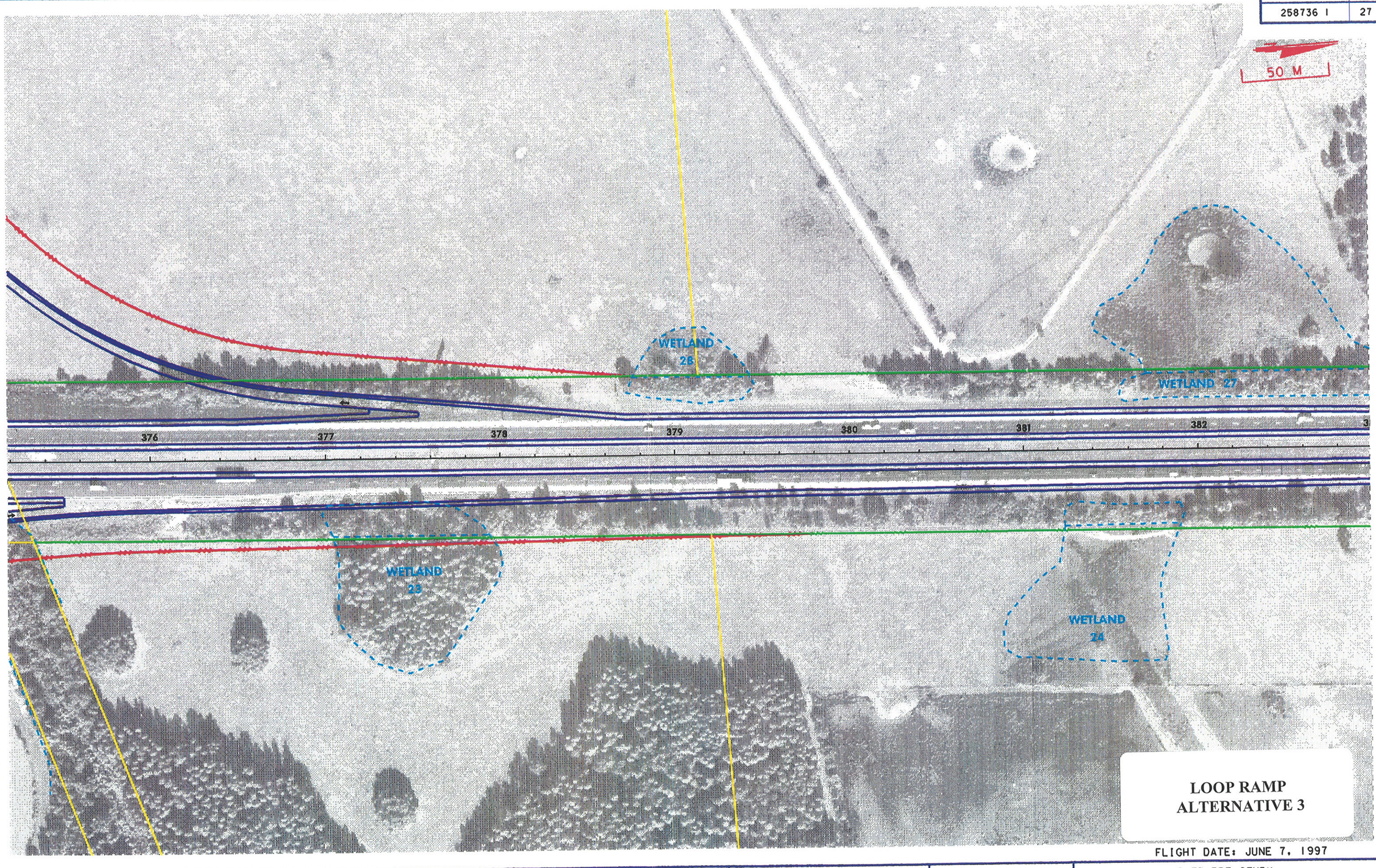
PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

07-AUG-2000 11:29
q:\projects\I75\FIG12D.DGN

WPI SEGMENT NO.	SHEET NO
258736 1	27



LOOP RAMP ALTERNATIVE 3

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

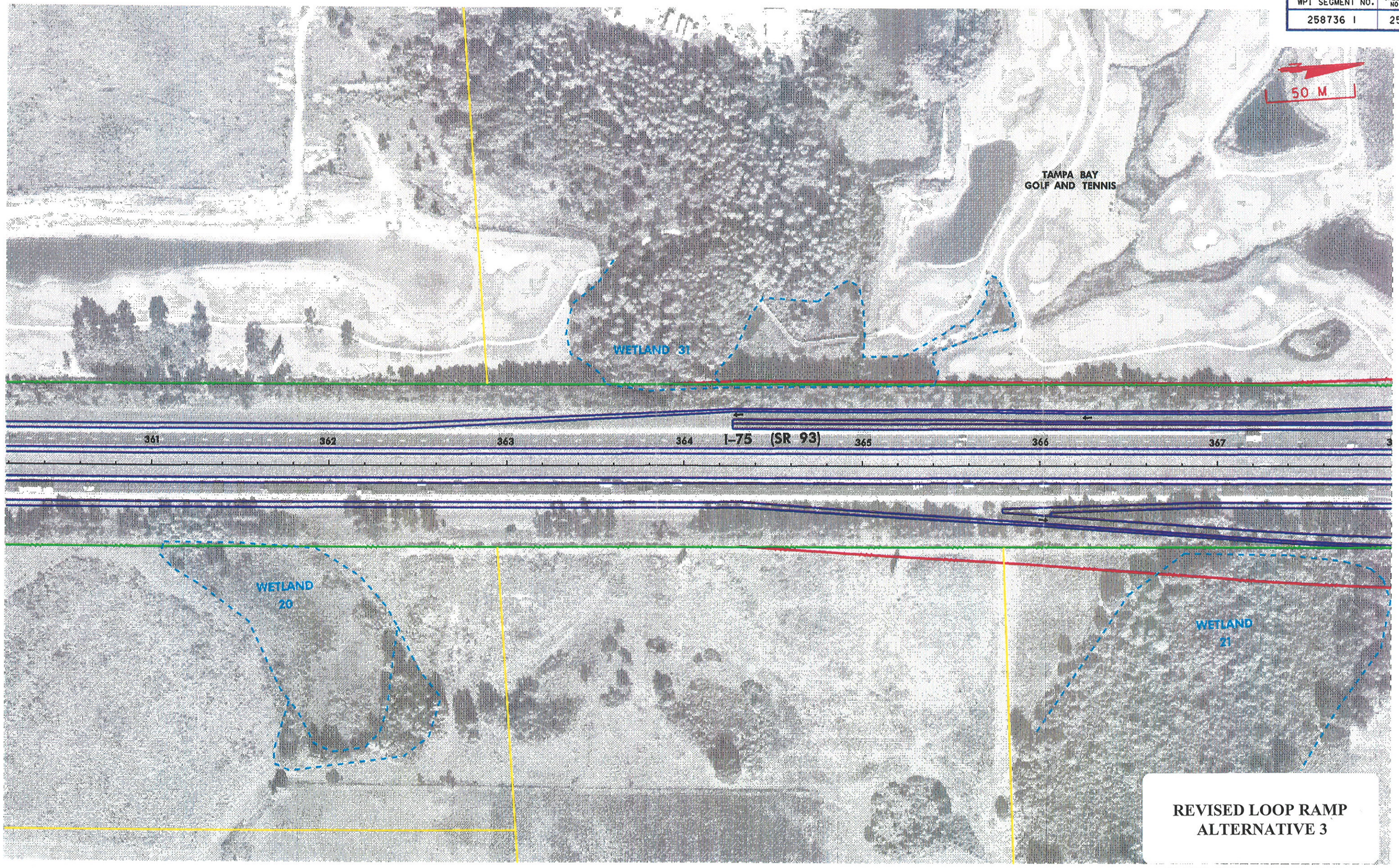
PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

07-AUG-2000 11:18
q:\projects\I75\FIG12C.DGN

WPI SEGMENT NO.	SHEET NO
258736 1	25



REVISED LOOP RAMP ALTERNATIVE 3

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

07-AUG-2000 11:30
d:\projects\I75\FIG13A.dgn

WPI SEGMENT NO.	SHEET NO
258736 1	26

50 M

TEXACO

S.R. 52

SUN RV SUPERSTORE

ABANDONED RAILROAD

WETLAND 29

TAMPA BAY GOLF AND TENNIS

TEXACO TRUCK STOP

WETLAND 30

EXISTING BRIDGES TO BE REMOVED

368 369 370 371 372 373 374 375

FULL REPLACEMENT BRIDGE

SUNCOAST FACTORY SHOPS LIMITED PARTNERSHIP (PROPOSED)

END PROPOSED LIMITED ACCESS RIGHT OF WAY

S.R. 52

WETLAND 22

WETLAND 22A

ABANDONED RAILROAD

FLYING "J" TRAVEL PLAZA

END PROPOSED LIMITED ACCESS RIGHT OF WAY

REVISED LOOP RAMP ALTERNATIVE 3

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

26-SEP-2000 11:27
q:\projects\175\FIG\38.dgn

WPI SEGMENT NO.	SHEET NO
258736 1	26A

50 M

OLD TAMPA BAY DRIVE

END PROPOSED LIMITED ACCESS RIGHT OF WAY

END PROPOSED LIMITED ACCESS RIGHT OF WAY

S.R. 52

WAFFLE HOUSE

REVISED LOOP RAMP ALTERNATIVE 3

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

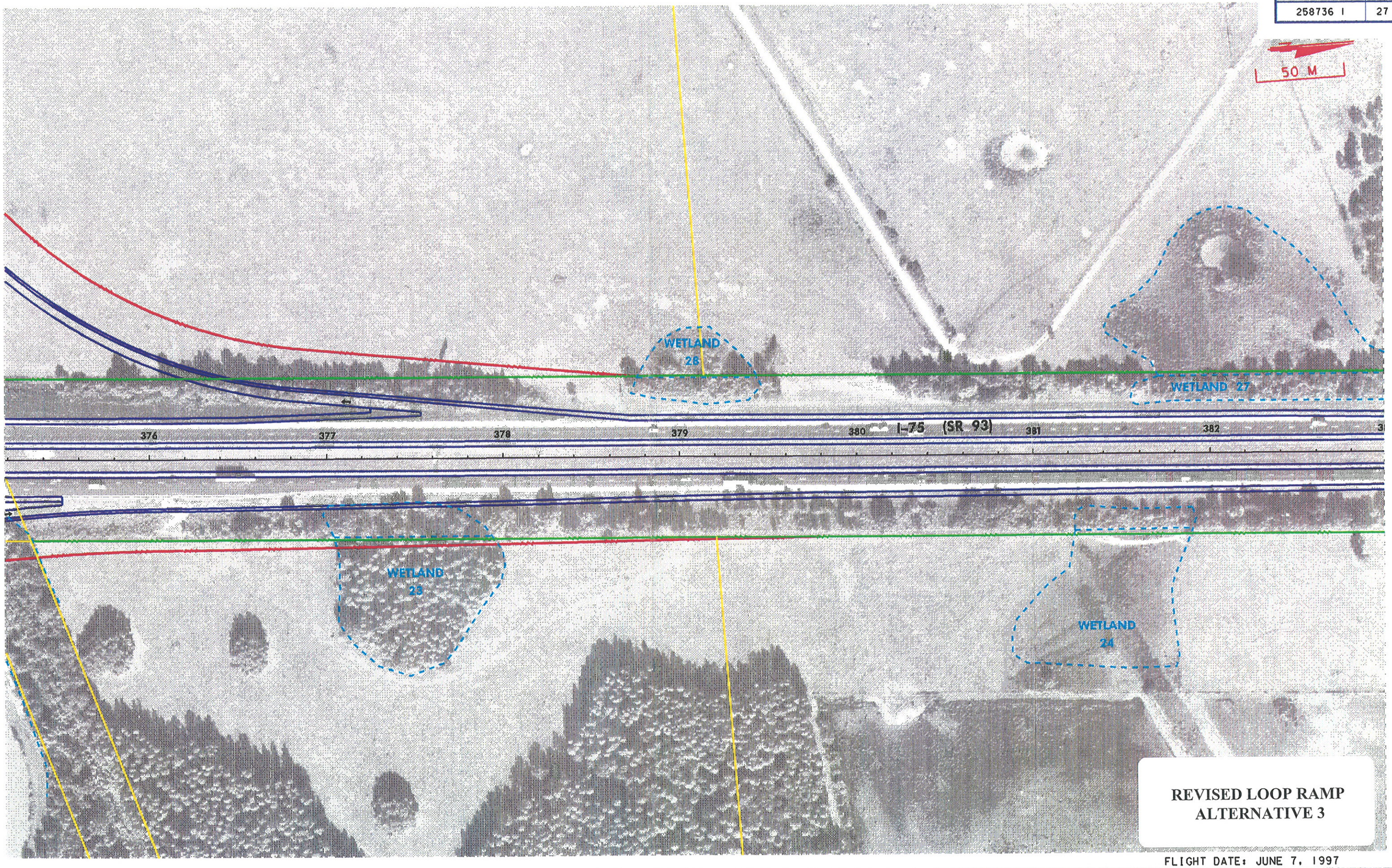
PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

07-AUG-2000 11:43
d:\projects\I75\FIG130.dgn

WPI SEGMENT NO.	SHEET NO
258736 1	27



REVISED LOOP RAMP ALTERNATIVE 3

FLIGHT DATE: JUNE 7, 1997

PROPOSED LIMITED ACCESS RIGHT OF WAY
EXISTING LIMITED ACCESS RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED EDGE OF PAVEMENT
PROPERTY LINES
EXISTING RIGHT OF WAY
SECTION LINES
WETLAND BOUNDARY

PBSJ

FLORIDA DEPARTMENT OF TRANSPORTATION

I-75 PDE STUDY
FROM SOUTH OF S.R.56 TO NORTH OF S.R. 52
PASCO COUNTY, FLORIDA

07-AUG-2000 11:40
d:\projects\I75\FIG13C.dgn