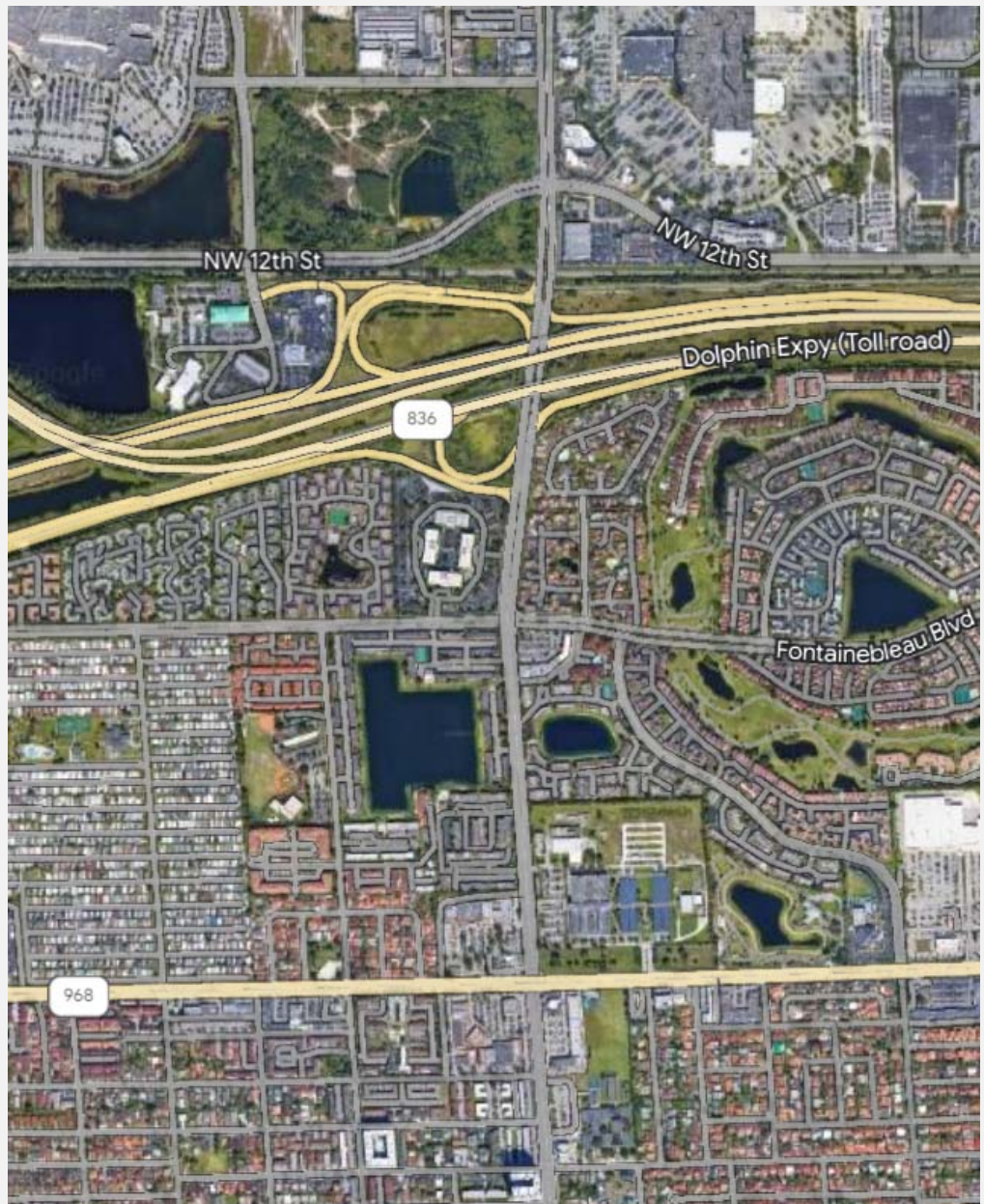


Districtwide Traffic Operations & Safety Studies
FPID 250650-6-32-01
Contract C-AP24

June 2024

RRR SAFETY REVIEW

SR 985/NW 107TH AVENUE
From North of Flagler Street to
North of SR 836/Dolphin Expressway
Section 87072000
(MP 6.827 to 7.604)



Resurfacing, Restoration, and Rehabilitation (RRR/3R)

SAFETY REVIEW



District Six Traffic Operations

District-Wide Traffic Operations & Safety Studies

FM: 250650-6-32-01

Contract No. C-AP24

Task Work Order No. 5

SR 985/NW 107TH AVENUE

FROM NORTH OF FLAGLER STREET

TO NORTH OF SR 836/DOLPHIN EXPRESSWAY

Section 87072000 (MP 6.827 to 7.604)

FDOT Project Manager: Cristina Morales, P.E.

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ENGINEER'S CERTIFICATION

I, Jeffrey Slawinski, PE, with Florida PE No. 90922, certify that I currently hold an active Professional Engineer's License in the State of Florida, and I am competent through education or experience to provide engineering services in the civil and traffic engineering disciplines contained in this report. I further certify that this report was prepared by me or under my responsible charge as defined in Chapter 61G15-18.001 F.A.C. and that all statements, conclusions, and recommendations made herein are true and correct to the best of my knowledge and ability.

Project Description:

3R SAFETY REVIEW**SR 985/NW 107TH AVENUE****FROM NORTH OF FLAGLER STREET TO NORTH OF SR 836/DOLPHIN EXPRESSWAY****SECTION 87072000 (MP 6.827 TO 7.604)**

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1 INTRODUCTION

SR 985/NW 107th Avenue segment from North of Flagler Street to North of SR 836/Dolphin Expressway was identified by the Department as a candidate for a Resurfacing, Restoration, and Rehabilitation (3R) project with FM No. 452560-1. This report has been prepared in response to the Department's request for a safety review for this project. The purpose of the safety review is to identify crash patterns, suggest a further review, and/or recommend safety countermeasures to enhance safety and operations. Some of the recommended improvements could potentially be implemented through the subject 3R Project. **Figure 1-1** depicts the locations of the 3R safety review project.

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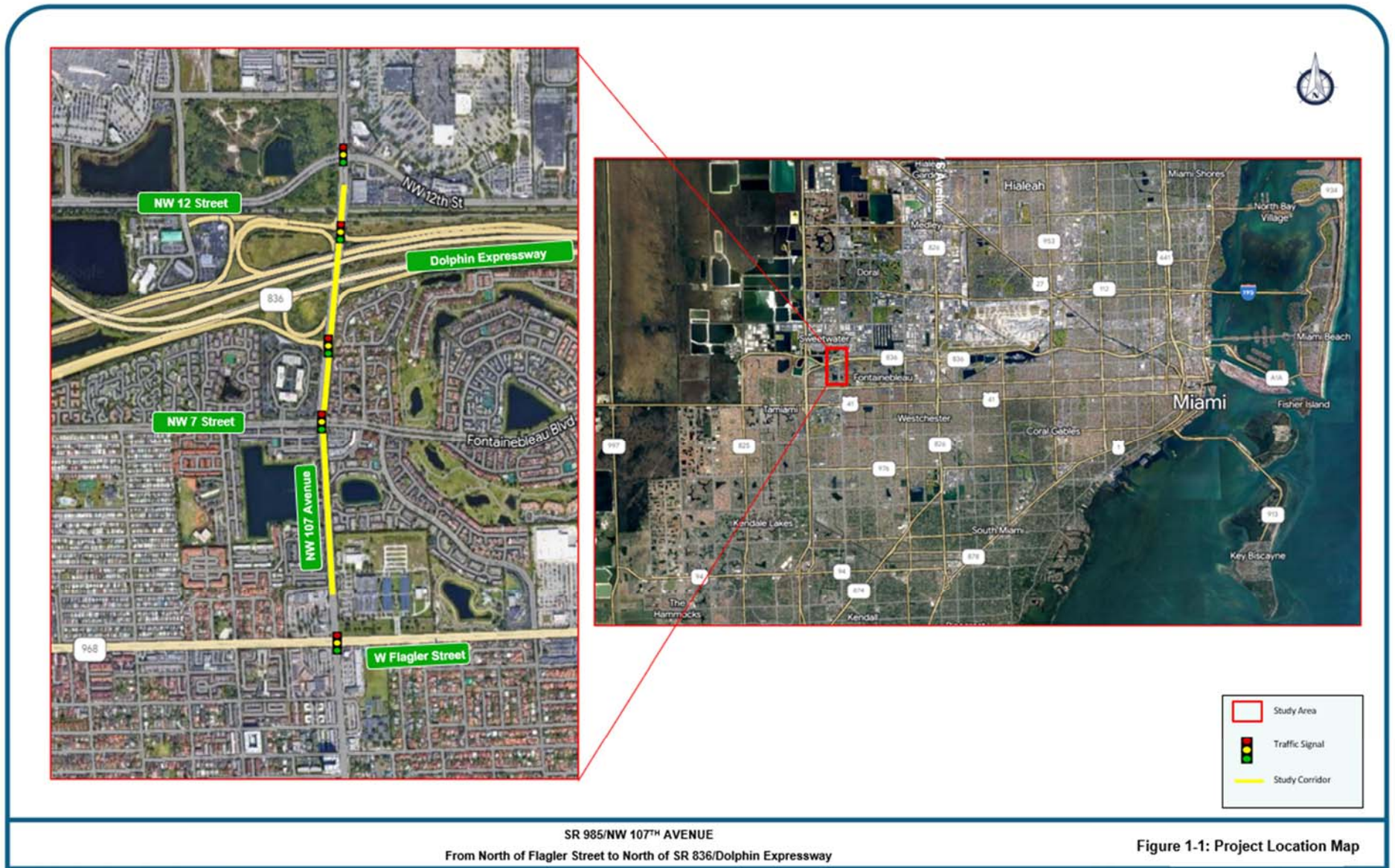


Figure 1-1: Project Location

2 EXISTING CONDITIONS

The study segment runs along SR 985/NW 107th Avenue from North of W. Flagler Street to North of SR 836/Dolphin Expressway in Miami-Dade County, Florida. SR 985/NW 107th Avenue is identified as section 87072000 on the State Highway System (SHS). Within the study limits, the study segment has a functional classification of “Urban Minor Arterial,” a roadway access classification of 5, and a context classification of C4 – Urban General. SR 985/NW 107th Avenue runs in the north-south direction, and its typical section consists of three (3) travel lanes in each direction divided by raised medians and traffic separators. However, it is noted that the north direction from NW 7th Street to the SR 836 Eastbound On-Ramp and the south direction from the SR 836 Eastbound Off Ramp to the On-Ramp consist of four lanes. Within the study limits, SR 985/NW 107th Avenue has curbs and gutters along both sides and sidewalks along the east side of the segment. The posted speed limit throughout the segment is 40 MPH in both directions.

The land use along SR 985/NW 107th Avenue is primarily residential. However, some commercial land uses surround the corridor near NW 7th Street and W. Flagler Street intersections. Within the study limits are two (2) bus stops in the northbound direction and two (2) bus stops in the southbound direction. The bus stops serve Miami-Dade Transit Route 137 and the City of Doral Trolley. Miami-Dade Transit Route 137 travels from South Dade Government Center to Dolphin Mall Metrobus.

The straight-line diagrams for the roadway sections forming the study segments are included in **Appendix A**. The study segment includes three (3) signalized intersections as follows:

- SR 985/NW 107th Avenue at NW 7th Street (Signalized)
- SR 985/NW 107th Avenue at SR 836 Eastbound Off Ramp (Signalized)
- SR 836 Westbound Off Ramp to SR 985/NW 107th Avenue Northbound (Signalized)

The signal timing reports for the signalized locations within the segment are included in **Appendix B**. The following are descriptions of the existing characteristics for each of the signalized intersections:

SR 985/NW 107th Avenue at NW 7th Street (Signalized)

This location is a four-legged intersection with mast arm-mounted signal heads. The northbound and southbound left-turn movements run under protective-only phasing. The eastbound and westbound movements run under split phasing. There are crosswalks (no high emphasis) at the south, east, and west legs of the intersection. There are countdown pedestrian signal heads with pushbuttons and pedestrian signs to cross the south leg of the intersection. There are internally illuminated street name signs facing all approaches.

The existing lane configuration geometry at the intersection is as follows:

- Northbound Approach: An exclusive left-turn lane, two through lanes, and a shared through/right-turn lane.
- Southbound Approach: Two exclusive left-turn lanes, two through lanes, and an exclusive right-turn lane.
- Eastbound Approach: An exclusive left-turn lane, a shared left-turn/through lane, and a shared through/right-turn lane.
- Westbound Approach: An exclusive left-turn lane, two through lanes, and an exclusive right-turn lane.

SR 985/NW 107th Avenue at SR 836 Eastbound Off Ramp (Signalized)

This three-legged intersection operates as a turbo lane, with mast arm-mounted signal heads controlling the eastbound and southbound movements and northbound lanes running continuously. Besides the sidewalk along the east side, the intersection has no pedestrian features. There are internally illuminated street name signs facing the eastbound and southbound approaches. The existing lane configuration geometry at the intersection is as follows:

- Northbound approach: Four through lanes. The right lane is an exclusive lane to SR 836 Eastbound.
- Southbound approach: Three through lanes. The entrance to the SR 836 Southbound on-ramp from the southbound direction is approximately 300 feet north of the southbound stop bar.
- Eastbound Approach: An exclusive left-turn lane and an exclusive channelized right-turn lane.

SR 836 Westbound Off Ramp to SR 985/NW 107th Avenue Northbound (Signalized)

This location is a four-legged intersection with mast arm-mounted signal heads facing the northbound, southbound, and westbound directions. The west leg is the westbound on-ramp to SR 836 WB and HEFT. The east leg is the westbound off-ramp from SR 836 WB. There is no sidewalk along the west side of NW 107th Avenue. There is a crosswalk (no high emphasis) with no pedestrian signal heads at the east leg. There is only an internally illuminated street name sign facing the westbound approach. The existing lane configuration geometry at the intersection is as follows:

- Northbound Approach: An exclusive left-turn lane and three through lanes. A concrete traffic separator separates a part of the left-turn lane from the through lanes.
- Southbound Approach: Three through lanes and an exclusive free-flow right-turn lane.
- Westbound Approach: Two right-turn lanes.

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3 WORK PROGRAM REVIEW

A review of the FIVE-YEAR FDOT Work Program and relevant studies revealed no planned or previous projects or studies within the project limits.

FM No. 450046-1. Rail Safety Improvements at the CSXT Railroad Crossing No. 631075R located on NW 107th Avenue between SR 836 WB On/Off Ramps and NW 12th Street: The safety project includes the installation of new cantilevers/bridges, new gates, LEDs, adding a new 8'x8' control house, crossing control equipment and new power service.

FM No. 250629-4-32-01. The project is a push button project which is extending the northbound left turn lane from SR 985/NW 107th Avenue by 200 feet. This project is currently under construction. An excerpt from the project plans is included in **Appendix C**.

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4 CRASH ANALYSIS

The crash data for the latest five-year period (January 1, 2018 to December 31, 2022) was downloaded from the FDOT's Signal Four Analytics database, reviewed, and summarized for the study segment. The raw data for the segments included 576 crashes; however, upon reviewing the raw data and eliminating crashes that fell outside the study limits, 417 crashes remained and were used for this safety review. The following is a summary of the analysis for the entire segment:

- The segment experienced 417 crashes in the five years, with a yearly breakdown of 88, 123, 56, 68, and 82 crashes from 2018 to 2022.
- The percentage of nighttime crashes (night/dusk/dawn) was 30.2% (126 crashes), slightly above the district-wide average of 28.5%.
- The percentage of crashes during wet/slippery pavement conditions was 12.5% (52 crashes), slightly above the district-wide average of 11.8%.
- Based on crash severity, 9.4% (39 crashes) were injury-type crashes, and 90.6% (378 crashes) were property damage-only crashes. There were no fatal crashes during the three-year study period.
- The leading crash types were rear-end with 191 and sideswipe with 132 crashes.
- Of the 191 rear-end crashes, 86 involved southbound vehicles, 52 involved northbound vehicles, 33 involved westbound vehicles, and 20 involved eastbound vehicles. According to the police reports, 'Careless or Negligent Manner', with 149 crashes (78%), was the leading cause of rear-end crashes. The peak period for rear-end crashes was from 3 PM to 6 PM.
- Of the 132 sideswipe crashes, 61 involved northbound vehicles, 46 involved southbound vehicles, 13 involved eastbound vehicles, and 12 involved westbound vehicles. According to the police reports, 'Failed To Keep In Proper Lane with 96 crashes (72.7%) was the leading cause of sideswipe crashes. The peak period for sideswipe crashes was 3 PM to 6 PM.
- Two (2) bicycle crashes and one (1) pedestrian crash occurred during the five-year study period.
 - The first bicycle crash (Crash # 88254659) occurred on Saturday, November 23, 2019, at 2:30 PM. According to the police report, the crash occurred when a westbound bicyclist failed to obey traffic control devices, crossed at an undesignated location, approximately 10 feet north of NW 7th Street, and was struck by a southbound vehicle. The bicyclist was not injured in the crash. The crash occurred under daylight lighting, clear weather, and dry pavement conditions.
 - The second bicycle crash (Crash # 24352602) occurred on Monday, April 19, 2021, at 12:30 AM. According to the police report, the crash occurred when a southbound left-turn vehicle struck a bicyclist traveling southbound within the east leg crosswalk. The vehicle left the scene. The bicyclist suffered minor injuries. The crash occurred under nighttime, clear weather, and dry pavement conditions.
 - The pedestrian crash (Crash # 24354689) occurred on Thursday, May 6, 2021, at 3:43 PM. According to the police report, the crash occurred when a southbound pedestrian crossed at an undesignated location, approximately 200 feet east of NW 107th Avenue, and was struck by a westbound vehicle. According to the police report, the bicyclist sustained life-threatening injuries. The crash occurred under daylight lighting, clear weather, and dry pavement conditions.
- According to the Department's 2019 3-Year and 5-Year High Crash Lists for spots and segments, the right turn lane from SR 985/NW 107th Avenue to NW 7th Street (MP 7.170) is the only identified high crash location within the study area.

- A confidence level analysis could not be performed for the study corridor to determine whether the frequency of crashes recorded is abnormally high when compared to other segments of similar characteristics, as, there are currently no crash rates available for 2018, 2019, 2020, 2021, or 2022. According to the Highway Safety Improvement Program (HSIP), urban locations with a confidence level of 99.95% or higher can be considered to have an abnormally high number of crashes. **Table 4.1** presents the confidence level calculations for the study area.

Table 4.1: Confidence Level Calculations

Year	2018	2019	2020	2021	2022
Number of Crashes	88	123	56	68	82
Average Daily Traffic (ADT)	65,500	61,500	58,500	55,500	62,000
Actual Crash Rate (ACR)	4.737	7.052	3.375	4.320	4.663
District 6 Average Crash Rate (A)	0.000	#N/A	#N/A	#N/A	#N/A
Average Vehicle Exposure (M)	18.576	17.442	16.591	15.740	17.584
Critical Crash Rate (CCR)	-0.027	#N/A	#N/A	#N/A	#N/A
Safety Ratio	0.000	#N/A	#N/A	#N/A	#N/A
Statistical Significance	-	-	-	-	-
Confidence Level	99.99%	99.99%	99.99%	99.99%	99.99%

Table 4.2 presents a summary by crash type for the segment, and **Table 4.3** presents a crash summary by different categories, such as lighting conditions, surface conditions, and weather conditions. The same information is depicted graphically in Figure 4-1 for visual comparison. **Table 4.4** and **Figure 4-2** present an overall perspective of the clustering and staggering crashes along the study segment. Collision Diagrams were prepared for the above locations for the analysis period of January 1, 2017, through December 31, 2022, and are presented in **Appendix D**.

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Table 4.2: Crash Summary by Type – Segment

SR 985/NW 107 Avenue From N. of Flagler Street to N. of SR 836/Dolphin Expressway		Number of Crashes Year					5 Year Total Crashes	Mean Crashes Per Year	%
		2018	2019	2020	2021	2022			
CRASH TYPE	Rear End	43	52	31	29	36	191	39	45.8%
	Head On	0	0	0	0	0	0	0	0.0%
	Angle	3	2	1	3	2	11	2	2.6%
	Left Turn	4	19	7	6	8	44	9	10.6%
	Right Turn	3	6	3	3	1	16	4	3.8%
	Sideswipe	31	39	10	21	31	132	25	31.7%
	Backed Into	0	1	1	0	1	3	1	0.7%
	Pedestrian	0	0	0	1	0	1	0	0.2%
	Bicycle	0	1	0	1	0	2	1	0.5%
	Fixed Object	3	3	3	4	3	16	3	3.8%
	Impact Attenuator/Crash Cushion	0	0	0	0	0	0	0	0.0%
	Bridge Overhead Structure	0	0	0	0	0	0	0	0.0%
	Bridge Pier or Support	0	0	0	0	0	0	0	0.0%
	Bridge Rail	0	0	0	0	0	0	0	0.0%
	Culvert	0	0	0	0	0	0	0	0.0%
	Curb	1	2	2	1	1	7	2	1.7%
	Ditch	0	0	0	0	0	0	0	0.0%
	Embankment	0	0	0	0	0	0	0	0.0%
	Guardrail Face	0	0	0	1	0	1	0	0.2%
	Guardrail End	0	0	0	0	0	0	0	0.0%
	Cable Barrier	0	0	0	0	0	0	0	0.0%
	Concrete Traffic Barrier	0	0	0	0	0	0	0	0.0%
	Other Traffic Barrier	0	0	0	0	0	0	0	0.0%
	Tree (Standing)	0	0	0	0	1	1	0	0.2%
	Utility Pole/Light Support	0	0	1	0	0	1	0	0.2%
	Traffic Sign Support	0	0	0	0	0	0	0	0.0%
	Traffic Signal Support	0	0	0	0	1	1	0	0.2%
	Other Post, Pole Or Support	0	0	0	0	0	0	0	0.0%
	Fence	1	0	0	0	0	1	0	0.2%
	Mailbox	0	0	0	0	0	0	0	0.0%
	Other Fixed Object	1	1	0	2	0	4	1	1.0%
	Other Non Fixed Object Collisions	0	0	0	0	0	0	0	0.0%
	Railway Vehicle (Train, Engine)	0	0	0	0	0	0	0	0.0%
	Animal	0	0	0	0	0	0	0	0.0%
	Motor Vehicle in Transport	0	0	0	0	0	0	0	0.0%
	Parked Motor Vehicle	0	0	0	0	0	0	0	0.0%
	Work Zone/Maintenance Equip.	0	0	0	0	0	0	0	0.0%
	Struck by Falling/Shifting Cargo	0	0	0	0	0	0	0	0.0%
	Other Non-Fixed Object	0	0	0	0	0	0	0	0.0%
	Non-Collisions	1	0	0	0	0	1	0	0.2%
Overturn/Rollover	0	0	0	0	0	0	0	0.0%	
Fire/Explosion	0	0	0	0	0	0	0	0.0%	
Immersion	0	0	0	0	0	0	0	0.0%	
Jackknife	0	0	0	0	0	0	0	0.0%	
Cargo/Equipment Loss or Shift	1	0	0	0	0	1	0	0.2%	
Fell/Jumped from Motor Vehicle	0	0	0	0	0	0	0	0.0%	
Thrown or Falling Object	0	0	0	0	0	0	0	0.0%	
Ran into Water/Canal	0	0	0	0	0	0	0	0.0%	
Other Non-Collision	0	0	0	0	0	0	0	0.0%	
Others	0	0	0	0	0	0	0	0.0%	
Total Crashes		88	123	56	68	82	417	84	100.0%

Table 4.3: Crash Summaries by Other Categories – Segment

SR 985/NW 107 Avenue From N. of Flagler Street to N. of SR 836/Dolphin Expressway		Number of Crashes					5 Year Total Crashes	Mean Crashes Per Year	%
		2018	2019	2020	2021	2022			
SEVERITY	PDO Crashes	82	112	54	59	71	378	77	90.6%
	Fatal Crashes	0	0	0	0	0	0	0	0.0%
	Injury Crashes	6	11	2	9	11	39	7	9.4%
LIGHTING	Daylight	75	81	33	40	62	291	57	69.8%
	Dusk	2	7	1	2	2	14	3	3.4%
	Dawn	0	0	2	1	0	3	1	0.7%
	Dark	11	35	20	25	18	109	23	26.1%
	Unknown	0	0	0	0	0	0	0	0.0%
SURFACE	Dry	78	110	39	61	77	365	72	87.5%
	Wet	10	13	17	7	5	52	12	12.5%
	Others	0	0	0	0	0	0	0	0.0%
MONTH	January	6	11	10	4	7	38	8	9.1%
	February	7	10	6	5	7	35	7	8.4%
	March	7	11	4	4	2	28	7	6.7%
	April	8	4	1	6	6	25	5	6.0%
	May	2	12	3	5	5	27	6	6.5%
	June	9	9	1	4	10	33	6	7.9%
	July	12	11	6	7	5	41	9	9.8%
	August	12	13	5	6	4	40	9	9.6%
	September	9	9	6	5	11	40	7	9.6%
	October	4	6	6	3	7	26	5	6.2%
	November	6	15	8	9	8	46	10	11.0%
	December	6	12	0	10	10	38	7	9.1%
DAY	Monday	14	22	2	8	12	58	12	13.9%
	Tuesday	10	17	7	7	18	59	10	14.1%
	Wednesday	15	13	12	12	10	62	13	14.9%
	Thursday	10	18	13	9	11	61	13	14.6%
	Friday	22	19	11	13	15	80	16	19.2%
	Saturday	7	19	6	11	7	50	11	12.0%
	Sunday	10	15	5	8	9	47	10	11.3%
HOUR	00:00-06:00	4	6	0	7	6	23	4	5.5%
	06:00-09:00	10	9	2	6	14	41	7	9.8%
	09:00-11:00	10	8	3	4	9	34	6	8.2%
	11:00-13:00	11	13	5	8	5	42	9	10.1%
	13:00-15:00	18	22	7	6	14	67	13	16.1%
	15:00-18:00	18	23	15	15	16	87	18	20.9%
	18:00-21:00	15	25	15	11	10	76	17	18.2%
21:00-24:00	2	17	9	11	8	47	10	11.3%	
WEATHER	Clear	67	96	40	56	71	330	65	79.1%
	Cloudy	16	18	4	12	9	59	13	14.1%
	Rain	5	8	12	0	2	27	6	6.5%
	Fog, Smog, Smoke	0	1	0	0	0	1	0	0.2%
	Sleet/Hail/Freezing Rain	0	0	0	0	0	0	0	0.0%
	Blowing Sand, Soil, Dirt	0	0	0	0	0	0	0	0.0%
	Severe Crosswinds	0	0	0	0	0	0	0	0.0%
	Other	0	0	0	0	0	0	0	0.0%

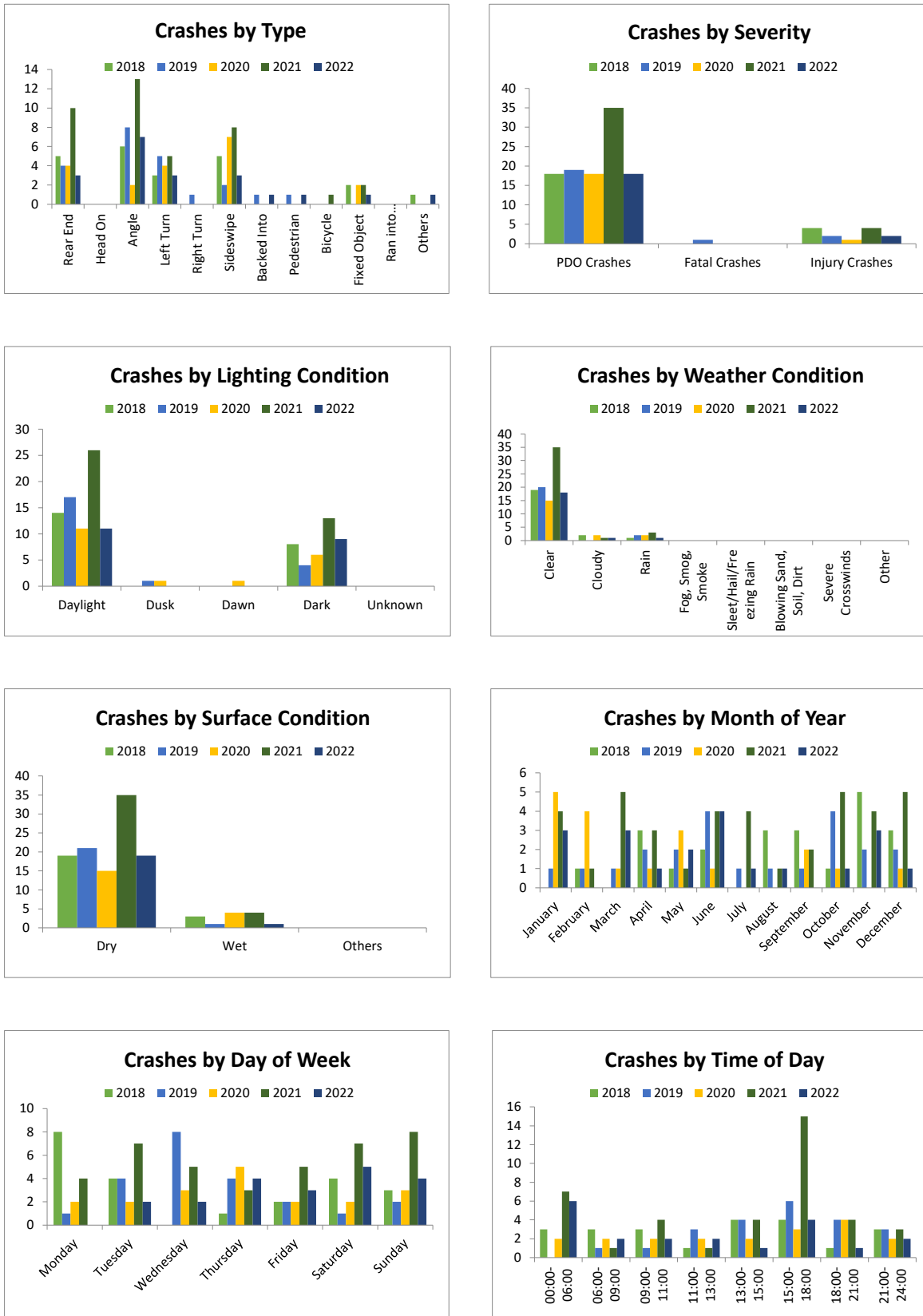


Figure 4-1: Histograms of Crash Summaries

Table 4.4: Crash Distribution at Intersections

Location	2018	2019	2020	2021	2022	PDO	Injury	Fatal	Totals	Average
MP 6.827 to W. Lake Village S. Driveway	4	6	2	1	0	11	2	0	13	3
Bet. W. Lake Village S. and N. DWYs	3	1	1	0	2	6	1	0	7	1
NW 7 Street	42	62	24	30	42	183	17	0	200	40
SR 836 EB On/Off Ramps	20	23	13	14	21	85	6	0	91	18
SR 836 WB On/Off Ramps	19	31	16	23	17	93	13	0	106	21
Total	88	123	56	68	82	378	39	0	417	83

DWOs: Driveways, W:West, N.: North, S.: South

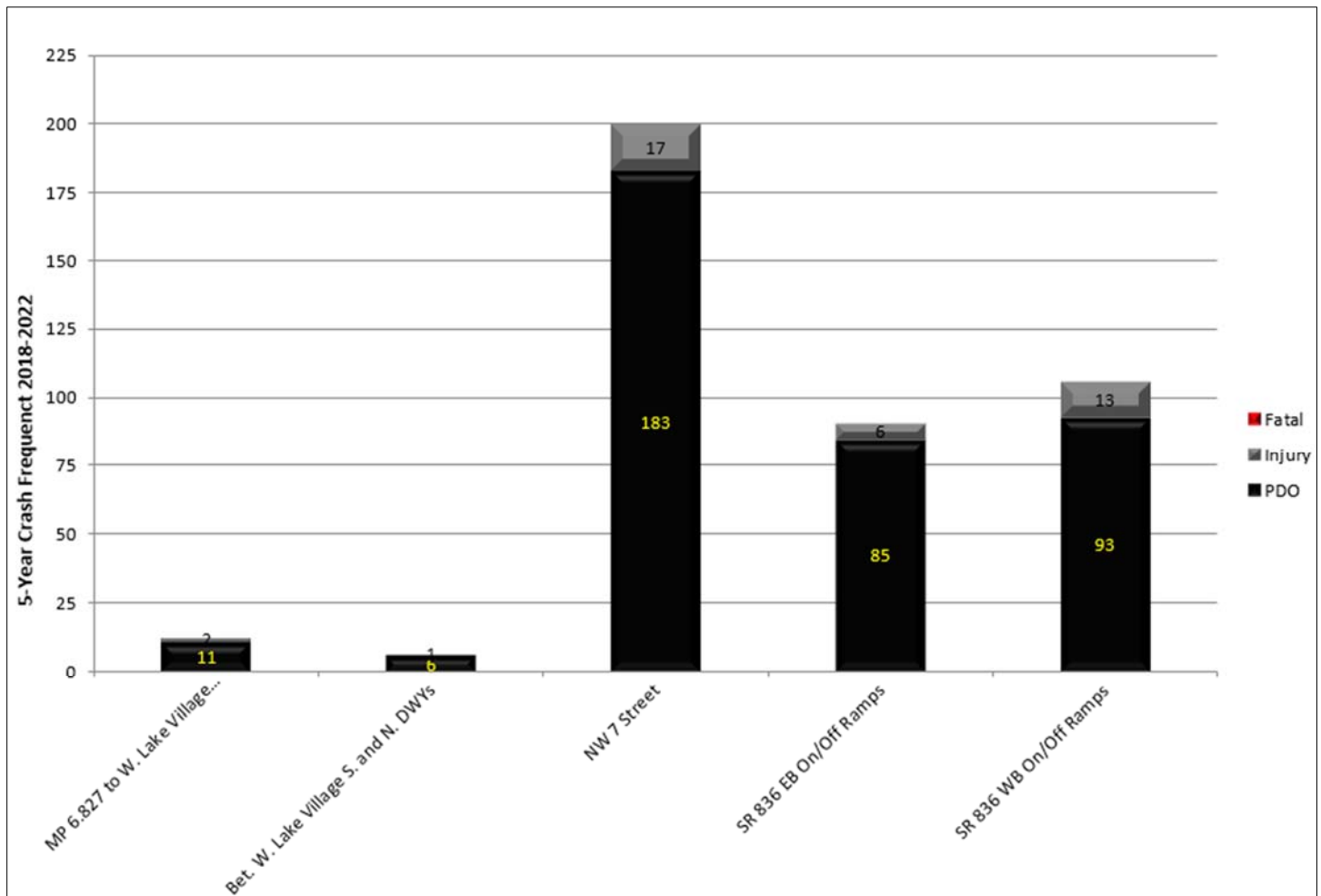


Figure 4-2: Crash Distribution by Intersection

From Table 4.4, Figure 4.2, the Collision Diagrams for the entire segment, the following locations are further investigated:

- SR 985/NW 107th Avenue at NW 7th Street
- SR 985/NW 107th Avenue at SR 836 Eastbound On/Off Ramps
- SR 985/NW 107th Avenue at SR 836 Westbound On/Off Ramps

SR 985/NW 107th Avenue at NW 7th Street

- Given this intersection's geometric layout, an expected value analysis (EVA) was performed using the following layout: 6 Lane x 4 Lane, Signalized, 4 Leg Intersection, Divided. Based on the EVA analysis, sideswipe and right-turn crashes were identified as abnormal at the 95th percentile.
- There were 200 crashes in the five-year study period, with a yearly breakdown of 42, 62, 24, 30, and 42 crashes from 2018 to 2022.
- The percentage of crashes during nighttime (night/dusk/dawn) was 30.5% (61 crashes), above the district-wide average of 28.5%.
- The percentage of crashes during wet/slippy pavement conditions was 8.0% (16 crashes), below the district-wide average of 11.8%.
- Based on crash severity, 8.5% (17 crashes) were injury-type crashes, and 91.5% (183 crashes) were property damage-only crashes. There were no fatal crashes during the five-year study period.
- The peak period for all crashes was 3 PM to 6 PM, with 40 crashes.
- The leading crash types were sideswipe at 43.5% (87 crashes) and rear-end at 40% (80 crashes).
- Of the 87 sideswipe crashes, 38 involved northbound vehicles, 28 involved southbound vehicles, 13 involved eastbound vehicles, and eight (8) involved westbound vehicles. According to the police reports, 'Failed To Keep In Proper Lane' with 68 crashes (78.2%) was the leading cause of sideswipe crashes. Most crashes involving northbound vehicles seem associated with lane changes to access the right-turn lane that connects to the SR 836 EB On-Ramp. The peak period for sideswipe crashes was 3 PM to 6 PM.
- Of the 80 rear-end crashes, 32 involved southbound vehicles, 22 involved northbound vehicles, 15 involved eastbound vehicles, and 11 involved westbound vehicles. According to the police reports, 'Careless or Negligent Manner,' with 63 crashes (78.8%), was the leading cause of rear-end crashes. The peak period for rear-end crashes was from 3 PM to 6 PM.
- Of the 10 right-turn crashes, three (3) involved southbound right-turn vehicles violating the right-of-way of westbound vehicles, one (1) involved a westbound right-turn vehicle violating the right-of-way of a northbound vehicle, five (5) involved westbound right-turn vehicles exiting the plaza located at the southeast corner and violating the right-of-way in northbound vehicles, and one (1) involved an eastbound right-turn vehicle exiting the commercial property located at the northwest quadrant and violating the right-of-way if a southbound vehicle. There was no specific peak period for the right-turn crashes.
- Two (2) bicycle crashes and one (1) pedestrian crash occurred at the intersection during the five-year study period.
 - The first bicycle crash (Crash # 88254659) occurred on Saturday, November 23, 2019, at 2:30 PM. According to the police report, the crash occurred when a westbound bicyclist failed to obey traffic control devices, crossed at an undesignated location, approximately 10 feet north of NW 7th Street, and was struck by a southbound vehicle. The bicyclist was not injured in the crash. The crash occurred under daylight lighting, clear weather, and dry pavement conditions.
 - The second bicycle crash (Crash # 24352602) occurred on Monday, April 19, 2021, at 12:30 AM. According to the police report, the crash occurred when a southbound left-turn vehicle struck a bicyclist traveling southbound within the east leg crosswalk. The vehicle left the scene. The bicyclist suffered minor injuries. The crash occurred under nighttime, clear weather, and dry pavement conditions.

- The pedestrian crash (Crash # 24354689) occurred on Thursday, May 6, 2021, at 3:43 PM. According to the police report, the crash occurred when a southbound pedestrian crossed at an undesignated location, approximately 200 feet east of NW 107th Avenue, and was struck by a westbound vehicle. According to the police report, the bicyclist sustained life-threatening injuries. The crash occurred under daylight lighting, clear weather, and dry pavement conditions.

Table 4-5 summarizes the crash statistics of the intersection.

Table 4-5: Crash Statistics - SR 985/NW 107th Avenue at NW 7th Street

SR 985/NW 107 Avenue at NW 7 Street 6 Lane x 4 Lane, Signalized, with Turn Lanes, 4 Leg Intersection		Number of Crashes					5 Year Total Crashes	Mean Crashes Per Year	%	Expected Annual Crash Value		90 %ile	95 %ile
		Year								Abnormally High Crashes per year			
		2018	2019	2020	2021	2022				90th percentile	95th percentile		
CRASH TYPE	Rear End	16	22	12	9	21	80	14.75	40.0%	45.88	50.22		
	Head On	0	0	0	0	0	0	0.00	0.0%	0.27	0.31		
	Angle	0	0	0	1	0	1	0.25	0.5%	13.89	15.11		
	Left Turn	2	5	0	2	2	11	2.25	5.5%	8.51	9.37		
	Right Turn	1	4	1	3	1	10	2.25	5.0%	0.99	1.11	X	X
	Sideswipe	23	27	8	13	16	87	17.75	43.5%	13.37	14.65	X	X
	Backed Into	0	1	1	0	1	3	0.50	1.5%	0.54	0.61		
	Pedestrian	0	0	0	1	0	1	0.25	0.5%	1.75	1.96		
	Bicycle	0	1	0	1	0	2	0.50	1.0%	1.02	1.15		
	Fixed Object	0	2	2	0	1	5	1.00	2.5%	1.70	1.89		
	Other Non-Collisions	0	0	0	0	0	0	0.00	0.0%	1.65	1.85		
	Overturn/Rollover	0	0	0	0	0	0	0.00	0.0%	0.59	0.67		
Others	0	0	0	0	0	0	0.00	0.0%	6.89	7.62			
	Total Crashes	42	62	24	30	42	200	39.50	100.0%	85.28	92.50		
SEVERITY	PDO Crashes	41	56	23	26	37	183	36.50	91.5%	70.33	76.51		
	Fatal Crashes	0	0	0	0	0	0	0.00	0.0%	0.46	0.52		
	Injury Crashes	1	6	1	4	5	17	3.00	8.5%	16.88	18.29		
LIGHTING CONDITIONS	Daylight	37	40	14	16	32	139	26.75	69.5%	59.58	64.68		
	Dusk	1	2	0	2	1	6	1.25	3.0%	2.23	2.46		
	Dawn	0	0	2	1	0	3	0.75	1.5%	1.32	1.46		
	Dark	4	20	8	11	9	52	10.75	26.0%	24.16	26.33		
	Unknown	0	0	0	0	0	0	0.00	0.0%	0.48	0.55		
SURFACE CONDITIONS	Dry	41	56	19	28	40	184	36.00	92.0%	74.44	80.82		
	Wet	1	6	5	2	2	16	3.50	8.0%	11.72	12.74		
	Others	0	0	0	0	0	0	0.00	0.0%	6.89	7.62		

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SR 985/NW 107th Avenue at SR 836 Eastbound On/Off Ramps

- Given this intersection's geometric layout, an expected value analysis (EVA) was not performed; instead, a frequency analysis was conducted.
- There were 91 crashes in the five-year study period, with a yearly breakdown of 20, 23, 13, 14, and 21 crashes from 2018 to 2022
- The percentage of crashes during nighttime (night/dusk/dawn) was 24.2% (22 crashes), below the district-wide average of 28.5%.
- The percentage of crashes during wet/slippy pavement conditions was 16.5% (15 crashes), above the district-wide average of 11.8%.
- Based on crash severity, 6.6% (6 crashes) were injury-type crashes, and 93.4% (85 crashes) were property damage-only crashes. There were no fatal crashes during the five-year study period.
- There was no specific peak period for all crashes.
- The leading crash types were rear-end at 54.9% (50 crashes) and sideswipe at 30.8% (28 crashes).
- Of the 50 rear-end crashes, 26 involved southbound vehicles, 18 involved northbound vehicles, five (5) involved eastbound vehicles, and one (1) involved westbound vehicles accessing the eastbound on-ramp from the southbound approach. The peak periods for rear-end crashes were from 3 PM to 6 PM and 6 PM to 9 PM, with 24.0% (12 crashes) each. 'Careless or Negligent Manner' was the leading contributing cause of rear-end crashes.
- Of the 28 sideswipe crashes, 19 involved northbound vehicles, and nine (9) involved southbound vehicles. The peak period for sideswipe crashes was 6 AM to 9 AM, with nine (9) crashes (32.1%). Failing to keep in the proper lane was the leading cause of sideswipe crashes.
- There were no pedestrian or bicycle crashes.

Table 4-6 summarizes the crash statistics of the intersection.

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Table 4-6: Crash Statistics - SR 985/NW 107th Avenue at SR 836 Eastbound On/Off Ramps

SR 985/NW 107 Avenue at EB Ramp Segment/Spot with No Expected Values Available		Number of Crashes					5 Year Total Crashes	Mean Crashes Per Year	%
		Year							
		2018	2019	2020	2021	2022			
CRASH TYPE	Rear End	9	14	11	10	6	50	11.00	54.9%
	Head On	0	0	0	0	0	0	0.00	0.0%
	Angle	3	2	0	1	2	8	1.50	8.8%
	Left Turn	0	0	0	0	0	0	0.00	0.0%
	Right Turn	1	1	0	0	0	2	0.50	2.2%
	Sideswipe	6	6	1	3	12	28	4.00	30.8%
	Backed Into	0	0	0	0	0	0	0.00	0.0%
	Pedestrian	0	0	0	0	0	0	0.00	0.0%
	Bicycle	0	0	0	0	0	0	0.00	0.0%
	Fixed Object	0	0	1	0	1	2	0.25	2.2%
	Other Non-Collisions	1	0	0	0	0	1	0.25	1.1%
	Overturn/Rollover	0	0	0	0	0	0	0.00	0.0%
	Others	0	0	0	0	0	0	0.00	0.0%
	Total Crashes	20	23	13	14	21	91	17.50	100.0%
SEVERITY	PDO Crashes	20	22	12	13	18	85	16.75	93.4%
	Fatal Crashes	0	0	0	0	0	0	0.00	0.0%
	Injury Crashes	0	1	1	1	3	6	0.75	6.6%
LIGHTING CONDITIONS	Daylight	16	20	5	11	17	69	13.00	75.8%
	Dusk	0	1	0	0	0	1	0.25	1.1%
	Dawn	0	0	0	0	0	0	0.00	0.0%
	Dark	4	2	8	3	4	21	4.25	23.1%
	Unknown	0	0	0	0	0	0	0.00	0.0%
SURFACE CONDITIONS	Dry	15	21	7	14	19	76	14.25	83.5%
	Wet	5	2	6	0	2	15	3.25	16.5%
	Others	0	0	0	0	0	0	0.00	0.0%

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SR 985/NW 107th Avenue at SR 836 Westbound On/Off Ramps

- Given this intersection's geometric layout, an expected value analysis (EVA) was not performed; instead, a frequency analysis was conducted.
- There were 106 crashes in the five-year study period, with a yearly breakdown of 19, 31, 16, 23, and 17 crashes from 2018 to 2022.
- The percentage of crashes during nighttime (night/dusk/dawn) was 34.9% (37 crashes), above the district-wide average of 28.5%.
- The percentage of crashes during wet/slippery pavement conditions was 18.9% (20 crashes), above the district-wide average of 11.8%.
- Based on crash severity, 12.3% (13 crashes) were injury-type crashes, and 87.7% (93 crashes) were property damage-only crashes. There were no fatal crashes during the five-year study period.
- The peak periods for all crashes were 3 PM to 6 PM, with 24 crashes, and the 6 PM to 9 PM, with 21 crashes.
- The leading crash types were rear-end at 50.0% (53 crashes) and left-turn at 28.3% (30 crashes).
- Of the 53 rear-end crashes, 23 involved southbound vehicles, 21 involved westbound vehicles, and nine (9) involved northbound vehicles. The peak periods for rear-end crashes were 6 PM to 9 AM, with 15 crashes (28.3%) and 3 PM to 6 PM, with 14 crashes (26.4%). "Careless or Negligent Manner" was the leading cause of rear-end crashes.
- All 30 left-turn crashes involved northbound left-turn vehicles. The peak period for left-turn crashes was 1 PM to 3 PM, with eight (8) crashes (26.7%). 'Failing to yield the right of way' was the contributing cause of 25 left-turn crashes, and Running the Red Light was the contributing cause of five (5) crashes.
- It is noted that there were 12 sideswipe crashes, with six (6) involving southbound vehicles, four (4) involving westbound vehicles, and two (2) involving northbound vehicles.

Table 4-7 summarizes the crash statistics of the intersection.

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Table 4-7: Crash Statistics - SR 985/NW 107th Avenue at SR 836 Westbound On/Off Ramps

SR 985/NW 107 Avenue at WB Ramp Segment/Spot with No Expected Values Available		Number of Crashes					5 Year Total Crashes	Mean Crashes Per Year	%
		Year							
		2018	2019	2020	2021	2022			
CRASH TYPE	Rear End	15	12	7	10	9	53	11.00	50.0%
	Head On	0	0	0	0	0	0	0.00	0.0%
	Angle	0	0	1	1	0	2	0.50	1.9%
	Left Turn	1	14	7	3	5	30	6.25	28.3%
	Right Turn	1	0	0	0	0	1	0.25	0.9%
	Sideswipe	0	4	1	5	2	12	2.50	11.3%
	Backed Into	0	0	0	0	0	0	0.00	0.0%
	Pedestrian	0	0	0	0	0	0	0.00	0.0%
	Bicycle	0	0	0	0	0	0	0.00	0.0%
	Fixed Object	2	1	0	4	1	8	1.75	7.5%
	Other Non-Collisions	0	0	0	0	0	0	0.00	0.0%
	Overturn/Rollover	0	0	0	0	0	0	0.00	0.0%
	Others	0	0	0	0	0	0	0.00	0.0%
	Total Crashes	19	31	16	23	17	106	22.25	100.0%
SEVERITY	PDO Crashes	16	28	16	19	14	93	19.75	87.7%
	Fatal Crashes	0	0	0	0	0	0	0.00	0.0%
	Injury Crashes	3	3	0	4	3	13	2.50	12.3%
LIGHTING CONDITIONS	Daylight	16	18	11	12	12	69	14.25	65.1%
	Dusk	1	4	1	0	1	7	1.50	6.6%
	Dawn	0	0	0	0	0	0	0.00	0.0%
	Dark	2	9	4	11	4	30	6.50	28.3%
	Unknown	0	0	0	0	0	0	0.00	0.0%
SURFACE CONDITIONS	Dry	15	27	10	18	16	86	17.50	81.1%
	Wet	4	4	6	5	1	20	4.75	18.9%
	Others	0	0	0	0	0	0	0.00	0.0%

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5 FIELD REVIEW

The field reviews were conducted during the following periods:

- Tuesday, October 10th, 2023, from 7:00 AM to 9:00 AM
- Tuesday, October 25th, 2023, from 3:00 PM to 5:00 PM.
- Thursday, October 26th, 2023, from 8:00 AM to 9:00 AM

SR 985/NW 107th Avenue Segmentwide

- Northbound and eastbound were the peak directions during the morning, and southbound and westbound during the afternoon.
- The lack of capacity of the northbound left-turn lane at the SR 836 WB On/Off Ramp signal generated heavy traffic congestion, long queues, blockage, and aggressive lane changes along NW 107th Avenue.
- There was low to moderate pedestrian activity along the segment. The highest pedestrian activities were observed at the south end of the corridor, close to Florida International University, Engineering Campus, and NW 7th Street.
- There was moderate to high bicycle activity along the east side of the segment during the field reviews. Most bicyclists, who seemed to be students, were observed riding electric bikes.
- There is no sidewalk along the west side of the segment from the southwest corner of the EB Off-Ramp signalized intersection to NW 12th Street.
- There is no visibility between northbound vehicles accessing the SR 836 EB On Ramp and pedestrians/bicyclists standing at the curb ramp to cross northbound.

SR 985/NW 107th Avenue at NW 7th Street

- Northbound and eastbound were the peak directions during the morning, and southbound and westbound during the afternoon.
- Northbound queues extended close to NW 3rd Street (approximately 1000 feet from the NW 7th Street stop bar) but were cleared by the signal phase.
- During the morning, eastbound queues extended close and occasionally beyond NW 109th Avenue (approximately 1300 feet from the NW 107th Avenue stop bar). Cycle failures occurred during the morning period. As eastbound vehicles tried to get into the left-turn lanes, there were numerous lane changes.
- Southbound left-turn queues extended approximately 400 feet and 600 feet from the NW 7th Street stop bar during the morning and afternoon, respectively. However, queues were cleared by the signal phase.
- Westbound queues were short during the morning period and extended beyond NW 106th Avenue (approximately 500 feet from the NW 107th Avenue stop bar); however, queues were cleared by the signal phase.
- A high volume of westbound right-turns was observed. However, the westbound right-turn lane is a channelized free-flow lane. Numerous westbound vehicles drove over the concrete raised median, sidewalk, and solid white lane separating the receiving and outside lanes. The turning radius and receiving lane appear not wide enough to accommodate the turning vehicles.

- Numerous lane changes occurred during the morning and afternoon periods just north of the intersection as the westbound right-turn lane entered NW 107th Avenue, and the northbound vehicles switched to the outside lanes to access lanes to SR 836 EB.
- During all field reviews, there was moderate pedestrian, bicycle (most in E-bikes), and scooter activity at the intersection. Many of the crossings occurred at undesignated locations, such as the north leg and the south leg, away from the crosswalk.

SR 985/NW 107th Avenue at SR 836 Eastbound On/Off Ramps

- Eastbound queues extended approximately 1400 ft from the NW 107th Avenue stop bar during the morning. However, only a couple of cycle failures were observed.
- Eastbound vehicles occasionally get blocked by northbound queues from the SR 836 WB On/Off Ramps signal.

SR 985/NW 107th Avenue at SR 836 Westbound On/Off Ramps

- Northbound queues extended to the SR 836 EB On/Off Ramp, occasionally eastbound traffic from that signal. The queues are longer in the inside lane due to the high volume of northbound left turns and the lack of capacity of the turn lane.
- The spillbacks from the northbound left-turn lane reduced the capacity of the northbound through lanes and generated numerous and aggressive lane change maneuvers.
- Westbound queues extended approximately 1000 ft from the NW 107th Avenue stop bar during the morning and afternoon. A few cycle failures were observed.
- Westbound vehicles standing in the left lane limit visibility between northbound vehicles and westbound vehicles standing in the right lane, which are allowed to turn on red.
- The northbound left turn lane to SR 836 Westbound On Ramp is currently being extended by 200 feet under FDOT project with FPID 250629-4-32-01.

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Figure 5-1: Field Observations



Figure 5-2: Field Observations



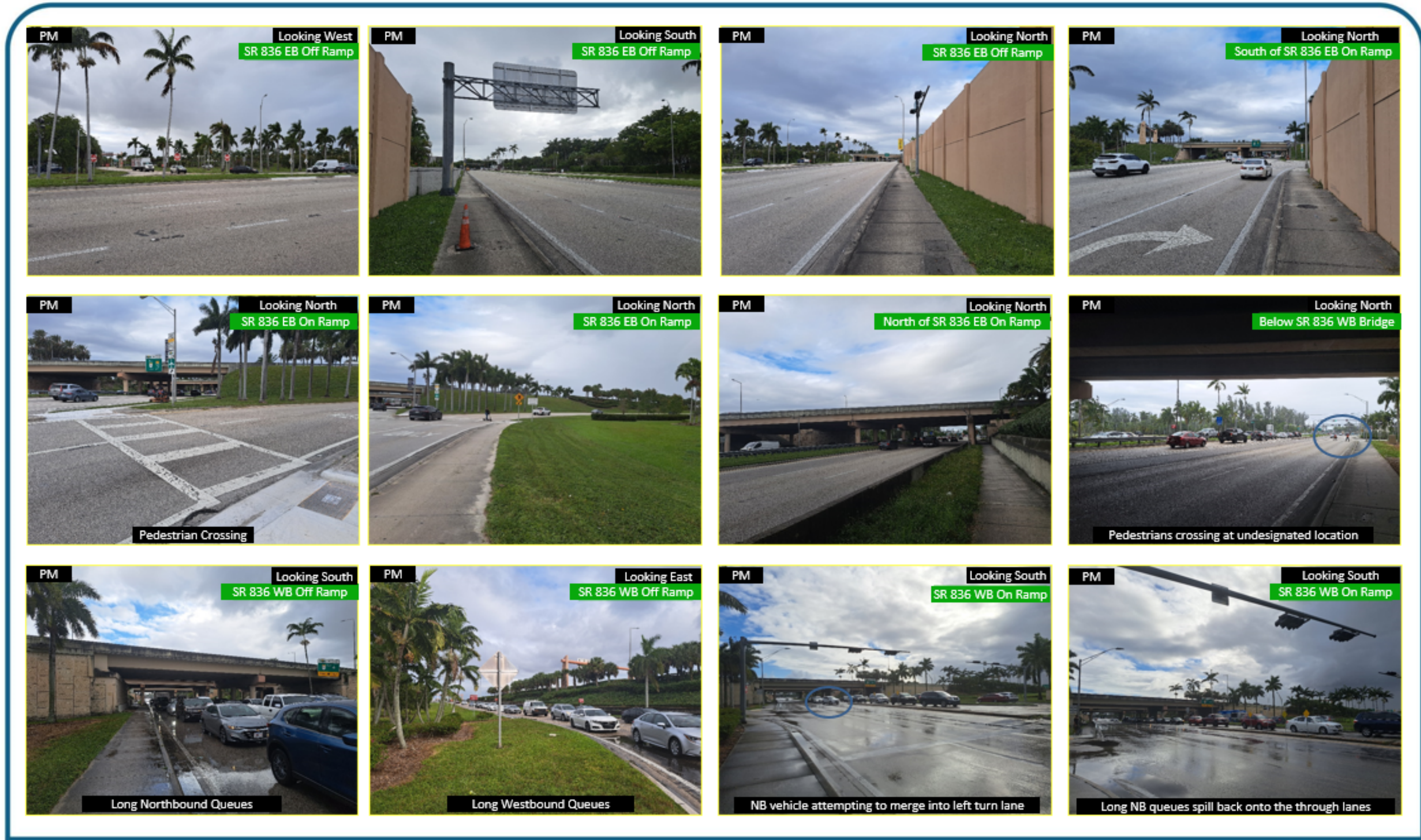
FIELD OBSERVATIONS

SR 985/NW 107 Avenue from N of SR 968/Flagler Street to N of SR 836/WB Off and On Ramp

Figure 5-3: Field Observations



Figure 5-4: Field Observations



FIELD OBSERVATIONS

SR 985/NW 107 Avenue from N of SR 968/Flagler Street to N of SR 836/WB Off and On Ramp

Figure 5-5: Field Observations



FIELD OBSERVATIONS

SR 985/NW 107 Avenue from N of SR 968/Flagler Street to N of SR 836/WB Off and On Ramp

Figure 5-6: Field Observations

6 IMPROVEMENT DEVELOPMENT

6.1 CRASH PATTERNS AND COUNTERMEASURES

SR 985/NW 107TH Avenue at NW 7TH Street

Crash Pattern:

- Rear-end Crashes
- Sideswipe Crashes

Probable Cause:

- Traffic congestion along NW 7th Street.
- Lack of visibility to the signal heads facing northbound.
- Substandard turning radius for westbound right-turn movements.

Safety Improvements:

- Consider improving signal timing during the morning to reduce traffic congestion and aggressive lane changes on the eastbound approach. The morning field review revealed opportunities to allocate additional green time to the eastbound phase by taking time from the westbound phase.
- Consider providing an overlap phase for the westbound right-turn movements that run concurrently with the southbound left-turn movements.
- Consider installing an additional signal head facing the northbound approach.
- Consider converting the eastbound approach lane configuration to two (2) left-turn lanes and a shared through/right-turn lane.
- Consider redesigning the turn radius at the northeast corner. Numerous sideswipe crashes occurred just north of the intersections. Although many hardcopy police reports did not provide details, based on the field review, many crashes should be associated with westbound failing to stay within the receiving lane and crashing against northbound vehicles traveling in the outside lane. As stated in the field review section, numerous westbound right-turn vehicles ran over the raised median or sidewalk and failed to stay within its lane.

Crash Pattern:

- Pedestrian and bicycle crashes

Probable Cause:

- High pedestrian and bicycle activities
- Lack of pedestrian and bicycle features

Safety Improvements:

- Consider upgrading the existing crosswalks to high-emphasis.
- Consider providing a crosswalk at the north leg of the intersection.
- Consider installing countdown pedestrian signal heads, pushbuttons, and plaques to assist the east and west legs crossing.

- Consider installing 'Turning Vehicles Stop for Pedestrians' signs (R10-15a) facing all approaches. The sign facing westbound depends on the installation of the north-leg crosswalk.
- Consider installing NO PEDESTRIAN CROSSING (R9-3) signs supplemented with USE CROSSWALK plaques (R9-3bP) on NW 107th Avenue south of NW 7th Avenue.

The above improvements require the following:

- An operational analysis to evaluate:
 - Providing additional green time to the eastbound phase.
 - Providing the overlap phase for the westbound right-turn movements that run concurrently with the southbound left-turn movements.
 - Providing a crosswalk at the north leg.
- Providing a 5-section signal head facing westbound and replacing the mast arm facing westbound to implement the overlap phase. This improvement may also require right-of-way acquisition at the northwest corner.
- Providing the additional signal head facing northbound and redesigning the northeast corner to improve the turning radius. This improvement requires an AUTO Turn analysis to evaluate its feasibility and right-of-acquisition extent at the northeast corner.

A Safety Study for this intersection is being conducted under FM: 434664-2-32-01, TWO 31 to evaluate the feasibility of implementing the above improvements. An excerpt with the Safety Study Improvements is included in Appendix E.

SR 985/NW 107th Avenue at SR 836 Eastbound On/Off Ramps

Crash Pattern:

- Rear-end Crashes
- Sideswipe Crashes

Probable Cause:

- Traffic congestion along NW 7th Street.
- Lack of visibility to the signal heads facing southbound.

Safety Improvements:

- Consider improving the capacity of the northbound left-turn lane at the SR 836 Westbound On/Off Ramps signal.
- Consider installing an additional signal head facing the southbound approach.
- Consider installing retroreflective signal head backplates facing the southbound approach.

Adding the additional signal head and backplates requires replacing the mast arm.

Non-safety Improvements:

- Consider installing a Pedestrian Crossing warning sign assembly (W11-2)/(W16-7a) with a rectangular rapid flashing beacon at the crosswalk on the SR 836 EB On-Ramp from NW 107th Avenue northbound, supplemented with a pedestrian ahead warning sign assembly (W11-2)/(W16-9P) with a rectangular rapid flashing beacon before the ramp. This improvement is to provide awareness of pedestrians crossing the ramp. Field reviews show moderate pedestrian/bicycle activity at the crosswalk and no visibility between northbound vehicles accessing the SR 836 EB On Ramp and pedestrians/bicyclists standing at the curb ramp to cross northbound. Coordination with the Greater Miami Expressway Agency (GMX) is required for this improvement.



A Safety Study for this intersection is being conducted under FM: 434664-2-32-01, TWO 31 to evaluate the feasibility of implementing the above improvements. An excerpt with the Safety Study Improvements is included in Appendix E.

SR 985/NW 107th Avenue at SR 836 Westbound On/Off RampsCrash Pattern:

- Rear-end Crashes
- Sideswipe Crashes
- Left-turn Crashes

Probable Cause:

- Traffic congestion along NW 7th Street.
- Lack of capacity of the northbound left turn lane.
- Northbound left-turn vehicles failing to yield the right-of-way of southbound through vehicles.

Safety Improvements:

- Consider providing an additional left-turn lane and extending the length of the proposed dual left-turn lanes to increase the capacity of the northbound left-turn lane. Based on the field and desktop review, providing the dual left-turn lane and extending the lanes is feasible. This improvement is anticipated to positively impact the SR 836 Westbound On/Off Ramp and SR 836 EB Off-Ramp signals.
- Consider converting the northbound left-turn phase from permissive to protected only. This improvement is required if the additional northbound left-turn lane is implemented.
- Consider realigning the westbound approach. This improvement is intended to improve the visibility of the westbound vehicles to the signal heads and between westbound vehicles traveling in the right lane and northbound vehicles traveling in the outside lane.
- Consider installing an additional signal head facing the northbound and southbound approaches.
- Consider installing retroreflective signal head backplates facing all approaches.

The above improvements require the following:

- *Replacing the mast arm facing northbound to accommodate a signal head for each left turn and through lane.*
- *Widening the westbound receiving lane for the new left-turn lane.*
- *Relocating and replacing the mast arm facing westbound to widen the westbound receiving lane and install backplates.*
- *Replacing the mast arm facing southbound to provide an additional signal head and backplates.*

A Safety Study for this intersection is being conducted under FM: 434664-2-32-01, TWO 31 to evaluate the feasibility of implementing the above improvements. An excerpt with the Safety Study Improvements is included in Appendix E.

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7 IMPROVEMENT RECOMMENDATIONS

Proposed Improvements are geared toward mitigating crash patterns identified at the cluster locations. The proposed safety and non-safety improvements are as follows:

SR 985/NW 107TH Avenue at NW 7TH Street

Safety Improvements:

- Consider improving signal timing during the morning to reduce traffic congestion and aggressive lane changes on the eastbound approach.
- Consider providing an overlap phase for the westbound right-turn movements that run concurrently with the southbound left-turn movements.
- Consider installing an additional signal head facing the northbound approach.
- Consider converting the eastbound approach lane configuration to two (2) left-turn lanes and a shared through/right-turn lane.
- Consider redesigning the turn radius at the northeast corner.
- Consider upgrading the existing crosswalks to high-emphasis.
- Consider providing a crosswalk at the north leg of the intersection.
- Consider installing countdown pedestrian signal heads, pushbuttons, and plaques to assist the east and west legs crossing.
- Consider installing 'Turning Vehicles Stop for Pedestrians' signs (R10-15a) facing all approaches. The sign facing westbound depends on the installation of the north-leg crosswalk.
- Consider installing NO PEDESTRIAN CROSSING (R9-3) signs supplemented with USE CROSSWALK plaques (R9-3bP) on NW 107th Avenue south of NW 7th Avenue.

The above improvements require the following:

- An operational analysis to evaluate:
 - *Providing additional green time to the eastbound phase.*
 - *Providing the overlap phase for the westbound right-turn movements that run concurrently with the southbound left-turn movements.*
 - *Providing a crosswalk at the north leg.*
- *Providing a 5-section signal head facing westbound and replacing the mast arm facing westbound to implement the overlap phase. This improvement may also require right-of-way acquisition at the northwest corner.*
- *Providing the additional signal head facing northbound and redesigning the northeast corner to improve the turning radius. This improvement requires an AUTO Turn analysis to evaluate its feasibility and right-of-acquisition extent at the northeast corner.*

A Safety Study for this intersection is being conducted under FM: 434664-2-32-01, TWO 31 to evaluate the feasibility of implementing the above improvements. The study concluded that the proposed improvements will have an overall positive effect on the operation of the intersections within the study area and that the improvements would be economically viable.

SR 985/NW 107th Avenue at SR 836 Eastbound On/Off Ramps**Safety Improvements:**

- Consider installing an additional signal head facing the southbound approach.
- Consider installing retroreflective signal head backplates facing the southbound approach.

Adding the additional signal head and backplates requires replacing the mast arm.

Non-safety Improvements:

- Consider installing a Pedestrian Crossing warning sign assembly (W11-2)/(W16-7a) with a rectangular rapid flashing beacon at the crosswalk on the SR 836 EB On-Ramp from NW 107th Avenue northbound, supplemented with a pedestrian ahead warning sign assembly (W11-2)/(W16-9P) with a rectangular rapid flashing beacon before the ramp. Coordination with the Greater Miami Expressway Agency (GMX) is required for this improvement.

**SR 985/NW 107th Avenue at SR 836 Westbound On/Off Ramps****Safety Improvements:**

- Consider providing an additional left-turn lane and extending the length of the proposed dual left-turn lanes.
- Consider converting the northbound left-turn phase from permissive to protected only. This improvement is required if the additional northbound left-turn lane is implemented.
- Consider realigning the westbound approach.
- Consider installing an additional signal head facing the northbound and southbound approaches.
- Consider installing retroreflective signal head backplates facing all approaches.

The above improvements require the following:

- Replacing the mast arm facing northbound to accommodate a signal head for each left turn and through lane.
- Widening the westbound receiving lane for the new left-turn lane.
- Relocating and replacing the mast arm facing westbound to widen the westbound receiving lane and install backplates.
- Replacing the mast arm facing southbound to provide an additional signal head and backplates.

A Safety Study for this intersection is being conducted under FM: 434664-2-32-01, TWO 31 to evaluate the feasibility of implementing the above improvements. The study concluded that the proposed improvements will have an overall positive effect on the operation of the intersections within the study area and that the improvements would be economically viable.

In addition to the above improvements, the Safety Study recommended the following:

SR 985/NW 107 Avenue Segmentwide**Safety Improvements:**

- Improve signal timing at NW 7 Street, SR 836 Eastbound, and SR 836 Westbound. The implementation of signal timing improvement requires coordination with the Miami-Dade County Traffic Signal and Signs Office. Note that one of the signal timing improvements includes modifying the cycle length, which require adjustments at the signalized intersections of NW 12 Street, NW 14 Street, NW 17 Street, and NW 19 Street, which are not part of the State Highway System, but are part of the same traffic signal coordinated system.

Non-Safety Improvements:

- Consider providing sidewalk connectivity along the west side of SR 985/NW 107th Avenue. The existing sidewalk ends just south of the SR 826 Eastbound Off-Ramp and continues at NW 12th Street. This improvement was discussed with the Department and will not be implemented at this time. Instead, improvements are proposed to enhance pedestrians, bicyclists, and scooter riders' safety along the east side of NW 107th Avenue.

Figure 7-1 on the next pages shows the conceptual diagram of the recommended improvements.

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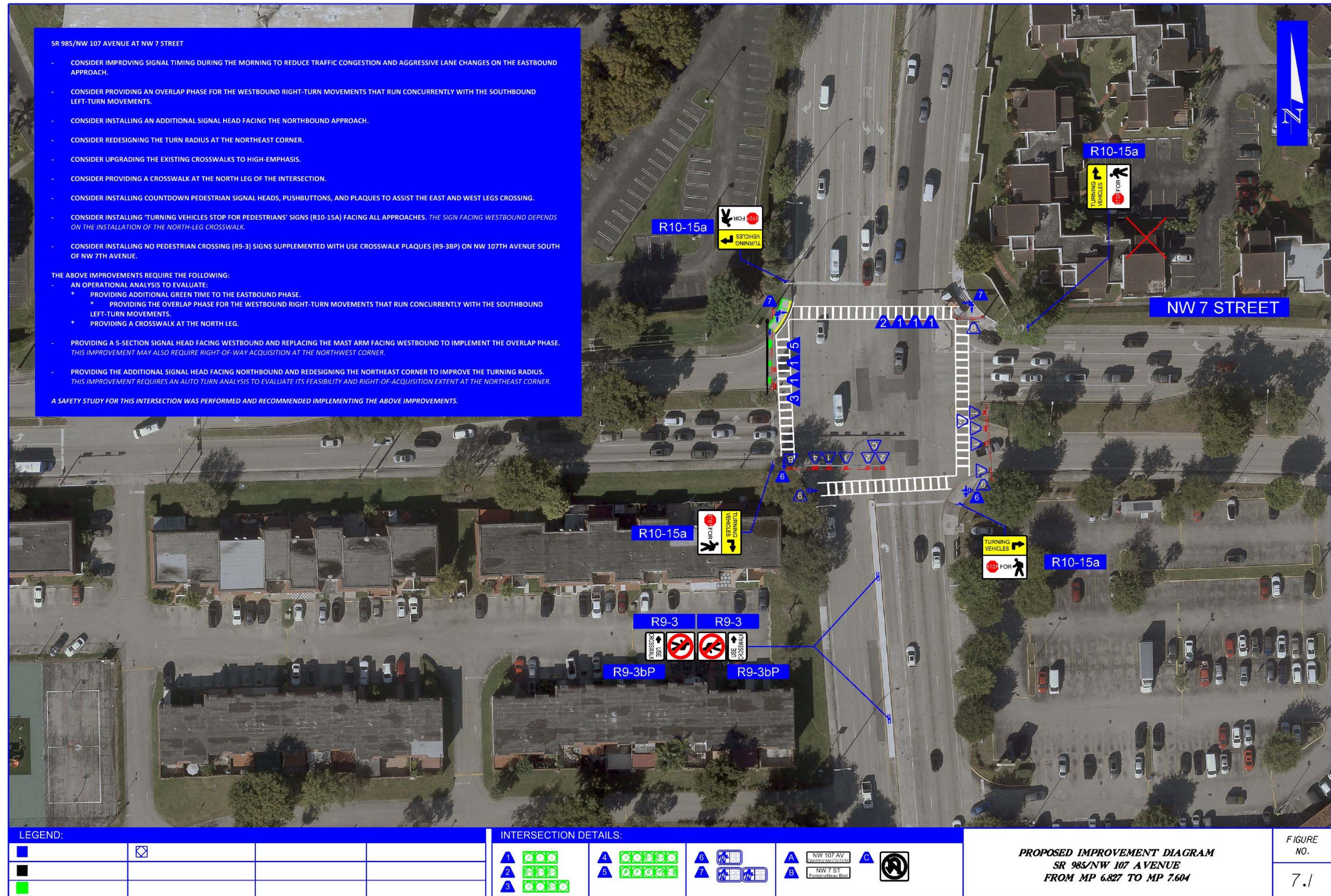
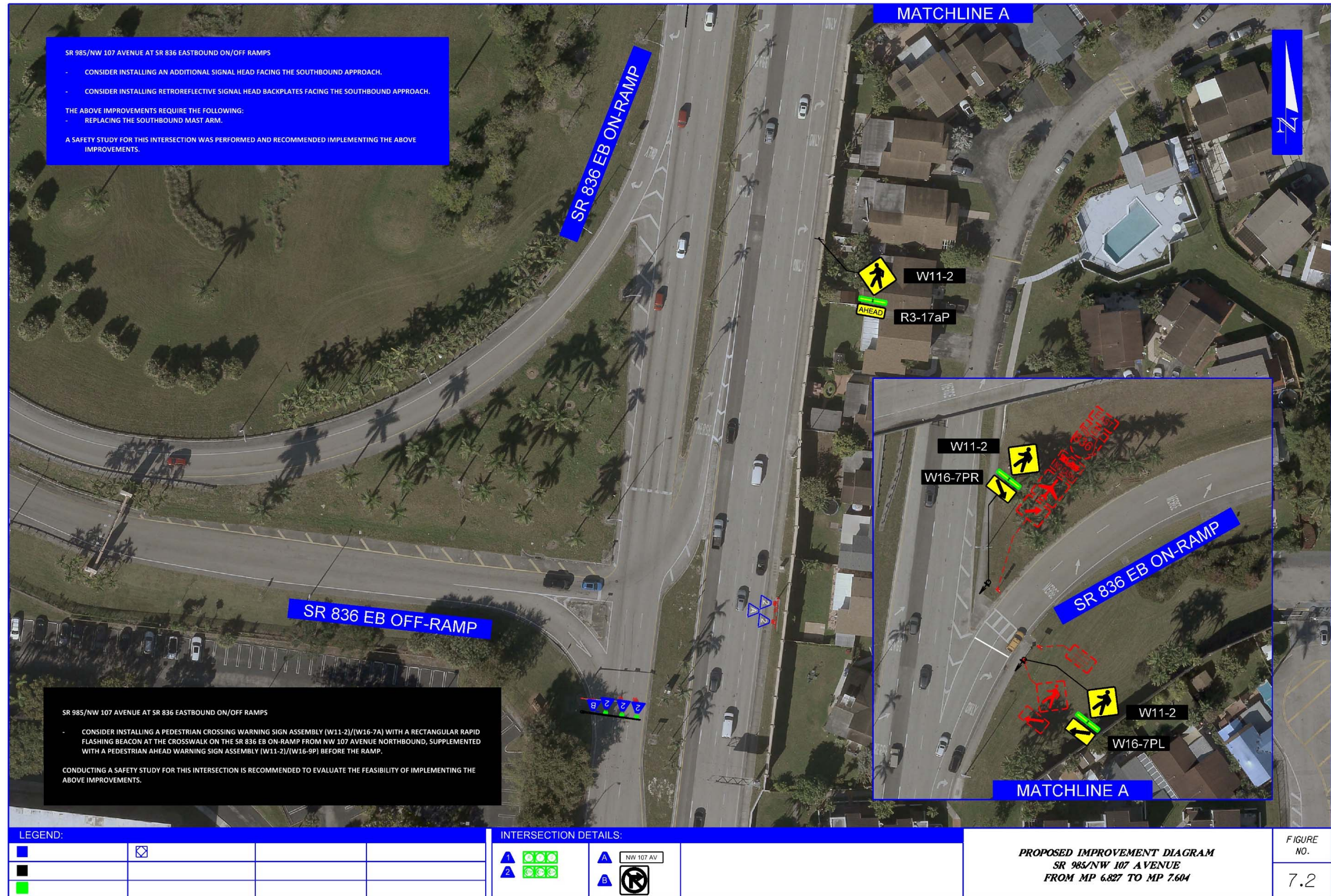
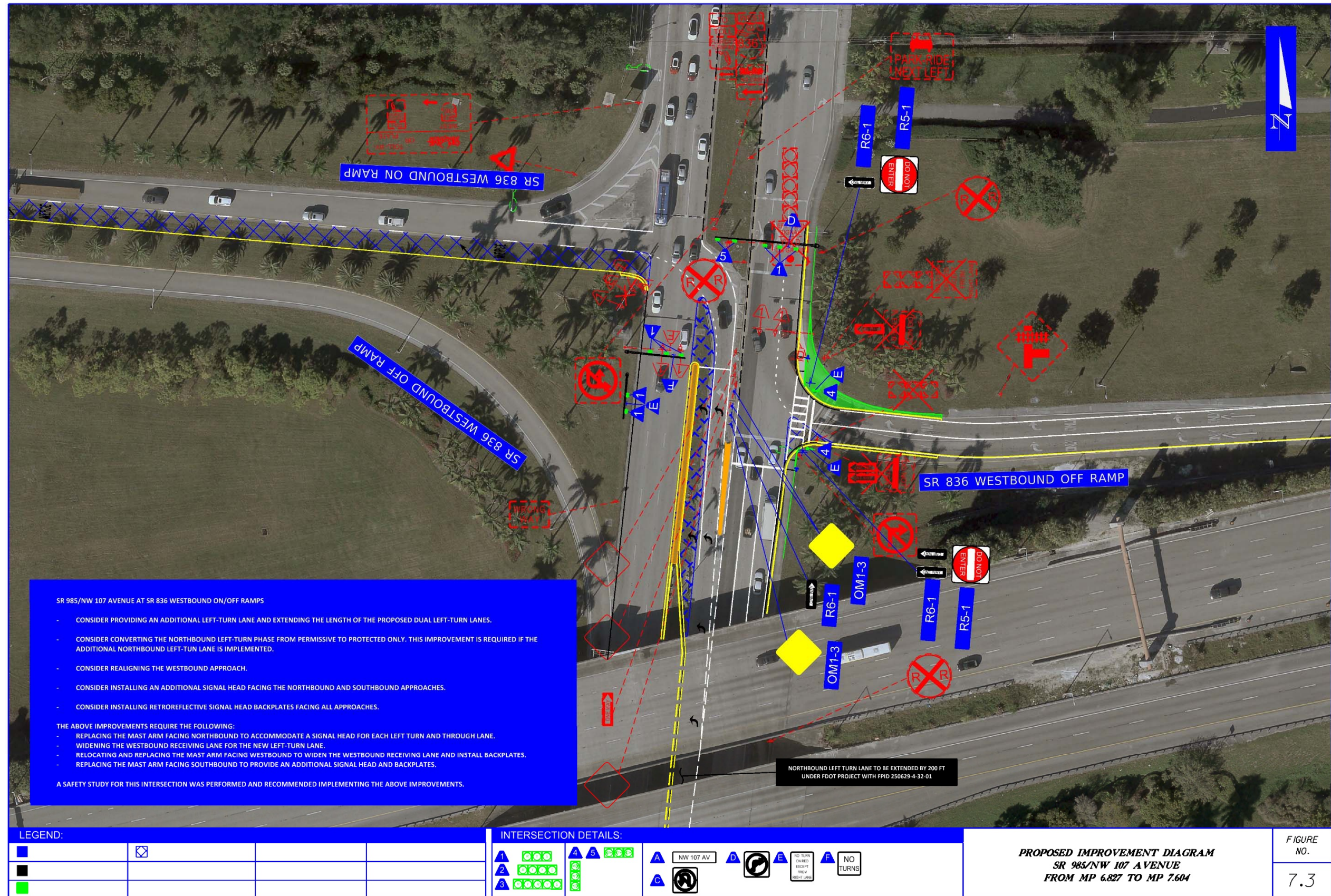


Figure 7-1: Proposed Improvement Diagram





8 BENEFIT-COST ANALYSIS

A benefit-to-cost ratio analysis was conducted to evaluate the economic viability of the proposed improvements. A benefit-to-cost ratio of 1.0 and above implies that the derived benefits justify the cost expenditure for the project.

Preliminary Cost Estimates: Table 8.1 shows the preliminary construction cost estimates for the recommended improvements. The costs were prepared using FDOT’s standard pay items and historical unit costs from previous construction projects recently completed in Area 13 (Miami Dade County). The cost estimates include pay items for roadway, signalization, signing and pavement marking, traffic control maintenance, preliminary engineering, mobilization, and a contingency amount to account for any unforeseen cost elements. It is estimated that the improvements will cost approximately **\$2,569,000**. The detailed cost estimate sheets are included in **Appendix F**.

Table 8.1: Construction Cost Estimates

SAFETY IMPROVEMENTS	COSTS
Roadway	\$ 265,976.77
Signalization	\$ 843,648.33
S&M	\$ 39,032.37
SUBTOTAL	\$ 1,148,657.47
20% Maintenance of Traffic	\$ 229,731.49
10% Mobilization	\$ 114,865.75
32% Preliminary Engineering	\$ 367,570.39
18% Construction Engineering & Inspection	\$ 206,758.34
Project Contingency	\$ 250,000.00
Right of Way Acquisition Estimate	\$ 251,000.00
GRAND TOTAL	\$ 2,568,583.44

Crash Reduction: Table 8.2 shows the potential number of crashes to be reduced by implementing the recommended improvements discussed in Section 7. The improvements would have a possible reduction of nearly five crashes per year. These crash reductions are estimated using crash modification factors found on the FHWA’s Clearinghouse.

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Table 8.2: Estimated Crash Reduction

PROPOSED IMPROVEMENTS		CRF	SOURCE	TARGETED CRASH TYPE	NUMBER OF CRASHES TARGETED	NUMBER OF REDUCED CRASHES
SR 985/NW 107 Avenue at NW 7 Street	Add 2nd LT lane in same direction as existing	35%	Florida Department of Transportation Crash Reduction Factors (as of 7/14/2020)	Angle	1.00	0.35
		6%		Rear End	7.00	0.42
		29%		Left Turn	2.00	0.58
	Add 3-inch yellow retroreflective sheeting to signal backplates	15%	CMF Clearinghouse (CMF ID: 1410)	Rear End	62.58	9.39
	Install pedestrian countdown timers	9%	CMF Clearinghouse (CMF ID: 10119)	Pedestrian Bicyclist	2.00	0.18
SR 985/NW 107 Avenue at SR 836 Eastbound On/Off Ramps	Add 3-inch yellow retroreflective sheeting to signal backplates	15%	CMF Clearinghouse (CMF ID: 1410)	Rear End	15.00	2.25
SR 985/NW 107 Avenue at SR 836 Westbound On/Off Ramps	Add 2nd LT lane in same direction as existing	6%	Florida Department of Transportation Crash Reduction Factors (as of 7/14/2020)	Rear End	1.00	0.06
		29%		Left Turn	31.00	8.99
	Add 3-inch yellow retroreflective sheeting to signal backplates	15%	CMF Clearinghouse (CMF ID: 1410)	Rear End	19.00	2.85
TOTAL CRASHES REDUCED IN 6-YEARS					25.07	
CRASHES REDUCED PER YEAR					5.01	

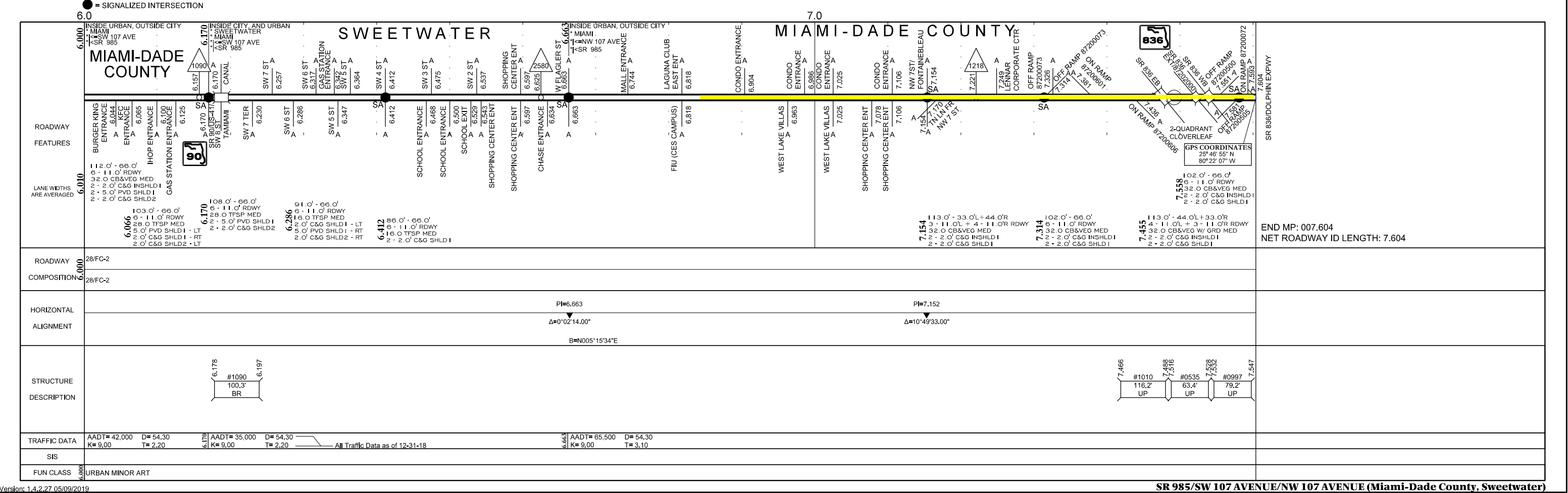
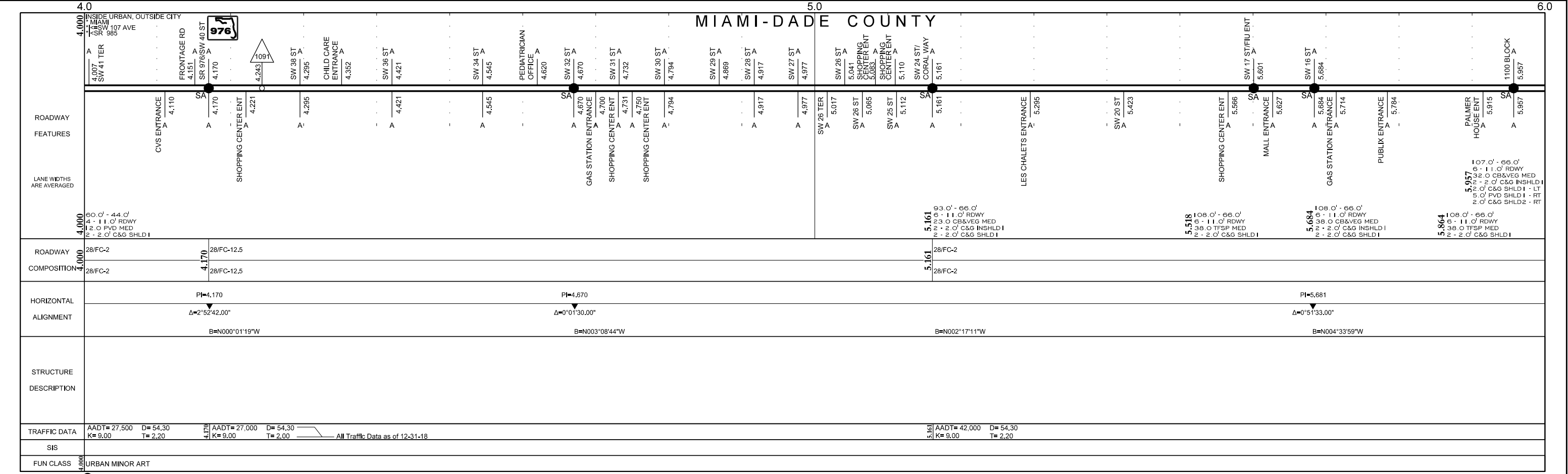
B/C Calculation: The benefit-cost ratio analysis was computed using the cost estimates above and monetizing the estimated crash reductions. A b/c ratio of **2.8** was calculated, as shown in **Table 8.3**. The computation sheets for the b/c ratio analyses are included in **Appendix G**, which also includes the Net Present Value (NPV) Analyses. A b/c ratio value of at least 1.0 indicates that the recommended improvement is economically viable.

Table 8.3: Benefit/Cost Ratio

DESCRIPTION	PROPOSED
Safety Benefits	\$ 544,745.83
Annualized Cost of Project	\$ 194,367.57
SAFETY B/C	2.8
NVP	\$ 3,730,379.55

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APPENDIX A – STRAIGHT LINE DIAGRAM



APPENDIX B – SIGNAL TIMING REPORTS

TOD Schedule Report

for 4554: Fontainebleau Blvd&NW 107 Av&NW 7 St

Print Date:
10/4/2021

Print Time:
6:41 PM

<u>Asset</u>	<u>Intersection</u>	<u>TOD Schedule</u>	<u>Op Mode</u>	<u>Plan #</u>	<u>Cycle</u>	<u>Offset</u>	<u>TOD Setting</u>	<u>Active PhaseBank</u>	<u>Active Maximum</u>
4554	Fontainebleau Blvd&NW 107 Av&NW 7	DOW-2	TOD	[11] PM PEAK	170	83	N/A	1	Max 2

Splits

<u>PH 1</u>	<u>PH 2</u>	<u>PH 3</u>	<u>PH 4</u>	<u>PH 5</u>	<u>PH 6</u>	<u>PH 7</u>	<u>PH 8</u>
NBL	SBT	EBT	WBT	SBL	NBT	-	-
11	78	33	20	38	51	0	0



Active Phase Bank: Phase Bank 1

Phase	<u>Walk</u>			<u>Don't Walk</u>			<u>Min Initial</u>			<u>Veh Ext</u>			<u>Max Limit</u>			<u>Max 2</u>			<u>Yellow</u>	<u>Red</u>
	Phase Bank																			
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3		
1 NBL	0	0	0	0	0	0	5	5	5	2.5	-2.5	-2.5	7	10	7	25	30	30	4.4	2.4
2 SBT	0	0	0	0	0	0	18	18	18	1	1	1	40	40	40	0	40	40	4.4	2.4
3 EBT	5	5	5	22	22	22	7	7	7	2.5	-2.5	-2.5	18	24	18	48	25	25	4	2.7
4 WBT	0	0	0	0	0	0	7	7	7	2.5	-2.5	-2.5	10	39	10	25	25	25	4	2.9
5 SBL	0	0	0	0	0	0	5	5	5	2.5	-2	-2	7	20	7	40	30	30	4.4	2.4
6 NBT	0	0	0	0	0	0	18	18	18	1	1	1	40	40	40	0	40	40	4.4	2.4
7 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Last In Service Date: unknown

Permitted Phases	
	12345678
Default	123456--
External Permit 0	-----
External Permit 1	-----
External Permit 2	-----

TOD Schedule Report

for 4554: Fontainebleau Blvd&NW 107 Av&NW 7 St

Print Date:
10/4/2021

Print Time:
6:41 PM

Current TOD Schedule	Plan	Cycle	Green Time								Ring Offset	Offset
			1 NBL	2 SBT	3 EBT	4 WBT	5 SBL	6 NBT	7 -	8 -		
2		140	10	55	33	14	10	55	0	0	0	44
3		170	9	72	46	15	9	72	0	0	0	132
4		160	6	68	43	15	9	65	0	0	0	105
5		130	7	60	23	12	19	48	0	0	0	108
7		150	7	76	27	12	20	63	0	0	0	145
8		160	11	70	32	19	35	46	0	0	0	75
9		160	11	69	32	20	35	45	0	0	0	67
10		130	9	55	23	15	27	37	0	0	0	118
11		170	11	78	33	20	38	51	0	0	0	83
12		140	9	64	24	15	28	45	0	0	0	128
14		120	20	40	18	14	25	35	0	0	0	104
20		115	9	46	20	12	19	36	0	0	0	104
21		150	20	63	24	15	32	51	0	0	0	46
22		115	9	46	20	12	19	36	0	0	0	104
24		110	9	35	27	11	16	28	0	0	0	73
25		150	17	62	28	15	21	58	0	0	0	119
26		160	20	64	28	20	32	52	0	0	0	53
27		110	9	35	27	11	16	28	0	0	0	73

Local TOD Schedule		
Time	Plan	DOW
0000	Free	M T W Th F
0000	22	
0000	Free	Su S
0130	Free	
0545	2	M T W Th F
0630	3	M T W Th F
0700	24	Su S
0900	20	
1000	7	M T W Th F
1000	25	Su S
1030	21	
1130	8	M T W Th F
1530	11	M T W Th F
1600	26	Su S
2000	12	M T W Th F
2100	27	Su S
2300	Free	M T W Th F
2300	22	

Current Time of Day Function			
Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----1	M T W ThF
0545	TOD OUTPUTS	-----	M T W ThF
2300	TOD OUTPUTS	-----1	M T W ThF

Local Time of Day Function			
Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----1	Su S
0000	TOD OUTPUTS	-----1	M T W ThF
0545	TOD OUTPUTS	-----	M T W ThF
0700	TOD OUTPUTS	-----	Su S
2300	TOD OUTPUTS	-----1	M T W ThF

* Settings
Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA

No Calendar Defined/Enabled

SIGNAL OPERATING PLAN



	Direction	EB		WB			SB			NB		Ped Heads			
Timing Phases	Head No.	1	6	5	2	2R	3	3/8	8	7/4	4		P8	Movements/Display/Actuation	
(1+5) SL+NL NW 107 Av (Actuated)	Dwell	<G	R	<G	R	R	R	R	R	R	R		DW		
	C l e a r t o	(1+6)	<G	R	<Y	R	R	R	R	R	R	R			DW
		(2+5)	<Y	R	<G	R	R	R	R	R	R	R			DW
		(2+6)	<Y	R	<Y	R	R	R	R	R	R	R			DW
(1+6) NL+NB NW 107 Av (Actuated)	Dwell	<G	G	<R	R	R	R	R	R	R	R		DW		
	C l e a r t o	(2+6)	<Y	G	<R	R	R	R	R	R	R	R			DW
(2+5) SL+SB NW 107 Av (Actuated)	Dwell	<R	R	<G	G	G	R	R	R	R	R		DW		
	C l e a r t o	(2+6)	<R	R	<Y	G	G	R	R	R	R	R			DW
(2+6) SB+NB NW 107 Av (Recall)	Dwell	<R	G	<R	G	G	R	R	R	R	R		DW		
	C l e a r t o	(3)	<R	Y	<R	Y	Y	R	R	R	R	R			DW
		(4)	<R	Y	<R	Y	Y	R	R	R	R	R			DW
		(1+5)	<R	Y	<R	Y	Y	R	R	R	R	R			DW
		(1+6)	<R	Y	<R	Y	Y	R	R	R	R	R			DW
		(2+5)	<R	Y	<R	Y	Y	R	R	R	R	R			
(3) EB NW 7 ST (Actuated)	Dwell	<R	R	<R	R	R/Y>	<G	<G/G	G	R	R		W/F		
	C l e a r t o	(4)	<R	R	<R	R	R/Y>	Y	Y	Y	R	R			DW
		(1+5)	<R	R	<R	R	R/Y>	Y	Y	Y	R	R			DW
		(1+6)	<R	R	<R	R	R/Y>	Y	Y	Y	R	R			DW
		(2+5)	<R	R	<R	R	R/Y>	Y	Y	Y	R	R			DW
		(2+6)	<R	R	<R	R	R/Y>	Y	Y	Y	R	R			DW
(4) WB NW 7 ST (Actuated)	Dwell	<R	R	<R	R	R	R	R	R	<G/G	G		DW		
	C l e a r t o	(1+5)	<R	R	<R	R	R	R	R	R	Y	Y			DW
		(1+6)	<R	R	<R	R	R	R	R	R	Y	Y			DW
		(2+5)	<R	R	<R	R	R	R	R	R	Y	Y			DW
		(2+6)	<R	R	<R	R	R	R	R	R	Y	Y			DW

Flashing Operation

F<R FY F<R FY FY FR FR FR FR FR

Page 1 of 1

Miami-Dade County Public Works Department

Drawn Radames Iribar	Date 11/7/2013	FOUNTAINBLEAU BLVD & NW 107 AV & NW 7 ST			
Checked H. HERNANDEZ	Date 11/12/13	Placed in Service Date 01/17/2014	By A.G.C.	Phasing No. 8	Asset Number 4554

TOD Schedule Report

for 4608: SR- 836 EB Off&NW 107 Av SB

Print Date:
10/4/2021

Print Time:
6:48 PM

<u>Asset</u>	<u>Intersection</u>	<u>TOD Schedule</u>	<u>Op Mode</u>	<u>Plan #</u>	<u>Cycle</u>	<u>Offset</u>	<u>TOD Setting</u>	<u>Active PhaseBank</u>	<u>Active Maximum</u>
4608	SR- 836 EB Off&NW 107 Av SB	DOW-2	TOD	[11] PM PEAK	170	73	N/A	1	Max 2

Splits

<u>PH 1</u>	<u>PH 2</u>	<u>PH 3</u>	<u>PH 4</u>	<u>PH 5</u>	<u>PH 6</u>	<u>PH 7</u>	<u>PH 8</u>
-	-	-	EBT	-	SBT	-	-
0	0	0	37	0	121	0	0



Active Phase Bank: Phase Bank 1

<u>Phase</u>	<u>Walk</u>			<u>Don't Walk</u>			<u>Min Initial</u>			<u>Veh Ext</u>			<u>Max Limit</u>			<u>Max 2</u>			<u>Yellow</u>	<u>Red</u>
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3		
1 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 EBT	0	0	0	0	0	0	7	7	7	5	4	4	28	50	35	52	30	52	4.4	2
5 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 SBT	0	0	0	0	0	0	16	16	16	1	1	1	25	20	25	0	40	0	4.4	2
7 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Last In Service Date: unknown

Permitted Phases	
12345678	
Default	---4-6--
External Permit 0	-----
External Permit 1	-----
External Permit 2	-----

TOD Schedule Report

for 4608: SR- 836 EB Off&NW 107 Av SB

Print Date:
10/4/2021

Print Time:
6:48 PM

Current TOD Schedule	Plan	Cycle	Green Time								Ring Offset	Offset
			1	2	3	4	5	6	7	8		
			-	-	-	EBT	-	SBT	-	-		
2		70	0	0	0	30	0	28	0	0	0	4
3		85	0	0	0	41	0	32	0	0	0	27
4		80	0	0	0	38	0	30	0	0	0	4
5		130	0	0	0	29	0	89	0	0	0	123
7		150	0	0	0	34	0	104	0	0	0	123
8		160	0	0	0	35	0	113	0	0	0	73
9		160	0	0	0	35	0	113	0	0	0	73
10		130	0	0	0	27	0	91	0	0	0	125
11		170	0	0	0	37	0	121	0	0	0	73
12		140	0	0	0	30	0	98	0	0	0	125
14		120	0	0	0	22	0	86	0	0	0	102
20		55	0	0	0	16	0	27	0	0	0	0
21		150	0	0	0	34	0	104	0	0	0	123
22		160	0	0	0	50	0	98	0	0	0	98
23		55	0	0	0	19	0	24	0	0	0	5
24		55	0	0	0	16	0	27	0	0	0	0
25		150	0	0	0	29	0	109	0	0	0	123
26		160	0	0	0	40	0	108	0	0	0	98
27		55	0	0	0	16	0	27	0	0	0	5

Local TOD Schedule		
Time	Plan	DOW
0000	Free	M T W Th F
0000	Free	
0000	Free	
0000	Free	Su S
0530	Free	
0545	2	M T W Th F
0545	4	
0630	3	M T W Th F
0700	24	Su S
0800	Free	
0900	20	
1000	7	M T W Th F
1000	25	Su S
1000	5	
1030	21	
1130	8	M T W Th F
1430	9	
1530	11	M T W Th F
1600	26	Su S
2000	10	
2000	12	M T W Th F
2100	27	Su S
2200	Free	
2300	Free	M T W Th F
2300	22	

Current Time of Day Function			
Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----1	M T W ThF
0500	TOD OUTPUTS	-----	M T W ThF
2200	TOD OUTPUTS	-----1	M T W ThF

Local Time of Day Function			
Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----1	M T W ThF
0000	TOD OUTPUTS	-----1	Su S
0500	TOD OUTPUTS	-----	M T W ThF
0700	TOD OUTPUTS	-----	Su S
2200	TOD OUTPUTS	-----1	M T W ThF

* Settings
Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA

TOD Schedule Report

for 4608: SR- 836 EB Off&NW 107 Av SB

Print Date:

10/4/2021

Print Time:

6:48 PM

No Calendar Defined/Enabled

SIGNAL OPERATING PLAN



Direction	SB	EB	Ped Heads	Movements/Display/Actuation	
Timing Phases	Head No. 6	7			
Clear to	Dwell				
Clear to	Dwell				
(6) SB NW 107 Av (Recall)	Dwell	G	<R		
	(4)	Y	<R		
Clear to	Dwell				
Clear to	Dwell				
(4) EB 836 Ramp (Actuated)	Dwell	R	<G		
	(6)	R	<Y		
Clear to	Dwell				

Flashing Operation FY F<R Page 1 of 1

Miami-Dade County Public Works Department

Drawn H. Herandez	Date 2/24/2003	SR 836 S & NW 107 Av		
Checked 	Date 2/24/03	Placed in Service	Phasing No.	Asset Number
		Date 2/27/03 By —	4	4608

TOD Schedule Report

for 6048: SR- 836 WB On&NW 107 Av SB

Print Date:
10/4/2021

Print Time:
9:03 PM

<u>Asset</u>	<u>Intersection</u>	<u>TOD Schedule</u>	<u>Op Mode</u>	<u>Plan #</u>	<u>Cycle</u>	<u>Offset</u>	<u>TOD Setting</u>	<u>Active PhaseBank</u>	<u>Active Maximum</u>
6048	SR- 836 WB On&NW 107 Av SB	DOW-2	TOD	N/A	0	0	N/A	0	Max 0

Splits

<u>PH 1</u>	<u>PH 2</u>	<u>PH 3</u>	<u>PH 4</u>	<u>PH 5</u>	<u>PH 6</u>	<u>PH 7</u>	<u>PH 8</u>
NBL	SBT	-	-	-	NBT	-	-
0	0	0	0	0	0	0	0



Active Phase Bank: Phase Bank 1

Phase	<u>Walk</u>			<u>Don't Walk</u>			<u>Min Initial</u>			<u>Veh Ext</u>			<u>Max Limit</u>			<u>Max 2</u>			<u>Yellow</u>	<u>Red</u>
	Phase Bank																			
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3		
1 NBL	0	0	0	0	0	0	5	5	5	3.5	2	2	15	15	10	57	25	25	4.4	2
2 SBT	0	0	0	0	0	0	16	16	16	1	1	1	40	30	30	0	30	30	4.4	2
3 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 NBT	0	0	0	0	0	0	16	16	16	1	1	1	40	30	30	0	30	30	4.4	2
7 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Last In Service Date: unknown

Permitted Phases	
12345678	
Default	12---6--
External Permit 0	-----
External Permit 1	-2---6--
External Permit 2	-2---6--

TOD Schedule Report

for 6048: SR- 836 WB On&NW 107 Av SB

Print Date:
10/4/2021

Print Time:
9:03 PM

Current TOD Schedule	Plan	Cycle	Green Time								Ring Offset	Offset
			1 NBL	2 SBT	3 -	4 -	5 -	6 NBT	7 -	8 -		
2		70	24	34	0	0	0	64	0	0	0	40
3		85	30	43	0	0	0	0	0	0	0	25
4		160	57	91	0	0	0	154	0	0	0	40
5		130	39	79	0	0	0	124	0	0	0	121
7		150	44	94	0	0	0	144	0	0	0	100
8		160	34	114	0	0	0	154	0	0	0	58
9		160	34	114	0	0	0	154	0	0	0	48
10		130	35	83	0	0	0	124	0	0	0	118
11		170	49	109	0	0	0	164	0	0	0	58
12		140	37	91	0	0	0	134	0	0	0	100
14		120	39	69	0	0	0	114	0	0	0	54
20		115	39	64	0	0	0	109	0	0	0	54
21		150	34	104	0	0	0	144	0	0	0	123
22		115	39	64	0	0	0	109	0	0	0	54
24		110	34	64	0	0	0	104	0	0	0	54
25		150	34	104	0	0	0	144	0	0	0	135
26		160	35	113	0	0	0	154	0	0	0	93
27		110	34	64	0	0	0	104	0	0	0	54

Local TOD Schedule

Time	Plan	DOW
0000	Free	Su S
0000	Free	M T W Th F
0545	2	M T W Th F
0630	3	M T W Th F
0700	24	Su S
1000	25	Su S
1000	7	M T W Th F
1130	8	M T W Th F
1530	11	M T W Th F
1600	26	Su S
2000	12	M T W Th F
2100	27	Su S
2300	Free	M T W Th F

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----1	M T W ThF
0545	TOD OUTPUTS	-----	M T W ThF
2300	TOD OUTPUTS	-----1	M T W ThF

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----1	Su S
0000	TOD OUTPUTS	-----1	M T W ThF
0545	TOD OUTPUTS	-----	M T W ThF
0700	TOD OUTPUTS	-----	Su S
2300	TOD OUTPUTS	-----1	M T W ThF

* Settings

- Blank - FREE - Phase Bank 1, Max 1
- Blank - Plan - Phase Bank 1, Max 2
- 1 - Phase Bank 2, Max 1
- 2 - Phase Bank 2, Max 2
- 3 - Phase Bank 3, Max 1
- 4 - Phase Bank 3, Max 2
- 5 - EXTERNAL PERMIT 1
- 6 - EXTERNAL PERMIT 2
- 7 - X-PED OMIT
- 8 - TBA

No Calendar Defined/Enabled

SIGNAL OPERATING PLAN



	Direction	NBL	SB	Ped Heads				Drawing	
Phase	Head No.	1/6	2						
(1+6) NBL NW 107 Av (Actuated)	Dwell	<G/G	R						
	Clear to	2+6	<Y/G	R					
(2+6) SB NW 107 Av (Recall)	Dwell	G	G						
	Clear to	1+6	G	Y					
	Dwell								
	Clear to								
Pre-emption Clearance SB	Dwell	G	G						
	Clear to	PE Dwell	G	Y					
Pre-emption Dwell NBL	Dwell	<G/G	R						
	Clear to	Recover	<Y/G	R					
Pre-emption Recover SB	Dwell	G	G						
	Clear to	2+6	G	G					

Flashing Operation FR FY Page 1 of 1

Miami-Dade County Public Works Department

Drawn H. Hernandez	Date 3/21/2001	SR 836 WB On & NW 107 Av		
Checked F. PRATS	Date 3/28/01	Placed in Service	Phasing No.	Asset Number
		Date 3/28/01 By	1	6048

TOD Schedule Report

for 6097: SR- 836 WB Off&NW 107 Av NB

Print Date:
10/4/2021

Print Time:
9:06 PM

<u>Asset</u>	<u>Intersection</u>	<u>TOD Schedule</u>	<u>Op Mode</u>	<u>Plan #</u>	<u>Cycle</u>	<u>Offset</u>	<u>TOD Setting</u>	<u>Active PhaseBank</u>	<u>Active Maximum</u>
6097	SR- 836 WB Off&NW 107 Av NB	DOW-2	TOD	[12] HEAVY PM PEAK	140	55	N/A	1	Max 2

Splits

<u>PH 1</u>	<u>PH 2</u>	<u>PH 3</u>	<u>PH 4</u>	<u>PH 5</u>	<u>PH 6</u>	<u>PH 7</u>	<u>PH 8</u>
-	NBT	-	-	-	-	-	WBT
0	84	0	0	0	0	0	44



Active Phase Bank: Phase Bank 1

Phase	<u>Walk</u>			<u>Don't Walk</u>			<u>Min Initial</u>			<u>Veh Ext</u>			<u>Max Limit</u>			<u>Max 2</u>			<u>Yellow</u>	<u>Red</u>
	Phase Bank																			
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3		
1 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 NBT	0	0	0	0	0	0	16	16	16	1	1	1	72	72	40	0	0	40	4.4	2
3 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 WBT	0	0	0	0	0	0	7	7	7	3.5	5	5	15	15	15	72	80	75	4.4	2

Last In Service Date: unknown

Permitted Phases	
	12345678
Default	-2-----8
External Permit 0	-----
External Permit 1	-----
External Permit 2	-----

TOD Schedule Report

for 6097: SR- 836 WB Off&NW 107 Av NB

Print Date:
10/4/2021

Print Time:
9:06 PM

Current TOD Schedule	Plan	Cycle	Green Time								Ring Offset	Offset
			1 -	2 NBT	3 -	4 -	5 -	6 -	7 -	8 WBT		
2		140	0	108	0	0	0	0	0	20	0	16
3		170	0	124	0	0	0	0	0	34	0	63
4		160	0	126	0	0	0	0	0	22	0	16
5		130	0	78	0	0	0	0	0	40	0	42
7		150	0	94	0	0	0	0	0	44	0	42
8		160	0	104	0	0	0	0	0	44	0	6
9		160	0	104	0	0	0	0	0	44	0	6
10		130	0	74	0	0	0	0	0	44	0	55
11		170	0	114	0	0	0	0	0	44	0	6
12		140	0	84	0	0	0	0	0	44	0	55
14		120	0	74	0	0	0	0	0	34	0	117
20		115	0	69	0	0	0	0	0	34	0	39
21		150	0	91	0	0	0	0	0	47	0	46
22		115	0	69	0	0	0	0	0	34	0	39
23		115	0	39	0	0	0	0	0	64	0	39
24		110	0	64	0	0	0	0	0	34	0	58
25		150	0	95	0	0	0	0	0	43	0	36
26		160	0	102	0	0	0	0	0	46	0	65
27		110	0	64	0	0	0	0	0	34	0	72
28		160	0	96	0	0	0	0	0	52	0	46
29		150	0	69	0	0	0	0	0	69	0	134

Local TOD Schedule		
Time	Plan	DOW
0000	Free	M T W Th F
0000	Free	
0000	Free	
0000	Free	Su S
0130	Free	
0530	Free	
0545	2	M T W Th F
0545	4	
0630	3	M T W Th F
0700	24	Su S
0800	Free	
0900	20	
1000	7	M T W Th F
1000	25	Su S
1000	5	
1030	21	
1130	8	M T W Th F
1430	9	
1530	11	M T W Th F
1600	26	Su S
2000	10	
2000	12	M T W Th F
2100	27	Su S
2300	Free	
2300	Free	M T W Th F
2300	22	

Current Time of Day Function			
Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----	SuM T W ThF S

Local Time of Day Function			
Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----	SuM T W ThF S

* Settings
Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA

TOD Schedule Report

for 6097: SR- 836 WB Off&NW 107 Av NB

Print Date:

10/4/2021

Print Time:

9:06 PM

No Calendar Defined/Enabled

SIGNAL OPERATING PLAN



Timing Phases	Direction	Head No.	NB		WB				Ped Heads				Movements/Display/Actuation
			2	8A	8B	8AV	8BV						
(2)	NB	Dwell	G	R	R	R	R						2
		(8)	G	R	R	R	R						
(8)	WB	Dwell	R	G>	G>	G>	G>						8
		(2)	R	Y>	Y>	Y>	Y>						
(Recall)	NW 107 AV	C											
		l											
(Actuated)	SR 836 WB Off	C											
		l											
		Dwell											
		C											
		C											
		l											
		Dwell											
		C											
		C											
		l											

Flashing Operation FY FR FR FR FR Page 1 of 1

Miami-Dade County Public Works Department

Drawn Radames Iribar	Date 01/27/2014	SR 836 WB Off & NW 107 AVE NB			
Checked <i>H. Hernandez</i>	Date 02/06/2014	Placed in Service		Phasing No.	
		Date <i>6/3/14</i>	<i>UPC</i>	2	6097

APPENDIX C – 250629-4-32-01 EXCERPT

CONTRACT PLANS COMPONENTS
ROADWAY PLANS

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

FINANCIAL PROJECT ID 250629-4-32-01

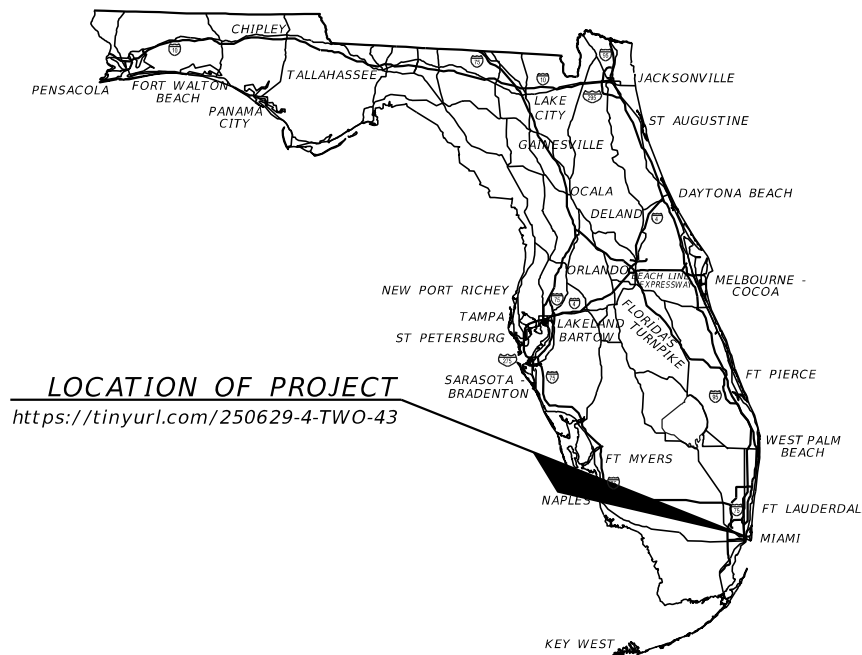
MIAMI-DADE COUNTY (87072)

STATE ROAD NO. 985

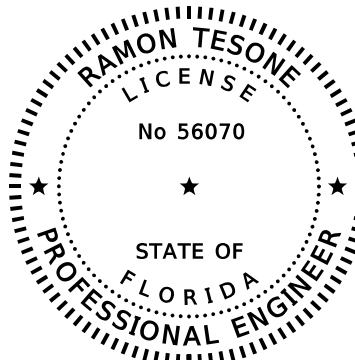
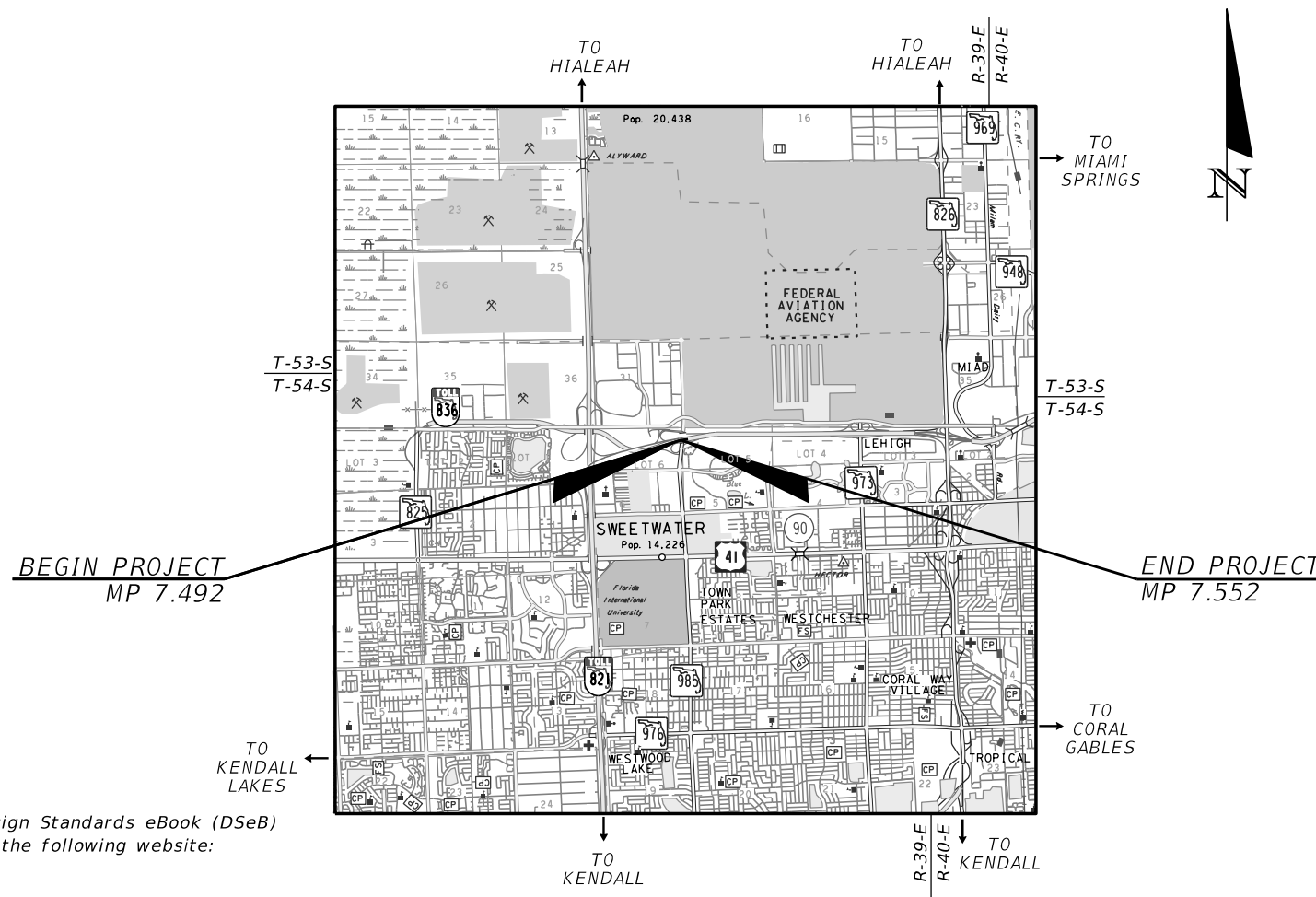
NW 107 AVENUE AND SR 836

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2	SUMMARY OF PAY ITEMS
3	GENERAL NOTES
4	TYPICAL SECTIONS
5	ROADWAY PLAN
6	SIGNING AND PAVEMENT MARKING PLAN
7 - 9	TEMPORARY TRAFFIC CONTROL PLANS
SQ-1-SQ-4	SUMMARY OF QUANTITIES



LOCATION OF PROJECT
<https://tinyurl.com/250629-4-TWO-43>



THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY:

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE
NOT CONSIDERED SIGNED AND SEALED.
AND THE SIGNATURE MUST BE VERIFIED
ON ANY ELECTRONIC COPIES.

ROADWAY PLANS
ENGINEER OF RECORD:

RAMON TESONE, P.E.
P.E. NO.: 56070
AES ENGINEERING, INC
13335 S.W. 124th STREET, SUITE 105
MIAMI, FLORIDA 33186
(305) 964-7353
CONTRACT NO.: C-9G93
VENDOR NO.: F274343167-001
CERTIFICATE OF AUTHORIZATION NO.: 29369

FDOT PROJECT MANAGER:

LANSY PACHECO, P.E.

GOVERNING DESIGN STANDARDS:

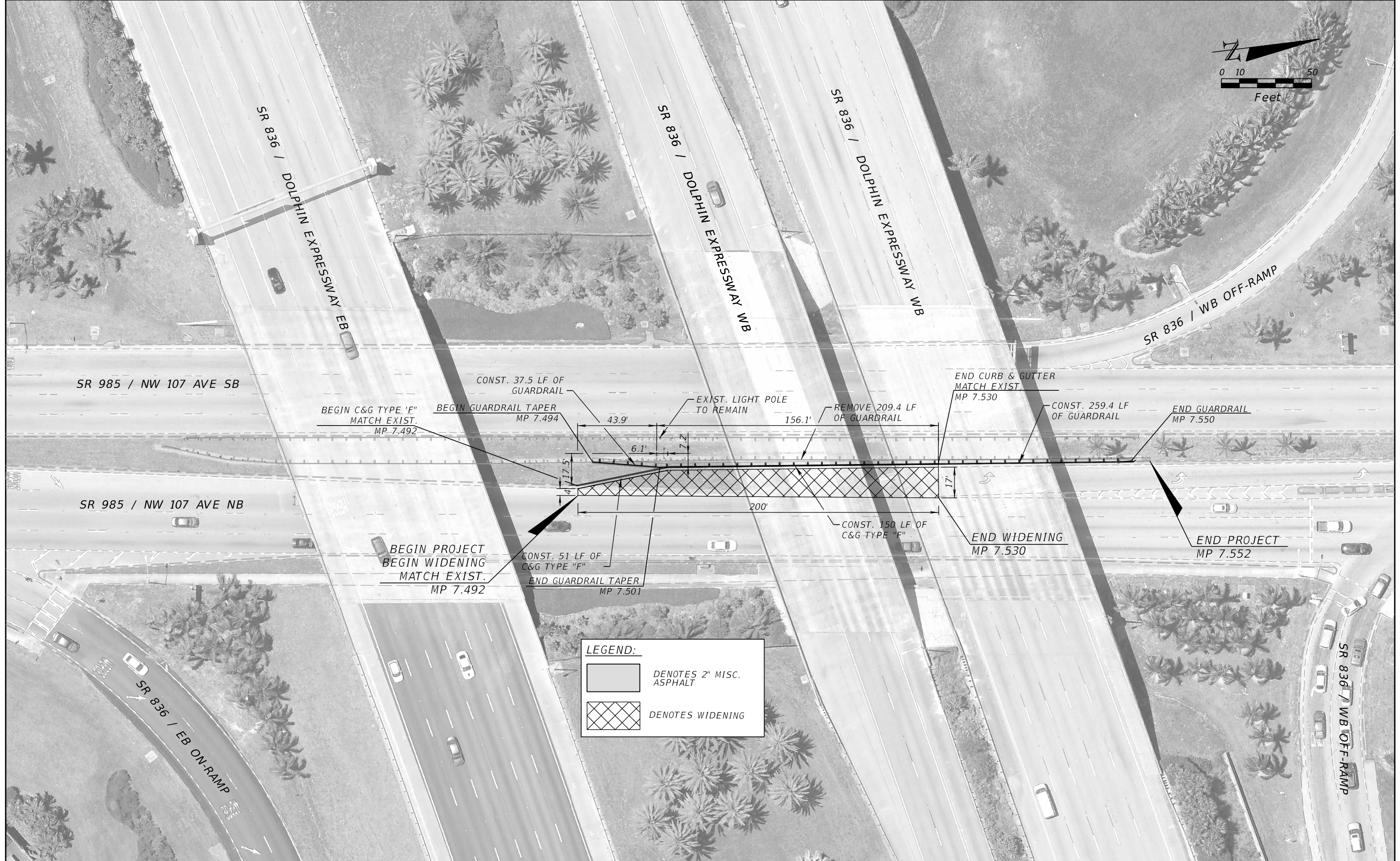
Florida Department of Transportation, FY 2018-19 Design Standards eBook (DSeB) and applicable Design Standards Revisions (DSRs) at the following website:
<http://www.fdot.gov/Design/Standardplans>

GOVERNING STANDARD SPECIFICATIONS:

Florida Department of Transportation, July 2018 Standard Specifications for Road and Bridge Construction at the following website:
<http://www.fdot.gov/programmanagement/Implemented/SpecBooks>

90% SUBMITTAL
MARCH 1, 2019

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
XXXXXX	19	1



LEGEND:

- DENOTES 2" MISC. ASPHALT
- DENOTES WIDENING

REVISIONS		DESCRIPTION	
DATE	DESCRIPTION	DATE	DESCRIPTION

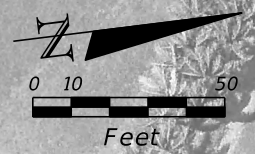
RAMON TESONE, P.E.
 P.E. No.: 56070
 AES ENGINEERING, INC
 13335 S.W. 124th STREET, SUITE 105
 MIAMI, FLORIDA 33186
 CERTIFICATE OF AUTHORIZATION: 29369

STATE OF FLORIDA		
DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 985	MIAMI-DADE	250629-4-32-01

ROADWAY PLAN

SHEET NO.
5

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RAMON TESONE, P.E.
 P.E. No.: 56070
 AES ENGINEERING, INC
 13335 SW. 124th STREET, SUITE 105
 MIAMI, FLORIDA 33186
 CERTIFICATE OF AUTHORIZATION: 29369

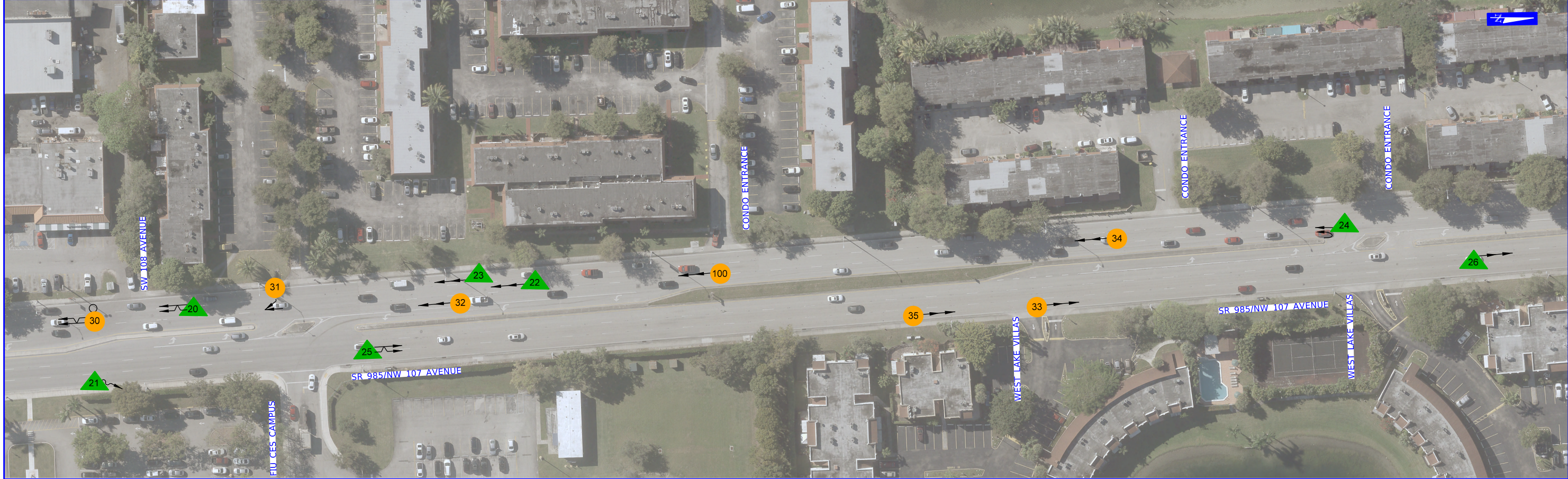
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 985	MIAMI-DADE	250629-4-32-01

**SIGNING AND PAVEMENT
 MARKING PLAN**

SHEET
 NO.
 6

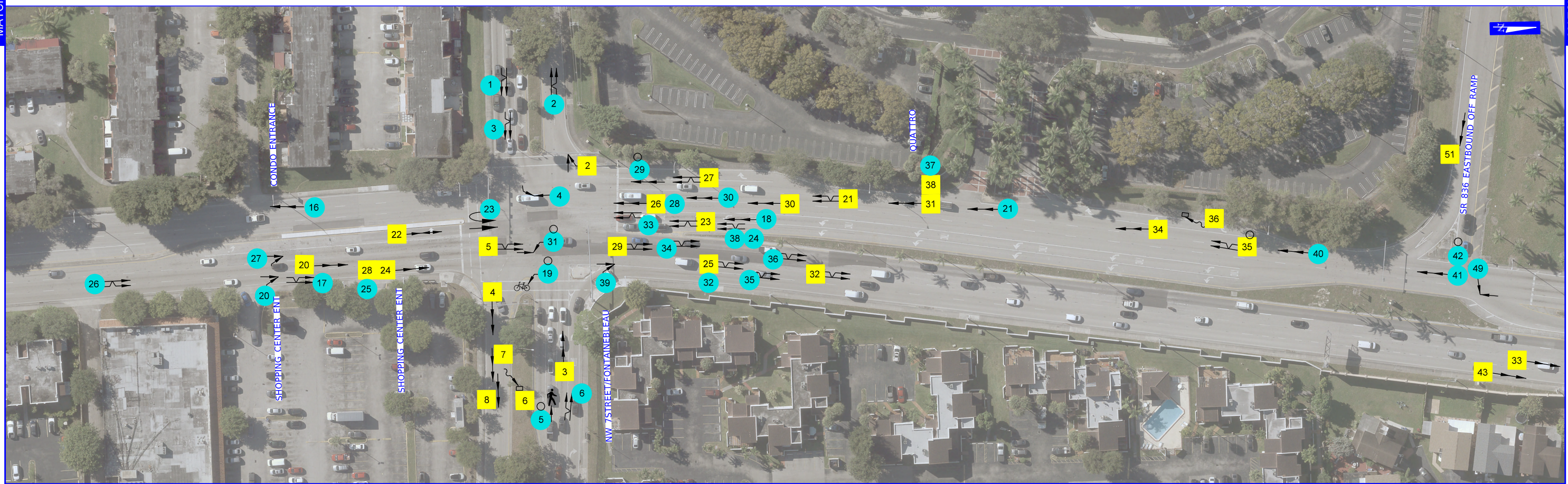
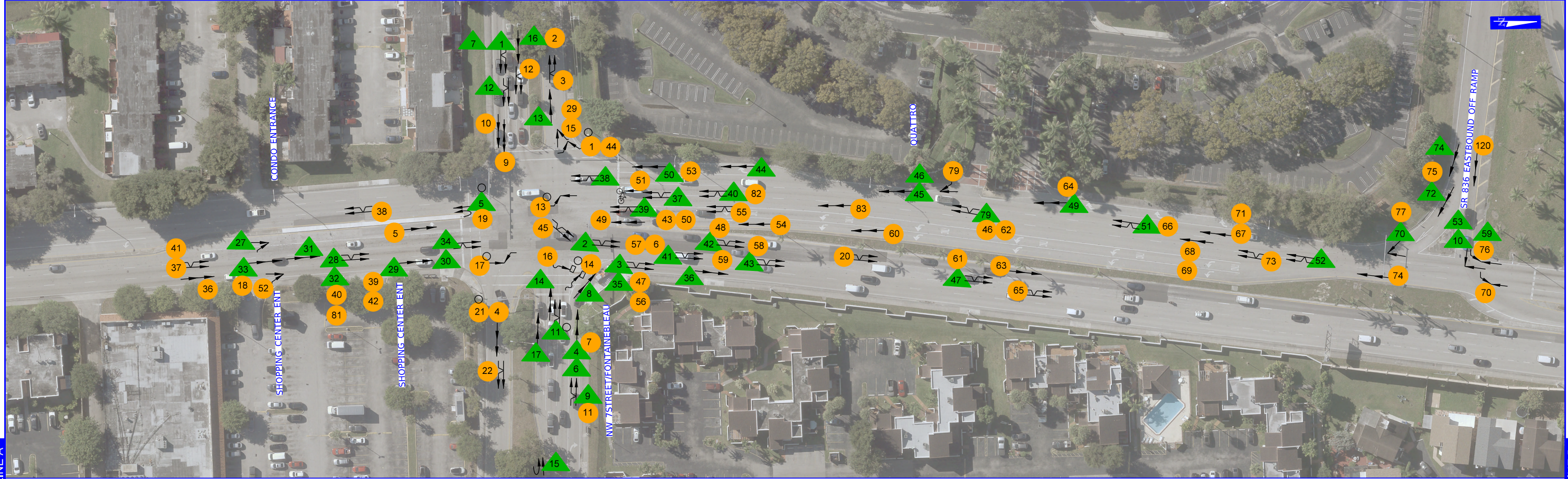
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

APPENDIX D – COLLISION DIAGRAMS AND ANNUAL CRASH SUMMARIES



COLLISION SYMBOLS:										COLLISION DIAGRAM (2018-2022) SR 985/NW 107 AVENUE FROM MP 6.827 TO MP 7.604		FIGURE NO.				
999	RECORD NUMBER		BICYCLIST		FIXED OBJECT		LEFT TURN		HEAD ON				CARGO LOSS/DEBRIS		YR 2018	
0	INJURY		PEDESTRIAN		PARKED CAR		OUT OF CONTROL		ANGLE		U-TURN		YR 2019		YR 2022	
1	FATAL		BACKING VEHICLE		REAR END		RIGHT TURN		SIDE SWIPE		OVERTAKEN		YR 2020			

MATCHLINE A



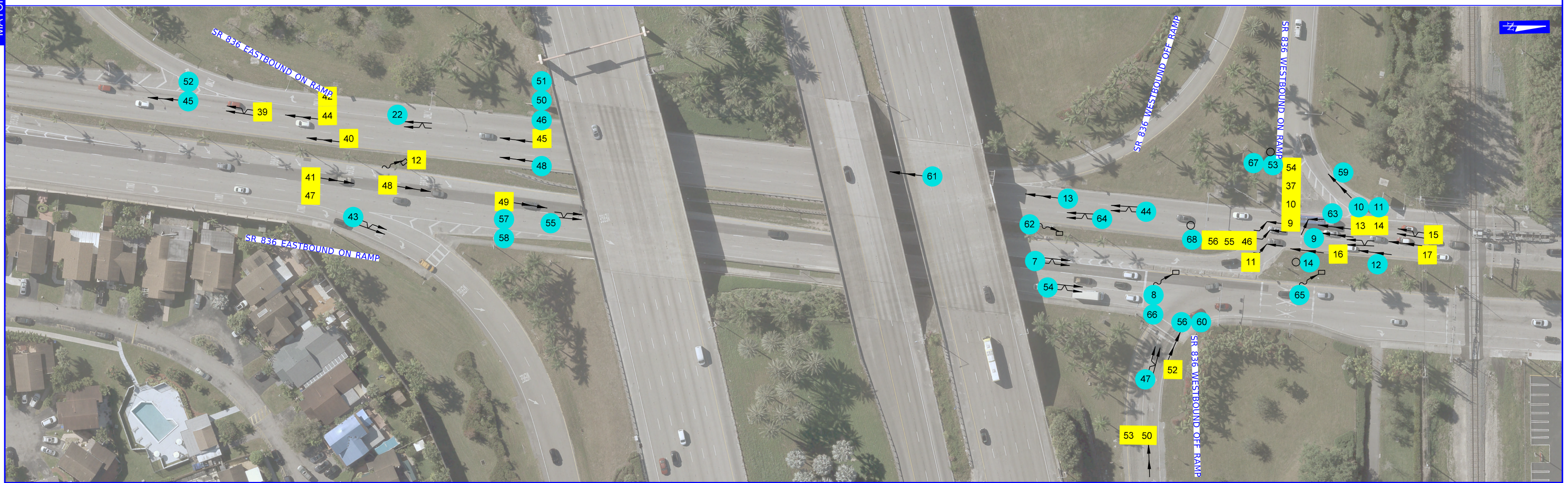
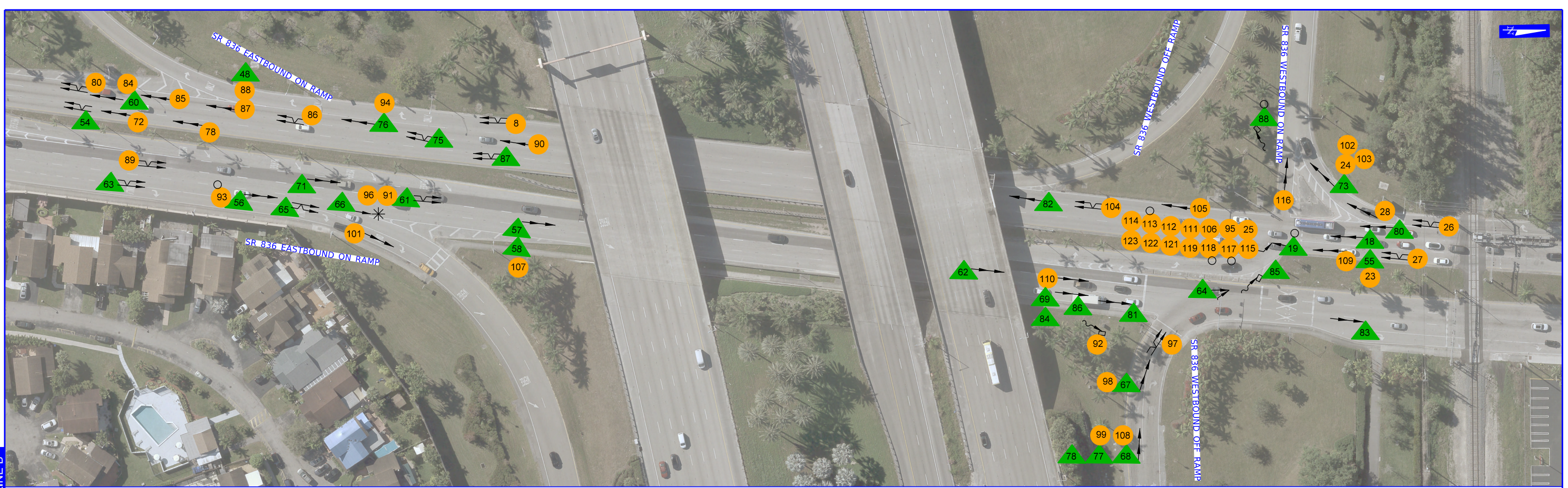
COLLISION SYMBOLS:

⊙	RECORD NUMBER	🚲	BICYCLIST	➡	FIXED OBJECT	↩	LEFT TURN	↔	HEAD ON	*	CARGO LOSS/DEBRIS	▲	YR 2018	●	YR 2021
○	INJURY	🚶	PEDESTRIAN	➡	PARKED CAR	↪	OUT OF CONTROL	↘	ANGLE	↺	U-TURN	●	YR 2019	▲	YR 2022
●	FATAL	↔	BACKING VEHICLE	➡	REAR END	↪	RIGHT TURN	↔	SIDE SWIPE	↺	OVERTURNED	■	YR 2020		

COLLISION DIAGRAM (2018-2022)
SR 985/NW 107 AVENUE FROM
MP 6.827 TO MP 7.604

FIGURE NO.
C-2

MATCHLINE B



COLLISION SYMBOLS:

RECORD NUMBER	BICYCLIST	FIXED OBJECT	LEFT TURN	HEAD ON	CARGO LOSS/DEBRIS	YR 2018	YR 2021
INJURY	PEDESTRIAN	PARKED CAR	OUT OF CONTROL	ANGLE	U-TURN	YR 2019	YR 2022
FATAL	BACKING VEHICLE	REAR END	RIGHT TURN	SIDE SWIPE	OVERTURNED	YR 2020	

COLLISION DIAGRAM (2018-2022)
SR 985/NW 107 AVENUE FROM
MP 6.827 TO MP 7.604

FIGURE NO.

C-3



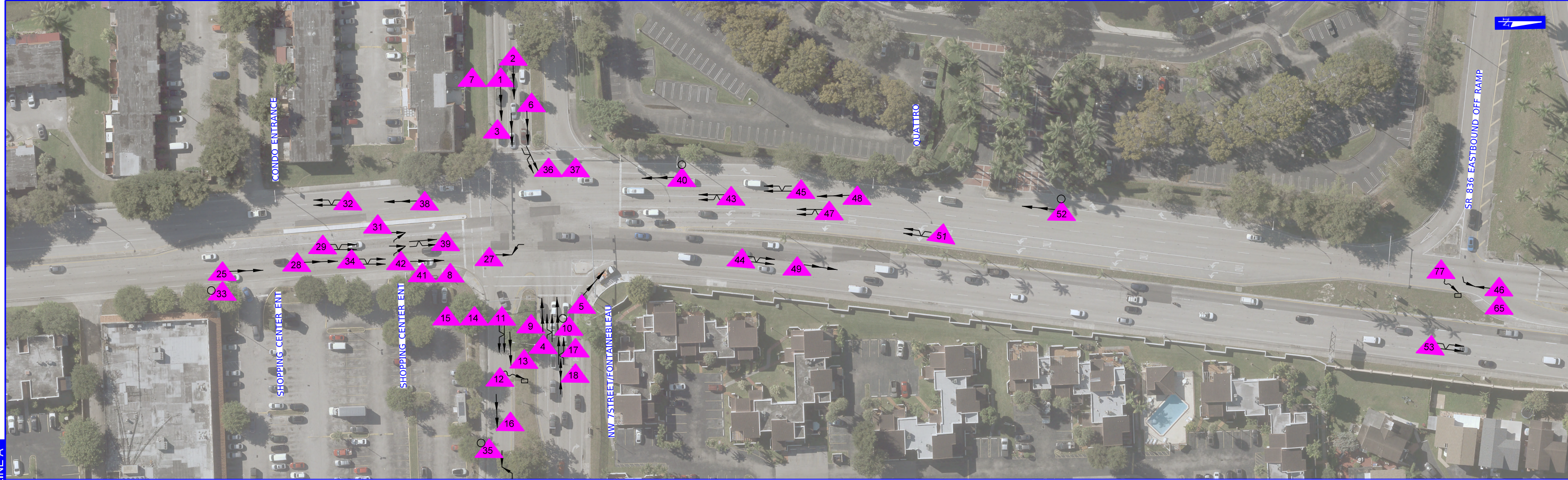
MATCHLINE A

COLLISION SYMBOLS:

⊕	RECORD NUMBER		BICYCLIST		FIXED OBJECT		LEFT TURN		HEAD ON	* CARGO LOSS/DEBRIS		YR 2018		YR 2021	
○	INJURY		PEDESTRIAN		PARKED CAR		OUT OF CONTROL		ANGLE		U-TURN		YR 2019		YR 2022
●	FATAL		BACKING VEHICLE		REAR END		RIGHT TURN		SIDE SWIPE		OVERTURNED		YR 2020		

COLLISION DIAGRAM (2018-2022)
SR 985/NW 107 AVENUE FROM
MP 6.827 TO MP 7.604

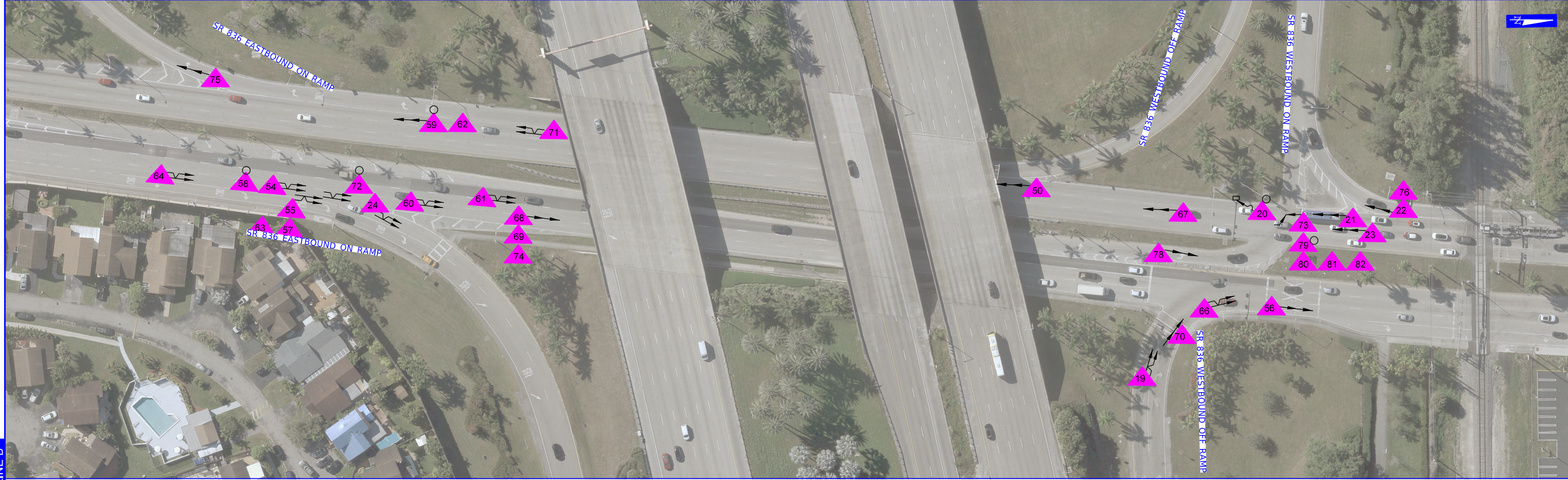
FIGURE NO.
C-4



MATCHLINE A

MATCHLINE B

COLLISION SYMBOLS:										COLLISION DIAGRAM (2018-2022) SR 985/NW 107 AVENUE FROM MP 6.827 TO MP 7.604	FIGURE NO. C-5					
⊙	RECORD NUMBER		BICYCLIST		FIXED OBJECT		LEFT TURN		HEAD ON			*	CARGO LOSS/DEBRIS		YR 2018	
○	INJURY		PEDESTRIAN		PARKED CAR		OUT OF CONTROL		ANGLE			U-TURN		YR 2019		YR 2022
●	FATAL		BACKING VEHICLE		REAR END		RIGHT TURN		SIDE SWIPE		OVERTURNED		YR 2020			



MATCHLINE B

COLLISION SYMBOLS:

⊕	RECORD NUMBER		BICYCLIST		FIXED OBJECT		LEFT TURN		HEAD ON	*	CARGO LOSS/DEBRIS		YR 2018		YR 2021
○	INJURY		PEDESTRIAN		PARKED CAR		OUT OF CONTROL		ANGLE		U-TURN		YR 2019		YR 2022
●	FATAL		BACKING VEHICLE		REAR END		RIGHT TURN		SIDE SWIPE		OVERTURNED		YR 2020		

**COLLISION DIAGRAM (2018-2022)
SR 985/NW 107 AVENUE FROM
MP 6.827 TO MP 7.604**

FIGURE NO.
C-6

**State of Florida Department of Transportation
CRASH SUMMARY**

SECTION: 87072000 STATE ROUTE: 985
ROADWAY LIMITS: From MP 6.827 to 7.604 M.P. 6.827 TO 7.604 ENGINEER: FDOT D6
STUDY PERIOD: FROM 1/ 2019 TO 12/ 2019 COUNTY: Miami-Dade

Crash Number	No.	MILE POST	DATE	DAY	TIME	CRASH TYPE	FATAL	INJURIES	PROP DAM	DAY / NIGHT	WET / DRY	CONTRIBUTING CAUSE (VEHICLE ONLY)
88862091	1	0.966	01/30/19	Wed	12:27 PM	Left-Turn	0	1	0	Day	Dry	Failed to Yield Right-Of-Way
88859874	2	0.997	01/12/19	Sat	6:24 PM	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner
88879086	3	0.997	09/17/19	Tue	11:14 PM	Sideswipe	0	0	1	Night	Dry	Failed To Keep In Proper Lane
88896716	4	0.997	12/09/19	Mon	7:47 AM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
88886171	5	0.997	07/23/19	Tue	2:54 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
88904592	6	0.997	11/25/19	Mon	9:21 PM	Sideswipe	0	0	1	Night	Dry	Failed To Keep In Proper Lane
88185610	7	0.997	11/07/19	Thu	12:10 PM	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner
88889398	8	7.245	08/12/19	Mon	6:51 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
88888296	9	0.997	08/10/19	Sat	6:55 PM	Backed Into	0	0	1	Day	Dry	Improper Backing
88888390	10	0.997	08/10/19	Sat	6:54 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
88880719	11	0.997	06/07/19	Fri	3:50 PM	Sideswipe	0	0	1	Day	Wet	Failed To Keep In Proper Lane
88895914	12	0.997	09/30/19	Mon	10:58 AM	Sideswipe	0	0	1	Day	Dry	Careless or Negligent Manner
88224222	13	0.997	11/16/19	Sat	10:15 PM	Left-Turn	0	4	0	Night	Dry	Ran Red Light
88859167	14	0.997	01/13/19	Sun	8:05 AM	Curb	0	1	0	Day	Wet	Careless or Negligent Manner
88878148	15	0.997	05/28/19	Tue	9:25 PM	Right-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way
88249815	16	0.997	12/31/19	Tue	2:15 AM	Curb	0	0	1	Night	Dry	Careless or Negligent Manner
88879231	17	0.997	08/14/19	Wed	9:36 PM	Left-Turn	0	1	0	Night	Dry	Ran Red Light
88056747	18	0.999	01/07/19	Mon	6:48 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
88129896	19	0.999	05/20/19	Mon	9:38 AM	Left-Turn	0	0	1	Day	Dry	Ran Red Light
88225938	20	0.999	12/20/19	Fri	10:20 PM	Rear-End	0	0	1	Night	Dry	Failed To Keep In Proper Lane
89511552	21	1.052	12/20/19	Fri	11:38 AM	Rear-End	0	1	0	Day	Dry	Careless or Negligent Manner
88860847	22	1.060	01/24/19	Thu	7:31 AM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
89028670	23	0.015	11/09/19	Sat	5:10 PM	Rear-End	0	0	1	Night	Wet	Careless or Negligent Manner
89028762	24	0.018	12/12/19	Thu	3:10 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
87728276	25	0.019	02/15/19	Fri	2:04 AM	Left-Turn	0	0	1	Night	Dry	Failed to Yield Right-Of-Way
89028718	26	0.022	11/24/19	Sun	5:43 PM	Sideswipe	0	0	1	Night	Dry	Failed To Keep In Proper Lane
89028139	27	0.038	03/22/19	Fri	3:05 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
89028622	28	0.039	10/14/19	Mon	3:15 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
87660699	29	7.224	01/13/19	Sun	11:12 PM	Right-Turn	0	0	1	Night	Dry	Failed to Yield Right-Of-Way
88186335	30	6.829	10/17/19	Thu	10:01 PM	Sideswipe	0	2	0	Night	Dry	Failed To Keep In Proper Lane
88858558	31	6.828	03/04/19	Mon	5:44 PM	Right-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way
88884898	32	6.853	07/19/19	Fri	9:00 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
88896400	33	6.930	09/30/19	Mon	3:31 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
88196120	34	6.969	10/13/19	Sun	7:30 PM	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner
88888950	35	6.959	08/09/19	Fri	8:00 PM	Rear-End	0	0	1	Night	Wet	Careless or Negligent Manner
88194931	36	7.127	08/21/19	Wed	4:52 PM	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner
88097786	37	7.136	05/03/19	Fri	1:30 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
88227137	38	7.139	11/19/19	Tue	1:37 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
88118415	39	7.145	05/07/19	Tue	12:10 PM	Rear-End	0	1	0	Day	Dry	Careless or Negligent Manner
88877500	40	7.145	05/18/19	Sat	6:43 AM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
88208755	41	7.145	11/29/19	Fri	12:15 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
88075522	42	7.155	03/14/19	Thu	6:00 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
88876657	43	7.156	05/15/19	Wed	1:16 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
88040955	44	7.157	03/23/19	Sat	9:20 PM	Left-Turn	0	0	1	Night	Dry	Failed to Yield Right-Of-Way
88174197	45	7.157	09/30/19	Mon	10:10 AM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
88174267	46	7.157	09/29/19	Sun	8:14 PM	Sideswipe	0	0	1	Night	Dry	Failed To Keep In Proper Lane
88888465	47	7.157	08/11/19	Sun	11:35 PM	Sideswipe	0	0	1	Night	Dry	Failed To Keep In Proper Lane
88203909	48	7.158	12/11/19	Wed	1:30 AM	Sideswipe	0	0	1	Night	Dry	#N/A
88900278	49	7.159	11/16/19	Sat	4:05 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
88860312	50	7.159	02/05/19	Tue	10:55 AM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
88254659	51	7.159	11/23/19	Sat	2:30 PM	Pedalcycle	0	0	1	Day	Dry	Careless or Negligent Manner
88084533	52	7.161	03/15/19	Fri	1:33 PM	Right-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way
88160246	53	7.166	07/08/19	Mon	3:04 PM	Rear-End	0	0	1	Day	Wet	Careless or Negligent Manner
88087718	54	7.166	03/27/19	Wed	4:12 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
88208827	55	7.166	11/05/19	Tue	2:17 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
88075425	56	7.167	02/02/19	Sat	6:49 PM	Sideswipe	0	0	1	Night	Wet	Failed To Keep In Proper Lane
88249812	57	7.170	12/28/19	Sat	10:20 PM	Sideswipe	0	0	1	Night	Dry	Failed To Keep In Proper Lane
88150346	58	7.173	06/18/19	Tue	10:50 AM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
88254676	59	7.183	12/14/19	Sat	6:52 PM	Sideswipe	0	0	1	Night	Dry	Failed To Keep In Proper Lane
88174210	60	7.195	10/24/19	Thu	12:40 PM	Rear-End	0	0	1	Day	Dry	Followed too Closely
88131898	61	7.203	07/02/19	Tue	1:15 AM	Sideswipe	0	0	1	Night	Dry	Failed To Keep In Proper Lane
88898633	62	7.211	10/18/19	Fri	1:19 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane
89028273	63	7.211	05/18/19	Sat	2:23 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
88130619	64	7.213	06/03/19	Mon	5:53 PM	Rear-End	0	0	1	Day	Dry	Failed To Keep In Proper Lane
88075513	65	7.225	03/05/19	Tue	7:34 PM	Sideswipe	0	0	1	Night	Dry	Failed To Keep In Proper Lane
88056760	66	7.225	01/20/19	Sun	6:03 PM	Sideswipe	0	0	1	Night	Dry	Failed To Keep In Proper Lane
88049689	67	7.225	02/05/19	Tue	12:34 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
88235178	68	7.225	12/19/19	Thu	7:14 PM	Rear-End	0	0	1	Night	Wet	Careless or Negligent Manner
88160261	69	7.225	07/26/19	Fri	6:02 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
88234089	70	7.254	11/28/19	Thu	1:56 PM	Angle	0	0	1	Day	Dry	Ran Red Light
88117972	71	7.225	06/27/19	Thu	6:19 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
88131874	72	7.266	06/02/19	Sun	2:30 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner
87654740	73	7.225	01/14/19	Mon	12:31 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane

State of Florida Department of Transportation CRASH SUMMARY																
SECTION:		87072000						STATE ROUTE:					985			
ROADWAY LIMITS:		From MP 6.827 to 7.604				M.P. 6.827		TO 7.604		ENGINEER:			FDOT D6			
STUDY PERIOD:		FROM 1/ 2019			TO 12/ 2019			COUNTY:					Miami-Dade			
Crash Number	No.	MILE POST	DATE	DAY	TIME	CRASH TYPE	FATAL	INJURIES	PROP DAM	DAY / NIGHT	WET / DRY	CONTRIBUTING CAUSE (VEHICLE ONLY)				
88860008	74	7.306	03/16/19	Sat	12:57 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
88870493	75	7.324	04/07/19	Sun	2:25 PM	Rear-End	0	0	1	Day	Dry	Followed too Closely				
88085773	76	7.326	04/13/19	Sat	8:50 AM	Angle	0	0	1	Day	Dry	Ran Red Light				
89028446	77	7.333	08/03/19	Sat	12:40 PM	Right-Turn	0	0	1	Day	Dry	Drove too Fast for Conditions				
85510633	78	7.345	08/11/19	Sun	12:01 AM	Rear-End	0	0	1	Night	Dry	Followed too Closely				
88189586	79	7.225	09/29/19	Sun	1:39 PM	Right-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way				
88132794	80	7.400	06/01/19	Sat	1:00 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane				
88095100	81	7.225	04/04/19	Thu	8:13 AM	Sideswipe	0	0	1	Day	Wet	Failed To Keep In Proper Lane				
88160249	82	7.225	07/09/19	Tue	4:14 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane				
88234078	83	7.225	11/20/19	Wed	5:43 PM	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner				
88208151	84	7.400	09/06/19	Fri	8:08 PM	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner				
88130593	85	7.400	05/01/19	Wed	6:41 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
88189547	86	7.400	08/07/19	Wed	1:55 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane				
88148016	87	7.400	08/26/19	Mon	5:57 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
88174270	88	7.400	10/07/19	Mon	5:34 PM	Rear-End	0	0	1	Night	Wet	Careless or Negligent Manner				
88225407	89	7.400	12/20/19	Fri	11:04 AM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane				
88148871	90	7.400	07/26/19	Fri	2:05 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
88139612	91	7.400	05/16/19	Thu	8:48 AM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane				
88088751	92	7.500	03/25/19	Mon	5:24 PM	Other Fixed Object	0	0	1	Day	Dry	Careless or Negligent Manner				
88032159	93	7.428	02/21/19	Thu	8:08 AM	Rear-End	0	1	0	Day	Wet	Careless or Negligent Manner				
88076473	94	7.447	01/24/19	Thu	9:04 AM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
88163712	95	7.520	08/05/19	Mon	10:48 PM	Left-Turn	0	0	1	Night	Dry	Failed to Yield Right-Of-Way				
87280891	96	7.464	03/04/19	Mon	8:40 AM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane				
88251511	97	7.525	12/07/19	Sat	10:01 PM	Sideswipe	0	0	1	Night	Dry	Failed To Keep In Proper Lane				
88133631	98	7.525	05/17/19	Fri	2:55 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
88160264	99	7.525	07/29/19	Mon	7:16 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
88230458	100	6.959	11/23/19	Sat	7:57 PM	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner				
88056756	101	7.464	01/15/19	Tue	3:10 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
88160237	102	7.500	06/21/19	Fri	4:43 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
88132823	103	7.500	07/11/19	Thu	11:06 AM	Rear-End	0	0	1	Day	Wet	Careless or Negligent Manner				
88142241	104	7.500	08/05/19	Mon	3:31 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane				
88070992	105	7.500	02/24/19	Sun	7:15 PM	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner				
89028429	106	7.500	07/29/19	Mon	2:20 PM	Left-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way				
88075503	107	7.463	02/27/19	Wed	5:09 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
88160258	108	7.477	07/23/19	Tue	6:04 PM	Rear-End	0	0	1	Day	Wet	Careless or Negligent Manner				
88040003	109	7.548	01/01/19	Tue	7:20 PM	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner				
88068425	110	7.555	02/14/19	Thu	2:58 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
89028138	111	7.575	03/22/19	Fri	1:55 PM	Left-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way				
89028538	112	7.583	09/16/19	Mon	2:00 PM	Left-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way				
89028761	113	7.584	12/12/19	Thu	8:01 PM	Left-Turn	0	1	0	Night	Wet	Failed to Yield Right-Of-Way				
89028734	114	7.584	11/28/19	Thu	6:10 PM	Left-Turn	0	0	1	Night	Dry	Failed to Yield Right-Of-Way				
89028687	115	7.585	11/15/19	Fri	2:46 PM	Left-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way				
87728287	116	0.000	02/21/19	Thu	5:02 AM	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner				
89028343	117	0.000	06/18/19	Tue	9:15 AM	Left-Turn	0	1	0	Day	Dry	Ran Red Light				
87728301	118	0.000	02/27/19	Wed	10:10 PM	Left-Turn	0	1	0	Night	Dry	Failed to Yield Right-Of-Way				
89028356	119	0.000	06/23/19	Sun	3:10 PM	Left-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way				
88114715	120	7.450	05/29/19	Wed	2:31 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
89028261	121	0.032	05/12/19	Sun	10:50 AM	Left-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way				
89028232	122	0.034	04/14/19	Sun	10:30 PM	Left-Turn	0	0	1	Night	Dry	Failed to Yield Right-Of-Way				
89028510	123	0.036	09/04/19	Wed	9:55 PM	Left-Turn	0	0	1	Night	Dry	Failed to Yield Right-Of-Way				
Total No.	Fatal	Injury	PDO	Rear-End	Head-On	Angle	Left-Turn	Right-Turn	Sideswipe	Backed Into	Ped/Bike	Parked Car	Fixed Object	Ran into Water	Other	
123	0	11	112	52	0	2	19	6	39	1	1	0	3	0	0	
Percent	0.00%	8.94%	91.06%	42.28%	0.00%	1.63%	15.45%	4.88%	31.71%	0.81%	0.81%	0.00%	2.44%	0.00%	0.00%	
Contrib. Cause	Day	Night	Wet	Dry	Careless Driving	FTYRW	Improper Turn	Ran Red Light	Exceeded Speed	Improper Passing	Disreg Cntl Dev	Erratic/Aggress	Ran off Road	DUI	Wrong Way	
Total	81	42	13	110	52	20	0	6	1	0	0	0	0	0	0	
Percent	65.85%	34.15%	10.57%	89.43%	42.28%	16.26%	0.00%	4.88%	0.81%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
TOTAL ENTERING VEHICLES/ADT: #VALUE!							SEGMENT CRASH RATE: #VALUE! CRASHES PER MILLION VEHICLE MILES									

State of Florida Department of Transportation CRASH SUMMARY																
SECTION:		87072000						STATE ROUTE: 985								
ROADWAY LIMITS:		From MP 6.827 to 7.604				M.P. 6.827 TO 7.604		ENGINEER: FDOT D6								
STUDY PERIOD:		FROM 1/ 2020		TO 12/ 2020		COUNTY: Miami-Dade										
Crash Number	No.	MILE POST	DATE	DAY	TIME	CRASH TYPE	FATAL	INJURIES	PROP DAM	DAY / NIGHT	WET / DRY	CONTRIBUTING CAUSE (VEHICLE ONLY)				
88377612	1	6.853	09/29/20	Tue	3:38 PM	Right-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way				
89546413	2	0.992	11/29/20	Sun	11:15 PM	Right-Turn	0	0	1	Night	Dry	Failed to Yield Right-Of-Way				
89513563	3	0.997	01/10/20	Fri	5:00 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
89520700	4	0.997	03/04/20	Wed	7:30 PM	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner				
89531147	5	0.999	07/16/20	Thu	9:57 AM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane				
89521182	6	1.016	04/05/20	Sun	9:48 PM	Curb	0	0	1	Night	Wet	Careless or Negligent Manner				
89532437	7	1.045	10/07/20	Wed	10:44 PM	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner				
89516067	8	1.088	01/23/20	Thu	9:05 PM	Rear-End	0	0	1	Night	Wet	Careless or Negligent Manner				
24000913	9	0.009	06/05/20	Fri	9:34 PM	Left-Turn	0	0	1	Night	Dry	Failed to Yield Right-Of-Way				
24001134	10	0.009	11/05/20	Thu	7:20 PM	Left-Turn	0	0	1	Night	Wet	Failed to Yield Right-Of-Way				
24000982	11	0.011	08/05/20	Wed	12:10 PM	Left-Turn	0	0	1	Day	Wet	Ran Red Light				
24000890	12	7.325	05/14/20	Thu	10:14 PM	Curb	0	0	1	Night	Dry	Careless or Negligent Manner				
24001163	13	0.014	11/21/20	Sat	5:57 PM	Rear-End	0	0	1	Night	Wet	Careless or Negligent Manner				
24001048	14	0.024	09/24/20	Thu	6:40 PM	Rear-End	0	0	1	Day	Wet	Careless or Negligent Manner				
24001028	15	0.025	09/10/20	Thu	12:50 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane				
89028981	16	0.031	03/13/20	Fri	2:40 PM	Rear-End	0	0	1	Day	Dry	Failed To Keep In Proper Lane				
24001007	17	0.039	01/22/20	Wed	6:14 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
89541861	18	6.828	10/27/20	Tue	5:20 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
89546735	19	6.997	11/25/20	Wed	12:41 PM	Right-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way				
88288207	20	7.135	03/04/20	Wed	11:40 AM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
89028863	21	7.137	01/23/20	Thu	5:20 PM	Sideswipe	0	0	1	Day	Wet	Failed To Keep In Proper Lane				
89531562	22	7.146	07/02/20	Thu	2:30 PM	Backed Into	0	0	1	Day	Dry	Improper Backing				
88329906	23	7.153	08/28/20	Fri	5:03 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane				
88307983	24	7.155	08/14/20	Fri	4:02 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
88269285	25	7.157	01/30/20	Thu	8:35 PM	Sideswipe	0	0	1	Night	Dry	Failed To Keep In Proper Lane				
88402426	26	7.159	11/22/20	Sun	2:23 PM	Rear-End	0	0	1	Day	Wet	Careless or Negligent Manner				
89514276	27	7.160	01/10/20	Fri	7:01 PM	Sideswipe	0	0	1	Night	Dry	Failed To Keep In Proper Lane				
89534205	28	7.163	08/06/20	Thu	6:43 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
88338991	29	7.167	07/03/20	Fri	9:23 PM	Sideswipe	0	0	1	Night	Dry	Failed To Keep In Proper Lane				
88332631	30	7.173	05/20/20	Wed	3:20 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
89542447	31	7.184	10/16/20	Fri	5:30 PM	Rear-End	0	0	1	Night	Wet	Careless or Negligent Manner				
88329417	32	7.198	09/18/20	Fri	10:45 AM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane				
88286085	33	7.249	02/04/20	Tue	11:01 PM	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner				
88330695	34	7.225	08/17/20	Mon	5:17 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
89544898	35	7.225	11/18/20	Wed	12:33 PM	Sideswipe	0	1	0	Day	Dry	Failed To Keep In Proper Lane				
88285189	36	7.225	03/18/20	Wed	3:47 PM	Utility Pole/Light Support	0	0	1	Day	Dry	Careless or Negligent Manner				
88288022	37	7.500	07/18/20	Sat	1:25 PM	Left-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way				
88230057	38	7.225	01/08/20	Wed	6:18 AM	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner				
88330717	39	7.400	10/03/20	Sat	4:00 PM	Sideswipe	0	0	1	Day	Dry	Failed To Keep In Proper Lane				
88343805	40	7.400	10/21/20	Wed	7:48 AM	Rear-End	0	0	1	Day	Wet	Careless or Negligent Manner				
88388391	41	7.400	10/02/20	Fri	11:26 PM	Rear-End	0	0	1	Night	Wet	Careless or Negligent Manner				
88332601	42	7.400	09/12/20	Sat	7:54 PM	Rear-End	0	0	1	Night	Wet	Careless or Negligent Manner				
88423315	43	7.400	11/10/20	Tue	1:19 PM	Rear-End	0	0	1	Day	Wet	Careless or Negligent Manner				
88276105	44	7.419	01/27/20	Mon	7:11 PM	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner				
88331441	45	7.427	07/17/20	Fri	6:02 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
88376976	46	7.500	09/27/20	Sun	1:58 PM	Left-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way				
88231681	47	7.438	01/07/20	Tue	6:35 PM	Rear-End	0	0	1	Night	Dry	Careless or Negligent Manner				
88192307	48	7.447	02/15/20	Sat	7:18 PM	Rear-End	0	1	0	Night	Wet	Careless or Negligent Manner				
88281289	49	7.457	02/15/20	Sat	7:13 PM	Rear-End	0	0	1	Night	Wet	Careless or Negligent Manner				
88269300	50	7.530	02/20/20	Thu	6:26 PM	Rear-End	0	0	1	Night	Wet	Careless or Negligent Manner				
88290977	51	7.464	02/20/20	Thu	4:21 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
88270062	52	7.500	02/11/20	Tue	1:22 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
88331436	53	7.500	07/01/20	Wed	4:10 PM	Rear-End	0	0	1	Day	Dry	Careless or Negligent Manner				
24001139	54	7.500	11/12/20	Thu	6:52 PM	Left-Turn	0	0	1	Night	Wet	Ran Red Light				
24000872	55	7.500	05/03/20	Sun	3:46 PM	Left-Turn	0	0	1	Day	Dry	Failed to Yield Right-Of-Way				
89028856	56	7.500	01/21/20	Tue	9:30 AM	Angle	0	0	1	Day	Dry	Failed to Yield Right-Of-Way				
	Total No.	Fatal	Injury	PDO	Rear-End	Head-On	Angle	Left-Turn	Right-Turn	Sideswipe	Backed Into	Ped/Bike	Parked Car	Fixed Object	Ran into Water	Other
	56	0	2	54	31	0	1	7	3	10	1	0	0	3	0	0
	Percent	0.00%	3.57%	96.43%	55.36%	0.00%	1.79%	12.50%	5.36%	17.86%	1.79%	0.00%	0.00%	5.36%	0.00%	0.00%
	Contrib. Cause	Day	Night	Wet	Dry	Careless Driving	FTYRW	Improper Turn	Ran Red Light	Exceeded Speed	Improper Passing	Disreg Cntl Dev	Erratic/Aggress	Ran off Road	DUI	Wrong Way
	Total	33	23	17	39	33	9	0	2	0	0	0	0	0	0	0
	Percent	58.93%	41.07%	30.36%	69.64%	58.93%	16.07%	0.00%	3.57%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
TOTAL ENTERING VEHICLES/ADT: #VALUE!								SEGMENT CRASH RATE: #VALUE! CRASHES PER MILLION VEHICLE MILES								

APPENDIX E - FM: 434664-2-32-01, TWO 31 EXCERPT

ODistrictwide Traffic Operations & Safety Studies
FPID 434664-2-32-01
Contract C-AJ72

June 2024

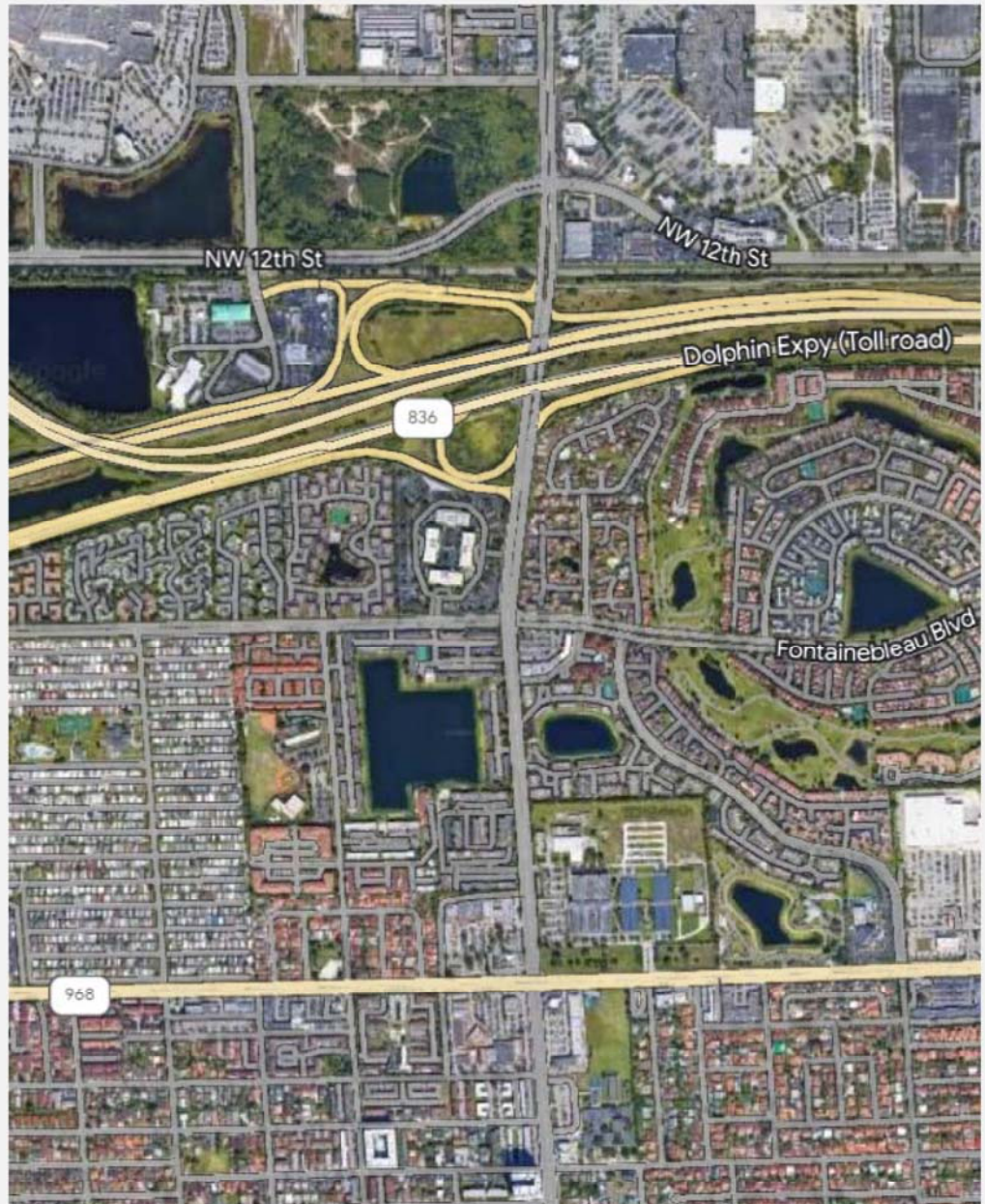
SR 985/NW 107TH AVENUE

From NW 7 Street

To SR 836/Dolphin Expressway Westbound On/Off Ramps

Section 87072000

(MP 7.154 to 7.381)



SAFETY STUDY



District Six Traffic Operations
District-Wide Traffic Operations & Safety Studies
FM: 434664-2-32-01
Contract No. C-AJ72, Task Work Order No.31

Location:

Section 87072000/SR 985/NW 107 Avenue
From NW 7 Street (MP 7.154)
To SR 836/Dolphin Expressway WB On/Off Ramps (MP 7.604)



FDOT Project Manager: Cristina Morales, PE.

ENGINEER'S CERTIFICATION

I, Jeffrey Slawinski, PE, with Florida PE No. 90922, certify that I currently hold an active Professional Engineer's License in the State of Florida, and I am competent through education or experience to provide engineering services in the civil and traffic engineering disciplines contained in this report. I further certify that this report was prepared by me or under my responsible charge as defined in Chapter 61G15-18.001 F.A.C. and that all statements, conclusions, and recommendations made herein are true and correct to the best of my knowledge and ability.

Project Description:

Safety Study

SR 985/NW 107 Avenue from

From NW 7 Street To SR 836/Dolphin Expressway WB On/Off Ramps (MP 7.154 to MP 7.604)



This item has been digitally signed and sealed by Jeffrey A Slawinski, PE, on 6/18/2024. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Jeffrey Slawinski, P.E.

Florida Registration P.E. No. 90922

C. H. Perez & Associates Consulting Engineers, Inc.

9594 NW 41st Street, Suite 201

Doral, Florida 33178

CA No.25976

1 EXECUTIVE SUMMARY

C. H. Perez & Associates Consulting Engineers, Inc. (P&A) was retained by the Florida Department of Transportation (FDOT) District Six Traffic Operations Office to perform a Safety Study for a segment of SR 985/NW 107 Avenue from NW 7 Street to the signalized intersection the SR 836/Dolphin Expressway Westbound On and Off Ramps. The study was conducted as a follow-up to a Resurfacing, Restoration, and Rehabilitation (3R) Project Safety Review study for the same segment (see **Appendix A**). The segment begins at MP 7.154 and ends at MP 7.604 on the Straight Line Diagram (SLD) of SR 985/NW 107 Avenue (Roadway ID # 87072000).

SR 985/NW 107 Avenue is identified as Section 87072000 on the State Highway System (SHS). The highway is functionally classified as an “Urban Minor Arterial” with a posted speed limit of 40 MPH in both directions. It has a north-south orientation and consists of three travel lanes in each direction divided by a traffic separator. Within the study limits, the study segment has a context classification C4 – Urban General and a roadway access classification 5. Sidewalks are provided in each direction next to the Type F curb & gutter. The study segment includes four (4) signalized intersections, two (2) unsignalized on-ramps, and one (1) unsignalized off-ramp. The signalized intersections are:

- SR 985/NW 107 Avenue at NW 7 Street
- SR 985/NW 107 Avenue at SR 836 Eastbound Off-Ramp
- SR 985/NW 107 Avenue at SR 836 Westbound Off-Ramp
- SR 985/NW 107 Avenue at SR 836 Westbound On-Ramp

The crash analysis for the segment was completed during the preceding 3R Safety Review study. The analysis used crash data from a five-year period (January 1, 2018, to December 31, 2022), downloaded from the FDOT’s Signal Four Analytics database, reviewed, and summarized for the study segment. The raw data for the segments included 576 crashes; however, upon reviewing the raw data and eliminating crashes that fell outside the study limits, 397 crashes remained and were used for the safety review. The leading crash types were rear-end with 184 and sideswipe with 126 crashes.

To address the crash issues/patterns identified during the crash analysis and other issues identified during the 3R Safety Review, proposed improvements were evaluated, as described below.

SR 985/NW 107 Avenue Segmentwide

Safety Improvements:

- Improve signal timing at NW 7 Street, SR 836 eastbound, and SR 836 westbound. The implementation of signal timing improvement requires coordination with the Miami-Dade County Traffic Signal and Signs Office. Note that one of the signal timing improvements includes modifying the cycle length, which require adjustments at the signalized intersections of NW 12 Street, NW 14 Street, NW 17 Street, and NW 19 Street, which are not part of the State Highway System, but are part of the same traffic signal coordinated system.

Non-Safety Improvements:

- Consider providing sidewalk connectivity along the west side of SR 985/NW 107th Avenue. *The existing sidewalk ends just south of the SR 826 Eastbound Off-Ramp and continues at NW 12th Street. This improvement was discussed with the Department and will not be implemented at this time. Instead, improvements are proposed to enhance pedestrians, bicyclists, and scooter riders' safety along the east side of NW 107th Avenue.*

SR 985/NW 107 Avenue at NW 7 StreetSafety Improvements:

- Consider improving signal timing during the morning to reduce traffic congestion and aggressive lane changes on the eastbound approach.
- Consider providing an overlap phase for the westbound right-turn movements that run concurrently with the southbound left-turn movements.
- Consider converting the eastbound approach lane configuration to two (2) left-turn lanes and a shared through/right-turn lane.
- Consider installing an additional signal head facing the northbound approach.
- Consider redesigning the turn radius at the northeast corner. Numerous sideswipe crashes occurred just north of the intersections. Although many hardcopy police reports did not provide details, based on the field review, many crashes should be associated with westbound failing to stay within the receiving lane and crashing against northbound vehicles traveling in the outside lane. As stated in the field review section, numerous westbound right-turn vehicles ran over the raised median or sidewalk and failed to stay within its lane.
- Consider installing pole delineators on the concrete island located on the northeast corner. A few northbound vehicles driving on or very near the concrete island were observed during the field reviews.
- Consider upgrading the existing crosswalks to high-emphasis.
- Consider providing a crosswalk at the north leg of the intersection.
- Consider installing countdown pedestrian signal heads, pushbuttons, and plaques to assist the east and west legs crossing.
- Consider installing 'Turning Vehicles Stop for Pedestrians' signs (R10-15a) facing all approaches. The sign facing westbound depends on the installation of the north-leg crosswalk.
- Consider installing NO PEDESTRIAN CROSSING (R9-3) signs supplemented with USE CROSSWALK plaques (R9-3bP) on NW 107 Avenue south of NW 7 Street.

The above improvements require the following:

- An operational analysis to evaluate:
 - *Providing a dual left turn configuration for the eastbound approach.*
 - *Providing the overlap phase for the westbound right-turn movements that run concurrently with the southbound left-turn movements.*

- Providing a crosswalk at the north leg. The crosswalk will have a length of 128 ft. At a walking speed of 3.5 ft/sec, the crosswalk will require approximately 37 seconds for the Pedestrian Clearance Interval.
- Providing a 5-section signal head facing westbound and replacing the mast arm facing westbound to implement the overlap phase. This improvement may also require right-of-way acquisition at the northwest corner.
- Providing the additional signal head facing northbound and redesigning the northeast corner to improve the turning radius. This improvement requires an AUTO Turn analysis to evaluate its feasibility and right-of-acquisition extent at the northeast corner.

SR 985/NW 107 Avenue at SR 836 Eastbound On/Off Ramps

Safety Improvements:

- Consider improving the capacity of the northbound left-turn lane at the SR 836 Westbound On/Off Ramps signal.
- Consider installing an additional signal head facing the southbound approach.
- Consider installing retroreflective signal head backplates facing the southbound approach.

Adding the additional signal head and backplates requires replacing the mast arm.

Non-safety Improvements:

- Consider installing a Pedestrian Crossing warning sign assembly (W11-2)/(W16-7a) with a rectangular rapid flashing beacon at the crosswalk on the SR 836 EB On-Ramp from NW 107 Avenue northbound, supplemented with a pedestrian ahead warning sign assembly (W11-2)/(W16-9P) with a rectangular rapid flashing beacon before the ramp. This improvement is to provide awareness of pedestrians crossing the ramp. Field reviews show moderate pedestrian/bicycle activity at the crosswalk and no visibility between northbound vehicles accessing the SR 836 EB On Ramp and pedestrians/bicyclists standing at the curb ramp to cross northbound. Coordination with the Greater Miami Expressway Agency (GMX) is required for this improvement.



SR 985/NW 107 Avenue at SR 836 Westbound On/Off Ramps

Safety Improvements:

- Consider providing an additional left-turn lane and extending the length of the proposed dual left-turn lanes to increase the capacity of the northbound left-turn lane. Based on the field and desktop review, providing the dual left-turn lane and extending the lanes is feasible. This improvement is anticipated to positively impact the SR 836 Westbound On/Off Ramp and SR 836 EB Off-Ramp signals.
- Consider converting the northbound left-turn phase from permissive to protected only. This improvement is required if the additional northbound left-turn lane is implemented.

- Consider realigning the westbound approach. This improvement is intended to improve the visibility of the westbound vehicles to the signal heads and between westbound vehicles traveling in the right lane and northbound vehicles traveling in the outside lane.
- Consider installing an additional signal head facing the northbound and southbound approaches.
- Consider installing retroreflective signal head backplates facing all approaches.
- Consider operating the SR 836 Westbound On-Ramp and Off-Ramp intersection under a single controller.

The above improvements require the following:

- *Replacing the mast arm facing northbound to accommodate a signal head for each left turn and through lane.*
- *Widening the westbound receiving lane for the new left-turn lane.*
- *Relocating and replacing the mast arm facing westbound to widen the westbound receiving lane and install backplates.*
- *Replacing the mast arm facing southbound to provide an additional signal head and backplates.*
- *The proposed widening for the NW 107 Avenue dual left turn lanes to SR 836 westbound on-ramp, will require revisiting the pier protection requirements for bridges 870997 and 870535 during the design phase.*
- *Coordination with Greater Miami Expressway Agency (GMX).*

An operational analysis was conducted to evaluate the impact of implementing the proposed improvements within the study area and the analysis did not reveal any major negative impacts. The operational analysis showed that implementing the proposed improvements will have an overall positive effect on the operation of the intersections within the study area, with the intersection delays and LOS improving or remaining unchanged.

The economic analysis showed that the recommended improvements would cost approximately **\$2,569,000**. The proposed improvements will potentially result in a crash reduction of nearly five crashes per year. The crash reduction was monetized and compared to the improvement costs to give a safety benefit/cost ratio. The benefit/cost ratios were calculated to be **2.8**, which is higher than the minimum threshold of 1.0, thus indicating that the proposed safety improvements would be economically viable.

[THIS AREA WAS INTENTIONALLY LEFT BLANK]

APPENDIX F – PRELIMINARY COST ESTIMATES FOR SAFETY IMPROVEMENTS

		SR 985/NW 107 Avenue From NW 7 Street To SR 836/Dolphin Expressway Westbound On/Off Ramps			
		Roadway ID:		87072000	
		Date:		6/3/2024	
		Produced By: JS		QA/QC By: KC	
Pay Item	Description	Unit Measured	Avg. Unit Cost	Quantity	Total
0110 1 1	CLEARING & GRUBBING	AC	\$ 190,514.17	0.27	\$ 52,177.09
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	\$ 34.09	295.89	\$ 10,086.85
0160 4	TYPE B STABILIZATION	SY	\$ 0.21	1,306.33	\$ 274.33
0285709	OPTIONAL BASE, BASE GROUP 09	SY	\$ 88.76	1,306.33	\$ 115,950.15
0334 1 13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	TN	\$ 166.85	118.55	\$ 19,780.03
0337 7 83	ASPH CONC FC, TRAFFIC C, FC-12.5, PG 76-22	TN	\$ 179.43	118.55	\$ 21,271.38
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	\$ 40.92	659.00	\$ 26,966.28
0520 5 41	TRAF SEP CONC-TYPE IV, 4' WIDE	LF	\$ 54.93	141.00	\$ 7,745.13
0520 70	CONCRETE TRAFFIC SEPARATOR, SPECIAL- VARIABLE WIDTH	SY	\$ 177.17	21.11	\$ 3,740.26
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	\$ 67.08	86.89	\$ 5,828.51
0570 1 2	PERFORMANCE TURF, SOD	SY	\$ 4.71	97.56	\$ 459.49
0705 11 1	DELINEATOR, FLEXIBLE TUBULAR	EA	\$ 106.08	16.00	\$ 1,697.28
Roadway Subtotal					\$ 265,976.77
0630 2 12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	\$ 43.42	350.00	\$ 15,197.00
0632 7 1	SIGNAL CABLE- NEW OR RECONSTRUCTED INTERSECTION, FURNISH & INSTALL	PI	\$ 11,510.99	1.00	\$ 11,510.99
0635 2 11	PULL & SPLICE BOX, F&I, 13" x 24"	EA	\$ 1,565.39	19.00	\$ 29,742.41
0646 1 11	ALUMINUM SIGNALS POLE, PEDESTAL	EA	\$ 2,359.09	7.00	\$ 16,513.63
0649 21 1	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 30'	EA	\$ 90,385.81	1.00	\$ 90,385.81
0649 21 3	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 40'	EA	\$ 71,003.33	2.00	\$ 142,006.66
0649 21 10	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 60'	EA	\$ 95,841.14	1.00	\$ 95,841.14
0649 21 15	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 70'	EA	\$ 90,000.00	2.00	\$ 180,000.00
0649 26 5	STEEL MAST ARM ASSEMBLY, REMOVE, DEEP FOUNDATION- BOLT ON ATTACHMENT	EA	\$ 3,606.50	4.00	\$ 14,426.00
0650 1 14	VEHICULAR TRAFFIC SIGNAL, F&I, ALUMINUM, 3 SECTION, 1 WAY	AS	\$ 1,665.66	22.00	\$ 36,644.52
0650 1 16	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 4 SECTION, 1 WAY	AS	\$ 2,183.79	1.00	\$ 2,183.79
0650 1 18	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 5 SECTION STRAIGHT, 1 WAY	AS	\$ 2,204.47	1.00	\$ 2,204.47
0650 2109	VEHICULAR SIGNAL AUXILIARIES, REPAIR/REPLACE/RETROFIT, F&I, BACKPLATE- FLEXIBLE REQUIRED	EA	\$ 466.15	8.00	\$ 3,729.20
0653 1 11	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 1 WAY	EA	\$ 1,279.64	4.00	\$ 5,118.56
0653 1 12	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 2 WAYS	EA	\$ 1,968.76	2.00	\$ 3,937.52
0665 1 11	PEDESTRIAN DETECTOR, FURNISH & INSTALL, STANDARD	EA	\$ 423.10	6.00	\$ 2,538.60
0670 5140	TRAFFIC CONTROLLER ASSEMBLY, FURNISH & INSTALL MODEL 2070	AS	\$ 48,620.74	3.00	\$ 145,862.22
0670 5600	TRAFFIC CONTROLLER ASSEMBLY, REMOVE CONTROLLER WITH CABINET	AS	\$ 1,254.02	4.00	\$ 5,016.08
Signalization Subtotal					\$ 802,858.60
0700 1 11	SINGLE POST SIGN, F&I GROUND MOUNT, UP TO 12 SF	AS	\$ 530.45	9.00	\$ 4,774.05
0700 3201	SIGN PANEL, FURNISH & INSTALL OVERHEAD MOUNT, UP TO 12 SF	EA	\$ 1,014.87	7.00	\$ 7,104.09
0700 5 21	INTERNALLY ILLUMINATED SIGN, FURNISH & INSTALL OVERHEAD MOUNT, UP TO 12 SF	EA	\$ 4,524.33	2.00	\$ 9,048.66
0710 11124	PAINTED PAVEMENT MARKINGS, STD, WHITE, SOLID FOR CROSSWALK AND ROUNDABOUT, 12"	LF	\$ 1.59	916.00	\$ 1,456.44
0710 11125	PAINTED PAVEMENT MARKINGS, STD, WHITE, SOLID, 24"	LF	\$ 1.80	770.00	\$ 1,386.00
0710 11160	PAINTED PAVEMENT MARKINGS, STD, WHITE, MESSAGE	EA	\$ 106.55	7.00	\$ 745.85
0710 11170	PAINTED PAVEMENT MARKINGS, STD, WHITE, ARROW	EA	\$ 71.83	13.00	\$ 933.79
0710 11101	PAINTED PAVEMENT MARKINGS, STD-OP, WHITE, SOLID, 6"	GM	\$ 1,530.21	0.33	\$ 498.19
0710 11201	PAINTED PAVEMENT MARKINGS, STD-OP, YELLOW, SOLID, 6"	GM	\$ 1,520.87	0.27	\$ 413.05
0711 11123	THERMOPLASTIC, STD, WHITE, SOLID, 12" FOR CROSSWALK AND ROUNDABOUT	LF	\$ 2.62	916.00	\$ 2,399.92
0711 11125	THERMOPLASTIC, STD, WHITE, SOLID, 24"	LF	\$ 5.31	770.00	\$ 4,088.70
0711 11160	THERMOPLASTIC, STD, WHITE, MESSAGE	EA	\$ 184.30	7.00	\$ 1,290.10
0711 11170	THERMOPLASTIC, STD, WHITE, ARROW	EA	\$ 116.72	13.00	\$ 1,517.36
0711 16101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	GM	\$ 5,614.38	0.33	\$ 1,827.86
0711 16201	THERMOPLASTIC, STD-OP, YELLOW, SOLID, 6"	GM	\$ 5,700.88	0.27	\$ 1,548.31
S & M Subtotal					\$ 39,032.37
Roadway					\$ 265,976.77
Signalization					\$ 802,858.60
S&M					\$ 39,032.37
Pre-Total					\$ 1,107,867.74
20% Maintenance of Traffic (MOT)					\$ 221,573.55
10% Mobilization					\$ 110,786.77
32% Preliminary Engineering					\$ 354,517.68
18% Construction Engineering & Inspection					\$ 199,416.19
Project Contingency					\$ 250,000.00
Right of Way Acquisition Estimate					\$ 251,000.00
Grand-Total					\$ 2,495,161.93

PROJECT #: UNKNOWN PROJECT NAME: MASTARMS @ NW 107AVE/NW 7 ST

SR # 985 COUNTY: MIAMI-DADE

LOCATION: NE AND NW CORNERS OF NW 107 AVE AND NW 7 STREET

ALTERNATE: 1 C.E. DATE: 2/13/24

ESTIMATED NO OF PARCELS: 2

PHASE

41 \$20,000

4B \$63,000

42

43 \$168,000

45

46

TOTAL: \$251,000

ESTIMATOR: Gary Cotroneo

COMMENTS: THE RIGHT OF WAY COST ESTIMATE FOR THIS PROJECT HAS BEEN ESTIMATED USING PRESENT DAY COSTS. DUE TO THE PRELIMINARY STAGE OF THIS ESTIMATE, DEMOLITION WAS NOT ADDRESSED. THIS COST ESTIMATE ADDRESSES COSTS FOR ACQUIRING RW ON THE NE AND NW CORNERS AT THE INTERSECTION OF NW 7 STREET AND NW 107 AVENUE FOR MAST ARMS. THE AREAS NEEDED ARE AS PER TRAFFIC OPERATIONS. THE IMPACTS ARE AS PROVIDED MAP. WP- NO

APPENDIX G – SAFETY BENEFIT-COST RATIO COMPUTATION

OPTION 1 - No Mast Arm Replacement

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

1 SUBMITTED BY **CH Perez & Associates** WPA NO. **N/A** SAFETY PRIORITY _____
 2 DATE SUBMITTED **6/3/2024** ENVIRONMENTAL STUDY _____
 3 PROJECT NO. **FM: 434664-2-32-01 - TWO 31** SKID (I.D.) **N/A**
 4 ALTERNATIVE NO. **I** SN **NA** SPEED LIMIT **40**
 6 DISTRICT **VI** COUNTY **MIAMI-DADE** SECTION **87072000** STATE ROAD **976** U.S. ROAD **-**
 BEGINNING MILE POST **6.827** ENDING MILE POST **7.604** LENGTH **0.777** miles NODE **-**

8 DESCRIPTION OF LOCATION/FACILITY TYPE **NW 107 Avenue from North of Flagler Street to North of SR 836/Dolphin Expressway**

9 CAUSE OF CRASH PROBLEMS (LIST AND DISCUSS)
REAR END
SIDESWIPE
LEFT TURN AND ANGLE

10 PROPOSED IMPROVEMENTS (LIST AND DISCUSS)
PROVIDING DUAL LEFT TURN LANES AT NW 7 STREET AND AT SR 836 WESTBOUND ON-RAMP OPERATIONAL IMPROVEMENTS

	2018	2019	2020	2021	2022	AVG.	
11 NO. OF CRASHES	81	116	53	67	80	79.4	
12 NO. CRASHES POTENTIALLY REDUCED	4.5	6.4	2.9	3.7	4.4	4.4	

14 CRASH INFORMATION FOR FACILITY	
COST/CRASH	\$ 123,598
CRASH CLEANUP	\$ 100
INTEREST RATE	4%

13 TYPE OF CRASH	NUMBER OF CRASHES (5-year)	CRASHES TO BE REDUCED
Rear End	184	12.12
Head On	0	0.00
Angle	12	0.35
Left Turn	42	9.57
Right Turn	13	0.00
Sideswipe	126	0.00
Backed Into	3	0.00
Coll. w/ Parked Car	0	0.00
Coll. w/ Pedestrian	1	0.00
Coll. w/ Bicycle	2	0.00
Fixed Object	13	0.00
Ran Off Road	0	0.00
Overtaken	0	0.00
Other	1	0.00
Total Crashes	397	22.04
Crashes Per Year	79.40	4.41
Wet/Slippery	0	0.00
Night Time	0	0.00

15 ANNUAL COST OF IMPROVEMENTS				
TYPE	COST	LIFE	CRF	ANNUAL COST
A. R-O-W	\$ 251,000	0	0.0000	\$ -
B. P.E.C.E.I.	\$ 553,934	15	0.0899	\$ 49,821.42
C. DRAINAGE	\$ -	15	0.0899	\$ -
D. ROADWAY	\$ 848,337	20	0.0736	\$ 62,422.13
E. S & M	\$ 39,032	15	0.0899	\$ 3,510.61
F. SIGNALS	\$ 802,859	15	0.0899	\$ 72,209.99
G. SUBTOTAL	\$ 2,495,162			\$ 187,964.15
H. CHANGE IN MAINTENANCE				\$ -
I. CRASH CLEANUP				\$ -
J. TOTAL				\$ 187,964.15

16 BENEFITS			
A. CRASH REDUCTION	4.41 crash @	\$ 123,598	\$ 544,745.83
B. DELAY SAVINGS	0.00 veh-hrs @	\$ -	\$ -
SUB TOTAL ANNUAL BENEFIT			\$ 544,745.83
C. OTHER BENEFIT	0	\$ -	\$ -
TOTAL ANNUAL BENEFIT			\$ 544,745.83

17 NET BENEFIT/COST	\$ 544,745.83	\$ 187,964.15	2.9
SAFETY BENEFIT/COST	\$ 544,745.83	\$ 187,964.15	2.9

PREPARED BY **RK** APPROVED BY **KC** DATE **06/03/2024**

COMMENTS/CRASH REDUCTION METHOD:
 FHWA, FDOT

HIGH CRASH LISTINGS:
 -

Project Name	NW 107 Avenue from North of Flagler Street to North of SR 836/Dolphin Expressway	Year #	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Current Year	2023	Calendar Year	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Project Completion	2025	Estimated Cost	\$2,495,162														
Project Life	15	Estimated Benefits	544,746	544,746	544,746	544,746	544,746	544,746	544,746	544,746	544,746	544,746	544,746	544,746	544,746	544,746	544,746
Project Category		Calculation															
Discount Rate	0.04	Discount Factor	1.000	0.962	0.925	0.889	0.855	0.822	0.790	0.760	0.731	0.703	0.676	0.650	0.625	0.601	0.577
Project Ends	2039	Discounted Cost	-2,495,162	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Discounted Benefits	544,746	523,794	503,648	484,277	465,651	447,741	430,521	413,962	398,040	382,731	368,011	353,857	340,247	327,160	314,577
Estimated Reduction in Crashes = 4.4074 crashes/year; Total Annual benefit = \$544,746; Cost Per Crash \$123,598		NPV	3,803,801.07														