

137th Avenue Corridor Study

Prepared for:

Miami-Dade Metropolitan Planning Organization



Prepared by:

The Corradino Group, Inc.

Executive Summary

The Miami-Dade County Metropolitan Planning Organization (MPO) is evaluating roadway and safety improvement alternatives along the 137th Avenue Corridor from SW 344th Street to the Extension of SR 836. The study area extends approximately twenty three (23) miles within Miami-Dade County, Florida. The project area is shown in Figure S-1. The proposed project is in the Planning phase in which preliminary planning and engineering studies are conducted.

Currently there are only three continuous north/south corridors between the Homestead/Florida City area and central Miami-Dade County:

- South Dixie Highway (U.S. 1)
- Homestead Extension of Florida's Turnpike (HEFT) (SR 821)
- Krome Avenue (SR 997)

The primary purpose of this study is to examine the feasibility of making 137th Avenue the fourth north/south facility between Homestead and Central Miami-Dade.

Planning Issues

The development of a fourth north-south corridor in Miami-Dade County in the 137th Avenue corridor will require sections of new road, roadway improvements, and widening to result in a functional, safe facility. Currently, the County's Comprehensive Development Master Plan (CDMP) shows 137th Avenue as a continuous six-lane facility from NW 12th Street to SW 184th Street and as a continuous four-lane facility from SW 184th Street to SW 344th Street.

**Figure S-1
Project Location Map**



The Metropolitan Planning Organization (MPO) is ultimately responsible for planning transportation projects in Miami-Dade County. As part of their responsibilities, they produce several documents that identify projects to be implemented. The most immediate of these documents is the Transportation Improvement Program (TIP), which is a five-year, cost-feasible program of projects to be implemented. Table S-1 shows the projects listed in the TIP for 137th Avenue and/or other projects that would impact traffic along 137th Avenue.

Table S-1
TIP Projects Impacting Corridor

MPO Project #	Facility	Limits	Project	Program Year
PS0000013	NW 137 th Avenue	NW 12 th Street to NW 17 th Street	New 4-lanes	NA*
PW20040343	SW 137 th Avenue	U.S. 1 to SW 200 th Street	New 2 lane road	2009
PS0000017	SW 137 th Avenue	SW 72 nd Street to SW 88 th Street	Widen 4 to 6 lanes	NA
PW20040344	SW 137 th Avenue	U.S. 1 to HEFT	Widen 2 to 4 lanes	2008
PW671561	SW 137 th Avenue	SW 88 th Street to SW 56 th Street	Reconstruct and add curb and gutter	NA
XA83605	SR 836 Extension	SW 137 th Avenue to SW 107 th Avenue	New 4-lane expressway extension	2007
PS0000114 PS0000124	NW 17 th Street	NW 127 th Avenue to NW 137 th Avenue	2-lanes and ½ turn lane	NA
PW671508	SW 104 th Street	SW 147 th Avenue to SW 137 th Avenue	Widen 4 to 6 lanes	NA
PW000321	SW 160 th Street	SW 147 th Avenue to SW 137 th Avenue	New 4-lane road	2007
PW67152AB	SW 184 th Street	SW 147 th Avenue to SW 127 th Avenue	Widen 2 to 4 lanes	NA
PW20040347	SW 180 th Street	SW 147 th Avenue to SW 137 th Avenue	Traffic operations improvements	2007
PW20040350	SW 264 th Street	SW 147 th Avenue to SW 137 th Avenue	Traffic operations improvements	2007
PW0000149	SW 268 th Street	SW 147 th Avenue to SW 112 th Avenue	Add exclusive turn lanes	NA
PW000515	SW 328 th Street	U.S. 1 to SW 137 th Avenue	Widen 2 to 4 lanes	NA

*A construction year is not identified in the TIP.

The MPO is also responsible for producing the County's Long-Range Transportation Plan (LRTP), which is a twenty-year forecast of transportation projects to be built.

First adopted by the MPO Governing Board in November 1990, the 137th Avenue projects were first proposed in the Metro-Dade Transportation Plan and Priorities Long Range Element to the Year 2010. The Plan listed 137th Avenue from SW 184th Street to U.S. 1 as a Priority II (1995-2000) project for roadway widening from two to six lanes. The four-lane widening of the 137th Avenue from U.S. 1 to SW 312th Street was listed as a Priority III (2000-2005) project. The two 137th Avenue corridor projects have remained in the County's LRTP through all subsequent updates.

The most recent version of the LRTP had several projects related to 137th Avenue as shown in Table S-2.

Table S-2
LRTP Projects Impacting Corridor

Facility	Segment	Project
Priority I		
NW 137 th Avenue	NW 12 th to NW 17 th Street	New 4-lane
NW 137 th Avenue	NW 12 th to SW 8 th Street	New 6-lane (construction complete Fall 2006)
SW 137 th Avenue	SW 8 th to SW 26 th Street	Widen 4 to 6 lanes
SW 120 th Street	SW 137 th Avenue to SW 117 th Avenue	Widen 4 to 6 lanes
Priority II		
SW 137 th Avenue	SW 120 th to 128 th Street	ITS (CCTV, Roadway sensors, arterial dynamic message signs, wireless comm.)
SW 137 th Avenue	SW 200 th Street to U.S. 1	Widen 2 to 4 lanes

In May 2005, the MPO amended the Long-Range Transportation Plan to include the 137th Avenue projects listed below:

- The extension of SW 137th Avenue from U.S. 1 to SW 200th Street as two-lane roadway in Priority I (2005-2009) of the LRTP.
- Widen SW 137th Avenue from U.S. 1 to the Homestead Extension of the Florida's Turnpike (HEFT) from two-lane to a four-lane roadway in Priority I (2005-2009) of the LRTP.
- Widen the extension of SW 137th Avenue from U.S. 1 to SW 200th Street from two-lane to a four-lane roadway in Priority III (2015-2020) of the LRTP.

As part of this analysis, it is acknowledged that South Dixie Highway (U.S. 1) corridor in South Dade has been the focus of an extensive planning effort since the mid-1990s. This effort has resulted in three unique zoning districts created to encourage mixed-use, pedestrian and transit-oriented development. The 137th Avenue alignment intersects with two of these districts, the Naranja Community Urban Center and Princeton Community Urban Center. Understanding the need for transit-oriented development, with its requisite opportunities for mobility, each roadway alternative considered for these areas should contain context sensitive roadway sections that incorporate the design elements set forth in the land development codes for these Urban Centers as approved by the Board of County Commissioners, such as wide sidewalks and on-street parking where appropriate. Additionally, it is emphasized that efforts should be undertaken to implement alternative modes of travel to move people more efficiently within the capacity provided in the early phases of the planned roadway improvement, if ridership numbers warrant those options, so as to adhere to the Policies set forth in the Miami Dade County Comprehensive Development Master Plan.

Urban Development Boundary

One portion of the 137th Avenue alignment forms the Urban Development Boundary (UDB) between SW 184th Street and SW 200th Street. The portion of the corridor from SW 200th Street to just north of U.S. 1 lies outside of the UDB.

- Policy 2B of the land use element of the Miami-Dade CDMP states – Priority in the provision of services and facilities and the allocation of financial resources for services and facilities in the County shall be given first to serve the areas within the UDB of the Land Use Plan (LUP) map. Second priority shall support the staged development of the Urban Expansion Area (UEA). Urban services and facilities which support and encourage urban development in Agricultural and Open Land areas shall be avoided, except for those improvements necessary to protect public health and safety and which service the localized needs of these non-urban areas.

Given that, it will be necessary to review the project within the context of the UDB and existing zoning and development.

Traffic Volumes

Currently, 137th Avenue functions very much like a suburban arterial. There are no obvious origins or destinations along the arterial and trips are made along the street to distribute to other major east-west arterials. As is evident in Table S-3, traffic volumes rise and fall as they approach major east/west cross streets. The high 24-hour north/south volumes on 137th Avenue are the highest closest to the major east-west arterials such as Kendall Drive, SW 56th Street and U.S. 41 indicating that 137th Avenue is feeding the east/west arterials.

Table S-3
2005 Traffic Volumes*

137 th Avenue	24 Hour Volumes		AM Peak Hour		PM Peak Hour	
	SB	NB	SB	NB	SB	NB
Coral Way	20,081	20,407	744	1926	1836	1116
Bird Road	18908	18695	781	1553	1644	1063
SW 56 th Street	20363	20777	818	1571	1613	1250
SW 72 nd Street	16360	16783	1160	1321	1269	1311
Kendall Drive	21300	23813	1259	1227	1421	1531
SW 104 th Street	21944	21763	1495	1496	1353	1409
SW 152 nd Street	24665	23858	879	1992	1990	1174
SW 288 th Street	9542	8516	780	665	742	664
Cross Streets	WB	EB	WB	EB	WB	EB
U.S. 41	22000	20500	n/a	n/a	n/a	n/a
Coral Way	17561	16791	617	1282	1517	772
Bird Road	13733	13494	767	1780	1333	816
SW 56 th Street	18473	19579	516	1744	1671	1146
Kendall Drive	41500	40,500	n/a	n/a	n/a	n/a
SW 184 th Street	8793	7895	469	66	788	417
SW 200 th Street	6327	6184	147	610	385	340
SW 232 nd Street	2904	2311	50	264	158	63
SW 288 th Street	9326	10919	214	707	582	745

* Available Miami-Dade Traffic Counts

This feeder function of the roadway can also be seen for the AM and PM peak period. At the north end of the corridor during the AM peak period, traffic is much higher going north (toward U.S. 41) than it is going south. In the center of the corridor, traffic is exactly evenly split as drivers head from both directions to SW 88th Street/Kendall Drive and SW 104th Street/Killian Drive to head east. The reverse phenomenon holds true in the PM peak period with traffic flowing from U.S. 41 at the north and traffic evenly split in the Kendall/Killian area.

The planned MDX extension of SR 874 to 137th Avenue along SW 136th Street would tie into the portion of 137th Avenue carrying the heaviest volumes. Table S-4 shows that the impacted portion of 137th Avenue is already carrying between 45,000 and 48,500 trips per day. The impact of the SR 874 extension on 137th Avenue will need to be carefully considered. This extension could either increase traffic on the facility as traffic accesses SR 874 or it could decrease volumes as trips are diverted to SR 874.

The volumes from the 2030 LRTP model for Miami-Dade County were obtained to examine the future demand for the corridor. The 2030 network includes all of the projects in the LRTP prior to the May 2005 amendment which extended 137th Avenue between SW 200th Street and U.S. 1. The 2030 network includes the extensions of both SR 836 and SR 874, but not the southerly extension of 137th Avenue. Table S-4 shows the growth in two-way 24-hour volumes within the corridor between 2005 and 2030. The traffic volume comparison was only based on model projections.

Table S-4
137th Avenue
2005 – 2030 Traffic Volume Comparison
(2-Way, 24-Hour Volumes)

Segment	2005 Volumes	2030 Volume	% Increase
SR 836 to U.S. 41	Under Construction	70,748	-
U.S. 41 to SW 26 th Street (Coral Way)	*30,189	50,352	67%
Coral Way to SW 42 nd Street (Bird Road)	40,488	56,014	38%
Bird Road to SW 88 th Street (Kendall Drive)	37,603	46,875	25%
Kendall Drive to SW 136 th Street	45,113	52,011	15%
SW 136 St to SW 184 th Street	48,523	60,099	24%
SW 184 St to SW 200 Street	*15,426	22,738	47%
U.S. 1 to Florida's Turnpike	*7,437	14,226	91%
Florida's Turnpike to SW 344 Street	18,058	25,775	43%

2005 – Available Miami-Dade Traffic Counts

2030 – Miami-Dade County LRTP Model

* Calculated by interpolation between 2000-2030

Land Use

The northern portion of the corridor is predominantly residential. Other designated uses along the corridor include business/office and institutional/public facility. In the area between SW 120th Street and SW 136th Street, Kendall-Tamiami Executive Airport abides on the western fringes of 137th Avenue.

The middle portion of the corridor is largely agricultural land. The area between SW 184th Street and SW 248th Street is adjacent to the Urban Development Boundary (UDB) and the area outside the UDB is entirely zoned agricultural. From SW 248th Street southward to SW 312th Street, the corridor is within the 2006 UDB and land adjacent to 137th Avenue is designated predominantly residential with some business/office areas. Between SW 312th Street and theoretical SW 336th Street the corridor is again outside the 2006 UDB and the land adjacent to 137th Avenue is designated agriculture. The year 2015 Urban Expansion Area (UEA) boundary extends curvilinear, from SW 312th Street to SW 344th Street, along the eastern and western frontages of 137th Avenue. The UEA is the area where current projections indicate that further urban development beyond the 2006 UDB is likely to be warranted some time between the years 2006 and 2015.

Right-of-Way

The majority of the corridor has more than 100 foot right-of-way, however between SW 184th Street and the HEFT the right-of-way is extremely variable or does not exist at all. The CDMP requires that developers dedicate all required right-of-way for section line roads as the property is developed or subdivided. Currently all of the land along the corridor where no right-of-way exists is zoned agricultural and if that property is not rezoned and developed prior to the extension of 137th Avenue, the right-of-way will have to be acquired by the County.

Corridor Alternatives and Analysis

Seven alternatives were identified to be considered for the 137th Avenue Corridor Study. Beyond the No Build and Transportation System Management (TSM) options, these were based on a realistic assessment of the type of facility that would be required to meet the goals of the study. Each of the following includes a brief description and statement concerning the likelihood of the alternative to satisfy the intent of the study.

- Alternative 1 - No-Build
- Alternative 2 - Transportation System Management (TSM)
- Alternative 3 - Four-Lane through facility, with neighborhood friendly design
- Alternative 4 - Five-Lane facility, providing full accessibility to all properties
- Alternative 5 - Six-Lane through divided facility
- Alternative 6 - High-Flow Arterial
- Alternative 7 - Parkway (Boulevard)

The consultant reviewed each of the alternatives to identify which could meet the objective of the study. The criteria used were:

- Ability to satisfy project goals.
- Ability to maximize level of service in the corridor.
- Ability to complement and enhance the transportation network.

Based on this evaluation, the following assessment of the alternatives to be considered further in the planning process was made (Table S-5).

Table S-5
Assessment of Alternatives

Alternative	Evaluation
1	This alternative will not move forward because it does not meet the study objective.
2	The TSM alternative will not move forward as a stand alone alternative. The TSM improvements will be incorporated into the build alternatives.
3	This alternative will not provide the needed capacity to accommodate future traffic growth into the year 2030. This alternative will not move forward.
4	This alternative will not address safety and traffic operation issues along the corridor. This alternative will not move forward.
5	This alternative will move forward as one of the build alternatives.
6	This alternative will move forward as one of the build alternatives.
7	This alternative will move forward as one of the build alternatives.

Recommendations

Based on the analysis conducted in this study and documented in Chapter 3 of the final report, it is clear that the three build options are the only ones that would realistically meet the overall objectives of a facility improvement project in the 137th Street corridor, if it were to be constructed. These objectives are:

1. Increase capacity to accommodate future travel demand.
2. Improve access management.
3. Provide roadway continuity.

To achieve these goals, it is recommended that the alternatives be phased as follows:

- Phase 1: Parkway Facility (Boulevard with Context Sensitive Design) (former Alternative 7)
- Phase 2: Six-lane Major North-South Corridor (former Alternative 5)
- Phase 3: Six-lane, Grade-separated High Flow Facility (former Alternative 6)

The overall utility to the transportation system of the 137th Avenue corridor will be achieved by: (1) establishing corridor connectivity; (2) ensuring adequate capacity; and, (3) creating a roadway environment that is friendly to the community.

Based on the information developed in this study, the creation of a contiguous roadway along 137th Avenue is feasible. Accomplishing the above given funding realities and the realities of the roadway development process, the “phased” approach as recommended in Chapter 4 is a logical approach.

To be able to build the ultimate design, financial plans will have to be developed in different fiscal years by identifying the needs and priorities for improvements along this corridor. Phase 1 includes the cost for the following improvements:

- The widening from two-lane to a four-lane section between the HEFT and U.S. 1
- The addition of a new four-lane typical section roadway between U.S. 1 and SW 200th Street (Quail Roost)
- The widening from two-lane to a four-lane section between SW 200th Street (Quail Roost) and SW 184th Street (Eureka Drive)
- The widening from a four-lane to a six-lane section from SW 88th Street (Kendall Drive) to SW 56th Street
- The widening from a four-lane to a six-lane section from SW 26th (Coral Way) to SW 8th Street (U.S. 41)

The four-lane typicals will have a forty-eight-foot (48) wide median to accommodate a six lane widening during Phase 2. Phase 1 will include sidewalks, bike paths, landscaping, etc. as appropriate. Phase 2 includes the widening of all the sections with four lanes to a six-lane typical section between SW 288th Street and SW 184th Street (Eureka Drive). Phase 3 includes the cost for the construction of grade separated intersections at U.S. 1, SW 88th Street and U.S. 41.



Phase 1: Parkway



Phase 2: Six-lane Through



Phase 3: Grade Separation

The costs for each phase are as follows:

- Phase 1: \$101,810,288
- Phase 2: \$54,871,816
- Phase 3: \$84,408,436

In addition to the roadway elements, it is recognized that transit is another alternative for mitigating this traffic congestion. Currently, there are other studies and actions that are considering transit alternatives for the corridor.

One project currently underway with a potential impact on 137th Avenue is the Kendall Drive Alternative Analysis (known as Kendall AA). The goal of this study is to develop several scenarios for the Kendall Drive Corridor. One scenario has a north-south element that considers the establishment of Bus Rapid Transit (BRT) along the SW 137th Avenue Corridor. If needed, the SW 137th Avenue Corridor has sufficient right-of-way to accommodate the roadway improvement, as well as future transit recommendations adopted by the community.

The work in this 137th Avenue study has been conducted in coordination with policies of the jurisdictions responsible for planning and eventual design and construction of the project. The study lays the groundwork for important improvements to the transportation network.

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1. Introduction

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- Krome Avenue (SR 997)

The primary purpose of this study is to examine the feasibility of making 137th Avenue the fourth north/south facility between Homestead and Central Miami-Dade.

This final report documents the work conducted in the study and presents the final recommendations and preliminary cost estimates.

Figure 1-1
Project Location Map



1:\Programs\2008-05\Corradino\StudyArea.rdb

2. Existing Conditions

2.1 Consistency with Plans

Miami-Dade Metropolitan Planning Organization

The Metropolitan Planning Organization (MPO) is ultimately responsible for planning transportation projects in Miami-Dade County. As part of their responsibilities, they produce several documents that identify projects to be implemented. The most immediate of these documents is the Transportation Improvement Program (TIP), which is a five-year, cost-feasible program of projects to be implemented. Table 2-1 shows the projects listed in the TIP for 137th Avenue and/or other projects that would impact traffic along 137th Avenue.

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- The extension of SW 137th Avenue from U.S. 1 to SW 200th Street as two-lane roadway in Priority I (2005-2009) of the LRTP.
- Widen SW 137th Avenue from U.S. 1 to the Homestead Extension of the Florida's Turnpike (HEFT) from two-lane to a four-lane roadway in Priority I (2005-2009) of the LRTP.
- Widen the extension of SW 137th Avenue from U.S. 1 to SW 200th Street from two-lane to a four-lane roadway in Priority III (2015-2020) of the LRTP.

Miami-Dade County Planning Department

In order to reflect the updates to the LRTP and to make the two plans consistent, the Board of County Commissioners (BCC) adopted an application, in April 1991, filed by the County Planning Department to amend the County's Comprehensive Development Master Plan (CDMP) Traffic Circulation Element and 2000 and 2010 Land Use Plan Map. The four-lane widening and extension of 137th Avenue from SW 184th Street to U.S. 1 and the four-lane widening from U.S. 1 to the HEFT have continuously been designated in the CDMP since 1991.

The CDMP's adopted County roadway network for significant roadways shows 137th Avenue as a continuous six-lane facility from NW 12th Street to SW 184th Street and as a continuous four-lane facility from SW 184th Street to SW 344th Street. The CDMP's existing functional roadway classification for 137th Avenue shows that it is a state principal arterial from SW 88th Street to SW 152nd Street. Two portions, from SW 184th Street to SW 200th Street and from SW 8th Street to SW 88th Street, are shown as county minor arterials and the remainder of the facility is shown as a collector.

Florida Department of Transportation

The planned roadway functional classification shows that it is a State Principal Arterial from SW 88th Street to SW 152nd Street; a County Minor Arterial from SR 836 to SW 88th Street and from SW 152nd Street to U.S. 1; and finally as a collector from U.S. 1 to SW 344th Street.

The FDOT Straight Line Diagram of Road Inventory currently classifies 137th Avenue as a State Urban Principal Arterial (SR 825) from SW 88th Street to SW 128th Street.

137th Avenue is a section-line road and, as such, is subject to policies in the CDMP. Policies 2A, 2B and 2 D directly impact the development of the corridor.

- Policy 2A states – The County shall continue to maintain and enforce the minimum right-of-way requirements to ensure countywide continuity of the thoroughfare system.
- Policy 2B states – The County shall require the dedication of the appropriate share of all necessary rights of way from all development at the time of development.
- Policy 2D states – The section-line, half-section line and quarter-section line road system should form a continuous network within developed areas, interrupted only when it would destroy the integrity of the neighborhood or development.

Urban Development Boundary

One portion of the 137th Avenue alignment forms the Urban Development Boundary (UDB) between SW 184th Street and SW 200th Street. The portion of the corridor from SW 200th Street to just north of U.S. 1 lies outside of the UDB.

- Policy 2B of the land use element of the Miami-Dade CDMP states – Priority in the provision of services and facilities and the allocation of financial resources for services and facilities in the County shall be given first to serve the areas within the UDB of the Land Use Plan (LUP) map. Second priority shall support the staged development of the Urban Expansion Area (UEA). Urban services and facilities which support and encourage urban development in Agricultural and Open Land areas shall be avoided, except for those improvements necessary to protect public health and safety and which service the localized needs of these non-urban areas.

The 2003 adopted Evaluation and Appraisal Report of the CDMP evaluates this policy by stating that the "prohibitions of such urban services and expenditures on the construction of new roads the

extension of water and sewer lines and the development of park and recreation areas have been instrumental in maintaining the rural character of the western fringes.”

- Land Use Policy 8H states – When considering land areas to add to the UDB, after demonstrating that a countywide need exists,
 1. The following areas shall not be considered:
 - a. The Redlands area south of SW 184th Street/Eureka Drive.
 2. The following areas shall be avoided:
 - a. Land designated Agricultural on the Land Use Plan Map.
 3. The following areas shall be given priority for inclusion, subject to conformance with policy 8G and the foregoing provision of this policy:
 - a. Land contiguous to the UDB

Given that it may be a number of years before any improvement in this area is initiated, it will be necessary to review the project within the context of the UDB and existing zoning and development.

Miami-Dade Expressway Authority

The Miami-Dade Expressway Authority (MDX) is responsible for operating and expanding toll facilities. The MDX system includes roadways such as State Road (SR) 836, SR 874, SR 878, SR 112, and SR 924. MDX currently has two major projects that directly impact this corridor.

The first project is under construction and is the extension of SR 836 from its current terminus at the HEFT to NW 137th Avenue. The SR 836 extension ends with ramps terminating at 137th Avenue and connecting the ramps to a six-lane divided arterial (137th Avenue) from NW 12th Street to SW 8th Street.

The second project is the result of a study conducted by the MPO in 2002 to evaluate the extension of SR 874 to SW 137th Avenue. The study concluded that SW 137th Avenue be connected to SR 874 by extending SW 136th Street as a four-lane divided arterial eastward over the CSX rail corridor, curving to the northeast following the CSX railroad alignment and connecting to SR 874. This project is currently in the MDX Long Range Plan, 2007 TIP, and in the 2030 LRTP. In addition to these projects, MDX’s Long Range Plan also includes the SR 836 Kendall Extension, which will affect traffic in southwest Miami-Dade County.

2.2 Roadway Continuity

137th Avenue begins at the northern segment at NW 12th Street and runs south to SW 200th Street. The construction along 137th Avenue from NW 12th Street to SW 8th Street (U.S. 41) was completed in fall 2006. The construction included ramp connection to the SR 836 extension and the widening from two lanes undivided to six lanes divided. Figure 2-1 shows the construction of the connecting ramps from the terminus of SR 836 to 137th Avenue. South of U.S. 41 the roadway typical section is 110 feet wide, but is only two (2) lanes wide in each direction with a 48-foot wide median. This cross section exists between U.S. 41 and Coral Way (SW 26th Street). Through this two mile stretch there is only one traffic signal. The back sides of the majority of the residential properties are along

137th Avenue. The east side of the roadway (northbound) has very few curb cuts unlike the west side of the roadway (southbound).

Figure 2-1
SR 836 Extension Under Construction at 137th Avenue



South of SW 26th Street to SW 56th Street, 137th Avenue is a six-lane divided arterial within a 110-foot-wide typical section. Between SW 26th Street and SW 42nd Street every block creates a full intersection and many of the residential properties have driveways onto 137th Avenue. There are, however, no traffic control devices along this stretch of roadway. From SW 42nd Street to SW 56th Street the facility changes dramatically with no residential driveways and very few streets intersecting 137th Avenue. On the west side of the roadway is a landscaped berm with a bicycle path separating the houses from the roadway. This mile of roadway functions like a high-flow limited access road, which typically allows vehicles to travel at higher speeds.

The next segment of roadway is a four-lane divided typical section within a 110-foot-wide typical section between SW 56th Street and SW 88th Street/Kendall Drive (Figure 2-2). The heavily landscaped median is 48 feet wide through this section giving a parkway appearance. Just south of SW 56th Street there are single-family homes that front onto 137th Avenue with their associated driveway curb cuts. Most of the properties along this section are multi-family residential with a few driveways. From SW 72nd Street to SW 82nd Street the east side of the roadway (northbound), every block creates an intersection.

Figure 2-2
Four-lane Divided Section at SW 79th Street



From SW 88th Street to SW 184th Street, the roadway is a six-lane divided typical section (Figure 2-3) and from SW 184th Street to SW 200th Street, the roadway is a two-lane rural typical section.

Figure 2-3
Six-lane Divided Section South of Kendall Drive



Table 2-3 shows the existing roadway characteristics along the corridor.

Table 2-3
Existing Roadway Characteristics

Segment	Roadway	Roadway Typical Section Width
NW 12 th Street to SW 8 th Street	6-lane divided (construction complete in Fall 2006)	96'
SW 8 th Street to SW 26 th Street	4-lane divided with protected turn lanes	110'
SW 26 th Street to SW 56 th Street	6-lane divided with protected turn lanes	110'
SW 56 th Street to SW 88 th Street	4-lane divided with protected turn lanes	110'
SW 88 th Street to SW 184 th Street	6-lane divided with protected turn lanes	110' – 220'
SW 184 th Street to SW 200 th Street	2 lanes	55' – 110'
SW 200 th Street to SW 232 nd Street	No improved roadway (dirt road)	0' – 90'
SW 232 nd Street to SW 248 th Street	2 lanes	0' – 80'
SW 248 th Street to U.S. 1	No Roadway	-
U.S. 1 to SW 272 nd Street	2 lanes	35' – 90'
SW 272 nd Street to SW 280 th Street	6-lane divided with protected turn lanes	75' – 90'
SW 280 th Street to SW 344 th Street	4-lane divided with protected turn lanes	55' – 140'

2.3 Traffic Volumes

Currently, 137th Avenue functions very much like a suburban arterial. There are no obvious origins or destinations along the arterial and trips are made along the street to distribute to other major east-west arterials. As is evident in Table 2-4, traffic volumes rise and fall as they approach major east/west cross streets. The high 24-hour north/south volumes on 137th Avenue are the highest closest to the major east-west arterials such as Kendall Drive, SW 56th Street and U.S. 41 indicating that 137th Avenue is feeding the east/west arterials.

This feeder function of the roadway can also be seen for the AM and PM peak period. At the north end of the corridor during the AM peak period, traffic is much higher going north (toward U.S. 41) than it is going south. In the center of the corridor, traffic is exactly evenly split as drivers head from both directions to SW 88th Street/Kendall Drive and SW 104th Street/Killian Drive to head east. The reverse phenomenon holds true in the PM peak period with traffic flowing from U.S. 41 at the north and traffic evenly split in the Kendall/Killian area.

Table 2-4
2005 Traffic Volumes*

137 th Avenue	24 Hour Volumes		AM Peak Hour		PM Peak Hour	
	SB	NB	SB	NB	SB	NB
Coral Way	20,081	20,407	744	1926	1836	1116
Bird Road	18908	18695	781	1553	1644	1063
SW 56 th Street	20363	20777	818	1571	1613	1250
SW 72 nd Street	16360	16783	1160	1321	1269	1311
Kendall Drive	21300	23813	1259	1227	1421	1531
SW 104 th Street	21944	21763	1495	1496	1353	1409
SW 152 nd Street	24665	23858	879	1992	1990	1174
SW 288 th Street	9542	8516	780	665	742	664
Cross Streets	WB	EB	WB	EB	WB	EB
U.S. 41	22000	20500	n/a	n/a	n/a	n/a
Coral Way	17561	16791	617	1282	1517	772
Bird Road	13733	13494	767	1780	1333	816
SW 56 th Street	18473	19579	516	1744	1671	1146
Kendall Drive	41500	40,500	n/a	n/a	n/a	n/a
SW 184 th Street	8793	7895	469	66	788	417
SW 200 th Street	6327	6184	147	610	385	340
SW 232 nd Street	2904	2311	50	264	158	63
SW 288 th Street	9326	10919	214	707	582	745

* Available Miami-Dade Traffic Counts

The planned MDX extension of SR 874 to 137th Avenue along SW 136th Street would tie into the portion of 137th Avenue carrying the heaviest volumes. Table 2-5 shows that the impacted portion of 137th Avenue is already carrying between 45,000 and 48,500 trips per day. The impact of the SR 874 extension on 137th Avenue will need to be carefully considered. This extension could either increase traffic on the facility as traffic accesses SR 874 or it could decrease volumes as trips are diverted to SR 874.

The volumes from the 2030 LRTP model for Miami-Dade County were obtained to examine the future demand for the corridor. The 2030 network includes all of the projects in the LRTP prior to the May 2005 amendment which extended 137th Avenue between SW 200th Street and U.S. 1. The 2030 network includes the extensions of both SR 836 and SR 874, but not the southerly extension of 137th Avenue. Table 2-5 shows the growth in two-way 24-hour volumes within the corridor between 2005 and 2030. The traffic volume comparison was only based on model projections.

Table 2-5
137th Avenue
2005 – 2030 Traffic Volume Comparison
(2-Way, 24-Hour Volumes)

Segment	2005 Volumes	2030 Volume	% Increase
SR 836 to U.S. 41	Under Construction	70,748	-
U.S. 41 to SW 26 th Street (Coral Way)	*30,189	50,352	67%
Coral Way to SW 42 nd Street (Bird Road)	40,488	56,014	38%
Bird Road to SW 88 th Street (Kendall Drive)	37,603	46,875	25%
Kendall Drive to SW 136 th Street	45,113	52,011	15%
SW 136 St to SW 184 th Street	48,523	60,099	24%
SW 184 St to SW 200 Street	*15,426	22,738	47%
U.S. 1 to Florida's Turnpike	*7,437	14,226	91%
Florida's Turnpike to SW 344 Street	18,058	25,775	43%

2005 – Available Miami-Dade Traffic Counts

2030 – Miami-Dade County LRTP Model

* Calculated by interpolation between 2000-2030

A report published in February 2004 by the Miami-Dade Department of Planning and Zoning provides the levels of service for this type of facility. Table 2-6 is a summary of the County's adopted levels of service for streets in different parts of the county.

Table 2-6
County's Adopted Levels of Service

Location	Transit Availability		
	No Transit Service	20 min. headways within ½ mile	Rail service or express bus available
Outside UDB	LOS D- State Minor Arterials LOS C – County Roads and State Principal Arterials		
Between UIA and UDB	LOS D or LOS E on State Urban Minor Arterial	LOS E (100% of capacity)	120% of Capacity
Inside the UIA	LOS E	120% Capacity	150% of capacity

The corridor study area has segments inside and outside the UDB and portions with transit service. These segments are discussed in detail in the following sections.

2.4 Land Use

Figure 2-4 illustrates the land use in the corridor. The northern portion of the corridor is predominantly residential. Figure 2-5 illustrates the nature of the multi-family residential areas between SW 79th Street and Kendall Drive. Other designated uses along the corridor include business/office and institutional/public facility. In the area between SW 120th Street and SW 136th Street, Kendall-Tamiami Executive Airport abides on the western fringes of 137th Avenue.

The middle portion of the corridor is largely agricultural land, as shown by the tomato field in Figure 2-6. The area between SW 184th Street and SW 248th Street is adjacent to the Urban Development Boundary (UDB) and the area outside the UDB is entirely zoned agricultural. Table 2-7 identifies the land use along the 137th Avenue corridor. From SW 248th Street southward to SW 312th Street, the corridor is within the 2006 UDB and land adjacent to 137th Avenue is designated predominantly residential with some business/office areas. Between SW 312th Street and theoretical SW 336th Street the corridor is again outside the 2006 UDB and the land adjacent to 137th Avenue is designated agriculture. The year 2015 Urban Expansion Area (UEA) boundary extends curvilinear, from SW 312th Street to SW 344th Street, along the eastern and western frontages of 137th Avenue. The UEA is the area where current projections indicate that further urban development beyond the 2006 UDB is likely to be warranted some time between the years 2006 and 2015.

Figure 2-4
Land Use in 137th Avenue Corridor

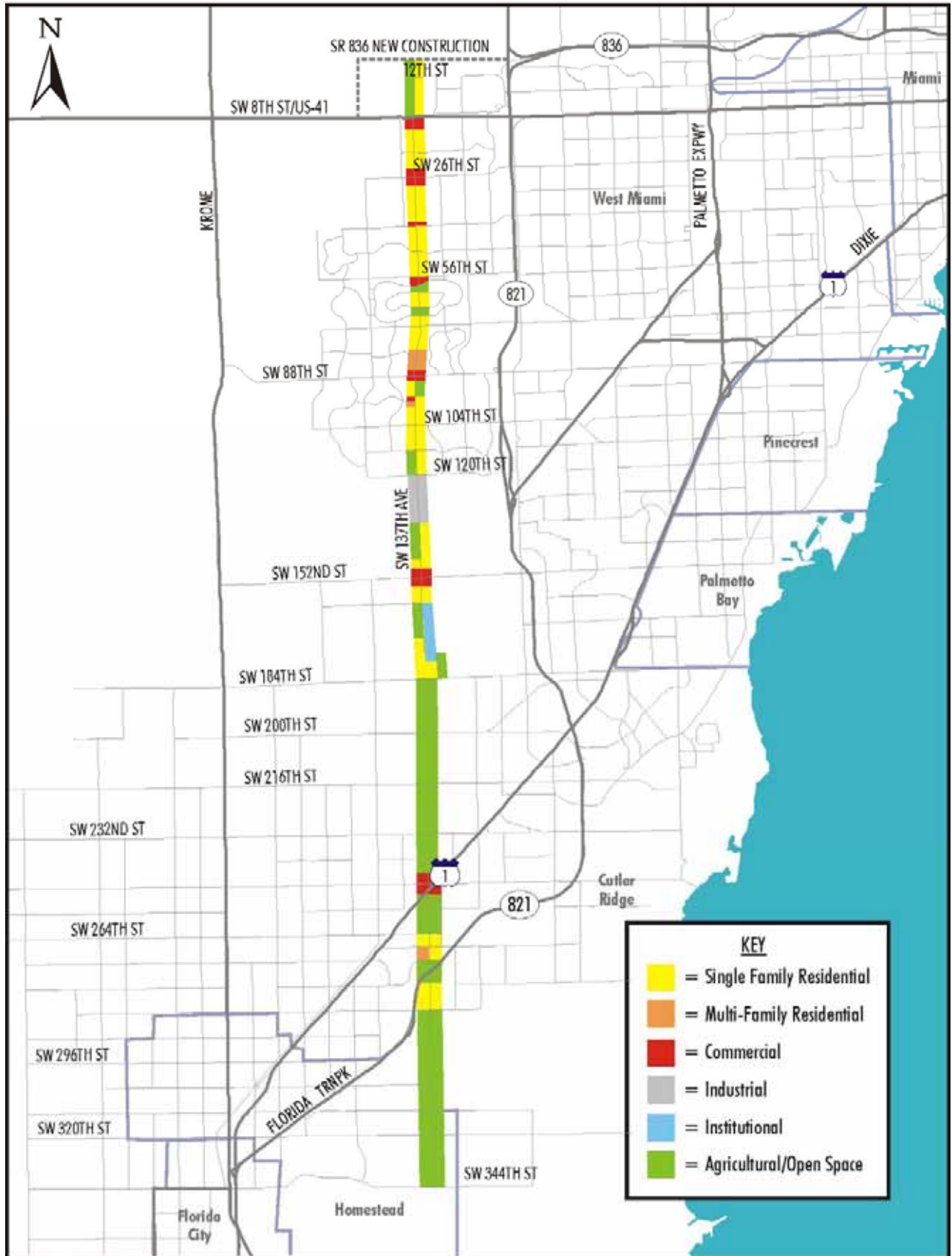


Figure 2-5
Multi-family Residential Area



Figure 2-6
Agricultural Area Inside the UDB Backed up by Warehousing



Table 2-7
Generalized Land Use in Corridor

Segment	Land Use
NW 12 th Street to U.S. 41	Single family residential east side of road
U.S. 41 Intersection	Commercial south side of intersection
U.S. 41 to Coral Way	Single family residential on both sides backing onto road with barrier walls.
Coral Way Intersection	Commercial on all four corners
Coral Way to SW 62 nd Street	Single family residential
Bird Road Intersection	Commercial north side of intersection
SW 56 th Street Intersection	Commercial south side of intersection
SW 62 nd Street to SW 66 th Street	Multi-family residential both sides of street
SW 66 th Street to SW 79 th Street	Single family residential both sides of street
SW 79 th Street to Kendall Drive	Multi-family residential both sides of street
Kendall Drive Intersection	Commercial all four corners
Kendall Drive to SW 100 th Street	Single family residential west side; vacant east side
SW 96 th Street Intersection	Commercial on NW side, Multi-family on SW side Single Family on east side
SW 100 th Street to SW 112 th Street	Single family residential both sides
SW 112 th Street to SW 120 th Street	Single family residential east side; vacant west side
SW 120 th Street to SW 136 th Street	Industrial east side; Airport west side
SW 136 th Street to SW 144 th Street	Single family residential east side; vacant west side
SW 144 th Street to SW 160 th Street	Single family residential both sides
SW 152 nd Street Intersection	Commercial all four corners
SW 160 th Street to SW 173 rd Street	East side institutional, west side vacant
SW 173 rd Street to SW 178 th Street	East side institutional, west side single family residential
SW 178 th Street to SW 184 th Street	Single family residential both sides
SW 184 th Street to SW 248 th Street	Agricultural
U.S. 1 Intersection	Commercial all four corners
SW 250 th Street to SW 264 th Street	Vacant
SW 264 th Street to SW 268 th Street	Single family residential both sides
SW 268 th Street to SW 272 nd Street	Single family residential east side; multi-family residential west side
SW 272 nd Street to SW 288 th Street	Turnpike Interchange
SW 278 th Street to SW 288 th Street	Single Family Residential both sides
SW 288 th Street to SE 344 th Street	Vacant/Agricultural

2.5 Right-of-Way

Table 2-8 shows the existing right-of-way along 137th Avenue, as recorded with the County. The majority of the corridor has more than 100 foot right-of-way, however between SW 184th Street and the HEFT the right-of-way is extremely variable or does not exist at all (Figure 2-7). The CDMP requires that developers dedicate all required right-of-way for section line roads as the property is developed or subdivided. Currently all of the land along the corridor where no right-of-way exists is zoned agricultural and if that property is not rezoned and developed prior to the extension of 137th Avenue, the right-of-way will have to be acquired by the County.

Figure 2-7
Right of Way South of 222nd Street (55 ft.)



Table 2-8
Actual Right of Way Along Corridor

Segments	Right of Way Width (ft)
SW 8 th Street – SW 92 nd Street	110
SW 92 nd Street – SW 104 th Street	100
SW 104 th Street – SW 120 th Street	120
SW 120 th Street – SW 136 th Street	Varies 110 to 120
SW 136 th St – SW 173 rd Terrace	110
SW 173 rd Terrace – SW 176 th Street	Varies 110 to 130
SW 176 th Street – 400' south of SW 184 th Street	110
Next 1120'	70
After 1120' up to SW 200 th Street	55
1270' south of SW 200 th Street	35
Next 330'	No ROW
Next 660'	35

Table 2-8 (continued)
Actual Right of Way Along Corridor

Segments	Right of Way Width (ft)
Next 620' up to SW 208 th Street	90
Next 2350'	No ROW
Next 330' up to SW 216 th Street	35
Next 600'	55
Next 650'	No ROW
Next 330'	55
Next 330' up to SW 222 nd Street	No ROW
300' south of SW 222 nd Street	55
Next 330'	95
Next 1300'	55
Next 2970'	No ROW
Next 350'	35
Next 650 up to SW 240 th Street	No ROW
SW 240 th Street – SW 244 th Street	80
SW 244 th Street – SW 248 th Street	50
Next 850'	No ROW
Next 2150' (south of SW 256 th Street)	40
Next 50'	80
Next 300' up to SW 258 th Street	40
Next 1980' up to SW 264 th Street	No ROW
Next 330' (south of SW 264 th Street)	35
Next 940' up to SW 268 th Street	90
Next 200'	90
Next 430'	75
Next 5500' up to SW 284 th Street	Varies (HEFT Interchange)
Next 620'	80
Next 570' up to SW 288 th Street	100
SW 288 th Street – Waterstone Way	128
Waterstone Way – 1800' south	118
Next 730' up to SW 304 th Street	55
SW 304 th Street – 1700' south	55
Next 850' up to SW 312 th Street	90
SW 312 th Street – 960' south	110
Next 330'	Varies from 110 to 140
Next 1320' up to SW 320 th Street	60
SW 320 th Street – SW 344 th Street	60

Right of way width – Miami-Dade County Public Works

2.6 Intersection Controls

Twenty-eight signalized intersections exist along the 23 miles that make up the 137th Avenue corridor. The locations are listed in Table 2-9. With only one signal every 0.8 miles, this corridor would provide an excellent north/south alternative to the U.S. 1 and the Florida's Turnpike if it was continuous. The section of roadway from SW 56th Street to SW 71st Street has five signals in 15 blocks or one signal every three blocks. From Kendall Drive south to SW 160th Street there is consistently one signal every eight blocks.

Table 2-9
Signalized Intersections Along 137th Avenue

SW 18 th Street
SW 26 th Street (Coral Way)
SW 42 nd Street (Bird Road)
SW 47 th Street
SW 56 th Street
SW 59 th Street
SW 62 nd Street
SW 68 th Street
SW 72 nd Street
SW 79 th Street
SW 84 th Street
SW 88 th Street (Kendall Drive)
SW 96 th Street
SW 104 th Street
SW 112 th Street
SW 120 th Street
SW 128 th Street
SW 136 th Street
SW 146 th Street
SW 152 nd Street (Coral Reef Drive)
SW 160 th Street
SW 180 th Street
SW 184 th Street (Eureka Drive)
U.S. 1 (Dixie Hwy.)
SW 268 th Street
SW 288 th Street (Biscayne)
Florida's Turnpike SB Off Ramp

Figure 2-8 shows the intersection where 137th Avenue drops from three lanes in each direction to one lane in each direction. Figure 2-9 shows the intersection with U.S. 1 where the corridor starts again and runs south to the Homestead Speedway.

Figure 2-8
SW 184th Street Intersection



Figure 2-9
U.S. 1 Intersection



2.7 Transit

Table 2-10 indicates all of the transit routes that operate through or across the corridor. Route 137 is the only bus route that operates along a major portion of the corridor, running between SW 8th Street and SW 180th Street. Table 2-9 also indicates the number of passengers that board (get on) or alight (get off) bus service at 137th Avenue. Many of these movements represent transfers between route 137 and the major east/west routes on Kendall Drive, Killian Drive and Coral Reef Drive.

Table 2-10
Bus Service

Route	Serves	Headway	On	Off
137	Southland Mall to International Mall	30 minutes	1112	1146
51	137 th Avenue/10 th Street to Convention Center	12 minutes		
24	137 th Avenue/Coral Way to Government Center	30 minutes		
224	137 Avenue/Coral Way to Douglas Road Metro	20 minutes	18	8
40	147 Avenue/47 Street to Douglas Road Metro	25 minutes	44	53
240	147 Avenue/42 Street to Dadeland North	20 minutes	32	19
56	152 Avenue/47 Street to University of Miami	50 minutes		
72	157 Avenue/88 Street to S. Miami Metro	30 minutes		
88	157 Avenue/88 Street to Dadeland North	20 minutes	222	198
288	167 Avenue/88 Street to Dadeland North	12 minutes	40	53
104	157 Avenue/104 Street to Dadeland North	30 minutes	277	231
204	167 Avenue/88 Street to Dadeland North	5 minutes	67	61
147	Tamiami Airport to Dolphin Mall	30 minutes		
136	142 Avenue/136 Street to Dadeland South	30 minutes		
252	Country Walk to Dadeland South	15 minutes	144	188
70	212 Street/85 Avenue to Florida City	30 minutes		

Source: Miami-Dade Transit

3. Corridor Alternatives and Analysis

The purpose of this chapter is to discuss the conceptual alternatives that were developed to assess the feasibility of a continuous corridor along 137th Avenue. All alternatives were developed in general and analyzed in order to select a preferred alternative. The alternatives were developed and refined with the objective of avoidance and minimization of impacts. Planning and engineering ideas to achieve this objective are described below.

3.1 137th Avenue Analysis Segments

To initiate the analysis, the study corridor was divided into nine individual segments for analysis (Figure 3-1). These segments were divided based on typical section, roadway physical characteristics, traffic and land use.

- Segment 1 – SW 344th Street to HEFT (4.3 miles)
- Segment 2 – Florida's Turnpike to U.S. 1 (1.6 miles)
- Segment 3 – U.S. 1 to SW 200th Street (Quail Roost) (3.2 miles)
- Segment 4 – SW 200th Street (Quail Roost) to SW 184th Street (Eureka Drive) (1.1 miles)
- Segment 5 – SW 184th Street (Eureka Drive) to SW 88th Street (6.1 miles)
- Segment 6 – SW 88th Street (Kendall Drive) to SW 56th Street (2.0 miles)
- Segment 7 – SW 56th Street to SW 26th Street (2.0 miles)
- Segment 8 – SW 26th Street (Coral Way) to U.S. 41 (1.2 miles)
- Segment 9 – SW 8th Street/U.S. 41 to SR-836 (1.6 miles)

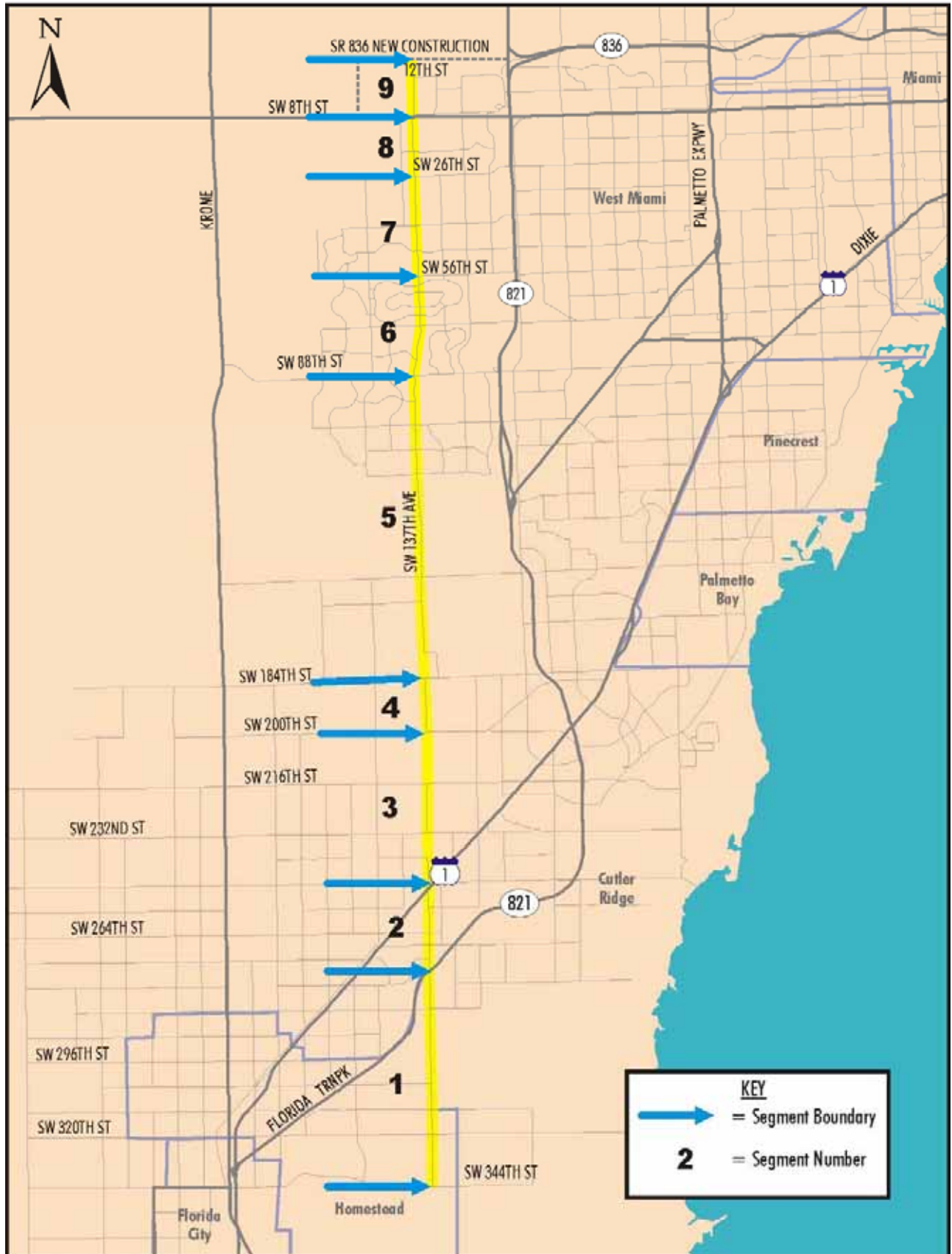
3.2 Definition of Alternatives

Seven alternatives were identified to be considered for the 137th Avenue Corridor Study. Beyond the No Build and Transportation System Management (TSM) options, these were based on a realistic assessment of the type of facility that would be required to meet the goals of the study. Each of the following includes a brief description and statement concerning the likelihood of the alternative to satisfy the intent of the study.

■ Alternative 1 - No-Build

This alternative proposes to keep the existing roadway layout and make no improvements. If no improvements are made, the roadway and its cross roads will likely experience congestion during peak hours. The congestion along the area may cause additional impacts to this roadway. Such impacts may include excessive delays in travel time, large reduction of average travel speeds, excess fuel consumption from idling vehicles, and increased air pollutants (particularly hydrocarbons and carbon monoxide).

Figure 3-1
137th Avenue Analysis Segment



1/10/2018 10:45 AM/10/10/2018

■ **Alternative 2 - Transportation System Management (TSM)**

This alternative involves selectively upgrading deficient roadway areas with improved signing, new turn lanes, pavement markings and access management improvements. This alternative will maximize its applicability on this project and will not satisfy the additional capacity needs along this section of roadway. The congestion along 137th Avenue is caused by a lack of thru lane capacity, roadway continuity and high turning volumes. The TSM alternative will only improve the operation of the signalized intersections and safety issues associated with this corridor.

■ **Alternative 3 - Four-Lane through facility, with neighborhood friendly design**

This alternative consists of the following elements:

- Narrowing to a four-lane the segments that currently have a six-lane typical section.
- Widening to four-lane the segments that currently have a two-lane typical section.
- Constructing a new four-lane typical section to the segments that currently have no existing roadway.
- Constructing a shared use path for pedestrians and bicyclists along the entire corridor.
- Implementing landscape along the entire corridor.
- Adding pedestrian amenities (i.e. protected crosswalks, lighting, bus stops, etc.).

This roadway alternative will provide a more urban pedestrian sensitive design. It will also address the needed roadway connectivity to the south of the corridor but it will not address the needed roadway capacity, which would be one of the primary objectives of a new facility.

■ **Alternative 4 - Five-Lane facility, providing full accessibility to all properties**

This alternative consists of the following elements:

- Maintaining the segments that currently have a six-lane typical section.
- Widening to five-lane the segments that currently have a two-lane typical section. The five-lane typical section will consist of two travel lanes in each direction and a center two-way left turn lane.
- Constructing a new five-lane typical section to the segments that currently have no existing roadway. The five-lane typical section will consist of two travel lanes in each direction and a center two-way left turn lane.

This alternative will provide the businesses and residents along the corridor full access to their properties. This alternative will also address the needed roadway connectivity to the south of the corridor but it will not improve intersections and queuing storage for the high turning volumes along the corridor.

A five-lane typical section permits unrestricted left-turn and right merges opportunities within the two-way left turn lane, which would result in a higher number of potential conflict points and possibly an increase in crash rates. Continuous left-turn lanes are also occasionally used as passing lanes.

■ **Alternative 5 - Six-lane through divided facility (see Appendix C for schematic plans of this alternative)**

This alternative consists of the following elements:

- Maintaining the segments that currently have a six-lane typical section.
- Widening to six-lane the segments that currently have a four-lane section.
- Widening to six-lane the segments that currently have a two-lane typical section.
- Constructing a new six-lane typical section to the segments that currently have no existing roadway.

This alternative will provide and address the needed roadway connectivity to the south of the corridor as well as the needed capacity enhancements for the rest of the corridor. This alternative will also upgrade this road to a major north-south facility.

■ **Alternative 6 - High-flow Arterial (see Appendix C for schematic plans of this alternative)**

This alternative consists of the following elements:

- Maintaining the segments that currently have a six-lane typical section.
- Widening to four-lane or six-lane the segments that currently have a two-lane typical section.
- Constructing a new four-lane or six-lane typical section to the segments that currently have no existing roadway.
- Constructing grade separated intersections at specific locations to provide a north-south free flow movement at the busiest intersections.

This alternative provides and addresses the needed roadway connectivity to the south of the corridor as well as the needed capacity enhancements for the rest of the corridor. This alternative will also upgrade this road to a high-flow arterial north-south facility.

■ **Alternative 7 - Parkway (Boulevard) (see Appendix C for schematic plans of this alternative)**

This alternative consists of the following elements:

- Maintaining the segments that currently have a six-lane typical section.
- Widening to four-lane the segments that currently have a two-lane typical section
- Constructing a new four-lane typical section to the segments that currently have no existing roadway.
- Implementing landscape to the entire corridor.
- Adding pedestrian amenities (i.e. protected crosswalks, lighting, bus stops, etc.).
- Constructing a shared use path for pedestrians and bicyclists along the entire corridor.

This alternative provides to the roadway a more urban pedestrian sensitive design. It will also address the needed roadway connectivity to the south of the corridor but it will not address needed roadway capacity.

Roadway improvements around developed areas could present opposition by local agencies and neighborhood associations. In most of the cases, they will be in favor for the roadway improvements if the design provides a Context Sensitive Design (CSD) instead of a major roadway arterial. A CSD alternative will present a balance in providing some of the needed improvements and the support of the area residents and businesses.

This alternative will provide mobility improvements, enhancement of the natural environment, safety and preservation of community values.

3.3 Evaluation of Alternatives

The consultant reviewed each of the alternatives to identify which could meet the objective of the study. The criteria used were:

- Ability to satisfy project goals.
- Ability to maximize level of service in the corridor.
- Ability to complement and enhance the transportation network.

Based on this evaluation, the following assessment of the alternatives to be considered further in the planning process was made (Table 3-1).

Table 3-1
Assessment of Alternatives

Alternative	Evaluation
1	This alternative will not move forward because it does not meet the study objective.
2	The TSM alternative will not move forward as a stand alone alternative. The TSM improvements will be incorporated into the build alternatives.
3	This alternative will not provide the needed capacity to accommodate future traffic growth into the year 2030. This alternative will not move forward.
4	This alternative will not address safety and traffic operation issues along the corridor. This alternative will not move forward.
5	This alternative will move forward as one of the build alternatives.
6	This alternative will move forward as one of the build alternatives.
7	This alternative will move forward as one of the build alternatives.

3.4 Level of Service Analysis

To support the evaluation of the alternatives, a generalized planning level of service (LOS) analysis for the roadway sections was prepared. This section describes that process.

2030 Model Runs

The Miami-Dade Planning Area Travel Demand Model was used to obtain and develop the travel projections along 137th Avenue. The Miami-Dade model is based on the Florida Standard Urban Transportation Model Structure (FSUTMS). The model is recognized by FDOT and the Metropolitan Planning Organization (MPO) as one of the accepted travel demand modeling tools for the Miami-Dade region. This model is the same tool used for the South Link study efforts during the South Miami-Dade Corridor Study in April 2006.

Two initial model runs were performed during the analysis to compare the existing conditions with the TIP and LRTP projects programmed in the future.

- No Build (Existing Conditions)
- TIP and LRTP (Future Projects)

The No Build model run includes the existing lane configurations as of today including the improvements currently under construction between SR 836 and U.S. 41. The second model run includes all the TIP and LRTP projects along 137th Avenue and the surrounding cross roads. Tables 3-2 and 3-3 show the estimated volume projections. The yellow highlights in Table 3-3 represent changes in lane configuration.

Table 3-2
No Build (Existing Conditions)

Segment Number	Limits	Existing Conditions	2005 Volumes	2030 Volumes
1	SW 344 th Street to SW 288 th Street (Biscayne)	4-Lanes	7,192	22,774
	SW 288 th Street (Biscayne) to Florida's Turnpike (SR 821)	4-Lanes	10,051	25,704
2	HEFT (SR 821) to U.S. 1	2-Lanes	7,419	14,118
3	U.S. 1 to SW 200 th Street (Quail Roost)	No roadway	No roadway	-
4	SW 200 th Street (Quail Roost) to SW 184 th Street (Eureka Drive)	2-Lanes	15,426	22,405
5	SW 184 th Street (Eureka Drive) to SW 88 th Street (Kendall Drive)	6-Lanes	44,344	61,366
6	SW 88 th Street (Kendall Drive) to SW 72 nd Street	4-Lanes	32,145	35,484
	SW 72 nd Street to SW 56 th Street	4-Lanes	31,812	35,275
7	SW 56 th Street to SW 26 th Street (Coral Way)	6-Lanes	40,488	54,028
8	SW 26 th Street (Coral Way) to SW 8 th Street (U.S. 41)	4-Lanes	30,189	38,230
9	SW 8 th Street (U.S. 41) to SR 836	6-Lanes	Under construction	70,708

Table 3-3
TIP and LRTP (Future Projects)

Segment Number	Limits	Including TIP & LRTP Improvements	2030 Volumes
1	SW 344 th Street to SW 288 th Street (Biscayne)	4-Lanes	26,834
	SW 288 th Street (Biscayne) to Florida's Turnpike (SR 821)	4-Lanes	35,546
2	HEFT (SR 821) to U.S. 1	4-Lanes*	31,954
3	U.S. 1 to SW 200 th Street (Quail Roost)	2-Lanes	15,968
4	SW 200 th Street (Quail Roost) to SW 184 th Street (Eureka Drive)	2-Lanes	24,737
5	SW 184 th Street (Eureka Drive) to SW 88 th Street (Kendall Drive)	6-Lanes	60,486
6	SW 88 th Street (Kendall Drive) to SW 72 nd Street	6-Lanes	44,732
	SW 72 nd Street to SW 56 th Street	4-Lanes	35,432
7	SW 56 th Street to SW 26 th Street (Coral Way)	6-Lanes	55,549
8	SW 26 th Street (Coral Way) to SW 8 th Street (U.S. 41)	6-Lanes	50,894
9	SW 8 th Street (U.S. 41) to SR 836	6-Lanes	72,927

* The yellow shading represents change in lane configuration.

Level of Service

Level of Service was examined based on state standards.¹ The analysis focused on assessing how the various roadway segments would perform in relation to LOS.

No-Build Alternative and Future Programmed Projects

Tables 3-4 and 3-5 show the LOS for the No-Build (Existing Conditions) and for the TIP and LRTP (Future Projects). The 137th Avenue corridor falls under the Non-State Roadways classification. If this roadway becomes the fourth north-south corridor within this area of the county, the roadway may become a State Two-Way Arterial Class I or Class II classification. The following tables analyze both scenarios for future comparison. The green highlights represent changes in LOS.

¹ Refer to "2002 Quality Level of Service Handbook, Table 4-1 Generalized Annual Average Daily Volumes for Florida's Urbanized Areas" (see Appendix B).

Table 3-4
No Build (Existing Conditions)

Segment Number	Limits	Existing Conditions	2030 Volumes	2030 Level of Service		
				Non-State Roadway	State Roadway Class II	State Roadway Class I
1	SW 344 th Street to SW 288 th Street (Biscayne)	4-Lanes	22,774	D	C	B
	SW 288 th Street (Biscayne) to Florida's Turnpike (SR 821)	4-Lanes	25,704	D	D	B
2	HEFT (SR 821) to U.S. 1	2-Lanes	14,118	E	D	D
3	U.S. 1 to SW 200 th Street (Quail Roost)	No roadway	-	-	-	-
4	SW 200 th Street (Quail Roost) to SW 184 th Street (Eureka Drive)	2-Lanes	22,405	F	F	F
5	SW 184 th Street (Eureka Drive) to SW 88 th Street (Kendall Drive)	6-Lanes	61,366	F	F	F
6	SW 88 th Street (Kendall Drive) to SW 72 nd Street	4-Lanes	35,484	F	F	F
	SW 72 nd Street to SW 56 th St	4-Lanes	35,275	F	F	F
7	SW 56 th Street to SW 26 th Street (Coral Way)	6-Lanes	54,028	F	F	F
8	SW 26 th Street (Coral Way) to SW 8 th Street (U.S. 41)	4-Lanes	38,230	F	F	F
9	SW 8 th Street (U.S. 41) SR 836	6-Lanes	70,708	F	F	F

Table 3-5
TIP and LRTP (Future Projects)

Segment Number	Limits	Number of Lanes	2030 Volumes	Non-State Roadway	State Roadway Class II	State Roadway Class I
1	SW 344 th Street to SW 288 th Street (Biscayne)	4-Lanes	26,834	D	D**	B
	SW 288 th Street (Biscayne) to Florida's Turnpike (SR 821)	4-Lanes	35,546	F	F	F
2	HEFT (SR 821) to U.S. 1	4-Lanes*	31,954	E	E	C
3	U.S. 1 to SW 200 th Street (Quail Roost)	2-Lanes	15,968	F	F	E
4	SW 200 th Street (Quail Roost) to SW 184 th Street (Eureka Drive)	2-Lanes	24,737	F	F	F
5	SW 184 th Street (Eureka Drive) to SW 88 th Street (Kendall Drive)	6-Lanes	60,486	F	F	F
6	SW 88 th Street (Kendall Drive) to SW 72 nd Street	6-Lanes	44,732	E	E	C
	SW 72 nd Street to SW 56 th St	4-Lanes	35,432	F	F	F
7	SW 56 th Street to SW 26 th Street (Coral Way)	6-Lanes	55,549	F	F	F
8	SW 26 th Street (Coral Way) to SW 8 th Street (U.S. 41)	6-Lanes	50,894	F	F	D
9	SW 8 th Street (U.S. 41) SR 836	6-Lanes	72,927	F	F	F

*See note on Table 3-3

** Green shading represents changes in LOS.

Build Alternatives

A generalized planning LOS analysis of the proposed alternatives was completed. The purpose of this analysis was to combine the year 2030 traffic projection estimates with the physical roadway characteristics of the proposed alternatives to determine the projected LOS. This analysis also helped to define the preliminary design details, such as intersection layouts and typical sections. Alternatives 5 and 6 have the same traffic six-lane typical section but Alternative 6 includes three new grade separated intersections at U.S. 1, Kendall Drive and U.S. 41. These intersection improvements will affect the LOS analysis, which in this planning study will only focus on the number of lanes and the volume/capacity (v/c) ratio along the segments. For traffic purposes, Alternatives 5 and 6 will have the same LOS results.

Tables 3-6 and 3-7 show the LOS for the build alternatives. The 137th Avenue corridor falls under the Non-State Roadways classification. If this roadway becomes the fourth north-south corridor within this area of the county, the roadway may become a State Two-Way Arterial Class I or Class II classification. The following tables analyze both scenarios for future comparison. The green highlights represent changes in LOS.

Volume/Capacity Ratio

The generalized planning LOS analysis was done to help identify the need for improvements along 137th Avenue and to determine the areas that will require to add capacity and provide roadway continuity within this area of the Miami-Dade County.

After the alternatives were identified, the Miami-Dade Planning Area Travel Demand Model was used to obtain and develop the volume/capacity (v/c) ratios along 137th Avenue. The v/c ratio analysis is mostly used to determine if the amount of lanes in any given road can handle the projected volume. The only disadvantage of this analysis is that it does not take in consideration the vehicle delays at the intersections, concentrating only along the segments of the roadway. The results of this analysis should support the decisions made during the alternative analysis. The v/c ratio results should show an improvement between the existing conditions and the build alternatives. If the v/c ratio analysis does not show any improvement, then the proposed number of lanes would have to be revised.

Tables 3-8 through 3-10 show the v/c ratios for the No-Build (Existing Conditions) and for the Build Alternatives.

Table 3-6
Alternative 7 – Preliminary Level of Service Segment Analysis

Segment Number	Limits	Number of Lanes	2030 Volumes	Non-State Roadway	State Roadway Class II	State Roadway Class I
1	SW 344 th Street to SW 288 th Street (Biscayne)	4-Lanes	26,839	D	D	B
	SW 288 th Street (Biscayne) to Florida's Turnpike (SR 821)	4-Lanes	36,190	F	F	F
2	HEFT (SR 821) to U.S. 1	4-Lanes	32,372	F	F	C
3	U.S. 1 to SW 200 th Street (Quail Roost)	4-Lanes	26,941	D	D	B
4	SW 200 th Street (Quail Roost) to SW 184 th Street (Eureka Drive)	4-Lanes	30,232	E	D	C
5	SW 184 th Street (Eureka Drive) to SW 88 th Street (Kendall Drive)	6-Lanes	65,961	F	F	F
6	SW 88 th Street (Kendall Drive) to SW 72 nd Street	4-Lanes	39,071	F	F	F
	SW 72 nd Street to SW 56 th Street	4-Lanes	40,743	F	F	F
7	SW 56 th Street to SW 26 th Street (Coral Way)	6-Lanes	54,239	F	F	F
8	SW 26 th Street (Coral Way) to SW 8 th Street (U.S. 41)	4-Lanes	41,310	F	F	F
9	SW 8 th Street (U.S. 41) SR 836	6-Lanes	73,410	F	F	F

Table 3-7
Alternatives 5 and 6 – Preliminary Level of Service Segment Analysis

Segment Number	Limits	Number of Lanes	2030 Volumes	Non-State Roadway	State Roadway Class II	State Roadway Class I
1	SW 344 th Street to SW 288 th Street (Biscayne)	4-Lanes	28,046	D	D	C
	SW 288 th Street (Biscayne) to Florida's Turnpike (SR 821)	6-Lanes	38,294	D	D	B
2	HEFT (SR 821) to U.S. 1	6-Lanes	37,010	D	C	B
3	U.S. 1 to SW 200 th Street (Quail Roost)	6-Lanes	32,413	D	C	B
4	SW 200 th Street (Quail Roost) to SW 184 th Street (Eureka Drive)	6-Lanes	37,937	D	C	B
5	SW 184 th Street (Eureka Drive) to SW 88 th Street (Kendall Drive)	6-Lanes	66,857	F	F	F
6	SW 88 th Street (Kendall Drive) to SW 72 nd Street	6-Lanes	53,870	F	F	F
	SW 72 nd Street to SW 56 th St	6-Lanes	59,446	F	F	F
7	SW 56 th Street to SW 26 th Street (Coral Way)	6-Lanes	59,813	F	F	F
8	SW 26 th Street (Coral Way) to SW 8 th Street (U.S. 41)	6-Lanes	54,872	F	F	F
9	SW 8 th Street (U.S. 41) SR 836	6-Lanes	79,310	F	F	F

Table 3-8
v/c Ratios
No Build (Existing Conditions)

Segment Number	Limits	Existing Conditions	2030 Model V/C Ratio
1	SW 344 th Street to SW 288 th Street (Biscayne)	4-Lanes	0.32
	SW 288 th Street (Biscayne) to Florida's Turnpike (SR 821)	4-Lanes	0.36
2	HEFT (SR 821) to U.S. 1	2-Lanes	1.53
3	U.S. 1 to SW 200 th Street (Quail Roost)	No roadway	-
4	SW 200 th Street (Quail Roost) to SW 184 th Street (Eureka Drive)	2-Lanes	1.09
5	SW 184 th Street (Eureka Drive) to SW 88 th Street (Kendall Drive)	6-Lanes	1.18
6	SW 88 th Street (Kendall Drive) to SW 72 nd Street	4-Lanes	1.03
	SW 72 nd Street to SW 56 th Street	4-Lanes	1.06
7	SW 56 th Street to SW 26 th Street (Coral Way)	6-Lanes	0.99
8	SW 26 th Street (Coral Way) to SW 8 th Street (U.S. 41)	4-Lanes	1.12
9	SW 8 th Street (U.S. 41) to SR 836	6-Lanes	1.43

Table 3-9
v/c Ratios
Alternative 7

Segment Number	Limits	Including TIP & LRTP Improvements	2030 V/C Ratio
1	SW 344 th Street to SW 288 th Street (Biscayne)	4-Lanes	0.38
	SW 288 th Street (Biscayne) to Florida's Turnpike (SR 821)	4-Lanes	0.51
2	HEFT (SR 821) to U.S. 1	4-Lanes	0.89
3	U.S. 1 to SW 200 th Street (Quail Roost)	4-Lanes	0.74
4	SW 200 th Street (Quail Roost) to SW 184 th Street (Eureka Drive)	4-Lanes	0.91
5	SW 184 th Street (Eureka Drive) to SW 88 th Street (Kendall Drive)	6-Lanes	1.21
6	SW 88 th Street (Kendall Drive) to SW 72 nd Street	4-Lanes	1.08
	SW 72 nd Street to SW 56 th Street	4-Lanes	1.12
7	SW 56 th Street to SW 26 th Street (Coral Way)	6-Lanes	1.01
8	SW 26 th Street (Coral Way) to SW 8 th Street (U.S. 41)	4-Lanes	1.14
9	SW 8 th Street (U.S. 41) to SR 836	6-Lanes	1.35

Table 3-10
v/c Ratios
Alternatives 5 and 6

Segment Number	Limits	Including TIP & LRTP Improvements	2030 V/C Ratio
1	SW 344 th Street to SW 288 th Street (Biscayne)	4-Lanes	0.38
	SW 288 th Street (Biscayne) to Florida's Turnpike (SR 821)	6-Lanes	0.50
2	HEFT (SR 821) to U.S. 1	6-Lanes	0.65
3	U.S. 1 to SW 200 th Street (Quail Roost)	6-Lanes	0.60
4	SW 200 th Street (Quail Roost) to SW 184 th Street (Eureka Drive)	6-Lanes	0.61
5	SW 184 th Street (Eureka Drive) to SW 88 th Street (Kendall Drive)	6-Lanes	1.20
6	SW 88 th Street (Kendall Drive) to SW 72 nd Street	6-Lanes	0.92
	SW 72 nd Street to SW 56 th Street	6-Lanes	0.98
7	SW 56 th Street to SW 26 th Street (Coral Way)	6-Lanes	1.10
8	SW 26 th Street (Coral Way) to SW 8 th Street (U.S. 41)	6-Lanes	1.01
9	SW 8 th Street (U.S. 41) to SR 836	6-Lanes	1.58

A more detailed traffic operational analysis will have to be performed during the next transportation phase (Project Development and Environment) to determine a more accurate LOS along the 137th Avenue Corridor.

The 137th Avenue Corridor overall LOS will depend on the intersection and arterial LOS. Intersection LOS corresponds to the average delay experienced by a vehicle passing through a given intersection. Arterial LOS is a function of the average travel speed through a project segment.

4. Recommendations

Based on the analysis conducted and documented in Chapter 3, it is clear that the three build options are the only ones that would realistically meet the overall objectives of a facility improvement project in the 137th Street corridor, if it were to be constructed. These objectives are:

1. Increase capacity to accommodate future travel demand.
2. Improve access management.
3. Provide roadway continuity.

To achieve these goals, it is recommended that the alternatives be phased as follows:

- Phase 1: Parkway Facility (Boulevard with Context Sensitive Design) (former Alternative 7)
- Phase 2: Six-lane Major North-South Corridor (former Alternative 5)
- Phase 3: Six-lane, Grade-separated High Flow Facility (former Alternative 6)

The following discussion addresses the specifics of each phase. The basis for the recommendation is the fact that given the relatively mature state of parts of the corridor, the overall evolution of the corridor into a contiguous north-south arterial will be done over time as project funding allows. The discussion of the phases identifies only the improvements that would be implemented with each phase. In addition to engineering features, the parkway phase will include elements such as sidewalks, bike paths, landscaping, illumination, signage, etc. These would be carried forward into subsequent phases. Appendix D presents a PowerPoint presentation that presents before and after scenarios for each phase.

As part of this analysis, it is acknowledged that South Dixie Highway (U.S. 1) corridor in South Dade has been the focus of an extensive planning effort since the mid-1990s. This effort has resulted in three unique zoning districts created to encourage mixed-use, pedestrian and transit-oriented development. The 137th Avenue alignment intersects with two of these districts, the Naranja Community Urban Center and Princeton Community Urban Center. Understanding the need for transit-oriented development, with its requisite opportunities for mobility, each roadway alternative considered for these areas should contain context sensitive roadway sections that incorporate the design elements set forth in the land development codes for these Urban Centers as approved by the Board of County Commissioners, such as wide sidewalks and on-street parking where appropriate. Additionally, it is emphasized that efforts should be undertaken to implement alternative modes of travel to move people more efficiently within the capacity provided in the early phases of the planned roadway improvement, if ridership numbers warrant those options, so as to adhere to the Policies set forth in the Miami Dade County Comprehensive Development Master Plan. More information about transit issues is provided at the end of this section.

Phase 1 (Alternative 7) – Parkway Facility (Boulevard with Context Sensitive Design)

This alternative will consist of the following potential improvements by segment:

Segment 1 - SW 344th Street to the HEFT

Intersection Improvements

- HEFT On-Ramp
 - Extend northbound storage left turn lane
- SW 288th Street
 - Add dual northbound left turn lanes

Segment 2 - HEFT to U.S. 1

Recommended Improvements:

- Widening from two-lane to four-lane from HEFT to U.S. 1
- Drainage system improvements
- Roadway continuity beyond U.S. 1

Intersection Improvements

- HEFT Off-ramp
 - Add a northbound acceleration lane
 - Add dual westbound left turn lanes

Segment 3 - U.S. 1 to SW 200th Street (Quail Roost)

Recommended Improvements

- New construction of a two-lane roadway as established by MPO Board Resolution #21-05
- Roadway continuity beyond U.S. 1 to SW 200th Street
- Drainage system improvements

Intersection Improvements

- New four-lane at grade intersection at U.S. 1
- New four-lane at grade intersection at SW 200th Street
 - Add a traffic signal

Segment 4 - SW 200th Street (Quail Roost) to SW 184th Street (Eureka Drive)

Recommended Improvements

- Widening from two-lane to four-lane from SW 200th Street to SW 184th Street
- Drainage system improvements
- New directional median opening at SW 192nd Street

Segment 5 - SW 184th Street (Eureka Drive) to SW 88th Street

Recommended Improvements

- Provide a six-lane continuity within the segment intersections

Intersection Improvements

- Extend storage queues at all signalized intersections
- Improve signal timing by coordinating all traffic signals
- SW 152nd Street
 - Add an eastbound right-turn lane
 - Provide six-lane continuity along 137th Avenue
- SW 136th Street
 - Add an eastbound right-turn lane
 - Provide six-lane continuity along 137th Avenue
- SW 120th Street
 - Add a northbound right-turn lane
 - Add a southbound right-turn lane
 - Add dual northbound left-turn lanes

Segment 6 - SW 88th Street (Kendall Drive) to SW 56th Street

Recommended Improvements

- Widening from four-lane to six-lane from SW 88th Street to SW 56th Street
- The proposed widening can be accommodated along the existing median (inside) or along the existing swales (outside)

Intersection Improvements

- Extend storage queues at all signalized intersections
- Improve signal timing by coordinating all traffic signals
- Access management
 - Close five (5) full directional median openings
 - Construct two (2) dual directional median openings
 - Construct two (2) northbound directional median openings
 - Construct six (6) southbound directional median openings

Segment 7 - SW 56th Street to SW 26th Street

Intersection Improvements

- Extend storage queues at all signalized intersections
- Improve signal timing by coordinating all traffic signals
- Access management
 - Close two (2) full median openings
 - Construct five (5) dual directional median openings
 - Construct two (2) northbound directional median openings
 - Construct two (2) southbound directional median openings
- SW 56th Street
 - Add a northbound right-turn lane
- SW 42nd Street
 - Add a westbound right-turn lane

Segment 8 - SW 26th Street (Coral Way) to U.S. 41

Recommended Improvements

- Widening from four-lane to six-lane from SW 26th Street to U.S. 41
- The proposed widening can be accommodated along the existing median (inside) or along the existing swales (outside)

Intersection Improvements

- Extend storage queues at all signalized intersections
- Improve signal timing by coordinating all traffic signals
- U.S. 41
 - Re-align intersection
- Access management
 - Close three full directional median openings
 - Construct four dual directional median openings
 - Construct four northbound directional median openings

Segment 9 -U.S. 41 to SR-836

No improvements needed in this area.

Summary

This alternative provides capacity improvements along the existing two-lane typical sections and the new four-lane connection between U.S. 1 and SW 200th Street. The goal of this alternative is to offer a neighborhood friendly environment that can balance the needs of the roadway and the preservation of community values.

Right of way acquisition will be required to accommodate the capacity improvements along the segments that currently have a two-lane typical section and along Segment #3. Some of the intersection improvements may also need right-of-way acquisitions to accommodate the new turn lanes.

Figure 4-1 shows the proposed four-lane typical section.

Phase 2 (Alternative 5) – Six-Lane Divided Facility (Major North-South Corridor)

This alternative will consist of the following potential improvements by segment:

Segment 1 - SW 344th Street to the HEFT

Recommended Improvements

- Widening from four-lane to six-lane from SW 288th Street to HEFT

Segment 2 - HEFT to U.S. 1

Recommended Improvements

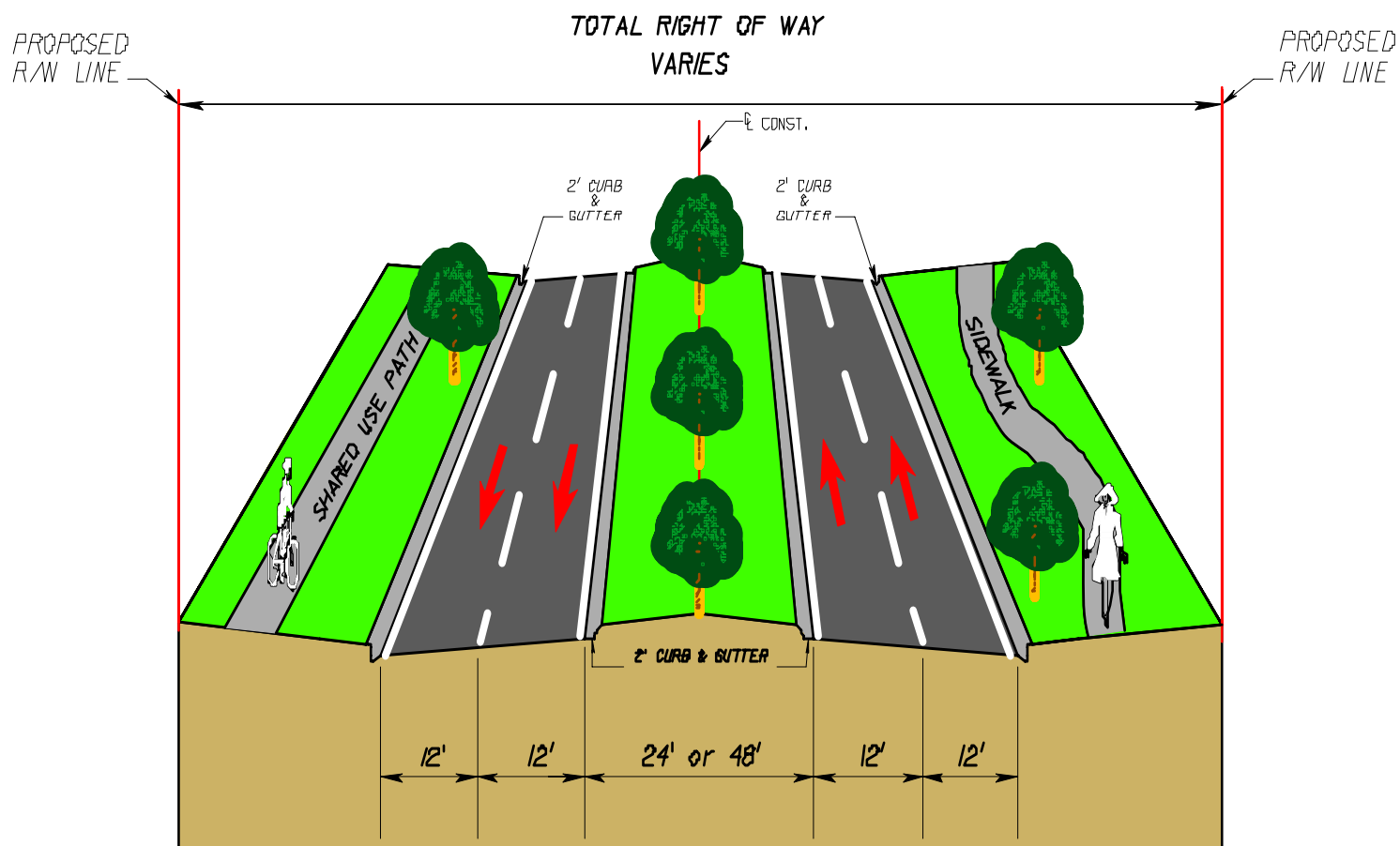
- Widening from four-lane to six-lane from HEFT to U.S. 1

Segment 3 - U.S. 1 to SW 200th Street (Quail Roost)

Recommended Improvements

- Widening from two-lane to four-lane from U.S. 1 to SW 200th Street, as established in MPO Board Resolution #21-05

Figure 4-1
Four-Lane Proposed Typical Roadway Section



Segment 4 - SW 200th Street (Quail Roost) to SW 184th Street (Eureka Drive)

Recommended Improvements

- Widening from four-lane to six-lane from SW 200th Street to SW 184th Street

Summary

Phase 2, when completed, will result in a six-lane roadway facility along the 137th Avenue Corridor from SW 288th Street to SR 836.

Right of way acquisition will not be required to accommodate the capacity improvements along the segments that currently have a four-lane typical section. The widening from four to six lanes will be accommodated by using the median. The median will be reduced from 48' to 24' wide.

Figure 4-2 shows the proposed six-lane typical section.

Phase 3 (Alternative 6) – High-Flow Arterial Facility (Major North-South Urban Principal Arterial)

This alternative will consist of the following potential improvements by segment:

Segment 3 - U.S. 1 to SW 200th Street (Quail Roost)

Intersection Improvements

- New four-lane grade separation intersection at U.S. 1

Segment 6 -SW 88th Street (Kendall Drive) to SW 56th Street

Intersection Improvements

- New four-lane grade separation at SW 88th Street

Segment 8 -SW 26th Street (Coral Way) to U.S. 41 (SW 8th Street)

Intersection Improvements

- U.S. 41
 - New four-lane grade separation intersection

Summary

The proposed intersection improvements will require right-of-way acquisitions to accommodate the new turn lanes and the grade separation improvements. The grade separation improvements will require temporary construction easements to accommodate the maintenance of traffic and the construction phases.

Figure 4-3 shows the proposed grade separation. Appendix A shows the proposed intersection grade separation typical sections.

Figure 4-2
Six-Lane Proposed Typical Roadway Section

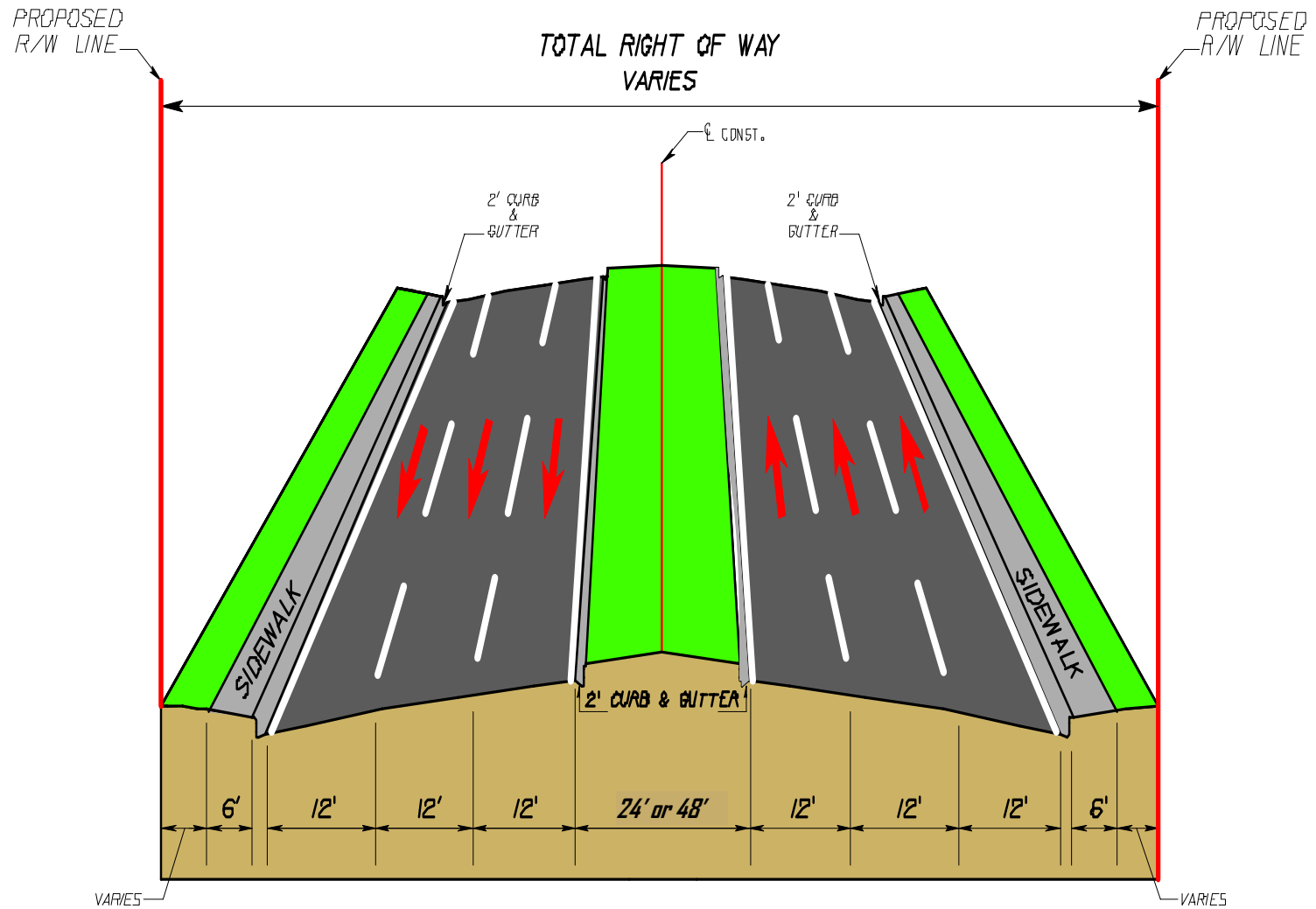
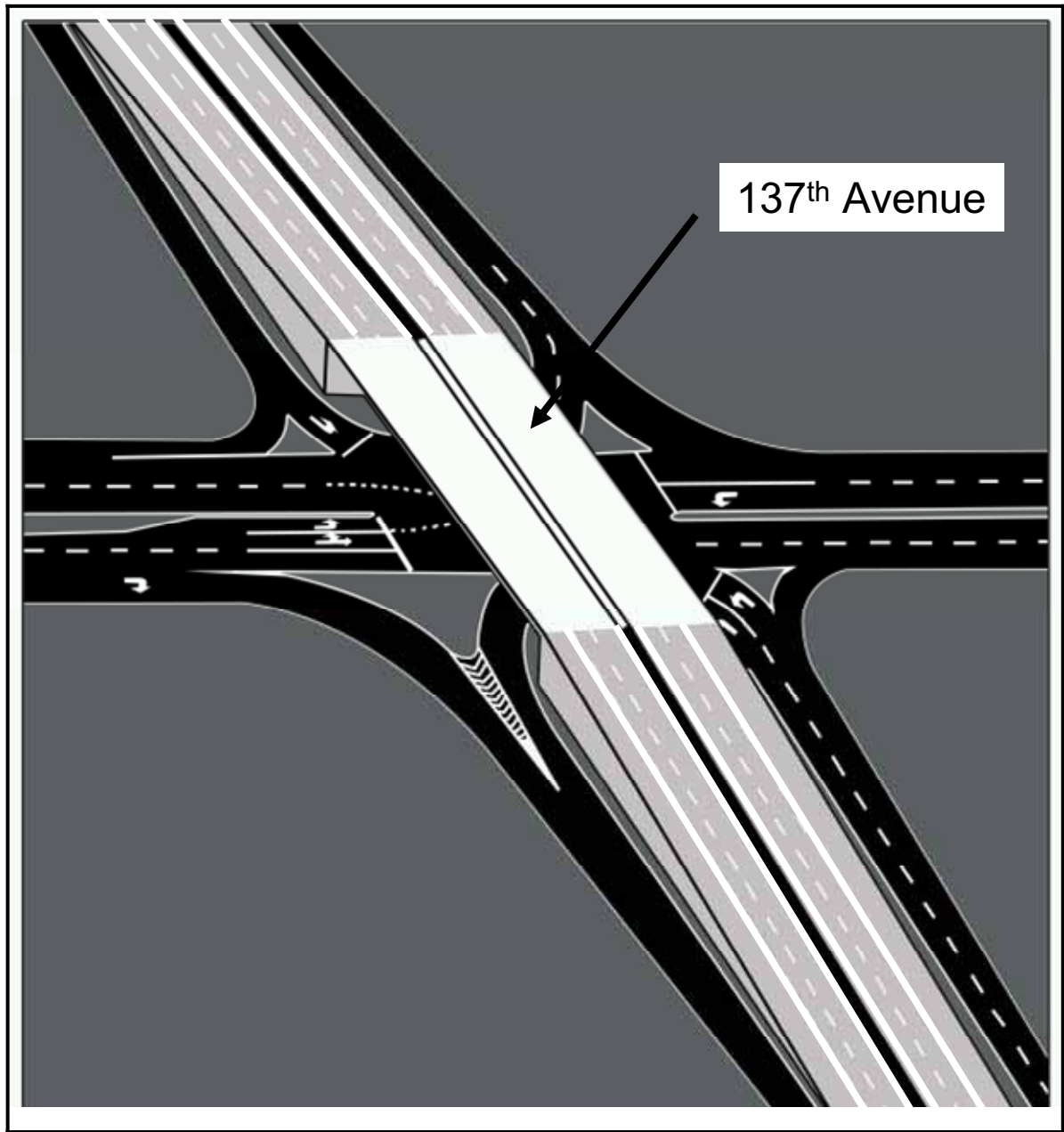


Figure 4-3
Phase 3 Proposed Intersection Grade Separation



Transit Element

As indicated in Chapter 2, the corridor is served by several transit routes. Most of them are using a portion of the corridor and only Route #137 serves the corridor from SW 8th Street to SW 180th Street. Even though this is an important element, the objective of this study was focused on providing additional roadway capacity and safety improvements to the corridor due to the current traffic congestion which has been worsened by the additional 11,400 vehicles per day coming from the recent connection of SR 836 to the northern part of SW 137th Avenue.

However, transit is another alternative for mitigating this traffic congestion. Currently, there are other studies and actions that are considering transit alternatives for the corridor. During the development of the study, coordination was established with the appropriate entities and the following considerations were discussed.

Kendall Drive Alternative Analysis (known as Kendall Link)

The goal of this study is to develop several transit scenarios for the Kendall Drive Corridor. This corridor has a north-south element that considers the establishment of a Bus Rapid Transit (BRT) along SW 137th Corridor. This study is underway and no final decision has been taken. This is a major transit improvement to the corridor. Based on this situation, no transit improvements are suggested for the corridor, pending the final recommendations.

Right-of-Way

The SW 137th Avenue Corridor has enough right-of-way to accommodate the recommended roadway improvements, as well as future transit recommendations adopted by the community.

Bus Improvements

Currently, Miami-Dade Transit (MDT) is evaluating the bus system for improving their service.

Express Service

With the connection of the SR 836, this corridor is an excellent candidate for expanding the bus-on-shoulders operation. An express route could be implemented (with minimum stops) along the corridor and use the SR 836 to serve the airport, the Civic Center and the downtown area.

Future Transit Projects

Once the Kendall Alternatives Analysis Study has a recommended local preferred alternative (LPA), this 137th Avenue study should be revisited for accommodating the recommended LPA. Additionally, depending on the LPA, other transit improvements could also be considered to supplement the recommended roadway improvements.

5. Implementation and Costs

Based on the work conducted in this study, it is clear that a “build” project is necessary to achieve the goals of the study. The overall utility to the transportation system of the 137th Avenue corridor will be achieved by: (1) establishing corridor connectivity; (2) ensuring adequate capacity; and, (3) creating a roadway environment that is friendly to the community.

Based on the information developed in this study, the creation of a contiguous roadway along 137th Avenue is feasible. Accomplishing the above given funding realities and the realities of the roadway development process, the “phased” approach as recommended in Chapter 4 is a logical approach.

Schedule

The corridor was divided in nine segments for detailed analyses and recommendations. Cost estimates were developed for each phase. However, priorities for the construction of the recommended improvements were neither ranked nor prioritized. The reason for this determination was based on the high number of improvements recommended by segment and phase. This approach provides the flexibility to the operational agencies for evaluating each segment based on availability of funding, need of the improvements and ease of implementation.

The recommended improvements include short-, medium- and long-term projects. Some of the safety improvement recommendations, as well as the access management could be implemented within three years. Others, such as the widening of some segments, could take four to eight years for implementation. Finally, recommendations regarding a major improvement such as grade separation would require over eight years for implementation. Based on the magnitude of recommended actions, some projects will require amending the Transportation Improvement Program (TIP) and others need to be included and evaluated in the development of the next 2035 Long Range Transportation Plan (LRTP).



Phase 1: Parkway



Phase 2: Six-lane Through



Phase 3: Grade Separation

It is important to consider other projects that in one way or another might affect the level of service along this corridor, among them:

- Kendall Link
- Extension of the SR 874 to SW 137th Avenue through SW 136th Street
- SW 152nd Street Corridor Study
- Construction of a two-lane road from U.S. 1 to SW 200th Street
- Implementation of the Electronic Toll Road (ETD) system along the SR 836 (Dolphin Expressway)

As these projects move on to the implementation phase, the recommendations of this 137th Avenue Study should be re-evaluated as appropriate.

Costs

Tables 5-1 through 5-3 show the ranges in construction costs estimated for all three phases. These are conceptual, in 2006 dollars, and do not include right-of-way acquisition costs. The project phases were divided due to the type and scope of the improvements recommended. The improvements should be implemented as the traffic demand increases and maintenance improvements not longer achieve the goals and visions of the County for this corridor.

To be able to build the ultimate design, financial plans will have to be developed in different fiscal years by identifying the needs and priorities for improvements along this corridor. Phase 1 (Table 5-1) includes the cost for the following improvements:

- The widening from two-lane to a four-lane section between the HEFT and U.S. 1
- The addition of a new four-lane typical section roadway between U.S. 1 and SW 200th Street (Quail Roost)
- The widening from two-lane to a four-lane section between SW 200th Street (Quail Roost) and SW 184th Street (Eureka Drive)
- The widening from a four-lane to a six-lane section from SW 88th Street (Kendall Drive) to SW 56th Street
- The widening from a four-lane to a six-lane section from SW 26th (Coral Way) to SW 8th Street (U.S. 41)

Table 5-1
Phase 1 – Construction Estimate

Major Pay Items	Quantity	Unit	Unit Price	Estimate
New Turn Lanes	11.00	ea	\$40,000	\$440,000
Widening from 2 to 4 lanes				
Clear and Grubbing	14.00	ac	\$40,000	\$560,000
Excavation Regular	45,056.00	cy	\$15	\$675,840
Roadway	1.60	mi	\$1,750,000	\$2,800,000
Drainage	1.60	mi	\$1,630,000	\$2,608,000
Signing	1.60	mi	\$36,300	\$58,080
Median	1.60	mi	\$470,100	\$752,160
Mill and Resurface Existing	1.60	mi	\$500,000	\$800,000
Sidewalks	9,400.00	sy	\$36	\$338,400
Widening from 4 to 6 lanes				
Clear and Grubbing	19.40	ac	\$40,000	\$776,000
Roadway	3.20	mi	\$3,500,000	\$11,200,000
Drainage	3.20	mi	\$394,200	\$1,261,440
Signing	3.20	mi	\$18,000	\$57,600
Median	3.20	mi	\$470,100	\$1,504,320
Mill and Resurface Existing	3.20	mi	\$600,000	\$1,920,000
Sidewalks	18,774	sy	\$36	\$675,864
New 4 lanes				
Clear and Grubbing	62.50	ac	\$40,000	\$2,500,000
Excavation Regular	201,800.00	cy	\$15	\$3,027,000
Roadway	4.30	mi	\$2,130,000	\$9,159,000
Drainage	4.30	mi	\$1,450,000	\$6,235,000
Signing	4.30	mi	\$36,300	\$156,090
Median	4.30	mi	\$470,100	\$2,021,430
Sidewalks	25,200.00	sy	\$36	\$907,200
Embankment	201,800.00	cy	\$25	\$5,045,000
Lighting	4.30	mi	\$530,000	\$2,279,000
Mast Arms	3.00	ea	\$180,000	\$540,000
U.S. 41 Re-alignment	1.00	ea	\$300,000	\$300,000
Access Management Improvements	3.50	mi	\$470,100	\$1,645,350
Construction Cost				\$60,242,774
Landscape	4%			\$2,409,711
Maintenance of Traffic	10%			\$6,024,277
Mobilization	10%			\$6,024,277
Contingency	15%			\$9,036,416
CEI	15%			\$9,036,416
Design	15%			\$9,036,416
Total Estimated Construction Cost				\$101,810,288

Table 5-2
Phase 2 – Construction Estimate

Major Pay Items	Quantity	Unit	Unit Price	Estimate
Widening from 4 to 6 lanes				
Clear and Grubbing	36.00	ac	\$40,000	\$1,440,000
Roadway	5.90	mi	\$3,500,000	\$20,650,000
Drainage	5.90	mi	\$394,200	\$2,325,780
Signing	5.90	mi	\$18,000	\$106,200
Median	5.90	mi	\$470,100	\$2,773,590
Mill and Resurface Existing	5.90	mi	\$600,000	\$3,540,000
Sidewalks	45,360	sy	\$36	\$1,632,960
Construction Cost				\$32,468,530
Landscape	4%			\$1,298,741
Maintenance of Traffic	10%			\$3,246,853
Mobilization	10%			\$3,246,853
Contingency	15%			\$4,870,280
CEI	15%			\$4,870,280
Design	15%			\$4,870,280
Total Estimated Construction Cost				\$54,871,816

Table 5-3
Phase 3 – Construction Estimate

Major Pay Items	Quantity	Unit	Unit Price	Estimate
Grade Separation	3.00			
Clear and Grubbing	31.40	ac	\$40,000	\$1,256,000
Embankment	360,000.00	cy	\$25	\$9,000,000
MSE Walls	202,500.00	sf	\$35	\$7,087,500
Retaining Wall (Temporary)	135,000.00	sf	\$11	\$1,485,000
Bridge Structure	39,170.00	sf	\$200	\$7,834,000
Concrete Barrier Wall	81,000.00	ft	\$167	\$13,527,000
Turn/Ramp Lanes	1.15	mi	\$500,000	\$575,000
Roadway	1.70	mi	\$2,130,000	\$3,621,000
Median	1.70	mi	\$470,100	\$799,170
Drainage	1.70	mi	\$1,450,000	\$2,465,000
Ligthing	1.70	mi	\$530,000	\$901,000
Mast Arms	6.00	ea	\$180,000	\$1,080,000
Sidewalks	7,040.00	sy	\$36	\$253,440
Signing	1.70	mi	\$36,300	\$61,710
Construction Cost				\$49,945,820
Landscape	4%			\$1,997,833
Maintenance of Traffic	10%			\$4,994,582
Mobilization	10%			\$4,994,582
Contingency	15%			\$7,491,873
CEI	15%			\$7,491,873
Design	15%			\$7,491,873
Total Estimated Construction Cost				\$84,408,436

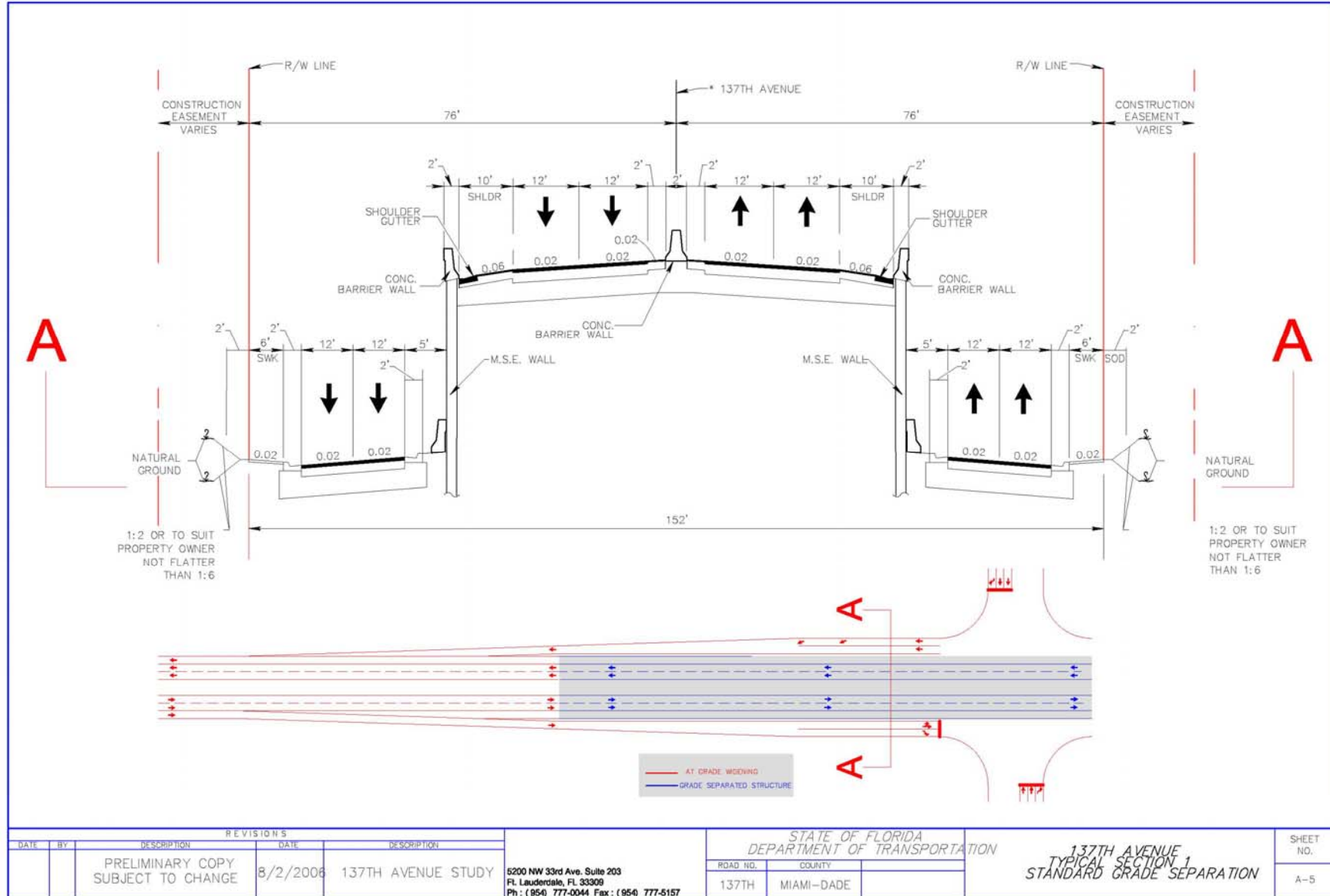
The four-lane typicals will have a forty-eight-foot (48) wide median to accommodate a six lane widening during Phase 2. Phase 2 (Table 5-2) includes the widening of all the sections with four lanes to a six-lane typical section between SW 288th Street and SW 184th Street (Eureka Drive). Phase 3 (Table 5-2) includes the cost for the construction of grade separated intersections at U.S. 1, SW 88th Street and U.S. 41.

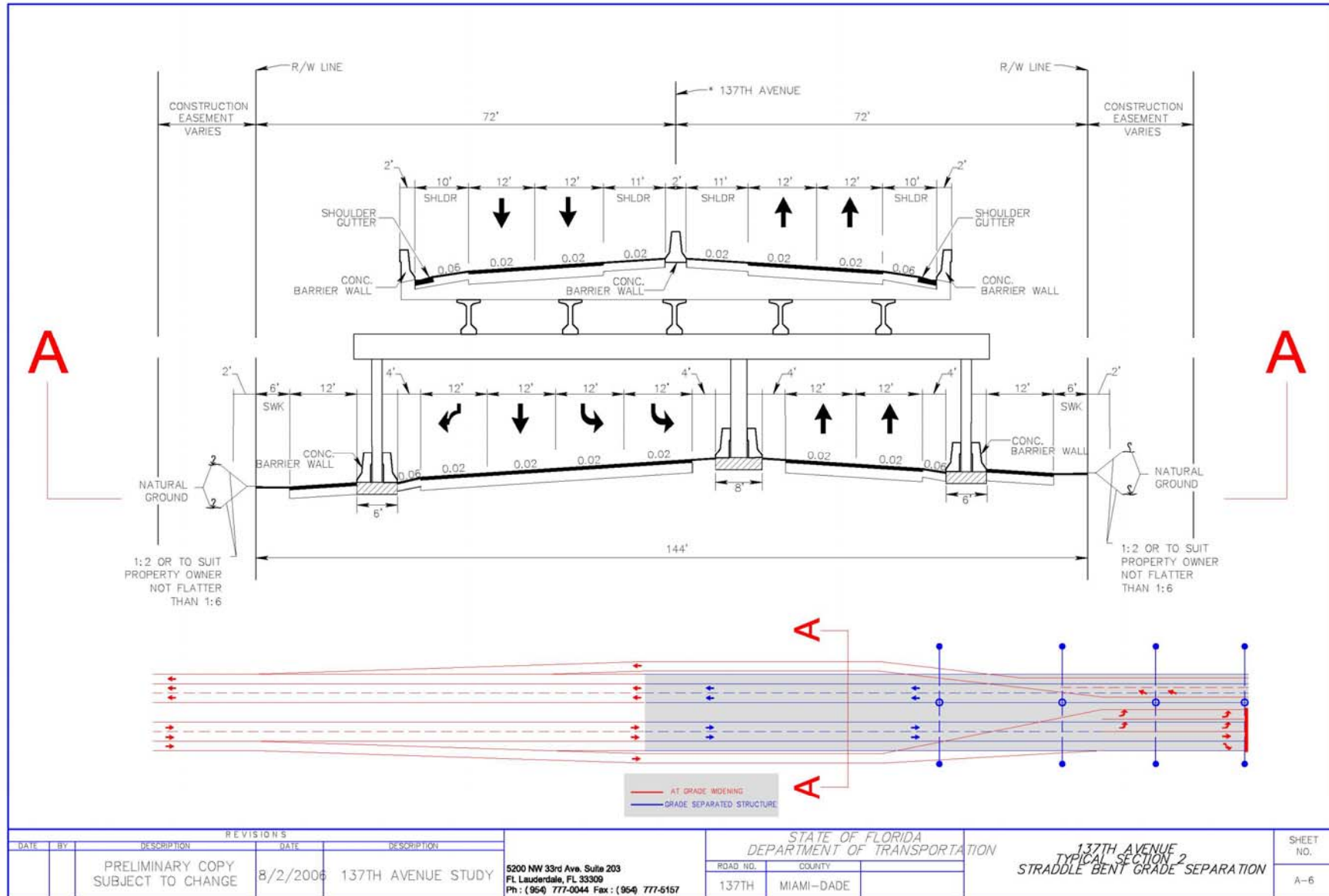
Appendix C illustrates preliminary concepts for Phase 1 (Parkway), Phase 2 (Six-lane Through), and Phase 3 (Grade Separation). The concept drawings represent how the corridor would look if the plan were fully implemented.

Appendix D presents a series of PowerPoint slides that review the project and show concepts of how it could look under the various phases.

Appendix A

Proposed Intersection Grade Separations





Appendix B

Tables 4-1 and 4-2 from Generalized Annual
Average Daily Volumes for Florida's Urban Areas

TABLE 4 - 1
GENERALIZED ANNUAL AVERAGE DAILY VOLUMES FOR FLORIDA'S
URBANIZED AREAS*

UNINTERRUPTED FLOW HIGHWAYS					
		Level of Service			
Lanes Divided		A	B	C	D E
2	Undivided	2,000	7,000	13,800	19,600 27,000
4	Divided	20,400	33,000	47,800	61,800 70,200
6	Divided	30,500	49,500	71,600	92,700 105,400
STATE TWO-WAY ARTERIALS					
Class I (>0.00 to 1.99 signalized intersections per mile)					
		Level of Service			
Lanes Divided		A	B	C	D E
2	Undivided	**	4,200	13,800	16,400 16,900
4	Divided	4,800	29,300	34,700	35,700 ***
6	Divided	7,300	44,700	52,100	53,500 ***
8	Divided	9,400	58,000	66,100	67,800 ***
Class II (2.00 to 4.50 signalized intersections per mile)					
		Level of Service			
Lanes Divided		A	B	C	D E
2	Undivided	**	1,900	11,200	15,400 16,300
4	Divided	**	4,100	26,000	32,700 34,500
6	Divided	**	6,500	40,300	49,200 51,800
8	Divided	**	8,500	53,300	63,800 67,000
Class III (more than 4.5 signalized intersections per mile and not within primary city central business district of an urbanized area over 750,000)					
		Level of Service			
Lanes Divided		A	B	C	D E
2	Undivided	**	**	5,300	12,600 15,500
4	Divided	**	**	12,400	28,900 32,800
6	Divided	**	**	19,500	44,700 49,300
8	Divided	**	**	25,800	58,700 63,800
Class IV (more than 4.5 signalized intersections per mile and within primary city central business district of an urbanized area over 750,000)					
		Level of Service			
Lanes Divided		A	B	C	D E
2	Undivided	**	**	5,200	13,700 15,000
4	Divided	**	**	12,300	30,300 31,700
6	Divided	**	**	19,100	45,800 47,600
8	Divided	**	**	25,900	59,900 62,200
* NON-STATE ROADWAYS					
Major City/County Roadways					
		Level of Service			
Lanes Divided		A	B	C	D E
2	Undivided	**	**	9,100	14,600 15,600
4	Divided	**	**	21,400	31,100 32,900
6	Divided	**	**	33,400	46,800 49,300
Other Signalized Roadways (signalized intersection analysis)					
		Level of Service			
Lanes Divided		A	B	C	D E
2	Undivided	**	**	4,800	10,000 12,600
4	Divided	**	**	11,100	21,700 25,200
Source:		Florida Department of Transportation Systems Planning Office 605 Suwannee Street, MS 19 Tallahassee, FL 32399-0450 http://www11.myflorida.com/planning/systems/sm/los/default.htm			02/22/02

FREEWAYS					
Interchange spacing ≥ 2 mi. apart					
		Level of Service			
Lanes		A	B	C	D E
4		23,800	39,600	55,200	67,100 74,600
6		36,900	61,100	85,300	103,600 115,300
8		49,900	82,700	115,300	140,200 156,000
10		63,000	104,200	145,500	176,900 196,400
12		75,900	125,800	175,500	213,500 237,100
Interchange spacing < 2 mi. apart					
		Level of Service			
Lanes		A	B	C	D E
4		22,000	36,000	52,000	67,200 76,500
6		34,800	56,500	81,700	105,800 120,200
8		47,500	77,000	111,400	144,300 163,900
10		60,200	97,500	141,200	182,600 207,600
12		72,900	118,100	170,900	221,100 251,200
BICYCLE MODE					
(Note: Level of service for the bicycle mode in this table is based on roadway geometrics at 40 mph posted speed and traffic conditions, not number of bicyclists using the facility.) (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)					
Paved Shoulder/ Bicycle Lane		Level of Service			
Coverage		A	B	C	D E
0-49%	**	**	3,200	13,800	>13,800
50-84%	**	2,500	4,100	>4,100	***
85-100%	3,100	7,200	>7,200	***	***
PEDESTRIAN MODE					
(Note: Level of service for the pedestrian mode in this table is based on roadway geometrics at 40 mph posted speed and traffic conditions, not number of pedestrians using the facility.) (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)					
Sidewalk Coverage		Level of Service			
		A	B	C	D E
0-49%	**	**	**	6,400	15,500
50-84%	**	**	**	9,900	19,000
85-100%	**	2,200	11,300	>11,300	***
BUS MODE (Scheduled Fixed Route)					
(Buses per hour)					
(Note: Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.)					
Sidewalk Coverage		Level of Service			
		A	B	C	D E
0-84%	**	>5	≥4	≥3	≥2
85-100%	>6	>4	≥3	≥2	≥1
ARTERIAL/NON-STATE ROADWAY ADJUSTMENTS					
DIVIDED/UNDIVIDED					
(alter corresponding volume by the indicated percent)					
Lanes	Median	Left Turns	Lanes	Adjustment Factors	
2	Divided	Yes		+5%	
2	Undivided	No		-20%	
Multi	Undivided	Yes		-5%	
Multi	Undivided	No		-25%	
ONE-WAY FACILITIES					
Decrease corresponding two-directional volumes in this table by 40% to obtain the equivalent one directional volume for one-way facilities.					
*This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Values shown are two-way annual average daily volumes (based on K ₁₀₀ factors) for levels of service and are for the automobile/truck modes unless specifically stated. Level of service letter grade thresholds are probably not comparable across modes and, therefore, cross modal comparisons should be made with caution. Furthermore, combining levels of service of different modes into one overall roadway level of service is not recommended. The table's input value defaults and level of service criteria appear on the following page. Calculations are based on planning applications of the Highway Capacity Manual, Bicycle LOS Model, Pedestrian LOS Model and Transit Capacity and Quality of Service Manual, respectively for the automobile/truck, bicycle, pedestrian and bus modes.					
**Cannot be achieved using table input value defaults.					
***Not applicable for that level of service letter grade. For automobile/truck modes, volumes greater than level of service D become F because intersection capacities have been reached. For bicycle and pedestrian modes, the level of service letter grade (including F) is not achievable, because there is no maximum vehicle volume threshold using table input value defaults.					

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TABLE 4 – 2
GENERALIZED ANNUAL AVERAGE DAILY VOLUMES FOR FLORIDA'S
AREAS TRANSITIONING INTO URBANIZED AREAS OR
AREAS OVER 5,000 NOT IN URBANIZED AREAS*

UNINTERRUPTED FLOW HIGHWAYS					
		Level of Service			
Lanes Divided	A	B	C	D	E
2 Undivided	2,100	6,900	12,900	18,200	24,900
4 Divided	18,600	30,200	43,600	56,500	64,200
6 Divided	27,900	45,200	65,500	84,700	96,200

STATE TWO-WAY ARTERIALS					
Class I (>0.00 to 1.99 signalized intersections per mile)					
		Level of Service			
Lanes Divided	A	B	C	D	E
2 Undivided	**	4,000	13,100	15,500	16,300
4 Divided	4,600	27,900	32,800	34,200	***
6 Divided	6,900	42,800	49,300	51,400	***
Class II (2.00 to 4.50 signalized intersections per mile)					
		Level of Service			
Lanes Divided	A	B	C	D	E
2 Undivided	**	**	10,500	14,500	15,300
4 Divided	**	3,700	24,400	30,600	32,200
6 Divided	**	6,000	38,000	46,100	48,400
Class III (more than 4.5 signalized intersections per mile)					
		Level of Service			
Lanes Divided	A	B	C	D	E
2 Undivided	**	**	5,000	11,800	14,600
4 Divided	**	**	11,700	27,200	30,800
6 Divided	**	**	18,400	42,100	46,300

NON-STATE ROADWAYS					
Major City/County Roadways					
		Level of Service			
Lanes Divided	A	B	C	D	E
2 Undivided	**	**	7,000	13,600	14,600
4 Divided	**	**	16,400	29,300	30,900
6 Divided	**	**	25,700	44,100	46,400
Other Signalized Roadways (signalized intersection analysis)					
		Level of Service			
Lanes Divided	A	B	C	D	E
2 Undivided	**	**	4,400	9,400	12,000
4 Divided	**	**	10,300	20,200	24,000

Source:		Florida Department of Transportation	02/22/02
		Systems Planning Office	
		605 Suwannee Street, MS 19	
		Tallahassee, FL 32399-0450	
		http://www11.myflorida.com/planning/systems/sm/los/default.htm	

FREEWAYS					
		Level of Service			
Lanes	A	B	C	D	E
4	23,500	38,700	52,500	62,200	69,100
6	36,400	59,800	81,100	96,000	106,700
8	49,100	80,900	109,600	129,800	144,400
10	61,800	101,800	138,400	163,800	182,000

BICYCLE MODE					
(Note: Level of service for the bicycle mode in this table is based on roadway geometrics at 40 mph posted speed and traffic conditions, not number of bicyclists using the facility.) (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)					
Paved Shoulder/ Bicycle Lane Coverage		Level of Service			
	A	B	C	D	E
0-49%	**	1,900	3,300	13,600	>13,600
50-84%	**	2,500	4,000	>4,000	***
85-100%	3,200	7,100	>7,100	***	***

PEDESTRIAN MODE					
(Note: Level of service for the pedestrian mode in this table is based on roadway geometric at 40 mph posted speed and traffic conditions, not number of pedestrians using the facility.) (Multiply motorized vehicle volumes shown by number of directional roadway lanes to determine two-way maximum service volumes.)					
% Sidewalk Coverage		Level of Service			
	A	B	C	D	E
0-49%	**	**	**	6,300	15,400
50-84%	**	**	**	9,800	18,800
85-100%	**	2,200	11,200	>11,200	***

ARTERIAL/NON-STATE ROADWAY ADJUSTMENTS			
DIVIDED/UNDIVIDED			
Lanes	Median	Left Turn Lanes	Adjustment Factors
2	Divided	Yes	+5%
2	Undivided	No	-20%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

ONE-WAY FACILITIES			
Decrease corresponding two-directional volumes in this table by 40% to obtain the equivalent one directional volume for one-way facilities.			

*This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Values shown are two-way annual average daily volumes (based on K₁₀₀ factors) for levels of service and are for the automobile/truck modes unless specifically stated. Level of service letter grade thresholds are probably not comparable across modes and, therefore, cross modal comparisons should be made with caution. Furthermore, combining levels of service of different modes into one overall roadway level of service is not recommended. The table's input value defaults and level of service criteria appear on the following page. Calculations are based on planning applications of the Highway Capacity Manual, Bicycle LOS Model, and Pedestrian LOS Model, respectively for the automobile/truck, bicycle and pedestrian modes.

**Cannot be achieved using table input value defaults.

***Not applicable for the level of service letter grade. For automobile/truck modes, volumes greater than level of service D become F because intersection capacities have been reached. For bicycle and pedestrian modes, the level of service letter grade (including F) is not achievable, because there is no maximum vehicle volume threshold using table input value defaults.

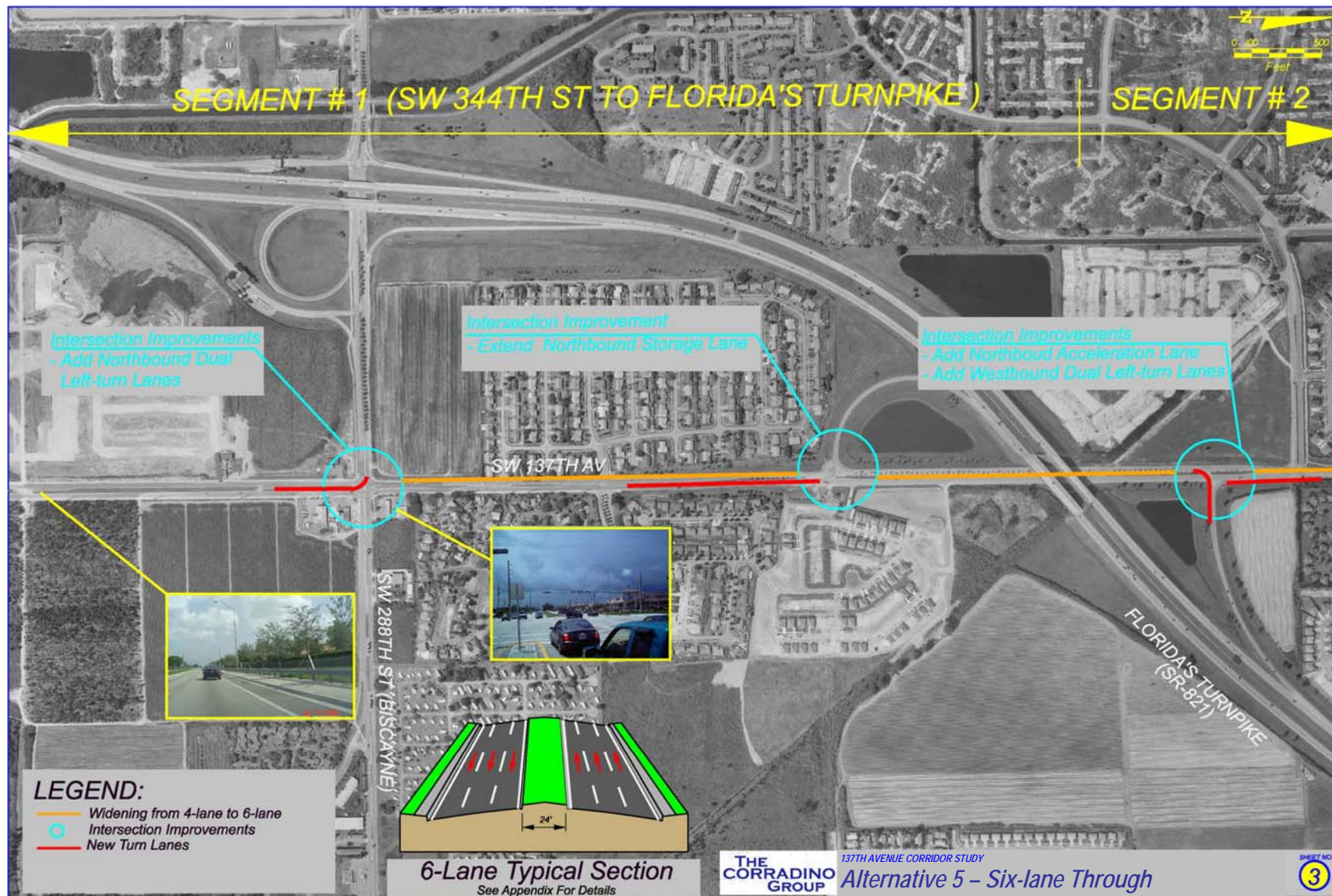
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Appendix C

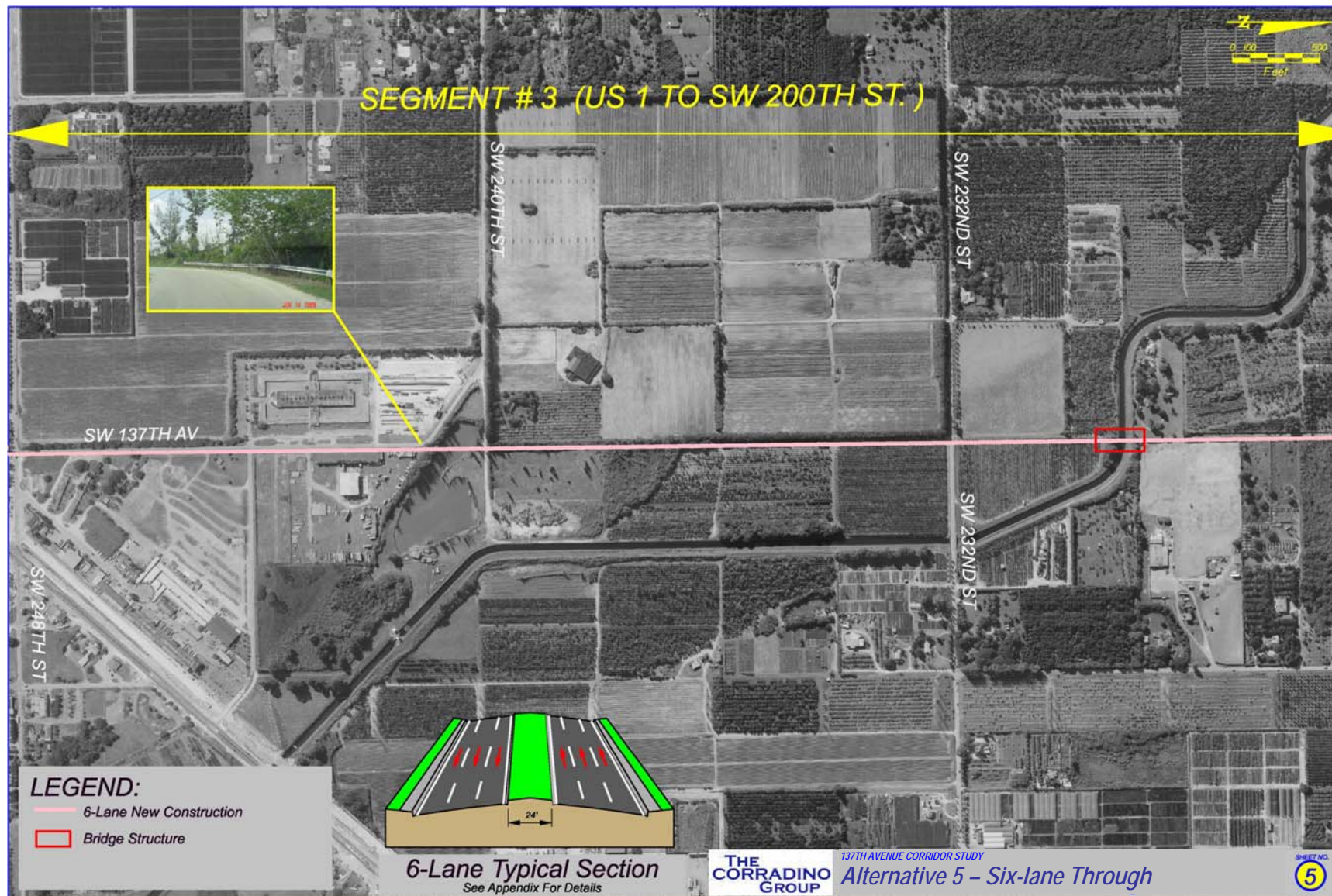
Schematic Plans

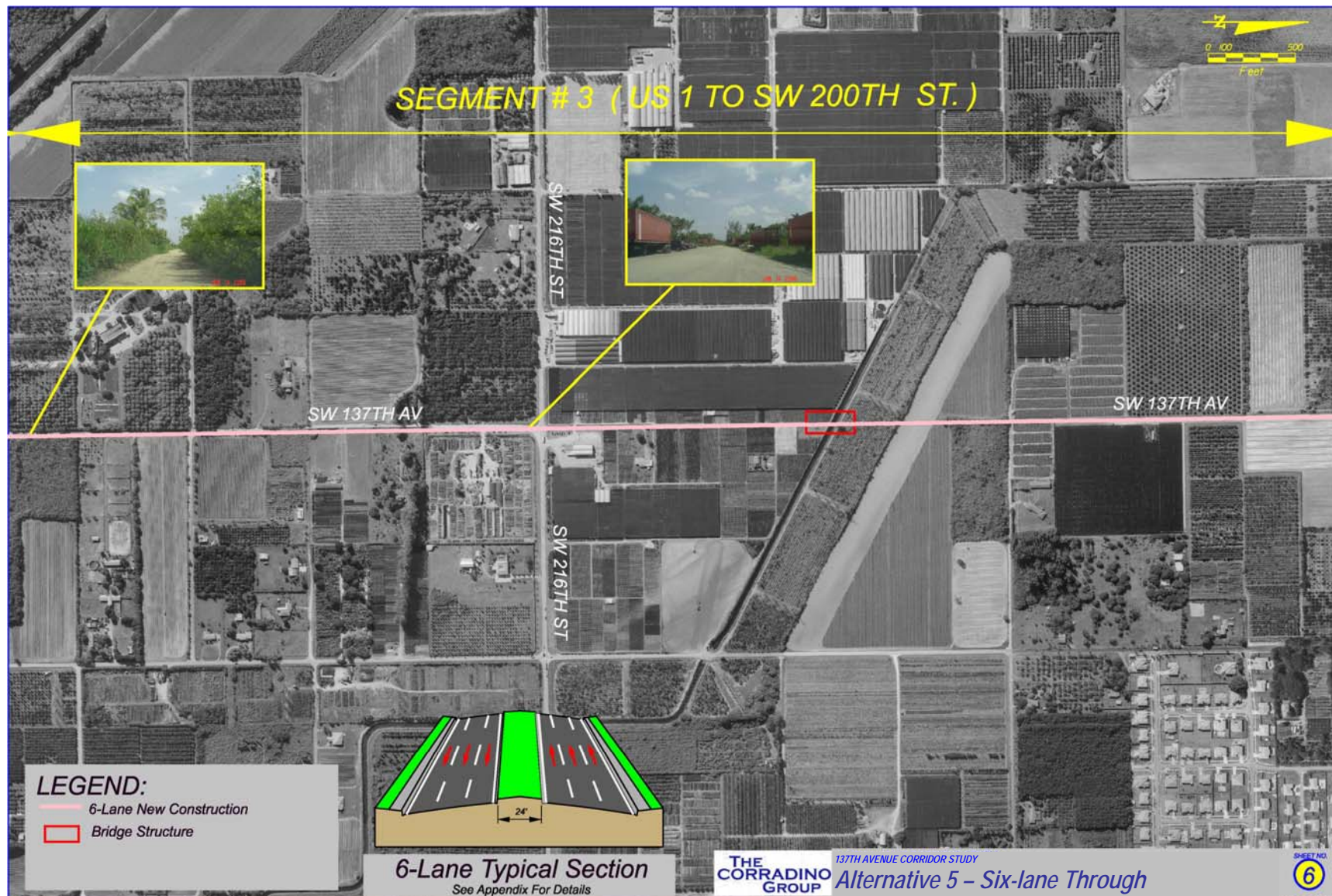


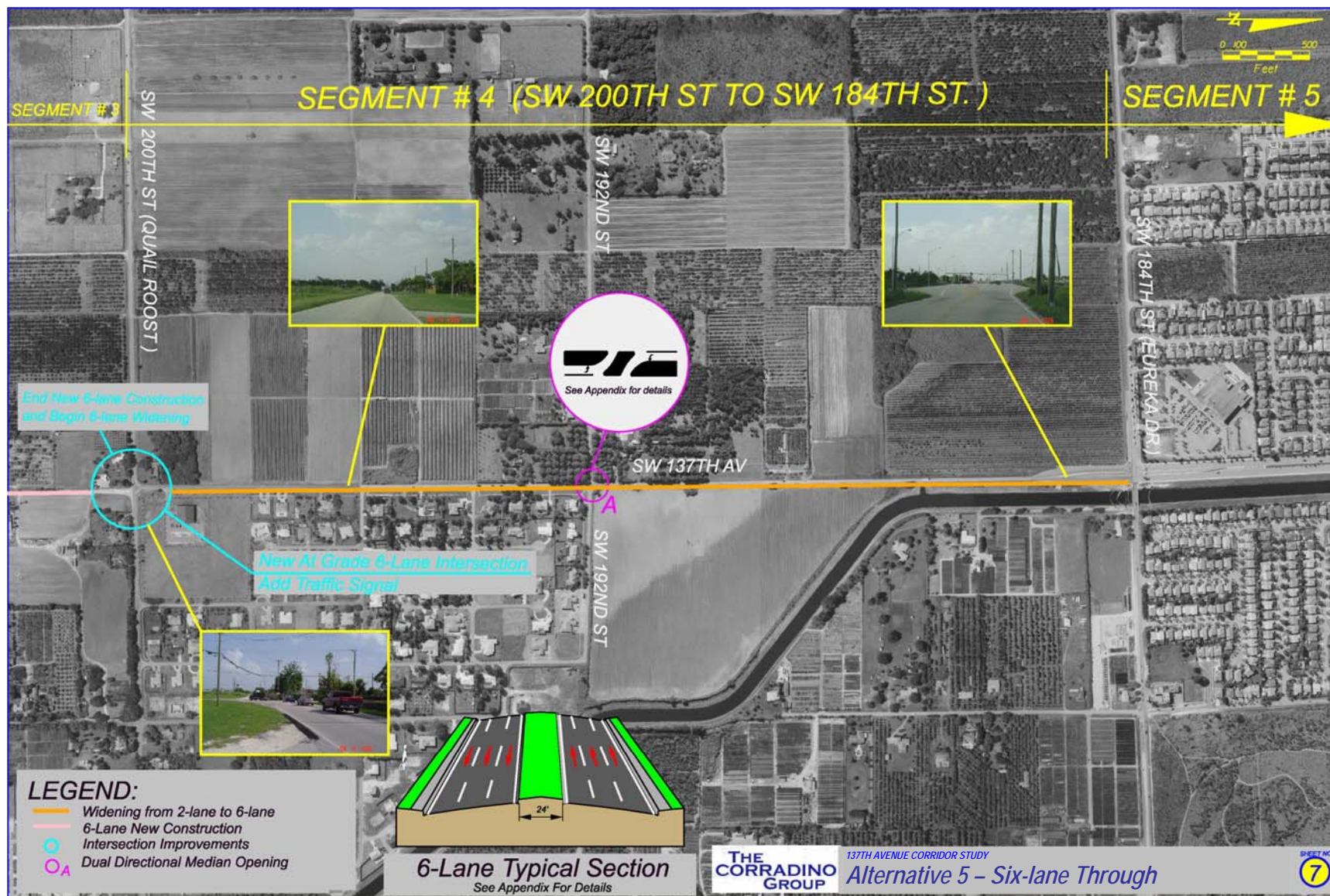




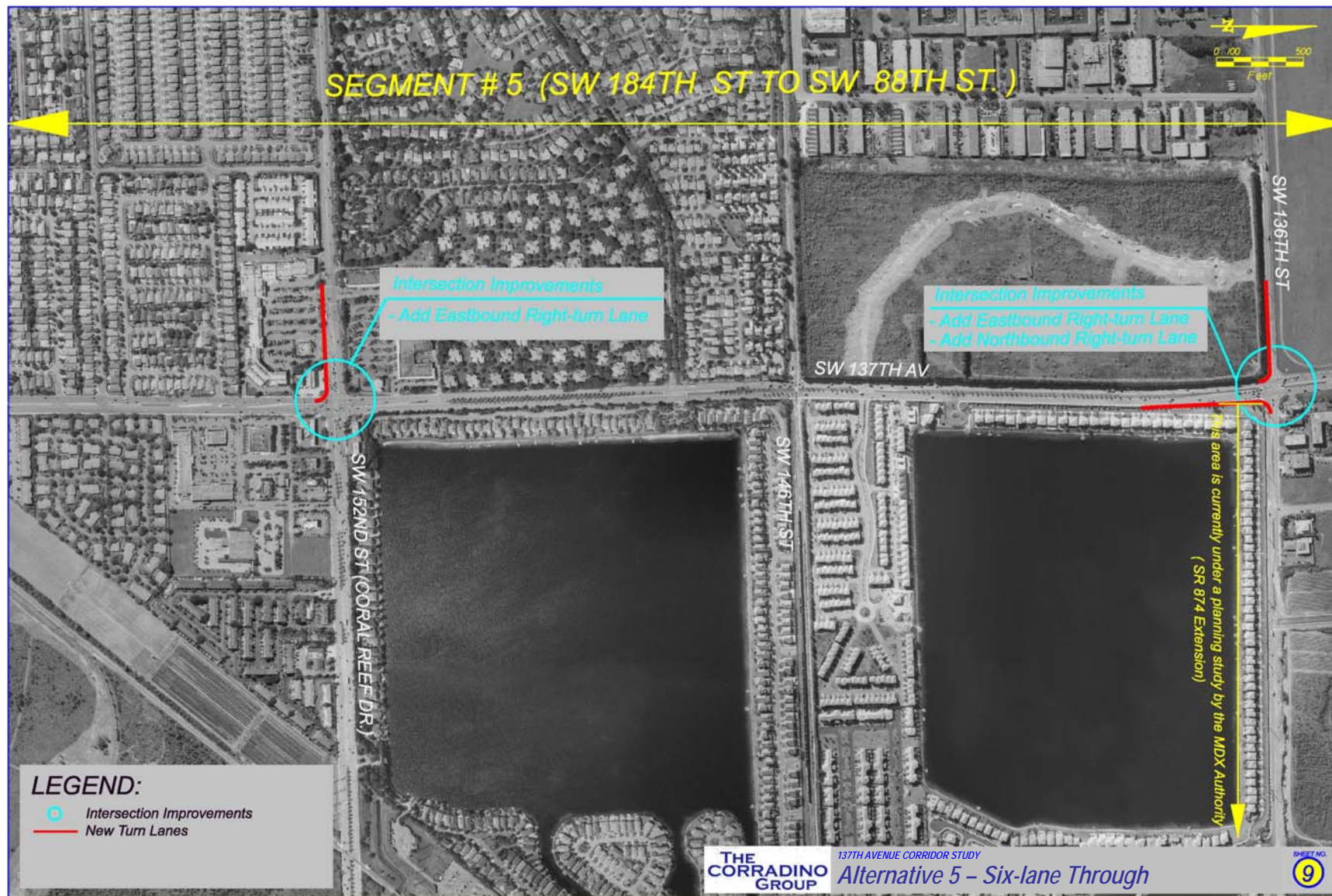


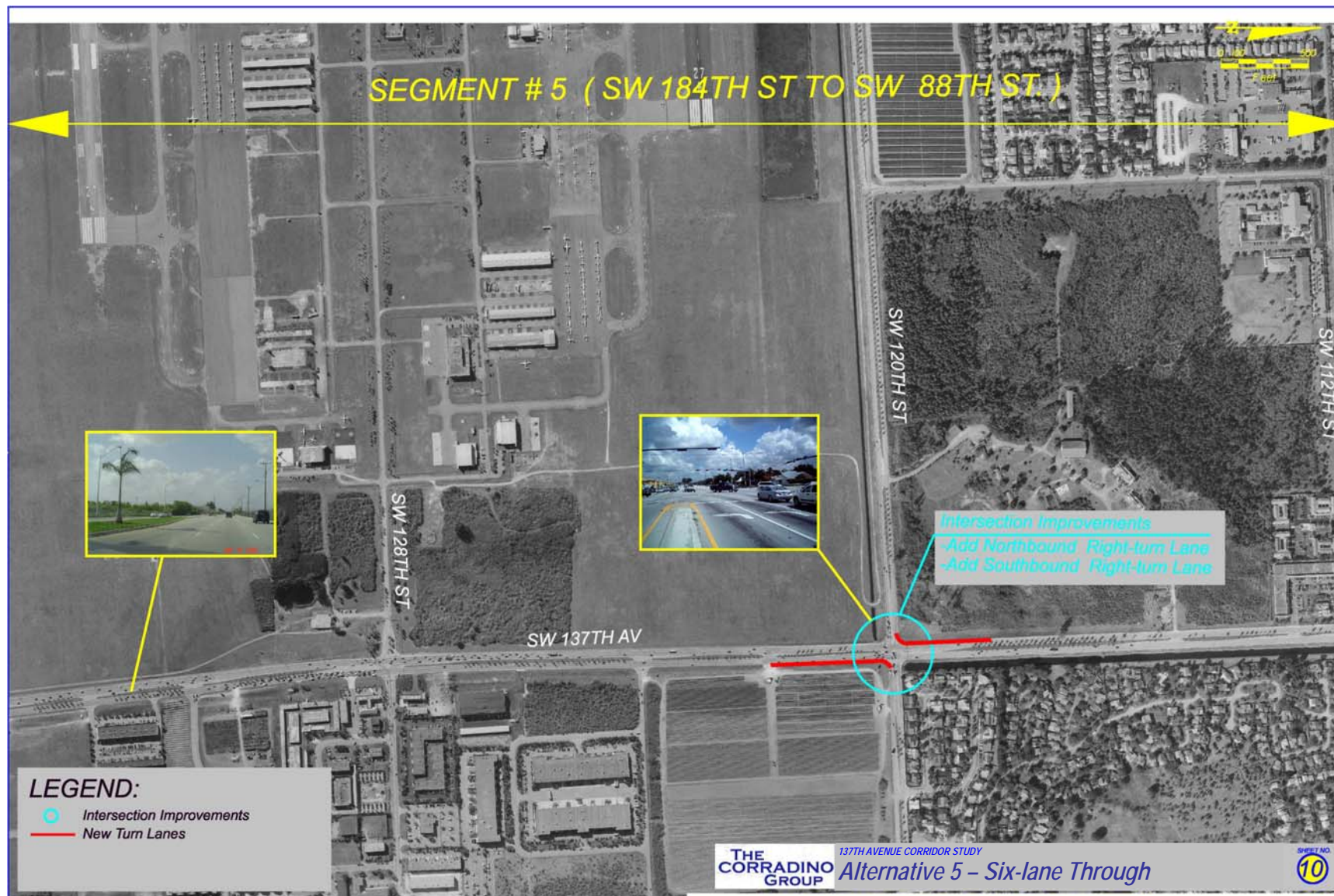




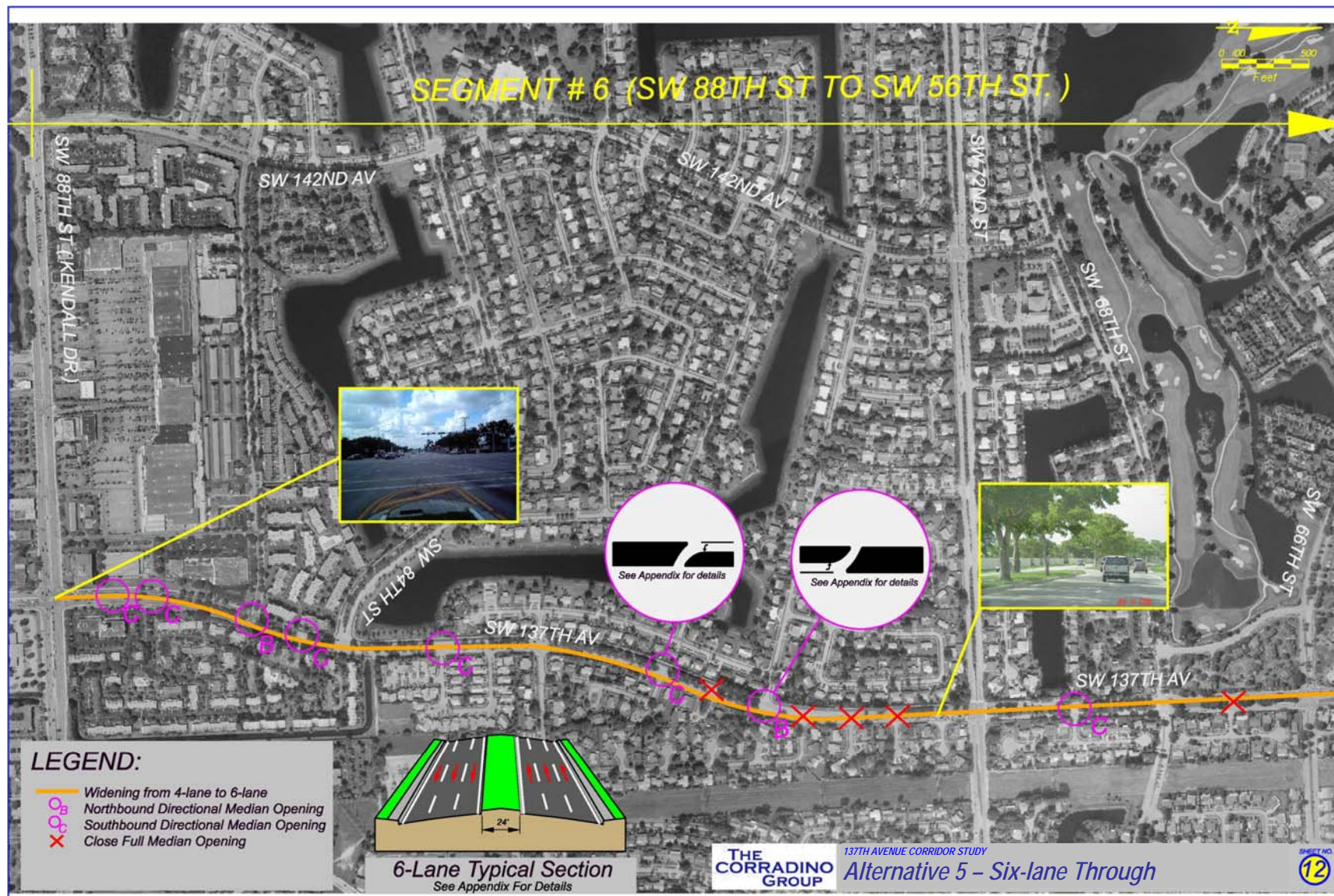


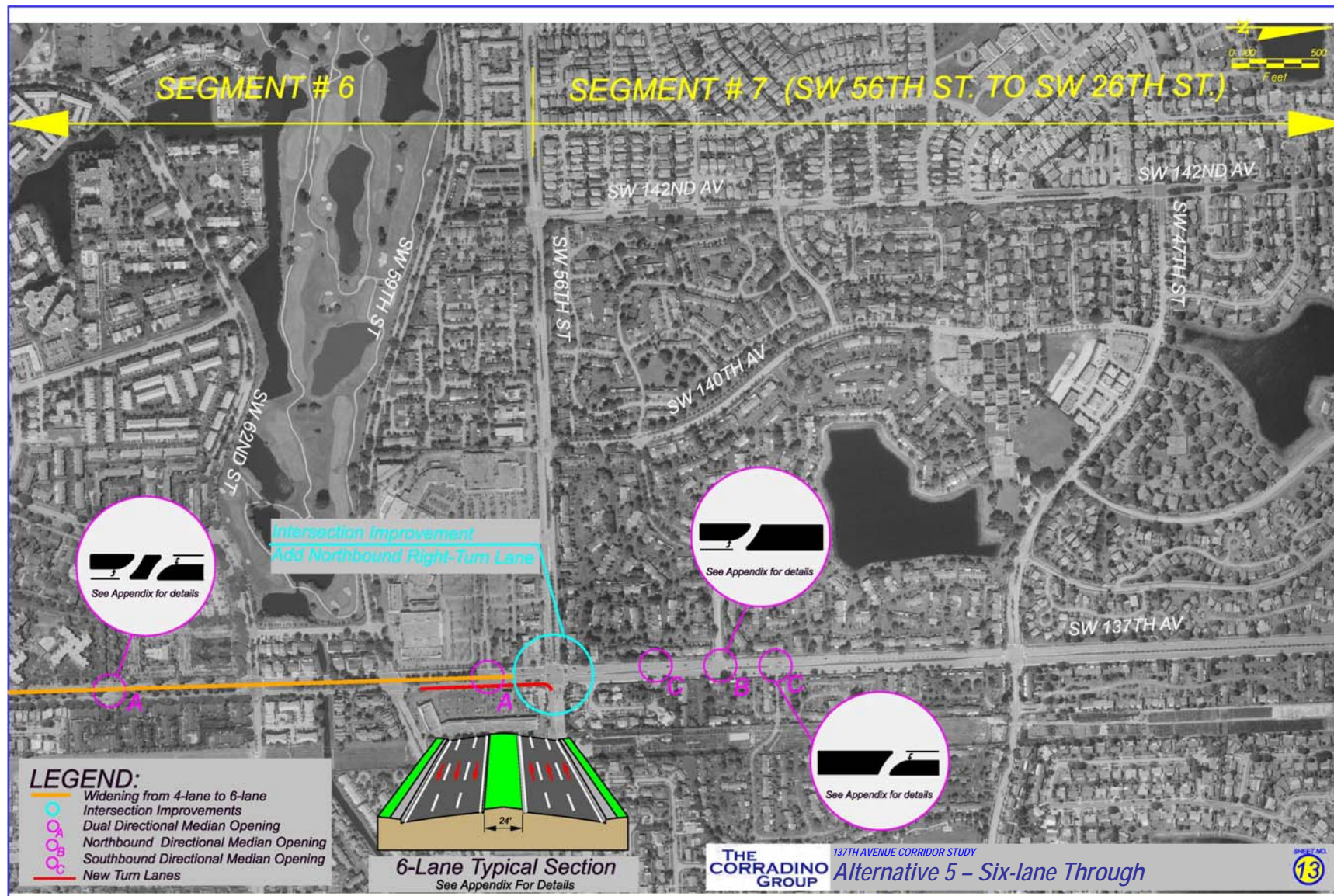


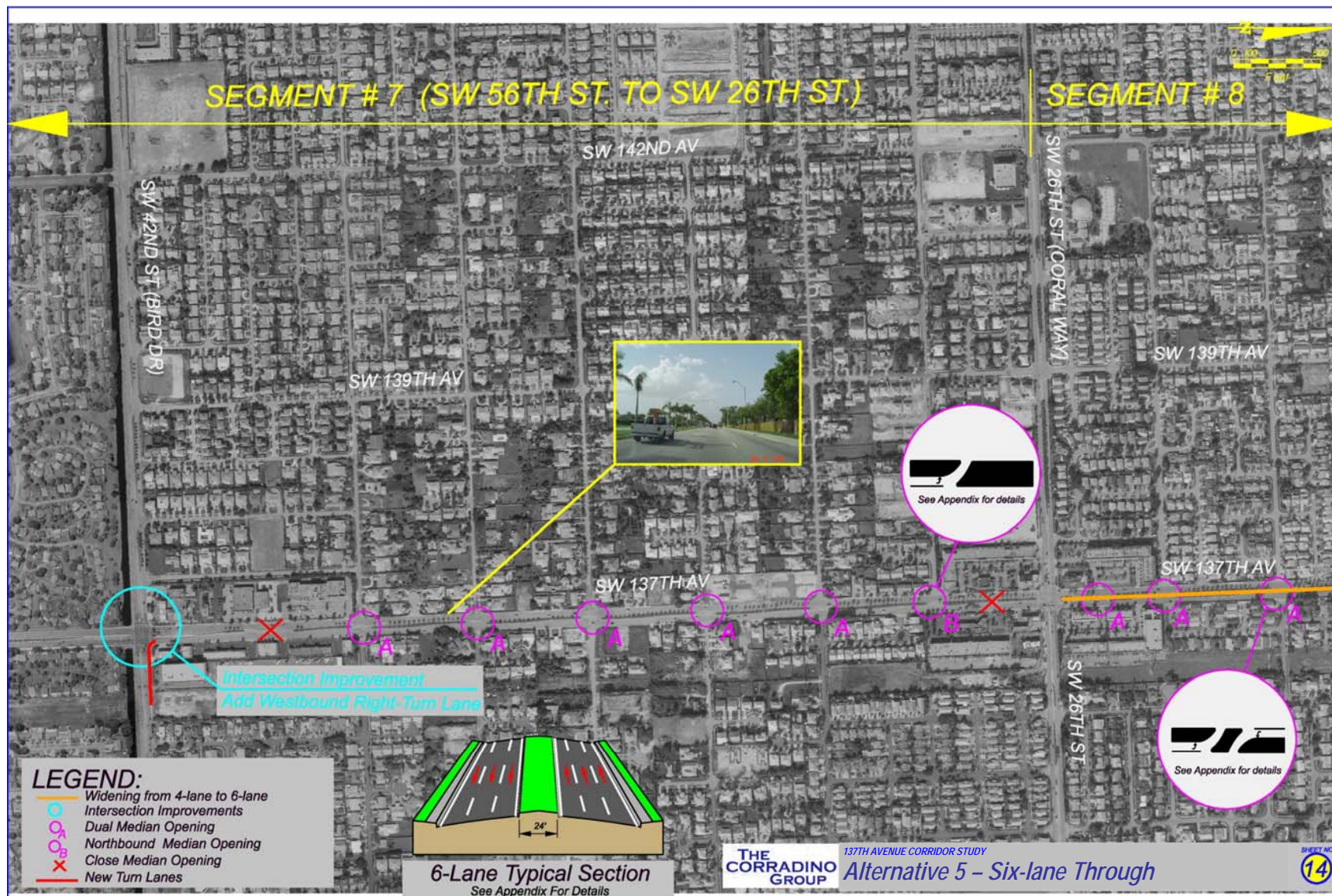


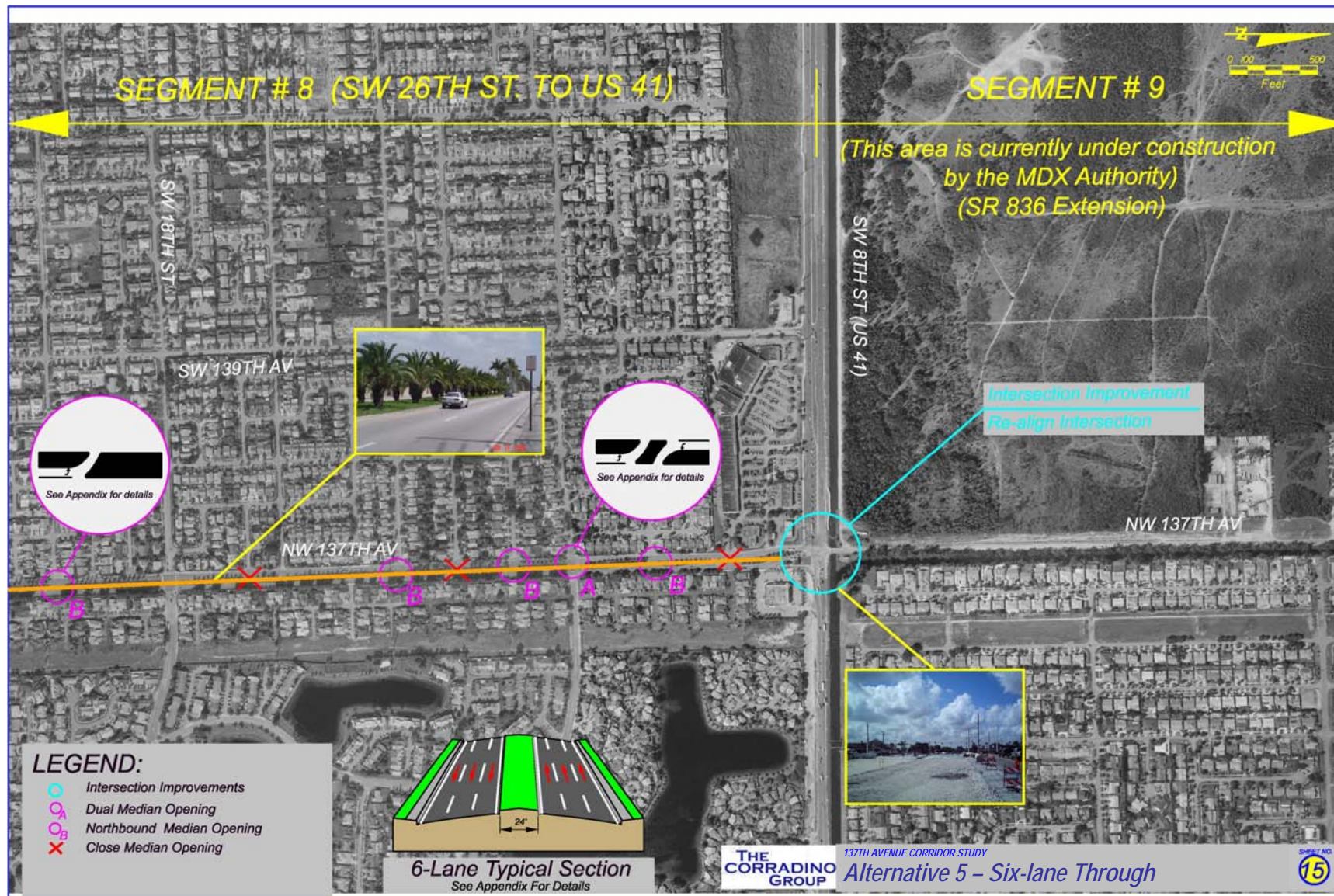


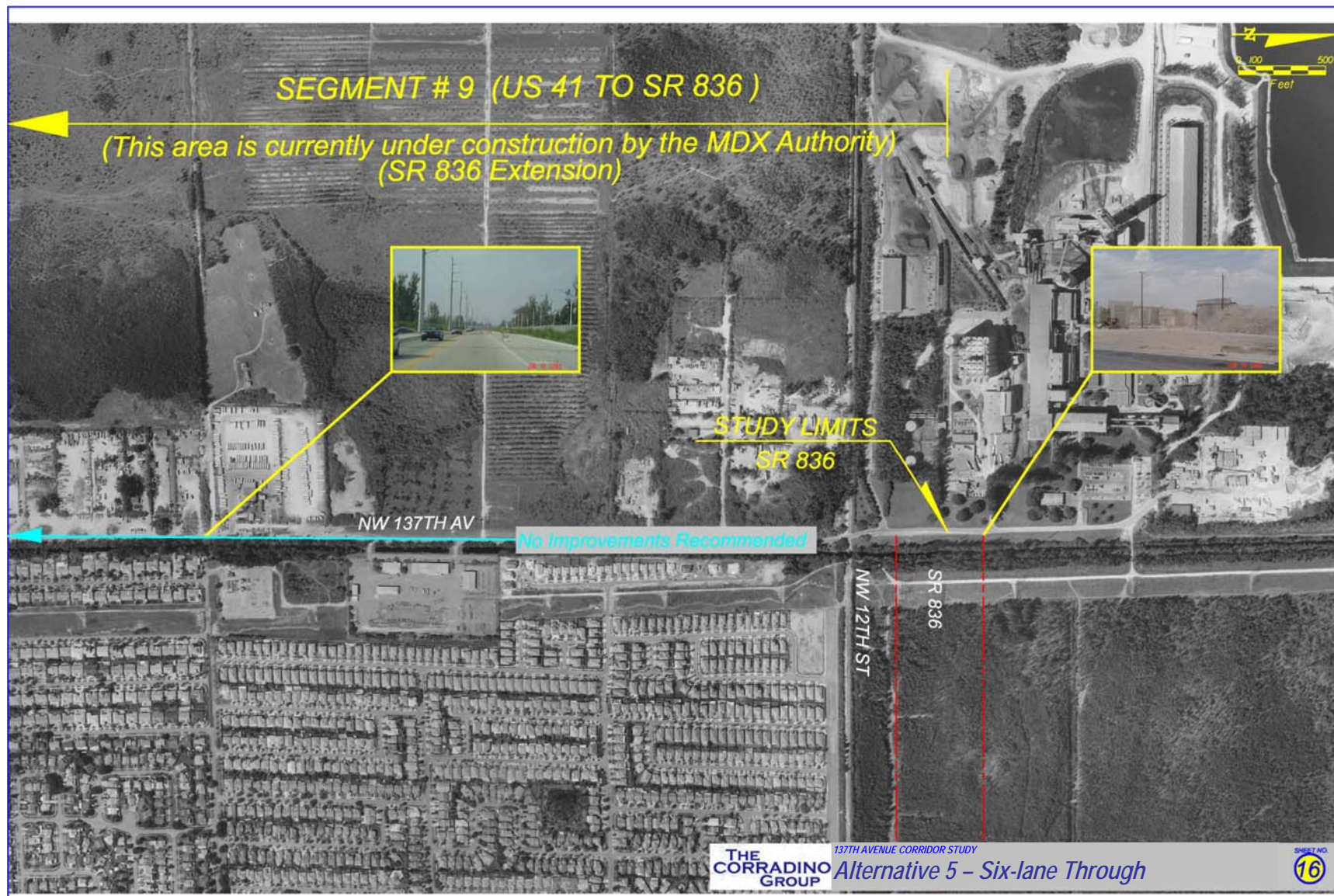




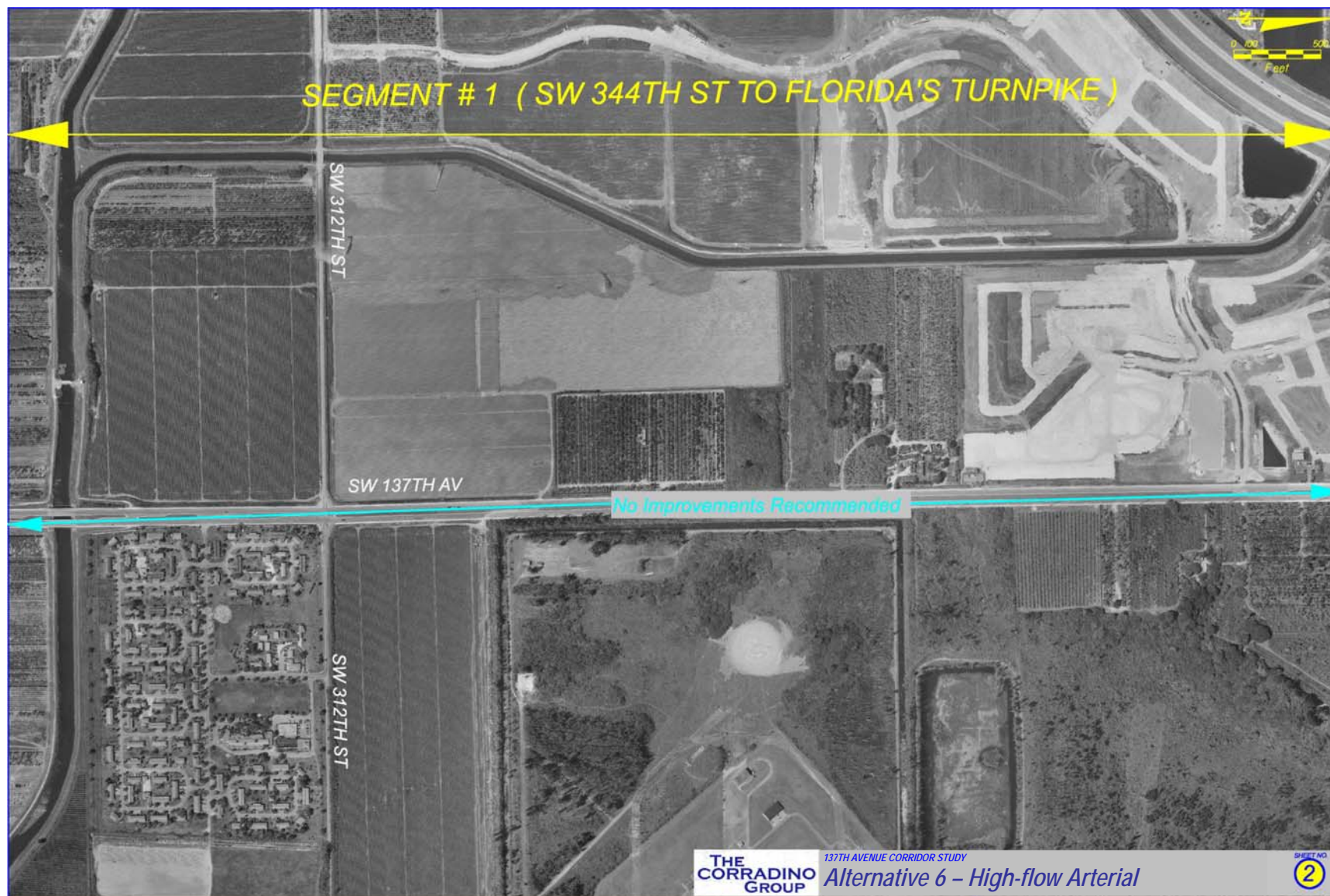




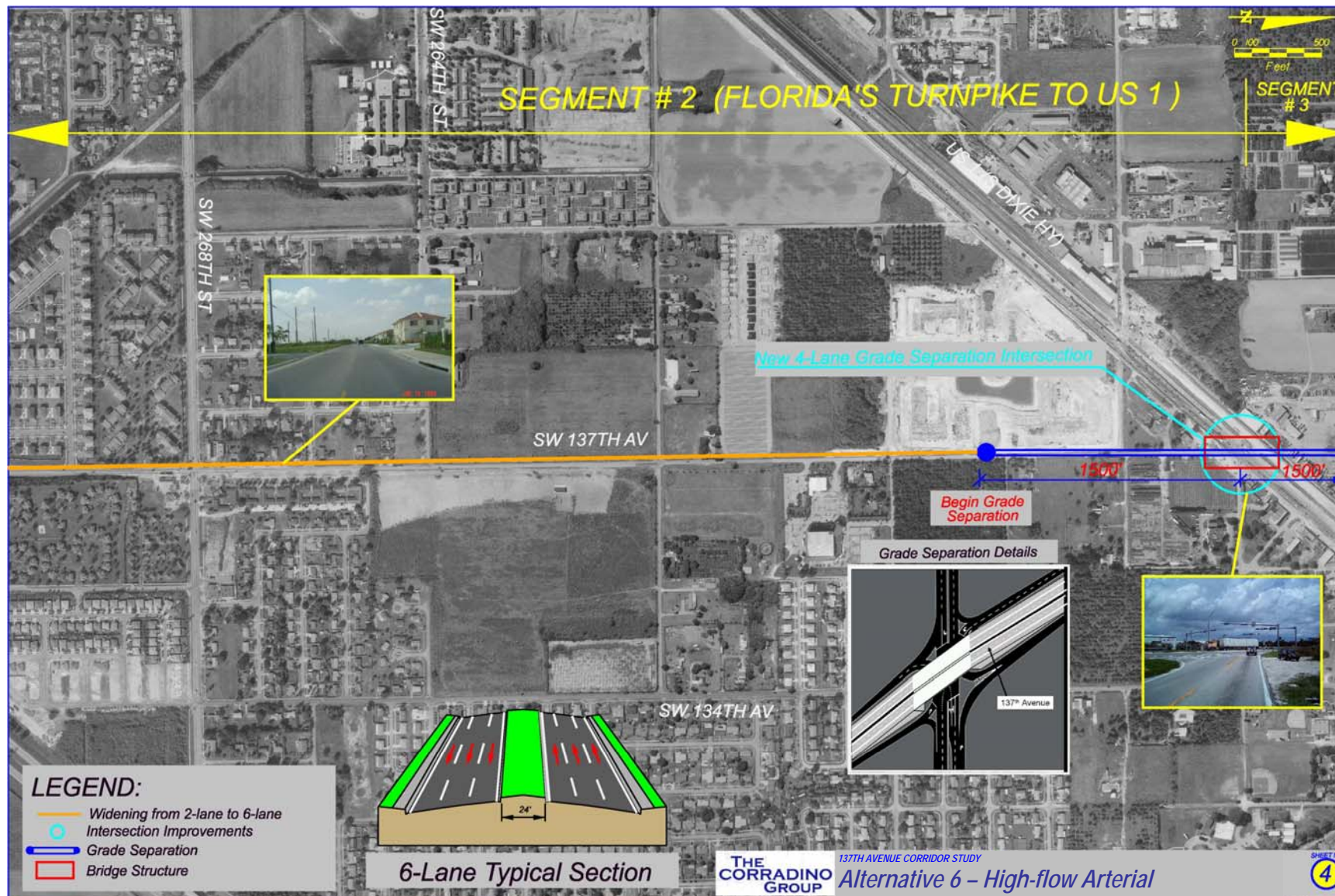


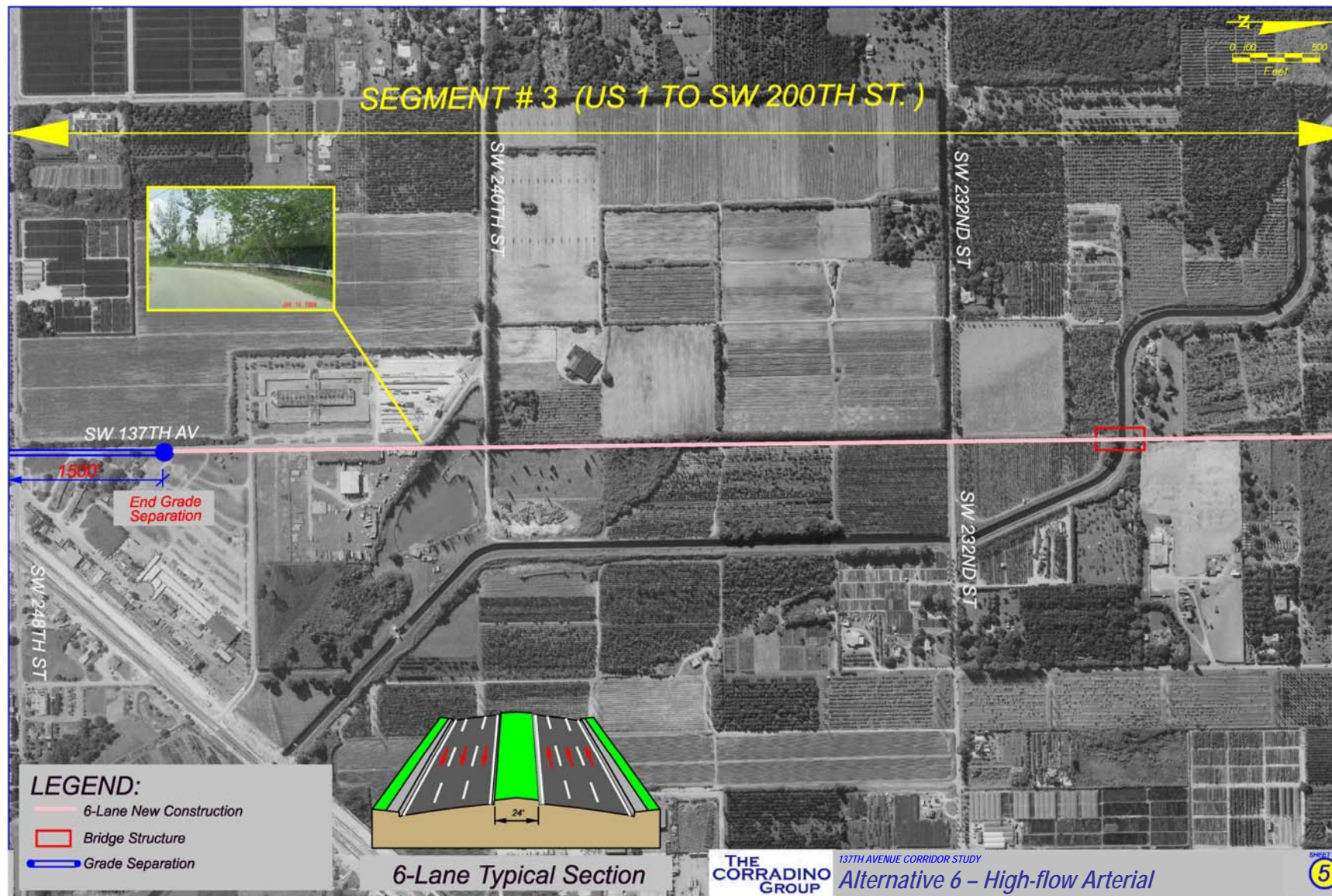


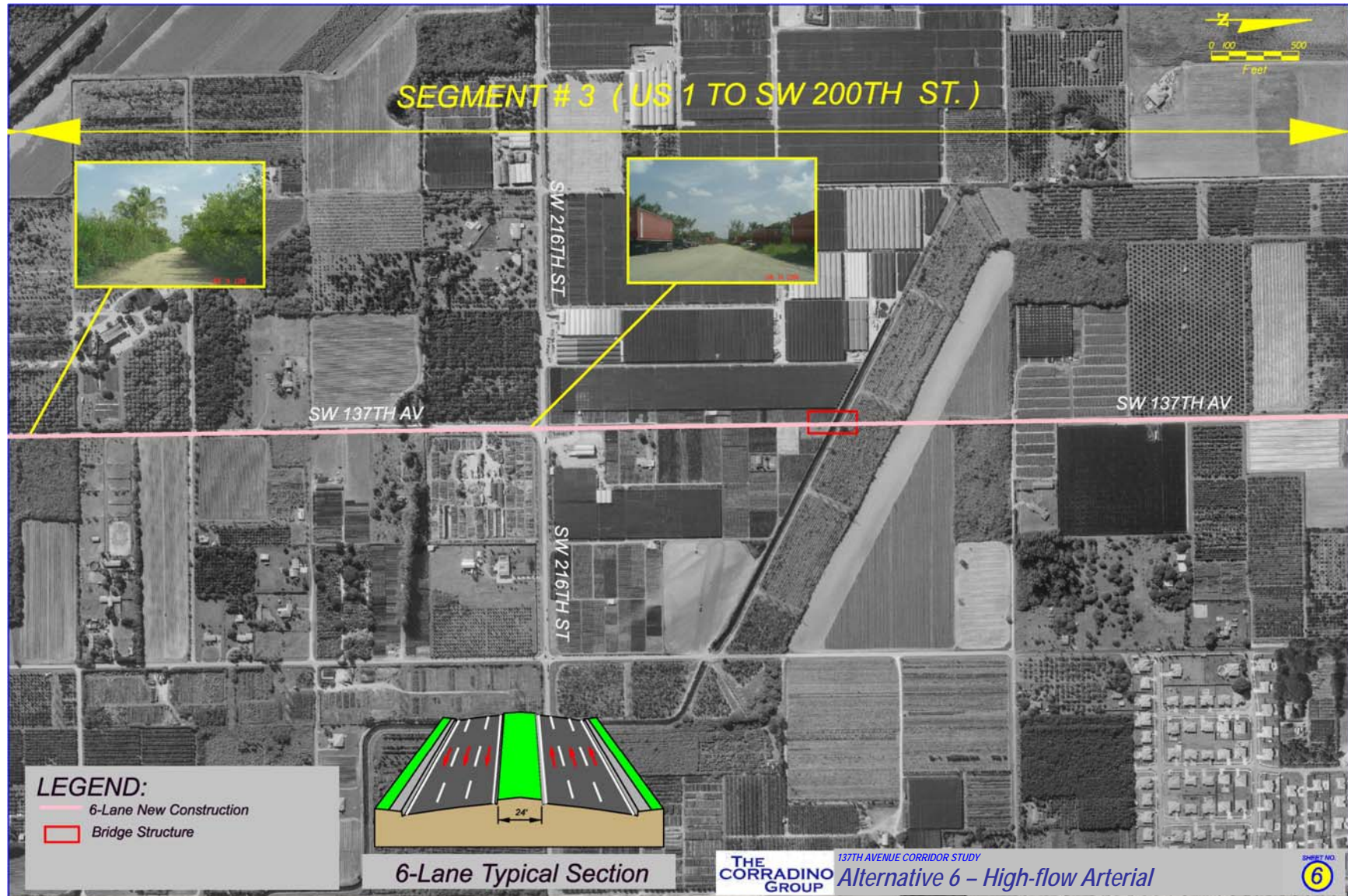


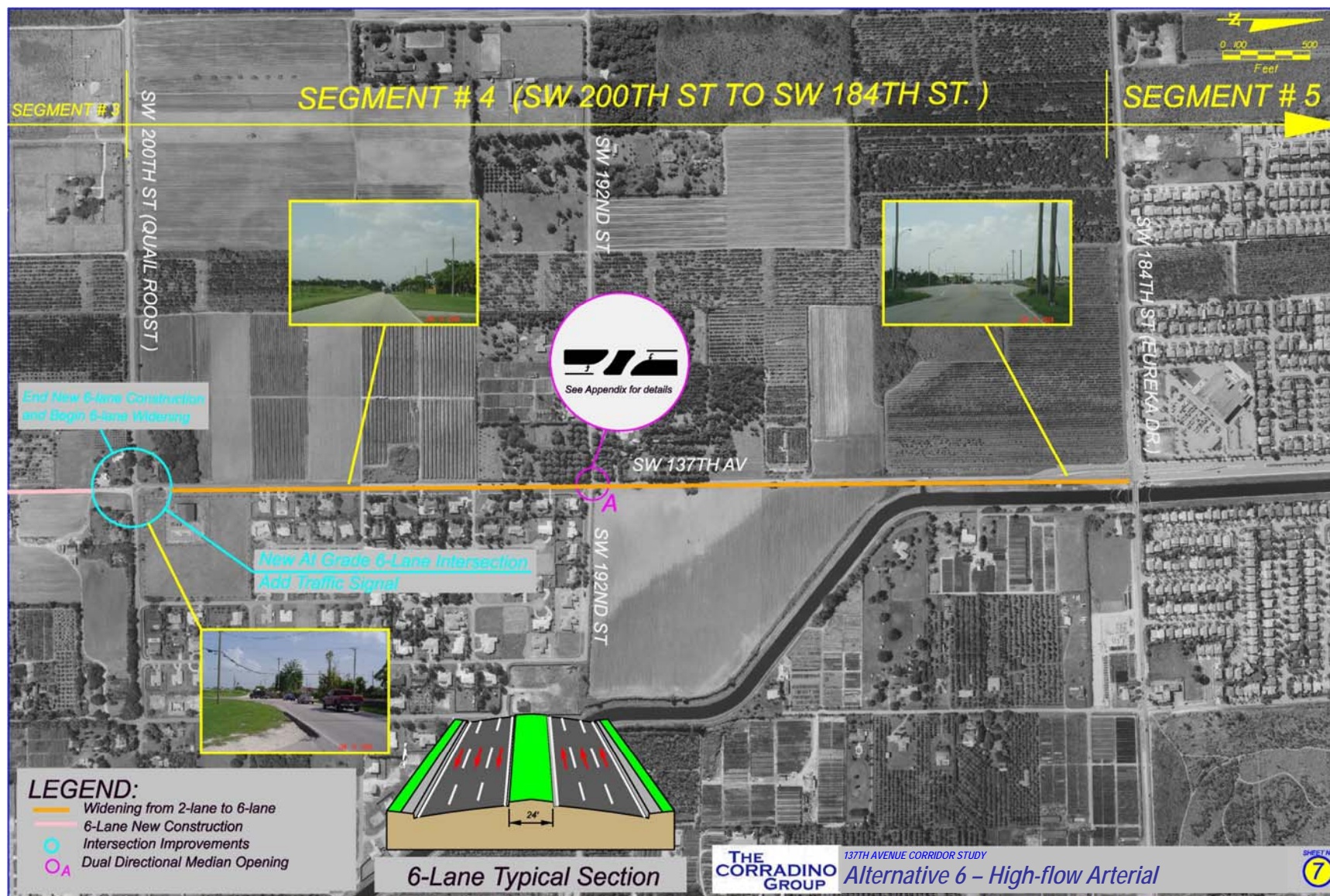




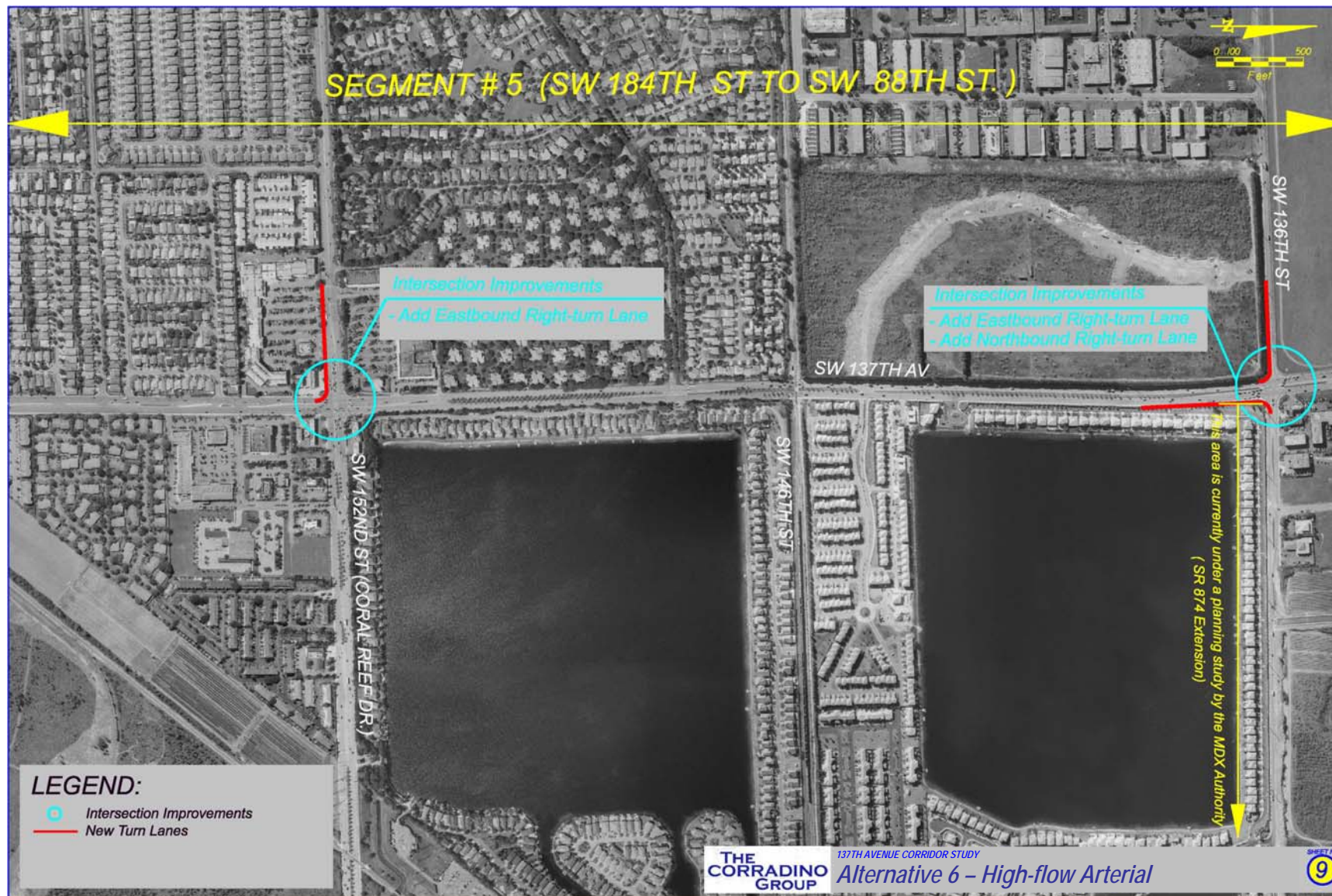


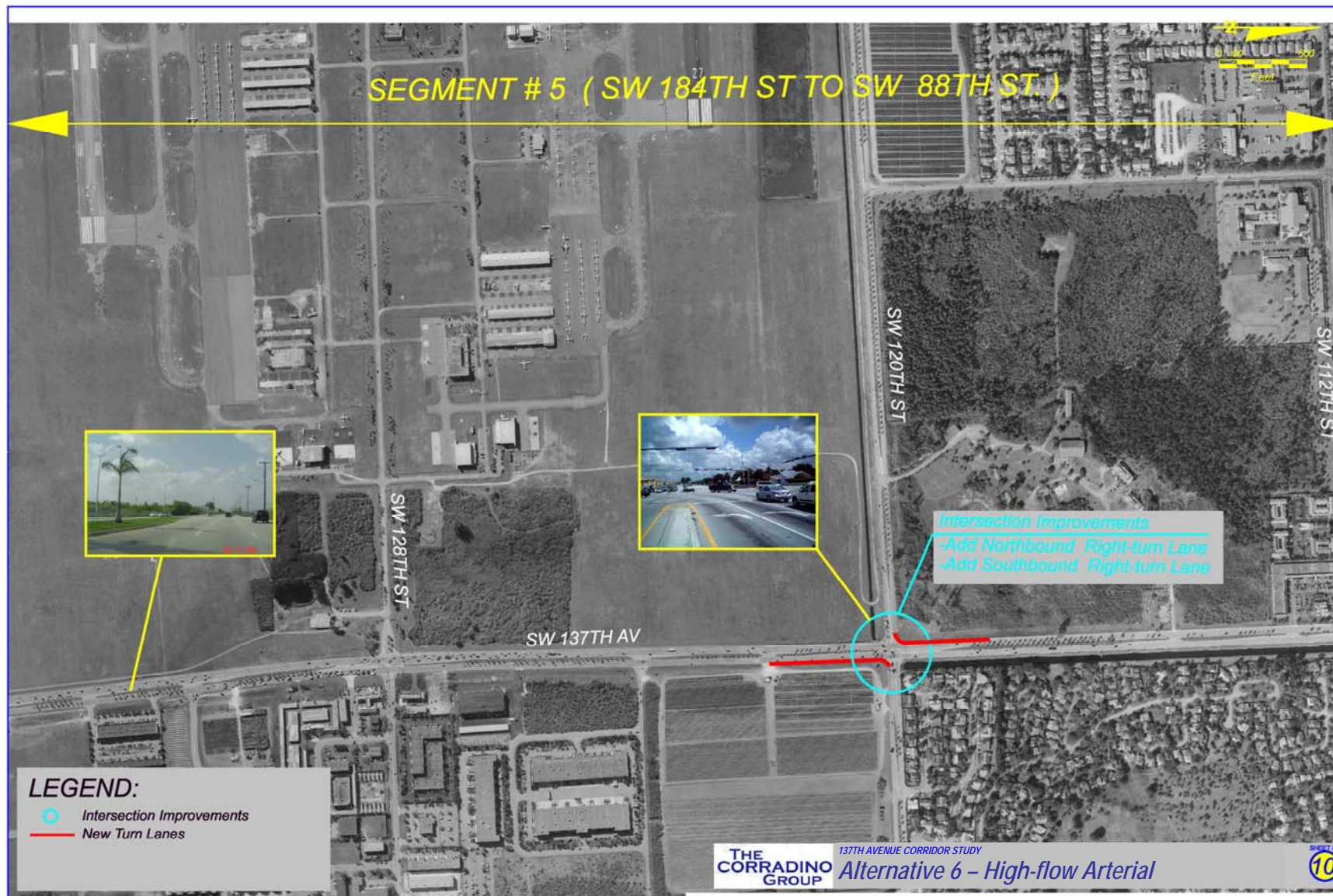


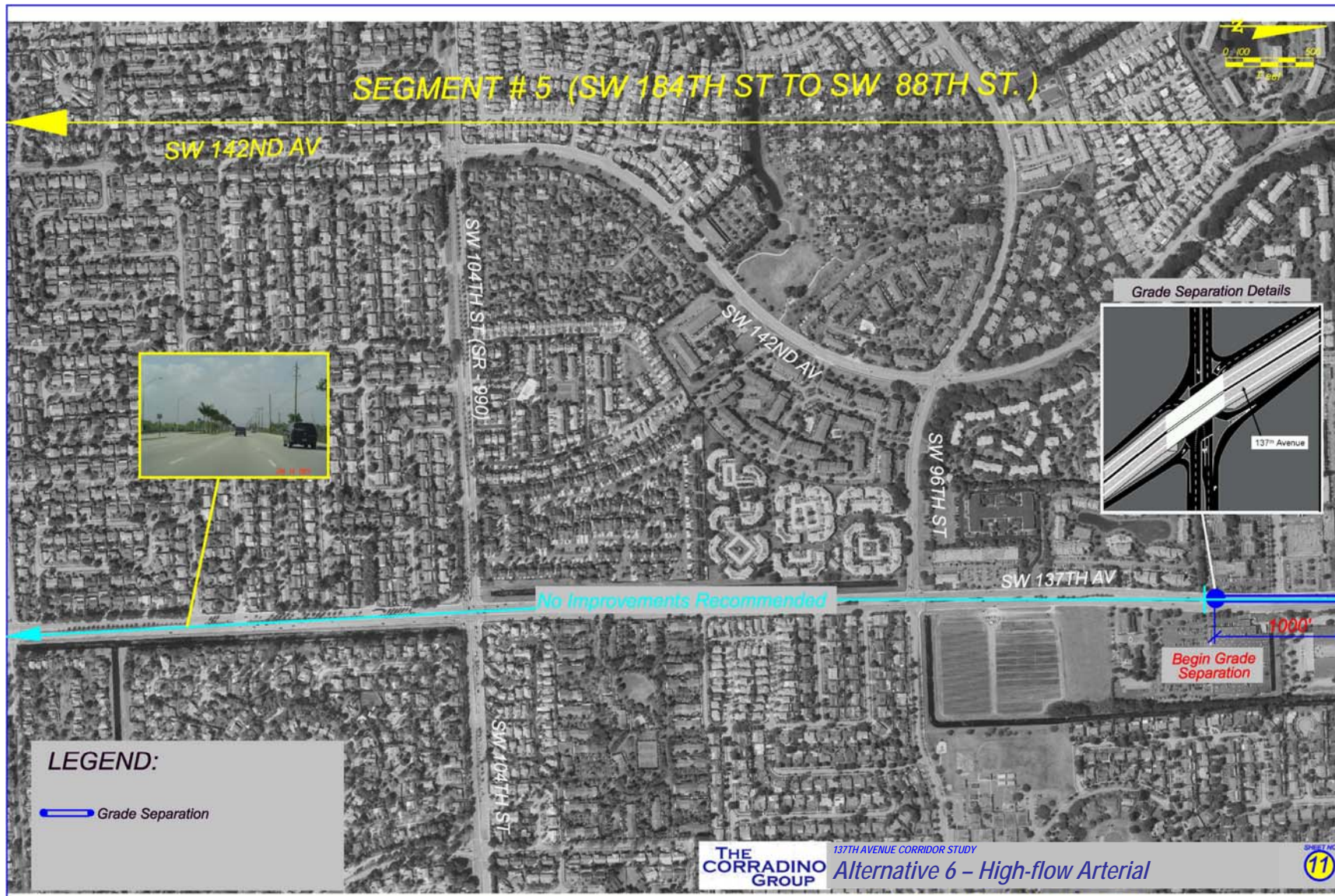




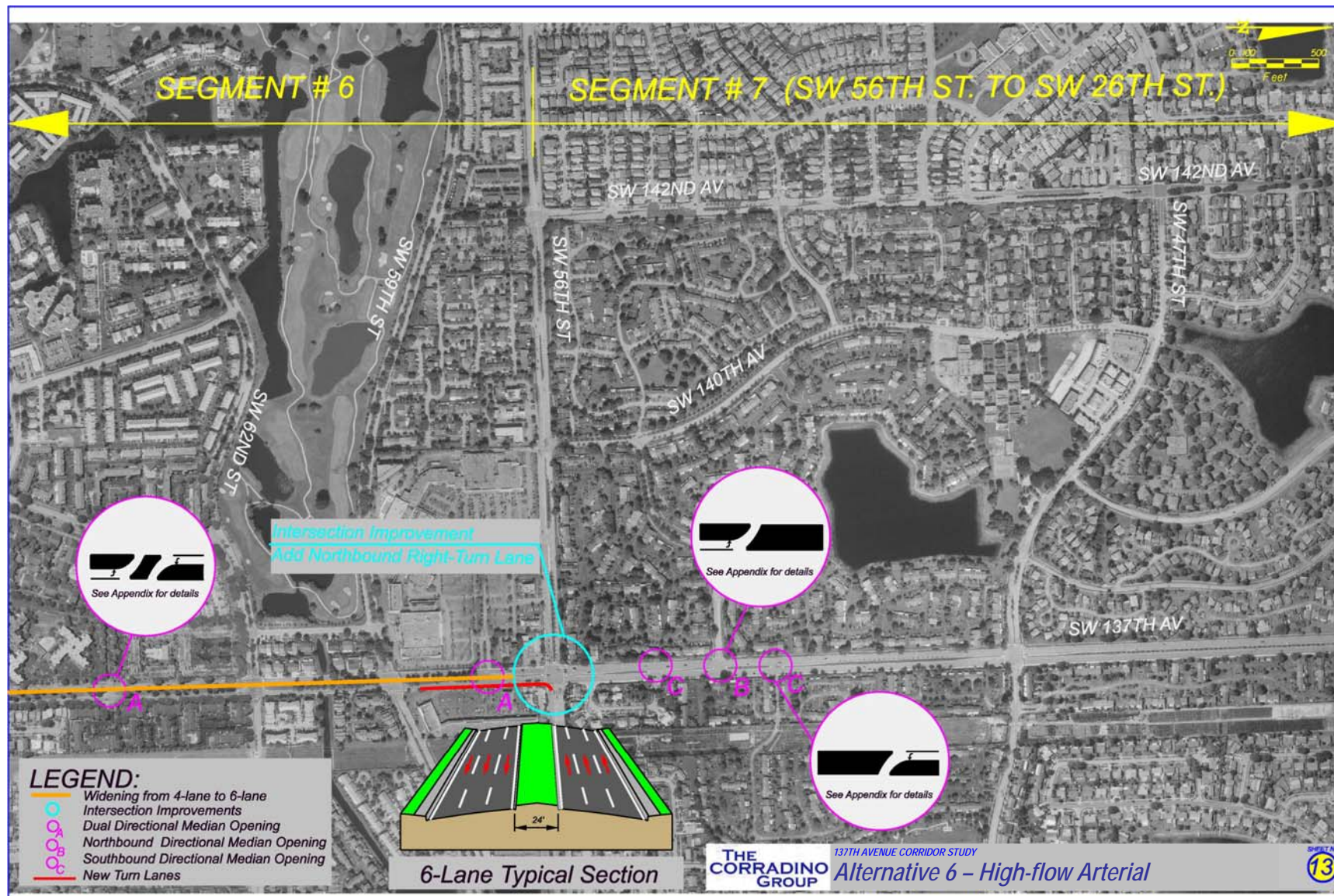


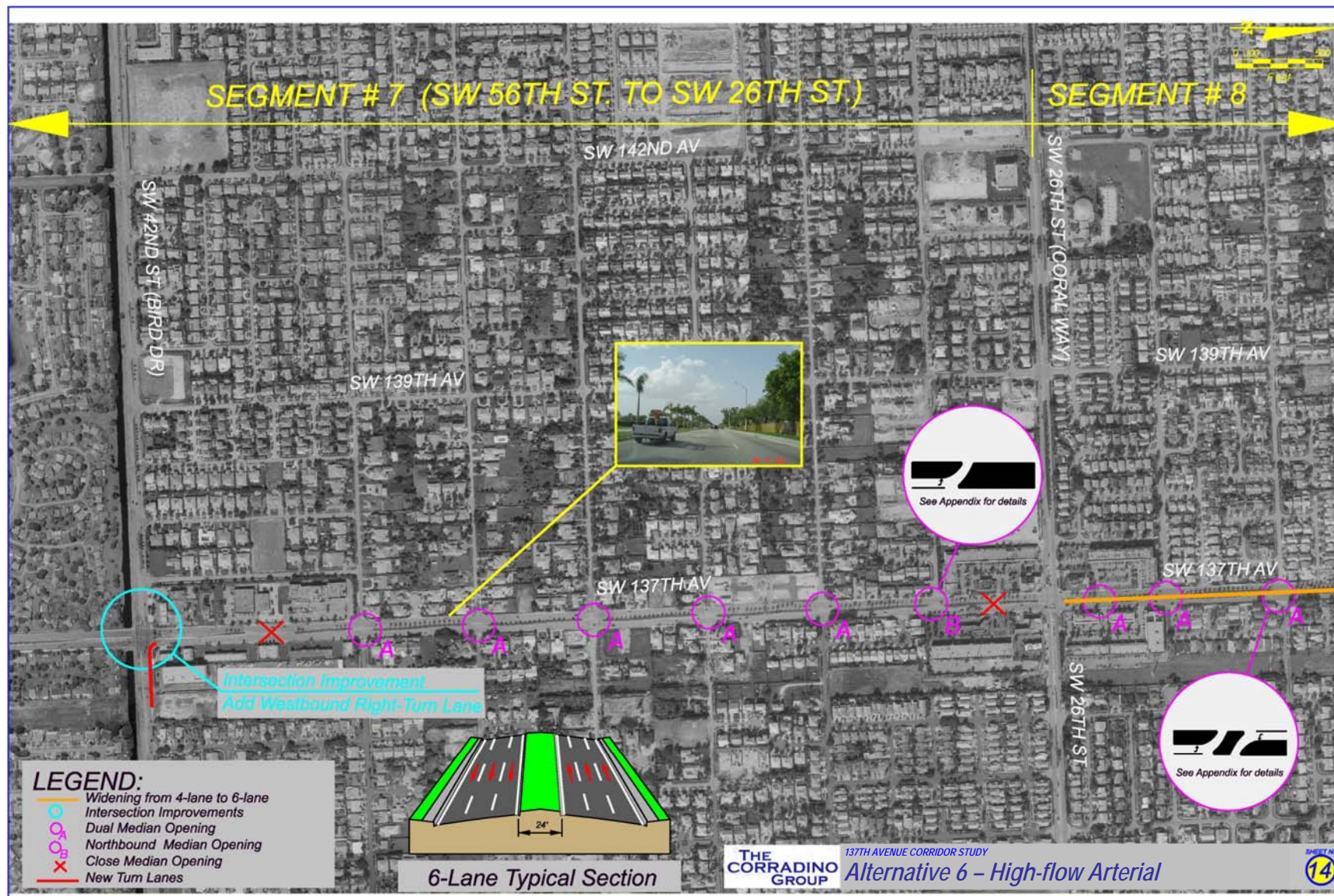


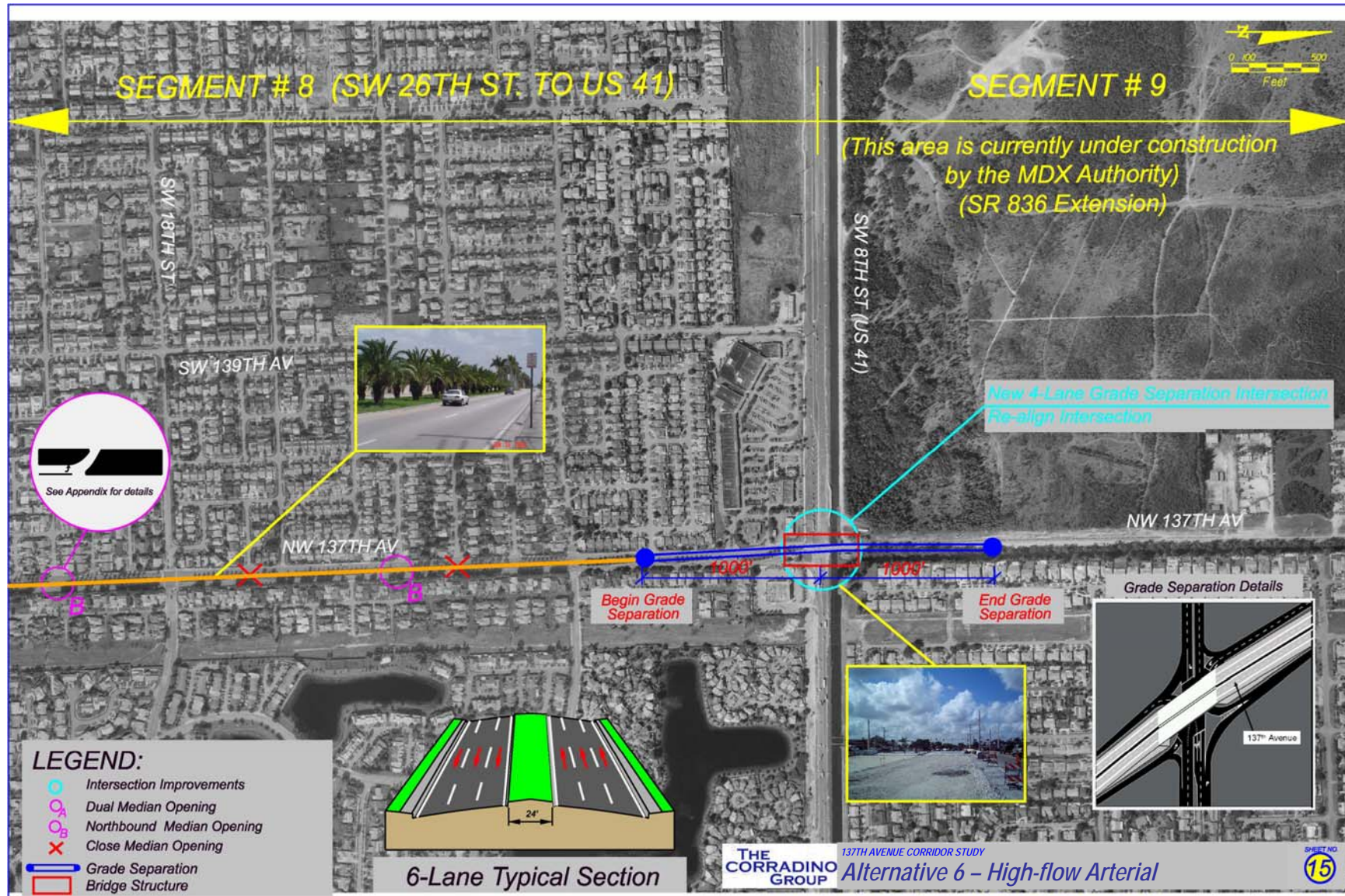


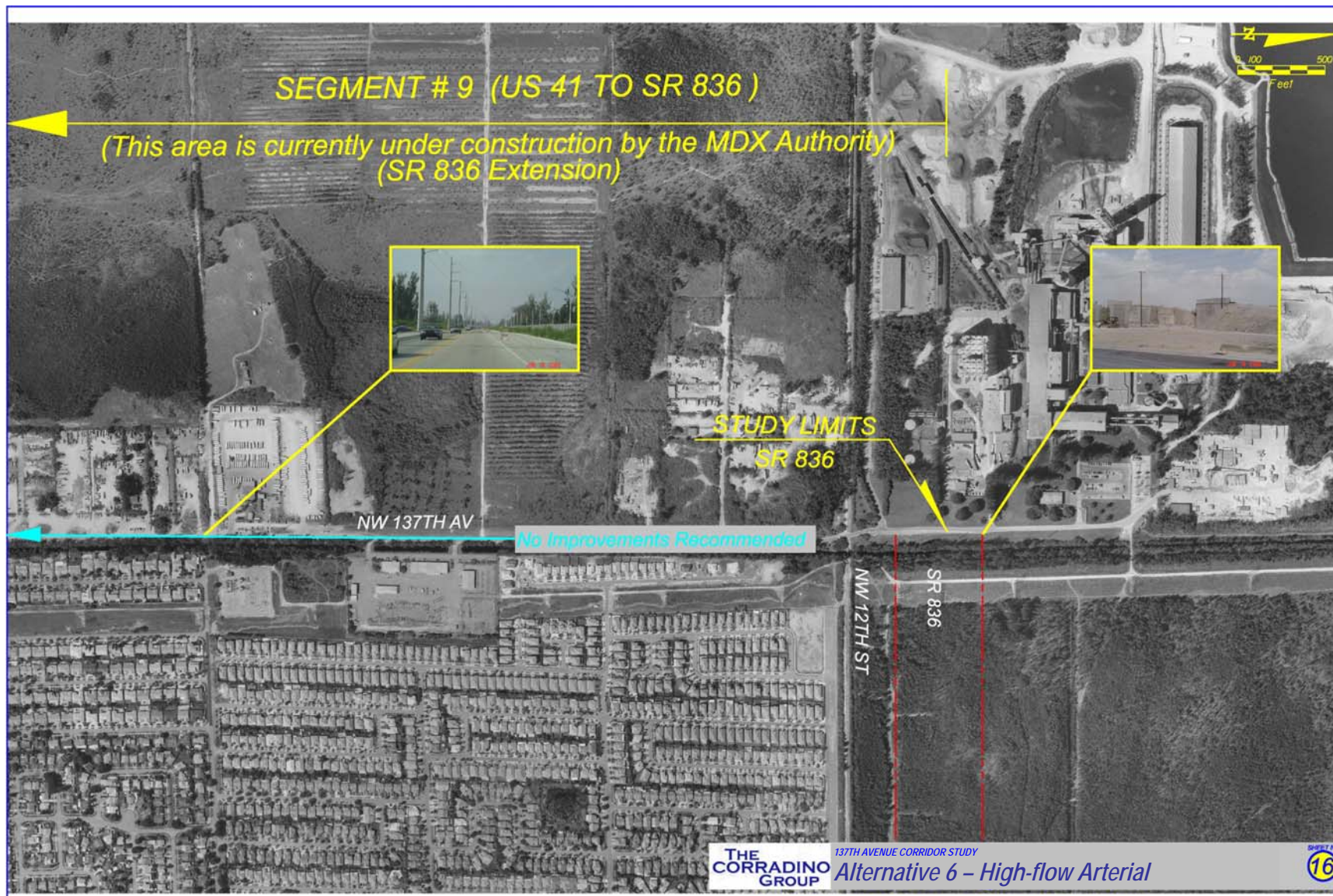






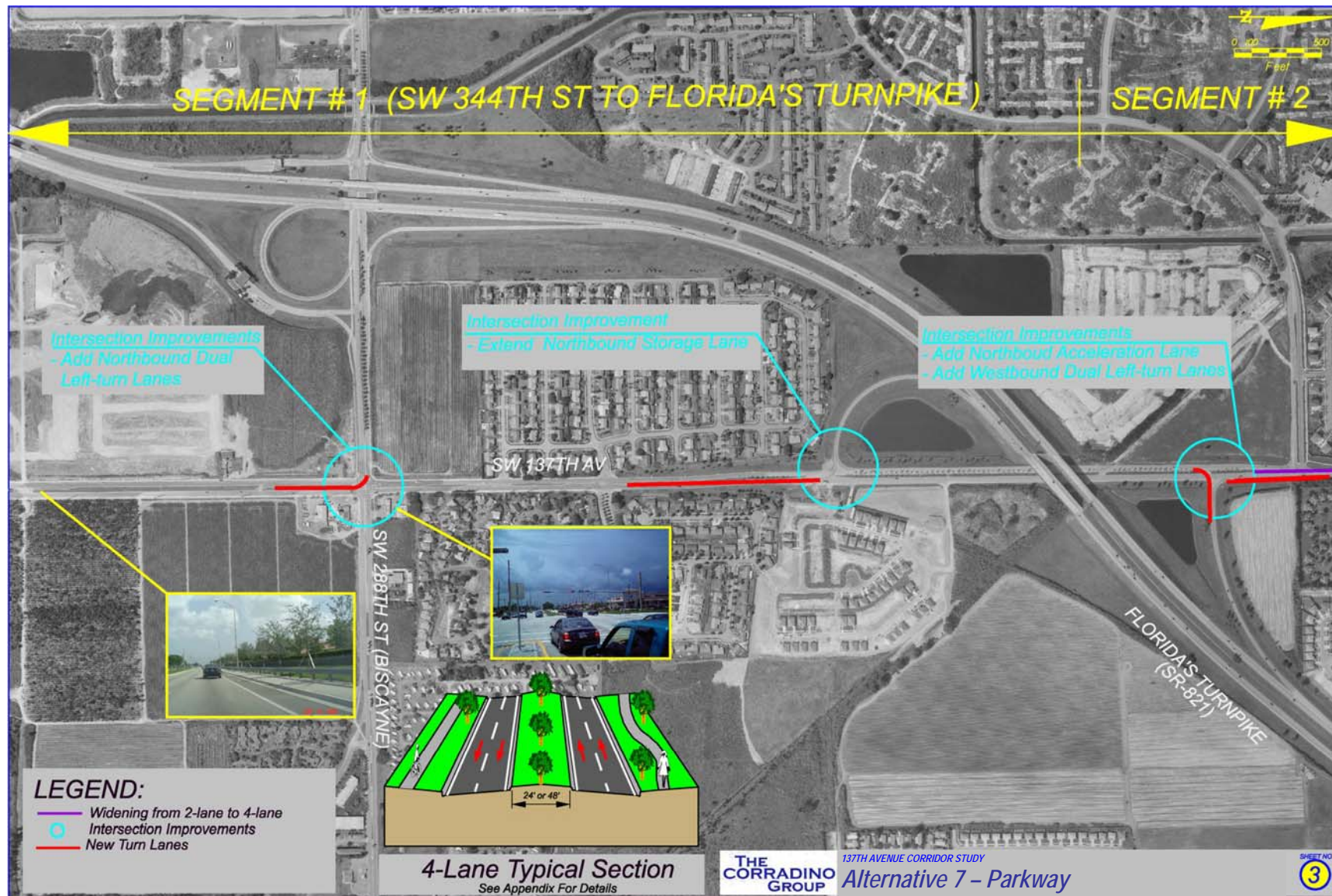


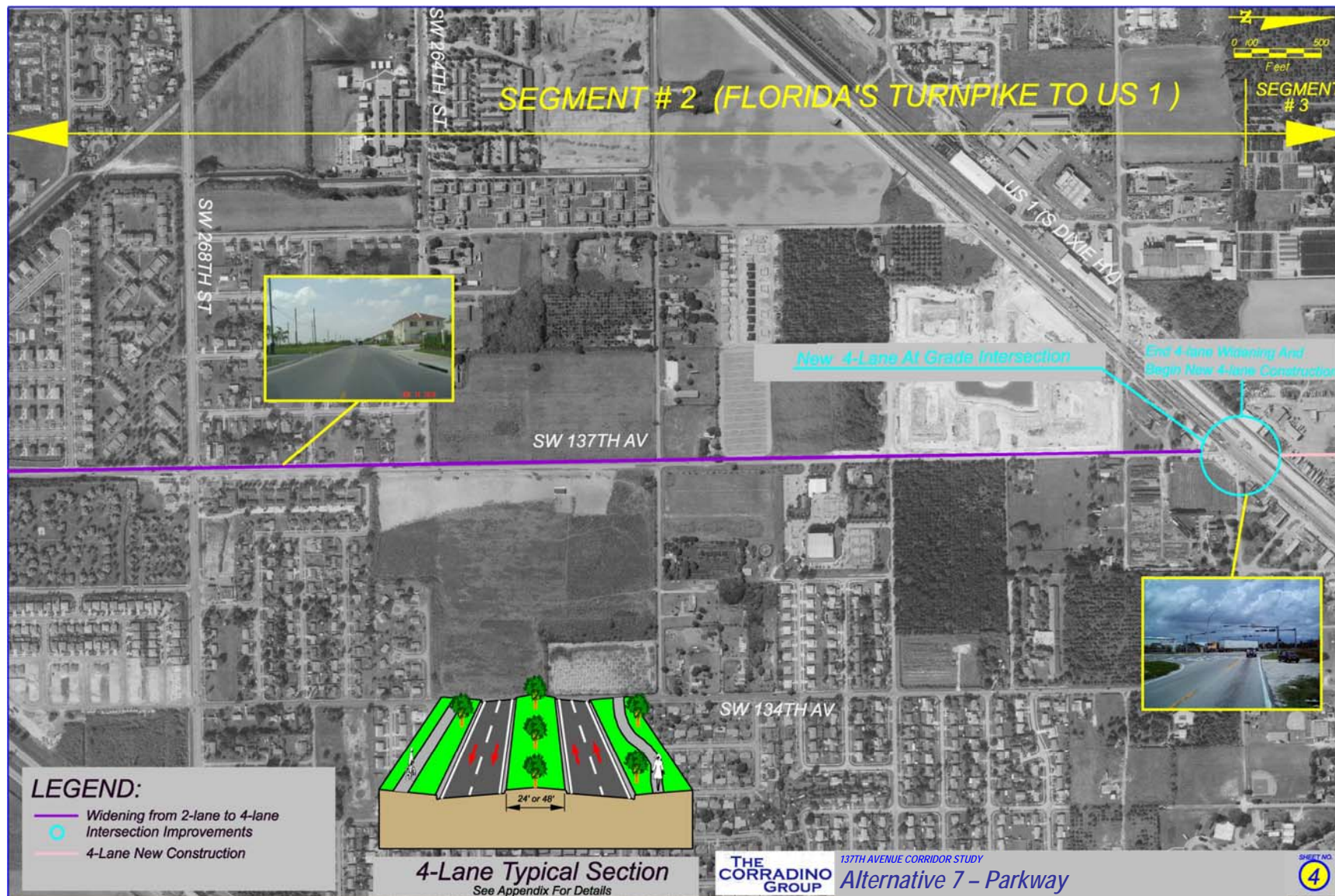


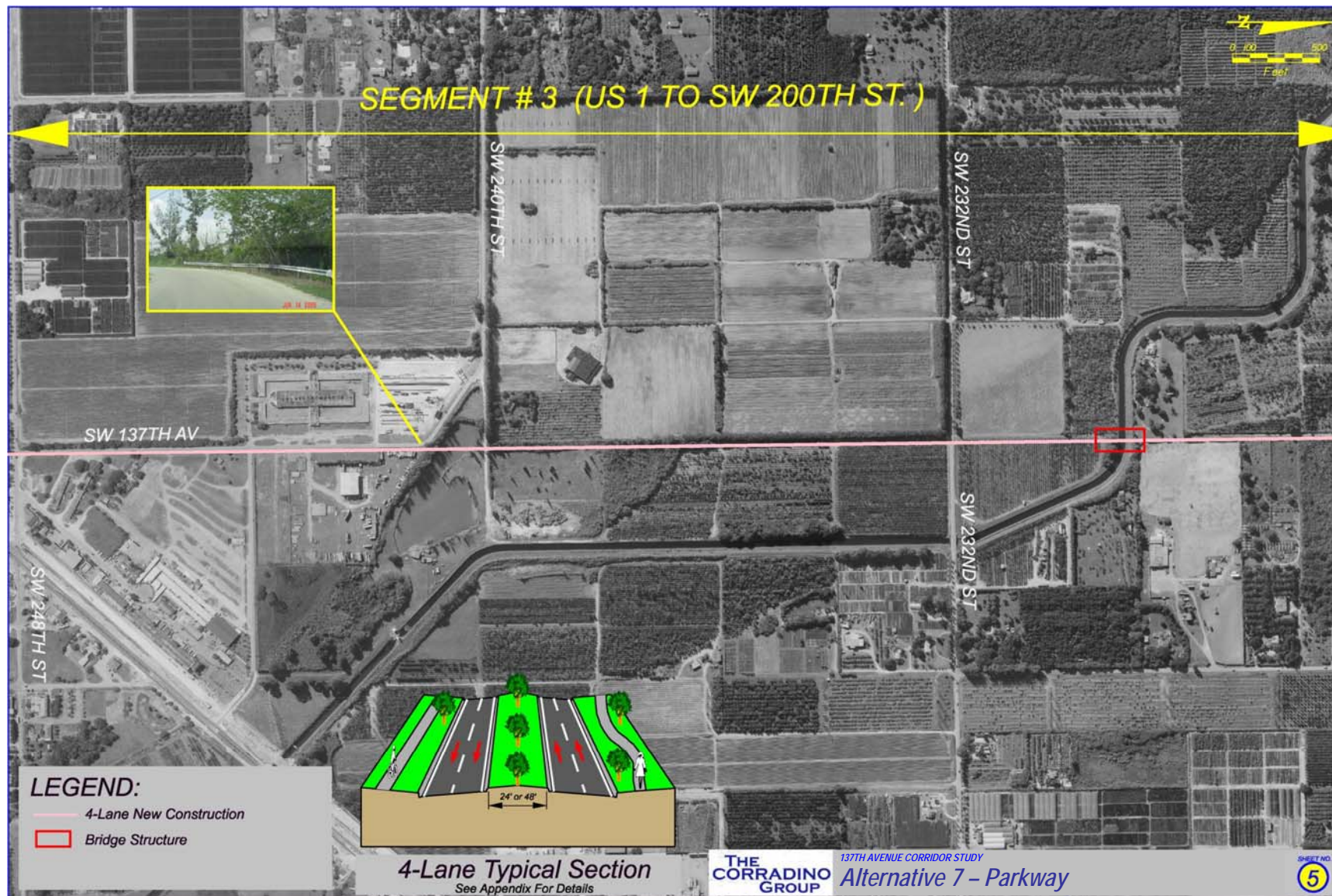


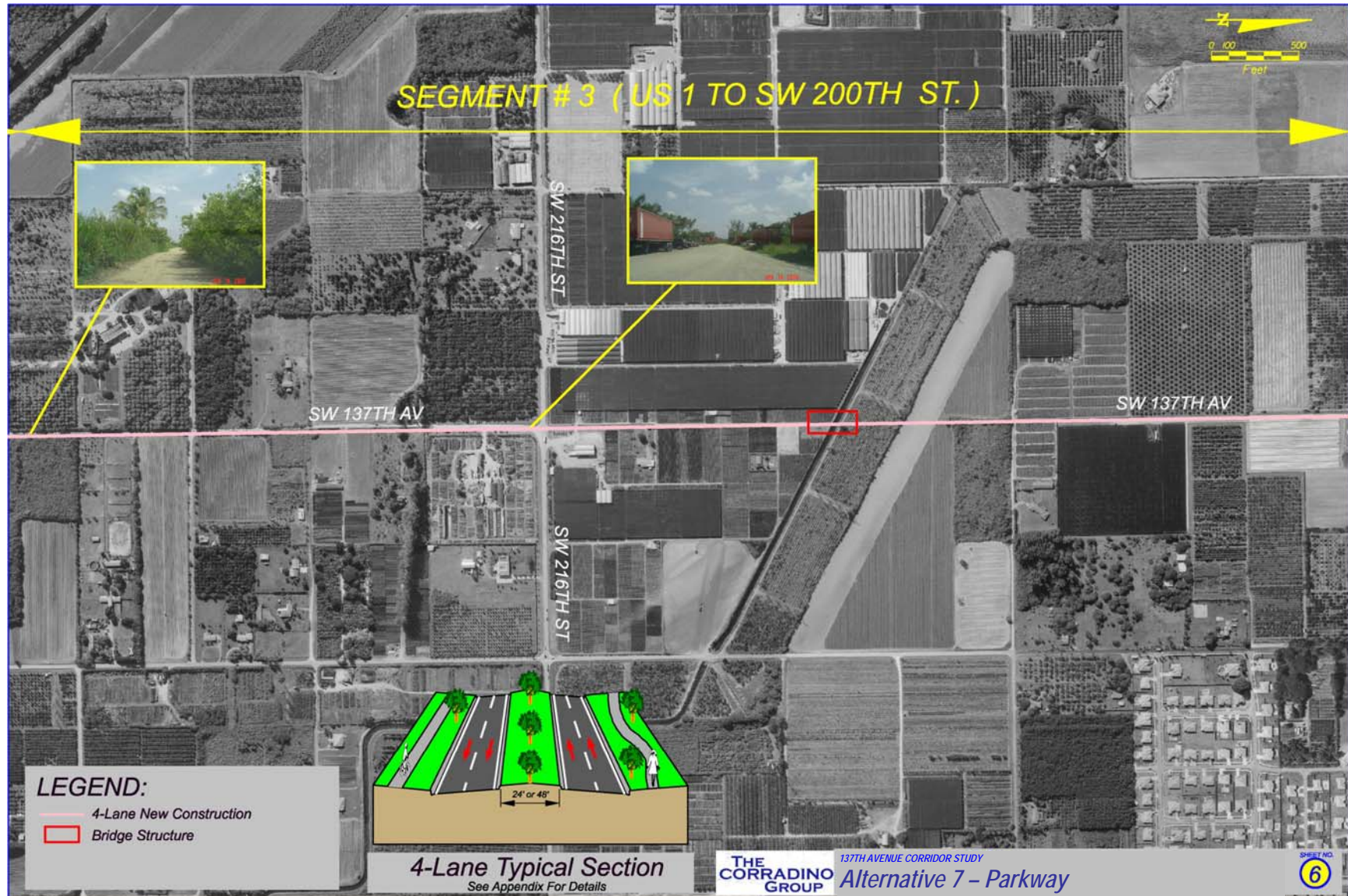


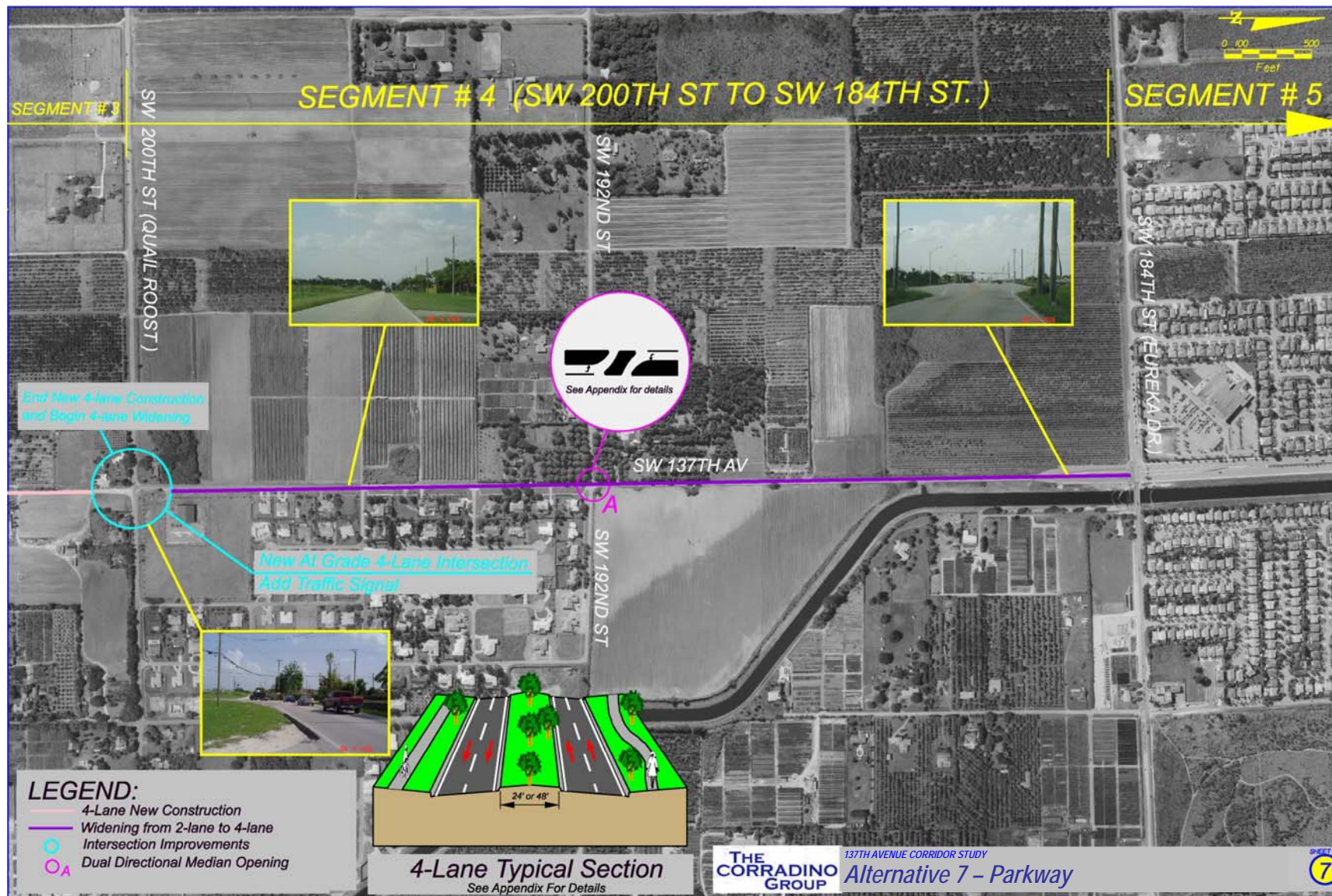




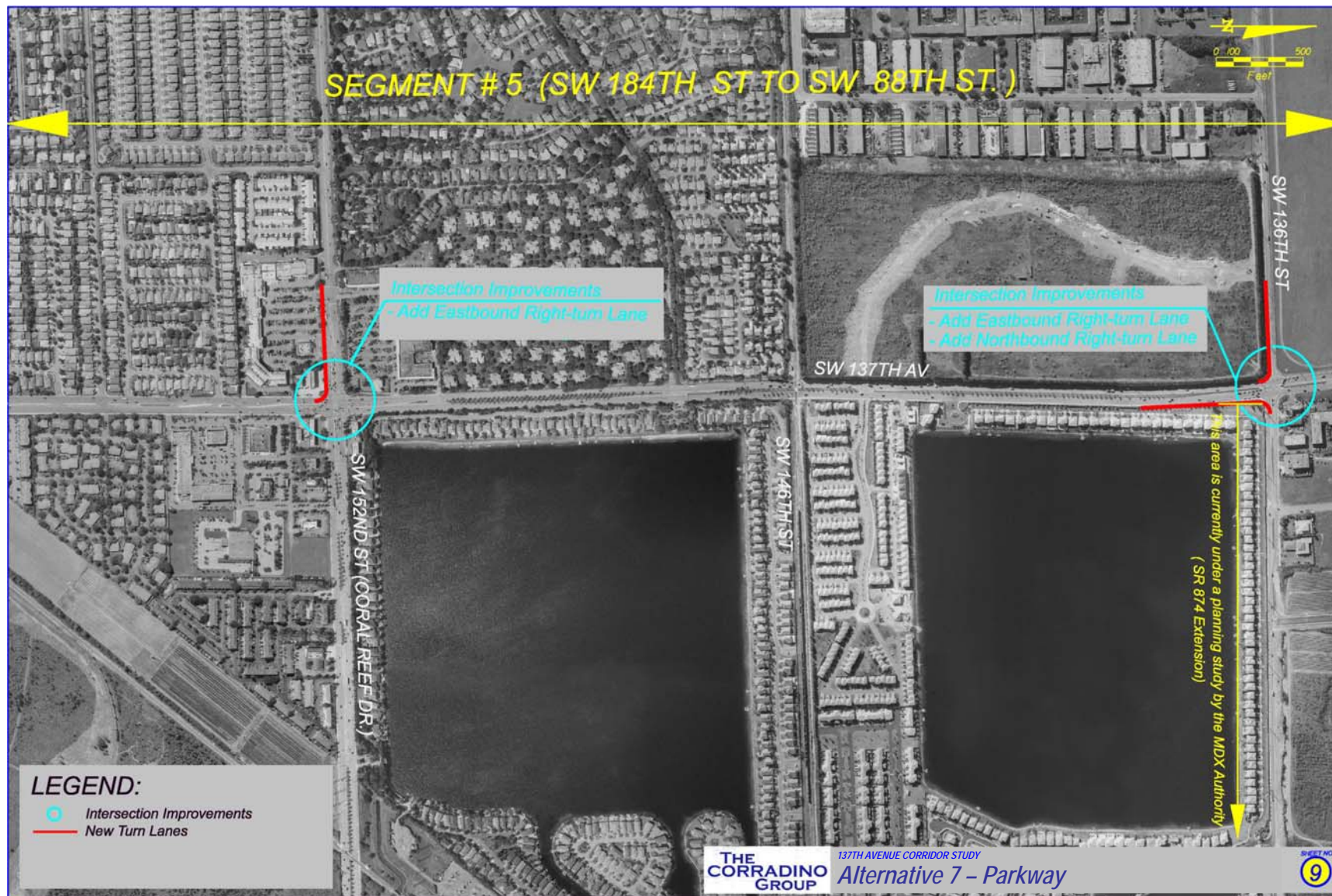


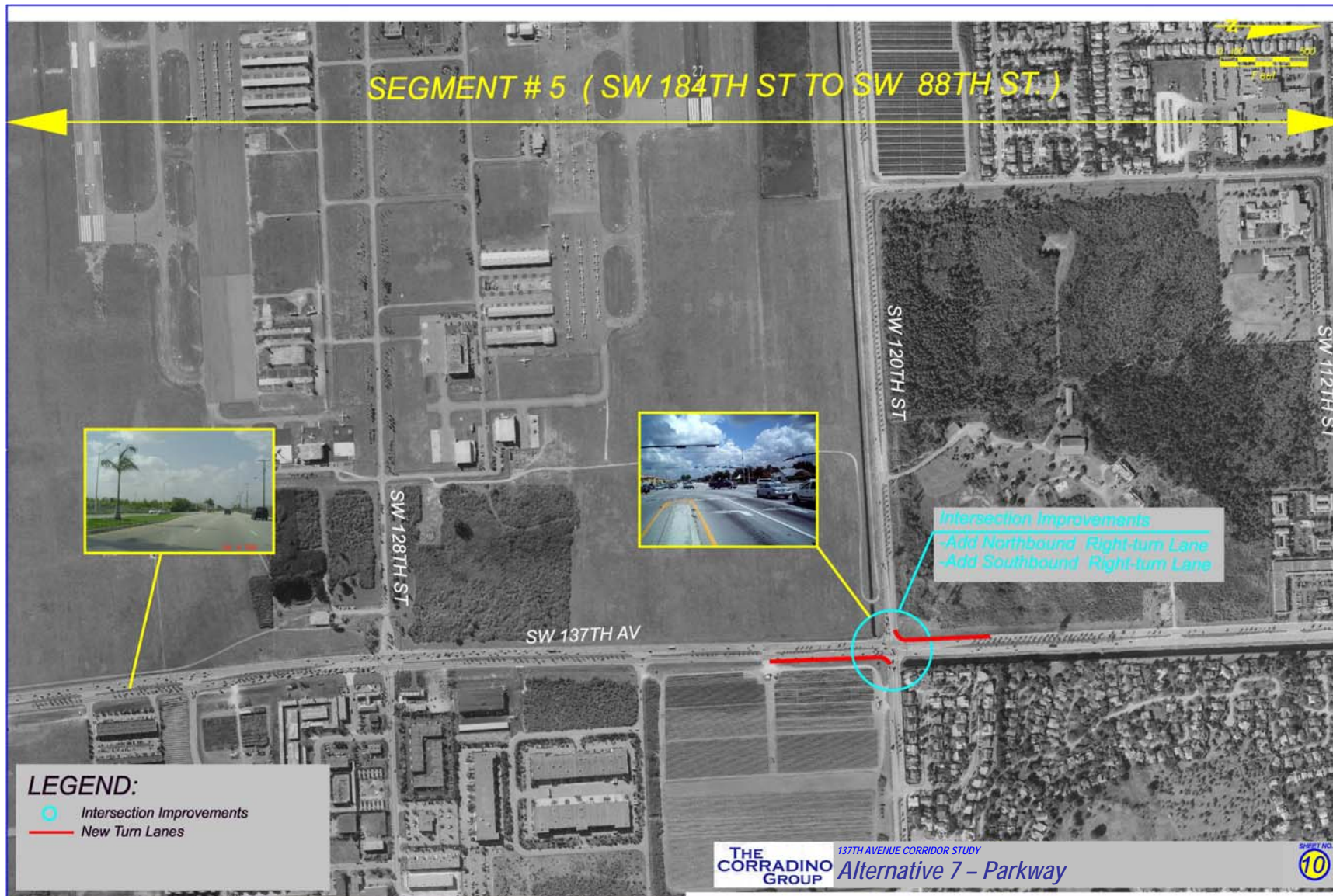




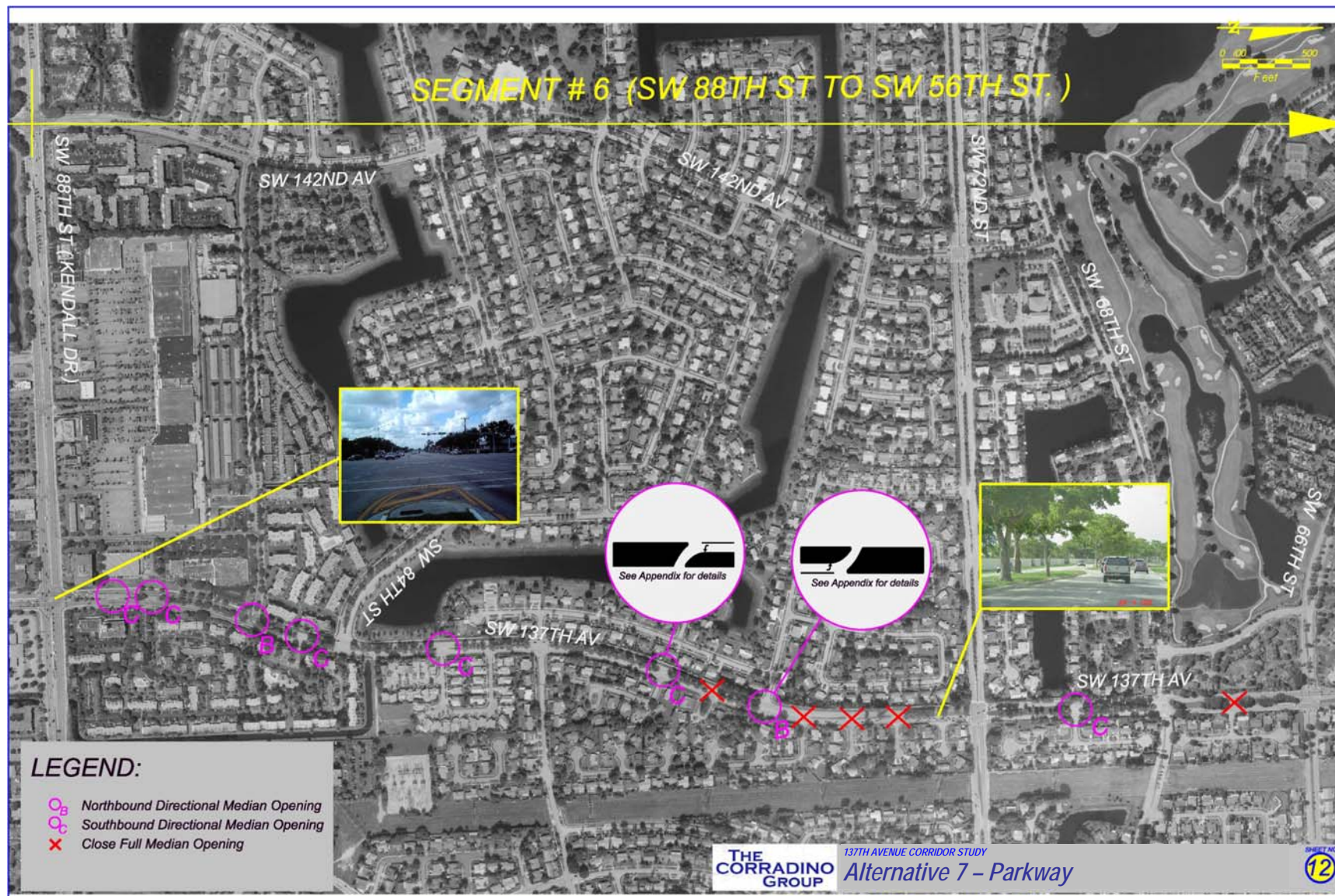


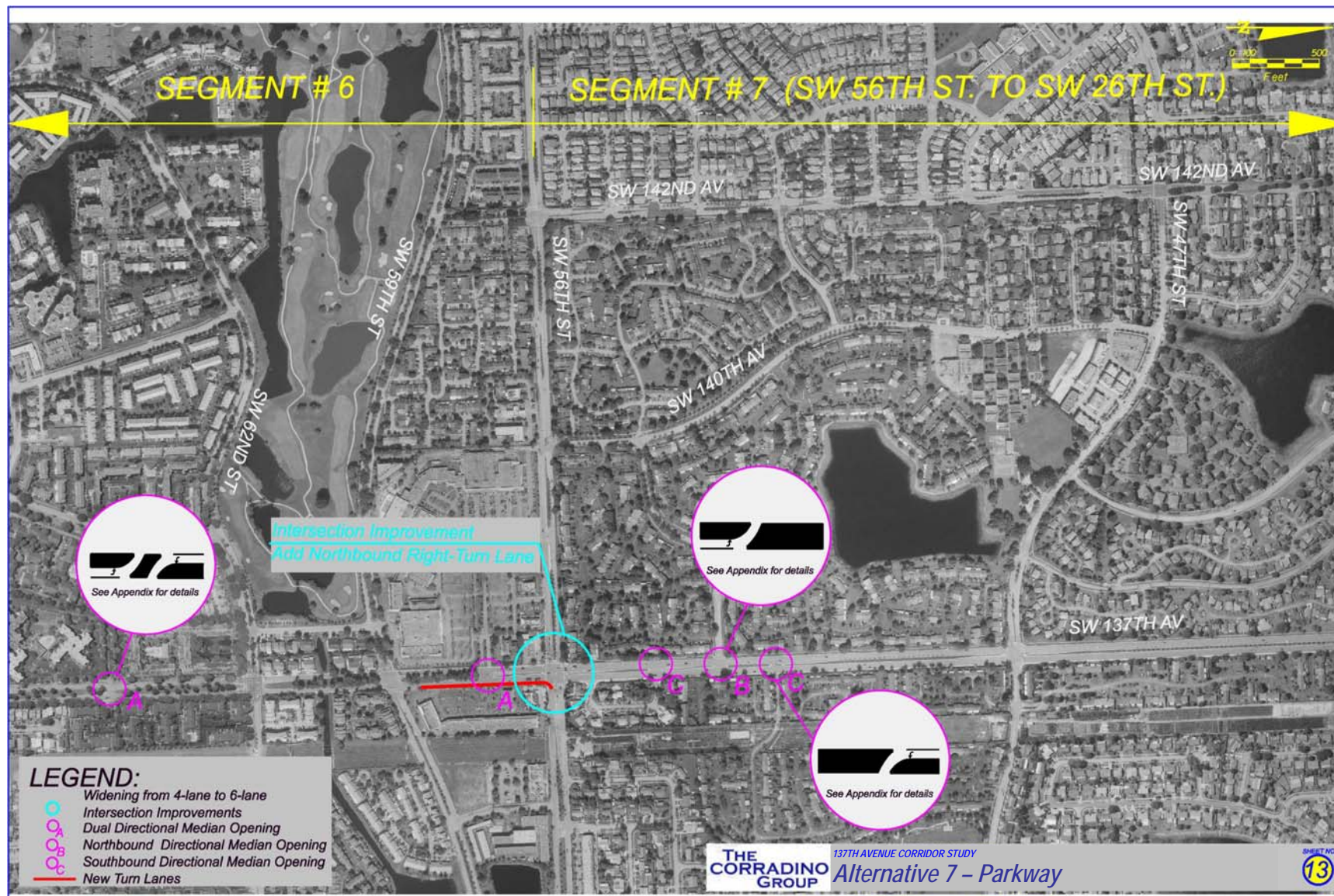






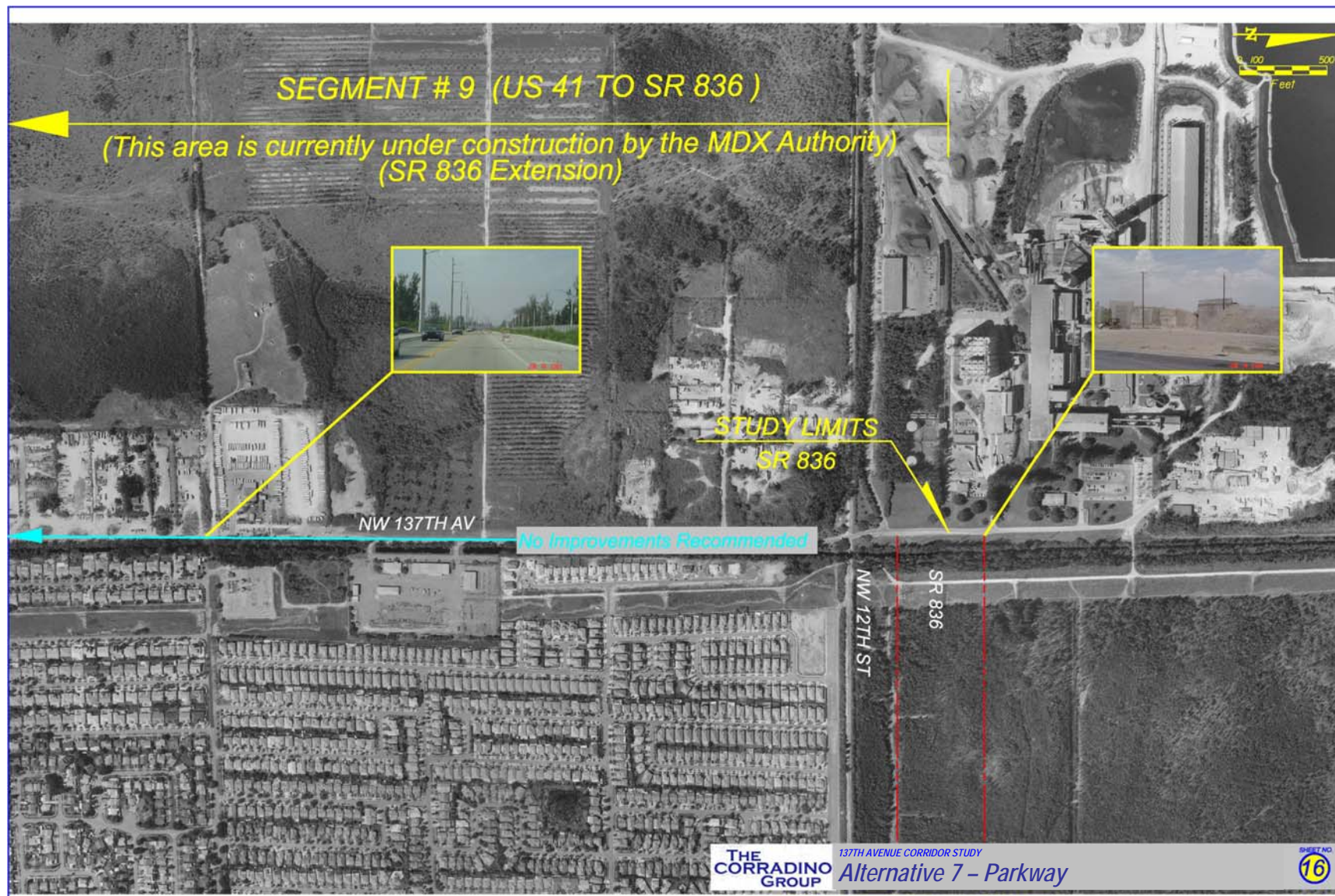












DIRECTIONAL MEDIAN OPENING DETAILS



A - DUAL DIRECTIONAL
MEDIAN OPENING

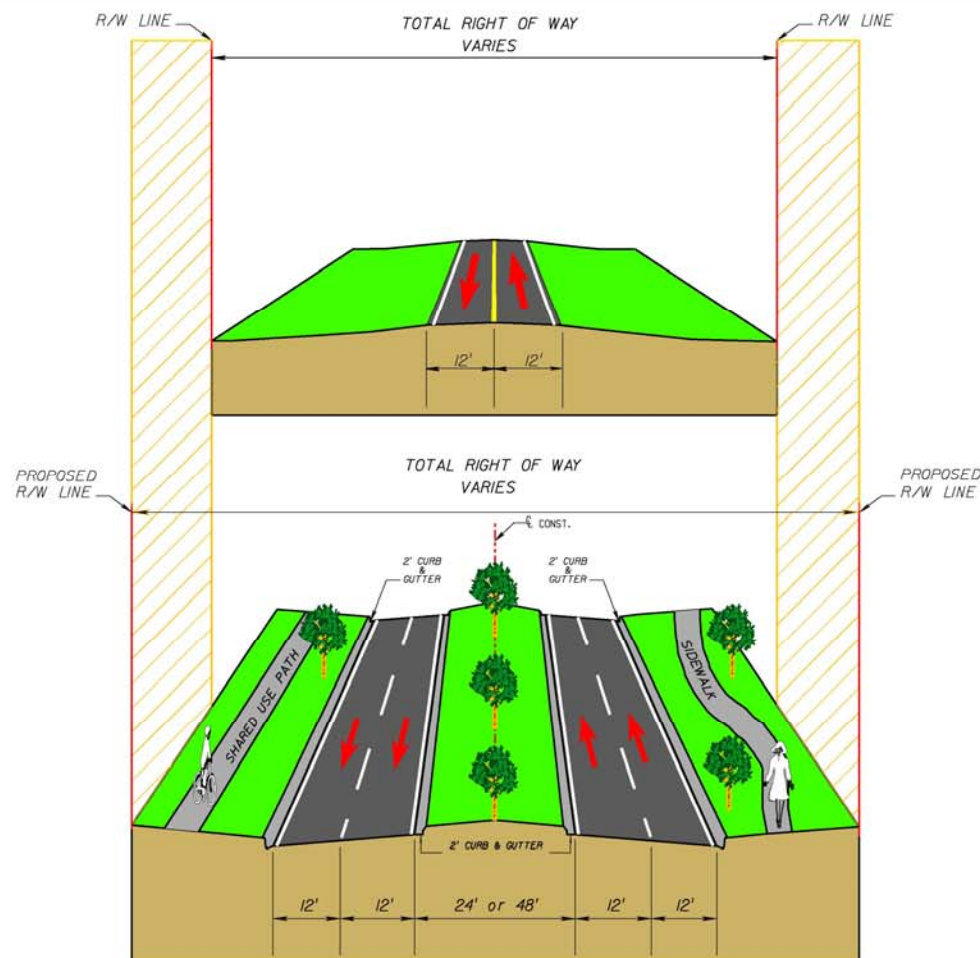


B - NORTHBOUND DIRECTIONAL
MEDIAN OPENING

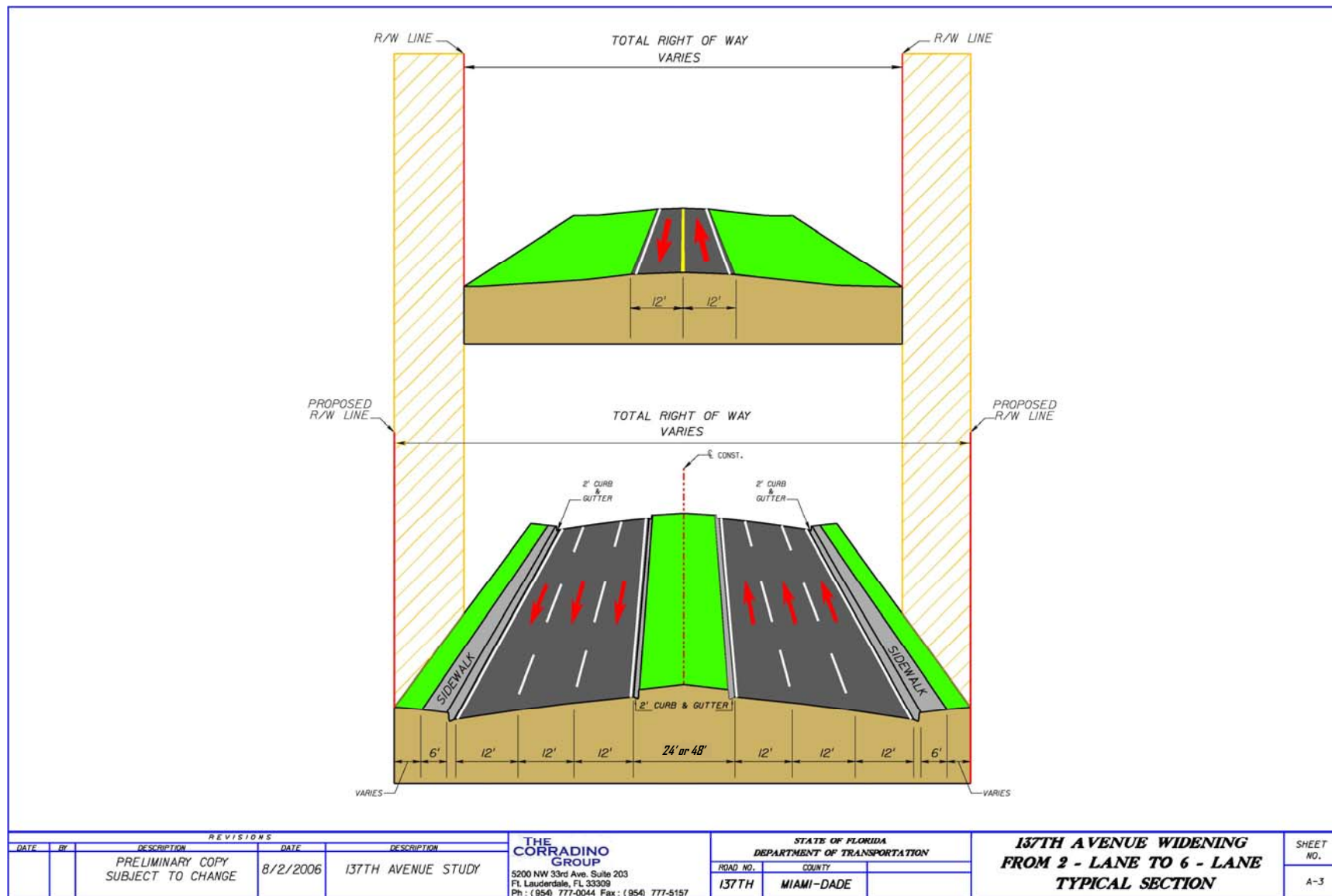


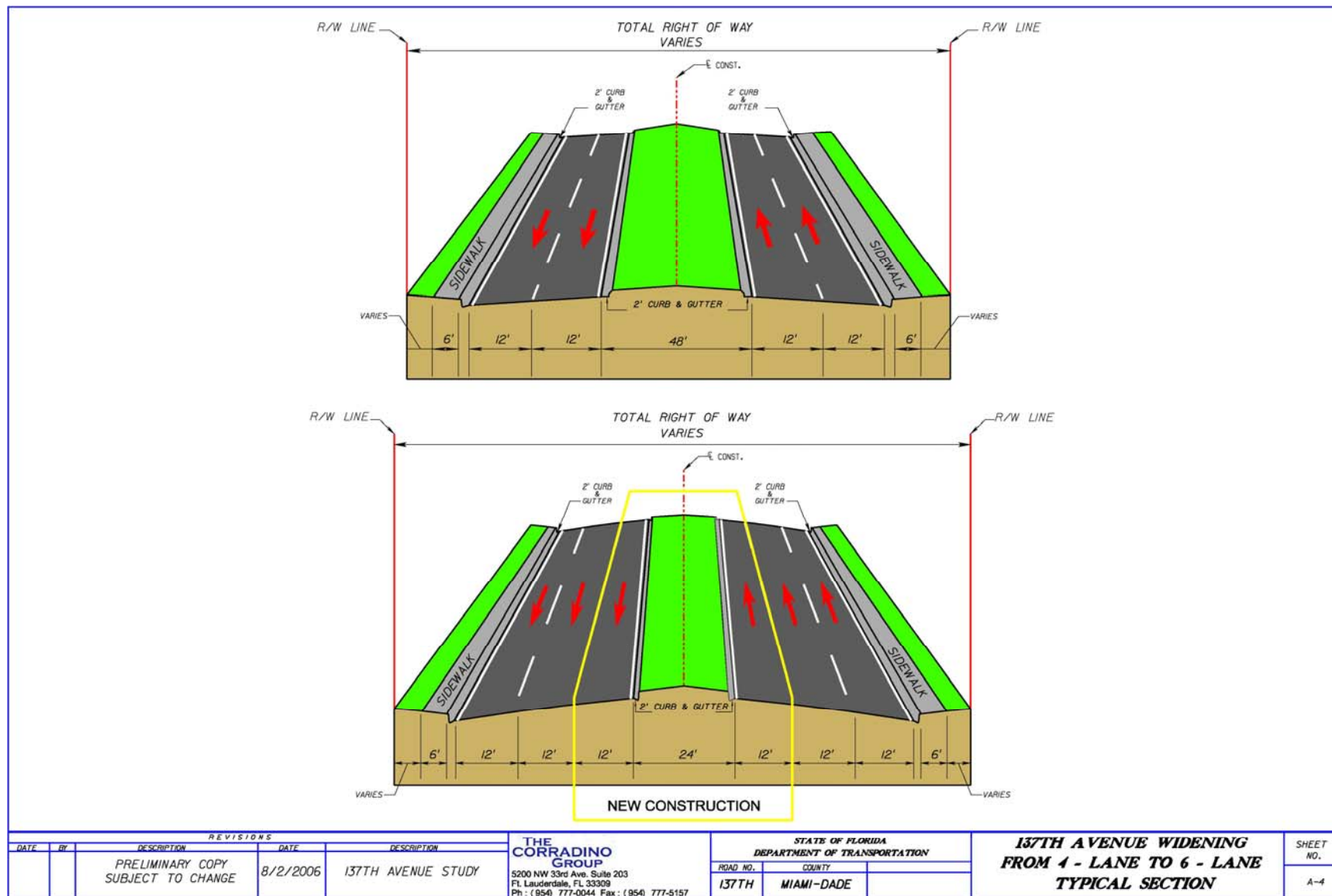
C - SOUTHBOUND DIRECTIONAL
MEDIAN OPENING

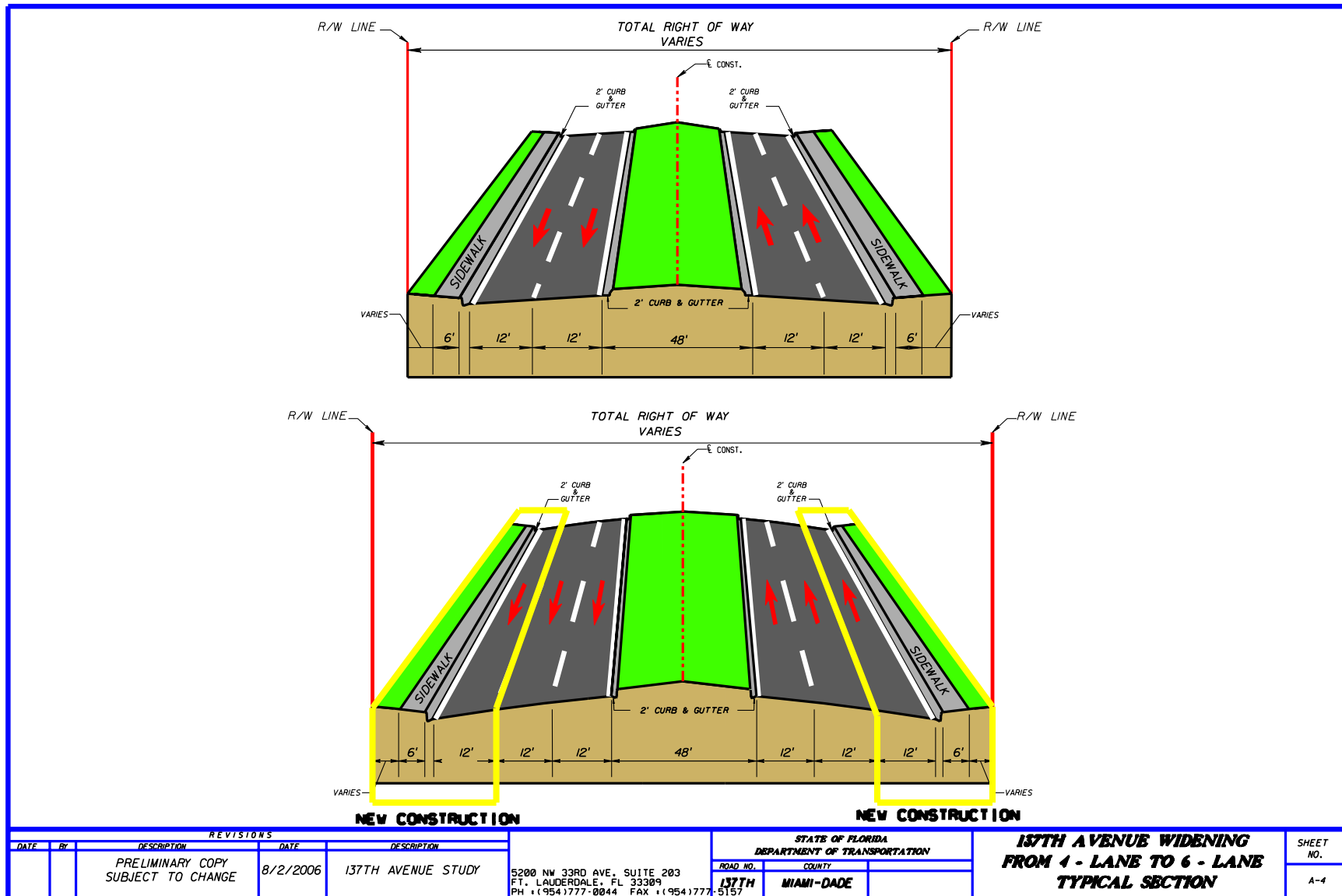
REVISIONS				THE CORRADINO GROUP	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		137TH AVENUE DIRECTIONAL MEDIAN OPENING DETAILS	SHEET NO. A-1
DATE	BY	DESCRIPTION	DATE		ROAD NO.	COUNTY		
		PRELIMINARY COPY SUBJECT TO CHANGE	8/2/2006	137TH AVENUE STUDY	5200 NW 33rd Ave, Suite 203 Ft. Lauderdale, FL 33309 Ph: (954) 777-0044 Fax: (954) 777-5157	137TH	MIAMI-DADE	



REVISIONS				THE CORRADINO GROUP 5200 NW 33rd Ave. Suite 203 Ft. Lauderdale, FL 33309 Ph: (954) 777-0044 Fax: (954) 777-5157	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		137TH AVENUE WIDENING FROM 2 - LANE TO 4 - LANE TYPICAL SECTION	SHEET NO. A-2
DATE	BY	DESCRIPTION	DATE		ROAD NO.	COUNTY		
		PRELIMINARY COPY SUBJECT TO CHANGE	8/2/2006		137TH	MIAMI-DADE		







Appendix D

PowerPoint Presentation
with Before and After Renderings

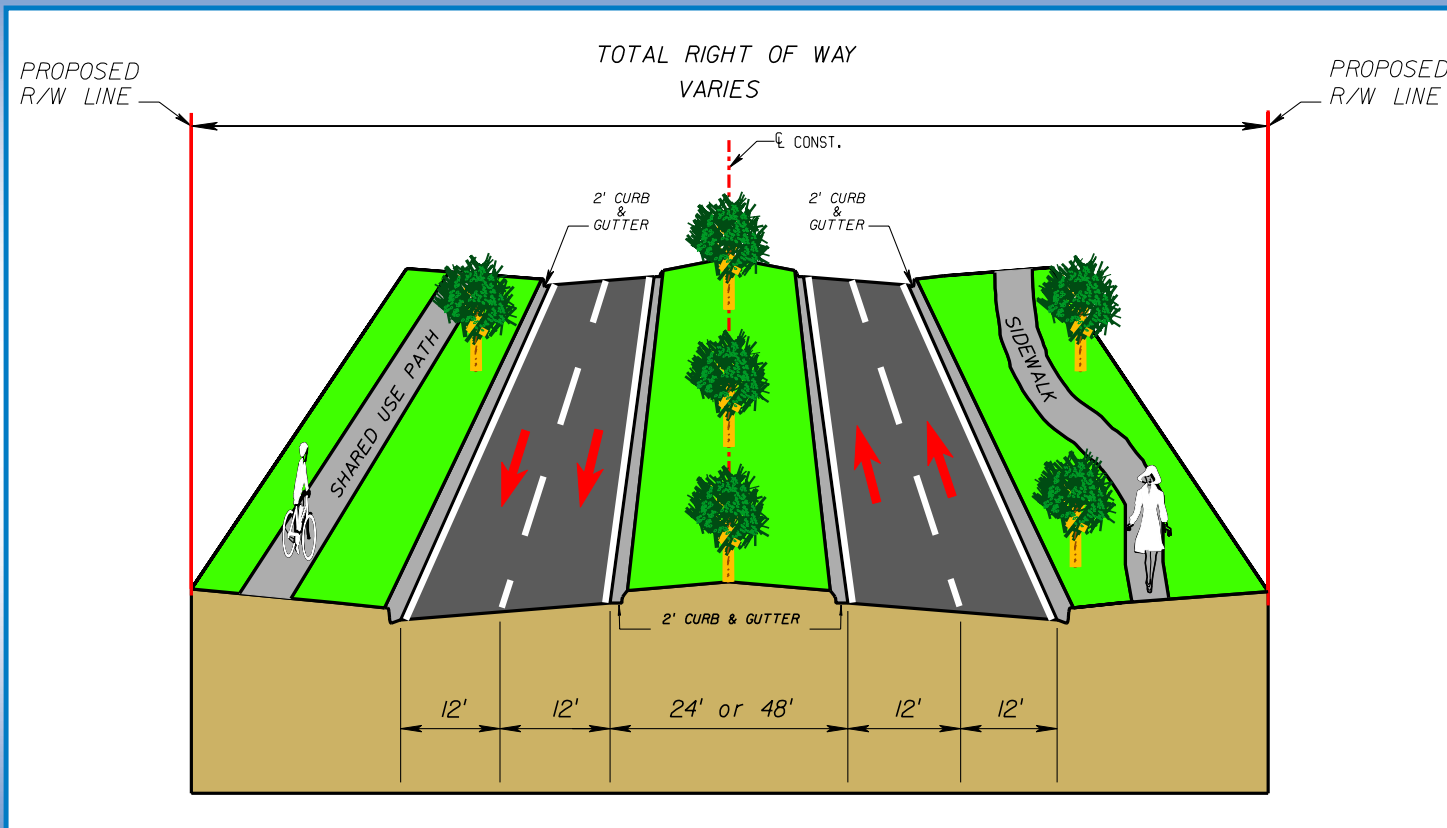
137th Avenue Corridor Study

From SW 344th Street in Florida City
to the Extension of SR 836

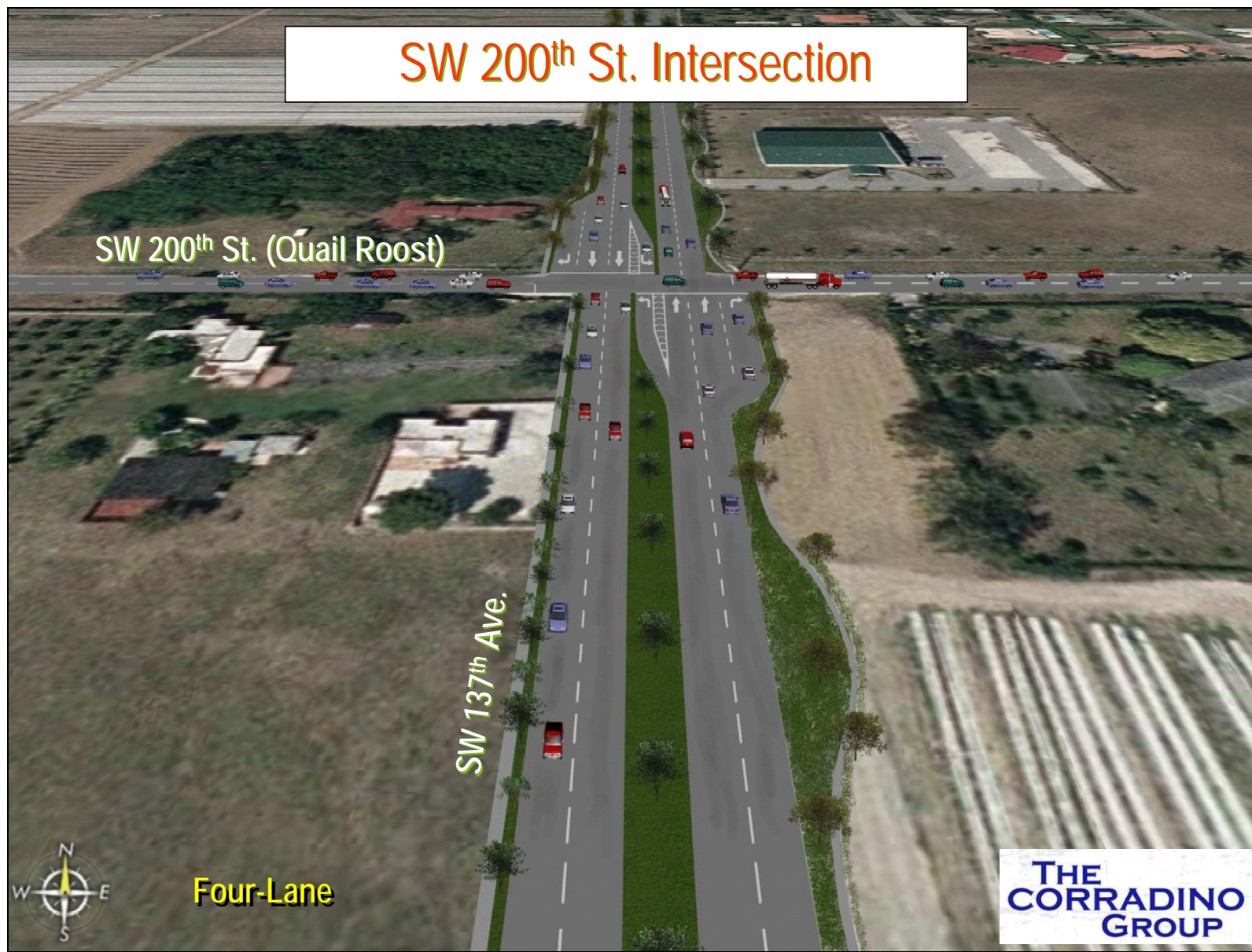
North of SW 56th Street



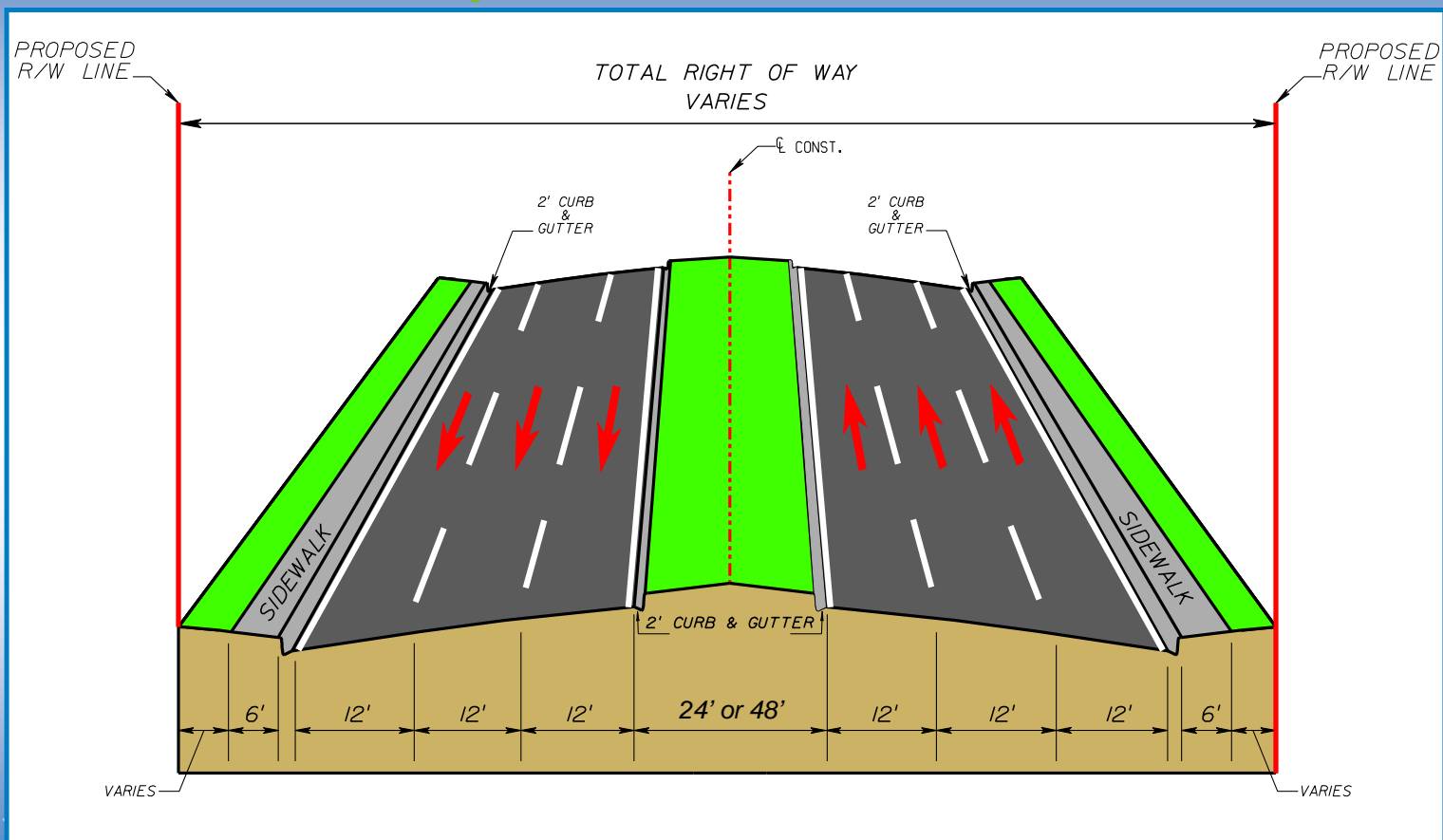
Four-Lane Parkway Facility (Boulevard with CSD)







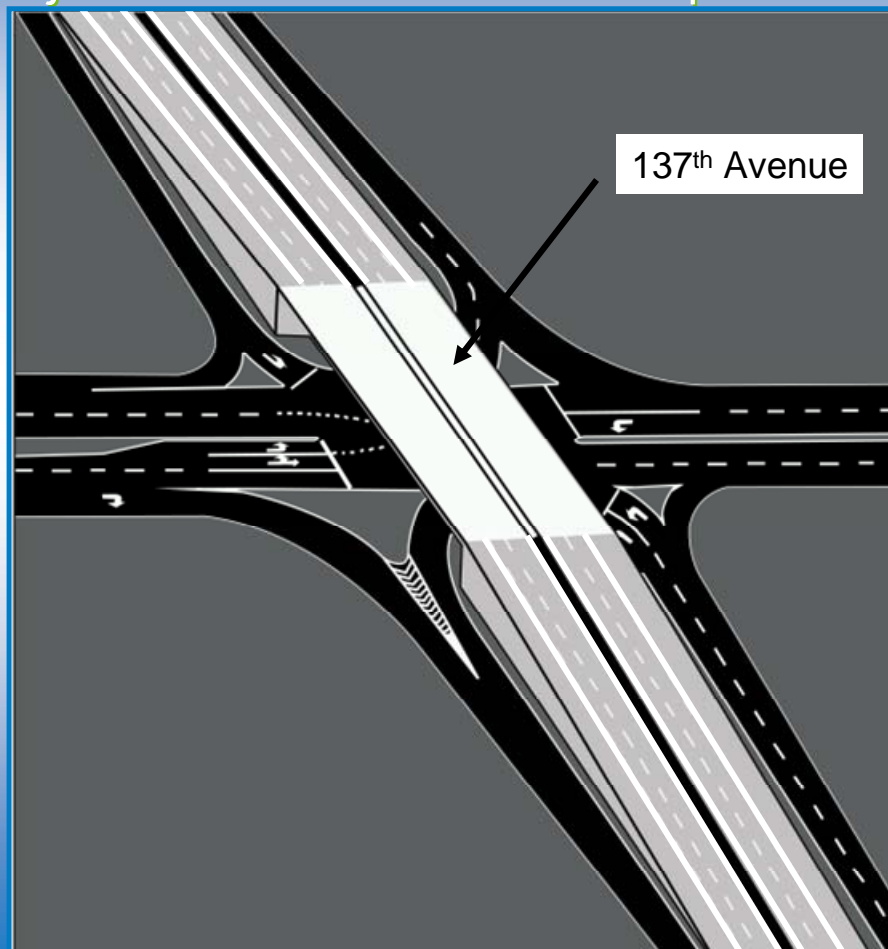
Six-Lane Major North-South Corridor

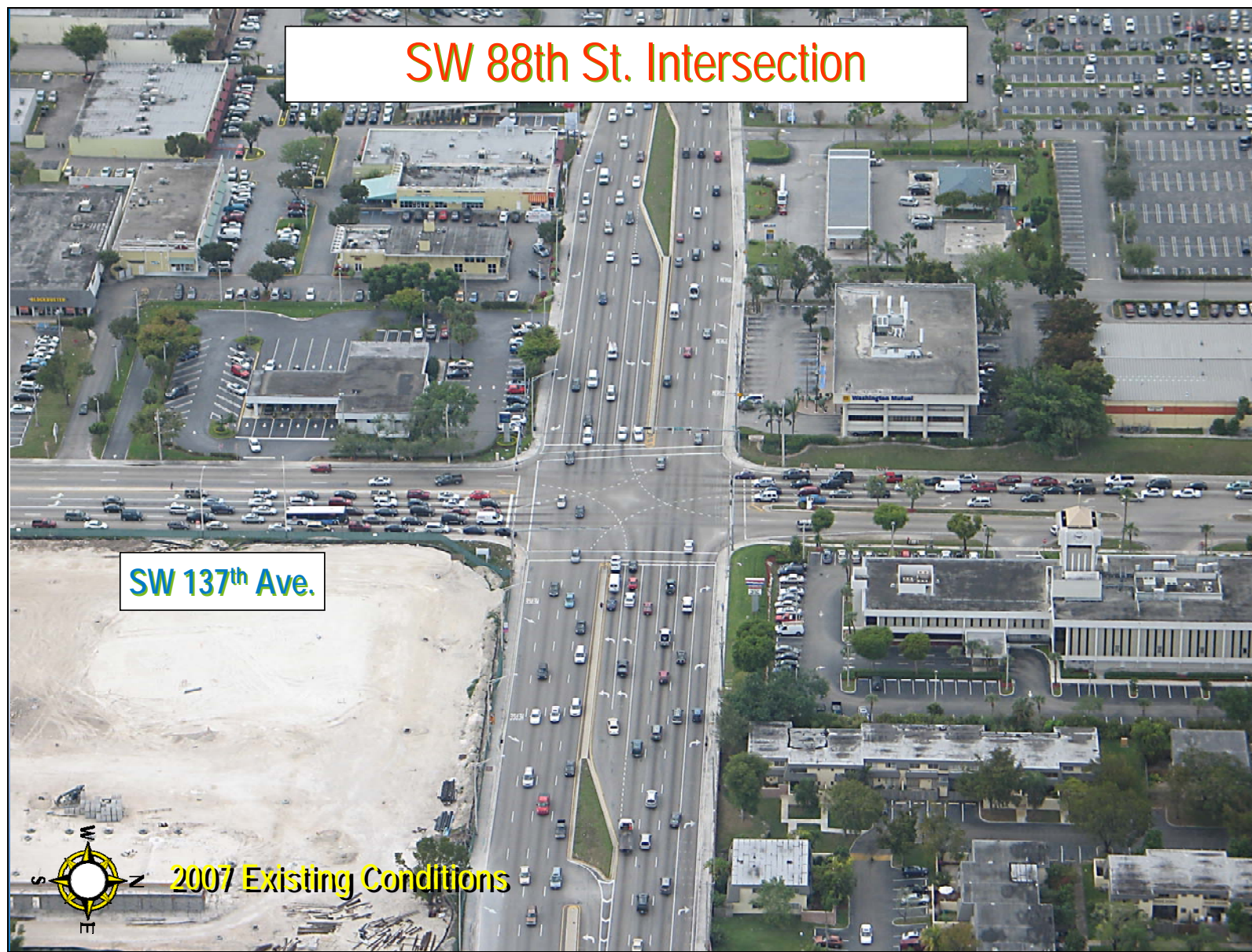


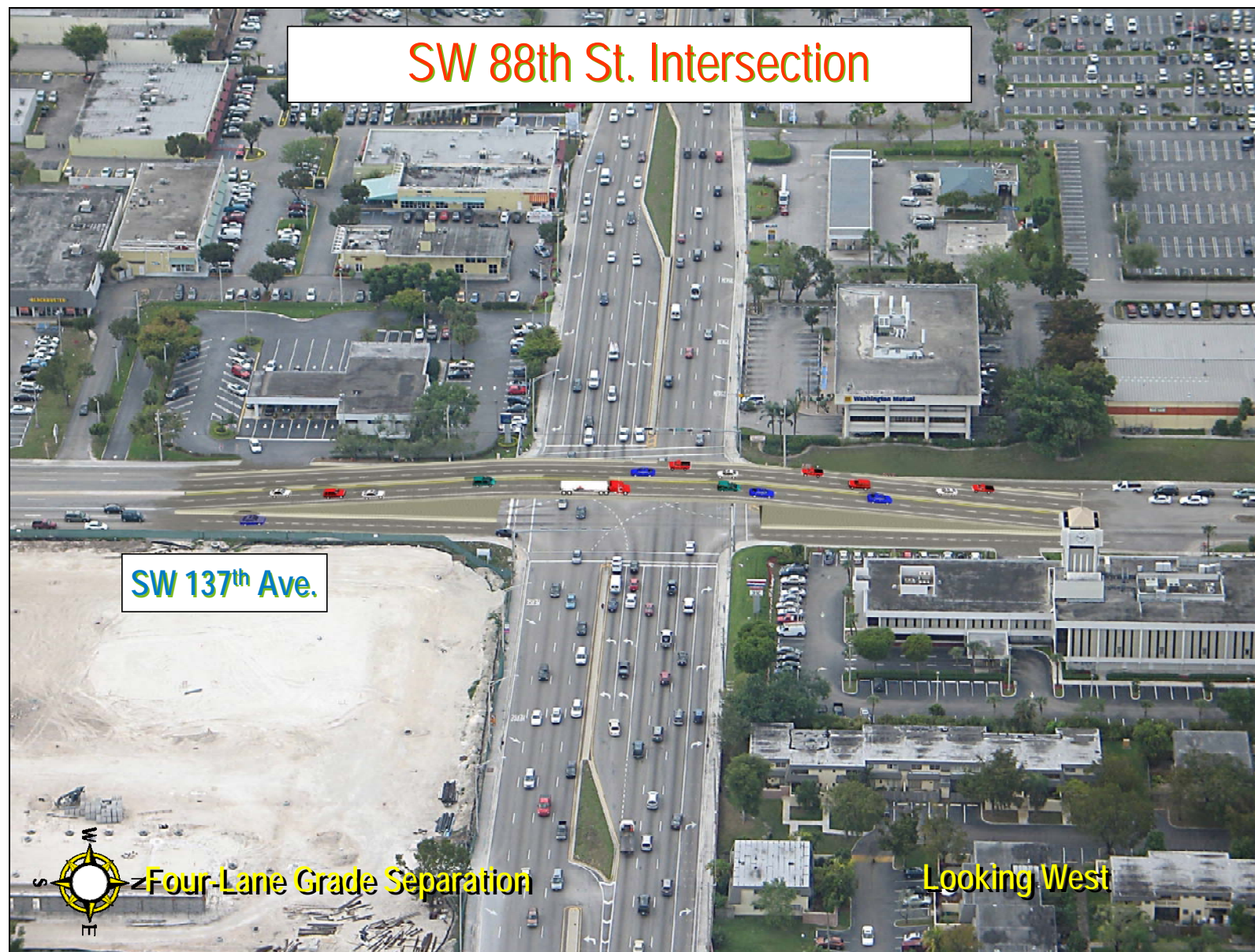




Six-Lane & Grade Separation High-Flow Arterial Facility (Major North-South Urban Principal Arterial)









Appendix E

Kendall Corridor Study
137th Avenue BRT Alternative



Alternative D1 - SW 137th Avenue Corridor

Bus Rapid Transit (BRT)



Projected ridership

D1-BRT
Daily Trips
7,785

Estimated operating and capital costs (millions)

D1-BRT
Operating costs
\$6.5
Capital costs
\$407.9
Capital cost per passenger mile
\$41.99

Travel Times

Station	D1-BRT
Distance and travel time from SW 152ND Street / SW 117th Avenue Park and Ride	
- Cumulative Mileage	0
- Arrival time in minutes	—
Florida International University Metrorail Station	
- Cumulative Mileage	12.63
- Arrival time in minutes	40 min
Miami Intermodal Center/Miami International Airport	
- Cumulative Mileage	22.88
- Arrival time in minutes	55-60 min
Government Center	
- Cumulative Mileage	30.58
- Arrival time in minutes	70-75 min

Service characteristics and community impacts

	System Characteristics			Community Indicators		
	Capital cost	Operations cost	Potential ridership	Interaction with auto traffic	Noise and vibration	Potential land requirement
D1 - BRT	High	Medium	Medium	High	Medium	Medium
	High:	Medium:			Low:	

137th Avenue Corridor Study

Executive Summary

The Miami-Dade County Metropolitan Planning Organization (MPO) is evaluating roadway and safety improvement alternatives along the 137th Avenue Corridor from SW 344th Street to the Extension of SR 836. The study area extends approximately twenty three (23) miles within Miami-Dade County, Florida. The project area is shown in Figure S-1. The proposed project is in the Planning phase in which preliminary planning and engineering studies are conducted.

Currently there are only three continuous north/south corridors between the Homestead/Florida City area and central Miami-Dade County:

- ◆ South Dixie Highway (US 1)
- ◆ Homestead Extension of Florida's Turnpike (HEFT) (SR 821)
- ◆ Krome Avenue (SR 997)

The primary purpose of this study is to examine the feasibility of making 137th Avenue the fourth north/south facility between Homestead and Central Miami-Dade.

Figure S-1
Project Location Map



Planning Issues

The development of a fourth north-south corridor in Miami-Dade County in the 137th Avenue corridor will require sections of new road, roadway improvements, and widening to result in a functional, safe facility. Currently, the County's Comprehensive Development Master Plan (CDMP) shows 137th Avenue as a continuous six-lane facility from NW 12th Street to SW 184th Street and as a continuous four-lane facility from SW 184th Street to SW 344th Street. The Metropolitan Planning Organization (MPO) is ultimately responsible for planning transportation projects in Miami-Dade County. As part of their responsibilities, they produce several documents that identify projects to be implemented. The most immediate of these documents is the Transportation Improvement Program (TIP), which is a five-year, cost-feasible program of projects to be implemented. Table S-1 shows the projects listed in the TIP for 137th Avenue and/or other projects that would impact traffic along 137th Avenue.

Table S-1
TIP Projects Impacting Corridor

MPO Project #	Facility	Limits	Project	Program Year
PS0000013	NW 137 th Avenue	NW 12 th Street to NW 17 th Street	New 4-lanes	NA*
PW20040343	SW 137 th Avenue	US 1 to SW 200 th Street	New 2 lane road	2009
PS0000017	SW 137 th Avenue	SW 72 nd Street to SW 88 th Street	Widen 4 to 6 lanes	NA
PW20040344	SW 137 th Avenue	US 1 to HEFT	Widen 2 to 4 lanes	2008
PW671561	SW 137 th Avenue	SW 88 th Street to SW 56 th Street	Reconstruct and add curb and gutter	NA
XA83605	SR 836 Extension	SW 137 th Avenue to SW 107 th Avenue	New 4-lane expressway extension	2007
PS0000114 PS0000124	NW 17 th Street	NW 127 th Avenue to NW 137 th Avenue	2-lanes and ½ turn lane	NA
PW671508	SW 104 th Street	SW 147 th Avenue to SW 137 th Avenue	Widen 4 to 6 lanes	NA
PW000321	SW 160 th Street	SW 147 th Avenue to SW 137 th Avenue	New 4-lane road	2007
PW67152AB	SW 184 th Street	SW 147 th Avenue to SW 127 th Avenue	Widen 2 to 4 lanes	NA
PW20040347	SW 180 th Street	SW 147 th Avenue to SW 137 th Avenue	Traffic operations improvements	2007
PW20040350	SW 264 th Street	SW 147 th Avenue to SW 137 th Avenue	Traffic operations improvements	2007
PW0000149	SW 268 th Street	SW 147 th Avenue to SW 112 th Avenue	Add exclusive turn lanes	NA
PW000515	SW 328 th Street	US 1 to SW 137 th Avenue	Widen 2 to 4 lanes	NA

*A construction year is not identified in the TIP.

The MPO is also responsible for producing the County's Long-Range Transportation Plan (LRTP), which is a twenty-year forecast of transportation projects to be built.

First adopted by the MPO Governing Board in November 1990, the 137th Avenue projects were first proposed in the Metro-Dade Transportation Plan and Priorities Long Range Element to the Year 2010. The Plan listed 137th Avenue from SW 184th Street to US 1 as a Priority II (1995-2000) project for roadway widening from two to six lanes. The four-lane widening of the 137th Avenue from US 1 to SW 312th Street was listed as a Priority III (2000-2005) project. The two 137th Avenue corridor projects have remained in the County's LRTP through all subsequent updates.

The most recent version of the LRTP had several projects related to 137th Avenue as shown in Table S-2.

Table S-2
LRTP Projects Impacting Corridor

Facility	Segment	Project
Priority I		
NW 137 th Avenue	NW 12 th to NW 17 th Street	New 4-lane
NW 137 th Avenue	NW 12 th to SW 8 th Street	New 6-lane (construction complete Fall 2006)
SW 137 th Avenue	SW 8 th to SW 26 th Street	Widen 4 to 6 lanes
SW 120 th Street	SW 137 th Avenue to SW 117 th Avenue	Widen 4 to 6 lanes
Priority II		
SW 137 th Avenue	SW 120 th to 128 th Street	ITS (CCTV, Roadway sensors, arterial dynamic message signs, wireless comm.)
SW 137 th Avenue	SW 200 th Street to US 1	Widen 2 to 4 lanes
SW 120 th Street	SW 147 th Avenue to SW 137 th Avenue	Widen 2 to 4 lanes

In May 2005, the MPO amended the Long-Range Transportation Plan to include the 137th Avenue projects listed below:

- ◆ The extension of SW 137th Avenue from US 1 to SW 200th Street as two-lane roadway in Priority I (2005-2009) of the LRTP.
- ◆ Widen SW 137th Avenue from US 1 to the Homestead Extension of the Florida's Turnpike (HEFT) from two-lane to a four-lane roadway in Priority I (2005-2009) of the LRTP.
- ◆ Widen the extension of SW 137th Avenue from US 1 to SW 200th Street from two-lane to a four lane roadway in Priority III (2015-2020) of the LRTP.

Urban Development Boundary

One portion of the 137th Avenue alignment forms the Urban Development Boundary (UDB) between SW 184th Street and SW 200th Street. The portion of the corridor from SW 200th Street to just north of US 1 lies outside of the UDB.

- ◆ Policy 2B of the land use element of the Miami-Dade CDMP states Priority in the provision of services and facilities and the allocation of financial resources for services and facilities in the County shall be given first to serve the areas within the UDB of the Land Use Plan (LUP) map. Second priority shall support the staged development of the Urban Expansion Area (UEA). Urban services and facilities which support and encourage urban development in Agricultural and Open Land areas shall be avoided, except for those improvements necessary to protect public health and safety and which service the localized needs of these non-urban areas.

Given that, it will be necessary to review the project within the context of the UDB and existing zoning and development.

Traffic Volumes

Currently, 137th Avenue functions very much like a suburban arterial. There are no obvious origins or destinations along the arterial and trips are made along the street to distribute to other major east-west arterials. As is evident in Table S-3, traffic volumes rise and fall as they approach major east/west cross streets. The high 24-hour north/south volumes on 137th Avenue are the highest closest to the major east-west arterials such as Kendall Drive, SW 56th Street and US 41 indicating that 137th Avenue is feeding the east/west arterials.

Table S-3
2005 Traffic Volumes*

	24 Hour Volumes		AM Peak Hour		PM Peak Hour	
137th Avenue	SB	NB	SB	NB	SB	NB
Coral Way	20,081	20,407	744	1926	1836	1116
Bird Road	18908	18695	781	1553	1644	1063
SW 56 th Street	20363	20777	818	1571	1613	1250
SW 72 nd Street	16360	16783	1160	1321	1269	1311
Kendall Drive	21300	23813	1259	1227	1421	1531
SW 104 th Street	21944	21763	1495	1496	1353	1409
SW 152 nd Street	24665	23858	879	1992	1990	1174
SW 288 th Street	9542	8516	780	665	742	664
Cross Streets	WB	EB	WB	EB	WB	EB
US 41	22000	20500	n/a	n/a	n/a	n/a
Coral Way	17561	16791	617	1282	1517	772
Bird Road	13733	13494	767	1780	1333	816
SW 56 th Street	18473	19579	516	1744	1671	1146
Kendall Drive	41500	40,500	n/a	n/a	n/a	n/a
SW 184 th Street	8793	7895	469	66	788	417
SW 200 th Street	6327	6184	147	610	385	340
SW 232 nd Street	2904	2311	50	264	158	63
SW 288 th Street	9326	10919	214	707	582	745

* Available Miami-Dade Traffic Counts

This feeder function of the roadway can also be seen for the AM and PM peak period. At the north end of the corridor during the AM peak period, traffic is much higher going north (toward US 41) than it is going south. In the center of the corridor, traffic is exactly evenly split as drivers head from both directions to SW 88th Street/Kendall Drive and SW 104th Street/Killian Drive to head east. The reverse phenomenon holds true in the PM peak period with traffic flowing from US 41 at the north and traffic evenly split in the Kendall/Killian area.

The planned MDX extension of SR 874 to 137th Avenue along SW 136th Street would tie into the portion of 137th Avenue carrying the heaviest volumes. Table S-4 shows that the impacted portion of 137th Avenue is already carrying between 45,000 and 48,500 trips per day. The impact of the SR 874 extension on 137th Avenue will need to be carefully considered. This extension could either increase traffic on the facility as traffic accesses SR 874 or it could decrease volumes as trips are diverted to SR 874.

The volumes from the 2030 LRTP model for Miami-Dade County were obtained to examine the future demand for the corridor. The 2030 network includes all of the projects in the LRTP prior to the May 2005 amendment which extended 137th Avenue between SW 200th Street and US 1. The 2030 network includes the extensions of both SR 836 and SR 874, but not the southerly extension of 137th Avenue. Table S-4 shows the growth in two-way 24-hour volumes within the corridor between 2005 and 2030. The traffic volume comparison was only based on model projections.

Table S-4
137th Avenue
2005 - 2030 Traffic Volume Comparison
(2-way, 24-Hour Volumes)

Segment	2005 Volumes	2030 Volume	% Increase
SR 836 to US 41	Under Construction	70,748	-
US 41 to SW 26 th Street (Coral Way)	*30,189	50,352	67%
Coral Way to SW 42 nd Street (Bird Road)	40,488	56,014	38%
Bird Road to SW 88 th Street (Kendall Drive)	37,603	46,875	25%
Kendall Drive to SW 136 th Street	45,113	52,011	15%
SW 136 St to SW 184 th Street	48,523	60,099	24%
SW 184 St to SW 200 Street	*15,426	22,738	47%
US 1 to Florida's Turnpike	*7,437	14,226	91%
Florida's Turnpike to SW 344 Street	18,058	25,775	43%

2005 – Available Miami-Dade Traffic Counts

2030 – Miami-Dade County LRTP Model

* Calculated by interpolation between 2000-2030

Land Use

The northern portion of the corridor is predominantly residential. Other designated uses along the corridor include business/office and institutional/public facility. In the area between SW 120th Street and SW 136th Street, Kendall-Tamiami Executive Airport abides on the western fringes of 137th Avenue.

The middle portion of the corridor is largely agricultural land. The area between SW 184th Street and SW 248th Street is adjacent to the Urban Development Boundary (UDB) and the area outside the UDB is entirely zoned agricultural. From SW 248th Street southward to SW 312th Street, the corridor is within the 2006 UDB and land adjacent to 137th

Avenue is designated predominantly residential with some business/office areas. Between SW 312th Street and theoretical SW 336th Street the corridor is again outside the 2006 UDB and the land adjacent to 137th Avenue is designated agriculture. The year 2015 Urban Expansion Area (UEA) boundary extends curvilinear, from SW 312th Street to SW 344th Street, along the eastern and western frontages of 137th Avenue. The UEA is the area where current projections indicate that further urban development beyond the 2006 UDB is likely to be warranted some time between the years 2006 and 2015.

Right of Way

The majority of the corridor has more than 100 foot right-of-way, however between SW 184th Street and the HEFT the right of way is extremely variable or does not exist at all. The CDMP requires that developers dedicate all required right of way for section line roads as the property is developed or subdivided. Currently all of the land along the corridor where no right of way exists is zoned agricultural and if that property is not rezoned and developed prior to the extension of 137th Avenue, the right of way will have to be acquired by the County.

Corridor Alternatives and Analysis

Seven alternatives were identified to be considered for the 137th Avenue Corridor Study. Beyond the No Build and Transportation System Management (TSM) options, these were based on a realistic assessment of the type of facility that would be required to meet the goals of the study. Each of the following includes a brief description and statement concerning the likelihood of the alternative to satisfy the intent of the study.

- ◆ Alternative 1 - No-Build
- ◆ Alternative 2 - Transportation System Management (TSM)
- ◆ Alternative 3 - Four-Lane through facility, with neighborhood friendly design
- ◆ Alternative 4 - Five-Lane facility, providing full accessibility to all properties
- ◆ Alternative 5 - Six-Lane through divided facility
- ◆ Alternative 6 - High-Flow Arterial
- ◆ Alternative 7 - Parkway (Boulevard)

The consultant reviewed each of the alternatives to identify which could meet the objective of the study. The criteria used were:

- ◆ Ability to satisfy project goals.
- ◆ Ability to maximize level of service in the corridor.
- ◆ Ability to complement and enhance the transportation network.

Based on this evaluation, the following assessment of the alternatives to be considered further in the planning process was made (Table S-5).

Table S-5
Assessment of Alternatives

Alternative	Evaluation
1	This alternative will not move forward because it does not meet the study objective.
2	The TSM alternative will not move forward as a stand alone alternative. The TSM improvements will be incorporated into the build alternatives.
3	This alternative will not provide the needed capacity to accommodate future traffic growth into the year 2030. This alternative will not move forward.
4	This alternative will not address safety and traffic operation issues along the corridor. This alternative will not move forward.
5	This alternative will move forward as one of the build alternatives.
6	This alternative will move forward as one of the build alternatives.
7	This alternative will move forward as one of the build alternatives.

Recommendations

Based on the analysis conducted in this study and documented in Chapter 3 of the final report, it is clear that the three build options are the only ones that would realistically meet the overall objectives of a facility improvement project in the 137th Street corridor, if it were to be constructed. These objectives are:

1. Increase capacity to accommodate future travel demand.
2. Improve access management.
3. Provide roadway continuity.



Phase 1: Parkway

To achieve these goals, it is recommended that the alternatives be phased as follows:

- ◆ Phase 1: Parkway Facility (Boulevard with Context Sensitive Design) (former Alternative 7)
- ◆ Phase 2: Six-lane Major North-South Corridor (former Alternative 5)
- ◆ Phase 3: Six-lane, Grade-separated High Flow Facility (former Alternative 6)

The overall utility to the transportation system of the 137th Avenue corridor will be achieved by: (1) establishing corridor connectivity; (2) ensuring adequate capacity; and, (3) creating a roadway environment that is friendly to the community.

Based on the information developed in this study, the creation of a contiguous roadway along 137th Avenue is feasible.

Accomplishing the above given funding realities and the realities of the roadway development process, the “phased” approach as recommended in Chapter 4 is a logical approach.

To be able to build the ultimate design, financial plans will have to be developed in different fiscal years by identifying the needs and priorities for improvements along this corridor. Phase 1 includes the cost for the following improvements:

- ◆ The widening from two-lane to a four-lane section between the HEFT and US 1
- ◆ The addition of a new four-lane typical section roadway between US 1 and SW 200th Street (Quail Roost)
- ◆ The widening from two-lane to a four-lane section between SW 200th Street (Quail Roost) and SW 184th Street (Eureka Drive)
- ◆ The widening from a four-lane to a six-lane section from SW 88th Street (Kendall Drive) to SW 56th Street
- ◆ The widening from a four-lane to a six-lane section from SW 26th (Coral Way) to SW 8th Street (US 41)

The four-lane typicals will have a forty-eight-foot (48) wide median to accommodate a six lane widening during Phase 2. Phase 2 includes the widening of all the sections with four lanes to a six-lane typical section between SW 288th Street and SW 184th Street (Eureka Drive). Phase 3 includes the cost for the construction of grade separated intersections at US 1, SW 88th Street and US 41.

The costs for each phase are as follows:

- ◆ Phase 1: \$101,810,288
- ◆ Phase 2: \$54,871,816
- ◆ Phase 3: \$84,408,436

The work in this study has been conducted in coordination with policies of the jurisdictions responsible for planning and eventual design and construction of the project. The study lays the groundwork for important improvements to the transportation network.



Phase 2: Six-lane Through



Phase 3: Grade Separation