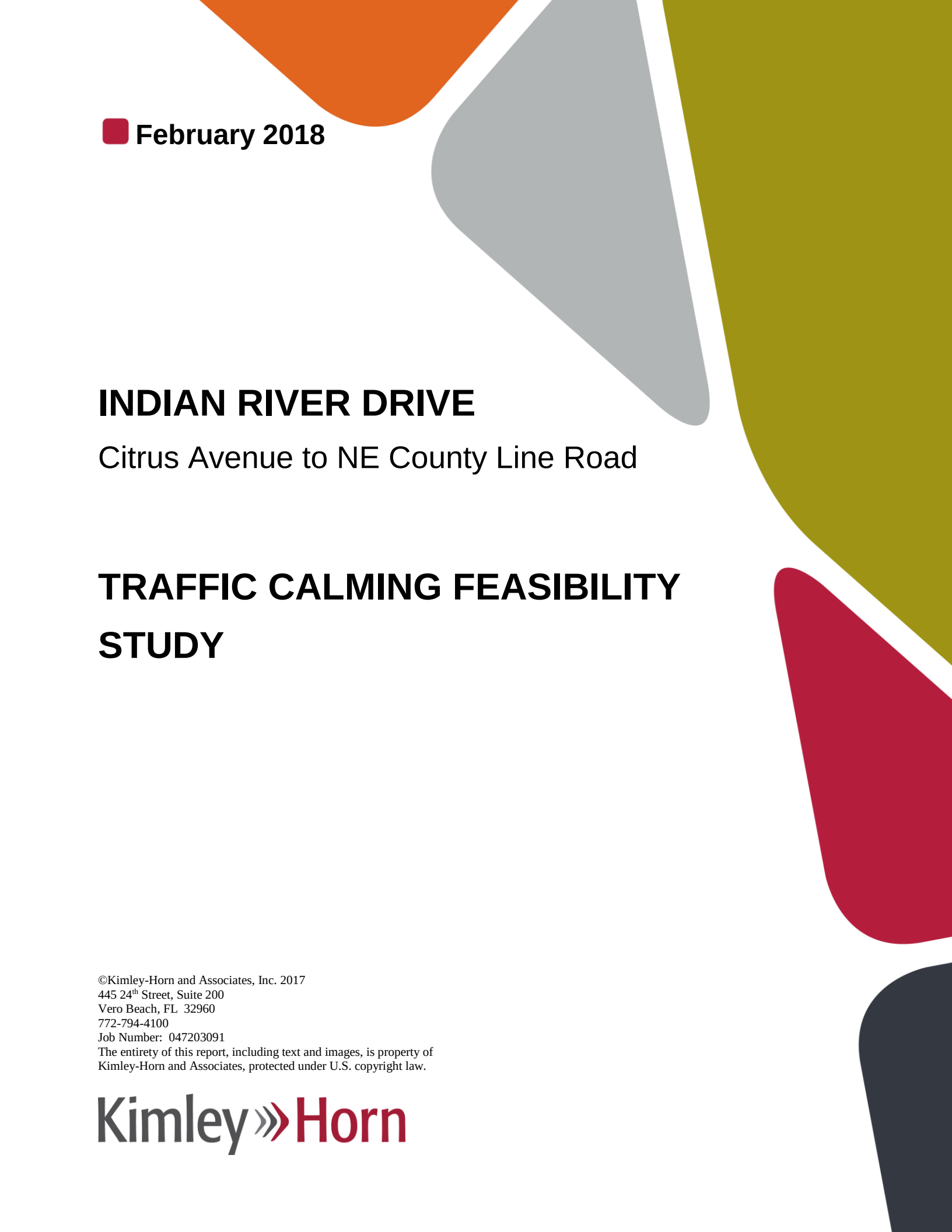




■ February 2018

INDIAN RIVER DRIVE

Citrus Avenue to NE County Line Road

TRAFFIC CALMING FEASIBILITY STUDY

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445 24th Street, Suite 200

Vero Beach, FL 32960

772-794-4100

Job Number: 047203091

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Kimley»Horn

February 2018

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TRAFFIC CALMING FEASIBILITY STUDY

Prepared by:

Kimley-Horn and Associates, Inc.

445 24th Street, Suite 200

Vero Beach, Florida 32960

INDIAN RIVER DRIVE TRAFFIC CALMING FEASIBILITY STUDY

TABLE OF CONTENTS

1.0	STUDY OBJECTIVE:.....	1
2.0	STUDY LIMITS:.....	1
2.1	Data Collection	3
2.2	Existing Vehicular Speed Analysis	3
3.0	TRAFFIC CALMING STRATEGIES EVALUATION:	5
3.1	Speed Humps	7
3.2	Speed Table.....	8
3.3	Raised Intersection	9
3.4	Textured Pavement.....	10
3.5	Roundabouts.....	11
3.6	Chicane.....	12
3.7	Center Island Narrowing	13
3.8	Choker/ Pinch Point	14
4.0	ENHANCED TRAFFIC CONTROL MEASURES:.....	15
4.1	Raised Audible Pavement Markings	15
4.2	Speed Reduction Markings.....	16
4.3	Radar Speed Feedback Signs	17
5.0	RECOMMENDATIONS:.....	19

<u>FIGURES</u>	<u>PAGE</u>
Figure 1 – Study Limits	2
Figure 2 – Recommended Traffic Calming Strategies.....	20

EXHIBITS

Exhibit 3.1 - Typical Speed Hump Application:	7
Exhibit 3.2 - Typical Speed Table Application:.....	8
Exhibit 3.3 - Typical Speed Hump Application:	9
Exhibit 3.4 - Typical Textured Pavement Application:	10
Exhibit 3.5 - Typical Roundabout Application:.....	11
Exhibit 3.6 – Typical Chicane Application:.....	12
Exhibit 3.7 - Typical Center Island Narrowing Application:	13
Exhibit 3.8 - Typical Mid-Block Choker Application	14
Exhibit 4.1 – Raised Audible Pavement Marking.....	16
Exhibit 4.2 - Typical Traverse Marking Application:	17
Exhibit 4.3 – Radar Speed Feedback Sign.....	18

TABLES

Table 1 – Indian River Drive Vehicular Speed Data Summary:	4
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APPENDICES

APPENDIX A:	Exhibit depicting the regulatory speed limit signage and traffic monitoring locations identified within the Study Limits.
APPENDIX B:	85 th percentile speeds and 10-mph pace data collected at the traffic monitoring stations located within the Study Limits
APPENDIX C:	Conceptual roundabout layouts
APPENDIX D:	Conceptual chicane layouts

1.0 STUDY OBJECTIVE:

St. Lucie County has contracted with Kimley-Horn and Associates, Inc. (Kimley-Horn) to develop a Traffic Calming Feasibility Study to identify potential traffic calming strategies and implementation locations along Indian River Drive that would assist in reducing vehicular travel speeds. Traffic calming strategies will consist of visual and physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for all street users. The current posted speeds along the corridor are primarily 35 mph with several locations that have speed advisory postings at 25 mph.

The County is undertaking this Traffic Calming Feasibility Study for the following reasons:

- The County has received complaints/ concerns relative to vehicular travel speeds along Indian River Drive in excess of the regulatory posted speeds.
- A successfully implemented traffic calming strategy will help to induce motorists to operate their vehicles within the designated safe operating speeds.

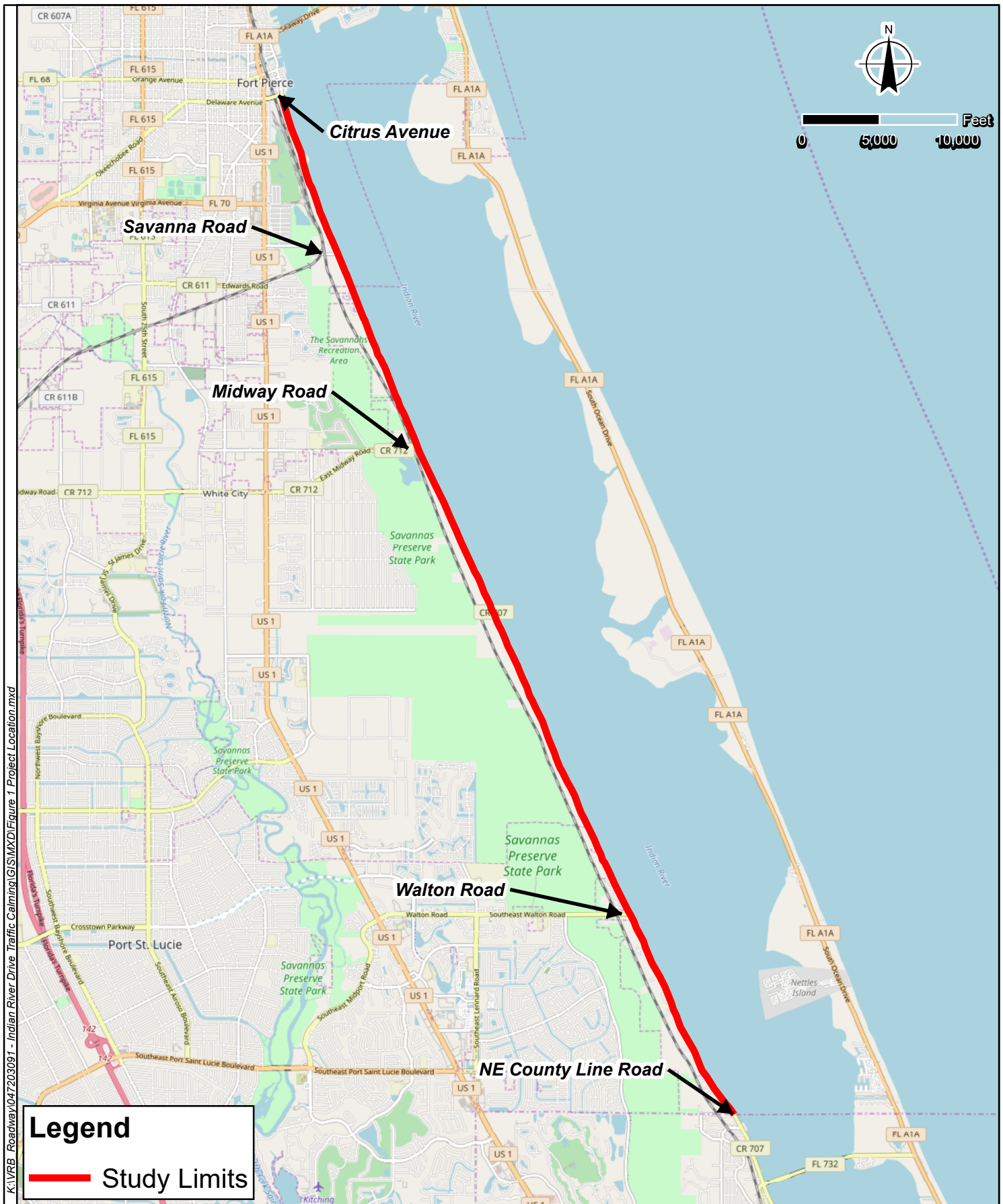
Traffic calming strategies typically involve one or all of the following elements:

- Physical (geometric) alterations
- Informational feedback to motorists
- Law enforcement action

Addressing chronic excessive vehicular speed through law enforcement alone often leads to temporary compliance at a significant cost. A more permanent way to reinforce the need to reduce speed is to change the look and feel of the road to encourage motorists to operate their vehicles in a safe manner, reducing the need for additional enforcement.

2.0 STUDY LIMITS:

The study limit is to consist of the entirety of Indian River Drive within unincorporated St. Lucie County beginning at Citrus Avenue at the northern end extending approximately 13.7 miles south to NE County Line Road. **Figure 1**, on the following page, graphically depicts the Study Limits relative to Indian River Drive.



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 445 24th Street, Suite 200, Vero Beach, FL 32960
 Phone (772) 794-4100 Fax (561) 863-8175
www.kimley-horn.com

Study Limits Location Map

**Indian River Drive
 Traffic Calming Feasibility Study
 St. Lucie County, Florida**

1 inch = 8,333 feet

PROJECT NUMBER: 047203091

OCTOBER 2017

FIGURE 1

2.1 Data Collection

Kimley-Horn collected vehicular speed and volume data associated with Indian River Drive between County Line Road and Citrus Avenue (Study Limits), approximately 13.5 miles. The data collection efforts consisted of collecting 24-hour directional vehicular speed and volume data at twenty-nine (29) traffic monitoring stations located along the corridor over a 5-day period. The data was collected starting at 12 AM on August 10th and ending at 12 PM on August 14th.

The entire corridor presently has a posted speed of 35 mph, with two locations having speed advisory postings at 25 mph. Advisory speeds are used on short sections of the corridor where the physical conditions of the corridor restrict safe operating speed to something lower than the regulatory posted speed. The vehicular speed data collected at each monitoring station is summarized into two statistical measures consisting of the following:

- 85th Percentile Speed
- 10-mph Pace

The 85th percentile speed is commonly utilized to support the regulatory posted speed establishment along a corridor. The 85th percentile speed reflects at or below the speed which 85 percent of motorists drive along the corridor. The 85th percentile speed concept is based upon the theory that the large majority of motorists are reasonable and prudent, do not want to have a crash and desire to reach their destination in the shortest possible time.

The 10-mph Pace is defined as the 10-mph speed range encompassing the greatest percentage of all the measured speeds. Traffic engineers believe corridor safety is enhanced when the 10-mph pace includes a large percentage (approximately 70 percent) of all the free-flowing motorists. Refer to **Appendix A** for an exhibit that depicts the regulatory speed limit signage and traffic monitoring locations identified within the Study Limits.

2.2 Existing Vehicular Speed Analysis

Posted speed limits on municipal or county roadways, or alteration thereof, are set forth in Section 316.189 F.S. Posted speeds are required to be based upon engineering and traffic investigations. A roadway posted speed may be based upon several factors consisting of a roadways environment/ traffic characteristics, observed/ measured vehicular speeds during ideal weather conditions, analysis of vehicular speeds to determine the 85th percentile speed, the roadways crash

history and review of any unusual conditions.

Within the State of Florida, it is common practice to evaluate the 85th percentile speed and the 10-mph Pace when establishing or altering the posted vehicular speed for a particular roadway. It is recommended by the Florida Department of Transportation (FDOT) that a roadway posted speed be rounded to the nearest multiple of 5 mph of the observed 85th percentile speed or upper limit of the 10-mph pace, whichever is less.

Table 1 summarizes the 85th percentile and 10-mph pace speeds quantified during the data collection period within the Study Limits:

Table 1 – Indian River Drive Vehicular Speed Data Summary:

	Data Collection Day of the Week									
SIDE STREET	Wednesday		Thursday		Friday		Saturday		Sunday	
	85 th %, MPH	10- MPH Pace	85 th %, MPH	10- MPH Pace	85 th %, MPH	10- MPH Pace	85 th %, MPH	10- MPH Pace	85 th %, MPH	10- MPH Pace
Citrus Avenue										
	41	33 to 42	42	33 to 42	44	33 to 42	44	33 to 42	44	33 to 42
Savannah Road										
	43	33 to 42	42	33 to 42	44	33 to 42	44	33 to 42	45	33 to 42
Midway Road										
	44	33 to 42	43	33 to 42	43	33 to 42	44	33 to 42	44	33 to 42
Walton Road										
	44	33 to 42	43	33 to 42	43	33 to 42	43	33 to 42	43	30 to 39
Spring Hill Drive										
	44	33 to 42	44	30 to 39	42	30 to 39	42	30 to 39	42	30 to 39
County Line Road										

Refer to **Appendix B** for additional information relative to the 85th percentile and 10-mph pace data collected at the traffic monitoring stations located along the corridor over the 5-day period within the Study Limits. The collected data would support a posted speed of 40 mph vs. the present 35 mph posted speed designation.

The posted speed is not recommended to differ from the lower of the 85th percentile or 10-mph pace by more than 3 mph. A speed limit of 4 to 8 mph less than the lower of these two parameters shall be supported by supplemental traffic investigation factors. Factors that would be considered to set the posted speed lower than the measured 85th percentile speed would be:

- Narrow roadway pavement widths
- Horizontal and vertical curves that result in limited sign distances
- Driveways with restricted visibility
- High driveway density
- Rural residential land uses located along corridor
- Narrow shoulder widths

The County has elected to post the corridor at 35 MPH, do to all of the factors identified above are applicable to Indian River Drive, and the following:

- Poor stormwater collection/ conveyance systems
- Numerous clear zone infractions
- Drop off-hazard represented by Indian River Lagoon

3.0 TRAFFIC CALMING STRATEGIES EVALUATION:

As the observed vehicular speeds along the corridor are approximately 5 mph above what has been identified by the County as the safe vehicular operating speed, a Traffic Calming Feasibility Study is being performed to identify and evaluate traffic calming strategies that may be considered to encourage motorists to operate their vehicles within the vehicular operating speeds designated by the County.

Traffic calming strategies utilize one or a combination of vertical pavement deflection, horizontal pavement deflection, travel lane narrowing or access restrictions. The traffic calming strategies will focus on the methods that best serve to induce slower vehicular speed (speed control). It has been previously discussed with the County that access restrictions are not a practical application

for Indian River Drive, due to the lack of alternative available routes and as such will not be considered.

Traffic calming elements are utilized to make motorists feel uncomfortable traveling over, through or around these elements at higher than desired vehicular speeds. Each of the following traffic calming strategies will be discussed relative to its advantages and disadvantages and a graphical depiction of each will be provided. Those methods consist of the following:

- Speed Humps
- Speed Tables
- Raised Crosswalks
- Raised Intersections
- Textured Pavement
- Roundabouts
- Chicanes
- Center Island Narrowing
- Chokers

In addition to traffic calming strategies, the following enhanced traffic control devices will be discussed:

- Raised Audible Pavement Markings
- Speed Reduction Markings
- Electronic Speed Feedback Signs

3.1 Speed Humps

Speed humps are rounded raised areas, typically 4 to 6 inches in height by 12 feet in length parallel to direction of travel, placed across a road. Speed humps encourage slower vehicular speeds by inducing motorists to slow down as they traverse the vertical pavement deflection. Comfortable traversing speed is between 15 to 20 mph. To be effective over longer stretches of roadway, speed hump spacing is recommended to be between 300 to 600 feet apart. The following image provides a speed hump visual depiction:

Exhibit 3.1 - Typical Speed Hump Application:



Advantages:

- Low construction cost
- Effective in reducing vehicular speeds (typically 5 to 10 mph)
- Bicycle friendly

Disadvantages:

- Poor aesthetic quality
- Not recommended on collector roads
- High speed impact can result in loss of vehicular control

3.2 Speed Table

Speed tables are like speed humps with the difference being the top of the hump being flat, typically 4 to 6 inches in height by 22 feet in length parallel to direction of travel, placed across a road. Speed tables encourage slower vehicular speeds by inducing motorist to slow down as they traverse the vertical pavement deflection. Comfortable traversing speed is between 25 to 30 mph. To be effective over longer stretches of roadway, speed table spacing is recommended to be between 300 to 600 feet apart. The following image provides a speed table visual depiction:

Exhibit 3.2 - Typical Speed Table Application:



Advantages:

- Low construction cost
- Can be integrated into pedestrian crosswalk to provide additional pedestrian crossing emphasis
- Less jarring than speed hump
- Less impactful on emergency response vehicles
- Bicycle friendly

Disadvantages:

- Vehicular speed reductions are not typically as great as speed humps
- High speed impact can result in loss of vehicular control

3.3 Raised Intersection

Raised intersections are like speed tables/ raised crosswalks with the difference being the top of the hump spans the entire length of an intersection, typically 6 inches in height by intersection width. Raised intersections encourage slower vehicular speeds by inducing motorist to slow down as they traverse the vertical pavement deflection. The following image provides a raised intersection crosswalk visual depiction:

Exhibit 3.3 - Typical Speed Hump Application:



Advantages:

- Additional pedestrian crossing emphasis
- Less jarring than speed hump
- Less impactful on emergency response vehicles
- Comfortable traversing speed of 25 to 30 mph
- Bicycle friendly

Disadvantages:

- Higher construction cost
- Typically, only applicable in dense urban areas

3.4 Textured Pavement

Textured pavement is a change in roadway surface resulting in a color contrast and potentially small changes in vertical alignment. Textured pavement is typically constructed using concrete pavers, clay brick pavers, granite cobble stone pavers or stamped asphalt. Textured pavement encourages slower vehicular speeds by contrasting roadway pavement and the small changes in vertical alignment. The following image provides a textured pavement visual depiction:

Exhibit 3.4 - Typical Textured Pavement Application: (clay brick pavers shown)



Advantages:

- Can have a positive aesthetic value
- When applied to intersection, can calm both streets
- Less jarring than other methods of vertical pavement deflection
- Less impactful on emergency response times
- Bicycle friendly

Disadvantages:

- Higher construction cost
- Greater traffic calming characteristics with higher variable surface, can create adverse conditions for pedestrians and bicyclists
- Can have higher maintenance needs

3.5 Roundabouts

Roundabouts require vehicular traffic to travel counterclockwise around a center island. Roundabouts typically have raised splitter islands on approach roadways that are designed to induce operating speeds between 15 and 25 mph within the roundabout. Yield signs typically control entry into the roundabout. Roundabouts encourage slower vehicular speeds by inducing motorists to slow down as they traverse the horizontal travel way deflection associated with the splitter island approach, as well as the circular roadway. The following image provides a roundabout visual depiction:

Exhibit 3.5 - Typical Roundabout Application:



Advantages:

- Can have a positive aesthetic value
- When applied to intersection, can calm both streets
- Less expensive to operate than a traffic signal
- Can be designed to accommodate a range of design vehicles

Disadvantages:

- Higher construction cost
- Can require additional right-of-way

Conceptual roundabouts have been developed for the Savannah Road, Midway Road and Walton Road intersections. Refer to **Appendix C** for these conceptual layouts.

3.6 Chicane

A chicane consists of alternating curb extensions resulting in motorists to horizontally deflect through the curb extensions typically in an S-shaped curve pattern. Chicanes encourage slower vehicular speeds by inducing motorists to slow down as they traverse the horizontal travel way deflections. The following image provides a chicane visual depiction:

Exhibit 3.6 – Typical Chicane Application:



Advantages:

- Slows traffic by utilizing horizontal deflection, as such it will be less jarring than measures that depend upon vertical deflection to elicit slower vehicle speeds
- Can be designed as to not impact bicyclists
- Less impactful on emergency response vehicles

Disadvantages:

- Can be impediments to roadway drainage
- Moderate construction cost
- Not recommended on high volume roadways or roadways with higher truck volumes
- Typically requires urban roadway section to be effective

Conceptual chicanes have been developed for the Savannah Road, Midway Road and Walton Road intersections. Refer to Appendix D for these conceptual layouts.

3.7 Center Island Narrowing

Center island narrowing consist of introducing a raised or striped island between opposing travel lanes that reduces or constricts the available travel lane width. Typically, other elements such as landscaping, street furniture, etc. are incorporated in conjunction with travel lane narrowing to further constrict the corridor by utilizing vertical elements immediately adjacent to the travel lane.

By constricting the corridor, drivers are made to feel less comfortable traveling through the constricted section at high speeds, thereby inducing motorists to slow down. The following image provides a center island narrowing visual depiction:

Exhibit 3.7 - Typical Center Island Narrowing Application:



Advantages:

- Raised center island can be opportunity for landscape amenity
- Can be integrated into pedestrian crossing, creating a pedestrian refuge
- Less impactful on emergency response vehicles

Disadvantages:

- Not as effective as vertical pavement deflection methods
- Bicycle facilities adjacent to travel lane will have the effect of negating traffic calming influence

3.8 Choker/ Pinch Point

Choker or pinch point is very similar to center island narrowing in the fact that they achieve traffic calming influences through reducing or constricting travel lane width by introducing curb projections along the outside of the travel lane. Typically, other elements such as landscaping, street furniture, etc. are incorporated in conjunction with them to further constrict the corridor by utilizing vertical elements immediately adjacent to the travel lane.

By constricting the corridor, drivers are made to feel less comfortable traveling through the constricted section at high speeds, thereby inducing motorists to slow down. The following image provides a choker or pinch point depiction:

Exhibit 3.8 - Typical Mid-Block Choker Application:



Advantages:

- Curb projections can be opportunity for landscape amenity
- Can be integrated into pedestrian crossing to reduce pedestrian crossing distance
- Less impactful on emergency response vehicles

Disadvantages:

- Not as effective as vertical pavement deflection methods
- Bicycle facilities adjacent to travel lane will have the effect of negating traffic calming influence

4.0 ENHANCED TRAFFIC CONTROL MEASURES:

While not typically thought of as traffic calming strategies, there are several enhanced traffic control measures that can result in effecting slower vehicular speeds. Many of the traffic calming strategies, previously discussed, are more applicable to urban roadways due to the curbed nature of those corridors. As Indian River Drive is a rural roadway (no curb and gutter), enhanced traffic control measures have been demonstrated to be effective tools in inducing slower vehicular speeds along rural roadways.

Enhanced traffic control measures are utilized to make motorist feel uncomfortable traveling over, through or around these elements in higher than desired vehicular speeds. Each of the following traffic calming strategies will be discussed relative to their advantages and disadvantages and a graphical depiction of each will be provided. The following enhanced traffic control measure will be discussed:

- Raised Audible Pavement Markings
- Speed Reduction Markings
- Electronic Speed Feedback Signs

4.1 Raised Audible Pavement Markings

Raised audible pavement markings are a profiled thermoplastic pavement marking material with raised thermoplastic bumps creating a raised profile marking. Raised audible pavement markings are used as edge and centerline striping on two-way roadways. The intent of using this advance pavement marking is to alert an inattentive driver through vibration and sound that their vehicle has diverged from their travel lane.

The Florida Department of Transportation has specified that the flat base line to have a thickness of 0.10 to 0.15 inches (100 to 150 mils), exclusive of the bumps. The raised bumps are specified to be raised another 0.30 inches (300 mils) above the flat base line, resulting in an overall height of approximately 0.45 inches. The thermoplastic bump is specified to be a minimum 2.5 inches in both the traverse and longitudinal direction, with the longitudinal distance between bumps being approximately 30 inches. The following image provides a raised audible pavement marking visual depiction:

Exhibit 4.1 – Raised Audible Pavement Marking:



Advantages:

- Low construction cost
- Equally effective in alerting a driver that they have diverged from their travel lane in day, night and adverse weather conditions
- Efficient way to reduce motorist's lane departure crashes

Disadvantages:

- Has potential to adversely affect bicycle operations in the corridor
- Can result in undesirable noise within nearby residences due to vehicular strikes
- Should not be utilized on small projects with limited installation lengths

4.2 Speed Reduction Markings

Speed reduction markings consisted of a series of parallel bars on the inside edges of the travel lane. The spacing between bars decreased approaching a specific location. The series of markings are intended to create the perception that the vehicle's speed is increasing to trigger driver awareness of the need to slow down. This may also induce slower vehicular speeds by warning or alerting drivers to an upcoming situation.

The transverse markings are recommended to be 12 inches wide (parallel to roadway edge) by 18 inches long. The length of each series and distance between bars vary based upon each speed transition and location within the series. The following image provides a speed reduction markings visual depiction:

Exhibit 4.2 - Typical Traverse Marking Application:



Advantages:

- Low construction cost
- Can also serve to notify motorists of changing geometric conditions, such as sharp horizontal curves or intersections

Disadvantages:

- Not recommended to be utilized on long tangent roadway sections
- Tends to be more effective during the day light hours as compared to night time hours

4.3 Radar Speed Feedback Signs

Radar speed feedback signs provide real-time digital feedback to motorists alerting them of their vehicular speed. The radar speed feedback sign collects traffic data of a passing vehicle, if the motorists is speeding the sign provides an electronic message which flashes indicating the motorists speed making them aware that they are speeding. Radar speed feedback signs typically operate as follows:

- A blank display is shown when no vehicles are approaching the sign
- An approaching vehicle's speed is displayed as a solid numeral (non-flashing numeral) if the approach speed is at or below the posted speed limit
- The approach speed is shown as a flashing numeral if the approach speed exceeds the posted speed limit by 3 mph or more

Studies have shown that radar speed feedback signs are effective in encouraging speeding motorists to reduce their vehicular speeds by providing real-time feedback. By using this real-time vehicle specific feedback, motorists are reminded of the posted operating speed. The following image provides a radar speed feedback sign visual depiction:

Exhibit 4.3 – Radar Speed Feedback Sign:



Advantages:

- Moderate construction cost
- Effective during the day light and night time hours
- Typical speed reductions of 5 to 10 mph

Disadvantages:

- Will require periodic maintenance
- Some manufacturer versions are not directly supported by the FHWA MUTCD

5.0 RECOMMENDATIONS:

The Indian River Drive corridor, within the Study Limits, has a very consistent physical context consisting of the following:

- Limited roadway right-of-way width (typically 30-ft)
- Rural roadway section with limited paved shoulders (0 to 1-ft)
- Narrow vehicular travel lanes (approx. 10-ft wide)
- No stop control conditions (e.g. signals or stop signs)
- Large spacing between bisecting collector or arterial roadways
- Large segments with consistent horizontal or vertical geometry
- Primarily moderate to dense single-family residential homes along the corridor's west side
- Steep grade change along the corridor's east side associated with the Indian River Lagoon
- On average 4,000 to 5,000 vehicles per day (approx. capacity of 6,500 vehicles per day to maintain LOS C)

Based upon the speed data collected within the Study Limits and to be consistent with the relationships recommended by the FDOT between posted speed, the 85th percentile speed and the 10-mph Pace; vehicular traffic speeds along the corridor would need to be reduced approximately 5 mph. To achieve this traffic calming goal, the above identified traffic calming strategies and enhanced traffic control measures were evaluated based upon the following criteria:

- Ability to implement quickly
- Cost benefit evaluation
- Application limits
- Ability to accommodate waste management vehicles, school buses and tractor & trailers (WB-50)
- Compatibility with the rural setting and driver expectations

Based upon these criteria, the following constitutes our recommended traffic calming applications:

Phase IA – Install raised audible pavement markings as edge and centerline striping within the Project Limits as depicted within **Figure 2**. This improvement will give motorists the perception of lane narrowing by providing a vibratory and auditory response when driven upon inducing slower vehicular speeds. It will induce motorists to stay within their travel lanes, in low vehicular volume conditions, when entering the horizontal curves along the corridor inducing slower vehicular speeds. It will also constitute a safety improvement alerting motorists of unrealized lane departures.

The estimated cost of implementing this strategy within the Study Limits is \$350,000.

Phase IB – Install traverse pavement markings with transverse rumble strips in the vicinity of the three-existing adverse horizontal alignments as indicated within **Figure 2**. This improvement will give motorists the perception that their vehicle's speed is increasing to trigger driver awareness of the need to slow down.

Transverse lateral rumble strips are placed across the full width of the travel lane, and their primary purpose is to provide motorists an audible and tactile warning of approaching adverse horizontal curves. While transverse rumble strips are not identified as a traffic calming strategy, they are identified as a safety enhancement and are intended to emphasize the speed reduction postings in these three locations.

The estimated cost of implementing this strategy within the Study Limits is \$15,000.

Phase IC – Replace 18 of the posted speed limit signs with radar speed feedback signs within the Project Limits as depicted within **Figure 2**. Radar speed feedback signs have been shown to be effective in encouraging speeding motorists to reduce their vehicular speeds by providing real-time feedback.

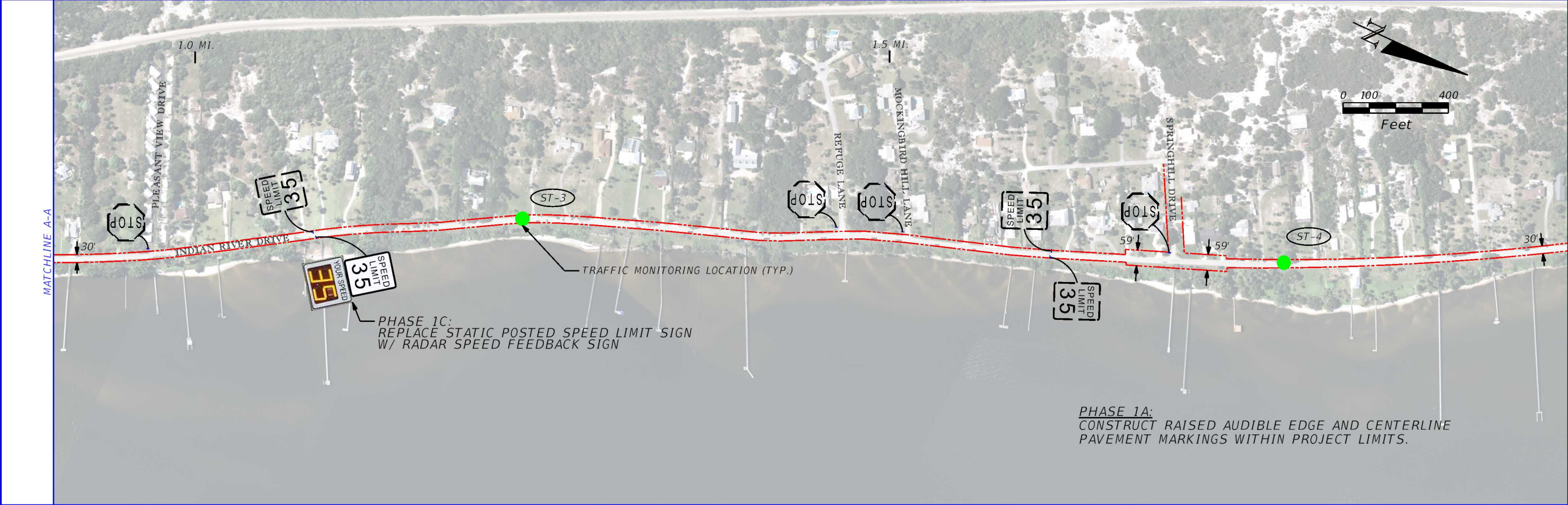
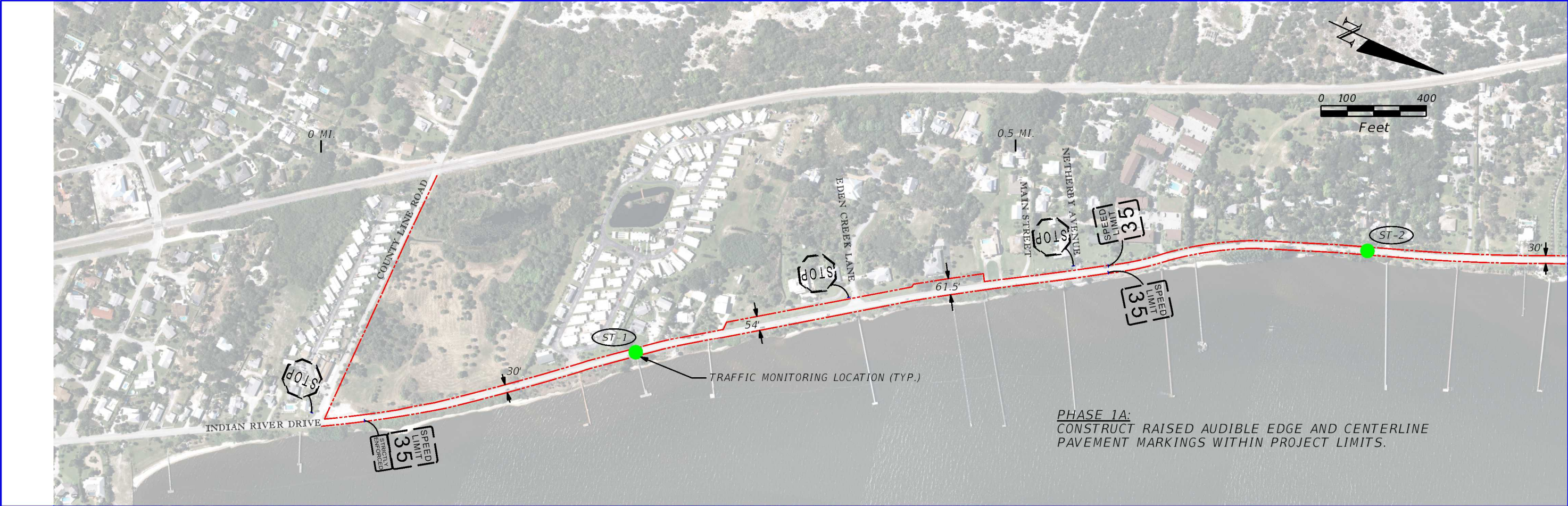
The estimated cost of implementing this strategy within the Study Limits is \$150,000.

Following implementation of the identified Phase I traffic calming strategies, it is recommended that updated vehicular speed data be collected coincidentally with the identified Traffic Monitoring Locations within the Study Limits approximately 6 to 9 months following Phase I completion to measure the effectiveness of the implemented traffic calming strategies. If the desired vehicular speed reductions within the Study Limits are not achieved, additional traffic calming measures should be considered

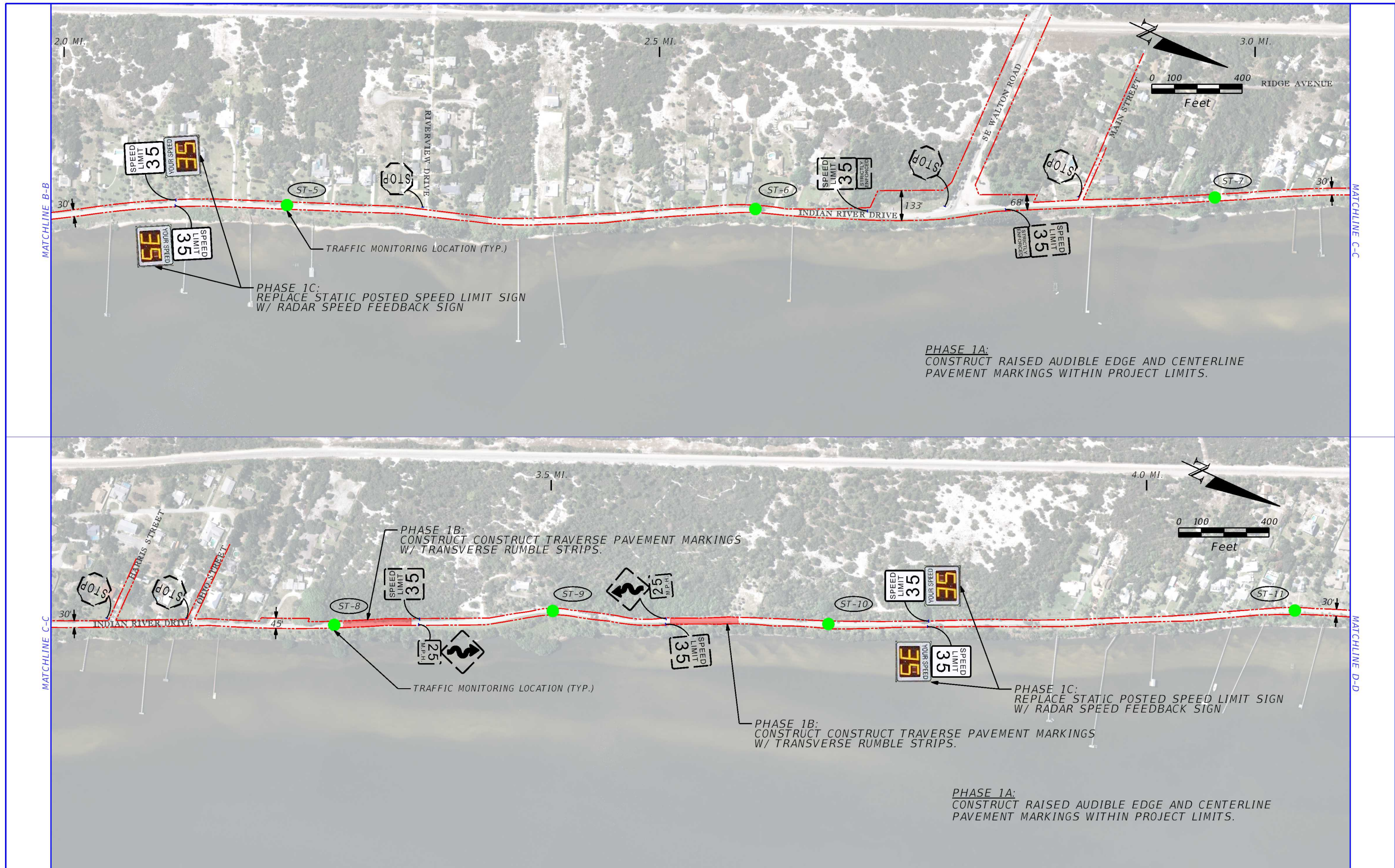
The traffic calming strategies recommended to be implemented in Phase I, were identified as a result of possessing the following attributes:

- Low construction cost
- Ability to quickly implement
- Can be implemented within the existing limited roadway right-of-way
- Does not require horizontal or vertical roadway alterations
- Phase IA & IC can be applied throughout the Study Limits

Please refer to **Figure 2**, on the following pages, which depicts the recommended implementation locations associated with each traffic calming strategy within the Study Limits.



REVISIONS						Kimley»Horn	ST LUCIE COUNTY BOARD OF COUNTY COMISSIONERS INDIAN RIVER DRIVE TRAFFIC CALMING FEASIBILITY STUDY	RECOMMENDED TRAFFIC CALMING STRATEGIES	FIGURE 2
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION				
						BRIAN A. GOOD, P.E. P.E. LICENSE NUMBER 56939 445 24th STREET, SUITE 200 VERO BEACH, FL 32960 (772) 794-4100 CERTIFICATE OF AUTHORIZATION: 00000696			



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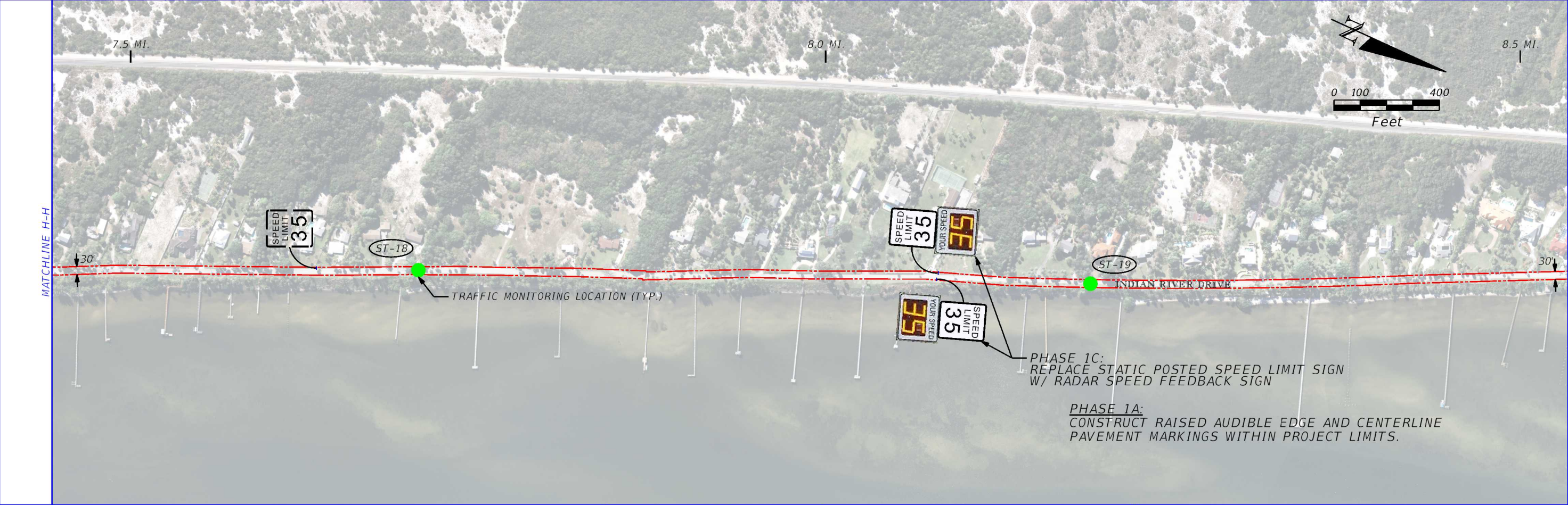
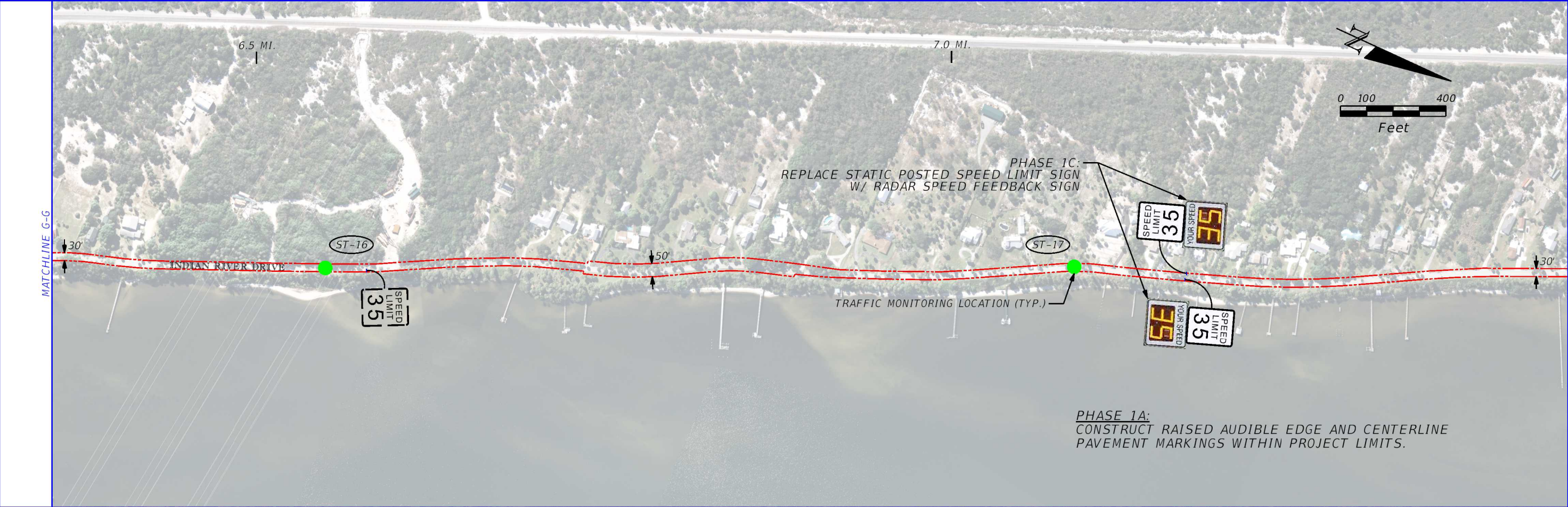
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RECOMMENDED TRAFFIC

CALMING STRATEGIES

FIGURE

2



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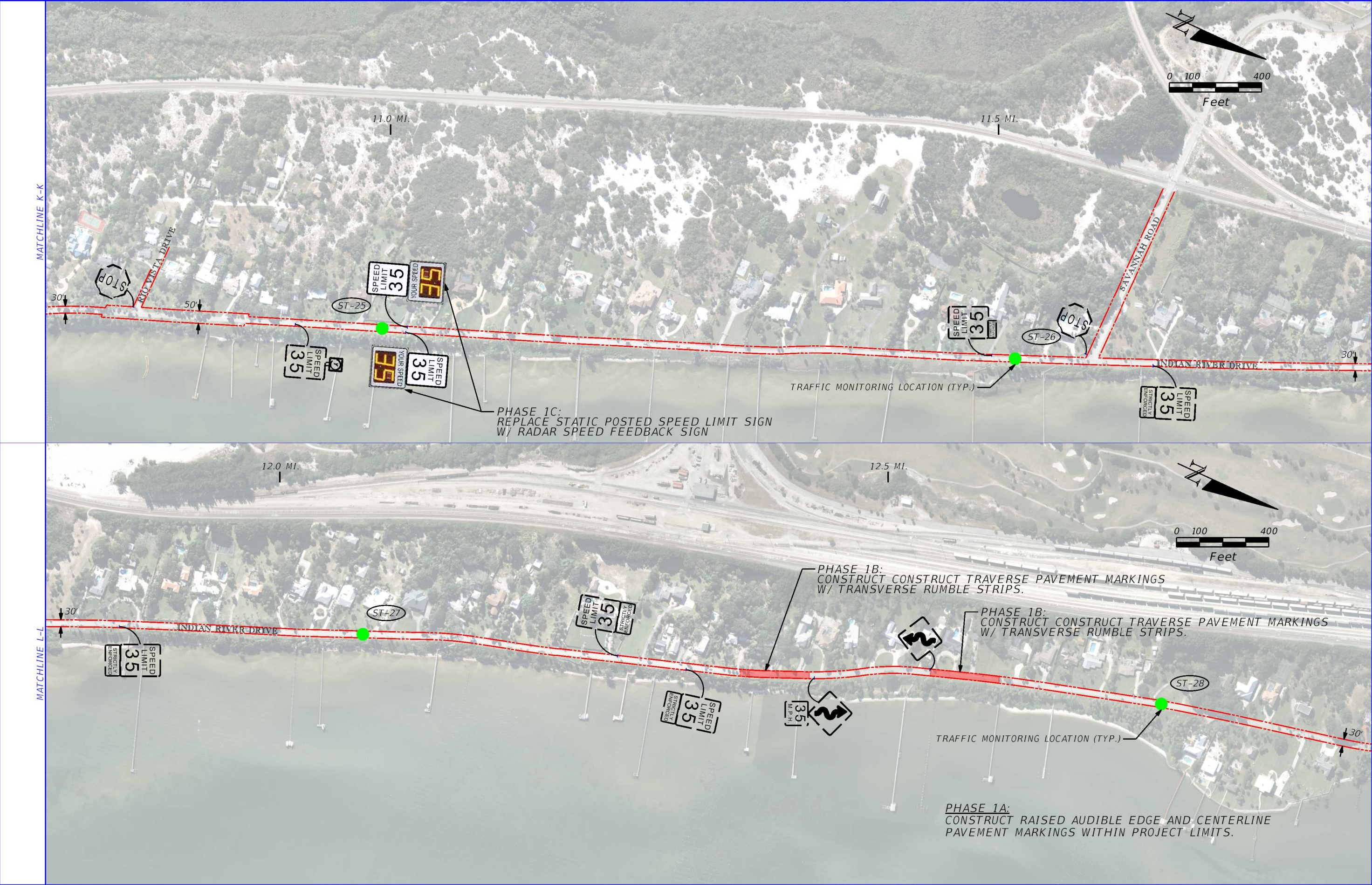
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CERTIFICATE OF AUTHORIZATION: 00000696

ST LUCIE COUNTY

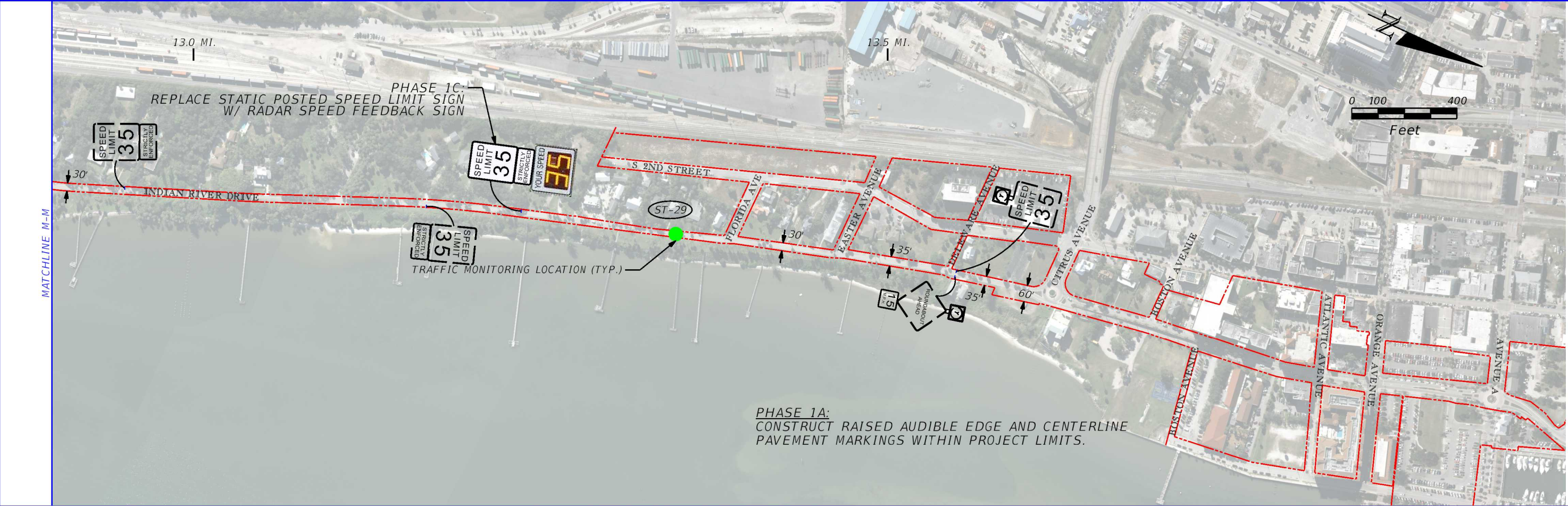
BOARD OF COUNTY COMISSIONERS

INDIAN RIVER DRIVE TRAFFIC

CALMING FEASIBILITY STUDY

RECOMMENDED TRAFFIC

CALMING STRATEGIES



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Kimley»Horn

BRIAN A. GOOD, P.E.
P.E. LICENSE NUMBER 56939
445 24th STREET, SUITE 200
VERO BEACH, FL 32960
(772) 794-4100
CERTIFICATE OF AUTHORIZATION: 00000696

ST LUCIE COUNTY
BOARD OF COUNTY COMISSIONERS
INDIAN RIVER DRIVE TRAFFIC
CALMING FEASIBILITY STUDY

RECOMMENDED TRAFFIC
CALMING STRATEGIES

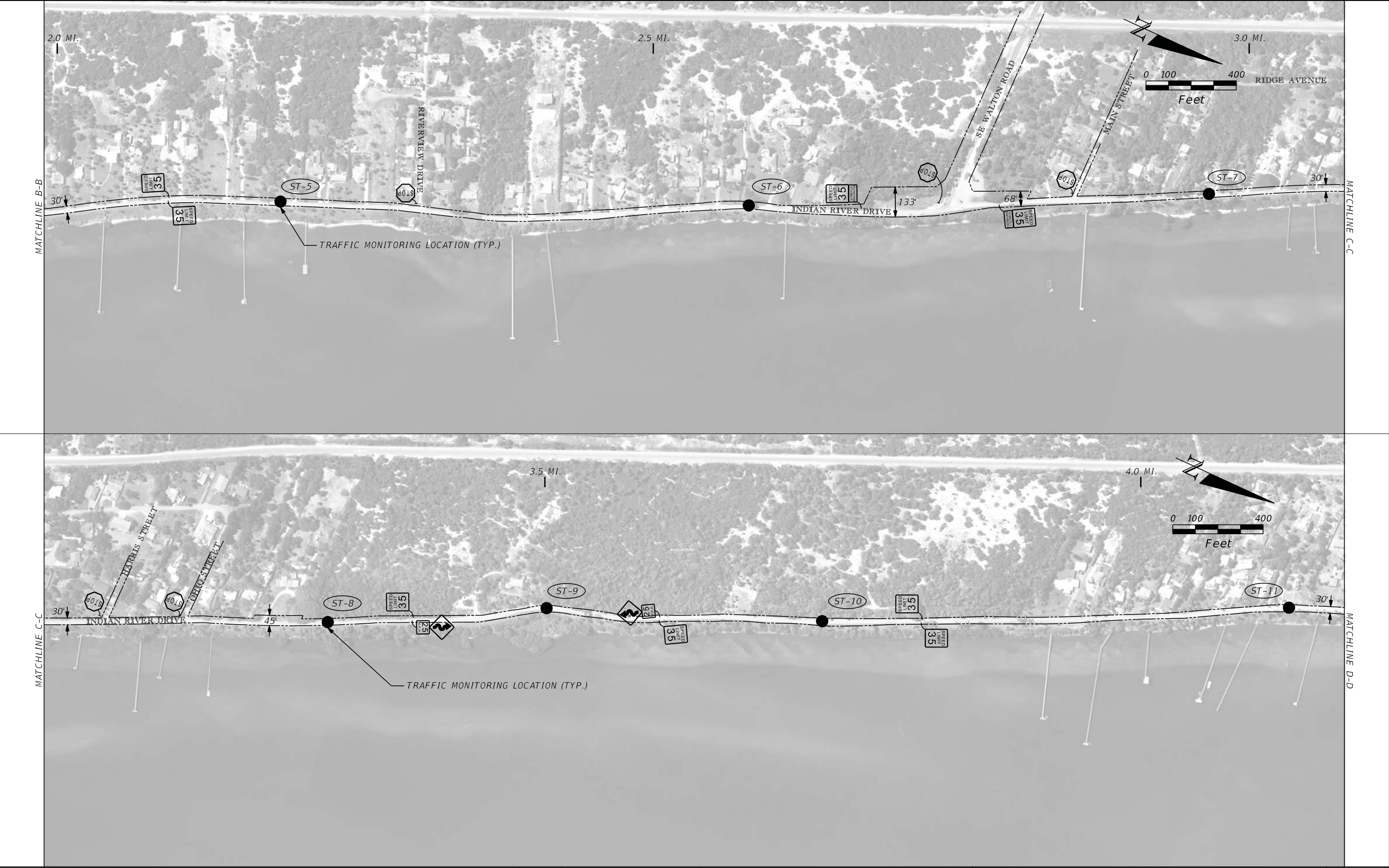
FIGURE
2

APPENDIX A:

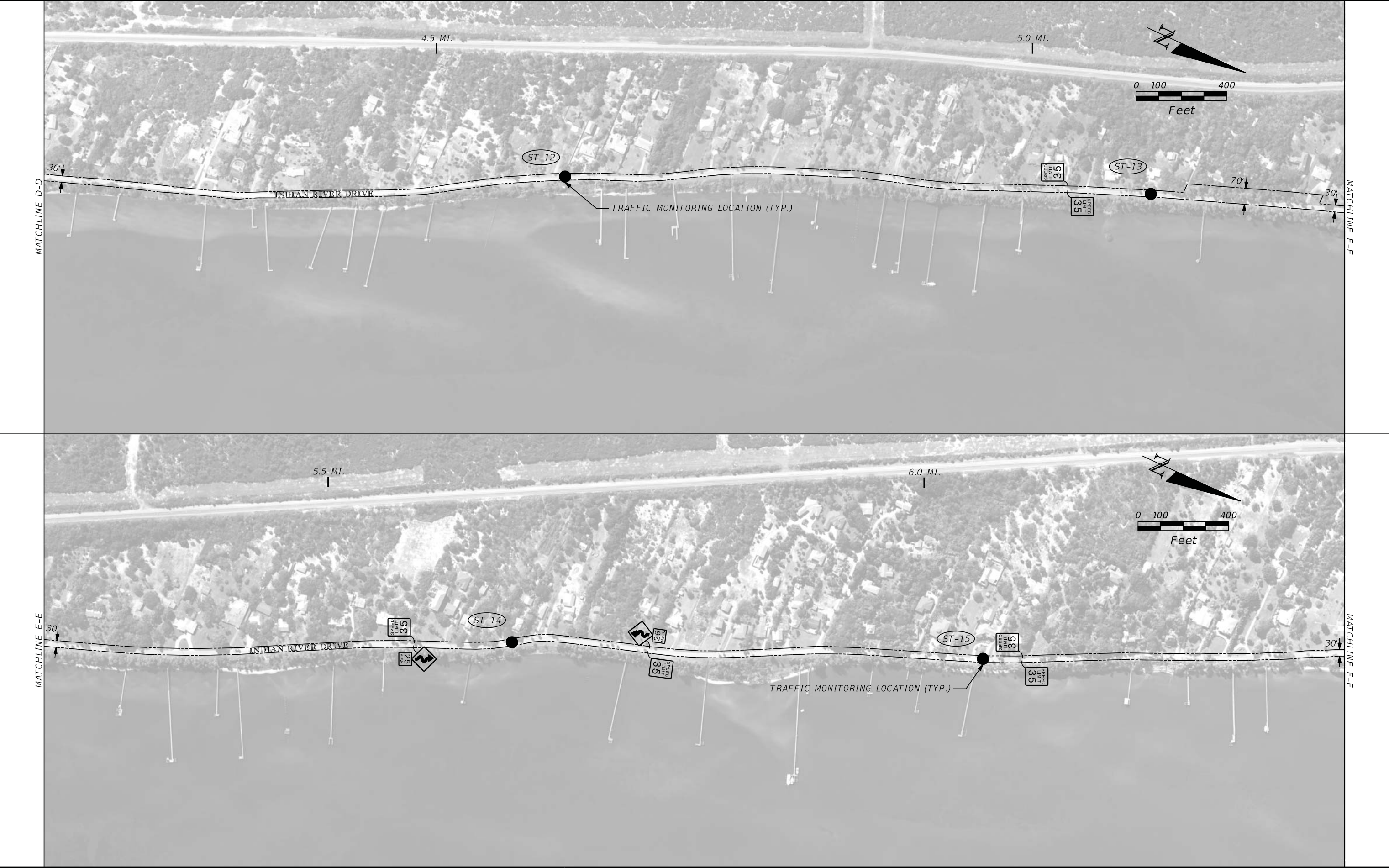
Exhibit depicting the regulatory speed limit signage and traffic monitoring locations identified within the Study Limits.



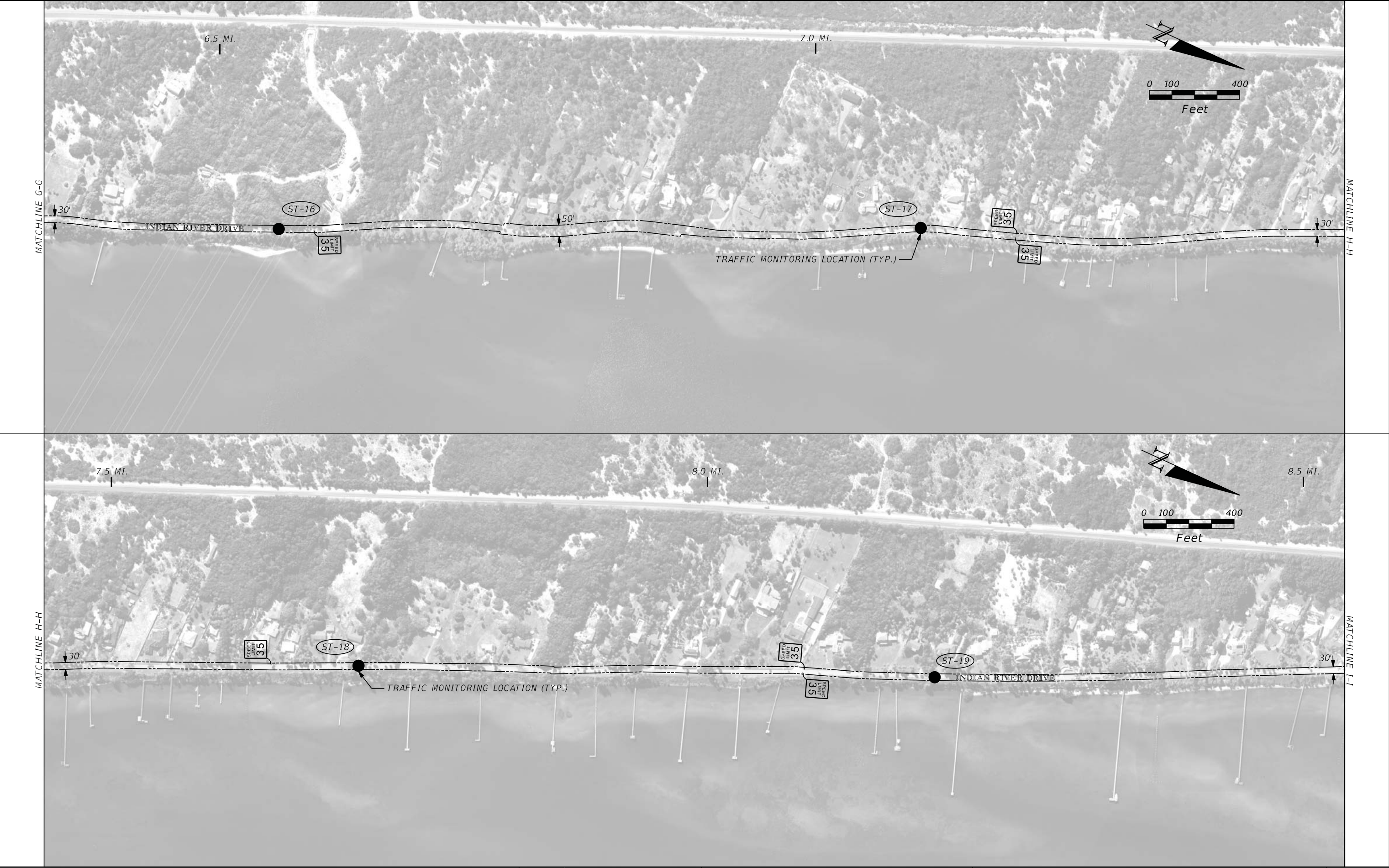
REVISIONS						Kimley»Horn	ST LUCIE COUNTY BOARD OF COUNTY COMISSIONERS INDIAN RIVER DRIVE TRAFFIC CALMING STUDY	TRAFFIC MONITORING & CORRIDOR CHARACTERISTICS EXHIBIT	SHEET NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION				
						BRIAN A. GOOD, P.E. P.E. LICENSE NUMBER 56939 445 24th STREET, SUITE 200 VERO BEACH, FL 32960 (772) 794-4100 CERTIFICATE OF AUTHORIZATION: 00000696			



REVISIONS						Kimley»Horn	ST LUCIE COUNTY BOARD OF COUNTY COMISSIONERS INDIAN RIVER DRIVE TRAFFIC CALMING STUDY	TRAFFIC MONITORING & CORRIDOR CHARACTERISTICS EXHIBIT	SHEET NO.
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REVISIONS						Kimley»Horn BRIAN A. GOOD, P.E. P.E. LICENSE NUMBER 56939 445 24th STREET, SUITE 200 VERO BEACH, FL 32960 (772) 794-4100 CERTIFICATE OF AUTHORIZATION: 00000696	ST LUCIE COUNTY BOARD OF COUNTY COMISSIONERS INDIAN RIVER DRIVE TRAFFIC CALMING STUDY	TRAFFIC MONITORING & CORRIDOR CHARACTERISTICS EXHIBIT	SHEET NO.
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REVISIONS						Kimley»Horn	ST LUCIE COUNTY BOARD OF COUNTY COMISSIONERS	TRAFFIC MONITORING & CORRIDOR CHARACTERISTICS EXHIBIT	SHEET NO.
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REVISIONS						Kimley»Horn BRIAN A. GOOD, P.E. P.E. LICENSE NUMBER 56939 445 24th STREET, SUITE 200 VERO BEACH, FL 32960 (772) 794-4100 CERTIFICATE OF AUTHORIZATION: 00000696	ST LUCIE COUNTY BOARD OF COUNTY COMISSIONERS INDIAN RIVER DRIVE TRAFFIC CALMING STUDY	TRAFFIC MONITORING & CORRIDOR CHARACTERISTICS EXHIBIT	SHEET NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION				

APPENDIX B:

85th percentile speeds and 10-mph pace data collected at the traffic monitoring stations
located within the Study Limits

PROJECT: INDIAN RIVER DRIVE SPEED STUDY
COLLECTION DATE: WEDNESDAY, AUGUST 10, 2016
POSTED SPEED: 35 MPH



		STATION	SOUTHBOUND				NORTHBOUND				TOTAL						
SIDE STREET		NUMBER	VEHICLE VOLUME	85% MPH	95% MPH	PACE SPEED		VEHICLE VOLUME	85% MPH	95% MPH	PACE SPEED		VEHICLE VOLUME	85% MPH	95% MPH	PACE SPEED	
County Line Road																	
1.7 Miles	ST-1		2778	45.0	47.8	36 to 45 MPH, 54.8%		2946	44.2	47.5	33 to 42 MPH, 51.7%		5724	44.6	47.7	36 to 45 MPH, 51.1%	
	ST-2		2630	44.2	47.0	33 to 42 MPH, 52.7%		2829	43.4	46.9	33 to 42 MPH, 51.7%		5459	43.8	46.9	33 to 42 MPH, 52.2%	
	ST-3		2614	44.7	47.4	36 to 45 MPH, 54.0%		2789	44.1	47.8	33 to 42 MPH, 55.8%		5403	44.4	47.6	33 to 42 MPH, 53.4%	
	Avg.			44.6	47.4	36 to 45 MPH			43.9	47.4	33 to 42 MPH			44.3	47.4	33 to 42 MPH	
Spring Hill Drive																	
1.0 Miles	ST-4		2558	45.2	47.6	36 to 45 MPH, 53.2%		2755	43.6	46.8	33 to 42 MPH, 55.5%		5313	44.8	47.7	36 to 45 MPH, 51.2%	
	ST-5		2555	44.6	47.7	36 to 45 MPH, 52.5%		2733	43.9	47.3	33 to 42 MPH, 56.2%		5288	44.3	47.5	33 to 42 MPH, 52.8%	
	ST-6		2585	44.3	47.3	33 to 42 MPH, 51.6%		2774	41.7	44.4	33 to 42 MPH, 55.1%		5359	43.3	46.5	33 to 42 MPH, 53.4%	
	Avg.			44.7	47.5				43.1	46.2				44.1	47.2	33 to 42 MPH	
Walton Road																	
6.2 Miles	ST-7		1999	42.0	45.0	33 to 42 MPH, 60.2%		2007	44.3	47.7	33 to 42 MPH, 51.5%		4006	43.4	46.8	33 to 42 MPH, 55.8%	
	ST-8		1980	43.4	46.3	33 to 42 MPH, 59.9%		1961	44.6	48.3	36 to 45 MPH, 54.2%		3941	44.4	47.7	33 to 42 MPH, 55.6%	
	ST-9		1973	42.0	44.5	33 to 42 MPH, 62.0%		1953	41.9	44.7	30 to 39 MPH, 56.1%		3926	42.0	44.6	33 to 42 MPH, 58.8%	
	ST-10		1979	44.9	47.7	36 to 45 MPH, 58.7%		1943	44.7	47.8	33 to 42 MPH, 52.6%		3922	44.8	47.0	36 to 45 MPH, 55.3%	
	ST-11		1953	43.4	46.0	33 to 42 MPH, 58.5%		1916	44.2	48.9	36 to 45 MPH, 52.2%		3869	44.3	47.7	33 to 42 MPH, 54.8%	
	ST-12		1936	43.3	46.4	33 to 42 MPH, 58.1%		1899	44.2	47.6	33 to 42 MPH, 56.9%		3835	43.8	47.1	33 to 42 MPH, 57.5%	
	ST-13		1899	43.5	46.6	33 to 42 MPH, 58.4%		1885	44.2	48.0	33 to 42 MPH, 58.1%		3784	43.9	47.3	33 to 42 MPH, 58.2%	
	ST-14		1899	41.5	44.0	30 to 39 MPH, 58.6%		1871	41.3	44.1	30 to 39 MPH, 62.6%		3770	41.4	44.0	30 to 39 MPH, 60.6%	
	ST-15		1858	43.5	46.1	33 to 42 MPH, 58.0%		1863	42.9	46.6	33 to 42 MPH, 60.5%		3721	43.3	46.3	33 to 42 MPH, 59.3%	
	ST-16		1888	44.1	48.0	36 to 45 MPH, 54.3%		1877	42.6	45.7	33 to 42 MPH, 61.2%		3765	44.1	47.4	33 to 42 MPH, 56.0%	
	ST-17		1906	43.2	46.0	33 to 42 MPH, 57.6%		1890	42.6	45.4	33 to 42 MPH, 61.6%		3796	42.9	45.7	33 to 42 MPH, 59.6%	
	ST-18		1936	45.0	48.7	36 to 45 MPH, 53.8%		1916	43.5	47.8	33 to 42 MPH, 60.1%		3852	44.7	48.1	33 to 42 MPH, 54.0%	
	ST-19		2000	44.7	47.0	36 to 45 MPH, 51.3%		1960	44.3	47.4	33 to 42 MPH, 57.6%		3960	44.5	47.2	33 to 42 MPH, 54.2%	
	ST-20**		-	-	-	-		-	-	-	-		-	-	-	-	
	Avg.			43.4	46.3				43.5	46.9				43.7	46.7	33 to 42 mph	
Midway Road																	
2.6 Miles	ST-21**		-	-	-	-		-	-	-	-		-	-	-	-	
	ST-22**		-	-	-	-		-	-	-	-		-	-	-	-	
	ST-23		2179	40.5	42.5	30 to 39 MPH, 66.0%		1898	41.8	44.7	30 to 39 MPH, 55.7%		4077	41.1	43.8	30 to 39 MPH, 61.2%	
	ST-24		2185	44.0	46.7	33 to 42 MPH, 53.6%		1916	44.3	47.8	36 to 45 MPH, 55.5%		4101	44.1	47.2	33 to 42 MPH, 54.3%	
	ST-25		2213	44.3	47.2	33 to 42 MPH, 54.1%		1957	43.0	45.6	33 to 42 MPH, 60.8%		4170	43.8	46.7	33 to 42 MPH, 57.2%	
	Avg.			42.9	45.5				43.0	46.0				43.0	45.9	33 to 42 MPH	
Savannah Road																	
2.0 Miles	ST-26		2254	42.0	44.7	33 to 42 MPH, 50.9%		1990	41.4	44.7	33 to 42 MPH, 52.7%		4244	41.1	45.0	33 to 42 MPH, 51.7%	
	ST-27		2056	41.2	44.8	33 to 42 MPH, 40.1%		1863	41.9	45	33 to 42 MPH, 43.4%		3919	41.5	44.3	33 to 42 MPH, 41.7%	
	ST-28		-	-	-	-		-	-	-	-		-	-	-	-	
	ST-29		2117	41.4	44.4	30 to 39 MPH, 57.8%		1881	41.1	45	33 to 42 MPH, 55.6%		3998	41.7	44.7	30 to 39 MPH, 55.1%	
	Avg.			41.5	44.6				41.5	44.9				41.4	44.7	33 to 42 mph	
Citrus Avenue																	

**Note: Data not collected at these station on this day

PROJECT: INDIAN RIVER DRIVE SPEED STUDY
COLLECTION DATE: THURSDAY, AUGUST 11, 2016
POSTED SPEED: 35 MPH



		STATION NUMBER	SOUTHBOUND				NORTHBOUND				TOTAL			
SIDE STREET			VEHICLE VOLUME	85% MPH	95% MPH	PACE SPEED	VEHICLE VOLUME	85% MPH	95% MPH	PACE SPEED	VEHICLE VOLUME	85% MPH	95% MPH	PACE SPEED
County Line Road														
1.7 Miles	ST-1		2832	44.3	47.3	36 to 45 MPH, 55.9%	3047	43.8	46.9	33 to 42 MPH, 52.11%	5879	44.0	47.1	33 to 42 MPH, 53.7%
	ST-2		2700	44.0	47.1	33 to 42 MPH, 57.8%	2933	42.7	46.0	33 to 42 MPH, 52.6%	5633	43.4	46.6	33 to 42 MPH, 55.1%
	ST-3		2685	44.5	47.5	36 to 45 MPH, 55.2%	2874	43.6	47.4	33 to 42 MPH, 53.4%	5559	44.1	47.5	33 to 42 MPH, 53.7%
	Avg.			44.3	47.3			43.4	46.8			43.8	47.1	33 to 42 MPH
Spring Hill Drive														
1.0 Miles	ST-4		2591	44.7	48	36 to 45 MPH, 56.8%	2818	43.4	46.6	33 to 42 MPH, 54.3%	5409	44.5	47.7	33 to 42 MPH, 51.3%
	ST-5		2595	44.2	47.5	33 to 42 MPH, 52.4%	2805	43.5	46.4	33 to 42 MPH, 55.8%	5400	43.9	47	33 to 42 MPH, 54.2%
	ST-6		2627	43.9	47	33 to 42 MPH, 54.9%	2799	41.9	44.6	33 to 42 MPH, 55.4%	5426	42.7	45.7	33 to 42 MPH, 55.2%
	Avg.			44.3	47.5			42.9	45.9			43.7	46.8	33 to 42 MPH
Walton Road														
6.2 Miles	ST-7		2025	41.6	44.7	33 to 42 MPH, 60.3%	2031	43.7	47.1	33 to 42 MPH, 53.2%	4056	42.8	45.7	33 to 42 MPH, 56.7%
	ST-8		1983	43.3	45.8	33 to 42 MPH, 59.3%	1985	44.1	47.5	36 to 45 MPH, 55.5%	3968	44.2	47.4	33 to 42 MPH, 54.8%
	ST-9		1969	41.9	44.2	33 to 42 MPH, 64.1%	1985	41.6	44.4	30 to 39 MPH, 57.4%	3954	41.8	44.3	33 to 42 MPH, 59.7%
	ST-10		2007	44.5	47.4	36 to 45 MPH, 59.0%	1976	44.3	47.3	33 to 42 MPH, 53.0%	3983	44.4	47.4	33 to 42 MPH, 55.5%
	ST-11		1957	43.2	45.7	33 to 42 MPH, 60.6%	1874	44.6	47.2	36 to 45 MPH, 57.3%	3831	44	47.1	33 to 42 MPH, 56.4%
	ST-12		1954	43	45.6	33 to 42 MPH, 59.5%	1895	43.8	46.7	33 to 42 MPH, 58.0%	3849	43.4	46.2	33 to 42 MPH, 58.8%
	ST-13		1911	43.6	46.4	33 to 42 MPH, 59.0%	1892	44	47.4	33 to 42 MPH, 57.3%	3803	43.8	46.9	33 to 42 MPH, 58.2%
	ST-14		1908	41.5	43.9	33 to 42 MPH, 58.3%	1867	41.1	43.7	30 to 39 MPH, 62.5%	3775	41.3	43.9	30 to 39 MPH, 58.8%
	ST-15		1880	43.4	46.1	33 to 42 MPH, 59.6%	1871	43.1	46	33 to 42 MPH, 57.6%	3751	43.2	46.1	33 to 42 MPH, 58.6%
	ST-16		1889	45	47.1	36 to 45 MPH, 58.1%	1861	42.8	45.1	33 to 42 MPH, 60.7%	3750	44.1	47.1	33 to 42 MPH, 55.5%
	ST-17		1900	43.2	46	33 to 42 MPH, 57.8%	1861	42.9	45.2	33 to 42 MPH, 61.2%	3761	43	45.7	33 to 42 MPH, 59.5%
	ST-18		1927	45.1	48.2	36 to 45 MPH, 54.2%	1884	43.4	47.2	33 to 42 MPH, 60.4%	3811	44.7	47.2	33 to 42 MPH, 54.8%
	ST-19		1987	44.3	47.3	33 to 42 MPH, 52.4%	1944	43.8	47.2	33 to 42 MPH, 57.5%	3931	44.1	47.3	33 to 42 MPH, 54.9%
	ST-20*		2085	44.9	47.9	36 to 45 MPH, 53.9%	2163	43.7	46.8	33 to 42 MPH, 55.8%	4248	44.4	47.5	33 to 42 MPH, 52.5%
	Avg.			43.4	46.0			43.3	46.3			43.4	46.3	33 to 42 mph
Midway Road														
2.6 Miles	ST-21*		2220	41.1	44	33 to 42 MPH, 56.7%	2080	44.9	47	36 to 45 MPH, 53.7%	4300	43.7	47	33 to 42 MPH, 53.3%
	ST-22*		2213	44.5	47.4	36 to 45 MPH, 55.3%	2054	44.5	47.4	36 to 45 MPH, 57.1%	4267	44.9	47.8	36 to 45 MPH, 56.2%
	ST-23		2110	40.5	42.9	30 to 39 MPH, 65.4%	1870	41.4	44.1	30 to 39 MPH, 59.2%	3980	40.9	43.6	30 to 39 MPH, 62.5%
	ST-24		2100	44.5	47.8	33 to 42 MPH, 54.4%	1875	44.2	47.3	33 to 42 MPH, 55.8%	3975	44.4	47.6	33 to 42 MPH, 55.1%
	ST-25		2111	44.4	47.6	33 to 42 MPH, 51.6%	1892	42.9	46.2	33 to 42 MPH, 58.9%	4003	43.8	47	33 to 42 MPH, 55.0%
	Avg.			43.1	46.1			42.8	45.9			43.0	46.1	33 to 42 MPH
Savannah Road														
2.0 Miles	ST-26		2155	41.9	44.6	30 to 39 MPH, 52.2%	1930	41.7	44.7	30 to 39 MPH, 56.2%	4085	41.8	44.6	30 to 39 MPH, 54.1%
	ST-27		1944	43.6	47	33 to 42 MPH, 52.6%	1808	43.5	46.9	33 to 42 MPH, 55.4%	3752	43.5	46.9	33 to 42 MPH, 53.9%
	ST-28		1954	42.3	45.6	33 to 42 MPH, 53.9%	1799	43.0	45.6	33 to 42 MPH, 55.6%	3753	42.7	45.6	33 to 42 MPH, 54.8%
	ST-29		1979	41.4	44.6	30 to 39 MPH, 56.3%	1834	41.7	44.5	30 to 39 MPH, 54.3%	3813	41.6	44.6	30 to 39 MPH, 55.4%
	Avg.			42.3	45.5			42.5	45.4			42.4	45.4	30 to 39 mph
Citrus Avenue														

*Note: Data for ST-20, ST-21 and ST-22 had collection date of 09/08/2016

PROJECT: INDIAN RIVER DRIVE SPEED STUDY
COLLECTION DATE: FRIDAY, AUGUST 12, 2016
POSTED SPEED: 35 MPH



		SOUTHBOUND				NORTHBOUND				TOTAL			
SIDE STREET	STATION NUMBER	VEHICLE VOLUME	85% MPH	95% MPH	PACE SPEED	VEHICLE VOLUME	85% MPH	95% MPH	PACE SPEED	VEHICLE VOLUME	85% MPH	95% MPH	PACE SPEED
County Line Road													
1.7 Miles	ST-1	2949	44.4	47.3	36 to 45 MPH, 55.5%	3211	44.0	47.3	33 to 42 MPH, 51.9%	6160	44.2	47.3	36 to 45 MPH, 52.2%
	ST-2	2798	43.9	46.9	33 to 42 MPH, 54.9%	3072	43.2	46.2	33 to 42 MPH, 53.4%	5870	43.5	46.6	33 to 42 MPH, 54.1%
	ST-3	2762	44.2	47.2	33 to 42 MPH, 54.5%	3007	43.6	46.5	33 to 42 MPH, 56.1%	5769	43.9	46.9	33 to 42 MPH, 55.3%
	Avg.		44.2	47.1			43.6	46.7			43.9	46.9	33 to 42 MPH
Spring Hill Drive													
1.0 Miles	ST-4	2664	44.5	47.1	36 to 45 MPH, 56.7%	2948	43.5	46.3	33 to 42 MPH, 55.3%	5612	44.5	47.4	36 to 45 MPH, 52.5%
	ST-5	2692	44.2	47.6	33 to 42 MPH, 52.3%	2967	43.6	46.4	33 to 42 MPH, 56.2%	5659	43.9	47.0	33 to 42 MPH, 54.3%
	ST-6	2682	43.9	47.2	33 to 42 MPH, 50.6%	2888	41.8	44.6	30 to 39 MPH, 55.3%	5570	42.6	45.8	33 to 42 MPH, 52.1%
	Avg.		44.2	47.3			43.0	45.8			43.7	46.7	33 to 42 MPH
Walton Road													
6.2 Miles	ST-7	2111	41.5	44.9	33 to 42 MPH, 60.3%	2194	43.9	46.9	33 to 42 MPH, 51.0%	4305	42.9	46.0	33 to 42 MPH, 55.5%
	ST-8	2069	43.4	46.1	33 to 42 MPH, 59.3%	2145	44.6	47.9	36 to 45 MPH, 53.7%	4214	44.5	47.6	33 to 42 MPH, 54.3%
	ST-9	2065	41.0	44.5	33 to 42 MPH, 60.3%	2145	41.8	44.6	30 to 39 MPH, 57.8%	4210	41.9	44.5	30 to 39 MPH, 56.3%
	ST-10	2074	44.6	47.9	36 to 45 MPH, 58.6%	2118	44.7	47.7	33 to 42 MPH, 49.4%	4192	44.7	47.8	36 to 45 MPH, 53.6%
	ST-11	2016	43.3	45.6	33 to 42 MPH, 57.8%	2007	44.6	47.9	36 to 45 MPH, 54.7%	4023	44	47.0	33 to 42 MPH, 55.0%
	ST-12	2010	43.1	45.6	33 to 42 MPH, 57.7%	2069	44.1	46.8	33 to 42 MPH, 53.6%	4079	43.6	46.4	33 to 42 MPH, 55.6%
	ST-13	2000	43.7	47	33 to 42 MPH, 58.1%	2052	43.9	47.3	33 to 42 MPH, 57.2%	4052	43.8	47.2	33 to 42 MPH, 57.7%
	ST-14	1988	41.3	44	30 to 39 MPH, 60.2%	2032	41.1	43.9	30 to 39 MPH, 61.6%	4020	41.2	44.0	30 to 39 MPH, 60.9%
	ST-15	1969	43.3	46.4	33 to 42 MPH, 57.4%	2032	43.0	46.1	33 to 42 MPH, 56.5%	4001	43.2	46.2	33 to 42 MPH, 57.0%
	ST-16	1962	43.7	47.4	36 to 45 MPH, 34.3%	1984	41.2	44.8	33 to 42 MPH, 40.7%	3946	42.6	46.1	33 to 42 MPH, 36.7%
	ST-17	2007	43.3	46.2	33 to 42 MPH, 54.5%	2070	42.2	44.9	33 to 42 MPH, 58.0%	4077	42.8	45.2	33 to 42 MPH, 56.3%
	ST-18	2060	45.0	48.6	36 to 45 MPH, 53.3%	2082	43.2	46.5	33 to 42 MPH, 57.5%	4142	44.6	47.9	33 to 42 MPH, 51.1%
	ST-19	2109	44.5	47.8	36 to 45 MPH, 51.2%	2151	44.0	47.4	33 to 42 MPH, 55.6%	4260	44.3	47.6	33 to 42 MPH, 53.1%
	ST-20*	2209	44.7	47.1	36 to 45 MPH, 55.0%	2183	44.1	47.3	33 to 42 MPH, 54.8%	4392	44.4	47.7	36 to 45 MPH, 54.5%
	Avg.		43.2	46.3			43.3	46.4			43.4	46.4	33 to 42 mph
Midway Road													
2.6 Miles	ST-21*	2343	41.5	44.8	33 to 42 MPH, 56.5%	2199	44.4	47.5	36 to 45 MPH, 57.8%	4542	44.0	47.1	33 to 42 MPH, 52.5%
	ST-22*	2332	44.9	47.7	36 to 45 MPH, 58.4%	2172	44.5	47.7	36 to 45 MPH, 60.4%	4504	44.1	48.0	36 to 45 MPH, 59.4%
	ST-23	2331	40.3	42.4	30 to 39 MPH, 67.2%	2105	41.4	44.0	30 to 39 MPH, 58.7%	4436	40.8	43.3	30 to 39 MPH, 63.2%
	ST-24	2344	44.1	46.8	33 to 42 MPH, 51.3%	2141	44.1	46.9	33 to 42 MPH, 54.9%	4485	44.1	46.9	33 to 42 MPH, 53.0%
	ST-25	2382	44.2	47.1	33 to 42 MPH, 51.8%	2170	42.6	44.8	33 to 42 MPH, 60.5%	4552	43.5	46.4	33 to 42 MPH, 55.9%
Avg.		42.9	45.4			42.7	45.2			42.8	45.5	33 to 42 MPH	
Savannah Road													
2.0 Miles	ST-26	2390	41.7	44.6	30 to 39 MPH, 52.3%	2185	41.6	44.6	30 to 39 MPH, 56.2%	4575	41.6	44.6	30 to 39 MPH, 54.2%
	ST-27	2180	42.9	45.5	33 to 42 MPH, 53.0%	2074	42.6	45.8	33 to 42 MPH, 58.8%	4254	42.8	45.7	33 to 42 MPH, 55.8%
	ST-28	2194	42.1	44.4	33 to 42 MPH, 54.5%	2056	43.1	45.8	33 to 42 MPH, 57.7%	4250	42.6	45.2	33 to 42 MPH, 56.0%
	ST-29	2220	41.0	43.8	30 to 39 MPH, 59.9%	2110	41.5	44.1	30 to 39 MPH, 57.8%	4330	41.3	44.0	30 to 39 MPH, 58.9%
Avg.		41.9	44.6			42.2	45.1			42.1	44.9	30 to 39 mph	
Citrus Avenue													

*Note: Data for ST-20, ST-21 and ST-22 had collection date of 09/09/2016

PROJECT: INDIAN RIVER DRIVE SPEED STUDY
COLLECTION DATE: SATURDAY, AUGUST 13, 2016
POSTED SPEED: 35 MPH



		SOUTHBOUND				NORTHBOUND				TOTAL			
SIDE STREET	STATION NUMBER	VEHICLE VOLUME	85% MPH	95% MPH	PACE SPEED	VEHICLE VOLUME	85% MPH	95% MPH	PACE SPEED	VEHICLE VOLUME	85% MPH	95% MPH	PACE SPEED
County Line Road													
1.7 Miles	ST-1	2735	44.6	47.6	36 to 45 MPH, 55.6%	2976	43.8	47.1	33 to 42 MPH, 54.4%	5711	44.2	47.4	33 to 42 MPH, 54.4%
	ST-2	2591	44.0	47.1	33 to 42 MPH, 57.0%	2860	43.1	46.4	33 to 42 MPH, 53.5%	5451	43.6	46.8	33 to 42 MPH, 55.2%
	ST-3	2575	44.2	47.3	33 to 42 MPH, 53.4%	2817	43.4	46.5	33 to 42 MPH, 58.1%	5392	43.8	47	33 to 42 MPH, 55.9%
	Avg.		44.3	47.3			43.4	46.7			43.9	47.1	33 to 42 MPH
Spring Hill Drive													
1.0 Miles	ST-4	2434	44.8	48.1	36 to 45 MPH, 56.5%	2753	43.5	46.9	33 to 42 MPH, 56.3%	5187	44.6	47.9	33 to 42 MPH, 52.5%
	ST-5	2480	44.3	47.4	33 to 42 MPH, 52.1%	2766	43.6	47	33 to 42 MPH, 58.4%	5246	44	47.2	33 to 42 MPH, 55.4%
	ST-6**	-	-	-	-	-	-	-	-	-	-	-	-
	Avg.		44.6	47.8			43.6	47.0			44.3	47.6	33 to 42 MPH
Walton Road													
6.2 Miles	ST-7	1729	41.5	44.9	33 to 42 MPH, 55.2%	1813	43.5	46.9	33 to 42 MPH, 50.9%	3542	42.6	45.9	33 to 42 MPH, 53.0%
	ST-8	1713	43.3	46.2	33 to 42 MPH, 57.2%	1775	44.4	47.5	36 to 45 MPH, 52.0%	3488	44.4	47.5	33 to 42 MPH, 53.9%
	ST-9	1698	41.8	44.6	33 to 42 MPH, 60.3%	1765	41.7	44.6	30 to 39 MPH, 58.1%	3463	41.8	44.6	30 to 39 MPH, 55.7%
	ST-10	1703	44.8	47.2	36 to 45 MPH, 57.4%	1740	44.8	47.2	33 to 42 MPH, 52.5%	3443	44.8	47.2	36 to 45 MPH, 53.9%
	ST-11	1641	43.2	46.4	33 to 42 MPH, 58.4%	1671	44.8	47.4	33 to 42 MPH, 53.5%	3312	44	47.5	33 to 42 MPH, 55.9%
	ST-12	1649	43.2	46.3	33 to 42 MPH, 57.8%	1698	44.3	47.8	33 to 42 MPH, 55.7%	3347	43.8	47.2	33 to 42 MPH, 56.7%
	ST-13	1637	43.3	46.4	33 to 42 MPH, 57.7%	1677	44.3	47.9	33 to 42 MPH, 53.8%	3314	43.8	47.3	33 to 42 MPH, 55.7%
	ST-14	1648	41.3	43.7	30 to 39 MPH, 60.0%	1693	41	44.3	30 to 39 MPH, 64.3%	3341	41.2	43.9	30 to 39 MPH, 62.2%
	ST-15	1592	43.4	46.6	33 to 42 MPH, 56.5%	1685	43.1	46.9	33 to 42 MPH, 55.6%	3277	43.3	46.8	33 to 42 MPH, 56.1%
	ST-16	1637	44.7	47.4	33 to 42 MPH, 51.3%	1687	42.9	46.4	33 to 42 MPH, 58.0%	3324	44	47.5	33 to 42 MPH, 54.7%
	ST-17	1673	42.6	46.2	33 to 42 MPH, 54.2%	1715	42.3	46	33 to 42 MPH, 58.0%	3388	42.5	46.1	33 to 42 MPH, 56.1%
	ST-18	1668	45.4	49.7	36 to 45 MPH, 51.2%	1736	43.6	47.4	33 to 42 MPH, 58.3%	3404	44.8	48.5	33 to 42 MPH, 53.4%
	ST-19	1756	44.6	47.5	33 to 42 MPH, 49.5%	1785	44.4	47.9	33 to 42 MPH, 56.0%	3541	44.5	47.2	33 to 42 MPH, 52.8%
	ST-20*	1745	44.8	47.1	33 to 42 MPH, 51.6%	1783	44.2	47.8	33 to 42 MPH, 55.4%	3528	44.5	48.0	33 to 42 MPH, 53.5%
	Avg.		43.3	46.4			43.5	46.8			43.5	46.7	33 to 42 mph
Midway Road													
2.6 Miles	ST-21*	1938	41.9	44.7	30 to 39 MPH, 56.3%	1904	44.0	47.6	36 to 45 MPH, 50.8%	3842	43.6	47.1	33 to 42 MPH, 50.7%
	ST-22*	1945	44.5	47.8	36 to 45 MPH, 54.6%	1910	45.0	48.0	36 to 45 MPH, 56.4%	3855	44.8	47.3	36 to 45 MPH, 55.5%
	ST-23	1990	40.0	42.4	30 to 39 MPH, 67.9%	1907	41.0	43.9	30 to 39 MPH, 62.6%	3897	40.5	43.3	30 to 39 MPH, 65.3%
	ST-24	1950	43.8	47.2	33 to 42 MPH, 53.2%	1958	44.0	47.0	33 to 42 MPH, 53.3%	3908	43.9	47.1	33 to 42 MPH, 53.3%
	ST-25	1899	43.8	47.4	33 to 42 MPH, 51.9%	1969	42.4	45.6	33 to 42 MPH, 56.6%	3868	43.2	46.7	33 to 42 MPH, 54.3%
	Avg.		42.5	45.7			42.5	45.5			42.5	45.7	33 to 42 MPH
Savannah Road													
2.0 Miles	ST-26	2018	41.8	44.8	30 to 39 MPH, 56.7%	2009	41.8	44.9	30 to 39 MPH, 58.6%	4027	41.8	44.9	30 to 39 MPH, 57.7%
	ST-27	1878	42.8	46.4	33 to 42 MPH, 50.6%	1928	42.4	45.4	33 to 42 MPH, 56.6%	3806	42.6	46.0	33 to 42 MPH, 53.7%
	ST-28	1890	41.1	44.7	30 to 39 MPH, 56.5%	1923	42.7	45.5	33 to 42 MPH, 56.3%	3813	42.1	45.2	33 to 42 MPH, 52.3%
	ST-29	1878	40.8	43.9	30 to 39 MPH, 59.3%	1959	41.1	44.0	30 to 39 MPH, 61.6%	3837	41.0	44.0	30 to 39 MPH, 60.5%
	Avg.		41.6	45.0			42.0	45.0			41.9	45.0	30 to 39 mph
Citrus Avenue													

*Note: Data for ST-20, ST-21 and ST-22 had collection date of 09/10/2016

**Note: No data collected for this day at this station.

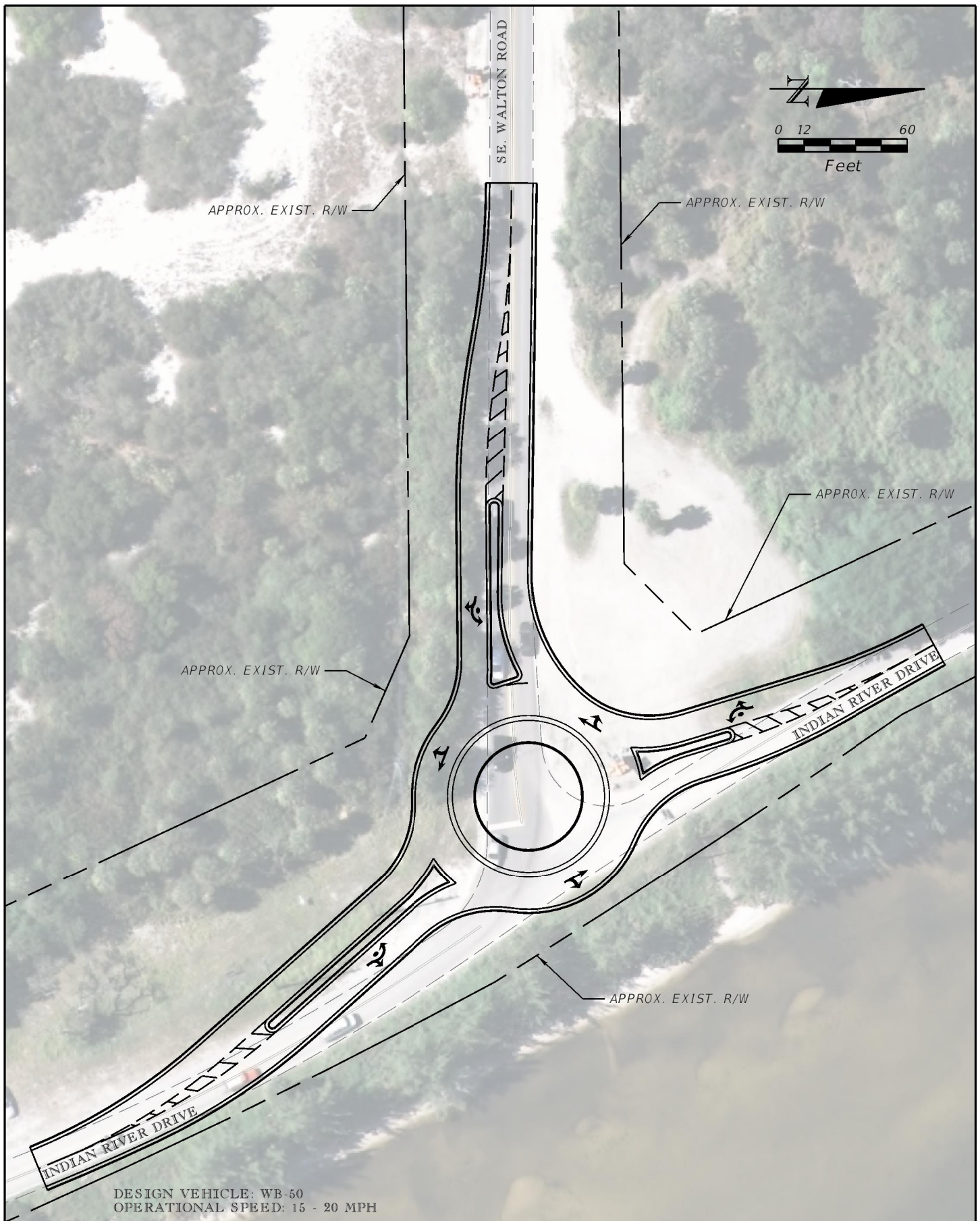
PROJECT: INDIAN RIVER DRIVE SPEED STUDY
COLLECTION DATE: SUNDAY, AUGUST 14, 2016
POSTED SPEED: 35 MPH



		SOUTHBOUND				NORTHBOUND				TOTAL			
SIDE STREET	STATION NUMBER	VEHICLE VOLUME	85% MPH	95% MPH	PACE SPEED	VEHICLE VOLUME	85% MPH	95% MPH	PACE SPEED	VEHICLE VOLUME	85% MPH	95% MPH	PACE SPEED
County Line Road													
1.7 Miles	ST-1	2107	44.2	48	33 to 42 MPH, 51.8%	2321	44.0	47.3	33 to 42 MPH, 51.4%	4428	44.6	47.9	33 to 42 MPH, 51.6%
	ST-2	1990	44.4	48	33 to 42 MPH, 53.2%	2249	43.4	46.9	33 to 42 MPH, 51.7%	4239	43.9	47.5	33 to 42 MPH, 52.4%
	ST-3	1962	44.9	47.9	33 to 42 MPH, 50.4%	2207	43.5	46.8	33 to 42 MPH, 56.3%	4169	44.2	47.5	33 to 42 MPH, 53.5%
	Avg.		44.5	48.0			43.6	47.0			44.2	47.6	33 to 42 MPH
Spring Hill Drive													
1.0 Miles	ST-4	1884	45.3	48.6	36 to 45 MPH, 53.0%	2160	43.5	46.8	33 to 42 MPH, 52.8%	4044	44.7	48	33 to 42 MPH, 49.5%
	ST-5	1882	44.2	47.7	33 to 42 MPH, 49.1%	2135	44.2	47.4	33 to 42 MPH, 54.6%	4017	44.6	47.9	33 to 42 MPH, 52.0%
	ST-6**	-	-	-	-	-	-	-	-	-	-	-	-
	Avg.		44.8	48.2			43.9	47.1			44.7	48.0	33 to 42 MPH
Walton Road													
6.2 Miles	ST-7	1332	42.3	45.1	33 to 42 MPH, 54.8%	1357	43.2	46.6	33 to 42 MPH, 51.8%	2689	42.8	46.0	33 to 42 MPH, 53.3%
	ST-8	1300	43.8	47	33 to 42 MPH, 56.5%	1329	44.7	47.8	36 to 45 MPH, 53.7%	2629	44.3	47.5	33 to 42 MPH, 54.1%
	ST-9	1291	41.6	44.9	33 to 42 MPH, 57.6%	1322	41.7	44.9	30 to 39 MPH, 59.8%	2613	41.1	44.9	30 to 39 MPH, 56.5%
	ST-10	1295	44.3	47.4	36 to 45 MPH, 53.4%	1314	44.7	47.4	33 to 42 MPH, 50.6%	2609	44.9	47.4	33 to 42 MPH, 51.7%
	ST-11	1242	43.8	46.9	33 to 42 MPH, 54.6%	1220	44.8	47.4	36 to 45 MPH, 53.0%	2462	44.4	47.6	33 to 42 MPH, 52.6%
	ST-12	1248	43.3	46.4	33 to 42 MPH, 55.5%	1269	44.3	47.5	33 to 42 MPH, 54.9%	2517	43.8	47.0	33 to 42 MPH, 55.2%
	ST-13	1233	43.7	47	33 to 42 MPH, 56.3%	1258	44.2	47.8	33 to 42 MPH, 56.0%	2491	43.9	47.5	33 to 42 MPH, 56.2%
	ST-14	1232	41.5	44.2	30 to 39 MPH, 60.2%	1253	41.1	44.0	30 to 39 MPH, 62.5%	2485	41.3	44.1	30 to 39 MPH, 61.4%
	ST-15	1192	43.7	47.1	33 to 42 MPH, 57.2%	1239	43.3	46.7	33 to 42 MPH, 56.7%	2431	43.5	46.9	33 to 42 MPH, 56.9%
	ST-16	1214	44.1	48.5	33 to 42 MPH, 50.7%	1239	42.7	45.9	33 to 42 MPH, 56.7%	2453	44.1	47.7	33 to 42 MPH, 53.7%
	ST-17	1209	43.3	46.7	33 to 42 MPH, 53.2%	1231	42.8	46.0	33 to 42 MPH, 57.7%	2440	43.0	46.4	33 to 42 MPH, 55.5%
	ST-18	1204	45.2	49.6	36 to 45 MPH, 53.3%	1230	43.6	47.0	33 to 42 MPH, 59.3%	2434	44.9	48.7	33 to 42 MPH, 54.2%
	ST-19	1236	44.7	47.6	33 to 42 MPH, 49.8%	1265	44.6	48.4	33 to 42 MPH, 53.7%	2501	44.7	48.0	33 to 42 MPH, 51.7%
	ST-20**	-	-	-	-	-	-	-	-	-	-	-	-
	Avg.		43.5	46.8			43.5	46.7			43.6	46.9	33 to 42 mph
Midway Road													
2.6 Miles	ST-21**	-	-	-	-	-	-	-	-	-	-	-	-
	ST-22**	-	-	-	-	-	-	-	-	-	-	-	-
	ST-23	1430	40.6	43.2	30 to 39 MPH, 65.4%	1381	41.5	44.7	30 to 39 MPH, 57.6%	2811	41.1	44.0	30 to 39 MPH, 61.5%
	ST-24	1427	44.2	47.5	33 to 42 MPH, 52.3%	1402	44.0	47.4	33 to 42 MPH, 52.6%	2829	44.1	47.5	33 to 42 MPH, 52.5%
	ST-25**	-	-	-	-	-	-	-	-	-	-	-	-
	Avg.		42.4	45.4			42.8	46.1			42.6	45.8	30 to 39 MPH
Savannah Road													
2.0 Miles	ST-26	1479	41.9	44.3	30 to 39 MPH, 52.9%	1440	41.4	44.8	30 to 39 MPH, 54.6%	2919	41.1	44.6	30 to 39 MPH, 53.7%
	ST-27	1384	43.0	46.4	33 to 42 MPH, 51.1%	1353	42.8	45.9	33 to 42 MPH, 55.7%	2737	42.9	46.2	33 to 42 MPH, 53.3%
	ST-28	1390	41.9	44.2	30 to 39 MPH, 54.2%	1351	42.9	45.8	33 to 42 MPH, 55.9%	2741	42.1	45.2	33 to 42 MPH, 54.3%
	ST-29	1400	40.6	43.4	30 to 39 MPH, 57.6%	1384	41.3	44.1	30 to 39 MPH, 59.1%	2784	41.0	43.8	30 to 39 MPH, 58.3%
	Avg.		41.9	44.6			42.1	45.2			41.8	45.0	30 to 39 mph
Citrus Avenue													

**Note: No data collected on this day at these stations.

APPENDIX C:
Conceptual roundabout layouts

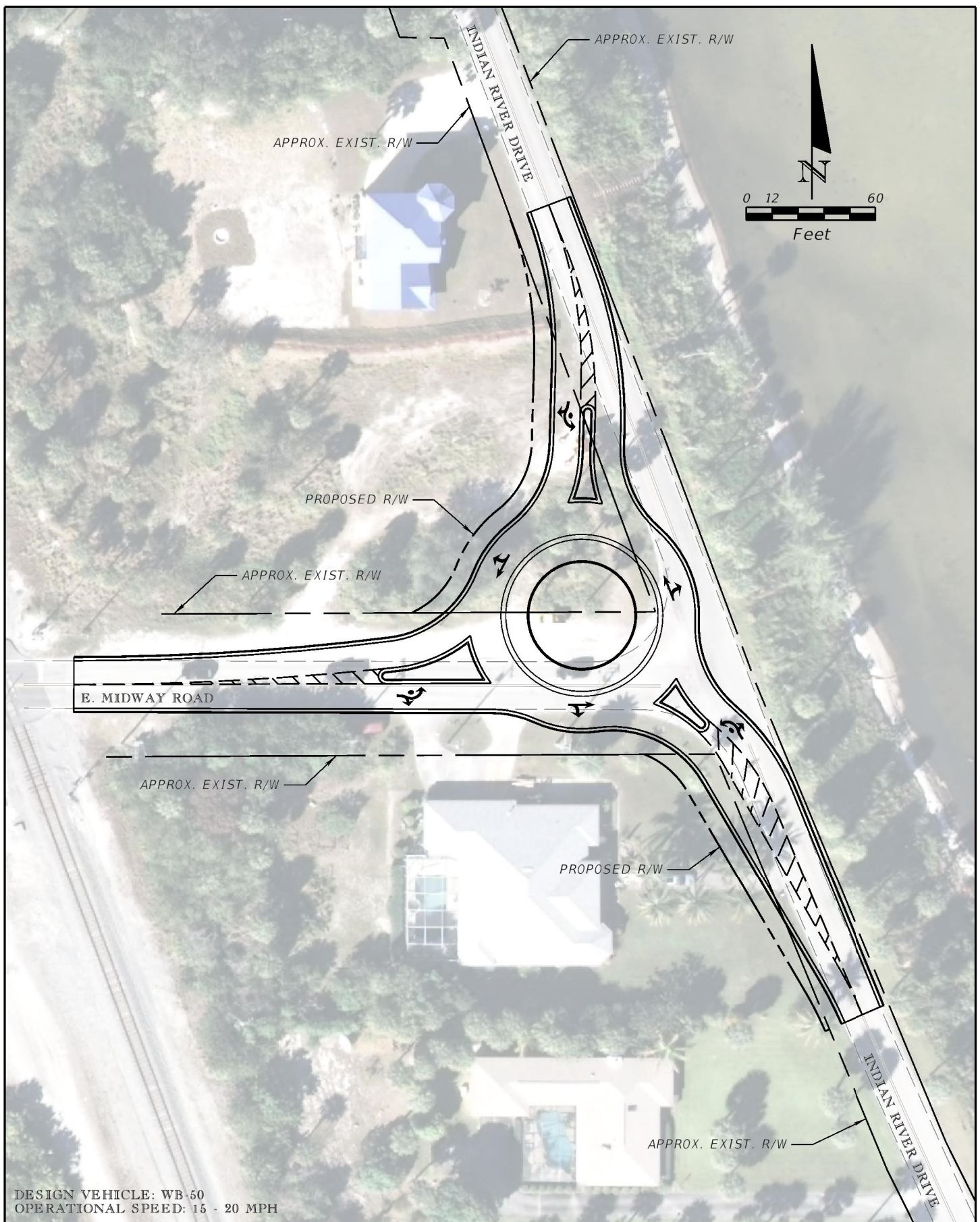


DESIGN VEHICLE: WB-50
OPERATIONAL SPEED: 15 - 20 MPH

Kimley»Horn

445 24th STREET, SUITE 200
VERO BEACH, FL 32960
(772) 794-4100
CERTIFICATE OF AUTHORIZATION: 00000696

SE. WALTON ROAD & INDIAN RIVER DRIVE CONCEPTUAL ROUNDABOUT EXHIBIT

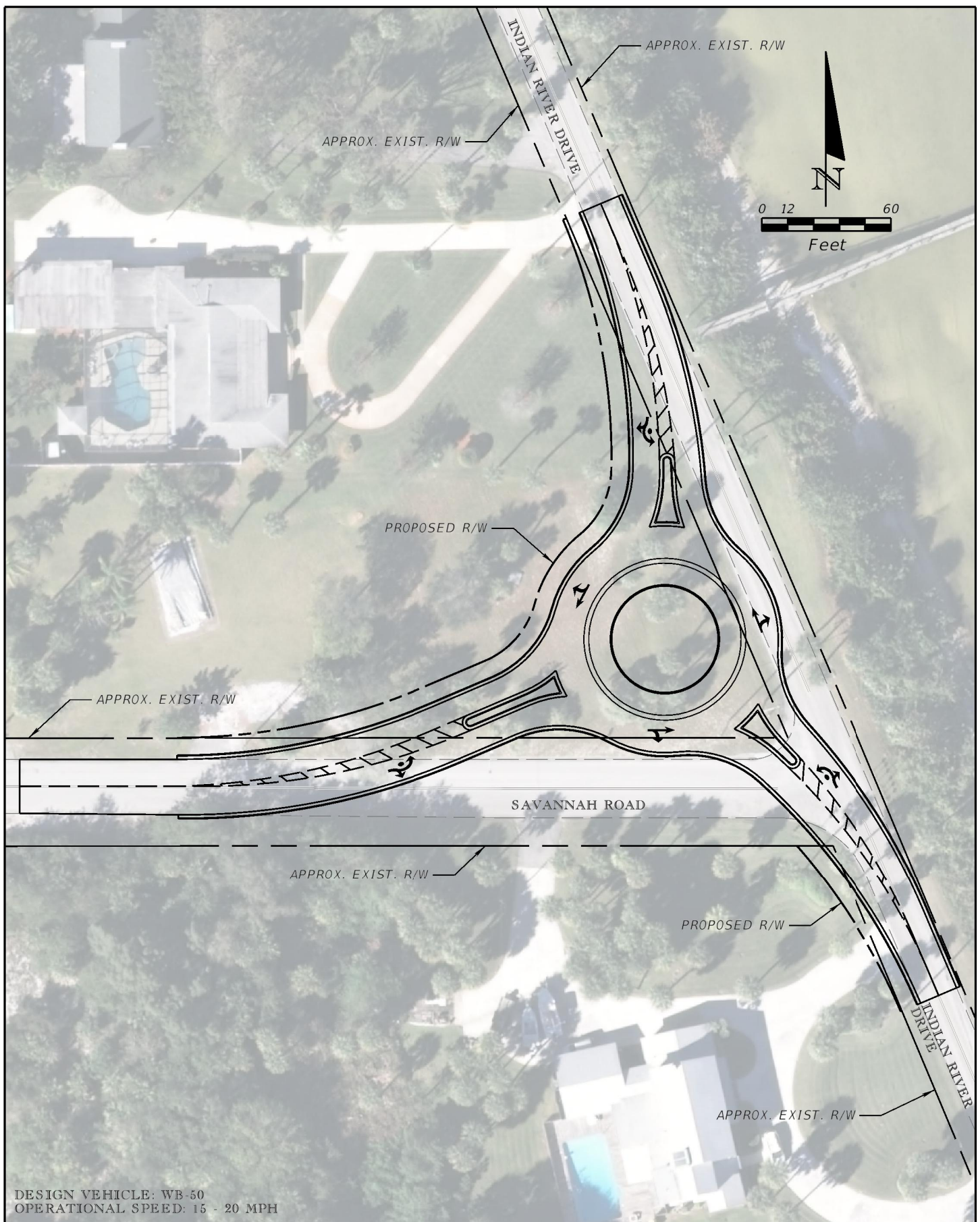


DESIGN VEHICLE: WB-50
OPERATIONAL SPEED: 15 - 20 MPH

Kimley»Horn

445 24th STREET, SUITE 200
VERO BEACH, FL 32960
(772) 794-4100
CERTIFICATE OF AUTHORIZATION: 00000696

*E. MIDWAY ROAD & INDIAN RIVER DRIVE
CONCEPTUAL ROUNDABOUT EXHIBIT*



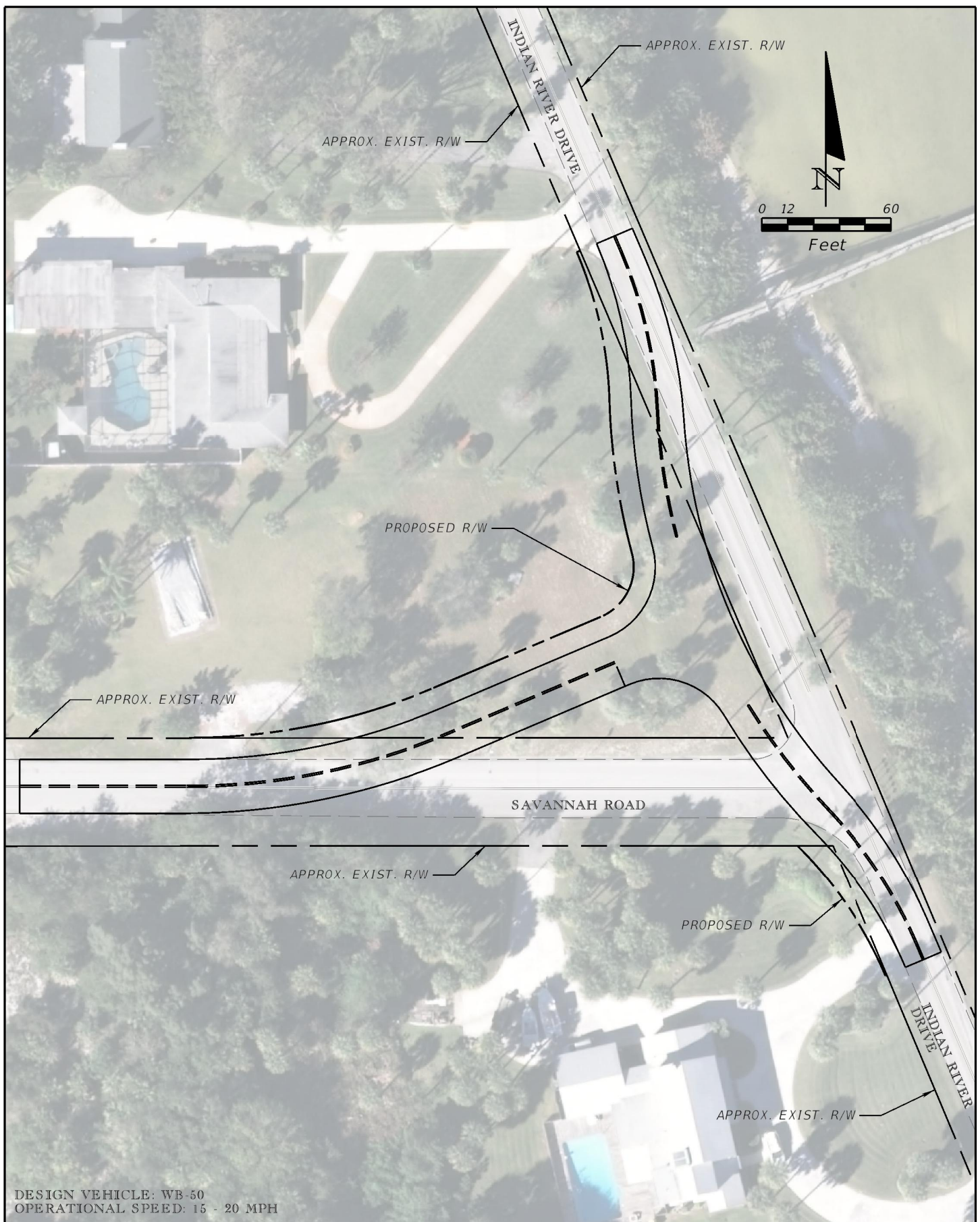
DESIGN VEHICLE: WB-50
OPERATIONAL SPEED: 15 - 20 MPH

Kimley»Horn

445 24th STREET, SUITE 200
VERO BEACH, FL 32960
(772) 794-4100
CERTIFICATE OF AUTHORIZATION: 00000696

*SAVANNAH ROAD & INDIAN RIVER DRIVE
CONCEPTUAL ROUNDABOUT EXHIBIT*

APPENDIX D:
Conceptual chicane layouts

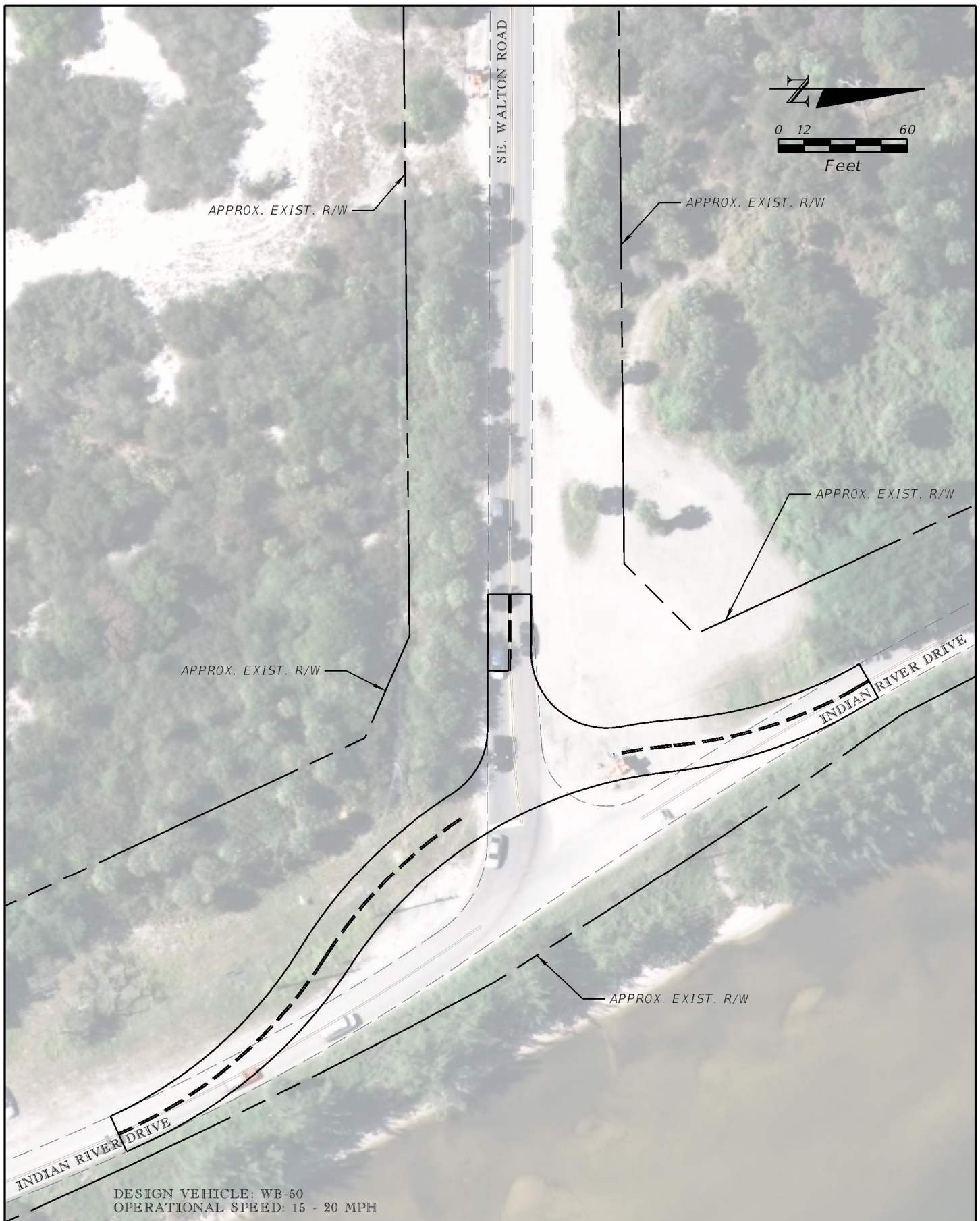


DESIGN VEHICLE: WB-50
OPERATIONAL SPEED: 15 - 20 MPH

Kimley»Horn

445 24th STREET, SUITE 200
VERO BEACH, FL 32960
(772) 794-4100
CERTIFICATE OF AUTHORIZATION: 00000696

SAVANNAH ROAD & INDIAN RIVER DRIVE CONCEPTUAL CHICANE EXHIBIT

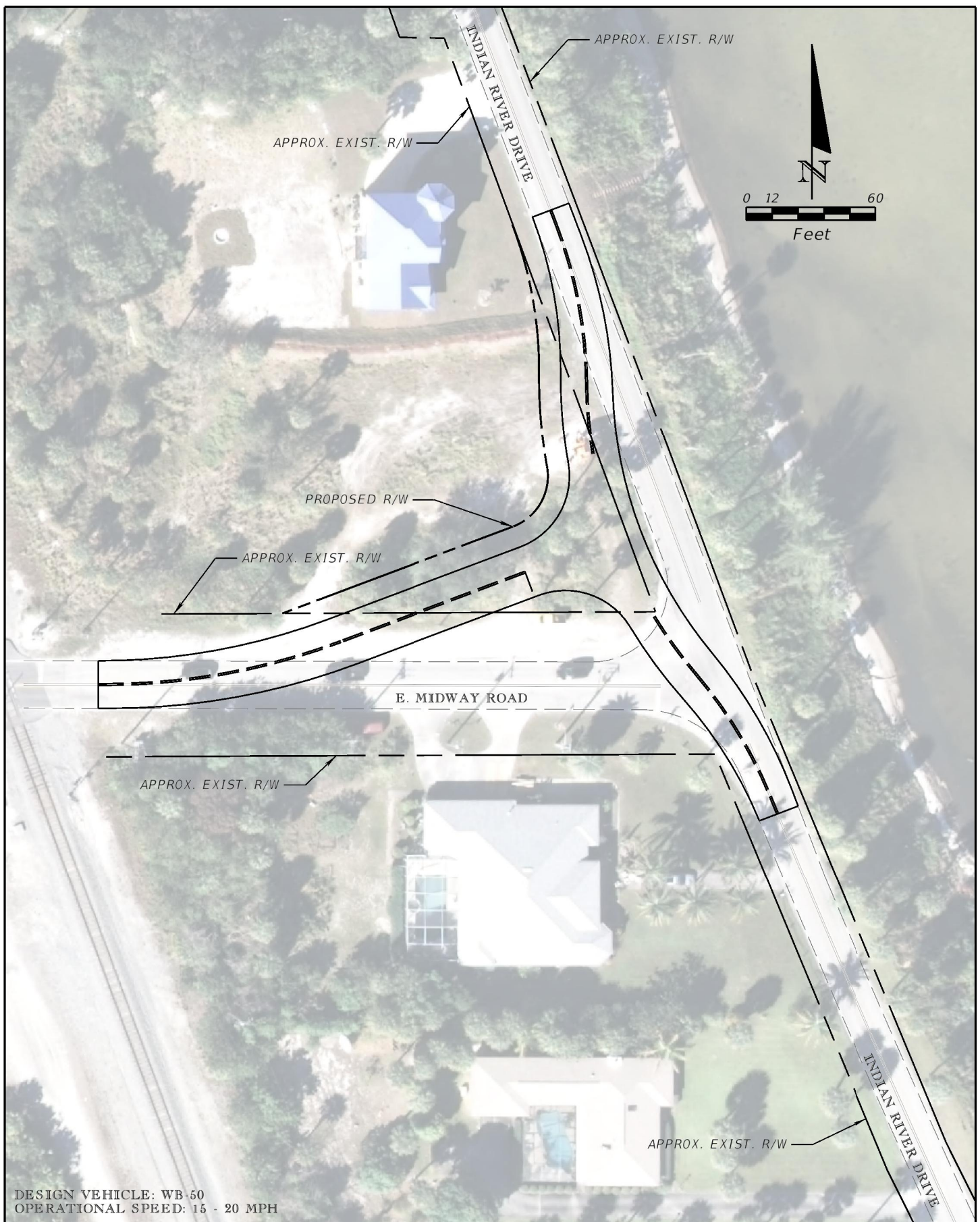


DESIGN VEHICLE: WB-50
OPERATIONAL SPEED: 15 - 20 MPH

Kimley»Horn

445 24th STREET, SUITE 200
VERO BEACH, FL 32960
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CERTIFICATE OF AUTHORIZATION: 00000696

SE. WALTON ROAD & INDIAN RIVER DRIVE CONCEPTUAL CHICANE EXHIBIT



DESIGN VEHICLE: WB-50
OPERATIONAL SPEED: 15 - 20 MPH

Kimley»Horn

445 24th STREET, SUITE 200
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(772) 794-4100
CERTIFICATE OF AUTHORIZATION: 00000696

*E. MIDWAY ROAD & INDIAN RIVER DRIVE
CONCEPTUAL CHICANE EXHIBIT*