

FINAL

Environmental Analysis

TAMPA INTERSTATE STUDY

(the I-275/I-4 Downtown Interchange Operational Improvements)

WPI No. 7140004, State Project No. 99007-1402, FAP No. IR-9999(43)

Interstate 275 (I-275) from the Hillsborough River to Floribraska Avenue and Interstate 4 (I-4) from the I-275/I-4 merge to east of 22nd Street (Section 10320-MP 0.0 to MP 0.7 and Section 10190-MP 6.389 to MP 8.49) approximately 4.5 kilometers (2.8 miles) in length.

Prepared For
**FLORIDA DEPARTMENT
OF
TRANSPORTATION**

Prepared By
GREINER, INC.

In Association With
**KNIGHT APPRAISAL SERVICES, INC.
JANUS RESEARCH**

JULY 1996

FINAL

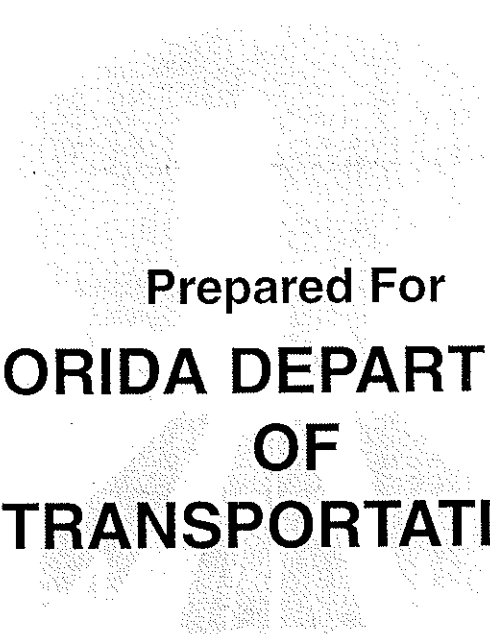
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SECTION 1.0

INTRODUCTION

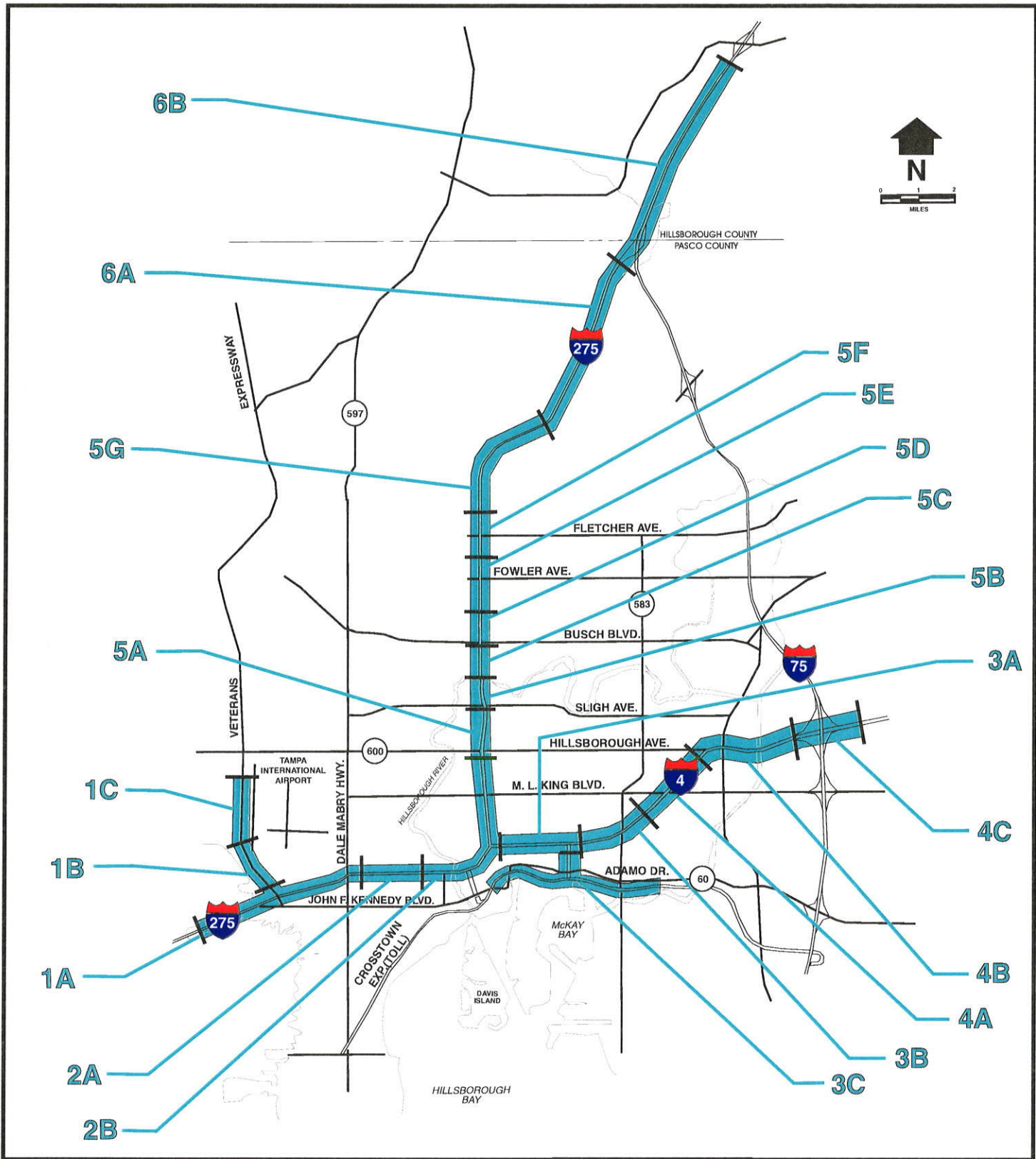
1.1 ORGANIZATION OF DOCUMENT

This Environmental Analysis has been prepared for the proposed I-275/I-4 downtown interchange operational improvements project. Section 1.0 presents a brief project description. Section 2.0 outlines the purpose and need for the operational improvements. Section 3.0 discusses the design criteria and development of reasonable alternatives. Section 4.0 describes the existing social, cultural, natural, and physical environments; the potential impacts associated with each reasonable alternative; and an alternatives evaluation. Section 5.0 describes the selection and refinement of a preferred alternative, the potential impacts associated with it, and any proposed mitigation. The engineering analysis for the I-275/I-4 downtown interchange operational improvement project is published separately.

1.2 DESCRIPTION OF PROJECT

The Tampa interstate system is a cornerstone of the Tampa Bay area's surface transportation network. A Master Plan for the Tampa interstate system was approved by the Federal Highway Administration (FHWA) in November 1989, and adopted by the Hillsborough County Metropolitan Planning Organization (MPO) in August 1990. The Tampa Interstate Study (TIS) Master Plan design segments are shown on Exhibit 1.1.

Because of the level of complexity and financial considerations involved with construction of the Master Plan preferred alternative, the Florida Department of Transportation (FDOT) has targeted funds to enhance the existing I-275/I-4 downtown interchange to provide much needed safety and operational improvements to this important link in the Tampa interstate system. It is estimated that the operational/safety improvement will be in place for twenty to thirty years based on current funding. Consequently, this is a much needed project even though it is not part of the ultimate improvement. The improvements would become disposable once funding for the ultimate



LEGEND

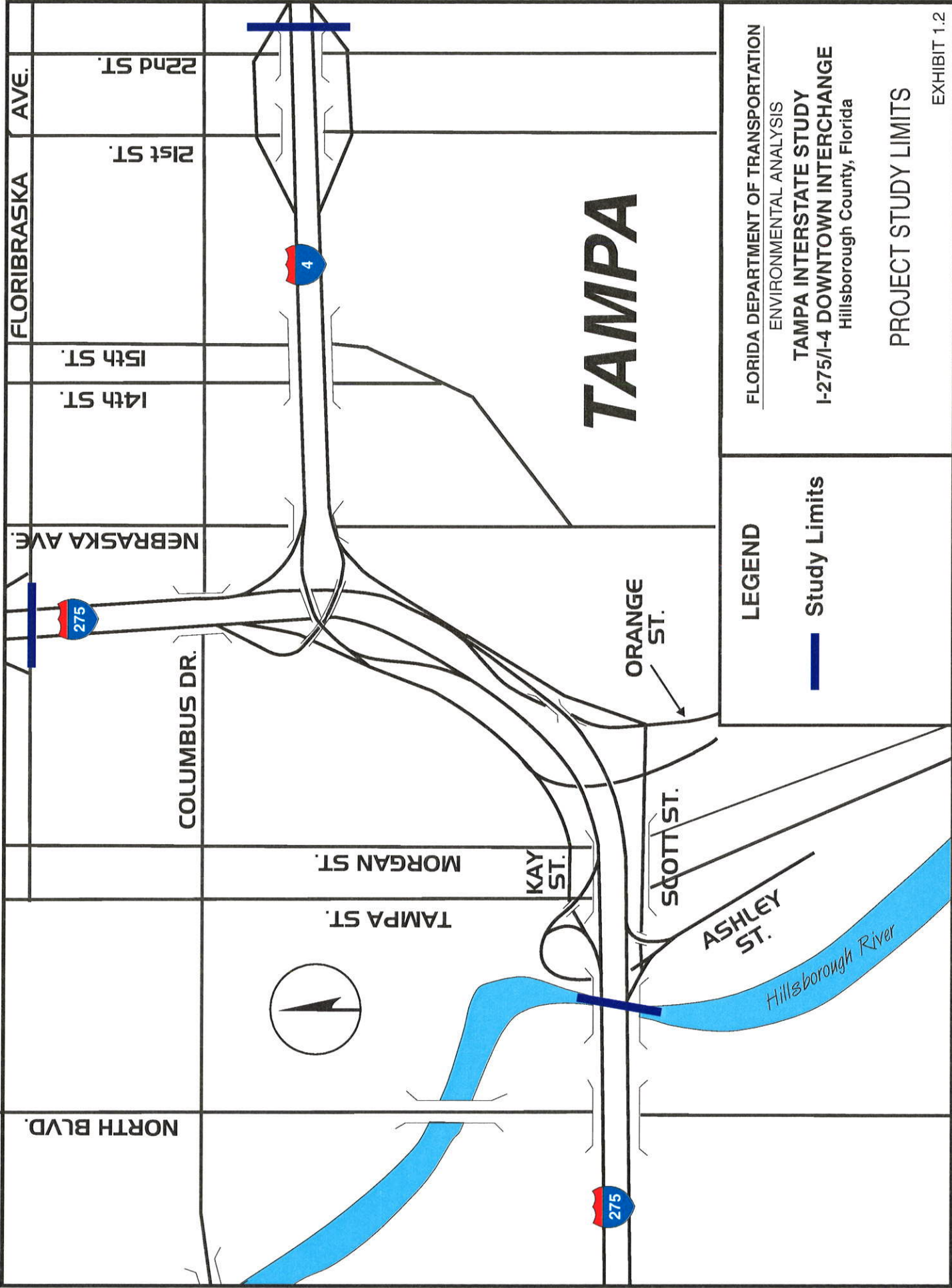
- Study Limits
- 1A Design Study Segment

FLORIDA DEPARTMENT OF TRANSPORTATION
 ENVIRONMENTAL ANALYSIS
TAMPA INTERSTATE STUDY
I-275/I-4 DOWNTOWN INTERCHANGE
 Hillsborough County, Florida

TIS MASTER PLAN DESIGN SEGMENTS

improvement becomes available. The I-275/I-4 downtown interchange, predominantly Design Segment 2B, has been identified by the Hillsborough County MPO, the FDOT, and the FHWA as a vital link to other staged improvements within the Master Plan limits which are currently either programmed, or are under design and construction.

The study limits for the proposed downtown interchange operational improvements are I-275 from the Hillsborough River north to Floribaska Avenue and I-4 from the I-275/I-4 merge to east of 22nd Street, approximately 4.5 kilometers (2.8 miles) in length. The project study limits are shown on Exhibit 1.2.



SECTION 2.0

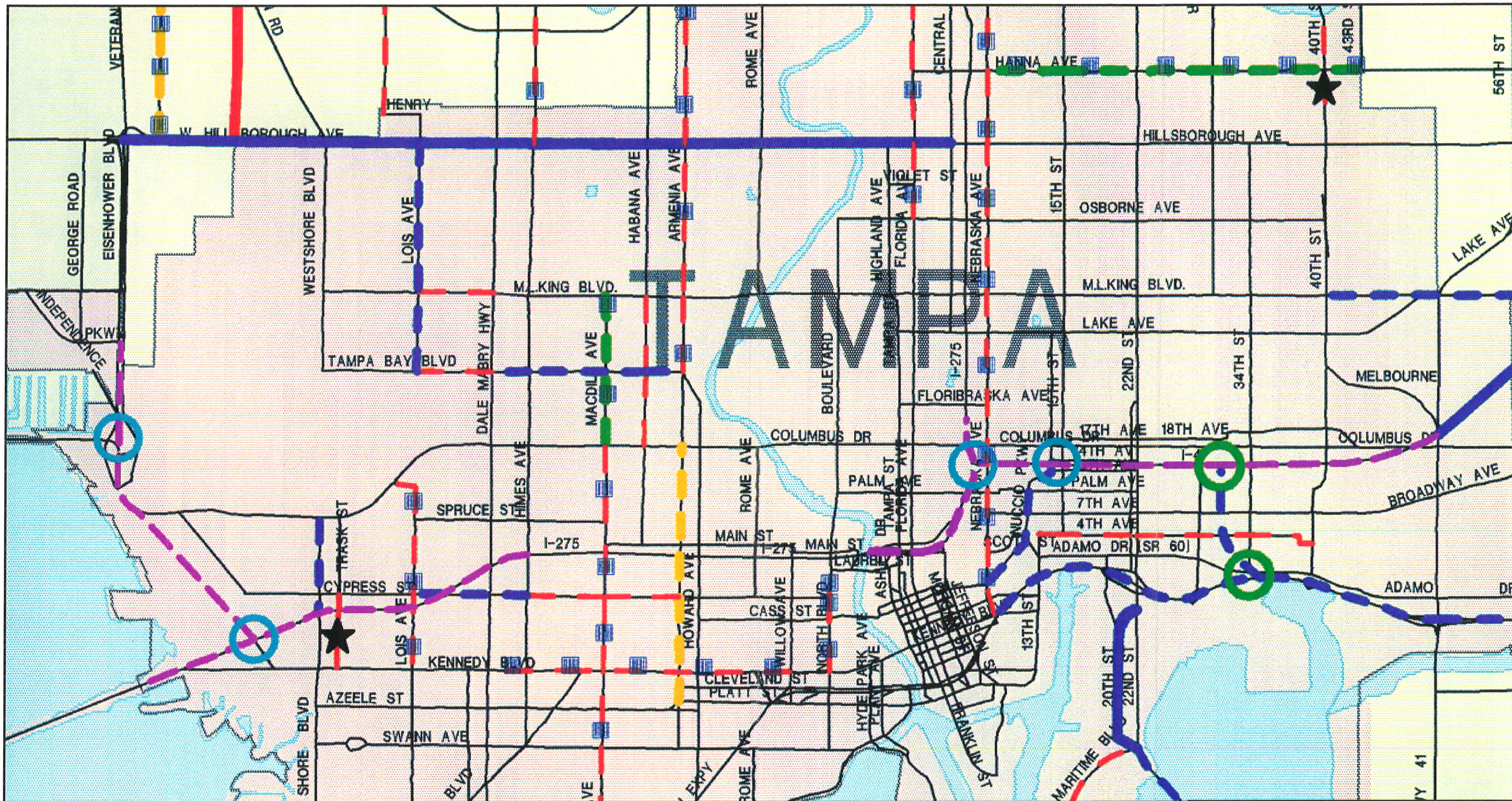
PURPOSE AND NEED FOR ACTION

The I-275/I-4 downtown interchange was designed in the early 1960's and is a complex arrangement of overpasses and weaving areas that handle large volumes of traffic. Originally designed to handle 40,000 to 60,000 vehicles per day (vpd), traffic volumes in 1994 ranged as high as 164,000 vpd, nearly three times the amount of traffic intended to travel this section of roadway. With such high volumes of traffic on the interstate, the issue of safety within the I-275/I-4 downtown interchange has become a great concern to the Tampa Bay community. This operational/safety improvement project is intended to improve conflicting merge/diverge areas that currently contribute to congestion in the downtown interchange area; to increase sight distance in order to reduce accidents and provide a pull off area when accidents occur by providing shoulders where economically and physically possible; and to identify any further safety improvements for the downtown interchange.

2.1 SYSTEM LINKAGE/TRANSPORTATION PLANNING

The Tampa interstate system provides key links to the entire Tampa urban area and is recognized as the most important regional highway system in Hillsborough County. The Federal Aid Classification system designates I-275 and I-4 as interstate facilities. In February 1989, a white paper entitled "Future of Hillsborough Transportation Concepts" was prepared for the Florida House of Representatives - Public Transportation Committee. This paper emphasized the significant role of the interstate in the region's transportation system and identified TIS, the proposed reconstruction of I-275, I-4 and I-75, as a "priority project."





Several major transportation projects planned to ultimately connect to the reconstructed Tampa interstate system in the Year 2015 are shown on Exhibit 2.1. The FDOT 1995/1996-1999/2000 Adopted Work Program includes funds for designing the connection between the Veterans Expressway and I-275, the Westshore portion of I-275, the Ybor City area of I-4, the proposed Crosstown Connector and Crosstown Expressway widening between Kennedy Boulevard and Maydell Drive, as well as the operational improvements documented in this report. Design,



2015 LONG RANGE TRANSPORTATION PLAN HIGHWAY IMPROVEMENTS

-  Enhanced Projects
-  Sensitive to Area Residents (STAR) Projects
-  Future Frontage Roads
-  New Interchange
-  Improvement to Existing Interchange

COMMITTED PROJECTS (1995-2000) AND DEVELOPER PROJECTS

-  2 Lanes
-  4 Lanes
-  6 Lanes
-  8 Lanes

CANDIDATE PROJECTS (2001-2015)

-  2 Lanes
-  3 Lanes
-  4 Lanes
-  6 Lanes
-  8 Lanes

FLORIDA DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL ANALYSIS

**TAMPA INTERSTATE STUDY
PHASE II**

Hillsborough County, Florida

**MPO2015 TRANSPORTATION PLAN
HIGHWAY NETWORK**

EXHIBIT 2.1

right-of-way, and construction are programmed for six-laning I-275 from Busch Boulevard to the proposed S.R. 56 interchange.

In addition to system linkage, the proposed interstate improvements have been planned to serve the anticipated transportation needs of the projected future population and development. The interstate reconstruction and other planned roadway improvements are essential to meet these demands and to promote economic growth in the region. Several major existing and planned developments will depend on the improved transportation system for the efficient movement of goods and people.

The Hillsborough County MPO is the governmental agency within the state of Florida responsible for establishing a continuing, cooperative, and comprehensive transportation process for Hillsborough County and the cities of Tampa, Plant City, and Temple Terrace. The Hillsborough County MPO functions as the transportation planning group of the Hillsborough County City-County Planning Commission (HCC-CPC).

2.2 SAFETY

Safety is quantified by calculating a safety ratio of the actual number of accidents to the critical accident rate. The critical accident rate is the statewide average accident rate for a similar type of road. A safety ratio greater than 1.0 indicates that a roadway is experiencing more accidents than are anticipated on that type of roadway.

The safety ratio for I-275 through the central business district (CBD) averages 1.36. The high safety ratios on this section of roadway are due to several factors which increase the potential for accidents, such as heavy traffic volumes, substandard horizontal and vertical alignments, and multiple weaving movements. In addition, the lack of adequate shoulders to pull off the road after an accident occurs creates hazardous conditions and major travel delays. Accidents at this interchange have caused multi-mile-long back-ups in several directions and delay times of up to three hours for some motorists. In severe situations, this section of the interstate has remained closed for six hours or

more, bringing the entire interstate system to a halt and causing gridlock on the few alternate routes available.

With the proposed I-275/I-4 downtown interchange operational improvements, travel conditions along the interstate will be improved and the probability of accidents will be reduced. Both of these factors will help to decrease the delay times associated with complex merge/diverge sections, accidents, and inadequate shoulders.

2.3 SOCIAL DEMANDS

Hillsborough County covers 2,778.5 km² (1,072.8 mi²) and includes the incorporated cities of Tampa, Temple Terrace, and Plant City. According to the 1990 Census, the population of Hillsborough County was 834,054 persons and the projected population for the year 2010 is just under 1.2 million persons, for an anticipated growth of 43 percent. As of 1990, the majority of the population resided in unincorporated Hillsborough County (62 percent), followed by the City of Tampa (33 percent), Plant City (3 percent), and Temple Terrace (2 percent). By the year 2015, approximately 68 percent of the County's population is projected to reside in the unincorporated area, 27 percent in the City of Tampa, 3 percent in Plant City, and 2 percent in Temple Terrace. Between 1990 and 2015, unincorporated Hillsborough County is projected to contain more than half of the entire county population. Currently, the most intense growth is occurring in the northwestern portion of the unincorporated county and in the Brandon area.

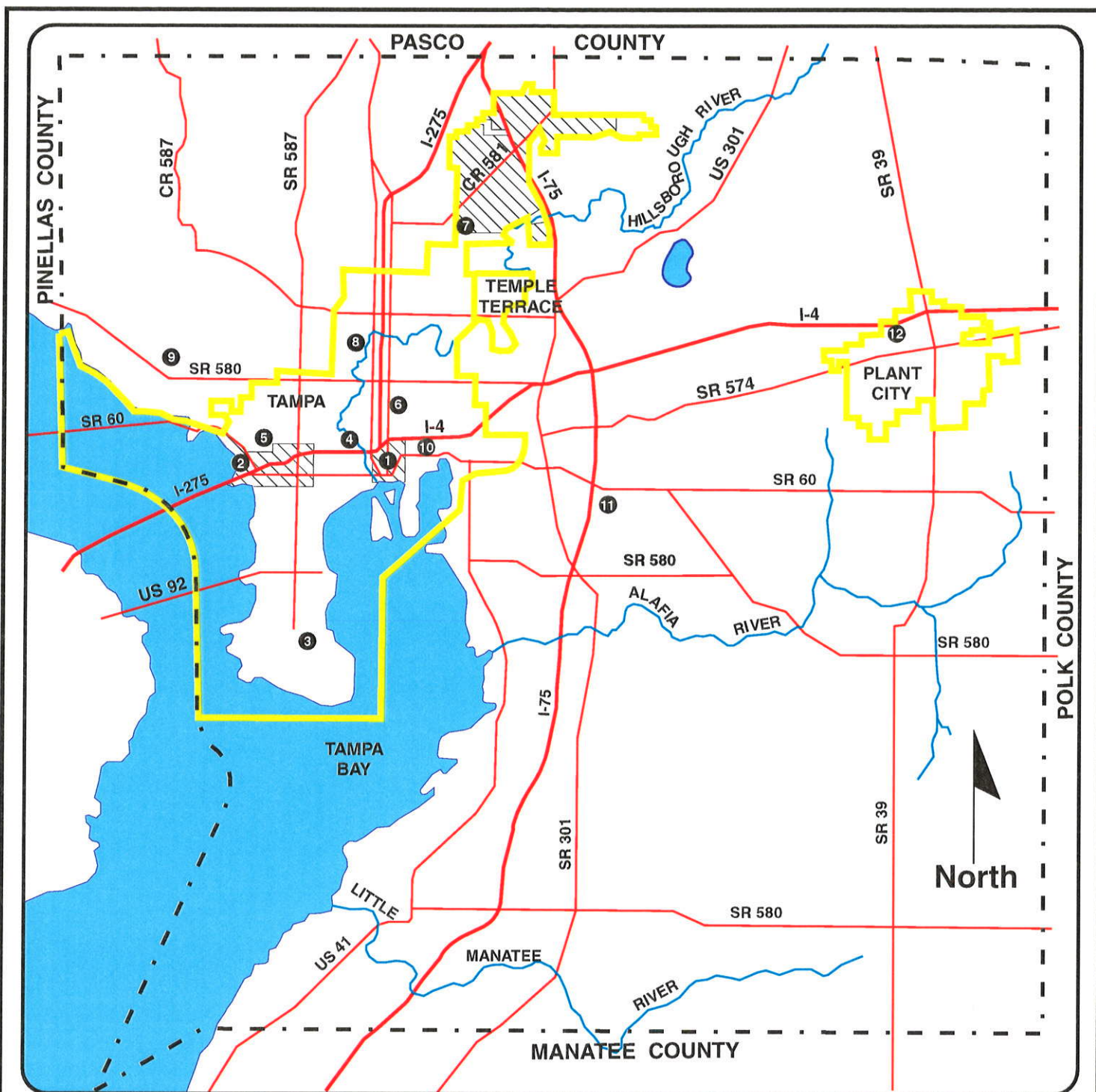
Based on a projected population of just under 1.2 million persons, the Hillsborough County MPO 2015 Long Range Transportation Plan (MPO 2015 Plan) estimates that over 4.3 million person-trips will occur in Hillsborough County daily; the majority of these trips will be made on the highway system. Year 2015 travel patterns indicate that 36 percent of all vehicle miles traveled will be on interstates and expressways and 50 percent will be on divided arterials. Major interstate and expressway facilities currently serving Hillsborough County include I-4, linking Tampa, Lakeland and Orlando; I-275, which bisects the City of Tampa and serves both as a commuter route to downtown Tampa and a through route to Pinellas County; the Crosstown Expressway, which extends

between Gandy Boulevard and I-75 near Brandon and provides access to the Tampa CBD; and I-75, which links several major cities along Florida's west coast. The MPO 2015 Plan includes approximately 66 miles of planned reconstruction and widening for I-275, I-4, and portions of I-75 in order to meet the existing and projected demands on the interstate systems. The TIS Preferred Alternative is consistent with the MPO 2015 Plan.

Exhibit 2.2 illustrates some of the major traffic generators and attractors within Hillsborough County, as listed in the Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County, Florida (July 1989). Some of these major generators and attractors include the Tampa CBD, the Westshore area, Ybor City, the University North area, West Tampa, MacDill Air Force Base, Tampa International Airport, and the Port of Tampa. The existing interstate system, and more specifically the downtown interchange, provides a vital link to all of these destinations from areas throughout Hillsborough County and surrounding counties such as Pinellas, Polk, Pasco, and Manatee.

In addition to the projected increase in population, Hillsborough County's economy is also expected to grow. As stated in the Future of Hillsborough Comprehensive Plan for Unincorporated Hillsborough County, Florida (July 1989), Hillsborough County's economy is expected to continue to expand throughout the next twenty years. This is due to the County's status as a seaport and airport, a major distribution and wholesale center, and its other strengths, such as phosphate mining and processing, agribusiness, a diverse manufacture base, construction industry, and tourism. The total employment for Hillsborough County in 1990 was 430,800 persons, and the year 2010 projection is approximately 600,000 persons.

The Tampa CBD is expected to undergo a considerable amount of growth through the year 2010. In 1990, employment for the CBD was 24,963 persons, while the employment projection for the year 2010 is 88,079 persons. The majority of this growth is expected to occur in private office development. The CBD also provides a variety of activity centers such as the Convention Center, Performing Arts Center, County Government Center, Cruise Ship Terminal #2, and the Harbour Island residential and retail complex. In addition, new activity centers such as the Federal Building,



Note: This exhibit is based on existing and future land use information and is not all inclusive.

LEGEND



Major Employment Centers



Major Traffic Generators and Attractors

- | | |
|--------------------------------|-----------------------------|
| 1. City of Tampa CBD | 7. University of S. Florida |
| 2. Westshore | 8. Carrollwood |
| 3. MacDill Air Force Base | 9. Town-N-Country |
| 4. West Tampa | 10. Ybor City |
| 5. Tampa International Airport | 11. Brandon |
| 6. Seminole Heights | 12. Plant City |

FLORIDA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS

TAMPA INTERSTATE STUDY
I-275/I-4 DOWNTOWN INTERCHANGE
Hillsborough County, Florida

**MAJOR TRAFFIC GENERATORS AND
ATTRACTORS IN HILLSBOROUGH
COUNTY**

EXHIBIT 2.2

Florida Aquarium, the Ice Palace hockey arena, and Cruise Ship Terminal #6 will help bring approximately one million visitors to the Tampa CBD annually.

2.4 FEDERAL, STATE, OR LOCAL GOVERNMENTAL AUTHORITY

The Hillsborough County MPO is the governmental agency within the state of Florida responsible for establishing a continuing, cooperative, and comprehensive transportation process for Hillsborough County and the cities of Tampa, Plant City, and Temple Terrace. The Hillsborough County MPO functions as the transportation planning group of the HCC-CPC. The MPO 2015 Plan identifies the region's major thoroughfares and the improvements needed to provide acceptable level of service to the area. The TIS proposed improvements to I-275 and I-4 are included in the MPO 2015 Plan, adopted on December 5, 1995.

The adopted MPO 2015 Plan clearly indicates that the interstate system is a basic component of the Plan, and is depicted on the MPO 2015 Transportation Plan - Highway Improvements (shown previously on Exhibit 2.1). The I-275/I-4 downtown interchange operational improvements are consistent with the MPO Adopted 2015 Interim Projects (2001-2005) portion of the MPO 2015 Plan. The MPO 2015 Plan is divided into three priority levels. The first priority is committed projects from 1995-2000; the second priority is interim projects identified for improvement from year 2001-2005; and the third priority is the cost affordable plan for years 2006-2015. The I-275/I-4 downtown interchange operational improvements are contained in the adopted MPO 2015 Plan and are planned for construction during the years 2003-2005.

The MPO 2015 Plan also lists additional improvements to the interstate outside of these project limits but included in the original Master Plan study limits. A copy of the roadway priorities identifying key aspects of the proposed roadway improvements to be constructed over the next 20 years is included in the Appendix.

2.5 SUMMARY OF PURPOSE AND NEED FOR ACTION

Section 2.0 of this report describes the purpose and need for the proposed I-275/I-4 downtown interchange operational improvements. The proposed improvements will provide a key link to other recently improved, under construction, or planned highway improvements and to portions of Hillsborough County which are expected to experience significant growth within the next 10 to 20 years.

Examination of the existing freeway operations analyses indicates that the safety ratio for I-275 through the CBD averages 1.36. The high safety ratios are due to heavy traffic volumes, multiple weaving sections, substandard horizontal and vertical geometrics and no shoulders in many areas. An analysis of future traffic conditions indicates continued increases in daily traffic volume on Tampa's interstate system which would in turn increase the potential for accidents.

In conclusion, the purpose of the proposed I-275/I-4 downtown interchange improvement project is to upgrade the existing interchange by improving operational deficiencies and increasing the safety of the interchange. These improvements are needed to improve the safety and efficiency of this important regional and local transportation link.

SECTION 3.0

ALTERNATIVES ANALYSIS

3.1 NO-ACTION ALTERNATIVE

To identify the traffic operations and safety impacts of not implementing the proposed downtown interchange operational improvements, a No-Action Alternative was considered. The No-Action Alternative was a viable alternative carried through the TIS Public Hearing. Existing traffic operations are currently deficient at several locations within the project limits. Safety is compromised by the design deficiencies of the existing interstate, based on design standards of the 1960's combined with the growth of traffic volumes.

The No-Action Alternative was dropped from consideration following the January 16, 1996 public hearing because of support from the Tampa Bay community for the safety/operational improvement.

3.2 TRANSPORTATION SYSTEM MANAGEMENT

Hillsborough County has, wherever possible, implemented Transportation System Management (TSM) improvements to improve existing facilities. TSM improvements involve increasing the available capacity within the existing right-of-way with minimum capital expenditures and without reconstructing the existing facility. TSM improvements to upgrade the I-275/I-4 downtown interchange without total reconstruction would include adding High Occupancy Vehicle (HOV)/Transitway lanes by restriping existing lanes, increasing shoulder widths, implementing incident management systems, improving weaving sections between interchange ramps and/or providing ramp metering at on-ramps.

The operational improvements include some TSM improvements associated with the existing system that should improve safety and reduce congestion. TSM improvements include: increasing shoulder widths, where feasible, to increase sight distance and provide breakdown areas; improving merging

and weaving sections; improving weaving patterns by changing the location of ramping; and removing some weaving movements from the mainline lanes.

Other TSM measures that are not part of the operational improvements include HOV lanes and ramp metering. The provision of HOV lanes could reduce the total number of vehicles in the corridor but would not resolve safety issues such as poor weaving sections, substandard shoulders, and poor sight distance. Ramp metering could limit the volume of traffic accessing the interstate, thus improving operations on the corridor, but would likely result in significant queues on the arterial street system.

3.3 DESIGN CRITERIA

Most alternatives for the operational improvement are based on making minor improvements to the existing facility. As a result, much of the design criteria for these alternatives were established based on existing roadway geometrics. The existing facility does not meet current standards in many areas for several reasons. Consequently, upgrading the facility to current standards would require removing the existing freeway and constructing new bridges and roadway for the entire project limits.

Given the diversity in alternative solutions, two design standard tables were created. Table 3.1 provides standards for improving the existing facility, while Table 3.2 provides current FDOT and AASHTO roadway standards for constructing a new facility in generally the same location.

3.4 ALTERNATIVES CONSIDERED AND REJECTED

Four major problem areas within the project limits were identified. The following sections summarize the alternatives considered for the problem areas but rejected in favor of feasible alternatives discussed in Section 3.5.

TABLE 3.1

**RECOMMENDED ROADWAY DESIGN STANDARDS -
IMPROVE EXISTING FACILITY
Tampa Interstate Study
I-275/I-4 Downtown Interchange Operational Improvements
Environmental Analysis**

Design Factors	Recommended Standards
Speeds	
Freeway	80 km/h (50 mph)
Connecting Freeway Ramps	60 km/h (40 mph)
Other Ramps and SB Collector Freeway	60 km/h (40 mph) desirable
	50 km/h (30 mph) minimum
Pavement Widths	
Freeway	3.6 m (12 ft.) standard lane width
Ramps	4.5 m (15 ft.) single lane
	3.6 m (12 ft.) dual lanes
Shoulder Widths	
Freeway	Inside and Outside - 0.6 m (2 ft.) existing minimum 3.6 m (12 ft.) desirable
All Ramps (including freeway connections)	
- Single Lane	Inside and Outside - 0.6 m (2 ft.) existing minimum 1.8 m (6 ft.) desirable
- Dual Lane	Inside - 0.6 m (2 ft.) existing minimum 2.4 m (8 ft.) desirable
	Outside - 0.6 m (2 ft.) existing minimum 3.0 m (10 ft.) desirable
Maximum Grades	
Freeway and SB Collector Freeway	5% (existing)
Connecting Freeway Ramps	4.2% ascending (existing)
	6% descending
All Other Ramps	6% ascending
	5% descending
Maximum Degree of Curve	
Freeway and SB Collector Freeway	6° - 00' (existing)
Connecting Freeway Ramps	8° - 15' (existing)
Ramps to Surface Streets	24° - 54' (230' R)
Ashley Street Loop Ramp	38° - 11' (150' R)
Minimum Vertical Clearances	
Existing Structures over Cross Streets	Existing Clearance or 4.4 m (14.5 ft.)
Existing Structures over Freeway	4.7 m (15.5 ft.)
New Structure over Freeway and Cross Streets	5.0 m (16.5 ft.)

Sources: Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways, FDOT, 1989.

Plans Preparation Manual, FDOT, 1993.

A Policy on Design of Highways and Streets, AASHTO, 1994.

TABLE 3.2
RECOMMENDED ROADWAY DESIGN STANDARDS -
NEW FACILITY
Tampa Interstate Study
I-275/I-4 Downtown Interchange Operational Improvements
Environmental Analysis

Design Factors	Recommended Standards
Speeds	
Freeway	90 km/h (55 mph) desirable
	80 km/h (50 mph) minimum
Connecting Freeway Ramps	70 km/h (45 mph) desirable
	60 km/h (40 mph) minimum
Other Ramps and SB Collector Freeway	80 km/h (50 mph) desirable
	50 km/h (30 mph) minimum
Pavement Widths	
Freeway	3.6 m (12 ft.) standard lane width
Ramps	4.5 m (15 ft.) single lane
	3.6 m (12 ft.) dual lanes
Shoulder Widths	
Freeway and Connecting Freeway Ramps	3.6 m (12 ft.) inside and outside
All Other Ramps	
- Single Lane	1.8 m (6 ft.) inside and outside
- Dual Lane	2.4 m (8 ft.) inside
	3.0 m (10 ft.) outside
Maximum Grades	
Freeway and SB Collector Freeway	4%
Connecting Freeway Ramps	4% ascending
	6% descending
All Other Ramps	6% ascending
	6% descending
Maximum Degree of Curve	
Freeway	4° - 00'
SB Collector Freeway	8° - 30'
Connecting Freeway Ramps	8° - 15'
All other Ramps	20° - 28' (280' R)
Cross Slopes (in tangent)	
Freeway SB Collector Freeway, and Ramps	9 mm (0.03 ft.) per 0.3 m (1.0 ft.) maximum
Shoulders	18 mm (0.06 ft.) per 0.3 m (1.0 ft.) outside
	15 mm (0.05 ft.) per 0.3 m (1.0 ft.) inside
Embankments	6:1 within clear recovery zone
Vertical Clearances	
Minimum over Freeway	5.0 m (16 ft. 6 in.)
Minimum over Cross Streets	5.0 m (16 ft. 6 in.)

Sources: Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways, FDOT, 1989.

Plans Preparation Manual, FDOT, 1993.

A Policy on Design of Highways and Streets, AASHTO, 1994.

3.4.1 I-275 Northbound - Ashley Street On-ramp

An alternative was developed to extend the existing acceleration taper to improve both safety and operations at this ramp juncture with I-275. It was determined that this alternative would not provide as much benefit as other feasible alternatives developed to create an additional lane at the Ashley Street on-ramp to extend through the entire interchange to I-4.

Another alternative was developed to eliminate the Ashley Street on-ramp and divert all I-275 northbound and I-4 traffic to the Orange/Jefferson Street ramps. This alternative was also rejected since traffic congestion problems would be created on Scott and Orange Streets by forcing a significant portion of downtown traffic destined for the interstate system to the east side ramp locations. In addition, the City of Tampa has requested in several coordination meetings that the Ashley on-ramp remain as an access point to the Interstate.

3.4.2 Orange/Jefferson Street On-ramp to I-4

Alternatives were developed to either complete the taper for this on-ramp prior to the I-4/I-275 fork or to extend this ramp as an additional lane beyond the fork and continuing on I-4 eastbound. It was determined that operations would be optimized by extending this ramp as an additional lane. Therefore, the alternative to taper this ramp into the system was removed from consideration.

3.4.3 I-275 Southbound to Eastbound I-4 Flyover

An alternative was developed to replace this flyover with an alignment on the inside of the existing flyover and touching down on the inside of the I-4 eastbound lanes. Through video surveillance of I-4 between the existing flyover ramp gore and the 21st Street off-ramp and traffic capacity analysis, it was determined that a problem is currently caused by vehicles on the flyover that exit at 21st Street. This maneuver requires vehicles to change two lanes from left to right in order to exit at 21st Street. Capacity analyses show that a right-side entrance from the I-275 southbound flyover would improve this weaving problem. As a result, it was determined that if a new flyover was constructed,

it should be placed on the outside of the I-4 freeway lanes instead of on the inside lanes. Therefore, the flyover alternative with an alignment on the inside of the existing flyover was rejected.

3.4.4 I-275 Southbound Local Freeway Lanes

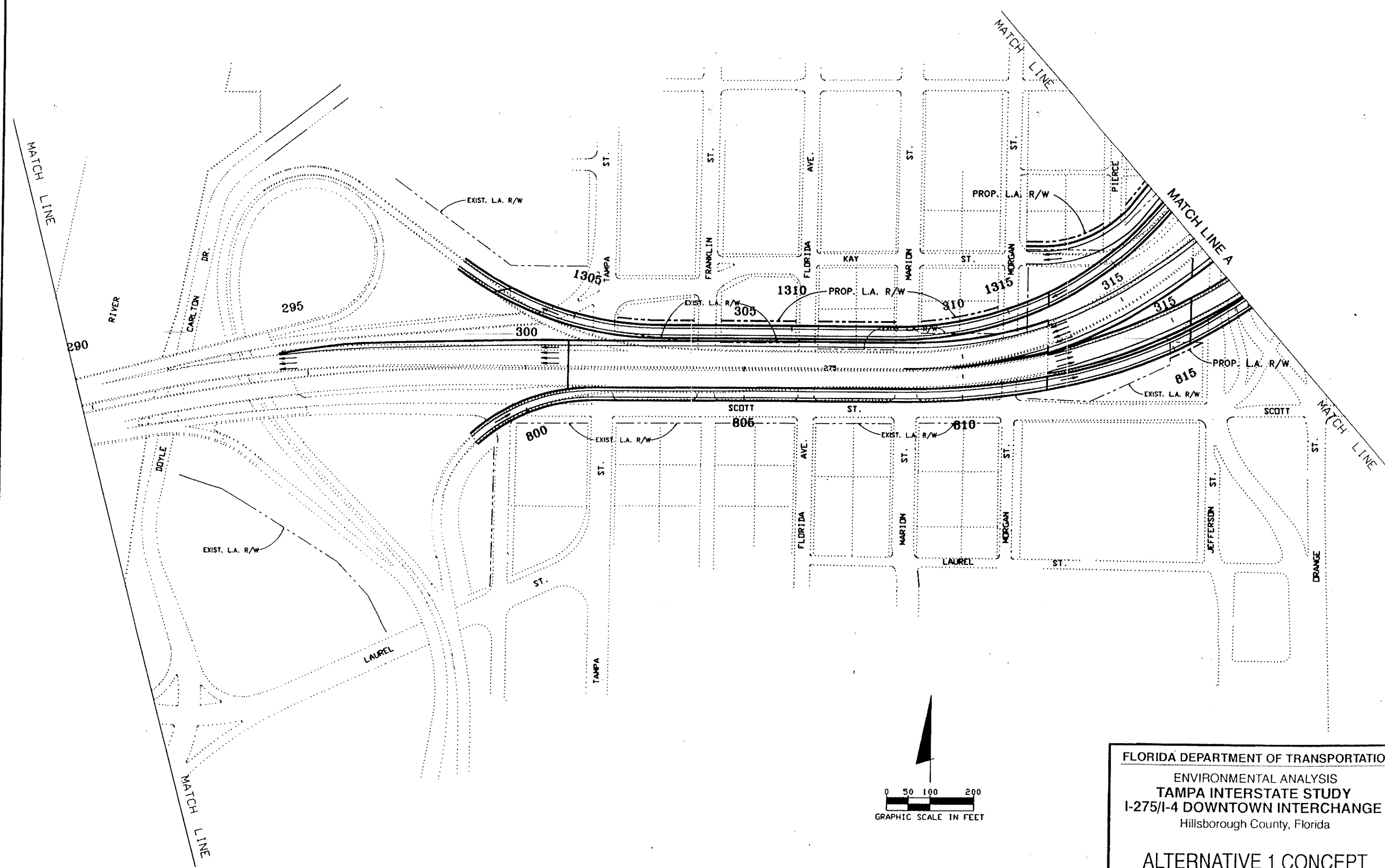
An alternative was developed to provide southbound access from the local freeway lanes to Orange/Jefferson Streets, Ashley Street, and Kay Street. This alternative was dropped from consideration due to the insufficient weaving distance between the southbound I-275/I-4 ramp gore and the Orange/Jefferson Streets ramp gore. In addition, the location of the Kay Street ramp gore (located south of the Orange/Jefferson Streets exit) would require the closure of Morgan Street in order for the Kay Street ramp to be down to grade at Marion Street.

3.5 REASONABLE ALTERNATIVES

Based on review and analysis of numerous solutions in the identified problem areas within the study limits, three alternative concepts were developed. Two of the concepts (Alternatives 1 and 2) were developed utilizing and improving the existing interstate freeway lanes and ramps as much as possible and minimizing right-of-way acquisition. Alternative 3 was developed to demonstrate what improvements would be necessary to bring the facility up to current roadway standards. The three concept alternatives are described in the following paragraphs and are graphically shown on Exhibits 3.1, 3.2, and 3.3.

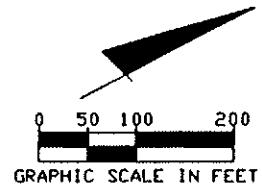
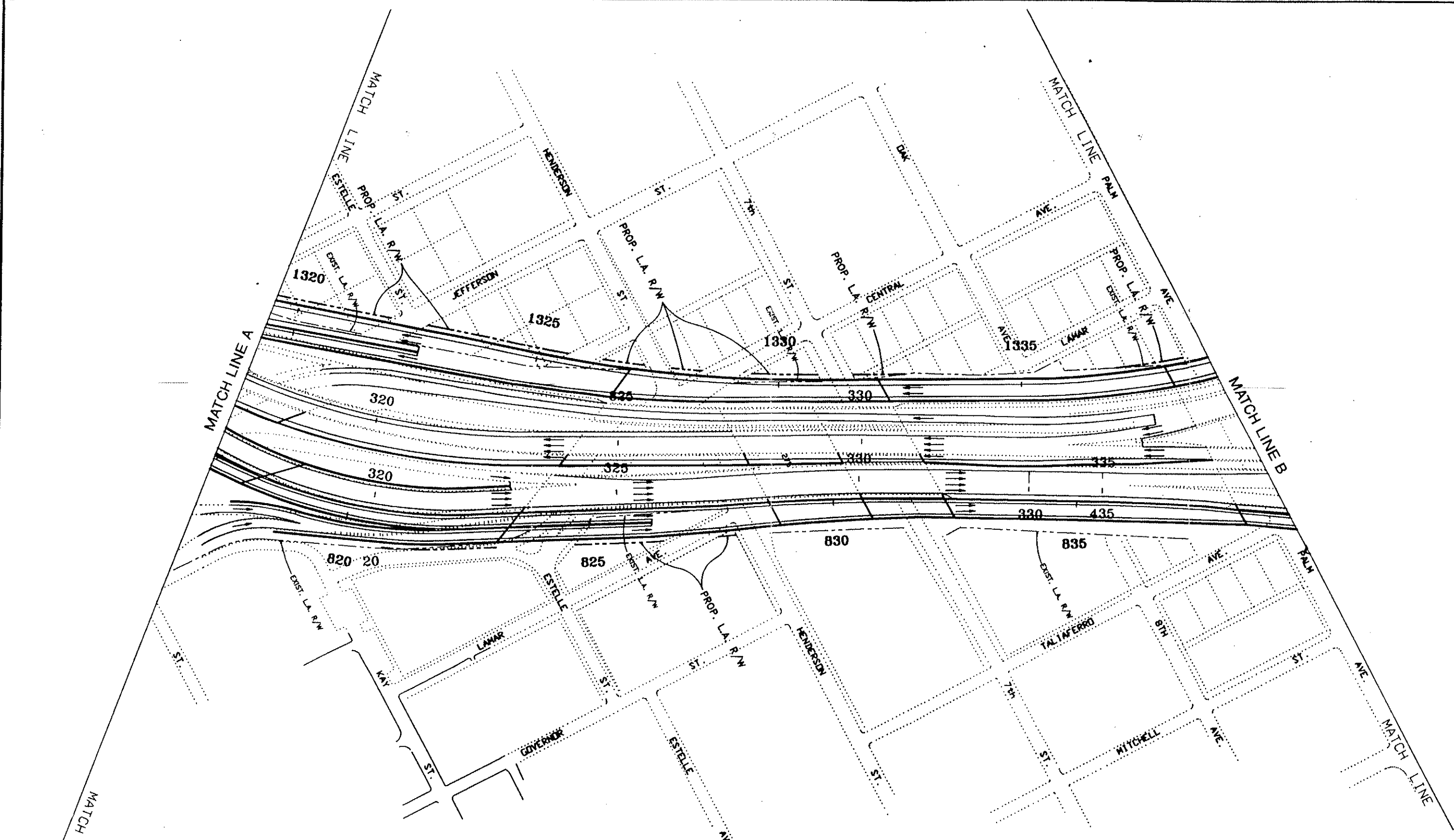
3.5.1 Alternative 1

Beginning on the west side of the project traveling northbound, the Ashley Street on-ramp enters at the same location as the existing ramp, but is situated on a separate alignment and structure which borders the outside of I-275 northbound and enters the I-4 through lanes beyond the I-275/I-4 fork on the east side of Nebraska Avenue. This ramp precludes access to I-275 northbound, separating ramp traffic from the mainline and forcing users onto I-4. A new one-lane ramp is constructed to



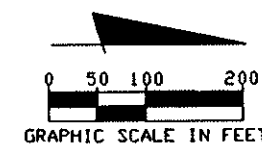
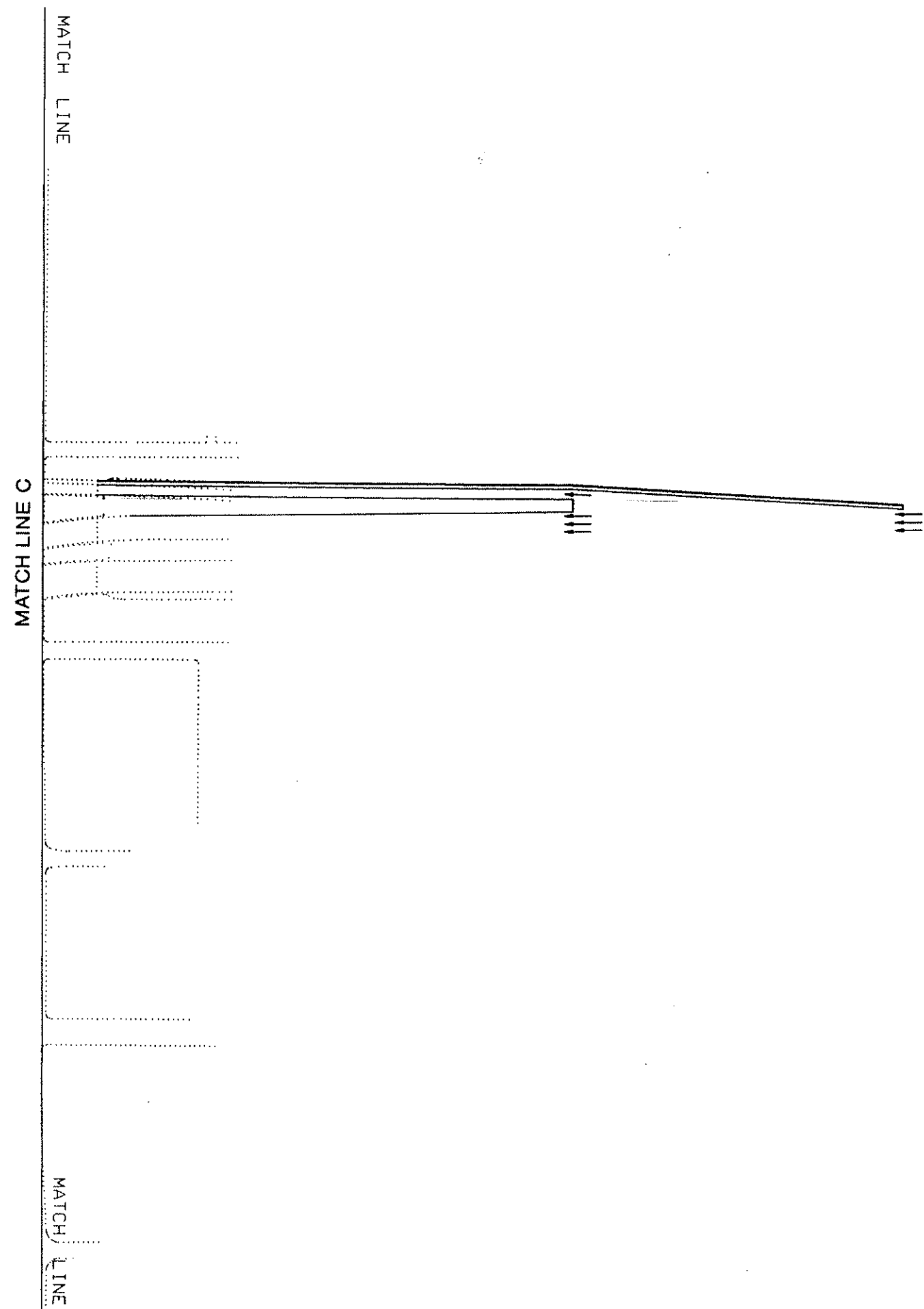
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I-275/I-4 DOWNTOWN INTERCHANGE
Hillsborough County, Florida

ALTERNATIVE 1 CONCEPT



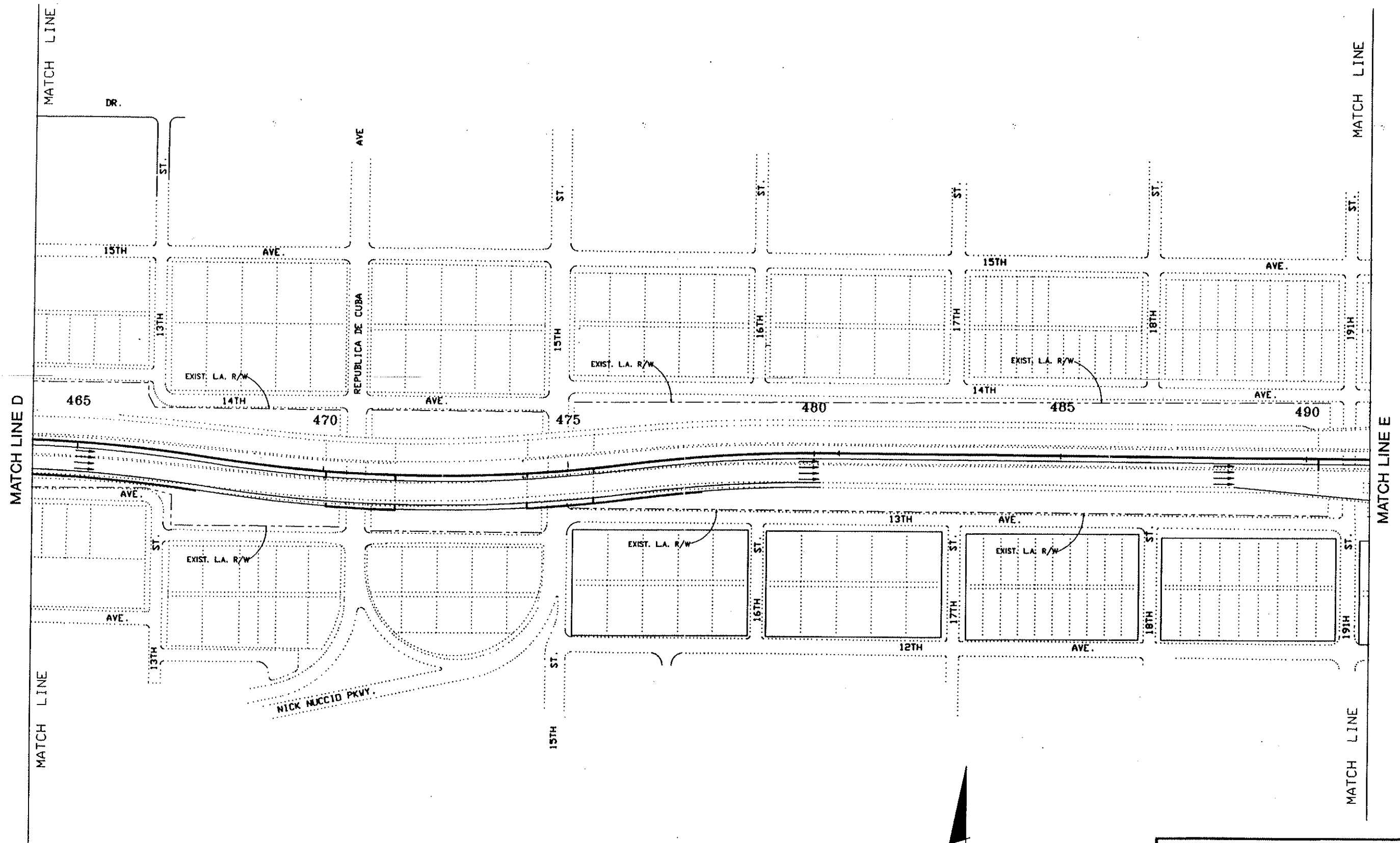
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ALTERNATIVE 1 CONCEPT



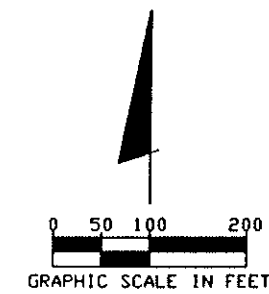
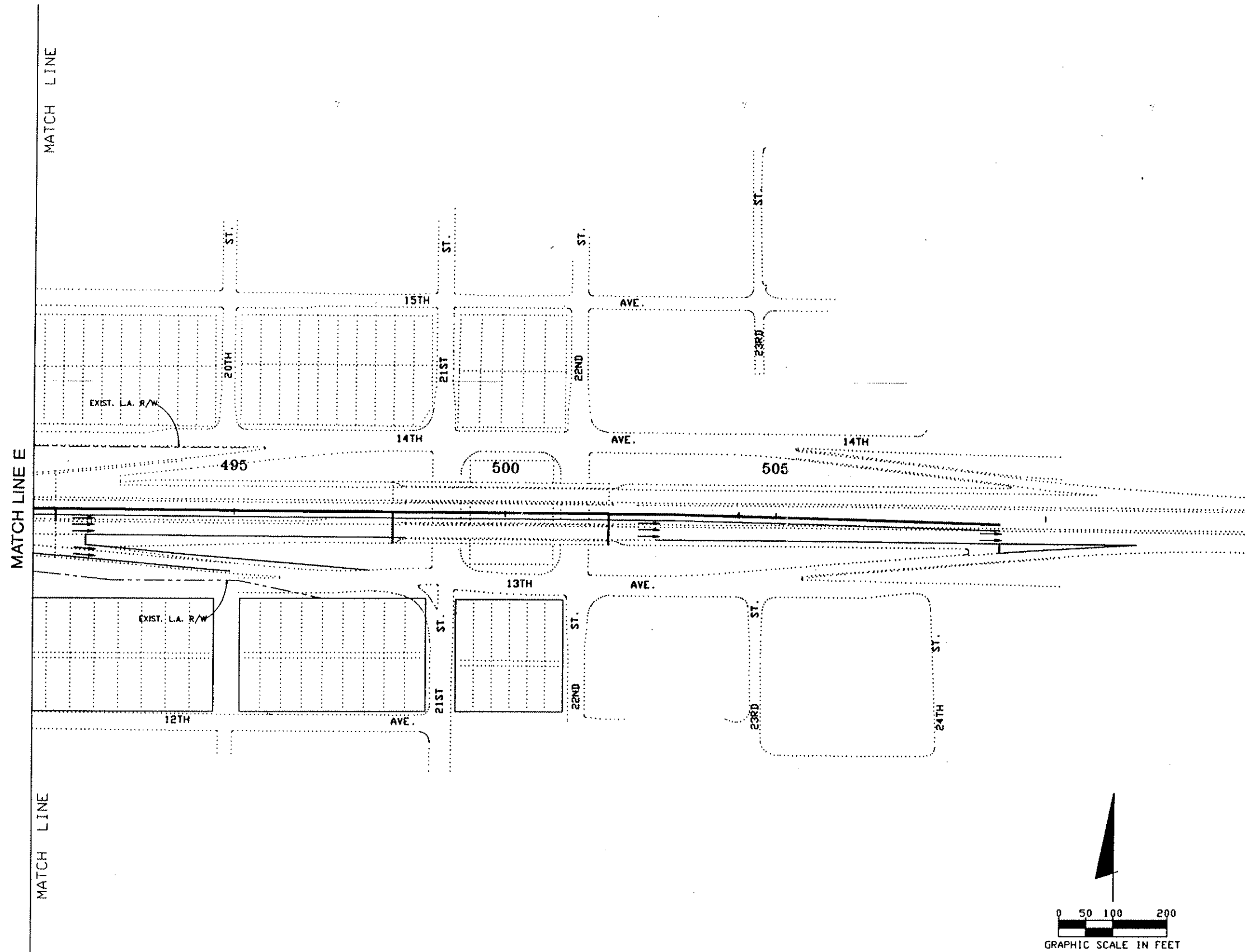
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ALTERNATIVE 1 CONCEPT



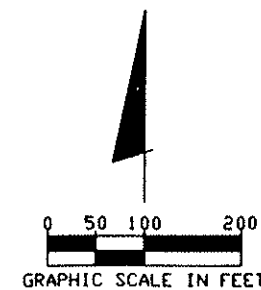
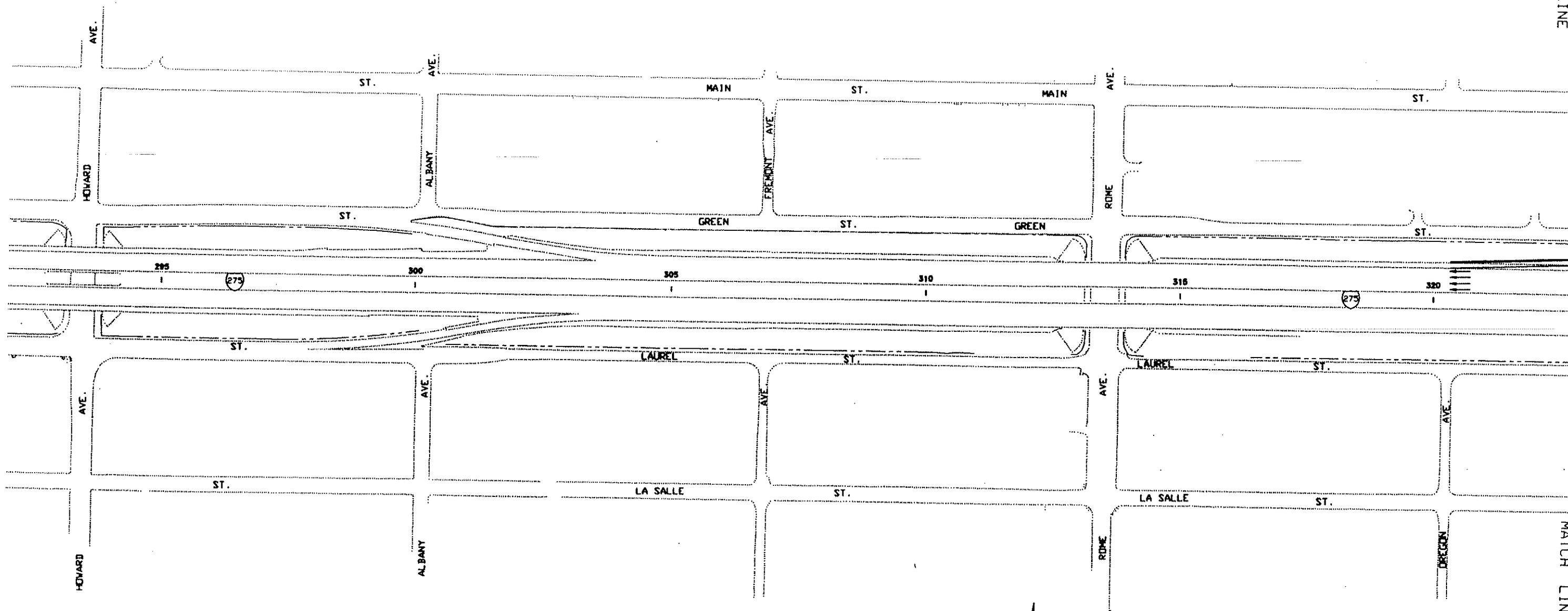
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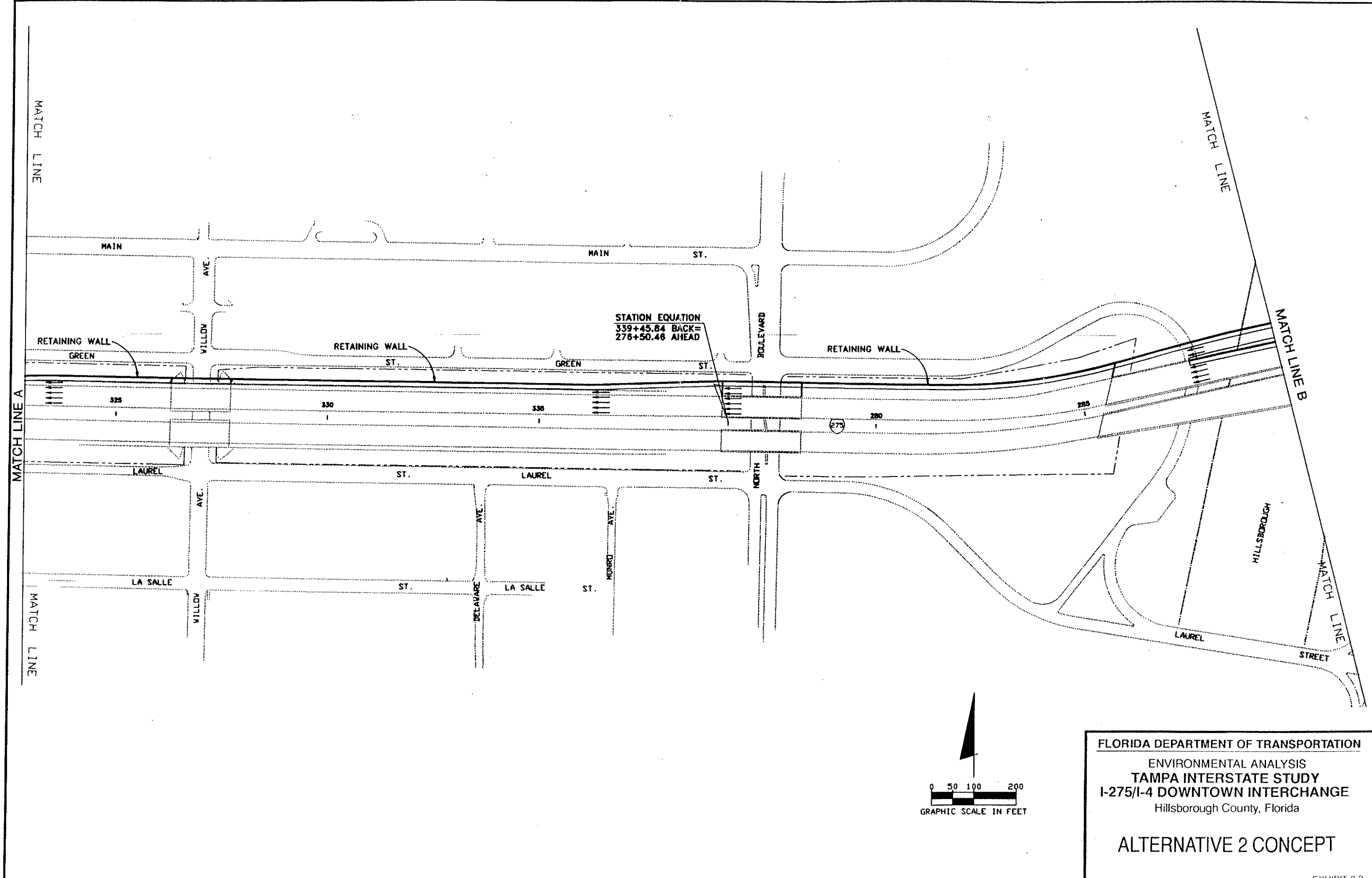
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ALTERNATIVE 1 CONCEPT



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ALTERNATIVE 2 CONCEPT



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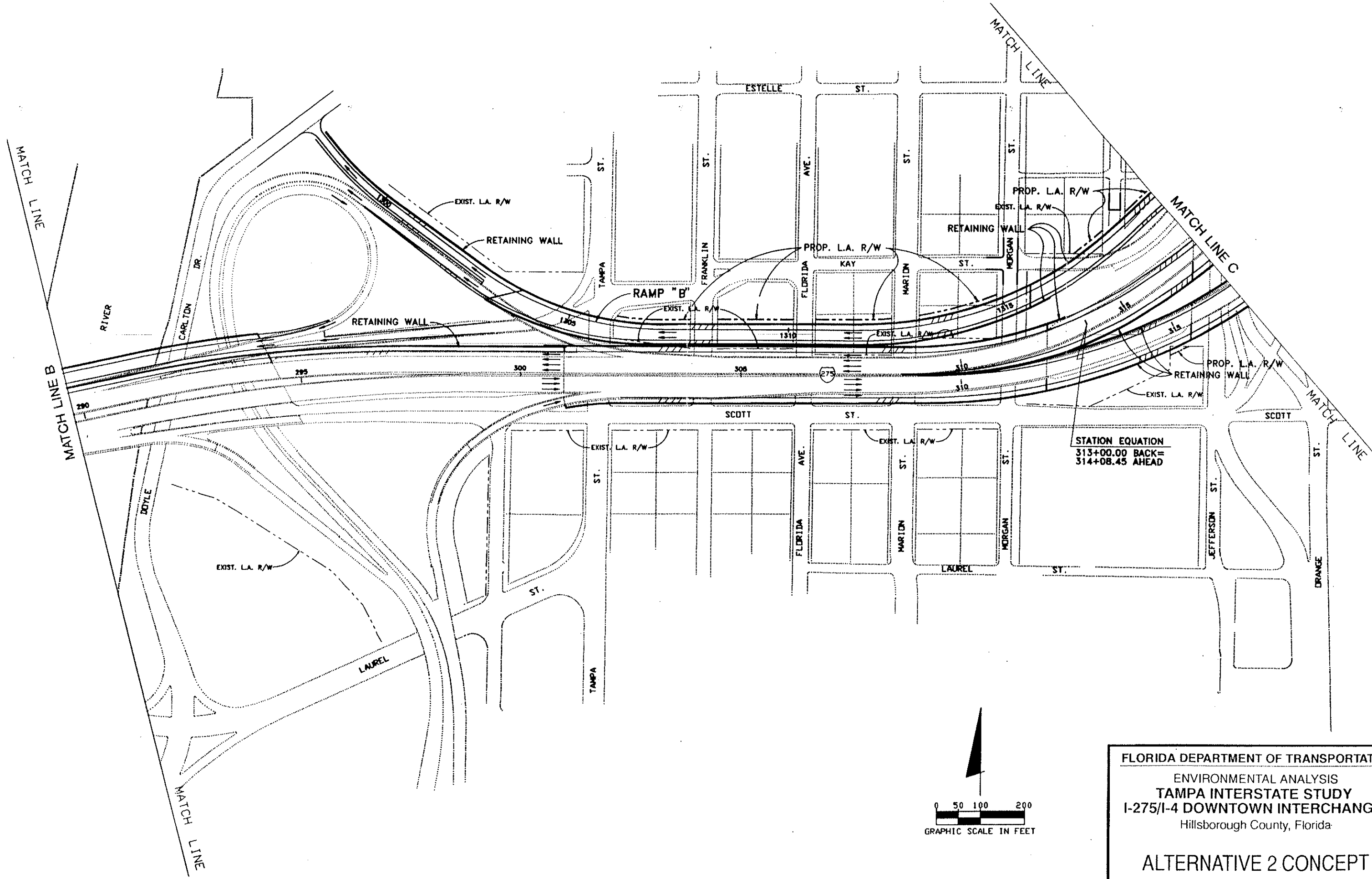
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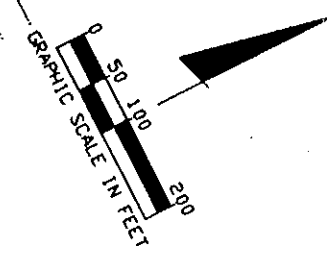
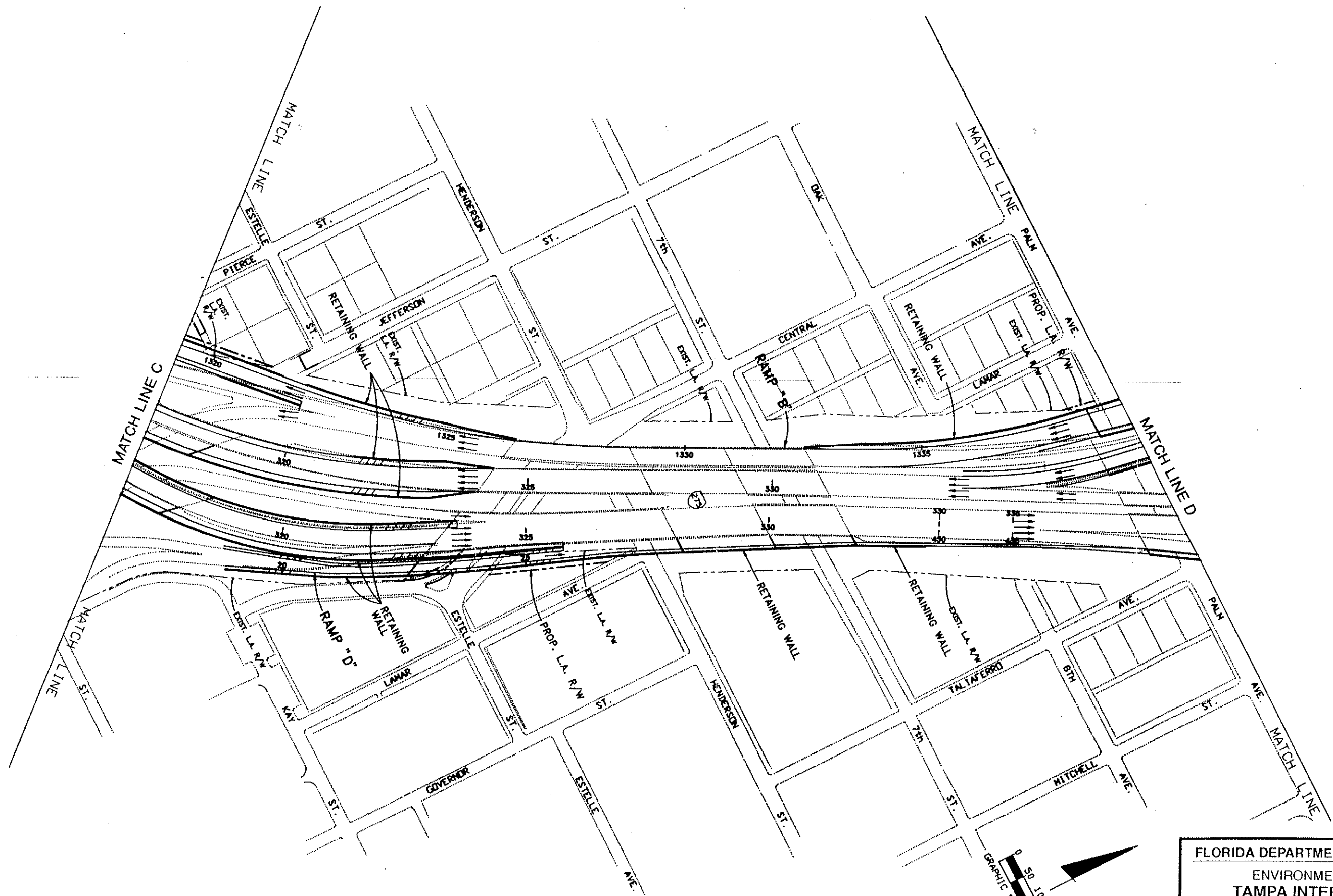
ALTERNATIVE 2 CONCEPT

EXHIBIT 3.2



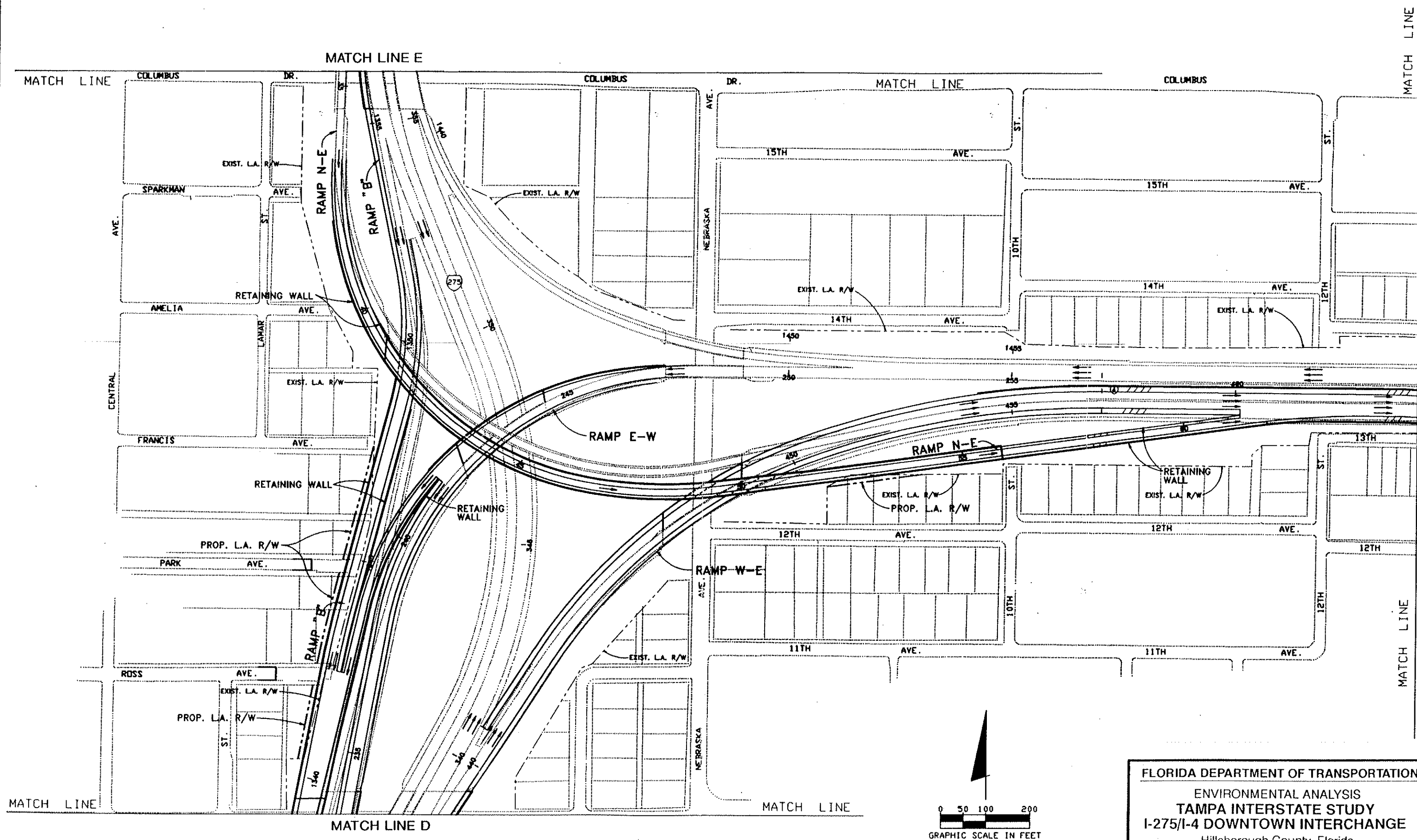
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ALTERNATIVE 2 CONCEPT



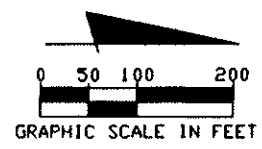
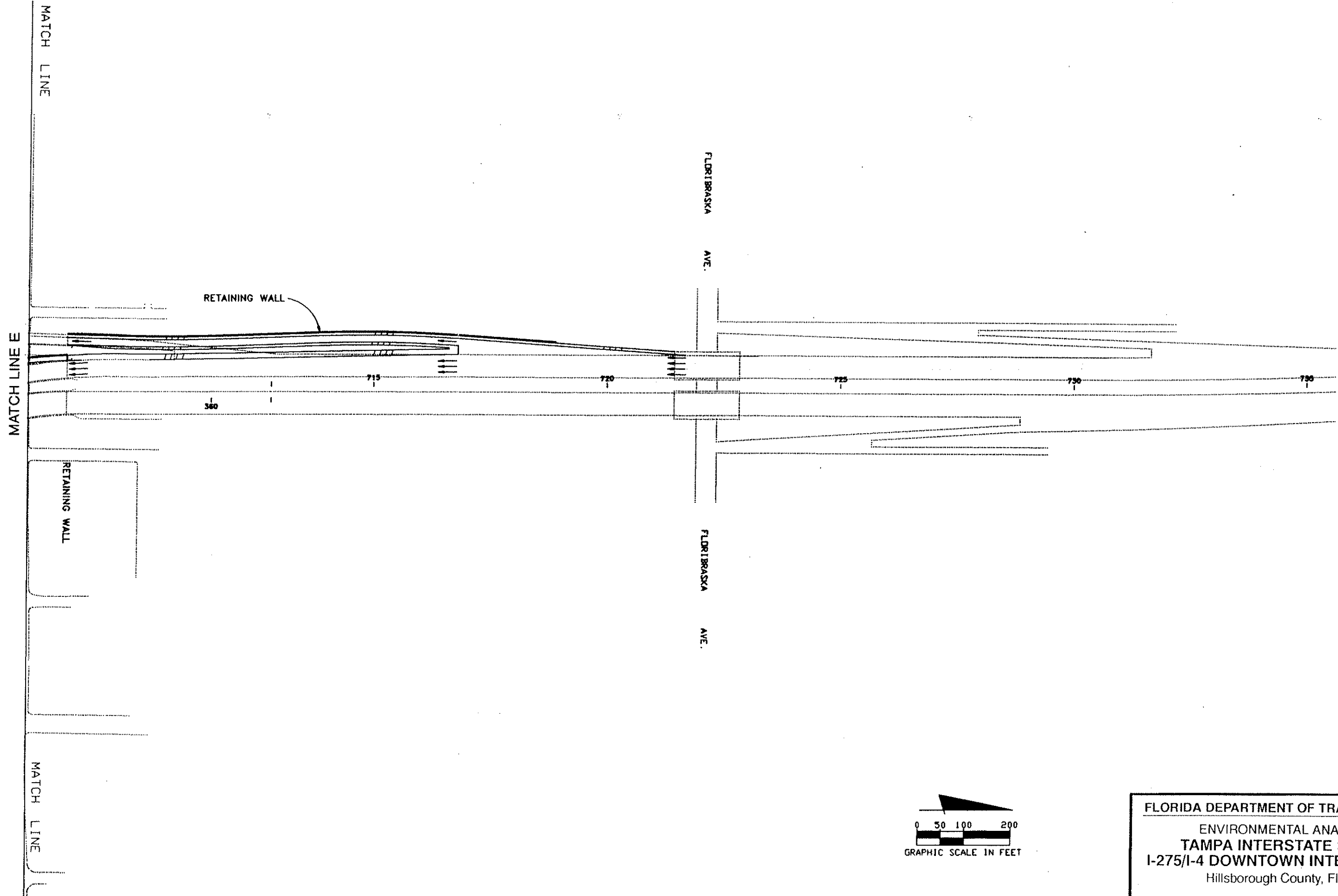
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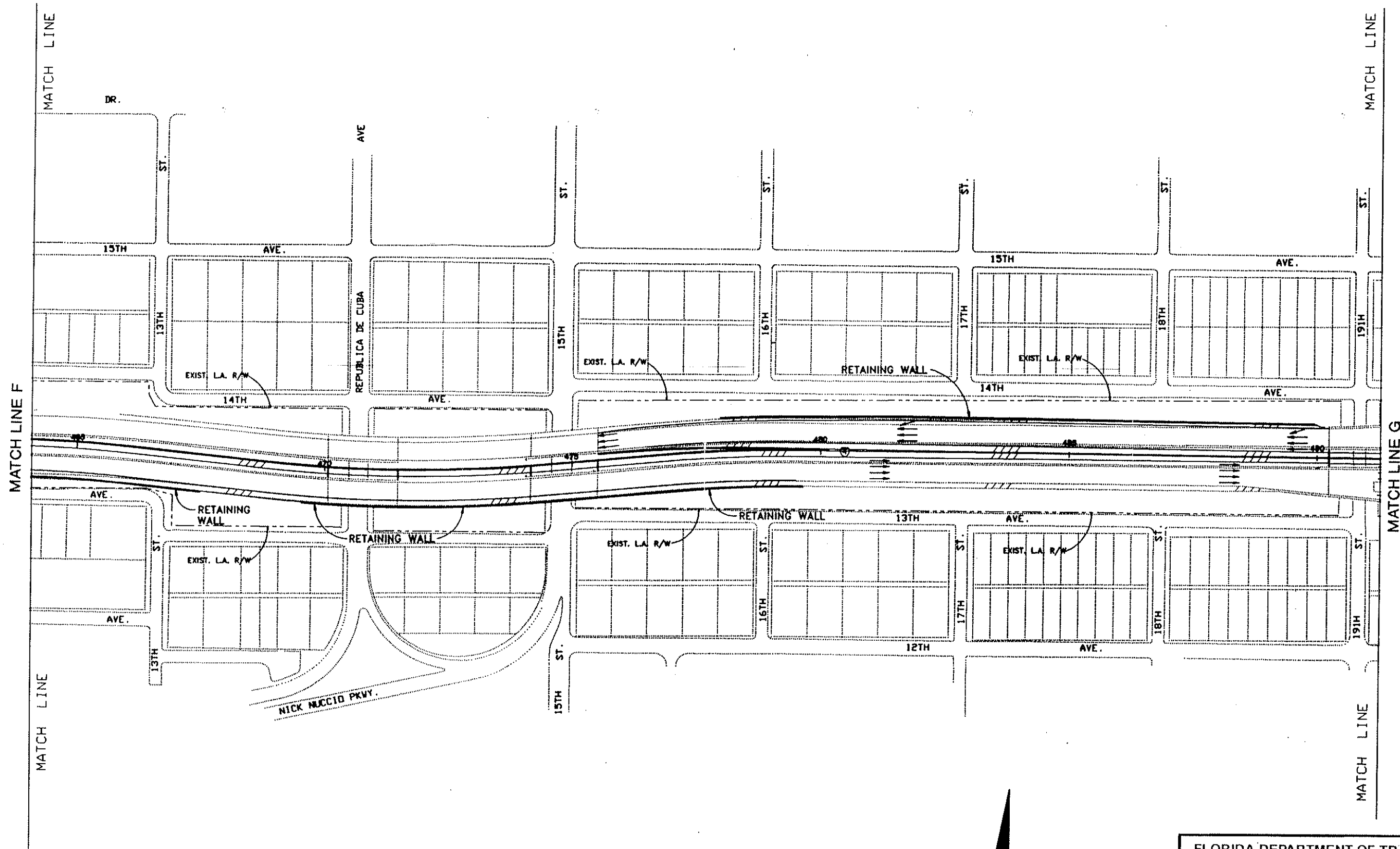
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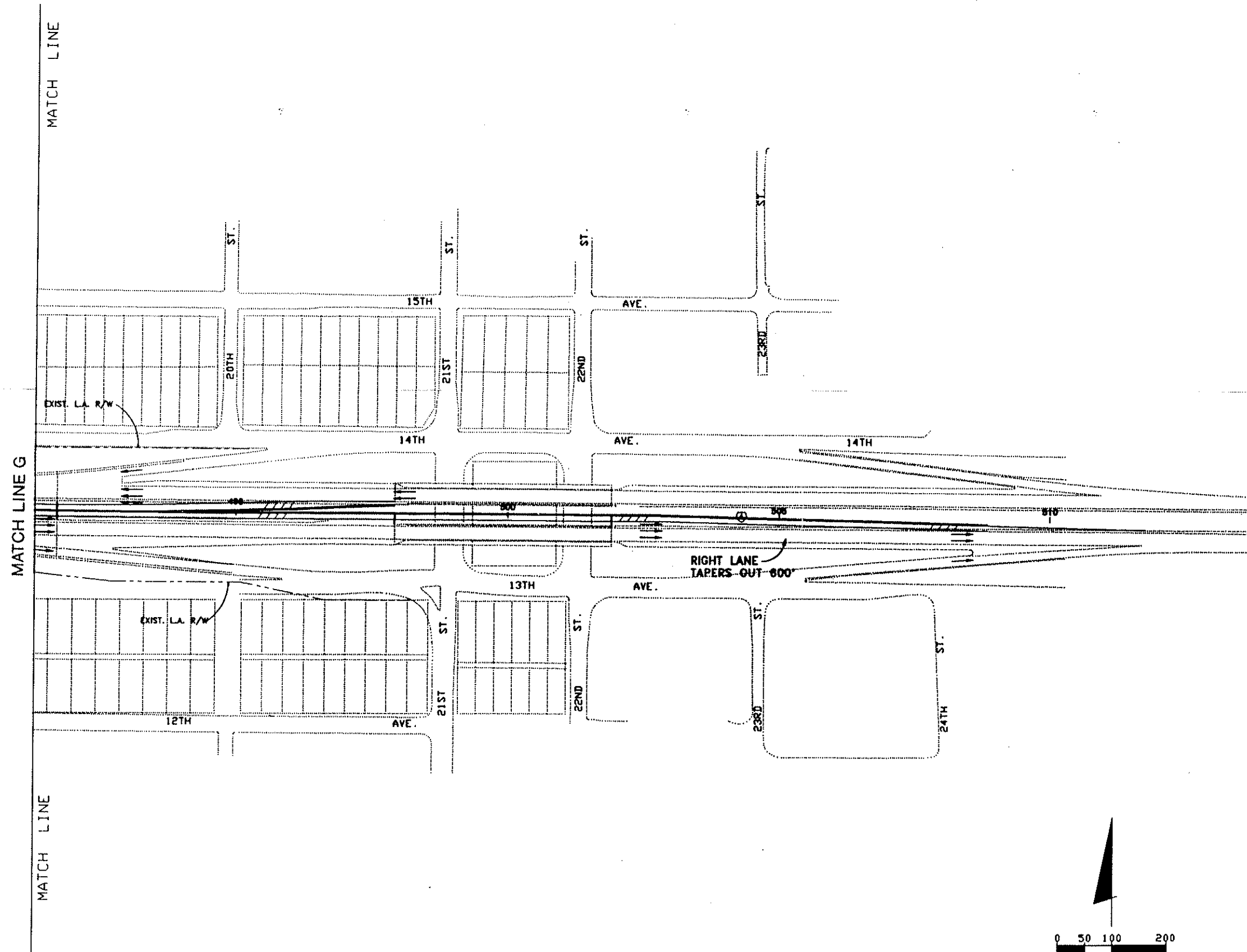
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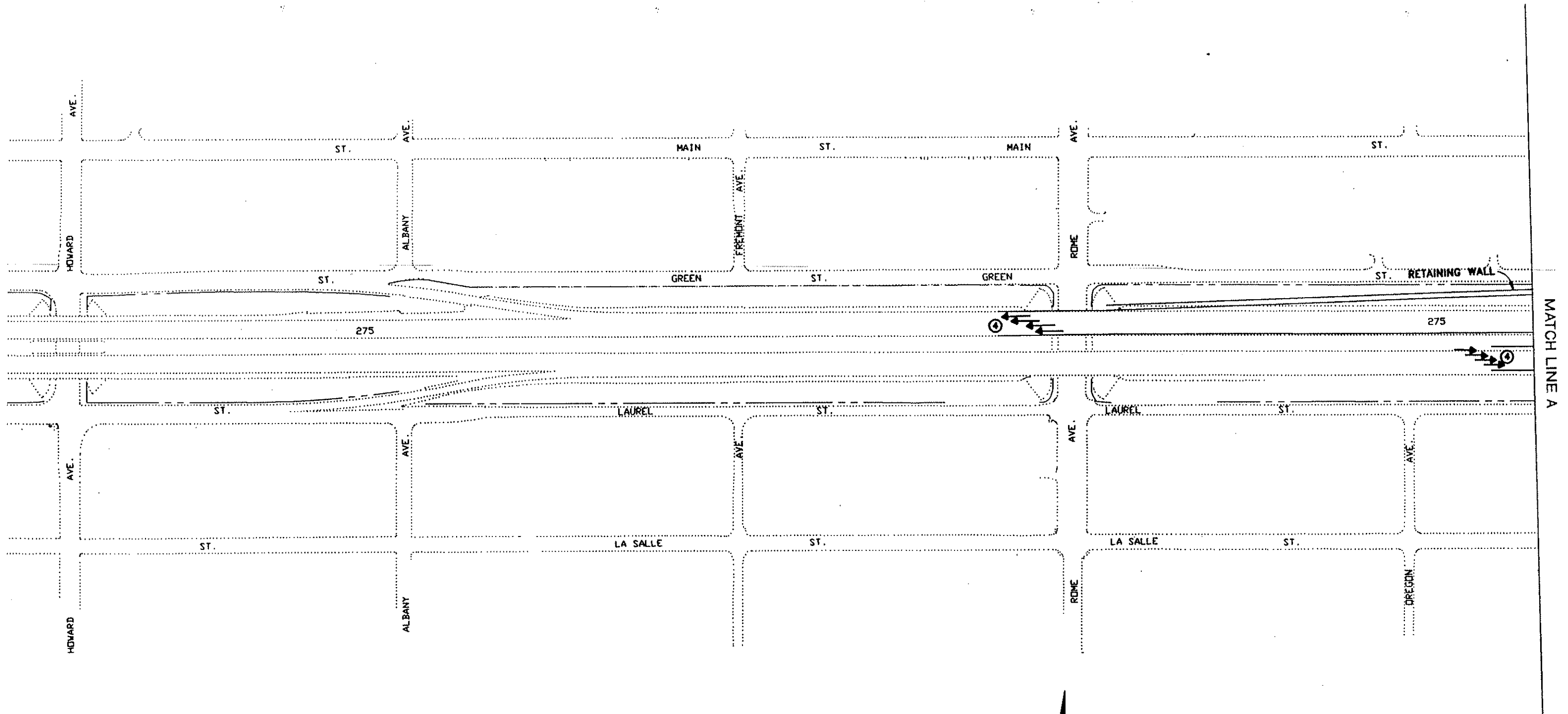
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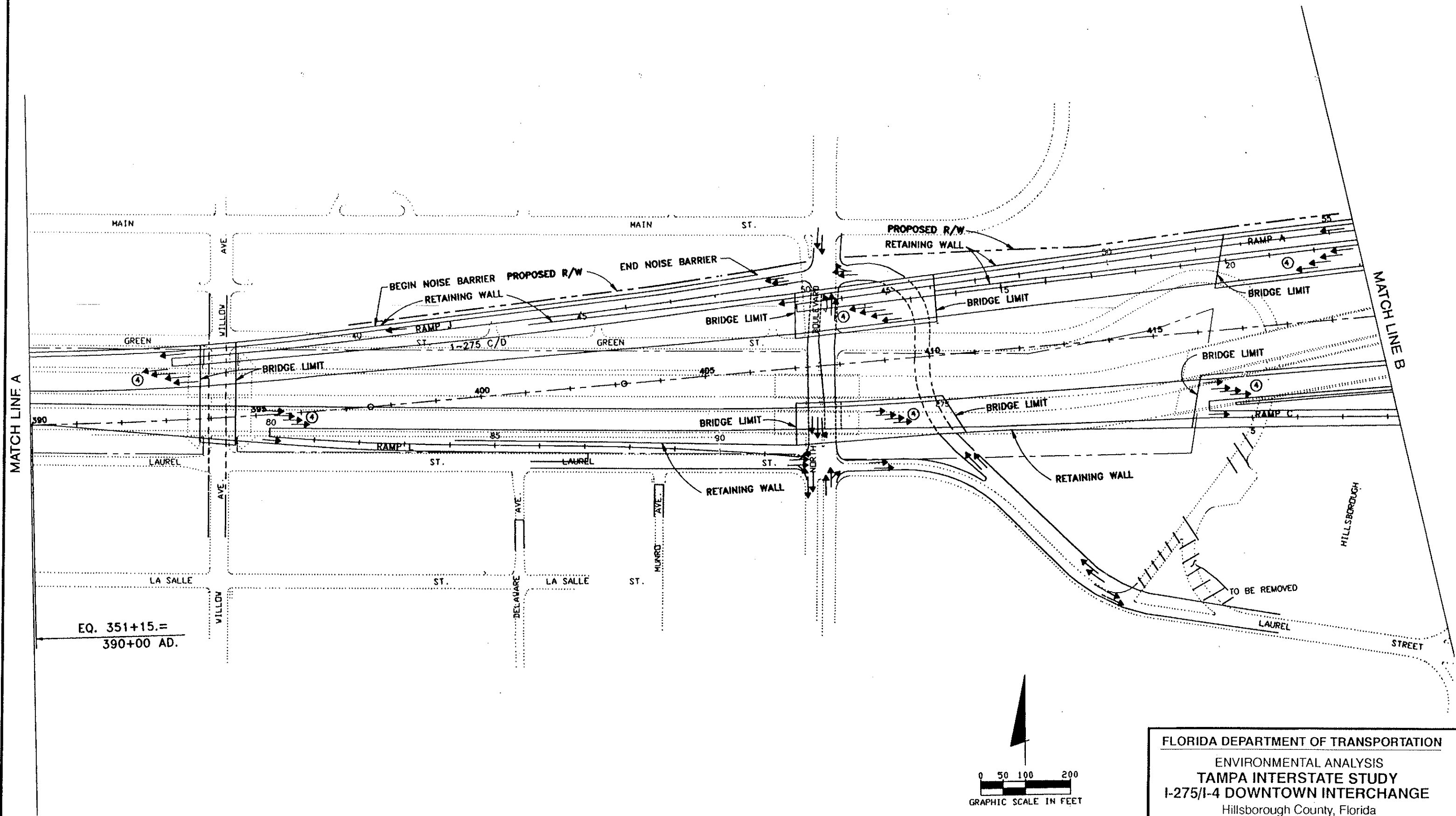
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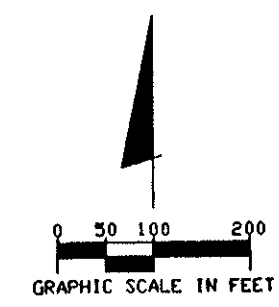
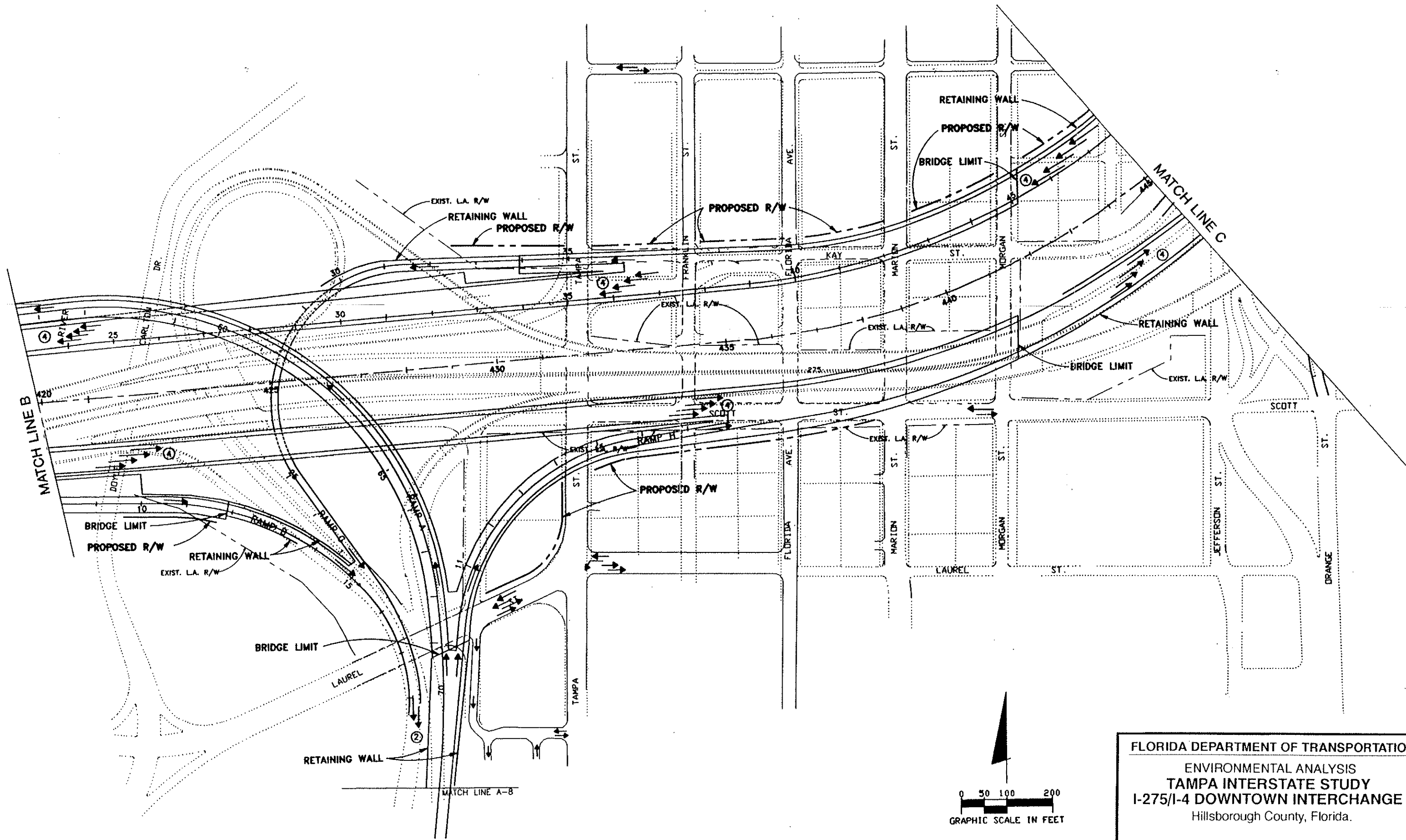
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ALTERNATIVE 3 CONCEPT



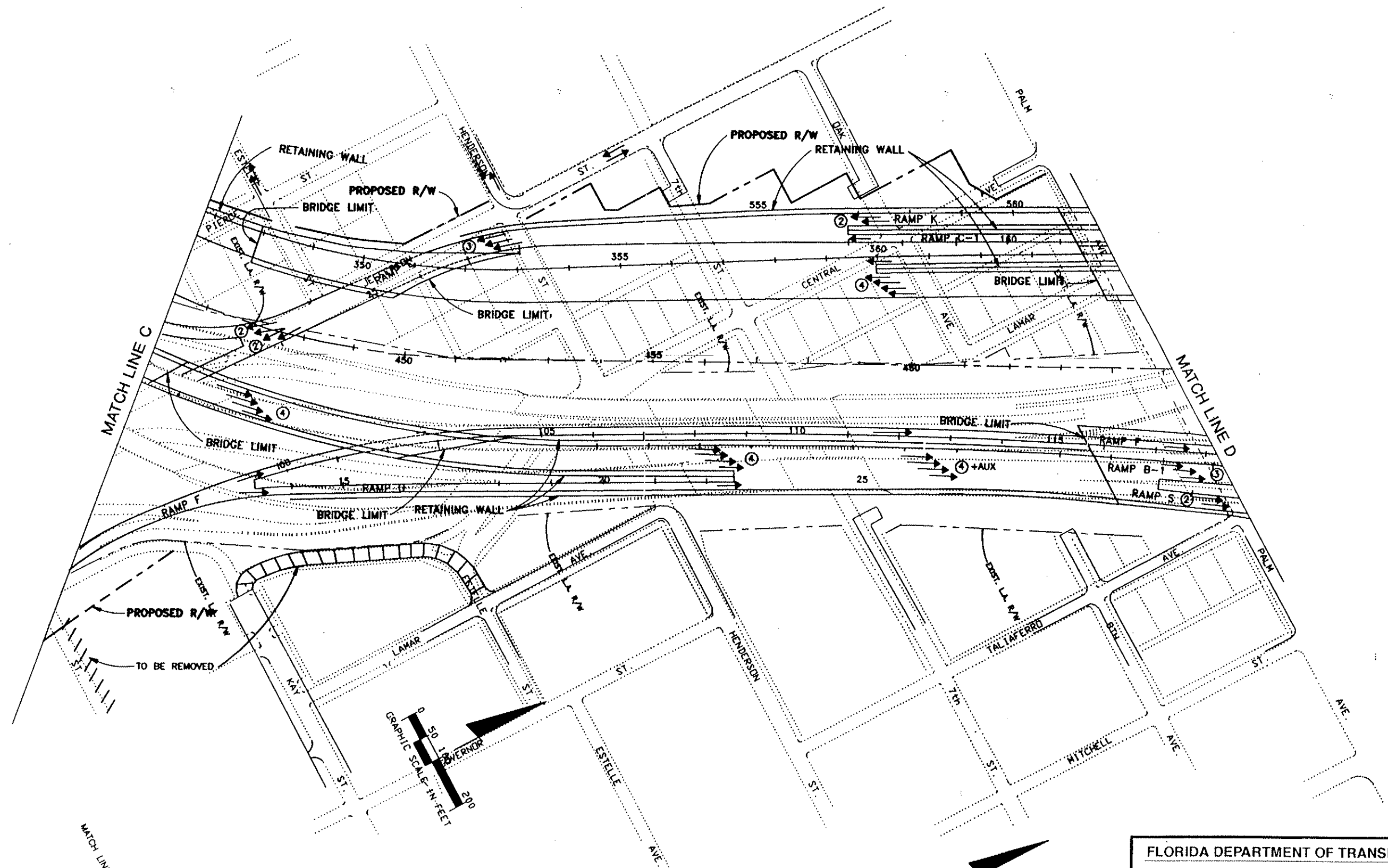
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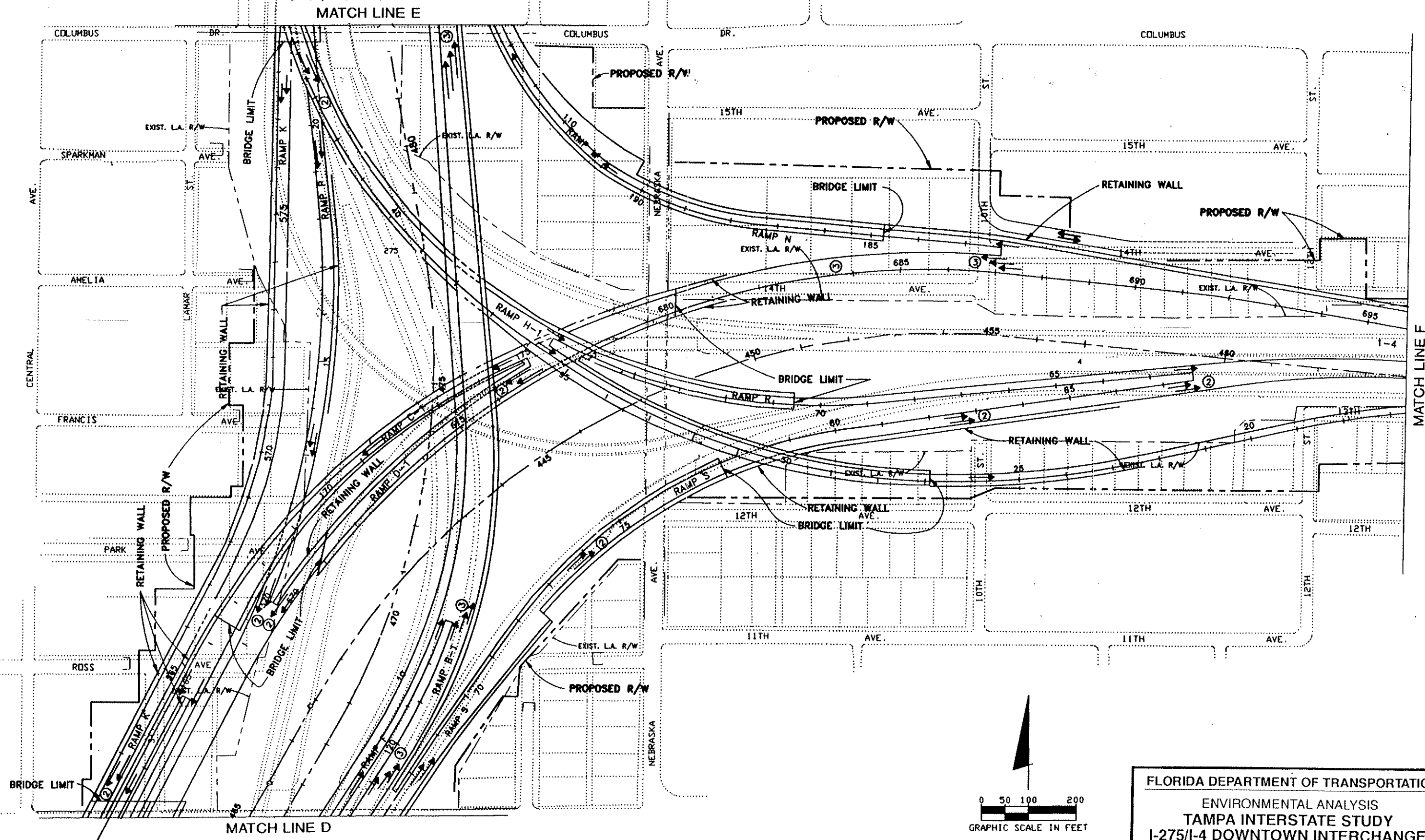
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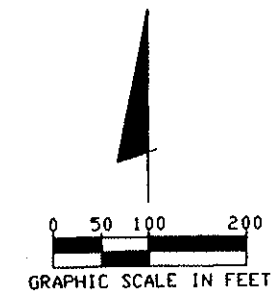
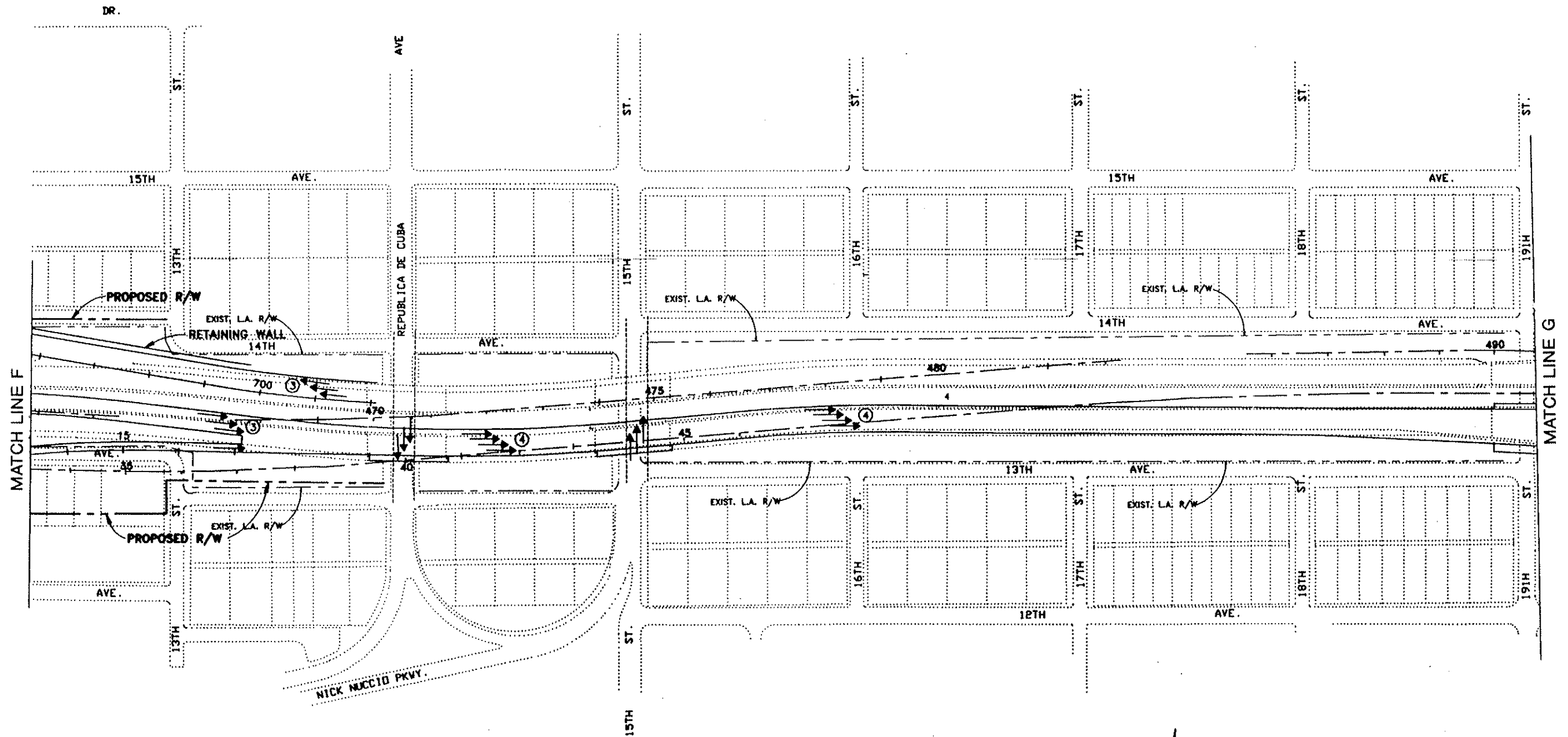
ALTERNATIVE 3 CONCEPT



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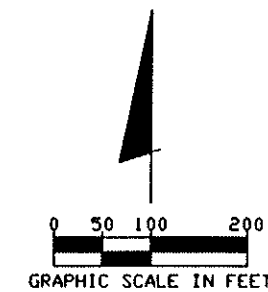
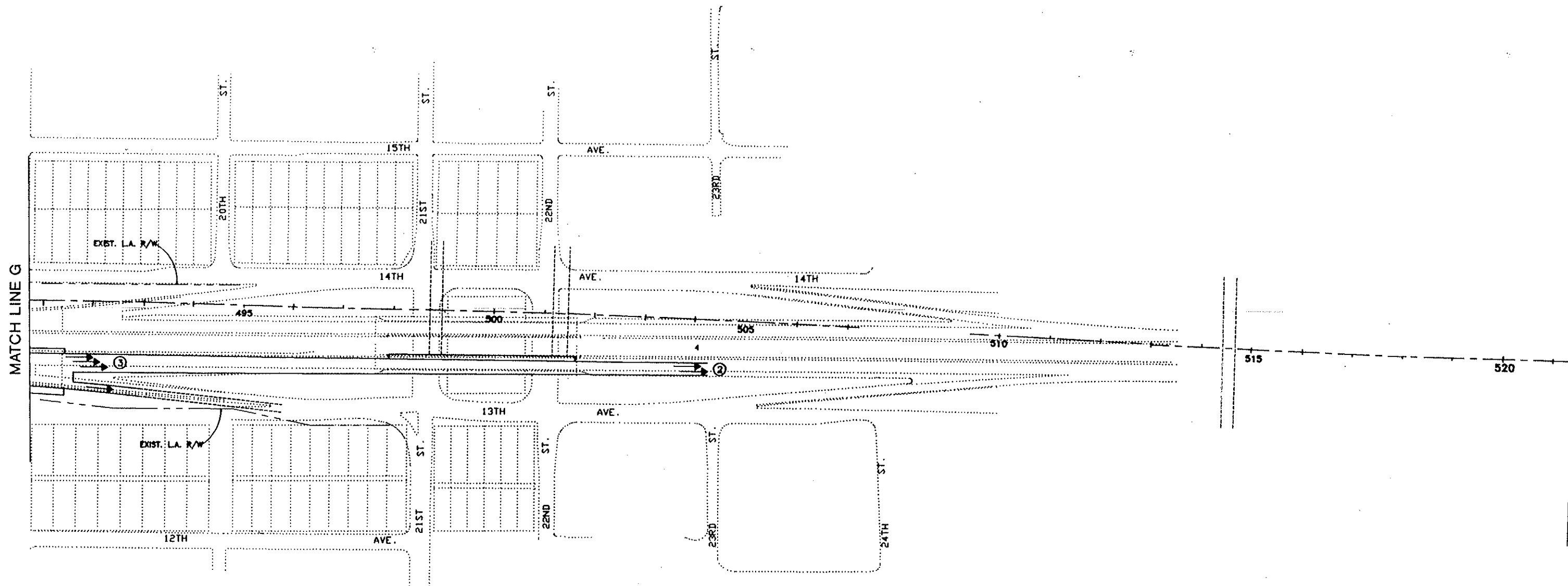
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ALTERNATIVE 3 CONCEPT

replace the Orange/Jefferson Street ramp to I-4. This ramp merges with the Ashley Street ramp prior to the I-4/I-275 fork.

From the north on the four-lane I-275 southbound section, the exit to I-4 is located approximately 182.8 m (600 ft.) north of the existing ramp gore in order to improve operations between this decision point and the following exit to the local freeway where both exits drop one lane. East of the I-275 southbound to I-4 flyover ramp gore to the 21st/22nd Streets off-ramp, I-4 carries a total of four lanes (one lane on the inside of I-4 from I-275 southbound, two lanes from I-275 northbound and one lane from the Ashley Street/Orange Street/Jefferson Street ramp) eastbound to a two-lane off-ramp. Three lanes continue eastbound over the 21st/22nd Street bridge and the outside lane merges into the two inside lanes at the 22nd Street on-ramp gore.

On the east side of the project, I-4 westbound carries the existing three-lane section to the vicinity of 11th Street where a new two-lane exit is provided. Beyond this exit area, another gore area splits the two lanes (on a new structure over Nebraska Avenue) for one additional lane to I-275 northbound (existing) and one lane for a new southbound flyover ramp connecting to the local freeway lanes in the vicinity of Ross Avenue. Two through lanes on I-4 continue to I-275 southbound.

From the north end of the project, just south of the I-4 exit, I-275 southbound provides three lanes (existing) with one lane exiting to the southbound local freeway and two lanes continuing through and joining two through lanes from I-4. Four through lanes continue southbound on I-275 to just before the Hillsborough River Bridge where the outside lane merges into a three-lane section. In addition, prior to the I-4/I-275 southbound merge, the two-lane section from I-4 provides a one-lane off-ramp to Orange/Jefferson Streets.

The southbound local freeway provides two lanes on a new alignment and structures from the vicinity of Ross Avenue southward to a two-lane exit at Kay Street. One lane continues southbound on a new structure to the Ashley Street off-ramp. Alternative 1 precludes access from I-275 southbound to Orange/Jefferson Streets. Full shoulders are provided in sections where vertical clearances (under the structure) and horizontal constraints are not major factors in the design.

3.5.2 Alternative 2

Beginning on the west side of the project traveling northbound, the Ashley Street ramp adds one lane to I-275. A total of four through lanes are carried northbound to where the Orange/Jefferson Street ramp adds one lane on the inside and the new Orange/Jefferson Street ramp adds one lane on the outside. This six-lane section splits at the I-4/I-275 fork with three lanes continuing northbound on I-275 (existing) and three lanes heading eastbound on I-4.

From the north on I-275, the I-275 southbound exit is located approximately 183 m (600 ft.) north of the existing ramp gore in order to improve operations as indicated with Alternative 1. The I-275 southbound exit to I-4 ramp is on a new one-lane flyover alignment outside of the existing ramp. This flyover adds one lane on the outside of the three lanes from I-275 southbound which becomes a four-lane section on I-4 eastbound to the 21st/22nd Street off-ramp. This single lane exit drops one lane and carries three lanes eastbound over the 21st/22nd Street bridge before the outside lane merges into two lanes at the 22nd Street on-ramp.

On the east side of the project, just west of the 21st Street bridge, I-4 adds one through lane to match the three-lane section in the vicinity of the 15th Street bridge. The existing three-lane section continues westbound and retains the same exit to I-275 northbound and southbound with one add lane to total four lanes on I-275 northbound and two through lanes to I-275 southbound. Prior to the two lanes from I-4 joining the I-275 southbound lanes, a new one-lane off-ramp is provided to the new southbound local freeway.

From the north, I-275 southbound carries four lanes southbound to the I-4 exit where one lane is dropped. Three lanes continue to the local freeway exit where a two-lane ramp is provided with two through lanes continuing to join the two southbound through lanes from I-4. A four-lane section then continues southbound over the Hillsborough River Bridge and matching the four-lane section to the west. In order to provide four through lanes over the river, the Ashley Street on-ramp (movements from the north and south) is reconstructed on a separate alignment north of the existing

I-275 bridge and carries a two-lane on-ramp tapering into the four I-275 southbound lanes approximately 198.1 m (650 ft.) west of Willow Avenue.

The southbound local freeway provides three lanes from the vicinity of Ross Avenue southward to a two-lane exit for Orange/Jefferson Streets. Two lanes continue southbound on structure to the Ashley Street off-ramp (one lane) and a new off-ramp at Doyle Carlton Drive (one lane).

Alternative 2 provides access to both downtown exits from I-4 and I-275 southbound. The Doyle Carlton Drive exit replaces existing access provided on the north side of I-275 by the Kay Street ramp.

3.5.3 Alternative 3

Alternative 3 follows the “ultimate” footprint for the TIS Preferred Alternative for the I-4/I-275 downtown interchange. Generally, this concept utilizes the local roadway lanes located on the outside of the ultimate concept as mainline freeway lanes. The “ultimate” freeway and HOV lanes are not constructed for this concept, but could be built later. Roadway segments different than the “ultimate” lanes are provided to transition this concept to I-275 to the south and north and I-4 to the east. Also, some minor changes were made to the concept to ensure that generally the same movements provided in Alternatives 1 and 2 were provided or replaced at another nearby location in Alternative 3.

Beginning on the west side of the project traveling northbound just east of the Rome Avenue bridge, the four I-275 northbound lanes provide a one-lane off-ramp to North Boulevard just east of Willow Avenue. This ramp via Laurel Place replaces the movement not provided to Scott Street from the Ashley Street ramp. The four lanes continue northbound with a one-lane off-ramp for Ashley Street just west of the Hillsborough Avenue Bridge. Between Franklin Street and Florida Avenue, the one-lane Ashley Street ramp tapers into the four I-275 northbound lanes and continues northbound to where the Orange/Jefferson Street ramps join the freeway. This section of roadway through downtown is on structure from the Hillsborough River to the Orange/Jefferson Street ramp to I-275.

The ramp from Orange/Jefferson Street to I-4 adds one lane to total five lanes at the I-4/I-275 fork. Two lanes exit to I-4, while three lanes continue northbound on I-275. Beyond the I-4 exit, the on-ramp from Orange/Jefferson Streets to I-275 northbound merges into the three-lane section. Continuing northbound, I-275 adds one lane from the I-4 westbound exit, providing four lanes to the end of the project.

The two lanes from I-275 northbound to I-4 eastbound are joined by the ramp from I-275 southbound to I-4. The two-lane ramp splits with one-lane merging into I-4 on the inside and one lane joining I-4 on the outside creating a four-lane section eastbound. The four lanes continue eastbound, basically on the existing alignment to the 21st/22nd Street single-lane off-ramp that drops one lane. Three lanes continue over the 21st/22nd Street bridge before the outside lane merges into the existing two-lane section at the 22nd Street on-ramp gore.

From the east side of the project, the three existing lanes on I-4 westbound extend off the existing alignment just west of the 14th Street bridge. The new alignment carries three lanes to the I-275 fork with a one-lane exit to I-275 northbound and three lanes continuing to I-275 southbound and the local southbound freeway. The one lane to I-275 northbound joins the three through lanes and continues with four lanes over Floribraska Avenue and ties into the existing I-275 northbound roadway just south of 26th Avenue. The three southbound lanes from I-4 provide a single lane exit for the local southbound freeway and two lanes continue to I-275 southbound.

From the north side of the project, the four existing I-275 southbound lanes begin with a new two-lane off-ramp to I-4 with a gore location near Adalee Street. Three I-275 southbound lanes continue on the existing alignment over Floribraska Avenue and southbound over the Columbus Drive bridge where a two-lane ramp is provided for the local freeway and two through lanes, on a new alignment, join the two through lanes from I-4 in the vicinity of Ross Avenue. From this location, I-275 southbound provides a four-lane section on a new alignment on the north side of the existing interstate to over the Hillsborough River where it ties into the existing four-lane section just east of the Rome Avenue bridge. In the section near Tampa Street, a one lane off-ramp replaces the existing

loop ramp and provides a direct connection under I-275 to Ashley Street. Through the downtown area, the four southbound lanes are on structure from Jefferson Street to North Boulevard.

Ashley Street access to I-275 southbound from the south of I-275 is provided with a flyover ramp that is carried over I-275 and onto the southbound freeway with a one-lane ramp in the vicinity of North Boulevard. Access from the north of I-275 from Ashley Street is replaced by the one-lane on-ramp via Laurel Place from North Boulevard.

The local freeway lanes, located on the outside of the new I-275 southbound alignment, include two lanes from I-275 southbound and one lane from I-4 westbound. The three-lane section begins in the vicinity of Oak Avenue, travels southward under the new I-275 southbound lanes, and provides a two-lane exit to Kay Street with two lanes continuing to Orange/Jefferson Streets.

Alternative 3 provides a facility that meets current 1996 roadway standards for horizontal and vertical geometry. In addition to the transitions from the “ultimate” freeway to the existing facility, which are different than the “ultimate” lanes, three temporary structures and temporary roadway would be required for maintenance of traffic. Since many of the features associated with this alternative are considered temporary, not all of the Alternative 3 would be salvageable.

3.6 CONSTRUCTABILITY OF REASONABLE ALTERNATIVES

Alternatives 1 and 2 propose similar improvements involving relatively minor modifications to the existing interstate, while Alternative 3 involves the reconstruction of the downtown interchange, incorporating portions of the proposed “ultimate” design. Alternatives 1 and 2 would minimize right-of-way acquisitions, while Alternative 3 would be confined within the proposed ultimate right-of-way.

All existing traffic lanes on I-275 and I-4 would be maintained except for short periods of time during off peak hours. In addition, traffic would remain in its existing location. Tables 3.3, 3.4, and 3.5 provide the proposed maintenance of traffic plans for Alternatives 1, 2, and 3, respectively.

TABLE 3.3

PROPOSED MAINTENANCE OF TRAFFIC - ALTERNATIVE 1
Tampa Interstate Study
I-275/I-4 Downtown Interchange Operational Improvements
Environmental Analysis

ALTERNATIVE 1
Ashley Street Northbound On-Ramp
Reroute this traffic to Orange Street on-ramp.
Construct the Ashley street on-ramp to I-4 eastbound including structure over Tampa Street, Franklin Street, Florida Avenue, Marion Street, Morgan Street, and Jefferson Street. Construct the associated retaining walls, embankment, and pavement to north of Jefferson Street but south of existing on-ramp from Orange Street.
Close Orange Street on-ramp to I-4 and reroute traffic to Ashley Street on-ramp.
Construct new Orange Street on-ramp and continue construction of Ashley Street ramp to I-4 from north of Jefferson Street structure to I-4.
Construct the new and widened bridges over Central Avenue, Henderson Street, 7th Avenue, Palm Avenue, and Nebraska Avenue.
Construct associated retaining walls, embankment, and pavement from north of Orange/Jefferson Street to the I-4 connection.
Open the newly constructed Orange Street on-ramp to I-4.
Northbound I-275 Mainline
Construct bridge widening over Orange/Jefferson Street and associated retaining walls, embankment, and pavement between Morgan Street and Central Avenue.
I-275 Southbound Local Access
Construct a new connection from I-275 southbound and I-4 westbound to serve local access.
Construct new bridge for I-4 westbound to I-275 northbound over Nebraska Avenue and the retaining walls, embankment, and pavement for this movement.
Shift traffic for I-4 westbound to I-275 northbound onto this new ramp and remove the existing bridge.
Construct new bridges over Nebraska Avenue, I-275 (northbound and southbound), Palm Avenue, 7th Avenue, Henderson Street, Morgan Street, Marion Street, Florida Avenue, Franklin Street, and Tampa Street.
Construct associated retaining walls, embankment, and pavement between I-4 and south of Tampa Street.
I-275 Southbound Mainline
Construct bridge widening over 7th Avenue, Henderson Street, and Jefferson Street and Morgan Street, Marion Street, Florida Avenue, Franklin Street, and Tampa Street.
Construct associated retaining walls, embankment, and pavement widening between the Ashley Street ramps and Palm Avenue.
Eastbound I-4
Construct the widened bridges (left side) over the 14th Street, 15th Street, 19th Street, and 21st/22nd Street.
Construct the associated retaining walls, embankment, and pavement widening between Nebraska Avenue and east of 22nd Street (left side).
Construct the widened bridges (right side) over 14th Street, 15th Street, and 19th Street.
Construct the associated retaining walls, embankment, and pavement widening between Nebraska Avenue and 21st Street.

TABLE 3.4

PROPOSED MAINTENANCE OF TRAFFIC - ALTERNATIVE 2
Tampa Interstate Study
I-275/I-4 Downtown Interchange Operational Improvements
Environmental Analysis

ALTERNATIVE 2
I-275 Southbound to I-4 Eastbound
Construct new structure for proposed I-275 southbound to I-4 eastbound along with approaches on each end.
While this structure is being constructed, special care should be taken to erect beams during off-peak hours and by possible pacing of vehicles. During construction of the remaining superstructure, safety nets should be used over existing travel lanes.
Southbound I-275 Collector/Distributor (Doyle Carlton and Ashley Street Ramps)
Construct northern 7m (23-foot) portion of the structure from Tampa Street to the west. This will allow existing I-275 southbound off-ramp to Ashley Street to remain open.
Construct temporary roadway and embankment to the south (west of Tampa Street), shift traffic, and complete proposed roadway in this area.
Construct roadway and embankment along with associated retaining walls between Marion Street and Jefferson Street.
I-275 Southbound On-Ramp
Construct temporary realignment of the Ashley Street loop ramp (to the south), construct temporary realignment of the Tampa Street ramp (to the south) and merge these two ramps into one lane (allowing 5.7m (19 feet) face-to-face of barriers), and remove remaining portion of the existing structure over the Hillsborough River.
Construct the northern portion 6.7m ((22 feet) minimum) of new structure over the river for the southbound I-275 on-ramp from Ashley Street and Tampa Street.
After completion of the northern portion, shift traffic back to existing loop and align traffic over newly constructed portion. Remove remaining portion of the existing bridge.
Remove remaining portion of existing structure north of construction joint between southbound I-275 and the southbound I-275 on-ramp.
Construct the remaining portion of the proposed bridge over Hillsborough River.
Construct embankment, roadway widening, and structure over North Boulevard to complete the I-275 southbound improvement.
I-275 Northbound to I-4 Eastbound
Construct bridge widening for I-275 northbound to I-4 eastbound along with retaining walls, embankment, and roadway widening between Palm Avenue and gore area of I-275 southbound to I-4 eastbound. Construct roadway and bridge widening from the gore area to east of 15th Street.
I-275 Southbound to Orange Street and Ashley Street
Construct the realigned I-275 roadway and structure over Columbus Drive to Orange Street and Ashley Street ramps and shift traffic.
Realign I-275 north of this location in order to shift the gore 152.4m (500 feet) north to provide 243.8m (800 feet) between successive off-ramps.
Construct roadway widening to the north for I-4 westbound to I-275 southbound to local access and shift traffic (Nebraska Avenue to gore area).
Construct widened shoulders and complete I-4 westbound to I-275 southbound (gore area to Palm Avenue).
Northbound I-275
Construct widened northbound I-275 structures over Tampa Street, Franklin Street, Florida Avenue, Marion Street, Morgan Street, and Jefferson Street. Construct associated retaining walls, embankment, and roadway widening between Tampa Street and the Orange Street on-ramp.
To I-4 Eastbound
Close existing Orange Street, Scott Street, and eastbound I-4 on-ramp and reroute to the northbound Ashley Street on-ramp and sign I-275 northbound to eastbound I-4.
Construct widened northbound I-275 structures over Central Avenue, Henderson Street, 7th Avenue, and Palm Avenue. Construct associated retaining walls, embankment, and roadway widening between Central Avenue and north of Palm Avenue.
I-275 Southbound
Construct widening of I-275 southbound structures over Jefferson Street, Morgan Street, Marion Street, Florida Avenue, Franklin Street, and Tampa Street. Construct associated retaining walls, embankment, and roadway widening between Central Avenue and Tampa Street.

TABLE 3.5

PROPOSED MAINTENANCE OF TRAFFIC - ALTERNATIVE 3
Tampa Interstate Study
I-275/I-4 Downtown Interchange Operational Improvements
Environmental Analysis

ALTERNATIVE 3	
I-4 Westbound to I-275 Northbound	
Construct structure over Nebraska Avenue and Columbus Drive and structure over Floribrasca Avenue.	
Construct retaining walls, embankment, and pavement between I-4 (west of 14th Street) and I-275 (south of Plymouth Street).	
Shift traffic onto newly constructed ramp and remove existing structure over Nebraska Avenue.	
I-275 Southbound to I-4 Eastbound	
Construct temporary retaining wall and embankment for I-275 southbound westerly between Floribrasca Avenue and Columbus Drive. Alignment will allow construction of new structure for I-275 southbound to I-4 eastbound. Construct the southern portion east of the gore to permit traffic to access I-4 from the right-hand side when completed.	
Construct the western half of structure over Floribrasca Avenue then shift traffic and construct the eastern half.	
Construct widened structures (right side) over 14th Street, 15th Street, and (both sides) over 19th Street.	
Construct the associated retaining walls, embankment, and pavement between Plymouth Street and 19th Street.	
Remove temporary retaining walls, embankment, and pavement between Floribrasca Avenue and Columbus Drive and structures over Columbus Drive and flyover ramp to eastbound I-4.	
I-275 Southbound	
Construct western half of structures over Columbus Drive and Palm Avenue.	
Construct local street modifications and closures adjacent to the southbound I-275 work areas between Columbus Drive and Willow Avenue.	
Construct associated retaining walls, embankment, and pavement for the I-275 southbound ramp to local access.	
Shift traffic onto this newly constructed ramp.	
Remove western portion of existing structure over Columbus Drive and construct the eastern portion of this bridge for I-275 southbound.	
Construct the eastern portion of the structure over Palm Avenue and total structure over Jefferson/Estelle Street, viaduct over Morgan Street, Marion Street, Florida Avenue, Franklin Street, Tampa Street and Hillsborough River.	
Construct structures over North Boulevard and widening over Willow Avenue.	
Construct associated retaining walls, embankment, and pavement between Columbus Drive and Rome Avenue.	
Construct the Ashley Street to I-275 southbound flyover. Construct associated retaining walls, embankment, and pavement from south of Laurel Place to North Boulevard.	
Shift all southbound I-275 traffic to newly constructed roadways.	
I-4 Westbound to I-275 Local Traffic	
Construct northern portion (minimum 6.7m (22 feet)) of structure over Nebraska Avenue and the complete structure width (west of the gore) over I-275 (northbound and southbound) and I-275 southbound to local access.	
Construct associated retaining walls, embankment, and pavement between 10th Street and Palm Avenue.	
Shift I-4 westbound traffic onto this newly constructed roadway. This is a one-lane structure; however, temporarily stripe for two lanes 0.6m ((2-foot) shoulder, two 3.5m 11½-foot lanes 0.6m (2-foot) shoulder) and remove existing structure.	
Construct the portion of bridge to carry I-4 mainline to southbound I-275.	
Reroute traffic for I-4 westbound to its ultimate location.	
I-4 to southbound I-275 and I-275 southbound is now complete for this segment of the I-275/I-4 downtown interchange.	
Northbound I-275	
Construct new off-ramp to North Boulevard via Laurel Place. This will replace existing Ashley/Scott Street exits.	
Shift I-275 northbound traffic onto existing I-275 southbound roadway west of North Boulevard and onto temporary roadway north of Palm Avenue to Columbus Drive and back onto existing I-275 northbound roadway just south of Columbus Drive structure.	

TABLE 3.5 (Continued)

PROPOSED MAINTENANCE OF TRAFFIC - ALTERNATIVE 3
Tampa Interstate Study
I-275/I-4 Downtown Interchange Operational Improvements
Environmental Analysis

ALTERNATIVE 3
Restripe and provide a two-lane connection from I-275 northbound to I-4 eastbound to go over existing structure of Palm Avenue (between 7th Street and Palm Avenue).
Construct temporary connection from Orange Street on-ramp under existing bridge carrying I-275 northbound over Henderson Street. Continue this temporary connection northward along the west side of temporary I-275 northbound and make connection just south of structure over Palm Avenue.
Construct bridge over North Boulevard and realigned Laurel Street. Construct viaduct over Hillsborough River, Tampa Street, Franklin Street, Florida Avenue to south of Marion Street.
Construct southern portion of structure over Hillsborough River for ramp to Ashley Street. When this structure and associated retaining walls, embankment, and pavement are completed, open to traffic.
Construct temporary Acrow bridges over Marion Street, Morgan Street, and Orange Street along with associated embankment and pavement between Florida Avenue and Central Avenue. This will be north of the existing I-275 southbound alignment for a temporary connection of the I-275 northbound roadway.
Construct I-275 viaduct from south of Marion Street to north of Morgan Street.
Construct bridge over Orange/Jefferson Street and new Orange Street on-ramp to I-275 northbound.
Construct (western portion) the bridge viaduct (minimum 24.3 m (80 feet)) for I-275 from south of Palm Avenue to north of Columbus Drive.
Construct Orange Street on-ramp to eastbound I-4 and structure over Palm Avenue and Nebraska Avenue.
Construct associated retaining walls, embankment, and pavement between Morgan Street and 12th Street.
Reroute I-275 northbound traffic to new roadway between Willow Street and Floribaska Avenue. Shift temporary two-lane connection (for eastbound I-4) from temporary I-275 northbound to the completed I-275 northbound over Palm Avenue.
Remove the Acrow bridges over Marion Street, Morgan Street and Orange Street.
Remove all of the existing I-275 northbound and southbound pavement and structures between North Boulevard and Columbus Avenue.
Construct the new I-275 northbound to eastbound I-4 structure over Palm Avenue and Nebraska Avenue.
Construct associated retaining walls, embankment, and pavement between south of Palm Avenue to west of 12th Street on I-4.
Remove existing pavement and bridge for this movement.
I-275 Southbound to I-4 Eastbound
Construct the remaining portion (north side) of the flyover for I-275 southbound to I-4 eastbound for the left-hand on-ramp for I-4 westbound through traffic.
Construct associated retaining walls, embankment, and pavement for this movement between Nebraska Avenue and 12th Street.
I-275 Southbound to Ashley Street
Construct associated retaining walls, embankment, and pavement for the I-275 southbound to Ashley Street ramp under I-275 southbound and I-275 northbound structures.

3.7 RIGHT-OF-WAY/RELOCATION AND CONSTRUCTION COSTS

Preliminary right-of-way, relocation, and construction cost estimates have been prepared for each of the three proposed alternatives under consideration. A break-down of the costs is provided on Table 3.6.

TABLE 3.6

PRELIMINARY COST ESTIMATES
Tampa Interstate Study
I-275/I-4 Downtown Interchange Operational Improvements
Environmental Analysis

	Alternative 1	Alternative 2	Alternative 3
Estimated Business Relocations	10	4	25
Estimated Residential Relocations	10	8	341
Estimated Sign Relocations	0	6	10
Total	20	12	366
Business Parcels	12	11	28
Residential Parcels	8	11	103
Unimproved Parcels	14	5	59
Total	34	27	190
Right-of-way Support Cost	\$340,000	\$270,000	\$1,900,000
Right-of-way Operations	1,447,000	1,211,000	9,029,000
Right-of-way Land Costs	9,708,000	9,635,000	68,860,000
Right-of-way Acquisition Consultant	306,000	243,000	1,710,000
Relocation Costs	284,000	197,000	7,823,000
Total	\$12,085,000	\$11,556,000	\$89,322,000
Construction Costs*	\$60.5 Million	\$64 Million	\$261 Million

* Construction costs include:

- 6% Mobilization cost
- 25% Maintenance of Traffic cost
- \$1,050,000 in Utility relocations
- \$1,400,000 in Landscaping (excluding sodding)
- 15% Contingency

SECTION 4.0

ENVIRONMENTAL OVERVIEW

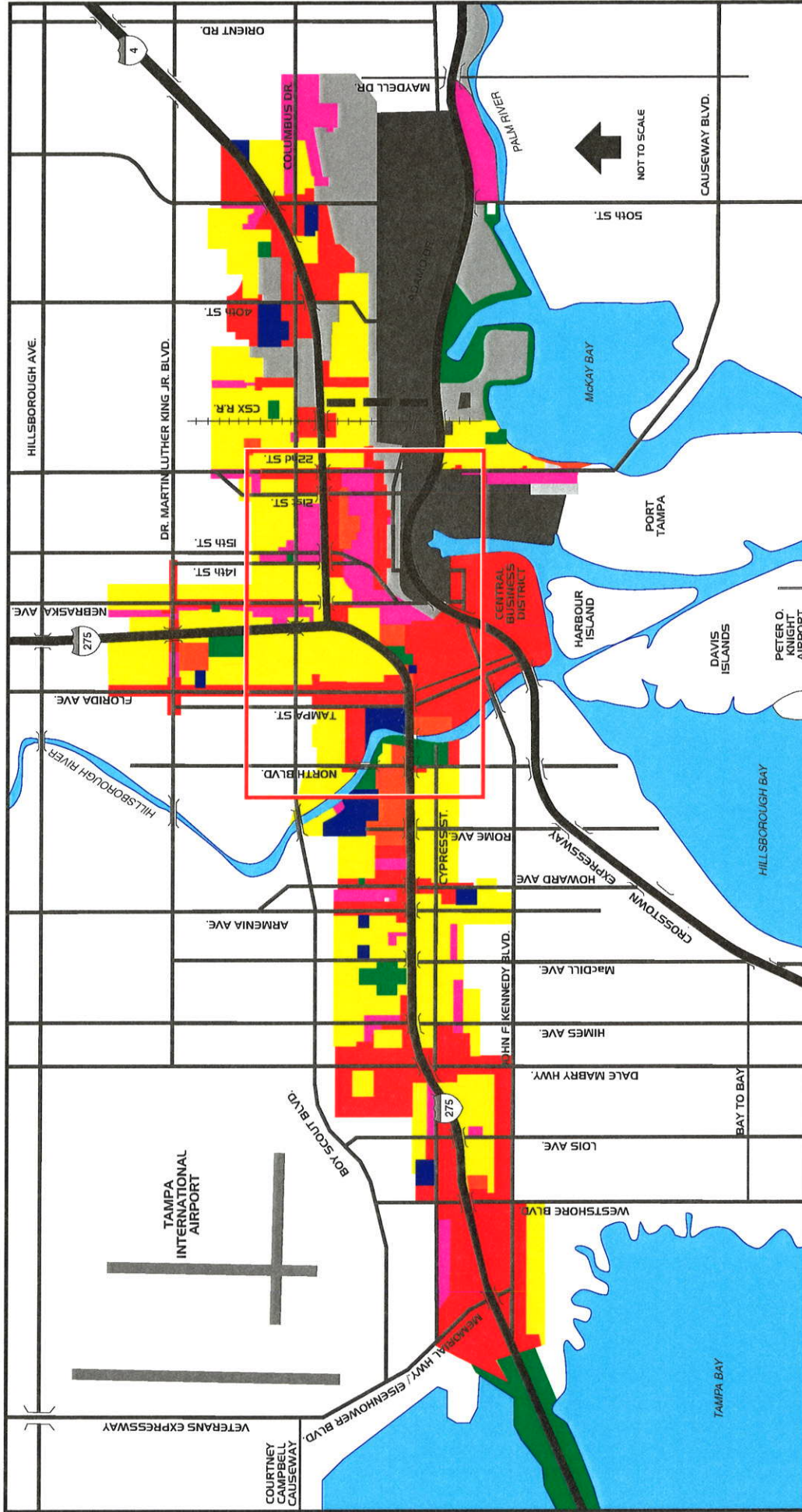
4.1 SOCIAL ISSUES

Social issues discussed in the following sections include existing conditions and the potential impacts to land use, community cohesion, community services, minority and low-income populations, and aesthetic treatments.

4.1.1 Land Use

Existing land use within the project vicinity is highly urbanized and varied. Existing land uses along the Tampa interstate system are shown on Exhibit 4.1. West of the Hillsborough River, on the north side of the interstate, is North Boulevard Homes, a Tampa Housing Authority complex of multi-family homes, and the Presbyterian Village multi-family complex, a federally assisted not-for-profit organization providing housing for families. On the south side of the interstate from Rome Avenue to North Boulevard are several single-family residences, a few commercial properties, and the Bethel A.M.E. Church. Riverfront Park is located on the south side of the interstate and extends to Cypress Street between North Boulevard and the Hillsborough River.

East of the Hillsborough River on the south side of the interstate is a multi-family condominium tower, City of Tampa Recreation Department Offices, a child care center, a retail establishment, and several commercial office uses. The Hillsborough County Jail is located between Morgan Street and Pierce Street on the south side of the interstate. On the north side of the interstate between Doyle Carlton Drive and Tampa Street, adjacent to the Kay Street entrance ramp, is the City of Tampa Police Department. Continuing east are several different types of developments between Tampa Street and Morgan Street including some commercial properties, the Salvation Army, and a Tampa Electric substation. From Morgan Street north along I-275 to the I-4/I-275 interchange is a predominantly single-family residential area, including the Tampa Heights National Register Historic District. There also are several religious institutions located among these residences



LEGEND

- | | | |
|---|---|---|
| Public / Semi-Public | Commercial | Study Limits |
| Single Family | Mixed Use | |
| Multi-Family | Industrial | |
| Recreational Space / Environmentally Sensitive Area | Light Industrial | |

--- Proposed Crosstown Connector

FLORIDA DEPARTMENT OF TRANSPORTATION
 ENVIRONMENTAL ANALYSIS
TAMPA INTERSTATE STUDY
I-275/I-4 DOWNTOWN INTERCHANGE
 Hillsborough County, Florida
GENERALIZED EXISTING
LAND USE

including Friendly Missionary Baptist Church, Faith Temple Missionary Baptist Church and Baptist Fellowship Bible College. On the south side of the interstate between Jefferson and Orange Streets, land uses include the Greater Bethel Baptist Church, the Kid Mason Fendall Community Center, and Perry Harvey Park. Adjacent to the park is the Boys and Girls Clubs of Tampa Bay, Inc. - Central Park facility, and a large multi-family complex, Central Park Village, owned by the City of Tampa Housing Authority. North of the park to the I-4/I-275 interchange, the east and south sides of the interstate are predominantly low-income, single-family residential areas. In the northeast quadrant of the I-4/I-275 interchange is the Hillsborough County Schools Instructional Services Center (old Velasco Building).

Continuing north along I-275 from Columbus Drive to Floribaska Avenue, the land use is predominantly single-family residential. On the east side of the interstate south of Floribaska Avenue on the northeast corner of Mathews Avenue and Taliaferro Avenue is a City of Tampa Fire Department Communications Building and 911 Dispatch Center.

From the I-4/I-275 interchange east to the 21st/22nd Streets interchange, the north side of I-4 is predominantly low-income single-family residential and mixed use. The south side of I-4 from 15th Street to the 21st/22nd Streets interchange is mostly vacant property with the exception of a former cigar factory currently occupied by U-Haul at 19th Street; the U.S. Post Office at the corner of 21st Street and the interstate; and the Ybor City Brewing Company on 21st Street. There are several small commercial properties on the north and south sides of the 21st/22nd Streets interchange.

Overall, land use impacts as a result of the proposed improvements are anticipated to be minor. Every effort has been made to minimize disruption of neighborhoods during development of the three alternatives. While some relocations are unavoidable, the proposed project should not physically separate any additional neighborhoods, families, or businesses.

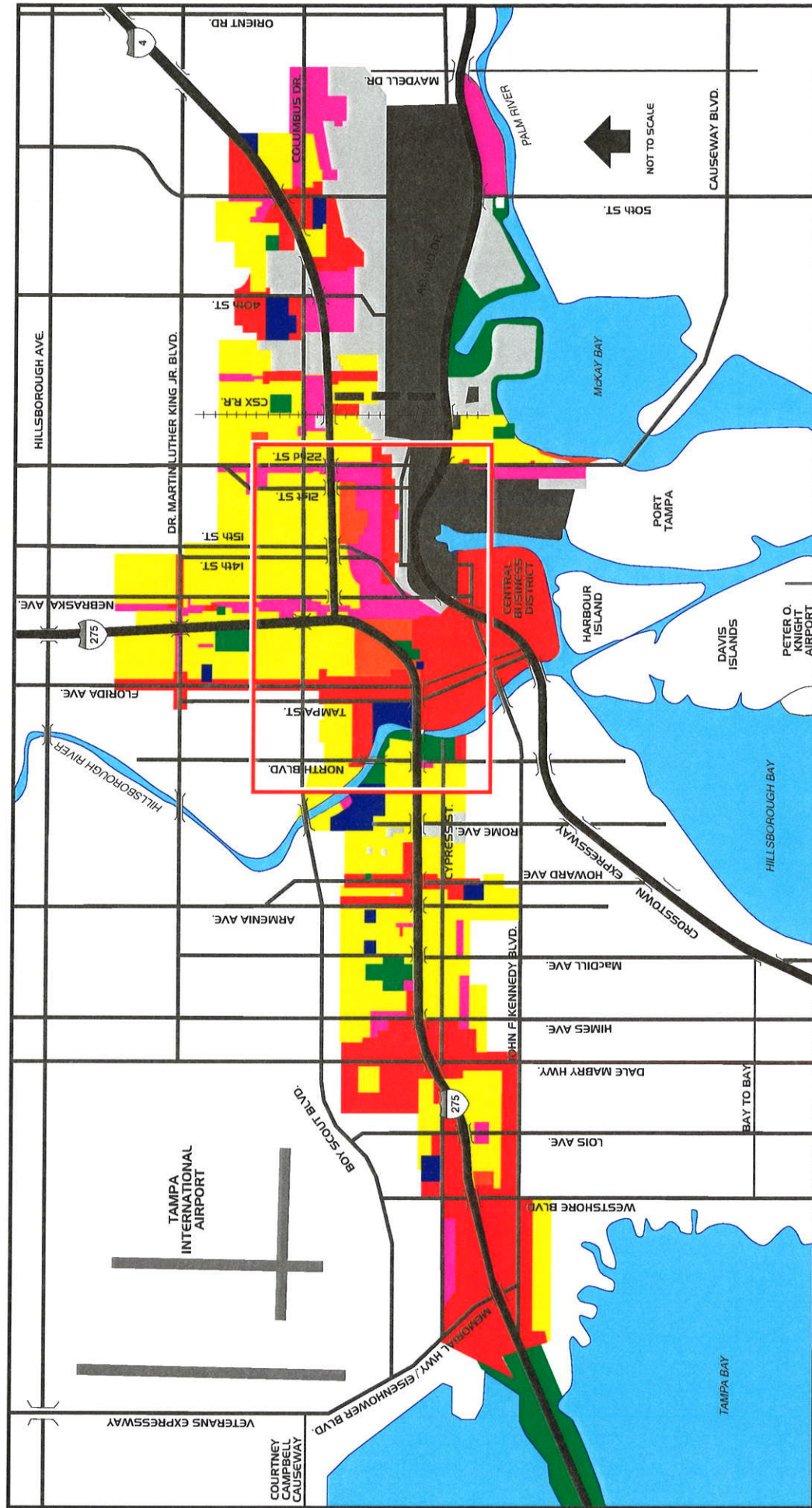
Land use impacts associated with **Alternative 1** include approximately nine business relocations, two single-family residences, two multi-family dwellings totaling six residences, and the acquisition of some small areas of undeveloped land. In addition, a strip of land from Perry Harvey Park and the Hartline Northern Transit Terminal will be impacted.

Land use impacts associated with **Alternative 2** include the relocation of three businesses, four single-family residences, one multi-family dwelling totaling four residences, and the acquisition of some additional undeveloped property. Like Alternative 1, Alternative 2 also requires the acquisition of a strip of land from Perry Harvey Park and will impact the Hartline Northern Transit Terminal transfer site.

Land use impacts associated with **Alternative 3** are more significant than those associated with Alternatives 1 and 2. Alternative 3 will require the relocation of three multi-family residential buildings at North Boulevard Homes comprising 32 residences; all sixteen multi-family buildings at Tampa Presbyterian Village comprising approximately 140 residences; three additional multi-family dwellings totaling 12 residences; approximately 114 single-family residences; approximately ten businesses; the Henderson School and Velasco Building School Board properties; the City of Tampa Fire Department Communications Building and the separate Recreation Department building; and three churches.

Land use planning for the City of Tampa is administered by the Hillsborough County City - County Planning Commission. The HCC-CPC produces comprehensive plans for each local government covering future land use and other local government issues. The proposed I-275/I-4 downtown interchange operational improvements are not expected to significantly alter future land use designations as established in the most recent version of the Tampa Comprehensive Plan (November 17, 1994).

Only a small amount of vacant land exists along the interstate; thus, most of the land use patterns have already been established. None of the three alternatives previously discussed will substantially alter current or future land uses in the study area. The Tampa Comprehensive Plan includes a future land use map which was developed to reflect TIS Master Plan improvements to the interstate system. A generalized future land use map is provided on Exhibit 4.2. The proposed I-275/I-4 downtown interchange operational improvements project is consistent with the Tampa Comprehensive Plan and the Hillsborough County MPO's 2015 Long Range Transportation Plan.



LEGEND

- Public / Semi-Public
- Single Family
- Multi-Family
- Recreational Space / Environmentally Sensitive Area
- Commercial
- Mixed Use
- Industrial
- Light Industrial
- Study Limits

FLORIDA DEPARTMENT OF TRANSPORTATION
 ENVIRONMENTAL ANALYSIS
TAMPA INTERSTATE STUDY
I-275/I-4 DOWNTOWN INTERCHANGE
 Hillsborough County, Florida
GENERALIZED FUTURE
LAND USE

Proposed Crosstown Connector

4.1.2 Community Cohesion

None of the three proposed alternatives will adversely affect community cohesion. The proposed downtown interchange operational improvements will not sever any additional neighborhoods. No specific ethnic groups or minorities will become socially or culturally isolated as a result of the improvements. Overall access to the neighborhoods adjacent to the I-275/I-4 interchange will be maintained. Any local street modifications have been planned to maintain local circulation.

Project planners have sought to preserve important community resources such as parks, churches, schools, and historic structures and maintain their accessibility. While a few community resources may be impacted, overall impacts to the community will be minor. Residents within the project area required to relocate will find ample resources available within their existing neighborhoods. Section 4.1.3 of this document summarizes the total number of relocations proposed for each alternative. A summary of existing land uses within the project area is provided in Section 4.1.1.

Improved interstate safety and operations will benefit not only the roadway user but also the neighborhood businesses and the local residents. The project will have no adverse impact on community cohesion, mobility or neighborhoods.

4.1.3 Relocations

The additional right-of-way requirements associated with each of the three alternatives varies substantially by alternative; however, each alternative will impact some property owners along the existing corridor. Although minimizing required right-of-way was one goal of the project, some residential and business relocations are unavoidable.

Relocation impacts associated with **Alternative 1** include two single-family residences; two multi-family dwellings containing six residences; and nine small businesses. The business relocations consist of an animal hospital, an auto-detailing establishment, a bail bond office, and a small six-

tenant office building. In addition, this alternative will require the relocation of the Hartline Northern Transit Terminal and the acquisition of a small strip of land from Perry Harvey Park.

Relocation impacts associated with **Alternative 2** include four single-family residences, one multi-family dwelling totaling four residences, and three small businesses. The businesses consist of an animal hospital, an auto-detailing establishment, and a bail bond office. In addition, this alternative also requires the relocation of the Hartline Northern Transit Terminal passenger transfer facility and the acquisition of a small strip of land from Perry Harvey Park.

Relocation impacts associated with **Alternative 3** are much more substantial. Residential relocations include approximately 114 single-family residences; three multi-family buildings at the North Boulevard Homes complex comprising of 32 residential relocations and sixteen multi-family buildings at the Tampa Presbyterian Village totaling approximately 140 residential relocations; and three smaller multi-family dwellings totaling 12 residential relocations. Additional relocations include the City of Tampa Recreation Department Offices; the Henderson School and the old Velasco Building, both School Board properties; the Tampa Fire Department Communications Building; Faith Temple Missionary Baptist Church, Friendly Missionary Baptist Church, and the Baptist Fellowship Bible College of Tampa; a TECO substation; a portion of the Salvation Army complex; the Hartline Northern Transit Terminal; and approximately ten small businesses.

The publication TIS-EIS Task A.5.b.12 - Conceptual Stage Relocation Plan (November 1995) documents in detail the potential relocation impacts associated with the “ultimate” TIS project. The information contained in this document has been extracted from the Relocation Plan and comprises an overview of only that information relevant to the I-275/I-4 downtown interchange operational improvements project. This document is not intended to duplicate the level of detailed demographics information and replacement housing statistics contained in the Relocation Plan. For additional information on those topics, please refer to the Relocation Plan.

As part of the TIS project, the commercial and residential real estate markets in Tampa were researched for the availability of resources to accommodate all of the potential displacees.

Comparable replacement resources were identified using information obtained from realtors and real estate publications. It was determined that sufficient resources are available to accommodate all relocations associated with that project. Commercial and residential resources within the project vicinity are available and abundant. It is anticipated that all residences, businesses, and non-profit organizations can be relocated within or near their respective neighborhoods, if so desired.

Last resort housing payments and rent supplements are anticipated for the residential relocations. If necessary, last resort payments will be used to place residential relocatees in decent, safe, and sanitary housing. Last resort housing would be the result of low income or low rental payments rather than because of a lack of available housing. Should last resort housing be necessary, the housing would be made available before the relocatees are required to vacate their current dwellings. There are numerous residential lots available for new construction, particularly within the Tampa Heights and Ybor City areas.

In order to minimize the unavoidable effects of right-of-way acquisition and displacement of people, the FDOT will carry out a right-of-way and relocation program in accordance with Florida Statute 339.09 and the Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (Public Law 91-646, as amended by Public Law 100-17).

The FDOT provides advance notification of impending right-of-way acquisition. Before acquiring right-of-way, all properties are appraised on the basis of comparable sales and land use values in the area. Owners of property to be acquired will be offered and paid fair market value for their property rights.

No person lawfully occupying real property will be required to move without at least 90 days written notice of the intended vacation date and no occupant of a residential property will be required to move until decent, safe, and sanitary replacement housing is made available. "Made available" means that the affected person has either by himself obtained and has the right of possession of replacement housing, or that the FDOT has offered the relocatee decent, safe, and sanitary housing which is within his financial means and available for immediate occupancy.

At least one relocation specialist is assigned to each highway project to carry out the relocation assistance and payments program. The relocation specialist will contact those requiring relocation to determine individual needs and desires, and to provide information, answer questions, and give help in finding replacement property. Relocation services and payments are provided without regard to race, color, religion, sex, or national origin.

All tenants and owner-occupant displacees will receive an explanation of all options available to them, such as (1) varying methods of claiming reimbursement for moving expenses; (2) rental of replacement housing, either private or publicly subsidized; (3) purchase of replacement housing; and (4) moving owner-occupied housing to another location.

Financial assistance is available to the eligible relocatees to:

- Reimburse the relocatees for the actual reasonable costs of moving from homes, businesses, and farm operations acquired for a highway project;
- Make up the difference, if any, between the amount paid for the acquired dwelling and the cost of a comparable decent, safe, and sanitary dwelling available on the private market;
- Provide reimbursement of expenses, such as legal fees and other eligible closing costs incurred in buying a replacement dwelling; and
- Make payment of eligible increased interest cost resulting from having to obtain another mortgage at a higher interest rate. Replacement housing payments, increased interest payments, and closing costs are limited to \$22,500 combined total.

A displaced tenant may be eligible to receive a payment, not to exceed \$5,250, to rent a replacement dwelling or room, or to use as down payment, including closing costs, on the purchase of a replacement dwelling. The brochures which describe in detail the FDOT's relocation assistance program and right-of-way acquisition program are "Your Relocation: Residential", "Your Relocation: Businesses, Farms, and Nonprofit Organizations", "Your Relocation: Signs", and "The Real Estate Acquisition Process". All of these brochures are distributed at all public hearings and are made available upon request to any interested persons.

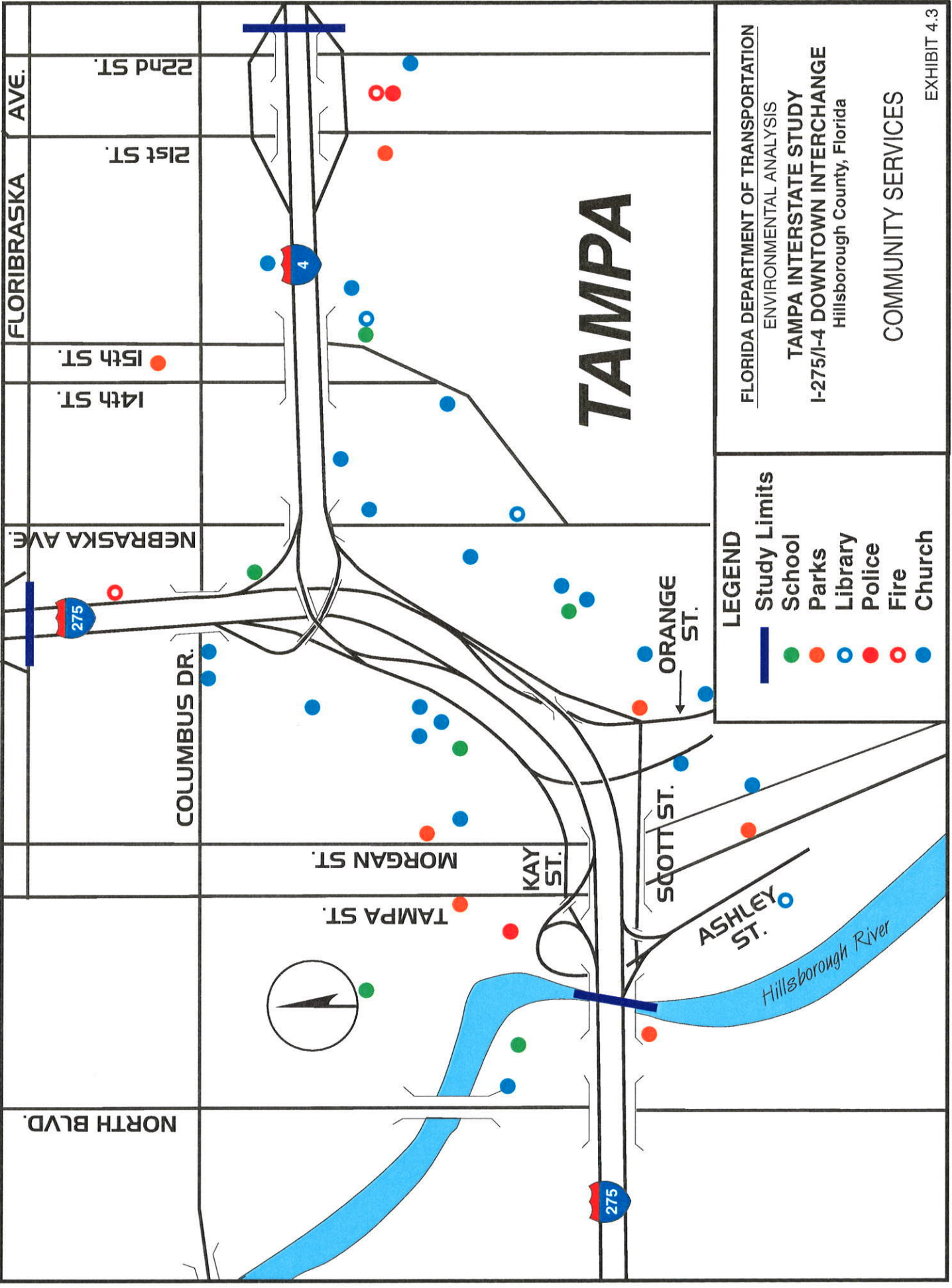
Detailed information regarding relocation impacts, available resources, and the relocation and acquisition programs are contained in the Conceptual Stage Relocation Plan (February 1996) published separately for the I-275/I-4 downtown interchange operational improvements project.

4.1.4 Community Services

Many community services are located in the vicinity of the proposed interstate improvements. These include schools, libraries, police and fire services, parks, and churches. The approximate locations of many community services are shown on Exhibit 4.3. Impacts to these facilities, associated with the three alternatives, are discussed in the following paragraphs.

Alternatives 1 and 2 will require the acquisition of a small amount of right-of-way from Perry Harvey Park. Alternative 1 will require approximately 1,092.6m² (0.27 ac.) and Alternative 2 will require approximately 607m² (0.15 ac.) from the 37,231m² (9.2 ac.) park. These impacts are confined to the northernmost segment of the park where there is little visitor activity and no visitor facilities. As such, these impacts should have little or no effect on the function or usage of the park. In addition, both alternatives will require relocation of the Hartline Northern Transit Terminal currently located between Florida Avenue and Marion Street, beneath and adjacent to the existing interstate.

Alternative 3 will directly impact several community service facilities in the area. This alternative will require the relocation of the City of Tampa Recreation Department offices at the corner of Scott Street and Tampa Street; the Hartline Northern Transit Terminal; three multi-family residential buildings at North Boulevard Homes, a City of Tampa Housing Authority complex; all 16 residential buildings associated with Tampa's Presbyterian Village, a federally subsidized multi-family housing complex; a Salvation Army building located at Florida Avenue and Kay Street; the Henderson School (vacant) and old Velasco Building, both Hillsborough County School Board properties; the Tampa Fire Department Communications Building located on Mitchell Avenue at Robles Street; Faith Temple Missionary Baptist Church, Friendly Missionary Baptist Church, and Baptist Fellowship Bible College of Tampa, all located in the Tampa Heights neighborhood.



4.1.5 Title VI and VIII

Title VI of the 1964 Civil Rights Act provides that no person shall on the grounds of race, color, religion, sex, national origin, marital status, handicap, or family composition be excluded from participation in, or be denied the benefits of, or be otherwise subject to discrimination under any program of the Federal, State, or local government. Title VIII of the 1968 Civil Rights Act guarantees each person equal opportunity in housing.

This project has been developed in accordance with the Civil Rights Act of 1964, as amended by the Civil Rights Act of 1968. The existing interstate system through Tampa was constructed in the early 1960s. At that time, the route selected for the facility traversed several of Tampa's oldest neighborhoods, including many areas of predominantly minority or ethnic populations. When constructed, the interstate corridor was a physical barrier placed within neighborhoods, severing some community ties. However, over the past 30 years, many of those areas have reestablished themselves as cohesive neighborhoods. Today, for the most part, these neighborhoods remain predominantly minority and ethnic communities with a sizable elderly population.

Depending on which alternative is selected for construction, the proposed I-275/I-4 downtown interchange project will impact some property owners in the project area including minority, ethnic, and elderly persons. **Alternatives 1 and 2**, which require very few relocations, would have minimal, if any, impact on low-income and minority sectors of the City of Tampa population. **Alternative 3**, which requires a large number of relocations, has the potential to impact many more minority and low-income property owners.

No discriminatory criteria have been used during the development and selection of alternatives. The proposed improvements have not been planned to impact any specific groups or individuals but rather to improve the existing facility. Some non-decent, safe and sanitary (non-DSS) dwelling units may be displaced by the project. Because it is anticipated that last resort housing could be necessary, some of the displaced residents will be relocated to DSS housing within their own neighborhoods.

The proposed improvements will have no undue effect on any specific groups or organizations including ethnic groups, minorities, the elderly or handicapped individuals.

4.1.6 Controversy Potential

An extensive Public Involvement Plan was developed as an integral part of the overall Tampa Interstate Study. The purpose of the plan was to establish and maintain communication with individuals and agencies concerned with the project and its potential impacts. The program included the establishment of a project office, a project mailing list, a speakers bureau, citizen advisory committee, an agency task force, a relocation task force, and a cultural resources committee. To date, over 60 community workshops and public meetings have been held, along with a public hearing. This proactive public involvement program has incorporated the I-275/I-4 downtown interchange operational improvements project in its presentations.

The proposed I-275/I-4 downtown interchange operational improvements project developed out of the need to improve safety in the downtown interchange after numerous accidents, involving injuries, fatalities and long traffic delays. As such, the interchange improvements project has community-wide support. The proposed I-275/I-4 downtown interchange operational improvement concept plans were displayed at the TIS Public Hearing held January 16, 1996. No controversial comments were received as a result of the public hearing. Copies of comments received as a result of the TIS Public Hearing are contained in the Public Hearing Comments Summary Working Paper, published for the TIS project and available at the Florida Department of Transportation, District VII.

4.1.7 Utilities and Railroads

A variety of utilities service the urbanized area encompassed by the project limits. Companies involved with existing utilities include Tampa Electric Company (TECO), General Telephone & Electronics of Florida (GTE), Peoples Gas System, Inc., and Time Warner Cable, Inc. The City of Tampa is responsible for water and sewer utilities. A discussion of the types and relative locations of existing utilities, as well as a map, is provided in the Engineering Summary (December 1995),

published separately. Utility impacts would be greater for Alternative 3 than for Alternatives 1 and 2 by the amount of additional land required for the roadway footprint. Alternatives 1 and 2 will have similar utility impacts confined in most cases to those utilities located within the existing right-of-way. Survey efforts being conducted as part of this PD&E project include the survey of all utilities within the limits of the proposed right-of-way for the preferred alternative (Section 5.2.1).

Amtrack (passenger trains) and CSX Transportation (freight trains) own tracks and facilities and operate daily in the general study area. However, there are currently no active or abandoned tracks or railroad crossings within the proposed project limits. The proposed improvements will have no involvement with railroads.

4.1.8 Aesthetics

Aesthetic design treatments were evaluated for incorporation into the proposed I-275/I-4 downtown interchange operational improvements. This section provides a discussion of how these treatments would be incorporated into each alternative.

Alternatives 1 and 2 consist primarily of lengthening on-ramps, adding a lane, and replacement of some of the existing structures to minimize weaving. The incorporation of aesthetic features in these improvements is not considered beneficial because so much of the original untreated facility and structures will remain in place. Aesthetic treatments to the existing structures is not feasible because of their design, and not cost reasonable because those structures will eventually require major rehabilitation or replacement. Most of the existing structures are AASHTO girder bridges and are difficult to treat aesthetically.

Alternative 3 essentially consists of complete reconstruction of the interstate system in the downtown area. The incorporation of aesthetic features into this alternative would comply with the TIS *Urban Design Guidelines* (December 1994). However, this area of reconstructed interstate would need to transition back into the existing interstate sections in three places, making the consistency and continuity of the aesthetic treatments impractical.

4.2 CULTURAL RESOURCES

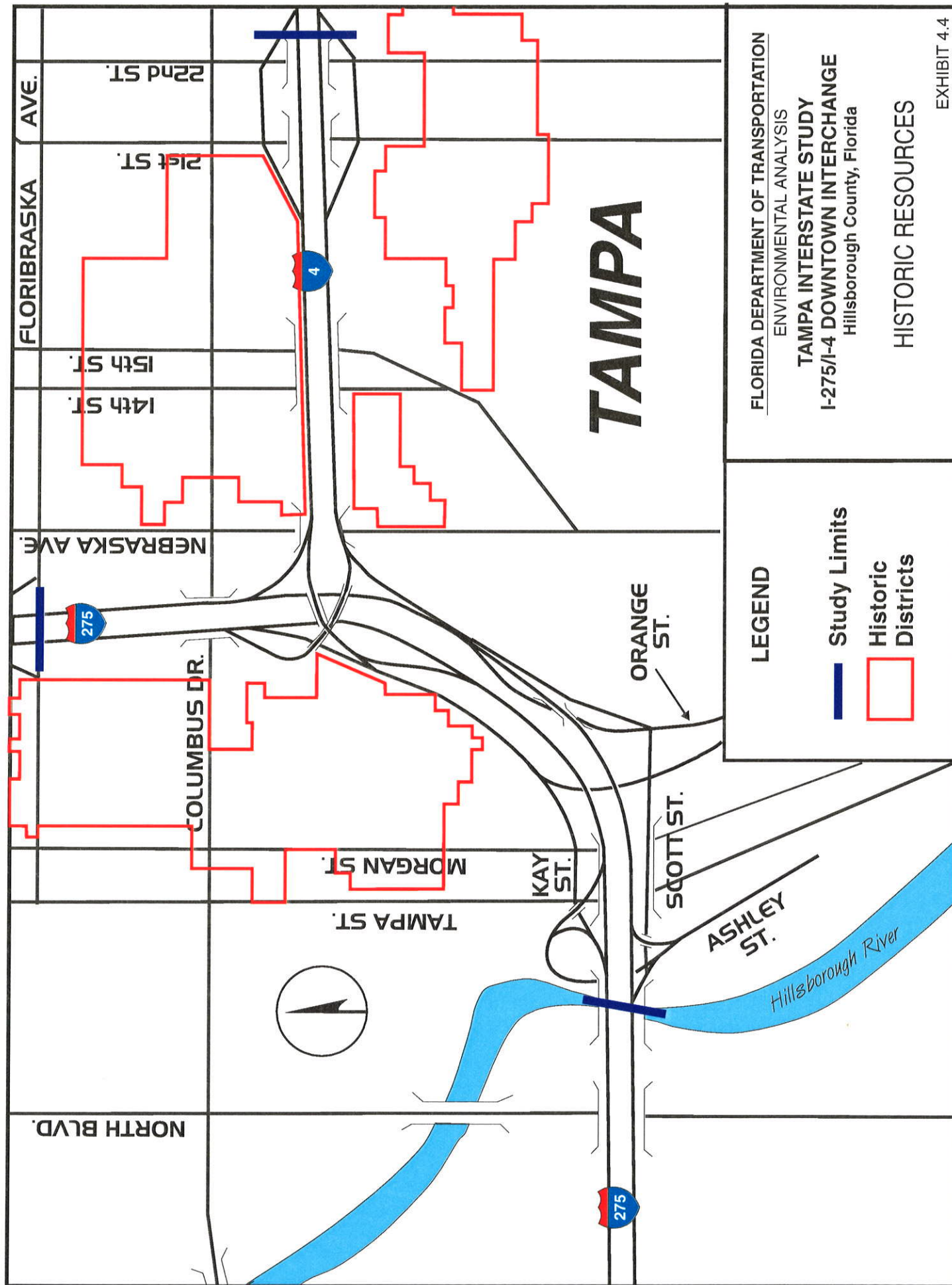
This section discusses existing archaeological and historic sites/districts, parks, and recreational facilities and discusses potential impacts by alternative.

4.2.1 Archaeological and Historic Sites/Districts

As part of the Tampa Interstate Study, a comprehensive archaeological and architectural background study of previously recorded cultural resources within the study area was conducted. This study and all subsequent research was performed pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended; 36 CFR 800, "Protection of Historic Properties," 23 CFR 771; and Federal Highway Administration Technical Advisory T6640.8A and all applicable Federal Aid Policy Guide transmittals.

An Archaeological Assessment Survey of the Tampa Interstate Study Activity A, Task II (EIS) Project Area (October 1993) was completed to locate any previously unrecorded archaeological sites located within the proposed right-of-way. In addition, the Cultural Resource Assessment Survey of the Tampa Interstate Study Activity A, Task II (EIS) Project Area (April 1992) identified historic sites and historic structures located within the proposed right-of-way, and in the Area of Potential Effect (APE) and assessed sites for their potential eligibility for listing on the *National Register of Historic Places*.

Exhibit 4.4 shows the location of historic resources within the project area. Within the vicinity of the I-275/I-4 downtown interchange operational improvements project, the Ybor City National Historical Landmark District comprises 948 contributing structures, and the Tampa Heights National Register Historic District comprises 286 individual contributing structures. The I-275/I-4 downtown interchange operational improvement project was evaluated for potential impacts to any historic resources. A discussion of the potential impacts by alternative is presented below.



Alternative 1 would directly impact one identified historic resource, requiring the acquisition of a small amount of property from the old Velasco Building site, a Hillsborough County School Board property (vacant). **Alternative 2** would also directly impact one historic resource, requiring the acquisition of a multi-family (fourplex) residence in Ybor City. **Alternative 3** would directly impact 37 historic structures: the Henderson School and the Velasco Building, both School Board properties; the Otto Stallings House; Faith Temple Missionary Baptist Church; an unidentified small business structure located on 14th Avenue in Ybor City; two separate multi-family (fourplex) residences; and approximately 30 single-family residences.

4.2.2 Parks and Recreational Facilities

As shown previously on Exhibit 4.3, two public parks and recreation areas are located adjacent to the proposed I-275/I-4 downtown interchange operational improvements project. Riverfront Park, approximately 10.5 ha (26.0 ac.) in size, is located at 1111 North Boulevard and is owned and operated by the City of Tampa. As the name implies, Riverfront Park is bordered on the east by the Hillsborough River, to the north by I-275 and Laurel Street, to the south by Cass Street, and to the west by North Boulevard.

Functionally classified as a community/district park, Riverfront Park contains a variety of active recreational facilities. These include picnic shelters, barbecue grills, restrooms, exercise/jogging paths, playground equipment, basketball, tennis and racquetball courts, baseball fields, and a swimming pool. In addition, there are shaded walkways with benches on which to rest and relax. A parking lot, with vehicular access from North Boulevard, is also provided.

Perry Harvey Park, approximately 3.7 ha (9.2 ac.) in size, is located at 1201 Orange Street in downtown Tampa and is owned and operated by the City of Tampa. Fragmented and irregular in shape, the park is bordered to the north by I-275, to the east and south by the Central Park Village public housing complex, and to the west by Orange Street and its associated interstate ramping. Three local through streets bisect the park: Scott Street, Kay Street, and Estelle Street.

Functionally classified as a neighborhood park, Perry Harvey Park contains a variety of active recreational facilities. These include basic components of a neighborhood park, such as picnic shelters, barbecue grills, restrooms, exercise/jogging paths, tennis and basketball courts, and playground equipment. A paved skateboarding area is located in the western portion of the park. In addition, a Boys & Girls Club recreation facility is located adjacent to the eastern side of the park, primarily serving youths from the adjoining public housing complex. A parking facility is provided, accessible from Cass Street and Central Avenue. Also associated with Perry Harvey Park is the Kid Mason Fendall Community Center, located along the west side of Orange Street. The Center is an important city-owned recreation facility serving youths, primarily from the nearby Central Park Village public housing complex and the local neighborhood, with afterschool and summer programs. The Center also offers a variety of programs for adults. Pedestrian access between the park and the recreation center is provided by crossing Orange Street.

Only Perry Harvey Park will be directly affected by the proposed downtown interchange improvements. Riverfront Park will not be affected directly or indirectly by the project. **Alternative 1** will require the acquisition of approximately 1,092.6m² (0.27 ac.) and **Alternative 2** will require approximately 607m² (0.15 ac.) from the 37,231m² (9.2 ac.) park. Right-of-way impacts associated with both alternatives are confined to the northernmost fragment of the park, bounded by Estelle Street to the south, Central Avenue to the west, Lamar Avenue to the east, and Henderson Street to the north. This small disconnected parcel, consisting of approximately two percent of the total park area, receives little visitor activity and contains no visitor facilities. As a result, impacts to the park associated with these two alternatives are anticipated to be minor and should not substantially impair or diminish the park's activities, features, functions, attributes, or usage. **Alternative 3** will have no direct impact on Perry Harvey Park.

Two coordination meetings with the City of Tampa Parks Department, and three meetings with Councilman Perry Harvey, Jr. and representatives from the adjacent community were conducted as part of the overall TIS project to discuss the effects at Perry Harvey Park and potential mitigation measures. The third meeting with the community discussed impacts to the park as they relate to the I-275/I-4 operational improvements project. A conceptual mitigation plan has been developed and

approved as part of the overall TIS project. It is anticipated that upon implementation of the full TIS project, the overall mitigation plan will be undertaken.

4.3 NATURAL ENVIRONMENT

This section discusses existing features of the natural environment and the potential impacts that may occur as a result of the three proposed alternatives.

4.3.1 Wetlands

In compliance with Executive Order 11990, "Protection of Wetlands," the project area has been evaluated for the presence of wetlands which have the potential to be impacted by the proposed project. The identification of wetlands was accomplished through interpretation of 2.54 cm = 304 m (1 in. = 1,000 ft.) and 2.54 cm = 30.4 m (1 in. = 100 ft.) scale aerial photographs, review of National Wetlands Inventory (NWI) maps, and field reviews of the project area. Approximate wetland boundaries were determined using the Army Corps of Engineers (ACOE) 1987 Wetland Delineation Manual and the U.S. Fish and Wildlife Service (USFWS) List of Plant Species that Occur in Wetlands, Florida, 1988. Wetlands were classified using the USFWS Classification System, Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et al. 1979). Field reviews of the project area were previously conducted as part of the overall TIS project. The downtown interchange improvement project area contains only one natural wetland, the Hillsborough River.

The Hillsborough River is classified by the USFWS classification system as E1UBL - Estuarine, Subtidal, Unconsolidated Bottom, Subtidal. The proposed project traverses a highly disturbed portion of the river which has concrete seawalls along its banks. An 83.8m (275 ft.) wide by 304.8m (1,000 ft.) long portion of the Hillsborough River, or approximately 2.5 ha (6.3 ac.), exists within the project right-of-way.

Alternative 1 will have no impact on wetlands associated with the Hillsborough River. **Alternative 2** will impact approximately 930.7m² (0.23 ac.) of river bottom, associated with the widening of the existing bridge structure over the Hillsborough River. **Alternative 3**, with its complete reconstruction of bridges across the river, will impact a total of 5,220.4m² (1.29 ac.) of river bottom. However, Alternative 3 will require the removal of the existing interstate bridge structures from the river, which currently impact approximately 4,977.6m² (1.23 ac.) of river bottom. As a result, the net loss of river bottom associated with Alternative 3 is 242.8m² (0.06 ac.).

If wetlands are impacted at the Hillsborough River, they will be mitigated by the creation of water quality treatment/flood volume attenuation ponds. Based on the results of the WET-II analyses conducted for the overall TIS project, the creation of these new ponds should compensate for the functions performed by the impacted wetland areas.

Permits will be required prior to start of construction. Permits will be required from the ACOE pursuant to Section 404 of the Clean Water Act, pursuant to 33 CFR Parts 320-330 for discharges of dredge or fill material into Waters of the United States, which include wetlands; the Southwest Florida Water Management District (SWFWMD), which issues Environmental Resource Permits pursuant to Chapters 40D-4, 40D-40, and 40D-400 FAC; and the United States Environmental Protection Agency (EPA), which issues National Pollutant Discharge Elimination System permits pursuant to 40 CFR, Parts 122 to 124. Agencies that will comment on permit applications submitted to the above-listed agencies include: the Florida Game and Fresh Water Fish Commission (FGFWFC), which will comment on the SWFWMD application; and the USFWS and the National Marine Fisheries Service (NMFS), which both comment on ACOE permit applications.

Coordination with permitting and permit review agencies will continue through subsequent design, permitting, and construction phases of the project, as required. Finalization of mitigation ratios and details will occur during the design phase of the project. Conceptual mitigation is proposed to consist of a combination of wetland creation and avoidance/minimization.

Wetland creation will be implemented to satisfy the "no net loss requirements" for wetlands set forth by federal guidelines. It is proposed that the stormwater treatment ponds necessary for this project be used to mitigate for impacted wetlands. By state regulation (Chapter 40D-4 FAC), detention ponds are required to have 35 percent of their surface area at a water elevation (depth) shallow enough to allow for the establishment and growth of wetland and aquatic vegetation (littoral zones). Pond littoral zones in excess of the required 35 percent can be used to offset impacts to the wetlands that will be impacted by the proposed project. It is proposed that mitigation on a one-to-one replacement ratio would be acceptable to permitting agencies based on the WET-II analyses results regarding the function and condition of the impacted wetlands.

4.3.2 Aquatic Preserves

The potential presence of designated "Aquatic Preserves" within the study area has been investigated. Research included review of the previously published TIS Task E.7k - Natural Features Inventory, and Chapter 17-302.700 of the Florida Administrative Code. Based on this review, no Aquatic Preserves exist within the project vicinity. The project will have no impact on Aquatic Preserves.

4.3.3 Water Quality

Existing stormwater outfalls within the study limits discharge to either the lower Hillsborough River or McKay Bay and ultimately to Tampa Bay. Tampa Bay is included in the National Estuary Program (NEP) and is a Southwest Florida Water Management District (SWFWMD) Surface Water Improvement Program (SWIM) priority water body.

Surface waters in the study area are designated by the Florida Department of Environmental Protection (FDEP) as Class II and Class III Waters (Florida Administrative Code [FAC], Chapter 17-302). Water quality in Class II Waters must be maintained to provide for shellfish propagation or harvesting.

All other surface waters in the study area are designated as Class III Waters. This designation requires adherence to less stringent water quality standards than the Class II designation; however, it requires protection of water quality for public recreation and the propagation and maintenance of fish and wildlife populations.

The proposed stormwater facility designs will include, at a minimum, the water quantity requirements for water quality impacts as required by the Southwest Florida Water Management District in Chapter 40D-40 F.A.C. Therefore, no further mitigation for water quality impacts will be required.

4.3.4 Outstanding Florida Waters

Based on a review of the Florida Administrative Code, Chapter 17-302.700, Outstanding Florida Waters, and correspondence with the FDEP, it has been determined that no Outstanding Florida Waters exist within the limits of the study area. The project will have no impact on any Outstanding Florida Waters.

4.3.5 Wild and Scenic Rivers

The proposed project involves improvements to an existing bridge crossing over the Hillsborough River located adjacent to downtown Tampa. The portion of the Hillsborough River within the project limits is not listed in the National Park Service Southeastern Rivers Inventory. Therefore, the coordination requirement for the Wild and Scenic Rivers Act does not apply to this project. The project will have no impact upon Wild and Scenic Rivers.

4.3.6 Floodplains and Floodways

Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) and Flood Insurance Studies (FIS), specifically City of Tampa FIRM Community Panels for the downtown area (Numbers 120114 0021C, 120114 0022C, 120114 0023C, 120114 0024C, and 120114 0025C) were

consulted to determine potential floodplain and floodway encroachment. The base floodplain within the downtown area results from tidal storm surge. Almost all areas within the project corridor are located in the area of minimal flooding (Zone C).

Floodplain impacts for the project were identified in the TIS Drainage Memorandum (April 1996), which was completed in accordance with the requirements set forth in Executive Order 11988 "Floodplain Management" and CFR 650A. The only 100-year floodplain encroachment is the I-275 crossing of the Hillsborough River between North Boulevard and Tampa Street.

The Hillsborough River is a non-regulated floodway for the city of Tampa as defined in the National Flood Insurance Program, City of Tampa Flood Insurance Study. The Lower Hillsborough River is regulated by the Tampa Bypass Canal flood-control project which was constructed by the U.S. Army Corps of Engineers and is owned and operated by the Southwest Florida Water Management District (SWFWMD). The Tampa Bypass Canal (TBC) facilities provide flood protection to the urban development area along the Lower Hillsborough River. Due to the effects of the flood-control project, encroachment up to the natural channel banks in the Lower Hillsborough River will not increase the flood elevation. No floodway data or delineations were presented in the City of Tampa FEMA Flood Study due to the flood control of the TBC. Flooding in the lower reaches of the river is a result of tidal storm surge in Tampa Bay.

Floodplain impacts for the project are minimal since the existing roadway alignment will be utilized. No floodways will be affected by the project. The proposed roadway improvements would not cause incompatible floodplain development or reduce beneficial floodplain values. The proposed roadway is primarily an elevated highway; therefore, roadway overtopping and traffic interruption due to flooding would not occur or will be insignificant.

The roadway within the project corridor currently serves the community as an evacuation route. Modification to the roadway width and drainage structures should improve the use of the facility for emergency services and evacuation purposes.

4.3.7 Coastal Zone Consistency

Congress passed the Coastal Zone Management Act (CZMA) in 1972. The Act authorizes the Federal government, through the Secretary of Commerce, to provide a Federal grant-in-aid assistance program to coastal states to assist them in developing coastal management programs for their coastal areas. A coastal zone is a county which borders either the Atlantic Ocean or the Gulf of Mexico.

Section 307 of the CZMA requires all Federal agencies to review their proposed Federal activities (including transportation improvements) which directly affect the coastal zone in order to develop consistency determinations. These consistency determinations will be used to determine if proposed Federal activities are consistent, to the maximum extent practicable, with Florida's Coastal Zone Management Plan (CZMP), which was approved on October 1, 1981.

The Office of Planning and Budget, Office of the Governor has determined that this project is consistent with the Florida Coastal Zone Management Plan. A copy of the correspondence is contained in the Appendix to the Draft Environmental Impact Statement for the TIS project.

4.3.8 Coastal Barrier Islands

The proposed project does not involve coastal barrier islands. Therefore, the project will have no impact upon coastal barrier islands.

4.3.9 Wildlife and Habitat

The study area is highly urbanized and does not provide suitable habitat for wildlife, with the exception of species tolerant of disturbed habitats. The majority of the natural environment has been altered to accommodate intense urban development. Remaining vegetated areas consist of maintained lawns and highway medians, and undeveloped rights-of-way along transportation corridors. No significant faunal communities exist within the study corridor.

In accordance with Section 7(c) of the Endangered Species Act of 1973 (as amended), the project area has been evaluated for the potential presence of threatened or endangered flora and fauna. Literature reviews, agency contacts, and habitat evaluations were originally conducted as part of the TIS Master Plan efforts in 1988 to identify threatened or endangered species which may inhabit the study area. This was accomplished by utilizing the FDOT computer list of threatened or endangered species (SPECIES) for Hillsborough County, a review of the Rare and Endangered Biota of Florida published series, and informal consultation with the USFWS, the FGFWFC, and the Florida Natural Areas Inventory (FNAI).

Over the past seven years, additional reviews for the potential presence of threatened or endangered species within the study area have been conducted. This included further agency correspondence, review of the FDOT computer list of threatened or endangered species (SPECIES), and subsequent field reviews.

Based on the information obtained through the above sources, the proposed project was evaluated for the potential for involvement with threatened or endangered species. No federal or state listed threatened or endangered species were observed during field reviews. In compliance with the Endangered Species Act of 1973, as amended, the U.S. Department of the Interior has designated critical habitat for threatened and endangered species. However, literature reviews resulted in the determination that no USFWS designated Critical Habitat for threatened and endangered species exists within the project study area. The majority of the study area is highly urbanized and does not provide substantial amounts of suitable habitat for any threatened or endangered species.

In addition, the USFWS was contacted for a list of species and they concurred that no listed species are known to exist in the study area. The determination was made that the project will not impact any proposed threatened or endangered species or affect or modify any critical habitat. A determination of "no effect" has been made, and the project is consistent with the Endangered Species Act. Copies of all correspondence from USFWS are contained in the Appendix to the Environmental Impact Statement prepared for the TIS project, published separately.

It is anticipated that the proposed project will not jeopardize the continued existence of the West Indian manatee (*Trichechus manatus latirostris*), nor will it destroy or modify its habitat. **Alternative 1** has no involvement with the Hillsborough River and, consequently, no potential to impact the West Indian manatee. The proposed Hillsborough River bridge improvements associated with **Alternatives 2 and 3** will require construction of additional pilings in the river. Possible hazards to the manatee during shoreline construction may include becoming trapped or entangled in turbidity barriers, or coming in contact with construction equipment, such as work boats and barges. Mitigation measures as outlined by the FDEP will be incorporated into the construction contract documents and implemented to ensure the protection of manatees. These measures are contained in the Appendix.

Long-term negative impacts to protected species that may utilize the wetlands associated with the Hillsborough River are not anticipated. Impact to existing wetland habitat from the interchange reconstruction could result in the loss of 930.7m² (0.23 ac.) or 242.8m² (0.06 ac.) of wetlands, depending on the alternative constructed. Due to the channelization of the river between seawalls, these areas provide limited habitat value and are not expected to be utilized to a significant degree by protected species.

This project has been evaluated for impacts to threatened and endangered species of flora. A literature review was conducted to determine those threatened or endangered species which may possibly inhabit the project area. This search resulted in findings that no listed species would be affected by the proposed project. Furthermore, the potential for impacts to critical habitat was assessed as to the relationship of the project to the USFWS designated "Critical Habitat."

4.3.10 Farmlands

Through coordination with the Soil Conservation Service, it has been determined that the project study limits, located in the urbanized area of Tampa, do not meet the definition of farmland as defined in 7 CFR 658. Therefore, the provisions of the Farmland Protection Policy Act of 1984 do not apply to this project. The project will have no impact on farmlands.

4.4 PHYSICAL ENVIRONMENT

The following sections discuss the existing physical environment and the potential impacts associated with the three alternatives.

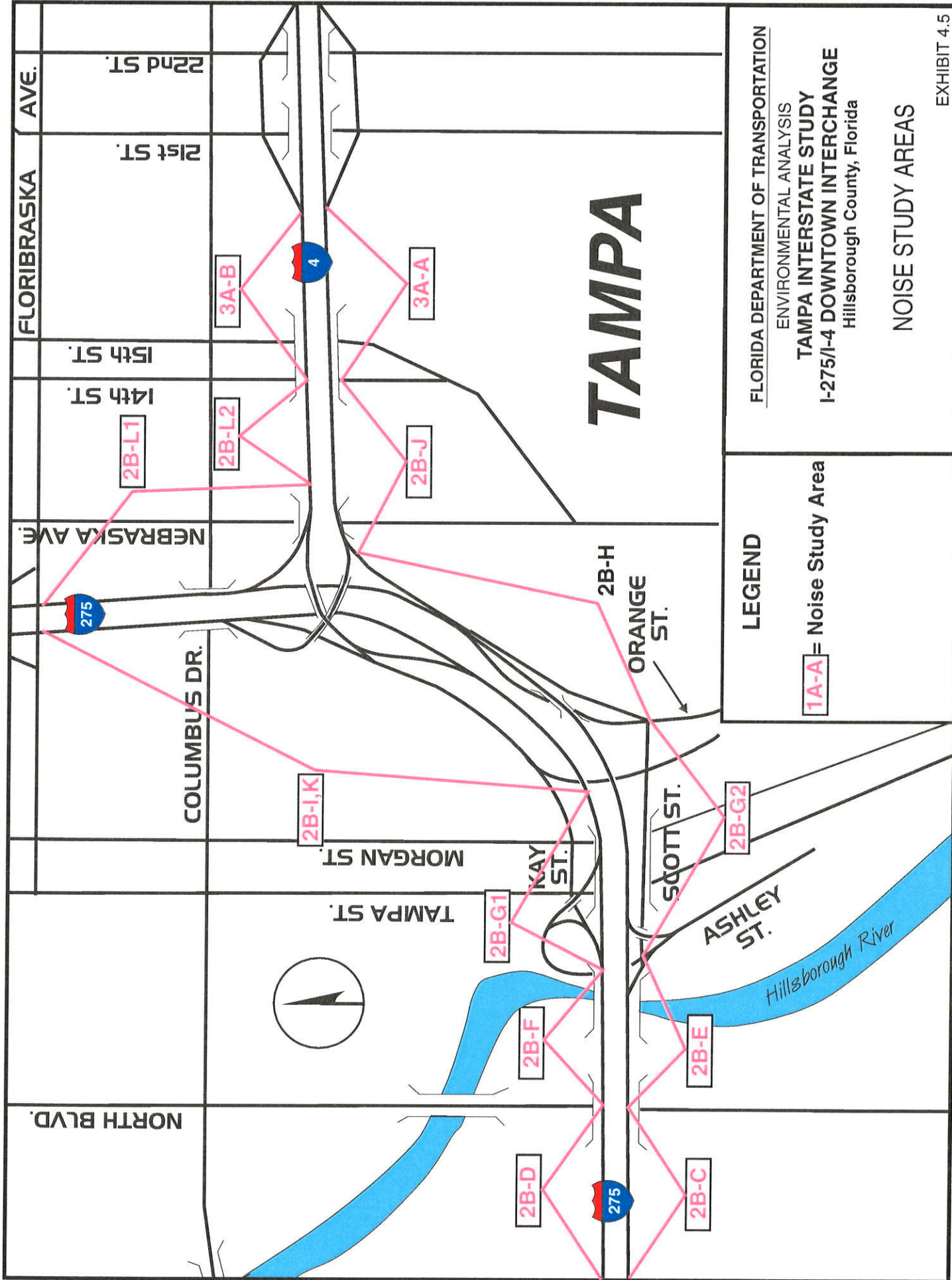
4.4.1 Noise

A noise analysis was conducted to document existing noise levels, analyze future-year noise levels and associated impacts, and evaluate the feasibility and economic reasonableness of potential noise mitigation measures associated with the proposed I-275/I-4 downtown interchange improvements. This analysis was prepared using methodology based on Title 23 CFR, Part 772, U.S. Department of Transportation FHWA, Procedures for Abatement of Highway Traffic Noise and Construction. The noise analysis follows the methodology previously established for the TIS and documented in the TIS - EIS Task A.5.b.13 Noise Report (December 1994).

The unit of noise measurement utilized for the analysis is the hourly equivalent sound level, Leq(h). Hourly Leq is defined as the equivalent steady state sound level which, in an hour, would contain the same acoustic energy as the time-varying sound level during the same period. Leq is measured in A-weighted decibels (dBA), which closely approximates human frequency response.

The existing noise environment in the vicinity of the project study area is typical of an urban community. Motor vehicles traveling the interstate system and the urban roadway system are the major intrusive sources of noise.

Existing land uses within the project area are primarily residential and commercial. For the purpose of the analysis, the study area was divided into 12 noise study areas as shown on Exhibit 4.5. The location and identification of these noise study areas is consistent with the noise analysis previously performed for the TIS. The noise sensitive sites within these areas include single-family residences, apartments, schools, parks, and churches. Noise sensitive sites are located in all of the noise study areas except 2B-G which is all commercial property.



Existing noise levels within the study area were evaluated through noise monitoring and modeling. The FHWA computer model, STAMINA 2.0, was previously validated for the study area by comparing measured values with predicted values. Based on this comparison, the STAMINA model was determined to be a reliable model for the prediction of traffic-related noise levels associated with this project. A review of the previous noise analysis indicates that Level of Service C traffic volumes were used to determine noise levels for existing conditions. Since the proposed improvements primarily address safety issues and are not considered a capacity improvement, the traffic volumes and speeds documented in the TIS Noise Report for existing conditions were assigned to corresponding roadway segments for the three design alternatives.

The noise sensitive sites within the study area are in activity category B. Therefore, STAMINA was used to predict the distance from the roadway centerline (existing centerline for existing conditions and proposed centerline for Alternatives 1, 2 and 3) to the 65 and 67 dBA contour. Note that these contours were determined for a typical location in each noise study area; however, because of the complex configuration and varying cross section of the interchange, these distances are variable. Additionally, these distances do not consider the effects of shielding which also varies. The 67 dBA contour corresponds to the FHWA criteria level and the 65 dBA contour corresponds to an approach of the criteria. FDOT considers the term “approach” to mean noise levels within 2 dBA of the FHWA criteria.

As shown in Table 4.1, the distances to the 65 and 67 dBA for Alternatives 1 and 2 are predicted to remain about the same as existing conditions. This is a result of limited changes in roadway geometry compared to existing conditions. In contrast, the distances for Alternative 3 are predicted to increase because of the expanded roadway cross section.

Representative noise sensitive receivers were modeled to identify and quantify the number of noise sensitive sites that would experience traffic noise levels which approach or exceed the FHWA criteria for 2010 build conditions. Noise sensitive sites predicted to experience an increase above existing levels, yet not approach or exceed the FHWA criteria, may also be impacted. In general, a 10 to 15 dBA increase above existing levels is considered a substantial increase. Therefore, noise

TABLE 4.1

NOISE ISOPLETHS FOR ALTERNATIVES 1, 2 AND 3
Tampa Interstate Study
I-275/I-4 Downtown Interchange Operational Improvements
Environmental Analysis

Noise Study Area	Limits	Approximate Distance From Roadway Centerline m (ft.)				
		Hourly LEQ (dBA)	1990 Existing	Alternative 1	Alternative 2	Alternative 3
SEGMENT 2A						
C	From Oregon Ave. to North Blvd., south of I-275	67 65	91 (300) 119 (390)	91 (300) 119 (390)	88 (290) 119 (390)	91 (300) 119 (390)
D	From Oregon Ave. to North Blvd., north of I-275	67 65	91 (300) 119 (390)	91 (300) 119 (390)	91 (300) 119 (390)	98 (320) 128 (420)
SEGMENT 2B						
E	From North Blvd. to Ashley St., south of I-275	67 65	91 (300) 119 (390)	91 (300) 119 (390)	91 (300) 119 (390)	116 (380) 146 (480)
F	From North Blvd. to Hillsborough River, south of I-275	67 65	98 (320) 131 (430)	98 (320) 131 (430)	101 (330) 131 (430)	119 (390) 152 (500)
G1	From Hillsborough River to Orange St., North of I-275	67 65	104 (340) 137 (450)	113 (370) 152 (500)	113 (370) 152 (500)	137 (450) 162 (530)
G2	From Hillsborough River to Orange St., south of I-275	67 65	94 (310) 128 (420)	104 (340) 137(450)	101 (330) 134 (440)	146 (480) 155 (510)
H	From Orange St. to I-4/I-275 Interchange	67 65	116 (380) 152 (500)	125 (410) 165 (540)	119 (390) 155 (510)	152 (500) 186 (610)
I	From Morgan St. to Palm Ave. northwest of I-275	67 65	116 (380) 158 (520)	124 (420) 174 (570)	116 (380) 162 (530)	174 (570) 213 (700)
J	From Palm Ave. to 14th St., south of I-4	67 65	104 (340) 140 (460)	104 (340) 140 (460)	104 (340) 140 (460)	131 (430) 165 (540)
K	From Palm Ave. to Floribaska Ave. west of I-275	67 65	107 (350) 143 (470)	107 (350) 143 (470)	107 (350) 143 (470)	152 (500) 192 (630)
L1	From Floribaska Ave. to 10th St., I-275/I-4 Interchange	67 65	119 (390) 162 (530)	119 (390) 162 (530)	119 (390) 162 (530)	134 (440) 177 (580)
L2	From 10th St. to 14th St. north of I-4	67 65	101 (330) 134 (440)	104 (340) 140 (460)	104 (340) 134 (440)	128 (420) 162 (530)
SEGMENT 3A						
A	From east of 14th St. to 20th St. Crosstown Connector, south of I-4	67 65	98 (320) 131 (430)	98 (320) 131 (430)	101 (330) 134 (440)	101 (330) 134 (440)
B	From east of 14th St. to 20th St., north of I-4	67 65	94 (310) 131 (430)	94 (310) 131 (430)	98 (320) 131 (430)	94 (310) 134 (440)

sensitive sites that would experience a substantial increase in 2010 for a build alternative, compared to existing or 2010 no-build conditions, were also identified and quantified.

The analysis indicates that under existing and 2010 no-build conditions, approximately 449 noise sensitive sites would experience noise levels that approach or exceed the FHWA criteria. These noise sensitive sites are single- and multi-family residences located primarily in the first- and second-row of residences bordering the existing roadway. The results for Alternatives 1, 2 and 3 are presented below by alternative.

The analysis indicates that for **Alternative 1**, approximately 462 noise sensitive sites are predicted to approach or exceed the FHWA criteria in 2010. Six sites identified under existing conditions are required as part of right-of-way acquisition, 444 sites are the same as those identified for existing conditions and 19 sites experience a 1 dBA or less increase resulting in a predicted noise level of 65 dBA (i.e., increase from 64 to 65 dBA after rounding off to the nearest decibel). Approximately 3 dBA is the largest increase predicted for any noise sensitive site. No sites with predicted noise levels below 65 dBA are anticipated to experience a substantial increase above existing levels.

The analysis indicates that for **Alternative 2**, approximately 459 noise sensitive sites are predicted to approach or exceed the FHWA criteria in 2010. Four sites identified under existing conditions are required as part of right-of-way acquisition, 445 sites are the same as those identified for existing conditions and 14 sites experience a 1 dBA or less increase resulting in a predicted noise level of 65 dBA. Approximately 3 dBA is the largest increase predicted for any noise sensitive site. No sites with predicted noise levels below 65 dBA are anticipated to experience a substantial increase over existing levels.

The analysis indicates that for **Alternative 3**, approximately 378 noise sensitive sites are predicted to approach or exceed the FHWA criteria in 2010. As part of right-of-way acquisition, 196 sites identified under existing conditions are required, 238 sites are the same as those identified for existing conditions, a shift in the alignment reduces noise levels at 15 sites below 65 dBA and 140 sites experience an increase ranging from 1 to 13 dBA resulting in a predicted noise level equal to or greater than 65 dBA. Approximately 13 dBA is the largest increase predicted for any noise

sensitive site. No sites with predicted noise levels below 65 dBA are anticipated to experience a substantial increase above existing levels.

In summary, Alternatives 1 and 2 are predicted to have little effect on the existing noise environment. However, there will be substantial impacts with Alternative 3 as existing first-row residences are removed as part of right-of-way acquisition, thus exposing second- and third-row residences to increased noise levels.

FHWA Noise Abatement Criteria, summarized in Table 4.2, establish guidelines for traffic noise impact assessments with respect to various land uses. The following criteria were used to determine when noise abatement measures for a noise sensitive site need to be considered:

- When predicted design year noise levels exceed 65 dBA, abatement considerations are required, regardless of the increase (or decrease) in noise as compared to the no-build noise levels.
- When the predicted design year noise levels are equal to or less than 55 dBA, abatement considerations are not warranted. This level is equal to an approach of the noise abatement criterion for "lands on which serenity and quiet are of extraordinary significance" and also represents a level generally perceived to be half of the Activity Category B noise abatement criterion.
- When the predicted design year noise levels are between 55 and 65 dBA, consideration of abatement will be based on the criteria shown graphically in Exhibit 4.6.

Abatement measures addressed include alignment modification, traffic management, property acquisition, land use controls, and noise barriers.

Alignment modification involves orientating and/or siting the roadway at sufficient distances from noise sensitive areas so as to minimize the noise impact. The proposed alignment primarily follows the existing alignment, making full use of existing right-of-way. Shifting the alignment would reduce noise impacts on one side of the facility, but this would result in additional right-of-way costs and increased noise impacts on the other side of the facility. Therefore, it was determined that shifting the alignment was not a feasible noise abatement measure.

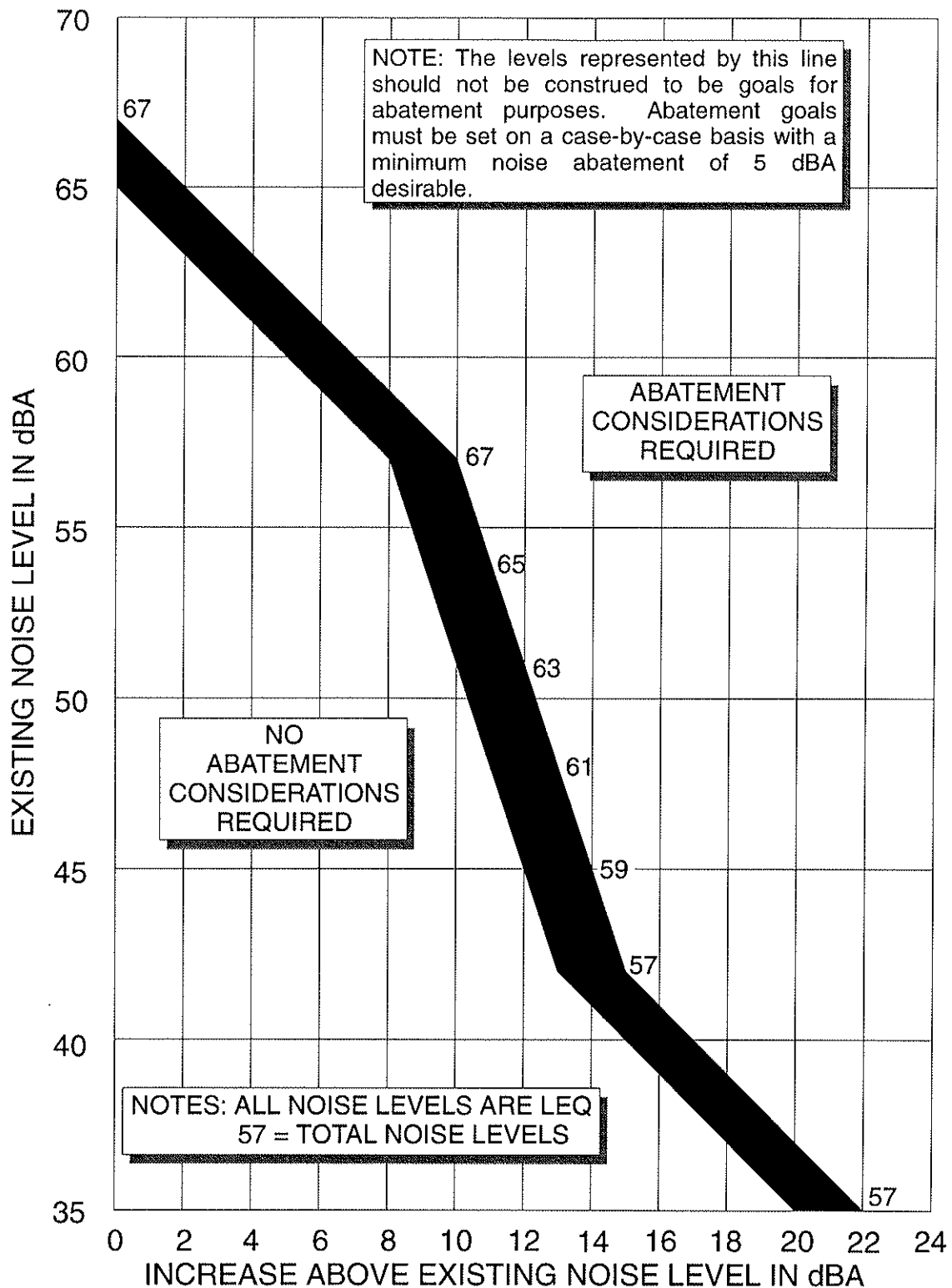
TABLE 4.2

**FHWA NOISE ABATEMENT CRITERIA
I-275/I-4 Downtown Interchange Operational Improvements
Environmental Analysis**

Activity Category	Description of Activity Category	Leq (h)
A	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.	57 (Exterior)
B	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.	67 (Exterior)
C	Developed lands, properties, or activities not included in Categories A or B above.	72 (Exterior)
D	Undeveloped lands.	N/A
E	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.	52 (Interior)

N/A = No Standard for this Activity Category, therefore not applicable.

Source: Code of Federal Regulations, Title 23, Part 772.



LEGEND

**APPROACHING ABATEMENT CRITERIA
(ABATEMENT CONSIDERATIONS
NORMALLY REQUIRED)**

FLORIDA DEPARTMENT OF TRANSPORTATION

ENVIRONMENTAL ANALYSIS
TAMPA INTERSTATE STUDY
I-275/I-4 DOWNTOWN INTERCHANGE
Hillsborough County, Florida

NOISE ABATEMENT CRITERIA
ACTIVITY CATEGORY B

Traffic management measures which limit motor vehicle type, travel speed, traffic volume, or time of operation are sometimes used as noise abatement measures. However, placing these limitations on the Tampa interstate system are not consistent with the project's goals for providing a modern urban interstate system.

Property acquisition programs to provide noise buffer zones or space for noise barrier construction are not recommended for this project due to the high cost and limited availability of land.

Proper land use controls can effectively minimize future impacts. Local governmental and planning agencies with land use controls can use the noise level isopleths to develop policies that minimize noise sensitive land uses adjacent to the roadway. Proper land use controls can also be used to maintain existing buffer areas. The FDOT will promote compatibility between land development and the operation of the proposed facility. To accomplish this goal, the FDOT will cooperate with the MPO and with local officials by furnishing:

- Appropriate generalized future noise levels (for various distances from highway improvement) for both developed and undeveloped lands or properties in the immediate vicinity of the project (Exhibit 4.2);
- Other information and explanation that will aid the local officials in planning for future traffic noise impacts.

Coordination with local agencies and officials has been conducted during the development of the TIS and a copy of this report will be provided to appropriate local planning authorities for use in the development of compatible future land use criteria.

Noise barriers reduce noise levels by blocking the sound path between a roadway and noise sensitive sites. The use of vegetation for noise barriers is not considered to be feasible in the actual reduction of noise levels for this project. Research conducted by the FHWA has shown that vegetative barriers should be composed of closely spaced, densely foliated trees and shrubs and should be approximately 100 feet wide in order to provide a 5 dBA reduction of noise levels. Nearly all the

property bordering the interstate system is developed and not conducive to this abatement measure. Vegetative barriers are not feasible due to the high cost and limited availability of land. Structural noise barriers are most effective on high speed, limited access facilities where there is adequate space for continuous barriers.

The FDOT is committed to the construction of feasible noise abatement measures at noise-impacted locations contingent upon the following conditions:

- Detailed noise analyses during the final design process support the need for abatement;
- Reasonable cost analyses indicate that the economic cost of the barrier(s) will not exceed the guidelines;
- Community input regarding desires, types, heights, and locations of barriers has been solicited by the District Office;
- Preferences regarding compatibility with adjacent land uses, particularly as addressed by officials having jurisdiction over such land uses has been noted;
- Safety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed; and
- Any other mitigating circumstances have been evaluated.

The noise analysis indicates that the project will result in increased noise levels and associated noise impacts as an unavoidable consequence. It is recommended that future noise impacts be mitigated through local land use ordinances involving zoning, building setbacks, and building construction materials. The results of the structural noise barrier evaluation are included in the section discussing the Preferred Alternative, specifically Section 5.2.4.

4.4.2 Air Quality

An air quality analysis was previously performed as part of TIS including the I-275/I-4 interchange, and is documented in TIS-EIS Task A.5.a - Air Quality Report (December 1994). The previous analysis used a worst-case approach in evaluating air quality impacts. The premise of this approach

is that air quality impacts elsewhere along the project corridor will be less than at worst-case locations.

Based on a review of traffic data and reasonable receptor sites, the I-275/Dr. Martin Luther King, Jr. Boulevard interchange and the I-275/North Boulevard area were selected as worst-case sites. The I-275/Dr. Martin Luther King, Jr. Boulevard is projected to have heavy traffic volumes on interstate mainline sections, arterial streets and the ramp system. A high volume-to-capacity ratio and long average delay per vehicle are anticipated at the signalized intersections associated with this interchange. In the vicinity of North Boulevard, the heaviest traffic volumes and highest volume-to-capacity ratios on the Tampa interstate system were forecasted to occur. Properties surrounding these two worst-case locations are nearly all developed with residential, commercial, or recreational use which establishes reasonable receptor sites in close proximity to the roadway.

In contrast, traffic in the I-275/I-4 interchange will not incur delays at signalized intersections. Furthermore, the I-275/I-4 interchange includes an interstate mainline and ramp system which spreads traffic volumes and motor vehicle emissions over a comparatively wide area. Even with consideration of the three I-275/I-4 downtown interchange operational improvements alternatives, the previously selected sites would still represent worst-case for the TIS.

Based on the worst-case microscale dispersion analysis results documented in the previous TIS Air Quality Report, there will be no carbon monoxide concentration above the one- and eight-hour National Ambient Air Quality Standard (NAAQS), regardless of the alternative selected. Furthermore, proposed improvements to the I-275/I-4 interchange primarily focus on safety improvements for all three alternatives. This will result in an improvement in traffic flow as the number of highway incidents and conflicting traffic movements are decreased. Improved traffic flow will ultimately lower emissions from motor vehicles operating in the I-275/I-4 interchange.

This project is in an area which has been designated as a maintenance area for the ozone standards under the criteria provided in the Clean Air Act Amendments of 1990. This project is in conformance with the State Implementation Plan (SIP) because it will not cause violations of any

of the NAAQS. This project is included in the urban area's current approved conforming TIP which was signed by the Secretary of the FDOT on August 31, 1995. This project is included in the area's conforming long range plan and is included in the area's Conformity Determination report which was approved by FHWA/Federal Transit Administration (FTA) on June 30, 1995.

The project is consistent with Congestion Management System Strategies. The I-275/I-4 downtown interchange operational improvements will improve traffic operations by reducing multiple weaving movements. The safety improvements should reduce the number of accidents, thereby augmenting any incident management measures developed during final design.

4.4.3 Contamination

A Level I contamination screening evaluation was conducted for the I-275/I-4 downtown interchange operational improvements project in December 1995. The results are published in the Contamination Screening Evaluation Technical Memorandum (July 1996) published separately. Essentially, this screening evaluation identifies known and potential hazardous material contamination sites along the project corridor; evaluates their risk to impact the proposed project; and provides recommendations for additional investigations, where required. The survey was conducted according to guidelines established by the FDOT, District VII.

This contamination screening evaluation was conducted in order to help identify any known or potential hazardous material contamination sites along the project corridor. Because there is no single comprehensive source of information currently available which identifies all known and potential hazardous material contamination sites along the project, the survey consisted of the following tasks:

- Reviewing computer data base files provided by Environmental Data Resources, Inc. These computer data base files include, but are not limited to:

Federal ASTM and Non-ASTM Records

1. CERCLIS - Comprehensive Environmental Resources, Compensation and Liability Information System.
2. ERNS - Emergency Response Notification System
3. NPL - National Priority List
4. RCRIS - Resource Conservation and Recovery Information System
5. FINDS - Facility Index System
6. HMIRS - Hazardous Materials Information Reporting System
7. PADS - PCB Activity Database System

State of Florida ASTM and Non-ASTM Records

1. LUST - PCT01- Petroleum Contamination Detail Report
 2. UST - STI01 - Facility/Owner/Tank Report
 3. SHWS - Florida's State-Funded Action Sites
 4. SWF/LS - Facility Directory (Solid Waste Facilities)
 5. AST - STI02 - Facility/Owner/Tank Report
 6. FLUCFCS - Sites List
- Consulting representatives of the Hillsborough County Environmental Protection Commission (EPC) responsible for pollution control and hazardous material regulations in the study area;
 - Reviewing Sanborn Fire Insurance Maps dated 1915, 1931, 1951, 1954 and 1962;
 - Reviewing the available R.L. Polk Co. City Directories for Tampa dated between the dates 1950 and 1993 to identify past land uses potentially involving hazardous material along the project corridor;
 - Evaluating historical aerial photography of the project corridor taken in 1960, 1966, 1972 and 1987;

- Reviewing previous hazardous material surveys along the TIS project corridor conducted by Greiner in 1988, 1991 and 1993; and
- Conducting in-the-field visual surveys within the study area in order to help verify known hazardous material sites and to identify and investigate any previously unrecorded sites focusing on underground storage tanks and hazardous material use.

Results

As a result of the data collection efforts and field reconnaissance, this survey identified 37 sites along the project corridor containing hazardous materials, hazardous waste, other regulated substances, and/or environmental contamination, or which have the potential to contain these materials. A map showing the proposed project limits and the location of each site is provided on Exhibit 4.7. Businesses which currently maintain underground storage tanks for petroleum products or sites that previously contained underground storage tanks constitute the majority of these sites. A summary of each site including the name, address, identification number (if any), potential contaminants, risk ranking, and proposed right-of-way involvement by alternative is provided on Table 4.3.

The information obtained from these tasks was evaluated according to the Project Development and Environment (PD&E) Contamination Risk Evaluation Guideline, Revision 2, developed by the FDOT District VII. Utilizing the FDOT risk evaluation rating system, each investigated site was assigned a rating of “No,” “Low,” “Medium,” or “High” based upon the information collected during this contamination screening. The risk rating assigned to each site, shown on Table 4.3, indicates the potential for hazardous material involvement which could impact the proposed I-275/I-4 downtown interchange project.

Recommendation

Based on the information available for each site, Level II investigations are recommended at those sites ranked Medium or High where soil and/or groundwater contamination, should it exist, could potentially impact the interchange improvement project. Additional information about those sites ranked Medium or High is provided in the Contamination Screening Evaluation Technical

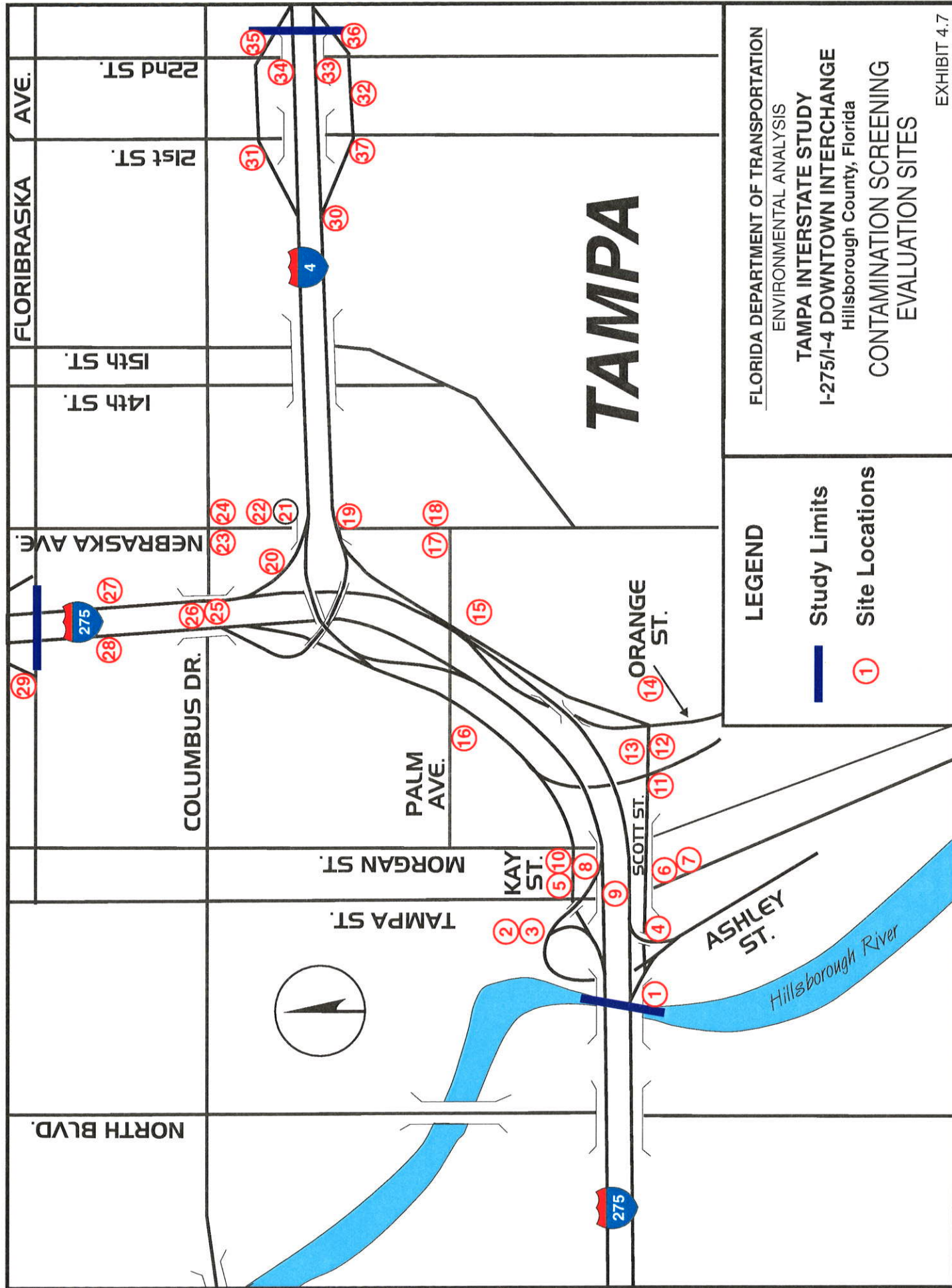


TABLE 4.3

CONTAMINATION SCREENING - SITE SUMMARY
Tampa Interstate Study
I-275/I-4 Downtown Interchange Operational Improvements
Environmental Analysis

Site No.	Loc.	Site Name/Description/Address	Facility Id. No.	Comments	Concern	Rank	Direct Involvement
1	S	Former Foundry - South of Scott Street, West of Ashley St. Currently River Frontage	None	Recorded on Sanborn Maps - 1951 No Regulatory Information	H/M	Med	Alt. 3
2 (NA-140)	N	Tampa City Police Dept./Fueling 1710 N. Tampa St.	298625142	LUST (tnr), UST EDI - Eligible 9/89 Tanks Removed x/xx	PET	Low	None
3	N	Former Foundry - West side of Tampa Street, North of Kay Street. Currently Tampa Police Dept. Parking Lot	None	Recorded on Sanborn Maps - 1915 No Regulatory Information	H/M	Low	None
4 (NA-172)	N	Tampa City - Recreation Dept. 1420 N. Tampa St.	299400333	UST - Fuel Oil Closed in Place 12/92	PET	Med	Alt. 3
5	N	Former Leather Works (Possible Tannery) East Side of Tampa Street, North of Kay Street	None	Recorded on Sanborn Maps - 1951, 54, 62 No Regulatory Information	H/M	Low	None
6	S	Former Gasoline Station/Currently HRS Office Parking Lot, East Side of Tampa Street, South of Scott Street	None	Recorded on Sanborn Maps - 1951, 54, 62 No Regulatory Information	PET	High	Alt. 3
7	S	Former Dry Cleaner/Currently HRS Office Parking Lot. East Side of Tampa Street, South of Scott Street	None	Recorded on Sanborn Maps - 1951, 54, 62 No Regulatory Information	H/M	Med	Alt. 3
8 (NA-NA)	N	Central Animal Hospital 1523 North Franklin Street	None	UST Observed	PET	High	Alts. 1, 2, 3 Preferred
9	N	Former Gasoline Station/Auto Repair - Currently Vacant. East Side of Franklin Street, North of Scott Street (beneath existing I-275)	None	Recorded on Sanborn Maps - 1931 No Regulatory Information	PET-H/M	High	Alt. 1,2,3, Preferred
10 (12-NA)	N	Tampa Electric Substation/Kay and Marion Streets	Not Found	PCB's	H/M	Med	Alt. 3
11 (NA-174)	S	Hillsborough County - Morgan St. Jail 1301 N. Morgan St.	299102571	UST, AST's Observed	PET-H/M	Low	None
12 (13-185)	S	Ray's Bail Bonds/Former Gas Station a.k.a. Bazarte/Rene 801 E. Scott St.	298732385	LUST (tnr), UST EDI - Eligible 3/93 CAR RAP - (MOP) Tanks Removed x/xx	PET	Low	None
13	S	Former Gasoline Station/Currently FDOT Right-of-Way. Area North of Scott Street between Orange and Jefferson Streets.	None	Recorded on Sanborn Maps - 1931 No Regulatory Information	PET	High	Alt. 1,2 Preferred
14	E	Former Dry Cleaner/Currently Central Park Village. Former intersection of Scott Street and Lamar Avenue	None	Recorded on Sanborn Maps - 1951 No Regulatory Information	H/M	Low	None
15	E	Former Gasoline Station/Currently vacant property. Southeast corner of Henderson Street and Governor Street	None	Recorded on Sanborn Maps - 1951, 54, 62 No Regulatory Information	PET	Low	None
16 (NA-NA)	W	Silver Dollar Tavern/Former Gas Station 411 E. Palm Ave.	Pending	UST Parts Observed Disposition Unknown Recorded on Sanborn Maps - 1951, 54, 62	PET	Med	None

TABLE 4.3 (Continued)
CONTAMINATION SCREENING - SITE SUMMARY
Tampa Interstate Study
I-275/I-4 Downtown Interchange Improvements
Environmental Analysis

Site No.	Loc.	Site Name/Description/Address	Facility Id. No.	Comments	Concern	Rank	Direct Involvement
17 (NA-99)	E	Torres Transmissions/Auto Repair a.k.a. Giglio Property/Former Gas Station 2002 N. Nebraska Ave.	299102252	LUST (nr), UST ATRP - Ineligible 3/93 (no contamination) Tanks Removed 3/91	PET-H/M	Low	None
18	E	Former Gasoline Station/Currently large vacant building. Northeast corner of Nebraska and Palm Avenues	None	Recorded on Sanborn Maps - 1951, 54, 62 No Regulatory Information	PET	Low	None
19	S	Former Gasoline Station/Currently FDOT Right-of-Way. Northeast corner of Nebraska and 12th Avenues (beneath existing I-4 Ramps)	None	Recorded on Sanborn Maps - 1951 No Regulatory Information	PET	High	Alt. 1, 2, 3, Preferred
20 (NA-63)	E	Hillsborough Co. School Board/School 707 E. Columbus Ave.	298736992	UST, Unmaintained AST, Active	PET	Med	Alt. 1, 3 Preferred
21 (19-NA)	E	Eastside Funeral Home/Former Auto Service Business 2301 N. Nebraska Ave.	None	No Regulatory Information	PET-H/M	Med	Alt. 3
22 (18-78)	E	Vacant Building/Former Gas Station a.k.a C Mart #643 2309 N. Nebraska Ave.	298508941	UST, Tanks Removed 12/90	PET-H/M	Med	None
23 (17-76)	E	Amigos Auto Service/Auto Repair a.k.a. Genes Ser/Former Gas Station 2318 N. Nebraska Ave.	298625737	UST, Closed in Place 10/88	PET	Med	None
24 (NA-78)	E	Goldstar Foods/Gas Station 2317 N. Nebraska Ave.	298944840	UST, Active Retail Station	PET	Low	None
25	E	Former Dry Cleaner/Currently FDOT Right-of-Way. Southwest corner of Taliaferro Avenue and Columbus Drive (beneath existing I-275).	None	Recorded on Sanborn Maps - 1951, 54, 62 No Regulatory Information	H/M	High	Alts. 1, 2, 3 Preferred
26	W	Former Gasoline Station/Currently FDOT Right-of-Way. Northeast corner of Elmore Street and Columbus Drive (beneath existing I-275).	None	Recorded on Sanborn Maps - 1962 No Regulatory Information	PET	High	Alts. 1, 2, 3 Preferred
27 (20-54)	E	Tampa City Fire Dept. Communication/Alarm Signal Bldg. And Fueling 2904 N. Mitchell Ave.	298842212	LUST (Gas and Diesel) UST AST. Tanks removed 10/90 and 3/91. One active AST remains. EDI - Eligible 10/89	PET	High	Alt. 3
28	W	ERNS Incident Site 2818 N. Elmore Ave.	None	Emergency Response Notification System - Recorded Site #8801808	Unknown	Low	Alt. 3
29 (21-NA)	W	Spring Property/Former Gas Station 520 E. Floribaska Ave.	299101452	LUST (Waste Oil), UST, Unmaintained ATRP - Ineligible 3/94	PET	Med	None
30 (NA-89)	S	U-Haul/Truck & Trailer Rental 2309 N. 18th St	298625612	UST	PET	Low	None

TABLE 4.3 (Continued)

CONTAMINATION SCREENING - SITE SUMMARY
Tampa Interstate Study
I-275/I-4 Downtown Interchange Improvements
Environmental Analysis

Site No.	Loc.	Site Name/Description/Address	Facility Id. No.	Comments	Concern	Rank	Direct Investment
31 (25-83)	N	BP - Ybor/Gas Station a.k.a. Royal Station 2040 14th Ave.	298627858	LUST (gas), UST, EDI - Eligible 3/90	PET	Med	None
32 (26-84)	S	Hardees/Fast Food/Former Gas Station a.k.a. NCJ Investments 2101 13th Ave.	298624753	LUST (tnr), UST, EDI - Eligible 1/92	PET	Med	None
33	S	Former Gasoline Station/Currently FDOT Right-of-Way. Northeast corner of 22nd Street and 13th Avenue (beneath I-4).	None	Recorded on Sanborn Maps - 1962 No Regulatory Information	PET	High	Alts 1,2,3 Preferred
34	N	Former Gasoline Station/Currently FDOT Right-of-Way. Southwest corner of 22nd Street and 14th Avenue (beneath existing I-4).	None	Recorded on Sanborn Maps - 1951, 54, 62 No Regulatory Information	PET	High	Alts 1,2,3 Preferred
35 (27-80)	N	Fina A - One/Gas Station a.k.a. Gas Kwick 2501 N. 22nd St.	298625735	LUST (tnr), UST, EDI - Eligible 8/91	PET	Med	None
36 (28-85)	S	Amoco - Alan Dale/Gas Station a.k.a. Shell - Alan Dale 2207 13th Ave.	298625038	LUST (tnr), UST, PLRP - Eligible 2/91, RAP (MOP)	PET	Med	None
37	S	Burger King/Former Texaco Gas Station 2302 N. 21st St.	None	Recorded in City Directories No Regulatory Information	PET	Med	None

AST - Aboveground Storage Tank
 ATRP - Abandoned Tank Restoration Program
 CAR - Contamination Assessment Report
 EDI - Early Detection Incentive Program
 FAC. ID. No. - FDEP Facility Identification Number
 HM - Hazardous Materials
 LUST - Leaking Underground Storage Tank
 MOP - Monitoring Only Plan
 PCB - Polychlorinated Biphenyls
 PET - Petroleum
 PLRP - Petroleum Liability & Restoration Program
 RAP - Remedial Action Plan
 tnr - Type of Contamination Not Recorded
 UST - Underground Storage Tank
 XXX - Date Unknown

Memorandum. At a minimum, Level II investigations should be conducted at those sites with direct project involvement. Direct project involvement means that all, or a portion of the site, is located within existing right-of-way or will be acquired for project right-of-way.

Alternative 1 would result in direct project involvement at Site Numbers 8, 9, 13, 19, 20, 25, 26, 33, and 34; **Alternative 2** at Site Numbers 8, 9, 13, 19, 25, 26, 33, and 34; and **Alternative 3** at Site Numbers 1, 4, 6, 7, 8, 9, 10, 19, 20, 21, 25, 26, 27, 28, 33, and 34. Level II investigations should include, but not be limited to, (1) an updated review of FDEP and EPC files, and (2) the select sampling and analysis of each site's soil and groundwater to help determine the absence or presence of environmental contamination.

The findings of this contamination screening evaluation are based upon preliminary information only and are not intended to replace more detailed studies such as individual environmental site assessments and subsurface soil/groundwater investigations. Rather, this survey is intended as a preliminary guide for identifying potential contamination in the proposed I-275/I-4 downtown interchange improvements project area. Other technical studies may be required to determine the existence of site contamination prior to right-of-way acquisition, utility relocation, or stormwater pond construction. It should be noted that potential contamination sites may extend beyond those identified in this preliminary survey because of limited historical and regulatory information, illegal dumping practices, and the lack of compliance with the FDEP stationary tank registration and hazardous waste generator programs. Finally, the identification of a site in this report does not necessarily indicate that the site contains environmental contamination, but only that there is the potential for environmental contamination to occur.

4.4.4 Drainage

The existing drainage system within the project area consists of enclosed stormwater systems. The majority of the stormwater outfall systems for the existing interstate were constructed in the early 1960s and are considered to be undersized or overloaded. The existing stormwater systems within

the project area outfall to the Hillsborough River or McKay Bay. Currently, no stormwater treatment is provided for the existing roadway runoff from the interstate.

Existing cross-drain structures and outfalls were located using City of Tampa drainage maps, basin studies, other similar sources, and field verification. Approximately 11 cross-drain structures were identified within the project limits, as listed in Table 4.4. The cross-drain structures range in size from a 45.7mm (18 in.) reinforced concrete pipe (RCP) to a 2.1m (7.0 ft.) x 1.5m (5 ft.) box culvert (BC). Cross drain structure improvements and impacts to the floodplain associated with this project are addressed in the TIS I-275/I-4 Downtown Interchange Improvements Drainage Memorandum (April 1996), which is published separately.

The three alternatives were evaluated for proposed drainage requirements. This included determining proposed stormwater treatment volumes, preliminary detention pond locations and estimated conveyance and outfall system improvements.

Existing and proposed new impervious areas were determined for each alternative and are shown in Table 4.5. Since the runoff from the existing and proposed roadways flows to the tidally influenced Hillsborough River, no stormwater peak attenuation per FDOT 14-86, F.A.C. or SWFWMD 40D-4, F.A.C. was considered.

Stormwater treatment of the first one-inch of runoff from the new impervious areas was determined for each alternative. Approximately 1,233m³ (43,560 ft.³), 863m³ (30,492 ft.³), and 2,590m³ (91,476 ft.³) of stormwater treatment volume will be required for Alternatives 1, 2 and 3, respectively. Preliminary detention pond locations were identified within existing right-of-way at the proposed interchange infield and ramp areas or within impacted areas adjacent to the proposed roadway and is shown on Exhibit 4.8. The proposed ponds are assumed to be “wet” ponds with approximately 0.6m (2.ft.) of storage fluctuation and 6.1m (20 ft.) maintenance berms. The total detention pond area is 3,237.4m² (0.8 ac.), 2,832.8m² (0.7 ac.), and 6,070.3m² (1.5 ac.) for Alternatives 1, 2, and 3, respectively.

TABLE 4.4

DRAINAGE STRUCTURE LOCATION SUMMARY
Tampa Interstate Study
I-275/I-4 Downtown Interchange Operational Improvements
Environmental Analysis

Structure I.D.	Location	Size/Type	Length	Invert el. (HW) (m/ft. NGVD)	Invert el. (TW) (m/ft. NGVD)	Drainage Basin
CD14	Franklin St.	914 mm RCP (36 in.)	91.4 m (300 ft.)	3.7 m (12.4 ft.)	2.1 m (7.1 ft.)	W. to Hillsborough River
CD15	Morgan St.	1524 mm RCP (60 in.)	60.9 m (200 ft.)	3.2 m (10.6 ft.)	3.1 m (10.3 ft.)	W. to Hillsborough River
CD16	Henderson Ave.	457 mm RCP (18 in.)	82.2 m (270 ft.)	13.2 m (43.4 ft.)	11.2 m (37.0 ft.)	W. to Hillsborough River
CD17	Palm St.	609 mm RCP (24 in.)	134.1 m (440 ft.)	12.1 m (40.0 ft.)	10.9 m (36.0 ft.)	Nuccio Pkwy.
CD18	10th St.	1.5 m x 1.5 m BC (5 ft. x 5 ft.)	70.7 m (232 ft.)	8.5 m (28.6 ft.)	8.5 m (28.0 ft.)	Nuccio Pkwy.
CD19	13th St.	2.1 m x 1.5 m BC (7 ft. x 5 ft.)	304.8 m (1,000 ft.)	11.7 m (38.5 ft.)	--	Ybor City
CD20	14th St.	457 mm RCP (18 in.)	76.2 m (250 ft.)	10.8 m (35.7 ft.)	9.5 m (31.2 ft.)	Ybor City
CD21	15th St.	1006 mm RCP (42 in.)	60.9 m (200 ft.)	--	8.8 m (29.0 ft.)	Ybor City
CD22	22nd St.	762 mm RCP (30 in.)	--	--	5.3 m (17.4 ft.)	29th Street
CD-100	Columbus Dr.	457 mm RCP (18 in.)	79.2 m (260 ft.)	N/A	N/A	Nuccio Parkway
CD-101	Floribraska Ave.	609 mm RCP (24 in.)	N/A	N/A	N/A	Robles Park/Hillsborough River

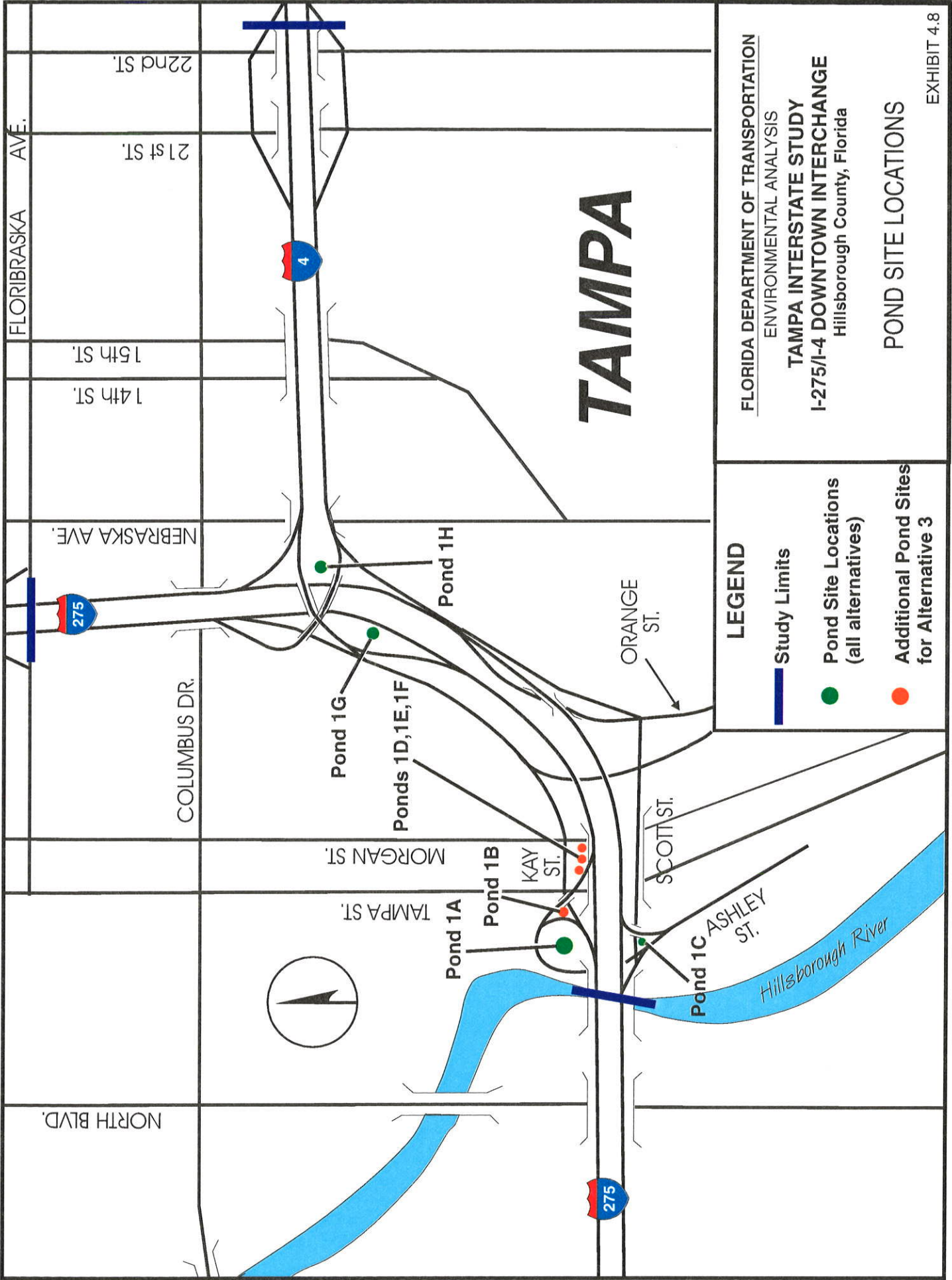
BC = Box Culvert
RCP = Reinforced Concrete Pipe
CBC = Concrete Box Culvert
N/A = Not Available
NGVD = National Geodetic Vertical Datum
HW = Headwater
TW = Tailwater

TABLE 4.5

EXISTING AND PROPOSED NEW IMPERVIOUS AREAS
Tampa Interstate Study
I-275/I-4 Downtown Interchange Operational Improvements
Environmental Analysis

Location	Pavement Area - Hectares (Acres)			
	Existing Pav't	New Pav't Alt. 1	New Pav't Alt. 2	New Pav't Alt. 3
Rome Ave. to Hillsborough River	3.6 (9.0)	*	*	1.4 (3.7)
Hillsborough River to Orange St.	4.2 (10.6)	*	*	1.6 (4.2)
Orange St. to Palm Ave.	4.0 (9.9)	2.5 (6.3)	1.8 (4.5)	2.3 (5.9)
Palm Ave. to Floribaska Ave. to Nebraska Ave.	4.2 (10.5)	0.8 (2.2)	0.6 (1.7)	3.1 (7.9)
Nebraska Ave. to 13th St.	1.9 (4.9)	0.7 (1.8)	0.4 (1.0)	0.8 (2.0)
13th St. to 19th St.	2.5 (6.4)	0.4 (1.1)	0.1 (0.4)	0.3 (0.9)
19th St. to 22nd St.	1.0 (2.6)	0.1 (0.2)	0.1 (0.4)	0.3 (0.9)
Total	21.8 (53.9)	4.6 (11.6)	3.2 (8.0)	10.3 (25.5)

- * No construction proposed in these segments with this alternative.



With the construction of any of the alternatives, the existing stormwater conveyance and outfall system will require modifications and improvements. Currently, the interstate is on a fill or bridge section throughout the project area. Existing drainage is conveyed to scuppers, inlets, or ditches and directed down to ground level. The existing drainage is then conveyed via a system of large diameter pipes (1,371mm (54 in.) to 1,676mm (66 in.) RCP) directly to the Hillsborough River along Scott Street. Drainage on the at-grade streets is conveyed via pipes and inlets to either the FDOT outfall or to an existing City of Tampa outfall system along Laurel Street. The proposed alternatives will consist of adding new travel lanes and shoulders. Depending on the alternative, the existing roadway collection system may still be utilized. However, additional inlets and pipes may be required to tie the new lanes or shoulder drainage system to the existing drainage system. In other cases, due to the roadway geometry, a new separate drainage collection system will be required. It is anticipated that the interstate outfall system will also require modification. This will be required for two reasons: the outfall will have to convey runoff from increased impervious area, and portions of the proposed alternatives will cover the existing pipe alignment. The ultimate roadway drainage system will be determined during final design.

The proposed conceptual drainage alternatives were reviewed by representatives of FDOT, SWFWMD, and the City of Tampa with regard to drainage requirements. The major items discussed with the agencies include:

- The existing interchange drainage system discharges directly into the Hillsborough River, which is tidally influenced. There is no existing stormwater treatment provided.
- FDOT indicated that since the interchange area is discharging into the Hillsborough River (tidal area), FDOT 14-86 requirements will not apply.
- Due to the combination of new pavement and the expansion of existing pavement, equivalent stormwater treatment is proposed. SWFWMD wants to maximize treatment capacity. As a minimum treatment, 2.54 cm (1 in.) of runoff over the area of new pavement (wet-detention) is currently proposed.
- No peak attenuation will be required by SWFWMD since discharges will be into the Hillsborough River provided that it is demonstrated that there is no adverse impact into adjacent drainage systems.

- The City will also not require peak attenuation for the interchange area discharging into the Hillsborough River. However, the City may require improvements to the outfall system in lieu of peak attenuation in the Ybor City area. During final design, the increase in peak discharge due to the roadway improvements will be calculated to determine what outfall improvements may be required.

4.4.5 Navigation

The I-275/I-4 downtown interchange operational improvements include one bridge crossing of a navigable waterway adjacent to the project. I-275 crosses the Hillsborough River at river-mile 1.4, in the vicinity of Scott Street in downtown Tampa. The crossing consists of twin concrete American Association of State Highway Transportation Officials (AASHTO) girder spans for westbound (Bridge No. 100135) and eastbound (Bridge No. 100136) traffic. The bridges were constructed in 1964.

Flowing north to south, the Hillsborough River is approximately 83.8m (275 ft.) wide at the bridge location, and is contained within concrete seawalls along the eastern and western banks. Land uses in the vicinity of the structures include multifamily residential development and a new high school (under construction) in the northwest quadrant; a large public park (Riverfront Park) in the southwest quadrant; and a combination of multifamily residential, urban commercial development, and open right-of-way in the southeast and northeast quadrants. A commercial marine refurbishing and repair facility is located along the river a short distance north of the interstate bridges. Vessels navigating the river in the vicinity of the bridges include row boats, small motorboats, cabin cruisers, houseboats, sailboats, and small to medium size commercial vessels.

The existing bridges provide a fixed vertical clearance of 12.2 m (40 ft.) at mean high water and a horizontal clearance of 22.9 m (75 ft.) fender to fender. The minimum controlling depth of the river at the bridges is 1.5 m (5 ft.) at mean low water. The U.S. Army Corps of Engineers maintains a channel from the river's mouth at Hillsborough Bay north (upstream) to Columbus Drive, a distance of 4.5 km (2.8 mi.), which includes the study area. No dredging of the channel has occurred in recent years.

The Florida Marine Patrol - Office of Waterway Management was contacted for information regarding boating accidents in the vicinity of the existing bridges. They were unable to provide specific information with regard to accidents at that location but indicated that the rate of accidents or incidents is comparable to other bridges along the waterway.

The proposed project will have no impacts on navigation or navigation-related land uses along the Hillsborough River. **Alternative 1** requires no improvements in the vicinity of the Hillsborough River bridges. **Alternatives 2 and 3** would require improvements to the bridges; however, the existing minimum horizontal and vertical clearances will be maintained. During project construction, the existing channel will be maintained open and no disruptions to navigation are anticipated.

4.4.6 Construction Impacts

Construction activities associated with the project will result in temporary air, noise, water quality, traffic flow, and visual impacts for those residents, businesses, and travelers within the immediate vicinity of the project. These construction impacts are summarized below.

The air quality impact will be temporary and will primarily be in the form of emissions from diesel-powered construction equipment and dust from embankment and haul road areas. Air pollution associated with the creation of airborne particles will be effectively controlled through the use of watering or the application of calcium chloride in accordance with FDOT's Standard Specifications for Road and Bridge Construction, as directed by the FDOT Project Manager.

Noise and vibration impacts will be from heavy equipment movement and construction activities, such as pile driving and vibratory compaction of embankments. Noise control measures will include those contained in FDOT Standard Specifications for Road and Bridge Construction.

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

Maintenance of traffic and sequence of construction will be planned and scheduled so as to minimize traffic delays throughout the project. These maintenance of traffic plans may include undertaking construction activities during night time to reduce congestion and shorten construction schedules. Signs will be used as appropriate to provide notice of road closures and other pertinent information to the traveling public. The local news media will be notified in advance of road closings and other construction-related activities which could excessively inconvenience the community so that motorists, residents, and businesses can plan their day and travel routes in advance. Access to all businesses and residences will be maintained to the extent practical through controlled construction scheduling. Close coordination with the Tampa Central Business District Transportation Management Association and the FDOT will be undertaken to develop a program for maintaining mobility in the CBD/Ybor City urban area. Development of travel demand management and transportation system management techniques during construction will be considered and evaluated by the FDOT as part of its design and construction activities. Traffic delays will be controlled to the extent possible where many construction operations are in progress at the same time. The contractor, whenever practical, will maintain the existing number of traffic lanes in each direction and comply with the Best Management Practices of FDOT. When lane closures are required, they should be limited to nighttime hours.

For the residents and businesses along the project's right-of-way, some of the materials stored for the project may be visually displeasing; however, this will be a temporary condition and should pose no substantial problem in the long term.

Construction of the roadway may require excavation of unsuitable material (muck), placement of embankments, and use of materials such as limerock, asphaltic concrete, and portland cement concrete. Demucking is anticipated at the wetland site and would be controlled by Section 120 of the FDOT Standard Specifications for Road and Bridge Construction. Disposal would be on-site in

detention areas or off-site. The removal of debris will be in accordance with local and state standards. The contractor is responsible for his methods of controlling pollution on haul roads, in borrow pits, other material pits, and areas used for disposal of waste materials from the project. Temporary erosion control features as specified in the FDOT's Standard Specifications for Road and Bridge Construction, Section 104, will consist of temporary grassing, sodding, mulching, sandbagging, slope, drains, sediment checks, artificial covering, and berms.

In addition to the above noted, it is anticipated the following specific construction impact mitigation measures will be implemented:

1. Pile driving operations will be restricted to the hours of 7 a.m. to 9 p.m. to avoid interfering with any adjacent noise sensitive land uses or a different foundation design will be considered, i.e. drilled shaft.
2. Preformed pile holes will be utilized when possible in proximity to vibration sensitive land uses to minimize vibration transfer.
3. Back-up alarm noise from heavy equipment and trucks will be minimized by requiring the Contractor to operate in forward passes or a figure-eight pattern when dumping, spreading, or compacting materials.
4. Restriction of operating hours for lighting the construction areas will be determined and required of the Contractor prior to beginning construction activities requiring lighting.
5. Coordination with the local media and law enforcement agencies will be undertaken prior to commencing construction activities to ensure that construction-related impacts are minimized or adequately mitigated when work during non-daylight hours is required.

4.5 SUMMARY OF ALTERNATIVES IMPACTS

An evaluation of Alternatives 1, 2 and 3 is summarized in the matrix provided in Table 4.6. This table indicates that environmental and community impacts, right-of-way and relocations, and construction time and cost estimates are substantially higher for Alternative 3 than for Alternatives 1 and 2. It should be noted that all of the alternatives would improve conditions by providing wider

TABLE 4.6

ALTERNATIVES EVALUATION MATRIX
Tampa Interstate Study
I-275/I-4 Downtown Interchange Operational Improvements
Environmental Analysis

	Alternative 1	Alternative 2	Alternative 3
Contamination Sites	9	8	16
Drainage - New Pavement Area (Acres)	46.9 ha (116 ac.)	3.2 ha (8 ac.)	10.3 ha (25.6 ac.)
Perry Harvey Park (acres)	1,092 m ² (0.27 ac.)	607 m ² (0.15 ac.)	0
Section 106 Impacts (Historic Properties)	Velasco Bldg.	1 Ybor Multi-Family Fourplex	1 Church 2 Schools 1 Ybor business 2 Multi-family fourplexes 30 single family residences
Community Services Impacts	HARTline Facility	HARTline Facility	HARTline, Salvation Army, City Rec., Henderson Bldg., Velasco Bldg., Presb. Village, North Blvd. Homes, Friendly Missionary Bap. Ch., Faith Temple Bap. Ch., Faith House, Tampa Fire Dept. Alarm
Relocations (Business/Residential)	10 Business 8 Residential	4 Business 8 Residential	20 Business 341 Residential
Construction Time (years)	3	4	7 ¹
Maintains Local Access (all existing movements)	No	Yes (modified)	Yes (modified)
Preliminary Cost Estimate Right-of-Way/Relocation Construction	\$ 12 million \$ 60.5 million	\$ 11.5 million \$ 64 million	\$ 89 million \$ 261 million
Total Preliminary Cost Estimate	\$ 72.5 million	\$ 75.5 million	\$ 350 million

¹ Assumes three separate contracts.

shoulders and safety improvements to lessen queueing lengths and minimize sight distance problems. Alternative 3 would further improve safety by providing a new vertical profile designed to meet current standards. However, due to the substantial impacts associated with Alternative 3 and funding constraints, Alternative 3 was dropped from consideration in favor of selecting a Preferred Alternative from the best components and refinements of Alternatives 1 and 2. Further evaluations of Alternatives 1 and 2, which resulted in a Preferred Alternative for this project, are discussed in Section 5.

SECTION 5.0

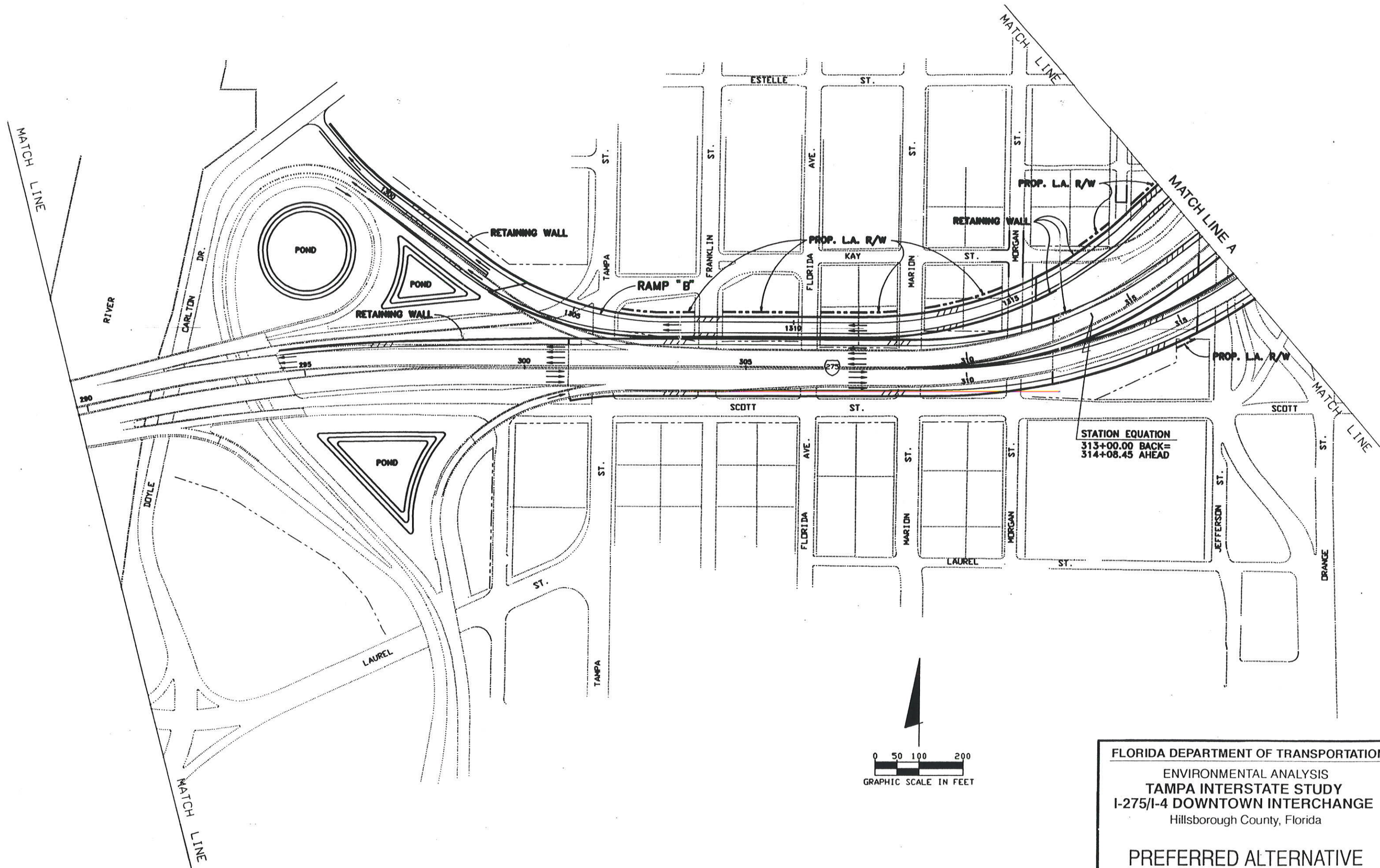
PREFERRED ALTERNATIVE

5.1 CONCEPTUAL DESIGN

After a comparison of the alternatives presented in Section 4.0, it was determined that the southbound local freeway would operate more efficiently by bringing traffic from I-4 to the outside of the local freeway. This design eases the weaving movement between I-4 and I-275 traffic destined for the east and west sides of downtown. This design would require two additional structures and increase the construction costs. To make this improvement and keep the total operational improvement project cost at \$80 million, other improvements would have to be eliminated. Consequently, the Preferred Alternative comprises many of the improvements developed for Alternative 2 with Alternative 1 improvements at the west end of the project and a refinement of the westbound I-4 ramping to the local freeway. A description of the Preferred Alternative is provided in the following sections and shown on Exhibit 5.1.

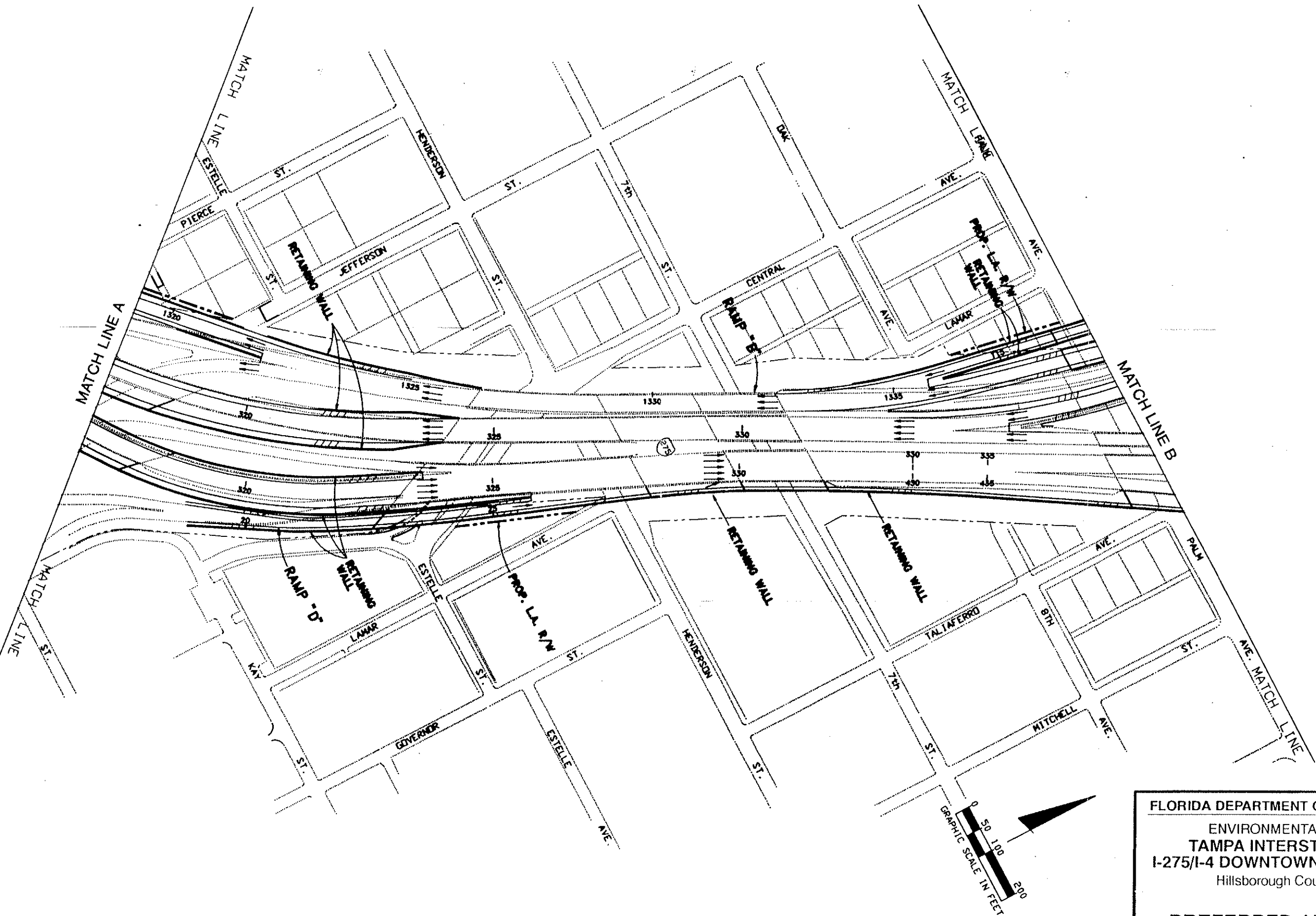
5.1.1 I-275 Northbound from Hillsborough River to I-4

This segment of the Preferred Alternative will include adding a fourth northbound through lane at the Ashley Street entrance ramp that will continue to I-4. This improvement, along with merging the Orange Street/Jefferson Street entrance ramp, will allow vehicles to access two through lanes from the river to I-4 without changing lanes and will eliminate the frequent accident problems that occur at the Ashley Street entrance ramp resulting from the substandard taper length and overloading of traffic destined for I-4 into one lane. The Alternative 1 improvement of diverting the Ashley Street ramp to a separate structure was not selected due to high costs (estimated at an additional 5 million dollars) and opposition from the City of Tampa regarding precluding Ashley Street ramp traffic to access I-275 northbound.



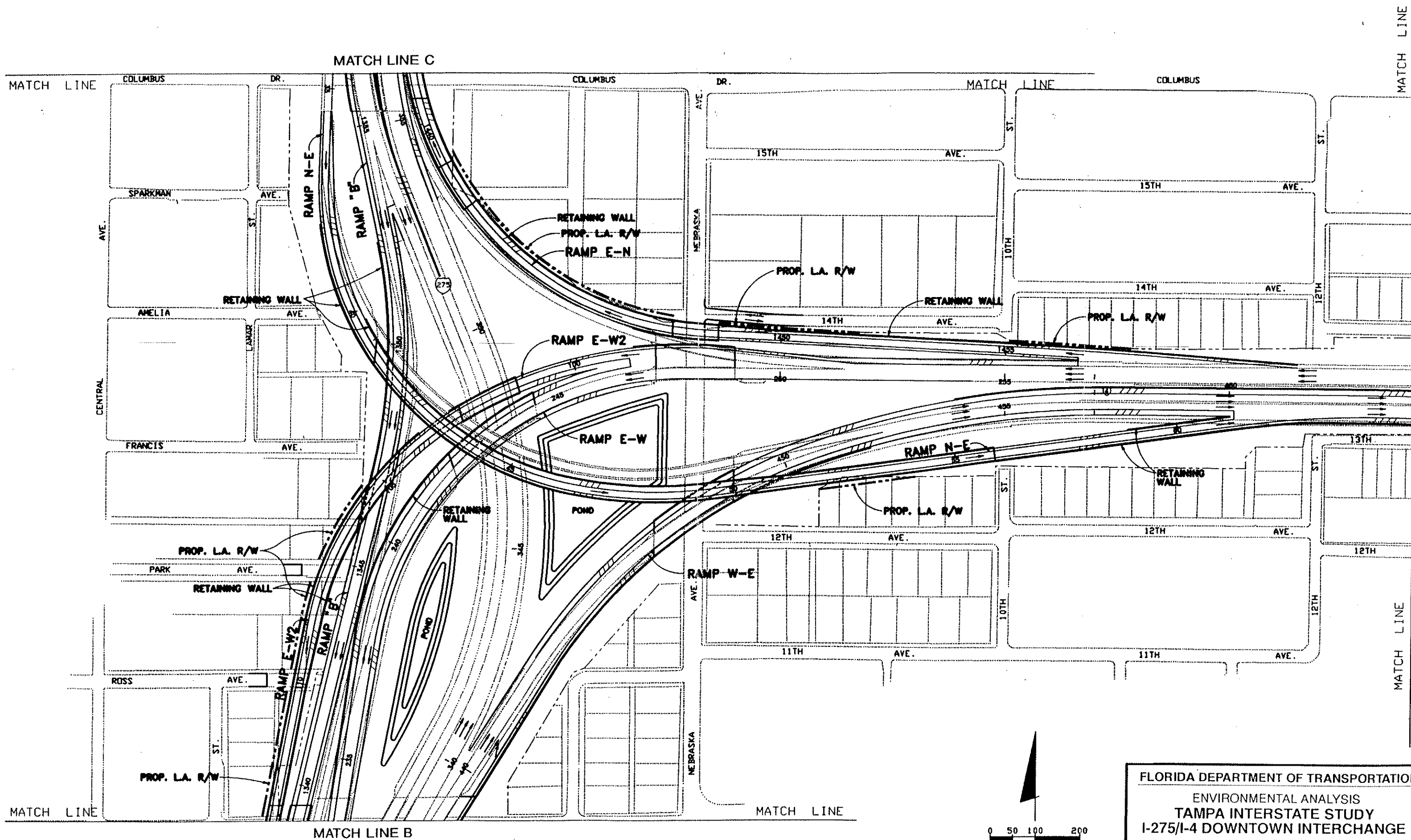
FLORIDA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS
TAMPA INTERSTATE STUDY
I-275/I-4 DOWNTOWN INTERCHANGE
Hillsborough County, Florida

PREFERRED ALTERNATIVE



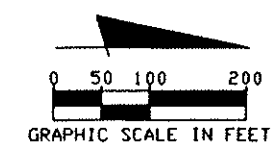
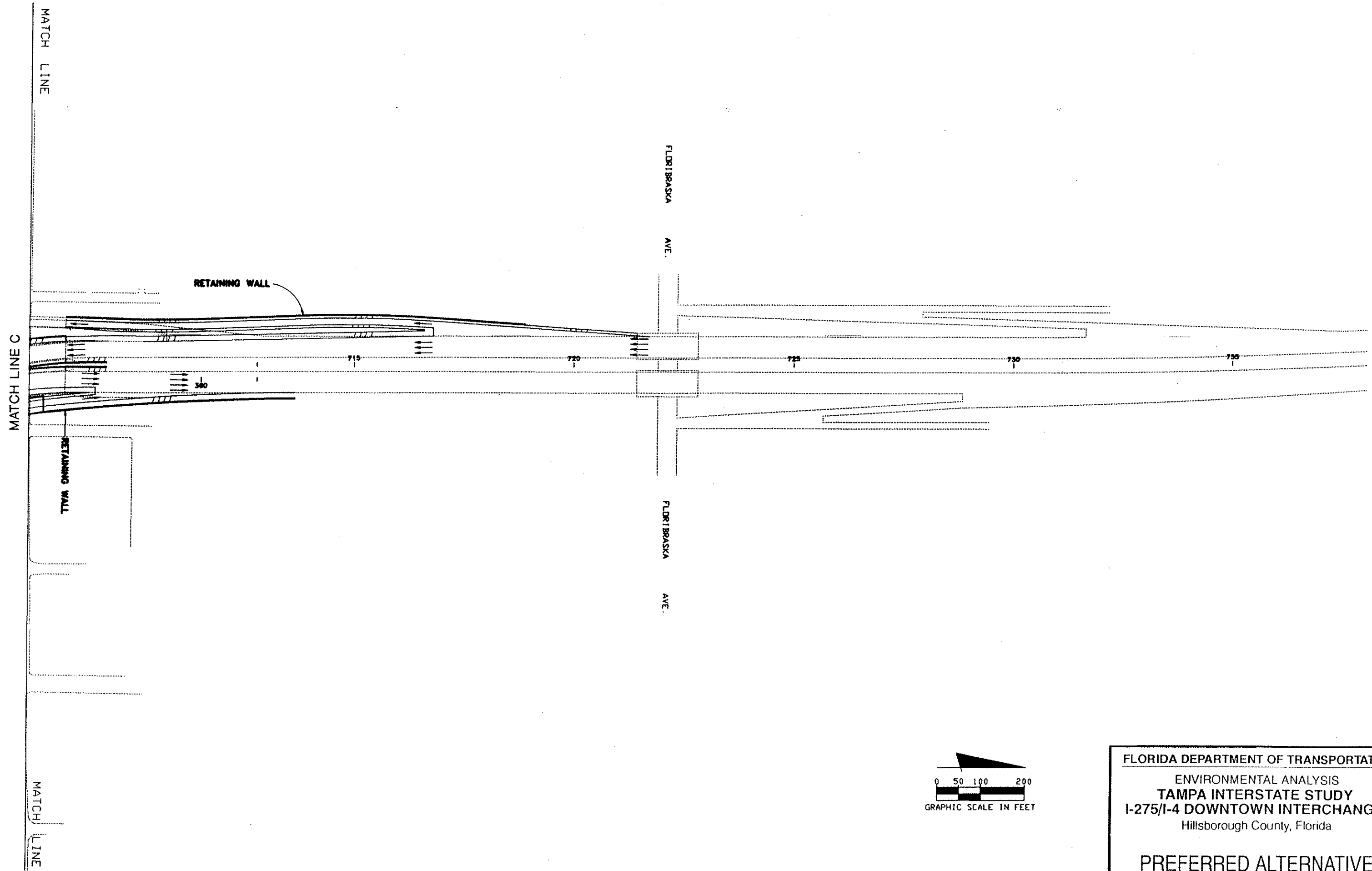
FLORIDA DEPARTMENT OF TRANSPORTATION
 ENVIRONMENTAL ANALYSIS
TAMPA INTERSTATE STUDY
I-275/I-4 DOWNTOWN INTERCHANGE
 Hillsborough County, Florida

PREFERRED ALTERNATIVE



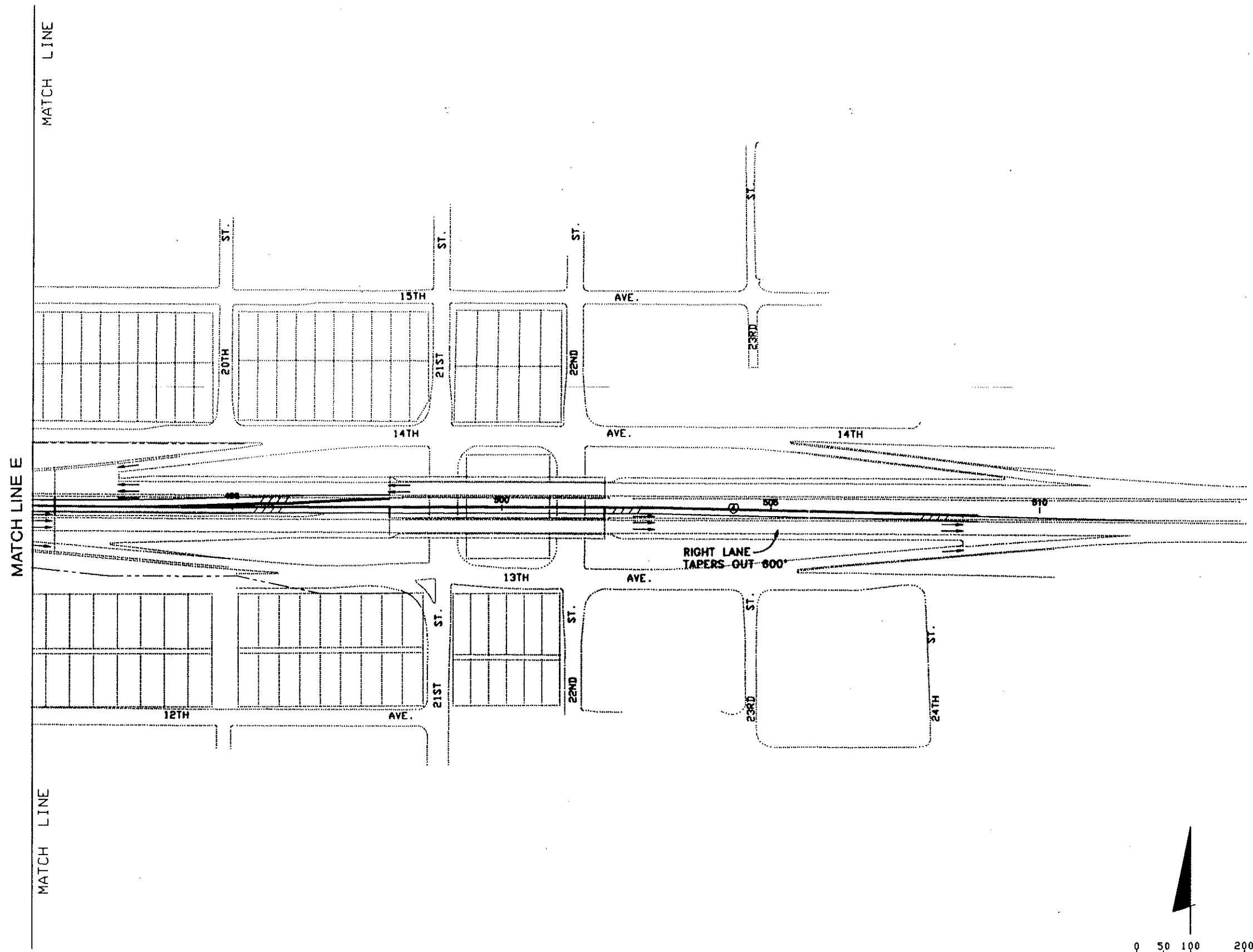
FLORIDA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS
TAMPA INTERSTATE STUDY
I-275/I-4 DOWNTOWN INTERCHANGE
Hillsborough County, Florida.

PREFERRED ALTERNATIVE



FLORIDA DEPARTMENT OF TRANSPORTATION
 ENVIRONMENTAL ANALYSIS
TAMPA INTERSTATE STUDY
I-275/I-4 DOWNTOWN INTERCHANGE
 Hillsborough County, Florida

PREFERRED ALTERNATIVE



FLORIDA DEPARTMENT OF TRANSPORTATION
 ENVIRONMENTAL ANALYSIS
TAMPA INTERSTATE STUDY
I-275/I-4 DOWNTOWN INTERCHANGE
 Hillsborough County, Florida

PREFERRED ALTERNATIVE

5.1.2 I-275 Southbound to I-4 Eastbound Flyover Ramp

The Preferred Alternative provides a new flyover ramp entering I-4 on the right side and adding a new lane, replacing the existing left side ramp, as proposed in Alternative 1. The right side ramp eliminates the weave for I-275 southbound vehicles entering I-4 destined for the 21st/22nd Street exit ramp. This improvement becomes even more important if the segment 3A/3B improvements are staged as currently planned due to funding constraints. The staged 3A/3B design moves the exit ramp gore for 21st/22nd Streets approximately 426.7 meters (1,400 ft.) further to the west which would make the existing flyover ramp weave extremely difficult and unsafe to exit I-4. In addition, the existing flyover ramp would require rehabilitation if kept in place.

5.1.3 I-4 Eastbound from 13th Street to 22nd Street

In this segment, the Preferred Alternative provides a total of four eastbound lanes (three lanes from I-275 northbound and one lane from I-275 southbound) to the 21st/22nd Streets ramp where one lane is dropped. Three lanes continue eastbound with the inside lane dropping and tapering back to a two-lane section in the vicinity of the 22nd Street entrance ramp gore. This improvement does not include a recovery lane for the lane drop at the exit ramp since the right side of I-4 is not affected by the improvements. As a result, the improvement is less expensive and as effective as the Alternative 1 improvement that provides a two-lane exit.

5.1.4 I-4 Westbound from 21st Street to 15th Street

In this segment, the present condition requires westbound vehicles destined for I-275 northbound to weave over to where the 21st/22nd Streets entrance ramp adds a lane to I-4. The Preferred Alternative provides a safer solution by creating a third through lane prior to the 21st/22nd Streets entrance ramp signed for I-275 northbound and the entrance ramp merges into I-4 rather than adding a lane. This improvement eliminates the weave for westbound traffic destined for I-275 northbound from I-4 and the weave for traffic entering I-4 from 21st/22nd Streets destined for I-275 southbound. This improvement should provide safer operations on I-4 in this segment.

5.1.5 I-4 Westbound from 15th Street to I-275 Northbound and Southbound

The Preferred Alternative carries the existing three through lanes to the I-275 juncture with a single lane exit (without a lane drop) to I-275 northbound and three through lanes continuing westbound where one lane is dropped for the southbound local freeway while two lanes continue to I-275 southbound. This improvement is a refinement to both Alternatives 1 and 2 that provides a safer condition by allowing the two lanes destined for I-275 southbound to travel through this ramping area without interruption. It also provides the drop lane at the ramp that would carry the most volume (the local freeway ramp) rather than dropping the lane prior to this exit at the I-275 northbound ramp.

5.1.6 I-275 Southbound from Floribraska Avenue to I-4

Beginning at the Floribraska Avenue bridge, the four existing southbound lanes drop one lane for the new flyover ramp to I-4. Three lanes continue south for approximately 365.7 m (1,200 ft.), 213.3 m (700 ft.) longer than existing conditions, where the next lane drop takes place with a two-lane exit ramp to the local freeway. The two I-275 through lanes continue southbound to meet two lanes from I-4 totaling four southbound lanes.

5.1.7 I-275 Southbound from I-4 to Hillsborough River

The Preferred Alternative utilizes the Alternative 1 solution of carrying four southbound through lanes over the downtown viaduct and tapering out the outside through lane prior to the Hillsborough River bridge. The Ashley Street exit ramp is eliminated from this section and is accessible by the local freeway. The Alternative 2 solution of carrying four lanes over the river, transitioning into the existing four-lane section and reconstructing the Ashley Street entrance ramp was dropped from consideration due to high construction costs (an additional 9 million dollars). In addition, this area is outside the project study limits. This improvement may be implemented with a possible future interim project to improve the segment of I-275 west of the Hillsborough River.

5.1.8 Southbound Local Freeway from I-4 to Ashley Street

The local freeway begins with a two-lane exit from I-275 southbound and a single-lane flyover ramp from I-4 transitioning into the local lanes on the right side. The three-lane section continues southbound on the existing bridge over 7th Avenue and Henderson Street. The alignment then provides a two-lane exit for Jefferson Street and continues on a new structure over Morgan Street, Marion Street, Florida Avenue, Franklin Street and Tampa Street before the left lane exits for Ashley Street and the outside lane to Doyle Carlton Drive. The Doyle Carlton Drive ramp replaces the Kay Street ramp that was eliminated due to the insufficient weaving section and geometric constraints created by the addition of the Ashley Street exit ramp to the local freeway.

This solution is a refinement of the Alternative 2 configuration that accommodated the I-4 volume on the left side of the local freeway. The refinement was developed since preliminary traffic analyses revealed that a significant percentage of the I-4 volume would be destined for Ashley Street (requiring a weave to the right side) and a significant volume of I-275 traffic would exit at Orange/Jefferson Streets (requiring a left side weave). The braided configuration shown on Exhibit 5.1 minimizes the weaving activity between the junction of I-4 and I-275 traffic to the local freeway and the Orange/Jefferson Streets exit. The Alternative 1 configuration was dropped from consideration since it does not provide access to Orange/Jefferson Streets from I-275 southbound, the provision of which was requested to be provided by the City of Tampa.

5.1.9 Maintenance of Traffic

The proposed maintenance of traffic plan for the Preferred Alternative, broken down by roadway segment, is provided on Table 5.1.

TABLE 5.1

PROPOSED MAINTENANCE OF TRAFFIC - PREFERRED ALTERNATIVE
Tampa Interstate Study
I-275/I-4 Downtown Interchange Operational Improvements
Environmental Analysis

PREFERRED ALTERNATIVE	
I-275 Southbound to I-4 Eastbound	
Construct the new structure for proposed I-275 southbound to I-4 eastbound along with approaches on each and tying into existing pavement, including realignment of the southbound ramp from Floribaska Avenue to Columbus Drive.	
While this structure is being constructed, special care should be taken to erect beams during off-peak hours and by possible pacing of vehicles. During construction of the remaining superstructure, safety nets should be used over the existing travel lanes.	
Shift traffic onto this newly-constructed roadway, demolish and remove the existing structure and roadway.	
Southbound I-275 Local Access Lanes (Doyle Carlton and Ashley Street Off-Ramps)	
Construct the viaduct structure from north of Morgan Street to south of Tampa Street full width.	
Construct the northern 7m (23-foot) portion of the viaduct structure to the south from Tampa Street along with approaches and associated retaining wall to Doyle Carlton Drive.	
Construct the roadway and embankment along with the associated retaining walls from Morgan Street to the north to tie into the existing pavement of the Jefferson Street ramp.	
Shift the signing for the southbound Ashley Street off-ramp (both on I-4 westbound and I-275 southbound, north of Columbus Drive) and reroute traffic onto this newly-constructed roadway. The Ashley Street traffic will connect to the existing ramp via a temporary connector close to Doyle Drive at grade.	
Remove the portion of structure and roadway which is no longer required for the Ashley Street southbound off-ramp.	
Complete the remaining southern portion of the new southbound viaduct from Tampa Street to the south including the embankment and pavement for the Ashley Street off-ramp and connect to the existing ramp.	
I-4 Westbound to I-275 Southbound Local Access Lanes	
Construct structure widening to the right over Nebraska Avenue, new structure over existing southbound to Jefferson/Ashley Street ramps and new structure over Palm Avenue.	
Construct embankment and roadway along with associated retaining walls from north of Nebraska Avenue to south of Oak Avenue tying into existing pavement on each end.	
Shift traffic destined for Jefferson Street/Ashley Street ramps to the newly-constructed roadway.	
I-275 Southbound to Jefferson Street/Ashley Street Local Access Lanes	
Construct structure widening to the right over Columbus Drive and Palm Avenue.	
Shift traffic to the left of the existing pavement utilizing the existing shoulder. Construct the western 20' of the end ramp and retaining wall. Construct the western shoulder to full depth for use in the next step, while placing temporary sheeting on the eastern side of this 20' pavement.	
Shift the traffic destined for southbound Jefferson Street/Ashley Street off-ramps to this newly constructed portion of this roadway and construct the widening on the left side off I-275 southbound over Columbus Drive.	
Construct the remaining (eastern portion) of this ramp. The temporary sheeting can either be pulled or cut off below grade before pavement section is constructed.	
I-4 Westbound to I-275 Southbound Freeway Lanes	
Construct structure widening to the right over I-275 northbound/southbound.	
Construct the embankment and roadway along with the associated retaining walls from south of Nebraska Avenue to Ross Avenue.	
Shift this traffic to the right side of this ramp and construct the structure widening on the left over I-275 northbound/southbound and the widening to the left over Palm Avenue.	
Make necessary modifications to pavement and shoulders for striping while shifting traffic to side in off-peak hours.	

TABLE 5.1 (Continued)

PROPOSED MAINTENANCE OF TRAFFIC - PREFERRED ALTERNATIVE
Tampa Interstate Study
I-275/I-4 Downtown Interchange Operational Improvements
Environmental Analysis

PREFERRED ALTERNATIVE
I-4 Westbound to I-275 Northbound
Construct new structures over Nebraska Avenue and Columbus Avenue on new alignment.
Construct embankment and roadway along with associated retaining walls from 12th Street to north of Columbus Drive.
Shift I-4 westbound traffic destined for I-275 northbound and this newly-constructed roadway.
Demolish and remove existing structure and roadway not required.
Construct modifications for I-275 northbound on the right side in the vicinity of Columbus Avenue.
Shift I-275 northbound traffic to the right and construct the shoulder and structure widening over Columbus Avenue.
I-275 Southbound Freeway Lanes
Construct structure widening to the left over Jefferson Street and Morgan Street.
Construct embankment and roadway along with associated retaining walls from south of Central Avenue to north of Morgan Street.
Shift traffic to the left and construct the structure widening to the right over Morgan Street, Marion Street, Florida Avenue, Franklin Street and Tampa Street.
Construct embankment and roadway along with associated retaining walls from south of Central Avenue to structure over Ashley Street.
I-275 Northbound to I-4 Eastbound
Construct the new structure, right of the existing structure for Scott Street and Orange Street on ramps, over Central Avenue and Henderson Street.
Construct the widening of structure, on the right side, over Seventh Street, Palm Avenue and Nebraska Avenue.
Construct the embankment and the roadway along with the associated retaining walls from Kay Street to Nebraska Avenue.
Shift the traffic over to the right onto this newly-constructed roadway.
Construct the widening of structures, on the left side, over Nebraska Avenue, Republic De Cuba Avenue, 15th Street, 19th Street and 21st/22nd Streets.
Construct the embankment and the roadway along with the associated retaining walls from south of Nebraska Avenue to east of 22nd Street.
It should be noted that the construction of the structure over 19th Street is widening for both eastbound and westbound roadways of I-4.
I-275 Northbound - Ashley Street to Central Avenue
Construct structure widening on the right from Tampa Street to north of Morgan Street, over Jefferson Street and over Central Avenue.
Construct embankment and pavement along with the associated retaining walls from Morgan Street to Central Avenue.
Shift the traffic to the right and construct structure widening over Morgan Street and Jefferson Street.
Construct modifications to embankment and pavement along with associated retaining walls from Morgan Street to Central Avenue.
Construct new roadway for Orange Street ramp, open for traffic.
Shut down and remove existing superstructure for Ashley on ramp - reroute traffic to new Orange Street ramp.
Construct new superstructure for Ashley on-ramp.

5.1.10 Preliminary Cost Estimate

The preliminary cost estimate for right-of-way, relocations, engineering and construction of the Preferred Alternative follows:

Right-of-Way/Relocations	\$14 million
Engineering	\$ 5 million
Construction	<u>\$61 million</u>
Total	\$80 million

A more detailed breakdown of both right-of-way and construction costs are included in the Engineering Summary, published separately.

5.2 ENVIRONMENTAL IMPACTS

This section presents a discussion of the potential environmental impacts associated with the Preferred Alternative. Since the Preferred Alternative incorporates the best conceptual design features of Alternatives 1 and 2, the environmental impacts associated with it are similar as well.

5.2.1 Social Impacts

5.2.1.1 Land Use Changes

Land use impacts as a result of the Preferred Alternative are anticipated to be minor. Potential relocations include three small businesses, one church, one multi-family dwelling totaling four residences, approximately six single-family residences, and the acquisition of some small areas of undeveloped land. In addition, a small strip of land from Perry Harvey Park and the Hartline Northern Transit Terminal will be impacted.

5.2.1.2 Community Cohesion

The proposed improvements will not sever any neighborhoods nor socially or culturally isolate any specific ethnic groups or minority communities. While a few community resources may be impacted, overall impacts to the community will be minor. Local traffic circulation patterns within existing neighborhoods will be maintained. Residences and businesses within the project area required to relocate will find ample resources available within their existing neighborhoods. The Preferred Alternative will have no adverse impact on community cohesion, mobility, or neighborhoods.

5.2.1.3 Relocations

Although every effort has been made to minimize the impact of the proposed interchange improvements on existing land uses, some residential and business relocations are unavoidable. Relocation impacts associated with the Preferred Alternative include six single-family residences; one multi-family dwelling containing four residences; three businesses consisting of Central Animal Hospital, Willy's Auto Detailing, and Abe's Bail Bonds; and Faith Temple Missionary Baptist Church. In addition, the Preferred Alternative will also require the relocation of the HART Northern Transit Terminal located beneath and immediately north of the interstate.

Because of the adequate supply of homes available for sale or rent, the abundance of vacant leasable business space, and the frequency in which new listings become available, it is anticipated that all displaced residences, businesses, and non-profit organizations can be relocated within or near their respective neighborhoods, if so desired.

A more complete discussion of the relocation impacts associated with the Preferred Alternative, including some general demographics information and a discussion of the FDOT's Acquisition and Relocation Assistance Program, is contained in the Conceptual Stage Relocation Plan (February 1996) published separately for this project.

5.2.1.4 Community Services

Many community services are located in the vicinity of the proposed interchange improvements. These include schools, post offices, libraries, police and fire services, multi-family subsidized housing complexes, parks, and churches. The Preferred Alternative will require the acquisition of approximately 566.5 m² (0.14 ac.) from Perry Harvey Park. This impact is anticipated to have little or no effect on the function or usage of the park. The Preferred Alternative will also require relocation of the HART Northern Transit Terminal located between Florida Avenue and Marion Street, beneath the existing interstate; and Faith Temple Missionary Baptist Church.

5.2.1.5 Title VI and VIII

The proposed improvements have been developed in accordance with the Civil Rights Act of 1964 as amended by the Civil Rights Act of 1968. No discriminatory criteria have been used during the development and selection of alternatives. The proposed improvements have not been planned to impact any specific groups or individuals but rather to improve the safety and operations of the existing interstate facility. The Preferred Alternative will have no undue effect on any specific groups or organizations including ethnic groups, minorities, the elderly, or handicapped individuals.

5.2.1.6 Controversy Potential

The proposed I-275/I-4 downtown interchange operational improvements represent a much smaller project than the overall Tampa Interstate Study and result in far fewer impacts. As such, the mitigation associated with the ultimate impacts does not apply. The Tampa Heights Civic Association has asked the FDOT to consider early acquisition of the ultimate right-of-way to enable the neighborhood to utilize the right-of-way area as interim open space because the greenway proposed for the ultimate impact is not programmed to occur within the next 25 years.

The FDOT is coordinating with FHWA to establish a voluntary purchasing plan in an effort to assist the neighborhood with their short-term goal of providing an open space buffer area adjacent to the interstate.

5.2.1.7 Utilities and Railroads

The Preferred Alternative will have no impact on active or abandoned railroad tracks or railroad crossings. The Preferred Alternative minimizes right-of-way requirements, resulting in impacts similar to Alternatives 1 and 2 and less than Alternative 3. A discussion of the potential utility impacts is contained in the Engineering Summary, published separately for this project. Once the utility survey is completed, more detailed information will be available.

5.2.1.8 Aesthetics

Aesthetic design treatments were considered for incorporation into the proposed interchange improvements. However, due to reasons of practicality, continuity, and cost reasonableness, they have not been included as part of the Preferred Alternative.

5.2.2 Cultural Impacts

5.2.2.1 Archaeological and Historic Sites/Districts

Within the vicinity of the I-275/I-4 downtown interchange project exists the Ybor City National Historic Landmark District and the Tampa Heights National Register District. Right-of-way acquisition associated with the Preferred Alternative will directly impact two historic structures: Faith Temple Missionary Baptist Church, a contributing structure to the proposed Tampa Heights National Register District; and a multi-family (fourplex) residence, a contributing structure within the Ybor City National Historic Landmark District. Neither structure is a suitable candidate for moving. In addition, the Preferred Alternative will also require the acquisition of property at the

Velasco Building, a Hillsborough County School Board property and also a National Register building. The building structure itself will not be impacted by the alternative.

5.2.2.2 Parks and Recreational Facilities

Two public parks and recreational areas are located adjacent to the proposed I-275/I-4 downtown interchange project: Riverfront Park and Perry Harvey Park. Riverfront Park is located outside of the project study limits. Only Perry Harvey Park will be directly impacted by the Preferred Alternative.

The Preferred Alternative will require the acquisition of approximately 566.5 m² (0.14 ac.) from the 37,231 m² (9.2 ac.) park. This right-of-way impact is confined to the northernmost section of the park, bounded by Estelle Street to the south, Central Avenue to the west, Lamar Avenue to the east, and Henderson Street to the north. This small disconnected parcel hosts little visitor activity and contains no visitor facilities. As a result, impacts to the park associated with this alternative are anticipated to be minor and should not substantially impair nor diminish the park's activities, features, functions, attributes, or usage.

The Preferred Alternative minimizes the impacts to the park in comparison to Alternatives 1 and 2. A conceptual mitigation plan has been developed and approved as a part of the overall TIS project. Two coordination meetings with the City of Tampa Parks and Recreation Departments, and three meetings with Councilman Perry Harvey, Jr. and representatives of the community were conducted as part of the overall TIS project to discuss the effects at Perry Harvey Park and potential mitigation measures. Copies of correspondence and meeting minutes are contained in the Appendix to the Environmental Impact Statement published for the TIS project. It is anticipated that upon implementation of the full TIS project, the overall mitigation plan, including measures for Perry Harvey Park, will be implemented.

5.2.3 Natural Environment

5.2.3.1 Wetlands

The proposed I-275/I-4 downtown interchange project contains only one natural wetland, the Hillsborough River. I-275 crosses the river via twin fixed bridge structures. No improvements to these structures are proposed as part of the Preferred Alternative. The Preferred Alternative will have no impact on the Hillsborough River.

5.2.3.2 Aquatic Preserves

No Aquatic Preserves exist within the project vicinity. The Preferred Alternative will have no impact on Aquatic Preserves.

5.2.3.3 Water Quality

Surface waters within the project study limits are designated by the FDEP as Class II and Class III Waters. The proposed stormwater facility design for the Preferred Alternative will include, at a minimum, the water quality requirements for water quality impacts as required by the SWFWMD in Chapter 40D-40 F.A.C. Therefore, no further mitigation for water quality impacts will be needed.

5.2.3.4 Outstanding Florida Waters

No Outstanding Florida Waters exist within the project vicinity. The Preferred Alternative will have no impact on Outstanding Florida Waters.

5.2.3.5 Wild and Scenic Rivers

No Wild and Scenic Rivers exist within the project vicinity. Therefore, the Preferred Alternative will have no impact on Wild and Scenic Rivers.

5.2.3.6 Floodways and Floodplains

The only 100-year floodplain encroachment in the vicinity of the project is the I-275 crossing of the Hillsborough River, outside of the project study limits. Floodplain impacts associated with the Preferred Alternative are not anticipated. No floodways will be affected by the project.

5.2.3.7 Coastal Zone Consistency

The Office of Planning and Budget, Office of the Governor, has determined that this project is consistent with the Florida Coastal Zone Management Plan. A copy of the correspondence is contained in the Appendix to the Environmental Impact Statement for the TIS project.

5.2.3.8 Coastal Barrier Islands

The proposed project does not involve coastal barrier islands. Therefore, the Preferred Alternative will have no impact on coastal barrier islands.

5.2.3.9 Wildlife and Habitat

The U.S. Fish and Wildlife Service has determined that the proposed project will not impact any threatened or endangered species nor impact any designated critical habitat. The project has been found consistent with the Endangered Species Act. Copies of all correspondence and coordination with the USFWS are contained in the Appendix to the Environmental Impact Statement, published for the TIS project.

5.2.3.10 Farmlands

The provisions of the Farmlands Protection Policy Act of 1984 do not apply to this project. The Preferred Alternative will have no impact on farmlands.

5.2.4 Physical Impacts

5.2.4.1 Noise

Noise levels within the study area were evaluated using the methodology previously discussed in Section 4.4.1. As shown in Table 5.2, the distances to the 65 and 67 dBA contour lines are predicted to remain about the same as existing conditions for Noise Study Areas 2B-G (south), 2B-H, 2B-K, 2B-L, 3A-A and 3A-B. In contrast, the distances for areas 2B-G (north), 2B-I and 2B-J are predicted to increase because of the expanded roadway cross section to accommodate realigned ramps.

The analysis indicates that for existing and 2010 no-build conditions, approximately 301 noise sensitive sites located within the project limits experience noise levels that approach or exceed the FHWA criteria. These noise sensitive sites, which include single and multi-family residences, recreational areas, a church and a vacant school, are primarily located in the first- and second-row of structures bordering the existing roadway.

The analysis indicates that for the Preferred Alternative, approximately 317 noise sensitive sites are predicted to approach or exceed the FHWA criteria in 2010. Nine sites identified under existing conditions are required as part of right-of-way acquisition, 292 sites are the same as those identified for existing conditions, approximately 22 sites experience a 2 dBA or less increase resulting in a predicted noise level of 65 to 66 dBA and three sites experience a 6 dBA or less increase resulting in a predicted noise level of 70 dBA. Approximately 7 dBA is the largest increase predicted for any noise sensitive site. No sites with predicted noise levels below 65 dBA are anticipated to experience a substantial increase above existing levels.

A noise barrier analysis was conducted to determine if the installation of noise barriers is cost reasonable. As shown on Table 5.3, the installation of noise barriers within the downtown interchange would be cost reasonable and benefit approximately 177 noise sensitive sites.

TABLE 5.2

NOISE ISOPLETHS FOR THE PREFERRED ALTERNATIVE
Tampa Interstate Study
I-275/I-4 Downtown Interchange Operational Improvements
Environmental Analysis

Noise Study Area	Limits	Approximate Distance From Roadway Centerline m (ft.)		
		Hourly LEO (dBA)	1990 Existing	Preferred Alternative
SEGMENT 2B				
G1	From Hillsborough River to Orange St., north of I-275	67 65	103.6 (340) 137.1 (450)	112.7 (370) 152.4 (500)
G2	From Hillsborough River to Orange St., south of I-275	67 65	94.1 (310) 128.0 (420)	97.5 (320) 134.1 (440)
H	From Orange St. to I-4/I-275 Interchange	67 65	115.8 (380) 152.4 (500)	118.8 (390) 155.4 (510)
I	From Morgan St. to Palm Ave., northwest of I-275	67 65	115.8 (380) 158.4 (520)	128.0 (420) 179.8 (590)
J	From Palm Ave. to 14th St., south of I-4	67 65	103.6 (340) 140.2 (460)	112.7 (370) 152.4 (500)
K	From Palm Ave. to Floribaska Ave., west of I-275	67 65	106.6 (350) 143.2 (470)	106.6 (350) 143.2 (470)
L1	From Floribaska Ave. to 10th St., I-275/I-4 Interchange	67 65	118.8 (390) 161.5 (530)	118.8 (390) 161.5 (530)
L2	From 10th St. to 14th St., north of I-4	67 65	100.5 (330) 134.1 (440)	103.6 (340) 143.2 (470)
SEGMENT 3A				
A	From east of 14th St. to 20th St. Crosstown Connector, south of I-4	67 65	97.5 (320) 131.0 (430)	100.5 (330) 134.1 (440)
B	From east of 14th St. to 20th St., north of I-4	67 65	94.4 (310) 131.0 (430)	97.5 (320) 131.0 (430)

TABLE 5.3

BARRIER SPECIFICATIONS FOR THE PREFERRED ALTERNATIVE
(Study Area Cutoff at 13th Street, NSA 3A-A and 3A-B Not Included)
I-275/I-4 Downtown Interchange Operational Improvement
Environmental Analysis

Noise Study Areas ¹	Barrier Number	Total Length (Feet) ²	Length x Height (Feet) ³	Barrier Location	Total Cost (@ \$16.50/ft ²)	Number of Benefitted Receivers	Total Cost/ Benefitted Receiver
2B-H, 2B-J, 3A-A	1	304.8 (1,000)	137.1 x 2.4 (450 x 8) 167.6 x 5.4 (550 x 18)	Southwest End - At off-ramp to southbound Orange Street; Northeast End - 30.4 m (100 feet) southwest of Lamar Avenue	\$1,683,000	48 (2B-H)	\$19,800
	2	115.5 (3,660)	338.3 x 2.4 (1110 x 8) 777.2 x 5.4 (2550 x 18)	Southwest End - 45.7 m (150 feet) northeast of Orange Street; East End - at 10th Street		37 (2B-J)	
	3	697.9 (2,290)	228.6 x 2.4 (750 x 8) 469.3 x 5.4 (1540 x 18)	West End - 18.2 m (60 feet) of Nebraska Avenue; East End - 18.2 m (60 feet) east of 14th Street		0 (3A-A)	
2B-L (1 & 2), 3A-B	1	1,155.1 (3,790)	57.9 x 2.4 (190 x 8) 1,097.2 x 5.4 (3600 x 18)	North End - 118.8 m (390 feet) south of Floribaska Avenue; East End - 18.2 m (60 feet) east of 13th	\$1,094,280	20 (2B-L1) 29 (2B-L2) 0 (3A-B)	\$22,332
2B-1, 2B-K	1	478.5 (1,570)	60.9 x 2.4 (200 x 8) 417.5 x 5.4 (1,370 x 14)	North End - 158.4 m (520 feet) south of Floribaska Avenue; South End - 18.2 m (60 feet) of Frances Avenue	\$1,060,950	12 (2B-1) 31 (2B-K)	\$24,673
	2	121.9 (400)	121.9 x 4.8 (400 x 16)	North End - At Amelia Avenue; South End - 18.2 m (60 feet) south of Frances Avenue			
	3	807.7 (2,650)	201.1 x 5.4 (660 x 8) 606.5 x 4.8 (1,990 x 16)	North End - 60.9 m (200 feet) northeast of Frances Avenue; Southwest End - 137.1 m (450 feet) southwest of Henderson Street			

1. Corresponds to the Noise Study Areas established for the EIS.

2. All barriers on structures are limited to a height of eight feet.

3. All barriers heights at 18 feet can be increased to 20 feet with the cost per benefitted receiver remaining below \$25,000.

Through analysis, noise barriers were originally determined to be reasonable along I-4 to the limits of the operational improvements at the 21st/22nd Street interchange. However, TIS design segments 3A and 3B, which begin at 13th Street, are currently under design and funded for construction. Any construction of barriers from 14th/15th Streets to 21st/22nd Streets as part of the operational improvements would be temporary. Construction of segments 3A and 3B would require their removal. Therefore, the construction of noise barriers from approximately 14th/15th Street to 21st/22nd Street will not be included as part of the operational improvements. Coordination with the design of Segments 3A and 3B resulted in the end barrier locations as noted on Table 5.3.

5.2.4.2 Air Quality

The project is in an area which has been designated as non-attainment for ozone under criteria in the Clean Air Act Amendments of 1990. Based upon worst-case microscale dispersion analysis results documented in the previous TIS Air Quality Report, published separately, the Preferred Alternative will result in no violations of National Ambient Air Quality Standards.

The project is in conformance with the State Implementation Plan. The project is included in the area's conforming long-range plan and is included in the area's Conformity Determination report approved by the FHWA/FTA on June 30, 1995.

5.2.4.3 Contamination

The Preferred Alternative results in direct impacts at nine sites along the project corridor known, or with the potential to contain environmental contamination. The sites are comprised mainly of businesses which maintain underground storage tanks for petroleum products or sites which previously contained underground storage tanks. Detailed information regarding each site and recommendations for Level II investigations are contained in Section 4.4.3 and in the Contamination Screening Evaluation Technical Memorandum (July 1996), published separately for this project.

5.2.4.4 Drainage

It is anticipated that portions of the existing roadway collection system be utilized with the Preferred Alternative, while a new separate drainage collection system may be necessary in some areas. Portions of the interstate outfall system to the Hillsborough River may also require modification. The ultimate roadway drainage system will be determined during final design.

Approximately 3.9 ha (9.7 ac) of new pavement area was identified and approximately 0.3 ha (0.8 ac) of stormwater treatment volume will be required. Since the roadway flows to the tidally influenced Hillsborough River, no stormwater peak attenuation (per FDOT 14-86, FAC or SWFWMD 40D-4, FAC) was considered. Preliminary detention pond areas of 0.3 ha (0.8 ac) were identified within the existing Ashley Street and I-275/I-4 interchange infield and ramp areas. The proposed ponds are assumed to be wet ponds with approximately 0.6 m (2 ft.) of storage fluctuation and 6 m (20 ft.) maintenance berms. Proposed detention pond locations are discussed in detail in the Pond Siting Report (April 1996), published separately.

5.2.4.5 Navigation

The project study area includes only one bridge crossing of a navigable waterway, the Hillsborough River. The Preferred Alternative proposed would involve no changes to the existing bridge structures at the river. Therefore, the Preferred Alternative will have no impact on navigation or navigation-related land uses along the Hillsborough River.

5.2.4.6 Construction Impacts

Construction impacts associated with the proposed I-275/I-4 downtown interchange project and mitigation measures are addressed in Section 4.4.6.

5.3 PERMITS REQUIRED

The permitting requirements of several federal, state, and local agencies must be satisfied prior to completion of the proposed project. The anticipated permits consist of the following:

- U.S. Army Corps of Engineers
 - Section 404 Dredge and Fill Permit
 - Section 10 Obstruction or Alteration of Navigable Waters Permit
- U.S. Environmental Protection Agency - National Pollutant Discharge Elimination System (NPDES) Permit
- Southwest Florida Water Management District (SWFWMD) - Environmental Resource Permit
- Tampa Port Authority - Permit to Conduct Work in Waters of the Hillsborough County Port District

5.4 COMMITMENTS AND RECOMMENDATIONS

Construction - Construction activities for the Preferred Alternative concept will result in temporary air, noise, water quality, traffic flow, and visual impacts for those residents, businesses, and travelers within the immediate vicinity of the project. The impacts will be effectively controlled in accordance with FDOT's Standard Specifications for Road and Bridge Construction. In addition to the following accepted standards, the FDOT is committed to implementing the following specific construction impact mitigation measures where they are determined to be cost reasonable and feasible from an engineering and construction perspective:

1. Pile driving operations will be restricted to the hours of 7 a.m. to 9 p.m. to avoid interfering with any adjacent noise sensitive land uses or a different foundation design will be considered, i.e., drilled shaft.
2. Preformed pile holes will be required where they are in proximity to vibration sensitive land uses to minimize vibration transfer.
3. Back-up alarm noise from heavy equipment and trucks will be minimized by requiring the Contractor to operate in forward passes or a figure-eight pattern when dumping, spreading, or compacting materials.

4. Restriction of operating hours for lighting the construction areas will be determined and required of the Contractor prior to beginning construction activities requiring lighting.
5. Coordination with the local law enforcement agencies will be undertaken prior to commencing construction activities to ensure that construction-related impacts are minimized or adequately mitigated when work during non-daylight hours is required.

Urban Design Guidelines - The TIS Urban Design Guidelines (UDG), approved by FHWA in December 1994, have been developed to minimize indirect adverse visual and auditory impacts to land uses adjacent to the system and to users of the freeway. The goal of the guidelines is to ensure a consistent, aesthetically pleasing design and to mitigate adverse effects of the project on the residents, neighborhoods, and businesses indirectly affected. The Urban Design Guidelines specify mitigation measures for indirect adverse effects to historic properties and communities in the vicinity of the project. The Urban Design Guidelines provide guidance on specific aesthetic design requirements for bridge structures, retaining walls and embankments, noise walls, lighting, fencing and sign supports, stormwater and surface water management areas, landscaping, public art, utilities, mounds and grading, and recreation facilities. Due to this type of proposed project, which is a safety and operational improvement, there are minimal areas where it is economically appropriate or feasible from an engineering perspective to apply the Urban Design Guidelines. Specific areas of application are planned to be evaluated for implementation of the Urban Design Guidelines. These areas include stormwater and surface water management areas, landscaping, retaining walls and embankments, and noise walls.

Noise Barriers - The TIS Master Plan Report (August 1989) first discussed the feasibility of noise abatement measures to mitigate noise impacts. Due to the number of noise sensitive sites identified and evaluated and in response to public comments received throughout the study, the FDOT and FHWA are committed to providing noise barriers as part of the project where they are economically reasonable and feasible. This commitment is identified in the TIS Environmental Impact Statement (August 1996). The FDOT is committed to providing noise barriers that meet both the acoustic and aesthetic goals of the project as identified in the TIS Urban Design Guidelines and the TIS EIS Noise Study Report. (See Table 5.3 for specific locations of proposed noise barriers.) Specific noise abatement measures will be further evaluated during final design.

Tampa Heights Greenway Area - The FDOT is committed to pursuing with FHWA a voluntary right-of-way acquisition program for the proposed Tampa Heights Greenway area, located directly north of I-275 from the I-275 southbound Ashley Street exit ramp to Columbus Drive. The details of the proposed greenway are included in the TIS Environmental Impact Statement (August 1996) and apply only as mitigation for the ultimate concept. Once right-of-way for the downtown operational improvement, discussed in this document, is established, the FDOT will pursue the voluntary acquisition of those properties between the required downtown operational improvement right-of-way and the ultimate right-of-way. This will further the community's goal of the redevelopment of the Tampa Heights neighborhood.

Historic Resources - A Section 106 Memorandum of Agreement (MOA) has been prepared to address mitigation measures for direct and indirect impacts to historic resources. The MOA includes FDOT commitments for the mitigation of impacts to historic structures within the Area of Potential Effect (APE) including the proposed moving and rehabilitation of certain historic structures, and numerous design amenities defined in the TIS Urban Design Guidelines. Three historic structures could potentially be impacted by the improvements to the downtown interchange if right-of-way for the concept is not minimized. These structures include the Faith Temple Baptist Church in Tampa Heights; the Old Velasco Building, an individually eligible structure in the northeast corner of the interchange; and a residential fourplex located on 12th Avenue in the Ybor City National Register Landmark District. If any of these structures are impacted, they must be documented and possibly moved and rehabilitated in accordance with the TIS Memorandum of Agreement.

HART Northern Transit Terminal - Based on the required relocation of HART's existing Northern Transit Terminal, the FDOT is committed to providing a new facility as part of the downtown interchange operational project. The FDOT will attempt to not select a final location for the new facility until separate Mobility MIS, High-Speed Rail, and Electric Streetcar studies being conducted by other agencies have been coordinated with the proposed operational improvements. The FDOT will coordinate with those agencies to integrate the related studies in order to optimize the facility's location and design and to maximize its use.

The relocation of the HART Northern Transit Terminal will be addressed with input from HART. Options for the new location of the Northern Transit Terminal will be identified and evaluated prior to vacating the existing site. FHWA and FDOT are committed to providing the opportunity for functional replacement of the Northern Transit Terminal based on HART's preference and acceptable application of the functional replacement requirements.

APPENDIX

K...DW... PRI...TIE

PRIORITY:

- 1 = COMMITTED PROJECTS (1995-2000)
- 2 = INTERIM PROJECTS (2001-2005)
- 3 = COST AFFORDABLE PLAN (2006-2015)
- D = DEVELOPER PROJECTS (1995-2015)

LANE CONFIGURATION:

- OW = ONE WAY
- LU = LANES UNDIVIDED
- LD = LANES DIVIDED

- STAR = SENSITIVE TO AREA RESIDENTS
- AUX = AUXILIARY LANES
- BRDG REPL = BRIDGE REPLACEMENT

ROADWAY	FROM	TO	EXISTING LANES	2015 LANE CONFIGURATION	PROJECT COSTS	PRIORITY
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STATE ROADS

20TH ST	MARITIME BLVD	GRANT ST	2 LU	6 LD	\$	1
20TH ST	GRANT ST	22ND ST	4 LU	6 LD	\$	1
22ND ST	CITY LIMITS	MARITIME BLVD	4 LD	6 LD	\$ 7,910,000	3
ADAMO DR (SR 60)	KINGSWAY	VALRICO	4 LD	6 LD	\$	1
BEARSS AVE	FLORIDA AVE	NEBRASKA AVE	4 LD	6 LD	\$ 1,655,000	3
CAUSEWAY/LUMSDEN	CITY LIMITS	US 41	4 LD	6 LD	\$ 662,000	3
CROSSTOWN X-WAY	KENNEDY BLVD	50TH ST	4 LD	6 LD	\$ 45,000,000	2
CROSSTOWN EXT	DALE MABRY	FALKENBURG RD	4 LD	6 LD	\$ 26,000,000	3
DALE MABRY HWY	GANDY BLVD	GANDY BRIDGE	0	4 LD	\$ 93,500,000	3
DALE MABRY HWY	VAN DYKE RD	EUCALID AVE	2 LU	4 LD	\$	1
DALE MABRY HWY	VAN DYKE RD	VETERANS EXPWAY	2 LU	4 LD	\$	1
DALE MABRY HWY	CHEVAL TRAIL	VETERANS EXPWAY	4 LD	4 LD (FRONTAGE RDS)	\$ 1,092,000	3
DALE MABRY HWY	CHEVAL TRAIL	PASCO COUNTY LINE	2 LU	4 LD	\$	1
FLORIDA AVE	OSBORNE AVE	PASCO COUNTY LINE	4 LD	4 LD (FRONTAGE RDS)	\$ 8,738,000	3
FLORIDA AVE	BOUGAINVILLEA AVE	WATERS AVE	4 LU	4 LU (ENHANCED)	\$ 1,900,000	3
FLORIDA AVE	FLETCHER	FLETCHER	2 LU	4 LD	\$	1
FOWLER AVE	FLORIDA AVE	FLORIDA/NEB APEX	2 LU	4 LD	\$	1
FOWLER AVE	I-275	NEBRASKA AVE	4 LD	6 LD	\$ 827,000	2
FOWLER AVE	NEBRASKA AVE	22ND ST	4 LD	6 LD	\$ 827,000	2
GANDY BRIDGE	PINELLAS CO. LINE	WESTSHORE BLVD	4 LD	4 LD (BRDG REPL)	\$	1
HILLSBOROUGH AVE (SR 580)	PINELLAS CO. LINE	DOUBLE BRNCH RD	4 LD	8 LD	\$	1
HILLSBOROUGH AVE (SR 580)	EISENHOWER BLVD	DALE MABRY	4 LD	6 LD	\$	1
HILLSBOROUGH AVE (SR 580)	DALE MABRY	ARMENIA	4 LD	6 LD	\$	1
HILLSBOROUGH AVE (SR 580)	ARMENIA	BEACON AVE	4 LD	6 LD	\$	1
HILLSBOROUGH AVE (SR 580)	BEACON AVE	TAMPA STREET	4 LD	6 LD	\$	1
HILLSBOROUGH AVE (SR 580)	TAMPA STREET	FLORIDA	4 LD	6 LD	\$	1
HILLSBOROUGH AVE (SR 580)	FLORIDA	CENTRAL	4 LD	6 LD	\$	1
I-275 (LINKS) *	MEMORIAL HWY	HIMES AVE	6 LD	6 LD (W/ AUX LANES)	\$ 99,000,000	2
I-275 (LINKS) *	MEMORIAL HWY	HIMES AVE	6 LD	6 LD (W/ AUX LANES)	\$ 183,500,000	3
I-275	BUSCH BLVD	FOWLER (CITY LIMITS)	4 LD	6 LD	\$	1
I-275	FOWLER AVE (CITY LIMITS)	FLETCHER AVE	4 LD	6 LD	\$	1
I-275	FLETCHER AVE	US 41	4 LD	6 LD	\$	1
I-275	US 41	I-75	4 LD	6 LD	\$ 20,851,000	2
I-4 / I-275 INTERCHANGE	I-275	I-275			\$ 15,100,000	2

PRIORITY:

- 1 = COMMITTED PROJECTS (1995-2000)
 2 = INTERIM PROJECTS (2001-2005)
 3 = COST AFFORDABLE PLAN (2006-2015)
 D = DEVELOPER PROJECTS (1995-2015)

LANE CONFIGURATION:

- OW = ONE WAY
 LU = LANES UNDIVIDED
 LD = LANES DIVIDED

STAR = SENSITIVE TO AREA RESIDENTS

AUX = AUXILIARY LANES

BRDG REPL = BRIDGE REPLACEMENT

ROADWAY	FROM	TO	EXISTING LANES	2015 LANE CONFIGURATION	PROJECT COSTS	PRIORITY
I-4 / I-275 INTERCHANGE	I-275	I-275			\$ 79,000,000	3
I-4	I-275	22ND ST	6 LD	8 LD	\$ 48,500,000	3
I-4	22ND ST	50TH ST	4 LD	8 LD	\$ 108,000,000	3
I-4	50TH ST	I-75	4 LD	6 LD	\$ -	1
I-4	I-75	McINTOSH	4 LD	6 LD	\$ -	1
I-4	McINTOSH	FORBES RD	4 LD	6 LD	\$ -	1
I-4	FORBES RD	SR 39	4 LD	6 LD	\$ -	1
I-4	SR 39	POLK COUNTY LINE	4 LD	6 LD	\$ -	1
I-4 CROSSTOWN CONNECTOR	I-4	CROSSTOWN X-WAY	0	6 LD	\$ 224,000,000	3
I-75	FOWLER AVE	CITY LIMITS S	4 LD	6 LD	\$ 33,969,000	3
I-75	CITY LIMITS S	CITY LIMITS N	4 LD	6 LD	\$ 35,424,000	3
I-75	CITY LIMITS N	I-275	4 LD	6 LD	\$ 17,280,000	3
KENNEDY BLVD	DALE MABRY HWY	WILLOW AVE	4 LD	4 LD(ENHANCED)	\$ 2,111,000	3
ML KING JR (SR 574)	40TH ST	CITY LIMITS	2 LU	6 LD	\$ 7,382,000	3
ML KING JR (SR 574)	CITY LIMITS	I-4	2 LU	6 LD	\$ 3,197,000	3
ML KING JR (SR 574)	I-4	US 301	2 LU	6 LD	\$ -	1
NEBRASKA AVE	KENNEDY BLVD	PINE ST	2 LU	6 LD	\$ -	1
NEBRASKA AVE (US 41)	HILLSBOROUGH AVE	HILLSBOROUGH AVE	4 LU	4 LU(ENHANCED)	\$ 3,200,000	3
NEBRASKA AVE (US 41)	FLETCHER	BUSCH BLVD	4 LU	4 LU(ENHANCED)	\$ 2,300,000	3
NEBRASKA AVE (US 41)	BEARSS	BEARSS	2 LU	4 LD	\$ -	1
NEBRASKA AVE (US 41)	FLORIDA/NEBRASKA APEX	FLA/NEB APEX	2 LU	4 LD	\$ -	1
NEBRASKA AVE (US 41)	SUNSET LANE	SUNSET LANE	2 LU	6 LD	\$ -	1
NEBRASKA AVE (US 41)	SUNSET LANE	PASCO COUNTY	2 LU	6 LD	\$ -	1
PARK RD	US 92	I-4	2 LU	6 LD	\$ -	1
SR 39	ALEXANDER ST EXT	KNIGHTS-GRIFFIN RD	2 LU	4 LD	\$ 6,001,000	3
SUNCOAST CON.	VETERANS EXPWAY	PASCO COUNTY LINE	0	4 LD	\$ -	1
US 301	I-4	BULLARD PKWY	2 LD	4 LD(STAR)	\$ 2,094,000	2

HILLSBOROUGH COUNTY ROADS

40TH ST	HENRY AVE	FOWLER AVE	2 LU	4 LD(STAR)	\$ 20,650,000	2
ANDERSON RD	CRENSHAW	WATERS	2 LU	4 LD	\$ -	1
ARMENIA AVE	TAMPA BAY BLVD	SLIGH AVE	4 LU	4 LU(ENHANCED)	\$ 2,046,000	3
ARMENIA AVE	SLIGH AVE	BUSCH BLVD	2 LU	4 LD	\$ 12,149,000	2
BELL SHOALS RD	BOYETTE RD	BLOOMINGDALE	2 LU	4 LD	\$ 17,806,000	3
BENJAMIN RD	HILLSBOROUGH AVE	WATERS AVE	2 LU	3 LU(ENHANCED)	\$ 6,706,000	3

MANATEE WATCH PROGRAM GUIDELINES

The contractor and subcontractors shall ensure that care is taken to conduct all construction and related activities with caution relative to any endangered or threatened species protected by the Federal Endangered Species Act of 1973, the Florida Manatee Act, and the Federal Marine Mammal Protection Act of 1972, as amended. All construction personnel shall be advised the potential presence of these species, of their endangered or threatened status, of their federal or state protection, and of the need to refrain from any action which would jeopardize the well-being of these species.

To minimize the potential impacts of bridge demolition and construction on manatees, a continuous Manatee Watch Program (MWP) will be established. The following conditions constitute the MWP and shall be included as special provisions.

- 1) Seven days prior to the first bridge-related construction event, the contractors will provide the U.S. Fish and Wildlife Service (USFWS) and Department of Environmental Protection (DEP) Office of Protected Species Management a list of the chief and primary observers for the MWP and their qualifications. An outline of the MWP will also be submitted seven days prior to the first such event.

The outline will include time tables for any blasting, dredging, or construction watercraft activity, tide tables for blasting events indicating slack tides; time tables for the MWP (start times for aerial survey as hereinafter required, and other survey positions); observer positions; a copy of the MWP log sheet; and map to record manatee sightings.

- 2) A formal MWP coordination meeting will be held at least two days prior to the first bridge-related construction event. Attendees will include the MWP chief and primary observers, construction contractors, demolition, subcontractors, FDOT, USFWS, DEP and other interested parties, such as the U.S. Coast Guard. All will be informed about the possible presence of manatees in the area, and that civil or criminal penalties can result from intentional or negligent annoyance, disturbance, harassment, molestation, capture, collection, injury and/or death of an endangered species or any part thereof. The construction contractors, demolition subcontractors and primary observer will present the protocol and logistics of bridge-related construction activities and the outline specified in condition No. 1.
- 3) During any blasting event, the manatee watch will consist of a minimum of six observers, one chief observer and five additional observers. In addition to these observers, there will be one MWP coordinator on-site to supervise the watch. Three of the six observers shall have previous experience in observing/spotting manatees and should be documented in the qualifications submitted in Condition #1. One of these observers shall have previous aerial survey experience and shall be the observer conducting the aerial surveys. The four additional observers shall be trained and informed in the methods of surveying and locating manatees. During all other bridge-related constructing events, the watch shall consist or at least one observer posted at locations designated by a DEP manatee specialist.

- 4) All observers will follow the protocol established for the MWP and will conduct the watch in good faith and to the best of their ability.
- 5) Each observer will be equipped with a two-way radio that will be dedicated exclusively to the MWP. Observers will also be equipped with polarized sunglasses, binoculars, a red flag for a backup visual communication system, and a sighting log with a map to record sightings at the bridge construction site and vicinity.
- 6) All blasting events will be scheduled within the period of slack tide to allow for optimum observing conditions. The chief observer will make the decision on optimum observing conditions to initiate the survey for each blast event.
- 7) A continuous aerial survey will be conducted by helicopter one hour prior to each blasting event in the vicinity of the blast site. In the event a helicopter is not available, DEP and USFWS will be contacted to determine another suitable method of aerial surveying. The aerial survey area and route will be designed in conjunction with a DEP manatee specialist. After detonation, the aerial survey crew shall make a complete survey of the safety and buffer zones before landing. The aerial survey crew shall either remain on ground stand-by in the survey area or continue surveillance of the waterway until the end of the blast period in case the need for aerial tracking of an injured manatee arises.
- 8) The additional primary observers will be located in various positions around the blast site. These positions will be situated to provide maximum visibility of the blasting safety zone and will have unobstructed views underneath the existing bridge. The exact observer locations will be approved by DEP and USFWS prior to each blast. One observer will conduct a sonar survey (e.g. depth finder, fish locator) starting twenty minutes prior to the blast of a 150 feet radius around pier. The primary observers will begin surveying the blast area one hour (60 minutes) prior to the blast event and continue observing for one-half hour (30-minutes) after the blast event.
- 9) The blasting safety zone will be clearly marked with highly visible buoys. Using the formula for an uncontrolled blast, the radius in feet of the blasting safety zone - $260 \sqrt[3]{W}$, where w = the weight of explosive to be used (TNT equivalent in pounds).
- 10) All of the observers will be in close communication with the blasting subcontractor in order to halt the blast event. The blast event will be halted if a manatee is spotted within 300 feet of the perimeter of the safety zone or within the safety zone (radius computer above). The blasting event will be immediately halted at the direction of the primary observers. The blast event will not take place until the animal(s) moves away from the area of its own volition. Manatees must not be herded away or harassed into leaving. If the animal(s) is/are not sighted a second time, the event will not resume until 30 minutes after the initial sighting. (If manatees are to be guided out of the danger zone, it will be done through an established protocol developed by the USFWS.)

- 11) Any problems encountered during bridge construction events will be evaluated by the observers and contractors and logistical solutions will be presented to the USFWS and DEP. Corrections to the MWP will be made prior to the next event.
- 12) If an injured or dead manatee is sighted during construction, an observer will contact the Florida Marine Patrol St. Petersburg office at (813) 893-2221. In any such case, an observer will also call the USFWS Vero Beach office at (407) 562-3909. The observer will act according to the situation and will maintain contact with the injured or dead manatee. The foregoing telephone numbers shall be posted at all on-site telephones.
- 13) If an injured or dead manatee is rescued/recovered within three miles up or down the waterway from the bridge site during construction or if the injury/death of any manatee in the vicinity is documented to be caused by construction activity, that activity will be postponed until cause of injury or mortality can be determined by DEP and USFWS.

If injuries are substantially documented, all contributing construction activities will be suspended and the principle parties will meet to determine a better way to conduct the activity.

- 14) Operators of watercraft will be responsible for any collisions with manatees. Vessels associated with the project should operate at slow (no wake) speed while in shallow water, especially where the draft of the boat provides less than 3 feet of clearance with the bottom. Work boats should load and off-load at designated sites. Vessels used to transport personnel shall be shallow-draft vessels of the light displacement category, and shall follow routes or deep water to the maximum extent possible where navigational safety permits.
- 15) When turbidity barriers are used to prevent or minimize degradation of water quality, the barriers shall be of appropriate dimension to restrict the animals access to the work area and to allow egress of any manatees which may enter the work area. Under such conditions, the barriers should use tangle-resistant or hemp rope when anchoring, or employ surface anchors to prevent entangling manatees. Continuous surveillance will be maintained in order to free animals which may become trapped in silt or turbidity barriers.
- 16) Construction debris shall not be discarded into the water.
- 17) Signs will be posted on-site warning of the presence of manatees, their endangered status, and precautions needed.
- 18) With two weeks (14 days) after completion of all bridge-related construction, the chief observer will submit a report to the USFWS and DEP providing the names of the observers and their positions during the event, number and location of manatees seen and what actions were taken.
- 19) If any one of the above conditions is not met prior to or during the applicable activity, the chief observer of the MWP will have the authority to terminate the activity. Any liability for a violation of the above protective measures will be assumed by the construction contractors.