I-75 PD&E Studies

from Moccasin Wallow Road
to North of Fletcher Avenue

WPI Segment Number - 419235-1

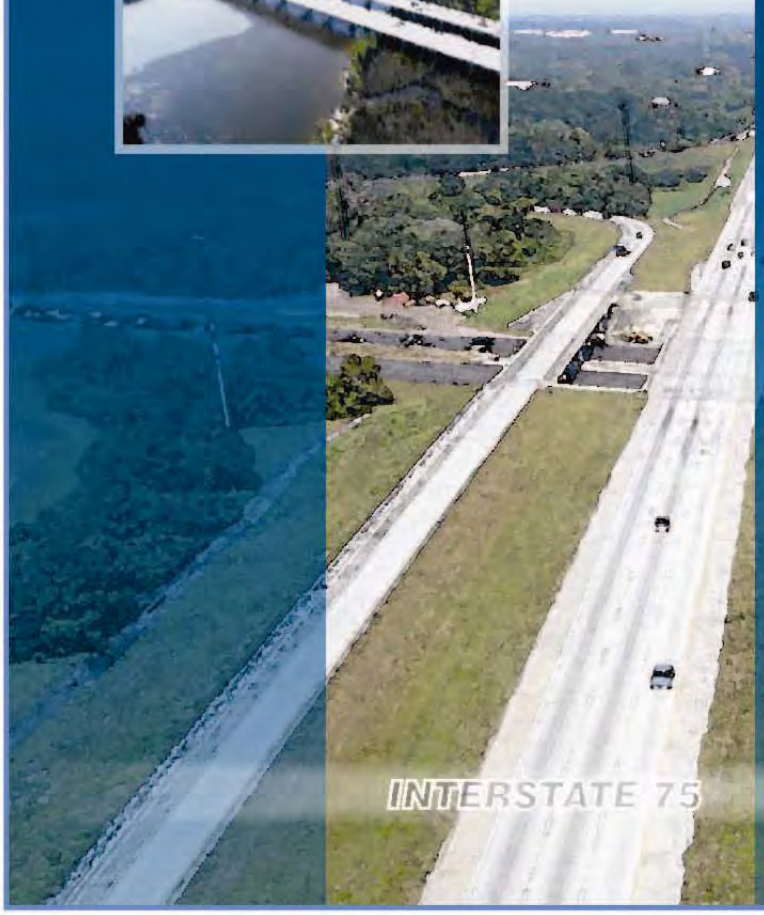
Design Traffic Technical Memorandum

Technical Report No. 1
Evaluation of Alternatives

Prepared for
Florida Department of Transportation
District Seven

September 2009

Manuel Santos, E.I.
FDOT Project Manager



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Prepared by
PB Americas, Inc.

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EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) is conducting two Project Development and Environment (PD&E) Studies to evaluate proposed capacity improvements along two consecutive segments of Interstate 75 (I-75) – State Road 93A (SR 93A). The first segment of I-75 extends from Moccasin Wallow Road, in Manatee County, to south of US 301 in Hillsborough County (WPI Segment Number 419235-2). The second segment extends from south of US 301 to north of Fletcher Avenue, in Hillsborough County (WPI Segment Number 419235-3). The combined length of the two segments is approximately 36.5 miles. The design year for the improvements is Year 2035.

The I-75 study corridor is the primary north-south travel route for regional travelers along the west coast of Florida. It also serves as a main commuter route for residents in south Hillsborough County and northern Manatee County as well as northwestern Hillsborough County and Pasco County who travel to the employment centers in Tampa. I-75 is included in the Strategic Intermodal System (SIS), and the Federal Aid Highway System. I-75 also serves as a major evacuation route throughout the state.

Within the study area, I-75 provides in general six travel lanes in each direction. From US 301 to SR 60 (2.8 miles), a series of collector-distributor roadways are provided on both sides of I-75. The study area includes 11 interchanges and two rest areas (one in each direction). Interchanges currently exist at Moccasin Wallow Road, Sun City Center Boulevard, (SR 674) Big Bend Road, Gibsonton Drive, US 301, Crosstown Expressway, SR 60, Martin Luther King Boulevard, I-4, Fowler Avenue, and Fletcher Avenue. The rest areas are located approximately 8.0 miles north of Moccasin Wallow Road.

This part of the Design Traffic Technical Memorandum (DTTM), Technical Report No. 1 – Evaluation of Alternatives, has been prepared as part of the PD&E Study to document the existing and future traffic conditions along I-75 within the study area. Technical Report No. 1 includes analyses of the efficiency and safety of the year 2007 traffic operations within the study area, forecasts of the traffic demand for the design year (2035) and an evaluation of the design year traffic conditions for three improvement alternatives and the No-Build alternative.

Based on the evaluation of the No-Build and the three improvement alternatives, an alternative will be recommended. This alternative will be further studied to define the specific roadway alignment, interchange configurations, intersection geometry, and access control features needed to meet the performance objectives stated by the FDOT. The analysis of the selected alternative will be documented in Technical Report No. 2.

The Annual Average Daily Traffic (AADT) volumes along I-75 generally increase from the southern and northern project termini towards I-4 and the Crosstown Expressway, which are the primary access routes to the City of Tampa from I-75. Current volumes range from a low of 58,000 vehicles per day (vpd) between Moccasin Wallow Road and SR 674 to a high of 144,800 vpd between Martin Luther King Boulevard and I-4.

This technical report summarizes the evaluation of the existing (2007) conditions and the design year 2035 traffic conditions for the No-Build (no improvements to I-75 other than those already planned and funded) and three improvement alternatives for I-75. Build Alternative 1 assumed

that one additional lane will be constructed along each direction of I-75 throughout the study limits. Build Alternative 2 assumed that two additional lanes will be constructed along each direction of I-75 throughout the study limits. Build Alternative 3 assumed that two special use lanes will be added in each direction of I-75 south of US 301 and three special use lanes will be added in each direction of I-75 north of US 301.

For the No-Build alternative, the design year (2035) traffic demand along I-75 is expected to range from 89,700 vpd south of SR 674 to 207,900 vpd south of I-4. Under Build Alternative 1, the design year (2035) traffic demand along I-75 is expected to range from 111,900 vpd south of SR 674 to 218,400 vpd south of I-4. For Build Alternative 2, the design year (2035) traffic demand along I-75 is expected to range from 132,200 vpd south of SR 674 to 226,400 vpd south of I-4. For Build Alternative 3, the design year (2035) traffic demand along I-75 is expected to range from 129,700 vpd south of SR 674 to 230,300 vpd south of I-4.

The No-Build Alternative analysis found that without significant improvements, the I-75 corridor will operate much worse than current conditions under the higher volume demand anticipated for the Design Year (2035).

Analysis of Build Alternative 1 found that, the I-75 study corridor will operate slightly better than the No-Build Alternative in the southern and central portions of the study area, but substandard conditions will persist on the corridor segments from Big Bend Road to US 301 and from SR 60 to Fletcher Avenue.

Analysis of Build Alternative 2 found that the level of service on the study corridor will be better than with Build Alterative 1. This improvement will allow I-75 to operate at or better than LOS D from Moccasin Wallow Road to SR 60, although same ramp merge and diverge locations along this segment will continue to operate worse than the LOS standard. The freeway segments between SR 60 and Fletcher Avenue will continue to operate at conditions worse than the LOS standard.

Analysis of Build Alternative 3 found that, with this improvement scenario, operations along the general use lane freeway segments from Big Bend Road to US 301 will worsen compared to Build Alternative 2. Operations along the general use freeway segments from SR 60 to I-4 will improve to standard LOS conditions. Substandard conditions will persist in the northern part of the study area between I-4 and Fletcher Avenue. All segments of the special use lanes will operate at or better than the LOS standard.

While Build Alternative 3 does not provide standard or better LOS for local trips on the general use lanes of I-75 for number of mainline segments, interregional trips along the I-75 corridor within the study area will operate at LOS C or better. Therefore, Build Alternative 3 does meet the objective set for this study by the FDOT to define a year 2035 improvement alternative that would, at minimum, provide a good level of service for interregional trips along the I-75 corridor within the study area.

Build Alternative 3 is recommended for additional analysis to further refine the geometric details and to provide a preliminary cost estimate. Technical Report No. 2 will address the interchange and other improvements considered for Build Alternative 3.

1.0 INTRODUCTION

The Florida Department of Transportation (FDOT) is conducting two Project Development and Environment (PD&E) Studies to evaluate proposed capacity improvements along two consecutive segments of Interstate 75 (I-75) – State Road 93A (SR 93A). The first segment of I-75 extends from Moccasin Wallow Road, in Manatee County, to south of US 301 in Hillsborough County WPI Segment Number 419235-2). The second segment extends from south of US 301 to north of Fletcher Avenue, in Hillsborough County (WPI Segment Number 419235-3). The combined length of the two segments is approximately 36.5 miles. The design year for the improvements is Year 2035. The location and limits of this project are shown on Figure 1-1.

Technical Report No. 1 (Evaluation of Alternatives) has been prepared as part of the PD&E Study to evaluate and compare the operational characteristics of the No-Build and the three improvement alternatives for I-75 within the study area. This report includes analyses of the efficiency of the year 2007 traffic operations within the study area, forecasts of the traffic demand for the design year (2035) and evaluations of the design year traffic conditions for three improvement alternatives and the No-Build alternative.

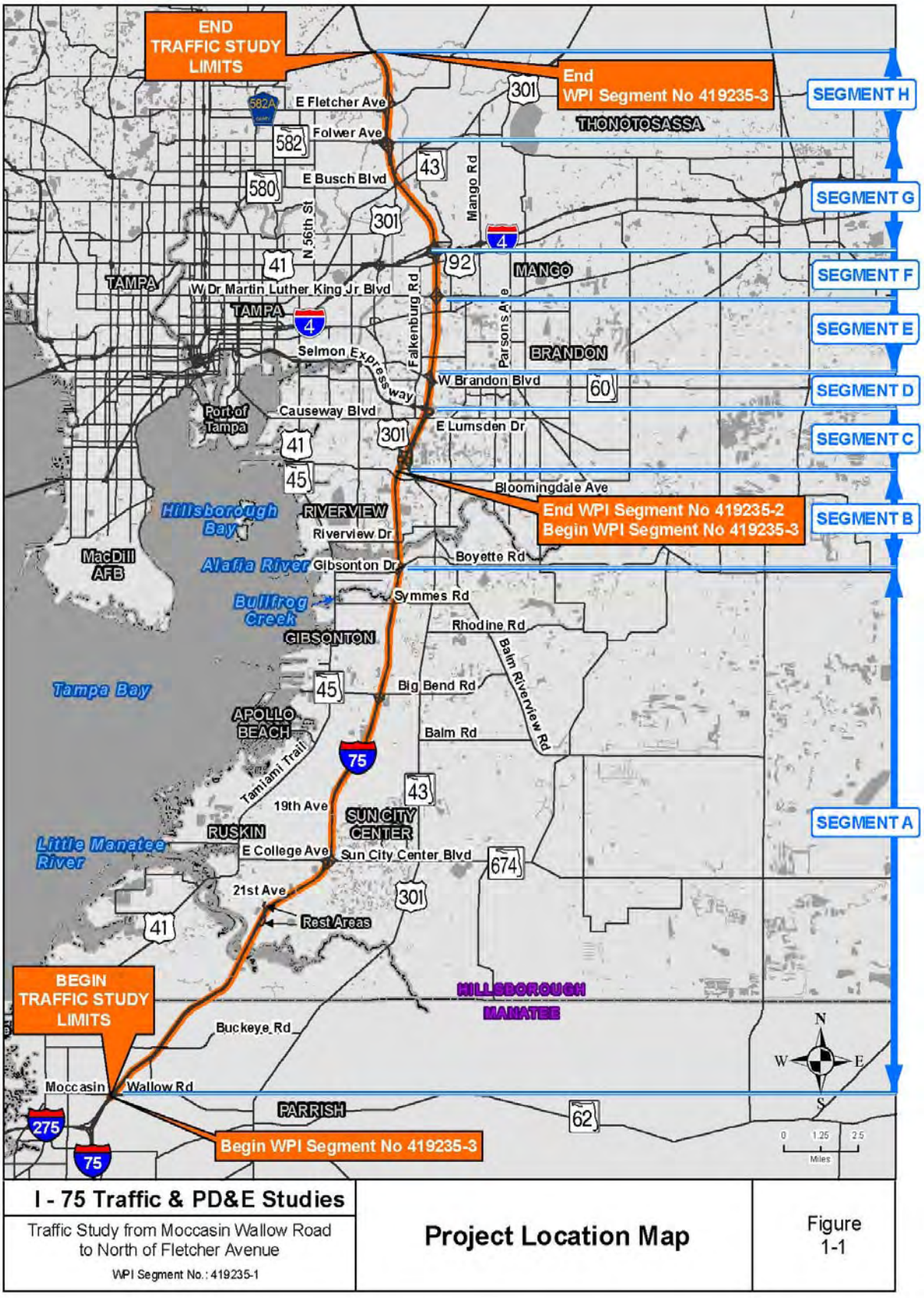
Based on the evaluation of the No-Build and the three improvement alternatives, an alternative will be recommended. This alternative will be further studied to define the specific roadway alignment, interchange configurations, intersection geometry, and access control features needed to meet the performance objectives stated by the FDOT. The analysis of the selected alternative will be documented in Technical Report No. 2.

1.1 Study Objective

The objective of this Technical Report is to document the analyses that were performed for the No-Build and the three improvement alternatives that were defined by the FDOT; to evaluate the No-Build and the three improvement alternatives to determine the most effective alternative, or combination of alternatives; and to recommend an improvement alternative for further consideration. The study documents the need for the improvements as well as the methodology and procedures utilized to develop and evaluate the three improvement alternatives.

In developing the three Build Alternatives evaluated in this study the FDOT recognized that accommodating the year 2035 traffic demand at Level of Service (LOS) D or better is not currently cost-feasible. The primary objective of the FDOT was to provide LOS D or better for inter-regional trips along I-75 within the study area, and the best achievable LOS for local trips. The three improvement (Build) alternatives proposed by the FDOT recognize that in some cases the best achievable LOS for the general purpose lanes in the year 2035 will be E, or in some cases F.

The FDOT did not intend for this study to identify the improvements that would accommodate the year 2035 design hour traffic volumes at LOS D or better. The intent was to identify the improvements that could accommodate the highest volume of traffic at standard LOS or better from a range of alternative improvements that the FDOT considered to be cost feasible.


END TRAFFIC STUDY LIMITS
End WPI Segment No 419235-3
SEGMENT H
SEGMENT G
SEGMENT F
SEGMENT E
SEGMENT D
SEGMENT C
End WPI Segment No 419235-2
Begin WPI Segment No 419235-3
SEGMENT B
SEGMENT A
BEGIN TRAFFIC STUDY LIMITS
Begin WPI Segment No 419235-3
E Fletcher Ave
Folwer Ave
E Busch Blvd
N 56th St
Mango Rd
THONOTOSASSA
MANGO
TAMPA
W Dr Martin Luther King Jr Blvd
Selmon Expressway
Falkenburg Rd
Parsons Ave
BRANDON
W Brandon Blvd
Causeway Blvd
Port of Tampa
E Lumsden Dr
Bloomingdale Ave
Hillsborough Bay
RIVERVIEW
Riverview Dr
MacDill AFB
Alafia River
Gibsonton Dr
Boyette Rd
Bullfrog Creek
Symmes Rd
Rhodine Rd
GIBSONTON
Balm Riverview Rd
Tampa Bay
Big Bend Rd
APOLLO BEACH
Balm Rd
Tamiami Trail
19th Ave
SUN CITY CENTER
RUSKIN
Little Manatee River
E College Ave
Sun City Center Blvd
21st Ave
Rest Areas
HILLSBOROUGH
MANATEE
Buckeye Rd
Moccasin Wallow Rd
PARRISH
N
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E
S
0 1.25 2.5
Miles
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Traffic Study from Moccasin Wallow Road to North of Fletcher Avenue
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Project Location Map
Figure 1-1

To meet these objectives, this report:

- documents the existing conditions along I-75, including typical-sections, interchange and intersection geometry, and existing traffic counts and traffic characteristics;
- provides analyses of the existing traffic conditions along the I-75 mainline; interchange ramps; weaving segments and ramp terminal intersections;
- summarizes the methodology used for future travel demand forecasting and presents the design year traffic volumes;
- evaluates the efficiency of traffic operations for the No-Build Alternative and the three improvement alternatives; and
- provides the necessary information for the selection of the most appropriate solution.

1.2 Project Description

1.2.1 Project Background

I-75 is an interstate, limited access facility. It is included in the State Highway System (SHS) – designated as SR 93A, the Strategic Intermodal System (SIS), and the Federal Aid Highway System. I-75 also serves as a major evacuation route throughout the state.

I-75 is the most important north-south corridor in west Florida with regards to regional and inter-regional travel and the transportation of goods. Residential and commercial development, which is economically tied to the Tampa Bay area, continues to spread north into Pasco County as well as south into Manatee County. As this growth continues, the segment of I-75 under study is called on to increasingly serve as an important link between these growing areas and older, established residential and employment areas of the Tampa Bay region as well as several intermodal facilities including the Tampa International Airport, the Port of Tampa, and Port Manatee.

Within the study area, I-75 connects with several regional transportation corridors such as I-4, the Crosstown Expressway, SR 60, and US 301. These connections link Tampa Bay's urban areas with other regions of the state and beyond. I-75 also parallels and serves as an alternative route for other north/south state roadways such as US 41 and US 301.

1.2.2 Study Area

The study area for this study consists of the I-75 corridor from Moccasin Wallow Road to Fletcher Avenue and the segments of the local roadway network in the vicinity of the ramp terminal intersections.

To organize the analyses, the project corridor was divided into the following study segments, as illustrated on Figure1-1:

- Segment A – from Moccasin Wallow Road to Gibsonton Drive
- Segment B – from Gibsonton Drive to US 301
- Segment C – from US 301 to Crosstown Expressway
- Segment D – from Crosstown Expressway to SR 60

- Segment E – from SR 60 to Martin Luther King Boulevard
- Segment F – from Martin Luther King Boulevard to I-4
- Segment G – from I-4 to north of Fowler Avenue
- Segment H – from Fowler Avenue to Fletcher Avenue.

2.0 EXISTING CONDITIONS

2.1 Existing Roadway Characteristics

The existing roadway characteristics were derived from the review of aerial photos, straight line diagrams (SLDs), and through field reconnaissance.

2.1.1 I-75 Mainline Typical Sections

In the study area, I-75 currently provides a minimum of six 12-foot-wide travel lanes (three travel lanes in each direction) from Moccasin Wallow Road to US 301 and from SR 60 to Fletcher Avenue. Between US 301 and SR 60, the typical section widens to include collector/distributor roadways, as described below. The posted speed limit is 70 mph. More specifically, the existing typical sections along the I-75 corridor are as follows:

- **Segment A**

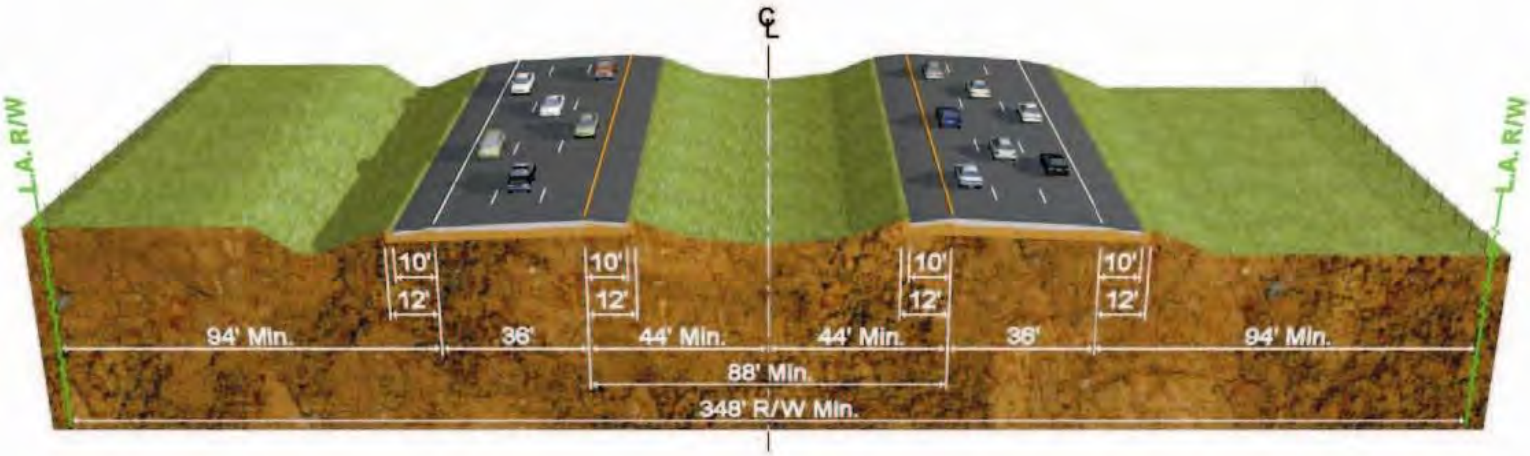
  At the south end of the project, from south of Moccasin Wallow Road to Gibsonton Drive (20.8 miles), the I-75 right-of-way is a minimum of 348 feet wide with wider segments, such as at the rest area at MP 237 (SLD Section 10-075-000 MP 3.046 northbound and MP 3.802 southbound). This segment includes an approximately 830-foot-long dual-span bridge that crosses the Little Manatee River (MP 235 / SLD MP 1.955) and an approximately 420-foot-long dual-span bridge that crosses the Bull Frog Creek (MP 249 / SLD MP 15.888). I-75 provides six 12-foot-wide general purpose lanes (three lanes in each direction), 12-foot-wide inside and outside shoulders (10 feet paved), and at minimum a 64-foot-wide median. A border (generally 82-foot-wide measured from the edge of the outside shoulder to the R/W line) is provided on both sides. The existing typical section for Segment A is shown on Figure 2-1.

- **Segment B**

  From Gibsonton Drive to US 301 (3.6 miles), the I-75 right-of-way is a minimum of 372 feet wide. This segment includes a 1,574-foot-long dual-span bridge that crosses the Alafia River. I-75 provides eight 12-foot-wide general purpose travel lanes (four lanes in each direction), 12-foot-wide inside and outside shoulders (10 feet paved), and at minimum a 64-foot-wide median. A border (generally 82-foot-wide measured from the edge of the outside shoulder to the R/W line) is provided on both sides. The existing typical section for Segment B is shown on Figure 2-2.

- **Segment C**

  From US 301 to the Crosstown Expressway (1.8 miles), the I-75 right-of-way is a minimum of 636 feet wide with one southbound and two northbound collector/distributor roadways. I-75 provides eight 12-foot-wide general purpose travel lanes (three lanes in the northbound direction and five lanes in the southbound direction), 12-foot-wide inside shoulders (10 feet paved), 10-foot-wide outside paved shoulders and at minimum a 64-foot-wide median. All collector/distributor roadways, which serve exiting and entering traffic to/from nearby interchanges, provide two 12-foot-wide lanes in each direction. At minimum, 94-foot-wide borders are provided in each direction. The existing typical section for Segment C is shown on Figure 2-3.

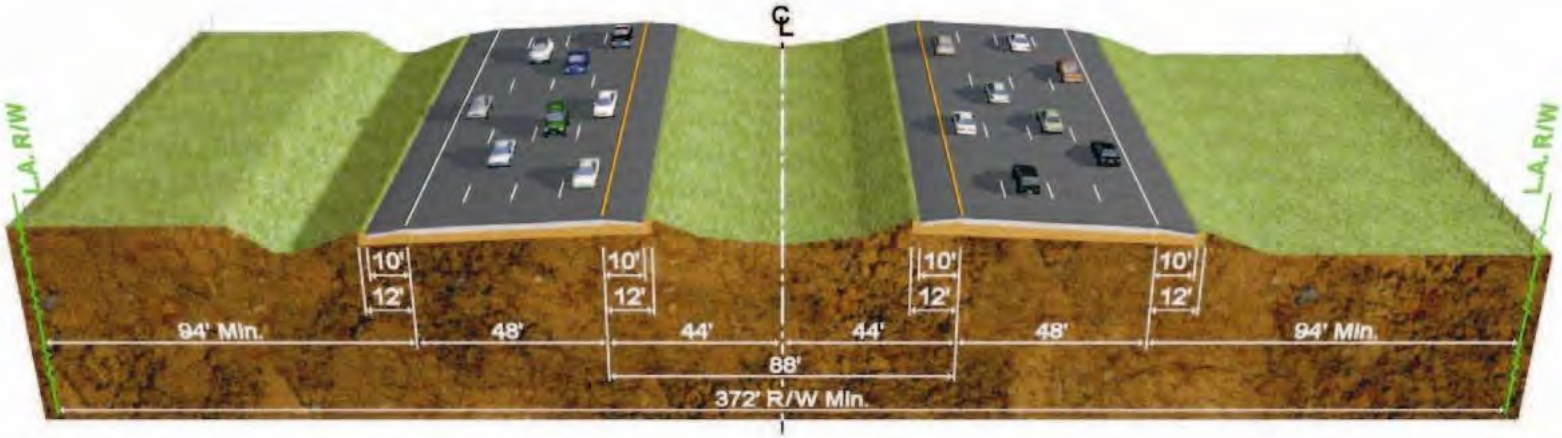


I - 75 Traffic & PD&E Studies

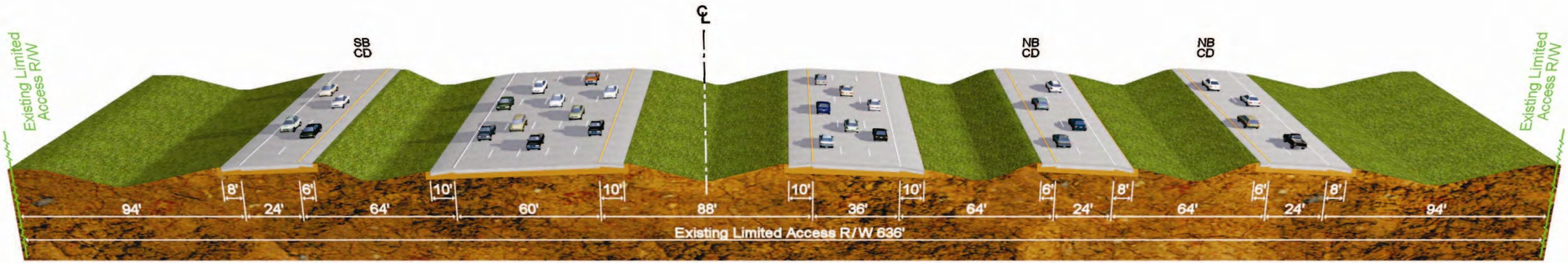
Traffic Study from Moccasin Wallow Road to North of Fletcher Avenue
WPI Segment Number - 419235-1

EXISTING ROADWAY TYPICAL SECTION - SEGMENT A
FROM MOCCASIN WALLOW ROAD TO GIBSONTON DRIVE

Figure 2-1



I - 75 Traffic & PD&E Studies Traffic Study from Moccasin Wallow Road to North of Fletcher Avenue WPI Segment Number - 419235-1	EXISTING ROADWAY TYPICAL SECTION - SEGMENT B FROM GIBSONTON DRIVE TO US 301	Figure 2-2



I - 75 Traffic & PD&E Studies

Traffic Study from Moccasin Wallow Road to North of Fletcher Avenue
WPI Segment Number - 419235-1

EXISTING ROADWAY TYPICAL SECTION - SEGMENT C
FROM US 301 TO SOUTH OF SELMON EXPRESSWAY

Figure 2-3

- **Segment D**

  From the Crosstown Expressway to SR 60 (1.0 mile), the I-75 right-of-way is at minimum 536 feet wide, with one southbound and two northbound collector/distributor roadways. I-75 provides six 12-foot-wide general purpose travel lanes (three lanes in each direction), 12-foot-wide inside shoulders (10 feet paved), 10-foot-wide outside paved shoulders and at minimum a 64-foot-wide median. The collector/distributor roadways, which serve exiting and entering traffic to/from nearby interchanges, provide three 12-foot-wide lanes in the northbound direction and two 12-foot-wide lanes in the southbound direction. The existing typical section for Segment D is shown on Figure 2-4.

- **Segment E**

  From SR 60 to SR 574 – Martin Luther King Boulevard (2.7 miles), the I-75 right-of-way is approximately 348 feet wide. I-75 provides six 12-foot-wide general purpose travel lanes (three lanes in each direction), 12-foot-wide inside shoulders (10 feet paved), 10-foot-wide outside paved shoulders, 94-foot-wide borders, and at minimum a 64-foot-wide median. The existing typical section for Segment E is shown on Figure 2-5.

- **Segment F**

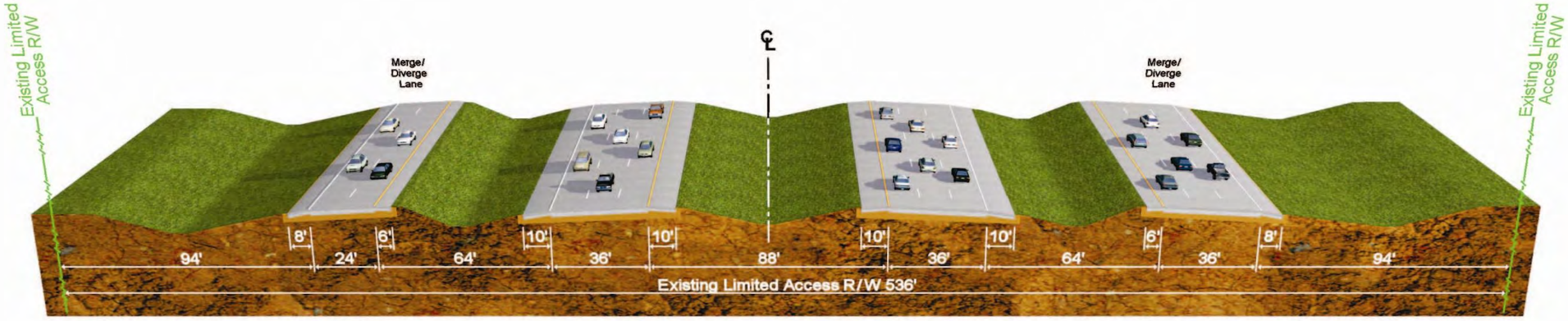
  From SR 574 (Martin Luther King Boulevard) to I-4 (1.4 miles), the I-75 right-of-way is at minimum 348 feet wide. I-75 provides three 12-foot-wide general purpose travel lanes and one 12-foot-wide merge/diverge lane in each direction; 12-foot-wide inside shoulders (10 feet paved); 10-foot-wide outside paved shoulders, 82-foot wide (at minimum) borders; and at minimum a 64-foot-wide median. The existing typical section for Segment F is shown on Figure 2-6.

- **Segment G**

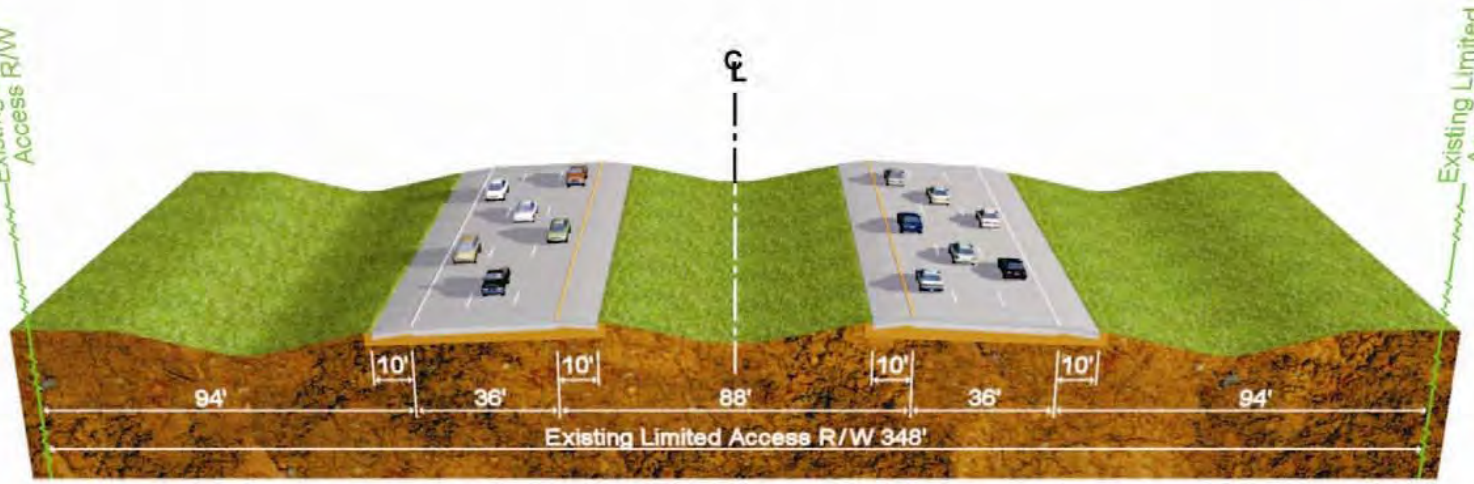
  From I-4 to Fowler Avenue (4.1 miles), the I-75 right-of-way is at minimum 348 feet wide. This segment includes an approximately 830-foot-long dual-span bridge that crosses the Tampa Bypass Canal (MP 263 / SLD MP 29.207). I-75 provides six 12-foot-wide general purpose travel lanes (three lanes in each direction), 12-foot-wide inside shoulders (10 feet paved), 10-foot-wide outside paved shoulders, 94-foot-wide (at minimum) borders, and at minimum a 64-foot-wide median. The existing typical section for Segment G is shown on Figure 2-7.

- **Segment H**

  From Fowler Avenue to Fletcher Avenue (1.1 miles), the I-75 right-of-way is at minimum 427 feet wide. I-75 provides six 12-foot-wide travel lanes. Two general purpose travel lanes and one auxiliary lane are provided in each direction. The typical section also includes 12-foot-wide inside shoulders (10 feet paved), 10-foot-wide outside paved shoulders, 94-foot-wide borders, and at minimum a 64-foot-wide median. The existing typical section for Segment G is shown on Figure 2-8.



I - 75 Traffic & PD&E Studies Traffic Study from Moccasin Wallow Road to North of Fletcher Avenue WPI Segment Number - 419235-1	EXISTING ROADWAY TYPICAL SECTION - SEGMENT D FROM SOUTH OF SELMON EXPRESSWAY TO SOUTH OF SR 60	Figure 2-4



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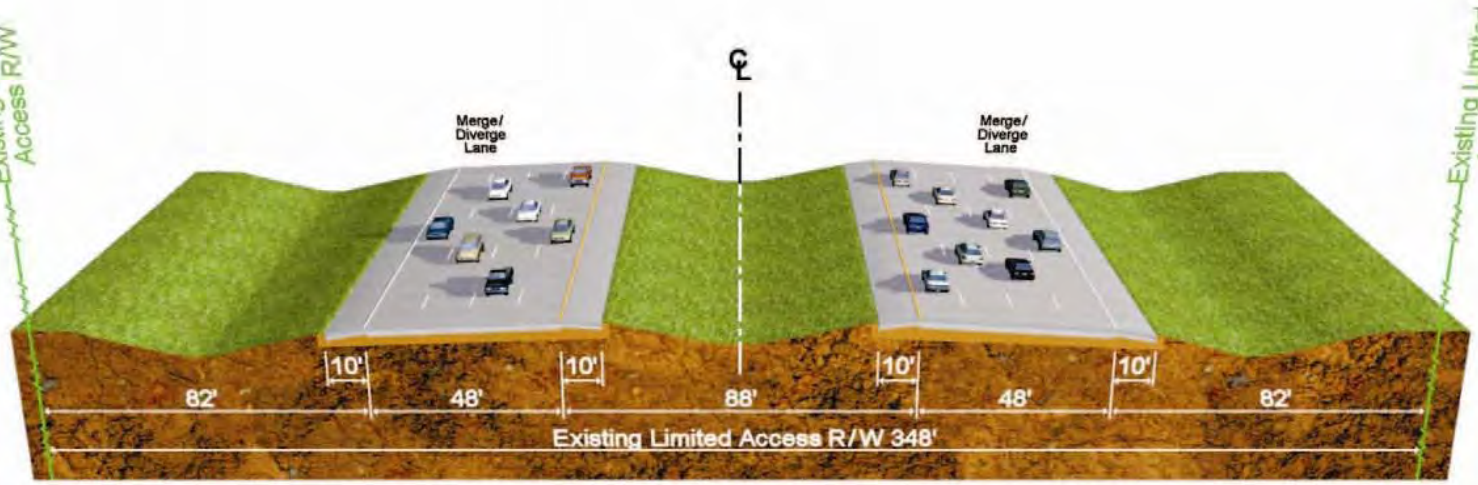
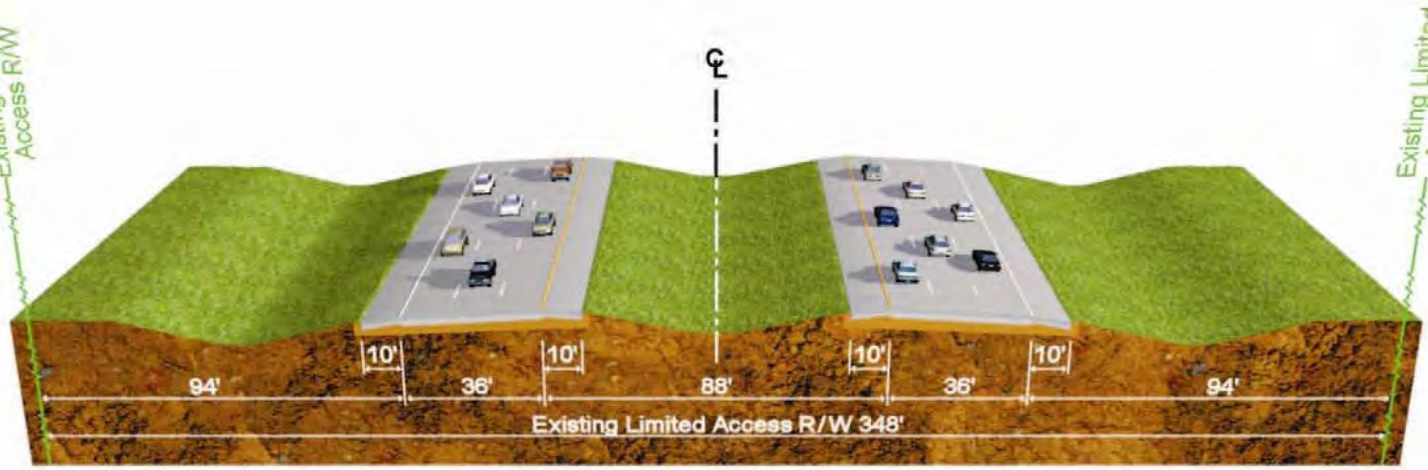
Traffic Study from Moccasin Wallow Road to North of Fletcher Avenue
WPI Segment Number - 419235-1

EXISTING ROADWAY TYPICAL SECTION - SEGMENT E
FROM SOUTH OF SR 60 TO MARTIN LUTHER KING BOULEVARD

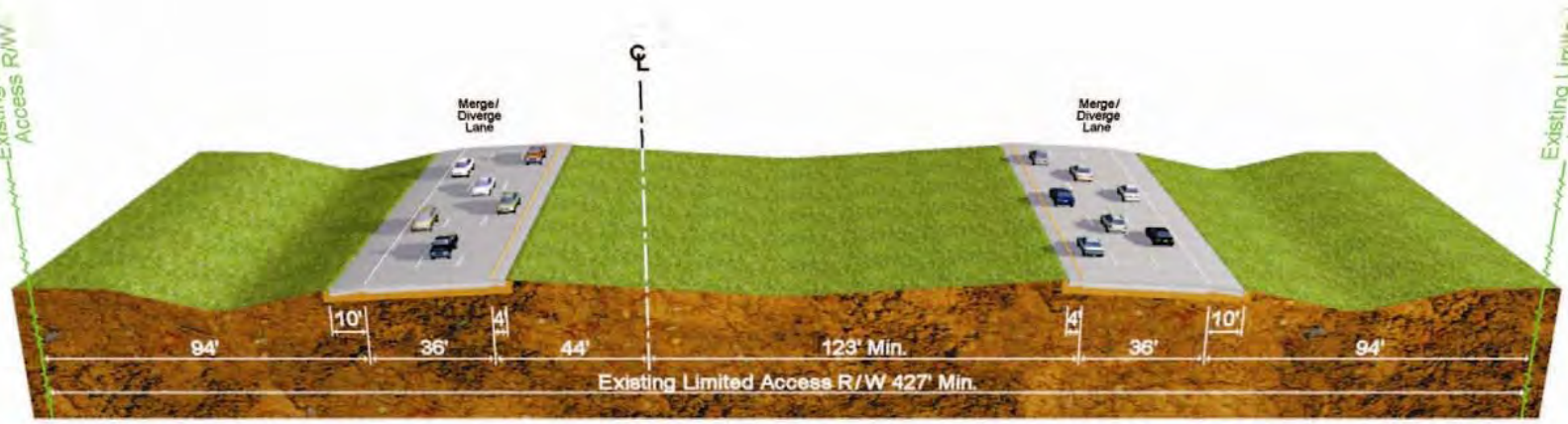
Figure 2-5



I - 75 Traffic & PD&E Studies Traffic Study from Moccasin Wallow Road to North of Fletcher Avenue WPI Segment Number - 419235-1	EXISTING ROADWAY TYPICAL SECTION - SEGMENT F FROM MARTIN LUTHER KING BOULEVARD TO I-4	Figure 2-6



I - 75 Traffic & PD&E Studies Traffic Study from Moccasin Wallow Road to North of Fletcher Avenue WPI Segment Number - 419235-1	EXISTING ROADWAY TYPICAL SECTION - SEGMENT G FROM I-4 TO FOWLER AVENUE	Figure 2-7



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EXISTING ROADWAY TYPICAL SECTION - SEGMENT H
FROM FOWLER AVENUE TO FLETCHER AVENUE

Figure 2-8

2.1.2 Interchanges

Eleven (11) interchanges are located within the project limits at the following intersecting roadways:

- CR 6 - Moccasin Wallow Road
- SR 674 - Sun City Center Boulevard
- CR 672 - Big Bend Road
- Gibsonton Drive
- US 301
- SR 618 - Crosstown Expressway
- SR 60 - Adamo Drive
- SR 574 - Martin Luther King Boulevard
- Interstate 4 - SR 400
- SR 582 - Fowler Avenue
- CR 582A - Fletcher Avenue

The Crosstown Expressway and I-4 are limited access roadways. Both of these limited access roadways, as well as SR 60 (east of I-75), and Big Bend Road are Strategic Intermodal System (SIS) facilities. The locations of these interchanges are shown on the Project Location Map, on Figure 1-1. The configuration of each interchange and traffic controls are shown on Figures 2-9a and 2-9b and are discussed in the following paragraphs.

- **CR 6 - Moccasin Wallow Road**

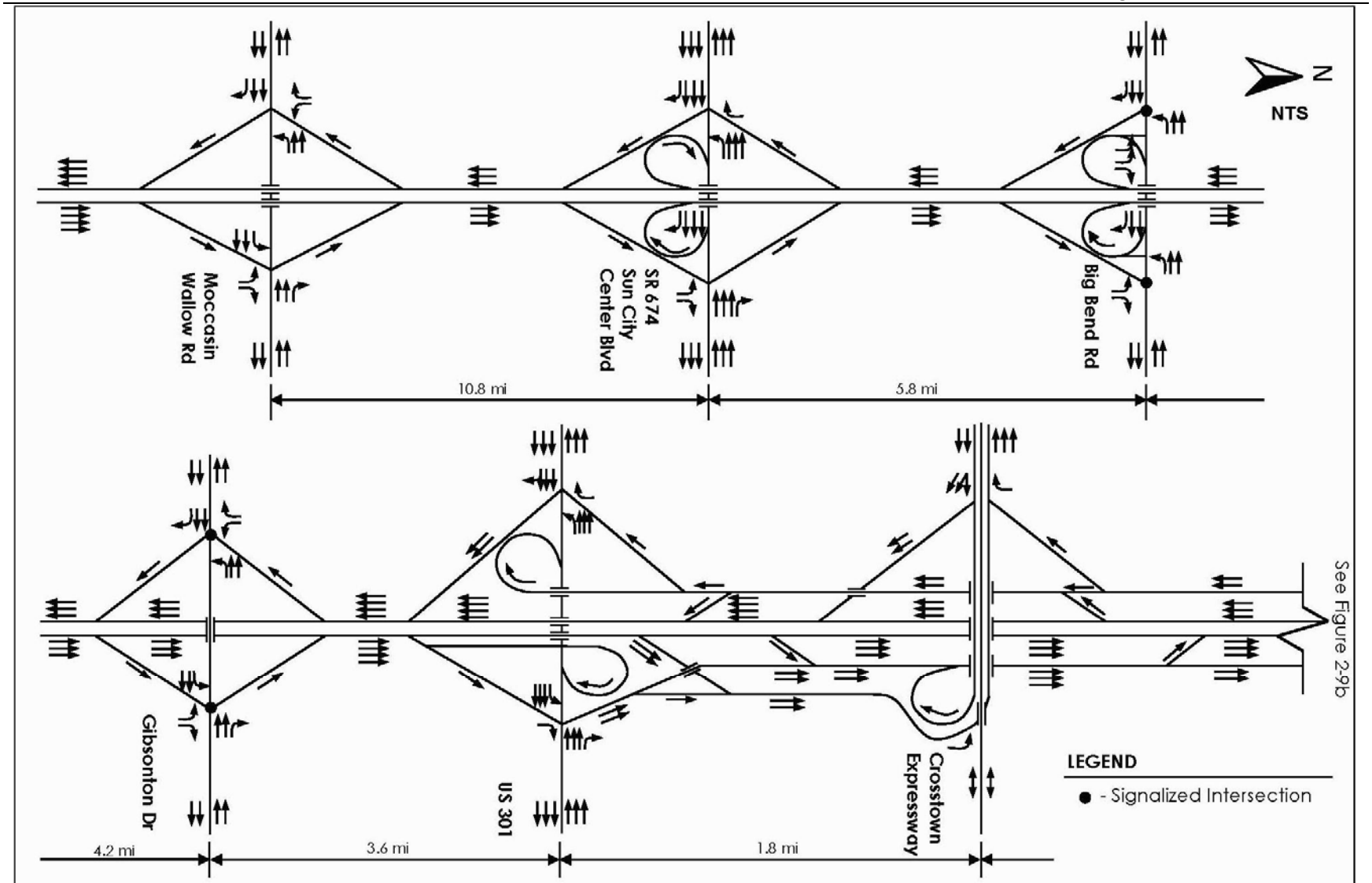
  This interchange has a diamond configuration with unsignalized intersections at the ramp terminals at Moccasin Wallow Road. All on-ramps and off-ramps at the interchange are one-lane ramps. Channelized right-turn movements are provided at all ramp terminals.

  Moccasin Wallow Road is a four-lane divided minor arterial in the immediate vicinity of the interchange and narrows to a two-lane undivided roadway approximately 0.5 miles on either side of I-75. Moccasin Wallow Road provides access to Port Manatee, located west of I-75 and to the town of Parrish located east of I-75.

- **SR 674 - Sun City Center Boulevard**

  This interchange has a diamond configuration with a free-flow loop on-ramp from eastbound SR 674 to northbound I-75 and a free-flow loop off-ramp from southbound I-75 to eastbound SR 674. All ramp terminals at SR 674 are unsignalized intersections. A merge lane is provided on westbound SR 674 to receive northbound I-75 exiting traffic. All on-ramps and off-ramps at the interchange are single-lane ramps. Channelized right-turn movements are provided at all ramp terminals.

  Sun City Center Boulevard is a six-lane divided principal arterial in the immediate area of the interchange and narrows to a four-lane divided roadway approximately 0.5 miles on either side of I-75. Sun City Center Boulevard provides access to the town of Ruskin on the west side of I-75 and to the town of Sun City Center on the east side of I-75.



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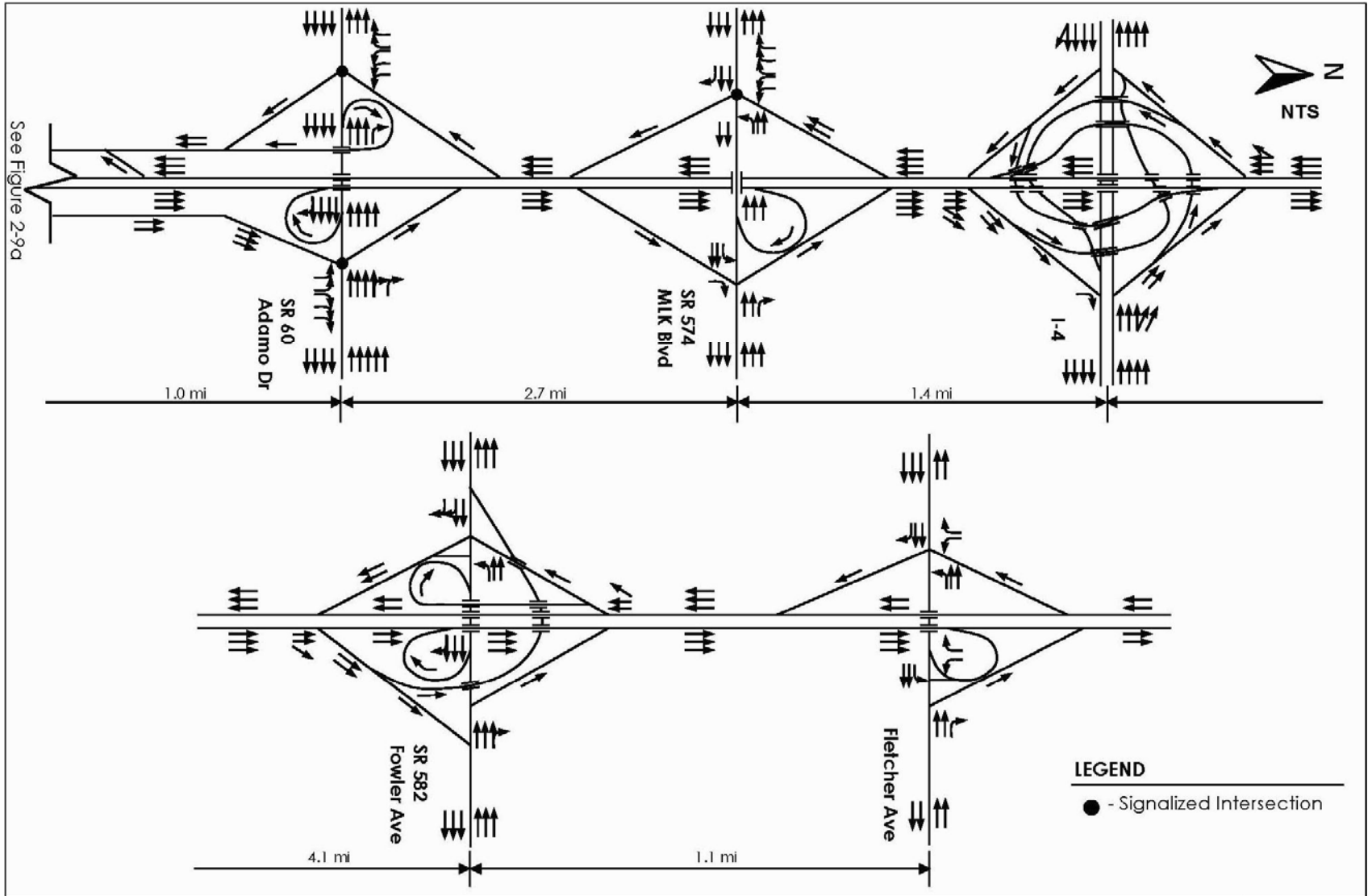
WPI Segment Number 419235-1

EXISTING ROADWAY/INTERSECTION GEOMETRY (SOUTH)

Figure 2-9a



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Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue
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EXISTING ROADWAY/INTERSECTION GEOMETRY (NORTH)

Figure 2-9b

- **CR 672 - Big Bend Road**

  This interchange has a half-cloverleaf configuration with a free-flow loop on-ramp from eastbound Big Bend Road to northbound I-75 and a free-flow loop off-ramp from southbound I-75 to eastbound Big Bend Road. The terminals of the southbound and northbound I-75 ramps at Big Bend Road are signalized. All on-ramps and off-ramps at the interchange are single-lane ramps. Channelized right-turn movements are provided at all ramp terminals.

  Big Bend Road is a four-lane divided minor arterial from US 41 to east of US 301. Big Bend Road provides access to the town of Apollo Beach on the west side of I-75 and to the town of Boyette on the east side of I-75.

- **Gibsonton Drive**

  This interchange has a diamond configuration with a signalized intersection at the southbound ramp terminals on the west side of the interchange and an unsignalized intersection at the northbound ramp terminals on the east side. All on-ramps and off-ramps at the interchange are single-lane ramps. Channelized right-turn movements are provided at all ramp terminals.

  Gibsonton Drive is a four-lane divided minor arterial from US 41 to east of US 301. Gibsonton Drive provides access to the town of Gibsonton on the west side of I-75 and the town of Riverview on the east side of I-75.

- **US 301**

  This interchange has a combination diamond / partial cloverleaf configuration with a free-flow loop off-ramp from southbound I-75 to southbound US 301 and a free-flow loop off-ramp from northbound I-75 to northbound US 301. All ramp terminals at the interchange are unsignalized, yield condition intersections. All ramps at the interchange are single-lane ramps.

  US 301 in the vicinity of I-75 is a six-lane divided principal arterial. It provides access to the town of Riverview on the east side of I-75 and the City of Tampa and the Port of Tampa on the west side of I-75.

- **SR 618 – Crosstown Expressway**

  This interchange has a trumpet configuration providing access to and from both directions of I-75 to the Expressway located west of I-75. The southbound I-75 on-ramp from eastbound on the Expressway and the northbound I-75 off-ramp to westbound on the Expressway are two-lane ramps; all other ramps are single-lane ramps.

  The Expressway is a six-lane limited access, toll highway and includes two elevated reversible lanes. The Expressway's elevated reversible lanes have no direct access to I-75 at the interchange and instead traffic wishing to access I-75 must exit the reversible lanes near the Expressway interchange at US 301. The Expressway provides access to downtown Tampa; South Tampa, and to Pinellas County via Gandy Boulevard.

- **SR 60 (Adamo Drive)**

  This interchange has a diamond configuration with a free-flow loop on-ramp from eastbound SR 60 to northbound I-75 and a free-flow loop on-ramp from westbound SR 60 to southbound I-75. Both off-ramps from I-75 at SR 60 are signalized. The right-turn movements have a "no right turn on red" condition because the northbound off-ramp provides three and the southbound off-ramp provides two right-turn lanes.

  SR 60 is a six-lane principal arterial roadway west of I-75 and an eight-lane divided principal arterial roadway east of I-75. A fourth eastbound lane, provided west of I-75, serves as an auxiliary lane to the next signalized intersection (Falkenburg Road), which is located approximately 1,000 feet west of the southbound ramp terminal. SR 60 provides access to the City of Tampa and the Port of Tampa on the west side of I-75 and the town of Brandon, including the Westfield Brandon shopping mall on the east side of I-75.

- **SR 574 - Martin Luther King Boulevard**

  This interchange has a diamond configuration with a free-flow loop off-ramp from northbound I-75 to westbound SR 574. The intersection of the southbound I-75 ramp at SR 574 is signalized while the intersection of the northbound ramp is unsignalized. All ramps at the interchange are single-lane except for the southbound off-ramp, which is a two-lane ramp. A channelized right-turn movement is provided from the southbound off-ramp to Martin Luther King Boulevard.

  SR 574 is a six-lane divided principal arterial in the area of the interchange. SR 574 provides access to the City of Tampa on the west side of I-75 and the towns of Mango and Seffner on the east side of I-75.

- **Interstate 4 – SR 400**

  This is a systems interchange with free-flow ramps to and from each direction on I-75 to and from each direction of I-4. All ramps at the interchange are single-lane ramps, except the northbound and westbound off-ramps which are two-lane ramps.

  I-4 has an eight-lane cross section west of I-75 and a six-lane (cross section) east of I-75 with auxiliary lanes in each direction to Mango Road (SR 579), the next interchange east of I-75. I-4 runs from downtown Tampa west of I-75 to I-95 at Daytona Beach on the east coast of Florida.

- **SR 582 - Fowler Avenue**

  This interchange has a modified diamond configuration with two cloverleaf access ramps to I-75 North. A fly-over ramp carries northbound I-75 traffic to westbound Fowler Avenue. I-75 southbound is accessible from eastbound and westbound Fowler Avenue via a single-lane ramp. All ramps are single-lane ramps except the northbound off-ramp, which is a two-lane ramp. Two unsignalized intersections connect the I-75 on- and off-ramps with Fowler Avenue. Fowler Avenue is a six-lane divided arterial roadway.

- **CR 582A - Fletcher Avenue / CR 579 - Morris Bridge Road**

  This interchange has a modified diamond configuration with a cloverleaf ramp in the northeast quadrant providing access from northbound I-75 to eastbound and westbound Fletcher Avenue through an unsignalized intersection at the ramp terminal. All ramps

are single-lane ramps. Fletcher Avenue is a four-lane divided arterial. An auxiliary lane is provided in each direction of travel on I-75 between the Fowler and Fletcher Avenue interchanges.

2.2 Existing Traffic Volumes

2.2.1 Traffic Data Collection

The following traffic data were collected for this study:

- Afternoon peak period turning movement counts at 18 ramp terminal intersections
- 2007 Annual Average Daily Traffic (AADT) Volumes (supplied by FDOT District 7)
- Florida Traffic Information – Version 2006

Four-hour vehicle turning movement counts – from 3:00 PM to 7:00 PM – were collected at the following eighteen (18) ramp terminal intersections within the study area:

- I-75 northbound ramps at Moccasin Wallow Road
- I-75 southbound ramps at Moccasin Wallow Road
- I-75 northbound ramps at SR 674 (Sun City Center Boulevard)
- I-75 southbound ramps at SR 674 (Sun City Center Boulevard)
- I-75 northbound ramps at Big Bend Road
- I-75 southbound ramps at Big Bend Road
- I-75 northbound ramps at Gibsonton Drive
- I-75 southbound ramps at Gibsonton Drive
- I-75 northbound ramps at US 301
- I-75 southbound ramps at US 301
- I-75 northbound ramps at SR 60 (Adamo Drive)
- I-75 southbound ramps at SR 60 (Adamo Drive)
- I-75 northbound ramps at SR 574 (Martin Luther King Boulevard)
- I-75 southbound ramps at SR 574 (Martin Luther King Boulevard)
- I-75 northbound ramps at SR 582 (Fowler Avenue)
- I-75 southbound ramps at SR 582 (Fowler Avenue)
- I-75 northbound ramps at Fletcher Avenue
- I-75 southbound ramps at Fletcher Avenue

The summary sheets for these counts are provided in Appendix A.

2.2.2 2007 AADT Volumes

FDOT District 7 provided Year 2007 AADT volumes for all segments of I-75 within the study area as well as all intersecting streets, ramps, and collector/distributor (CD) roadways. These data are provided in Appendix B. The existing (2007) AADT volumes are shown on Figures 2-10a and 2-10b.

2.2.3 2007 PM Design Hour Volumes

FDOT provided the K_{30} and D_{30} factors for the I-75 mainline and cross streets and truck volumes for the mainline and cross streets. Table 2-1 shows the K_{30} and D_{30} factors used to develop existing project traffic.

Table 2-1
Existing K_{30} and D_{30} Factors

	Mainline I-75	Side Streets
K_{30}	8.75%	9.55%
D_{30}	52.89%	55.25%

The K_{30} and D_{30} factors shown in Table 2-1 were applied to the AADT volumes of the I-75 mainline and CD roads to estimate the design hour volumes (DHV). Peak flow direction and the peak hour period for the mainline and CD roads was determined using information from the Florida Traffic Information CD – 2006 version. The design hour volumes for the ramps and ramp terminal intersections were developed with use of the evening peak period turning movement counts. Figures 2-11a and 2-11b show the resulting design hour traffic volumes.

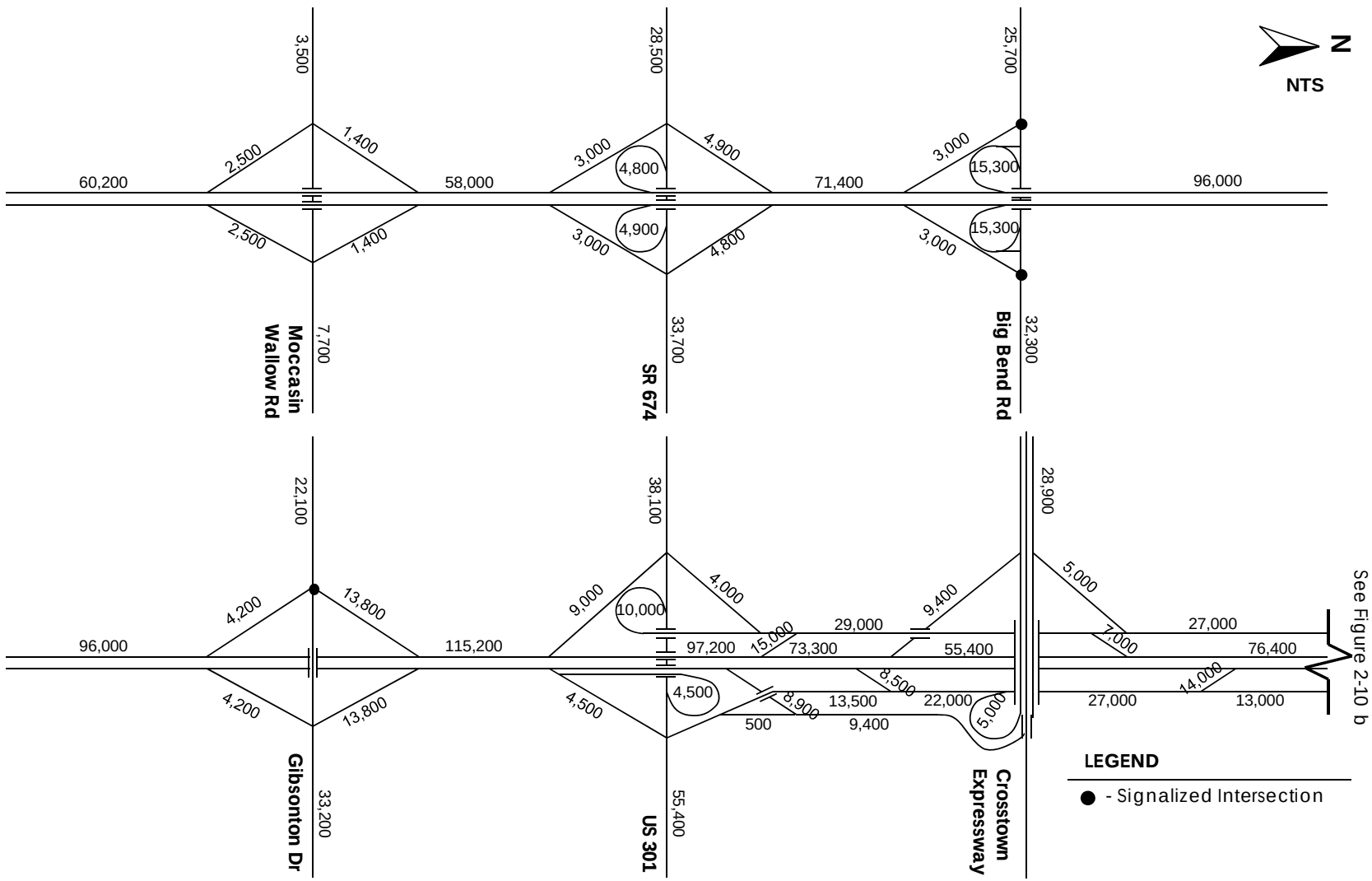
2.3 Existing Conditions Operations Analyses

2.3.1 Analyses Methodology

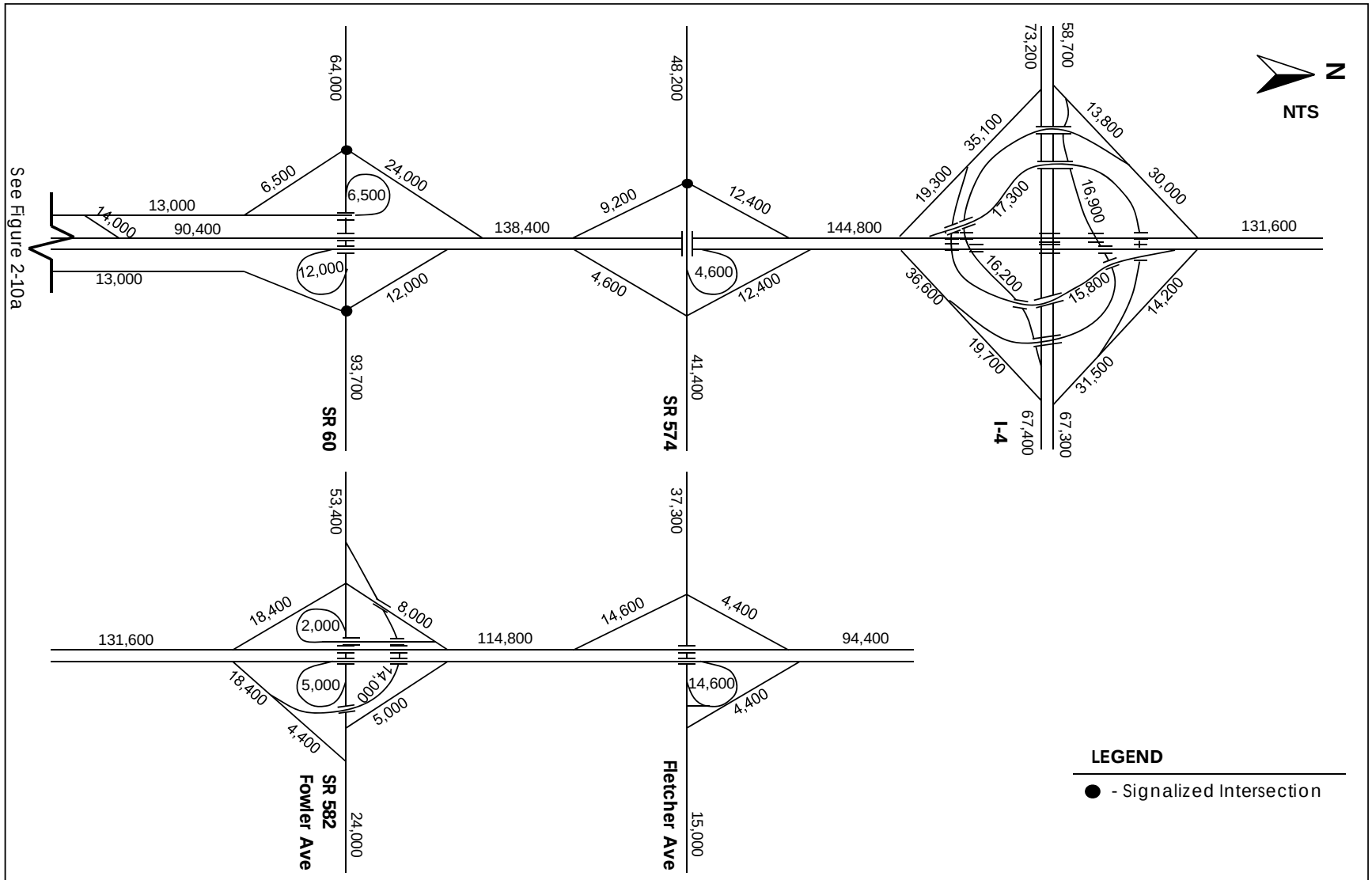
Existing traffic operating conditions for signalized and unsignalized intersections, ramp merge and diverge areas, weave sections, and mainline freeway segments were evaluated. Signal timing plans, obtained from the Hillsborough County Traffic Engineering Department, were used to analyze the study area's signalized intersections.

The existing traffic conditions at signalized intersections were analyzed using *HCS+ Signal* software. Unsignalized intersection analysis was conducted using *HCS+ Unsignal* software. HCS+ (Version 5.2) was also used for the other analyses such as mainline and weave sections and ramp merge and diverge areas. A driver population factor of 1.0 and a Peak Hour Factor (PHF) of 0.9 were used in the analysis.

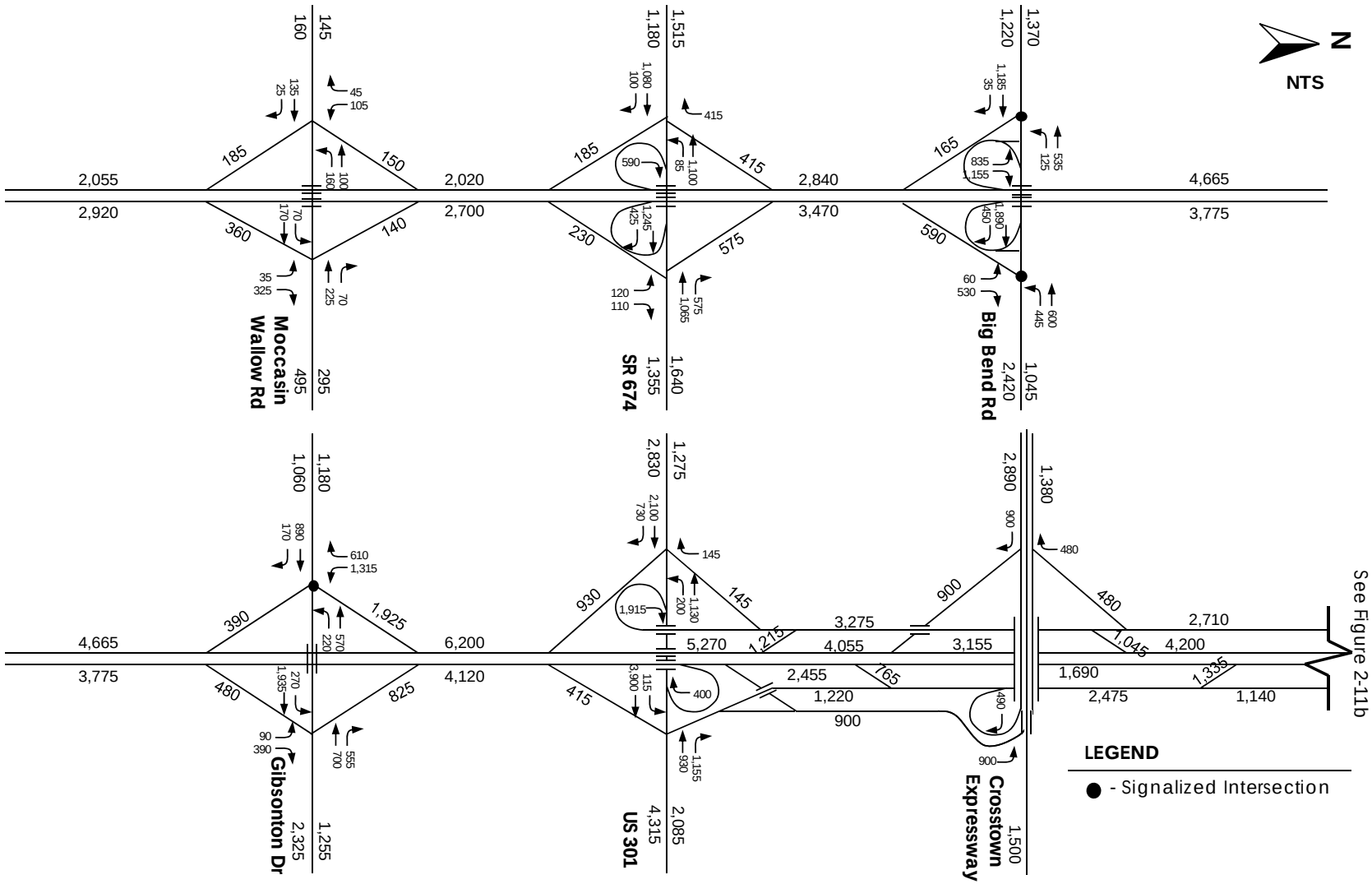
Special analysis cases exist for the northbound on-ramp and southbound off-ramp at the Gibsonton Drive interchange. Traffic on the single-lane northbound on-ramp enters I-75 on its own lane. Traffic exits I-75 to the single-lane southbound off-ramp with a lane drop. According to Chapter 25 of HCM, these special cases can not be analyzed using HCS Software. Instead, they must be analyzed manually using equations 23-3 and 25-1 and Exhibit 25-3.



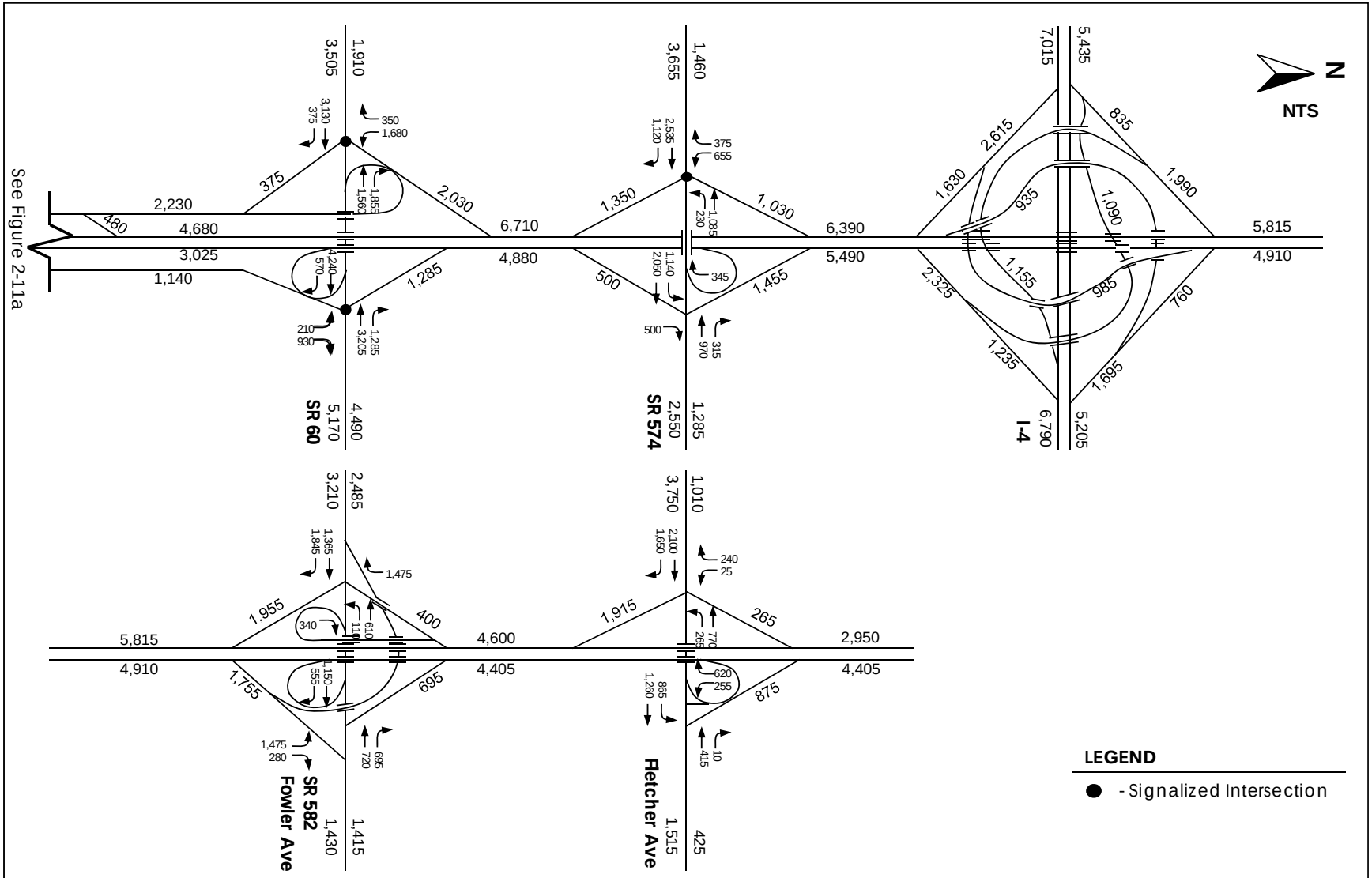
I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2007 AVERAGE ANNUAL DAILY TRAFFIC VOLUMES (SOUTH)	Figure 2-10a



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2007 AVERAGE ANNUAL DAILY TRAFFIC VOLUMES (NORTH)	Figure 2-10b



I-75 Traffic & PD&E Studies		
Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2007 PM PEAK HOUR TRAFFIC VOLUMES (SOUTH)	Figure 2-11a



I-75 Traffic & PD&E Studies		
Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2007 PM PEAK HOUR TRAFFIC VOLUMES (NORTH)	Figure 2-11b

2.3.2 Levels of Service

Existing levels of service for the I-75 mainline, ramp junctions, ramp roadways, and weaving sections were determined using the PM design hour traffic volumes depicted on Figures 2-11a and 2-11b. I-75 is designated as rural from Moccasin Wallow Road to US 301, and as urban from US 301 to Fletcher Avenue. According to the minimum level of service criteria in the 2002 Level of Service Handbook, the minimum standard level of service is Level of Service (LOS) D for urban freeway facilities and LOS C for rural freeway facilities. According to the Hillsborough County 2007 Level of Service Report, LOS D is the standard for the cross roads at all the interchanges within the study area (including I-4 and the Selmon Expressway).

- **Intersection Analysis**

  Table 2-2 shows the results of the existing ramp terminal intersection analysis. The results show that four of the five signalized intersections do not meet the minimum LOS standard. Five of the 13 unsignalized intersections, have a side street LOS or main street left turning LOS that is worse than the LOS standard.

- **Ramp Merge / Diverge Analysis**

  Ramp analysis was conducted at all mainline on-ramp and off-ramp segments as well as the CD road merge and diverge areas, where the CD road has two or more lanes. The results of this analysis are shown on Table 2-3. Nine of the 24 on-ramp merge areas and seven of the 24 off-ramp diverge areas do not meet the LOS standard. From south of the Crosstown Expressway to the project's southern terminus, all ramps along I-75 operate at or better than the LOS standard except for the southbound ramps at SR 674, the southbound off-ramp to Gibsonton Drive, and the southbound off-ramp to Big Bend Road. North of the Crosstown Expressway, all interchanges from SR 60 to Fowler Avenue have some or all of their ramps operating at substandard levels of service. The worst operating interchanges are at Fowler Avenue and Fletcher Avenue.

- **Freeway Segment Analysis**

  Freeway segment analysis was conducted on all the I-75 segments between each interchange. The results of the freeway segment analysis are shown on Table 2-4. All of the northbound segments operate at standard LOS or better while four of the 10 southbound segments do not meet the LOS standard.

- **Weaving Segment Analysis**

  Freeway weaving segment analysis was conducted on three weaving segments that occur on the I-75 mainline and the CD roads. By definition of the Highway Capacity Manual, a weaving segment occurs along a roadway where an on-ramp is followed by an off-ramp within a distance of 2,500 feet or less. By this definition, there is one weaving segment on the southbound mainline of I-75 from Fletcher Avenue to Fowler Avenue and two weaving segments in both directions on the CD roads from the Crosstown Expressway to SR 60. The results of the analyses are shown on Table 2-4. As the results show, the mainline weaving segment between Fletcher Avenue and Fowler Avenue operates at LOS E. The two CD ramp weaving segments operate LOS B and D.

Table 2-2
Existing (2007) Ramp Terminal Intersection LOS Results

No.	Intersection	Signalized	Approach / Movement	Design Hour Control Delay (sec/veh)	Approach LOS	Design Hour Average Intersection Delay (sec/veh)	Intersection LOS
1	I-75 northbound ramps at Moccasin Wallow Road	NO	NB LT	13.3	B	n/a	n/a
			EB LT	8.1	A		
2	I-75 southbound ramps at Moccasin Wallow Road	NO	WB LT	8.0	A	n/a	n/a
			SB LT	17.8	C		
3	I-75 northbound ramps at SR 674	NO	NB LT	92.9	**F**	n/a	n/a
4	I-75 southbound ramps at SR 674	NO	WB LT	12.5	**F**	n/a	n/a
5	I-75 northbound ramps at Big Bend Road	YES	EB Thru	94.3	**F**	75.8	**E**
			WB LT	97.9	**F**		
			WB Thru	2.4	A		
			NB LT	61.5	**E**		
6	I-75 southbound ramps at Big Bend Road	YES	EB Thru	96.4	**E**	93.3	**F**
			WB LT	116.6	**F**		
			WB Thru	22.7	C		
			NB LT	130.6	**F**		
7	I-75 northbound ramps at Gibsonton Drive	NO	EB LT	24.1	C	n/a	n/a
			NB LT	16902	**F**		
8	I-75 southbound ramps at Gibsonton Drive	YES	EB Thru	180.7	**F**	208.8	**F**
			WB LT	300.5	**F**		
			WB Thru	32.4	C		
			SB LT	288.9	**F**		
9	I-75 northbound ramps at US 301	NO	EB LT	11.7	B	n/a	n/a

Notes: Shaded cells and bold letters indicate a LOS that does not meet the minimum LOS standards; LOS for unsignalized intersections is reported for the stop sign or yield controlled movements only.
n/a: Not applicable; unsignalized intersection

Table 2-2 (continued)
Existing (2007) Ramp Terminal Intersection LOS Results

No.	Intersection	Signalized	Approach / Movement	Design Hour Control Delay (sec/veh)	Approach LOS	Design Hour Average Intersection Delay (sec/veh)	Intersection LOS
10	I-75 southbound ramps at US 301	NO	n/a	n/a	n/a	Merge condition only	Merge condition only
11	I-75 northbound ramps at SR 60	YES	EB Thru	37.8	D	42.3	D
			WB Thru	15.8	B		
			NB LT	51.4	D		
			NB RT	151.6	**F**		
12	I-75 southbound ramps at SR 60	YES	EB Thru	28.8	C	86.4	**F**
			WB Thru	19.5	B		
			SB LT	263.7	**F**		
			SB RT	46.4	D		
13	I-75 northbound ramps at SR 574	NO	EB LT	457.7	**F**	n/a	n/a
14	I-75 southbound ramps at SR 574	YES	EB Thru	174.0	**F**	125.7	**F**
			WB LT	215.2	**F**		
			WB Thru	7.2	A		
			SB LT	149.9	**F**		
16	I-75 southbound ramps at SR 582	NO	WB LT	16.4	C	n/a	n/a
17	I-75 northbound ramps at Fletcher Avenue	NO	EB LT	27.0	D	n/a	n/a
			SB LT	n/a	**F**		
18	I-75 southbound ramps at Fletcher Avenue	NO	WB LT	252.6	**F**	n/a	n/a
			SB LT	n/a	**F**		

Notes: Shaded cells and bold letters indicate a LOS that does not meet the minimum LOS standards; LOS for unsignalized intersections is reported for the stop sign on yield controlled movements only
n/a: Not applicable; unsignalized intersection

Table 2-3
Existing (2007) Ramp LOS Results

Intersection	Design Hour Ramp Density (pc/mi/ln)	LOS
Moccasin Wallow Road		
I-75 NB off-ramp to Moccasin Wallow Road	17.4	B
I-75 NB on-ramp from Moccasin Wallow Road	11.1	B
I-75 SB off-ramp to Moccasin Wallow Road	17.0	B
I-75 SB on-ramp from Moccasin Wallow Road	13.8	B
SR 674		
I-75 NB off-ramp to SR 674	15.0	B
I-75 NB on-ramp from WB SR 674	20.3	C
I-75 SB off-ramp to WB SR 674	14.3	B
I-75 SB on-ramp from SR 674	12.6	B
I-75 NB on-ramp from EB SR 674	18.6	B
I-75 SB off-ramp to EB SR 674	13.7	B
Big Bend Road		
I-75 NB off-ramp to Big Bend Road	26.4	C
I-75 NB on-ramp from Big Bend Road	20.5	C
I-75 SB off-ramp to Big Bend Road	33.9	**F**
I-75 SB on-ramp from Big Bend Road	14.1	B
Gibsonton Drive		
I-75 NB off-ramp to Gibsonton Drive	27.0	C
I-75 NB on-ramp from Gibsonton Drive	n/a	C
I-75 SB off-ramp to Gibsonton Drive	n/a	**F**
I-75 SB on-ramp from Gibsonton Drive	27.5	C
US 301		
I-75 NB off-ramp to US 301	20.9	C
I-75 SB on-ramp from US 301	9.7	A
I-75 SB off-ramp to Crosstown Expressway - US 301 CD Road	31.4	D
Crosstown Expressway		
I-75 NB off-ramp to Crosstown Expressway	18.9	B
I-75 NB off-ramp from Crosstown Expressway - SR 60 CD Road	21.7	C
I-75 NB on-ramp from US 301- Crosstown Expressway CD Road	23.1	C
I-75 SB off-ramp to Crosstown Expressway - SR 60 CD Road	32.8	D
I-75 SB on-ramp from Crosstown Expressway	21.0	C
I-75 SB on-ramp from SR 60 - Crosstown Expressway CD Road	17.7	B
I-75 NB CD on-ramp from Crosstown Expressway	24.3	C
I-75 NB CD off-ramp to I-75 NB	27.0	C
I-75 SB CD on-ramp from I-75 SB	26.4	C

Note: Shaded cells and bold letters indicate a LOS that does not meet the minimum LOS standards

Table 2-3 (continued)
Existing (2007) Ramp LOS Results

Intersection	Design Hour Ramp Density (pc/mi/ln)	LOS
SR 60 / Adamo Drive		
I-75 NB on-ramp from WB SR 60	32.9	D
I-75 NB on-ramp from EB SR 60	18.8	B
I-75 SB off-ramp to SR 60	44.9	**F**
SR 574 / MLK Boulevard		
I-75 NB off-ramp to EB MLK Boulevard	34.2	D
I-75 NB off-ramp to WB MLK Boulevard	24.3	C
I-75 NB on-ramp from MLK Boulevard	29.9	D
I-75 SB off-ramp to MLK Boulevard	35.7	**F**
I-75 SB on-ramp from MLK Boulevard	43.2	**F**
I-4		
I-75 NB off-ramp to I-4	36.6	**E**
I-75 NB on-ramp from I-4 EB	29.4	D
I-75 NB on-ramp from I-4 WB	32.2	D
I-75 SB off-ramp to I-4	41.4	**F**
I-75 SB on-ramp from I-4 WB	31.6	D
I-75 SB on-ramp from I-4 EB	41.6	**F**
SR 582 / Fowler Avenue		
I-75 NB off-ramp to Fowler Avenue	37.0	**E**
I-75 NB on-ramp from WB Fowler Avenue	35.0	**F**
I-75 NB on-ramp from EB Fowler Avenue	27.5	C
I-75 SB off-ramp to Fowler Avenue	34.6	D
I-75 SB on-ramp from Fowler Avenue	32.5	**F**
Fletcher Avenue		
I-75 NB off-ramp to Fletcher Avenue	19.9	B
I-75 NB on-ramp from Fletcher Avenue	42.6	**F**
I-75 SB off-ramp to Fletcher Avenue	33.1	D
I-75 SB on-ramp from Fletcher Avenue	35.9	**F**

Note: Shaded cells and bold letters indicate a LOS that does not meet the minimum LOS standards

Table 2-4
Existing (2007) Mainline and Weaving Section LOS Results

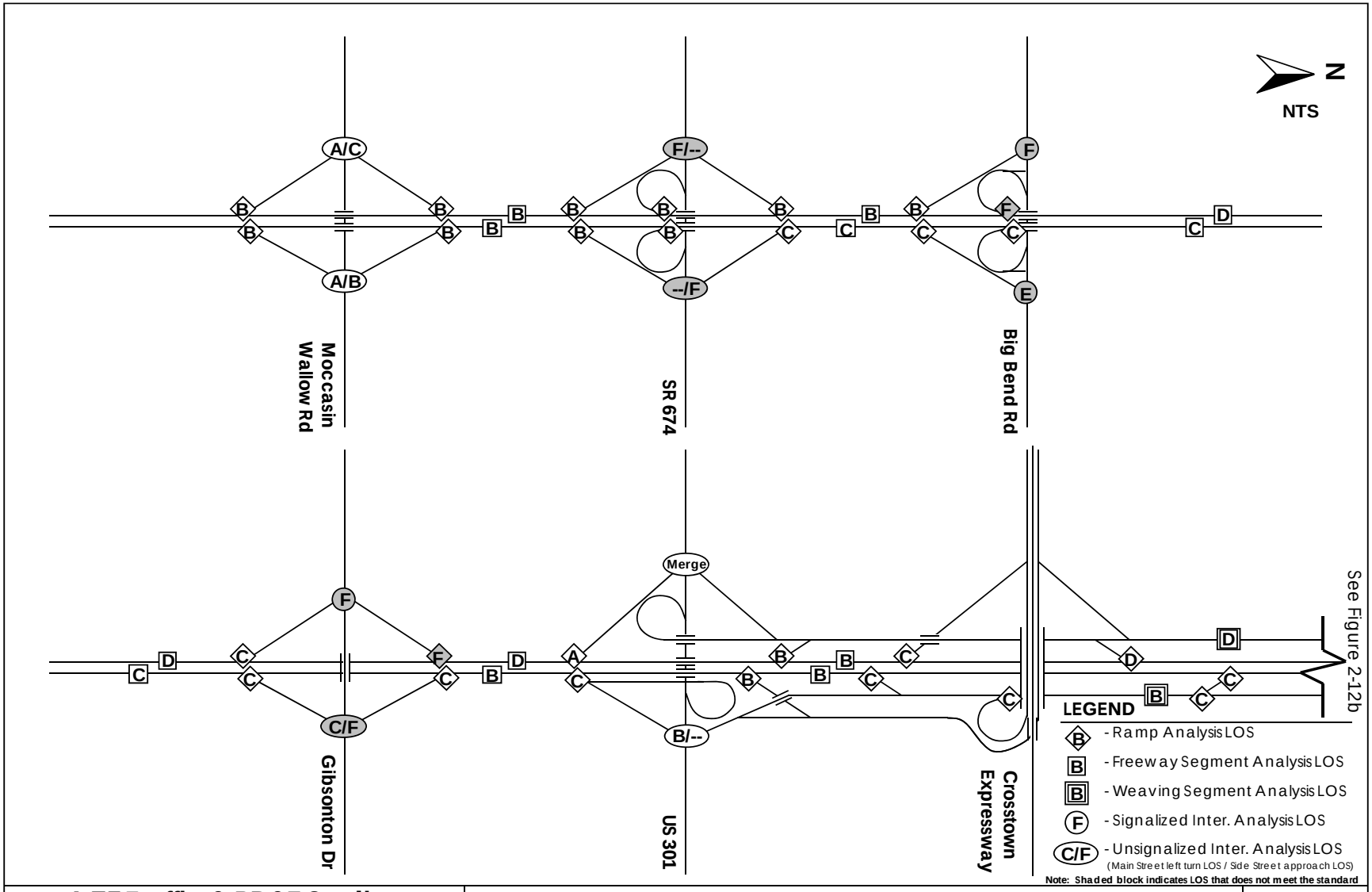
Mainline Segment	Design Hour Freeway Density (pc/mi/ln)	LOS
I-75 Northbound		
Moccasin Wallow Road to SR 674	15.7	B
SR 674 to Big Bend Road	20.0	C
Big Bend Road to Gibsonton Drive	21.6	C
Gibsonton Drive to US 301	17.3	B
US 301 to Crosstown Expressway	14.2	B
Crosstown Expressway to SR 60	18.0	B
SR 60 to Martin Luther King Boulevard	28.5	D
Martin Luther King Boulevard to I-4	23.2	C
I-4 to Fowler Avenue	28.9	D
Fowler Avenue to Fletcher Avenue	26.2	D
I-75 Southbound		
Fletcher Avenue to Fowler Avenue	27.5	D
Fowler Avenue to I-4	38.4	**E**
I-4 to Martin Luther King Boulevard	27.7	D
Martin Luther King Boulevard to SR 60	n/a	**F**
SR 60 to Crosstown Expressway	25.0	C
Crosstown Expressway to US 301	13.4	B
US 301 to Gibsonton Drive	26.6	D
Gibsonton Drive to Big Bend Road	27.2	D
Big Bend Road to SR 674	16.4	B
SR 674 to Moccasin Wallow Road	11.7	B

Weave Level of Service Analysis

Weave Segment	Design Hour Freeway Density	LOS
I-75 SB Fletcher Avenue to Fowler Avenue	41.2	**F**
I-75 NB CD Crosstown Expressway to SR 60	15.0	B
I-75 SB CD SR 60 to Crosstown Expressway	33.4	D

Note: Shaded cells and bold letters indicate a LOS that does not meet the minimum LOS standards

In summary, I-75 operates at standard LOS or better south of the Crosstown Expressway except the interchanges at SR 674, Big Bend Road, and Gibsonton Drive, where the ramp terminal intersections and the southbound off-ramps at both locations operate at LOS F. North of the Crosstown Expressway, most of the study corridor operates acceptably from a freeway segment analysis standpoint. It does not operate acceptably at the ramp merge and diverge areas, which produce congested sections in both directions from the Crosstown Expressway to Fletcher Avenue. Therefore, most of the current congestion problems could be solved with ramp improvements without requiring mainline I-75 widening. The one exception to this finding is the southbound segment of I-75 from I-4 to SR 60, which operates at LOS E and would require additional capacity to operate acceptably. Figures 2-12a and 2-12b show the existing levels of service in the study area.

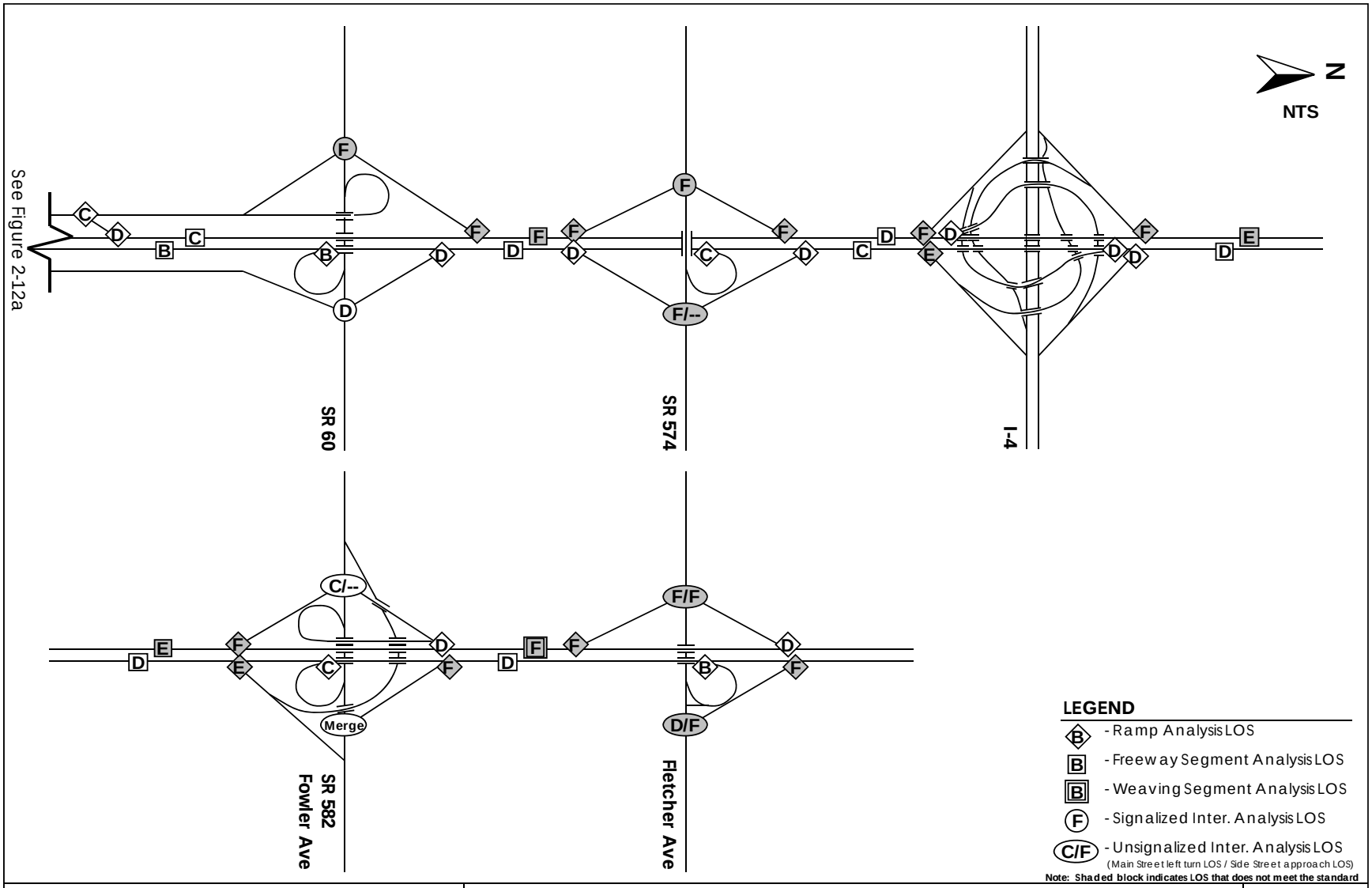


I-75 Traffic & PD&E Studies

Design Traffic Technical Memorandum
Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue
WPI Segment Number 419235-1

YEAR 2007 TRAFFIC OPERATIONS ANALYSIS
LEVEL OF SERVICE RESULTS(SOUTH)

Figure 2-12a



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2007 TRAFFIC OPERATIONS ANALYSIS LEVEL OF SERVICE RESULTS (NORTH)	Figure 2-12b

3.0 FUTURE ROADWAY NETWORK

The future roadway network considered for this Study is consistent with the Strategic Intermodal System (SIS) 2035 Cost Feasible Plan, the 2030 Long Range Transportation Plans (LRTP) and Transportation Improvement Programs (TIP) of the Sarasota-Manatee and Hillsborough County Metropolitan Planning Organizations (MPO), the FDOT's Adopted Five-Year Work Program, local government comprehensive plans, and development mitigation improvement projects that are elements of approved development orders. These committed improvements, in addition to the existing roadway network, were considered as the design year base roadway network (No-Build Alternative) for modeling and operational analysis purposes.

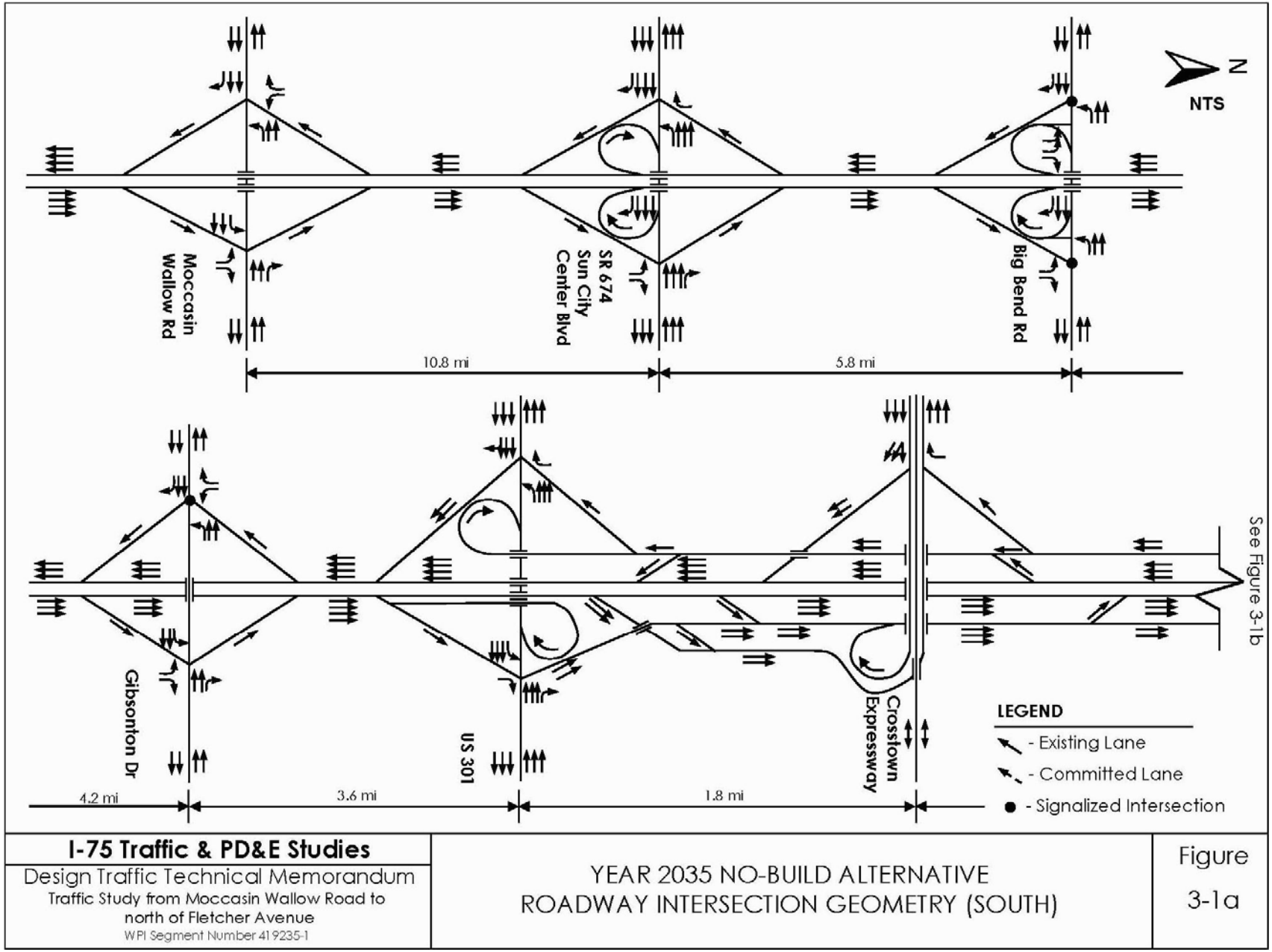
Review of the above referenced documents shows that there is only one committed/funded improvement within the study area at the I-75 / Martin Luther King Boulevard interchange:

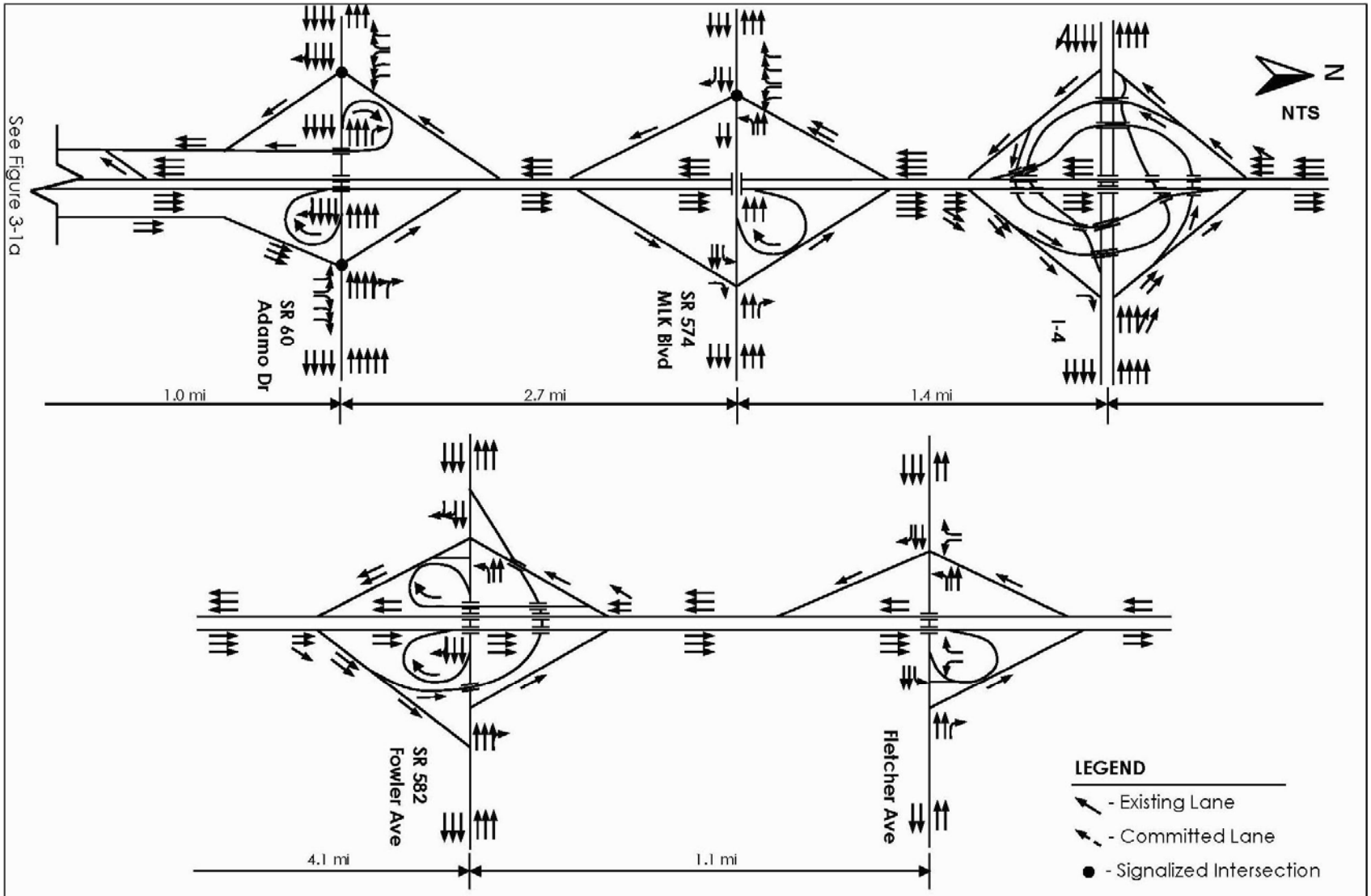
- I-75 at Martin Luther King Boulevard interchange – Add lanes on the southbound (SB) ramp – scheduled construction - 2008/2009 / LRTP – FPN: 2558935

Although there are no committed/funded improvements to the mainline, there are two study area corridor improvements that may have some effect on traffic volumes demand on the I-75 mainline. These improvements are:

- US Highway 301 – Six-lane widening from CR 672 (Balm Road) to Gibsonton Drive – scheduled construction - 2008/2009 / LRTP / Work Program – FPN: 4154892
- US Highway 301 – Four-lane widening from CR 672 (Balm Road) to SR 674 – scheduled construction – 2010 to 2015 / LRTP / Work Program – FPN: 415489-1

Figures 3-1a and 3-1b illustrate the resulting No-Build Alternative roadway network with the planned committed roadway improvements described above.


N
NTS
Moccasin Wallow Rd
SR 674 Sun City Center Blvd
Big Bend Rd
10.8 mi
5.8 mi
Gibsonton Dr
US 301
Crosstown Expressway
See Figure 3-1b
LEGEND
- Existing Lane
- Committed Lane
- Signalized Intersection
4.2 mi
3.6 mi
1.8 mi
I-75 Traffic & PD&E Studies
Design Traffic Technical Memorandum
Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue
WPI Segment Number 419235-1
YEAR 2035 NO-BUILD ALTERNATIVE
ROADWAY INTERSECTION GEOMETRY (SOUTH)
Figure 3-1a



I-75 Traffic & PD&E Studies

Design Traffic Technical Memorandum

Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue

WPI Segment Number 419235-1

YEAR 2035 NO-BUILD ALTERNATIVE
ROADWAY INTERSECTION GEOMETRY (NORTH)

Figure 3-1b

4.0 DESIGN YEAR 2035 TRAFFIC DEMAND PROJECTIONS

4.1 Traffic Demand Projection Methodology

The West Central Florida Regional Planning Model (WCFRPM) Version 5.2 (with a horizon year of 2030) was used to develop Design Year (2035) AADT volumes for the No-Build and three Build Alternatives. The FDOT maintains the WCFRPM and the MPOs have approved it as the regional travel demand model. The WCFRPM is based on the Florida Standard Urban Transportation Modeling Structure (FSUTMS) and is a combination of a number of Tampa Bay area travel demand models, including the Tampa Bay Regional Planning Model and the Sarasota-Manatee Travel Demand Model. Figures 3-1a and 3-1b (shown in the previous section) illustrate the roadway network that is currently included in the latest version of the WCFRPM and is the roadway network considered in this study for the 2035 No-Build Alternative.

4.1.1 Model Validation

A sub-area model validation was used to review and evaluate the WCFRPM performance in the I-75 study area. Model validation is the process of verifying the ability of the validated network to replicate actual conditions at the project level. This model validation was conducted for the project study area using year 2000 land use and traffic volume data that the FDOT provided. Documentation explaining the sub-area model validation procedure used for this study is included in Appendix E.

4.1.2 Future Traffic Growth Trends

The model outputs were checked to verify the simple growth rates between the existing year AADTs and the design year AADTs. The average percentage increase of volumes on the project study area's portion of the I-75 mainline is 68.73% (years 2007 to 2035) with a range of 43% (No-Build Alternative growth between I-4 and Martin Luther King Boulevard) and 128% (Build Alternative 2 growth between Moccasin Wallow Road and SR 674). As the area surrounding the I-75 corridor builds out, it can be expected that the growth rate on I-75 should slow to a more moderate rate, which is the case for the middle sections of the study corridor. The area surrounding the southern portion of I-75 (south of the Alafia River) is still primarily rural with substantial planned residential and commercial growth. In addition, I-75 is the primary regional travel route along the western side of Florida and thus, traffic growth will take place as the overall population and economy of Florida grows.

As an additional check, all future model output AADT volumes for the No-Build and the three Build alternatives were compared against the existing AADT volumes. In the few cases where the future volumes were less than the existing volumes, those particular volumes were set to exceed the existing volume by a minimum of 5.0 percent.

4.2 Design Year K_{30}, D_{30}, and T Factors

Design Year (2035) directional design hour volumes (DDHVs) were derived for the I-75 PD&E Study corridor using K_{30} and D_{30} factors which were developed based on existing (2006) K_{30} and D_{30} values for the study area and the FDOT guidelines for the preparation of K_{30} and D_{30} values.

The K_{30} and D_{30} factors, that were reviewed and approved by the FDOT, are shown in Table 4-1.

Table 4-1
Design Year K_{30} and D_{30} Factors

Factor	Mainline I-75	Side Streets
K_{30}	9.4%	9.4%
D_{30}	53.0%	53.0%

The truck percentages for the future years' analysis were the same as used in the existing traffic analysis. Truck percentages are expected to remain constant in relation to the growth of overall traffic volumes. The truck percentages are shown on the existing (2007) AADT Traffic sheet provided by the FDOT and included in Appendix B. Peak directions on the freeways and arterials were determined from the directional traffic volume counts conducted for this study.

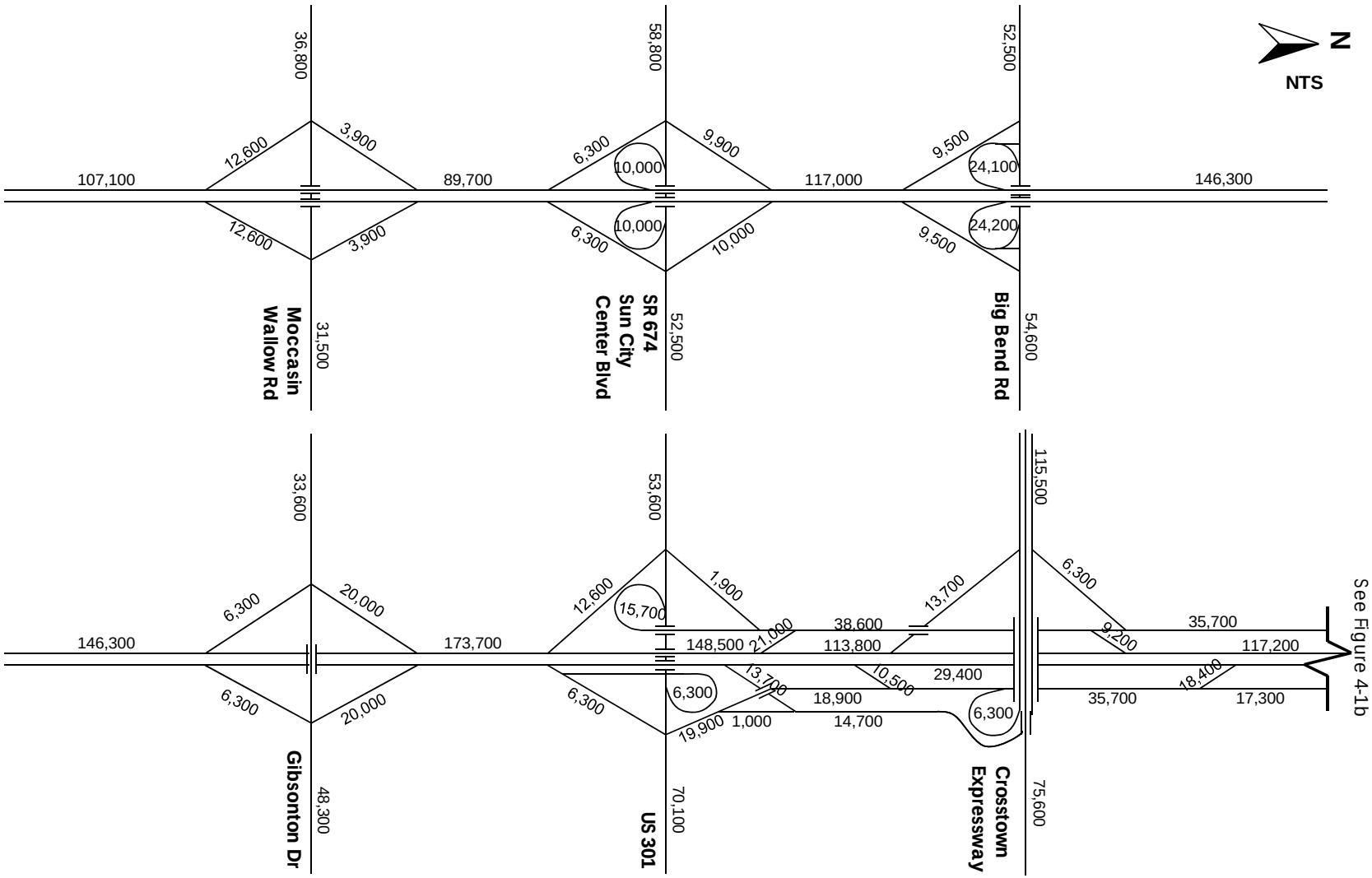
4.3 Year 2035 Traffic Volume Projections

Year 2030 traffic volume projections were developed by the WCFRPM network model for the No-Build and three Build alternatives. Under Build Alternative 1, it was assumed that one additional lane will be constructed along each direction of I-75 throughout the study area. Under Build Alternative 2, it was assumed that two additional lanes will be constructed along each direction of I-75 throughout the study area. Under Build Alternative 3, it was assumed that two special use lanes will be added in each direction of I-75 south of US 301 and three special use lanes will be added in each direction of I-75 north of US 301. Documentation describing the methodology applied to forecast the 2030 AADT volumes is provided in Appendix E.

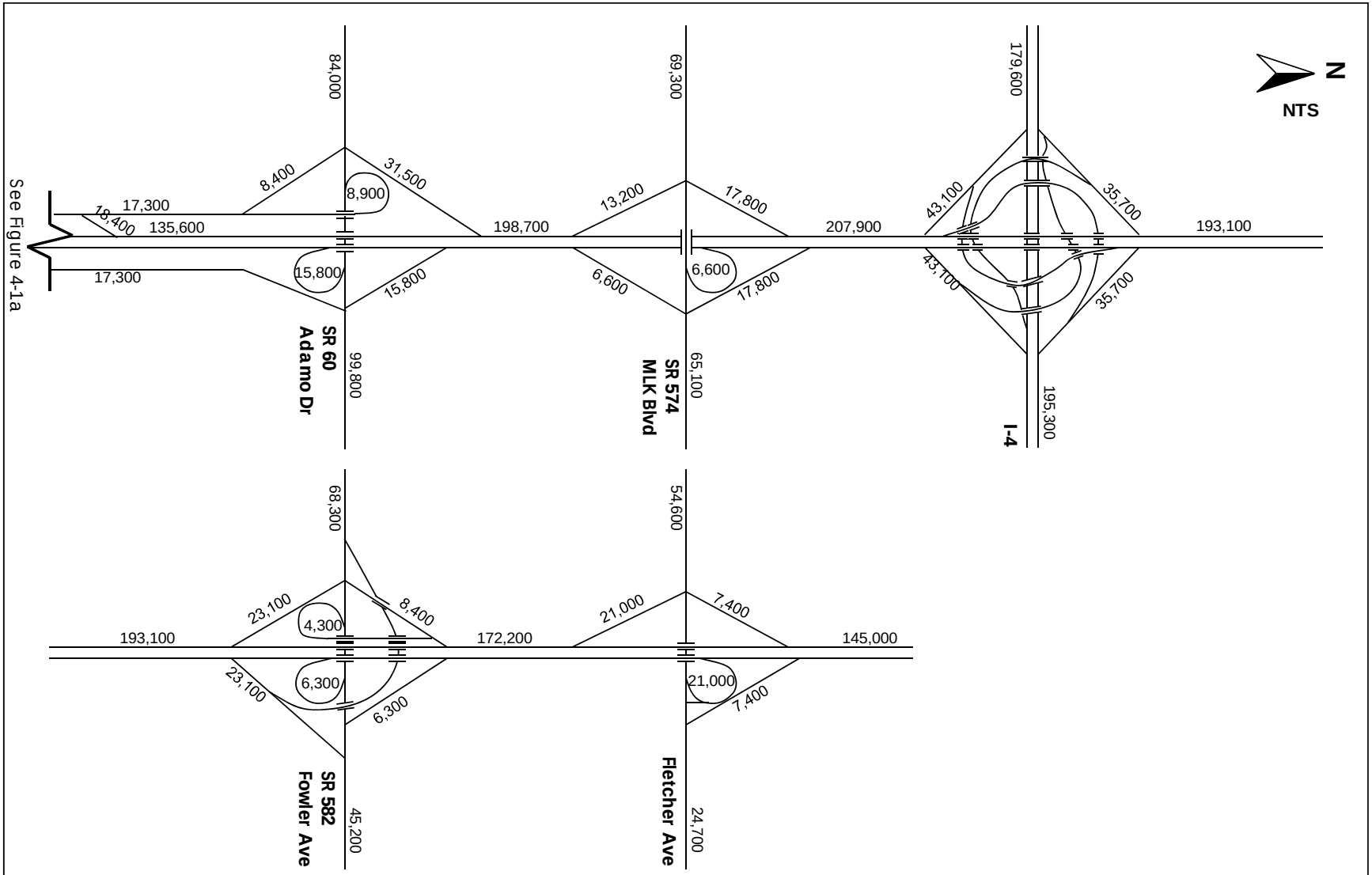
The 2030 AADT Traffic schematics (contained in Appendix F), show the AADT volumes for the No-Build and the three Build alternatives for all segments of I-75 within the study area, as well as AADTs for all major cross streets, ramps and collector-distributor (CD) roadways.

4.3.1 Year 2035 AADT Volumes

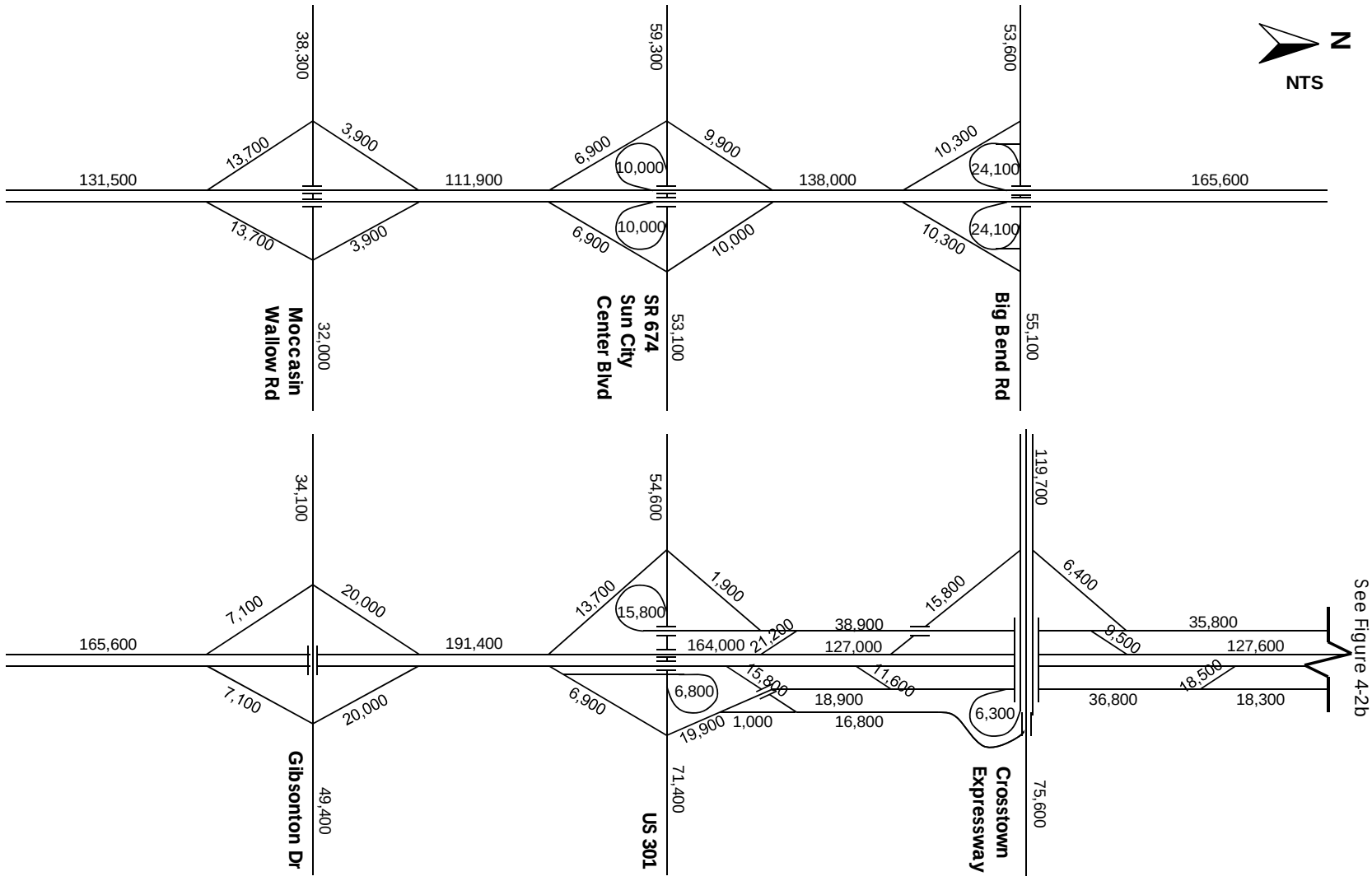
A non-compounded annual growth rate of 1% (for a total rate of 5%) was applied to the adjusted model output Year 2030 volumes to estimate the Design Year 2035 volumes. Figures 4-1a through 4-4b illustrate the Design Year (2035) AADT volumes for the No-Build and three Build alternatives.



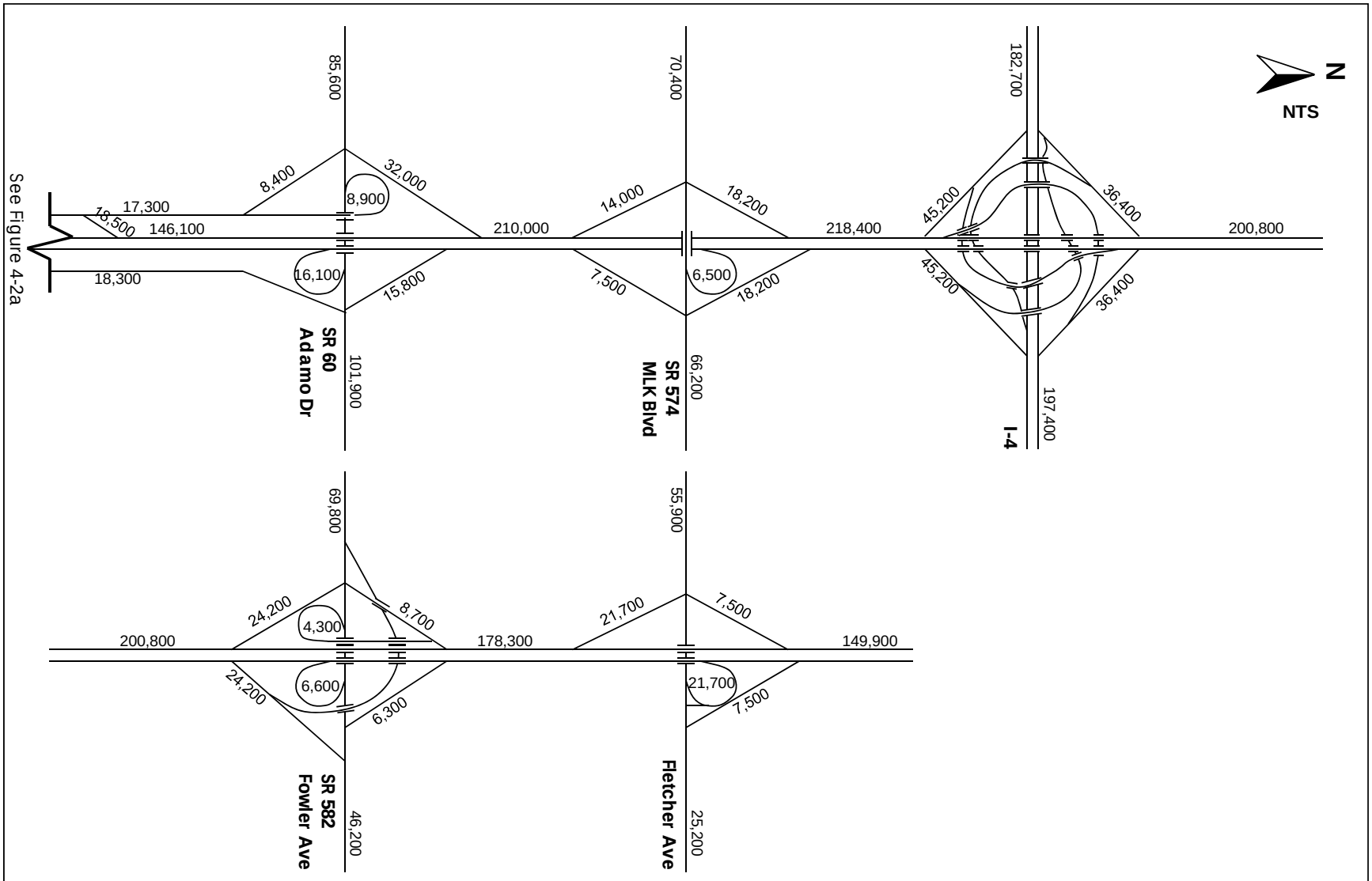
I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 NO-BUILD ALTERNATIVE AVERAGE ANNUAL DAILY TRAFFIC VOLUMES (SOUTH)	Figure 4-1a



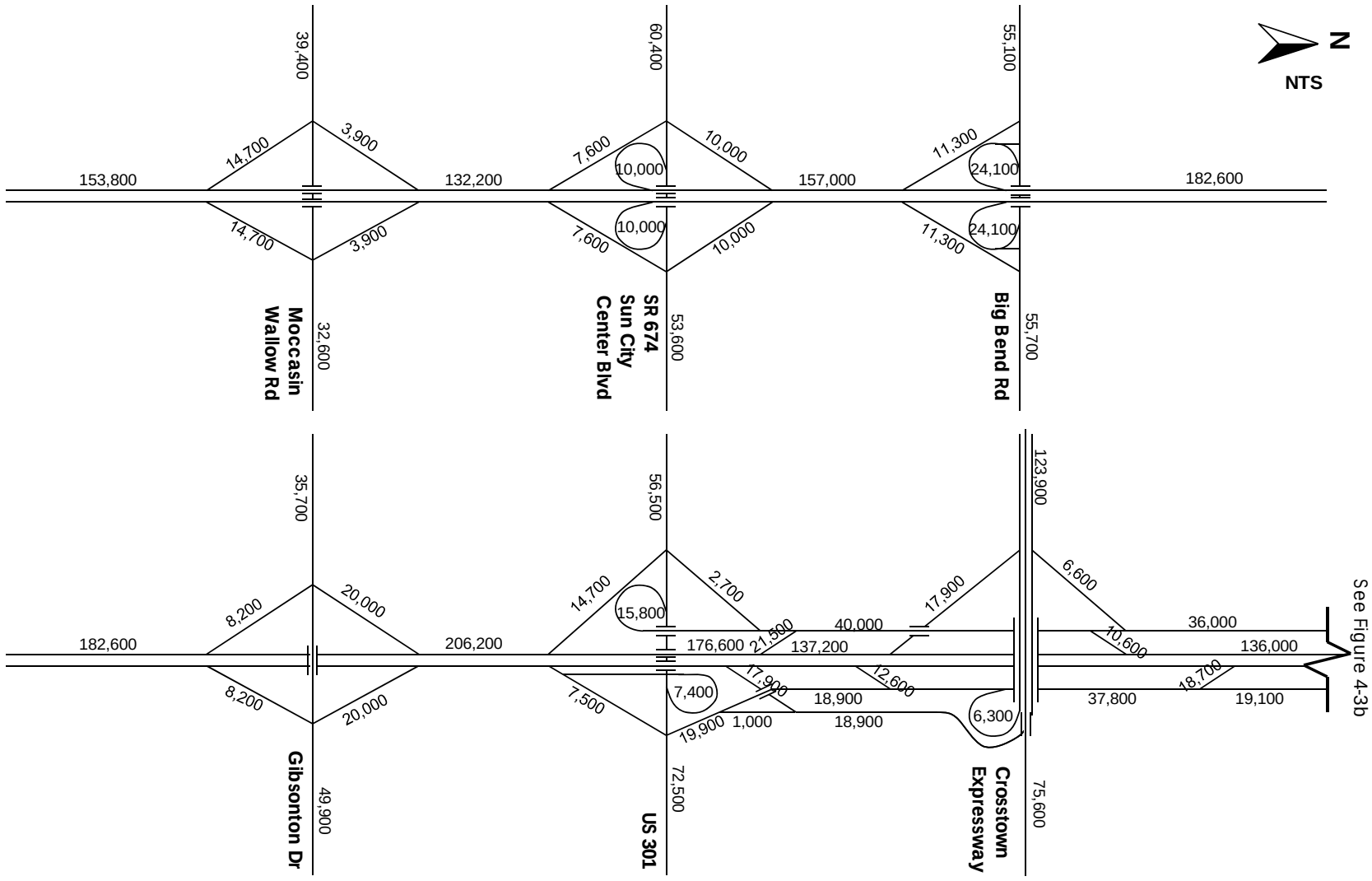
I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 NO-BUILD ALTERNATIVE AVERAGE ANNUAL DAILY TRAFFIC VOLUMES (NORTH)	Figure 4-1b



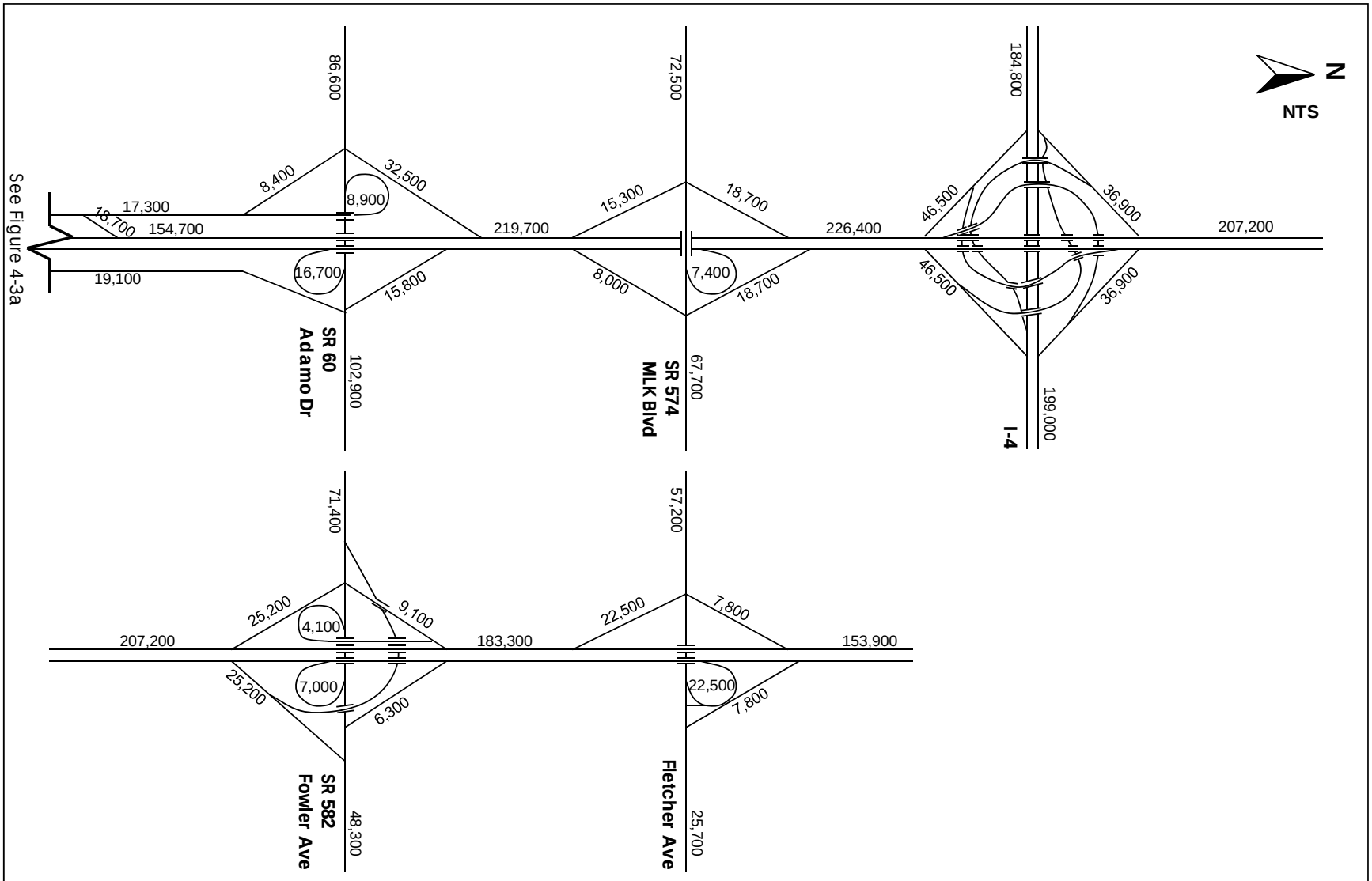
I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 1 AVERAGE ANNUAL DAILY TRAFFIC VOLUMES (SOUTH)	Figure 4-2a



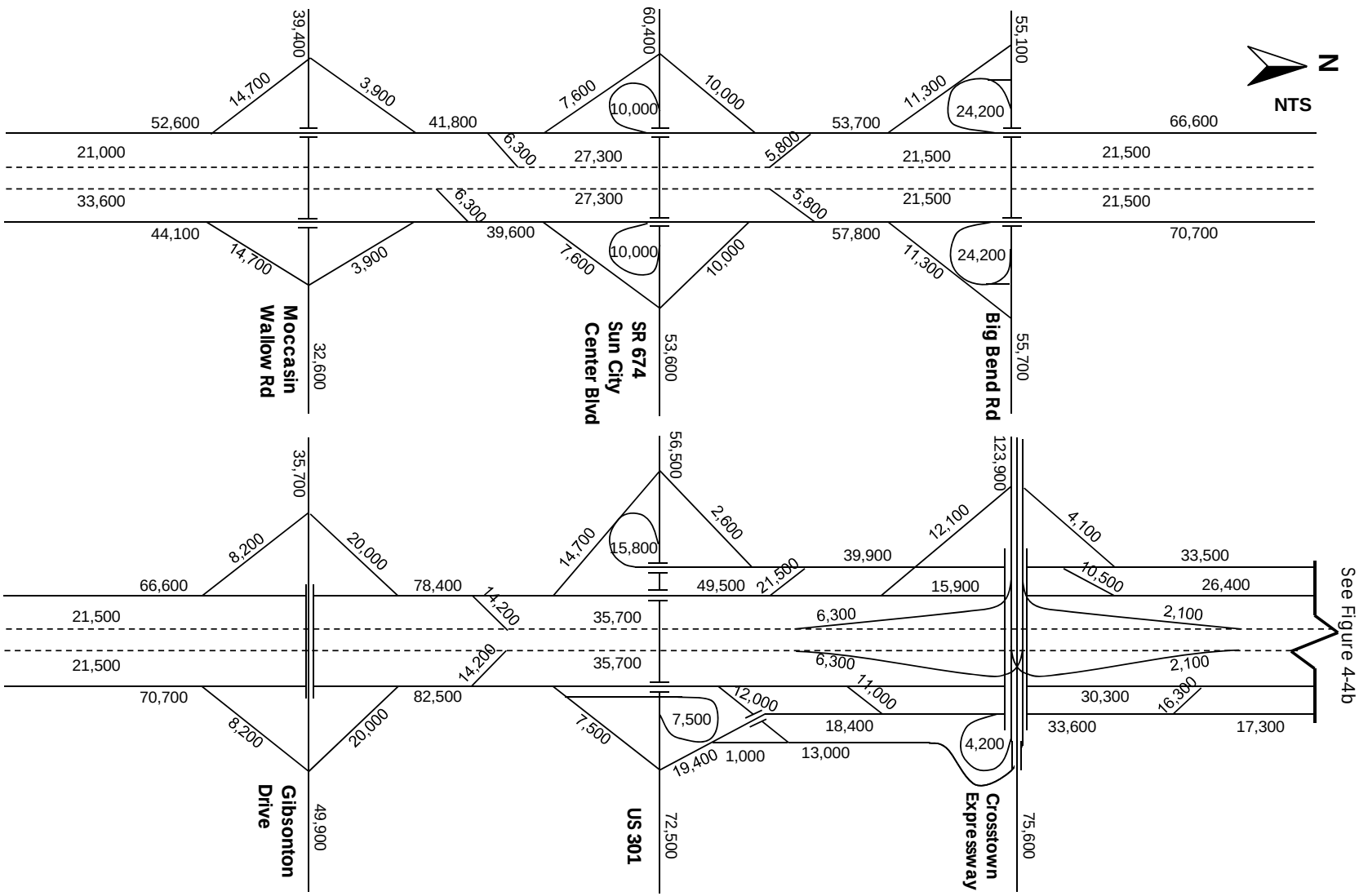
I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 1 AVERAGE ANNUAL DAILY TRAFFIC VOLUMES (NORTH)	Figure 4-2b



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 2 AVERAGE ANNUAL DAILY TRAFFIC VOLUMES (SOUTH)	Figure 4-3a



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 2 AVERAGE ANNUAL DAILY TRAFFIC VOLUMES (NORTH)	Figure 4-3b

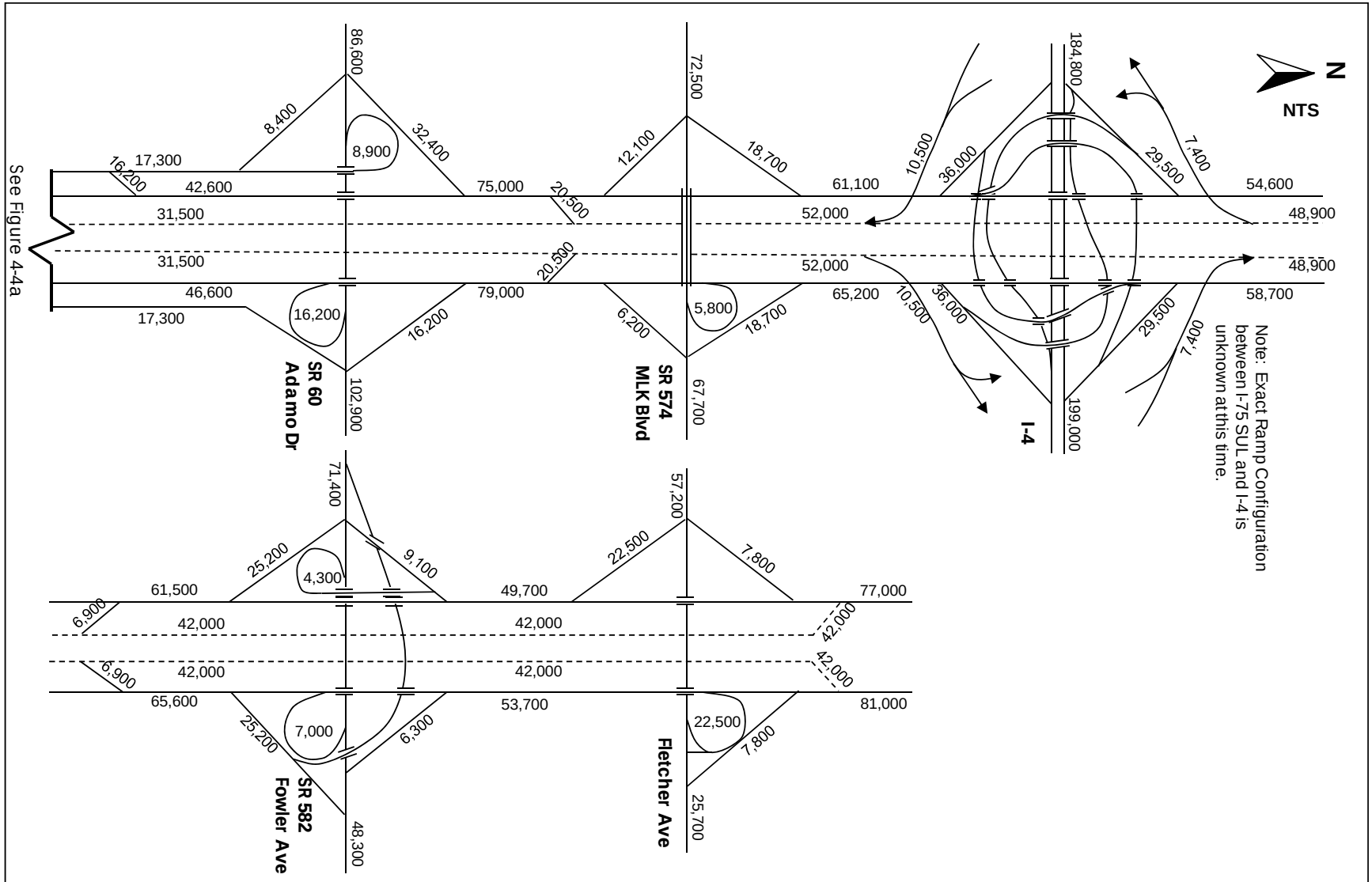


I-75 Traffic & PD&E Studies

Design Traffic Technical Memorandum
Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue
WPI Segment Number 419235-1

YEAR 2035 BUILD ALTERNATIVE 3
AVERAGE ANNUAL DAILY TRAFFIC VOLUMES (SOUTH)

Figure 4-4a



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 3 AVERAGE ANNUAL DAILY TRAFFIC VOLUMES (NORTH)	Figure 4-4b

4.3.2 Year 2035 Design Hour Traffic Volumes

The year 2035 AM and PM design hour traffic volumes for the No-Build and the three Build Alternatives were developed by applying the K_{30} and D_{30} factors illustrated in Table 4-1 to the AADT volumes illustrated on Figures 4-1a through 4-4b.

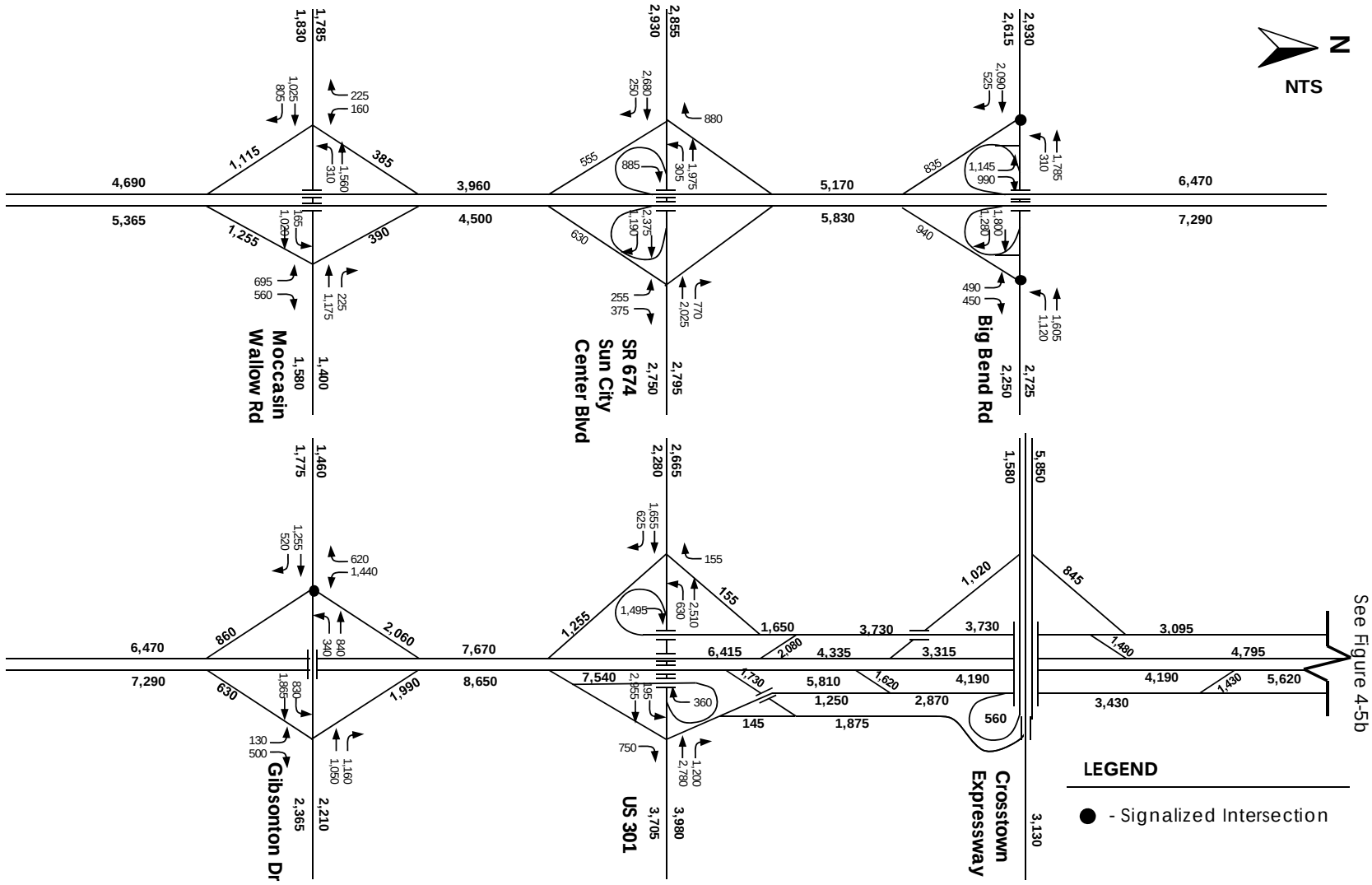
- **PM Design Hour Traffic Volumes:** The PM design hour turning movements at the ramp terminal intersections were estimated by applying the existing turning movement percentages defined by the PM peak hour turning movement counts conducted for this study to the directional design hour approach volumes at the intersections. The resulting volumes were then balanced. The balancing procedure made no adjustments that would change the volumes on the I-75 mainline. Minimal adjustments were made to the ramp volumes, but only if the I-75 mainline volumes were unchanged. All significant volume adjustments, made to achieve a balanced condition, were restricted to the intersecting arterial roadways.

- **AM Design Hour Traffic Volumes:** There were no AM peak period intersection turning movement counts conducted for this study that could be used in the estimation of AM design hour volumes. Therefore, the AM peak hour turning volumes were estimated by reversing the PM design hour traffic volumes and then balancing the resulting volumes on each roadway segment within the study area. Because AM and PM peak hour traffic volumes are not always a mirror image of each other, the procedure of reversing the PM design hour volumes to estimate the AM design hour volumes resulted in some locations were the volumes could not be rebalanced without significant adjustments to the traffic volumes. In these cases additional adjustments were made to the turning movement percentages to achieve a more reasonable balance in the traffic volumes throughout the study area.

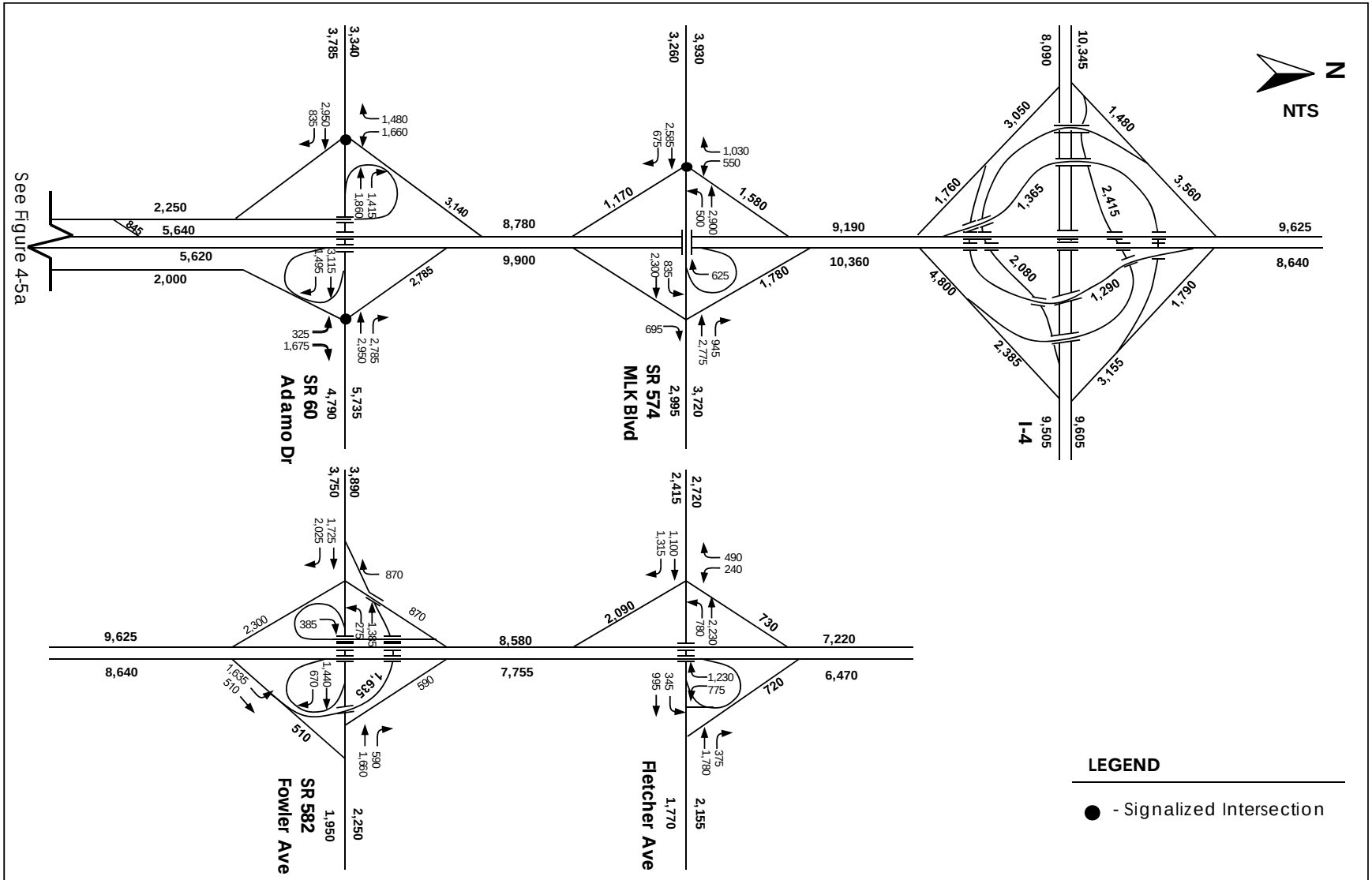
The year 2035 AM and PM Design Hour Traffic volumes for the No-Build Alternative, and Build Alternatives 1, 2 and 3, are illustrated on Figures 4-5a through 4-12b.

4.3.3 Opening Year Traffic Volumes

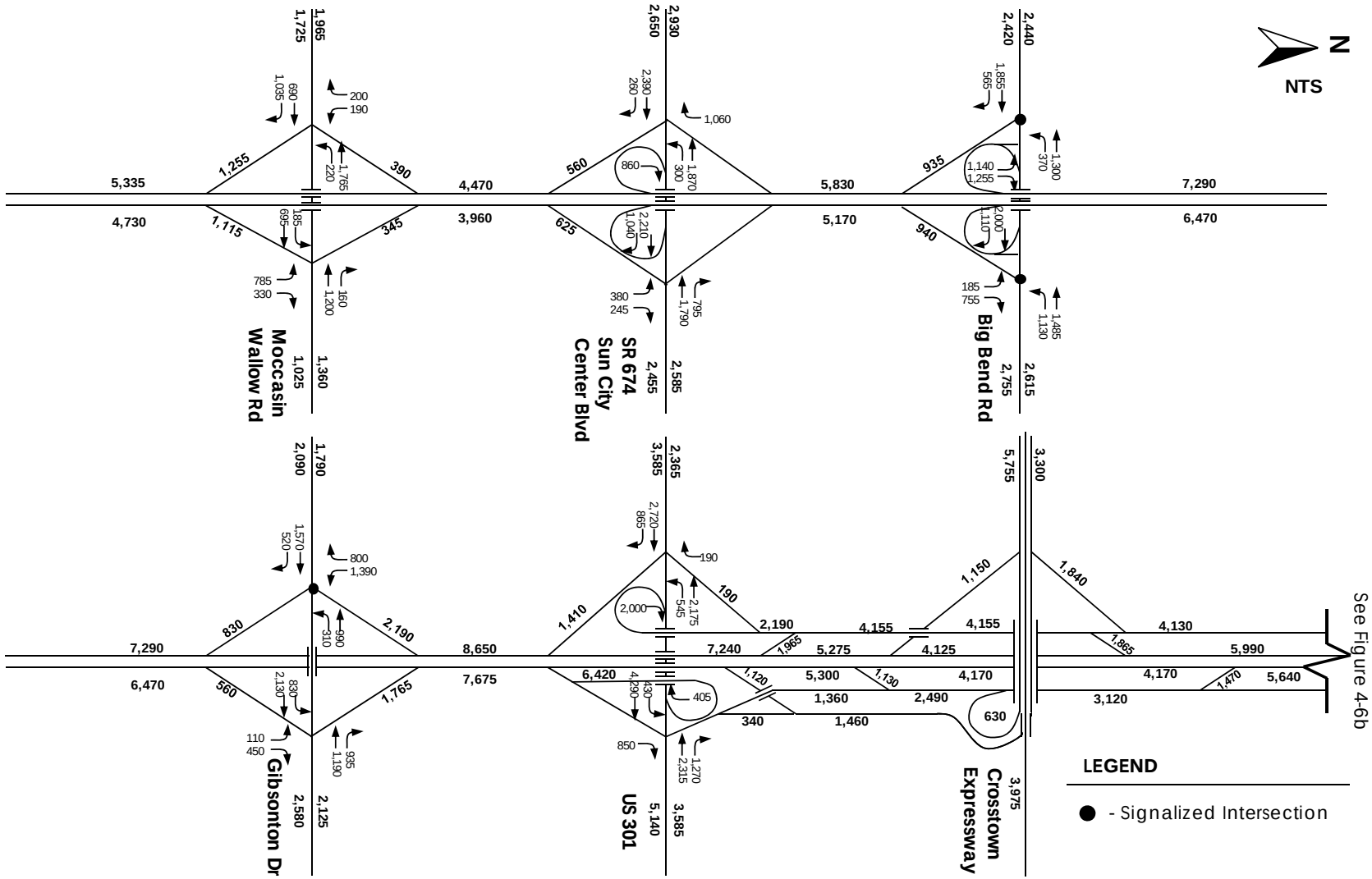
The Opening Year (2015) volumes for the improvement alternative that will be selected for further analysis in the next phase of the study will be estimated by conducting a straight line interpolation between the year 2007 design hour volumes and the year 2035 design hour volumes.



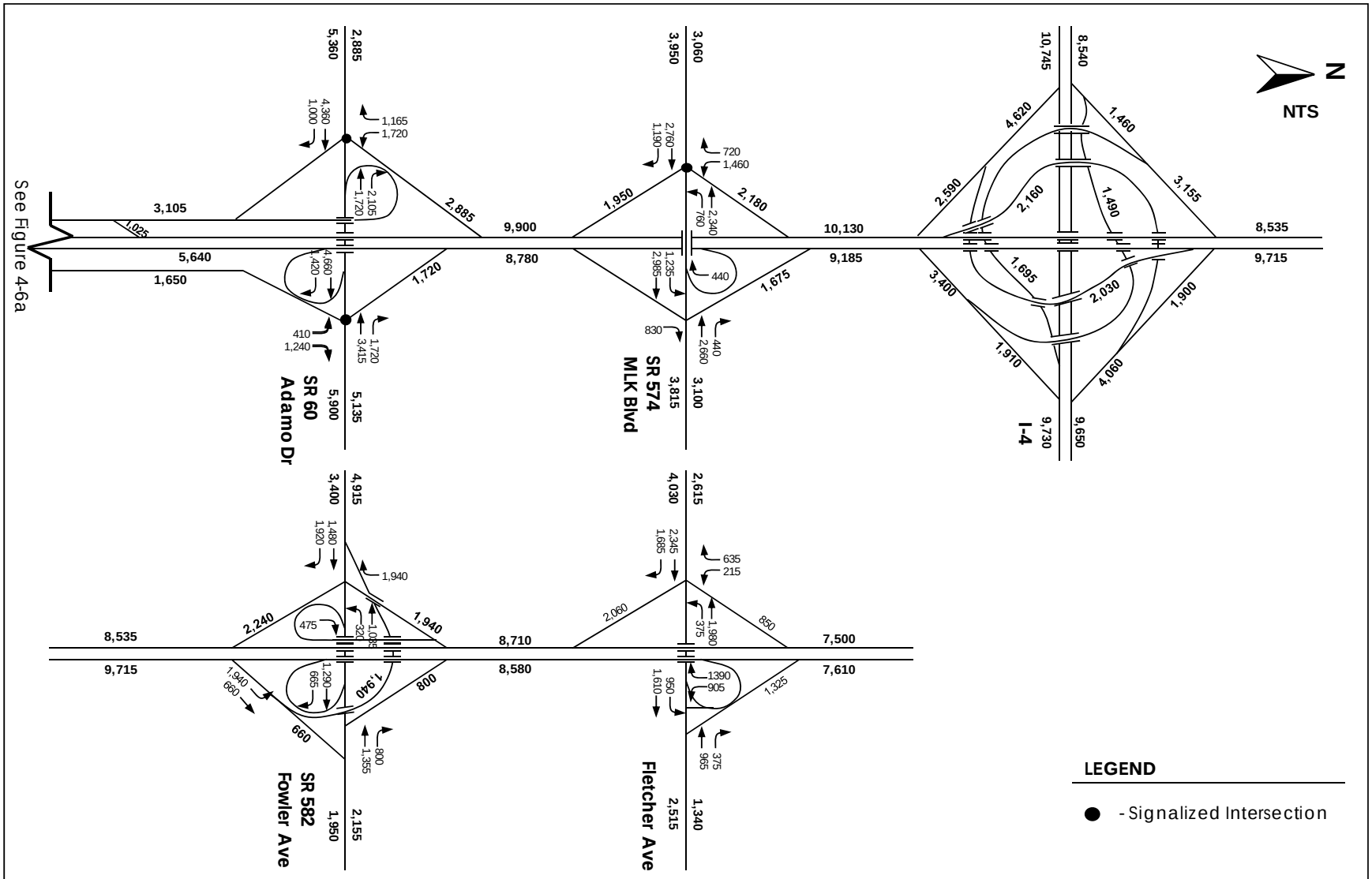
I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 NO-BUILD ALTERNATIVE AM DESIGN HOUR VOLUMES (SOUTH)	Figure 4-5a



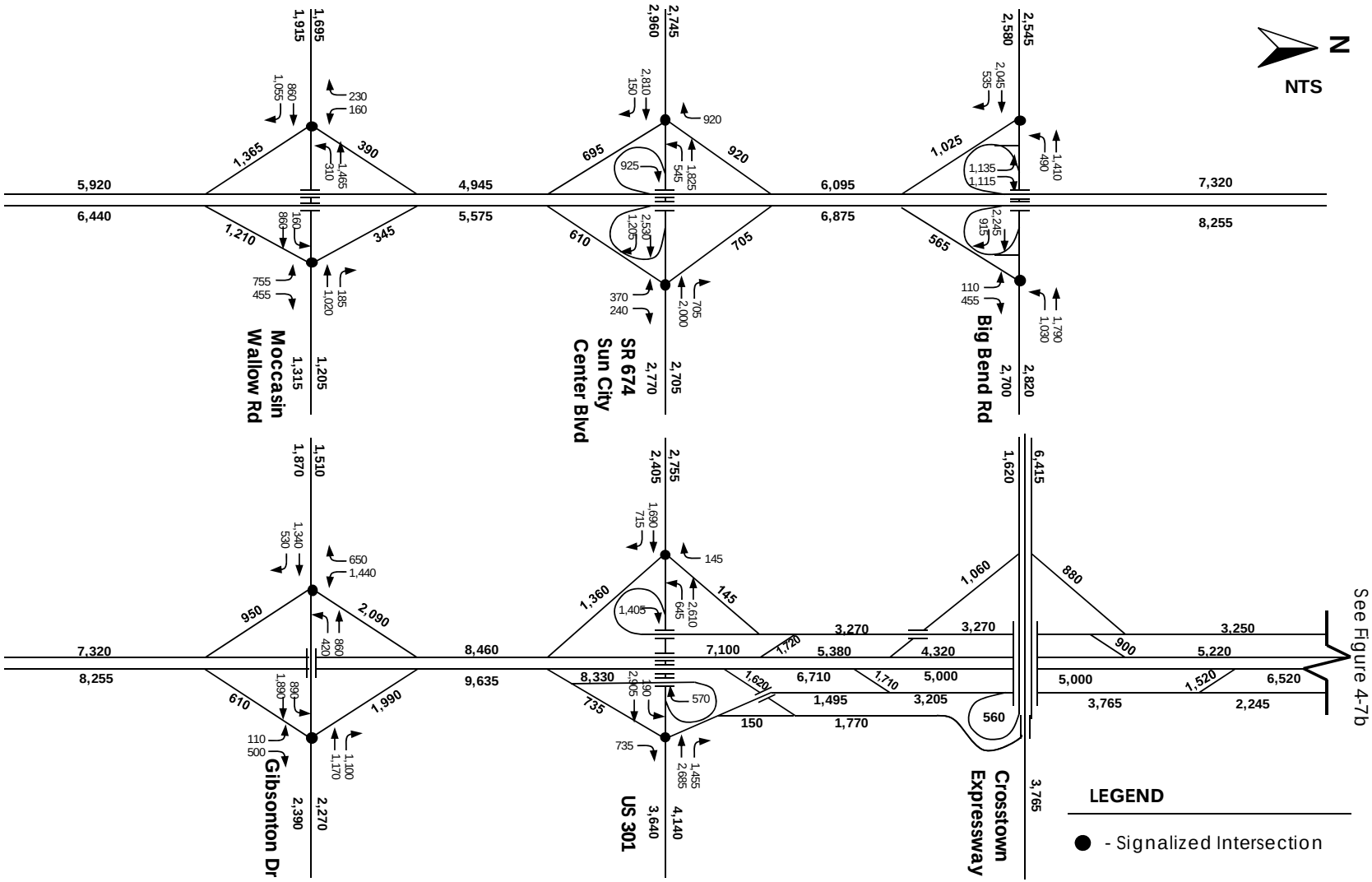
I-75 Traffic & PD&E Studies		
Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 NO-BUILD ALTERNATIVE AM DESIGN HOUR VOLUMES (NORTH)	Figure 4-5b



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 NO-BUILD ALTERNATIVE PM DESIGN HOUR VOLUMES (SOUTH)	Figure 4-6a



I-75 Traffic & PD&E Studies		
Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 NO-BUILD ALTERNATIVE PM DESIGN HOUR VOLUMES (NORTH)	Figure 4-6b

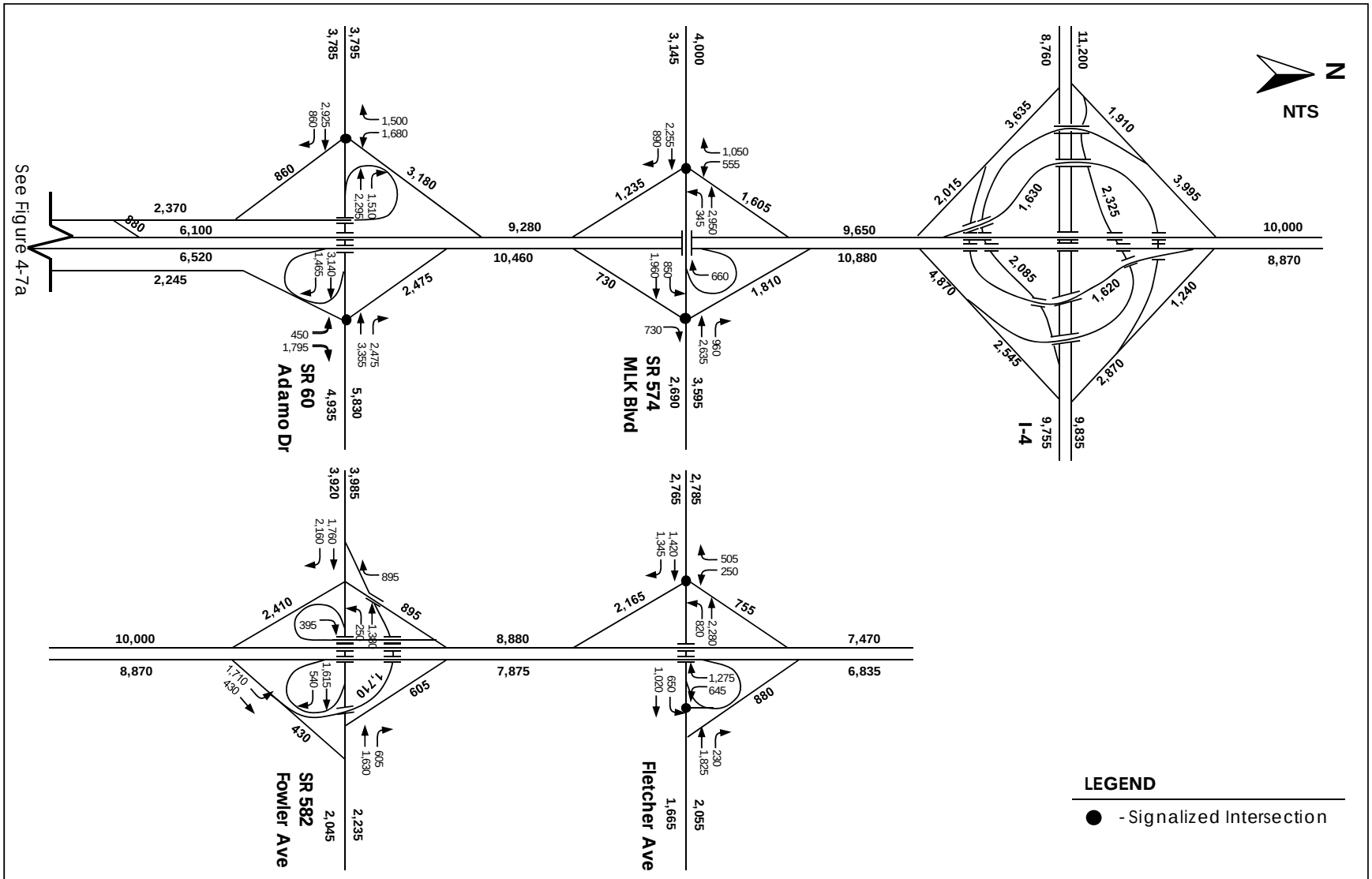


I-75 Traffic & PD&E Studies

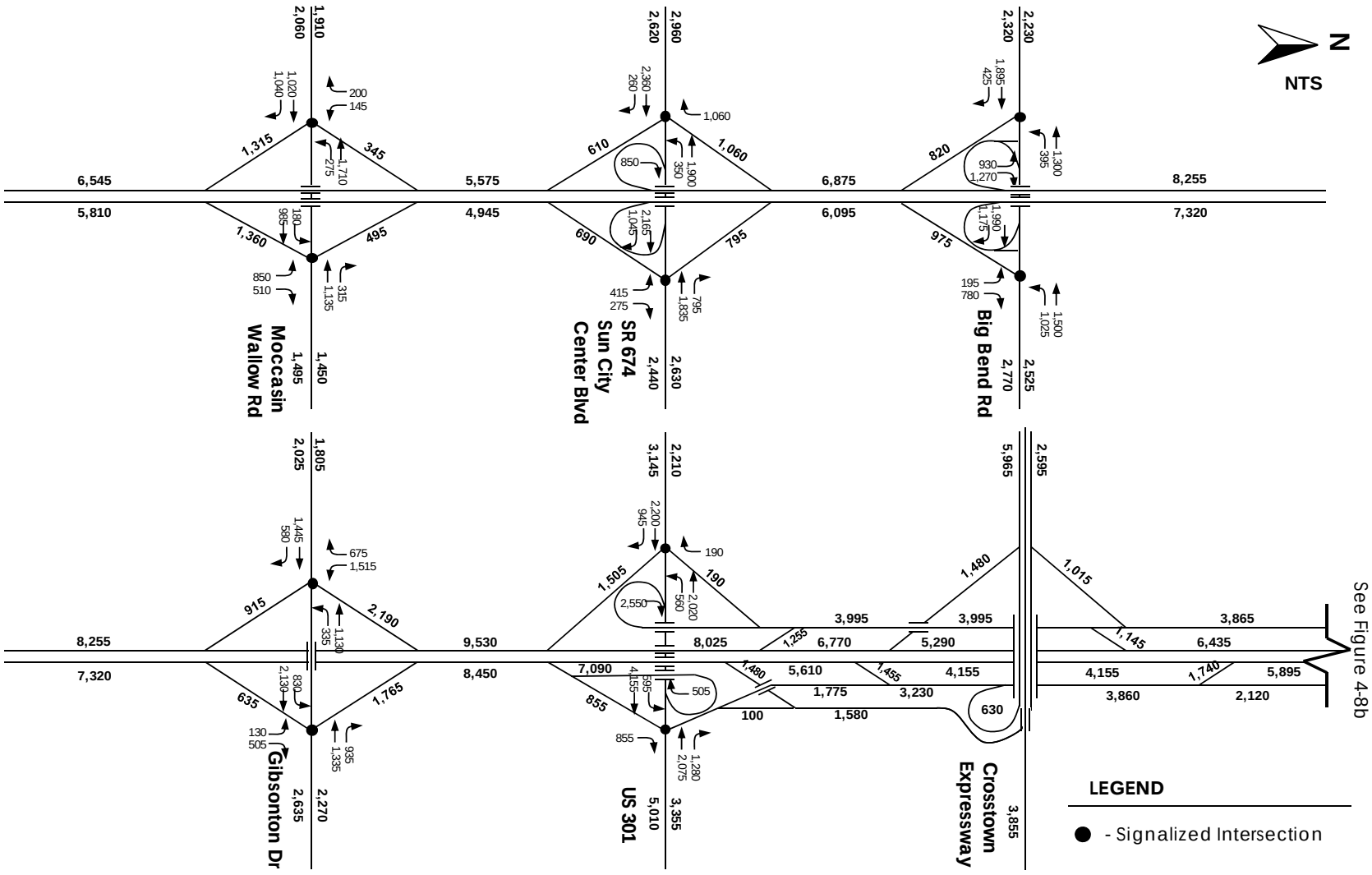
Design Traffic Technical Memorandum
Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue
WPI Segment Number 419235-1

YEAR 2035 BUILD ALTERNATIVE 1
AM DESIGN HOUR VOLUMES (SOUTH)

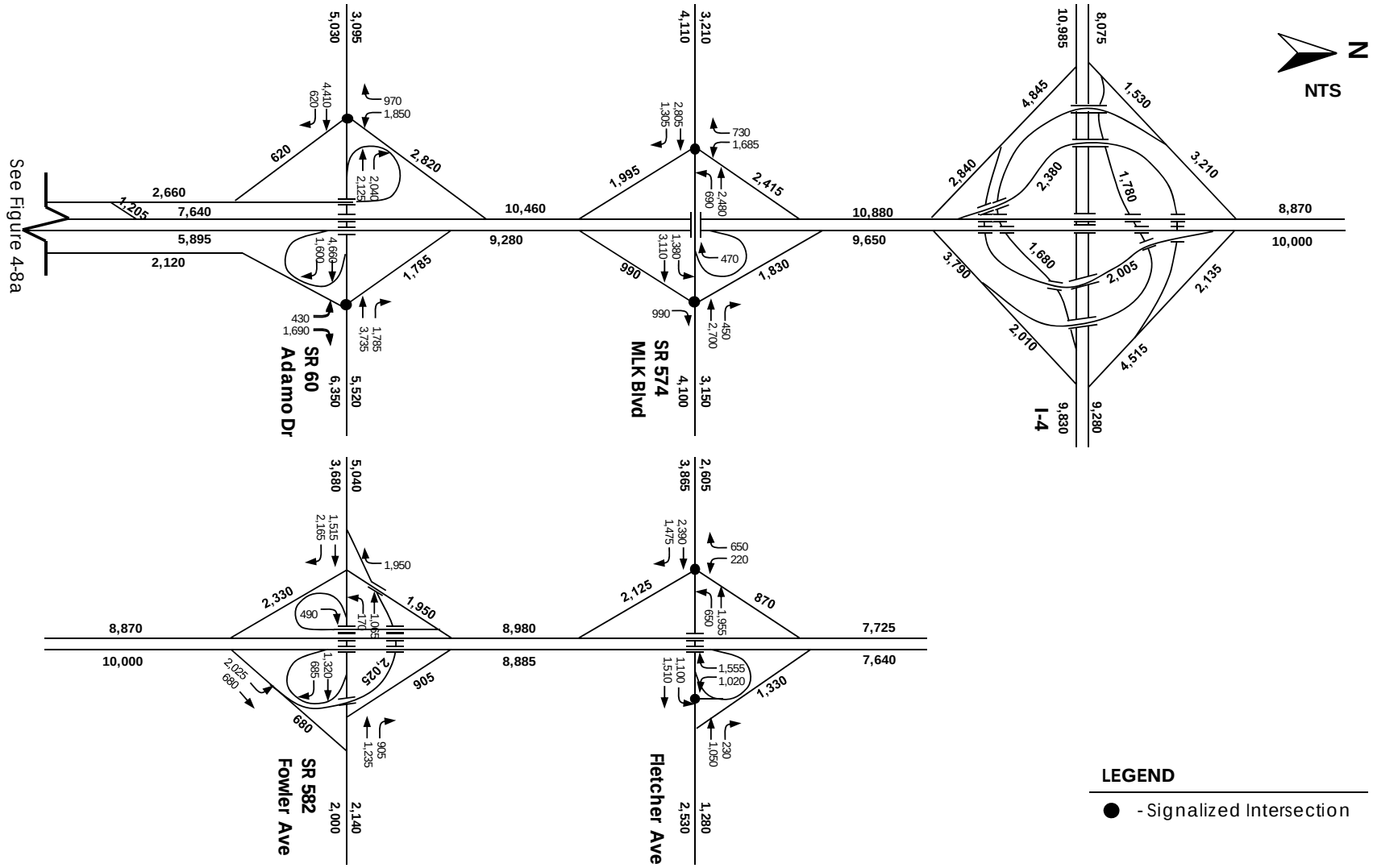
Figure 4-7a



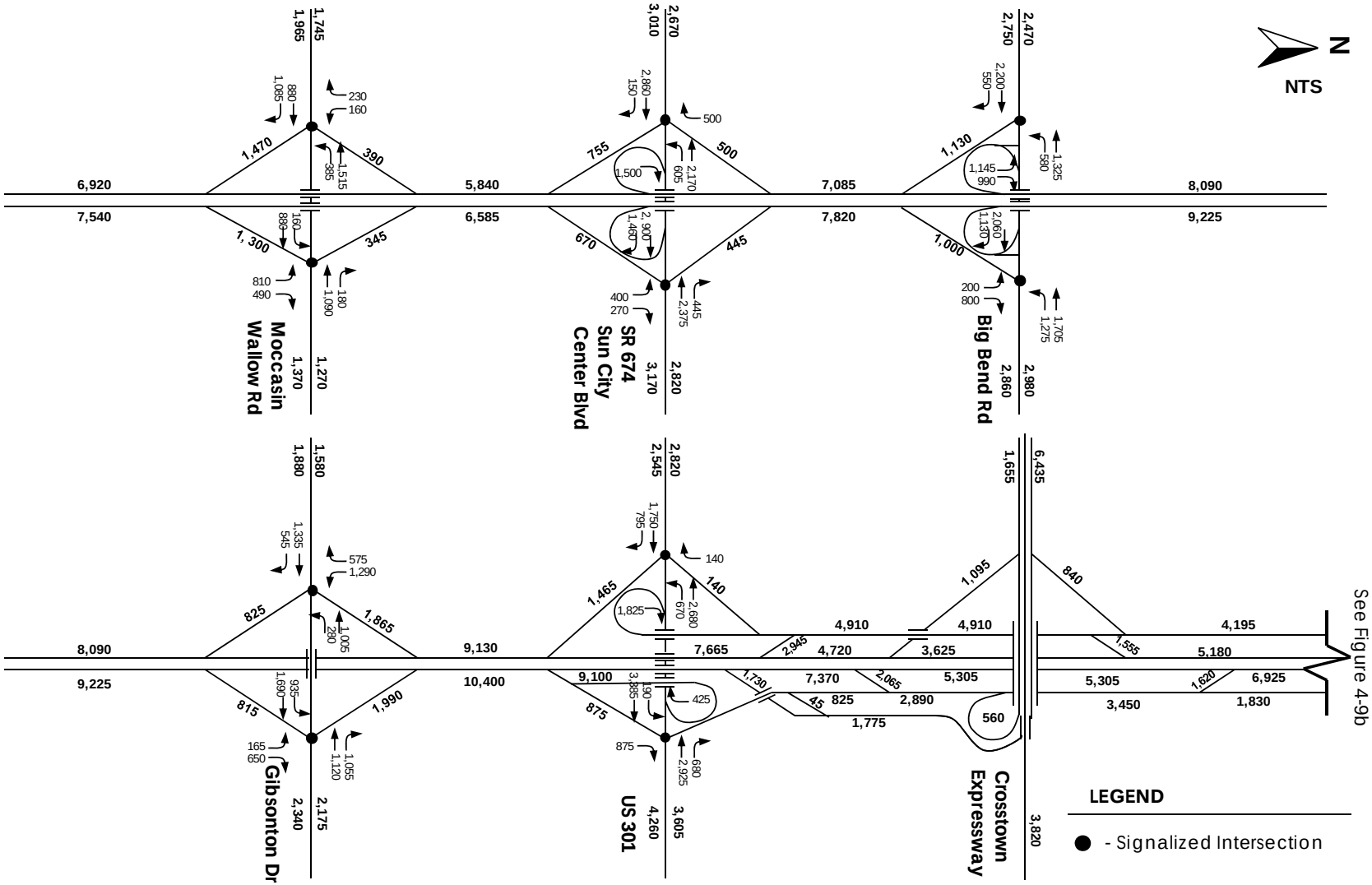
I-75 Traffic & PD&E Studies		
Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 1 AM DESIGN HOUR VOLUMES (NORTH)	Figure 4-7b



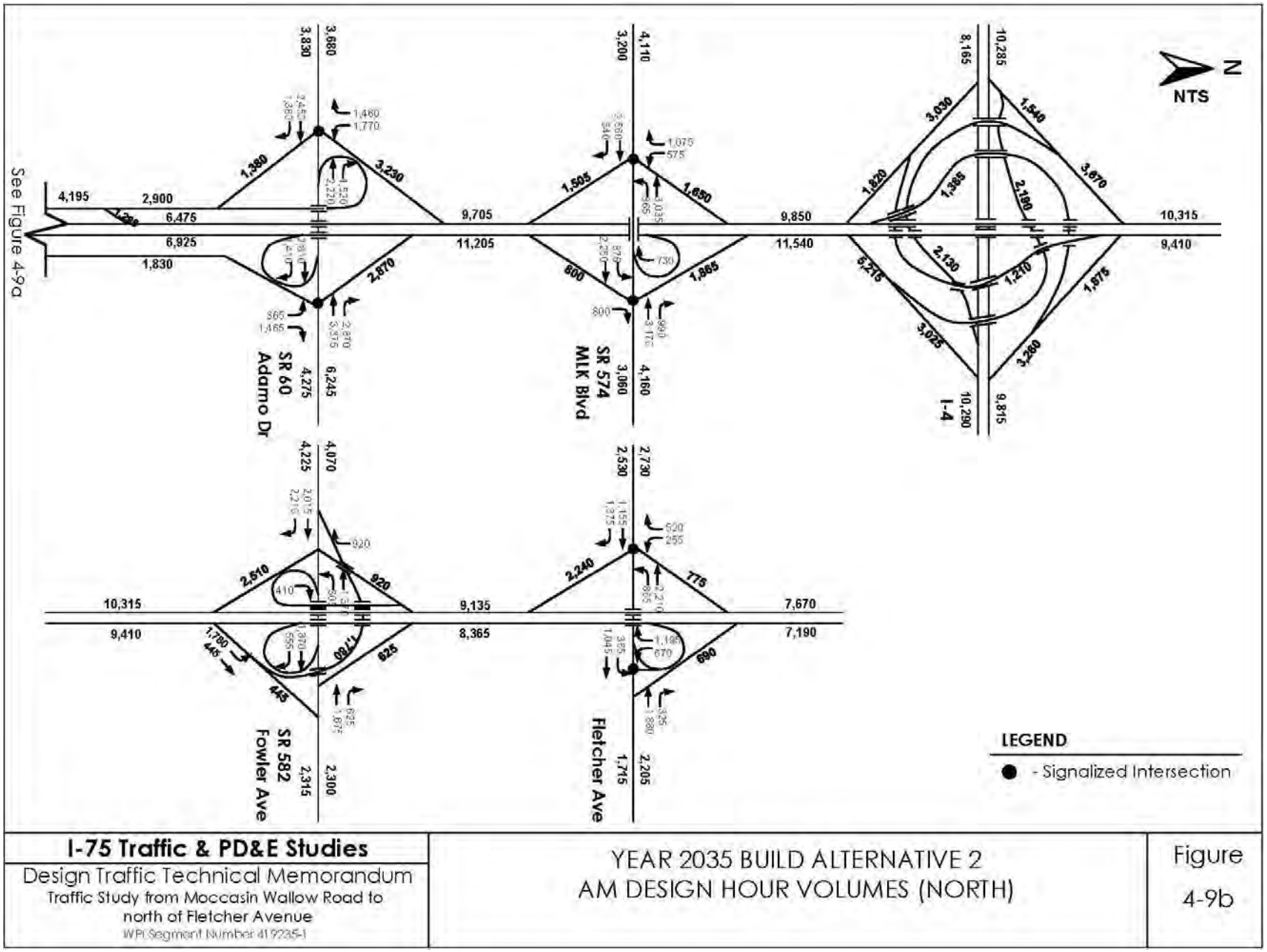
I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 1 PM DESIGN HOUR VOLUMES (SOUTH)	Figure 4-8a

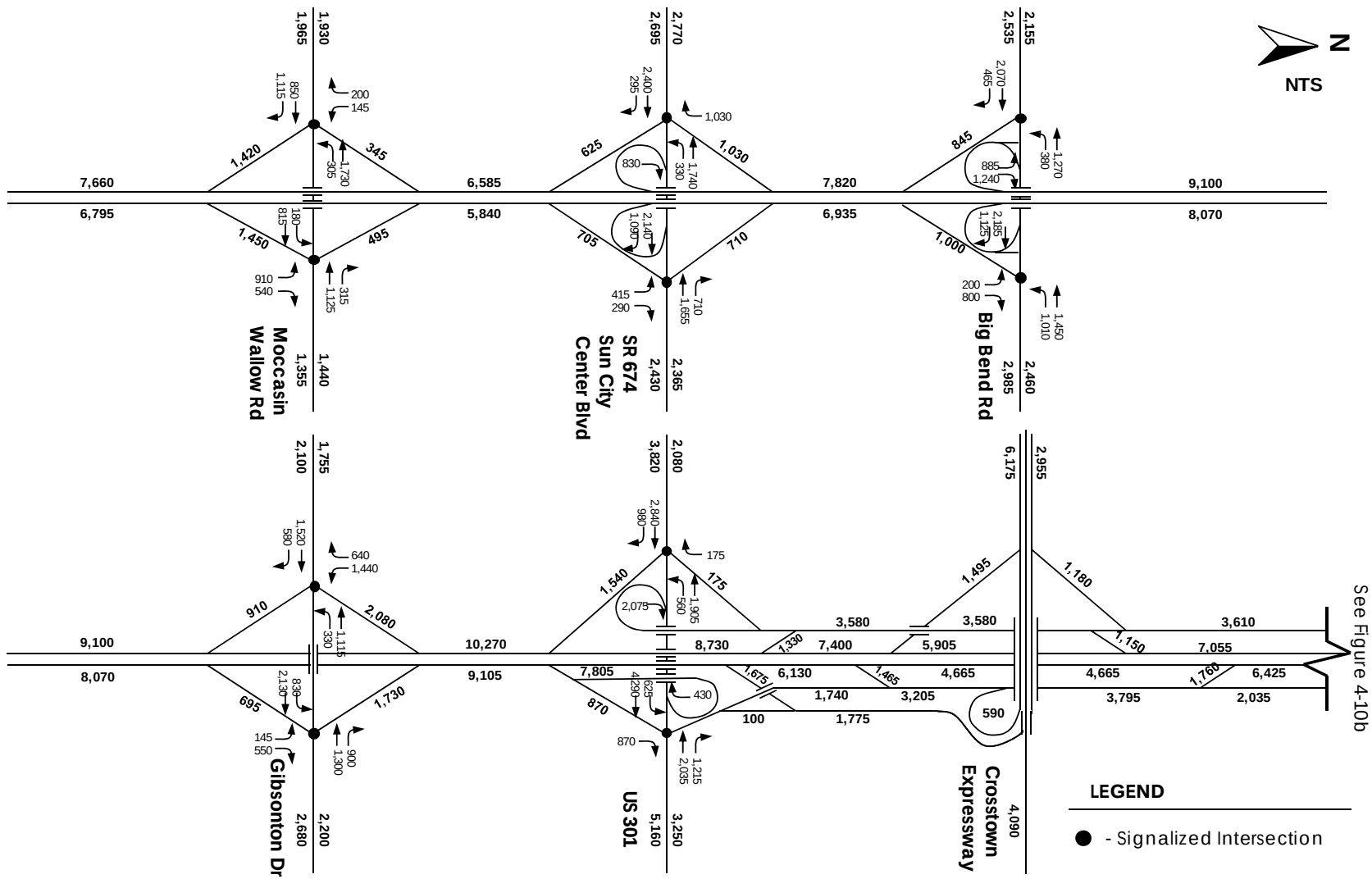


I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 1 PM DESIGN HOUR VOLUMES (NORTH)	Figure 4-8b

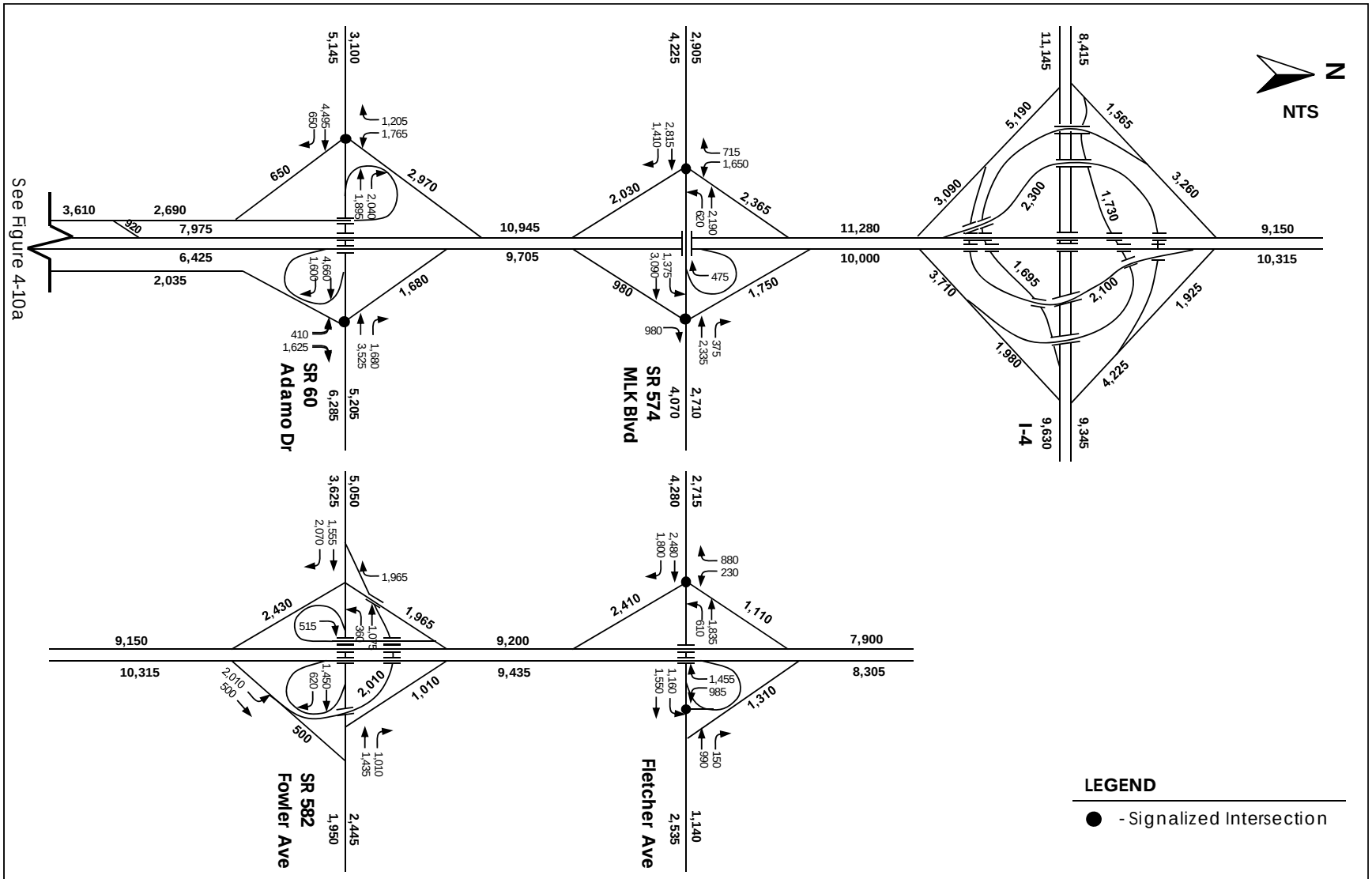


I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 2 AM DESIGN HOUR VOLUMES (SOUTH)	Figure 4-9a

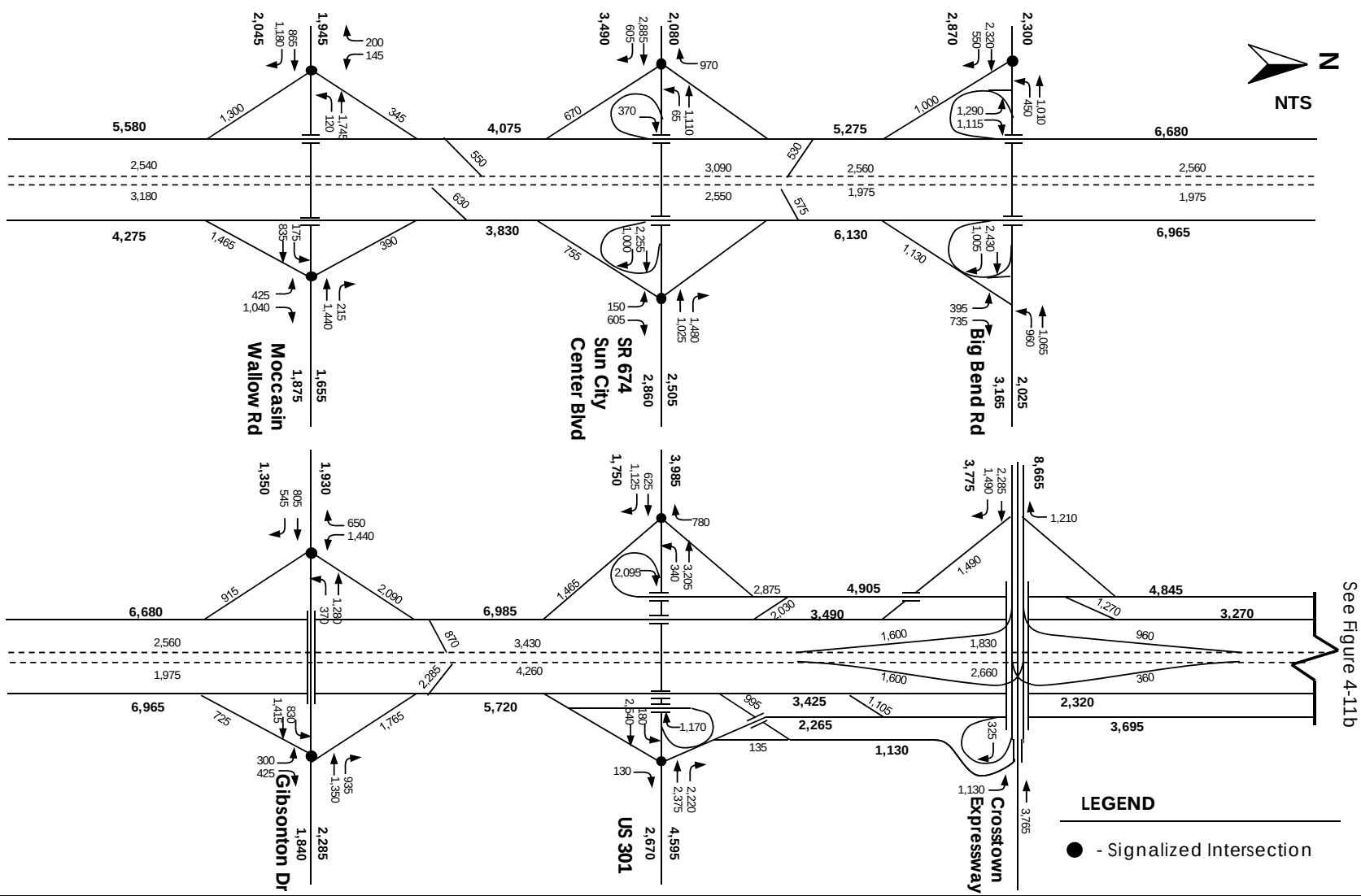

See Figure 4-9a
N
NTS
SR 60
Adamo Dr
SR 574
MLK Blvd
I-4
SR 582
Fowler Ave
Fletcher Ave
LEGEND
- Signalized Intersection
I-75 Traffic & PD&E Studies
Design Traffic Technical Memorandum
Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue
WPI Segment Number 419235-1
YEAR 2035 BUILD ALTERNATIVE 2
AM DESIGN HOUR VOLUMES (NORTH)
Figure 4-9b



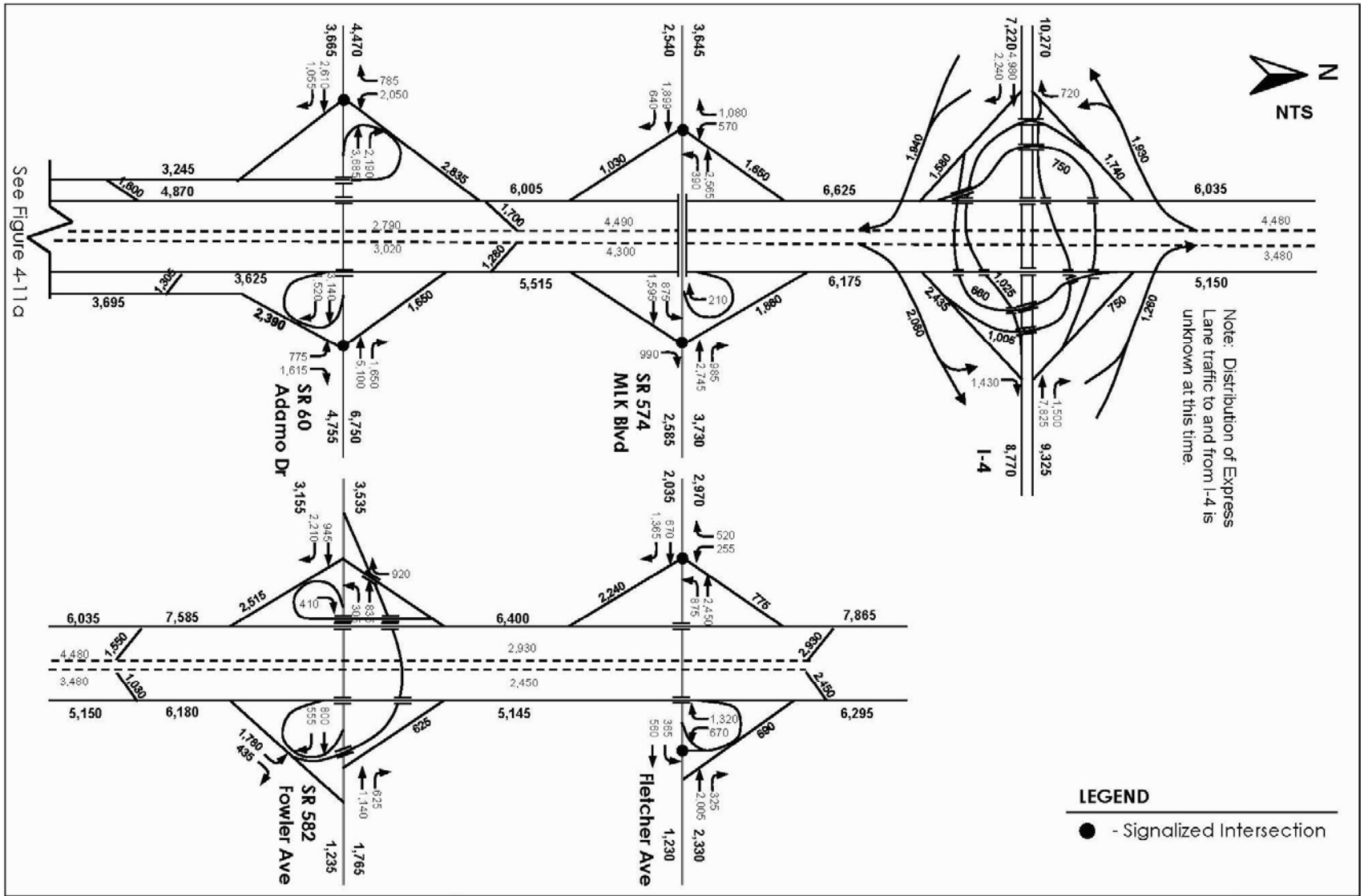
I-75 Traffic & PD&E Studies	YEAR 2035 BUILD ALTERNATIVE 2 PM DESIGN HOUR VOLUMES (SOUTH)	Figure 4-10a
Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1		



I-75 Traffic & PD&E Studies	YEAR 2035 BUILD ALTERNATIVE 2 PM DESIGN HOUR VOLUMES (NORTH)	Figure 4-10b
Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1		



I-75 Traffic & PD&E Studies	YEAR 2035 BUILD ALTERNATIVE 3 AM DESIGN HOUR VOLUMES (SOUTH)	Figure 4-11a
Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1		

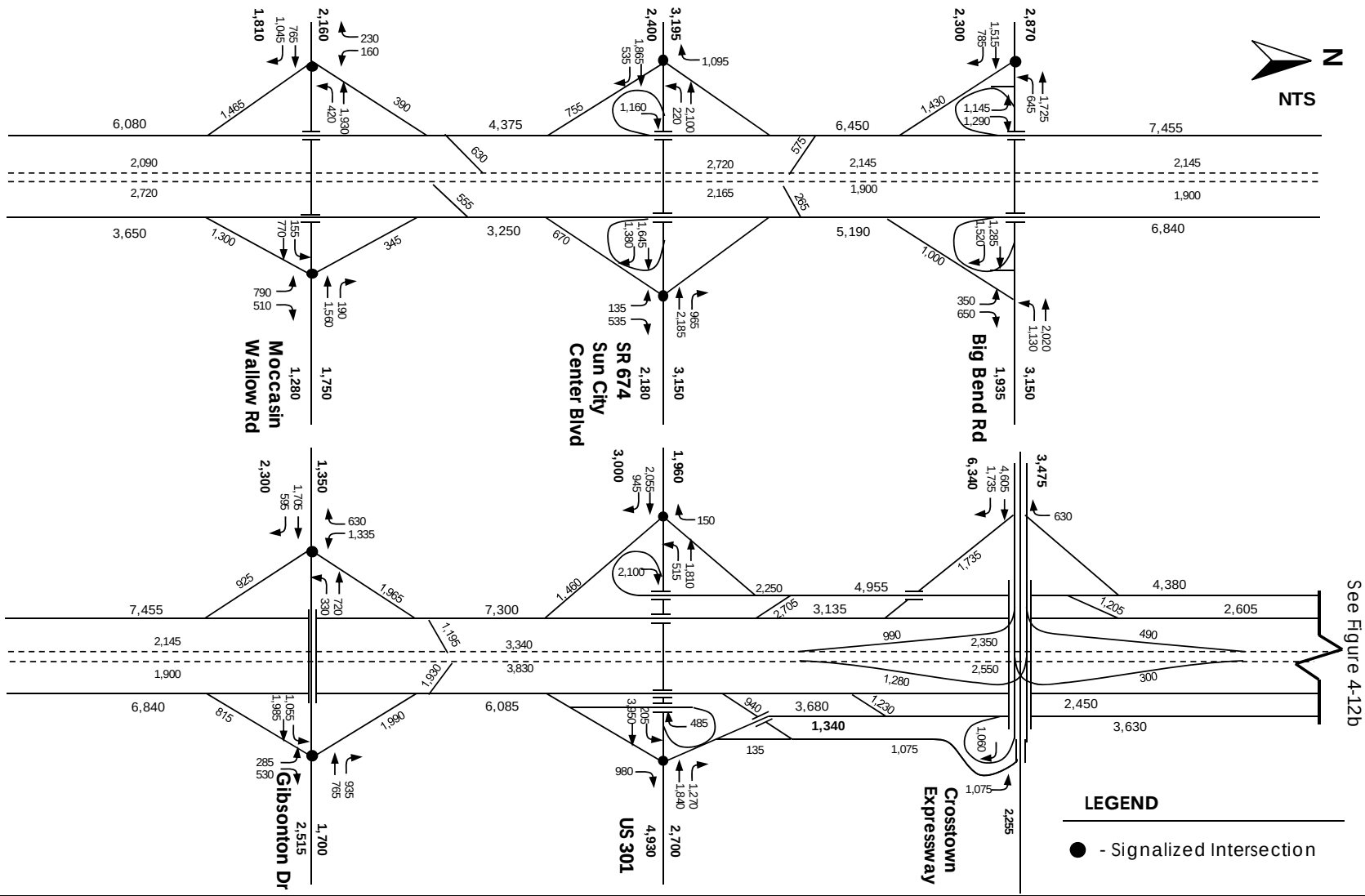


I-75 Traffic & PD&E Studies

Design Traffic Technical Memorandum
Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue
WPI Segment Number 419235-1

YEAR 2035 BUILD ALTERNATIVE 3
AM DESIGN HOUR VOLUMES (NORTH)

Figure 4-11b

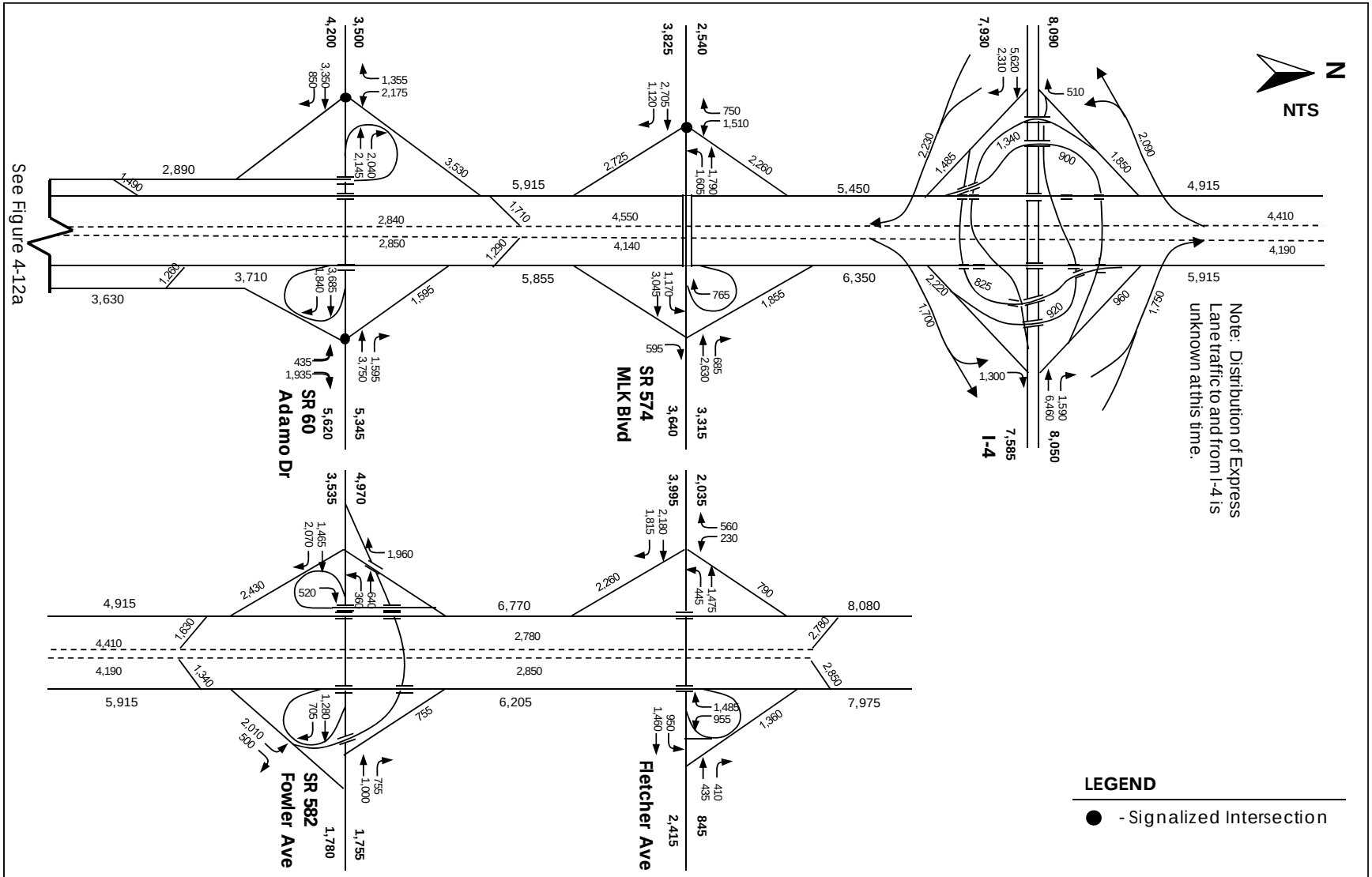


I-75 Traffic & PD&E Studies

Design Traffic Technical Memorandum
Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue
WPI Segment Number 419235-1

YEAR 2035 BUILD ALTERNATIVE 3
PM DESIGN HOUR VOLUMES (SOUTH)

Figure 4-12a



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 3 PM DESIGN HOUR VOLUMES (NORTH)	Figure 4-12b

5.0 NO-BUILD ALTERNATIVE ANALYSES

Design Year (2035) traffic operating conditions were evaluated for the AM and PM design hours of the No-Build Alternative for the same areas as was done for the existing conditions traffic analyses, including the signalized and unsignalized intersections, ramp merge and diverge areas, weave sections, and mainline freeway segments.

Review of the future land use maps for southern Hillsborough County and northern Manatee County indicates that most of the land adjacent to I-75 will be converted from rural to residential and commercial uses. For this reason, for the No-Build Alternative, as well as the three Build alternatives, it was assumed that the future LOS standard for I-75 and the intersecting roadways will be LOS D for the entire corridor.

5.1 Analyses Methodology

HCS+ (Version 5.2) software was used to analyze all segments and interchanges in the study area south of US 301. VISSIM (Version 5.0) micro-simulation model was used to analyze the segments of I-75 between US 301 and Fletcher Avenue where interchange spacing is closer and projected traffic volumes are higher and weaving impacts have a greater effect on freeway operations.

As explained in Section 2.3.1, special analysis cases exist for the northbound on-ramp and southbound off-ramp at the Gibsonton Drive interchange. Traffic on the single-lane northbound on-ramp enters I-75 on its own lane. Traffic exits I-75 to the single-lane southbound off-ramp with a lane drop. The same methodology used to analyze the existing conditions for these ramps was used also to analyze the No-Build Alternative conditions.

The VISSIM micro-simulation network combines mainline, ramp and intersection analyses into one network and was used to develop traffic operation measures of effectiveness (MOE's) for the more complicated system-wide network north of US 301, because it better models the impacts of weaving and lane-changing movements. MOE's, including control delay, roadway density, and average speeds, comply with the methodology presented in the Highway Capacity Manual (HCM) analysis. VISSIM also allows calibration of current traffic flow behavior and the interaction between vehicles through all the different elements of a freeway. In addition, VISSIM provides system-wide operational performance measures that better capture the interaction between mainline, ramp and signal capacities and provides 3-d graphic visualizations of corridor operations that can be used to better identify operational bottlenecks or deficiencies and make appropriate improvement recommendations.

The VISSIM model also analyzes the network as a constrained highway system. The VISSIM model tracks every vehicle in the network (much the same as a in a CORSIM model network), including desired origin and destination patterns, vehicle response to other vehicles, intersection controls, desired speeds, and lane changes. The VISSIM study area network includes the ramp terminal intersections at every interchange; these intersections can operate as a meter for vehicles getting on and off the freeway. It is important to determine the capacities of these intersections to determine if a) there is sufficient intersection capacity and storage on the off-ramps so that vehicles will not back up onto the interstate; and b) there is sufficient mainline capacity for vehicles to enter the interstate on-ramps.

The VISSIM model outputs data for link speeds, density, stops and delays, similar to the measures of effectiveness used in the HCM procedures. The HCM and VISSIM models have distinct differences and the measures of delay and level of service and their results should not be *directly* compared; however, VISSIM measures of travel speeds, queues and delay can be equated to a level of service that measures drivers' expectations for travel time, queue and stopped delay as outlined in the HCM procedures.

The regional model forecasts travel demands that may exceed the available capacity of the interstate facility and/or the intersecting roadways. Therefore, traffic micro-simulation models developed in VISSIM were used to more accurately estimate operating conditions for each of the alternatives. The VISSIM model process estimated origin-destination (O-D) trip tables based upon the demand model's projected traffic demand volumes on road segments and turning movements at intersections. Truck trips were extracted based upon historical data of truck percentage. The O-D estimation was performed in VISUM, a transportation software package within the VISSIM model family. The estimation process was able to replicate the projected traffic demand volumes within 10% difference (correlation coefficients (R-Square) ranged from 0.98 to 1.00 which indicate an excellent match to the demand volumes). The estimated O-D trip table was assigned to the highway network to simulate traffic operation for each alternative. The advantage of this methodology is that drivers are presented more than one choice of routes from an origin to a destination in the simulation and the decision of the route is based upon travel times. This is critical in assessing the traffic operation in the section between SR 60 and US 301 where a driver can choose to travel on either the CD road or freeway mainline, and in Alternative 3 (proposed improvements include special use lanes separated from the general use lanes), where vehicles have a choice between the parallel general use and special use lanes.

A separate report titled "Traffic Micro-Simulation Model Development, Calibration, and Application Report," included in Appendix G, provides a detailed description of the procedure used to develop the VISSIM model and infer from its results.

5.2 Level of Service Analyses Results

Level of service (LOS) analyses were conducted for the I-75 mainline, ramp junctions, ramp terminal signalized and unsignalized intersections, and weaving sections for the Design Year (2035) No-Build traffic conditions and roadway characteristics. LOS results were determined using the AM and PM design hour traffic volumes depicted on Figures 4-5a through and 4-6b. As was done with the existing conditions traffic analyses, the No-Build Alternative traffic analyses were conducted using a driver population factor of 1.0 and a Peak Hour Factor (PHF) of 0.9.

5.2.1 Intersection Analysis Results

Table 5-1 summarizes the results of the ramp terminal intersection analysis for the Design Year (2035). As shown, the unsignalized intersections will fail under the increased volume conditions and most will require signalization. Several signalized intersections should also be expected to fail if no improvements are made. These intersections include the I-75 northbound and southbound ramps at Big Bend Road, the I-75 southbound ramps at Gibsonton Drive and the I-75 southbound ramps at SR 574. It should be noted that no intersection analysis results are provided for the northbound ramps at Fowler Avenue, because this intersection operates under merge conditions.

Table 5-1
Year 2035 No-Build Ramp Terminal Intersection LOS

	Intersection	Control	Approach / Movement	AM (PM) Design Hour Control Delay (sec/veh)	AM (PM) Approach LOS	AM (PM) Overall Intersection Delay (sec/veh)	AM (PM) Design Hour Intersection LOS
HCS Analysis Results	I-75 NB ramps at Moccasin Wallow Rd.	Stop	NB LT	4054.0 (3596.0)	**F (F)**	4054 (3596)	**F (F)**
			EB LT	16.1 (17.5)	C (C)		
	I-75 SB ramps at Moccasin Wallow Rd.	Stop	WB LT	19.7 (11.3)	C (B)	21586 (3044)	**F (F)**
			SB LT	21586.0 (3044.0)	**F (F)**		
	I-75 NB ramps at SR 674 (Sun City Center Blvd.)	Stop	NB LT	2351.0 (2818.0)	**F (F)**	2351 (2818)	**F (F)**
	I-75 SB ramps at SR 674 (Sun City Center Blvd.)	Stop	WB LT	986.3 (589.8)	**F (F)**	1714 (1883)	**F (F)**
			SB RT	1714.0 (1883)	**F (F)**		
	I-75 NB ramps at Big Bend Rd.	Signal	WB LT	455.3 (582.1)	**F (F)**	247.2 (238.8)	**F (F)**
			WB Thru	9.0 (6.7)	A (A)		
			EB Thru	274.8 (232.0)	**F (F)**		
			NB LT	451.2 (78.1)	**F (E)**		
	I-75 SB ramps at Big Bend Rd.	Signal	WB LT	361.8 (438.9)	**F (F)**	161.8 (155.1)	**F (F)**
			WB Thru	49.1 (25.4)	D (C)		
			EB Thru	274.5 (250.4)	**F (F)**		
			NB LT	76.6 (56.1)	**E (E)**		
	I-75 NB ramps at Gibsonton Dr.	Stop	EB LT	1851.0 (1657)	**F (F)**	1851.0 (1657.0)	**F (F)**
			NB LT	n/a (n/a)	**F (F)**		
	I-75 SB ramps at Gibsonton Dr.	Signal	WB LT	372.8 (209.3)	**F (F)**	305.5 (299.7)	**F (F)**
			WB Thru	19.6 (23.8)	B (C)		
			EB Thru	70.0 (260.9)	**E (F)**		
			SB LT	660.9 (560.0)	**F (F)**		
VISSIM Analysis Results	I-75 NB ramps at SR 60 (Adamo Dr.)	Signal	EB Thru	17.7 (18.8)	B (B)	37.8 (43.1)	D (D)
			WB Thru	75.3 (74.0)	**E (E)**		
			NB LT	26.6 (30.2)	C (C)		
			NB RT	36.4 (32.5)	D (C)		
	I-75 SB ramps at SR 60 (Adamo Dr.)	Signal	EB Thru	47.0 (29.5)	D (C)	37.2 (31.9)	D (C)
			WB Thru	18.6 (26.7)	B (C)		
			SB LT	31.0 (29.6)	C (C)		
			SB RT	37.2 (53.6)	D (D)		
	I-75 SB ramps at SR 574 (Martin Luther King Blvd.)	Signal	WB LT	97.3 (312.2)	**F (F)**	150.7 (308.3)	**F (F)**
			WB Thru	28.6 (197.8)	C **(F)**		
			EB Thru	293.0 (444.5)	**F (F)**		
			SB LT	56.6 (174.5)	**E (F)**		
	I-75 NB ramps at SR 574 (Martin Luther King Blvd.)	Stop	EB LT	82.3 (218.6)	**F (F)**	82.3 (218.6)	**F (F)**
	I-75 SB ramps at SR 582 (Fowler Ave.)	Stop	WB LT	69.5 (349.6)	**F (F)**	69.5 (349.6)	**F (F)**
	I-75 NB ramps at Fletcher Ave.	Stop	EB LT	88.6 (499.1)	**F (F)**	509.5 (83.0)	**F (F)**
			SB LT	509.5 (83.0)	**F (F)**		
	I-75 SB ramps at Fletcher Ave.	Stop	WB LT	158.5 (40.4)	**F (E)**	1932.5 (1046.6)	**F (F)**
			SB LT	1932.5 (1046.6)	**F (F)**		
	I-75 NB ramps at US 301	Stop	EB LT	1012.3 (1079.4)	**F (F)**	1012.3 (1079.4)	**F (F)**
	I-75 SB ramps at US 301	Stop	WB LT	745.9 (1154.7)	**F (F)**	745.9 (1154.7)	**F (F)**

Notes: Bold text and shaded cells indicate an approach or intersection that will operate at a LOS worse than the standard LOS D

Table 5-2
Year 2035 No-Build Ramp LOS Results

	Interchange	Ramp	AM (PM) Ramp Density (pc/mi/ln)	AM (PM) LOS
HCS Analysis Results	Moccasin Wallow Rd.	I-75 NB off-ramp to Moccasin Wallow Road	32.8 (29.3)	D (D)
		I-75 NB on-ramp from Moccasin Wallow Road	15.8 (14.5)	B (B)
		I-75 SB off-ramp to Moccasin Wallow Road	28.7 (31.2)	D (D)
		I-75 SB on-ramp from Moccasin Wallow Road	22.6 (26.7)	C (C)
	SR 674 (Sun City Center Blvd.)	I-75 NB off-ramp to SR 674	25.5 (22.8)	C (C)
		I-75 NB on-ramp from EB SR 674	32.4 (28.3)	D (D)
		I-75 NB on-ramp from WB SR 674	33.7 (30.2)	D (D)
		I-75 SB off-ramp to WB SR 674	27.2 (30.3)	C (D)
		I-75 SB off-ramp to EB SR 674	24.6 (26.8)	C (C)
		I-75 SB on-ramp from SR 674	24.2 (26.9)	C (C)
	Big Bend Rd.	I-75 NB off-ramp to Big Bend Road	38.2 (35.4)	**E (E)**
		I-75 NB on-ramp from Big Bend Road	44.0 (39.0)	**F (F)**
		I-75 SB off-ramp to Big Bend Road	41.3 (44.6)	**F (F)**
		I-75 SB on-ramp from Big Bend Road	28.8 (32.7)	D (D)
	Gibsonton Dr.	I-75 NB off-ramp to Gibsonton Drive	42.1 (39.1)	**F (F)**
		I-75 NB on-ramp from Gibsonton Drive	n/a (n/a)	**F (E)**
		I-75 SB off-ramp to Gibsonton Drive	n/a (n/a)	**F (F)**
		I-75 SB on-ramp from Gibsonton Drive	38.5 (42.8)	**F (F)**
VISSIM Analysis Results	US 301 and Crosstown Expressway	I-75 NB off-ramp to US 301	36.7 (30.9)	**E** (D)
		I-75 NB off-ramp to Crosstown Expressway	14.9 (10.0)	B (A)
		I-75 NB off-ramp to CD Road / SR 60	29.8 (27.4)	D (C)
		I-75 NB on-ramp from CD Road / Crosstown Expressway	49.6 (63.1)	**F (F)**
		I-75 NB CD on-ramp from I-75 NB	36.9 (21.2)	**E** (C)
		I-75 SB off-ramp to Crosstown Expressway	18.5 (20.9)	B (C)
		I-75 SB off-ramp to US 301 / CD Road	14.2 (17.0)	B (B)
		I-75 SB on-ramp from Crosstown Expressway	8.1 (9.0)	A (A)
		I-75 SB on-ramp from I-75 SB CD Road	20.3 (21.9)	C (C)
		I-75 SB on-ramp from US 301	13.3 (10.5)	B (B)
		I-75 SB CD Road on-ramp from I-75 SB	14.9 (18.1)	B (B)
		I-75 SB CD Road off-ramp to SB I-75	15.2 (23.1)	B (C)
	SR 60 (Adamo Dr.)	I-75 NB on-ramp from EB SR 60	46.4 (53.9)	**F (F)**
		I-75 NB on-ramp from WB SR 60	55.9 (75.2)	**F (F)**
		I-75 SB off-ramp to SR 60	32.2 (29.5)	D (D)
	SR 574 (MLK Blvd.)	I-75 NB off-ramp to EB SR 574	27.7 (29.2)	C (D)
		I-75 NB off-ramp to WB SR 574	16.8 (19.0)	B (B)
		I-75 NB on-ramp from SR 574	28.6 (27.1)	D (C)
		I-75 SB off-ramp to SR 574	20.0 (20.6)	C (C)
		I-75 SB on-ramp from SR 574	27.9 (28.2)	C (D)
	I-4	I-75 NB off-ramp to I-4	28.8 (25.1)	D (C)
		I-75 NB on-ramp from EB I-4	17.0 (18.9)	B (B)
		I-75 NB on-ramp from WB I-4	26.8 (24.1)	C (C)
		I-75 SB off-ramp to I-4	36.8 (41.7)	**E (E)**
		I-75 SB on-ramp from EB I-4	22.0 (22.9)	C (C)
		I-75 SB on-ramp from WB I-4	20.6 (21.8)	C (C)
	SR 582 / Fowler Ave.	I-75 NB off-ramp to Fowler Avenue	33.2 (30.2)	D (D)
		I-75 NB on-ramp from EB Fowler Avenue	36.9 (58.4)	**E (F)**
		I-75 NB on-ramp from WB Fowler Avenue	41.5 (38.1)	**E (E)**
		I-75 SB off-ramp to Fowler Avenue	33.7 (37.9)	D (**E**)
		I-75 SB on-ramp from Fowler Avenue	56.8 (33.1)	**F** (D)
	Fletcher Ave.	I-75 NB off-ramp to Fletcher Avenue	30.2 (36.2)	D (**E**)
		I-75 NB on-ramp from Fletcher Avenue	15.4 (70.0)	B (**F**)
		I-75 SB off-ramp to Fletcher Avenue	46.7 (51.0)	**F (F)**
		I-75 SB on-ramp from Fletcher Avenue	36.0 (39.6)	**E (E)**

Note: Bold text and shaded cells indicate a LOS that does not meet the LOS D standard

Table 5-3
Year 2035 No-Build Mainline and Weaving Section LOS Results

	Mainline Segment	AM (PM) Design Hour Freeway Density (pc/mi/ln)	AM (PM) Design Hour LOS
HCS Analysis Results	**I-75 Northbound**		
	Moccasin Wallow Rd. to SR 674	26.5 (23.0)	D (C)
	SR 674 to Big Bend Rd.	39.8 (31.8)	**E** (D)
	Big Bend Rd. to Gibsonton Dr.	n/a (n/a)	**F (F)**
	Gibsonton Dr. to US 301	n/a (37.4)	**F (E)**
	I-75 Southbound		
	US 301 to Gibsonton Dr.	37.4 (n/a)	**E (F)**
	Gibsonton Dr. to Big Bend Rd.	n/a (n/a)	**F (F)**
	Big Bend Rd. to SR 674	31.8 (39.8)	D **(E)**
	SR 674 to Moccasin Wallow Rd.	23.0 (26.3)	C (D)
VISSIM Analysis Results	**I-75 Northbound**		
	US 301 to Crosstown Expressway	14.7 (20.5)	B (C)
	Crosstown Expressway to SR 60	19.4 (36.6)	C **(E)**
	SR 60 to Martin Luther King Blvd.	28.0 (29.4)	D (D)
	Martin Luther King Blvd. to I-4	24.9 (23.4)	C (C)
	I-4 to Fowler Ave.	29.7 (30.7)	D (D)
	Fowler Ave. to Fletcher Ave.	49.9 (41.4)	**F (E)**
	I-75 Southbound		
	Fowler Avenue to I-4	31.2 (41.2)	D **(E)**
	I-4 to Martin Luther King Blvd.	21.9 (22.6)	C (C)
	Martin Luther King Blvd. to SR 60	24.5 (25.1)	C (C)
	SR 60 to Crosstown Expressway	13.3 (15.7)	B (B)
	Crosstown Expressway to US 301	10.3 (11.3)	A (B)
	Weave Segments		
	I-75 SB - Fletcher Ave. to Fowler Ave.	36.0 (41.0)	**E (E)**
	I-75 NB CD - Crosstown Expressway to SR 60	48.0 (37.5)	**F (E)**
	I-75 SB CD - SR 60 to Crosstown Expressway	16.9 (18.2)	B (B)

Note: Bold text and shaded cells indicate the mainline or weaving LOS that is less than the LOS D standard
n/a: Density value not provided since lane volume exceeds allowable limits; LOS is F.

5.2.2 Ramp Merge / Diverge Analysis Results

Ramp analysis was conducted at all mainline on-ramp and off-ramp segments and at the CD merge and diverge segments where the CD has two or more lanes. The results of this analysis are shown on Table 5-2. The interchanges at Moccasin Wallow Road and SR 674 are expected to operate at standard LOS or better but all other interchanges will have at least one ramp that will not meet LOS standards.

5.2.3 Freeway Segment Analysis Results

Freeway segment analysis was conducted on all the I-75 segments between the interchanges. The results of this analysis are shown on Table 5-3. The only segments that will continue to operate at the LOS D standard are from Moccasin Wallow Road to SR 674 and from SR 60 to I-4. All other segments will operate at levels of service worse than the LOS D standard along at least one travel direction and at least during one time period.

5.2.4 VISSIM Analysis Results

This analysis summary covers the northern portion of the study area between US 301 and Fletcher Avenue. The analysis results were provided from VISSIM model outputs. The VISSIM model provides both analytical results and animation results, which were used to verify the corridor-wide operational results for both AM and PM peak hour conditions.

It should be noted, that when reviewing the VISSIM results from the constrained simulation model, operations along segment(s) downstream of major bottlenecks appear to operate at a better level of service than the unconstrained demand volume for that segment might otherwise indicate. This occurs due to the fact that VISSIM accounts for the metering effect of the bottlenecks on the traffic volumes.

5.2.4.1 AM Peak Period

- **Northbound Issues:** The major bottleneck in the northbound direction occurs where a large amount of traffic from SR 60 merges onto I-75 northbound. The merge area is very short, which causes traffic to queue onto mainline I-75. Once the bottleneck reaches the location at which the CD merges back into the mainline, it causes queuing on the CD as well. Eventually, queuing on the CD road backs up to where I-75 traffic merges onto the CD road. This results in a new bottleneck on mainline I-75, just south of the off-ramp of the CD / SR 60.

  Traffic worsens between the Crosstown Expressway and SR 60 because of the large number of vehicles merging onto I-75 from SR 60. However, once the queuing backs up south of the CD / SR 60 exit, this segment improves because the vehicles are metered by the bottleneck and unable to easily travel on this segment of I-75.

  The northbound mainline levels of service improve to LOS ranging from C to D between the CD road exit ramp and the Fowler Avenue interchange. North of this interchange to Fletcher Avenue, the mainline LOS is F. This is a result of the high volume (2005 vph) exiting at Fletcher Avenue and not adequately being accommodated by the unsignalized intersection. Traffic queuing occurs on the loop ramp and eventually extends onto the mainline of northbound I-75, causing the mainline to fail north of Fowler Avenue.

- **Southbound Issues:** In the southbound direction, there is a high level of congestion on Fletcher Avenue. This congestion is due to the high volumes of left turns merging onto I-75. This results in queuing on I-75 north of the Fletcher Avenue interchange. In addition, weaving traffic trying to get onto I-4 also causes congestion between the I-4 interchange and Fowler Avenue. The congestion, caused by the large volumes on this segment, results in LOS E between Fowler Avenue and I-4.

  South of I-4, there are no major bottlenecks or congestion areas. The segments between I-4 and Martin Luther King Boulevard, and Martin Luther King Boulevard and SR 60 operate at LOS D.

5.2.4.2 PM Peak Period

- **Northbound Issues:** The northbound direction has the same bottleneck constraints at the I-75 / SR 60 merge in the PM peak period as it does during the AM peak period. Again, the queuing affects the CD and causes it to back up to where I-75 merges with the CD. In addition, the bottleneck causes queuing on the I-75 mainline south of the off-ramp to the CD / SR 60.

  The position of the VISSIM analysis control point north of the CD / SR 60 exit ramps explains the LOS C between US 301 and Crosstown Expressway and the bottleneck caused by the merge of traffic from SR 60 onto I-75 northbound is the cause of LOS E between the Crosstown Expressway and SR 60. The mainline operates at LOS D between SR 60 and Martin Luther King Boulevard and LOS C between Martin Luther King Boulevard and I-4.

  A second bottleneck on I-75 northbound occurs at Fletcher Avenue. While Fletcher Avenue is still congested during the PM peak period, one key source of the bottleneck is the narrowing of I-75 from three lanes to two. At the north end of the study area, there are 7,610 vph using two travel lanes. This lane reduction causes traffic to back up south of Fowler Avenue towards I-4, resulting in LOS D between I-4 and Fowler Avenue and LOS E between Fowler Avenue and Fletcher Avenue.

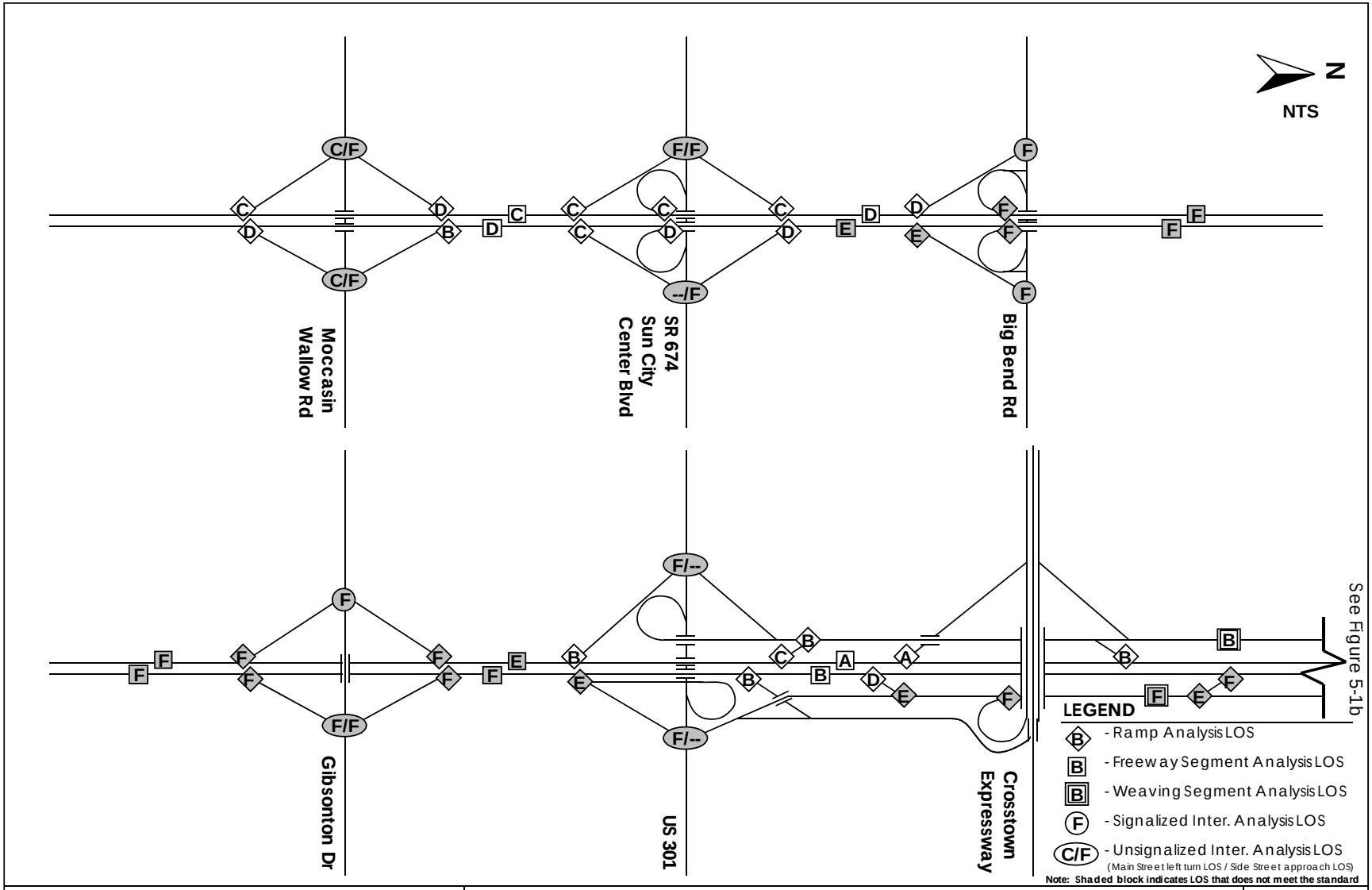
- **Southbound Issues:** The constraints in the southbound direction on I-75 during the PM peak period are similar to the issues encountered during the AM peak period. I-75 operates at LOS E between Fowler Avenue and I-4 due to weaving caused by more than a third of the traffic exiting onto I-4. South of I-4 the segments between I-4 and Martin Luther King Boulevard and between Martin Luther King Boulevard and SR 60 operate at LOS C.

  Traffic continues to improve south of SR 60 where the CD can help accommodate the high volumes. US 301 experiences similar constraints as Fletcher Avenue, such as high left-turn volumes at stop controlled ramps. This condition causes congestion on US 301 which results in queuing along the southbound CD.

5.2.5 Summary – No-Build Conditions Analyses

The LOS results for the No-Build Alternative (HCS and VISSIM) are shown on Figures 5-1a and 5-1b for the AM peak hour and on Figures 5-2a and 5-2b for the PM peak hour.

Overall the I-75 study area will operate much worse under the higher volume conditions in the Design Year (2035) than the existing conditions. Mainline improvements will be required from SR 674 to Fletcher Avenue to maintain efficient operations.

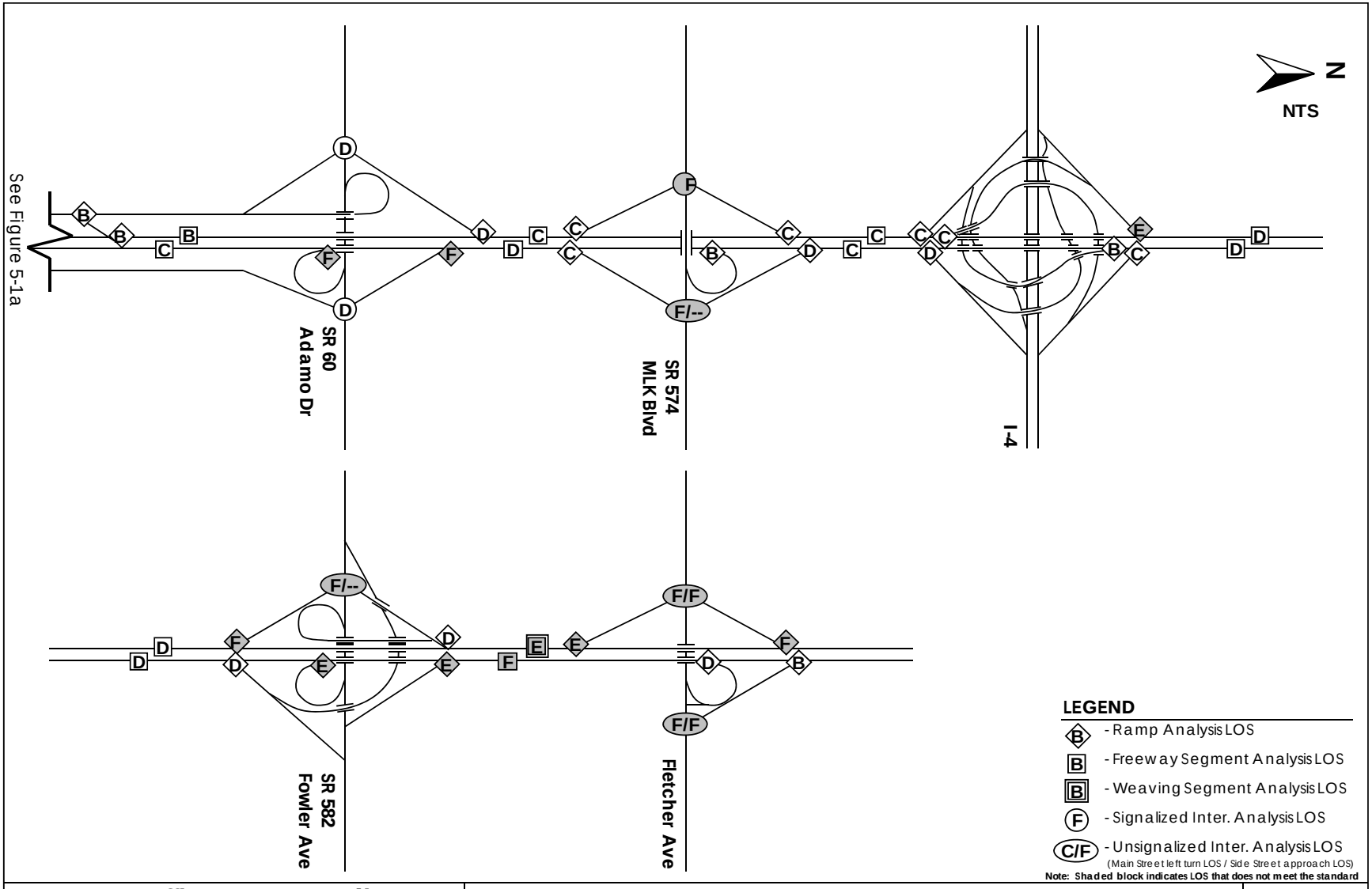


I-75 Traffic & PD&E Studies

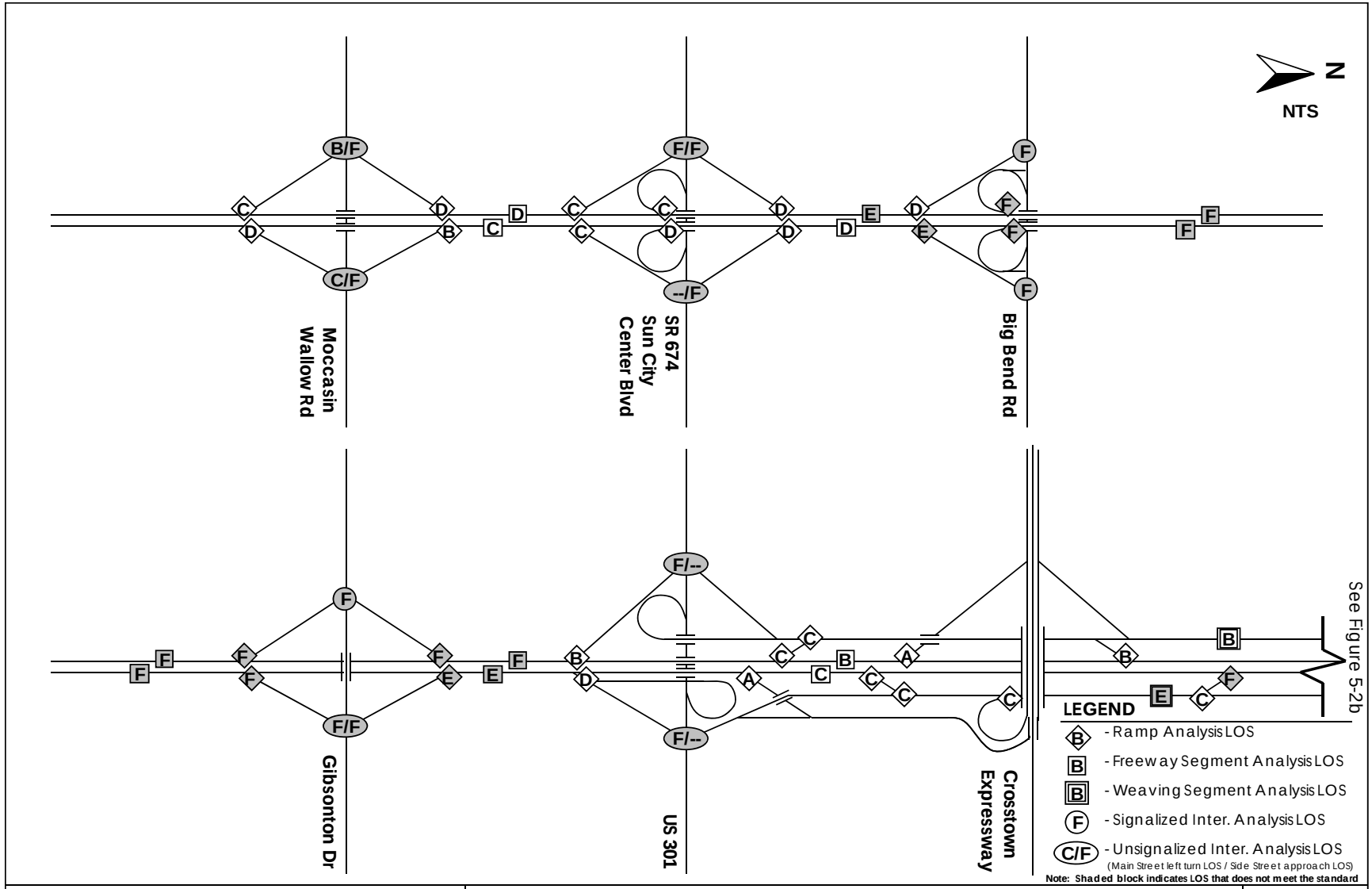
Design Traffic Technical Memorandum
Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue
WPI Segment Number 419235-1

YEAR 2035 NO-BUILD ALTERNATIVE
AM DESIGN HOUR LOS RESULTS (SOUTH)

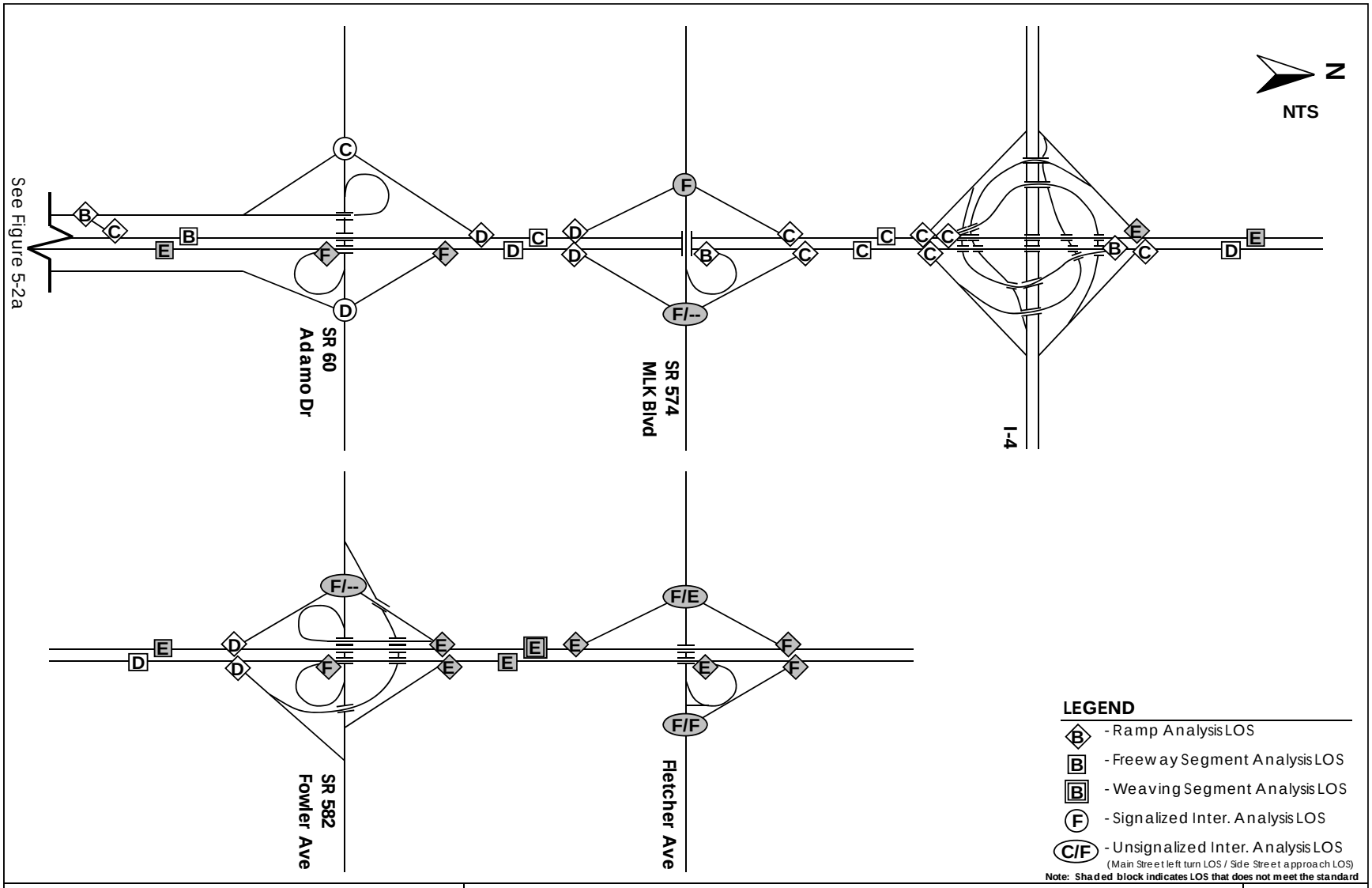
Figure 5-1a



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 NO-BUILD ALTERNATIVE AM DESIGN HOUR LOS RESULTS (NORTH)	Figure 5-1b



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 NO-BUILD ALTERNATIVE PM DESIGN HOUR LOS RESULTS (SOUTH)	Figure 5-2a



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 NO-BUILD ALTERNATIVE PM DESIGN HOUR LOS RESULTS (NORTH)	Figure 5-2b

6.0 BUILD ALTERNATIVES ANALYSES

This section presents the analyses results of the three Build Alternatives.

6.1 Build Alternatives

Three Build alternatives were selected by the FDOT for analysis in this study. Two of these alternatives involve widening of the mainline but maintaining its general use and its availability for all vehicles. The third alternative involves the implementation of special use lanes (SULs).

The description of the Build alternatives evaluated in this study is provided below.

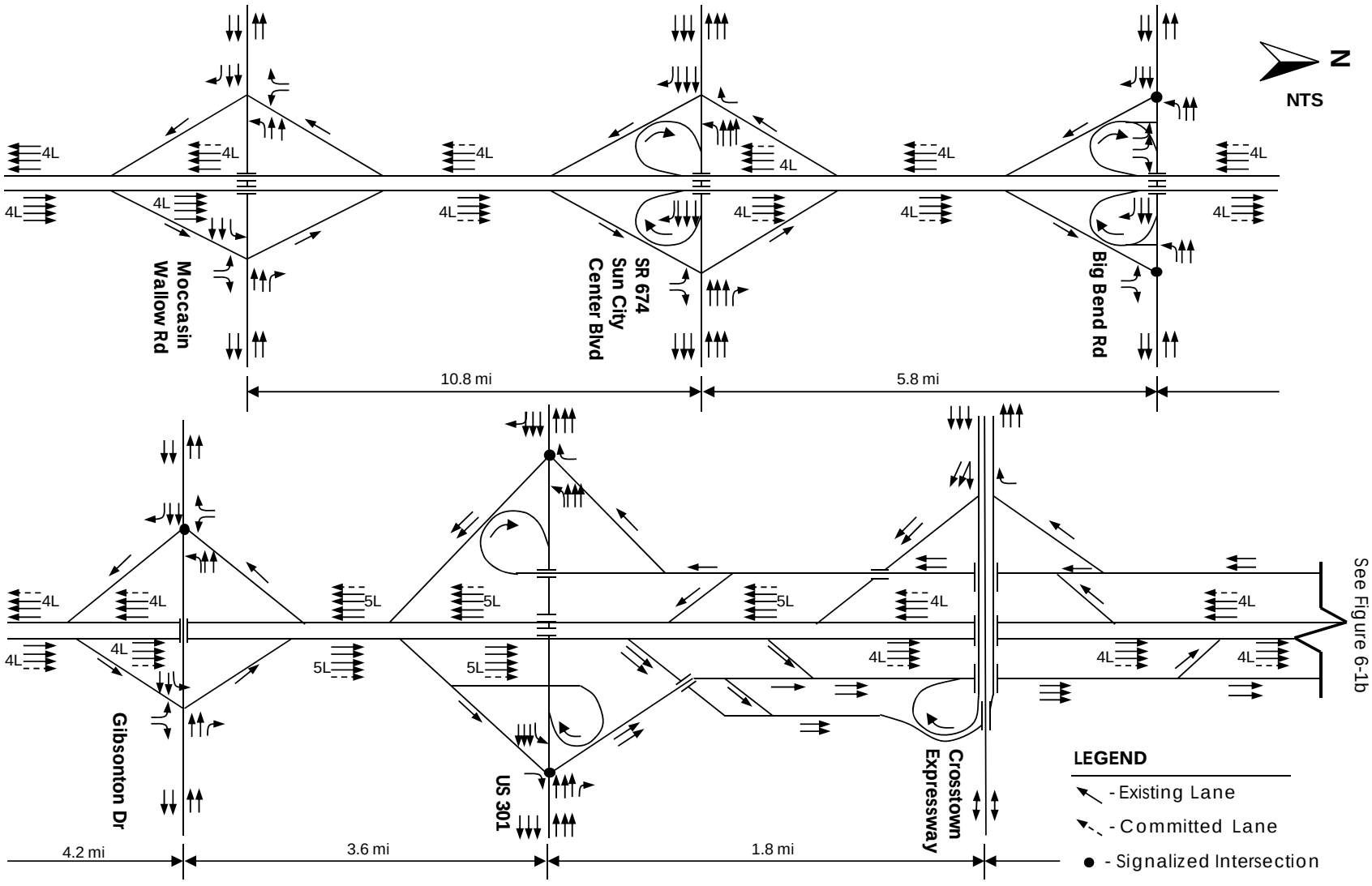
6.1.1 Build Alternative 1 – Add One Lane in Each Direction

Build Alternative 1 adds one travel lane in each direction from Moccasin Wallow Road to Fletcher Avenue. This would result in I-75 within the study area having a two-way cross-section of between eight and ten continuous mainline lanes from Moccasin Wallow Road to Fletcher Avenue compared to the present six to eight lanes.

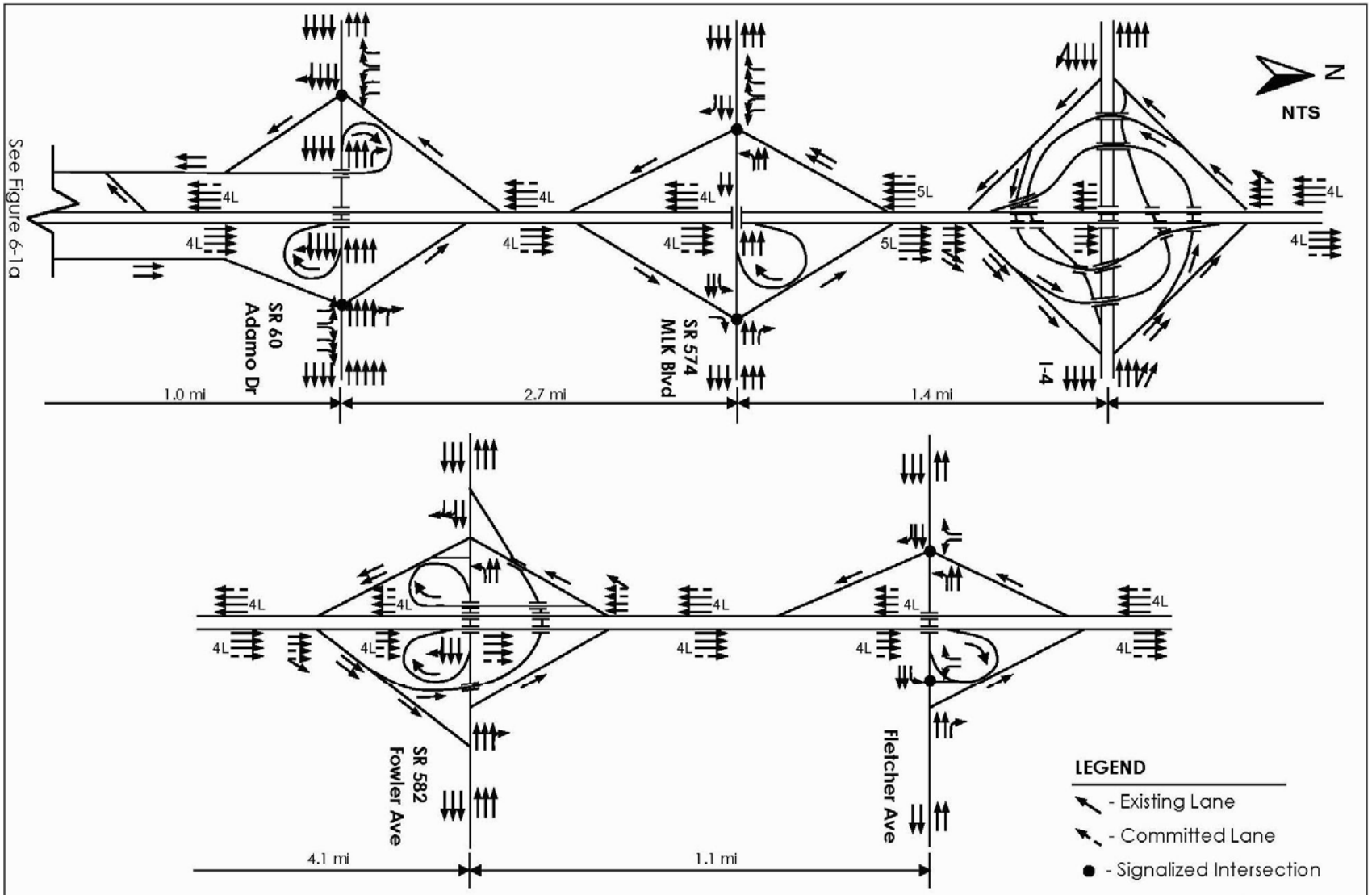
Table 6-1 provides a summary of how this improvement alternative would alter the study area segment laneage. Figures 6-1a and 6-1b graphically illustrate the laneage provided by improvement Alternative 1.

Table 6-1
Description of Build Alternative 1

Segment	Segment Limits	Improved Typical Section
A	Moccasin Wallow Road to Gibsonton Drive	8-lane typical section
B	Gibsonton Drive to US 301	10-lane typical section
C	US 301 to Crosstown Expressway	9-lane (4 NB & 5 SB) typical section (no changes to existing CD roadway)
D	Crosstown Expressway to SR 60	8-lane typical section (no changes to existing CD roadway)
E	SR 60 to Martin Luther King Boulevard	8-lane typical section
F	Martin Luther King Boulevard to Interstate 4	10-lane typical section
G,H	Interstate 4 to Fletcher Avenue	8-lane typical section



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 1 LANE DIAGRAM (SOUTH)	Figure 6-1a



I-75 Traffic & PD&E Studies

Design Traffic Technical Memorandum
Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue
WPI Segment Number 419235-1

YEAR 2035 BUILD ALTERNATIVE 1
LANE DIAGRAM (NORTH)

Figure 6-1b

6.1.2 Build Alternative 2 – Add Two Lanes in Each Direction

Build Alternative 2 adds two travel lanes in each direction from Moccasin Wallow Road to Fletcher Avenue. This would result in I-75 having a two-way cross-section of between 10 and 12 continuous mainline lanes from Moccasin Wallow Road to Fletcher Avenue compared to the present six to eight lanes.

Table 6-2 provides a summary of how this improvement alternative would alter the study area segment laneage. Figures 6-2a and 6-2b graphically illustrate the laneage provided by improvement Alternative 2.

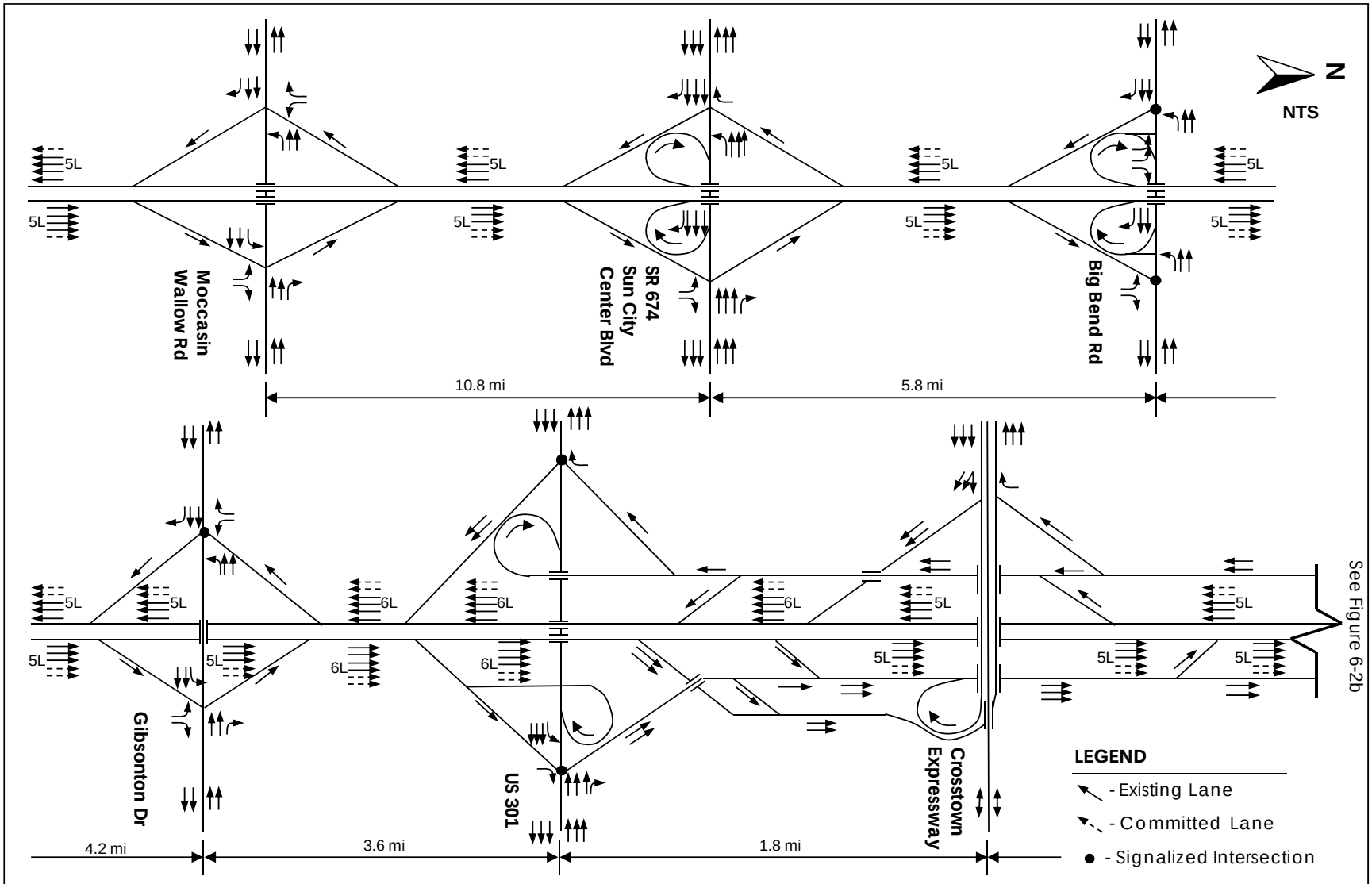
Table 6-2
Description of Build Alternative 2

Segment	Segment Limits	Improved Typical Section
A	Moccasin Wallow Road to Gibsonton Drive	10-lane typical section
B	Gibsonton Drive to US 301	12- lane typical section
C	US 301 to Crosstown Expressway	11-lane (5 NB & 6 SB) typical section (no changes to existing CD roadway)
D	Crosstown Expressway to SR 60	10-lane typical section (no changes to existing CD roadway)
E	SR 60 to Martin Luther King Boulevard	10-lane typical section
F	Martin Luther King Boulevard to Interstate 4	12-lane typical section
G,H	Interstate 4 to Fletcher Avenue	10-lane typical section

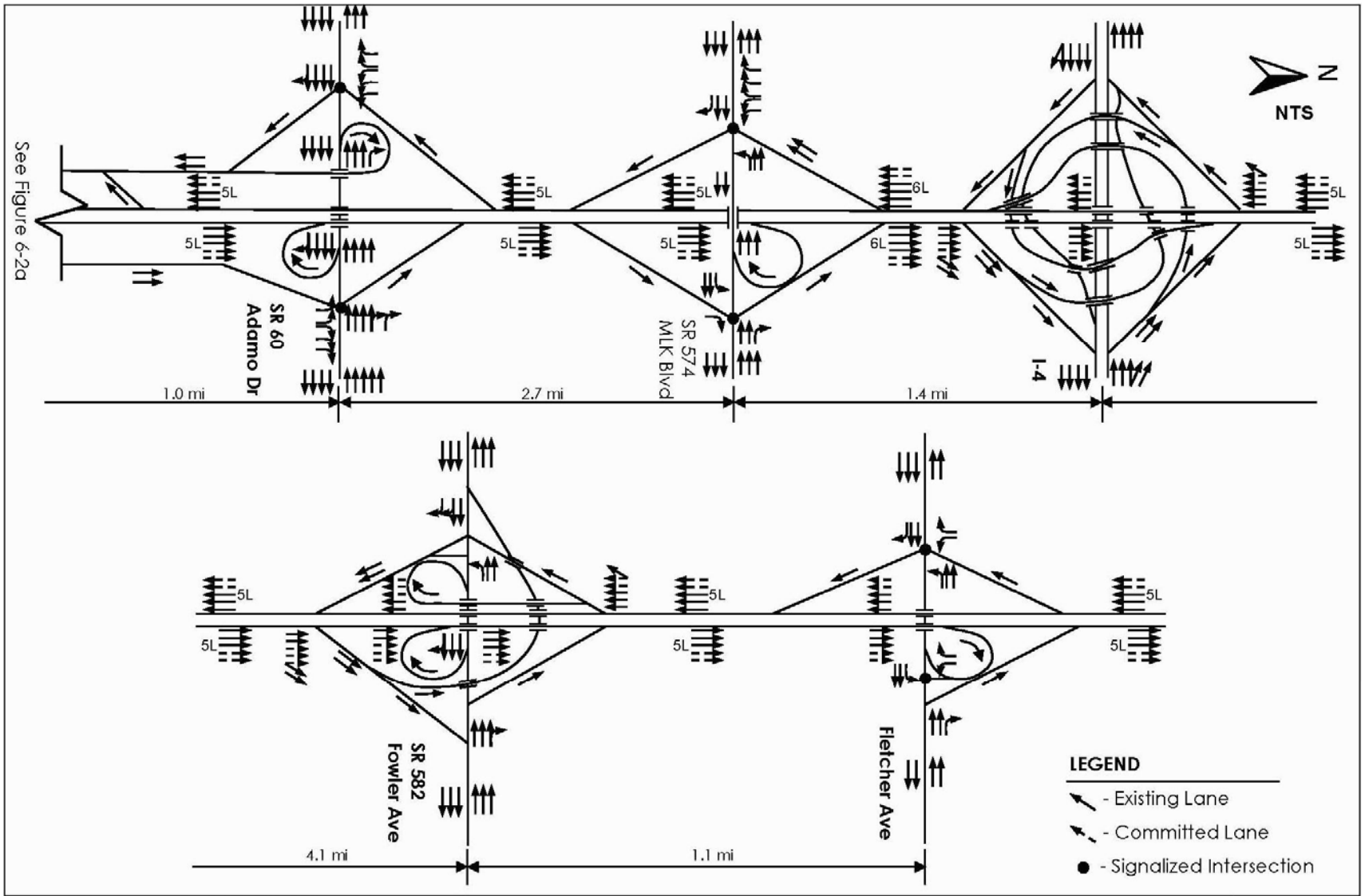
6.1.3 Build Alternative 3 – Add Special Use Lanes

Build Alternative 3 adds two special use lanes (SUL) in each direction from Moccasin Wallow Road to South of US 301, and three SULs in each direction from US 301 to Fletcher Avenue, and maintains the existing number of general use lanes (GUL) throughout the corridor. This would result in I-75 within the study area having a two-way cross-section of between ten and 14 continuous mainline lanes (not including CD roadway lanes) from Moccasin Wallow Road to Fletcher Avenue compared to the present six to eight lanes.

The locations and methods of access to and from the special use lanes (SULs) have been preliminarily defined with primarily slip ramps between the SUL and GUL well in advance of downstream interchanges and direct access ramps to and from the Crosstown Expressway and I-4. This preliminary design was used for analysis purposes and may be adjusted in later phases of the study based on traffic analysis results, right-of-way impacts, and other factors.



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 2 LANE DIAGRAM (SOUTH)	Figure 6-2a



I-75 Traffic & PD&E Studies

Design Traffic Technical Memorandum
Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue
WPI Segment Number 419235-1

YEAR 2035 BUILD ALTERNATIVE 2
LANE DIAGRAM (NORTH)

Figure 6-2b

Table 6-3 provides a summary of how this improvement alternative would alter the study area segment laneage. Figures 6-3a and 6-3b graphically illustrate the laneage provided by improvement Alternative 3.

Table 6-3
Description of Build Alternative 3

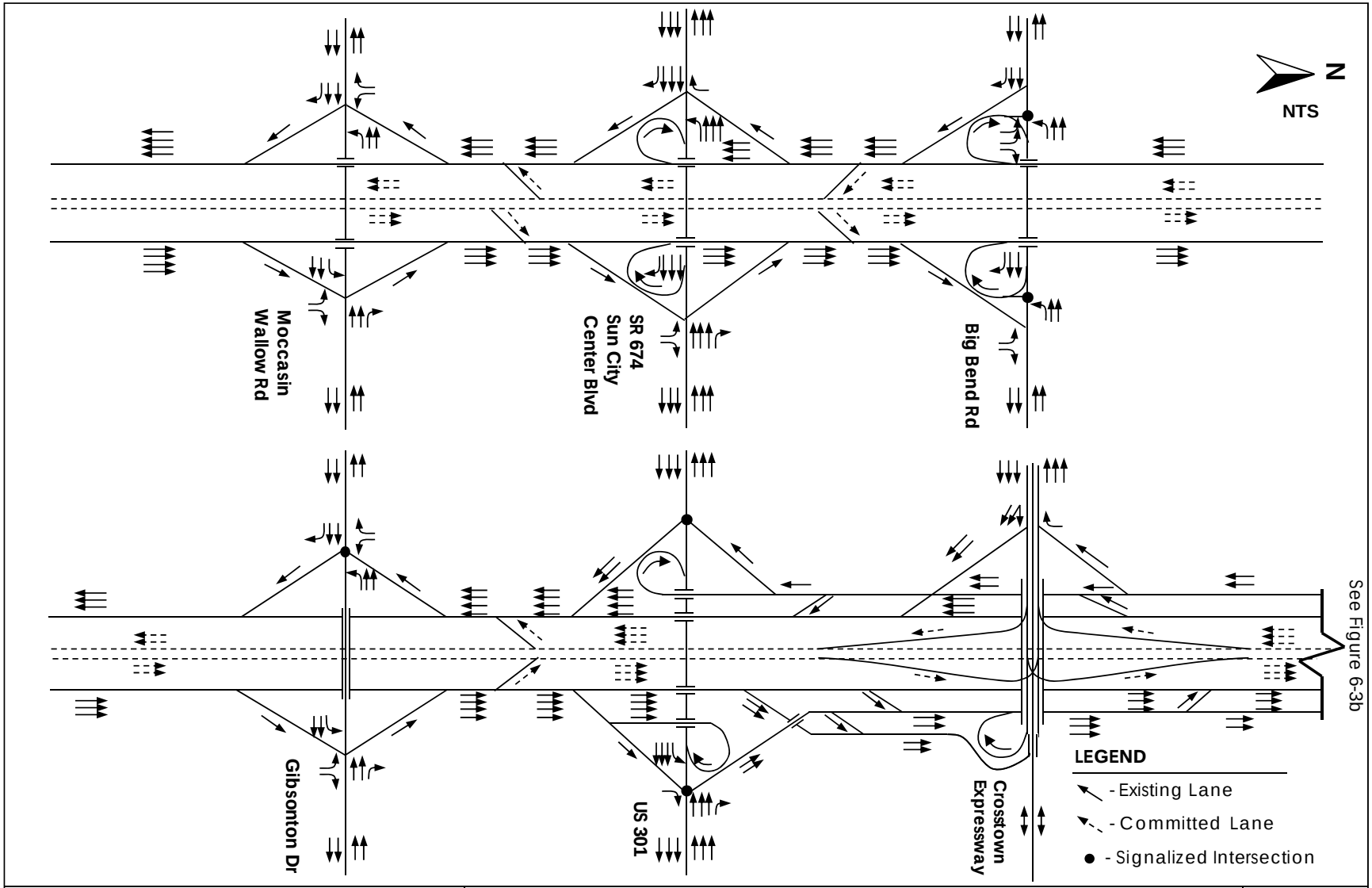
Segment	Segment Limits	Improved Typical Section
A	Moccasin Wallow Road to Gibsonton Drive	10-lane typical section
B	Gibsonton Drive to US 301	12-lane typical section
C	US 301 to Crosstown Expressway	11-lane (5 NB & 6 SB) typical section (no changes to existing CD roadway)
D	Crosstown Expressway to SR 60	12-lane typical (no changes to existing CD roadway)
E	SR 60 to Martin Luther King Boulevard	12-lane typical section
F	Martin Luther King Boulevard to Interstate 4	14-lane typical section
G,H	Interstate 4 to Fletcher Avenue	12-lane typical section

6.2 Year 2035 Traffic Operations Analyses

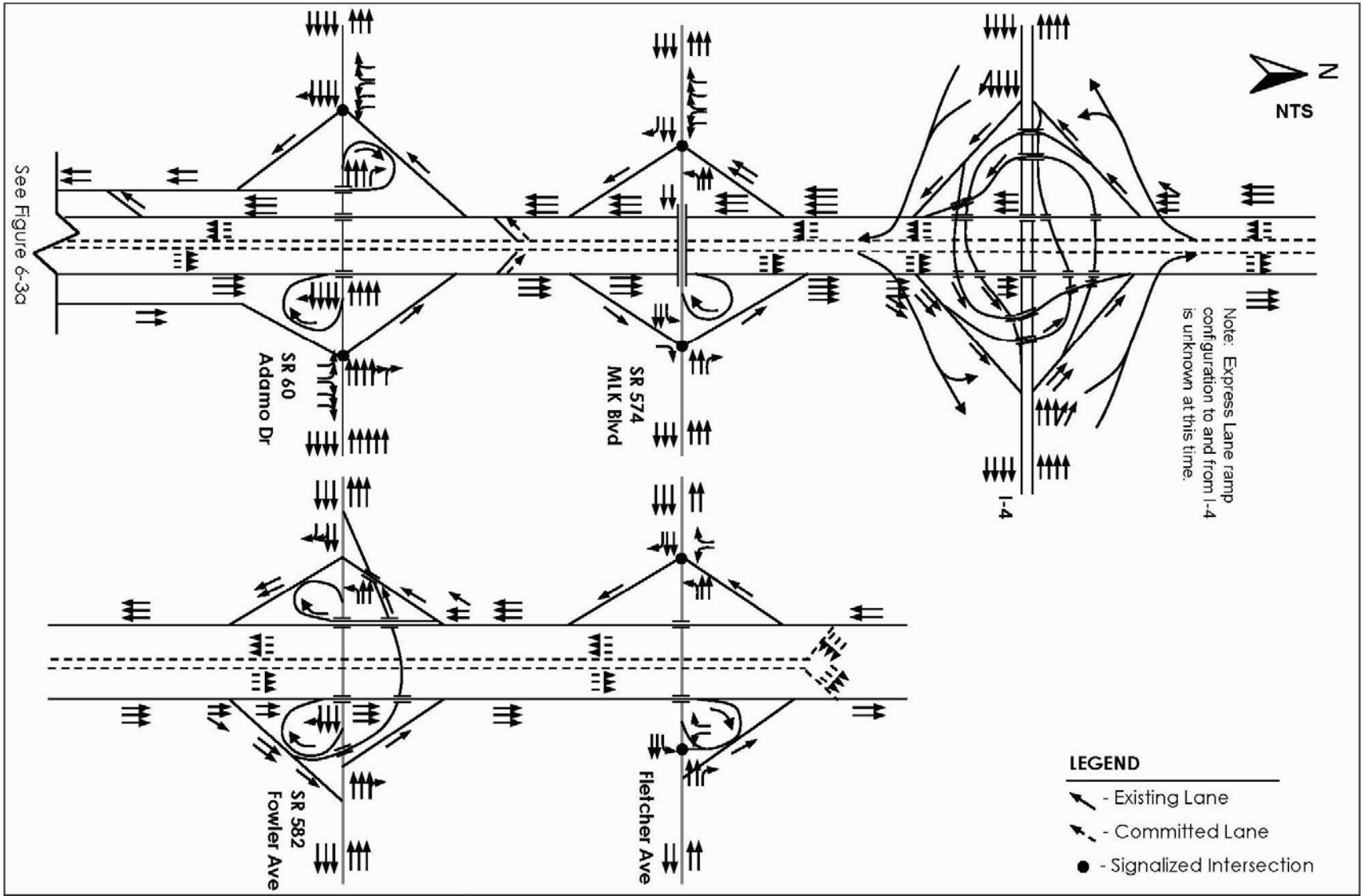
Traffic analyses were conducted for the three previously summarized Build Alternatives.

6.2.1 Analyses Methodology

Year 2035 traffic operating conditions were evaluated for the AM and PM design hours for the same areas as was done for the existing conditions and the No-Build Alternative analyses and for the special use lanes in Alternative 3. To maintain consistency and facilitate results comparisons, the same traffic analyses methodology used for the No-Build Alternative was also applied for the traffic analyses of the three Build alternatives.



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 3 LANE DIAGRAM (SOUTH)	Figure 6-3a



I-75 Traffic & PD&E Studies

Design Traffic Technical Memorandum
Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue
WPI Segment Number 419235-1

YEAR 2035 BUILD ALTERNATIVE 3
LANE DIAGRAM (NORTH)

Figure 6-3b

6.2.2 Build Alternative 1 – Level of Service Analyses Results

6.2.2.1 Intersection Analysis

The results of the interchange ramp terminal intersection analysis for Build Alternative 1 are summarized in Table 6-4. No improvement (or in some cases, worse conditions) will result with this alternative compared to the No-Build Alternative. This results because the Build Alternative 1 improvements while they only increase the mainline capacity of I-75, they also attract higher volumes than the No-Build Alternative along the mainline and the ramps. To avoid queuing onto the mainline, signalization of ramp terminal intersections was considered and this greatly improved the situation in many locations, as shown in Table 6-5. Some intersections, however, will continue to fail and at these locations further improvements (beyond signalization) were analyzed. Table 6-6 summarizes the results of these improvements on the LOS and Table 6-7 lists the recommended improvements. With signalization and the additional improvements, all intersections will operate efficiently with no queuing onto the mainline; however, not all intersections will meet the minimum LOS standards. No signal was proposed at the I-75 southbound ramp terminal at SR 674 for any of the Build alternatives. The only movement here (aside from uncontrolled through movements) is a westbound left-turn. Adequate gaps to accommodate this movement will be generated by the signalized intersection located less than a half-mile to the west.

6.2.2.2 Ramp Merge / Diverge Analysis

Ramp analysis was conducted at all mainline on-ramp and off-ramp segments as well as for the CD road merge / diverge segments where the CD road has two or more lanes. The results of the ramp merge / diverge analysis for Build Alternative 1 are summarized in Table 6-8 for the Year 2035. Most of the ramps will not operate efficiently. Widening of the ramps will slightly improve this situation.

6.2.2.3 Freeway Segment Analysis

Freeway segment analysis was conducted on all the I-75 segments in the study area. The results of the freeway segment analysis for Build Alternative 1 are summarized in Table 6-9 for Year 2035. Adding one lane in each direction will greatly improve conditions on the mainline, although as shown in Table 6-9, sub-standard conditions will persist in the heavier traffic directions during the peak travel periods.

Table 6-4
Year 2035 Build Alternative 1 – Ramp Terminal Intersection LOS Results

	Intersection	Control	Approach / Movement	AM (PM) Design Hour Control Delay (sec/veh)	AM (PM) Design Hour Approach LOS	AM (PM) Design Hour Average Delay (sec/veh)	AM (PM) Design Hour LOS
HCS Analysis Results	I-75 NB ramps at Moccasin Wallow Rd.	Stop	NB LT	8921.0 (5319.0)	**F (F)**	8921 (5319)	**F (F)**
			EB LT	13.9 (16.2)	B (C)		
	I-75 SB ramps at Moccasin Wallow Rd.	Stop	WB LT	15.4 (17.7)	C (C)	12152 (3968)	**F (F)**
			SB LT	12152.0 (3968.0)	**F (F)**		
	I-75 NB ramps at SR 674	Stop	NB LT	9078.0 (2910)	**F (F)**	9078 (2910)	**F (F)**
	I-75 SB ramps at SR 674	Stop	WB LT	2357.0 (719.3)	**F (F)**	1547 (1984)	**F (F)**
			SB RT	1547 (1984.0)	**F (F)**		
	I-75 NB ramps at Big Bend Rd.	Signal	WB LT	705.7 (487.8)	**F (F)**	267.8 (231.0)	**F (F)**
			WB Thru	9.4 (8.8)	A (A)		
			EB Thru	283.3 (282.8)	**F (F)**		
			NB LT	52.8 (59.5)	D **(E)**		
	I-75 SB ramps at Big Bend Rd.	Signal	WB LT	396.0 (305.9)	**F (F)**	204.1 (146.9)	**F (F)**
			WB Thru	23.6 (20.6)	C (C)		
			EB Thru	350.2 (249.3)	**F (F)**		
			NB LT	81.9 (47.6)	**F** (D)		
	I-75 NB ramps at Gibsonton Dr.	Stop	EB LT	2021.0 (2115.0)	**F (F)**	n/a (n/a)	**F (F)**
			NB LT	n/a (n/a)	**F (F)**		
	I-75 SB ramps at Gibsonton Dr.	Signal	WB LT	366.9 (249.0)	**F (F)**	310.6 (313.2)	**F (F)**
			WB Thru	22.8 (27.4)	C (C)		
			EB Thru	195 (224.9)	**F (F)**		
			SB LT	573.9 (624.9)	**F (F)**		
VISSIM Analysis Results	I-75 NB ramps at US 301	Signal	EB LT	21.7 (43.5)	C (D)	13.1 (17.1)	B (B)
			EB Thru	1.6 (2.6)	A (A)		
			WB Thru	19.1 (19.0)	B (B)		
	I-75 SB ramps at US 301	Signal	WB LT	27.2 (26.4)	C (C)	11.7 (12.8)	B (B)
			WB Thru	3.0 (2.0)	A (A)		
			EB Thru	16.3 (17.6)	B (B)		
	I-75 NB ramps at SR 60 (Adamo Dr.)	Signal	EB Thru	25.5 (33.3)	C (C)	59.7 (54.8)	**E** (D)
			WB Thru	92.9 (94.5)	**F (F)**		
			NB LT	36.6 (29.0)	D (C)		
			NB RT	71.1 (46.4)	**E** (D)		
	I-75 SB ramps at SR 60 (Adamo Dr.)	Signal	EB Thru	77.8 (62.6)	**E (E)**	47.5 (41.8)	D (D)
			WB Thru	23.6 (19.3)	C (B)		
			SB LT	35.3 (36.6)	D (D)		
			SB RT	35.6 (32.4)	D (C)		
	I-75 SB ramps at SR 574 (MLK Blvd.)	Signal	WB LT	76.9 (259.0)	**E (F)**	160.1 (212.7)	**F (F)**
			WB Thru	28.1 (128.6)	C **(F)**		
			EB Thru	292.7 (339.3)	**F (F)**		
			SB LT	70.4 (60.2)	**E (E)**		

Note: Bold text and shaded cells indicate an approach or intersection that will operate at a LOS worse than the standard LOS D
n/a: Control Delay value not provided since lane volume exceeds allowable units; LOS F.

Table 6-4 (continued)
Year 2035 Build Alternative 1 – Ramp Terminal Intersection LOS Results

	Intersection	Control	Approach / Movement	AM (PM) Design Hour Control Delay (sec/veh)	AM (PM) Design Hour Approach LOS	AM (PM) Design Hour Average Delay (sec/veh)	AM (PM) Design Hour LOS
VISSIM Analysis Results	I-75 NB ramps at SR 574 (MLK Blvd.)	Signal	EB LT	94.9 (30.0)	**F** (C)	123.1 (139.9)	**F (F)**
			EB Thru	30.2 (8.7)	C (A)		
			WB Thru	273.9 (372.4)	**F (F)**		
	I-75 SB ramps at SR 582 (Fowler Ave.)	Stop	WB LT	8.1 (14.2)	A (B)	8.1 (14.2)	A (B)
	I-75 NB ramps at Fletcher Ave.	Signal	EB LT	81.9 (172.2)	**F (F)**	89.4 (74.7)	**F (E)**
			SB LT	48.6 (47.4)	D (D)		
			EB Thru	18.8 (89.0)	B **(F)**		
			WB Thru	120.3 (35.2)	**F** (D)		
	I-75 SB ramps at Fletcher Ave.	Signal	EB LT	57.7 (81.4)	**E (F)**	72.5 (85.6)	**E (F)**
			SB LT	78.3 (78.4)	**E (E)**		
			WB Thru	12.9 (14.2)	B (B)		
			EB Thru	276.6 (218.3)	**F (F)**		

Note: Bold text and shaded cells indicate an approach or intersection that will operate at a LOS worse than the standard LOS D
n/a: Control Delay value not provided since lane volume exceeds allowable units; LOS F.

Table 6-5
Year 2035 Build Alternative 1 – South Study Area Ramp Terminal Intersection HCS LOS Results (Signalized)

Intersection	Control	Approach / Movement	AM (PM) Design Hour Control Delay (sec/veh)	AM (PM) Design Hour Approach LOS	AM (PM) Design Hour Average Delay (sec/veh)	AM (PM) Design Hour LOS
I-75 NB ramps at Moccasin Wallow Rd.	Signal	EB LT	39.9 (41.3)	D (D)	79.5 (100.4)	**E (F)**
		EB Thru	18.0 (22.4)	B (C)		
		WB Thru	43.0 (84.7)	D (**F**)		
		NB LT	207.7 (224.2)	**F (F)**		
I-75 SB ramps at Moccasin Wallow Rd.	Signal	WB LT	23.6 (34.5)	C (C)	16.2 (19.0)	B (B)
		WB Thru	10.2 (13.6)	B (B)		
		EB Thru	17.3 (19.8)	B (B)		
		SB LT	50.7 (47.2)	D (D)		
I-75 NB ramps at SR 674 (Sun City Center Blvd.)	Signal	EB Thru	32.9 (39.2)	C (D)	28.5 (33.9)	C (C)
		WB Thru	20.6 (28.2)	C (C)		
		NB LT	41.6 (31.8)	D (C)		
I-75 NB ramps at Big Bend Rd.	Signal	WB LT	705.7 (487.8)	**F (F)**	267.8 (231.0)	**F (F)**
		WB Thru	9.4 (8.8)	A (A)		
		EB Thru	283.3 (282.8)	**F (F)**		
		NB LT	52.8 (59.5)	D **(E)**		
I-75 SB ramps at Big Bend Rd.	Signal	WB LT	396.0 (305.9)	**F (F)**	204.1 (146.9)	**F (F)**
		WB Thru	23.6 (20.6)	C (C)		
		EB Thru	350.2 (249.3)	**F (F)**		
		NB LT	81.9 (47.6)	**F (D)**		
I-75 NB ramps at Gibsonton Dr.	Signal	EB LT	235.0 (180.7)	**F (F)**	73.9 (66.4)	**E (E)**
		EB Thru	8.8 (9.7)	A (A)		
		WB Thru	58.1 (83.6)	**E (F)**		
		NB LT	60.3 (89.1)	**E (F)**		
I-75 SB ramps at Gibsonton Dr.	Signal	WB LT	366.9 (249.0)	**F (F)**	310.6 (313.2)	**F (F)**
		WB Thru	22.8 (27.4)	C (C)		
		EB Thru	195 (224.9)	**F (F)**		
		SB LT	573.9 (624.9)	**F (F)**		

Note: Bold text and shaded cells indicate an approach or intersection that will operate at a LOS worse than the standard LOS D

Table 6-6
Year 2035 Build Alternative 1 – South Study Area Ramp Terminal Intersection HCS LOS Results (Signalized and Improved)

Intersection	Control	Approach / Movement	AM (PM) Design Hour Control Delay (sec/veh)	AM (PM) Design Hour Approach LOS	AM (PM) Design Hour Average Delay (sec/veh)	AM (PM) Design Hour LOS
I-75 NB ramps at Moccasin Wallow Rd.	Signal	EB LT	32.3 (48.9)	C (D)	30.7 (35.6)	C (D)
		EB Thru	15.4 (16.5)	B (B)		
		WB Thru	35.8 (41.7)	D (D)		
		NB LT	41.0 (46.6)	D (D)		
I-75 NB ramps at Big Bend Rd.	Signal	WB LT	98.4 (75.5)	**F (E)**	56.5 (72.3)	**E (E)**
		WB Thru	4.1 (6.4)	A (A)		
		EB Thru	78.5 (121.6)	**E (F)**		
		NB LT	68.2 (59.5)	**E** (D)		
I-75 SB ramps at Big Bend Rd.	Signal	WB LT	79.7 (74.0)	**E (E)**	53.0 (47.4)	D (D)
		WB Thru	12.3 (15.2)	B (B)		
		EB Thru	73.7 (69.4)	**E (E)**		
		NB LT	54.6 (36.1)	D (D)		
I-75 NB ramps at Gibsonton Dr.	Signal	EB LT	45.7 (43.9)	D (D)	24.9 (26.2)	C (C)
		EB Thru	7.2 (9.1)	A (A)		
		WB Thru	35.2 (40.3)	D (D)		
		NB LT	49.6 (48.4)	D (D)		
I-75 SB ramps at Gibsonton Dr.	Signal	WB LT	51.8 (53.2)	D (D)	43.8 (56.4)	D **(E)**
		WB Thru	14.6 (20.9)	B (C)		
		EB Thru	50.2 (105.1)	D **(F)**		
		SB LT	53.1 (37.2)	D (D)		

Note: Bold text and shaded cells indicate an approach or intersection that will operate at a LOS worse than the standard LOS D

Table 6-7
Year 2035 Build Alternative 1 – Ramp Terminal Intersection Improvements

Intersection	Needed Improvements
I-75 NB ramps at Moccasin Wallow Road	• Add 1 NB LT lane
I-75 NB ramps at Big Bend Road	• Add 1 WB LT lane • Add 1 EB through lane • Add 1 WB through lane
I-75 SB ramps at Big Bend Road	• Add 1 NB LT lane • Add 1 WB LT lane • Add 1 EB through lane • Add 1 WB through lane
I-75 NB ramps at Gibsonton Drive	• Add 1 EB LT lane • Add 1 WB through lane • Add 1 EB through lane
I-75 SB ramps at Gibsonton Drive	• Add 2 SB LT lanes • Add 1 EB through lane • Add 1 WB through lane

Table 6-8
Year 2035 Build Alternative 1 – Ramp LOS Results

	Interchange	Ramp	AM (PM) Ramp Density (pc/mi/ln)	AM (PM) Design Hour LOS
HCM Analysis Results	Moccasin Wallow Rd.	I-75 NB off-ramp to Moccasin Wallow Road	37.2 (35.3)	**E (E)**
		I-75 NB on-ramp from Moccasin Wallow Road	18.3 (16.9)	B (B)
		I-75 SB off-ramp to Moccasin Wallow Road	26.2 (28.7)	C (D)
		I-75 SB on-ramp from Moccasin Wallow Road	25.6 (28.7)	C **(F)**
	SR 674 (Sun City Center Blvd.)	I-75 NB off-ramp to SR 674	23.9 (21.5)	C (C)
		I-75 NB on-ramp from EB SR 674	22.5 (33.3)	C (D)
		I-75 NB on-ramp from WB SR 674	24.7 (22.2)	C (C)
		I-75 SB off-ramp to WB SR 674	25.9 (30.0)	C (D)
		I-75 SB off-ramp from to EB SR 674	23.4 (25.8)	C (C)
		I-75 SB on-ramp from SR 674	29.9 (19.9)	D (B)
	Big Bend Rd.	I-75 NB off-ramp to Big Bend Road	35.4 (34.3)	**E** (D)
		I-75 NB on-ramp from Big Bend Road	33.7 (30.3)	**F** (D)
		I-75 SB off-ramp to Big Bend Road	44.4 (48.2)	**F (F)**
		I-75 SB on-ramp from Big Bend Road	23.5 (26.6)	C (C)
	Gibsonton Dr.	I-75 NB off-ramp to Gibsonton Drive	40.7 (36.8)	**F (E)**
		I-75 NB on-ramp from Gibsonton Drive	n/a (n/a)	**F (E)**
		I-75 SB off-ramp to Gibsonton Drive	n/a (n/a)	**F (F)**
		I-75 SB on-ramp from Gibsonton Drive	23.2 (25.3)	C (C)
VISSIM Analysis Results	US 301 / Crosstown Expressway	I-75 NB off-ramp to US 301	29.3 (26.5)	D (C)
		I-75 NB off-ramp to Crosstown Expressway	18.9 (23.6)	B (C)
		I-75 NB off-ramp to CD Road / SR 60	13.0 (16.4)	B (B)
		I-75 NB on-ramp from CD Road / Crosstown Expressway	9.8 (14.9)	A (B)
		I-75 NB CD on-ramp from I-75 NB	20.6 (21.5)	C (C)
		I-75 SB off-ramp to Crosstown Expressway	17.4 (16.9)	B (B)
		I-75 SB off-ramp to US 301 / CD Road	14.1 (12.9)	B (B)
		I-75 SB on-ramp from Crosstown Expressway	15.3 (15.2)	B (B)
		I-75 SB on-ramp from I-75 SB CD Road	49.1 (37.1)	**F (E)**
		I-75 SB on-ramp from US 301	56.2 (37.4)	**F (E)**
		I-75 SB CD Road on-ramp from I-75 SB	46.4 (46.4)	**F (F)**
		I-75 SB CD Road off-ramp to SB I-75	56.0 (47.9)	**F (F)**
	SR 60 (Adamo Dr.)	I-75 NB on-ramp from EB SR 60	37.2 (29.8)	**E** (D)
		I-75 NB on-ramp from WB SR 60	69.4 (67.6)	**F (F)**
		I-75 SB off-ramp to SR 60	20.2 (25.0)	C (C)
	SR 574 (MLK Blvd.)	I-75 NB off-ramp to EB SR 574	27.5 (30.5)	C (D)
		I-75 NB off-ramp to WB SR 574	72.6 (71.8)	**F (F)**
		I-75 NB on-ramp from SR 574	19.0 (24.6)	B (C)
		I-75 SB off-ramp to SR 574	21.4 (26.7)	C (C)
		I-75 SB on-ramp from SR 574	25.4 (25.5)	C (C)
	I-4	I-75 NB off-ramp to I-4	24.5 (32.0)	C (D)
		I-75 NB on-ramp from EB I-4	23.2 (26.1)	C (C)
		I-75 NB on-ramp from WB I-4	19.8 (26.1)	B (C)
		I-75 SB off-ramp to I-4	24.7 (35.6)	C **(E)**
		I-75 SB on-ramp from EB I-4	21.6 (29.3)	C (D)
		I-75 SB on-ramp from WB I-4	51.9 (51.2)	**F (F)**
	SR 582 (Fowler Ave.)	I-75 NB off-ramp to Fowler Avenue	57.8 (54.8)	**F (F)**
		I-75 NB on-ramp from EB Fowler Avenue	19.9 (26.1)	B (C)
		I-75 NB on-ramp from WB Fowler Avenue	23.1 (31.6)	C (D)
		I-75 SB off-ramp to Fowler Avenue	54.1 (54.7)	**F (F)**
		I-75 SB on-ramp from Fowler Avenue	60.1 (60.6)	**F (F)**
	Fletcher Ave.	I-75 NB off-ramp to Fletcher Avenue	43.5 (39.6)	**F (E)**
		I-75 NB on-ramp from Fletcher Avenue	14.5 (12.9)	B (B)
		I-75 SB off-ramp to Fletcher Avenue	47.6 (38.9)	**F (E)**
		I-75 SB on-ramp from Fletcher Avenue	37.4 (30.9)	**E** (D)

Note: Bold text and shaded cells indicate an approach or intersection LOS that exceeds LOS D standards

Table 6-9
Year 2035 Build Alternative 1 – Mainline and Weaving Section LOS Results

	Mainline Segment	AM (PM) Design Hour Freeway Density (pc/mi/ln)	AM (PM) Design Hour LOS
HCM Analysis Results	**I-75 Northbound**		
	Moccasin Wallow Rd. to SR 674	23.9 (21.1)	C (C)
	SR 674 to Big Bend Rd.	31.2 (26.4)	D (D)
	Big Bend Rd. to Gibsonton Dr.	44.4 (34.1)	**E** (D)
	Gibsonton Dr. to US 301	37.2 (29.5)	**E** (D)
	I-75 Southbound		
	US 301 to Gibsonton Dr.	29.6(36.3)	D **(E)**
	Gibsonton Dr. to Big Bend Rd.	26.4 (44.4)	D **(E)**
	Big Bend Rd. to SR 674	31.8 (31.2)	D (D)
	SR 674 to Moccasin Wallow Rd.	21.1 (23.9)	C (C)
VISSIM Analysis Results	**I-75 Northbound**		
	US 301 to Crosstown Expressway	25.7 (19.4)	C (C)
	Crosstown Expressway to SR 60	41.4 (28.0)	**E** (D)
	SR 60 to Martin Luther King Blvd.	52.9 (44.7)	**F (E)**
	Martin Luther King Blvd. to I-4	57.2 (54.4)	**F (F)**
	I-4 to Fowler Ave.	20.2 (26.6)	C (D)
	Fowler Avenue to Fletcher Ave.	20.3 (26.4)	C (D)
	I-75 Southbound		
	Fowler Avenue to I-4	54.9 (52.4)	**F (F)**
	I-4 to Martin Luther King Blvd.	22.6 (27.8)	C (D)
	Martin Luther King Blvd. to SR 60	24.8 (29.2)	C (D)
	SR 60 to Crosstown Expressway	12.6 (16.0)	B (B)
	Crosstown Expressway to US 301	10.8 (14.7)	A (B)
	Weave Segments		
	I-75 SB - Fletcher Ave. to Fowler Ave.	57.1 (56.4)	**F (F)**
	I-75 NB CD - Crosstown Expressway to SR 60	38.8 (30.5)	**E** (D)
	I-75 SB CD - SR 60 to Crosstown Expressway	21.0 (19.1)	C (B)

Note: Bold text and shaded cells indicate a LOS that does not meet the LOS D standard

6.2.2.4 VISSIM Analysis Results

The VISSIM simulation results are described below.

- **AM Peak Period**

  Northbound Issues: The first bottleneck described in the AM No-Build Alternative (caused by the merge of traffic from SR 60 onto I-75) is not an issue in Build Alternative 1 because the auxiliary lane was extended to add room to merge and one through travel lane was added. However, the largest issue that was discovered in the northbound direction is the weaving caused by nearly 45 percent of traffic on I-75 exiting onto I-4. On the segment between Martin Luther King Boulevard and I-4, there are nearly 11,000 vph using five travel lanes, which results in an average of 2,200 vehicles per-hour per-lane (vphpl). This high volume by itself would result in a poor LOS. With 45 percent of the traffic trying to get into the right lane to exit, a major bottleneck occurs, which causes traffic to back up past the Crosstown Expressway interchange.

  Traffic operations are LOS E north of Crosstown Expressway. In addition, I-75 operates at LOS C between US 301 and Crosstown Expressway while operating at LOS F between SR 60 and Martin Luther King Boulevard. Also, I-75 operates at LOS F between Martin Luther King Boulevard and I-4. North of I-4, traffic conditions are at LOS C.

  As noted, traffic signals were added to Fletcher Avenue; therefore, there is no longer any back up on the mainline due to that interchange. Traffic operates at LOS C from I-4 to Fowler Avenue as well as from Fowler Avenue to Fletcher Avenue.

  Southbound Issues: In the southbound direction, there is a heavy volume of traffic entering the system north of Fletcher Avenue (7,470 vph using four travel lanes). Over 2,100 vph enter I-75 from Fletcher Avenue and 2,400 vph enter from Fowler Avenue. Between Fowler Avenue and I-4, there are 10,000 vph using four lanes of traffic, averaging 2,500 vphpl.

  In the southbound direction, 40 percent of the traffic on I-75 was exiting onto I-4. This created the same situation approaching I-4 as occurred on northbound I-75. The high traffic volumes mixed with a large percentage of traffic trying to get into the right lane results in a large bottleneck extending past Fletcher Avenue, resulting in LOS F between I-4 and Fowler Avenue. South of I-4, traffic begins to improve, operating at LOS C between I-4 and Martin Luther King Boulevard, and Martin Luther King Boulevard and SR 60 (LOS C is a result of high traffic volumes), and operating at LOS B from SR 60 to US 301.

- **PM Peak Period**

  Northbound Issues: The issues experienced along I-75 northbound in the PM peak period are very similar to those experienced in the AM. Heavy traffic volumes combined with a large amount of weaving for the high percentages of traffic exiting onto I-4 cause queuing on I-75 extending back to the Crosstown Expressway. From US 301 to Crosstown Expressway, I-75 operates at LOS C. However, as the congestion worsens due to I-4, the LOS between Crosstown Expressway and SR 60 falls to LOS D. From

SR 60 to Martin Luther King Boulevard, I-75 operates at LOS E, and from Martin Luther King Boulevard to I-4 operates at LOS F. North of I-4, traffic conditions improve along I-75; however, the route still operates at LOS D.

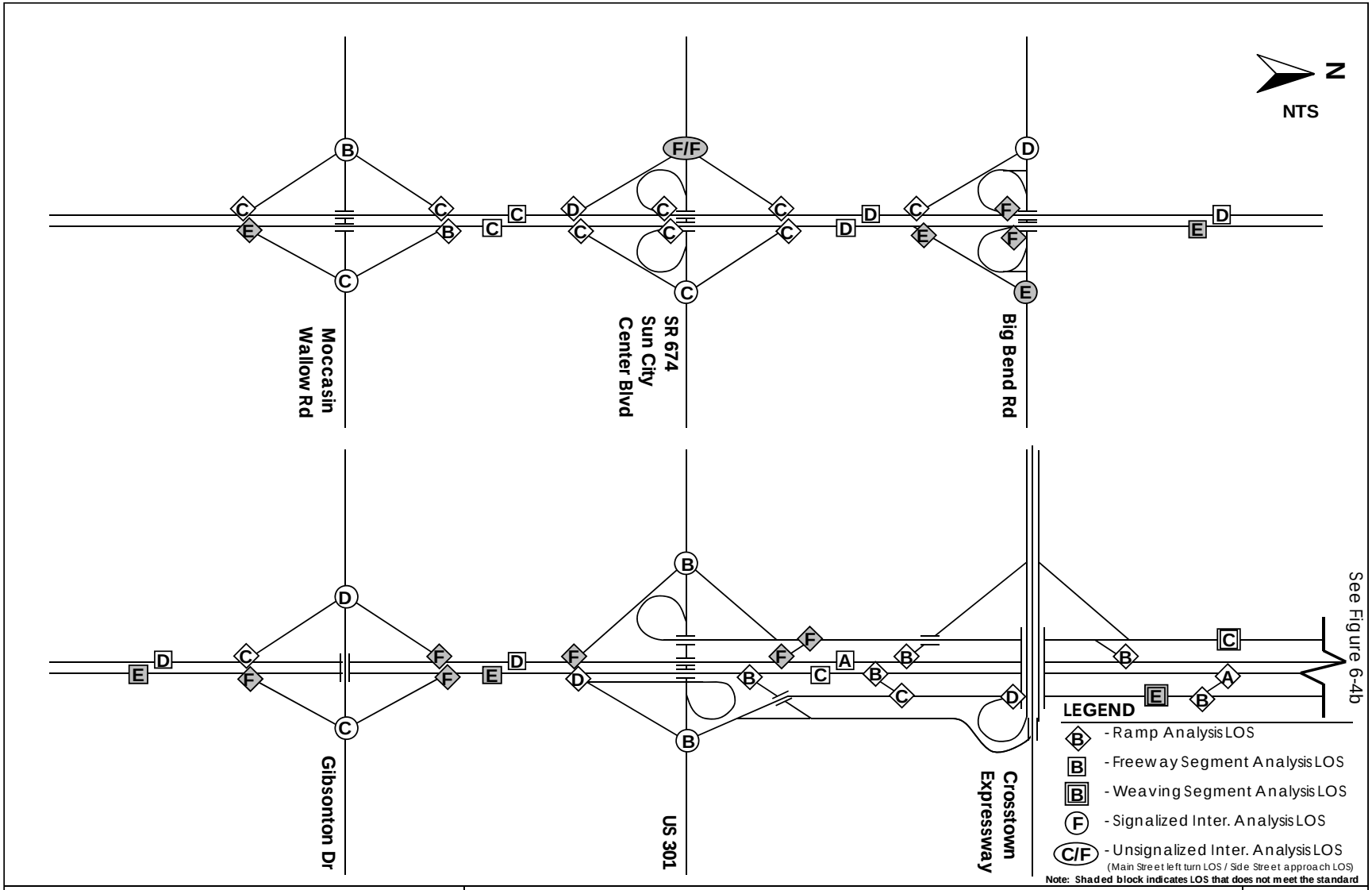
Southbound Issues: The southbound direction experiences similar problems during the PM peak period as it does in the AM peak period. The heavy traffic volumes combined with heavy weaving causes a back-up north of I-4. The segment between Fowler Avenue and I-4 operates at LOS F. South of I-4, LOS improves to LOS D between I-4 and SR 60 and LOS B south of SR 60. Since traffic signals were added at US 301, there are no longer queuing issues on the southbound CD exit onto US 301.

6.2.2.5 Summary – Build Alternative 1 Operations Analyses

The LOS results for Build Alternative 1 (both HCS and VISSIM) are shown on Figures 6-4a and 6-4b for the AM peak hour and on Figures 6-5a and 6-5b for the PM peak hour. Overall, the I-75 study area operates slightly better in the southern portion of the study area with the additional lane in each direction compared to the No-Build alternative, although substandard conditions persist in the area of the Big Bend Road and Gibsonton Drive interchanges.

According to VISSIM, the addition of one general use travel lane in each direction is not enough to provide efficient traffic operations and thus additional capacity improvements / adjustments were made for effective and reasonable operations to result. These adjustments and other additional improvements to Build Alternative 1 are shown on Figures 6-6a and 6-6b and are listed below.

- Changed traffic signal timings of existing signals (AM and PM peak periods) to better accommodate through traffic on the arterials and avoid a back-up on the mainline. The re-timing also provided increased green time and capacity for movements to and from I-75;
- Added new traffic signals at both I-75 ramp terminal intersections on Fletcher Avenue and US 301, and a new signal at the I-75 northbound on-ramp and Martin Luther King Boulevard intersection;
- Added dual left-turn lanes to the eastbound and westbound Fletcher Avenue approaches of both ramp (northbound and southbound) terminal intersections and widened the ramp to accommodate the dual left-turns (tapers to a single lane before entering the interstate);
- Added dual left-turn lanes from the I-75 northbound loop ramp onto eastbound Fletcher Avenue, as well an additional lane on this ramp not to exceed the length of the ramp;
- Widened the off-ramp from I-75 southbound to I-4 (from one lane to two lanes) and added a 1,000-foot deceleration lane prior to the dual lane off-ramp gore (deceleration lane drops onto the ramp and outside general use lane is an option lane);
- Widened the ramp from I-4 eastbound to I-75 southbound (one lane to two lanes) and added an 880-foot deceleration lane prior to the dual lane off-ramp gore (deceleration lane drops onto the ramp and outside general use lane is an option lane);
- Added a 750-foot ramp deceleration lane on I-75 northbound as it approaches the dual lane exit to I-4 (exit becomes two drop lanes);

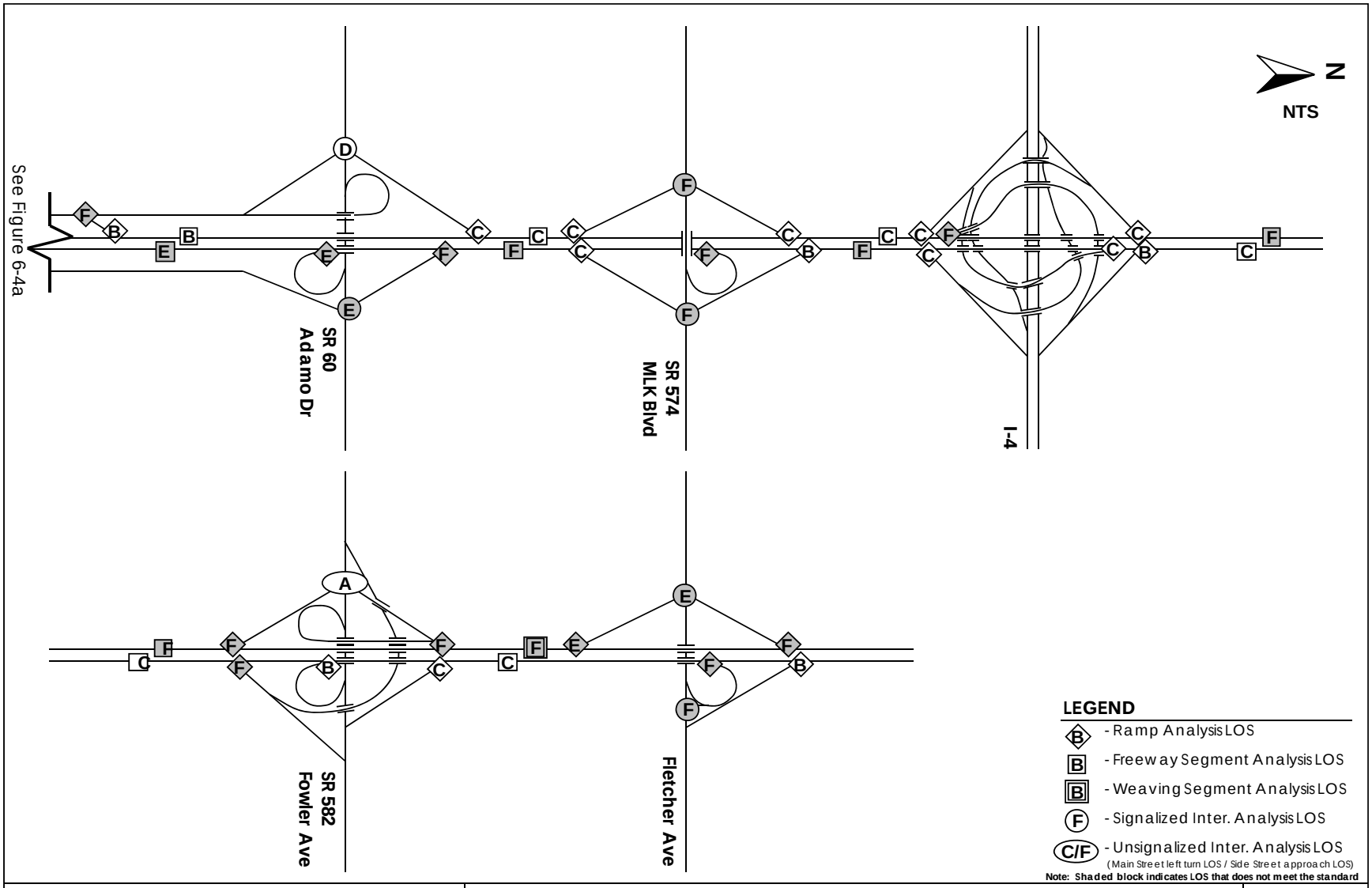


I-75 Traffic & PD&E Studies

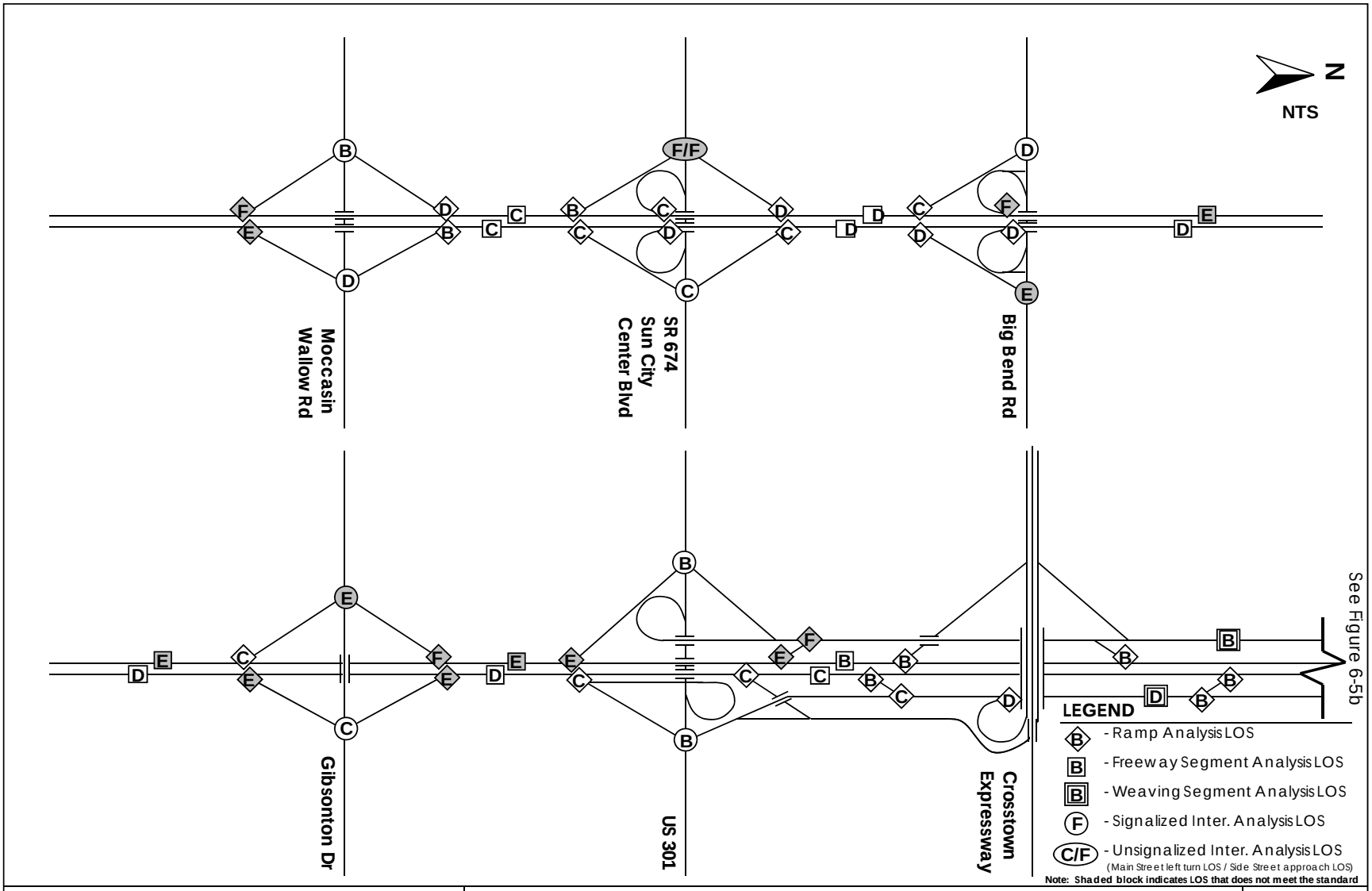
Design Traffic Technical Memorandum
Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue
WPI Segment Number 419235-1

YEAR 2035 BUILD ALTERNATIVE 1
AM DESIGN HOUR LOS RESULTS (SOUTH)

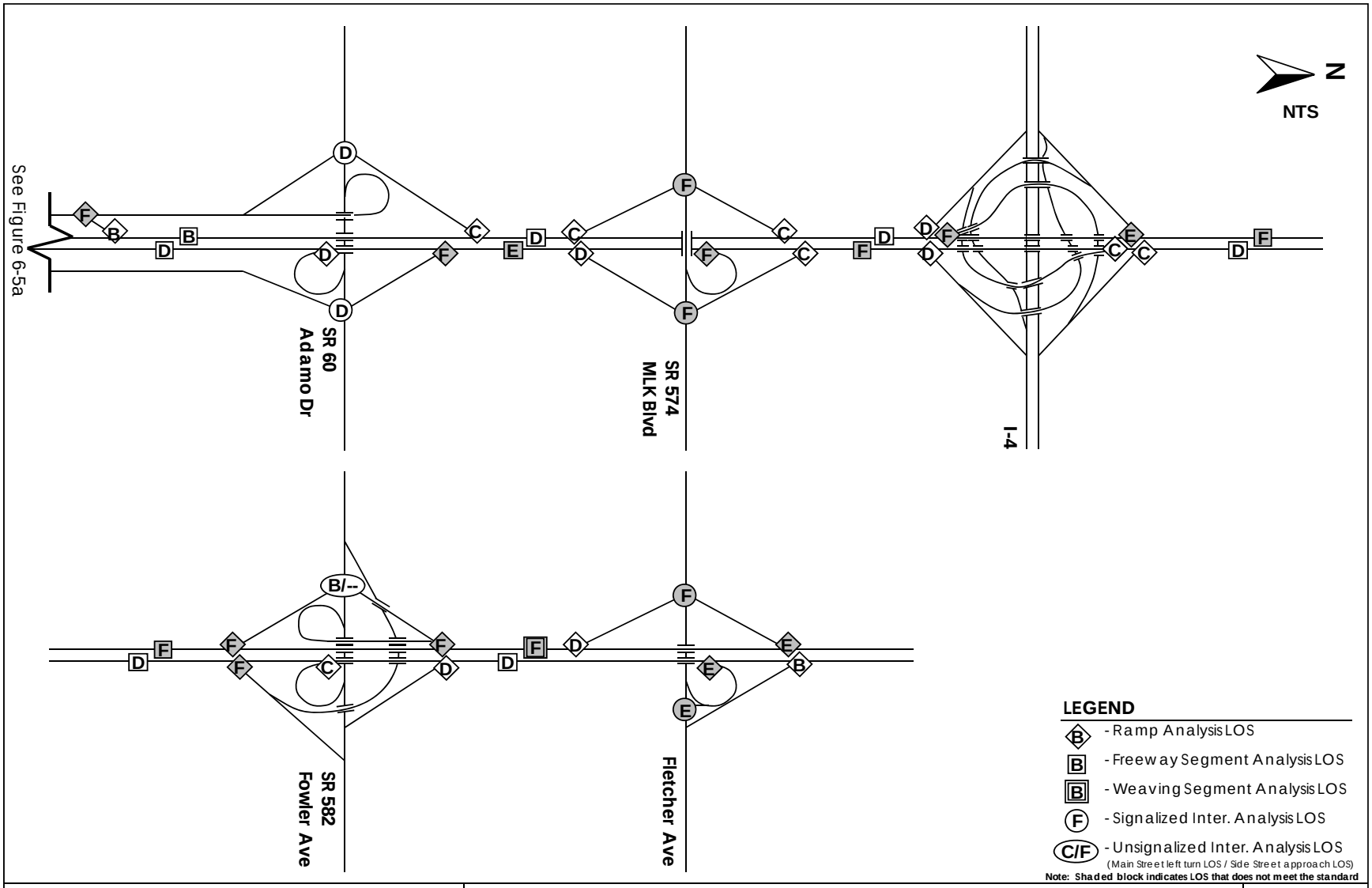
Figure 6-4a



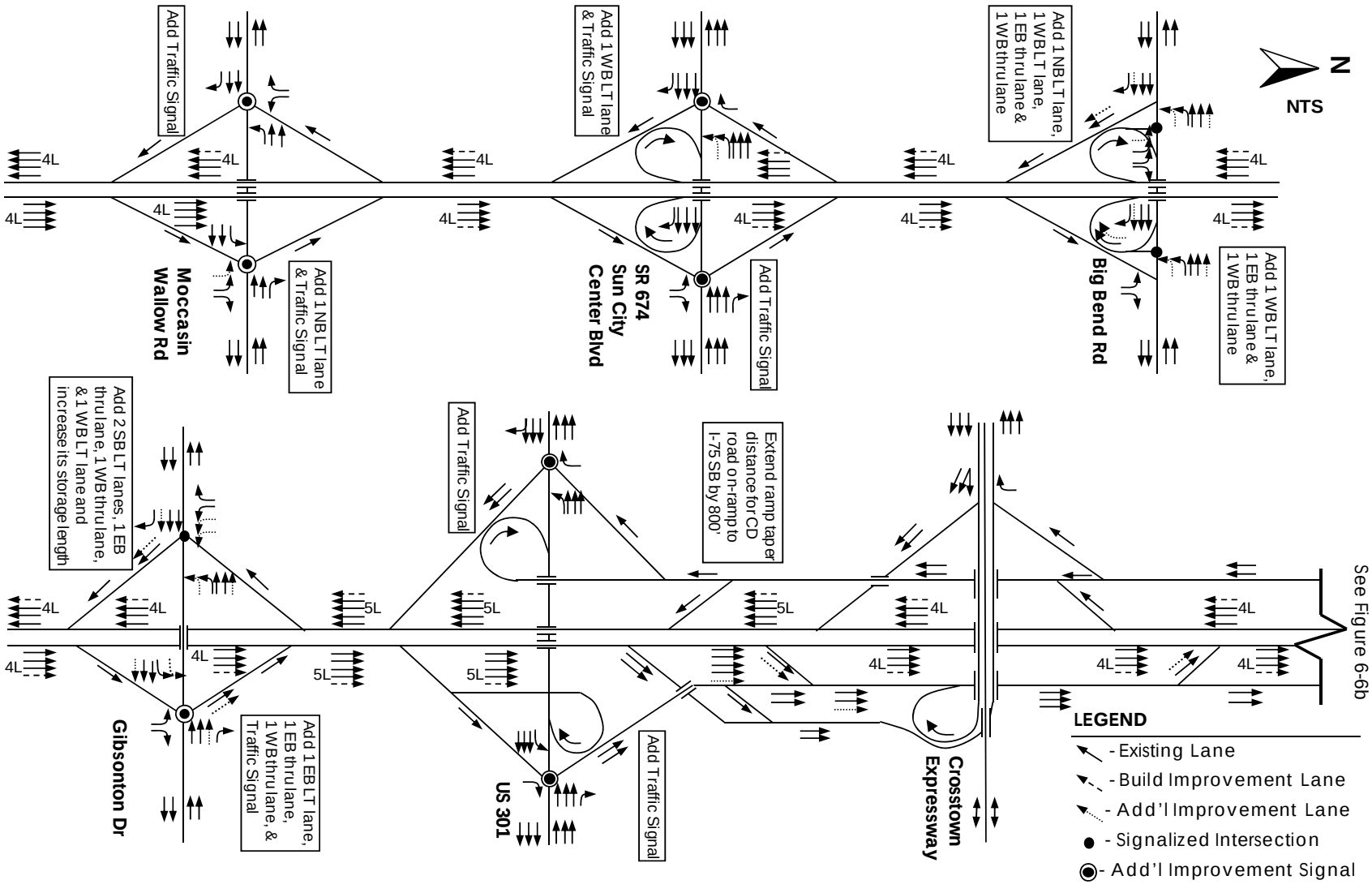
I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 1 AM DESIGN HOUR LOS RESULTS (NORTH)	Figure 6-4b



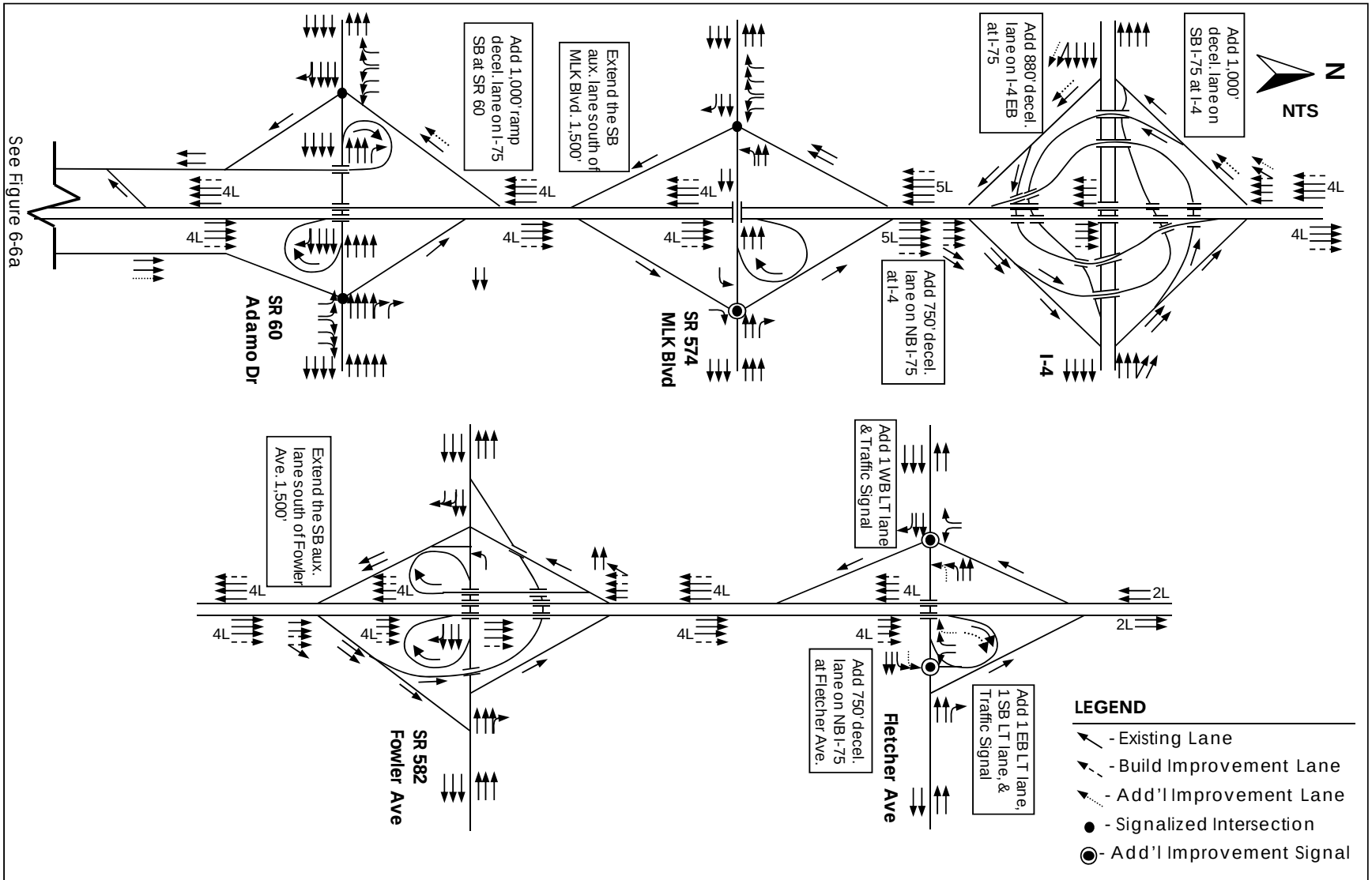
I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 1 PM DESIGN HOUR LOS RESULTS (SOUTH)	Figure 6-5a



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 1 PM DESIGN HOUR LOS RESULTS (NORTH)	Figure 6-5b



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 1 ADDITIONAL IMPROVEMENTS (SOUTH)	Figure 6-6a



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 1 ADDITIONAL IMPROVEMENTS (NORTH)	Figure 6-6b

- Extended ramp taper distance for CD road on-ramp to I-75 southbound (just north of US 301) by 800 feet to allow more distance for merging;
- Reconfigured lanes on I-75 northbound adjacent to the CD road between US 301 and SR 60 to include:
    - At the two lane I-75 northbound off-ramp to Crosstown Connector changed from two drop lanes to one drop and one option lane, with four lanes carrying north on I-75
    - Changed ramp from I-75 northbound to CD road to two lanes, one drop and one option lane, with three lanes carrying north on I-75
    - Widened CD road from two to three lanes between the on-ramp from I-75 and the off-ramp to SR 60; Loop on-ramp from Crosstown Expressway tapers into three-lane CD roadway
    - Where the I-75 northbound CD road approaches the CD road / SR 60 off-ramp, the three lanes on the CD road split with the right-most lane to the SR 60 intersection, the left-most lane to I-75 northbound and the center lane being an option lane to either
    - Widened the ramp from the CD road onto I-75 northbound to two lanes, with one lane as an add-lane on I-75 northbound and the second lane is tapered out before the loop on-ramp from SR 60 (four lanes north on I-75)
- Widened the exit ramp to SR 60 from I-75 southbound to two lanes and added a 1,000-foot ramp deceleration lane prior to the dual lane off-ramp gore (deceleration lane drops onto the ramp and outside general use lane is an option lane);
- Extended the auxiliary lane on I-75 southbound south of Fowler Avenue to 1,500 feet to the location where the traffic from Fowler Avenue merges in, to allow more room for merges;
- Extended the auxiliary lane on I-75 southbound south of Martin Luther King Boulevard to 1,500 feet, where traffic from Martin Luther King Boulevard merges in, to allow more room for merges;
- Adjusted VISSIM model vehicle behavior defaults on freeway segments to make drivers less aggressive and allow more vehicles entering the freeway to merge.

6.2.3 Build Alternative 2 – Level of Service Analyses Results

6.2.3.1 Intersection Analysis

The results of the interchange ramp terminal intersections analysis for the Build Alternative 2 are summarized in Table 6-10. The addition of the second lane in each direction on I-75 will allow more traffic to travel on the I-75 mainline and thus ramp and arterial volumes will also increase. To avoid queuing onto the mainline, signalization of the ramp terminal intersections was considered and this greatly improved the situation, as shown in Table 6-11. Some intersections, however, will continue to fail. At these locations additional improvements were analyzed. Table 6-12 summarizes the results of these improvements on the LOS, and Table 6-13 lists the improvements made. With signalization and the additional improvements, all intersections will operate efficiently with no queuing onto the mainline; however, not all intersections will meet the minimum LOS standards.

Table 6-10
Year 2035 Build Alternative 2 – Ramp Terminal Intersection LOS Results

	Intersection	Control	Approach / Movement	AM (PM) Design Hour Control Delay (sec/veh)	AM (PM) Design Hour Approach LOS	AM (PM) Design Hour Average Intersection Delay (sec/veh)	AM (PM) Design Hour LOS
HCM Analysis Results	I-75 NB ramps at Moccasin Wallow Rd.	Stop	NB LT	11008 (13150)	**F (F)**	11008 (13150)	**F (F)**
			EB LT	14.8 (16.0)	B (C)		
	I-75 SB ramps at Moccasin Wallow Rd.	Stop	WB LT	19.2 (15.1)	C (C)	12407 (6934)	**F (F)**
			SB LT	28473 (15472)	**F (F)**		
			SB RT	43.0 (61.3)	**E (F)**		
	I-75 NB ramps at SR 674 (Sun City Center Blvd.)	Stop	NB LT	18375 (5210)	**F (F)**	18375 (5210)	**F (F)**
	I-75 SB ramps at SR 674 (Sun City Center Blvd.)	Stop	EB Thru	n/a (n/a)	n/a (n/a)	n/a (n/a)	n/a (n/a)
			WB LT	2854 (707.9)	**F (F)**		
			WB Thru	n/a (n/a)	n/a (n/a)		
	I-75 NB ramps at Big Bend Rd.	Signal	WB LT	675.7 (383.0)	**F (F)**	288.4 (207.0)	**F (F)**
			WB Thru	7.0 (3.3)	A (A)		
			EB Thru	297.9 (238.7)	**F (F)**		
			NB LT	116.9 (448.3)	**F (F)**		
	I-75 SB ramps at Big Bend Rd.	Signal	WB LT	541.0 (285.2)	**F (F)**	253.1 (176.5)	**F (F)**
			WB Thru	21.8 (20.1)	C (C)		
			EB Thru	403.3 (309.0)	**F (F)**		
			NB LT	86.3 (44.4)	**F** (D)		
	I-75 NB ramps at Gibsonton Dr.	Stop	EB LT	424.3 (479.9)	**F (F)**	n/a (n/a)	n/a (n/a)
			NB LT	n/a (n/a)	**F (F)**		
	I-75 SB ramps at Gibsonton Dr.	Signal	WB LT	131.0 (329.3)	**F (F)**	237.4 (294.2)	**F (F)**
			WB Thru	26.3 (28.5)	C (C)		
			EB Thru	216.8 (241.9)	**F (F)**		
			SB LT	446.2 (547.0)	**F (F)**		
VISSIM Analysis Results	I-75 NB ramps at US 301	Signal	EB LT	24.5 (73.4)	C **(E)**	19.2 (21.5)	B (C)
			EB Thru	1.9 (4.5)	A (A)		
			WB Thru	28.3 (18.7)	C (B)		
	I-75 SB ramps at US 301	Signal	WB LT	35.6 (29.0)	D (C)	12.9 (14.1)	B (B)
			WB Thru	3.3 (2.0)	A (A)		
			EB Thru	16.5 (18.9)	B (B)		
	I-75 NB ramps at SR 60 (Adamo Dr.)	Signal	EB Thru	29.6 (42.0)	C (D)	42.7 (38.2)	D (D)
			WB Thru	75.6 (28.4)	**E** (C)		
			NB LT	31.5 (31.1)	C (C)		
			NB RT	29.8 (52.2)	C (D)		
	I-75 SB ramps at SR 60 (Adamo Dr.)	Signal	EB Thru	48.1 (52.8)	D (D)	45.5 (36.5)	D (D)
			WB Thru	42.7 (14.2)	D (B)		
			SB LT	41.1 (38.5)	D (D)		
			SB RT	56.5 (33.7)	**E** (C)		

Note: Bold text and shaded cells indicate an approach or intersection that will operate at a LOS worse than the standard LOS D
n/a: Control Delay value not provided since lane volume exceeds allowable units; LOS F

Table 6-10 (continued)
Year 2035 Build Alternative 2 – Ramp Terminal Intersection LOS Results

	Intersection	Control	Approach / Movement	AM (PM) Peak Design Hour Control Delay (sec/veh)	AM (PM) Design Hour Approach LOS	AM (PM) Design Hour Average Intersection Delay (sec/veh)	AM (PM) Design Hour LOS
VISSIM Analysis Results	I-75 SB ramps at SR 574 (Martin Luther King Blvd.)	Signal	WB LT	115.3 (56.1)	**F (E)**	165.6 (146.5)	**F (F)**
			WB Thru	20.2 (21.6)	C (C)		
			EB Thru	284.1 (329.7)	**F (F)**		
			SB LT	71.2 (55.4)	**E (E)**		
	I-75 NB ramps at SR 574 (Martin Luther King Blvd.)	Signal	EB LT	74.4 (23.0)	**E** (C)	103.2 (82.3)	**F (F)**
			EB Thru	21.1 (7.1)	C (A)		
			WB Thru	266.1 (182.9)	**F (F)**		
	I-75 SB ramps at Fowler Ave.	Stop	WB LT	16.7 (147.2)	C **(F)**	16.7 (147.2)	C **(F)**
	I-75 NB ramps at Fletcher Ave.	Signal	EB LT	80.9 (64.4)	**F (E)**	88.4 (50.8)	**F** (D)
			SB LT	78.9 (78.9)	**E (E)**		
			EB Thru	20.7 (14.3)	C (B)		
			WB Thru	116.3 (48.9)	**F** (D)		
	I-75 SB ramps at Fletcher Ave.	Signal	EB LT	61.7 (80.2)	**E (F)**	72.7 (77.7)	**E (E)**
			SB LT	141.8 (125.6)	**F (F)**		
			WB Thru	22.2 (13.8)	C (B)		
			EB Thru	252.8 (154.4)	**F (F)**		

Note: Bold text and shaded cells indicate an approach or intersection that will operate at a LOS worse than the standard LOS D

Table 6-11
Year 2035 Build Alternative 2 – South Study Area Ramp Terminal Intersection LOS Results (Signalized)

Intersection	Control	Approach / Movement	AM (PM) Design Hour Control Delay (sec/veh)	AM (PM) Design Hour Approach LOS	AM (PM) Design Hour Average Intersection Delay (sec/veh)	AM (PM) Design Hour LOS
I-75 NB ramps at Moccasin Wallow Rd.	Signal	EB LT	55.0 (175.4)	**E (F)**	85.4 (101.4)	**F (F)**
		EB Thru	20.0 (23.4)	B (C)		
		WB Thru	46.7 (56.5)	D **(E)**		
		NB LT	214.6 (212.2)	**F (F)**		
I-75 SB ramps at Moccasin Wallow Rd.	Signal	EB Thru	33.8 (17.8)	C (B)	25.3 (17.6)	C (B)
		WB LT	42.3 (23.4)	D (C)		
		WB Thru	14.0 (13.9)	B (B)		
		SB LT	43.3 (47.2)	D (D)		
I-75 NB ramps at SR 674 (Sun City Center Blvd.)	Signal	EB Thru	50.7 (31.2)	D (C)	38.8 (28.4)	D (C)
		WB Thru	21.7 (22.9)	C (C)		
		NB LT	54.6 (35.3)	D (D)		
I-75 SB ramps at SR 674 (Sun City Center Blvd.)	Signal	EB Thru	41.9 (29.4)	D (C)	46.1 (18.8)	D (B)
		WB LT	230.3 (39.3)	**F** (D)		
		WB Thru	0.3 (0.2)	A (A)		
I-75 NB ramps at Big Bend Rd.	Signal	WB LT	675.7 (383.0)	**F (F)**	288.4 (207.0)	**F (F)**
		WB Thru	7.0 (3.3)	A (A)		
		EB Thru	297.9 (238.7)	**F (F)**		
		NB LT	116.9 (448.3)	**F (F)**		
I-75 SB ramps at Big Bend Rd.	Signal	WB LT	541.0 (285.2)	**F (F)**	253.1 (176.5)	**F (F)**
		WB Thru	21.8 (20.1)	C (C)		
		EB Thru	403.3 (309.0)	**F (F)**		
		NB LT	86.3 (44.4)	**F** (D)		
I-75 NB ramps at Gibsonton Dr.	Signal	EB LT	256.9 (164.3)	**F (F)**	83.5 (60.9)	**F (E)**
		EB Thru	7.2 (9.8)	A (A)		
		WB Thru	53.8 (73.8)	D **(E)**		
		NB LT	83.0 (103.1)	**F (F)**		
I-75 SB ramps at Gibsonton Dr.	Signal	WB LT	131.0 (329.3)	**F (F)**	237.4 (294.2)	**F (F)**
		WB Thru	26.3 (28.5)	C (C)		
		EB Thru	216.8 (241.9)	**F (F)**		
		SB LT	446.2 (547.0)	**F (F)**		

Note: Bold text and shaded cells indicate an approach or intersection that will operate at a LOS worse than the standard LOS D

Table 6-12
Year 2035 Build Alternative 2 – South Study Area Ramp Terminal Intersection HCS LOS Results (Signalized and Improved)

Intersection	Control	Approach / Movement	AM (PM) Design Hour Control Delay (sec/veh)	AM (PM) Design Hour Approach LOS	AM (PM) Design Hour Average Intersection Delay (sec/veh)	AM (PM) Design Hour LOS
I-75 NB ramps at Moccasin Wallow Rd.	Signal	EB LT	35.0 (47.2)	C (D)	30.4 (35.6)	C (D)
		EB Thru	14.3 (13.8)	B (B)		
		WB Thru	32.7 (35.4)	C (D)		
		NB LT	43.9 (52.9)	D (D)		
I-75 SB ramps at Moccasin Wallow Rd.	Signal	EB Thru	14.3 (21.8)	B (C)	16.6 (21.8)	B (C)
		WB LT	43.1 (30.4)	D (C)		
		WB Thru	8.3 (19.2)	A (B)		
		SB LT	44.6 (34.8)	D (C)		
I-75 NB ramps at SR 674 (Sun City Center Blvd.)	Signal	EB Thru	33.4 (25.6)	C (C)	27.2 (23.7)	C (C)
		WB Thru	17.7 (19.7)	B (B)		
		NB LT	39.0 (29.5)	D (C)		
I-75 SB ramps at SR 674 (Sun City Center Blvd.)	Signal	EB Thru	40.7 (23.2)	D (C)	25.5 (15.0)	C (B)
		WB LT	43.8 (34.1)	D (C)		
		WB Thru	0.3 (0.2)	A (A)		
I-75 NB ramps at Big Bend Rd.	Signal	WB LT	40.6 (21.5)	D (C)	27.9 (31.6)	C (C)
		WB Thru	9.8 (11.9)	A (B)		
		EB Thru	33.9 (49.2)	C (D)		
		NB LT	39.5 (34.3)	D (C)		
I-75 SB ramps at Big Bend Rd.	Signal	WB LT	20.2 (26.9)	C (C)	55.9 (40.0)	**E** (D)
		WB Thru	17.3 (16.9)	B (B)		
		EB Thru	78.0 (56.4)	**E (E)**		
		NB LT	76.4 (40.5)	**E** (D)		
I-75 NB ramps at Gibsonton Dr.	Signal	EB LT	35.5 (28.5)	D (C)	26.6 (24.1)	C (C)
		EB Thru	17.1 (18.1)	B (B)		
		WB Thru	31.6 (29.9)	C (C)		
		NB LT	39.7 (33.1)	D (C)		
I-75 SB ramps at Gibsonton Dr.	Signal	WB LT	19.6 (22.3)	B (C)	28.5 (31.8)	C (C)
		WB Thru	16.8 (18.1)	B (B)		
		EB Thru	32.5 (37.9)	C (D)		
		SB LT	35.4 (38.0)	D (D)		

Note: Bold text and shaded cells indicate an approach or intersection that will operate at a LOS worse than the standard LOS D

Table 6-13
Year 2035 Build Alternative 2 – Ramp Terminal Intersection Improvements

Intersection	Needed Improvements
I-75 NB ramps at Moccasin Wallow Road	• Add 1 NB LT lane
I-75 NB ramps at Moccasin Wallow Road	• Add 1 SB RT lane
I-75 NB Ramps at SR 674	• Add 1 NB LT lane
I-75 SB Ramps at SR 674	• Add 1 WB LT lane
I-75 NB ramps at Big Bend Road	• Add 1 WB LT lane • Add 1 EB through lane • Add 1 WB through lane
I-75 SB ramps at Big Bend Road	• Add 1 WB LT lane; increase storage length • Add 1 NB LT lane
I-75 NB ramps at Gibsonton Drive	• Add 1 EB LT lane • Add 1 EB through lane • Add 1 WB through lane
I-75 SB ramps at Gibsonton Drive	• Add 2 SB LT lanes • Add 1 EB through lane • Add 1 WB through lane • Increase storage length for WB LT lane

6.2.3.2 Ramp Merge / Diverge Analysis

Ramp analysis was conducted at all mainline on-ramp and off-ramp segments as well as the CD merge and diverge segments where the CD road has two or more lanes. The results of the ramp merge / diverge analysis for Build Alternative 2 are summarized in Table 6-14. The HCS analysis results show that the addition of two lanes will permit some ramp junctions to operate more efficiently compared to Build Alternative 1. Substandard conditions will persist at Big Bend Road and Gibsonton Drive. These conditions could be improved with merge / diverge section improvements such as acceleration / deceleration lanes and additional ramp lanes.

6.2.3.3 Freeway Segment Analysis

Freeway segment analysis was conducted on all I-75 segments in the study area. The results of the freeway segment analysis for Build Alternative 2 are summarized in Table 6-15. The addition of the two lanes will allow the freeway operations to meet the LOS standard in the southern portion of the study area. This is an improvement over Build Alternative 1.

Table 6-14
Year 2035 Build Alternative 2 – Ramp LOS Results

	Interchange	Ramp	AM (PM) Ramp Density (pc/mi/ln)	AM (PM) Design Hour LOS
HCM Analysis Results	Moccasin Wallow Rd.	I-75 NB off-ramp to Moccasin Wallow Road	35.9 (34.2)	**E** (D)
		I-75 NB on-ramp from Moccasin Wallow Road	16.7 (16.1)	B (B)
		I-75 SB off-ramp to Moccasin Wallow Road	26.3 (27.4)	C (C)
		I-75 SB on-ramp from Moccasin Wallow Road	19.6 (19.9)	B (B)
	SR 674 (Sun City Center Blvd.)	I-75 NB off-ramp to SR 674	22.8 (21.7)	C (C)
		I-75 NB on-ramp from EB SR 674	21.7 (19.7)	C (B)
		I-75 NB on-ramp from WB SR 674	21.5 (19.8)	C (B)
		I-75 SB off-ramp to WB SR 674	21.8 (27.2)	C (C)
		I-75 SB off-ramp from to EB SR 674	26.9 (24.0)	C (C)
		I-75 SB on-ramp from SR 674	17.3 (18.2)	B (B)
	Big Bend Rd.	I-75 NB off-ramp to Big Bend Road	35.1 (32.0)	**E** (D)
		I-75 NB on-ramp from Big Bend Road	30.0 (27.8)	D (C)
		I-75 SB off-ramp to Big Bend Road	40.1 (43.6)	**F (F)**
		I-75 SB on-ramp from Big Bend Road	21.3 (22.8)	C (C)
	Gibsonton Dr.	I-75 NB off-ramp to Gibsonton Drive	38.1 (33.4)	**E** (D)
		I-75 NB on-ramp from Gibsonton Drive	n/a (n/a)	**F (E)**
		I-75 SB off-ramp to Gibsonton Drive	n/a (n/a)	**E (F)**
		I-75 SB on-ramp from Gibsonton Drive	20.4 (22.4)	C (C)
VISSIM Analysis Results	US 301 / Crosstown Expressway	I-75 NB off-ramp to US 301	58.3 (43.9)	**F (F)**
		I-75 NB off-ramp to Crosstown Expressway	30.1 (15.2)	D (B)
		I-75 NB off-ramp to CD Road / SR 60	51.6 (38.9)	**F (E)**
		I-75 NB on-ramp from CD Road/Crosstown Expressway	24.8 (28.2)	C (D)
		I-75 NB CD on-ramp from I-75 NB	44.1 (41.4)	**F (E)**
		I-75 SB off-ramp to Crosstown Expressway	24.1 (24.7)	C (C)
		I-75 SB off-ramp to US 301 / CD Road	19.9 (17.8)	B (B)
		I-75 SB on-ramp from Crosstown Expressway	10.6 (16.8)	B (B)
		I-75 SB on-ramp from I-75 SB CD Road	27.7 (27.1)	C (C)
		I-75 SB on-ramp from US 301	19.3 (18.4)	B (B)
		I-75 SB CD Road on-ramp from I-75 SB	23.5 (17.1)	C (B)
		I-75 SB CD Road off-ramp to SB I-75	27.2 (20.5)	C (C)
	SR 60 (Adamo Dr.)	I-75 NB on-ramp from EB SR 60	25.5 (28.6)	C (D)
		I-75 NB on-ramp from WB SR 60	27.7 (29.6)	C (D)
		I-75 SB off-ramp to SR 60	53.4 (49.3)	**F (F)**
	SR 574 (MLK Blvd.)	I-75 NB off-ramp to EB SR 574	45.4 (39.6)	**F (E)**
		I-75 NB off-ramp to WB SR 574	21.1 (25.1)	C (C)
		I-75 NB on-ramp from SR 574	68.9 (64.1)	**F (F)**
		I-75 SB off-ramp to SR 574	24.2 (25.1)	C (C)
		I-75 SB on-ramp from SR 574	31.0 (32.8)	D (D)
	I-4	I-75 NB off-ramp to I-4	61.4 (69.8)	**F (F)**
		I-75 NB on-ramp from EB I-4	16.2 (23.5)	B (C)
		I-75 NB on-ramp from WB I-4	21.5 (24.7)	C (C)
		I-75 SB off-ramp to I-4	58.0 (57.4)	**F (F)**
		I-75 SB on-ramp from EB I-4	30.1 (32.3)	D (D)
		I-75 SB on-ramp from WB I-4	24.1 (24.3)	C (C)
	SR 582 (Fowler Ave.)	I-75 NB off-ramp to Fowler Avenue	17.2 (25.7)	B (C)
		I-75 NB on-ramp from EB Fowler Avenue	44.0 (27.1)	**F** (C)
		I-75 NB on-ramp from WB Fowler Avenue	62.9 (24.5)	**F** (C)
		I-75 SB off-ramp to Fowler Avenue	52.7 (46.0)	**F (F)**
		I-75 SB on-ramp from Fowler Avenue	41.0 (38.7)	**E (E)**
	Fletcher Ave.	I-75 NB off-ramp to Fletcher Avenue	66.7 (24.4)	**F** (C)
		I-75 NB on-ramp from Fletcher Avenue	10.8 (25.9)	B (C)
		I-75 SB off-ramp to Fletcher Avenue	59.8 (51.8)	**F (F)**
		I-75 SB on-ramp from Fletcher Avenue	58.7 (53.7)	**F (F)**

Note: Bold text and shaded cells indicate a LOS that does not meet the LOS D standard

Table 6-15
Year 2035 Build Alternative 2 – Mainline and Weaving Section LOS Results

	Mainline Segment	AM (PM) Design Hour Freeway Density (pc/mi/ln)	AM (PM) Design Hour LOS
HCM Analysis Results	**I-75 Northbound**		
	Moccasin Wallow Rd. to SR 674	22.1 (19.5)	C (C)
	SR 674 to Big Bend Rd.	26.8 (23.2)	D (C)
	Big Bend Rd. to Gibsonton Dr.	34.1 (27.6)	D (D)
	Gibsonton Dr. to US 301	30.7 (25.5)	D (C)
	I-75 Southbound		
	US 301 to Gibsonton Dr.	25.6 (30.1)	C (D)
	Gibsonton Dr. to Big Bend Rd.	27.7 (33.3)	D (D)
	Big Bend Rd. to SR 674	23.8 (26.8)	C (D)
	SR 674 to Moccasin Wallow Rd.	19.5 (22.1)	C (C)
VISSIM Analysis Results	**I-75 Northbound**		
	US 301 to Crosstown Expressway	13.4 (14.8)	B (B)
	Crosstown Expressway to SR 60	14.9 (15.8)	B (B)
	SR 60 to Martin Luther King Blvd.	37.0 (33.9)	**E** (D)
	Martin Luther King Blvd. to I-4	54.1 (50.2)	**F (F)**
	I-4 to Fowler Ave.	16.7 (24.7)	B (C)
	Fowler Ave. to Fletcher Ave.	57.8 (23.0)	**F** (C)
	I-75 Southbound		
	Fowler Ave. to I-4	64.1 (65.7)	**F (F)**
	I-4 to Martin Luther King Blvd.	27.9 (28.6)	D (D)
	Martin Luther King Blvd. to SR 60	27.9 (29.7)	D (D)
	SR 60 to Crosstown Expressway	17.5 (16.9)	B (B)
	Crosstown Expressway to US 301	11.1 (15.5)	B (B)
	Weave Segments		
	I-75 SB - Fletcher Ave. to Fowler Ave.	52.5 (50.3)	**F (F)**
	I-75 NB CD - Crosstown Expressway to SR 60	40.0 (45.4)	**E (F)**
	I-75 SB CD - SR 60 to Crosstown Expressway	30.0 (23.7)	D (C)

Note: Bold text and shaded cells indicate a LOS that does not meet the LOS D standard

6.2.3.4 VISSIM Analysis Results

The VISSIM simulation results are described below.

- **AM Peak Period**

  Northbound Issues: A large volume of traffic uses the CD road during the AM peak period. This large volume of traffic utilizes the CD / SR 60 interchange and causes queuing on I-75, south of the interchange. Since there is only one lane merging onto the CD road, the amount of traffic that can get on the CD road is controlled, and therefore results in some queuing on the CD road. The queuing occurs south of the VISSIM analysis control point; therefore, the freeway segment between US 301 and SR 60 operates at LOS B.

  During the AM peak period, there is also a large volume of traffic exiting onto I-4. As in Build Alternative 1, the already high volumes on I-75, combined with the large volumes trying to get into the right lane to exit, cause a bottleneck that causes traffic queuing to extend to SR 60. This causes LOS E between SR 60 and Martin Luther King Boulevard and LOS F between Martin Luther King Boulevard and I-4. A third bottleneck occurs in the northbound direction south of Fletcher Avenue.

  A very high volume of traffic exits at Fletcher Avenue during the AM peak period. There is one exit lane, and the high number of vehicles trying to get into the right lane, coupled with the high volume on I-75, creates a bottleneck that causes LOS F between Fletcher Avenue and Fowler Avenue and LOS B between Fowler Avenue and I-4.

  Southbound Issues: In the southbound direction, there is a high volume of traffic entering the system from the north. High volumes merging onto I-75 southbound from Fletcher Avenue and Fowler Avenue add even more traffic to the system. A large percentage of traffic desiring to exit onto I-4 causes weaving and merging issues that create a bottleneck that causes queuing to extend past Fletcher Avenue and results in LOS F. South of I-4, traffic volumes are still heavy, but the exiting movements are not as heavy which allows for LOS D between I-4 and SR 60 and LOS B between SR 60 and US 301.

- **PM Peak Period**

  Northbound Issues: The existing CD road efficiently separates traffic from the interchanges and the mainline. Between US 301 and SR 60, I-75 operates at LOS B. However, at the end of the CD road at the SR 60 interchange, 3,280 vph enter northbound I-75. A review of the origin-destination pairs indicates that approximately 25 percent of these trips have a destination to I-4 while the remaining 75 percent of these trips continue on I-75 northbound beyond I-4. These 3,280 vehicles produce a major weaving conflict with the mainline I-75 traffic. The situation is further complicated with the arrival of 1,750 vph from Martin Luther King Boulevard. Again, this high number of merging vehicles creates major conflict with the vehicles that already are on I-75 that are in the right-most lane as they approach the I-4 exit ramps.

  A large of amount of weaving occurs in the segment of I-75 between Martin Luther King Boulevard and I-4 as a result of approximately 45 percent of the 10,000 vph mainline volume exiting to I-4. According to the VISSIM model, the congestion and queuing

resulting from this weaving affects the Martin Luther King Boulevard and SR 60 interchanges. Also, the impact on I-75 is major, with all northbound lanes eventually blocked by vehicles wishing to make lane changes. I-75 experiences LOS D between SR 60 and Martin Luther King Boulevard and LOS F between Martin Luther King Boulevard and I-4.

North of I-4, I-75 operates at LOS C. This level of service improvement can be attributed to the lane blockages and metering that occur as a result of the weaving south of the I-4 interchange.

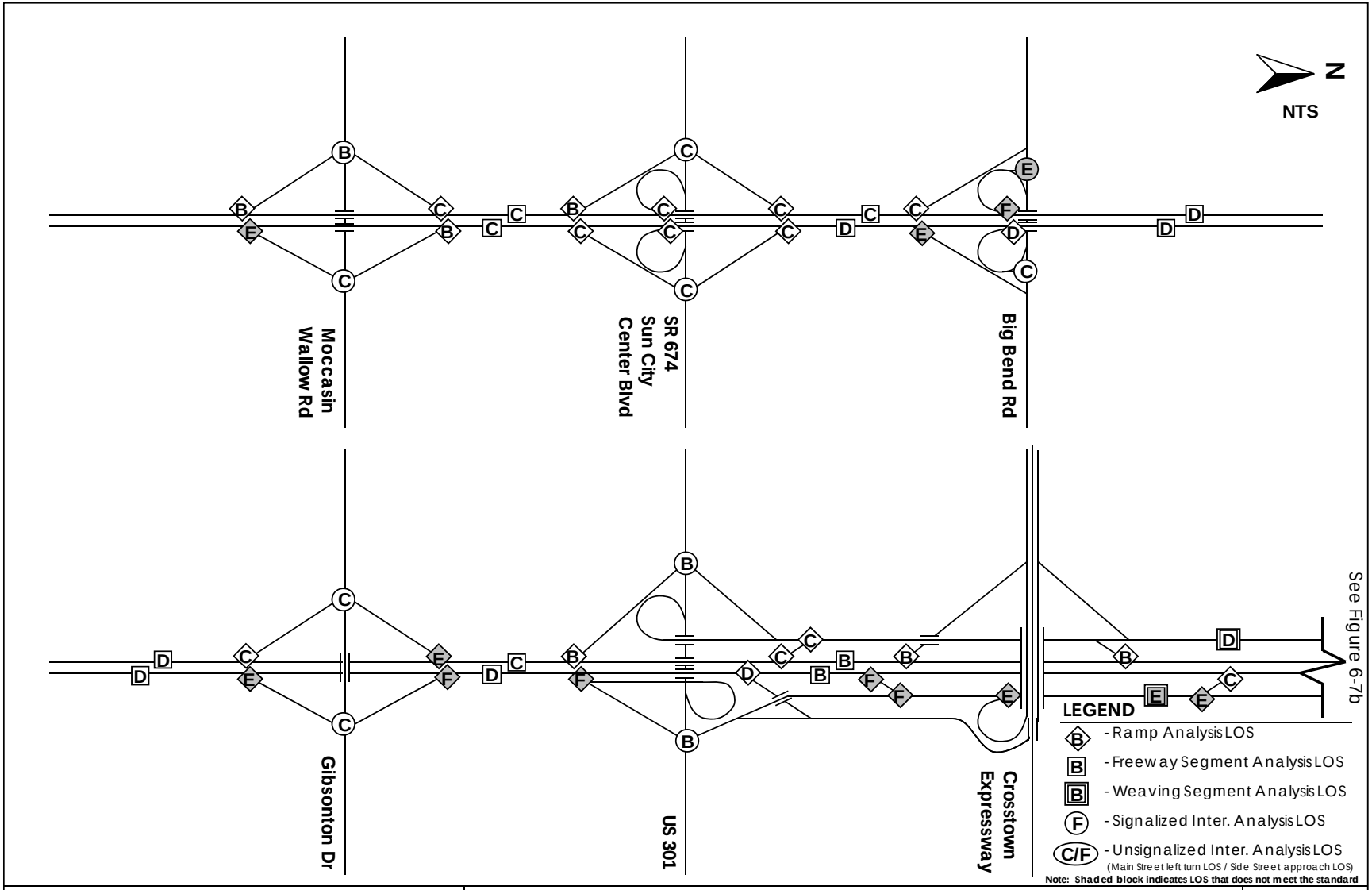
Southbound Issues: The southbound issues begin with the high number of vehicles entering the network (approximately 7,900 vph entering the system). Initial system constraints exist even with the addition of two new southbound lanes. This issue is further complicated by extremely high traffic entering the system at Fletcher Avenue (approximately 2,410 vph) and Fowler Avenue (2,430 vph) while the number of through lanes remains at four at the Fowler Avenue interchange. South of the Fowler Avenue interchange, the number of through lanes increases to five. However, at this point, the number of hourly vehicles along this segment is over 9,150 vph. Approximately 33 percent of this 9,150 vph have a destination on I-4. Therefore, as with the northbound movements, there are a large number of vehicles wanting to change lanes whether it is those on the mainline trying to move to the right toward I-4, or the traffic from Fletcher Avenue or Fowler Avenue trying to move to the left on mainline I-75. This results in LOS F. Once the traffic clears I-4, traffic conditions improve. The freeway operates at LOS D from I-4 to SR 60 and LOS B from SR 60 to US 301. Again, it must be considered that some of this traffic is blocked from the upstream problems at I-4.

6.2.3.5 Summary – Build Alternative 2 Operations Analyses

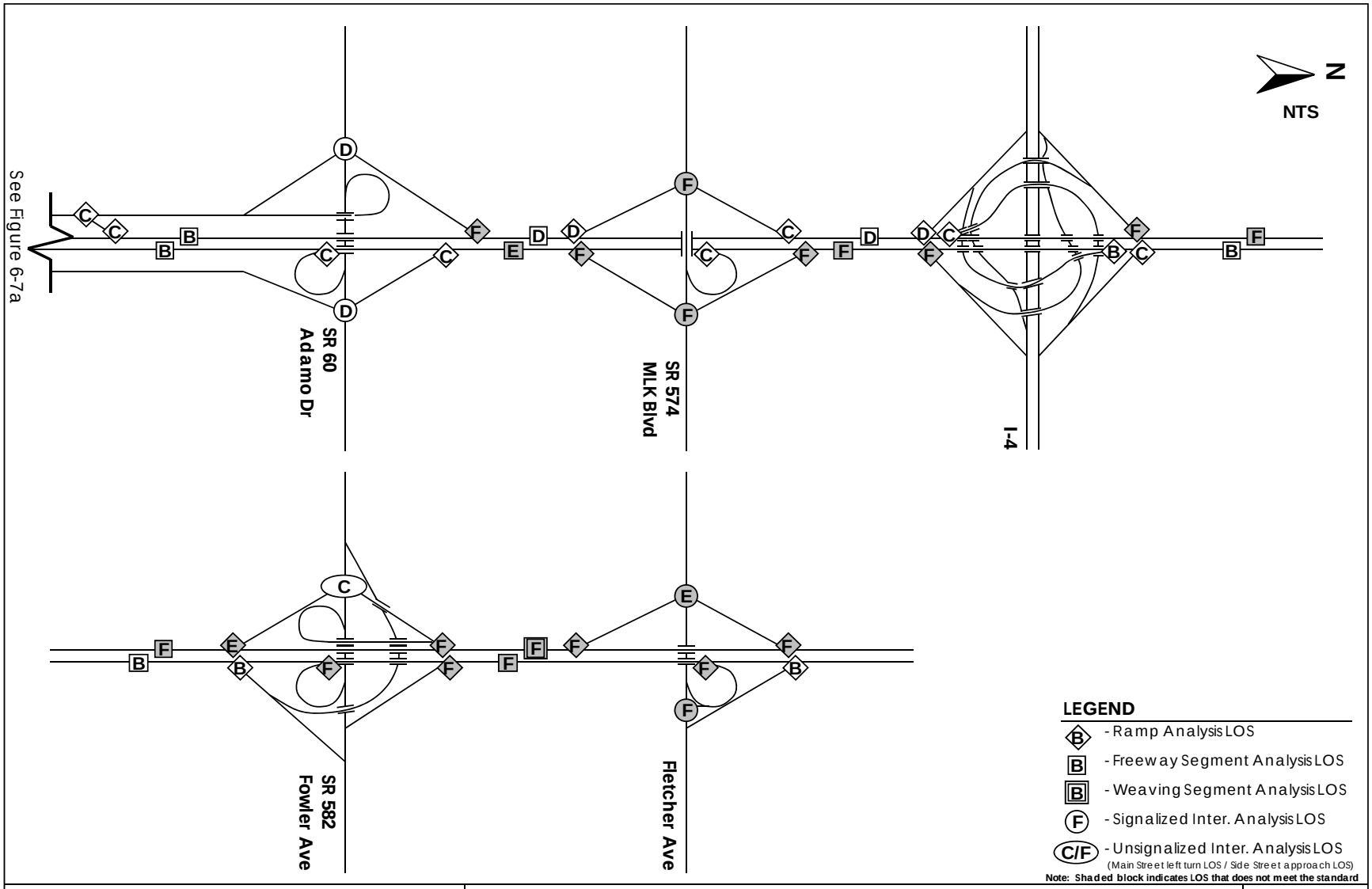
The LOS results for Build Alternative 2 are shown on Figures 6-7a and 6-7b for the AM peak hour and on Figures 6-8a and 6-8b for the PM peak hour. The additional lanes in each direction will allow all segments to operate at or better than the LOS standard in the southern portion of the study area, although substandard conditions will persist at the ramps and ramp terminal intersections with cross street arterials.

As with Build Alternative 1, the addition of two lanes in Build Alternative 2 alone was not enough to accommodate the traffic demand efficiently. Thus, additional improvements / adjustments were considered for effective and reasonable operations to result. Note that these additional adjustments were essentially the same as in Build Alternative 1, as many of the same congestion hot spots remain the same in Build Alternative 2. These and other additional improvements to Build Alternative 2 are shown on Figures 6-9a and 6-9b and are listed below.

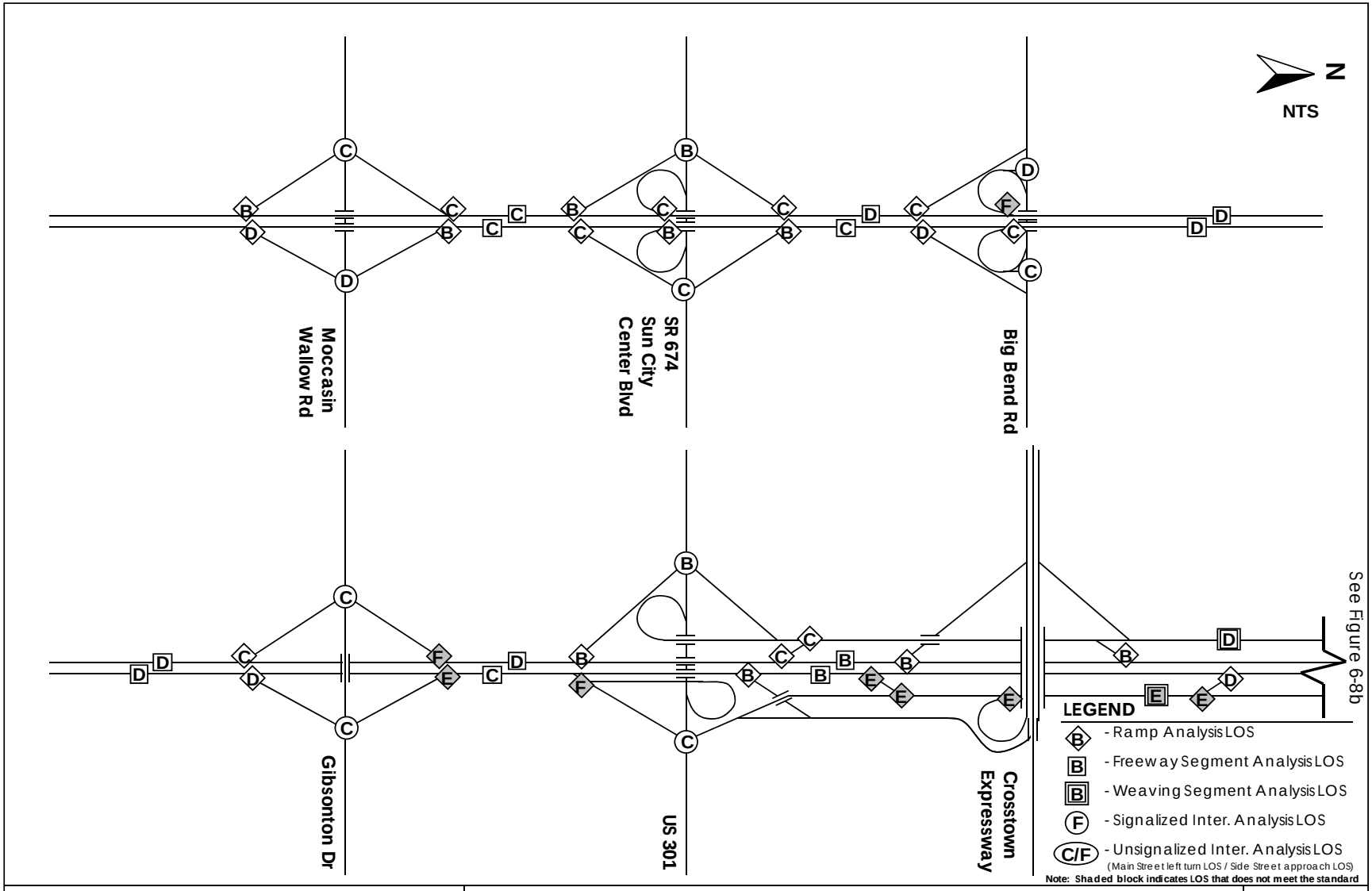
- Changed traffic signal timings of existing signals (AM and PM peak periods) to better accommodate through traffic on the arterials and avoid traffic backing-up onto the mainline;
- Added new traffic signals at both I-75 ramp terminal intersections on Fletcher Avenue and US 301, and a new signal at the I-75 northbound on-ramp at the Martin Luther King Boulevard intersection;



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 2 AM DESIGN HOUR LOS RESULTS (SOUTH)	Figure 6-7a



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 2 AM DESIGN HOUR LOS RESULTS (NORTH)	Figure 6-7b

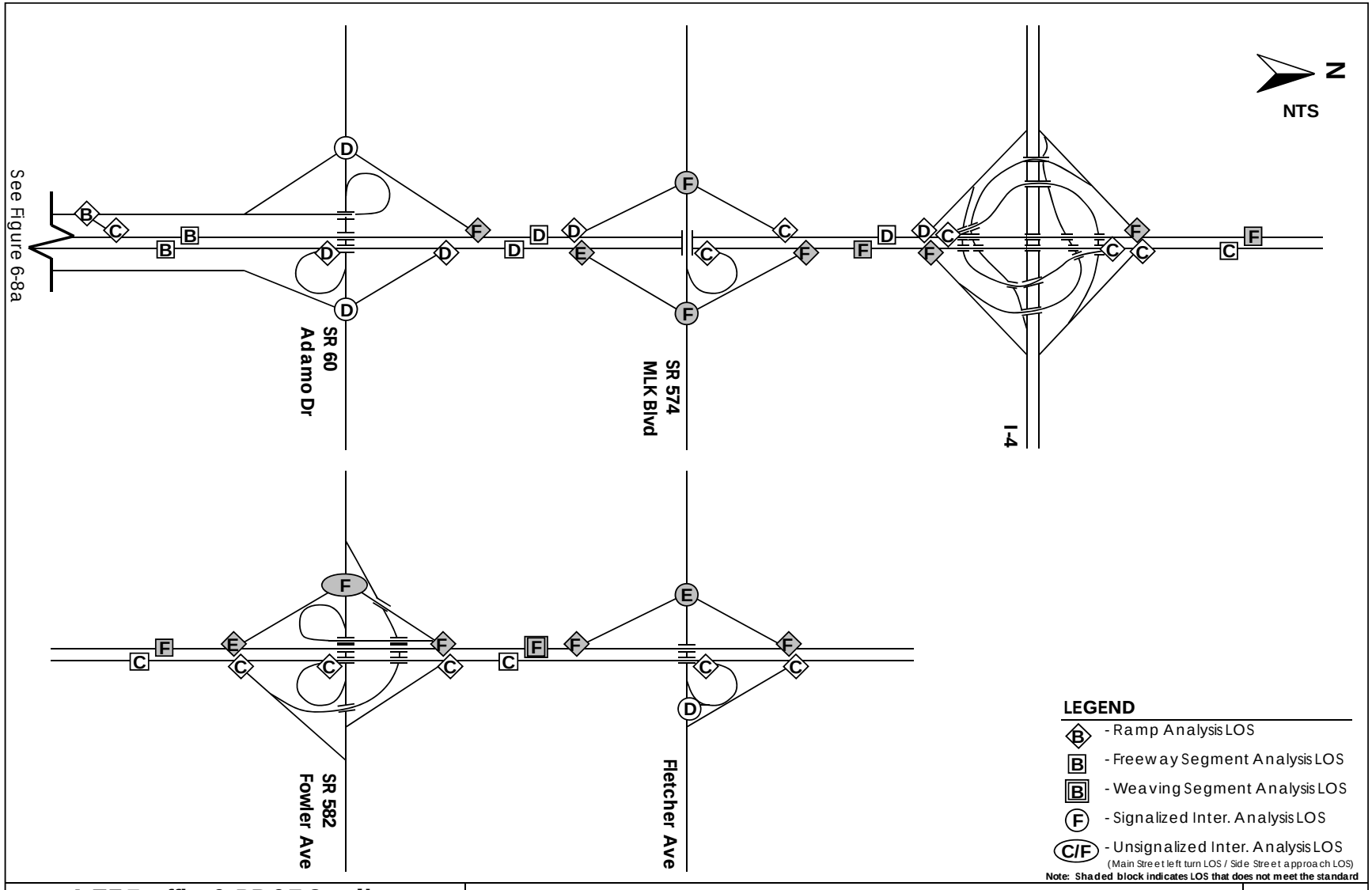


I-75 Traffic & PD&E Studies

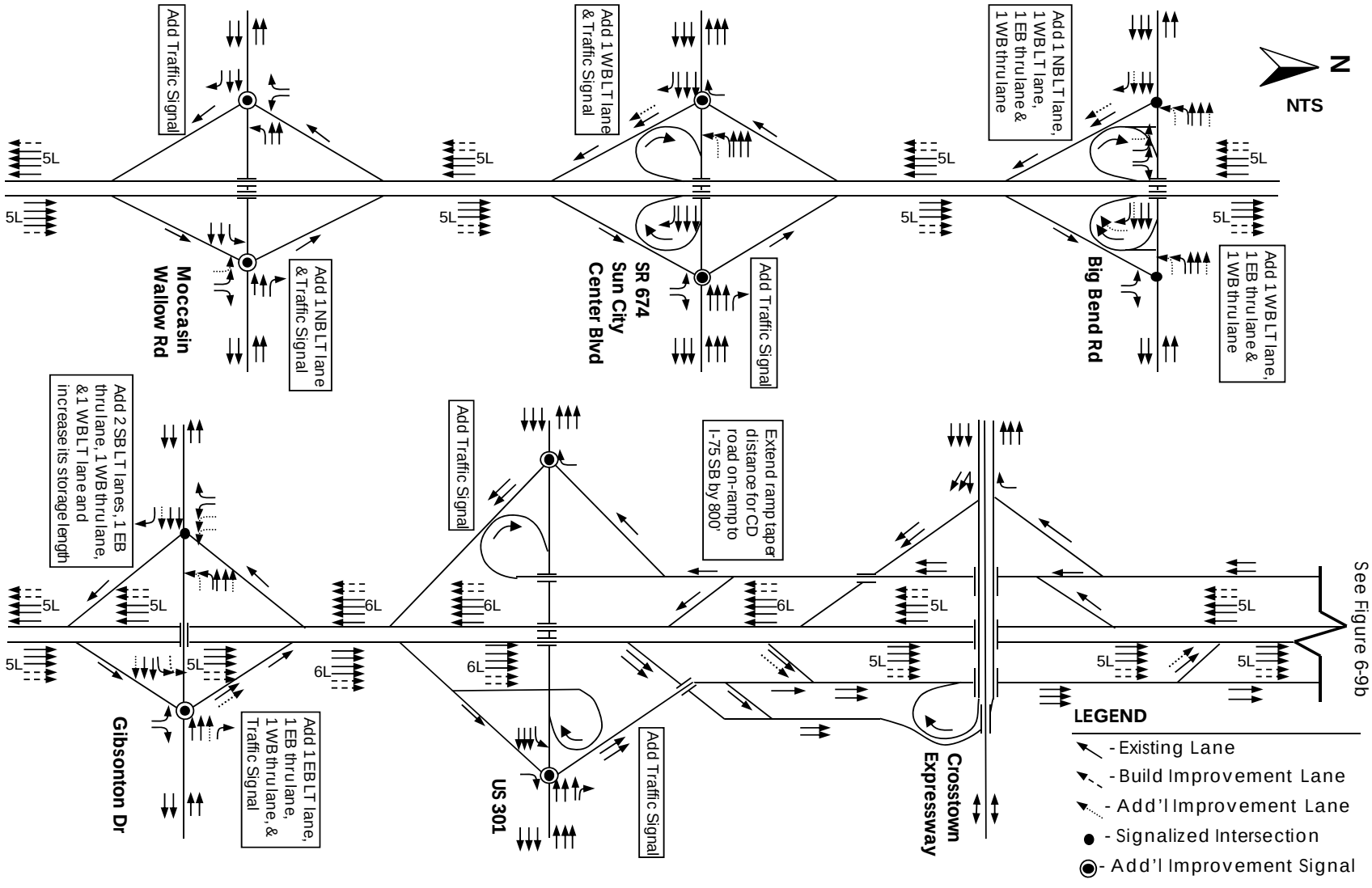
Design Traffic Technical Memorandum
Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue
WPI Segment Number 419235-1

YEAR 2035 BUILD ALTERNATIVE 2
PM DESIGN HOUR LOS RESULTS (SOUTH)

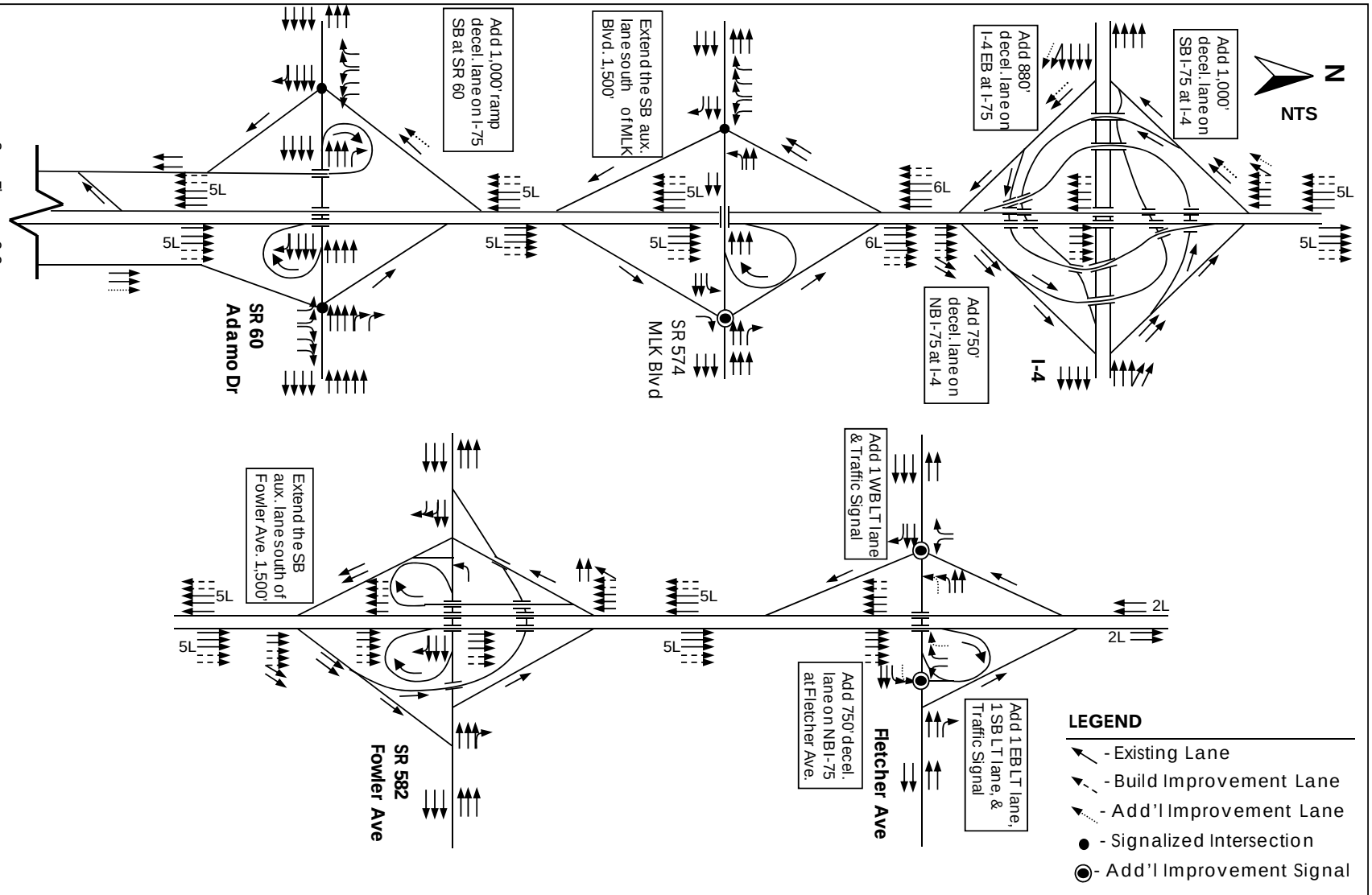
Figure 6-8a



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 2 PM DESIGN HOUR LOS RESULTS (NORTH)	Figure 6-8b



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 2 ADDITIONAL IMPROVEMENTS (SOUTH)	Figure 6-9a



I-75 Traffic & PD&E Studies

Design Traffic Technical Memorandum
Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue
WPI Segment Number 419235-1

YEAR 2035 BUILD ALTERNATIVE 2
ADDITIONAL IMPROVEMENTS (NORTH)

Figure 6-9b

- Added dual left-turn lanes to the eastbound and westbound Fletcher Avenue approaches of both ramp (northbound and southbound) terminal intersections and widened the ramp to accommodate the dual left-turns (tapers to a single lane before entering the interstate);
- Added dual left-turn lanes from the I-75 northbound loop ramp onto eastbound Fletcher Avenue, as well an additional lane on this ramp not to exceed the length of the ramp;
- Widened the off-ramp from I-75 southbound to I-4 (from one lane to two lanes) and added a 1,000-foot deceleration lane prior to the dual lane off-ramp gore (deceleration lane drops onto the ramp and outside general use lane is an option lane);
- Widened the ramp from I-4 eastbound to I-75 southbound (one lane to two lanes) and added an 880-foot deceleration lane prior to the dual lane off-ramp gore (deceleration lane drops onto the ramp and outside general use lane is an option lane);
- Added a 750-foot ramp deceleration lane on I-75 northbound as it approaches the dual lane exit to I-4 (exit becomes two drop lanes);
- Extended ramp taper distance for CD road on-ramp to I-75 southbound (just north of US 301) by 800 feet to allow more distance for merging;
- Reconfigured lanes on I-75 northbound and adjacent CD road between US 301 and SR 60 to include:
    - Two lane I-75 northbound off-ramp to Crosstown Expressway changed from two drop lanes to one drop and one option lane, with four lanes carrying north on I-75
    - Changed ramp from I-75 northbound to CD road to two lanes, one drop and one option lane, with three lanes carrying north on I-75
    - Widened CD road from two to three lanes between the on-ramp from I-75 and the off-ramp to SR 60; Loop on-ramp from Crosstown Expressway tapers into a three-lane CD road.
    - Where the I-75 northbound CD road approaches the CD road / SR 60 off-ramp, the three lanes on the CD road split with the right-most lane to the SR 60 intersection, the left-most lane to I-75 northbound and the center lane being an option lane to either
    - Widened the ramp from the CD road onto I-75 northbound to two lanes, with one lane as an add-lane on I-75 northbound and the second lane is tapered out before the loop on-ramp from SR 60 (four lanes north on I-75)
- Widened the exit ramp to SR 60 from I-75 southbound to two lanes and added a 1,000-foot ramp deceleration lane prior to the dual lane off-ramp gore (deceleration lane drops onto the ramp and outside general use lane is an option lane);
- Extended the auxiliary lane on I-75 southbound south of Fowler Avenue to 1,500 feet to the location where the traffic from Fowler Avenue merges in, to allow more room for merges;
- Extended the auxiliary lane on I-75 southbound south of Martin Luther King Boulevard to 1,500 feet, where traffic from Martin Luther King Boulevard merges in, to allow more room for merges;

- Adjusted VISSIM model vehicle behavior defaults on freeway segments to make drivers less aggressive and allow more vehicles entering the freeway to merge.

6.2.4 Build Alternative 3 – Level of Service Analyses Results

6.2.4.1 Intersection Analysis

The results of the interchange ramp terminal intersection analysis for Build Alternative 3 are summarized in Table 6-16. Similar to Build Alternative 1 and Build Alternative 2, the intersections of Big Bend Road and Gibsonton Drive will operate at LOS E or F. To avoid queuing onto the mainline, signalization of the ramp terminal intersections was considered and this improved the LOS, as shown in Table 6-17. Some intersections, however, continued to fail and at these locations additional improvements were analyzed. Table 6-18 summarizes the results of these improvements and Table 6-19 lists the improvements made. With signalization and the additional improvements, all intersections will operate efficiently with no queuing onto the mainline; however, not all intersections will meet the minimum LOS standards.

6.2.4.2 Ramp Merge/Diverge Analysis

Ramp analysis was conducted at all mainline on-ramp and off-ramp segments as well as the CD merge and diverge segments where the CD road has two or more lanes. The results of the ramp merge/diverge analysis for Build Alternative 3 are summarized in Table 6-20.

6.2.4.3 Freeway Segment Analysis

Freeway segment analysis was conducted on all the I-75 segments in the study area. The results of the freeway segment analysis for Build Alternative 3 are summarized in Table 6-21. The levels of service along the general use lanes of the segments of the I-75 mainline will approximate those provided by Build Alternative 1. The special use lanes, however, will operate at or better than the LOS standard. The overall LOS is better than the LOS provided by Alternatives 1 and 2.

6.2.4.4 VISSIM Analyses Results

The VISSIM simulation results are described below.

- **AM Peak Period**

  Northbound Issues: A large volume of traffic uses the CD system to exit at SR 60 (nearly 2,400 vph), causing long queuing on the CD road, and eventually affecting the I-75 mainline. Also, the density is high north of I-4 interchange because of the high volume (approximately 5,150 vph).

  Southbound Issues: Approximately 7,900 vph enter the system, of which about 5,000 vph will use the two general use lanes and 2,900 vph will use three special use lanes. This issue is further complicated by extremely high traffic volumes entering the system at Fletcher Avenue (approximately 2,240 vph) and Fowler Avenue (2,515 vph). The forecasted volume downstream of the Fowler Avenue entrance ramp of 6,400 vph will be carried by three general purpose lanes. This results in a LOS F from Fletcher Avenue to Fowler Avenue, and LOS D from Fowler Avenue to I-4.

Table 6-16
Year 2035 Build Alternative 3 – Ramp Terminal Intersection LOS Results

	Intersection	Control	Approach/ Movement	AM (PM) Design Hour Control Delay (sec/veh)	AM (PM) Design Hour Approach LOS	AM (PM) Design Hour Average Intersection Delay (sec/veh)	AM (PM) Design Hour LOS
HCM Analysis Results	I-75 NB ramps at Moccasin Wallow Rd.	Stop	NB LT	2745 (4846)	**F (F)**	2745 (4846)	**F (F)**
			EB LT	23.7 (26.0)	C (D)		
	I-75 SB ramps at Moccasin Wallow Rd.	Stop	WB LT	11.6 (17.2)	B (C)	1377 (12152)	**F (F)**
			SB LT	1377 (12152)	**F (F)**		
	I-75 NB ramps at SR 674 (Sun City Center Blvd.)	Stop	NB LT	1634 (209.8)	**F (F)**	1634 (209.8)	**F (F)**
	I-75 SB ramps at SR 674 (Sun City Center Blvd.)	Stop	WB LT	124.7 (81.7)	F (F)	124.7 (81.7)	F (F)
	I-75 NB ramps at Big Bend Rd.	Signal	WB LT	487.3 (497.1)	**F (F)**	378.8 (183.4)	**F (F)**
			WB Thru	7.0 (9.6)	A (A)		
			EB Thru	512.7 (76.0)	**F (E)**		
			NB LT	293.7 (567.8)	**F (F)**		
	I-75 SB ramps at Big Bend Rd.	Signal	WB LT	380.2 (390.2)	**F (F)**	248.0 (173.0)	**F (F)**
			WB Thru	4.7 (7.4)	A (A)		
			EB Thru	306.0 (156.0)	**F (F)**		
			NB LT	287.9 (322.8)	**F (F)**		
	I-75 NB ramps at Gibsonton Dr.	Stop	EB LT	294.8 (712.0)	**F (F)**	n/a (n/a)	n/a (n/a)
			NB LT	n/a (n/a)	**F (F)**		
	I-75 SB ramps at Gibsonton Dr.	Signal	WB LT	563.7 (477.7)	**F (F)**	276.8 (382.0)	**F (F)**
			WB Thru	38.0 (25.1)	D (C)		
			EB Thru	50.5 (464.6)	D **(F)**		
			SB LT	541.8 (445.4)	**F (F)**		
VISSIM Analysis Results	I-75 NB ramps at US 301	Signal	EB LT	10.9 (25.3)	B (C)	7.5 (8.2)	A (A)
			EB Thru	1.5 (3.0)	A (A)		
			WB Thru	12.8 (10.6)	B (B)		
	I-75 SB ramps at US 301	Signal	WB LT	17.6 (22.3)	B (C)	12.1 (11.5)	B (B)
			WB Thru	1.1 (1.8)	A (A)		
			EB Thru	17.7 (18.2)	B (B)		
	I-75 NB ramps at SR 60 (Adamo Dr.)	Signal	EB Thru	15.8 (136.5)	B **(F)**	126.1 (95.6)	**F (F)**
			WB Thru	98.8 (21.7)	**F** (C)		
			NB LT	311.4 (136.6)	**F (F)**		
			NB RT	217.0 (185.5)	**F (F)**		
	I-75 SB ramps at SR 60 (Adamo Dr.)	Signal	EB Thru	22.8 (33.6)	C (C)	115.4 (79.4)	**F (E)**
			WB Thru	140.2 (111.9)	**F (F)**		
			SB LT	166.2 (89.6)	**F (F)**		
			SB RT	136.8 (85.4)	**F (F)**		
	I-75 SB ramps at SR 574 (Martin Luther King Blvd.)	Signal	WB LT	45.9 (109.1)	D (**F**)	129.0 (274.6)	**F (F)**
			WB Thru	4.3 (65.0)	A (**E**)		
			EB Thru	274.6 (715.9)	**F (F)**		
			SB LT	137.8 (257.1)	**F (F)**		

Note: Bold text and shaded cells indicate an approach or intersection that will operate at a LOS worse than the standard LOS D
n/a: Control delay value not provided since lane volume exceeds allowable units; LOS F

Table 6-16 (continued)
Year 2035 Build Alternative 3 – Ramp Terminal Intersection LOS Results

	Intersection	Control	Approach / Movement	AM (PM) Design Hour Control Delay (sec/veh)	AM (PM) Design Hour Approach LOS	AM (PM) Design Hour Average Intersection Delay (sec/veh)	AM (PM) Design Hour LOS
VISSIM Analysis Results	I-75 NB ramps at SR 574 (Martin Luther King Blvd.)	Signal	EB LT	30.1 (56.1)	C **(E)**	81.2 (131.8)	**F (F)**
			EB Thru	3.4 (3.9)	A (A)		
			WB Thru	177.9 (265.3)	**F (F)**		
	I-75 SB ramps at SR 582 (Fowler Ave.)	Signal	WB LT	10.5 (132.0)	B **(F)**	6.3 (23.0)	A (C)
			WB Thru	0.4 (0.7)	A (A)		
			EB Thru	14.5 (18.8)	B (B)		
	I-75 NB ramps at Fletcher Ave.	Signal	EB LT	41.1 (58.5)	D **(E)**	57.2 (28.3)	**E** (C)
			SB LT	63.6 (65.4)	**E (E)**		
			EB Thru	2.4 (3.0)	A (A)		
			WB Thru	78.0 (23.2)	**E** (C)		
	I-75 SB ramps at Fletcher Ave.	Signal	WB LT	31.1 (22.9)	C (C)	66.1 (47.1)	**E** (D)
			SB LT	113.4 (81.1)	**F (F)**		
			WB Thru	10.6 (8.3)	B (A)		
			EB Thru	261.5 (112.2)	**F (F)**		

Note: Bold text and shaded cells indicate an approach or intersection that will operate at a LOS worse than the standard LOS D

Table 6-17
Year 2035 Build Alternative 3 – South Study Area Ramp Terminal Intersection HCS LOS Results (Signalized)

Intersection	Control	Approach / Movement	AM (PM) Design Hour Control Delay (sec/veh)	AM (PM) Design Hour Approach LOS	AM (PM) Design Hour Average Intersection Delay (sec/veh)	AM (PM) Design Hour LOS
I-75 NB ramps at Moccasin Wallow Rd.	Signal	EB LT	80.3 (75.0)	**F (E)**	45.8 (131.3)	D **(F)**
		EB Thru	1.5 (16.3)	A (B)		
		WB Thru	56.2 (148.1)	**E (F)**		
		NB LT	83.3 (221.3)	**F (F)**		
I-75 SB ramps at Moccasin Wallow Rd.	Signal	WB LT	30.6 (41.5)	C (D)	9.7 (17.8)	A (B)
		WB Thru	2.8 (3.1)	A (A)		
		EB Thru	17.6 (36.4)	B (D)		
		SB LT	28.1 (43.3)	C (D)		
I-75 NB ramps at SR 674 (Sun City Center Blvd.)	Signal	EB Thru	18.2 (13.7)	B (B)	15.8 (16.7)	B (B)
		WB Thru	9.7 (18.6)	A (B)		
		NB LT	21.5 (24.6)	C (C)		
I-75 SB ramps at SR 674 (Sun City Center Blvd.)	Signal	WB LT	34.3 (28.6)	C (C)	23.5 (12.1)	C (B)
		WB Thru	0.1 (0.3)	A (A)		
		EB Thru	32.3 (23.5)	C (C)		
I-75 NB ramps at Big Bend Rd.	Signal	WB LT	487.3 (497.1)	**F (F)**	378.8 (183.4)	**F (F)**
		WB Thru	7.0 (9.6)	A (A)		
		EB Thru	512.7 (76.0)	**F (E)**		
		NB LT	293.7 (567.8)	**F (F)**		
I-75 SB ramps at Big Bend Rd.	Signal	WB LT	380.2 (390.2)	**F (F)**	248.0 (173.0)	**F (F)**
		WB Thru	4.7 (7.4)	A (A)		
		EB Thru	306.0 (156.0)	**F (F)**		
		NB LT	287.9 (322.8)	**F (F)**		
I-75 NB ramps at Gibsonton Dr.	Signal	EB LT	229.6 (358.8)	**F (F)**	138.5 (124.5)	**F (F)**
		EB Thru	7.6 (12.1)	A (B)		
		WB Thru	198.2 (42.2)	**F** (D)		
		NB LT	234.8 (260.5)	**F (F)**		
I-75 SB ramps at Gibsonton Dr.	Signal	WB LT	563.7 (477.7)	**F (F)**	276.8 (382.0)	**F (F)**
		WB Thru	38.0 (25.1)	D (C)		
		EB Thru	50.5 (464.6)	D **(F)**		
		SB LT	541.8 (445.4)	**F (F)**		

Note: Bold text and shaded cells indicate an approach or intersection that will operate at a LOS worse than the standard LOS D

Table 6-18
Year 2035 Build Alternative 3 – South Study Area Ramp Terminal Intersection HCS LOS Results (Signalized and Improved)

Intersection	Control	Approach / Movement	AM (PM) Design Hour Control Delay (sec/veh)	AM (PM) Design Hour Approach LOS	AM (PM) Design Hour Average Intersection Delay (sec/veh)	AM (PM) Design Hour LOS
I-75 NB ramps at Moccasin Wallow Rd.	Signal	EB LT	53.1 (71.3)	D **(E)**	31.3 (40.5)	C (D)
		EB Thru	1.6 (10.9)	A (B)		
		WB Thru	41.0 (44.1)	D (D)		
		NB LT	47.9 (56.3)	D **(E)**		
I-75 SB ramps at Moccasin Wallow Rd.	Signal	WB LT	30.6 (41.5)	C (D)	9.7 (17.8)	A (B)
		WB Thru	2.8 (3.1)	A (A)		
		EB Thru	17.6 (36.4)	B (D)		
		SB LT	28.1 (43.3)	C (D)		
I-75 NB ramps at Big Bend Rd.	Signal	WB LT	220.5 (180.6)	**F (F)**	133.7 (69.6)	**F (E)**
		WB Thru	5.2 (9.7)	A (A)		
		EB Thru	115.2 (36.2)	**F** (D)		
		NB LT	382.8 (179.1)	**F (F)**		
I-75 SB ramps at Big Bend Rd.	Signal	WB LT	90.7 (121.9)	**F (F)**	199.8 (71.7)	**F (E)**
		WB Thru	9.1 (10.0)	A (B)		
		EB Thru	268.4 (30.1)	**F** (C)		
		NB LT	263.8 (191.5)	**F (F)**		
I-75 NB ramps at Gibsonton Dr.	Signal	EB LT	60.1 (50.2)	**E** (D)	40.4 (32.7)	D (C)
		EB Thru	10.8 (14.5)	B (B)		
		WB Thru	55.5 (48.6)	**E** (D)		
		NB LT	57.9 (52.1)	**E** (D)		
I-75 SB ramps at Gibsonton Dr.	Signal	WB LT	254.6 (133.0)	**F (F)**	82.0 (133.7)	**F (F)**
		WB Thru	22.7 (14.8)	C (B)		
		EB Thru	40.6 (157.9)	D **(F)**		
		SB LT	113.6 (167.2)	**F (F)**		

Note: Bold text and shaded cells indicate an approach or intersection that will operate at a LOS worse than the standard LOS D

Table 6-19
Year 2035 Build Alternative 3 – Ramp Terminal Intersection Improvements

Intersection	Needed Improvements
I-75 NB ramps at Moccasin Wallow Road	• Add 1 NB LT lane
I-75 NB ramps at Big Bend Road	• Add 1 WB LT lane • Add 1 EB through lane
I-75 SB ramps at Big Bend Road	• Add 1 NB LT lane • Add 1 WB LT lane; increase storage length
I-75 NB ramps at Gibsonton Drive	• Add 1 EB LT lane • Add 1 EB through lane • Add 1 WB through lane
I-75 SB ramps at Gibsonton Drive	• Add SB LT Lane • Add 1 EB through lane • Add 1 WB through lane • Increase storage for WB LT lane

Table 6-20
Year 2035 Build Alternative 3 – Ramp LOS Results

	Interchange	Ramp	AM (PM) Ramp Density (pc/mi/ln)	AM (PM) Design Hour LOS
HCM Analysis Results	Moccasin Wallow Rd.	I-75 NB off-ramp to Moccasin Wallow Road	29.0 (25.3)	D (C)
		I-75 NB on-ramp from Moccasin Wallow Road	24.1 (12.7)	C (B)
		I-75 SB off-ramp to Moccasin Wallow Road	31.9 (33.8)	D (D)
		I-75 SB on-ramp from Moccasin Wallow Road	40.2 (43.6)	**F (F)**
	SR 674 (Sun City Center Blvd.)	I-75 NB off-ramp to SR 674	22.4 (19.4)	C (B)
		I-75 NB on-ramp from EB SR 674	24.8 (23.5)	C (C)
		I-75 NB on-ramp from WB SR 674	35.9 (27.5)	**E** (C)
		I-75 SB off-ramp to WB SR 674	25.5 (31.2)	C (D)
		I-75 SB off-ramp from to EB SR 674	20.9 (27.5)	C (C)
		I-75 SB on-ramp from SR 674	25.1 (26.9)	C (C)
	Big Bend Rd.	I-75 NB off-ramp to Big Bend Road	39.7 (35.6)	**E (E)**
		I-75 NB on-ramp from Big Bend Road	40.8 (42.8)	**F** (**F**)
		I-75 SB off-ramp to Big Bend Road	38.4 (40.7)	**F (F)**
		I-75 SB on-ramp from Big Bend Road	29.9 (41.7)	D (**F**)
	Gibsonton Dr.	I-75 NB off-ramp to Gibsonton Drive	41.1 (40.8)	**F (F)**
		I-75 NB on-ramp from Gibsonton Drive	n/a (n/a)	**E (F)**
		I-75 SB off-ramp to Gibsonton Drive	n/a (n/a)	**F (F)**
		I-75 SB on-ramp from Gibsonton Drive	41.5 (45.7)	**F (F)**
VISSIM Analysis Results	US 301 / Crosstown Expressway	I-75 NB off-ramp to US 301	19.9 (20.9)	B (C)
		I-75 NB off-ramp to Crosstown Expressway	8.4 (8.0)	A (A)
		I-75 NB off-ramp to CD Road / SR 60	21.5 (20.5)	C (C)
		I-75 NB on-ramp from CD Road / Crosstown Expressway	18.5 (27.2)	B (C)
		I-75 NB CD on-ramp from I-75 NB	34.7 (16.0)	D (B)
		I-75 SB off-ramp to Crosstown Expressway	23.7 (27.8)	C (C)
		I-75 SB off-ramp to US 301 / CD Road	15.7 (16.6)	B (B)
		I-75 SB on-ramp from Crosstown Expressway	10.8 (8.5)	B (A)
		I-75 SB on-ramp from I-75 SB CD Road	27.6 (33.3)	C (D)
		I-75 SB on-ramp from US 301	16.8 (16.6)	B (B)
		I-75 SB CD Road on-ramp from I-75 SB	26.1 (22.6)	C (C)
		I-75 SB CD Road off-ramp to SB I-75	30.8 (24.1)	D (C)
	SR 60 (Adamo Dr.)	I-75 NB on-ramp from EB SR 60	19.7 (21.0)	B (C)
		I-75 NB on-ramp from WB SR 60	20.7 (23.5)	C (C)
		I-75 SB off-ramp to SR 60	31.4 (34.8)	D (D)
	SR 574 / MLK Blvd.	I-75 NB off-ramp to EB SR 574	20.5 (23.3)	C (C)
		I-75 NB off-ramp to WB SR 574	12.8 (12.6)	B (B)
		I-75 NB on-ramp from SR 574	24.0 (23.9)	C (C)
		I-75 SB off-ramp to SR 574	23.4 (33.5)	C (D)
		I-75 SB on-ramp from SR 574	17.6 (27.8)	B (C)
	I-4 (New Interchange)	I-75 NB off-ramp to I-4	18.0 (16.1)	B (B)
		I-75 NB on-ramp from EB I-4	16.9 (20.2)	B (C)
		I-75 SB off-ramp to I-4	28.7 (29.4)	D (D)
		I-75 SB on-ramp from I-4	17.9 (27.8)	B (C)
	SR 582 (Fowler Ave.)	I-75 NB off-ramp to Fowler Avenue	35.1 (42.9)	**E (E)**
		I-75 NB on-ramp from EB Fowler Avenue	38.1 (59.4)	**E (F)**
		I-75 NB on-ramp from WB Fowler Avenue	29.4 (39.9)	D (**E**)
		I-75 SB off-ramp to Fowler Avenue	47.8 (45.5)	**F (F)**
		I-75 SB on-ramp from Fowler Avenue	68.7 (60.5)	**F (F)**
	Fletcher Ave.	I-75 NB off-ramp to Fletcher Avenue	35.6 (42.2)	**E (E)**
		I-75 NB on-ramp from Fletcher Avenue	25.2 (33.4)	C (D)
		I-75 SB off-ramp to Fletcher Avenue	41.8 (39.3)	**E (E)**
		I-75 SB on-ramp from Fletcher Avenue	54.2 (52.0)	**F (F)**

Note: Bold text and shaded cells indicate an approach or intersection that will operate at a LOS worse than the standard LOS D

Table 6-20 (continued)
Year 2035 Build Alternative 3 – Ramp LOS Results

	Interchange	Ramp	AM (PM) Ramp Density (pc/mi/ln)	AM (PM) Design Hour LOS
HCM Analysis Results	Slip Ramp between Moccasin Wallow Rd. & SR 674	SUL NB off-ramp to I-75 NB	34.3 (29.8)	D (D)
		I-75 NB on-ramp from SUL NB Lane	28.4 (25.2)	D (C)
		SUL SB off-ramp to I-75 NB	33.4 (29.7)	D (D)
		I-75 SB on-ramp from SUL SB Lane	32.8 (35.2)	D **(E)**
	Slip Ramp between SR 674 & Big Bend Rd.	SUL NB off-ramp to I-75 NB	28.0 (24.2)	D (C)
		I-75 NB on-ramp from SUL NB Lane	44.2 (37.2)	**F (E)**
		I-75 SB off-ramp to SUL SB Lane	39.9 (47.0)	**E (F)**
		SUL SB on-ramp from I-75 SB	31.5 (28.2)	D (D)
	Slip Ramp between Gibsonton Dr. & US 301	I-75 NB off-ramp to SUL NB Lane	51.2 (49.1)	**F (F)**
		SUL NB on-ramp from I-75 NB	40.9 (37.2)	**F (E)**
		SUL SB off-ramp to I-75 SB	33.3 (32.5)	D (D)
		I-75 SB on-ramp from SUL SB Lane	22.2 (21.8)	C **(F)**
VISSIM Analysis Results	Crosstown Expressway	SUL NB off-ramp to Crosstown Expressway	27.4 (23.3)	C (C)
		SUL NB on-ramp from Crosstown Expressway	14.9 (14.1)	B (B)
		SUL SB off-ramp to Crosstown Expressway	15.6 (13.8)	B (B)
		SUL SB on-ramp from Crosstown Expressway	20.6 (18.0)	C (B)
	Slip Ramp between SR 574 & SR 60	I-75 NB off-ramp to SUL Lane (Left side)	27.0 (30.6)	C (D)
		SUL NB on-ramp from I-75 NB	18.4 (19.0)	B (B)
		I-75 SB on-ramp from SUL Lane (Left side)	26.0 (28.5)	C (D)
		SUL SB off-ramp to I-75 SB	26.0 (26.6)	C (C)
	Slip Ramp between SR 582 & I-4	I-75 NB on-ramp from SUL Lane (Left side)	26.2 (28.5)	C (D)
		SUL NB off-ramp to I-75 NB	17.5 (21.1)	B (C)
		I-75 SB off-ramp to SUL Lane (Left side)	37.8 (38.4)	**E (E)**
		SUL SB on-ramp from I-75 SB	21.7 (21.6)	C (C)
	I-4 SUL Ramps	SUL NB off-ramp to I-4	25.1 (22.3)	C (C)
		SUL NB on-ramp from I-4 EB	12.7 (15.7)	B (B)
		SUL NB on-ramp from I-4 WB	17.0 (21.1)	B (C)
		SUL SB off-ramp to I-4	25.7 (25.6)	C (C)
		SUL SB on-ramp from I-4 WB	23.7 (23.5)	C (C)
		SUL SB on-ramp from I-4 EB	15.0 (18.0)	B (B)

Note: Bold text and shaded cells indicate an approach or intersection that will operate at a LOS worse than the standard LOS D

Table 6-21
Year 2035 Build Alternative – Mainline and Weaving Section LOS Results

	Mainline Segment	AM (PM) Design Hour Freeway Density (pc/mi/ln)	AM (PM) Design Hour LOS
HCM Analysis Results	**I-75 GULs Northbound**		
	Moccasin Wallow Rd. to SR 674	21.3 (18.9)	C (C)
	SR 674 to On-Ramp SUL	36.1 (29.7)	**E** (D)
	From On-Ramp SUL to Big Bend Rd.	n/a (32.1)	**F** (D)
	Big Bend Rd. to Gibsonton Dr.	n/a (n/a)	**F (F)**
	From Gibsonton Dr. to SUL Off-Ramp	41.1 (41.2)	**E (E)**
	From SUL Off-Ramp to US 301	27.3 (29.3)	D (D)
	I-75 GULs Southbound		
	US 301 to SUL On-Ramp	35.6 (38.5)	**E (E)**
	SUL On-Ramp to Gibsonton Dr.	41.9 (n/a)	**E (F)**
	Gibsonton Dr. to Big Bend Rd.	n/a (n/a)	**F (F)**
	Big Bend Rd. to SUL Off-Ramp	32.9 (n/a)	D **(F)**
	From SUL Off-Ramp to SR 674	28.2 (40.6)	D **(E)**
	SR 674 to SUL On-Ramp	23.7 (25.7)	C (C)
	From SUL On-Ramp to Moccasin Wallow Rd.	27.5 (30.5)	D (D)
VISSIM Analysis Results	**I-75 GULs Northbound**		
	US 301 to Crosstown Expressway	11.0 (12.5)	A (B)
	Crosstown Expressway to SR 60	10.9 (12.4)	A (B)
	SR 60 to Martin Luther King Blvd.	23.2 (27.5)	C (D)
	Martin Luther King Blvd. to I-4	16.8 (15.8)	B (B)
	I-4 to Fowler Ave.	36.2 (48.7)	**E (F)**
	Fowler Ave. to Fletcher Ave.	30.9 (39.7)	D **(E)**
	I-75 GULs Southbound		
	Fowler Ave. to I-4	33.0 (32.0)	D (D)
	Martin Luther King Blvd. to SR 60	26.4 (29.4)	D (D)
	SR 60 to Crosstown Expressway	13.0 (15.0)	B (B)
	Crosstown Expressway to US 301	9.0 (9.3)	A (A)
	Weave Segments		
	I-75 SB - Fletcher Ave. to Fowler Ave.	52.3 (49.4)	**F (F)**
	I-75 NB CD - Crosstown Expressway to SR 60	38.3 (17.3)	**E** (B)
	I-75 SB CD - SR 60 to Crosstown Expressway	15.5 (14.5)	B (B)
	I-75 SB – I-4 to Martin Luther King Blvd.	22.1 (31.7)	C (D)

Note: Bold text and shaded cells indicate a freeway or weaving segment LOS that does not meet the LOS D standard
n/a: No freeway density value provided for these segments; LOS F

Table 6-21 (continued)
Year 2035 Build Alternative 3 – Mainline and Weaving Section LOS Results

	Mainline Segment	AM (PM) Design Hour Freeway Density (pc/mi/ln)	AM (PM) Design Hour LOS
HCM Analysis Results	**I-75 SULs Northbound**		
	Moccasin Wallow Rd. to SUL off-ramp south of SR 674	29.1 (24.3)	D (C)
	SUL off-ramp south of SR 674 to SUL off-ramp south of Big Bend Rd.	22.6 (19.2)	C (C)
	SUL off-ramp south of Big Bend Rd. to SUL on-ramp north of Gibsonton Dr.	17.3 (16.7)	B (B)
VISSIM Analysis Results	SUL on-ramp north of Gibsonton Dr. to Crosstown Expressway / SUL off-ramp	20.7 (18.3)	C (B)
	Crosstown Expressway / SUL on-ramp to SUL on-ramp north of SR 60	14.8 (13.9)	B (B)
	SUL on-ramp north of SR 60 to I-4 / SUL off-ramp	18.5 (18.0)	B (B)
	I-4 / SUL on-ramp to SUL off-ramp south of Fowler Ave.	15.8 (19.1)	B (B)
	SUL off-ramp south of Fowler Ave. to SUL / Mainline tie-in north of Fletcher Ave.	10.9 (13.2)	B (B)
	I-75 SULs Southbound		
	SUL / Mainline tie-in north of Fletcher Ave. to SUL on-ramp south of Fowler Ave.	12.3 (12.2)	B (B)
	SUL on-ramp south of Fowler Ave. to I-4 / SUL off-ramp	20.7 (20.4)	C (C)
	I-4 / SUL on-ramp to SUL off-ramp north of SR 60	21.0 (21.4)	C (C)
	SUL off-ramp north of SR 60 to Crosstown Expressway / SUL off-ramp	13.4 (13.5)	B (B)
	Crosstown Expressway / SUL on-ramp to SUL on-ramp north of Gibsonton Dr.	16.3 (15.5)	B (B)
HCM Analysis Results	SUL off-ramp north of Gibsonton Dr. to SUL on-ramp south of Big Bend Rd.	22.5 (18.8)	C (C)
	SUL on-ramp South of Big Bend Rd. to SUL off-ramp north of Moccasin Wallow Rd.	27.9 (24.1)	D (C)
	SUL off-ramp south of SR 674 to Moccasin Wallow Rd.	22.6 (18.6)	C (C)

Other issues are the extremely high volume (2,835 vph) that exits at SR 60 (Adamo Drive) and cannot be processed by the intersection. The queues keep building up in the mainline and reach the Martin Luther King Boulevard interchange. Also, the weaving issue on the southbound CD road from the SR 60 southbound entrance ramp to the southbound exit ramp to Crosstown Expressway westbound is also resolved by the overpass ramp from the I-75 southbound.

- **PM Peak Period**

  Northbound Issues: In the northbound direction, the large volume exiting at SR 60 is processed fairly well. High delay is still observed at the intersection, but the queue does not affect the operation on the CD road. Also, the segment volume density is high north of I-4 because of the high volume (approximately 5,915 vph).

  Southbound Issues: The southbound issues for the general use lanes are similar to those encountered during the AM peak period. The excessive volume entering the network causes significant congestion from the northern terminus to the I-4 interchange. The high volume (3,530 vph) exits at SR 60 (Adamo Drive) causing queuing to back up to the I-75 mainline.

6.2.4.5 Summary - Build Alternative 3 Operations Analyses

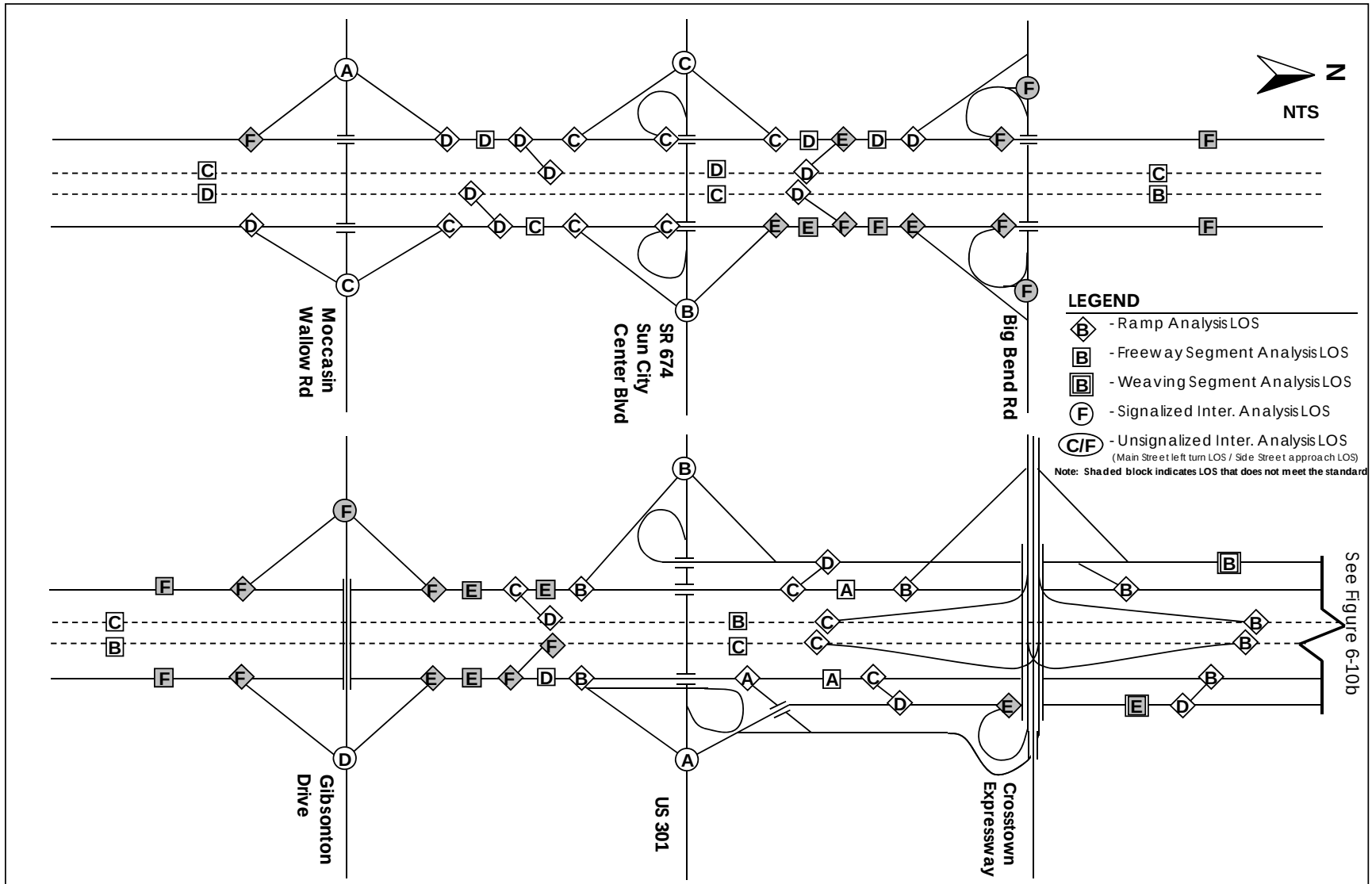
The LOS results for Build Alternative 3 are shown on Figures 6-10a and 6-10b for the AM peak hour and on Figures 6-11a and 6-11b for the PM peak hour. Build Alternative 3 adds two special use lanes in each direction from Moccasin Wallow Road to US 301 and adds three special use lanes in each direction from US 301 to Fletcher Avenue.

The implementation of the special use lane system, and keeping the same number of general use lanes (three in each direction) as the No-Build Alternative, will cause conditions on the general use lanes to mirror Build Alternative 1 levels with failing conditions in the southern portion of the study area from Big Bend to US 301. The special use lanes will operate at or better than the LOS standard.

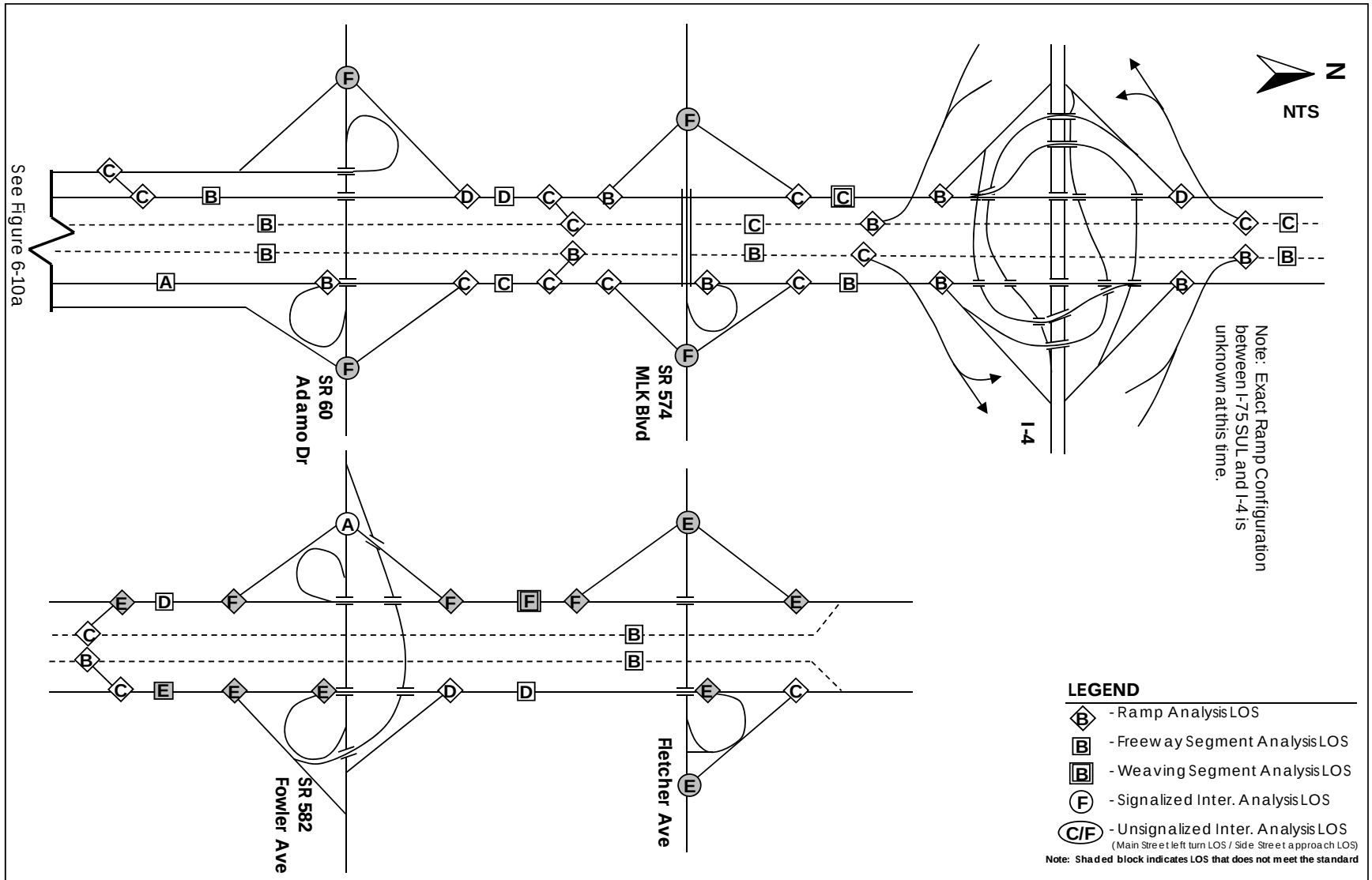
The slip ramps and direct-connect interchanges from the special use lanes at I-4 and Crosstown Expressway were included in the VISSIM model.

As with Build Alternatives 1 and 2, Build Alternative 3 alone (without modification of the existing general lanes, ramps and intersections) was not sufficient to accommodate the projected traffic demand in the corridor. Thus, additional improvements / adjustments were made in order for effective and reasonable operations to result. Also, since the exact design concept of the special use lane system has not yet been determined, considerable assumptions were made to accommodate the modeling effort. These and other improvements to the Build Alternative 3 are shown on Figures 6-12a and 6-12b and are listed below.

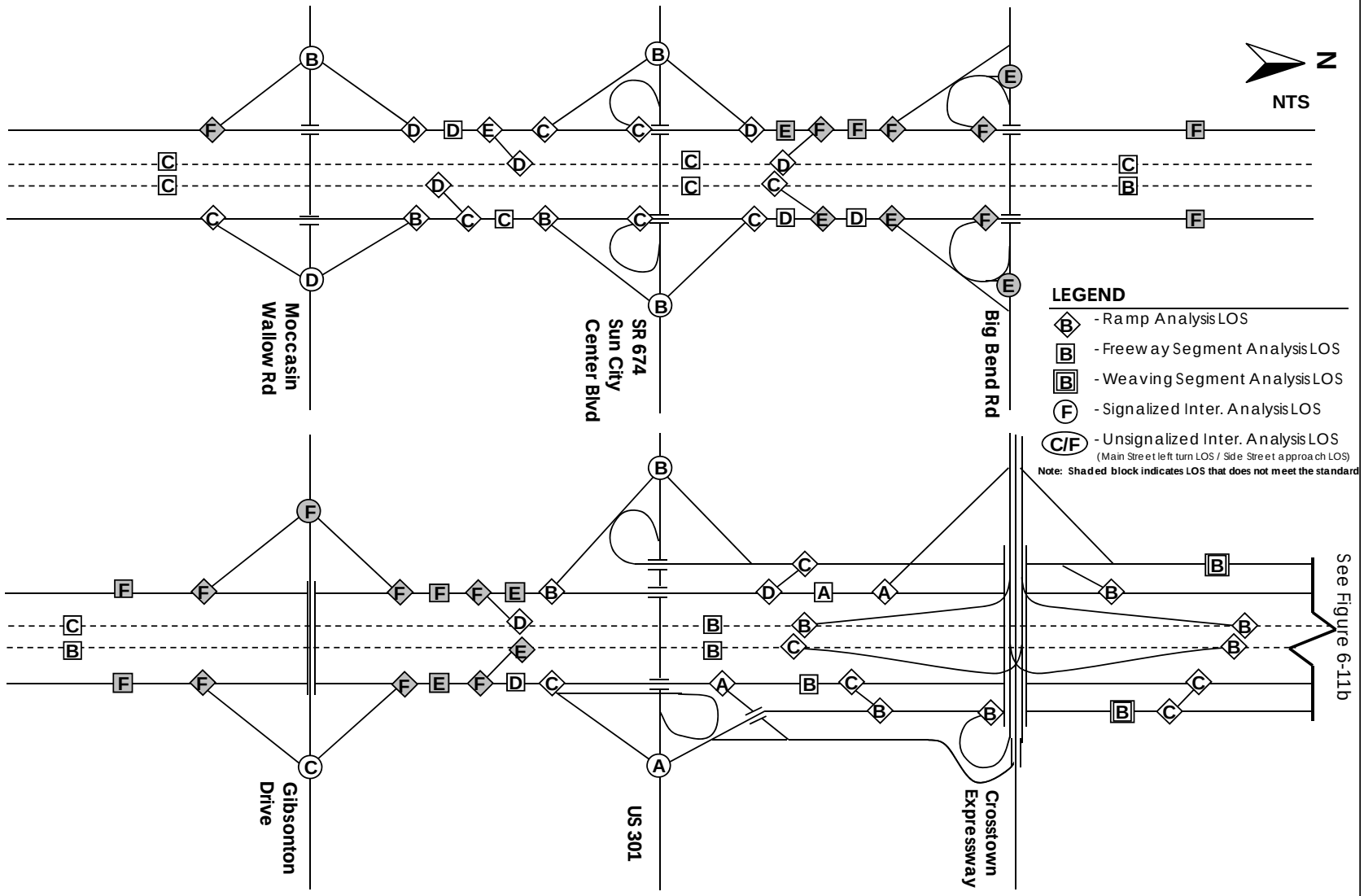
- Changed traffic signal timings of existing signals (AM and PM peak periods) to better accommodate through traffic on the arterials and avoid a back-up onto the mainline. The re-timing also provided increased green time and capacity for movements to and from I-75;



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 3 AM DESIGN HOUR LOS RESULTS (SOUTH)	Figure 6-10a



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 3 AM DESIGN HOUR LOS RESULTS (NORTH)	Figure 6-10b

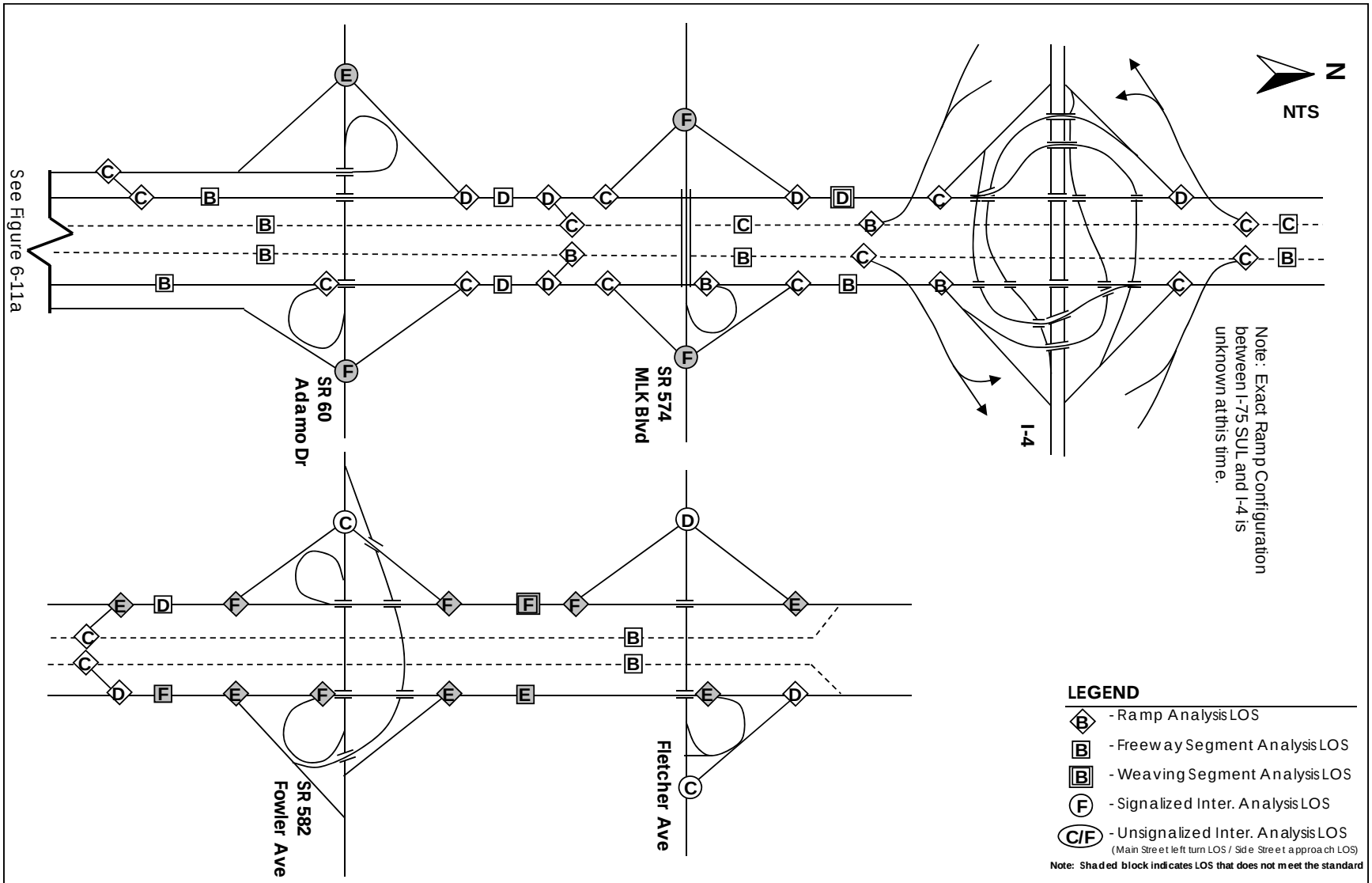


I-75 Traffic & PD&E Studies

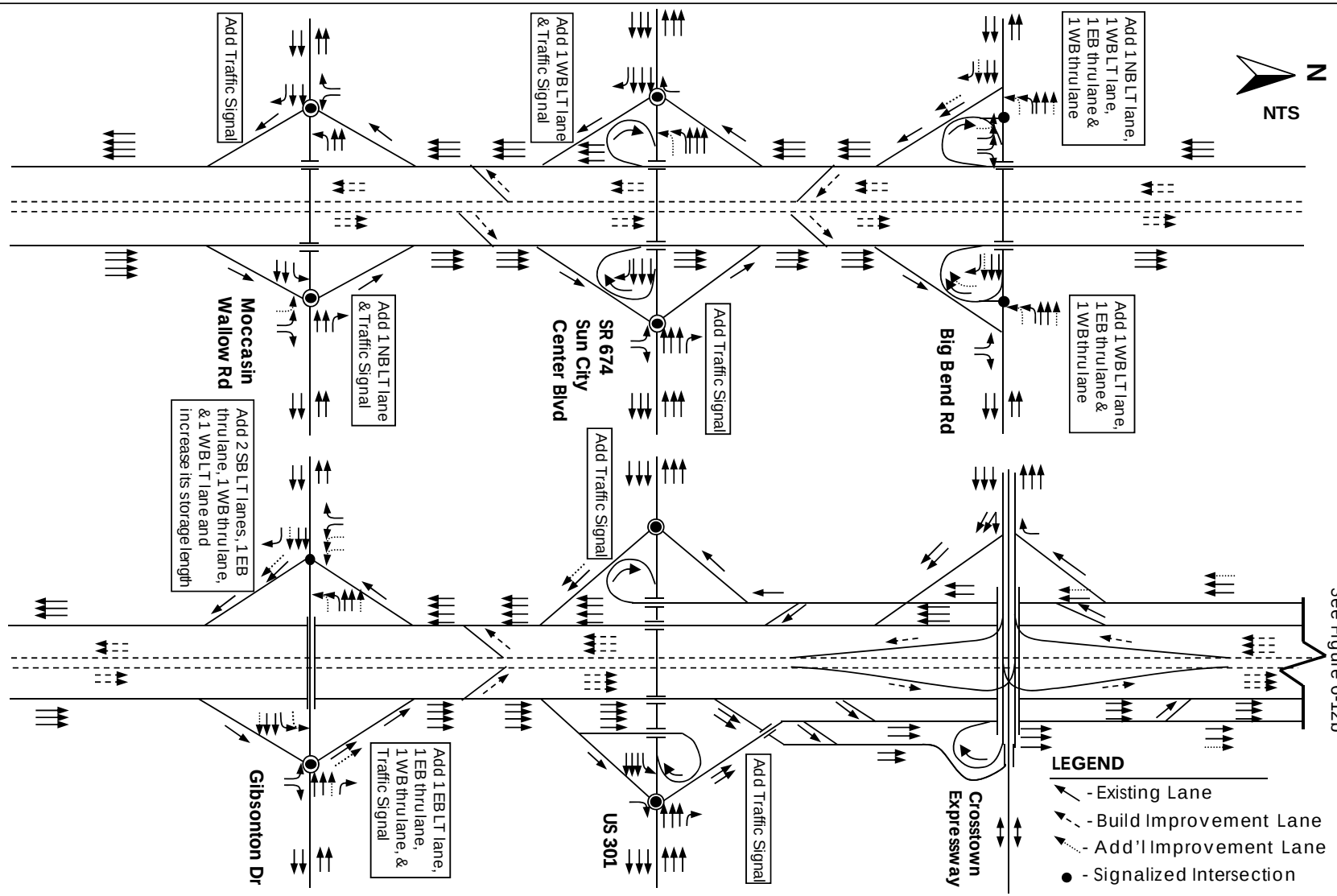
Design Traffic Technical Memorandum
Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue
WPI Segment Number 419235-1

YEAR 2035 BUILD ALTERNATIVE 3
PM DESIGN HOUR LOS RESULTS (SOUTH)

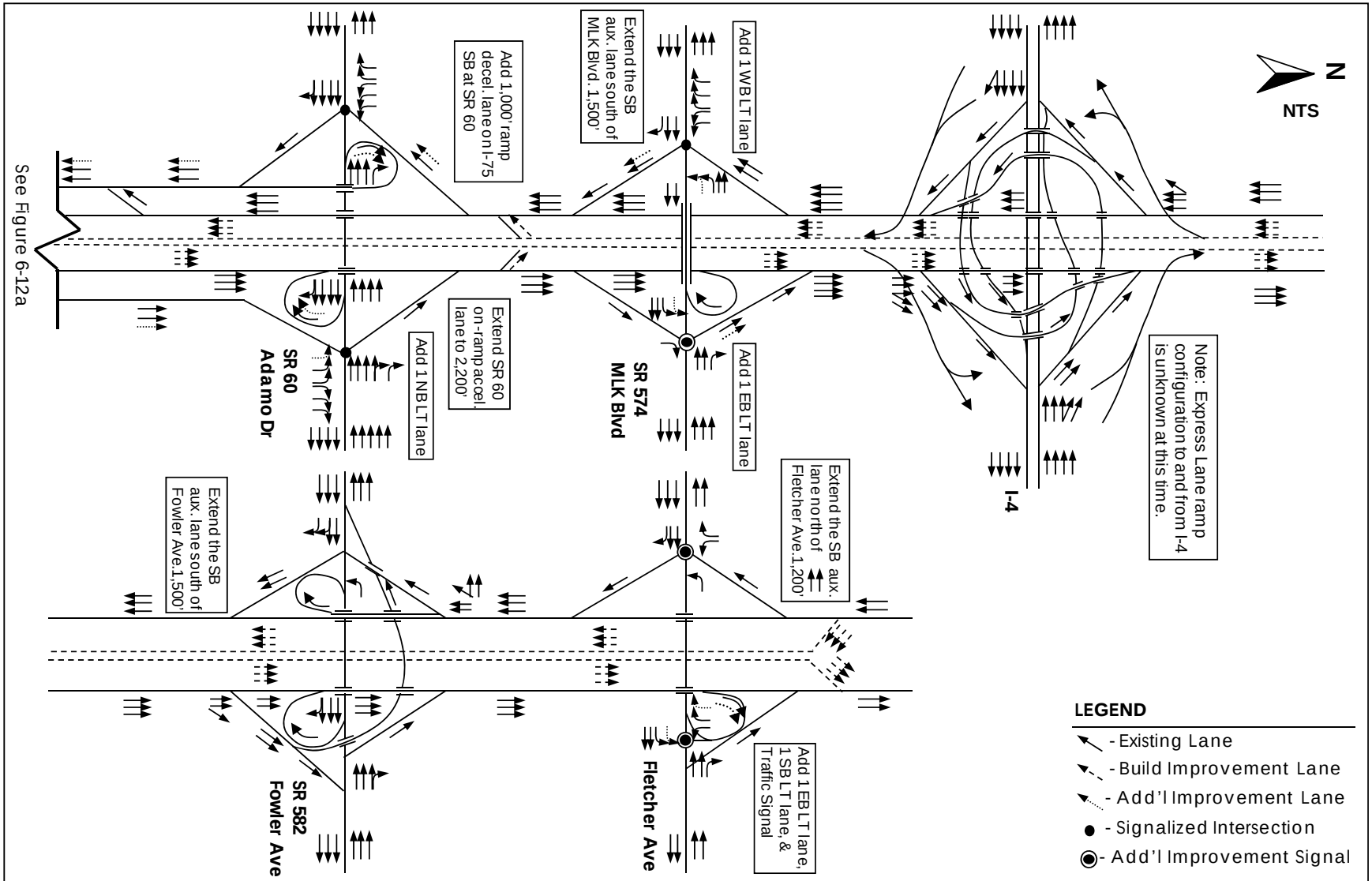
Figure 6-11a



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 3 PM DESIGN HOUR LOS RESULTS (NORTH)	Figure 6-11b



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 3 ADDITIONAL IMPROVEMENTS (SOUTH)	Figure 6-12a



I-75 Traffic & PD&E Studies Design Traffic Technical Memorandum Traffic Study from Moccasin Wallow Road to north of Fletcher Avenue WPI Segment Number 419235-1	YEAR 2035 BUILD ALTERNATIVE 3 ADDITIONAL IMPROVEMENTS (NORTH)	Figure 6-12b

- Added one general use lane (three lanes to four lanes) on I-75 southbound between the special use lane slip ramp and SR 60 (SR 60 becomes two lane off-ramp with drop and option lanes);
- Added new traffic signals at both I-75 ramp terminal intersections on Fletcher Avenue and US 301, and a new signal at the I-75 northbound on-ramp at the Martin Luther King Boulevard intersection;
- Added dual left-turn lanes on both Fletcher Avenue eastbound and westbound ramp terminal intersections and widened the ramp to accommodate the dual left turns (tapers to a single lane before entering the interstate);
- Added dual left-turn lanes from the I-75 northbound loop ramp onto eastbound Fletcher Avenue, as well an additional lane on this ramp not to exceed the length of the ramp;
- Added dual left-turn lanes on both Martin Luther King Boulevard eastbound and westbound ramp terminal intersections and widened the ramp to accommodate the dual left turns (tapers to a single lane before entering the interstate);
- Added triple left turns (currently dual left turns) on I-75 northbound off-ramp to SR 60 westbound.
- Added dual lane entrance loop ramps from SR 60 eastbound to I-75 northbound and from SR 60 westbound to I-75 southbound.
- Widened the exit ramp from I-75 northbound CD road to SR 60 (two lanes to three lanes)
- Extended the SR 60 on-ramp entrance lane to I-75 northbound to 2,200 feet, to allow more distance for merging;
- Widened the SR 60 exit ramp from I-75 southbound to two lanes and added an 860-foot deceleration lane to provide increased ramp capacity;
- Added acceleration lane on US 301 eastbound to improve the diverge from I-75 northbound exit ramp
- Widened the on-ramp from US 301 eastbound to I-75 southbound (one lane to two lanes)
- Extended the auxiliary lane on I-75 southbound south of Fowler Avenue to 1,500 feet to the location where the traffic from Fowler Avenue merges in, to allow more room for merges;
- Extended the auxiliary lane on I-75 southbound south of Fletcher Avenue to 1,200 feet to allow more room for merges;
- Added one lane (two lanes to three lanes) on southbound CD road between SR 60 southbound entrance ramp and the exit ramp to Crosstown Expressway westbound;
- Braided ramp from I-75 southbound to Crosstown Expressway westbound over the CD southbound road between SR 60 and Crosstown Expressway to eliminate weaving problem on the CD road.

7.0 CONCLUSIONS

The Annual Average Daily Traffic (AADT) volumes along I-75 generally increase from the southern and northern project termini towards I-4 and the Crosstown Expressway, which are the primary access routes to the City of Tampa from I-75. Current volumes range from a low of 58,000 vehicles per day (vpd) between Moccasin Wallow Road and SR 674 to a high of 144,800 vpd between Martin Luther King Boulevard and I-4.

This Technical Report summarizes the evaluation of the existing (2007) conditions and the design year 2035 traffic conditions for the No-Build (no improvements to I-75 other than those already planned and funded) and three improvement alternatives for I-75. Build Alternative 1 assumed that one additional lane will be constructed along each direction of I-75 throughout the study limits. Build Alternative 2 assumed that two additional lanes will be constructed along each direction of I-75 throughout the study limits. Build Alternative 3 assumed that two special use lanes will be added in each direction of I-75 south of US 301 and three special use lanes will be added in each direction of I-75 north of US 301.

For the No-Build alternative, the design year (2035) traffic demand along I-75 is expected to range from 89,700 vpd south of SR 674 to 207,900 vpd south of I-4. Under Build Alternative 1, the design year (2035) traffic demand along I-75 is expected to range from 111,900 vpd south of SR 674 to 218,400 vpd south of I-4. For Build Alternative 2, the design year (2035) traffic demand along I-75 is expected to range from 132,200 vpd south of SR 674 to 226,400 vpd south of I-4. For Build Alternative 3, the design year (2035) traffic demand along I-75 is expected to range from 129,700 vpd south of SR 674 to 230,300 vpd south of I-4.

The No-Build Alternative analysis found that without significant improvements, the I-75 corridor will operate much worse than current conditions under the higher volume demand anticipated for the Design Year (2035).

Analysis of Build Alternative 1 found that, the I-75 study corridor will operate slightly better than the No-Build Alternative in the southern and central portions of the study area, but substandard conditions will persist on the corridor segments from Big Bend Road to US 301 and from SR 60 to Fletcher Avenue.

Analysis of Build Alternative 2 found that the level of service on the study corridor will be better than with Build Alterative 1. This improvement will allow I-75 to operate at or better than LOS D from Moccasin Wallow Road to SR 60, although same ramp merge and diverge locations along this segment will continue to operate worse than the LOS standard. The freeway segments between SR 60 and Fletcher Avenue will continue to operate at conditions worse than the LOS standard.

Analysis of Build Alternative 3 found that, with this improvement scenario, operations along the general use lane freeway segments from Big Bend Road to US 301 will worsen compared to Build Alternative 2. Operations along the general use freeway segments from SR 60 to I-4 will improve to standard LOS conditions. Substandard conditions will persist in the northern part of the study area between I-4 and Fletcher Avenue. All segments of the special use lanes will operate at or better than the LOS standard.

The analyses summarized herein indicate that the No-Build Alternative and Build Alternatives 1 and 2 will not provide level of service D or better on a large number of the I-75 mainline segments and will not provide standard LOS or better for local or interregional trips along the I-75 corridor within the study area.

While Build Alternative 3 does not provide standard or better LOS for local trips on the general use lanes of I-75 for number of mainline segments, interregional trips along the I-75 corridor within the study area will operate at LOS C or better. Therefore, Build Alternative 3 does meet the objective set for this study by the FDOT to define a year 2035 improvement alternative that would, at minimum, provide a good level of service for interregional trips along the I-75 corridor within the study area.

Build Alternative 3 is recommended for additional analysis to further refine the geometric details and to provide a preliminary cost estimate. Technical Report No. 2 will address the interchange and other improvements considered for Build Alternative 3.

APPENDICES **(Provided in a CD)**

Appendix A Manual Traffic Count Data Sheets

Appendix B Existing Year (2007) Traffic Sheets

Appendix C Signal Timing Plans

Appendix D Existing Year (2007) Conditions Traffic Analysis Data Sheets

Appendix E I-75 PD&E Study Network Model Validation Study

Appendix F Future Year (2030) AADT Traffic Sheets

Appendix G VISSIM Analysis - Traffic Micro-Simulation Model Development Calibration Report & Analyses Results

Appendix H Future Year (2035) Conditions Traffic Analysis Data Sheets