

# MARIGOLD AVENUE SAFETY STUDY

## **Study Intersections:**

Marigold Avenue and Peabody Road  
Marigold Avenue and Laurel Avenue  
Marigold Avenue and San Miguel Road  
Marigold Avenue and San Lorenzo Road

**Osceola County, Florida**

Prepared for:

## **THE FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 5 TRAFFIC OPERATIONS**

719 South Woodland Boulevard  
DeLand, Florida 32720



### **Districtwide Contract for Traffic Operations**

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Prepared by:

**England-Thims & Miller, Inc.**  
1540 International Parkway, Suite 2000  
Lake Mary, Florida 32746

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Professional Engineer: Mark S. Manwell, PE  
Florida P.E. Number: 53938

Supported By: Adriann LeBlanc, PE  
Florida P.E. Number: 87860

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## Executive Summary

At the request of the Florida Department of Transportation (FDOT), England-Thims & Miller, Inc. (ETM) conducted a safety study at the Marigold Avenue intersections with Peabody Road, Laurel Avenue, San Miguel Road, and San Lorenzo Road in Osceola County, Florida. The purpose of the study was to identify any improvements that address existing crash patterns and potentially reduce the frequency and severity of future crashes.

From January 1, 2012 to March 31, 2019, there were 107 collisions reported at the study intersections. These crashes resulted in no fatalities, 149 injuries (in 70 injury crashes), and \$857,055 in estimated property damage. The predominant crash types include 32 (30%) angle, 24 (22%) left-turn crashes, and 24 (22%) rear-end collisions. There were also 3 pedestrian-/bicyclist-related crashes.

Eight-hour turning-movement counts were collected at the study intersections. These locations were counted by Osceola County on May 22, 2019 (at the San Lorenzo Road and Peabody Road intersections) and on August 27, 2019 (at the San Miguel Road and Laurel Avenue intersections). ETM personnel completed field observations during the AM and PM peak periods as well as the off-peak hours to identify existing operational deficiencies and potential safety issues.

To reduce crash frequencies and improve the overall operations within the corridor, constructing roundabouts at the significant Marigold Avenue intersections (Peabody Road, Laurel Avenue, and San Lorenzo Road) is recommended (please see the Long-Term Concept Diagrams located in **Appendix G**).

Roundabouts feature channelized approaches and a center island that results in lower speeds and fewer conflict points. By constructing roundabouts at the study intersections, the corridor can anticipate safety and operational benefits. The intersections would operate more efficiently and the number of crashes (and the crash severity) should be reduced. This corridor-wide improvement should also have a traffic-calming effect, slowing traffic and creating a more pedestrian-friendly environment.

The following long-term improvements are recommended:

- Construct a roundabout at the Peabody Road/Marigold Avenue intersection.
- Construct a roundabout at the Laurel Avenue/Marigold Avenue intersection.
- Construct a northbound left-turn bay at the San Miguel Road/Marigold Avenue intersection.
- Construct a roundabout at the San Lorenzo Road/Marigold Avenue intersection.

A benefit-to-cost analysis was calculated for the proposed improvements and was based on criteria outlined in the Highway Safety Improvement Program Manual. The estimated cost to provide these improvements is \$6,157,741 (which reflects an annual cost of \$461,795). The resulting annual benefit is expected to be \$1,059,871. **The calculated benefit/cost ratio is 2.30 and the Net Present Value is \$6,647,354.**

Additionally, the following low-cost, short-term improvements are recommended:

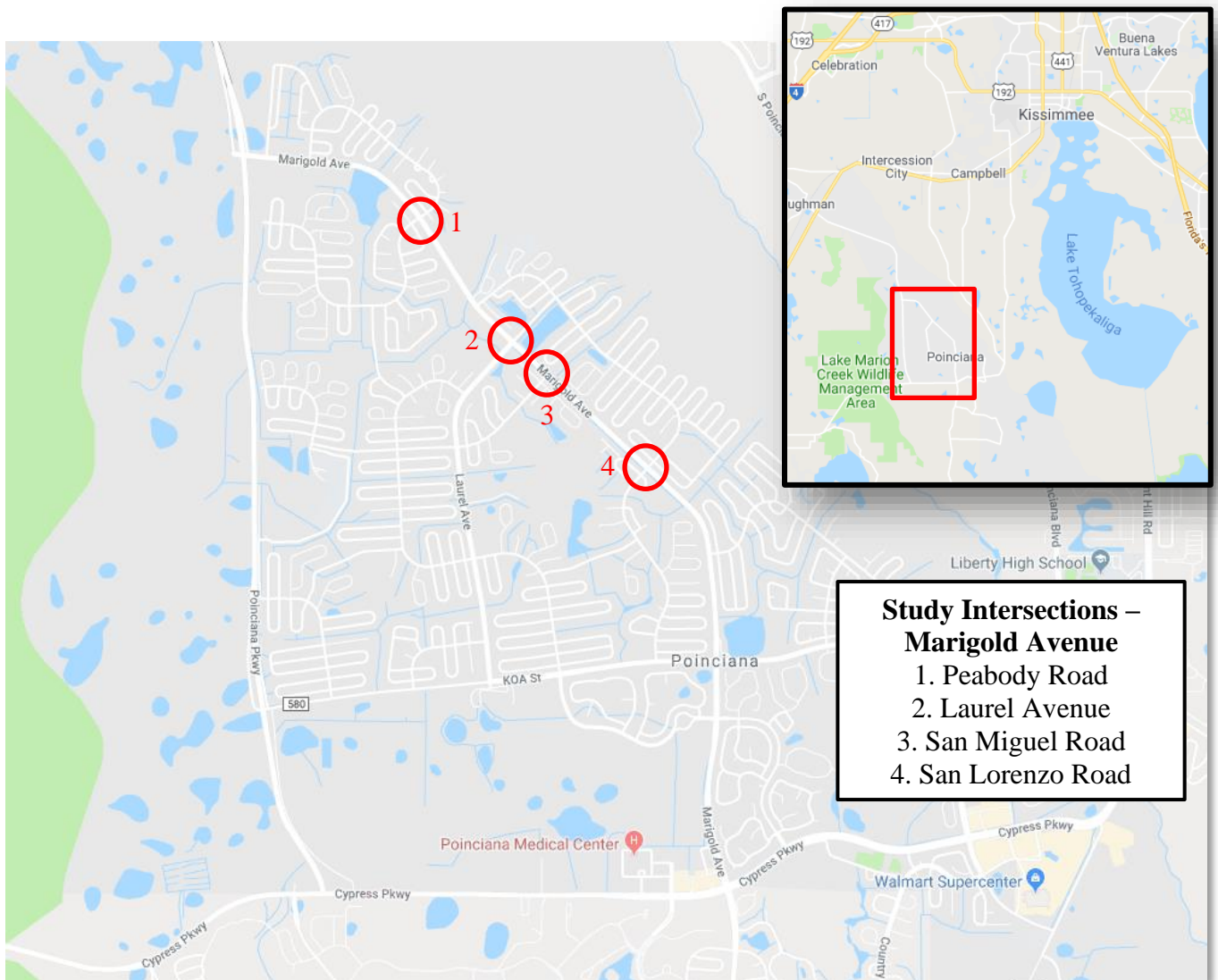
- Replace the school crossing signs with fluorescent yellow-green school crossing signs and supplemental plaques. Also, re-stripe the existing “SCHOOL” pavement messages/markings.
- Install high-emphasis crosswalk striping at all existing marked crosswalks at the study intersections.
- Install “STOP” pavement messages and additional STOP signs to supplement some existing STOP signs. Also, install red “bright sticks” to enhance the visibility of some existing STOP signs.
- Re-stripe the double yellow centerline and replace the Y/Y RPMs at each study intersection.

The estimated cost for these short-term improvements is \$74,823.

## Introduction

England-Thims & Miller, Inc. (ETM) performed a safety study at the Marigold Avenue intersections with Peabody Road, Laurel Avenue, San Miguel Road, and San Lorenzo Road in Osceola County, Florida. The purpose of the study was to identify improvements that could reduce the frequency and/or severity of crashes.

The analysis methods used in completing this study are consistent with the Federal Highway Administration's **Manual on Uniform Traffic Control Devices** (MUTCD 2009), the American Association of State Highway and Transportation Officials' (AASHTO) **Highway Safety Manual** (2010), FDOT's **Traffic Engineering Manual** (TEM January 2019), FDOT's **Manual of Uniform Traffic Studies** (MUTS 2016), FDOT's **Median Handbook** (2014), and FDOT's **Design Manual** (January 2019). This report contains existing conditions, collision analyses, qualitative assessments, recommended improvements, cost estimates and final recommendations.



**Figure 1 – Project Location/Vicinity Map**

## Existing Conditions

Table 1 summarizes the existing conditions for the study corridor. The conditions diagrams are provided in **Appendix A**. Site photos are provided in **Appendix B**.

**Table 1 – Existing Conditions**

<b>Feature</b>	<b>Description</b>
Roadway	Marigold Avenue
Area Location	This corridor is located in Kissimmee, Florida (Osceola County)
Surrounding Development	The corridor serves a predominantly residential area.
Marigold Avenue	<ul style="list-style-type: none"> <li>• <u>Cross Section</u> – two-lane, undivided rural typical section</li> <li>• <u>Posted Speed Limit</u> – 45 mph (except for 30 mph from approximately 500’ south of Laurel Avenue to about 1500’ north of Laurel Avenue)</li> <li>• <u>AADT</u> – 5,500 vpd with a daily T-factor of 1.9%</li> <li>• <u>Sidewalks</u> exist on the west side of the corridor (between Peabody Road and San Lorenzo Road)</li> <li>• <u>Street lighting</u> exists along the east side of Marigold Avenue</li> </ul>
Peabody Road at Marigold Avenue	<ul style="list-style-type: none"> <li>• <u>Intersection</u> – Cross-intersection (four legs)</li> <li>• <u>Cross Section</u> – two-lane, undivided rural typical section</li> <li>• <u>Posted Speed Limit</u> – 30 mph</li> <li>• <u>Traffic Control</u> – All-way stop-controlled</li> </ul>
Laurel Avenue at Marigold Avenue	<ul style="list-style-type: none"> <li>• <u>Intersection</u> – Cross-intersection (four legs)</li> <li>• <u>Cross Section</u> – two-lane, undivided rural typical section</li> <li>• <u>Posted Speed Limit</u> – 30 mph</li> <li>• <u>Traffic Control</u> – Side-street stop-controlled</li> </ul>
San Miguel Road at Marigold Avenue	<ul style="list-style-type: none"> <li>• <u>Intersection</u> – T-intersection (three legs)</li> <li>• <u>Cross Section</u> – two-lane, undivided rural typical section</li> <li>• <u>Posted Speed Limit</u> – 30 mph</li> <li>• <u>Traffic Control</u> – Side-street stop-controlled</li> </ul>
San Lorenzo Road at Marigold Avenue	<ul style="list-style-type: none"> <li>• <u>Intersection</u> – Cross-intersection (four legs)</li> <li>• <u>Cross Section</u> – two-lane, undivided rural typical section</li> <li>• <u>Posted Speed Limit</u> – 30 mph</li> <li>• <u>Traffic Control</u> – Side-street stop-controlled</li> </ul>

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## **Traffic Conditions**

There is one FDOT Traffic Count Station on Marigold Avenue (just north of Peabody Road). Historical traffic data and traffic characteristics are shown in Table 2.

**Table 2 – Historical Local Traffic Data and Characteristics**

<b>Characteristics</b>	<b>FDOT Count Station 927085 2.42 miles north of Koa Street</b>	<b>AADT Flags</b>
<b>2014 AADT</b>	7,800	Computed
<b>2015 AADT</b>	8,000	First Year Estimate
<b>2016 AADT</b>	8,200	Second Year Estimate
<b>2017 AADT</b>	5,300	Computed
<b>2018 AADT</b>	5,500	First Year Estimate
<b>2018 K-Factor</b>	9.00	
<b>2018 D-Factor</b>	53.60	
<b>2018 T-Factor</b>	1.90	

A review of the 24-hour counts taken by Osceola County helped determine times for the morning, afternoon and evening peaks. Traffic data was collected from 6:30-9:00 AM and 2:00-7:30 PM. Data collected included 8-hour turning-movement counts and pedestrian/bicycle activity at the following locations along Marigold Avenue:

- Peabody Road
- Laurel Avenue
- San Miguel Road
- San Lorenzo Road

All traffic data collected as part of this study is included in **Appendix J**.

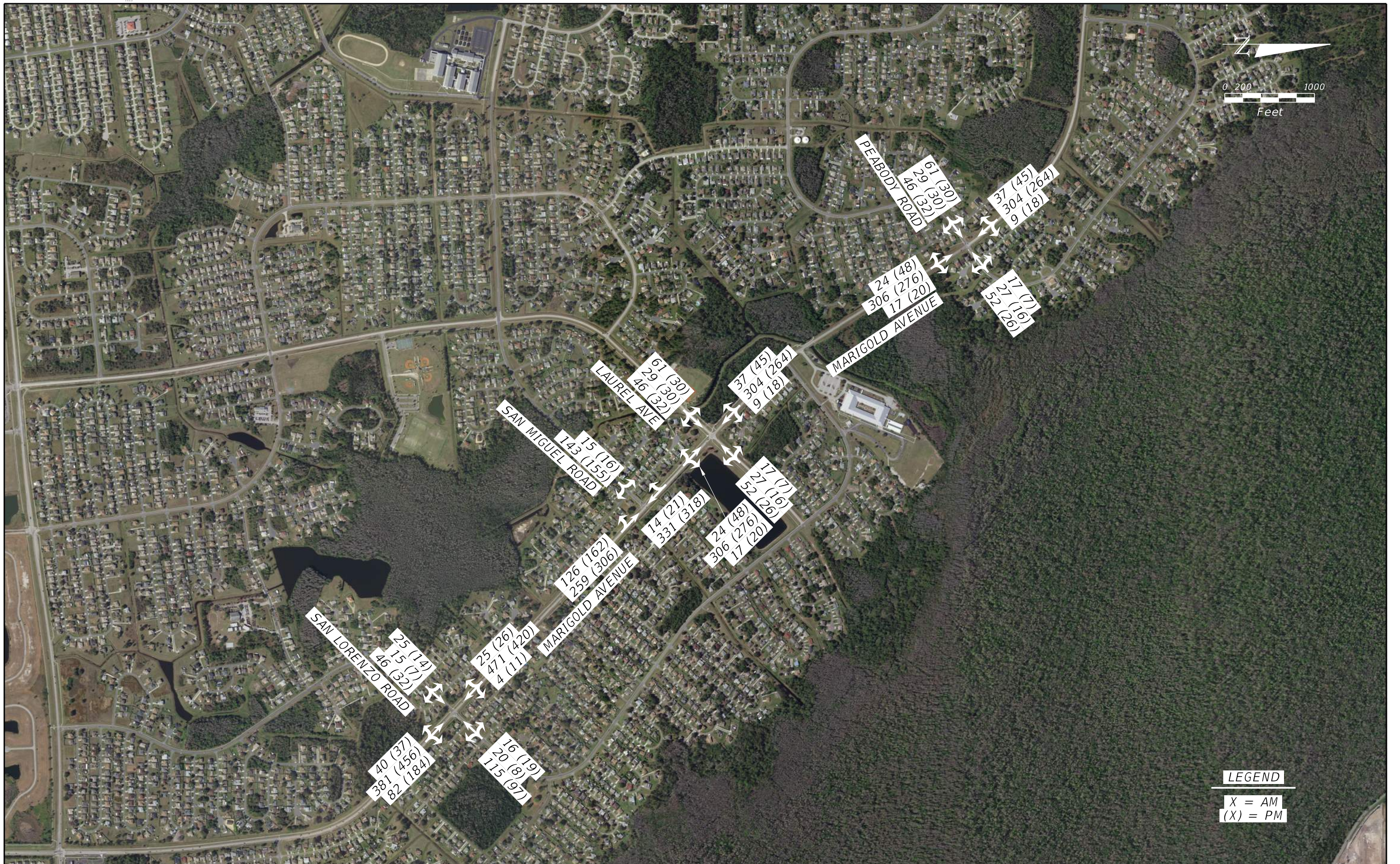
The AM/PM peak-hour turning-movement counts are summarized in Figure 2 (shown on the next page).

## **Collision Analysis**

Within the study area, crash data was obtained from FDOT’s Crash Analysis Reporting System (CARS) and the University of Florida’s *Signal Four Analytics* for the seven-year (plus) period between January 1, 2012 and March 31, 2019.

During this time, a total of 107 crashes were reported at the study intersections and included the following crash types:

- |                        |                          |
|------------------------|--------------------------|
| • 32 angle             | • 4 sideswipe            |
| • 24 left-turn         | • 3 pedestrian/bicyclist |
| • 24 rear-end          | • 3 right-turn           |
| • 10 off-road/rollover | • 1 head-on              |
| • 5 other              | • 1 animal               |



ENGLAND-THIMS & MILLER, INC.  
 1540 INTERNATIONAL PARKWAY, SUITE 2000  
 LAKE MARY, FL 32746  
 TEL: (407) 536-5379  
 FAX: (407) 536-5301  
 CA - 00002584 LC - 0000316

STATE OF FLORIDA  
 DEPARTMENT OF TRANSPORTATION

OSCEOLA ROUNDABOUTS  
 PEAK HOUR  
 TURNING MOVEMENTS

SHEET  
 NO.

1

An annual summary of the crash types (Table 3), crash severities (Table 4), and lighting/roadway conditions (Table 5) are shown below:

**Table 3: Crash Types by Year**

Year	2012	2013	2014	2015	2016	2017	2018	Jan - Mar 2019	SUM
Type									
Angle	6	2	5	2	4	6	6	1	32
Animal	0	0	0	0	0	0	0	1	1
Bicycle	0	0	0	0	0	0	1	0	1
Head On	0	0	1	0	0	0	0	0	1
Left Turn	5	3	1	1	3	6	5	0	24
Off Road	2	0	2	1	1	1	0	0	7
Other	2	0	1	0	2	0	0	0	5
Pedestrian	1	0	0	0	0	1	0	0	2
Rear End	5	4	1	1	2	5	6	0	24
Right Turn	0	2	0	0	0	1	0	0	3
Rollover	0	0	0	1	0	1	1	0	3
Sideswipe	2	0	0	0	1	0	1	0	4
Unknown	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>23</b>	<b>11</b>	<b>11</b>	<b>6</b>	<b>13</b>	<b>21</b>	<b>20</b>	<b>2</b>	<b>107</b>

**Table 4: Crash Severity by Year**

Year	2012	2013	2014	2015	2016	2017	2018	Jan - Mar 2019	SUM
Type									
Fatal	0	0	0	0	0	0	0	0	0
Incapacitating	1	2	5	1	3	4	2	0	18
Non-Incapacitating	7	1	0	2	4	2	5	1	22
Possible	5	3	4	2	1	10	5	0	30
Property Damage Only	10	5	2	1	5	5	8	1	37
<b>TOTAL</b>	<b>23</b>	<b>11</b>	<b>11</b>	<b>6</b>	<b>13</b>	<b>21</b>	<b>20</b>	<b>2</b>	<b>107</b>

**Table 5: Lighting and Roadway Condition by Year**

Year	2012	2013	2014	2015	2016	2017	2018	Jan - Mar 2019	SUM
Type									
<b>Lighting Condition</b>									<b>107</b>
Daylight	18	8	7	5	11	16	13	0	78
Dark - Lighted	3	2	3	0	0	2	2	0	12
Dark - Not Lighted	2	1	1	1	1	2	3	1	12
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0
Dusk/Dawn	0	0	0	0	1	1	2	1	5
Unknown	0	0	0	0	0	0	0	0	0
<b>Roadway Condition</b>									<b>107</b>
Dry Pavement	17	8	9	6	12	16	18	2	88
Wet Pavement	6	3	2	0	1	5	2	0	19
Mud, Dirt, Gravel	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0



Additional collision information:

- 70 crashes (65%) resulted in 149 injuries.
- There were 19 (18%) wet-pavement crashes and 29 (27%) nighttime crashes, which included dawn and dusk.
- The total property damage amount for all 107 crashes was estimated to be \$857,055.

Detailed crash summaries for each intersection and collision diagram are located in **Appendix C** and **Appendix D**, respectively.

## **Qualitative Assessment**

To assess the existing operating conditions and determine what, if any, improvements could be recommended (to enhance safety and efficiency for the traveling public), the study corridor was observed by a registered professional engineer.

Observations occurred primarily during peak hours derived from the intersection turning movement counts.

### **General Observations**

- Numerous school buses were observed throughout the corridor turning into (and out from) all of the study intersections.
- The posted speed limit changes throughout the corridor (especially when considering school hours).
- Parents park on the side of road and wait on the north side of San Lorenzo Road/Marigold Avenue intersection.
- Crossing guards were stationed at several intersections along Marigold Avenue.

## **Planned Improvements**

Marigold Avenue between Peabody Road and San Lorenzo Road is part of the Osceola County's 2016 Safe Routes To School (SRTS) application. Sidewalk is proposed on the northeast side of Marigold Avenue from Peabody Road south to Deerwood Elementary School and at San Lorenzo Road's northernmost connection to Marigold Avenue. Please see the exhibit in **Appendix E** for more information.

## **Intersection Evaluation**

### **Peabody Road and Marigold Avenue**

The intersection of Peabody Road and Marigold Avenue has four legs. This intersection is currently operating with all-way STOP control.

Collisions: Between 2012 and March 2019, there were 10 left-turn/angle collisions. Four (4) of these collisions occurred in the last three years (2016-2018).

Pedestrians/Bicyclists: The south leg of Marigold Avenue is the only approach with a marked crosswalk. Sidewalk runs east/west along the south side of Peabody Road and north/south on the west side of Marigold Avenue ending at Peabody Road. During the eight hours of turning movement counts collected, 20 pedestrians and 11 bicyclists crossed Marigold Avenue at this intersection.

Operational Analysis: Synchro software was used to evaluate the corridor’s existing and future traffic operations. The existing conditions analysis resulted in LOS C during the AM peak hour and LOS B during the PM peak hour. A single-lane roundabout was also analyzed, which resulted in LOS A results during the AM and PM peak hours. The volumes on Marigold Avenue were then increased by 2% annually for 21 years. In 2040, the roundabout would remain at LOS A during the peak hours. For comparison, the all-way STOP-controlled intersection (in 2040) is expected to operate with LOS E results during the AM peak hour and with LOS C results during the PM peak hour.

**Table 6: Peabody Road Intersection Analysis Results**

Year	Peak Hour	Intersection Control							
		TWSC		AWSC		Signal		Roundabout	
		Delay	LOS*	Delay	LOS	Delay	LOS	Delay	LOS
2019	AM	9.8	D	15.6	C	10.9	B	5.8	A
	PM	5.6	D	12.5	B	9.7	A	5.5	A
2040	AM	14.5	E	38	E	12.2	B	7.1	A
	PM	6.1	E	17.7	C	10.2	B	6.6	A

*\*LOS was used from the approach with the greatest delay*

Recommendation: The four-way STOP currently functions satisfactory and the collisions are minor. A roundabout would function better at this location and could be used as a traffic-calming measure, to beautify the corridor, and to provide consistency throughout the Marigold Avenue corridor (especially if roundabouts are constructed at the San Lorenzo Road and Laurel Avenue intersections).

**Laurel Avenue and Marigold Avenue**

The intersection of Laurel Avenue and Marigold Avenue has four legs. This intersection is currently operating with two-way STOP control as Laurel Avenue stops for Marigold Avenue.

Collisions: Between 2012 and March 2019, there were 20 left-turn/angle collisions. Ten (10) of these collisions occurred in the last three years (2016-2018).

Pedestrians/Bicyclists: The south leg of Marigold Avenue and the west leg of Laurel Avenue are the only approaches with marked crosswalks. Sidewalk runs east/west along the south side of Laurel Avenue, on the north side of Laurel Avenue (to the west of Marigold Avenue), and north/south on the west side of Marigold Avenue. During the eight hours of turning movement counts collected, 27 pedestrians and 22 bicyclists crossed Marigold Avenue at this intersection.

Operational Analysis: Synchro software was used to evaluate the corridor’s existing and future traffic operations. The existing conditions analysis resulted in LOS C during the AM and PM peak hours. A single-lane roundabout was also analyzed, which resulted in LOS A results during the AM and PM peak hours. The volumes on Marigold Avenue were then increased by 2% annually for 21 years. In 2040, the roundabout would remain at LOS A during the peak hours. For comparison, an all-way STOP-controlled intersection (in 2040) is expected to operate with LOS D results during the AM peak hour and with LOS C results during the PM peak hour.

**Table 7: Laurel Avenue Intersection Analysis Results**

Year	Peak Hour	Intersection Control							
		TWSC		AWSC		Signal		Roundabout	
		Delay	LOS*	Delay	LOS	Delay	LOS	Delay	LOS
2019	AM	5.9	C	13.6	B	9.2	A	5.5	A
	PM	3.9	C	11.8	B	8.7	A	5.2	A
2040	AM	9.7	F	31.1	D	9.7	A	6.9	A
	PM	4.5	D	18.9	C	9	A	6.4	A

*\*LOS was used from the approach with the greatest delay*

**Recommendation:** The two-way STOP currently functions satisfactory. A roundabout would function better at this location and could be used as a traffic-calming measure, to beautify the corridor, and to provide consistency throughout the Marigold Avenue corridor (especially if roundabouts are constructed at the Peabody Road and San Lorenzo Road intersections).

**San Miguel Road and Marigold Avenue**

The intersection of San Miguel Road and Marigold Avenue has three legs (San Miguel “tees” into Marigold). This intersection is currently operating with side-street STOP-control as San Miguel Road stops for Marigold Avenue.

**Collisions:** Between 2012 and March 2019, there were 24 collisions at/near the study intersection. Ten were northbound rear-ends and three were collisions occurring from a northbound motorist attempting to pass another motorist waiting to complete a left-turn movement onto San Miguel Road.

**Pedestrians/Bicyclists:** There are is one marked crosswalks at this intersection (across San Miguel). Sidewalk runs north/south on the west side of Marigold Avenue. During the eight hours of turning movement counts collected, one bicyclist crossed Marigold Avenue.

**Operational Analysis:** Synchro software was used to evaluate the corridor’s existing and future traffic operations. The existing conditions analysis resulted in LOS A during the peak hours with an eastbound approach delay (for San Miguel Road) of 13.5 seconds during the AM peak hour and 14.2 seconds during the PM peak hour.

**Recommendation:** Construct a dedicated northbound left-turn bay on Marigold Avenue.

**San Lorenzo Road and Marigold Avenue**

The intersection of San Lorenzo Road and Marigold Avenue has four legs. This intersection is currently operating with two-way STOP control as San Lorenzo Road stops for Marigold Avenue.

**Collisions:** Between 2012 and March 2019, there were 25 left-turn/angle collisions. Sixteen (16) of these crashes occurred within the last three years (2016-2018).

**Pedestrians/Bicyclists:** The north leg of Marigold Avenue and the west leg of San Lorenzo Road are the only approaches with marked crosswalks. Sidewalk runs east/west along the north side of San Lorenzo Road and north/south on the west side of Marigold Avenue. During the eight hours of turning movement counts collected, 38 pedestrians and 7 bicyclists crossed Marigold Avenue at this intersection.

Operational Analysis: Synchro software was used to evaluate the corridor’s existing and future traffic operations. The existing conditions analysis resulted in LOS F for the southwest approach (for motorists on San Lorenzo) during the peak hours. This intersection was analyzed to determine if an all-way STOP was feasible and the Synchro analysis resulted in LOS F during the PM peak hour. Signal warrants were reviewed and a signal would be warranted based on existing volumes. A single-lane roundabout was also analyzed, which resulted in a LOS A during AM and PM peak hours. The volumes on Marigold Avenue were then increased by 2% annually for 21 years. In 2040, the roundabout would experience LOS B results during the AM and PM peak hours.

**Table 8: San Lorenzo Road Intersection Analysis Results**

Year	Peak Hour	Intersection Control							
		TWSC		AWSC		Signal		Roundabout	
		Delay	LOS*	Delay	LOS	Delay	LOS	Delay	LOS
2019	AM	16	F	32.2	D	10	B	7	A
	PM	9.8	F	50.4	F	9.8	A	7.5	A
2040	AM	64.7	F	137.7	F	11.8	B	10.1	B
	PM	41.8	F	158.8	F	11.8	B	10.9	B

*\*LOS was used from the approach with the greatest delay*

A partial signal warrant analysis was completed for the intersection of San Lorenzo Road and Marigold Avenue. The Manual on Uniform Traffic Control Devices (MUTCD) provides requirements and guidance for determining if signalization is the best method of traffic control. Chapter 4C of the 2009 edition (revised May 2012) of the MUTCD was used for this effort.

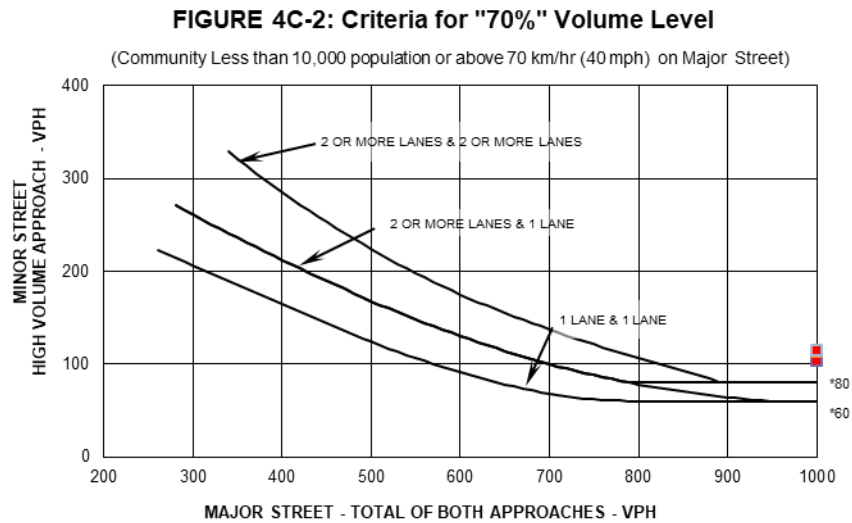
The collected turning-movement count data is summarized in Table 9, Warrant 1 (Eight-Hour Vehicle Volume) below. The posted speed limit in this area is 45 MPH, therefore this location would qualify for the reduction of the required approach volumes (from 100% to 70%). As a result, the required volume for the major roadway would be 350 vehicles per hour (vph) and the corresponding required volume for the minor roadway would be 105 vph (for Condition A, Minimum Vehicular Volume). For Condition B (Interruption of Continuous Traffic), the minimum requirements would be 525 vph for the major roadway and 53 vph for the minor roadway.

**Table 9 – WARRANT 1 (Eight-Hour Vehicular Volume) – Existing Volumes**

Time Period	NUMBER OF VEHICLES		IS HOURLY WARRANT SATISFIED?		
	Marigold Avenue	Minor Street (WB San Lorenzo)	Condition A	Condition B	Combination of A & B
6:30 - 7:00 AM	332	63	NO **	NO **	N/A
7:00 - 8:00 AM	946	152	YES	YES	N/A
8:00 - 9:00 AM	906	119	YES	YES	N/A
2:00 - 3:00 PM	890	105	YES	YES	N/A
3:00 - 4:00 PM	1060	104	NO	YES	N/A
4:00 - 5:00 PM	1120	114	YES	YES	N/A
5:00 - 6:00 PM	1102	114	YES	YES	N/A
6:00 - 7:00 PM	1081	115	YES	YES	N/A
NUMBER OF HOURS MEETING WARRANT			6	7	N/A
IS WARRANT SATISFIED?			NO	NO	N/A

*\*\* only thirty minutes of data was reviewed*

A review of this data (see Table 9, previous page) shows that the required minimum volumes for Condition B are met for 7 of the 8 hours. However, based on the 6:30-7:00 AM volumes, it is reasonable to assume Warrant 1 requirements would be satisfied (if 6:00-6:30 AM or 9:00-9:30 AM data were included). For this reason, **Warrant 1 is expected to be satisfied.**



**Figure 3 – MUTCD’s Figure 4C-2, Four-Hour Vehicular Volume (70% Factor)**

Warrant 2 (Four-hour Vehicular Volume) was also examined. The MUTCD permits the use of Figure 4C-2, Four-Hour Vehicular Volume (70% Factor) at this location. The lower threshold for the minor-street approach is 60 vehicles per hour (vph) when the major-street volume is equal to or exceeds 900 vph.

When the highest Table 9 volumes were plotted on Figure 4C-2, at least seven (7) hours were located on the warranted side of the “Four-Hour” curves. For this reason, the required volumes meet or exceed the minimum requirements. As a result, **Warrant 2 is satisfied.**

In addition, there have been eight angle/left-turn collisions in 2018. Warrant 7 (Crash Experience) can be applied in situations “where the collision severity and frequency are the principal reasons” for installing a signal. One of the requirements needed to satisfy this warrant is that five (5) or more “reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash.”

Based on the warrants and crashes mentioned above, a traffic signal is warranted at the intersection of San Lorenzo Road with Marigold Avenue.

**Recommendation:** Although a traffic signal is warranted, a roundabout is recommended at this intersection. Based on the operational analysis results, a roundabout should work well for the next 20-plus years and could be used as a traffic-calming measure, to beautify the corridor, and to provide consistency throughout the Marigold Avenue corridor (especially if roundabouts are constructed at the Peabody Road and Laurel Avenue intersections).

## **Recommended Improvements**

After reviewing the study corridor, short-term and long-term conceptual plans were developed. By constructing roundabouts at the significant intersections, the corridor should experience safety and operational benefits. The intersections should operate more efficiently and the number of crashes (and crash severities) would decrease. This corridor-wide improvement should also have a traffic-calming effect, slowing traffic and creating a more pedestrian-friendly environment.

When long-term costs are considered, roundabouts eliminate the equipment/materials/devices, maintenance and electrical costs associated with traffic signals. During power outages, roundabouts are much more effective (when compared to traffic signals). When a traditional signalized intersection does not have power, motorists must treat the intersection as a four-way stop. Another costly option is to have enforcement agencies direct traffic. However, roundabouts operate normally regardless of whether power is available or not.

In addition, there are 32 conflict points associated with a conventional four-leg intersection (eight merging or joining, eight diverging or separating, and 16 crossing). By contrast, roundabouts serving four legs only have eight conflict points (four merging and four diverging). Not only are the number of conflict points reduced with a roundabout, the conflicts that remain typically result in substantially less-severe crashes, which in turn, decreases the likelihood of injury. The reduction in both the total number of conflict points and the resulting crash severity also benefits pedestrians and bicyclists.

## **Long-Term Improvements**

The following long-term improvement are recommended:

- Construct a roundabout at the Peabody Road/Marigold Avenue intersection.
- Construct a roundabout at the Laurel Avenue/Marigold Avenue intersection.
- Construct a northbound left-turn bay at the San Miguel Road/Marigold Avenue intersection.
- Construct a roundabout at the San Lorenzo Road/Marigold Avenue intersection.

## **Short-Term Improvements**

The following low-cost, short-term improvements are also recommended:

- Replace the school crossing signs with fluorescent yellow-green school crossing signs and supplemental plaques. Also, re-stripe the existing “SCHOOL” pavement messages/markings.
- Install high-emphasis crosswalk striping at all existing marked crosswalks at the study intersections.
- Install “STOP” pavement messages and additional STOP signs to supplement some existing STOP signs. Also, install red “bright sticks” to enhance the visibility of some existing STOP signs.
- Re-stripe the double yellow centerline and replace the Y/Y RPMs at each study intersection.

## **Proposed Roundabouts – Fastest Path Analyses**

ETM performed additional analyses on each proposed roundabout to confirm they meet the criteria for FDM and NCHRP 672. Fastest path analyses (see Table 10, next page) indicate each approach movement is within the 20-25 MPH range for R1 using the criteria of a single lane roundabout.

**Table 10 – Fastest Path Analyses – Proposed Roundabouts on Marigold Avenue**

Main Street	Side Street	Dir.	R1 (FT)	MPH	R2 (FT)	MPH	R3 (FT)	MPH (Measured)	D23 (LF)	R3 MPH (Calculated)	R4 (FT)	MPH
Marigold	Peabody	EB	93.09	20	53.66	16	204.34	27	109	38		
Marigold	Peabody	WB	165.11	25	64.1	17	392.15	35	103	43	53	16
Peabody	Marigold	SB	148.22	24	54.13	16	212.37	27	100	37		
Peabody	Marigold	NB	158.79	24	44.1	15	174.96	25	102	36		
Marigold	Laurel	EB	129.46	23	48.74	15	206.53	27	98	37		
Marigold	Laurel	WB	150.19	24	52.56	16	318.88	32	98	41	53	16
Laurel	Marigold	SB	137.47	23	50.2	16	190.79	26	100	36		
Laurel	Marigold	NB	172.06	25	50.87	16	216.17	27	99	37		
Marigold	San Lorenzo	EB	152.17	24	50.14	16	261.93	30	108	40		
Marigold	San Lorenzo	WB	137.84	23	63.06	17	285.87	31	111	40	53	16
San Lorenzo	Marigold	SB	145.69	24	39.9	14	195.45	26	108	37		
San Lorenzo	Marigold	NB	173.85	25	65.75	17	247.17	29	101	38		

**Other Considerations**

The posted speed limit is 45 mph approaching San Lorenzo Road, then drops to 30 mph approximately 400’ before Laurel Avenue. The 30 mph continues for approximately 2,000’ north, then increases to 45 mph. There are no apparent context classification or typical section changes within the 30 mph segment. In addition, 20 mph school zones currently exist at San Lorenzo Road, north of Laurel Avenue at the entrance to Deerwood Elementary School, and at Peabody Road. Especially during school-zone hours, the changing speed limits may create confusion. If the roundabout improvements are pursued, consideration should be given to placing one consistent speed limit throughout the corridor.

**Benefit-To-Cost Analysis**

Proposed Short-Term and Long-Term Concept Diagrams are included in **Appendix F** and **Appendix G**, respectively. Cost estimates were based on FDOT’s Historical Costs from 08/01/18 to 07/31/19. If available, Area 8 cost data was used; if unavailable, statewide cost data was used. The appropriate pay items and estimated quantities were used to generate an opinion of probable costs. The cost estimates are located in **Appendix H**.

A benefit/cost analysis was completed for the proposed long-term improvements and was based on criteria outlined in the Highway Safety Improvement Program Manual. The estimated engineering and construction costs associated with the improvements are \$6,157,741 (which reflects an annual cost of \$461,795). Based on the Federal Highway Administration's (FHWA's) Crash Modification Factors Clearinghouse, two crash modification factors (CMF) were identified. A crash reduction factor of 52.7% (for conversion of intersection into low-speed roundabout) was used. This was applied to 31 of the applicable crashes at the study intersections recommended to be converted into roundabouts. A reduction of 43.4% was identified for installing a left-turn lane and was applied to 8 of the applicable crashes at the Marigold Avenue and San Miguel Road intersection. These factors were applied individually to specific crashes (no collisions were used twice when applying crash modification factors).

The resulting annual benefit is expected to be \$1,059,871. **The calculated benefit/cost ratio is 2.30 and the Net Present Value is \$6,647,354.** The associated B/C analysis forms, NPV, and CMF information (for the long-term improvements) are located in **Appendix I**. The recommended improvements satisfy the minimum requirements of  $B/C > 2$  and  $NPV > 0$ , and indicate the proposed improvements are justified and should be pursued as Highway Safety Improvement Program (HSIP) funding becomes available.

### **Project Documentation, Variations and Exceptions**

With the proposed concept plans, no variations or exceptions are anticipated.



# **APPENDIX**

Appendix A: Existing Condition Diagrams

Appendix B: Site Photos

Appendix C: Crash Summaries

Appendix D: Collision Diagrams

Appendix E: Safe Routes To School Sidewalk Improvements

Appendix F: Short-Term Concept Diagrams

Appendix G: Long-Term Concept Diagrams

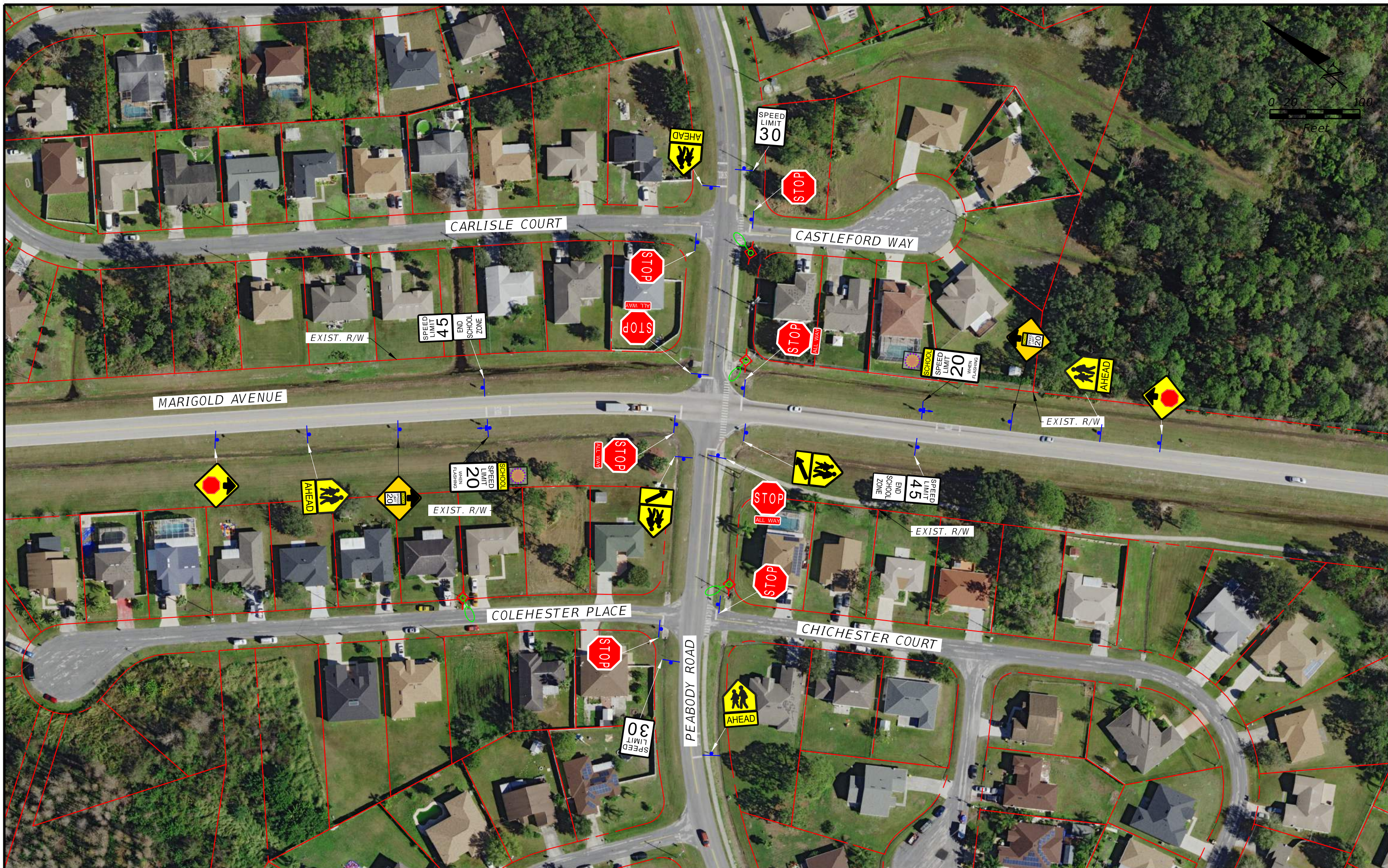
Appendix H: Improvements Cost Estimates

Appendix I: B/C Analysis, Net Present Value, and Crash Modification Factors





Appendix J: Turning Movement Volumes

## **Appendix A:**

### Existing Condition Diagrams



 TRAFFIC SIGNAL  
 BUS STOP

 UTILITY POLE  
 LIGHT POLE  
 TRAFFIC SIGN  
 RIGHT-OF-WAY

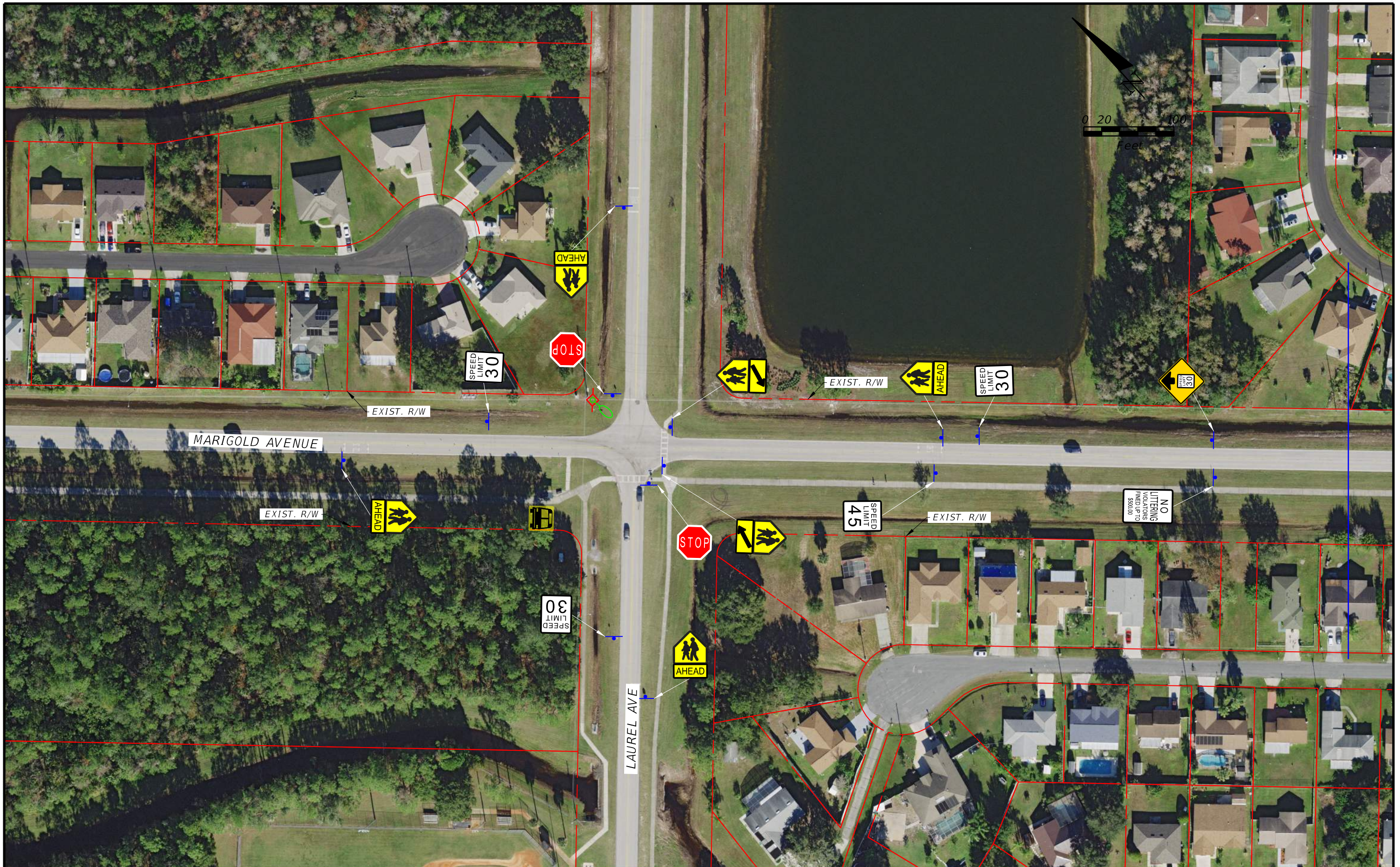
ENGLAND-THIMS & MILLER, INC.  
 1540 INTERNATIONAL PARKWAY, SUITE 2000  
 LAKE MARY, FL 32746  
 TEL: (407) 536-5379  
 FAX: (407) 536-5301  
 CA - 00002584 LC - 0000316

STATE OF FLORIDA  
 DEPARTMENT OF TRANSPORTATION

OSCEOLA ROUNDABOUTS  
 EXISTING CONDITIONS

SHEET NO.

1



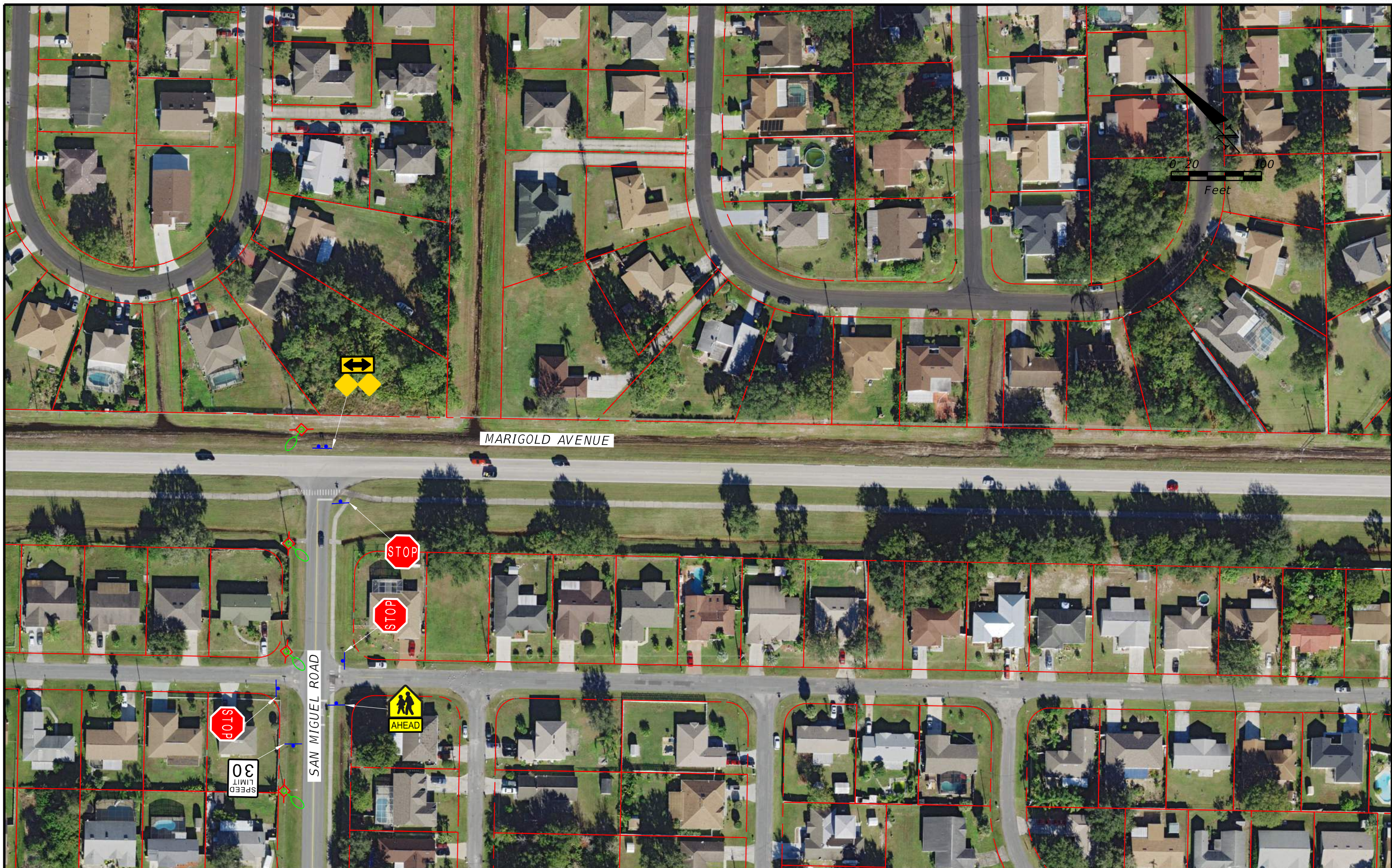
	TRAFFIC SIGNAL		BUS STOP		UTILITY POLE		LIGHT POLE
	TRAFFIC SIGN		RIGHT-OF-WAY				

ENGLAND-THIMS & MILLER, INC.  
 1540 INTERNATIONAL PARKWAY, SUITE 2000  
 LAKE MARY, FL 32746  
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STATE OF FLORIDA  
 DEPARTMENT OF TRANSPORTATION

OSCEOLA ROUNDABOUTS  
 EXISTING CONDITIONS

SHEET NO.  
 2



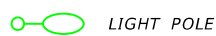
TRAFFIC SIGNAL



BUS STOP



UTILITY POLE



LIGHT POLE



TRAFFIC SIGN



RIGHT-OF-WAY

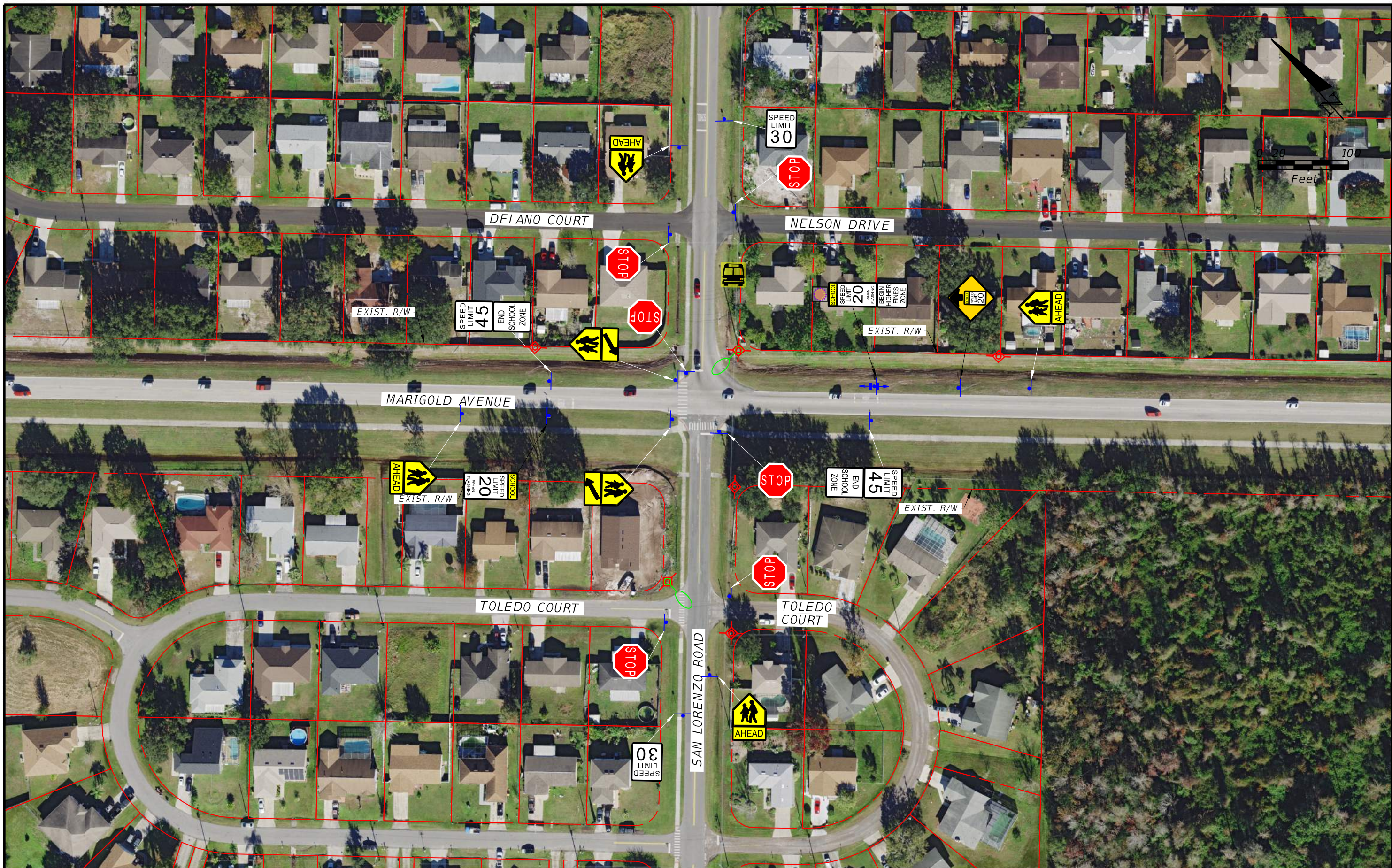
ENGLAND-THIMS & MILLER, INC.  
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


OSCEOLA ROUNDABOUTS  
 EXISTING CONDITIONS

SHEET  
 NO.

3



 TRAFFIC SIGNAL  
 BUS STOP

 UTILITY POLE  
 LIGHT POLE  
 TRAFFIC SIGN  
 RIGHT-OF-WAY

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STATE OF FLORIDA  
 DEPARTMENT OF TRANSPORTATION

OSCEOLA ROUNDABOUTS  
 EXISTING CONDITIONS

SHEET NO.

4

## **Appendix B:**

Site Photos

# Marigold Avenue / Peabody Road



Northbound



Southbound



Eastbound



Westbound



# Marigold Avenue / Laurel Avenue



Northbound



Southbound



Eastbound



Westbound

## Marigold Avenue / San Miguel Road



Northbound



Southbound



Eastbound

# Marigold Avenue / San Lorenzo Road



Northbound



Southbound



Eastbound



Westbound

**Appendix C:**  
Crash Summaries

State of Florida Department of Transportation

**COLLISION SUMMARY**

**General Information**

Section/Roadway ID:	_____	State Road:	Marigold Avenue		
Intersecting Route:	Peabody Road	Study Period:	1/1/12	To:	3/31/19
Milepost:	_____	Data by:	ETM		
County:	Osceola	Date:	6/21/2019		

No.	Date	Day	Time	Severity		Property Damage	Crash Type	Day / Night	Wet / Dry	Contributing Cause		
				Fatal	Injury							
1	3/23/2012	Fri	12:55 AM	0	0	\$700	Rear End	Night	Dry	Careless Driving		
2	4/8/2012	Sun	7:04 PM	0	2	\$15,000	Angle	Day	Dry	Failed to Yield ROW		
3	4/24/2012	Tue	9:13 AM	0	0	\$1,000	Left Turn	Day	Dry	Disregarded Control Devices		
4	5/22/2012	Tue	1:27 PM	0	0	\$5,000	Off Road	Day	Dry	Unknown		
5	5/29/2012	Tue	9:00 AM	0	1	\$25	Other	Day	Dry	Unknown		
6	7/24/2012	Tue	7:45 AM	0	1	\$300	Pedestrian	Day	Dry	Careless Driving		
7	7/28/2012	Sat	10:40 PM	0	1	\$6,000	Left Turn	Night	Dry	Failed to Yield ROW		
8	6/27/2013	Thu	7:22 AM	0	0	\$3,000	Right Turn	Day	Dry	Failed to Yield ROW		
9	6/30/2013	Sun	12:27 PM	0	0	\$8,000	Rear End	Day	Wet	Careless Driving		
10	10/5/2013	Sat	11:00 AM	0	0	\$2,800	Left Turn	Day	Dry	Failed to Yield ROW		
11	2/4/2014	Tue	7:32 PM	0	1	\$18,000	Head On	Night	Dry	DUI		
12	3/5/2014	Wed	1:13 PM	0	1	\$9,000	Angle	Day	Dry	Disregarded Control Devices		
13	3/20/2015	Fri	12:21 PM	0	1	\$5,500	Left Turn	Day	Dry	Failed to Yield ROW		
14	5/5/2015	Tue	4:00 AM	0	1	\$5,000	Rollover	Night	Dry	Careless Driving		
15	7/12/2015	Sun	7:38 AM	0	0	\$11,000	Off Road	Day	Dry	Hit and Run		
16	5/21/2016	Sat	9:50 PM	0	0	\$17,000	Rear End	Night	Dry	Followed Too Closely		
17	9/7/2016	Wed	8:15 AM	0	0	\$6,000	Angle	Day	Dry	Unknown		
18	11/12/2016	Sat	3:07 PM	0	2	\$11,000	Left Turn	Day	Dry	Failed to Yield ROW		
19	2/9/2017	Thu	10:43 AM	0	1	\$0	Pedestrian	Day	Dry	Unknown		
20	4/16/2017	Sun	7:28 PM	0	1	\$9,000	Angle	Day	Dry	Failed to Yield ROW		
21	5/3/2017	Wed	12:22 PM	0	0	\$500	Rear End	Day	Dry	Careless Driving		
22	9/27/2017	Wed	8:30 AM	0	1	\$2,000	Left Turn	Day	Dry	Wrong Side of Wrong Way		
23	1/5/2018	Fri	10:30 AM	0	1	\$6,200	Rear End	Day	Dry	Careless Driving		
24	1/11/2018	Thu	7:55 AM	0	5	\$18,200	Rear End	Day	Dry	Careless Driving		
<b>TOTAL</b>				<b>0</b>	<b>20</b>	<b>\$160,225</b>						

Total No.	Fatal	Injury	PDO	Rear End	Head-on	Angle	Left Turn	Right Turn	Sideswipe	Off Road	Bicycle / Pedestrian	Other
24	0	14	23	6	1	4	6	1	0	2	2	2
PERCENT	0%	58%	96%	25%	4%	17%	25%	4%	0%	8%	8%	8%

Contrib. Cause	Day	Night	PAVEMENT CONDITIONS			Exceeded Speed	DUI	Careless Driving	Improper Lane Change	Failed to Yield ROW	Disregarded Control Devices	Other
			WET	DRY	Unknown							
TOTAL	19	5	1	23	0	0	1	7	0	7	2	7
PERCENT	79%	21%	4%	96%	0%	0%	4%	29%	0%	29%	8%	29%

Total Vehicles Entering/ADT: \_\_\_\_\_ Collision Rate: \_\_\_\_\_ PER M.E.V. \_\_\_\_\_





State of Florida Department of Transportation

**COLLISION SUMMARY**

**General Information**

Section/Roadway ID:	_____	State Road:	Marigold Avenue		
Intersecting Route:	Laurel Avenue	Study Period:	1/1/12	To:	3/31/19
Milepost:	_____	Data by:	ETM		
County:	Osceola	Date:	9/30/2019		

No.	Date	Day	Time	Severity		Property Damage	Crash Type	Day / Night	Wet / Dry	Contributing Cause		
				Fatal	Injury							
1	6/23/2012	Sat	3:55 PM	0	0	\$15,000	Rear End	Day	Wet	Careless Driving		
2	8/25/2012	Sat	11:58 AM	0	2	\$11,000	Left Turn	Day	Dry	Failed to Yield ROW		
3	9/18/2012	Tue	12:57 AM	0	1	\$2,000	Angle	Day	Wet	Disregarded Control Devices		
4	11/14/2012	Wed	8:15 AM	0	2	\$9,500	Angle	Day	Dry	Disregarded Control Devices		
5	12/24/2012	Mon	3:52 PM	0	1	\$13,000	Angle	Day	Dry	Failed to Yield ROW		
6	4/11/2013	Thu	7:56 AM	0	2	\$10,000	Right Turn	Day	Dry	Failed to Yield ROW		
7	7/20/2013	Sat	4:54 AM	0	3	\$10,000	Rear End	Night	Dry	Careless Driving		
8	11/28/2013	Thu	2:05 PM	0	0	\$6,500	Angle	Day	Dry	Failed to Yield ROW		
9	4/12/2014	Sat	12:52 PM	0	2	\$11,000	Left Turn	Day	Dry	Failed to Yield ROW		
10	5/12/2014	Mon	2:12 PM	0	2	\$8,000	Angle	Day	Dry	Disregarded Control Devices		
11	7/3/2014	Thu	1:30 PM	0	1	\$15,000	Angle	Day	Dry	Disregarded Control Devices		
12	1/10/2015	Sat	3:25 PM	0	4	\$10,000	Angle	Day	Dry	Disregarded Control Devices		
13	9/8/2015	Tue	12:00 PM	0	4	\$13,000	Angle	Day	Dry	Disregarded Control Devices		
14	4/25/2016	Mon	12:15 PM	0	7	\$12,000	Angle	Day	Dry	Unknown		
15	6/6/2016	Mon	11:56 AM	0	1	\$17,000	Angle	Day	Dry	Failed to Yield ROW		
16	9/4/2016	Sun	1:40 PM	0	2	\$24,000	Angle	Day	Dry	Disregarded Control Devices		
17	12/2/2016	Fri	3:38 PM	0	1	\$55	Other	Day	Dry	Careless Driving		
18	3/25/2017	Sat	3:41 PM	0	0	\$6,000	Left Turn	Day	Dry	Failed to Yield ROW		
19	4/2/2017	Sun	5:27 PM	0	1	\$17,000	Angle	Day	Dry	Disregarded Control Devices		
20	5/11/2017	Thu	12:36 PM	0	4	\$5,000	Angle	Day	Dry	Disregarded Control Devices		
21	9/14/2017	Thu	6:30 PM	0	2	\$25,000	Angle	Night	Dry	Failed to Yield ROW		
22	11/18/2017	Sat	6:55 AM	0	3	\$3,200	Left Turn	Day	Dry	Disregarded Control Devices		
23	12/3/2017	Sun	12:33 AM	0	0	\$5,000	Rear End	Night	Dry	Unknown		
24	4/21/2018	Sat	4:00 PM	0	0	\$7,000	Angle	Day	Dry	Disregarded Control Devices		
<b>TOTAL</b>				<b>0</b>	<b>45</b>	<b>\$255,255</b>						

Total No.	Fatal	Injury	PDO	Rear End	Head-on	Angle	Left Turn	Right Turn	Sideswipe	Off Road	Bicycle / Pedestrian	Other
24	0	19	24	3	0	15	4	1	0	0	0	1
PERCENT	0%	79%	100%	13%	0%	63%	17%	4%	0%	0%	0%	4%

Contrib. Cause	Day	Night	PAVEMENT CONDITIONS			Exceeded Speed	DUI	Careless Driving	Improper Lane Change	Failed to Yield ROW	Disregarded Control Devices	Other
			WET	DRY	Unknown							
TOTAL	21	3	2	22	0	0	0	3	0	8	11	2
PERCENT	88%	13%	8%	92%	0%	0%	0%	13%	0%	33%	46%	8%

Total Vehicles Entering/ADT: \_\_\_\_\_ Collision Rate: \_\_\_\_\_ PER M.E.V. \_\_\_\_\_







State of Florida Department of Transportation

**COLLISION SUMMARY**

**General Information**

Section/Roadway ID:	_____	State Road:	Marigold Avenue		
Intersecting Route:	San Miguel Road	Study Period:	1/1/12	To:	3/31/19
Milepost:	_____	Data by:	ETM		
County:	Osceola	Date:	9/30/2019		

No.	Date	Day	Time	Severity		Property Damage	Crash Type	Day / Night	Wet / Dry	Contributing Cause		
				Fatal	Injury							
1	6/10/2012	Sun	2:55 PM	0	5	\$4,500	Rear End	Day	Dry	Careless Driving		
2	7/7/2012	Sat	2:45 PM	0	1	\$14,000	Rear End	Day	Dry	Careless Driving		
3	7/28/2012	Sat	8:20 PM	0	0	\$50	Rear End	Night	Dry	Unknown		
4	10/5/2012	Fri	5:25 PM	0	0	\$2,100	Off Road	Day	Wet	Careless Driving		
5	12/31/2012	Mon	12:56 PM	0	2	\$13,000	Other	Day	Dry	Failed to Yield ROW		
6	1/27/2013	Sun	1:20 PM	0	2	\$3,400	Rear End	Day	Dry	Careless Driving		
7	1/23/2014	Thu	8:45 PM	0	1	\$900	Rear End	Night	Dry	Careless Driving		
8	8/2/2014	Sat	5:32 PM	0	1	\$1,000	Off Road	Day	Dry	Unknown		
9	10/19/2014	Sun	3:25 AM	0	1	\$2,500	Off Road	Night	Dry	Careless Driving		
10	11/9/2014	Sun	12:47 AM	0	0	\$11,500	Other	Night	Wet	Failed to Yield ROW		
11	6/27/2015	Sat	6:15 PM	0	1	\$6,000	Rear End	Day	Dry	Careless Driving		
12	7/23/2016	Sat	1:33 PM	0	3	\$14,000	Sideswipe	Day	Dry	Failed to Yield ROW		
13	8/26/2016	Fri	2:20 PM	0	0	\$2,100	Other	Day	Dry	Improper Backing		
14	12/6/2016	Tue	4:10 PM	0	0	\$18,000	Rear End	Day	Wet	Followed Too Closely		
15	1/14/2017	Sat	11:45 PM	0	2	\$2,300	Right Turn	Night	Dry	Disregarded Control Devices		
16	3/9/2017	Thu	7:56 AM	0	2	\$1,400	Rear End	Day	Dry	Careless Driving		
17	6/12/2017	Mon	8:00 PM	0	1	\$8,075	Rear End	Day	Wet	Careless Driving		
18	10/5/2017	Thu	11:01 AM	0	1	\$500	Rollover	Day	Wet	Unknown		
19	12/5/2017	Tue	8:42 AM	0	3	\$7,000	Rear End	Day	Dry	Careless Driving		
20	2/26/2018	Mon	9:57 PM	0	1	\$8,000	Rear End	Night	Dry	Careless Driving		
21	4/4/2018	Wed	3:35 PM	0	0	\$7,000	Rollover	Day	Dry	Careless Driving		
22	4/17/2018	Tue	4:22 PM	0	0	\$550	Bicycle	Day	Dry	Failed to Yield ROW		
23	9/8/2018	Sat	3:37 AM	0	2	\$15,000	Rear End	Day	Wet	Careless Driving		
24	12/29/2018	Sat	2:26 PM	0	0	\$3,000	Rear End	Day	Dry	Careless Driving		
<b>TOTAL</b>				<b>0</b>	<b>29</b>	<b>\$145,875</b>						

Total No.	Fatal	Injury	PDO	Rear End	Head-on	Angle	Left Turn	Right Turn	Sideswipe	Off Road	Bicycle / Pedestrian	Other
24	0	16	24	13	0	0	0	1	1	3	1	5
PERCENT	0%	67%	100%	54%	0%	0%	0%	4%	4%	13%	4%	21%

Contrib. Cause	Day	Night	PAVEMENT CONDITIONS			Exceeded Speed	DUI	Careless Driving	Improper Lane Change	Failed to Yield ROW	Disregarded Control Devices	Other
			WET	DRY	Unknown							
TOTAL	18	6	6	18	0	0	0	14	0	4	1	5
PERCENT	75%	25%	25%	75%	0%	0%	0%	58%	0%	17%	4%	21%

Total Vehicles Entering/ADT: \_\_\_\_\_ Collision Rate: \_\_\_\_\_ PER M.E.V. \_\_\_\_\_

State of Florida Department of Transportation

**COLLISION SUMMARY**

**General Information**

Section/Roadway ID:	_____	State Road:	Marigold Avenue		
Intersecting Route:	San Lorenzo	Study Period:	1/1/12	To:	3/31/19
Milepost:	_____	Data by:	ETM		
County:	Osceola	Date:	6/21/2019		

No.	Date	Day	Time	Severity		Property Damage	Crash Type	Day / Night	Wet / Dry	Contributing Cause		
				Fatal	Injury							
1	1/24/2012	Tue	12:40 PM	0	0	\$650	Sideswipe	Day	Dry	Improper Passing		
2	4/19/2012	Thu	10:30 PM	0	0	\$1,000	Sideswipe	Night	Dry	DUI		
3	6/1/2012	Fri	5:06 PM	0	0	\$10,000	Left Turn	Day	Wet	Failed to Yield ROW		
4	6/24/2012	Sun	11:55 AM	0	5	\$10,000	Angle	Day	Wet	Disregarded Control Devices		
5	7/2/2012	Mon	10:26 PM	0	2	\$25,000	Angle	Night	Dry	Failed to Yield ROW		
6	10/5/2012	Fri	6:52 PM	0	0	\$3,200	Left Turn	Day	Wet	Failed to Yield ROW		
7	2/26/2013	Tue	1:03 PM	0	3	\$11,500	Rear End	Day	Wet	Careless Driving		
8	4/27/2013	Sat	11:12 AM	0	2	\$14,000	Left Turn	Day	Dry	Failed to Yield ROW		
9	6/7/2013	Fri	12:15 AM	0	0	\$9,000	Left Turn	Night	Wet	Failed to Yield ROW		
10	12/11/2013	Wed	7:00 PM	0	2	\$12,400	Angle	Night	Dry	Failed to Yield ROW		
11	4/12/2014	Sat	12:10 PM	0	1	\$18,000	Angle	Day	Dry	Failed to Yield ROW		
12	5/3/2014	Sat	10:07 AM	0	0	\$12,000	Angle	Day	Wet	Failed to Yield ROW		
13	8/3/2016	Wed	3:23 PM	0	1	\$15,500	Off Road	Day	Dry	Careless Driving		
14	10/30/2016	Sun	10:40 AM	0	0	\$12,000	Left Turn	Day	Dry	Failed to Yield ROW		
15	11/24/2016	Thu	6:10 AM	0	2	\$20,200	Left Turn	Day	Dry	Failed to Yield ROW		
16	3/19/2017	Sun	6:30 PM	0	1	\$12,000	Angle	Day	Dry	Disregarded Control Devices		
17	3/19/2017	Sun	8:31 PM	0	1	\$20,000	Left Turn	Night	Dry	Failed to Yield ROW		
18	4/14/2017	Fri	1:45 PM	0	0	\$5,000	Left Turn	Day	Dry	Failed to Yield ROW		
19	6/4/2017	Sun	8:11 PM	0	2	\$13,000	Left Turn	Night	Wet	Failed to Yield ROW		
20	7/31/2017	Mon	1:20 PM	0	0	\$4,500	Off Road	Day	Wet	Careless Driving		
21	10/23/2017	Mon	5:25 PM	0	1	\$1,100	Angle	Day	Wet	Careless Driving		
22	1/20/2018	Sat	12:00 PM	0	0	\$2,300	Left Turn	Day	Dry	Failed to Yield ROW		
23	3/3/2018	Sat	9:50 AM	0	6	\$4,000	Angle	Day	Dry	Disregarded Control Devices		
24	8/19/2018	Sun	7:34 AM	0	2	\$6,000	Angle	Day	Dry	Disregarded Control Devices		
<b>TOTAL</b>				<b>0</b>	<b>31</b>	<b>\$242,350</b>						

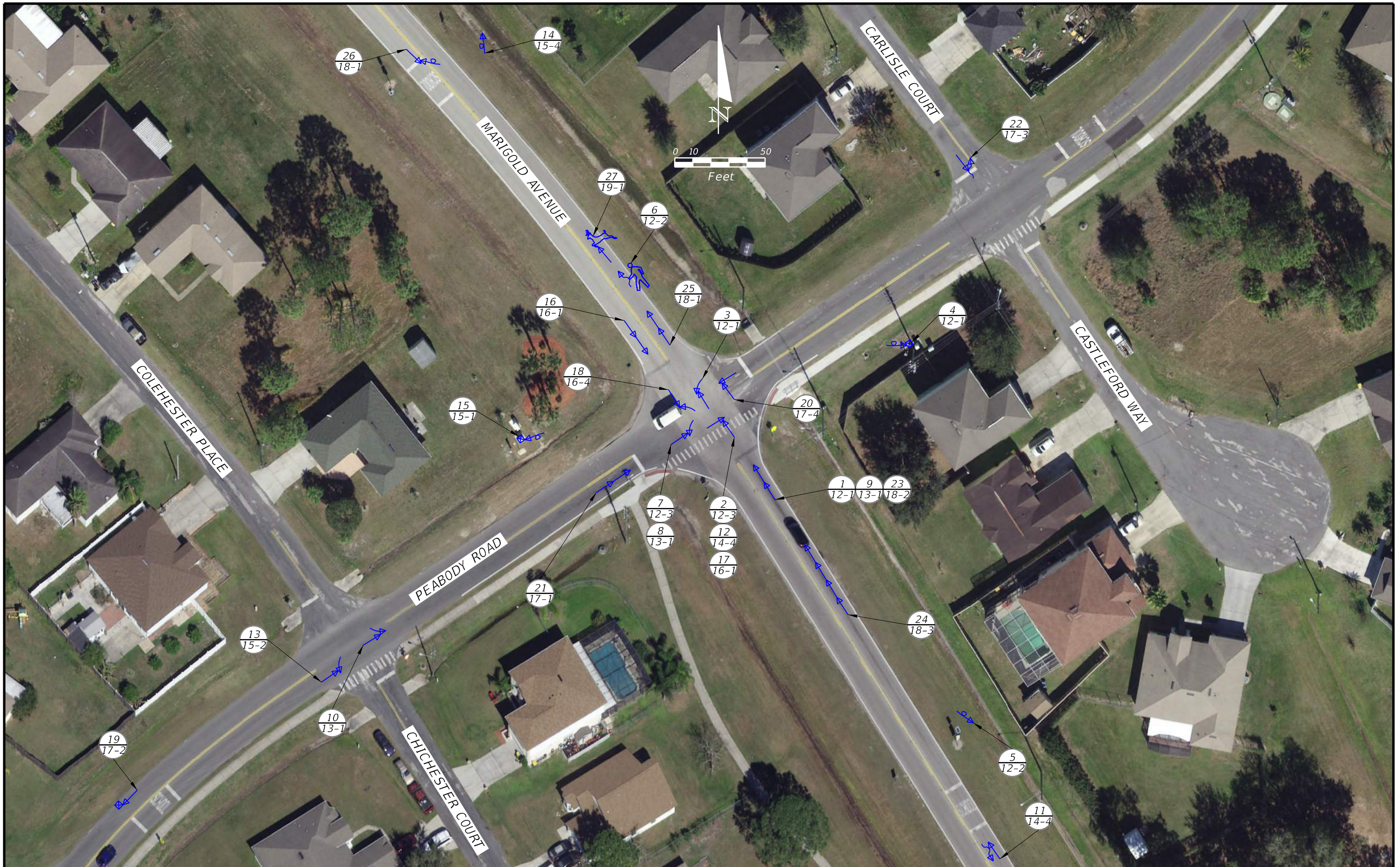
Total No.	Fatal	Injury	PDO	Rear End	Head-on	Angle	Left Turn	Right Turn	Sideswipe	Off Road	Bicycle / Pedestrian	Other
24	0	14	24	1	0	9	10	0	2	2	0	0
PERCENT	0%	58%	100%	4%	0%	38%	42%	0%	8%	8%	0%	0%
Contrib. Cause	Day	Night	PAVEMENT CONDITIONS			Exceeded Speed	DUI	Careless Driving	Improper Lane Change	Failed to Yield ROW	Disregarded Control Devices	Other
			WET	DRY	Unknown							
TOTAL	18	6	9	15	0	0	1	4	0	14	4	1
PERCENT	75%	25%	38%	63%	0%	0%	4%	17%	0%	58%	17%	4%

Total Vehicles Entering/ADT: \_\_\_\_\_ Collision Rate: \_\_\_\_\_ PER M.E.V. \_\_\_\_\_





**Appendix D:**  
Collision Diagrams



 <b>CRASH NUMBER</b> XX-X <b>INJURY SEVERITY</b> 1 = NO INJURY 2 = POSSIBLE INJURY 3 = NON-INCAPACITATING 4 = INCAPACITATING 5 = FATALITY <b>YEAR</b>	 PEDESTRIAN   FATALITY	 BICYCLE   VEHICLE DIRECTION
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**STATE OF FLORIDA**  
**DEPARTMENT OF TRANSPORTATION**

**OSCEOLA ROUNDABOUTS**  
**COLLISION DIAGRAM**

SHEET  
 NO.  
 1





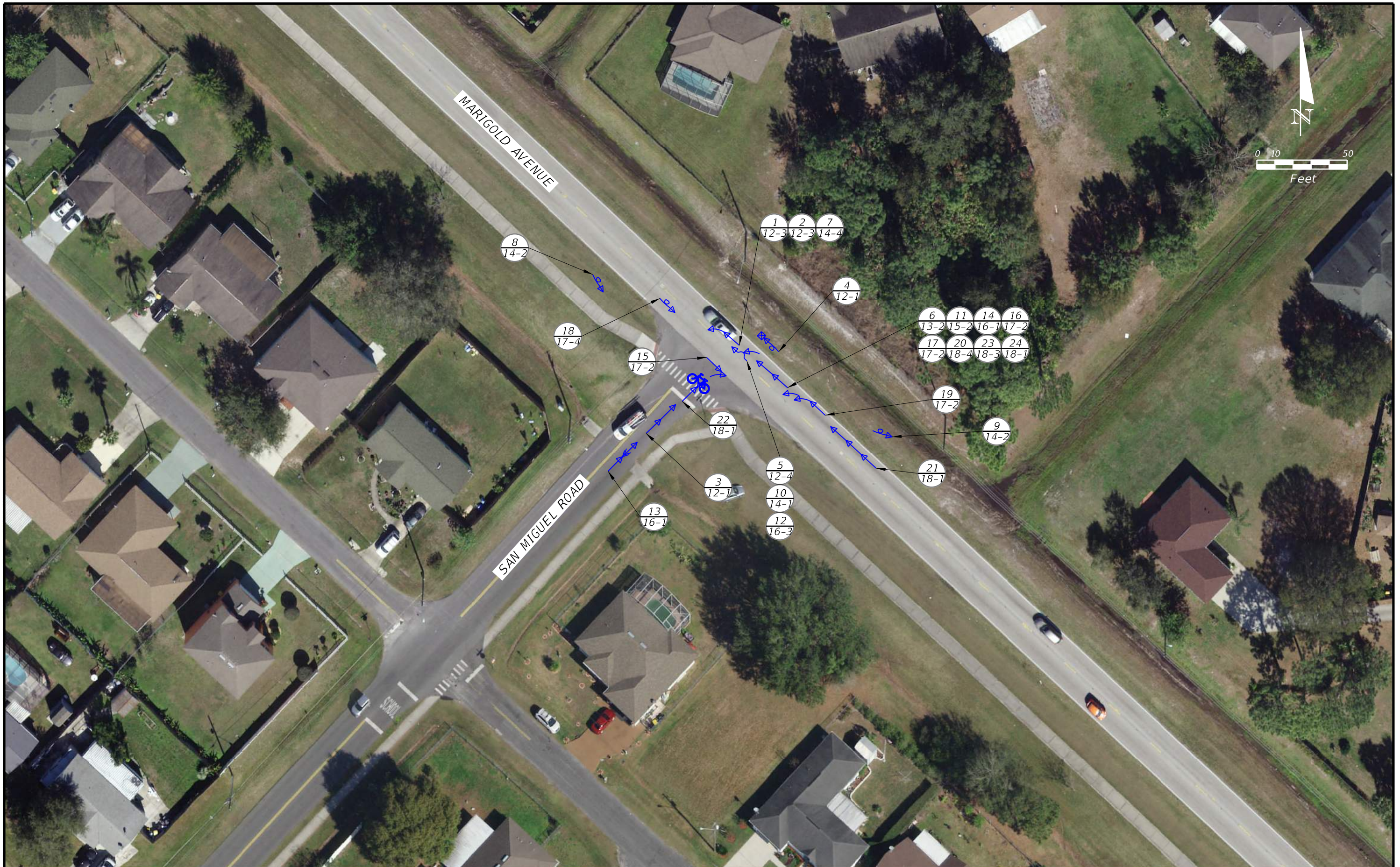
 CRASH NUMBER XX-X YEAR	INJURY SEVERITY 1 = NO INJURY 2 = POSSIBLE INJURY 3 = NON-INCAPACITATING 4 = INCAPACITATING 5 = FATALITY	 PEDESTRIAN	 BICYCLE	 FATALITY	 VEHICLE DIRECTION
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OSCEOLA ROUNDABOUTS  
 COLLISION DIAGRAM

SHEET NO.  
 2



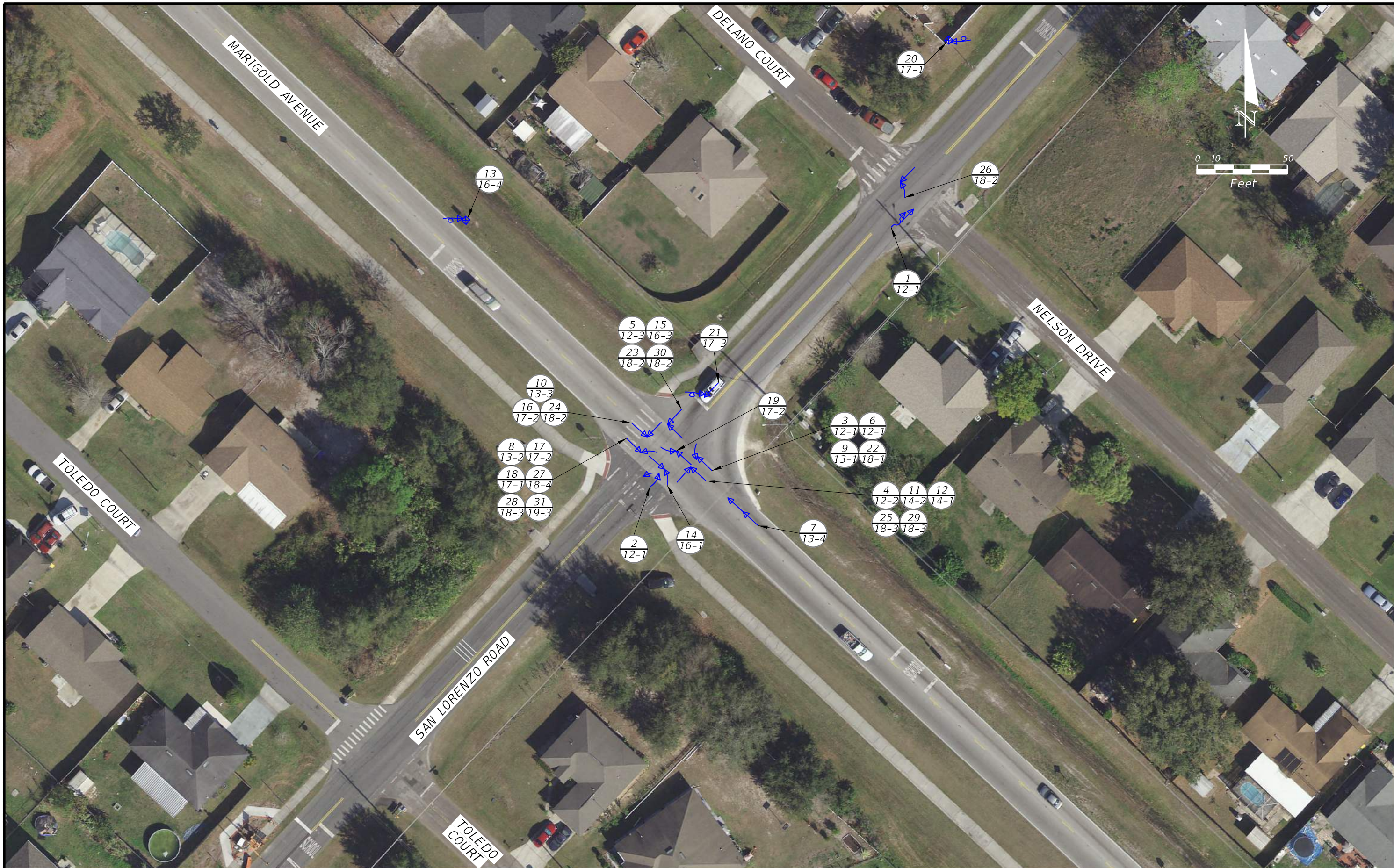
 CRASH NUMBER INJURY SEVERITY 1 = NO INJURY 2 = POSSIBLE INJURY 3 = NON-INCAPACITATING 4 = INCAPACITATING 5 = FATALITY YEAR	 PEDESTRIAN	 BICYCLE	 VEHICLE DIRECTION	 FATALITY
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*OSCEOLA ROUNDABOUTS  
 COLLISION DIAGRAM*

SHEET  
 NO.  
 3



 <b>CRASH NUMBER</b> XX-X YEAR	 <b>INJURY SEVERITY</b> 1 = NO INJURY 2 = POSSIBLE INJURY 3 = NON-INCAPACITATING 4 = INCAPACITATING 5 = FATALITY	 <b>PEDESTRIAN</b>	 <b>BICYCLE</b>	 <b>FATALITY</b>	 <b>VEHICLE DIRECTION</b>
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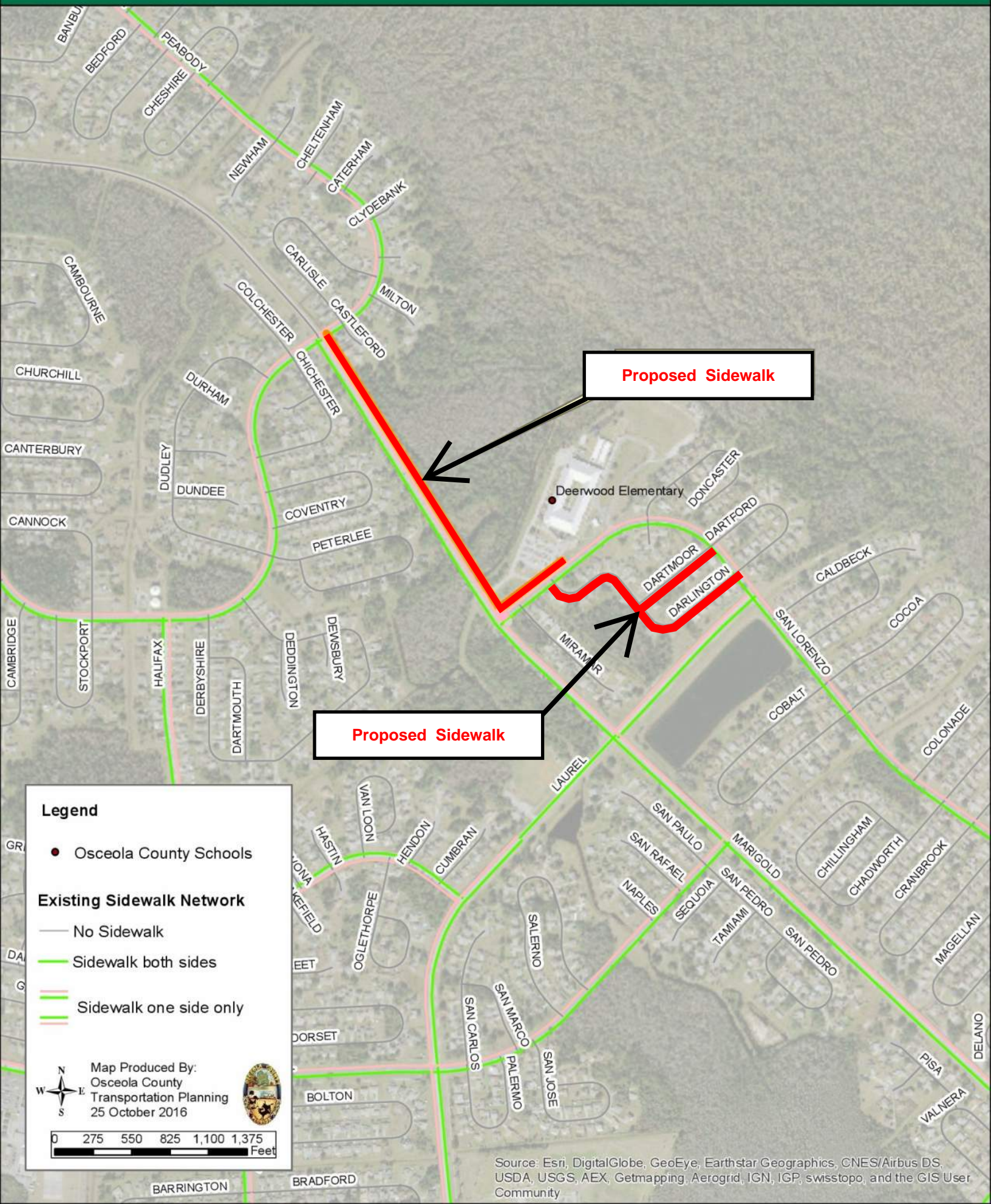
**OSCEOLA ROUNDABOUTS**  
**COLLISION DIAGRAM**

SHEET  
 NO.  
 4

## **Appendix E:**

### **Safe Routes To School Sidewalk Improvements**

# Deerwood SRTS Plan



**Proposed Sidewalk**

**Proposed Sidewalk**

**Legend**

- Osceola County Schools

**Existing Sidewalk Network**

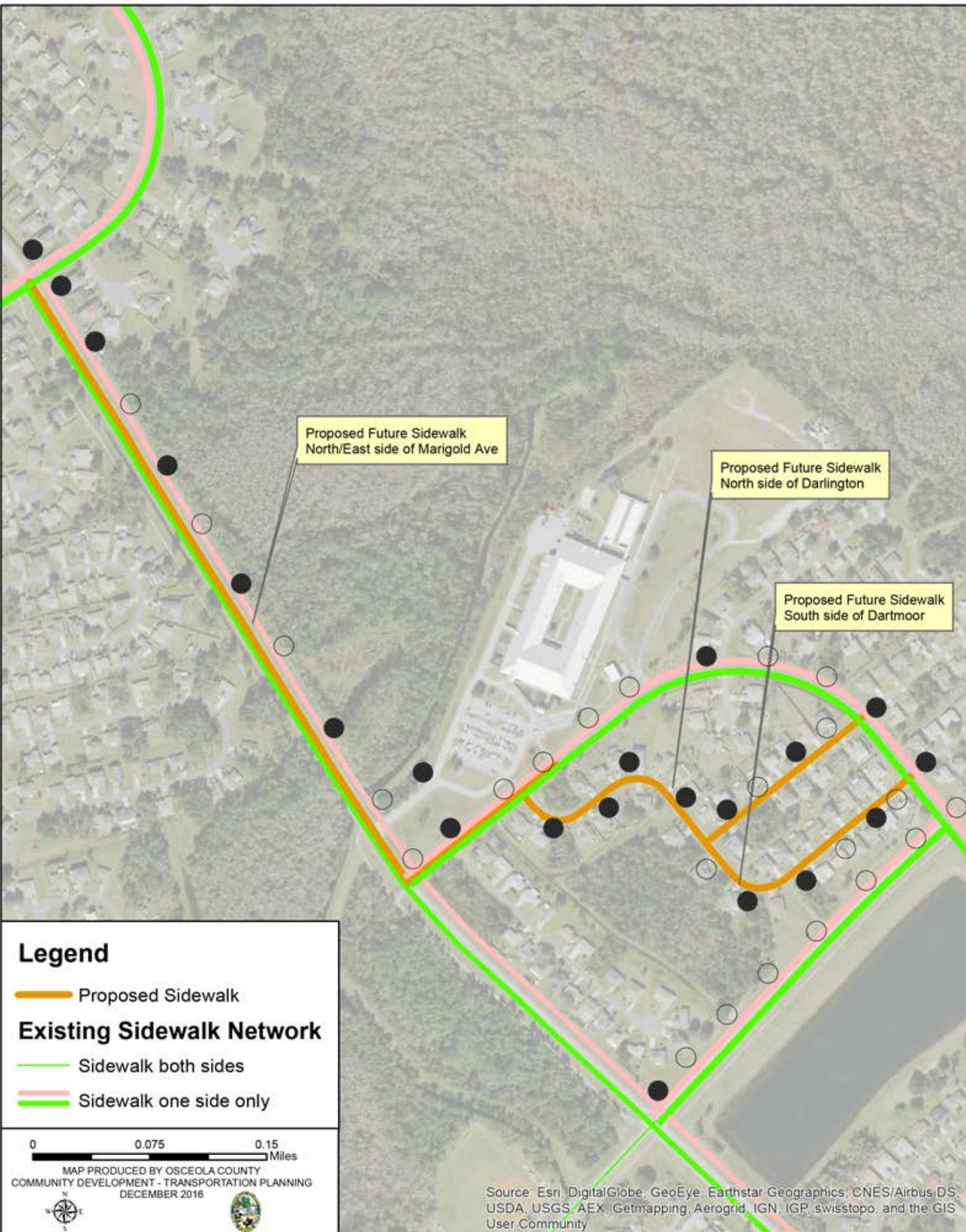
- No Sidewalk
- Sidewalk both sides
- Sidewalk one side only

Map Produced By:  
Osceola County  
Transportation Planning  
25 October 2016

0 275 550 825 1,100 1,375 Feet

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

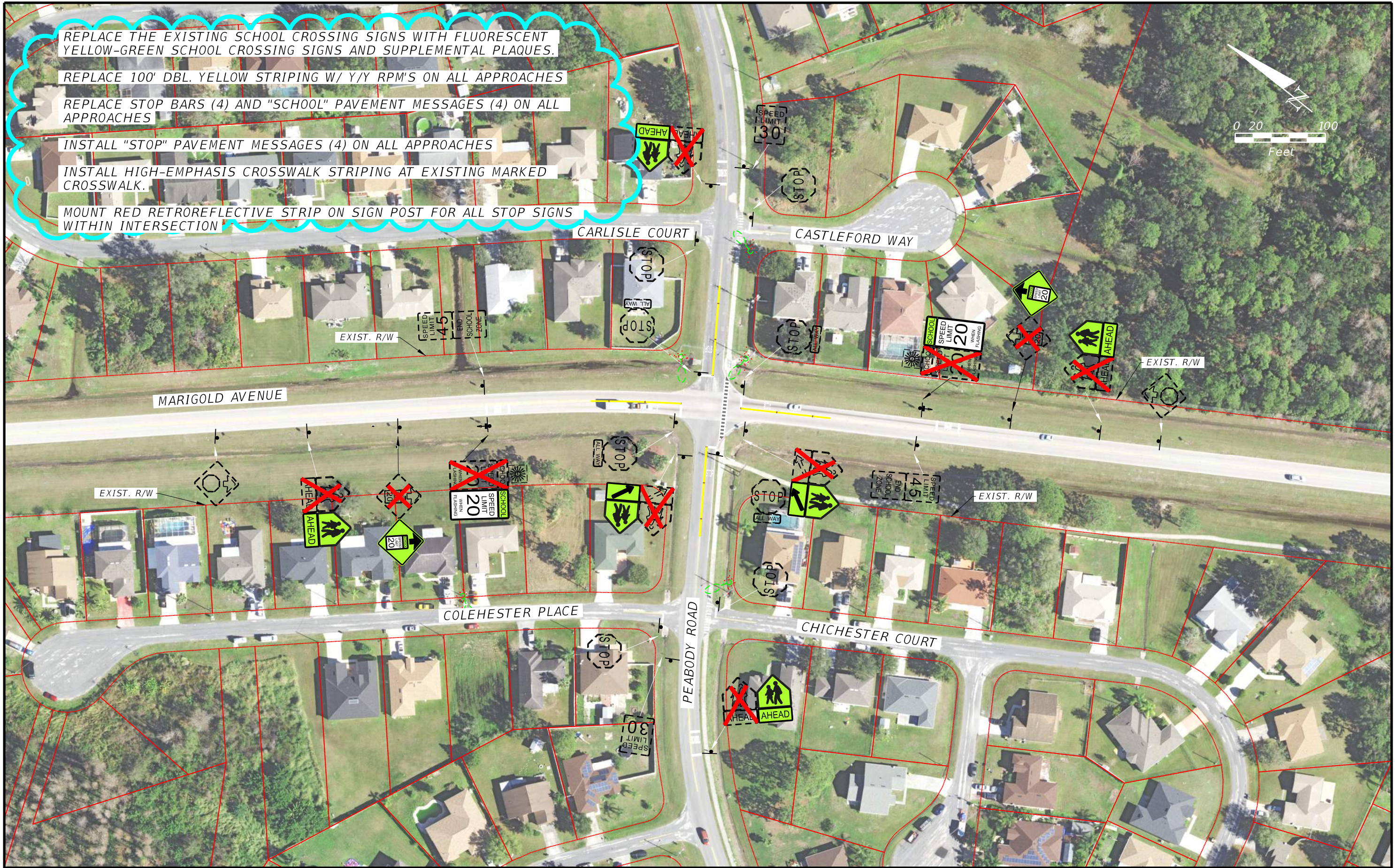
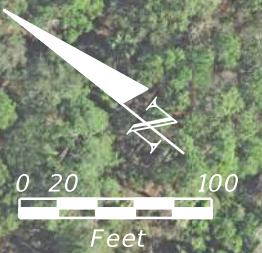
# Deerwood Elementary School Plan



## **Appendix F:**

### Short-Term Concept Diagrams

- REPLACE THE EXISTING SCHOOL CROSSING SIGNS WITH FLUORESCENT YELLOW-GREEN SCHOOL CROSSING SIGNS AND SUPPLEMENTAL PLAQUES.
- REPLACE 100' DBL. YELLOW STRIPING W/ Y/Y RPM'S ON ALL APPROACHES
- REPLACE STOP BARS (4) AND "SCHOOL" PAVEMENT MESSAGES (4) ON ALL APPROACHES
- INSTALL "STOP" PAVEMENT MESSAGES (4) ON ALL APPROACHES
- INSTALL HIGH-EMPHASIS CROSSWALK STRIPING AT EXISTING MARKED CROSSWALK.
- MOUNT RED RETROREFLECTIVE STRIP ON SIGN POST FOR ALL STOP SIGNS WITHIN INTERSECTION



— RIGHT-OF-WAY FROM GIS PARCELS

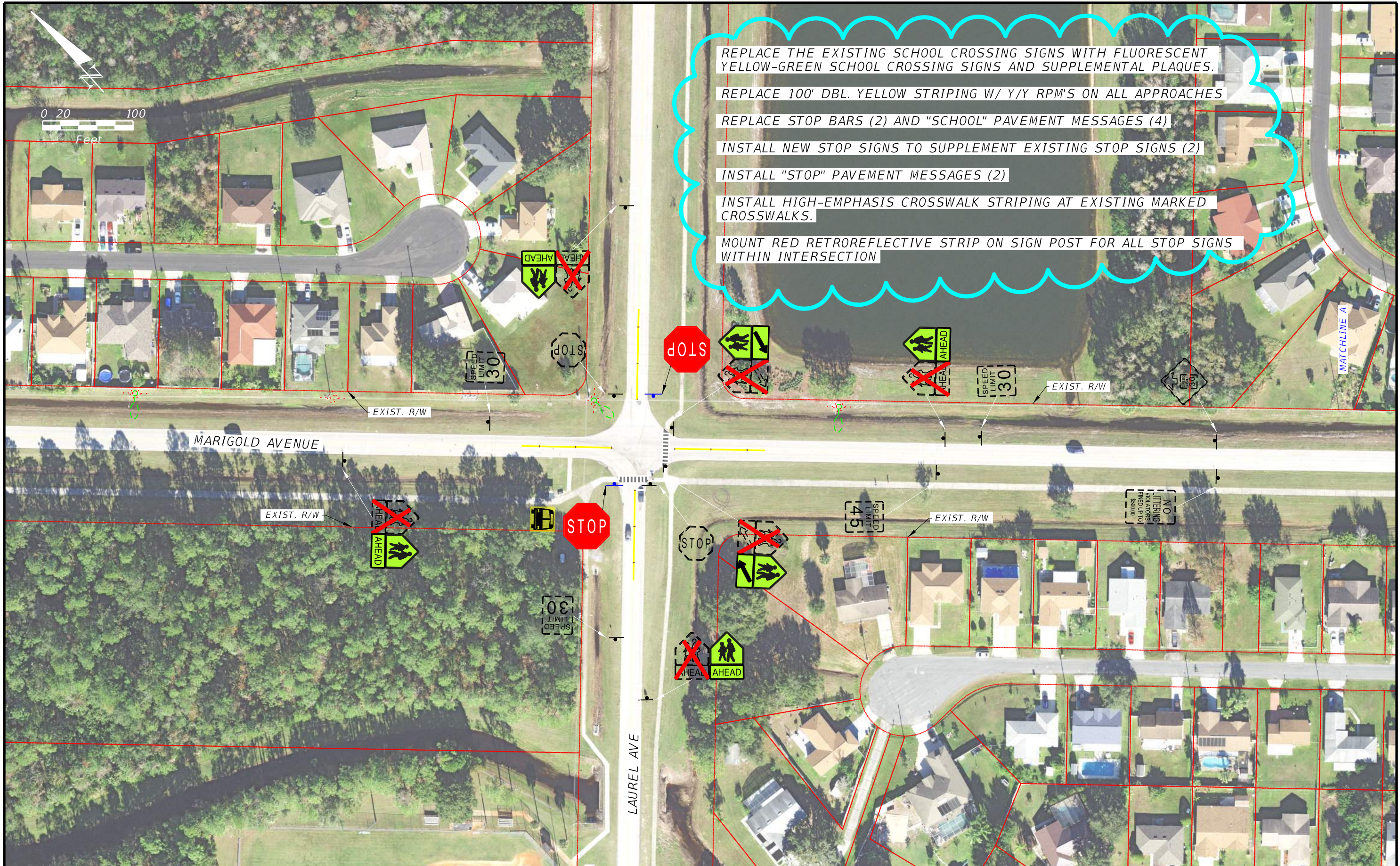
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STATE OF FLORIDA  
 DEPARTMENT OF TRANSPORTATION

OSCEOLA ROUNDABOUTS  
 SHORT-TERM IMPROVEMENTS

SHEET NO.  
 1





- REPLACE THE EXISTING SCHOOL CROSSING SIGNS WITH FLUORESCENT YELLOW-GREEN SCHOOL CROSSING SIGNS AND SUPPLEMENTAL PLAQUES.
- REPLACE 100' DBL. YELLOW STRIPING W/ Y/Y RPM'S ON ALL APPROACHES
- REPLACE STOP BARS (2) AND "SCHOOL" PAVEMENT MESSAGES (4)
- INSTALL NEW STOP SIGNS TO SUPPLEMENT EXISTING STOP SIGNS (2)
- INSTALL "STOP" PAVEMENT MESSAGES (2)
- INSTALL HIGH-EMPHASIS CROSSWALK STRIPING AT EXISTING MARKED CROSSWALKS.
- MOUNT RED RETROREFLECTIVE STRIP ON SIGN POST FOR ALL STOP SIGNS WITHIN INTERSECTION

— RIGHT-OF-WAY FROM GIS PARCELS

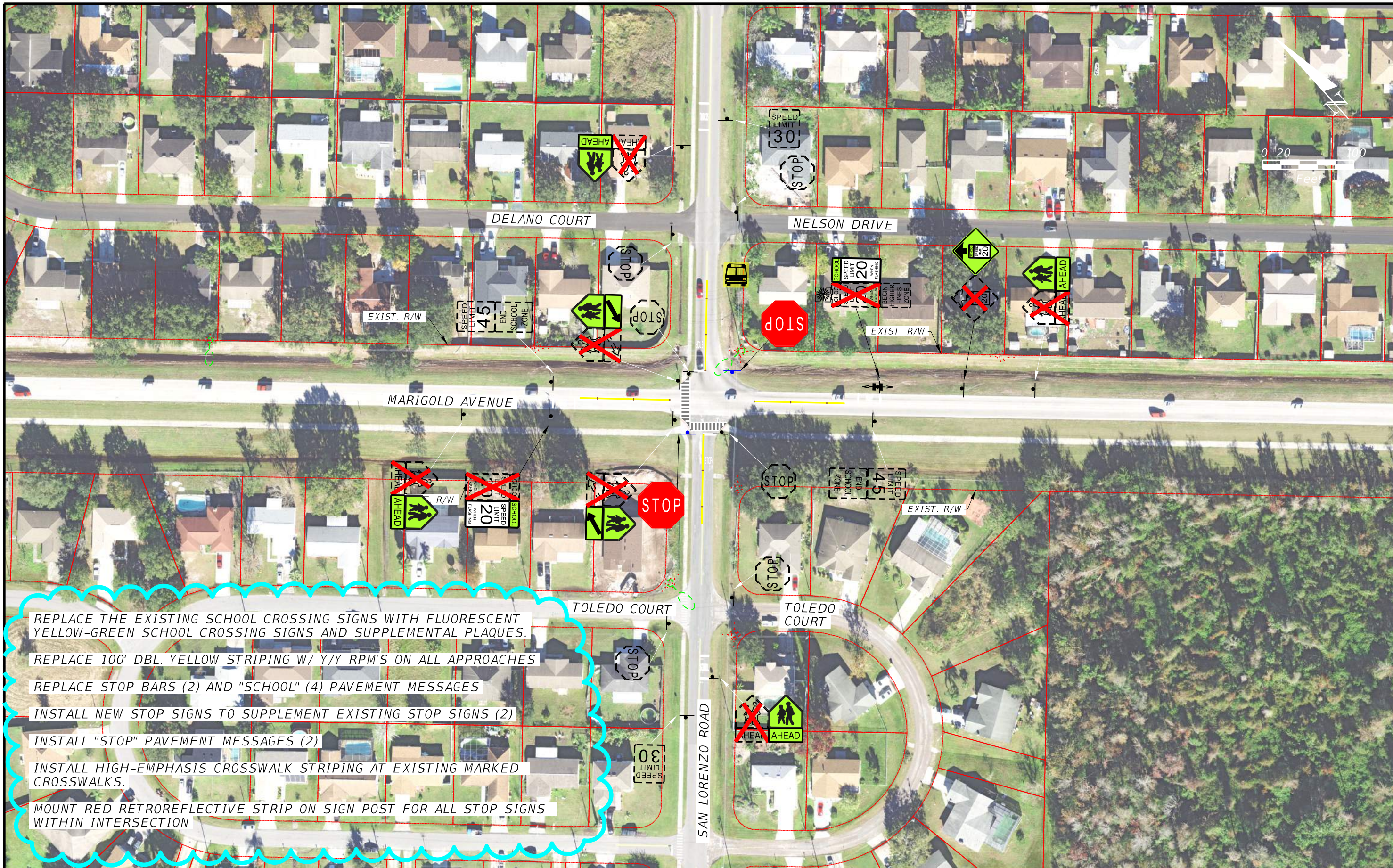
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OSCEOLA ROUNDABOUTS  
 SHORT-TERM IMPROVEMENTS

SHEET NO.  
 2





- REPLACE THE EXISTING SCHOOL CROSSING SIGNS WITH FLUORESCENT YELLOW-GREEN SCHOOL CROSSING SIGNS AND SUPPLEMENTAL PLAQUES.
- REPLACE 100' DBL. YELLOW STRIPING W/ Y/Y RPM'S ON ALL APPROACHES
- REPLACE STOP BARS (2) AND "SCHOOL" (4) PAVEMENT MESSAGES
- INSTALL NEW STOP SIGNS TO SUPPLEMENT EXISTING STOP SIGNS (2)
- INSTALL "STOP" PAVEMENT MESSAGES (2)
- INSTALL HIGH-EMPHASIS CROSSWALK STRIPING AT EXISTING MARKED CROSSWALKS.
- MOUNT RED RETROREFLECTIVE STRIP ON SIGN POST FOR ALL STOP SIGNS WITHIN INTERSECTION

— RIGHT-OF-WAY  
FROM GIS PARCELS

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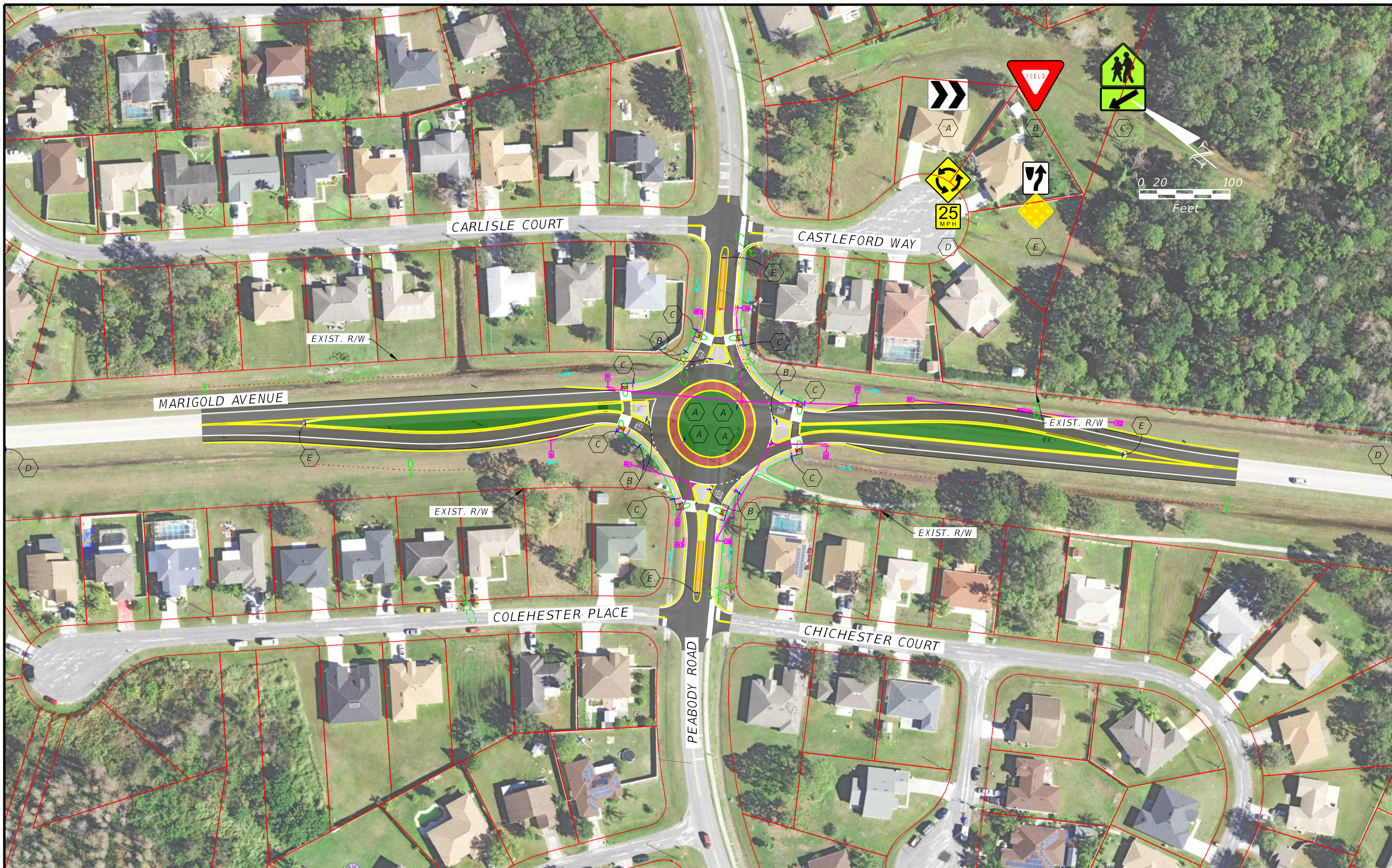
OSCEOLA ROUNDABOUTS  
SHORT-TERM IMPROVEMENTS

SHEET  
NO.

4

## **Appendix G:**

### Long-Term Concept Diagrams



PROPOSED DRAINAGE

POTENTIAL RIGHT-OF-WAY CONSTRAINTS SHOULD BE CONSIDERED DURING FINAL DESIGN

RIGHT-OF-WAY FROM GIS PARCELS

EXIST. R/W

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OSCEOLA ROUNDABOUTS  
 LONG-TERM IMPROVEMENTS

SHEET NO.

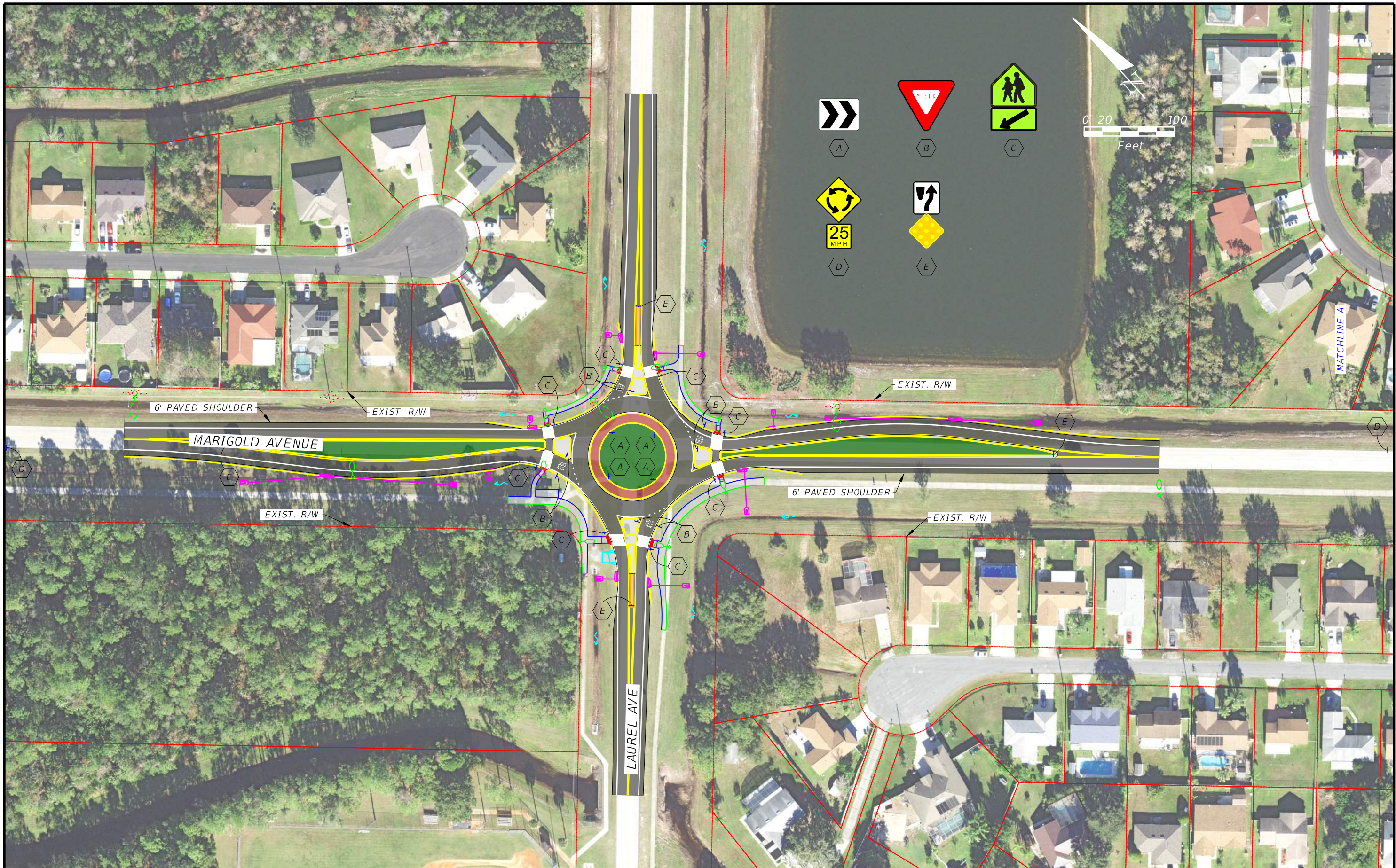
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SUSERS

SDATES

STIMES

SFILES



PROPOSED DRAINAGE

POTENTIAL RIGHT-OF-WAY CONSTRAINTS SHOULD BE CONSIDERED DURING FINAL DESIGN

RIGHT-OF-WAY FROM GIS PARCELS

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STATE OF FLORIDA  
 DEPARTMENT OF TRANSPORTATION

OSCEOLA ROUNDABOUTS  
 LONG-TERM IMPROVEMENTS

SHEET NO.

2

SUSERS

SDATES

STIMES

SFILES



— PROPOSED DRAINAGE  
— RIGHT-OF-WAY FROM GIS PARCELS  
 POTENTIAL RIGHT-OF-WAY CONSTRAINTS SHOULD BE CONSIDERED DURING FINAL DESIGN

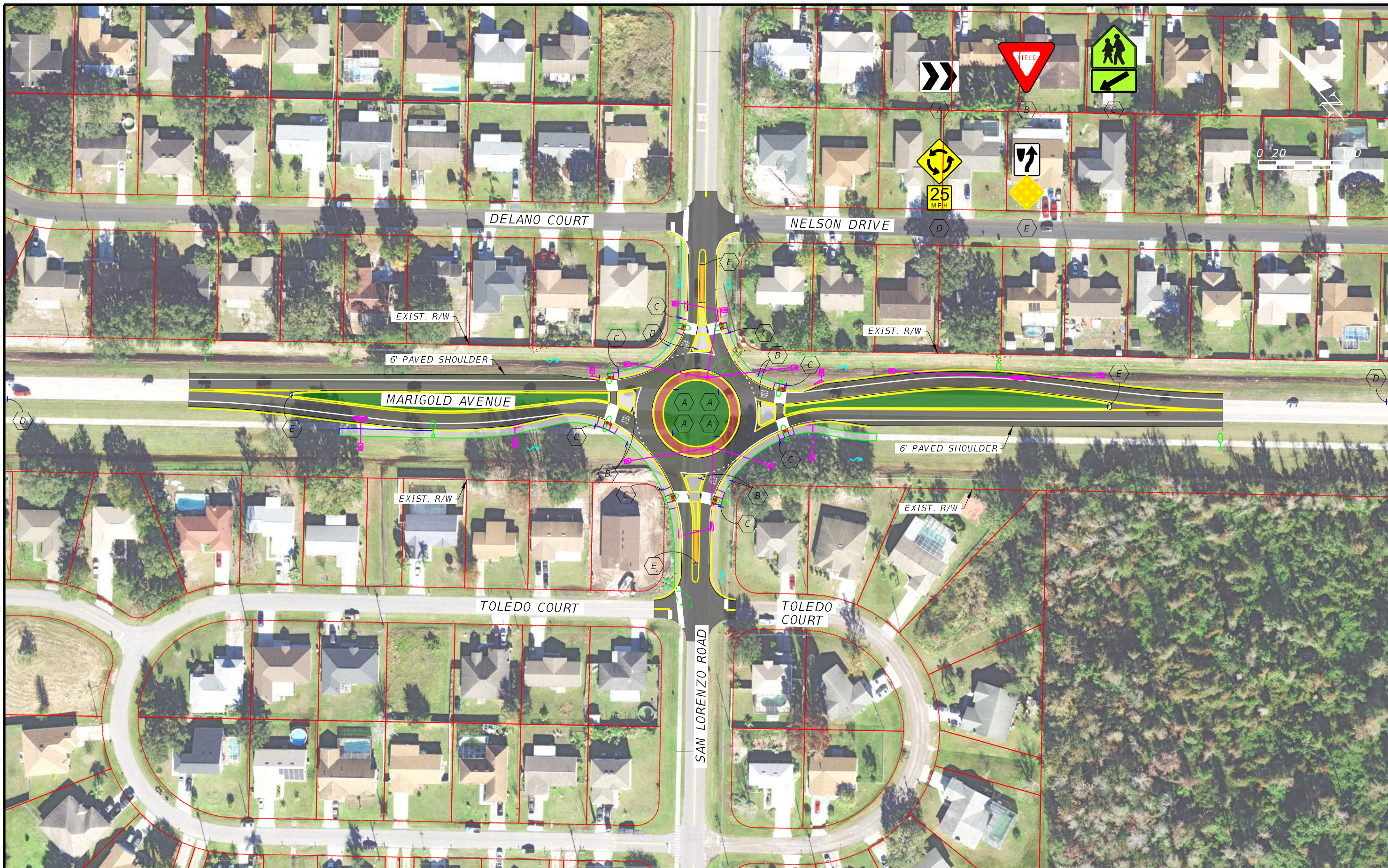
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OSCEOLA ROUNDABOUTS  
 LONG-TERM IMPROVEMENTS

SHEET NO.

3



— PROPOSED DRAINAGE  
— RIGHT-OF-WAY FROM GIS PARCELS  
 POTENTIAL RIGHT-OF-WAY CONSTRAINTS SHOULD BE CONSIDERED DURING FINAL DESIGN

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STATE OF FLORIDA  
 DEPARTMENT OF TRANSPORTATION

OSCEOLA ROUNDABOUTS  
 LONG-TERM IMPROVEMENTS

SHEET NO.

4



**Appendix H:**  
Improvements Cost Estimates

**ENGINEER'S OPINION OF PROBABLE COST**

**SHORT-TERM IMPROVEMENTS**

**Marigold Avenue Access Management**

PAY ITEM	PAY ITEM DESCRIPTION	QUANTITY	UNIT	FDOT UNIT COST 02/01/19 - 01/31/20 AREA 08	PROBABLE UNIT COST (10% INCREASE)	TOTAL
<b>I. EARTHWORK</b>						
104-10-3	SEDIMENT BARRIER		LF	\$1.40	\$1.54	\$0.00
110-1-1	CLEARING & GRUBBING		AC	\$10,076.11	\$11,083.72	\$0.00
110-4-10	REMOVAL OF EXIST CONC		SY	\$20.23	\$22.25	\$0.00
120-6	EMBANKMENT		CY	\$12.38	\$13.62	\$0.00
160-4	TYPE B STABILIZATION		SY	\$7.84	\$8.62	\$0.00
<b>SUBTOTAL I</b>						<b>\$0.00</b>
<b>II. ROADWAY</b>						
285-709	OPTIONAL BASE, BASE GROUP 9		SY	\$20.04	\$22.04	\$0.00
327-70-1	MILLING EXIST ASPH PAVT, 1" AVG DEPTH		SY	\$2.09	\$2.30	\$0.00
334-1-12	SUPERPAVE ASPH CONC, TRAF B, PG 76-22		TN	\$113.08	\$124.39	\$0.00
337-7-81	ASPH CONC FC, TRAFFIC B, FC-12.5, PG 76-22		TN	\$119.68	\$131.65	\$0.00
350-30-13*	CONC PAVEMENT FOR ROUNDABOUT APRON, 12"		SY	\$144.71	\$159.18	\$0.00
425-1-351	INLETS, CURB, TYPE P-5, <10'		EA	\$5,116.84	\$5,628.52	\$0.00
425-1-361	INLETS, CURB, TYPE P-6, <10'		EA	\$5,075.95	\$5,583.55	\$0.00
425-1-521	INLETS, DT BOT, TYPE C, <10'		EA	\$3,417.38	\$3,759.12	\$0.00
425-2-61	MANHOLES, P-8, <10'		EA	\$4,515.33	\$4,966.86	\$0.00
430-175-118	PIPE CULV, OPT MATL, ROUND, 18"S/CD		LF	\$92.15	\$101.37	\$0.00
430-982-125	MITERED END SECT, OPTIONAL RD, 18" CD		EA	\$1,699.73	\$1,869.70	\$0.00
520-1-10	CONCRETE CURB & GUTTER, TYPE F		LF	\$29.99	\$32.99	\$0.00
520-1-7	CONCRETE CURB & GUTTER, TYPE E		LF	\$27.71	\$30.48	\$0.00
520-2-4	CONCRETE CURB, TYPE D		LF	\$23.82	\$26.20	\$0.00
520-2-8*	CONCRETE CURB, TYPE RA		LF	\$22.90	\$25.19	\$0.00
520-5-11	TRAF SEP CONC-TYPE I, 4' WIDE		LF	\$57.12	\$62.83	\$0.00
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"		SY	\$61.39	\$67.53	\$0.00
527-2	DETECTABLE WARNINGS		SF	\$31.08	\$34.19	\$0.00
570-1-2	PERFORMANCE TURF, SOD		SY	\$2.85	\$3.14	\$0.00
<b>SUBTOTAL II</b>						<b>\$0.00</b>
<b>III. SIGNING &amp; STRIPING</b>						
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	5	AS	\$366.95	\$403.65	\$2,018.23
700-12-22*	SIGN BEACON, F&I GROUND MOUNT- SOLAR POWERED, TWO BEACONS		AS	\$5,964.68	\$6,561.15	\$0.00
700-1-50	SINGLE POST SIGN, RELOCATE		AS	\$239.50	\$263.45	\$0.00
700-1-60	SINGLE POST SIGN, REMOVE		AS	\$33.27	\$36.60	\$0.00
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	26	EA	\$230.01	\$253.01	\$6,578.29
700-3-601	SIGN PANEL, REMOVE, UP TO 12 SF	26	EA	\$42.17	\$46.39	\$1,206.06
700-5-22	INTERNAL ILLUM SIGN, F&I OM, 12-18 SF		EA	\$3,625.49	\$3,988.04	\$0.00
700-13-15	RETROREFLECTIVE SIGN STRIP- F&I, 5'	6	EA	\$70.72	\$77.79	\$466.75
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	54	EA	\$3.45	\$3.80	\$204.93
711-11-124	THERMOPLASTIC, STD, WHITE, SOLID, 18"		LF	\$4.23	\$4.65	\$0.00
711-11-160	THERMOPLASTIC, STD, WHITE, MESSAGE	22	EA	\$148.17	\$162.99	\$3,585.71
711-11-170	THERMOPLASTIC, STD, WHITE, ARROW		EA	\$67.59	\$74.35	\$0.00
711-11-224	THERMOPLASTIC, STD, YELLOW, SOLID, 18"		LF	\$3.90	\$4.29	\$0.00
711-14-123	THERMOPLASTIC, PREFORM, WHITE, SOLID, 12"	550	LF	\$11.83	\$13.01	\$7,157.15
711-14-125	THERMOPLASTIC, PREFORM, WHITE, SOLID, 24"	900	LF	\$15.30	\$16.83	\$15,147.00
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"		GM	\$4,040.82	\$4,444.90	\$0.00
711-16-131	THERMOPLASTIC, STD-OTH, WHITE, SKIP, 6"		GM	\$1,245.19	\$1,369.71	\$0.00
711-16-201	THERMOPLASTIC, STD-OTH, YELLOW, SOLID, 6"	0.57	GM	\$4,104.28	\$4,514.71	\$2,574.93
711-16-231	THERMOPLASTIC, STD-OTH, YELLOW, SKIP, 6"		GM	\$1,318.12	\$1,449.93	\$0.00
711-17	THERMOPLASTIC, REMOVE	1,500	SF	\$4.83	\$5.31	\$7,969.50
<b>SUBTOTAL III</b>						<b>\$38,939.05</b>
<b>IV. TOTALS</b>						
<b>SUBTOTAL I+II+III</b>						<b>\$38,939.05</b>
<b>MOBILIZATION (10%)</b>						<b>\$3,893.90</b>
<b>TEMPORARY TRAFFIC CONTROL (15%)</b>						<b>\$6,424.94</b>
<b>CONSTRUCTION TOTAL</b>						<b>\$49,257.90</b>
<b>ENGINEERING (30%)</b>						<b>\$14,777.37</b>
<b>CEI (21.90%)</b>						<b>\$10,787.48</b>
<b>P.E.C.E.I. Total</b>						<b>\$25,564.85</b>
<b>GRAND TOTAL</b>						<b>\$74,822.74</b>

\*Unit cost taken from FDOT Statewide Historical Cost from 02/01/2019 to 01/31/2020

**ENGINEER'S OPINION OF PROBABLE COST  
LONG-TERM IMPROVEMENTS  
Marigold Avenue Access Management**

PAY ITEM	PAY ITEM DESCRIPTION	QUANTITY	UNIT	FDOT UNIT COST 02/01/19 - 01/31/20 AREA 08	PROBABLE UNIT COST (10% INCREASE)	TOTAL
<b>I. EARTHWORK</b>						
104-10-3	SEDIMENT BARRIER	15,000	LF	\$1.40	\$1.54	\$23,100.00
110-1-1	CLEARING & GRUBBING	5.00	AC	\$10,076.11	\$11,083.72	\$55,418.61
110-4-10	REMOVAL OF EXIST CONC	1,500	SY	\$20.23	\$22.25	\$33,379.50
120-1	REGULAR EXCAVATION	2,700	CY	\$8.32	\$9.15	\$24,710.40
120-6	EMBANKMENT	2,700	CY	\$12.38	\$13.62	\$36,768.60
160-4	TYPE B STABILIZATION	30,000	SY	\$7.84	\$8.62	\$258,720.00
<b>SUBTOTAL I</b>						<b>\$432,097.11</b>
<b>II. ROADWAY</b>						
285-709	OPTIONAL BASE, BASE GROUP 9	22,715	SY	\$20.04	\$22.04	\$500,729.46
327-70-6	MILLING EXIST ASPH PAVT, 1.5" AVG DEPTH	5,000	SY	\$2.09	\$2.30	\$11,495.00
334-1-12	SUPERPAVE ASPH CONC, TRAF B, PG 76-22	1,800	TN	\$113.08	\$124.39	\$223,898.40
337-7-81	ASPH CONC FC, TRAFFIC B, FC-12.5, PG 76-22	2,000	TN	\$119.68	\$131.65	\$263,296.00
350-30-13*	CONC PAVEMENT FOR ROUNDABOUT APRON, 12"	900	SY	\$144.71	\$159.18	\$143,262.90
425-1-351	INLETS, CURB, TYPE P-5, <10'	24	EA	\$5,116.84	\$5,628.52	\$135,084.58
425-1-361	INLETS, CURB, TYPE P-6, <10'	5	EA	\$5,075.95	\$5,583.55	\$27,917.73
425-2-61	MANHOLES, P-8, <10'	5	EA	\$4,515.33	\$4,966.86	\$24,834.32
430-175-118	PIPE CULV, OPT MATL, ROUND, 18"S/CD	2,500	LF	\$92.15	\$101.37	\$253,412.50
430-982-125	MITERED END SECT, OPTIONAL RD, 18" CD	37	EA	\$1,699.73	\$1,869.70	\$69,179.01
520-1-10	CONCRETE CURB & GUTTER, TYPE F	10,350	LF	\$29.99	\$32.99	\$341,436.15
520-1-7	CONCRETE CURB & GUTTER, TYPE E	11,200	LF	\$27.71	\$30.48	\$341,387.20
520-2-4	CONCRETE CURB, TYPE D	1,400	LF	\$23.82	\$26.20	\$36,682.80
520-2-8*	CONCRETE CURB, TYPE RA	1,800	LF	\$22.90	\$25.19	\$45,342.00
520-5-11	TRAF SEP CONC-TYPE I, 4' WIDE	300	LF	\$57.12	\$62.83	\$18,849.60
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	2,900	SY	\$61.39	\$67.53	\$195,834.10
527-2	DETECTABLE WARNINGS	350	SF	\$31.08	\$34.19	\$11,965.80
570-1-2	PERFORMANCE TURF, SOD	11,000	SY	\$2.85	\$3.14	\$34,485.00
630-2-11	CONDUIT, F&I, OPEN TRENCH	3,500	LF	\$7.45	\$8.20	\$28,682.50
635-2-11	PULL & SPLICE BOX, F&I, 13"X24"	40	EA	\$742.86	\$817.15	\$32,685.84
715-1-12	LIGHT CONDUCTORS, F&I, INSULATED, NO. 8-6	3,500	LF	\$1.44	\$1.58	\$5,544.00
715-4-11	LIGHT POLE COMPLETE, F&I- STD, 30'	33	EA	\$3,753.87	\$4,129.26	\$136,265.48
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	33	EA	\$623.63	\$685.99	\$22,637.77
715-7-21*	LOAD CENTER, REWORK, SECONDARY VOLTAGE	5	EA	\$2,978.14	\$3,275.95	\$16,379.77
<b>SUBTOTAL II</b>						<b>\$2,921,287.90</b>
<b>III. SIGNING &amp; STRIPING</b>						
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	77	AS	\$366.95	\$403.85	\$31,080.67
700-12-22*	SIGN BEACON, F&I GROUND MOUNT- SOLAR POWERED, TWO BEACONS	4	AS	\$5,964.68	\$6,561.15	\$26,244.59
700-1-50	SINGLE POST SIGN, RELOCATE	14	AS	\$239.50	\$263.45	\$3,688.30
700-1-60	SINGLE POST SIGN, REMOVE		AS	\$33.27	\$36.60	\$0.00
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF		EA	\$230.01	\$253.01	\$0.00
700-3-601	SIGN PANEL, REMOVE, UP TO 12 SF		EA	\$42.17	\$46.39	\$0.00
700-5-22	INTERNAL ILLUM SIGN, F&I OM, 12-18 SF		EA	\$3,625.49	\$3,988.04	\$0.00
711-11-124	THERMOPLASTIC, STD, WHITE, SOLID, 18"		LF	\$4.23	\$4.65	\$0.00
711-11-160	THERMOPLASTIC, STD, WHITE, MESSAGE	12	EA	\$148.17	\$162.99	\$1,955.84
711-11-170	THERMOPLASTIC, STD, WHITE, ARROW	3	EA	\$67.59	\$74.35	\$223.05
711-11-224	THERMOPLASTIC, STD, YELLOW, SOLID, 18"	100	LF	\$3.90	\$4.29	\$429.00
711-14-123	THERMOPLASTIC, PREFORM, WHITE, SOLID, 12"	700	LF	\$11.83	\$13.01	\$9,109.10
711-14-125	THERMOPLASTIC, PREFORM, WHITE, SOLID, 24"	1,310	LF	\$15.30	\$16.83	\$22,047.30
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"	2.15	GM	\$4,040.82	\$4,444.90	\$9,554.86
711-16-131	THERMOPLASTIC, STD-OTH, WHITE, SKIP, 6"	0.09	GM	\$1,245.19	\$1,369.71	\$129.71
711-16-201	THERMOPLASTIC, STD-OTH, YELLOW, SOLID, 6"	2.48	GM	\$4,104.28	\$4,514.71	\$11,201.26
711-16-231	THERMOPLASTIC, STD-OTH, YELLOW, SKIP, 6"		GM	\$1,318.12	\$1,449.93	\$0.00
711-17-1	THERMOPLASTIC, REMOVE	1.36	SF	\$4.83	\$5.31	\$7.23
<b>SUBTOTAL III</b>						<b>\$115,670.90</b>
<b>IV. TOTALS</b>						
<b>SUBTOTAL I+II+III</b>						<b>\$3,469,055.90</b>
<b>MOBILIZATION (10%)</b>						<b>\$346,905.59</b>
<b>TEMPORARY TRAFFIC CONTROL (15%)</b>						<b>\$572,394.22</b>
<b>CONSTRUCTION TOTAL</b>						<b>\$4,388,355.72</b>
<b>ENGINEERING (30%)</b>						<b>\$1,316,506.72</b>
<b>CEI (10.32%)</b>						<b>\$452,878.31</b>
<b>P.E.C.E.I. Total</b>						<b>\$1,769,385.03</b>
<b>GRAND TOTAL</b>						<b>\$6,157,740.74</b>

\*Unit cost taken from FDOT Statewide Historical Cost from 02/01/2019 to 01/31/2020

## **Appendix I:**

B/C Analysis, Net Present Value, and  
Crash Modification Factor



## CMF / CRF Details

**CMF ID: 5228**

**Conversion of intersection into low-speed roundabout**

**Description: Conversion of intersection into low-speed roundabout**

**Prior Condition: The intersection was operating under no control, yield, TWSC, AWSC, or signal control.**

**Category: Intersection geometry**

**Study: [Evaluation of Roundabout Safety, Qin et al., 2013](#)**

**Star Quality Rating:**



[\[View score details\]](#)

### Crash Modification Factor (CMF)

**Value:** 0.473

**Adjusted Standard Error:**

**Unadjusted Standard Error:** 0.113

### Crash Reduction Factor (CRF)

**Value:** 52.73 (This value indicates a **decrease** in crashes)

**Adjusted Standard Error:**

<b>Unadjusted Standard Error:</b>	11.3
-----------------------------------	------

### Applicability

<b>Crash Type:</b>	All
--------------------	-----

<b>Crash Severity:</b>	K (fatal),A (serious injury),B (minor injury),C (possible injury)
------------------------	---

<b>Roadway Types:</b>	Not specified
-----------------------	---------------

<b>Number of Lanes:</b>	2,4
-------------------------	-----

<b>Road Division Type:</b>	All
----------------------------	-----

<b>Speed Limit:</b>	
---------------------	--

<b>Area Type:</b>	All
-------------------	-----

<b>Traffic Volume:</b>	
------------------------	--

<b>Time of Day:</b>	All
---------------------	-----

### *If countermeasure is intersection-based*

<b>Intersection Type:</b>	Roadway/roadway (not interchange related)
---------------------------	---

<b>Intersection Geometry:</b>	3-leg,4-leg
-------------------------------	-------------

<b>Traffic Control:</b>	Other
-------------------------	-------

<b>Major Road Traffic Volume:</b>	4100 (total entering) to 48100 (total entering) Annual Average Daily Traffic (AADT)
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<b>Minor Road Traffic Volume:</b>	
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### Development Details

<b>Date Range of Data Used:</b>	1994 to 2010
---------------------------------	--------------

<b>Municipality:</b>	Statewide
----------------------	-----------

<b>State:</b>	WI
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<b>Country:</b>	USA
<b>Type of Methodology Used:</b>	Before/after using empirical Bayes or full Bayes
<b>Sample Size Used:</b>	Crashes
<b>Before Sample Size Used:</b>	55 Crashes
<b>After Sample Size Used:</b>	26 Crashes

<b>Other Details</b>	
<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Aug-01-2013
<b>Comments:</b>	- Study included three-yearbefore and after crash datafor each site.- In this case, the reported before-crashes represent the "expected crashes" after treatment.- "Traffic Control" includes intersections with yield control, two-way stop-control, all-way stop-control, and signal control.- Reported traffic volume is total entering volume.

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This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

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# CMF / CRF Details

**CMF ID: 7999**

**Install left-turn lane**

**Description:**

**Prior Condition: Intersections without left turn lanes**

**Category: Intersection geometry**

**Study: [Safety Evaluation of Signal Installation With and Without Left Turn Lanes on Two Lane Roads in Rural and Suburban Areas, Srinivasan et al., 2014](#)**

**Star Quality Rating:**



[\[View score details\]](#)

## Crash Modification Factor (CMF)

**Value:** 0.566

**Adjusted Standard Error:**

**Unadjusted Standard Error:** 0.113

## Crash Reduction Factor (CRF)

**Value:** 43.4 (This value indicates a **decrease** in crashes)

**Adjusted Standard Error:**



<b>Unadjusted Standard Error:</b>	11.3
-----------------------------------	------

### Applicability

<b>Crash Type:</b>	All
--------------------	-----

<b>Crash Severity:</b>	K (fatal),A (serious injury),B (minor injury),C (possible injury)
------------------------	---

<b>Roadway Types:</b>	Not specified
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<b>Number of Lanes:</b>	2
-------------------------	---

<b>Road Division Type:</b>	
----------------------------	--

<b>Speed Limit:</b>	
---------------------	--

<b>Area Type:</b>	All
-------------------	-----

<b>Traffic Volume:</b>	
------------------------	--

<b>Time of Day:</b>	All
---------------------	-----

### *If countermeasure is intersection-based*

<b>Intersection Type:</b>	Not specified
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<b>Intersection Geometry:</b>	3-leg
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<b>Traffic Control:</b>	Signalized
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<b>Major Road Traffic Volume:</b>	2981 to 18248 Annual Average Daily Traffic (AADT)
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<b>Minor Road Traffic Volume:</b>	972 to 13880 Annual Average Daily Traffic (AADT)
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### Development Details

<b>Date Range of Data Used:</b>	1992 to 2012
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<b>Municipality:</b>	
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<b>State:</b>	NC
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<b>Country:</b>	
<b>Type of Methodology Used:</b>	Before/after using empirical Bayes or full Bayes
<b>Sample Size Used:</b>	

<b>Other Details</b>	
<b>Included in Highway Safety Manual?</b>	No
<b>Date Added to Clearinghouse:</b>	Nov-10-2016
<b>Comments:</b>	The CMF was developed for both rural and suburban areas.

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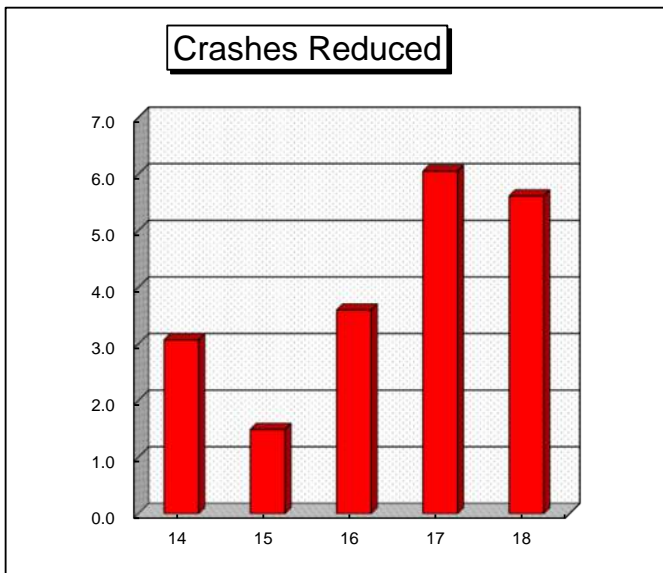
## STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION SAFETY OFFICE ANNUAL BENEFIT COST ANALYSIS

1. SUBMITTED BY ETM, Inc. FM # \_\_\_\_\_ 5. X SAFETY PRIORITY  
 2. DATE SUBMITTED 10/5/2019 \_\_\_\_\_ ENV. STUDY  
 3. PROJECT NO. 15-225-28 \_\_\_\_\_ SKID (ID) \_\_\_\_\_  
 4. ALTERNATIVE NO. Long-Term SN \_\_\_\_\_ SPEED 45  
 6. DISTRICT 5 COUNTY Osceola SECTION \_\_\_\_\_ SR \_\_\_\_\_ U.S. ROAD \_\_\_\_\_  
 7. BEGIN MILE POST \_\_\_\_\_ END MILE POST \_\_\_\_\_ LENGTH \_\_\_\_\_ NODE \_\_\_\_\_

10. PROPOSED IMPROVEMENTS (LIST AND DISCUSS) Construct roundabouts on Marigold Avenue at the intersections of Peabody Road, Laurel Avenue, and San Lorenzo Road. Construct a northbound left-turn bay at the Marigold Avenue and San Miguel Road intersection.

YEAR	14	15	16	17	18	AVG
11. NO. OF CRASHES	6	3	7	12	11	7.8
12. NO. CRASHES POTENTIALLY REDUCED BY PROJECT	3.1	1.5	3.6	6.0	5.6	3.964

14. CRASH INFORMATION FOR FACILITY	
COST/CRASH \$	\$267,397
CRASH CLEANUP \$	-100
INTEREST RATE	4%



15. ANNUAL COST OF IMPROVEMENTS				
TYPE	COST	LIFE	CRF	AN'L COST
A. R-O-W	\$0	50	0.0725	\$0
B. PECEI	\$1,769,385	20	0.0736	\$130,227
C. EARTHWK	\$432,097	50	0.0725	\$31,327
D. SIGNAL	\$0	15	0.0899	\$0
E. SGN/STRIP	\$115,671	8	0.1485	\$17,177
F. RDWY	\$2,921,288	20	0.0736	\$215,007
G. MOT/MOBIL	\$919,300	20	0.0736	\$67,660
H. LIGHTING				\$0
I. CRASH CLEANUP				\$396
J. TOTAL				\$461,795

16. BENEFIT	\$1,059,870.79
17. BENEFIT / COST	2.30

PREPARED BY: Adriann LeBlanc, PE APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

COMMENTS/CRASH REDUCTION METHOD: Cost per crash based on the FDOT's Average Cost per Crash 2-3 Lanes, Undivided, Suburban  
 Used CMF ID 5228 - Conversion of intersection into low-speed roundabout. CMF value = 0.473 and CRF value = 52.73%.  
 Used CMF ID 7999 - Install left-turn lane. CMF value = 0.566 and CRF value = 43.4%.

HIGH CRASH SEGMENTS: \_\_\_\_\_



**Appendix J:**  
Turning Movement Volumes



**15 MINUTE TURNING MOVEMENT COUNTS**

*(Trucks Only)*

DATE: May 22, 2019 (Wednesday)

CITY: Poinciana

LATITUDE: 0

LOCATION: Marigold Av & Peabody Rd

COUNTY: Osceola County

LONGITUDE: 0

TIME BEGIN	Marigold Av NORTHBOUND					Marigold Av SOUTHBOUND					N/S TOTAL	Peabody Rd EASTBOUND					Peabody Rd WESTBOUND					E/W TOTAL	GRAND TOTAL	
	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL			
06:30 AM	0	1	0	0	1	0	1	0	0	1	2	1	0	1	0	2	0	0	0	0	0	0	2	4
06:45 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	1	2
<b>TOTAL</b>	1	1	0	0	2	0	1	0	0	1	3	1	0	2	0	3	0	0	0	0	0	0	3	6
07:00 AM	0	1	1	0	2	0	2	0	0	2	4	0	1	0	0	1	1	0	0	0	1	2	6	
07:15 AM	1	1	1	0	3	0	2	1	0	3	6	0	0	1	0	1	0	0	0	0	0	1	7	
07:30 AM	0	1	1	0	2	0	1	0	0	1	3	0	0	2	0	2	0	1	0	0	1	3	6	
07:45 AM	0	0	0	0	0	0	1	0	0	1	1	0	0	1	0	1	0	1	0	0	1	2	3	
<b>TOTAL</b>	1	3	3	0	7	0	6	1	0	7	14	0	1	4	0	5	1	2	0	0	3	8	22	
08:00 AM	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	1	2	
08:15 AM	0	1	1	0	2	0	1	2	0	3	5	0	1	0	0	1	0	0	0	0	0	1	6	
08:30 AM	0	1	0	0	1	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	2	
08:45 AM	0	1	0	0	1	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	2	
<b>TOTAL</b>	0	4	1	0	5	0	2	3	0	5	10	0	1	0	0	1	0	1	0	0	1	2	12	
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
02:15 PM	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	1	2	
02:30 PM	3	0	0	0	3	0	0	0	0	0	3	0	0	2	0	2	0	0	0	0	0	2	5	
02:45 PM	1	0	2	0	3	0	2	0	0	2	5	1	0	1	0	2	1	0	0	0	1	3	8	
<b>TOTAL</b>	4	1	2	0	7	0	2	0	0	2	9	1	0	3	0	4	1	1	0	0	2	6	15	
03:00 PM	1	0	1	0	2	0	0	1	0	1	3	0	0	1	0	1	0	0	0	0	0	1	4	
03:15 PM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	
03:30 PM	1	0	1	0	2	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	1	1	3	
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	2	2	
<b>TOTAL</b>	2	0	2	0	4	0	1	1	0	2	6	1	0	1	0	2	1	1	0	0	2	4	10	
04:00 PM	1	1	1	0	3	0	1	0	0	1	4	1	0	1	0	2	0	0	0	0	0	2	6	
04:15 PM	1	2	0	0	3	0	0	0	0	0	3	1	0	1	0	2	0	0	0	0	0	2	5	
04:30 PM	0	0	0	0	0	0	1	0	0	1	1	0	1	0	0	1	0	0	0	0	0	1	2	
04:45 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	2	0	2	0	0	0	0	0	2	3	
<b>TOTAL</b>	3	3	1	0	7	0	2	0	0	2	9	2	1	4	0	7	0	0	0	0	0	7	16	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
05:15 PM	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	1	2	
05:30 PM	0	0	1	0	1	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	2	
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>TOTAL</b>	0	1	1	0	2	0	0	1	0	1	3	0	0	0	0	0	1	0	0	0	1	1	4	
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>TOTAL</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>TOTAL</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>AM Peak</b> 07:00 AM to 08:00 AM	1	3	3	0	7	0	6	1	0	7	14	0	1	4	0	5	1	2	0	0	3	8	22	
<b>Midday Peak</b> 02:45 PM to 03:45 PM	3	0	4	0	7	0	3	1	0	4	11	1	0	2	0	3	2	0	0	0	2	5	16	
<b>PM Peak</b> 05:30 PM to 06:30 PM	0	0	1	0	1	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	2	







**15 MINUTE TURNING MOVEMENT COUNTS**

(Cars and Trucks)

DATE: August 27, 2019 (Tuesday)

CITY: Poinciana

LATITUDE: 0

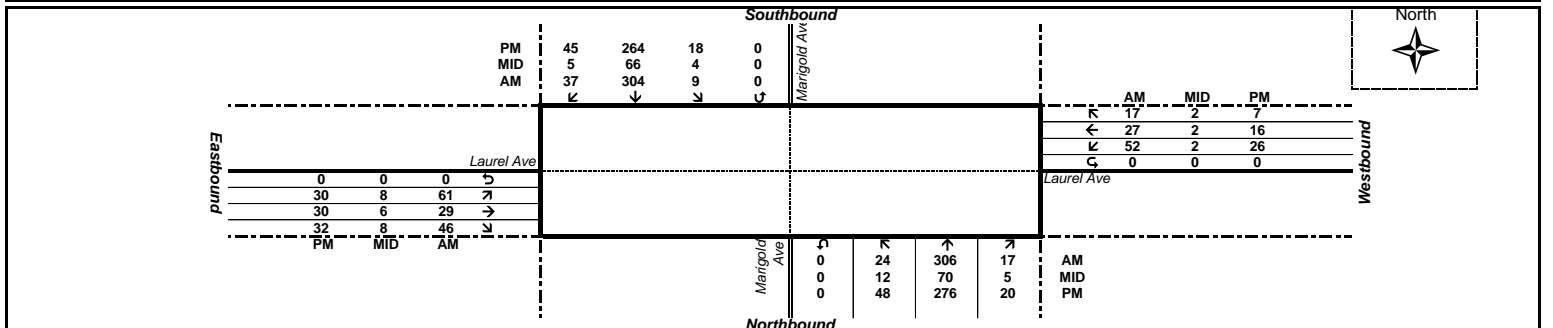
LOCATION: Marigold Ave & Laurel Ave

COUNTY: Osceola County

LONGITUDE: 0

TIME BEGIN	Marigold Ave NORTHBOUND					Marigold Ave SOUTHBOUND					N/S TOTAL	Laurel Ave EASTBOUND					Laurel Ave WESTBOUND					E/W TOTAL	GRAND TOTAL
	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		
06:30 AM	1	79	0	0	80	0	60	1	0	61	141	18	0	12	0	30	6	1	5	0	12	42	183
06:45 AM	1	61	1	0	63	3	52	3	0	58	121	13	1	9	0	23	3	2	4	0	9	32	153
<b>TOTAL</b>	2	140	1	0	143	3	112	4	0	119	262	31	1	21	0	53	9	3	9	0	21	74	336
07:00 AM	7	77	1	0	85	0	50	3	0	53	138	15	1	5	0	21	7	5	6	0	18	39	177
07:15 AM	6	68	4	0	78	1	47	2	0	50	128	15	1	8	0	24	6	0	4	0	10	34	162
07:30 AM	7	61	2	0	70	2	48	6	0	56	126	8	10	12	0	30	14	2	5	0	21	51	177
07:45 AM	3	47	4	0	54	4	74	9	0	87	141	13	5	11	0	29	12	11	5	0	28	57	198
<b>TOTAL</b>	23	253	11	0	287	7	219	20	0	246	533	51	17	36	0	104	39	18	20	0	77	181	714
08:00 AM	8	70	4	0	82	1	72	13	0	86	168	17	11	11	0	39	13	8	2	0	23	62	230
08:15 AM	0	60	3	0	63	1	63	7	0	71	134	8	2	4	0	14	7	6	1	0	14	28	162
08:30 AM	5	54	1	0	60	1	34	4	0	39	99	12	6	7	0	25	2	9	1	0	12	37	136
08:45 AM	7	34	0	0	41	0	37	5	0	42	83	5	4	14	0	23	11	7	2	0	20	43	126
<b>TOTAL</b>	20	218	8	0	246	3	206	29	0	238	484	42	23	36	0	101	33	30	6	0	69	170	654
02:00 PM	14	54	2	0	70	0	68	4	0	72	142	4	2	6	0	12	4	4	0	0	8	20	162
02:15 PM	6	64	7	0	77	2	49	5	0	56	133	0	1	4	0	5	6	0	1	0	7	12	145
02:30 PM	7	53	4	0	64	0	58	8	0	66	130	5	4	4	0	13	10	3	0	0	13	26	156
02:45 PM	12	70	5	0	87	4	66	5	0	75	162	8	6	8	0	22	2	2	2	0	6	28	190
<b>TOTAL</b>	39	241	18	0	298	6	241	22	0	269	567	17	13	22	0	52	22	9	3	0	34	86	653
03:00 PM	12	73	6	0	91	2	55	10	0	67	158	9	7	9	0	25	7	3	2	0	12	37	195
03:15 PM	12	74	7	0	93	12	75	17	0	104	197	9	5	9	0	23	6	6	3	0	15	38	235
03:30 PM	12	67	1	0	80	3	64	12	0	79	159	7	12	9	0	28	8	5	0	0	13	41	200
03:45 PM	12	62	6	0	80	1	70	6	0	77	157	5	6	5	0	16	5	2	2	0	9	25	182
<b>TOTAL</b>	48	276	20	0	344	18	264	45	0	327	671	30	30	32	0	92	26	16	7	0	49	141	812
04:00 PM	18	53	2	0	73	4	80	13	0	97	170	3	2	7	0	12	6	3	1	0	10	22	192
04:15 PM	9	70	5	0	84	2	71	8	0	81	165	1	3	9	0	13	3	7	1	0	11	24	189
04:30 PM	16	68	3	0	87	0	69	15	0	84	171	6	10	8	0	24	4	4	1	0	9	33	204
04:45 PM	12	59	3	0	74	3	61	17	0	81	155	5	3	7	0	15	6	3	0	0	9	24	179
<b>TOTAL</b>	55	250	13	0	318	9	281	53	0	343	661	15	18	31	0	64	19	17	3	0	39	103	764
05:00 PM	6	62	5	0	73	1	82	10	0	93	166	5	2	4	0	11	6	1	0	0	7	18	184
05:15 PM	9	78	4	0	91	3	83	9	0	95	186	6	4	5	0	15	5	2	0	0	7	22	208
05:30 PM	13	69	3	0	85	2	83	11	0	96	181	4	2	8	0	14	3	2	2	0	7	21	202
05:45 PM	4	75	5	0	84	1	72	14	0	87	171	4	7	5	0	16	5	4	2	0	11	27	198
<b>TOTAL</b>	32	284	17	0	333	7	320	44	0	371	704	19	15	22	0	56	19	9	4	0	32	88	792
06:00 PM	10	57	6	0	73	2	70	12	0	84	157	6	5	10	0	21	3	2	1	0	6	27	184
06:15 PM	5	58	5	0	68	2	68	16	0	86	154	5	6	5	0	16	6	4	0	0	10	26	180
06:30 PM	12	62	6	0	80	1	52	8	0	61	141	4	4	5	0	13	6	6	0	0	12	25	166
06:45 PM	15	80	2	0	97	1	60	17	0	78	175	3	5	4	0	12	7	3	0	0	10	22	197
<b>TOTAL</b>	42	257	19	0	318	6	250	53	0	309	627	18	20	24	0	62	22	15	1	0	38	100	727
07:00 PM	10	54	2	0	66	1	65	15	0	81	147	4	8	6	0	18	4	6	0	0	10	28	175
07:15 PM	8	57	2	0	67	0	56	4	0	60	127	2	1	7	0	10	6	1	0	0	7	17	144
<b>TOTAL</b>	18	111	4	0	133	1	121	19	0	141	274	6	9	13	0	28	10	7	0	0	17	45	319

<b>AM Peak</b> 07:15 AM to 08:15 AM	24	306	17	0	347	9	304	37	0	350	697	61	29	46	0	136	52	27	17	0	96	232	929	Peak Hour Factor: 1.010
<b>Midday Peak</b> 02:45 PM to 03:45 PM	12	70	5	0	87	4	66	5	0	75	162	8	6	8	0	22	2	2	2	0	6	28	190	Peak Hour Factor: 0.202
<b>PM Peak</b> 03:00 PM to 04:00 PM	48	276	20	0	344	18	264	45	0	327	671	30	30	32	0	92	26	16	7	0	49	141	812	Peak Hour Factor: 0.864



**15 MINUTE TURNING MOVEMENT COUNTS**

*(Trucks Only)*

DATE: August 27, 2019 (Tuesday)

CITY: Poinciana      LATITUDE: 0

LOCATION: Marigold Ave & Laurel Ave

COUNTY: Osceola County      LONGITUDE: 0

TIME BEGIN	Marigold Ave NORTHBOUND					Marigold Ave SOUTHBOUND					N/S TOTAL	Laurel Ave EASTBOUND					Laurel Ave WESTBOUND					E/W TOTAL	GRAND TOTAL
	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		
06:30 AM	0	2	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	1	1	0	2	2	0	0	0	0	0	0	0	1	0	1	1	1
<b>TOTAL</b>	0	2	0	0	2	0	1	1	0	2	4	0	0	0	0	0	0	0	1	0	1	1	1
07:00 AM	0	0	0	0	0	0	1	1	0	2	2	0	1	1	0	2	0	1	0	0	1	3	5
07:15 AM	0	1	0	0	1	0	2	0	0	2	3	0	0	0	0	0	1	0	0	0	1	1	4
07:30 AM	1	1	0	0	2	0	1	0	0	2	4	0	0	0	0	0	0	0	1	0	1	1	5
07:45 AM	0	2	0	0	2	0	1	0	0	1	3	1	0	0	0	1	0	0	0	0	0	1	4
<b>TOTAL</b>	1	4	0	0	5	0	5	2	0	7	12	1	1	1	0	3	1	1	1	0	3	6	18
08:00 AM	0	1	0	0	1	0	2	1	0	3	4	1	0	0	0	1	1	0	1	0	2	3	7
08:15 AM	0	3	0	0	3	0	4	1	0	5	8	0	1	0	0	1	1	0	0	0	1	2	10
08:30 AM	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0	0	0	0	1	2
08:45 AM	0	0	0	0	0	0	1	1	0	2	2	0	0	0	0	0	0	0	0	0	0	0	2
<b>TOTAL</b>	0	4	0	0	4	0	7	4	0	11	15	2	1	0	0	3	2	0	1	0	3	6	21
02:00 PM	0	0	0	0	0	0	1	1	0	2	2	0	0	0	0	0	0	1	0	0	1	1	3
02:15 PM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	2	2	1	0	5	0	1	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	6
<b>TOTAL</b>	2	2	1	0	5	0	3	1	0	4	9	0	0	0	0	0	0	1	0	0	1	1	10
03:00 PM	0	4	0	0	4	1	0	0	0	1	5	0	0	0	0	0	1	1	1	0	3	3	8
03:15 PM	0	1	0	0	1	0	0	2	0	2	3	0	0	0	0	0	0	0	1	0	1	1	4
03:30 PM	0	1	0	0	1	0	4	1	0	5	6	1	1	0	0	2	0	0	0	0	0	2	8
03:45 PM	2	0	0	0	2	0	1	1	0	2	4	0	0	1	0	1	0	0	0	0	0	1	5
<b>TOTAL</b>	2	6	0	0	8	1	5	4	0	10	18	1	1	1	0	3	1	1	2	0	4	7	25
04:00 PM	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	1	2
04:30 PM	0	1	1	0	2	0	1	1	0	2	4	0	0	0	0	0	0	0	0	0	0	0	4
04:45 PM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	1	0	0	1	1	2
<b>TOTAL</b>	0	3	1	0	4	0	2	1	0	3	7	0	0	1	0	1	0	1	0	0	1	2	9
05:00 PM	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	1	0	0	1	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	0	1	1	0	2	0	1	2	0	3	5	0	0	0	0	0	0	0	0	0	0	0	5
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	0	2	1	0	3	0	2	3	0	5	8	0	0	0	0	0	0	0	0	0	0	0	8
06:00 PM	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
06:15 PM	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	0	0	0	0	0	0	0	2	0	2	2	0	0	0	0	0	0	0	0	0	0	0	2
07:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 PM	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
<b>TOTAL</b>	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
<b>AM Peak</b> 07:15 AM to 08:15 AM	1	8	0	0	9	0	10	3	0	13	22	2	1	0	0	3	3	0	2	0	5	8	30
<b>Midday Peak</b> 02:45 PM to 03:45 PM	2	2	1	0	5	0	1	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	6
<b>PM Peak</b> 03:00 PM to 04:00 PM	2	6	0	0	8	1	5	4	0	10	18	1	1	1	0	3	1	1	2	0	4	7	25

FLORIDA DEPARTMENT OF TRANSPORTATION

PEDESTRIAN MOVEMENT SUMMARY

SECTION 0  
STATE ROUTE  
OBSERVER

CITY Poinciana  
INTERSECTING ROUTE Marigold Av & Laurel Av  
DATE

COUNTY Osceola

REMARKS

FORM COMPLETED BY CM

Marigold Av  
SB ST NAME

6:30-7:30	7:30-8:30	8:30-9:30						2-3	3-4	4-5	5-6	6-7	7-8		Total
0	0	0						0	0	0	0	0	0		0
0	0	0						0	0	0	0	0	0		0
0	0	0						0	0	0	0	0	0		0



Laurel Av  
EB ST NAME

6:30-7:30	1	1	2
7:30-8:30	5	3	8
8:30-9:30	0	0	0
2-3	0	0	0
3-4	2	0	2
4-5	0	1	1
5-6	1	0	1
6-7	0	0	0
7-8	1	0	1
Total	10	5	15

6:30-7:30	0	1	1
7:30-8:30	0	0	0
8:30-9:30	0	0	0
2-3	0	0	0
3-4	0	0	0
4-5	0	0	0
5-6	0	0	0
6-7	0	0	0
7-8	0	0	0
Total	0	1	1

Laurel Av  
WB ST NAME

6:30-7:30	7:30-8:30	8:30-9:30						2-3	3-4	4-5	5-6	6-7	7-8		Total
6	2	0						0	0	0	0	6	0		14
2	0	0						0	0	9	0	0	2		13
8	2	0						0	0	9	0	6	2		27

Marigold Av  
NB ST NAME

FLORIDA DEPARTMENT OF TRANSPORTATION

BICYCLE MOVEMENT SUMMARY

SECTION 0  
STATE ROUTE  
OBSERVER

CITY Poinciana  
INTERSECTING ROUTE Marigold Av & Laurel Av  
DATE

COUNTY Osceola

REMARKS

FORM COMPLETED BY CM

Marigold Av

SB ST NAME

6:30-7:30	7:30-8:30	8:30-9:30						2-3	3-4	4-5	5-6	6-7	7-8			Total
0	0	0						0	0	0	0	0	0			0
0	0	0						0	0	0	0	0	0			0
0	0	0						0	0	0	0	0	0			0



Laurel Av

EB ST NAME

6:30-7:30	7:30-8:30	8:30-9:30			
0	0	0			
1	0	1			
0	0	0			
2-3	0	0	0		
3-4	0	0	0		
4-5	0	0	0		
5-6	1	0	1		
6-7	0	0	0		
7-8	0	0	0		
Total	2	0	2		

6:30-7:30	7:30-8:30	8:30-9:30			
0	0	0			
0	0	0			
0	0	0			
2-3	0	0	0		
3-4	0	0	0		
4-5	0	0	0		
5-6	0	0	0		
6-7	0	0	0		
7-8	0	0	0		
Total	0	0	0		

Laurel Av

WB ST NAME

6:30-7:30	7:30-8:30	8:30-9:30						2-3	3-4	4-5	5-6	6-7	7-8			Total
0	6	2						0	0	0	3	2	0			13
0	0	0						0	0	9	0	0	0			9
0	6	2						0	0	9	3	2	0			22

Marigold Av

NB ST NAME

**15 MINUTE TURNING MOVEMENT COUNTS**

*(Cars and Trucks)*

DATE: August 27, 2019 (Tuesday)

CITY: Poinciana

LATITUDE: 0

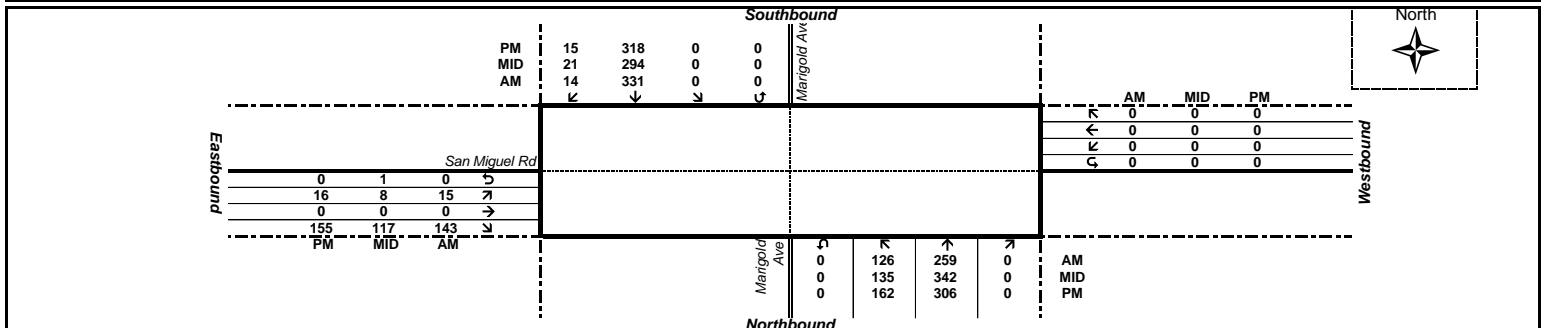
LOCATION: Marigold Ave & San Miguel Rd

COUNTY: Osceola County

LONGITUDE: 0

TIME BEGIN	Marigold Ave NORTHBOUND					Marigold Ave SOUTHBOUND					N/S TOTAL	San Miguel Rd EASTBOUND					WESTBOUND					E/W TOTAL	GRAND TOTAL
	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		
06:30 AM	8	67	0	0	75	0	83	1	0	84	159	3	0	25	0	28	0	0	0	0	0	28	187
06:45 AM	11	65	0	0	76	0	66	0	0	66	142	8	0	39	0	47	0	0	0	0	0	47	189
<b>TOTAL</b>	19	132	0	0	151	0	149	1	0	150	301	11	0	64	0	75	0	0	0	0	0	75	376
07:00 AM	16	70	0	0	86	0	53	1	0	54	140	8	0	35	0	43	0	0	0	0	0	43	183
07:15 AM	18	75	0	0	93	0	64	0	0	64	157	5	0	22	0	27	0	0	0	0	0	27	184
07:30 AM	21	72	0	0	93	0	75	2	0	77	170	4	0	33	0	37	0	0	0	0	0	37	207
07:45 AM	26	53	0	0	79	0	93	3	0	96	175	1	0	28	0	29	0	0	0	0	0	29	204
<b>TOTAL</b>	81	270	0	0	351	0	285	6	0	291	642	18	0	118	0	136	0	0	0	0	0	136	778
08:00 AM	35	75	0	0	110	0	91	3	0	94	204	8	0	37	0	45	0	0	0	0	0	45	249
08:15 AM	44	59	0	0	103	0	72	6	0	78	181	2	0	45	0	47	0	0	0	0	0	47	228
08:30 AM	37	56	0	0	93	0	41	1	0	42	135	4	0	27	0	31	0	0	0	0	0	31	166
08:45 AM	45	37	0	0	82	0	58	1	0	59	141	3	0	40	0	43	0	0	0	0	0	43	184
<b>TOTAL</b>	161	227	0	0	388	0	262	11	0	273	661	17	0	149	0	166	0	0	0	0	0	166	827
02:00 PM	22	70	0	0	92	0	74	1	0	75	167	1	0	28	0	29	0	0	0	0	0	29	196
02:15 PM	29	69	0	0	98	0	54	3	0	57	155	5	0	19	0	24	0	0	0	0	0	24	179
02:30 PM	22	65	0	0	87	0	72	6	0	78	165	4	0	24	0	28	0	0	0	0	0	28	193
02:45 PM	31	78	0	0	109	0	64	6	0	70	179	2	0	19	0	21	0	0	0	0	0	21	200
<b>TOTAL</b>	104	282	0	0	386	0	264	16	0	280	666	12	0	90	0	102	0	0	0	0	0	102	768
03:00 PM	36	83	0	0	119	0	71	3	0	74	193	3	0	34	0	37	0	0	0	0	0	37	230
03:15 PM	28	98	0	0	126	0	77	6	0	83	209	2	0	30	1	33	0	0	0	0	0	33	242
03:30 PM	40	83	0	0	123	0	82	6	0	88	211	1	0	34	0	35	0	0	0	0	0	35	246
03:45 PM	47	79	0	0	126	0	74	3	0	77	203	3	0	30	0	33	0	0	0	0	0	33	236
<b>TOTAL</b>	151	343	0	0	494	0	304	18	0	322	816	9	0	128	1	138	0	0	0	0	0	138	954
04:00 PM	40	72	0	0	112	0	79	5	0	84	196	1	0	19	0	20	0	0	0	0	0	20	216
04:15 PM	39	75	0	0	114	0	87	6	0	93	207	7	0	35	0	42	0	0	0	0	0	42	249
04:30 PM	36	80	0	0	116	0	78	1	0	79	195	5	0	71	0	76	0	0	0	0	0	76	271
04:45 PM	28	71	0	0	99	0	70	4	0	74	173	4	0	35	0	39	0	0	0	0	0	39	212
<b>TOTAL</b>	143	298	0	0	441	0	314	16	0	330	771	17	0	160	0	177	0	0	0	0	0	177	948
05:00 PM	27	67	0	0	94	0	81	4	0	85	179	1	0	21	0	22	0	0	0	0	0	22	201
05:15 PM	46	95	0	0	141	0	91	6	0	97	238	2	0	21	0	23	0	0	0	0	0	23	261
05:30 PM	49	73	0	0	122	0	82	5	0	87	209	3	0	32	0	35	0	0	0	0	0	35	244
05:45 PM	38	92	0	0	130	0	84	6	0	90	220	1	0	16	0	17	0	0	0	0	0	17	237
<b>TOTAL</b>	160	327	0	0	487	0	338	21	0	359	846	7	0	90	0	97	0	0	0	0	0	97	943
06:00 PM	43	73	0	0	116	0	74	5	0	79	195	2	0	20	0	22	0	0	0	0	0	22	217
06:15 PM	41	62	0	0	103	0	77	3	0	80	183	2	0	26	0	28	0	0	0	0	0	28	211
06:30 PM	33	82	0	0	115	0	65	3	0	68	183	2	0	24	0	26	0	0	0	0	0	26	209
06:45 PM	31	88	0	0	119	0	67	4	0	71	190	2	0	23	0	25	0	0	0	0	0	25	215
<b>TOTAL</b>	148	305	0	0	453	0	283	15	0	298	751	8	0	93	0	101	0	0	0	0	0	101	852
07:00 PM	35	72	0	0	107	0	69	3	0	72	179	0	0	31	0	31	0	0	0	0	0	31	210
07:15 PM	32	66	0	0	98	0	71	7	0	78	176	2	0	19	0	21	0	0	0	0	0	21	197
<b>TOTAL</b>	67	138	0	0	205	0	140	10	0	150	355	2	0	50	0	52	0	0	0	0	0	52	407

Peak Period	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL	N/S	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL	E/W	GRAND
<b>AM Peak</b> 07:30 AM to 08:30 AM	126	259	0	0	385	0	331	14	0	345	730	15	0	143	0	158	0	0	0	0	0	158	888
<b>Midday Peak</b> 02:45 PM to 03:45 PM	135	342	0	0	477	0	294	21	0	315	792	8	0	117	1	126	0	0	0	0	0	126	918
<b>PM Peak</b> 03:45 PM to 04:45 PM	162	306	0	0	468	0	318	15	0	333	801	16	0	155	0	171	0	0	0	0	0	171	972



**15 MINUTE TURNING MOVEMENT COUNTS**

*(Trucks Only)*

DATE: August 27, 2019 (Tuesday)

CITY: Poinciana LATITUDE: 0

LOCATION: Marigold Ave & San Miguel Rd

COUNTY: Osceola County LONGITUDE: 0

TIME BEGIN	Marigold Ave NORTHBOUND					Marigold Ave SOUTHBOUND					N/S TOTAL	San Miguel Rd EASTBOUND					WESTBOUND					E/W TOTAL	GRAND TOTAL
	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		
06:30 AM	0	2	0	0	2	0	1	0	0	1	3	0	0	2	0	2	0	0	0	0	0	2	5
06:45 AM	0	1	0	0	1	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	2
<b>TOTAL</b>	0	3	0	0	3	0	2	0	0	2	5	0	0	2	0	2	0	0	0	0	0	0	7
07:00 AM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	1	1	0	0	2	0	3	0	0	3	5	0	0	0	0	0	0	0	0	0	0	0	5
07:30 AM	0	2	0	0	2	0	3	0	0	3	5	0	0	0	0	0	0	0	0	0	0	0	5
07:45 AM	2	2	0	0	4	0	0	1	0	1	5	0	0	1	0	1	0	0	0	0	0	0	6
<b>TOTAL</b>	3	5	0	0	8	0	7	1	0	8	16	0	0	1	0	1	0	0	0	0	0	0	17
08:00 AM	2	0	0	0	2	0	3	0	0	3	5	1	0	3	0	4	0	0	0	0	0	0	9
08:15 AM	0	2	0	0	2	0	3	2	0	5	7	1	0	1	0	2	0	0	0	0	0	0	9
08:30 AM	2	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
08:45 AM	7	0	0	0	7	0	1	0	0	1	8	0	0	0	0	0	0	0	0	0	0	0	8
<b>TOTAL</b>	11	2	0	0	13	0	7	2	0	9	22	2	0	4	0	6	0	0	0	0	0	0	28
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	2	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	2
02:30 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:45 PM	2	4	0	0	6	0	1	0	0	1	7	0	0	2	0	2	0	0	0	0	0	0	9
<b>TOTAL</b>	3	4	0	0	7	0	3	0	0	3	10	0	0	2	0	2	0	0	0	0	0	0	12
03:00 PM	4	5	0	0	9	0	0	0	0	0	9	0	0	2	0	2	0	0	0	0	0	0	11
03:15 PM	2	1	0	0	3	0	0	0	0	0	3	0	0	1	0	1	0	0	0	0	0	0	4
03:30 PM	2	2	0	0	4	0	1	2	0	3	7	0	0	3	0	3	0	0	0	0	0	0	10
03:45 PM	2	1	0	0	3	0	3	0	0	3	6	1	0	0	0	1	0	0	0	0	0	0	7
<b>TOTAL</b>	10	9	0	0	19	0	4	2	0	6	25	1	0	6	0	7	0	0	0	0	0	0	32
04:00 PM	2	1	0	0	3	0	0	0	0	0	3	0	0	3	0	3	0	0	0	0	0	0	6
04:15 PM	1	1	0	0	2	0	1	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	3
04:30 PM	0	0	0	0	0	0	1	0	0	1	1	1	0	9	0	10	0	0	0	0	0	0	11
04:45 PM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
<b>TOTAL</b>	3	2	0	0	5	0	3	0	0	3	8	1	0	12	0	13	0	0	0	0	0	0	21
05:00 PM	1	0	0	0	1	0	1	0	0	1	2	0	0	1	0	1	0	0	0	0	0	0	3
05:15 PM	1	1	0	0	2	0	1	0	0	1	3	0	0	1	0	1	0	0	0	0	0	0	4
05:30 PM	0	2	0	0	2	0	1	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	3
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	2	3	0	0	5	0	3	0	0	3	8	0	0	2	0	2	0	0	0	0	0	0	10
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>AM Peak</b> 07:30 AM to 08:30 AM	4	6	0	0	10	0	9	3	0	12	22	2	0	5	0	7	0	0	0	0	0	0	29
<b>Midday Peak</b> 02:45 PM to 03:45 PM	10	12	0	0	22	0	2	2	0	4	26	0	0	8	0	8	0	0	0	0	0	0	34
<b>PM Peak</b> 03:45 PM to 04:45 PM	5	3	0	0	8	0	5	0	0	5	13	2	0	12	0	14	0	0	0	0	0	0	27

FLORIDA DEPARTMENT OF TRANSPORTATION

PEDESTRIAN MOVEMENT SUMMARY

SECTION 0  
STATE ROUTE  
OBSERVER

CITY Poinciana  
INTERSECTING ROUTE Marigold Av & San Miguel Rd  
DATE

COUNTY Osceola

REMARKS

FORM COMPLETED BY CM

Marigold Av  
SB ST NAME

6:30-7:30	7:30-8:30	8:30-9:30						2-3	3-4	4-5	5-6	6-7	7-8		Total
0	0	0						0	0	0	0	0	0		0
0	0	0						0	0	0	0	0	0		0
0	0	0						0	0	0	0	0	0		0



San Miguel Rd  
EB ST NAME

6:30-7:30	2	2	4
7:30-8:30	8	4	12
8:30-9:30	0	0	0
2-3	1	0	1
3-4	0	0	0
4-5	0	0	0
5-6	1	0	1
6-7	1	0	1
7-8	1	0	1
Total	14	6	20

6:30-7:30	0	0	0
7:30-8:30	0	0	0
8:30-9:30	0	0	0
2-3	0	0	0
3-4	0	0	0
4-5	0	0	0
5-6	0	0	0
6-7	0	0	0
7-8	0	0	0
Total	0	0	0

WB ST NAME

6:30-7:30	7:30-8:30	8:30-9:30						2-3	3-4	4-5	5-6	6-7	7-8		Total
0	0	0						0	0	0	0	0	0		0
0	0	0						0	0	0	0	0	0		0
0	0	0						0	0	0	0	0	0		0

Marigold Av  
NB ST NAME



FLORIDA DEPARTMENT OF TRANSPORTATION

BICYCLE MOVEMENT SUMMARY

SECTION 0  
STATE ROUTE  
OBSERVER

CITY Poinciana  
INTERSECTING ROUTE Marigold Av & San Miguel Rd  
DATE

COUNTY Osceola

REMARKS

FORM COMPLETED BY CM

Marigold Av  
SB ST NAME

6:30-7:30	7:30-8:30	8:30-9:30						2-3	3-4	4-5	5-6	6-7	7-8			Total
0	0	0						0	0	0	0	0	0			0
0	0	0						0	0	0	0	0	0			0
0	0	0						0	0	0	0	0	0			0



San Miguel Rd  
EB ST NAME

6:30-7:30	7:30-8:30	8:30-9:30			
0	0	0	0		
2	0	2			
1	0	1			
2-3	0	0	0		
3-4	0	0	0		
4-5	0	1	1		
5-6	1	0	1		
6-7	0	1	1		
7-8	0	0	0		
Total	4	2	6		

6:30-7:30	7:30-8:30	8:30-9:30			
0	0	0	0		
0	0	0	0		
0	0	0	0		
2-3	0	0	0		
3-4	0	0	0		
4-5	0	0	0		
5-6	0	0	0		
6-7	0	0	0		
7-8	0	0	0		
Total	0	0	0		

WB ST NAME

Marigold Av  
NB ST NAME

6:30-7:30	7:30-8:30	8:30-9:30						2-3	3-4	4-5	5-6	6-7	7-8			Total
0	0	0						0	0	0	0	0	0			0
0	0	0						0	0	1	0	0	0			1
0	0	0						0	0	1	0	0	0			1

**15 MINUTE TURNING MOVEMENT COUNTS**

*(Cars and Trucks)*

DATE: May 22, 2019 (Wednesday)

CITY: Poinciana

LATITUDE: 0

LOCATION: Marigold Av & San Lorenzo Rd S

COUNTY: Osceola County

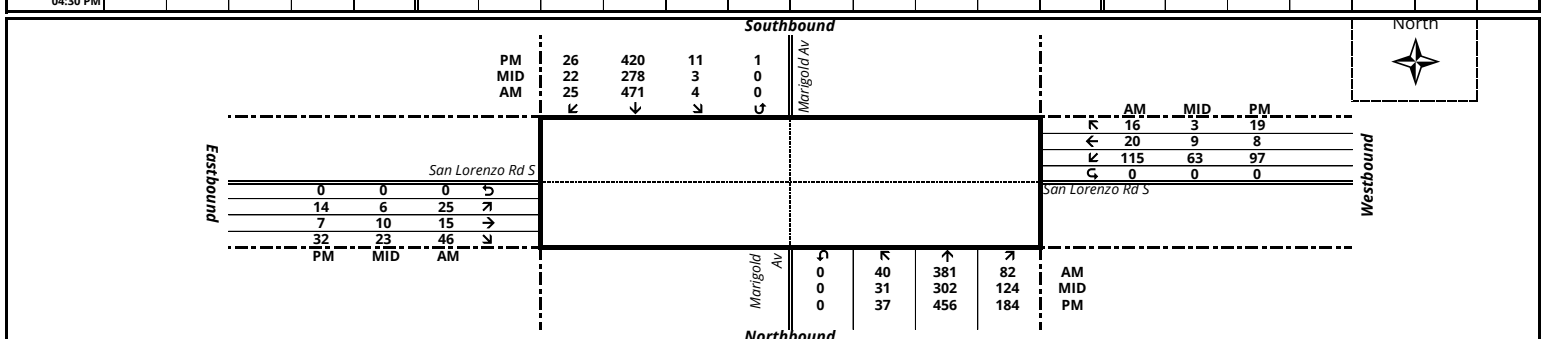
LONGITUDE: 0

TIME BEGIN	Marigold Av NORTHBOUND					Marigold Av SOUTHBOUND					N/S TOTAL	San Lorenzo Rd S EASTBOUND					San Lorenzo Rd S WESTBOUND					E/W TOTAL	GRAND TOTAL
	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		
06:30 AM	0	48	10	0	58	1	94	0	0	95	153	8	1	6	0	15	29	2	2	0	33	48	201
06:45 AM	3	79	14	0	96	0	82	1	0	83	179	11	0	6	0	17	31	1	3	0	35	52	231
<b>TOTAL</b>	3	127	24	0	154	1	176	1	0	178	332	19	1	12	0	32	60	3	5	0	68	100	432
07:00 AM	3	84	17	0	104	1	99	3	0	103	207	16	0	9	0	25	33	5	2	0	40	65	272
07:15 AM	7	76	17	0	100	1	85	9	0	95	195	7	4	8	0	19	31	3	3	0	37	56	251
07:30 AM	18	85	22	0	125	0	118	9	0	128	253	4	3	14	0	21	31	4	9	0	44	65	318
07:45 AM	8	91	26	0	125	2	154	10	0	166	291	9	3	20	0	32	35	10	4	0	49	81	372
<b>TOTAL</b>	36	336	82	0	454	5	456	31	0	492	946	36	10	51	0	97	130	22	18	0	170	267	1,213
08:00 AM	8	91	15	0	114	0	109	3	0	112	226	7	7	8	0	22	25	4	1	0	30	52	278
08:15 AM	6	114	19	0	139	1	90	3	0	94	233	5	2	4	0	11	24	2	2	0	28	39	272
08:30 AM	3	98	20	0	121	0	111	3	0	114	235	4	2	6	0	12	32	3	5	0	40	52	287
08:45 AM	0	78	15	0	93	1	117	1	0	119	212	2	2	5	0	9	29	0	1	0	30	39	251
<b>TOTAL</b>	17	381	69	0	467	2	427	10	0	439	906	18	13	23	0	54	110	9	9	0	128	182	1,088
02:00 PM	5	76	30	0	111	1	94	2	0	97	208	3	1	7	0	11	27	1	4	0	32	43	251
02:15 PM	5	99	32	0	136	6	90	2	0	98	234	3	3	5	0	11	28	0	1	0	29	40	274
02:30 PM	6	83	28	0	117	3	75	8	0	86	203	10	0	5	0	15	22	7	0	0	29	44	247
02:45 PM	9	86	44	0	139	0	97	9	0	106	245	1	1	9	0	11	13	7	1	0	21	32	277
<b>TOTAL</b>	25	344	134	0	503	10	356	21	0	387	890	17	5	26	0	48	90	15	6	0	111	159	1,049
03:00 PM	17	100	39	0	156	3	83	6	0	92	248	2	9	11	0	22	26	1	1	0	28	50	298
03:15 PM	5	116	41	0	162	0	98	7	0	105	267	3	0	3	0	6	24	1	1	0	26	32	299
03:30 PM	14	126	45	0	185	2	92	7	0	101	286	3	2	5	0	10	28	3	5	0	36	46	332
03:45 PM	11	122	47	0	180	1	74	4	0	79	259	4	1	12	0	17	20	1	3	0	24	41	300
<b>TOTAL</b>	47	464	172	0	683	6	347	24	0	377	1,060	12	12	31	0	55	98	6	10	0	114	169	1,229
04:00 PM	6	91	52	0	175	4	127	4	1	136	311	5	2	7	0	14	21	2	7	0	30	44	355
04:15 PM	6	117	40	0	163	4	127	11	0	142	279	2	2	8	0	12	28	2	4	0	34	46	325
04:30 PM	12	109	59	0	180	2	101	5	0	108	288	2	1	4	0	7	29	3	1	0	33	40	328
04:45 PM	7	93	50	0	150	1	89	2	0	92	242	3	2	2	0	7	26	3	0	0	29	36	278
<b>TOTAL</b>	31	410	201	0	642	11	444	22	1	478	1,120	12	7	21	0	40	104	10	12	0	126	166	1,286
05:00 PM	8	114	45	0	167	0	93	9	0	102	269	3	2	7	0	12	24	2	0	0	26	38	307
05:15 PM	10	112	47	0	169	2	114	15	0	131	300	1	1	7	0	9	31	2	1	0	34	43	343
05:30 PM	10	117	46	0	173	3	93	3	0	99	272	3	0	5	0	8	25	6	6	0	37	45	317
05:45 PM	8	103	45	0	156	4	98	3	0	105	261	1	2	4	0	7	22	2	0	0	24	31	292
<b>TOTAL</b>	36	446	183	0	665	9	398	30	0	437	1,102	8	5	23	0	36	102	12	7	0	121	157	1,259
06:00 PM	13	115	54	0	182	1	77	12	0	90	272	4	2	3	0	9	22	2	0	0	24	33	305
06:15 PM	6	117	41	0	164	4	113	8	0	125	289	6	0	5	0	11	25	0	2	0	27	38	327
06:30 PM	10	94	43	0	147	1	113	3	0	117	264	1	1	4	0	6	32	4	0	0	36	42	306
06:45 PM	16	112	34	0	162	1	88	5	0	94	256	2	2	5	0	9	29	1	1	0	31	40	296
<b>TOTAL</b>	45	438	172	0	655	7	391	28	0	426	1,081	13	5	17	0	35	108	7	3	0	118	153	1,234
07:00 PM	6	106	44	0	156	3	82	4	0	89	245	0	3	4	0	7	28	1	1	0	30	37	282
07:15 PM	9	89	48	0	146	1	63	2	0	66	212	1	1	4	0	6	25	1	0	0	26	32	244
<b>TOTAL</b>	15	195	92	0	302	4	145	6	0	155	457	1	4	8	0	13	53	2	1	0	56	69	526

<b>AM Peak</b> 07:30 AM to 08:30 AM	40	381	82	0	503	4	471	25	0	500	1,003	25	15	46	0	86	115	20	16	0	151	237	1,240
<b>Peak Hour Factor: 0.833</b>																							

<b>Midday Peak</b> 02:45 PM to 03:45 PM	31	302	124	0	457	3	278	22	0	303	760	6	10	23	0	39	63	9	3	0	75	114	874
<b>Peak Hour Factor: 0.658</b>																							

<b>PM Peak</b> 03:30 PM to 04:30 PM	37	456	184	0	677	11	420	26	1	458	1,135	14	7	32	0	53	97	8	19	0	124	177	1,312
<b>Peak Hour Factor: 0.924</b>																							



**15 MINUTE TURNING MOVEMENT COUNTS**

*(Trucks Only)*

DATE: May 22, 2019 (Wednesday)

CITY: Poinciana

LATITUDE: 0

LOCATION: Marigold Av & San Lorenzo Rd S

COUNTY: Osceola County

LONGITUDE: 0

TIME BEGIN	Marigold Av NORTHBOUND					Marigold Av SOUTHBOUND					N/S TOTAL	San Lorenzo Rd S EASTBOUND					San Lorenzo Rd S WESTBOUND					E/W TOTAL	GRAND TOTAL
	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		
06:30 AM	0	1	1	0	2	1	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	1	1	0	0	2	0	0	1	0	1	3	0	0	0	0	0	2	0	0	0	2	2	2
<b>TOTAL</b>	1	2	1	0	4	1	0	1	0	2	6	0	0	0	0	0	2	0	0	0	2	2	8
07:00 AM	1	1	1	0	3	0	1	0	0	1	4	0	0	0	0	0	0	1	1	0	2	2	6
07:15 AM	0	5	0	0	5	1	4	0	0	5	10	0	1	0	0	1	0	0	0	0	0	1	11
07:30 AM	0	1	2	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
07:45 AM	2	2	0	0	4	0	5	0	0	5	9	0	0	0	0	0	0	1	0	0	1	1	10
<b>TOTAL</b>	3	9	3	0	15	1	10	0	0	11	26	0	1	0	0	1	0	2	1	0	3	4	30
08:00 AM	0	4	1	0	5	0	5	1	0	6	11	0	0	0	0	0	0	0	0	0	0	0	11
08:15 AM	1	11	3	0	15	0	1	0	0	1	16	1	0	0	0	1	0	1	1	0	2	3	19
08:30 AM	0	5	2	0	7	0	12	0	0	12	19	0	0	0	0	0	1	0	0	0	1	1	20
08:45 AM	0	0	0	0	0	0	6	0	0	6	6	1	0	0	0	1	0	0	0	0	0	1	7
<b>TOTAL</b>	1	20	6	0	27	0	24	1	0	25	52	2	0	0	0	2	1	1	1	0	3	5	57
02:00 PM	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:15 PM	0	5	2	0	7	0	1	0	0	1	8	1	0	0	0	1	0	0	0	0	0	1	9
02:30 PM	1	5	0	0	6	0	3	0	0	3	9	0	0	0	0	0	0	0	0	0	0	0	9
02:45 PM	0	6	4	0	10	0	4	1	0	5	15	0	0	0	0	0	2	0	0	0	2	2	17
<b>TOTAL</b>	1	16	7	0	24	0	8	1	0	9	33	1	0	0	0	1	2	0	0	0	2	3	36
03:00 PM	0	5	1	0	6	0	1	1	0	2	8	0	0	0	0	0	0	0	0	0	0	0	8
03:15 PM	0	4	1	0	5	0	2	0	0	2	7	0	0	0	0	0	1	0	0	0	1	1	8
03:30 PM	0	8	0	0	8	1	3	0	0	4	12	0	0	0	0	0	0	0	0	0	0	0	12
03:45 PM	0	4	2	0	6	0	0	0	0	0	6	0	0	2	0	2	1	0	0	0	1	3	9
<b>TOTAL</b>	0	21	4	0	25	1	6	1	0	8	33	0	0	2	0	2	2	0	0	0	2	4	37
04:00 PM	0	0	1	0	1	2	10	0	0	12	13	0	0	1	0	1	0	0	0	0	0	1	14
04:15 PM	1	3	2	0	6	0	4	0	0	4	10	0	0	0	0	0	2	0	0	0	2	2	12
04:30 PM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	1	0	0	0	1	1	2
04:45 PM	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
<b>TOTAL</b>	1	4	3	0	8	2	15	0	0	17	25	0	0	1	0	1	3	0	0	0	3	4	29
05:00 PM	0	1	2	0	3	0	0	0	0	0	3	0	0	0	0	0	0	1	0	0	1	1	4
05:15 PM	0	2	0	0	2	0	1	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
<b>TOTAL</b>	0	3	3	0	6	0	1	0	0	1	7	0	0	0	0	0	0	1	0	0	1	1	8
06:00 PM	0	0	2	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
06:45 PM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
<b>TOTAL</b>	0	0	3	0	3	0	1	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	4
07:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 PM	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
<b>TOTAL</b>	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
<b>AM Peak</b> 07:30 AM to 08:30 AM	3	18	6	0	27	0	11	1	0	12	39	1	0	0	0	1	0	2	1	0	3	4	43
<b>Midday Peak</b> 02:45 PM to 03:45 PM	0	15	6	0	21	0	7	2	0	9	30	0	0	0	0	0	3	0	0	0	3	3	33
<b>PM Peak</b> 03:30 PM to 04:30 PM	1	15	5	0	21	3	17	0	0	20	41	0	0	3	0	3	3	0	0	0	3	6	47

FLORIDA DEPARTMENT OF TRANSPORTATION

PEDESTRIAN MOVEMENT SUMMARY

SECTION 0

CITY Poinciana

COUNTY Osceola

STATE ROUTE

INTERSECTING ROUTE Marigold Av & San Lorenzo Rd S

OBSERVER

DATE

REMARKS \_\_\_\_\_

FORM COMPLETED BY CM

Marigold Av

SB ST NAME

6:30-7	7-8	8-9					2-3	3-4	4-5	5-6	6-7:30			Total
0	4	0					5	2	7	1	5			24
0	1	8					2	0	1	0	1			13
0	5	8					7	2	8	1	6			37



San Lorenzo Rd S

EB ST NAME

6:30-7	7-8	8-9			
0	0	0			
1	0	1			
1	0	1			
2-3	1	0	1		
3-4	0	0	0		
4-5	0	0	0		
5-6	0	0	0		
6-7:30	2	0	2		
Total	5	0	5		

6:30-7	7-8	8-9			
0	0	0			
0	0	0			
0	0	0			
2-3	0	0	0		
3-4	0	0	0		
4-5	0	3	3		
5-6	0	0	0		
6-7:30	0	0	0		
Total	0	3	3		

San Lorenzo Rd S

WB ST NAME

6:30-7	7-8	8-9					2-3	3-4	4-5	5-6	6-7:30			Total
0	0	0					0	0	0	1	0			1
0	0	0					0	0	0	0	0			0
0	0	0					0	0	0	1	0			1

Marigold Av

NB ST NAME

FLORIDA DEPARTMENT OF TRANSPORTATION

BICYCLE MOVEMENT SUMMARY

SECTION 0  
STATE ROUTE  
OBSERVER

CITY Poinciana  
INTERSECTING ROUTE Marigold Av & San Lorenzo Rd S  
DATE

COUNTY Osceola

REMARKS

FORM COMPLETED BY CM

Marigold Av  
SB ST NAME

6:30-7	7-8	8-9						2-3	3-4	4-5	5-6	6-7:30				Total
0	1	0						0	1	1	0	0				3
0	0	0						0	2	0	0	2				4
0	1	0						0	3	1	0	2				7



San Lorenzo Rd S  
EB ST NAME

6:30-7	7-8	8-9			
0	0	0	0		
0	0	0	0		
0	0	0	0		
2-3	1	0	1		
3-4	1	1	2		
4-5	1	2	3		
5-6	0	0	0		
6-7:30	2	3	5		
Total	5	6	11		

6:30-7	7-8	8-9			
0	0	0	0		
0	0	0	0		
0	0	0	0		
2-3	0	0	0		
3-4	0	0	0		
4-5	0	0	0		
5-6	0	0	0		
6-7:30	0	0	0		
Total	0	0	0		

San Lorenzo Rd S  
WB ST NAME

6:30-7	7-8	8-9						2-3	3-4	4-5	5-6	6-7:30				Total
0	0	0						0	0	0	0	0				0
0	0	0						0	0	0	0	0				0
0	0	0						0	0	0	0	0				0

Marigold Av  
NB ST NAME