



**Access to SW 137<sup>th</sup> Avenue  
to and from SR 874  
(Don Shula Expressway)  
Work Order # GPC-06**

**Final Report**

**Prepared for:**



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April, 2002

**Prepared by:**



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## Introduction

Kimley-Horn and Associates, Inc. was retained by the Miami-Dade Metropolitan Planning Organization (MPO) to identify alternatives for providing access between SW 137<sup>th</sup> Avenue and SR 874 (Don Shula Expressway) in the vicinity of SW 136<sup>th</sup> Street. Previously, the Florida Department of Transportation (FDOT) partially completed a Project Development & Environment (PD&E) study, which resulted in five possible alternatives for the extension of SR 874 to the southwest. However, the extension of SR 874 has since been removed from the Miami-Dade *Transportation Improvement Plan* (TIP).

In addition to previous studies conducted by FDOT, other studies within the area of the junction of the Homestead Extension of Florida's Turnpike (HEFT) and SR 874 (Don Shula Expressway) will be discussed in subsequent sections of this report. Figure 1 depicts the location of the SR 874 extension project.

## Background

Southwest Miami-Dade County is one of the fastest growing areas in the County. Expressways in the area include the HEFT and SR 874. The HEFT provides north-south traffic flow between the northern part of Miami-Dade County and Homestead. SR 874 provides northeast-southwest flow and connects the HEFT with SR 826 (Palmetto Expressway). Major east-west section-line arterials in the area include Kendall Drive (SW 88<sup>th</sup> Street) and Killian Drive (SW 104<sup>th</sup> Street) to the north, and Coral Reef Drive (SW 152<sup>nd</sup> Street) to the south. SW 137<sup>th</sup> Avenue is the major north-south section-line arterial in the western area of the project. SW 127<sup>th</sup> Avenue connects the residential area south of SW 144<sup>th</sup> Street to Coral Reef Drive (SW 152<sup>nd</sup> Street), but does not cross the CSX railroad corridor to provide connectivity to the north.

Motorists south of Killian Drive and west of the HEFT are required to use an indirect connection to SR 874 (1.5 miles) via Coral Reef Drive and the HEFT. As shown in Figure 2, connections to the remaining part of the County are hindered by the CSX



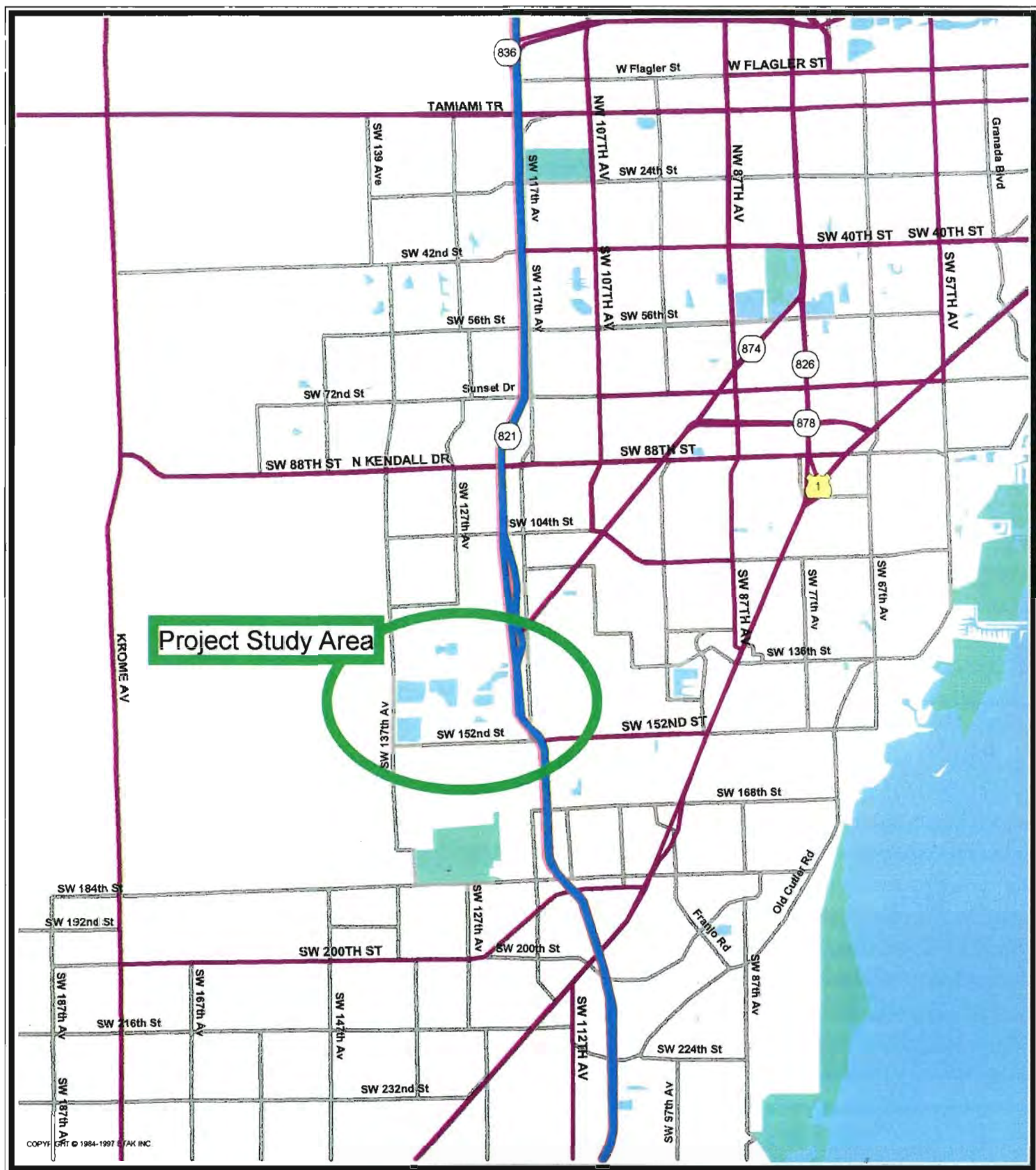


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railroad corridor. The railroad corridor runs northeast-southwest following the SR 874 alignment east of the HEFT and continues in the same direction west of the HEFT.

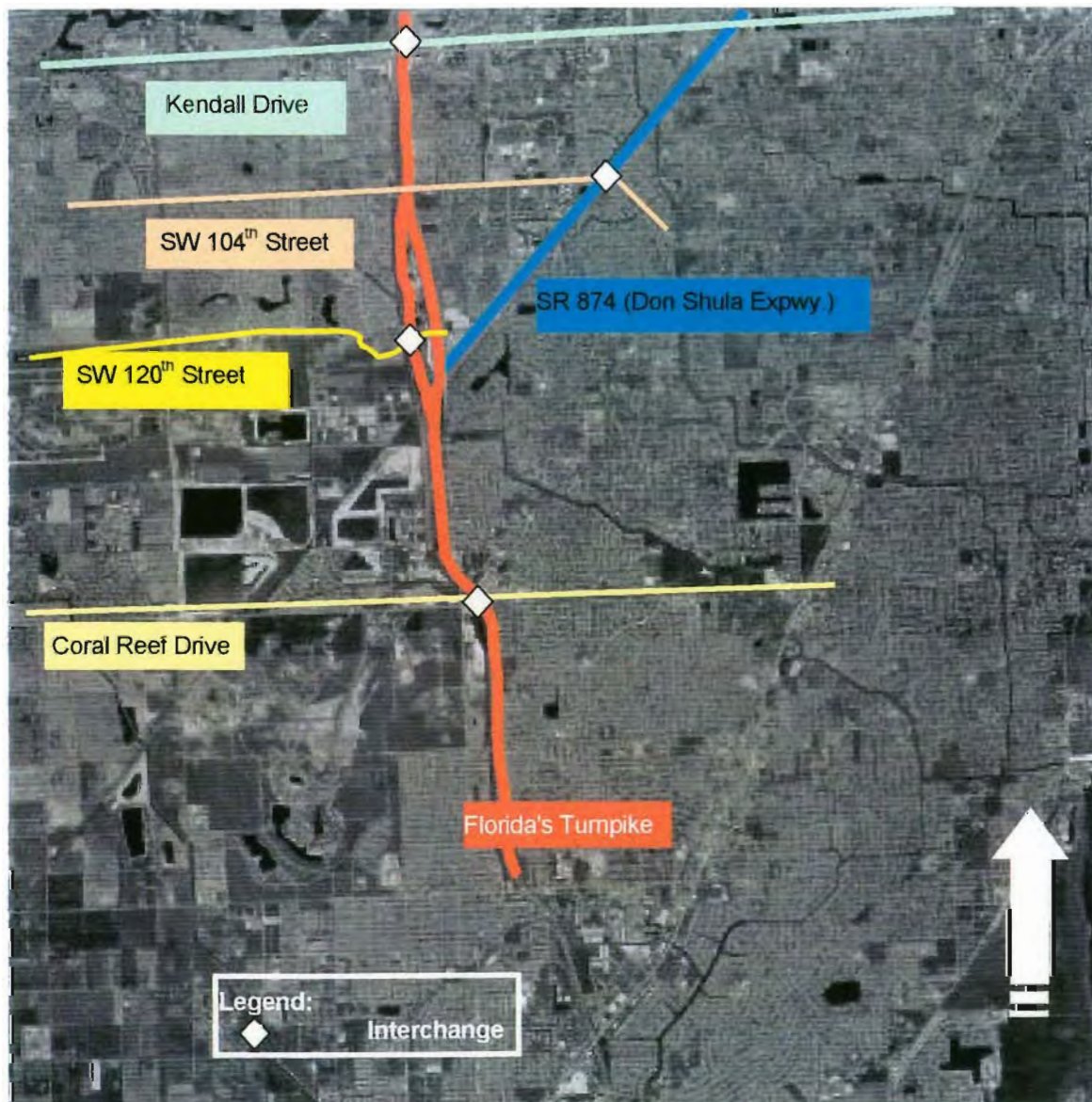
The rapid growth of the area is creating a high degree of congestion and excessive traffic delays. Unless a significant improvement is made to the transportation network, these delays will only increase as traffic volumes increase due to further growth.

## Figure 1 - Project Location Map





**Figure 2- Study Area Roadway Network and Connections**







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## **Current and Previous Work**

### **HEFT / SR 874 Study**

FDOT has conducted a Turnpike Planning Concept Study to modify the existing alignment of the HEFT through movements at the SR 874 interchange. The proposed alignment recommends the northbound HEFT through movements should follow a more direct path through the center of the interchange instead of veering to the right and then passing over the SR 874 movements. HEFT / SR 874 Interchange Planning Concepts are included in Appendix A of this report.

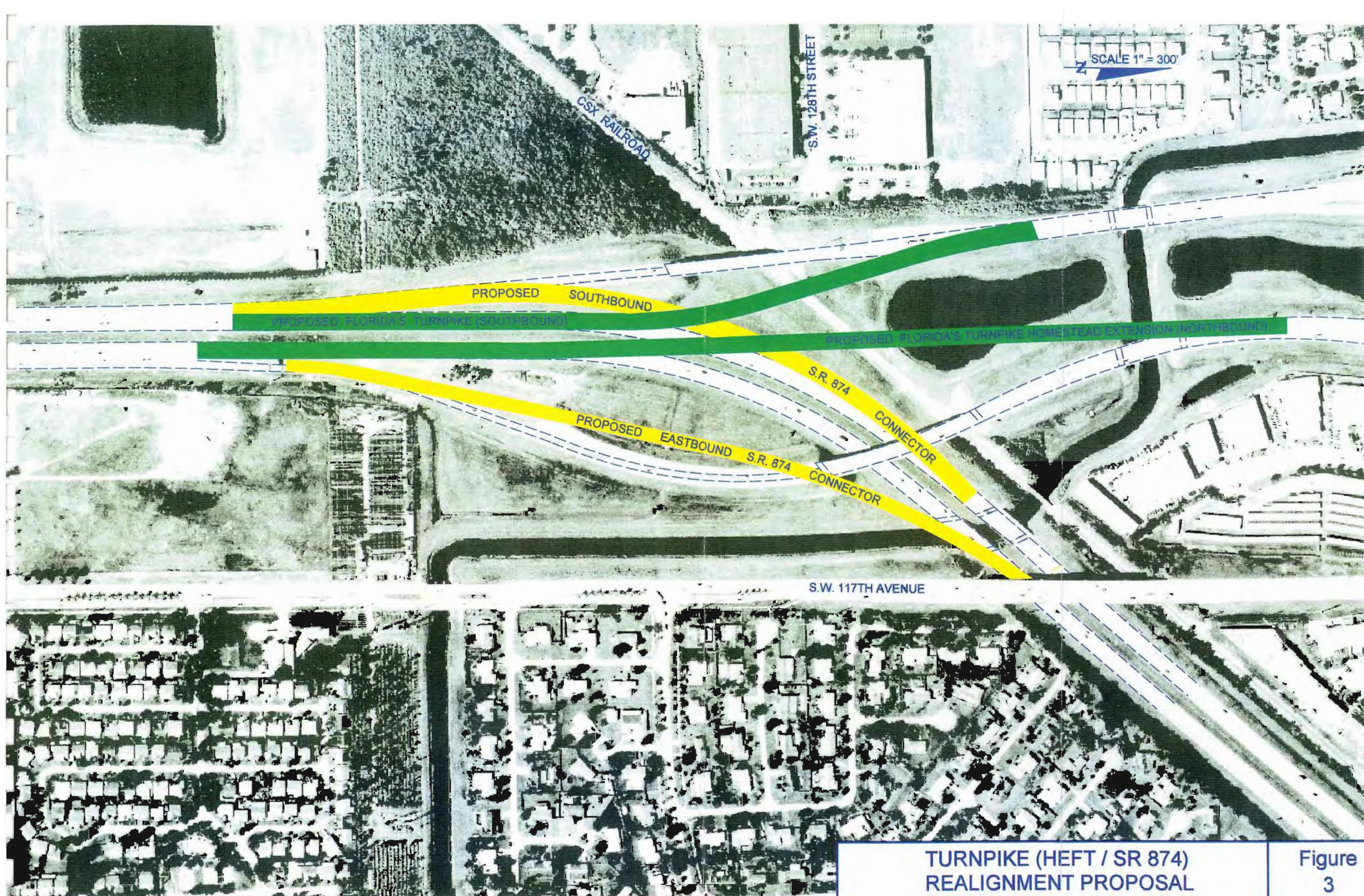
Three preliminary alternatives were developed to address the needs of the HEFT in this area. Alternatives 1 & 2 use a frontage road configuration to separate traffic movements with different tolls. The only difference is the location of the toll collection. The report illustrates that each alternative provides adequate capacity to meet the forecast year traffic demand and eliminates the existing weaving segment. Alternative 3 also provides adequate capacity to accommodate forecast traffic without using frontage roads. Alternative 3 widens and realigns the HEFT through traffic to the center of the interchange and uses auxiliary lanes between Eureka Drive/Quail Roost Drive, Coral Reef Drive/SW 117<sup>th</sup> Avenue, and SR 874. The auxiliary lanes are contiguous to the HEFT through lanes. According to the preliminary report, Alternative 3 could be constructed within the existing right-of-way (R/W). Figure 3 depicts the Turnpike (HEFT / SR 874 interchange) realignment proposal.

The implementation of this project will not provide improved access to the SW 137<sup>th</sup> Avenue area.

### **Miami-Dade Expressway Authority (MDX)/Don Shula Expressway Master Plan**

After reviewing the Miami-Dade Expressway (MDX) work program it was determined that the MDX Authority is not considering the extension of SR 874 as part of the master plan study. The Don Shula Expressway Master Plan study (currently under





TURNPIKE (HEFT / SR 874)  
REALIGNMENT PROPOSAL

Figure  
3





development) concentrates on the identification of corridors with regard to capacity needs, intelligent transportation systems (ITS), toll collection systems, and interchange and access improvements. The plan does not contemplate a connection to the SW 137<sup>th</sup> Avenue area.

## **PD&E Study**

FDOT partially completed a PD&E Study in 1995 to develop design alternatives for the extension of SR 874. This partially completed study resulted in five alternatives (alternatives A through E.) Figure 4 (provided by FDOT) depicts these five alternatives. Alternative E was initially selected as the best. Alternative E is described in the following paragraph.

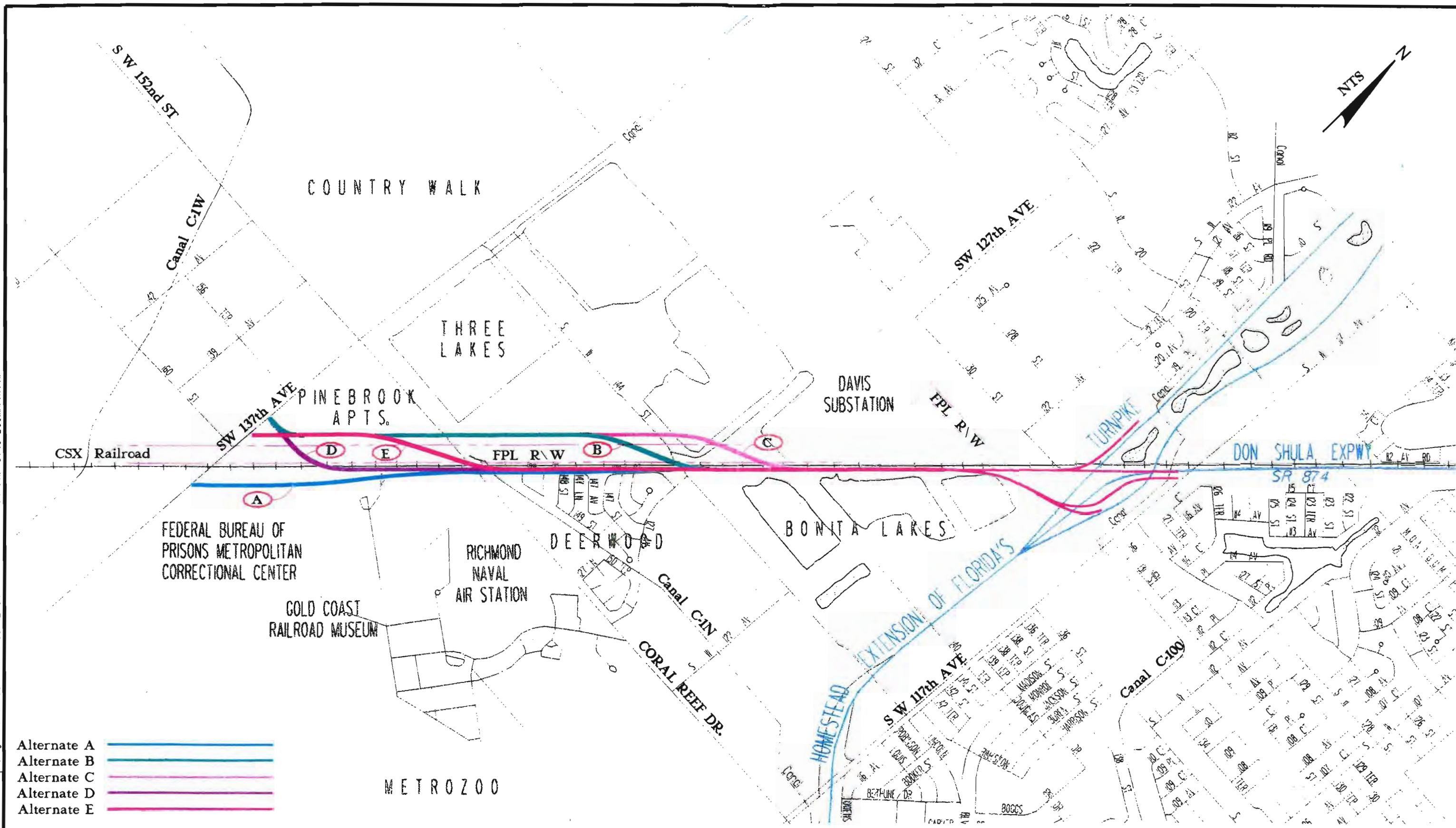
The alignment begins west of the CSX railroad corridor R/W at SW 137<sup>th</sup> Avenue, then crosses the FPL transmission corridor R/W, the CSX railroad corridor, and Coral Reef Drive. The alignment then continues east of the CSX railroad corridor from just north of Coral Reef Drive to the HEFT. This alternative would not have an interchange at Coral Reef Drive. The typical section for the SR 874 extension was restricted to the existing 125-foot wide corridor. It would provide three, 12-foot wide lanes for each direction of travel. Shoulders are required to be 10-foot wide inside and outside. Retaining walls would be located on the edge of the outside shoulders. Figure 5 (provided by FDOT) presents the Alternative E typical section. The preferred alignment as part of the PD&E study is shown in Appendix B.

The following discussion is a summary of the PD&E study findings grouped by topics.

## **Public Involvement**

Some public involvement steps were conducted as part of the partially completed PD&E process. As part of the minor public involvement effort conducted at the time, an area neighborhood (Deerwood Homeowners, near Coral Reef Drive) expressed opposition to the project mostly because one of the alternatives proposed a tall noise/retaining wall (up to 51-feet) along their back yards. Noise walls were identified as needed to mitigate the

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- Alternate A
- Alternate B
- Alternate C
- Alternate D
- Alternate E



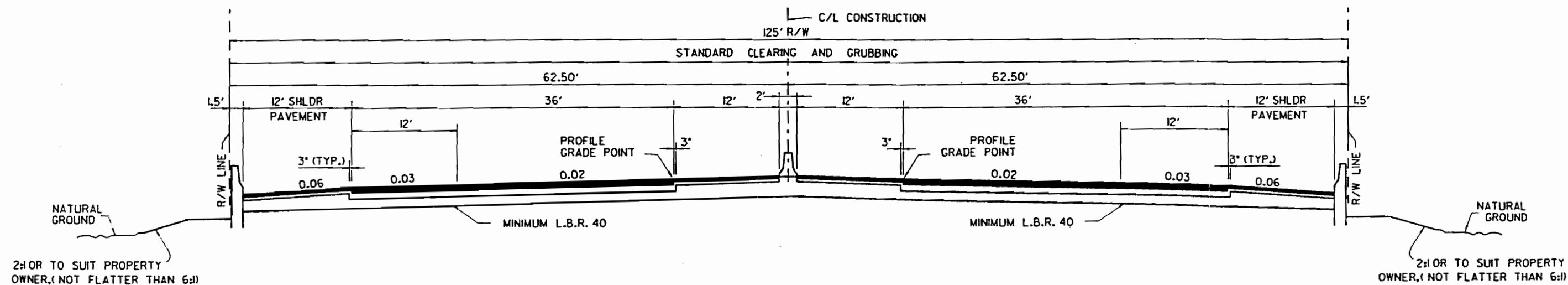
FLORIDA DEPARTMENT OF  
TRANSPORTATION

STATE PROJECT NUMBER 87005-1543  
WORK PROGRAM ITEM NUMBER 6113712  
FEDERAL AID PROJECT NUMBER M-6047(2)

SR 874 EXTENSION  
PROJECT DEVELOPMENT AND ENVIRONMENT  
STUDY

DESIGN ALTERNATIVES

Figure  
4



TYPICAL SECTION

AS PROPOSED  
ALTERNATIVE E



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PROJECT DEVELOPMENT AND ENVIRONMENT  
STUDY

SR 874 EXTENSION  
125 FT. RIGHT OF WAY

Figure  
5



increase of noise level due to the implementation of the project. The height of the wall was due to a grade separated interchange at the intersection with Coral Reef Drive.

### ***Endangered Species***

The PD&E study demonstrated the need to mitigate some ecologically impacted areas due to endangered species and ecological concerns. One of the most impacted species was identified as the Tiny Polygala. This small plant is on the list of endangered species of the U.S. Fish & Wildlife Service (USFWS). A research project to study the feasibility of relocating the Tiny Polygala was requested from the Department of Biological Sciences of Florida International University in Miami. The study was completed in August 1998 and concluded that it is not possible to relocate the Tiny Polygala population. Additionally, the proposed alignment would have impacted 8.4 acres of Pineland. The implementation of this project under the recommended PD&E alignment will require mitigation efforts.

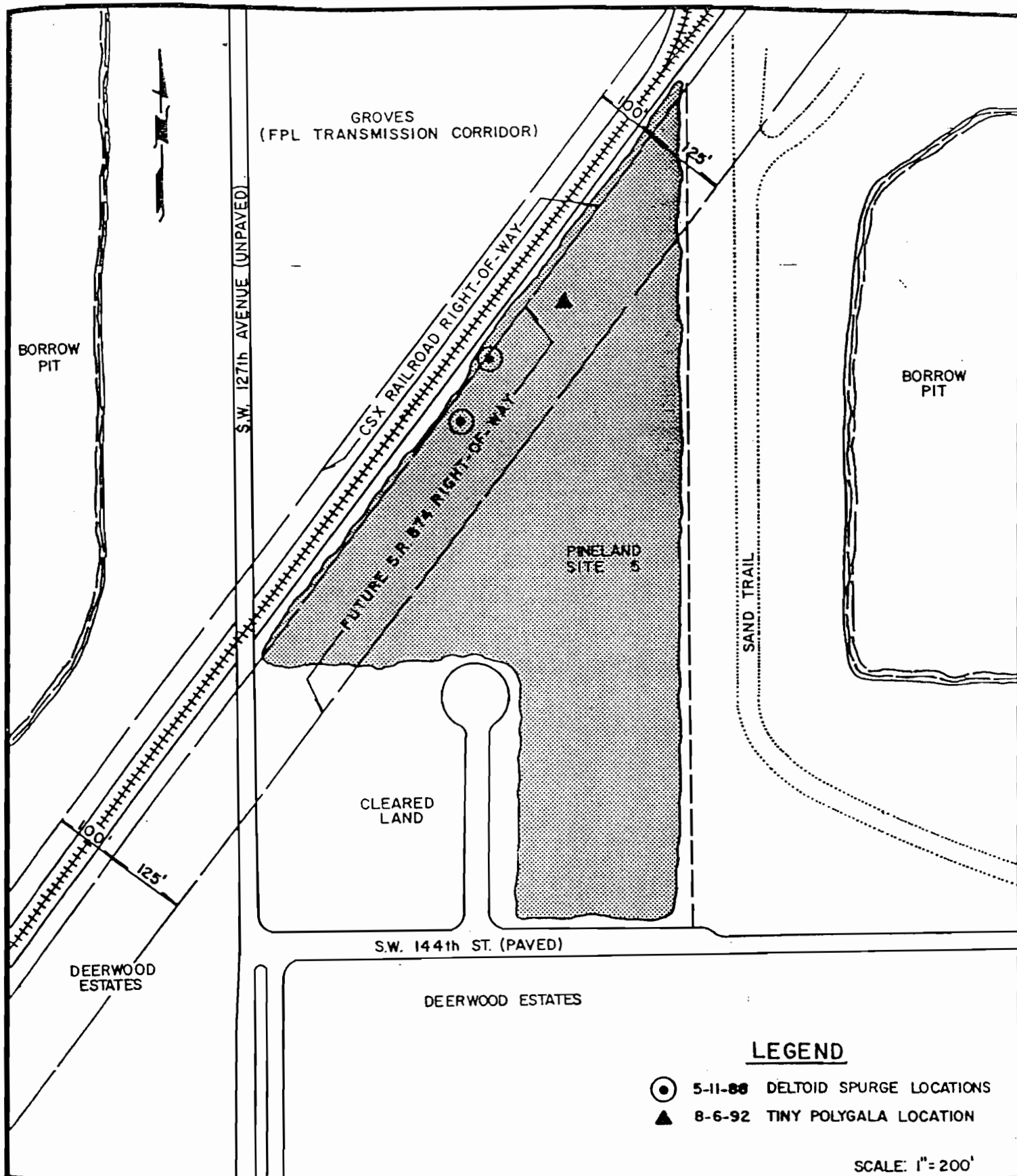
Another endangered species identified in the previous study is the Deltoid Spurge. This species was found near the Tiny Polygala in Pineland #5 and within the existing 125-foot R/W, as depicted in Figure 6 (provided by FDOT). Since the study was completed in 1995, most of Pineland #5 has been cleared for the construction of residential units. New surveys would be required to confirm the existence of these species within the existing R/W.

### ***Wetland***

The PD&E study found no significant impact to wetland areas associated with the project.

### ***Contamination Sites***

Most of the contaminated sites identified were from SW 144<sup>th</sup> Street to SW 136<sup>th</sup> Street. The recommended alternative under the PD&E study offered the least impact to contaminated sites. The D&J Enterprises site was the only site given a high risk rating among all the potential contaminated sites. This site was a Hurricane Andrew debris site, which is located within two residential developments: Lennar Bonita Lakes (14286 SW 122<sup>nd</sup> Avenue), and Lennar Homes Three Lakes (13321 Coral Reef Drive). Additional



PINELAND SITE 5  
ENDANGERED PLANT LOCATION MAP

FIGURE NO.

6





evaluation to determine levels of contamination from this site would be required for the implementation of the project.

### ***Drainage***

The PD&E report recommended the use of an exfiltration system to provide the required drainage along the project. Water quality attenuation was not required based on the PD&E drainage calculations.

### ***Right-of-Way***

The potential connection of SW 137<sup>th</sup> Avenue to SR 874 could be accomplished by using the existing R/W that runs parallel to and along the CSX railroad corridor between the HEFT / SR 874 interchange and SW 137<sup>th</sup> Avenue. The R/W was set aside by a Miami-Dade County Zoning Ordinance, (SS 33-133), which established 125 feet of R/W to be set aside for the Seaboard Throughway from Galloway Road (SW 87<sup>th</sup> Avenue) to Krome Avenue (SW 177<sup>th</sup> Avenue). This right-of-way reservation ordinance is provided in Appendix C. At the HEFT / SR 874 interchange, sufficient R/W exists to develop the connecting ramps.

Due to the lack of activity in developing an expressway extension, Miami-Dade County has been deeding back the previously set aside R/W to property owners as they develop their land. This policy must be discontinued immediately in order to maintain R/W for the SR 874 Connector.

### ***Value Engineering***

A value engineering (VE) analysis was completed for the SR 874 extension project in November 1995. The analysis recommended the implementation of a 4-lane divided arterial terminating at Coral Reef Drive (SW 152<sup>nd</sup> Street) with an additional at-grade intersection at SW 127<sup>th</sup> Avenue. The Value Engineering Team recommended this alternative as an interim project until the 6-lane expressway (Alternative E) could be extended. The VE alternative is shown in Appendix D. The VE analysis indicated that the project (as proposed in the PD&E) would have significant impact to the FPL transmission corridor located south of Coral Reef Drive and west of the CSX railroad tracks.



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## Evaluation of Previous and Current Studies

The SR 874 PD&E study developed five alternatives to provide a connection between SR 874 and SW 137<sup>th</sup> Avenue. All five alternatives shared the following characteristics.

- The alternatives considered similar design concepts at the interchange of the HEFT and SR 874.
- The alternatives followed the CSX railroad alignment from the interchange of the HEFT and SR 874 to near the Bonita Lakes Residential Development.

For evaluation purposes, Alternative E was recommended under the PD&E study and will be used in our evaluation matrix as the PD&E alternative. The evaluation matrix shown below is intended to evaluate the ability to provide reasonable access to the SW 137<sup>th</sup> Avenue area by the partially completed PD&E and current ongoing studies being conducted by the FDOT Turnpike Office and the MDX Authority. Elements considered in the matrix include: environmental impact, socioeconomic impact, implementation cost, and traffic flow characteristics.

### Evaluation Matrix: Current and Previous Studies

Alternative				
	Environmental	Socio-economic	Cost	Traffic
<b>PD&amp;E Alternative E</b>	Potential impact to endangered species. Impacts to federal prison facilities.	Requires 49.5 acres of R/W. Requires relocation of one home (at the time of the study). Previous community concerns due to retaining walls and grade separation intersection with Coral Reef Drive (SW 152 <sup>nd</sup> Street).	\$81.9 million. Requires relocation of FPL transmission lines.	Improves LOS on the HEFT, Coral Reef Drive (SW 152 <sup>nd</sup> Street), and SW 137 <sup>th</sup> Ave. <b>Provides improved access to the SW 137<sup>th</sup> Avenue area.</b>
<b>SR 874 (Don Shula Expressway) Master Plan Prepared by the MDX Authority</b>	No major environmental issues expected.	N/A	N/A	Provides safety improvements, access improvements to and from SR 874 at existing interchanges. <b>No access improvements to the SW 137<sup>th</sup> Avenue area.</b>
<b>HEFT/ SR 874 Improvements Prepared by FDOT</b>	No major environmental issues expected.	No R/W required.	\$106 million.	Provides adequate capacity on the HEFT. <b>No access improvements to the SW 137<sup>th</sup> Avenue area.</b>



The PD&E alternative is the only alternative that proposes reasonable access to the SW 137<sup>th</sup> Avenue area. The other alternatives do not propose any relief to traffic in the area under study. However, the PD&E alternative (as originally presented) was not well received by the residents of the adjacent neighborhoods. Therefore, it is desirable to provide modifications to this alternative. Other possible access connection alternatives to address the traffic congestion within the SW 137<sup>th</sup> Avenue area may be needed. The following elements were considered in the development of alternatives.

- Environmental issues such as endangered species and pineland impact
- Right-of-Way requirements
- Neighborhood and Social Impact
- Construction cost
- Community support
- MPO support
- Miami-Dade County Commission support
- Endorsement by the Miami-Dade Expressway Authority
- Endorsement by FDOT D8 (Florida's Turnpike)



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## Development of New Alternatives

The evaluation matrix presented in the previous section demonstrates the need for developing additional alternatives to provide access to the SW 137<sup>th</sup> Avenue area. Only PD&E Alternative E was able to provide access to SW 137<sup>th</sup> Avenue. None of the other studies consider additional access to the study area. Due to the lack of additional alternatives for providing traffic benefits in the area, new alternatives were developed by the project staff that would provide access to the SW 137<sup>th</sup> Avenue area.

Several issues previously identified during the PD&E study were considered when developing new alternatives. The impact of one or more of these issues may significantly impact the potential for implementation of any of the alternatives. Therefore, the development of new alternatives was guided by the following criteria.

- Minimum R/W acquisition
- Minimum community impact
- Maximum use of existing facilities
- Minimum impact to environmentally sensitive areas
- Minimum impact to power transmission lines
- Maximum community support
- Minimum cost

Five alternatives were developed following these criteria.

Several options for the interchange connections between the HEFT / SR 874 interchange and the alternatives under consideration are available. Two possibilities are shown in Figure 7.





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SR 874 / HEFT ALTERNATIVES

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FIGURE 7	





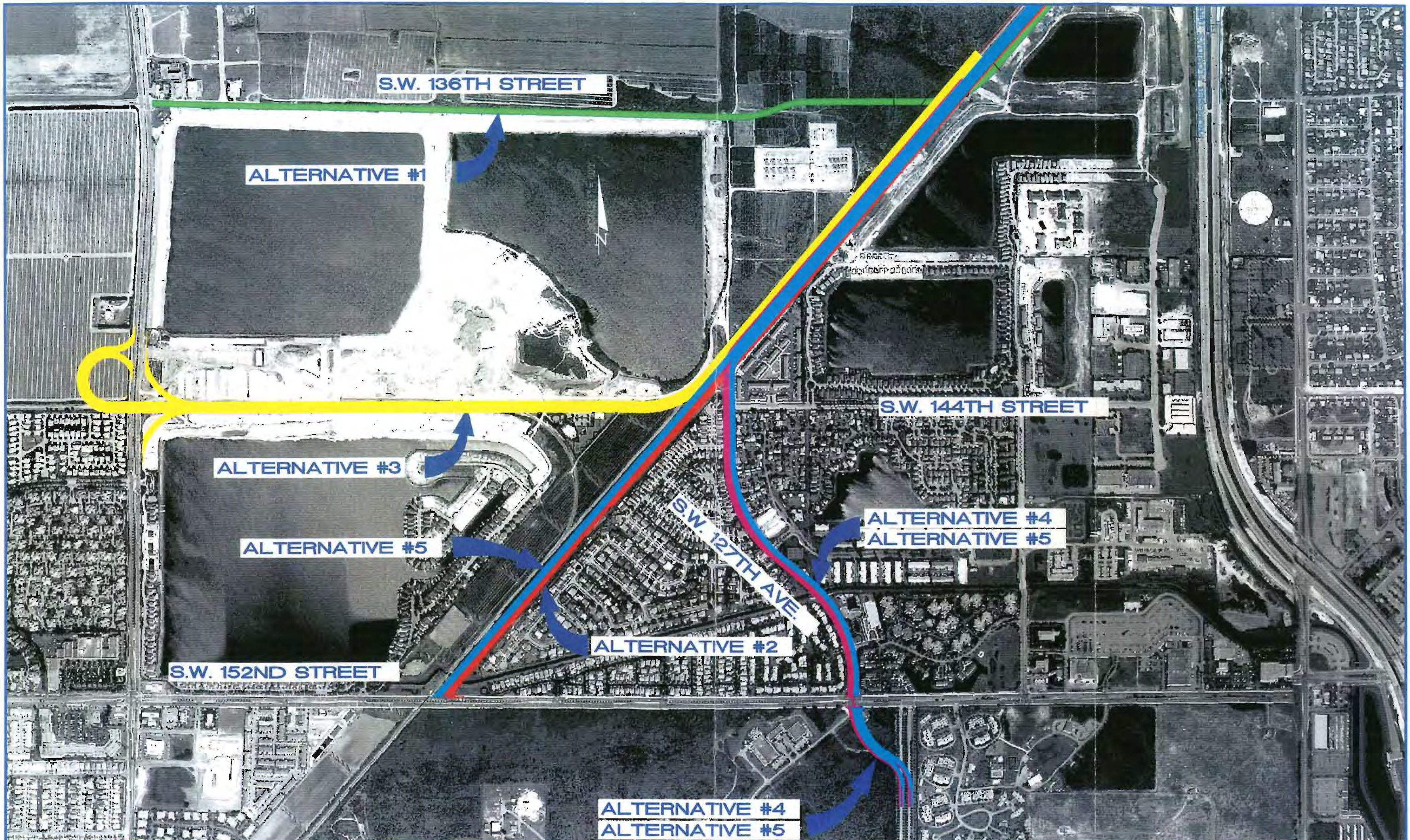
### **Alternative 1 - Typical Section: 4 Lanes Divided**

**Alternative 1** consists of connecting SW 137<sup>th</sup> Avenue with SR 874 by extending SW 136<sup>th</sup> Street from SW 137<sup>th</sup> Avenue eastward over the CSX railroad corridor, curving to the northeast following the CSX railroad alignment, and connecting to the HEFT / SR 874 interchange. This alignment will require a grade separated crossing over the railroad corridor as shown in Figure 8, and will provide direct connection with SW 137<sup>th</sup> Avenue.

Currently, an 80-foot wide R/W exists along SW 136<sup>th</sup> Street between SW 137<sup>th</sup> Avenue and approximately 1320 feet east of SW 137<sup>th</sup> Avenue. From 1320 feet east of SW 137<sup>th</sup> Avenue to SW 132<sup>nd</sup> Avenue (a distance of approximately 1320 feet), a 40-foot wide R/W exists on the south side of SW 136<sup>th</sup> Street, but R/W will have to be acquired on the north side if the extension is implemented before the property is developed. East of SW 132<sup>nd</sup> Avenue, R/W will have to be acquired along the SW 136<sup>th</sup> Street alignment if the extension is implemented before the adjacent property to the north and south is developed. This alternative will also require R/W acquisition from SW 127<sup>th</sup> Avenue to the CSX railroad corridor. Additionally, some R/W may be required to expand the intersection of SW 136<sup>th</sup> Street and SW 137<sup>th</sup> Avenue. No relocations and no impact to the FPL transmission corridor are expected.

A traffic signal may be required for the entrance to a new residential development (SW 132<sup>nd</sup> Avenue) located along the south side of SW 136<sup>th</sup> Street. This signal would be about one-half mile from the SW 137<sup>th</sup> Avenue at SW 136<sup>th</sup> Street intersection. No impact to the internal access of this residential community is expected because the residences are facing an internal frontage street and there is a concrete wall that separates the residential units and SW 136<sup>th</sup> Street.





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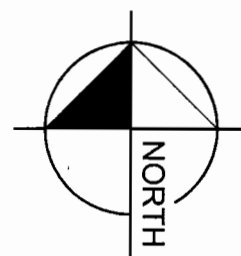
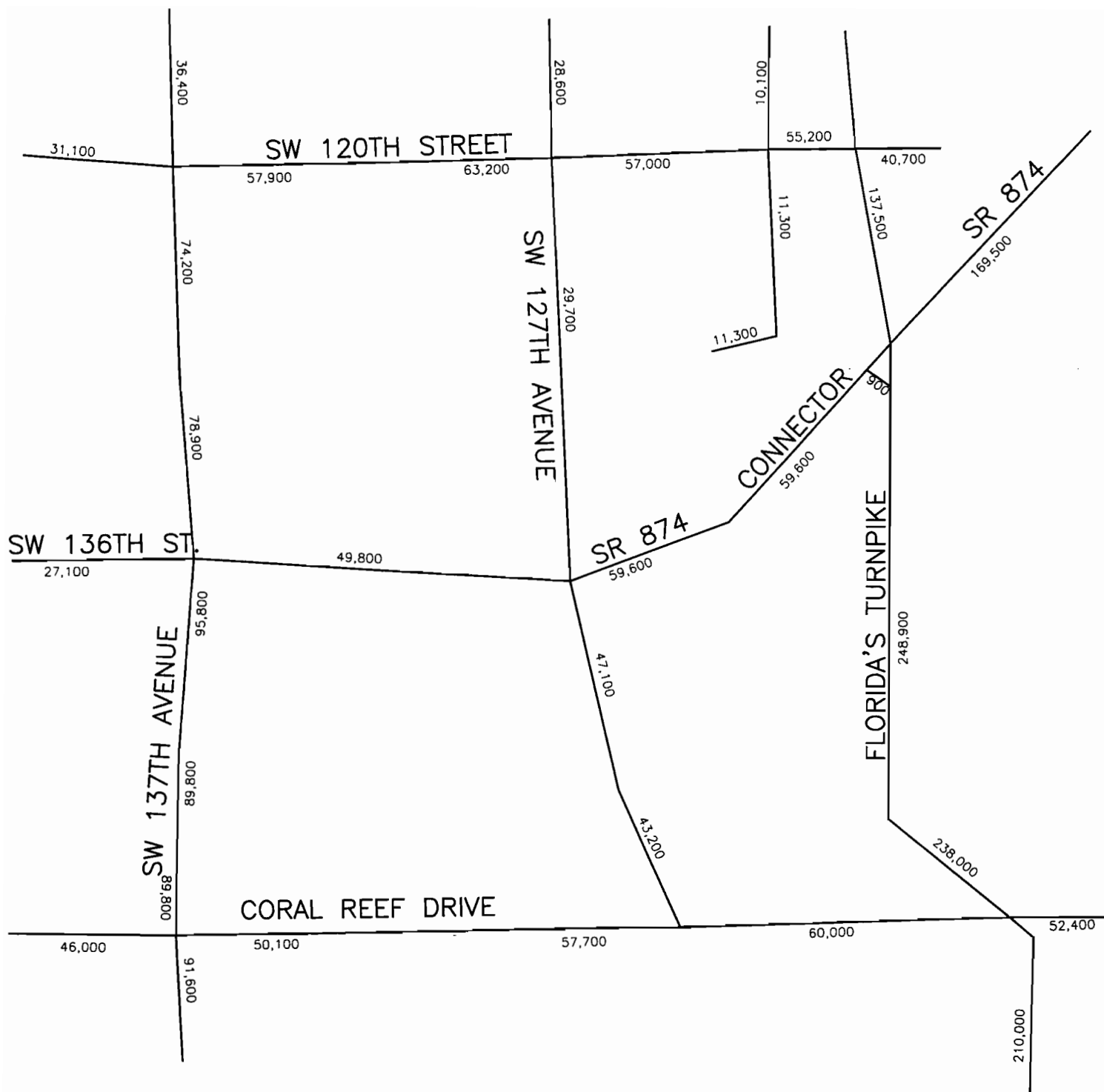
SR 874 / HEFT ACCESS ALTERNATIVES

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FIGURE 8

SEAL





SR 874 ALTERNATIVE ANALYSIS  
 2020 ALT. 1 (4-LANE CONNECTOR)  
 TOTAL VOLUME IN VEHICLES PER DAY (VPD)  
 FIGURE 9



### **Alternative 2 - Typical Section: 4 Lanes Divided**

**Alternative 2** provides indirect connection to SW 137<sup>th</sup> Avenue and follows the existing 125-foot wide R/W along the CSX railroad tracks from Coral Reef Drive to the HEFT / SR 874 interchange, as shown in Figure 8. It will not require major R/W acquisition. Some minor R/W may be required to provide an at-grade-expanded intersection at Coral Reef Drive. This intersection will be signalized. No impact to the FPL transmission corridor and no relocations will be required. Noise walls will be required along the south side of the corridor within the existing residential area. Different interchange connections with the HEFT and SR 874 would be available as discussed earlier. There may be similar environmental issues as the ones presented in the preliminary PD&E Alternative E.

### **Alternative 3 - Typical Section: 3 Lanes (Reversible)**

**Alternative 3** considers an innovative approach to the use of existing R/W by providing direct access to SW 137<sup>th</sup> Avenue using the existing CSX railroad spur line R/W that aligns with SW 144<sup>th</sup> Street. The existing railroad spur has a 50-foot wide R/W that can be used to build an elevated roadway that could run from SW 127<sup>th</sup> Avenue to SW 137<sup>th</sup> Avenue. This alternative consists of a reversible lane concept. Two lanes are to be designated for the northbound direction during the morning hours with one lane for the southbound direction. For the afternoon hours, two lanes would be designated for the southbound direction and one lane for the northbound direction. The traffic capacity and forecast will determine the feasibility of this alternative, which provides a grade separation connection with SW 137<sup>th</sup> Avenue. R/W will be required for the connection with SW 137<sup>th</sup> Avenue and some houses may require relocation. An innovative design may avoid any home-takings and the R/W required could be reduced to vacant land at the northwest corner of SW 137<sup>th</sup> Avenue and the railroad tracks. Figure 8 provides a conceptual drawing of this alternative.





#### **Alternative 4 - Typical Section: 4 Lanes Divided**

**Alternative 4** provides an indirect connection to SW 137<sup>th</sup> Avenue via Coral Reef Drive near the entrance to the Metrozoo. Figure 8 depicts the layout of Alternative 4. The alignment follows the existing alignment of SW 127<sup>th</sup> Avenue from Coral Reef Drive north to the CSX railroad corridor. A grade separation at the CSX railroad crossing for the southbound movement will be required. The northbound movement will follow the CSX railroad corridor R/W.

This alternative proposes a 4-lane divided facility. It will require access modification to the residential areas along SW 127<sup>th</sup> Avenue (Deerwood Development). Access to these residential communities could be provided under signal control at SW 147<sup>th</sup> Street. Access to SW 144<sup>th</sup> Street will need to be closed at SW 127<sup>th</sup> Avenue directing all traffic to and from this area to use SW 122<sup>nd</sup> Avenue. The remaining access points to the area along SW 127<sup>th</sup> Avenue will need to be restricted to right turns (both incoming and outgoing). Under this alternative the access road to the Metrozoo could be realigned with SW 127<sup>th</sup> Avenue, which will provide improved access to the Metrozoo. Opposition from the residents of the area is expected due to a substantial traffic increase within the Deerwood neighborhood. A small amount of R/W acquisition will be required.

#### **Alternative 5 - Typical Section: 4 Lanes Divided**

**Alternative 5** provides an indirect connection to SW 137<sup>th</sup> Avenue via Coral Reef Drive near the CSX railroad crossing and the entrance to the Metrozoo. The alignment follows the existing alignment of SW 127<sup>th</sup> Avenue from Coral Reef Drive similar to Alternative 4 for the northbound movement and uses the CSX railroad R/W for the southbound movement completing a one-way pair concept, which is illustrated in Figure 8. This alternative will have similar constraints to those seen in Alternative 4.



## Capacity Analysis

Each of the five alternatives developed under the previous section will be able to provide the same number of lanes for peak hour traffic. However, those with less conflict points (intersections) will provide higher capacity and better traffic flow. The FDOT generalized level of service tables were used to determine the approximate capacity of the alternatives under study. To obtain an approximate value of the capacity, a weighted-average methodology was used and is described with the following example.

Alternative 1 consists of 4 lanes with free movement for about 75% of the length and 25% of the length constrained by a traffic signal. Based on Table 5-4 in FDOT's 1998 *Level of Service Handbook*, a 4-lane freeway LOS D capacity is 66,200 vehicles per day (vpd) and the LOS D capacity for a 4-lane divided arterial with less than 2 signals per mile is 35,000 vpd. With 75% of the corridor having a capacity of 66,200 vpd and 25% of the corridor having a capacity of 35,000 vpd, it can be estimated that the capacity of the corridor is  $66,200 \times .75 + 35,000 \times .25 = 58,400$  vpd. Similar estimates were calculated for the remaining alternatives as shown in the table below.

### Capacity of Alternatives at Level of Service D

Alternative	Alternative	Alternative	Alternative	Alternative
1	2	3	4	5
58,400 vpd	66,200 vpd	57,925 vpd	50,600 vpd	58,400 vpd

Alt. 1:  $66,200 \times 0.75 + 35,000 \times 0.25 = 58,400$

Alt. 2:  $66,200 \times 1.00 + 35,000 \times 0.00 = 66,200$

Alt. 3:  $66,200 \times 0.50 + 66,200 \times \frac{3}{4} \times 0.50 = 57,925$

Alt. 4:  $66,200 \times 0.50 + 35,000 \times 0.50 = 50,600$

Alt. 5:  $66,200 \times 0.50 + 35,000 \times 0.25 + 66,200 \times 0.25 = 58,400$



## Comparison of Alternatives

An evaluation matrix was developed to compare the new alternatives. The comparison criteria used for the matrix were developed from the issues discussed in the partially completed PD&E study. Most of these issues should be re-evaluated and considered under a more detailed study before implementing this project. The assigned points for each alternative are based on engineering judgment following the Value Engineering concept. Additional traffic analysis will be completed for the selected alternative(s).

**Table 1 – Alternative Comparison Matrix**

**Ranking Criteria: 1 = Worst 10 = Best**

Criteria \ Alternative					
	1	2	3	4	5
Endanger Species/Pineland impact	7	5	8	8	8
Noise Level	5	5	9	5	6
Adherence to Land Use Plan	8	10	7	3	3
R/W Requirements	6	10	5	7	8
Neighborhood and Social Impact	5	7	5	4	4
Typical Section	10	10	4	7	7
Utilities Impact	10	10	9	9	9
Traffic Capacity	8	10	7	5	8
Direct connection to SW 137 <sup>th</sup> Av.	10	1	10	1	1
Network capacity enhancement	9	4	5	1	1
Potential for expansion	10	2	2	2	2
<b>Total</b>	<b>88</b>	<b>74</b>	<b>71</b>	<b>52</b>	<b>57</b>



From the previous evaluation matrix, Alternative 1 (the SW 136<sup>th</sup> Street alternative) obtained the highest evaluation points and Alternative 2 (the alternative following the CSX railroad northward from Coral Reef Drive) obtained the second highest ranking.

### **Preferred Alternative**

Based on analysis presented in this report and further discussion by the project staff and the study advisory committee (SAC), Alternative 1 (the SW 136<sup>th</sup> Street alternative) was selected as the “preferred alternative.”



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## Traffic Forecasting

Traffic demand forecasting was performed to get a general idea of future traffic demand for the “preferred alternative” – Alternative 1 (the SW 136<sup>th</sup> Street alternative). The FSUTMS model for Miami-Dade County was used to obtain future traffic volumes and a model output conversion factor (MOCF) of 0.99 was multiplied by the model volumes to calculate future average annual daily traffic (AADT). The MOCF is used to convert the traffic volumes provided by the model (peak season weekday average daily traffic) to AADT.

Alternative 1 was modeled as both a four-lane and a six-lane facility in the year 2020 to gauge the future demand on the facility.

### ***Four-lane Alternative 1***

As a four-lane facility, the 2020 AADT is projected to be 64,000 vehicles per day (vpd) between the HEFT / SR 874 interchange and SW 127<sup>th</sup> Avenue. The FSUTMS model assumes the connection of SW 127<sup>th</sup> Avenue across the CSX railroad corridor. Between SW 127<sup>th</sup> Avenue and SW 137<sup>th</sup> Avenue, the 2020 AADT is projected to be 54,000 vpd.

### ***Six-lane Alternative 1***

Alternative 1 was also modeled as a six-lane facility. The 2020 AADT projection for Alternative 1 between the HEFT / SR 874 interchange and SW 127<sup>th</sup> Avenue is 83,300 vpd as a six-lane facility. As mentioned previously, the FSUTMS model assumes the connection of SW 127<sup>th</sup> Avenue across the CSX railroad corridor. Between SW 127<sup>th</sup> Avenue and SW 137<sup>th</sup> Avenue, 2020 AADT is projected to be 62,000 vpd as a six-lane facility.

### ***Southbound Ramp to HEFT***

In addition, Alternative 1 was modeled with and without a connection to the HEFT in the southbound direction. However, the traffic volume utilizing the southbound connection



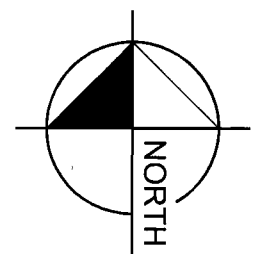
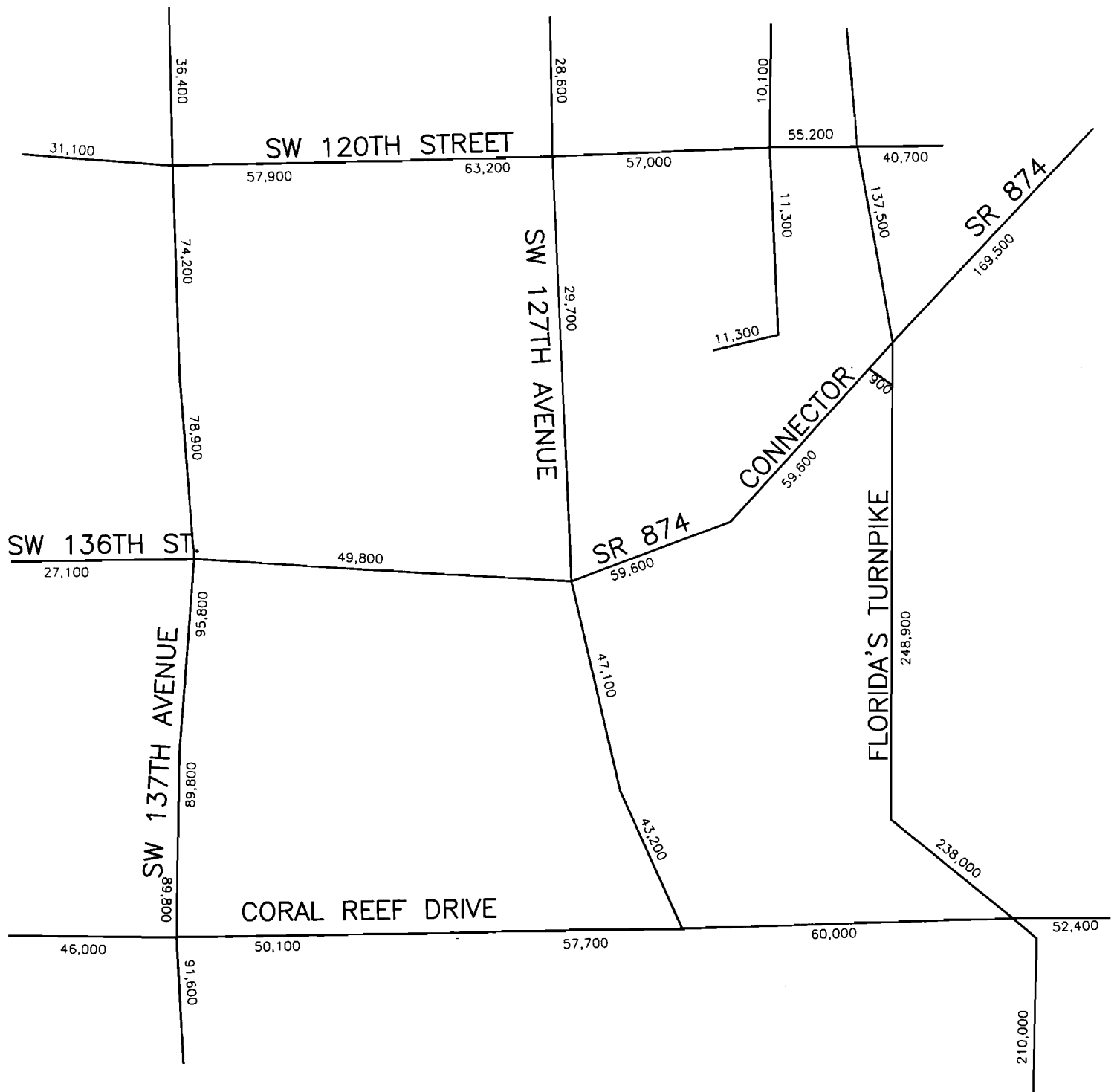
to the HEFT was projected to be minimal. With Alternative 1 modeled as a four-lane facility, the 2020 AADT projection for the southbound ramp is projected to be 900 vpd. With Alternative 1 modeled as a six-lane facility, the 2020 AADT projection for the southbound ramp is 1100 vpd.

### ***Analysis of Modeling Results***

Traffic volumes obtained from the model output are shown in Figure 9 (for the four-lane SR 874 Connector) and Figure 10 (for the six-lane SR 874 Connector). The modeling results indicate 2020 traffic volumes to be approximately 25% greater for the six-lane Alternative 1 than for the four-lane Alternative 1. This indicates that there is latent demand for the SR 874 Connector that would not be accommodated by a four-lane alternative. Providing six lanes for the SR 874 Connector would help alleviate traffic on other roads providing access to the HEFT, such as Coral Reef Drive.

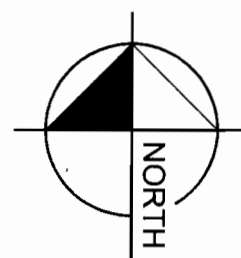
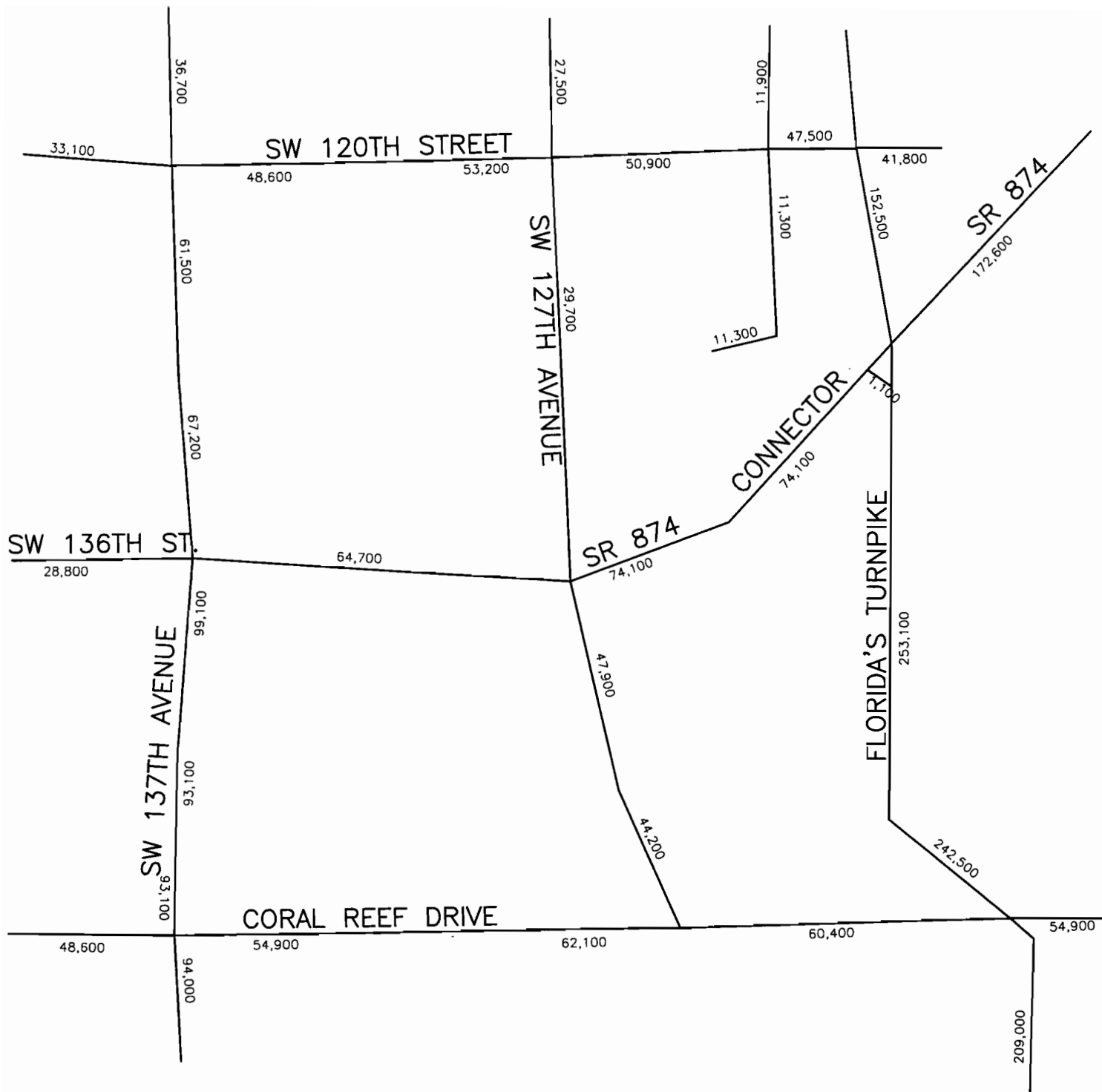
The high level of forecasted traffic volumes for the SR 874 Connector demonstrate the need for this connection between the HEFT / SR 874 and the SW 137<sup>th</sup> Avenue area. Model results indicate that the traffic volume on a four-lane SR 874 Connector would slightly exceed LOS D capacity according to 2020 projections. The traffic volume on a six-lane SR 874 Connector would be below the LOS D capacity.

Model results for the connection to the southbound HEFT indicate that there is low demand for this movement. More direct access for this movement is provided by the existing connection at Coral Reef Drive. Because of the low demand for this movement and the availability of alternate access, providing a connection to the southbound HEFT is not recommended as a cost effective improvement.



SR 874 ALTERNATIVE ANALYSIS  
 2020 ALT. 1 (4-LANE CONNECTOR)  
 TOTAL VOLUME IN VEHICLES PER DAY (VPD)  
 FIGURE 9





SR 874 ALTERNATIVE ANALYSIS  
 2020 ALT. 1 (6-LANE CONNECTOR)  
 TOTAL VOLUME IN VEHICLES PER DAY (VPD)  
 FIGURE 10



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## Next Steps

It is recommended that Alternative 1 as the “preferred alternative” be taken to the PD&E process for a more detailed study. Since the modeling results show that six lanes are needed to satisfy future traffic demand, it is recommended that R/W be reserved for a six-lane Alternative 1. However, more factors should be considered in determining how many lanes to construct. A more detailed capacity and traffic analysis than what was performed for this study should be undertaken not only to determine whether four lanes or six lanes should actually be constructed, but also to determine more detailed geometry and R/W requirements at intersections. In addition, community support for a four- or six-lane SR 874 Connector should be measured and included in the decision. A southbound ramp from northeast-bound SR 874 Connector to southbound HEFT should not be considered during the PD&E process. The primary reason for this is the extremely small volume of traffic projected to use a southbound ramp at this interchange.

Traffic patterns in the vicinity of SW 137<sup>th</sup> Avenue are likely to change after the implementation of a SR 874 connection to SW 137<sup>th</sup> Avenue. These changes in traffic patterns should be addressed as part of the detailed traffic analysis during the PD&E study.

Access management details should also be examined more thoroughly in the PD&E process. For example, access to the FPL facility just south of the SR 874 Connector Alternative 1 alignment needs to be studied along with access to industrial areas to the north (along the planned SW 127<sup>th</sup> Avenue extension). Additionally, no details were given in this report on the traffic signal that is likely to be required at SW 132<sup>nd</sup> Avenue to provide access to the residential neighborhood to the south of SW 136<sup>th</sup> Street. This intersection will also need to be examined in detail during the PD&E study.



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## Conclusion

Kimley-Horn and Associates, Inc. was retained by the Miami-Dade MPO to identify alternatives for providing access between SW 137<sup>th</sup> Avenue and SR 874 in the vicinity of SW 136<sup>th</sup> Street. This area of southwest Miami-Dade County is one of the fastest growing areas in the County. Motorists in the area experience significant delays in attempting to access SR 874 because there is no direct access to SR 874 from west of the HEFT. This study was a preliminary study to identify conceptual alternatives for providing this connector and to identify a “preferred alternative.” The “preferred alternative” will need further examination to identify specific aspects of the environmental, socioeconomic, traffic, and geometric design characteristics of this project.

A previous SR 874 Connector PD&E study produced alternatives that were not desirable from the standpoint of public acceptance. Other planning processes, such as the SR 874 Master Plan, provide no access improvements to the SW 137<sup>th</sup> Avenue area. Therefore, this study developed five new alternatives to improve access.

Of the five alternatives considered in this study, Alternative 1 was identified as the “preferred alternative” and should be taken forward to the PD&E process for further study. Alternative 1 consists of connecting SW 137<sup>th</sup> Avenue with SR 874 by extending SW 136<sup>th</sup> Street from SW 137<sup>th</sup> Avenue eastward over the CSX railroad corridor, curving to the northeast following the CSX railroad alignment, and connecting to the HEFT / SR 874 interchange. This alignment will require a grade separated crossing over the railroad corridor and will provide direct connection with SW 137<sup>th</sup> Avenue.

The Alternative 1 alignment also offers a potential connection farther west beyond SW 137<sup>th</sup> Avenue to SW 157<sup>th</sup> Avenue. The Miami-Dade Public Works Department has already begun acquiring R/W along SW 136<sup>th</sup> Street in this area.



Alternative 1 was modeled using the FSUTMS model for the year 2020. Modeling results indicate a significant latent demand for the SR 874 Connector if it is constructed as four lanes instead of six lanes. However, the public may be more willing to support a four-lane connector and additional traffic studies are needed to better analyze the typical section decision. Modeling results show that a ramp from the connector to the southbound HEFT will attract small traffic volumes and should be eliminated from further consideration.



Kimley-Horn  
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## **APPENDIX A**

# **Turnpike Planning Concepts**



# ***HEFT/SR 874***

## ***Study***

### **Turnpike Planning Concept Report**



March 2001



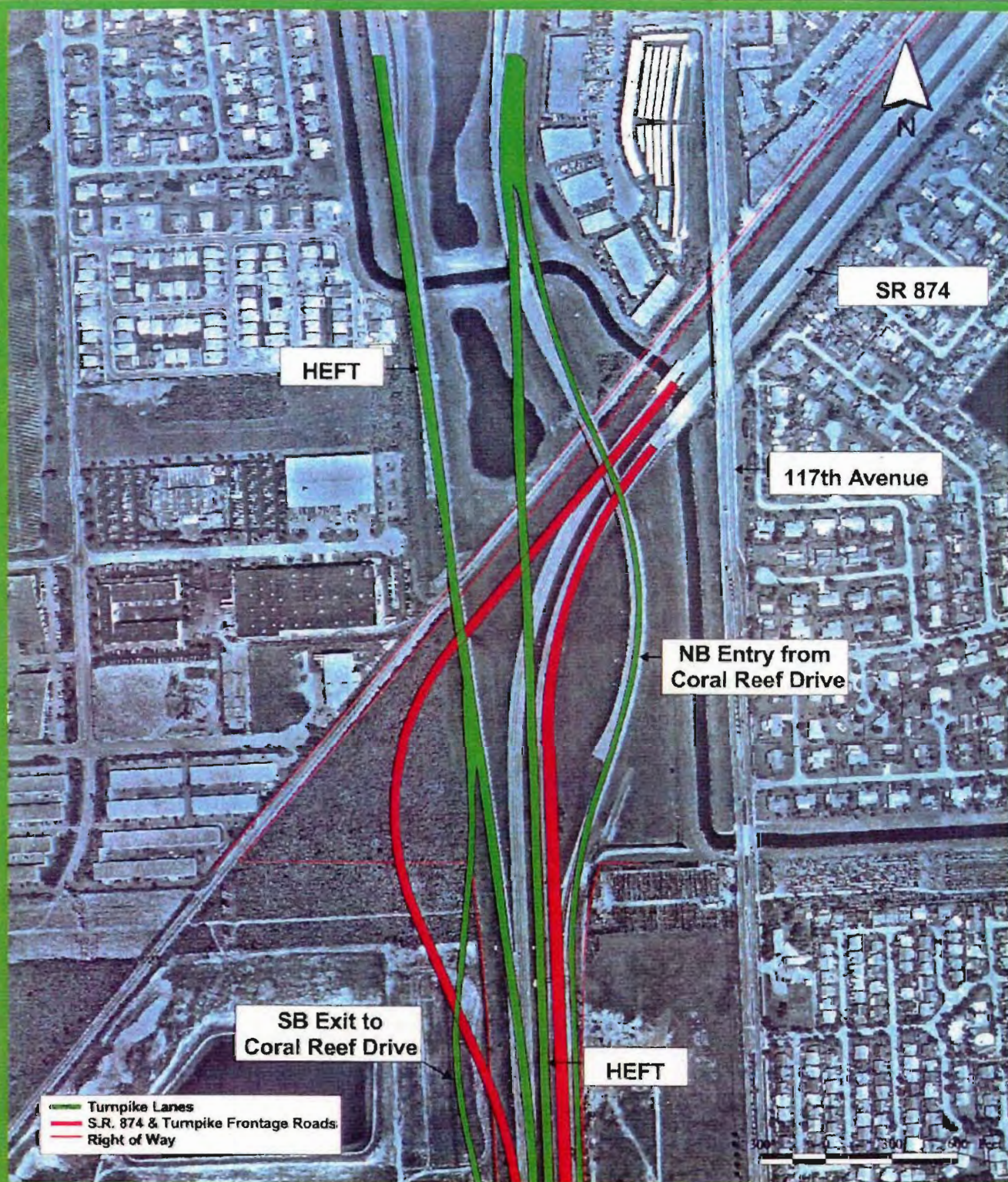


Figure 11

## HEFT/SR 874 Interchange Concept # 1

Source: Florida Department of Transportation





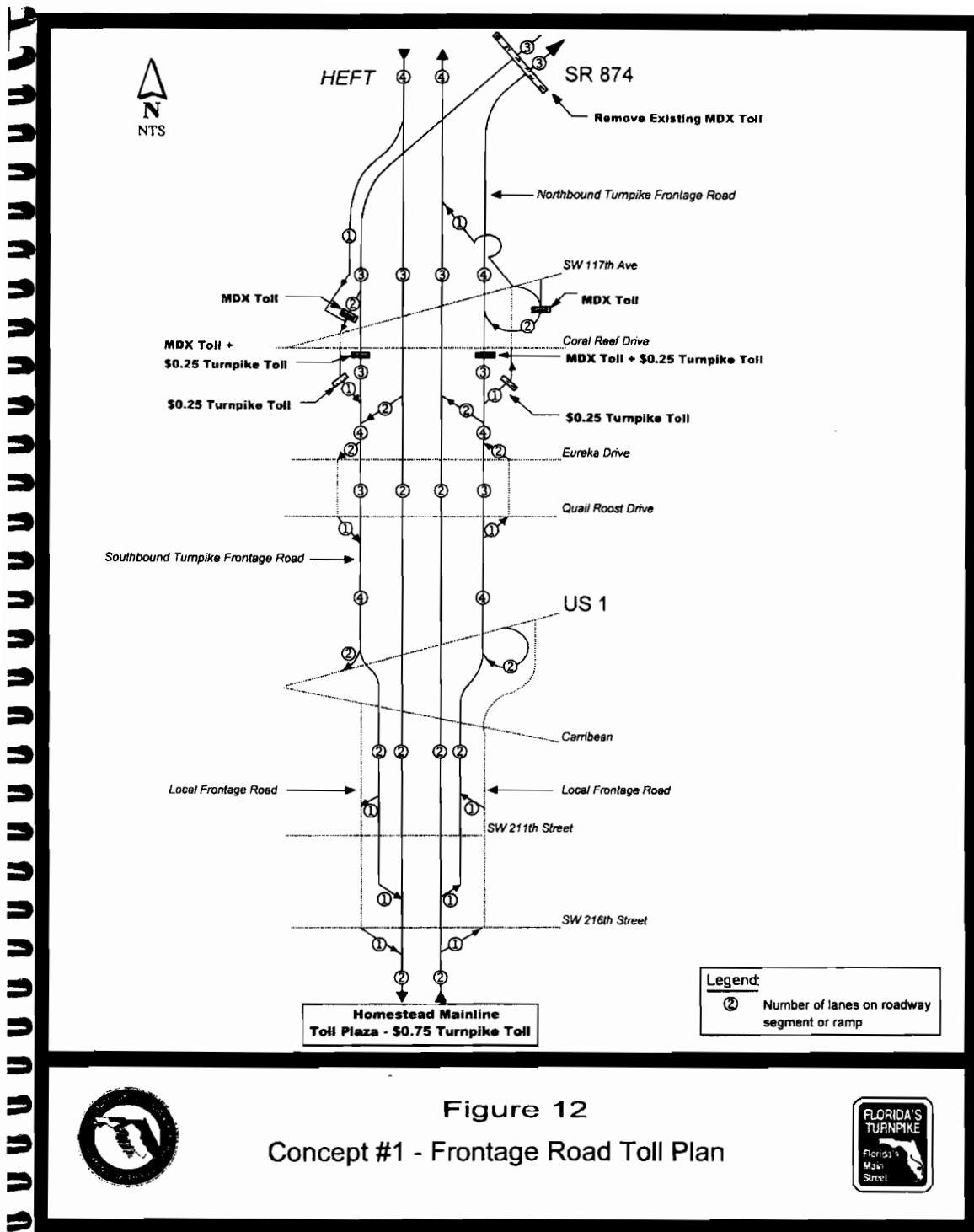


Figure 12  
Concept #1 - Frontage Road Toll Plan



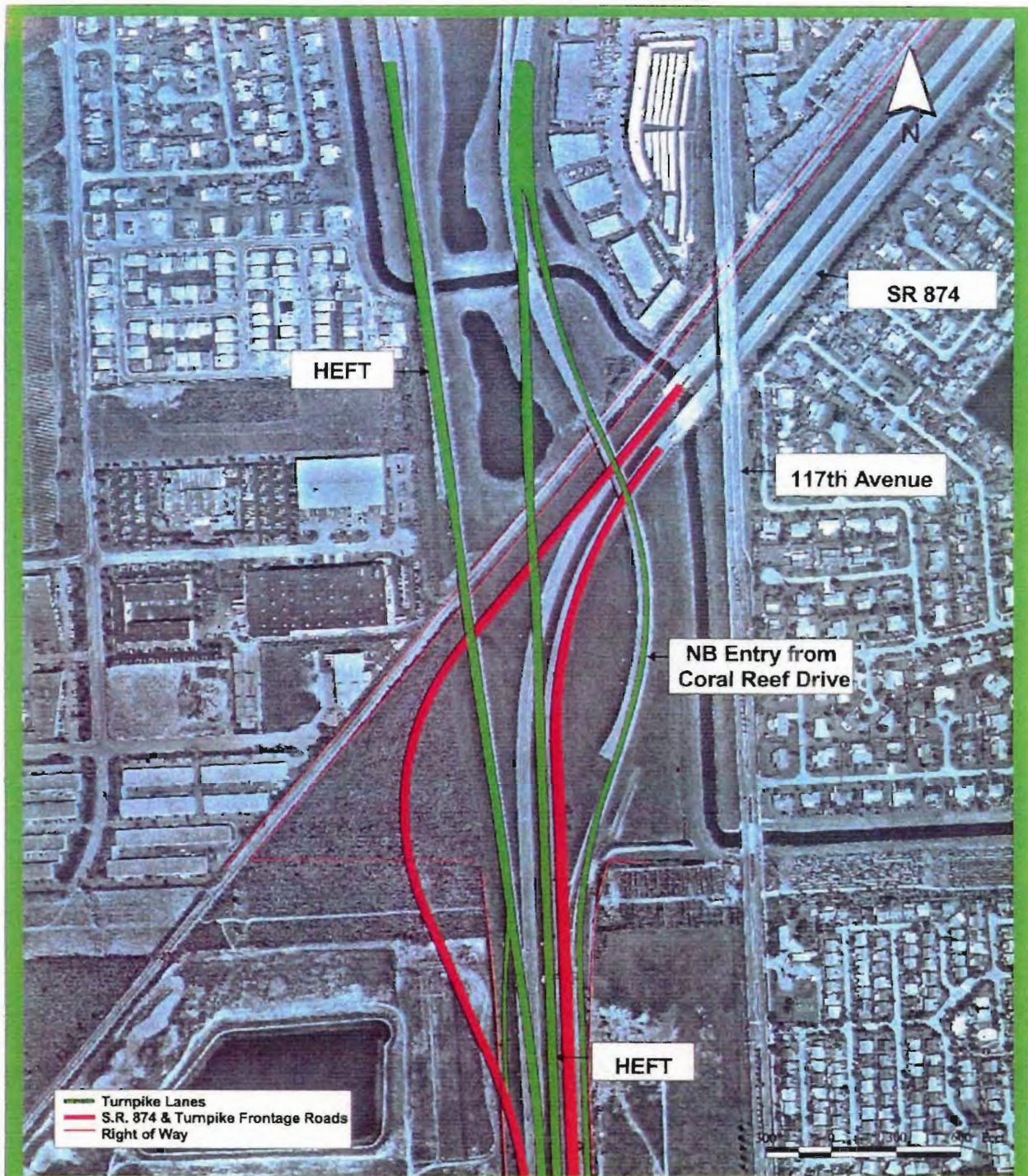


Figure 13

## HEFT/SR 874 Interchange Concept # 2

Source: Florida Department of Transportation



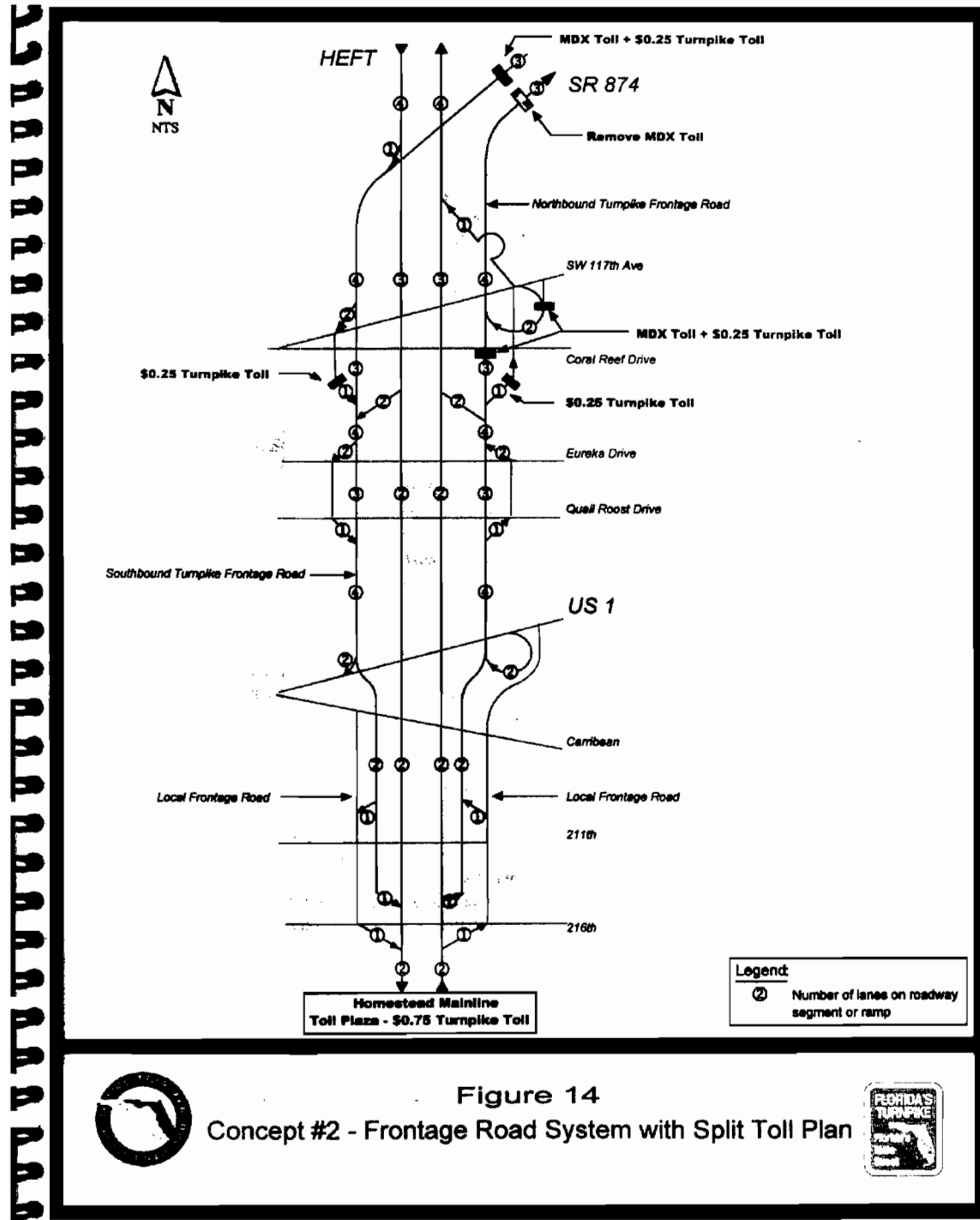


Figure 14  
Concept #2 - Frontage Road System with Split Toll Plan



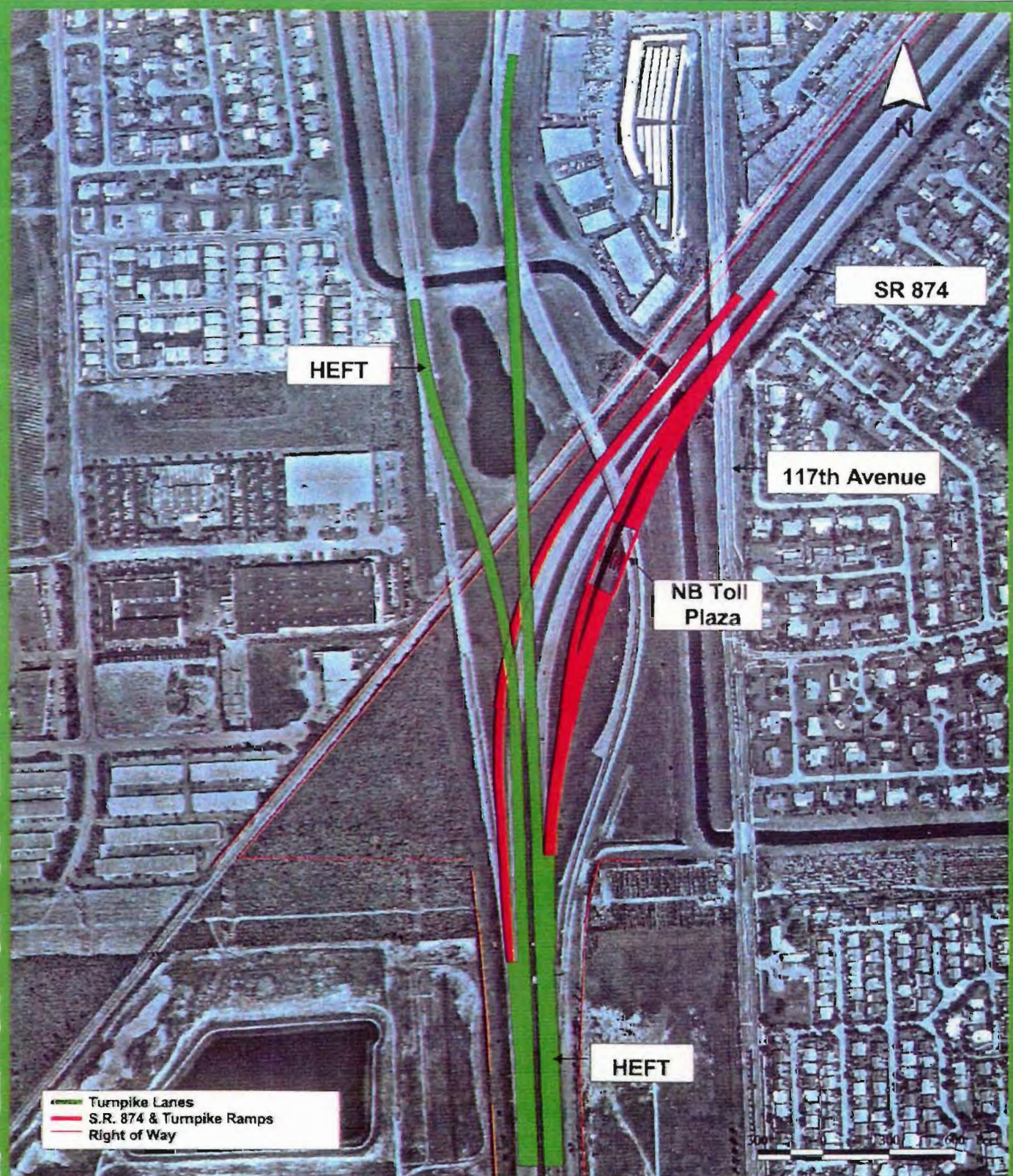


Figure 15

## HEFT/SR 874 Interchange Concept # 3

Source: Florida Department of Transportation





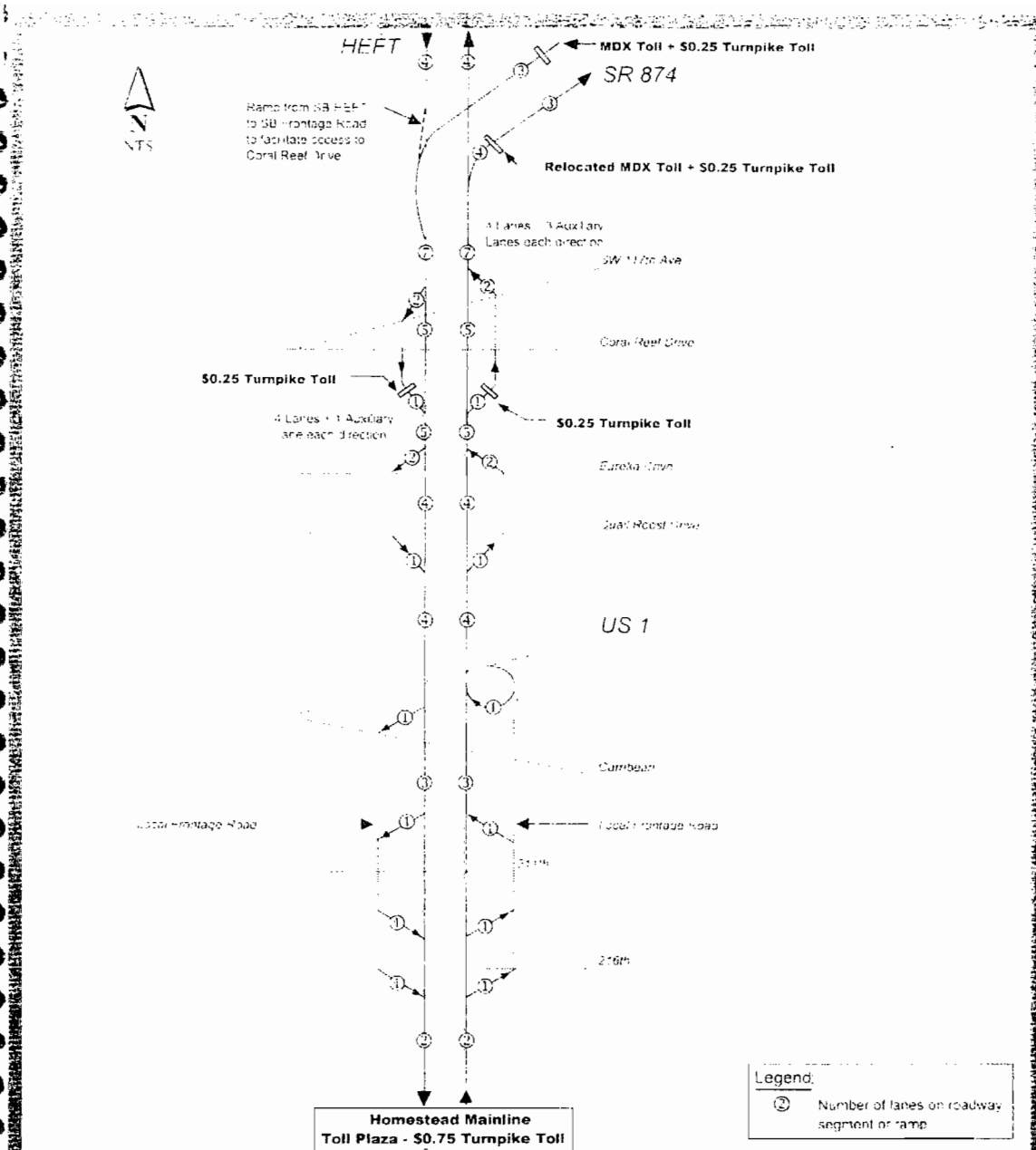


Figure 16  
Concept #3 - Interchange Upgrade with  
No Frontage Road System



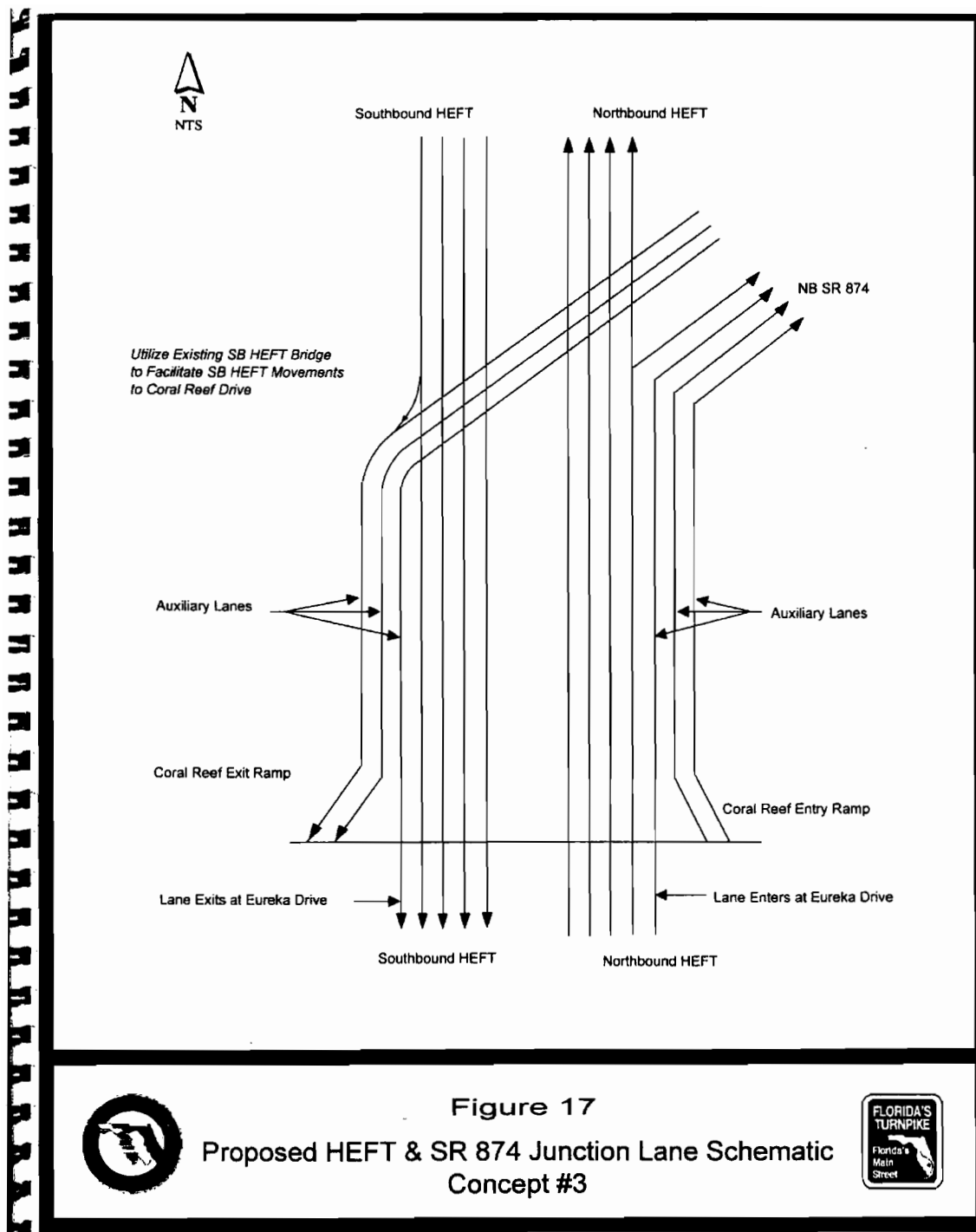


Figure 17  
Proposed HEFT & SR 874 Junction Lane Schematic  
Concept #3







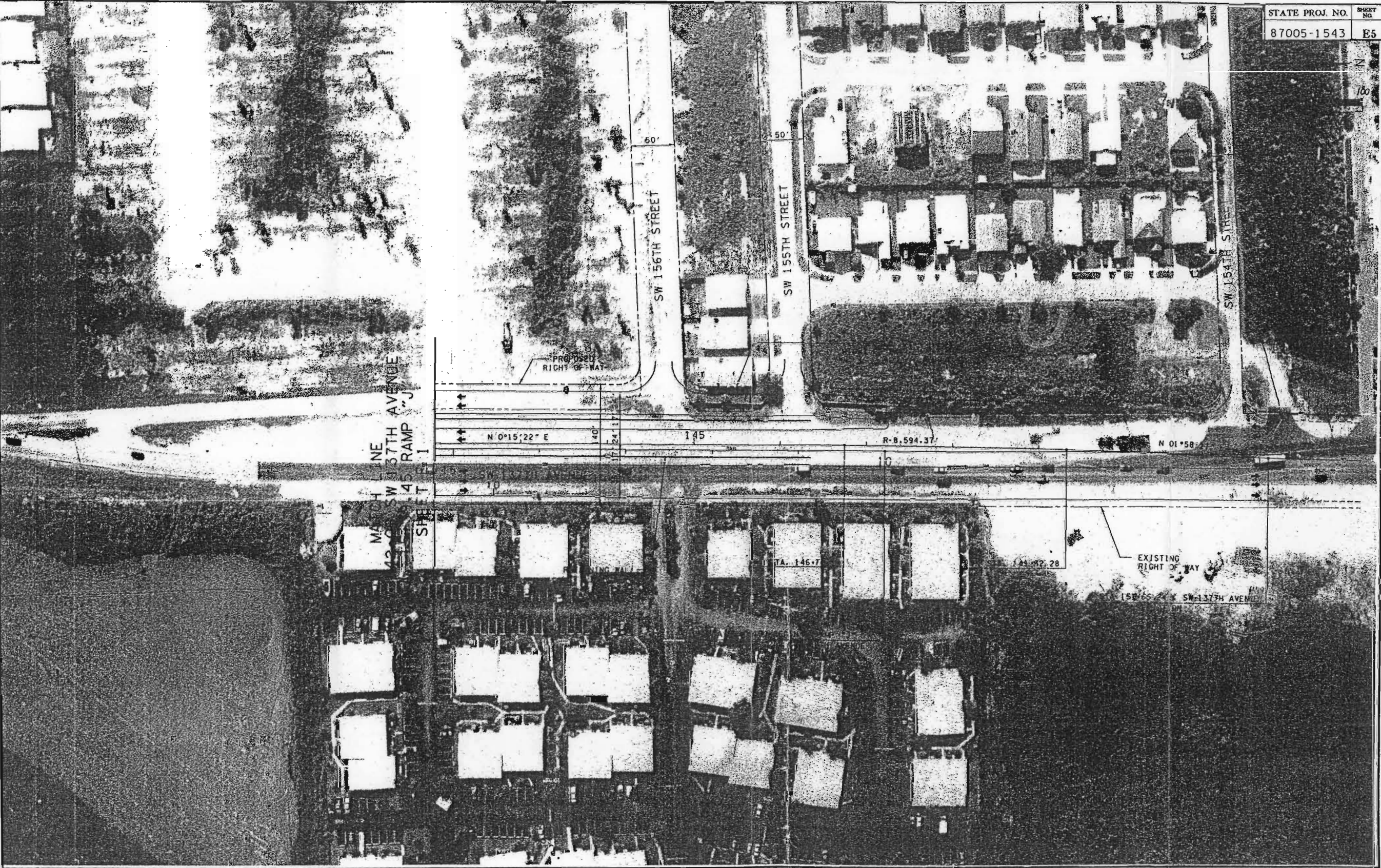
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## **APPENDIX B**

# **FDOT PD&E Alternative E Alignment**





STATE PROJ. NO.  
87005-1543

SHEET NO.  
E5

REVISIONS								DESIGNED CHECKED BY	NAME	DATE	DRAWN CHECKED BY	NAME	DATE	FLORIDA DEPARTMENT OF TRANSPORTATION		APPROVED BY	DATE	SR 874 EXTENSION ALTERNATIVE "E"
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY											

05/10/2001



1

AVENUE

SR 874 EXTENSION  
ALTERNATIVE "E"

SR 874 EXTENSION  
ALTERNATIVE "E"

05/10/2001





STATE PROJ. NO.	SHEET NO.
87005-1543	E1

REVISIONS												DESIGNED		NAME		DATE		DRAWN		NAME		DATE		FLORIDA DEPARTMENT OF TRANSPORTATION		SR 874 EXTENSION ALTERNATIVE "E"			
DATE	BY	DESCRIPTION		DATE	BY	DESCRIPTION		DATE	BY	DESCRIPTION		DATE	BY	DESCRIPTION		DATE	BY	CHECKED		BY		APPROVED BY :		DATE :					
												SUPERVISED BY :																	

05/10/2001



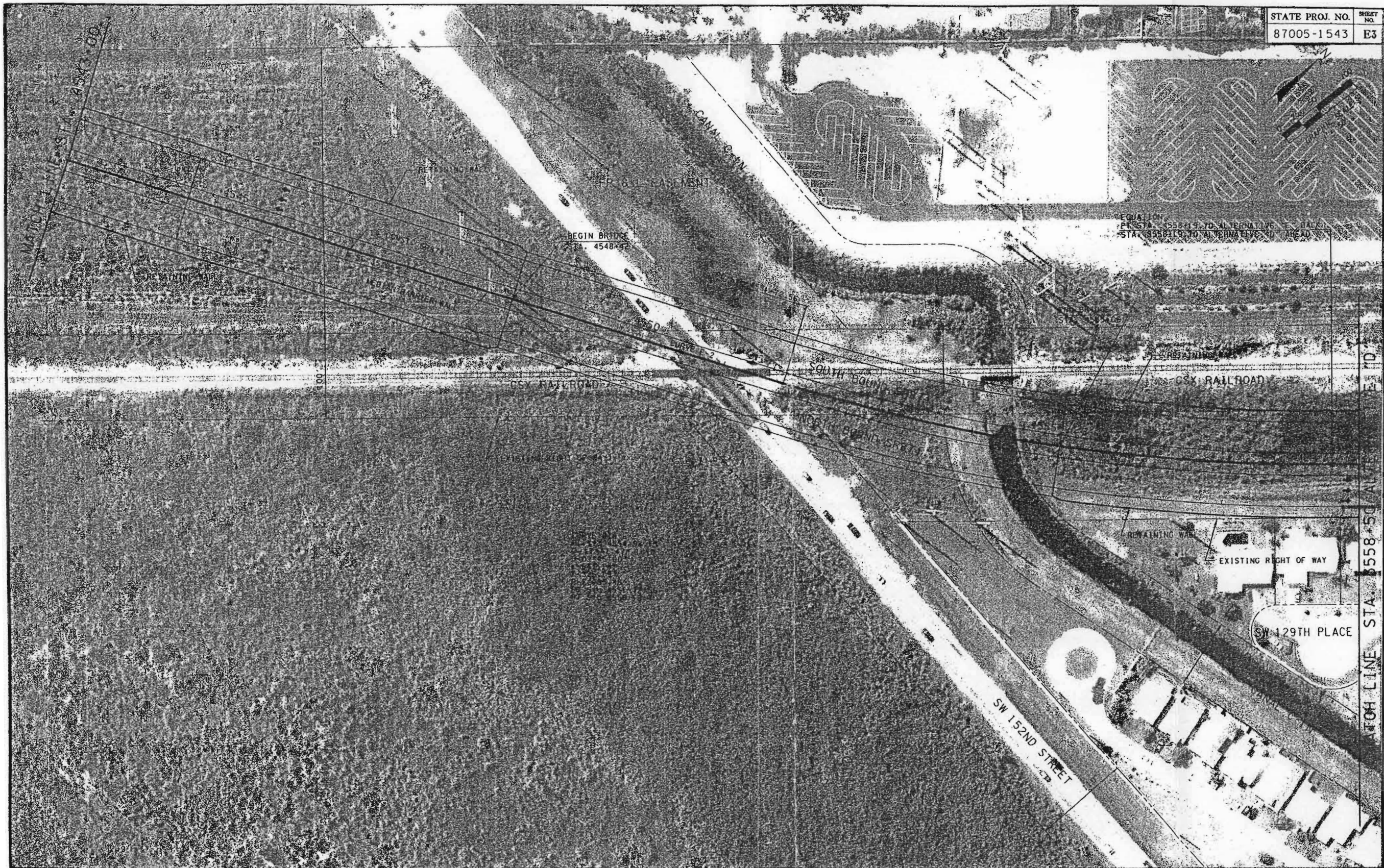


REVISIONS										DESIGNED		DRAWN		FLORIDA DEPARTMENT OF		SR 874 EXTENSION ALTERNATIVE "E"
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DATE	APPROVED BY	

05/10/2001

05/10/2001





STATE PROJ. NO.	SHEET NO.
87005-1543	E3

EQUATION  
STA. 4558+19 TO ALTERNATIVE "E" BACK  
STA. 4558+19 TO ALTERNATIVE "E" AHEAD

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

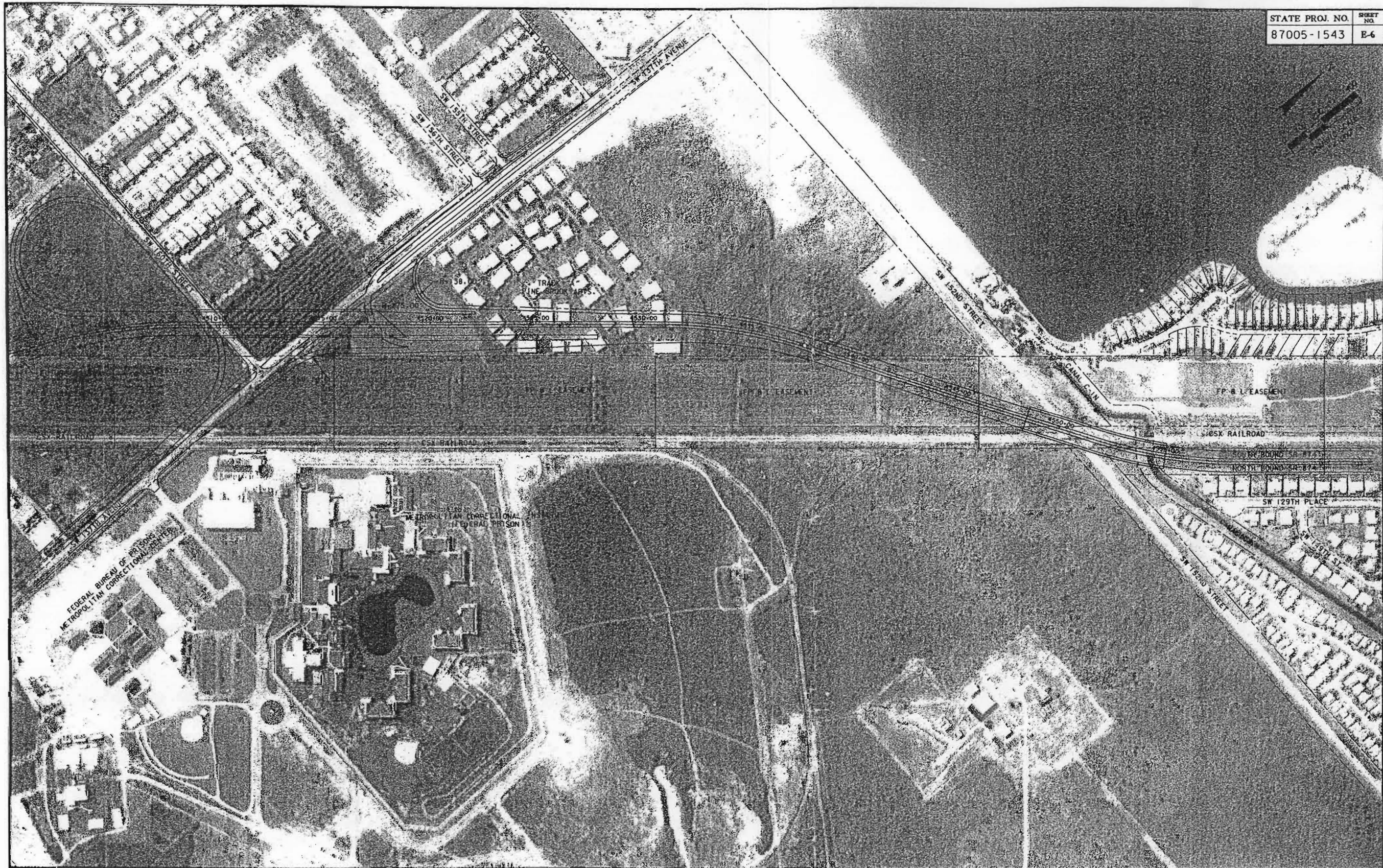
DESIGNED BY	NAME	DATE	DRAWN BY	NAME	DATE
CHECKED BY			CHECKED BY		
SUPERVISED BY:			DATE:		

FLORIDA DEPARTMENT OF TRANSPORTATION	
APPROVED BY:	

SR 874 EXTENSION  
ALTERNATIVE "E"

05/10/2001





REVISIONS												DESIGNED		DRAWN		CHECKED		SUPERVISED BY		FLORIDA DEPARTMENT OF TRANSPORTATION		APPROVED BY		DATE	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY

SR 874 EXTENSION  
 ALTERNATIVE "E"

SR 874 EXTENSION  
ALTERNATIVE "E"

05/10/2001

25/10/2001



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and Associates, Inc.

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## **APPENDIX C**

# **Right-of-Way Reservation Ordinance**



Cutler Rd. (Ingraham Hwy.) from Coral Reef Dr. South to Silver Palm Dr. 100		Range 39 East, and Sections 4, 5, 7, 8, and 18 in Township 56 South, Range 39 East, bounded on the northwesterly side of the Seaboard Airline Railway southeasterly right-of-way line and on the southeasterly side by a line parallel to the Seaboard Airline Railway southeasterly right-of-way line, and one hundred twenty-five (125) feet southeasterly therefrom as measured on a perpendicular from the southeasterly Seaboard Airline Railway right-of-way line.	
(16) Card Sound Road from U.S. #1 (in Sec. 30, Twp. 57S, Rge. 39E going Se/ly to the Monroe County Line (being the East line of Sec. 13, Twp. 59S, Rge. 39E). Said right-of-way traversing the following Sections: 30 and 31, Twp. 57S, Rge. 39E; 5, 6, 8, 16, 17, 21, 22, 27, 34 and 35, Twp. 58S, Rge. 39E; 2, 11, 12 and 13, Twp. 59S, Rge. 39E). Said right-of-way to be measured 55' each side from the centerline of existing pavement .....	110	<i>North-South West Highways (Avenues).</i>	
(17) State Rd. A1A Bakers Haulover North to County Line .....	100	(22) State Rd. No. 7 Golden Glades Dr. north to County Line .....	100
(18) Rickenbacker Causeway Rd. from South end of Crandon Park South to Cape Florida Lighthouse	120	(23) NW 7th Ave. (State Rd. No. 7) from NW 79th St. to south limits of North Miami and from north limits of North Miami to Golden Glades Dr. Cloverleaf .....	100
(19) Bayshore Dr. (Biscayne Key) from Cape Florida Lighthouse North to waterway and then East to North and South Highway .....	100	(24) NW 7th Ave. from Golden Glades Dr. extended north to County Line .....	70
(20) Reserved*		(25) State Hwy. No. 9 from 27th Ave. north to north County Line (See State Dept. of Transportation r/w Project No. 8724-203)	200 to 300
(21) Seaboard Throughway from Galloway Road to Krome Avenue.....	125	(26) NW 12th Ave.—Extension from NW 71st St. north to south limits of North Miami and north limits of North Miami to Opa Locka Blvd. ....	100
On portions of Sections 28, 32 and 33 in Township 54 South, Range 40 East, Sections 5, 7, 8 and 18 in Township 55 South, Range 40 East, Sections 13, 23, 24, 26, 27, 33 and 34 in Township 55 South,		(27) NW 17th Ave.—From NW 71st St., north to Opa Locka Blvd. ....	100
		(28) NW 22nd Ave.—From NW 38th St., north to Dade County north line.....	100

\*Editor's note—Ord. No. 65-27, § 1, enacted April 20, 1965, repealed item (20). The number has been reserved to maintain continuity.





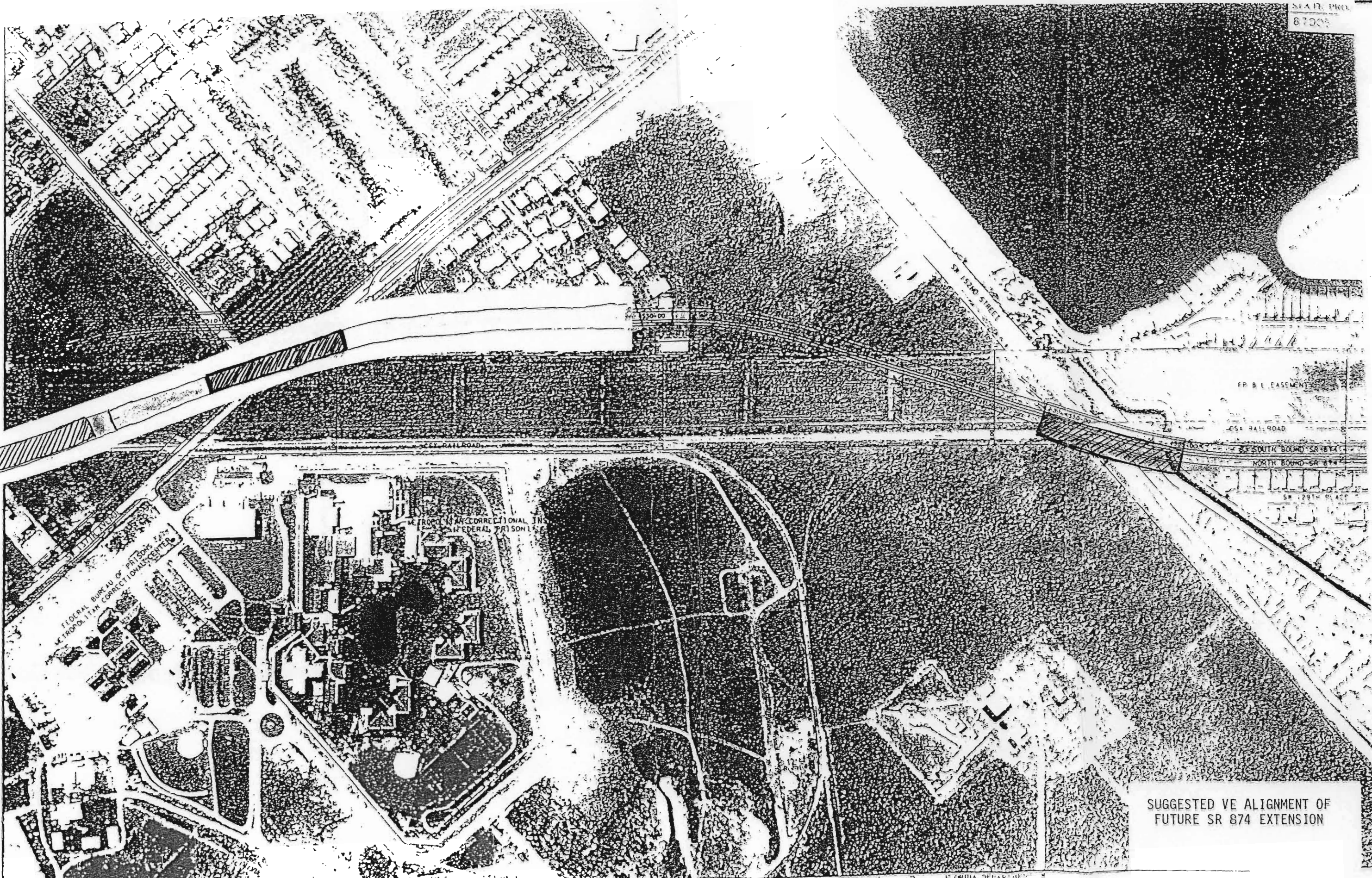
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and Associates, Inc.

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## **APPENDIX D**

# **Value Engineering Alternative**





SUGGESTED VE ALIGNMENT OF  
FUTURE SR 874 EXTENSION









