

FINAL
COUNTY ROAD 3 SHARED USE PATH
BICYCLE/PEDESTRIAN FEASIBILITY STUDY

TOWN OF PIERSON, FL



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Prepared For:



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1 EXECUTIVE SUMMARY

The River to Sea Transportation Planning Organization (R2CTPO) recognizes the importance of developing a cohesive transportation network that provides safe, efficient, and accessible pedestrian and bicycle facilities. One way to accomplish this goal is to expand the integrated bicycle and pedestrian transportation system by completing engineering feasibility studies for prioritized projects.

The Town of Pierson submitted a 2015 Application for Project Prioritization for a Bicycle/Pedestrian Project for County Road 3. County Road 3 is the former US corridor and provides access for shopping, services, and public facilities. CR 3 also provides access to local schools and community parks.

The purpose of this project is to conduct a limited corridor study that assesses the feasibility of providing a shared use path along County Road 3. The project study corridor is approximately 3.5 miles in length, and runs mostly parallel to US 17 (Center Street) through the Town of Pierson and Volusia County. The corridor limits are from Steadman Road to Menton Road.

Field visits were conducted on July 28, 2015, and October 7, 2015, to review the existing conditions along the corridor in consideration of a potential shared use path. As part of the field visits, the locations of existing utilities, drainage features, power poles, trees, driveways, pedestrian crossings, and other existing features were identified.

Study recommendations for a conceptual alignment were made based on design criteria for pedestrian facilities. This report contains the recommended conceptual alignment for the study corridors, as well as a planning level estimate of the anticipated costs associated with the recommended improvements. Key items on this corridor include coordination with the Florida Wildlife Commission, permitting through St. Johns River Water Management District (SJRWMD) and Volusia County, and right of way acquisition. These items are discussed further in the following sections.

Because of the limited right of way information available on the corridor. It is recommended that a full right of way analysis be conducted on this corridor prior to moving forward with full design plans. The other factors involved in this feasibility analysis should be re-evaluated once complete right of way information is available.

2 INTRODUCTION

The River to Sea Transportation Planning Organization (R2CTPO) recognizes the importance of developing a cohesive transportation network that provides safe, efficient, and accessible pedestrian and bicycle facilities. One way to accomplish this goal is to expand the integrated bicycle and pedestrian transportation system by completing engineering feasibility studies for prioritized projects. The Town of Pierson submitted a 2015 Application for Project Prioritization for a Bicycle/Pedestrian Project for County Road 3 in Pierson.

PURPOSE AND OBJECTIVES

The purpose of this project is to conduct a limited corridor study that assesses the feasibility of providing a shared use path along County Road 3. The project study corridor is approximately 3.5 miles in length, and runs mostly parallel to US 17 (Center Street) through the Town of Pierson and Volusia County. The corridor limits are from Steadman Road to Menton Road. The project study corridor is shown in **Figure 1**.

The development surrounding the study corridor is mostly residential in nature, with some commercial and industrial development located closer to US 17/92. The project is located in the vicinity of several schools, including Pierson Elementary School and Taylor Middle-High School. Two parks are also located near the project corridor. Some of the key surrounding features of the study corridor are shown in **Figure 2**.

The study will focus on identifying the width of the path and its location in an effort to design a cost-effective path that fits within the existing right-of-way. Key components of the study include project coordination meetings, data collection, project site visits, conceptual planning, development of an engineer's opinion of probable cost, and preparation of a fee proposal report.

PROJECT HISTORY

The Town of Pierson submitted a 2015 Application for Project Prioritization for a Bicycle/Pedestrian Project for County Road 3. County Road 3 is the former US corridor and provides access for shopping, services, and public facilities. CR 3 also provides access to local schools and community parks.

Several other pedestrian improvements are in development in the surrounding area. A sidewalk is being constructed along US Hwy 17, connecting to the existing sidewalk along Washington Avenue. The Town also has plans for a proposed shared use path from Washington north to the new proposed elementary school site.

Currently, there is no shoulder or pedestrian pathway along CR 3. Pedestrians and school students have been observed walking in the roadway, which is an unsafe condition. This need was identified in the 2008 Pierson/Seville Elementary School Bicycle and Pedestrian Safety Study. The Town has support from the community and from Volusia County for pedestrian improvements to CR 3.

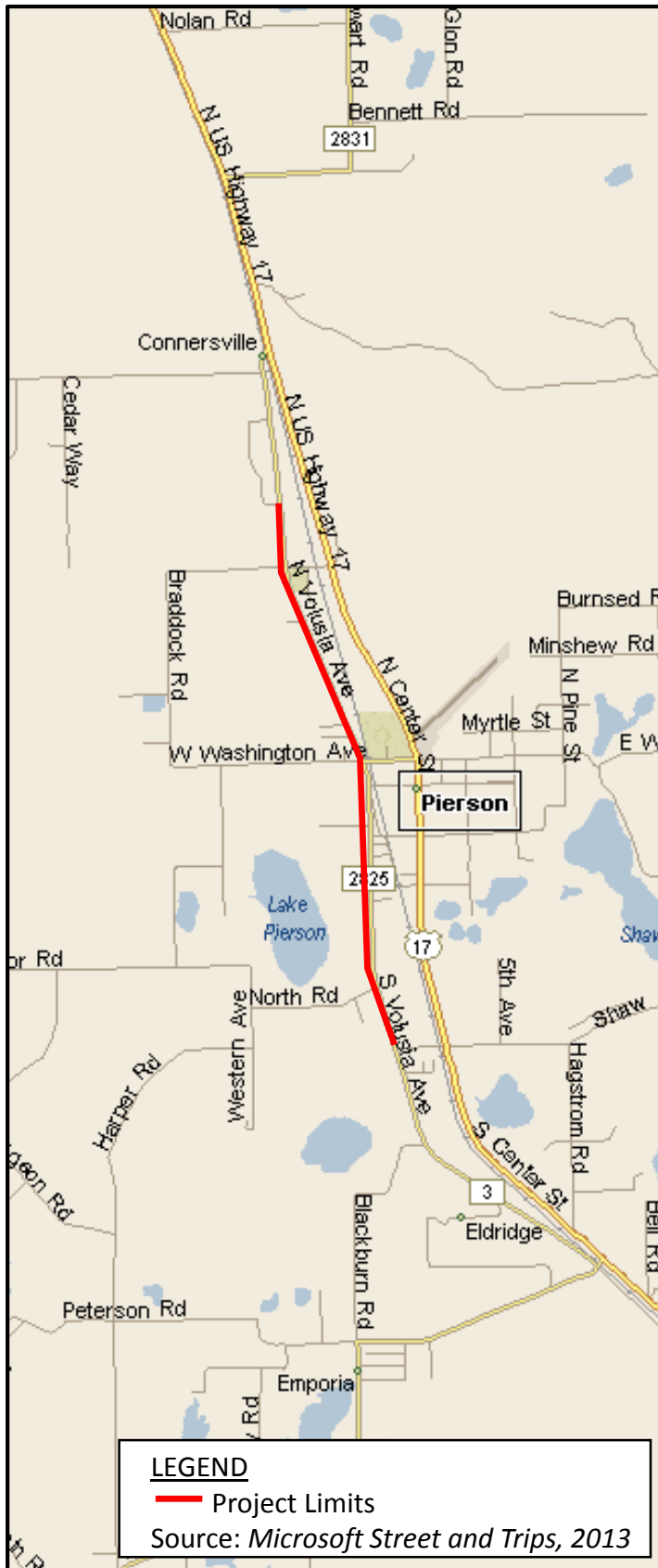
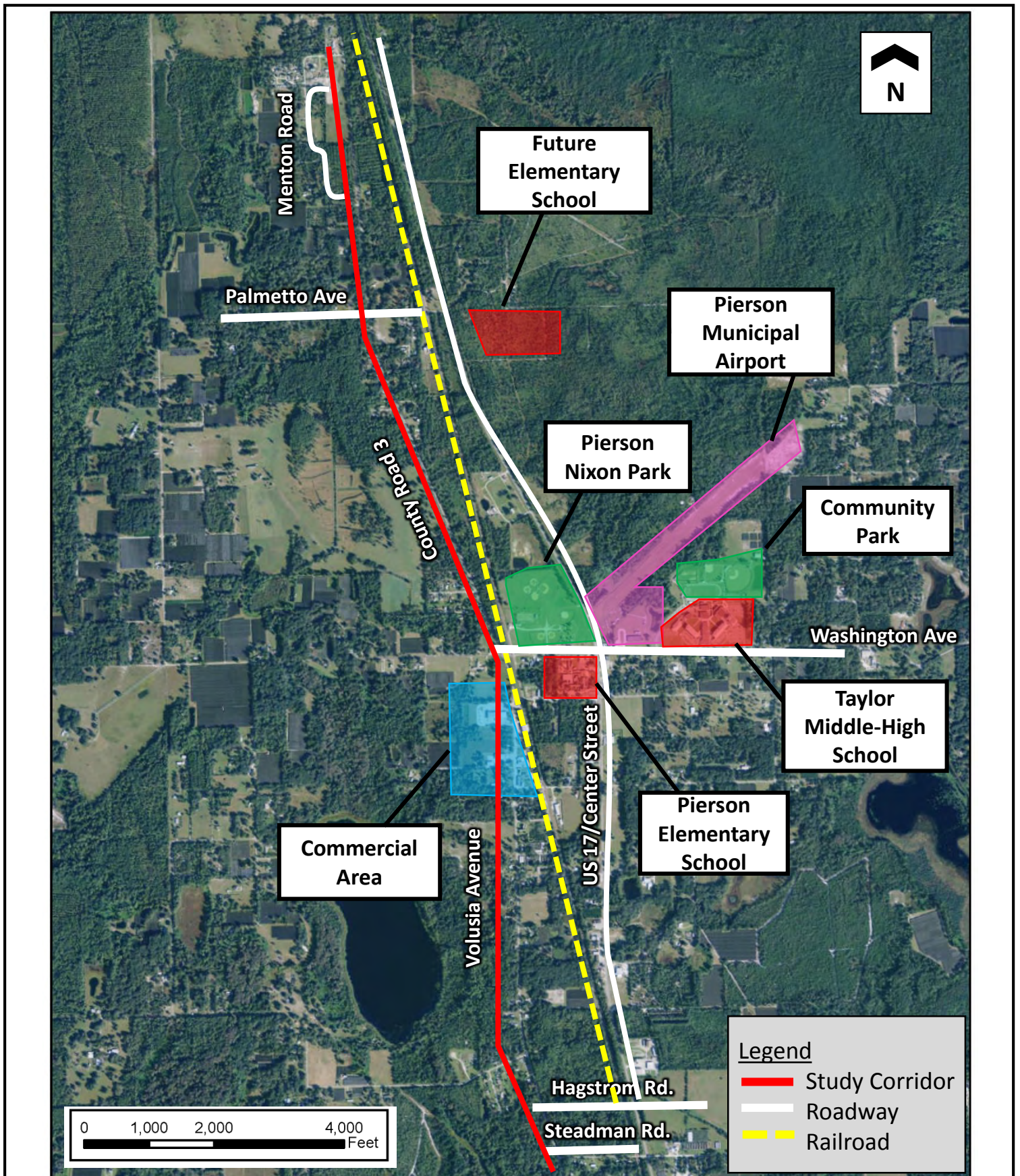


Figure 1 – Location Map



3 EXISTING CONDITIONS

Field visits were conducted on July 28, 2015, and October 7, 2015, to review the existing conditions along the corridor in consideration of a potential shared use path. As part of the field visits, the locations of existing utilities, drainage features, power poles, trees, driveways, pedestrian crossings, and other existing features were identified. These existing features are explained below, and are also noted in the Corridor Concept Plans included in **Appendix A**.

General observations of the corridor include the following:

- Two-lane undivided roadway, approximately 24 feet wide
- No paved shoulder for most of the corridor
- Speed limits ranging from 25 miles per hour to 45 miles per hour
- Unpaved shoulder ranging from four to six feet wide along the corridor
- Minimal pedestrian features along the corridor – limited to short segments of sidewalk
- Mostly residential development, with some commercial/industrial development located centrally along the corridor
- Dense vegetation located approximately 12 to 15 feet from the edge of pavement

Right of Way

Limited right of way is available on the corridor. According to data provided by Volusia County, the dedicated right of way varies from 15 to 66 feet. There are also several locations along the corridor where no data on dedicated right of way is available. It is likely, however, that more right of way exists than is shown in some areas of the right of way maps.

Parcel boundaries along the corridor were obtained from Volusia County GIS data, in addition to the right of way information provided by the County. This data shows variable width along the corridor ranging from approximately 40 feet to approximately 80 feet. Because of the lack of consistent right of way information available along the corridor, it is recommended that a corridor specific boundary survey be conducted prior to full design of the proposed shared use path. This will help clarify the available space and further refine the recommendations as to where right of way acquisition will be necessary. Right of way information is provided in **Appendix B**.

Environmental

A desktop evaluation of the potential environmental impacts was conducted along the corridor. The corridor is located within USFWS Consultation Areas for Florida scrub jay, the red-cockaded woodpecker (RCW), and the snail kite. There were no documented occurrences or designated critical habitats for these species along the corridor. Gopher Tortoise habitats are possible in this area.

There were several black bear road kills documented within 1,000 feet of the project corridor. Coordination with the Florida Wildlife Commission (FWC) is recommended in order to account for special conditions during design and construction phases (i.e. ceasing work if bears are present).

No wetland impacts are anticipated in association with the project. Although Wetlands are located within 500 feet of the project corridor, disruption to these Wetlands is anticipated to be negligible with any proposed construction activities. A map showing the environmental features of the surrounding area is provided in **Appendix C**.

Drainage

There is a significant drainage swale along each side of the majority of the corridor. The bottom of the swale is located approximately eight to twelve feet from the edge of the roadway, and the slope area extends out to fifteen feet from the edge of the roadway. Just beyond the drainage swale, there are areas of dense vegetation on both sides of the roadway for much of the corridor. There are three major drainage pipe crossings beneath the roadway located just north of Hagstrom Road, south of Silver Road, and at the Washington Avenue intersection.

Permitting

It is noted that the northern section of this roadway is outside of the Town limits. Therefore, it will be necessary to coordinate and permit this project through Volusia County as well as the Town of Pierson. More information on the anticipated permitting needs is included in **Section 7**.

STEADMAN ROAD TO NORTH ROAD

The speed limit on the segment from Steadman Road to North Road is 45 miles per hour. This portion of the corridor predominantly consists of residential houses and vacant properties. Right of way data from Volusia County shows 50 feet of dedicated right of way for most of the section, however no dedicated right of way information is available for the portion from Hagstrom Road to Steadman Road. Parcel data obtained from Volusia County GIS files shows right of way varying from approximately 42 feet to 50 feet along this segment.

The west side of CR 3 is relatively flat for approximately six feet beyond the roadway edge, followed by a steep drainage swale. Beyond the swale, the grade levels out again, but is covered by dense vegetation. There are overhead utilities and buried fiber optic cable (Brighthouse) on this side approximately 9 feet from the edge of pavement.

The east side of the roadway is more sloped and has a steeper drainage swale located approximately five feet from the edge of pavement (EOP). The majority of residential driveways in this segment are located on the east side of the roadway. There is an underground water line and fire hydrants running along the east side of the roadway.

There is a drainage crossing located on this section of CR 3, which includes two High Density Polyethylene (HDPE) cross drains. It appears that the crossing was added after the roadway was constructed. The pipes, which are approximately two feet in diameter, are lined with a

variety of rocks on either side of the roadway. They feed into the drainage swale that runs parallel to the road on both sides. In order to avoid drainage impacts and maintain appropriate spacing to the roadway, it may be beneficial to locate the trail outside the swale area. Further discussion on the proposed conceptual alignment is included in **Section 5**.

Additional images regarding the existing conditions from Steadman Road to North Road are included in **Figure 3**.

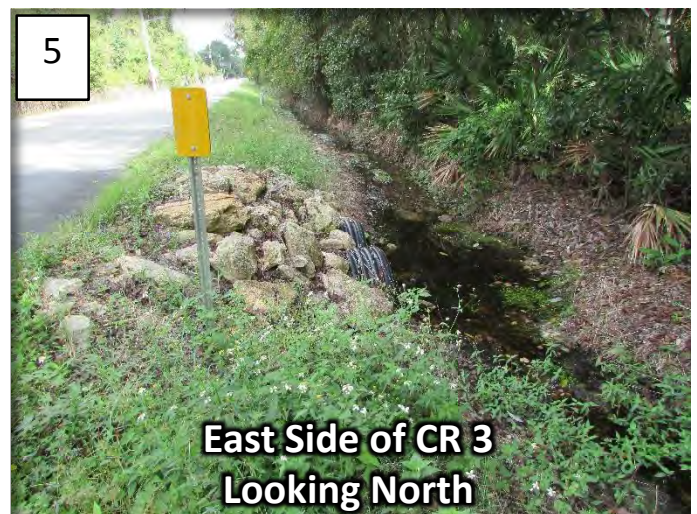
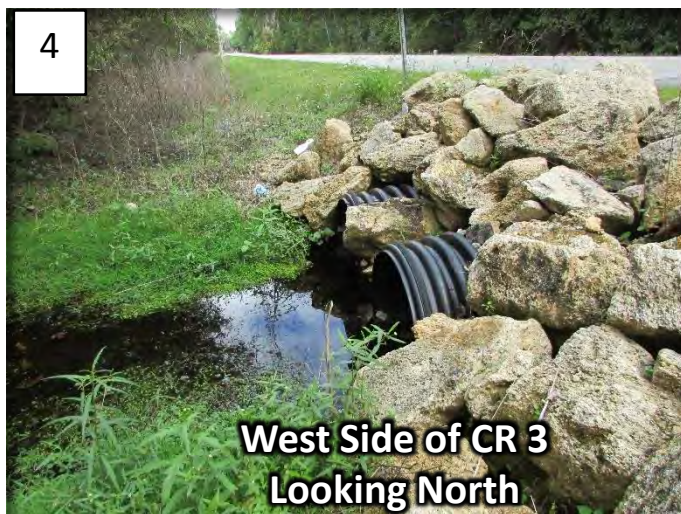
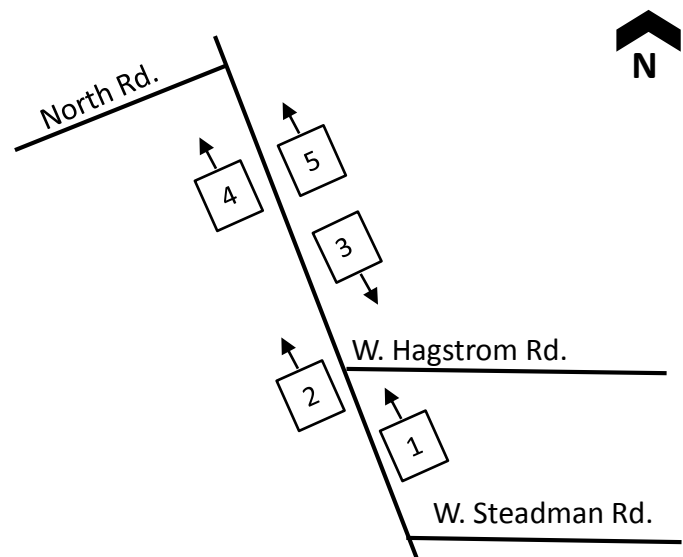
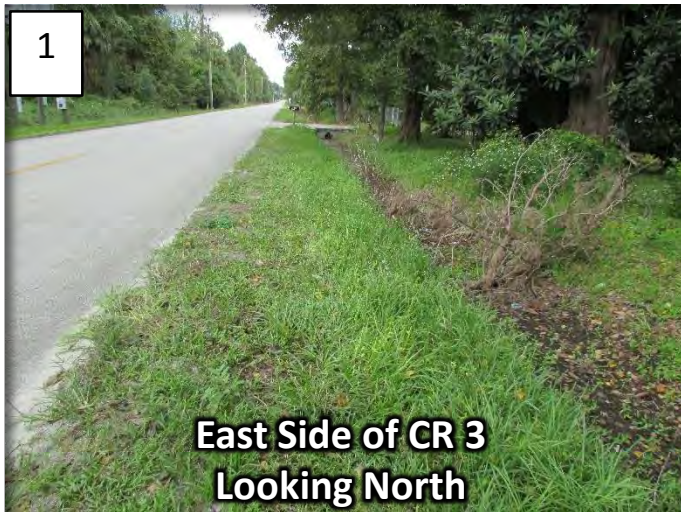
NORTH ROAD TO 3RD AVENUE

The segment of CR 3 from North Road to 3rd Avenue is similar to the previous segment. Noted utilities include overhead electric and buried fiber optic cable on the west side of the roadway, and a water line on the east side of the roadway.

Right of way data from Volusia County shows dedicated right of way ranging from 15 to 50 feet on this segment. According to available parcel data, however, the right of way appears to be approximately 50 feet along the entire segment.

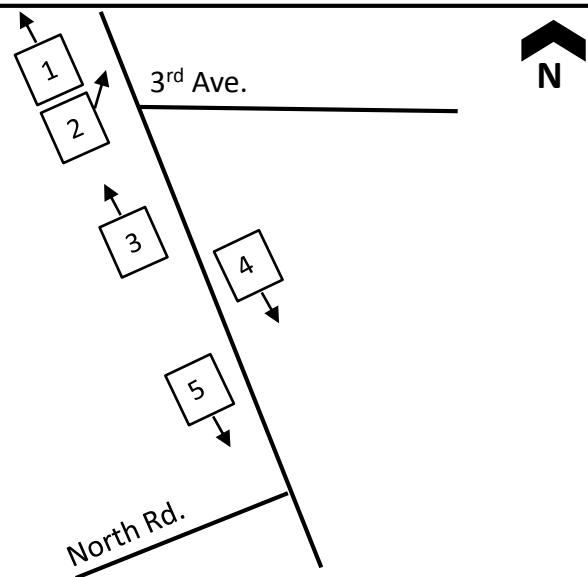
This segment is more densely populated with driveways on both sides of the roadway. The speed limit drops to 40 miles per hour mid-segment, and then to 30 miles per hour on at the northern end of the segment. Steep drainage swales exist on the southern end of the segment, giving way to more level unpaved shoulders at the northern end of the segment. There's a rolled asphalt curb, as shown in **Figure 4**, that extends for approximately 650 feet on the west side of County Road 3.

Additional images are included in **Figure 4**.





**West Side of CR 3
Looking North**



**West Side of CR 3
Looking Northeast at 3rd Ave.**



**West Side of CR 3
Looking North**



**East Side of CR 3
Looking South**



**East Side of CR 3
Looking South**

3RD AVENUE TO SHORT STREET

The segment of CR 3 from 3rd Avenue to Short Street is more densely populated and has residential and commercial uses. The posted speed limit is 30 miles per hour along this segment. Electric lines, fiber lines, and water lines are still present on this segment.

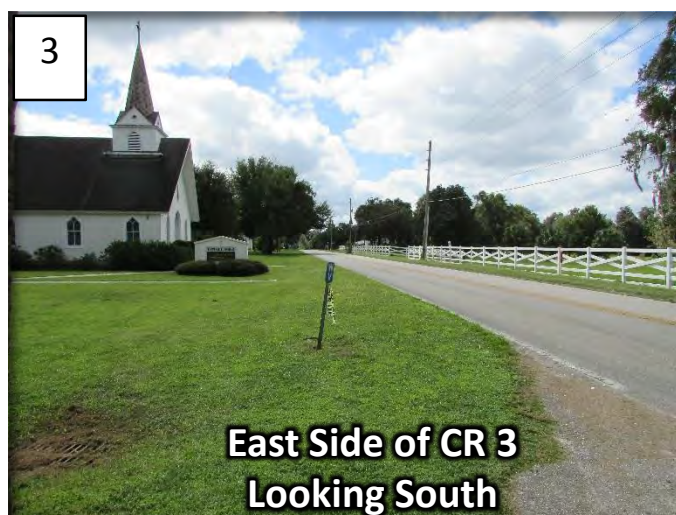
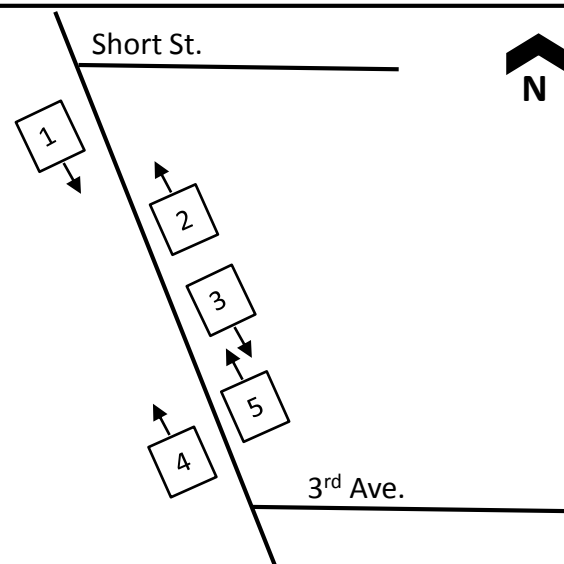
The commercial uses include two churches and a flower shop on the east side of the roadway. Some of these uses have existing sidewalk on their property that extends toward the CR 3 right of way. However, since there is no existing sidewalk along CR 3 through these limits, the sidewalk doesn't connect to anything. There is a brief section of sidewalk in the southeast quadrant of the intersection of CR 3 and Short Street.

Most of the west side of the roadway from Echo Street to Short Street is divided by a fence approximately 12 feet from the edge of pavement. There is also an existing concrete structure buried in the ground, located on the west side of the roadway near the intersection with Church Street. This structure is shown in **Figure 5**.

Both sides of the roadway are fairly flat through these limits. There are several drainage inlets located along this segment, as some of the drainage features transition from an open swale system to a closed pipe system.

Right of way data from Volusia County shows approximately 15 feet of dedicated right of way on this segment. According to available parcel data, however, the right of way appears to be approximately 50 to 65 feet along the segment.

Additional images regarding the existing conditions are included in **Figure 5**.



SHORT STREET TO 1ST AVENUE

North of Short Street, the land use in the area transitions to mostly commercial/industrial. The speed limit ranges from 25 to 30 miles per hour along this segment, and is reduced to 15 miles per hour during school hours along the section north of Fountain Drive.

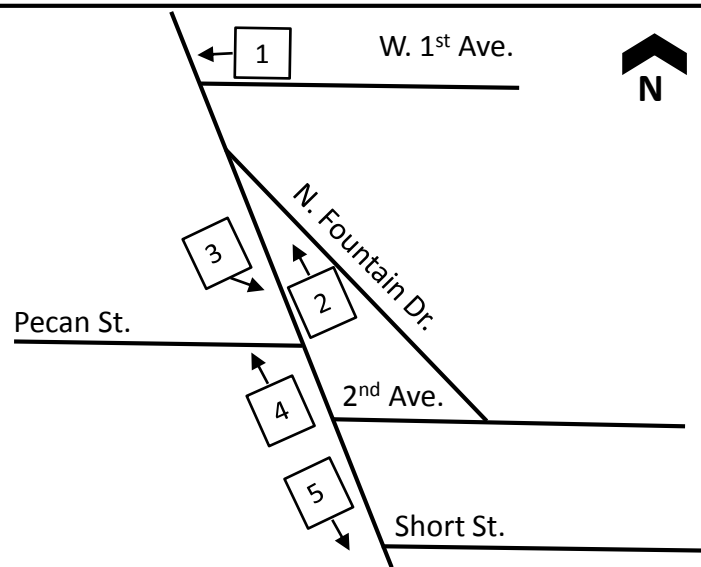
The east side of CR 3 from Short Street to 1st Avenue consists of commercial buildings including a hotel, grocery store, public library, and a U.S. Post Office. Parking for these businesses is primarily located along the roadway in the sand area between the edge of pavement and front of the building. The parking strip is approximately 20 feet wide and extends from 2nd Avenue to the intersection of Fountain Drive and CR 3.

The west side of the roadway has a 2 foot shoulder and an adjacent area that appears to be used for parallel parking. The parking is used by people going to the businesses on the other east side of the roadway (east side).

The intersection with 1st Avenue has an existing pedestrian crosswalk on the north leg of the intersection. However, the sidewalk on CR 3 does not fully extend to meet the existing crosswalk. There is a small stretch of existing sidewalk along the Prime Floral property that does not connect to any pedestrian features to the south or to the north. In addition, the north side of 1st Avenue has a 5 foot sidewalk that extends east to US 17. However, this sidewalk does not provide a crossing over the railroad tracks.

Right of way data from Volusia County shows dedicated right of way ranging from 15 to 32 feet on this segment. According to available parcel data, however, the right of way appears to be approximately 50 to 65 feet along the segment.

Additional images regarding the existing conditions are included in **Figure 6**.



1ST AVENUE TO WASHINGTON AVENUE

The portion of roadway between 1st Avenue and Washington Avenue runs parallel to the railroad tracks and has a large open area on the east side. The posted speed limit is 25 miles per hour but is reduced to 15 miles per hour during school hours.

The intersection of CR 3 and Washington Avenue was recently converted from a 2 way stop to a 4 way stop controlled intersection. There is an existing crosswalk along the north leg of the intersection and existing sidewalk running east from the intersection along the north side of Washington Avenue. There are no sidewalks or crosswalks in the other three quadrants of the intersection.

The existing drainage features at the CR 3 and Washington Avenue intersection are located near the edge of the roadway, and do not provide room for adequate crossing areas. These drainage features will need to be extended and/or replaced to provide adequate pedestrian facilities. New pipes and drainage structures are proposed at this intersection to replace the existing features. A new ditch bottom inlet is also proposed to replace the existing inlet on the northwest corner. Several utilities are also noted in the vicinity of this intersection that will need to be accommodated during design. Major relocations are not anticipated, however the survey will show full details of the existing utilities at the intersection.

Right of way data from Volusia County shows 66 feet of dedicated right of way on this segment. According to available parcel data, the right of way appears to be approximately 50 to 60 feet along the segment.

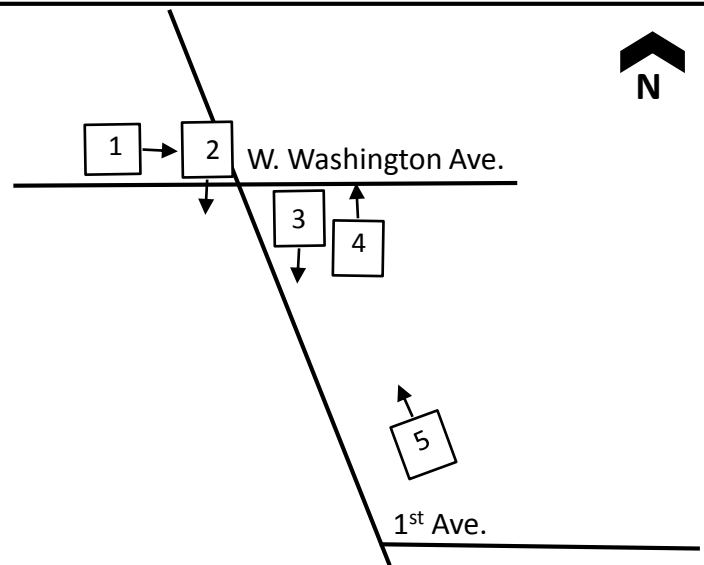
Additional images regarding the existing conditions are included in **Figure 7**.

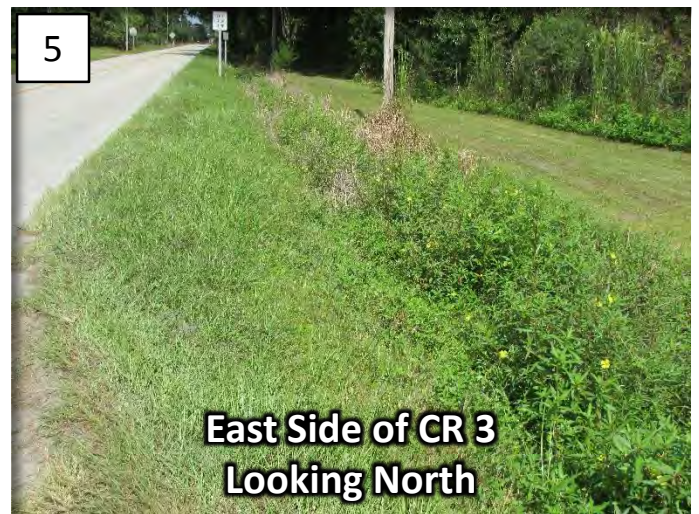
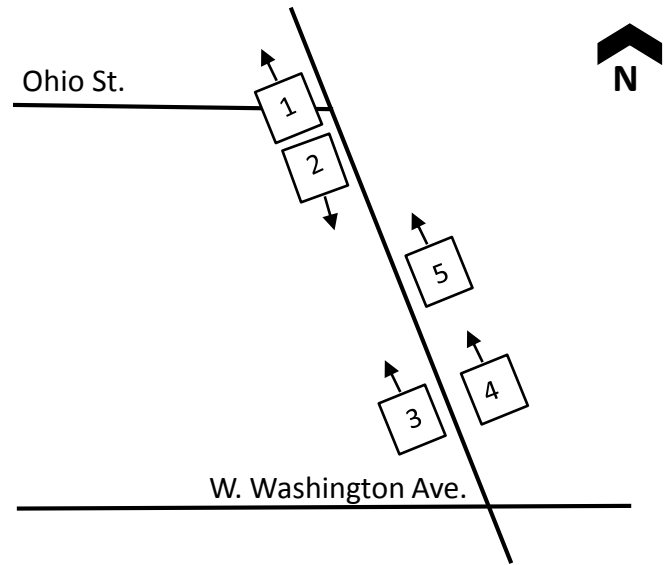
WASHINGTON AVENUE TO OHIO STREET

North of Washington Avenue, the posted speed limit increases to 35 miles per hour. The surrounding uses become more residential and agricultural. Both the east and west sides of CR 3 are very narrow with approximately 4 to 5 feet of space between the road and the drainage swale. Utilities include overhead electric and an underground water line running on the west side of CR 3.

Right of way data from Volusia County shows 66 feet of dedicated right of way on this segment. According to available parcel data, the right of way appears to be approximately 50 to 60 feet along the segment.

Additional images regarding the existing conditions are included in **Figure 8**.





OHIO STREET TO SILVER ROAD

This portion of CR 3 has a posted speed limit of 35 miles per hour. At the intersection of CR 3 and Lake George Street, there is approximately 5.5 feet of space between the edge of pavement and the drainage swale on the west side of the roadway. This narrows to approximately 4.5 feet in the middle of the segment and then increases to 5 feet at the intersection of CR 3 and Silver Road. The width of the east side also varies throughout the segment between 4 and 6 feet.

There is a park located in the southeast quadrant of the intersection of Palmetto Avenue and CR 3. The park contains a wide open area used for parking that could also be utilized for a shared use path.

Existing drainage features include a perpendicular crossing under CR 3, approximately 0.2 miles south of Silver Road. This crossing includes large concrete structures located approximately 4 to 5 feet from the edge of pavement. This is illustrated in **Figure 9**.

Right of way data from Volusia County shows portions of this segment with no dedicated right of way. According to available parcel data, however, the right of way appears to be approximately 50 to 70 feet along the segment.

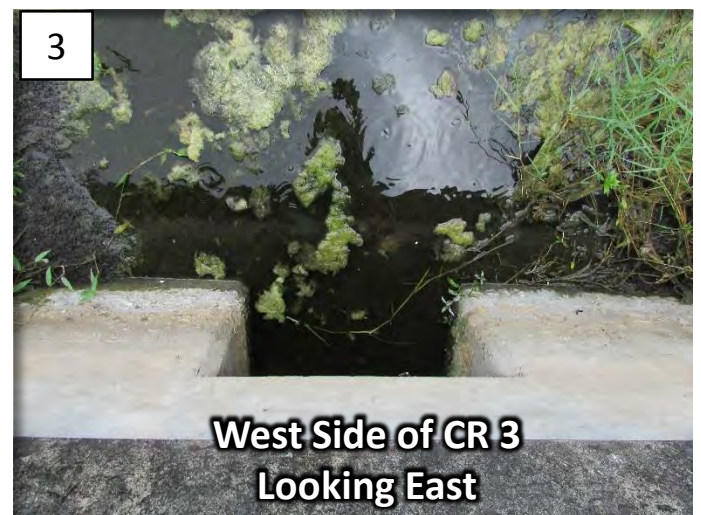
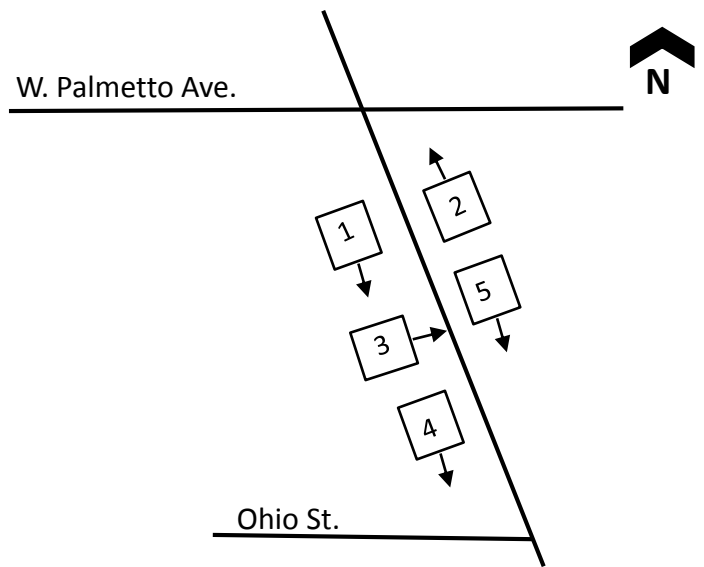
Additional images regarding the existing conditions are included in **Figure 9**.

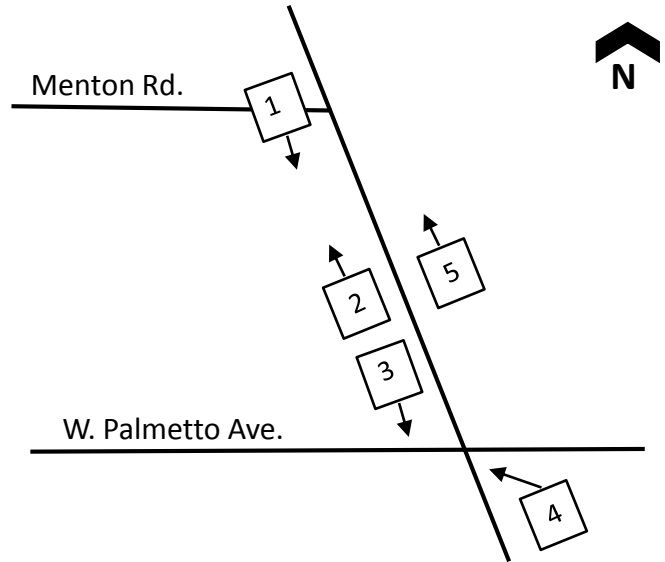
PALMETTO AVENUE TO MENTON ROAD

North of Palmetto Avenue, the posted speed increases from 35 to 45 miles per hour. The area on the west side is farmland with very few driveways accessing CR 3. The area on the east side is rural with a few residential houses scattered throughout. The area in this segment is fairly level with approximately 7 feet of space between the edge of pavement and the drainage on the west side of the roadway.

There is undimensioned right of way through these limits, per the information provided by Volusia County. The available parcel data, however, shows a width of approximately 70 to 80 feet.

Additional images regarding the existing conditions are included in **Figure 10**.





4 GENERAL DESIGN PRINCIPLES

Study recommendations are based on design criteria for pedestrian facilities contained in the FDOT Pedestrian Facilities Planning and Design Handbook, the FDOT Plans Preparation Manual (PPM), the Manual on Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways, The Florida Greenbook, and the FDOT Design Standards.

Sidewalks

According to the Florida Pedestrian Planning and Design Handbook, sidewalks are defined as “paved area (typically concrete) which normally runs parallel to vehicular traffic and is separated from the road surface by at least a curb and gutter.” A sidewalk is designed for preferential or exclusive use by pedestrians. The number one goal in designing sidewalks shall be the elimination of vehicle-pedestrian conflicts. Though it is not possible to eliminate all vehicle-pedestrian conflicts within the typical roadway corridor, steps should be taken to minimize the effects of all vehicle-pedestrian conflicts through proper design. Some important design requirements to consider involve the proper horizontal separation/barriers from the traveled way and accessibility/safety.

The effective minimum width of a sidewalk within a residential area is five feet. A minimum width of six feet of horizontal clear zone is recommended for urban facilities where no curb and gutter is present. If six feet is not available, a barrier is recommended between the pedestrian way and the vehicular travel way. The barrier may consist of curb and gutter, landscaping or a permanent structure, such as guard railing.

One of the most important design considerations for persons with disabilities is curb cuts. Therefore, new and retrofitted streets with sidewalks should have curb cuts installed at all delineated crossings. It is desirable to provide separate ramps for each crosswalk at intersections with perpendicular approaches. Two curb cuts at each corner with a curb separating each ramp provides a greater amount of information to visually impaired pedestrians in street crossing designs. However a single uniform diagonal ramp including both crossings is also acceptable, when installed with truncated dome warning strips along the edge of the curb line.

Curb ramps, maximum slopes, minimum widths, clear zones, and design treatments for the visually impaired, such as truncated domes, are design features that result in part from the Americans with Disabilities Act (ADA). These design features, when included in pedestrian facility planning, produce “ADA-compliant” facilities.

Crosswalk markings provide guidance for pedestrians who are crossing roadways from defined sidewalks. Crosswalks delineate paths and also serve to alert vehicles of a pedestrian crossing point. Crosswalks should be as wide as the sidewalk facility, not including ramp flares, and be aligned to reduce the crossing distance whenever possible.

Horizontal Separation

To properly account for horizontal separation between the roadway and sidewalk, the design must, at a minimum, meet Florida Greenbook requirements. The Florida Greenbook states that sidewalks shall be separated from the travel lane of a rural (non-curbed) roadway based on the following criteria listed in order of desirability:

- Outside of the highway right-of-way in a separately dedicated corridor
- At or near the right-of-way line
- Outside of the designed roadside clear zone.
- Outside of the minimum required roadside clear zone
- As far from the edge of the driving lane as possible.

When adequate horizontal separation cannot be achieved, longitudinal barriers should be considered. Longitudinal barriers can be either guardrails or other rigid barriers which are designed to deflect errant vehicles away from the pedestrian facility.

Shared Use Paths

The Florida Greenbook defines shared uses paths as “paved facilities physically separated from motorized vehicular traffic by an open space or barrier”. These facilities may be within the highway right of way or an independent right of way. Typical users may include pedestrians, bicyclists, skaters, and others.

According to the Florida Greenbook, the minimum recommended width for a two-way path is 10 feet. Under constraints, it may be acceptable to reduce the trail to 8 feet if bicycle and pedestrian traffic is anticipated to be low. A horizontal buffer of 2 feet of mostly flat land should be provided adjacent to the shared use path, with 3 or more feet preferred if available. Additional clearance should be provided to adjacent ditches or steep slopes (5 feet minimum) and fixed objects such as poles and fences (3 feet minimum). The Plans Preparation Manual recommends a lateral offset of 4 feet on either side of the shared use path to provide sufficient clearance to obstacles.

A five foot separation is recommended between the shared use path and the adjacent roadway. If five feet is not available, a physical barrier is recommended at a minimum of 42 inches high. Consideration should be given to the clear zone of the roadway and providing sufficient sight distance for motorists when considering the use of a barrier.

Accessibility/Safety

The Florida Greenbook states that curb ramps meeting the requirements of ADA Accessibility Guidelines and the Florida Accessibility Code for Building Construction shall be constructed at crosswalks at all intersections where curbs and sidewalks are constructed in order to give persons with disabilities safe access. In general, proper design of pedestrian crossings shall consider the following:

- Crossings should be placed at locations with ample sight distances
- At crossings, the roadway should be free from changes in alignment or cross section
- The entire length of the crosswalk shall be visible to drivers at a sufficient distance to allow a stopping maneuver
- STOP bars shall be provided adjacent to all signalized crosswalks to inform drivers of the proper location to stop. The STOP bar should be well separated from the crosswalk, but should not be closer than 4 feet.
- All crosswalks shall be easily identified and clearly delineated, in accordance with Manual on Uniform Traffic Control Devices (MUTCD) (Rule 14-15.010)
- Additionally, signs and markings should be utilized whenever possible to provide the pedestrian clear direction. The signs and markings should conform to the standards set forth in the MUTCD.

5 CONCEPTUAL DESIGN RECOMMENDATIONS

In order to construct a shared use path along County Road 3, approximately 25 to 30 feet of clear space would be needed. This width would accommodate the 12 foot path in addition to the clear space on either side.

This existing configuration along the corridor typically provides a maximum of five feet of usable space within the right of way. There are two primary options for constructing a shared use path on this section of County Road:

- Acquire right of way to build the path on additional space outside of the existing swale.
- Modify the swale, likely through a system of pipes, in order to construct the path over the existing swale. This may require right of way acquisition to accommodate the modified drainage pattern, retention, and/or flow requirements.

Due to the complexities associated with modifying the existing drainage system, it is recommended to locate the path outside of the existing swale. Specific recommendations are included in the following sections. The project corridor concept plans illustrate the recommended conceptual modifications to the corridor, and are included in **Appendix A**.

Right of way acquisition will be required in order to locate the trail outside of the existing swale. Additional information on the anticipated right of way needs and recommended next steps is included in **Section 7**.

A trailhead has not been included in the conceptual alignment. The trailhead is considered supplemental to the proposed shared use path and therefore has not been included in the cost estimate for this shared use path. If a trailhead is desired on this section, one possible location would be near the Pierson Nixon Park, located just north of Washington Street. The trailhead may include a variety of features, including parking areas, restrooms, water fountains, benches, and/or covered pavilion areas.

STEADMAN ROAD TO 3RD AVENUE

On the southern section of CR 3, it appears that there is a fairly consistent 50 foot corridor of right of way. However, this right of way is insufficient to construct a shared use path based on the current features accommodated within the right of way:

- 24 feet dedicated to the roadway
- 5 to 15 feet of drainage swales on either side of the roadway
- Overhead utility poles located approximately 10 feet from the edge of pavement

A corridor specific survey should be conducted prior to acquiring right of way, in order to further clarify and define the limits through which right of way acquisition will be needed. Based on the results of this feasibility study, it is anticipated that right of way will be required from approximately 30 to 40 owners along this section of the corridor.

It is recommended that a 12 foot asphalt shared use path be installed on the west side of County Road 3 through these limits. With the proposed location of the shared use path, only minor impacts to utilities are anticipated. The shared use path is recommended to be constructed on the west side of the roadway, as there are fewer interruptions from driveways and cross streets. However some mailbox relocations may be necessary to construct the shared use path.

3RD AVENUE TO WASHINGTON AVENUE

The section from 3rd Avenue to Washington Avenue is the most densely developed of the corridor. This segment provides access to several residences, businesses, and industrial uses. There are also several cross streets through these limits that connect CR 3 back to US 17.

It is recommended that a 12 foot asphalt shared use path be installed on the west side of County Road 3 through these limits. Due to the constrained right of way on this segment, and the presence of several business adjacent to the County Road 3 right of way, some parcels may need to be acquired in full through these limits. . A corridor specific survey should be conducted prior to acquiring right of way, in order to further clarify and define the limits through which right of way acquisition will be needed. It is also noted that the presence of so many driveways on this section of roadway make a shared use path less functional.

During field observations, pedestrians were observed crossing County Road 3 at uncontrolled locations. Although the primary users of the trail are anticipated to be recreational users, it is possible that some local residents will use the trail for shorter trips. Crosswalks across County Road 3 in this area have not been included in the conceptual alignment. At the time this project moves forward to design, this area should be reviewed to determine if a mid-block crossing is warranted.

Improvements are needed at the intersection with 1st Avenue and Washington Avenue to bring the pedestrian crossings up to standard. Some drainage work will be needed provide appropriate pedestrian landings at all corners of the intersection. The drainage improvements are anticipated to qualify for an exemption with St. Johns River Water Management District (SJRWMD). However, modifications should be coordinated with SJRWMD accordingly.

WASHINGTON AVENUE TO MENTON ROAD

North of Washington Avenue, the corridor becomes more rural and agricultural in nature. There are fewer cross streets and driveways. There is also an area of dense vegetation on the east side of the roadway.

An asphalt shared use path is recommended along the east side of the roadway through these limits. The path is recommended to be 12 feet wide, with approximately four feet of clear space on either side of the path. This will require acquisition of right of way. A corridor specific survey should be conducted prior to acquiring right of way, in order to further clarify and define the limits through which right of way acquisition will be needed. Based on the results of this

feasibility study, it is anticipated that right of way will be required from approximately 30 to 40 owners along this section of the corridor.

With the proposed location of the shared use path, only minor impacts to utilities are anticipated. Some mailbox relocations may be also necessary to construct the shared use path.

6 FINANCIAL FEASIBILITY

Table 1 provides a planning level Opinion of Probable Cost to construct the proposed corridor, based on the conceptual alignment. The item numbers and units of measure are based on the FDOT 2015 Basis of Estimates Manual. Inflation factors provided by FDOT were used to adjust the total project cost on an annual basis from 2017 to 2019. The inflation factors are also shown in the table.

Explanations of the key items included in the cost estimate are included below. Additional detail is included in Table 1.

- *Mobilization* – Consists of work and operations necessary to begin work on a project. Includes moving in equipment and personnel, establishing temporary offices, safety equipment and sanitary facilities. May include surveying, bond and insurance expenses.
- *Maintenance of Traffic* – Includes all items required to safely maintain traffic throughout a transportation work zone with minimal inconvenience to the public and fit into one of the following categories: 1) cannot reasonably be quantified; 2) cannot be addressed under current pay items; 3) are incidental to the operation necessary to safely maintain traffic throughout a work zone
- *Clearing and Grubbing* – This Item is included to account for the clearing that is necessary to build the proposed trail.
- *Earthwork/Embankment* – The bid price for this item shall include, but not be limited to, the requirements of Section 120 Excavation and Embankment of the Standard Specifications.
- *Sidewalk Concrete (4" / 6" Thick)* – These items are included to account for the cost of placing sidewalk and replacing driveways along the proposed route.
- *Detectable Warning Surface* – This item is included as an ADA compliant feature included within all sidewalk ramps. This item accounts for retrofitting existing sidewalk ramps with detectable warning surfaces.
- *Performance Turf, Sod* – This item is included to sod all areas disturbed by construction of the proposed sidewalk.
- *Single Post Sign, F&I, Relocate, Remove* – These items are included for the pedestrian crosswalk signage, and various additional signs throughout the project.
- *Stabilization, Optional Base, and Superpave* – These items are included to account for the cost of the proposed trail, and to cover the replacement of driveways.
- *Thermoplastic* - These items are included to mark the special emphasis crosswalks, as detailed in the FDOT Design Standards, Index 17346.

Table 1 – Engineer’s Estimate Opinion of Probable Cost

Pay Item Number	Description	Estimated Quantity	Unit of Measure	Unit Price	Total Cost
101-1	Mobilization	1	LS	10%	\$ 204,130
102-1	Maintenance of Traffic	1	LS	15%	\$ 306,190
104-10-3	Sediment Barrier	18,480	LF	\$ 2.00	\$ 36,960
107-1	Litter Removal	11	AC	\$ 26.00	\$ 276
107-2	Mowing	11	AC	\$ 52.00	\$ 552
110-1-1	Clearing and Grubbing	11	AC	\$ 15,150.00	\$ 160,742
110-7-1	Mailbox, F&I	10	EA	\$ 195.00	\$ 1,950
120-1	Regular Excavation	2,710	CY	\$ 20.00	\$ 54,208
120-6	Embankment	1,232	CY	\$ 25.00	\$ 30,800
160-4	Type B Stabilization, 12" (Min LBR 40)	27,589	SY	\$ 7.50	\$ 206,918
285-701	Optional Base, Base Group 1 (4")	24,640	SY	\$ 28.00	\$ 689,920
285-706	Optional Base, Base Group 6 (8")	2,949	SY	\$ 92.00	\$ 271,315
334-1-11	Superpave Asphalt, Traffic A	3,197	TN	\$ 125.00	\$ 399,625
425-1-541	Inlets, Ditch Bottom, Type D, <10'	1	EA	\$ 6,000.00	\$ 6,000
430-174-218	Pipe Culvert, Optional Material, Elliptical, 18" SD	212	LF	\$ 120.00	\$ 25,440
430-982-125	Mitered End Section, Optional Round, 18" CD	4	EA	\$ 1,100.00	\$ 4,400
519-78	Bollards	24	EA	\$ 260.00	\$ 6,240
522-1	Concrete Sidewalk (4" Thick)	99	SY	\$ 45.00	\$ 4,475
522-2	Concrete Sidewalk (6" Thick)	1,088	SY	\$ 60.00	\$ 65,276
527-2	Detectable Warnings	512	SF	\$ 33.50	\$ 17,152
570-1-2	Performance Turf, Sod	22,590	SY	\$ 3.00	\$ 67,770
700-1-11	Single Post Sign, F&I, up to 12 SF	16	AS	\$ 330.00	\$ 5,280
700-1-50	Single Post Sign, Relocate	14	AS	\$ 220.00	\$ 3,080
711-16-211	Thermoplastic, Std, Yellow, Solid 4"	3.50	NM	\$ 3,750.00	\$ 13,125
711-11-123	Thermoplastic, Std, White, Solid, 12"	631	LF	\$ 4.00	\$ 2,526
711-11-125	Thermoplastic, Std, White, Solid, 24"	605	LF	\$ 5.70	\$ 3,449
711-11-160	Thermoplastic, Std, White, Message or Symbol	4	EA	\$ 150.00	\$ 600
711-17	Thermoplastic, Remove Existing Pavement Markings	372	SF	\$ 2.50	\$ 930
CONSTRUCTION COSTS SUBTOTAL					\$ 2,589,327
-	Design (Including Bid Package)	1	LS	32%	\$ 828,580
-	CEI	1	LS	12%	\$ 310,720
DESIGN/CEI SUBTOTAL					\$ 1,139,300
	Right of Way	1	LS	\$ 2,734,500	\$ 2,734,500
	Gopher Tortoise Survey	1	LS	\$ 17,500	\$ 17,500
ADDITIONAL ITEMS SUBTOTAL					\$ 2,752,000
TOTAL PROJECT COST					\$ 6,480,627
FDOT Inflation-Adjusted Estimate			Inflation Factor		Adj. Cost
2017 Estimated Project Cost			1.025		\$ 6,642,600
2018 Estimated Project Cost			1.053		\$ 6,824,100
2019 Estimated Project Cost			1.082		\$ 7,012,000

NOTES:

- 1) THIS OPC IS BASED ON CONCEPTUAL DESIGN.
- 2) THIS OPC IS BASED ON HISTORICAL COST INFORMATION MADE AVAILABLE BY THE FDOT. UNIT PRICES OF SOME QUANTITIES MAY HAVE BEEN INFLATED TO ACCOUNT FOR THE SMALL NATURE OF THE PROJECT. ACTUAL CONSTRUCTION COSTS WILL VARY.
- 3) THIS OPC DOES NOT INCLUDE THE COSTS ASSOCIATED WITH OBTAINING PERMITS.
- 4) THE ESTIMATE FOR DESIGN FEE INCLUDES 20% FOR ENGINEERING DESIGN AND 12% FOR SURVEY. THE LIMITS OF SURVEY ARE ANTICIPATED TO BE FROM THE EDGE OF PAVEMENT TO THE RIGHT OF WAY LINE FOR THE LENGTH OF THE PROJECT.
- 5) THE ENGINEER HAS NO CONTROL OVER THE COST OF LABOR, MATERIALS, EQUIPMENT, OR OVER THE CONTRACTOR'S METHODS OF DETERMINING PRICES OR OVER COMPETITIVE BIDDING OR MARKET CONDITIONS. OPINIONS OF PROBABLE COSTS PROVIDED HEREIN ARE BASED ON THE INFORMATION KNOWN TO ENGINEER AT THIS TIME AND REPRESENT ONLY THE ENGINEER'S JUDGMENT AS A DESIGN PROFESSIONAL FAMILIAR WITH THE CONSTRUCTION INDUSTRY. THE ENGINEER CANNOT AND DOES NOT GUARANTEE THAT PROPOSALS, BIDS, OR ACTUAL CONSTRUCTION COSTS WILL NOT VARY FROM ITS OPINIONS OF PROBABLE COSTS.

7 CONCLUSION AND SUMMARY OF RECOMMENDATIONS

The purpose of this project was to conduct a limited assessment of the feasibility of providing a shared use path along County Road 3 in Pierson. The conceptual alignment for the proposed sidewalk is included in **Appendix A**. Constructing sidewalk along the specified limits appears to be feasible, however it will require acquisition of right of way and various drainage improvements.

The key issues on the project corridors are noted below. Additional steps should be taken prior to final design to address the following concerns. Specifically, a right of way study is recommended prior to moving forward with design of the proposed shared use path. The other primary factors should be revisited, once detailed right of way information is available for the corridor.

PUBLIC INVOLVEMENT

The project corridor contains a mix of residential, commercial, industrial, and agricultural uses. Due to existing constraints, the proposed shared use path does not fit within the existing right of way along the corridor. Right of way acquisition will be necessary for much of the corridor. For those sections that are within existing right of way, it is noted that the modifications may require minor re-grading of existing drainage areas, addition of new concrete aprons, replacement of existing driveways, relocation of mailboxes, and other modifications that may impact the existing property owners. A coordination effort should be conducted to reach out to the property owners on the both sides of County Road 3 to discuss the planned improvements.

RIGHT OF WAY

Right of way information was provided by Volusia County for County Road 3. According to this information, the existing dedicated right of way along CR 3 varies from 15 feet to 66 feet, with no dedicated right of way information for some sections of the corridor. However, it is likely that additional right of way exists along the corridor. Parcel boundaries show variable width along the corridor ranging from approximately 40 feet to approximately 80 feet.

Because of the lack of consistent right of way information available along the corridor, it is recommended that a corridor specific boundary survey be conducted prior to full design of the proposed shared use path. This will help clarify the available space and further refine the recommendations as to where right of way acquisition will be necessary.

Preliminary estimates for the cost of right of way to be acquired have been provided in the planning level Opinion of Probable Cost included in Table 1. These estimates are based on data from the Volusia County Property Appraiser. The portion of property required was estimated for each parcel. This portion was then applied to the total value of the property to come up with a base cost. Multipliers were applied to the base cost to account for damages resulting from taking a portion of the property. In cases where the damages were significant, the property was assumed to be acquired in full, and the entire value of the property was used in the estimate.

It is noted that the right of way limits and conceptual design are based on aerial imagery using available information and property appraiser data. This approach does not provide sufficient accuracy for final design. The estimates included in this feasibility study have a Level D Confidence Rating according to the District 5 Right of Way Cost Estimate Confidence Ratings (included in **Appendix B.**) Due to the lack of available right of way information on the corridor, these estimates have been rated at Level D – Fair level of confidence. Right of way cost estimates should be updated once a corridor specific survey has been completed. The feasibility of this shared use path should also be reassessed at that time, prior to moving into full design.

PERMITTING & ENVIRONMENTAL

A desktop evaluation of the potential environmental impacts was conducted along the corridor. Further coordination with FWC is recommended in order to identify and address any environmental impacts associated with the proposed construction. Due to the potential presence of gopher tortoises on the project corridor, it is also recommended that a full species study be conducted prior to construction commencement to verify the presence of gopher tortoises and identify (if necessary) options for relocation in accordance with FWC permitting procedures.

It is noted that the northern section of this roadway is outside of the Town limits. Therefore, it will be necessary to coordinate and permit this project through Volusia County as well as the Town of Pierson. The project will require a Volusia County right of way use permit. It is also noted that the Town of Pierson will be required to maintain the proposed shared use path.

The water management district for this area is the St. Johns River Water Management District. According to SJRWMD policies, the addition of sidewalk/pedestrian paths does not require an application to SJRWMD. Therefore, it is not anticipated that any drainage permitting will be required on this project. This project is anticipated to fall under exemption criteria, which is typically a 30 day to 60 day process. Due to the right of way unknowns associated with this path, it is recommended that the final schedule allow for full permitting through SJRWMD, which typically takes 90 to 120 days to complete. A pre-application meeting should be set up with SJRWMD when the project moves into design. Permitting needs can be reassessed once additional right of way information is available.

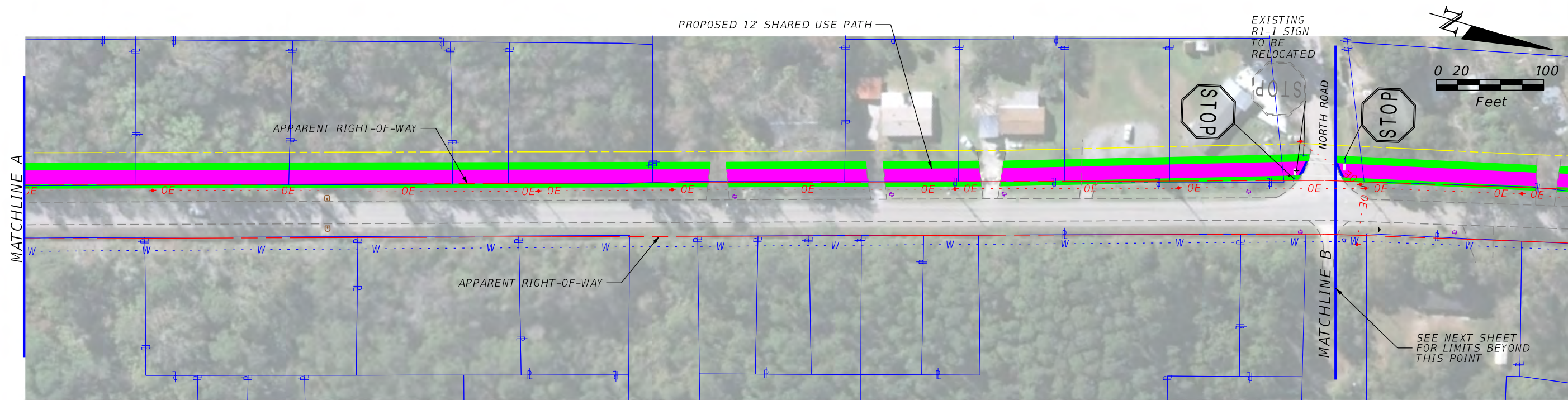
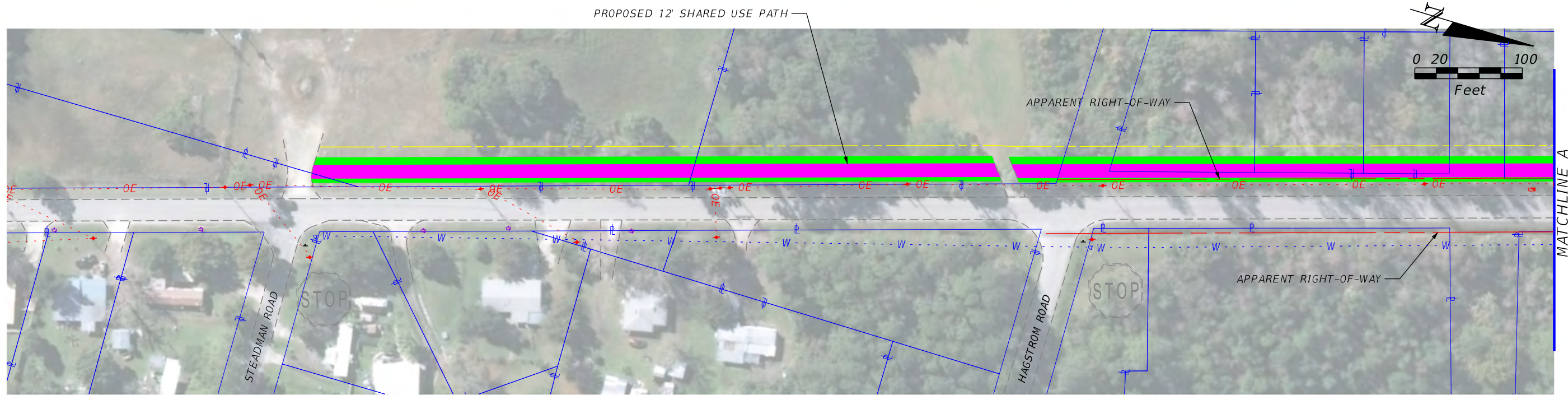
8 DATA COLLECTION REFERENCES

Data collection consisted of referencing readily available information including:

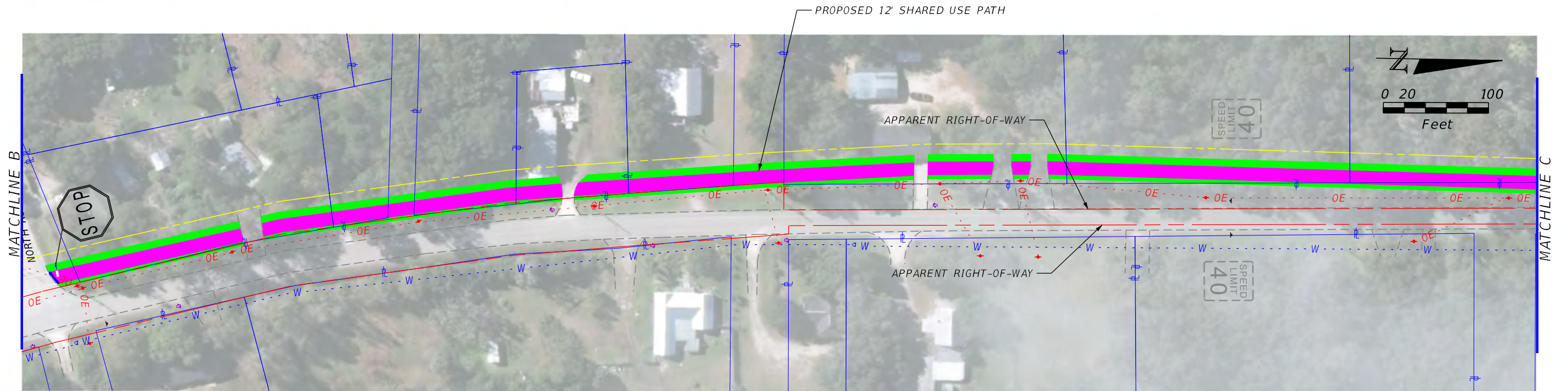
- Manual on Uniform Traffic Control Devices (2009)
- FDOT 2015 Basis of Estimates Handbook
- FDOT Plans Preparation Manual (PPM)
- Volusia County, <http://www.volusia.org/>
- River to Sea TPO, <http://r2ctpo.org>
- Florida Department of Transportation (FDOT), <http://www.dot.state.fl.us/>
- Florida Pedestrian Planning and Design Handbook, FDOT, 1999
- Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways, May 2013, (Florida Greenbook")
- American Association of State Highway and Transportation Officials (AASHTO) Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004
- ADA Standards for Accessible Design, Code of Federal Regulations, 28 CFR Part 36,
- FDOT Roadway and Traffic Design Standards

APPENDIX A

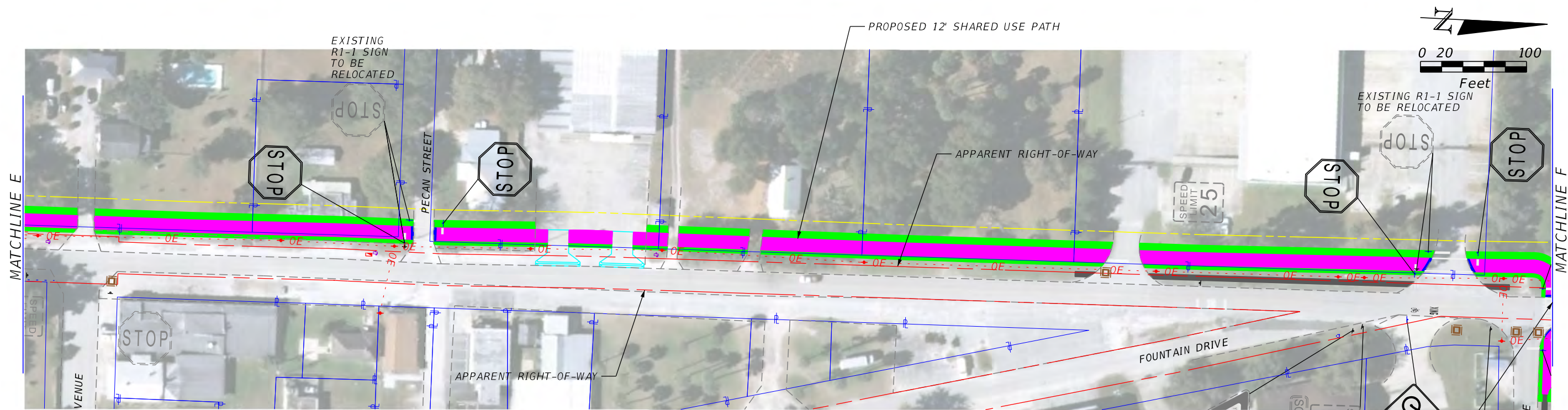
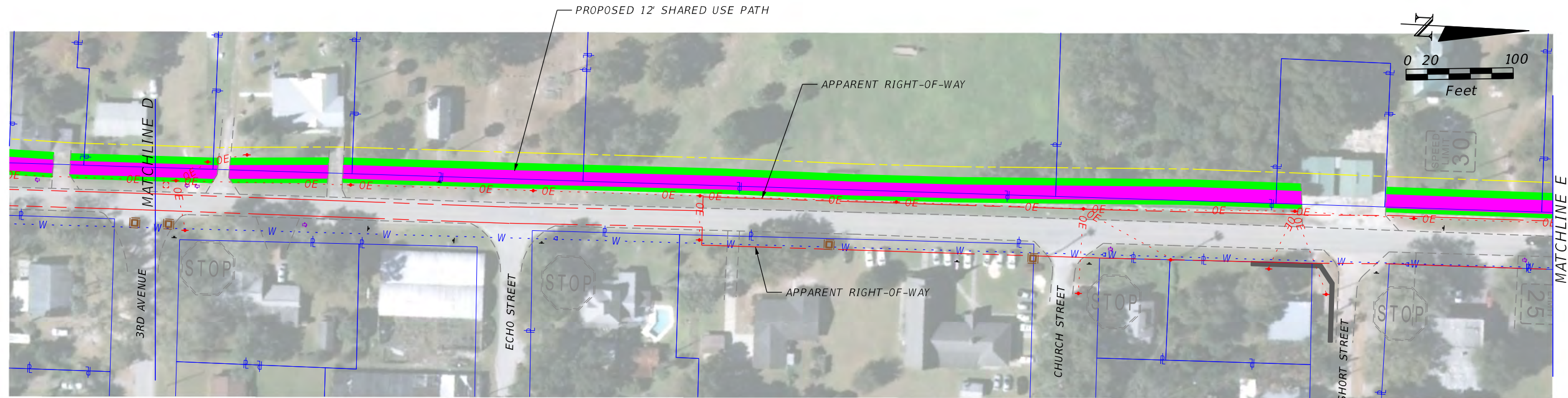
Corridor Concept Plans



LEGEND					
	POWER POLE		PROPOSED SIGN		AT&T BOX
	HEADWALL		FIRE HYDRANT		WATER LINE
	MAILBOX		PULL BOX		OVERHEAD UTILITY
	EXISTING SIGN		DRAINAGE INLET		APPARENT RIGHT-OF-WAY
					PROPOSED RIGHT-OF-WAY
					12' ASPHALT SHARED USE PATH
					GRASS BUFFER STRIP
					EXISTING SIDEWALK
					TRUNCATED DOMES

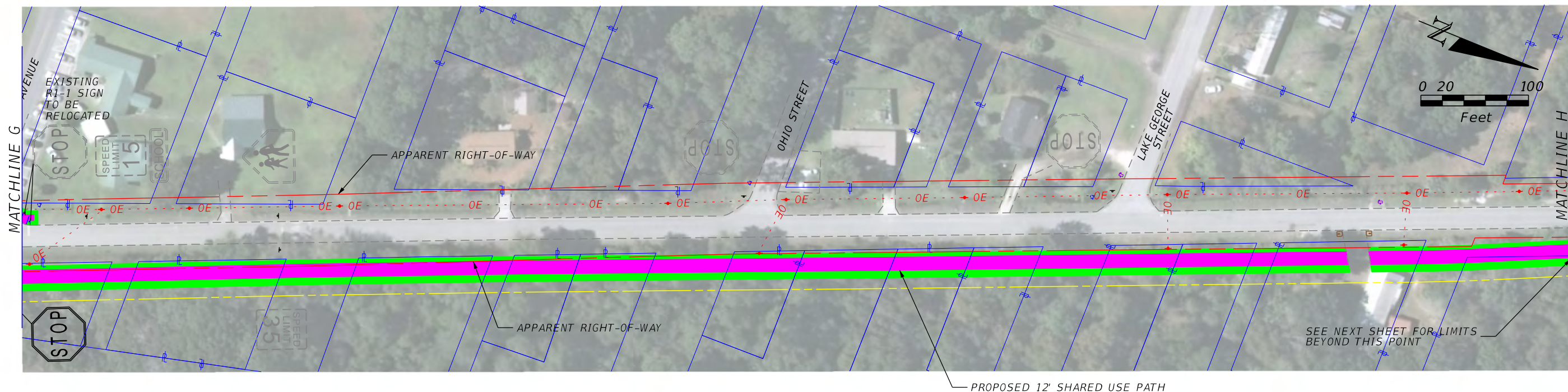
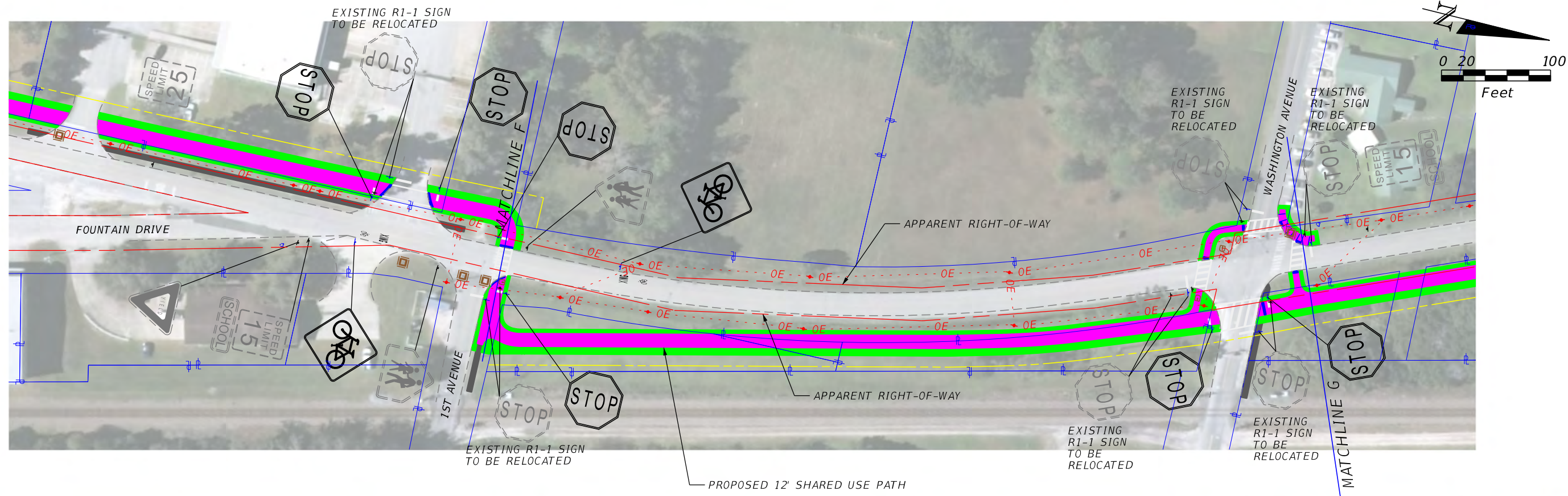


LEGEND			
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	HEADWALL		FIRE HYDRANT
	MAILBOX		PULL BOX
	EXISTING SIGN		DRAINAGE INLET
	AT&T BOX		WATER LINE
	OVERHEAD UTILITY		APPARENT RIGHT-OF-WAY
	PROPOSED RIGHT-OF-WAY		TRUNCATED DOMES
			12' ASPHALT SHARED USE PATH
			GRASS BUFFER STRIP
			EXISTING SIDEWALK

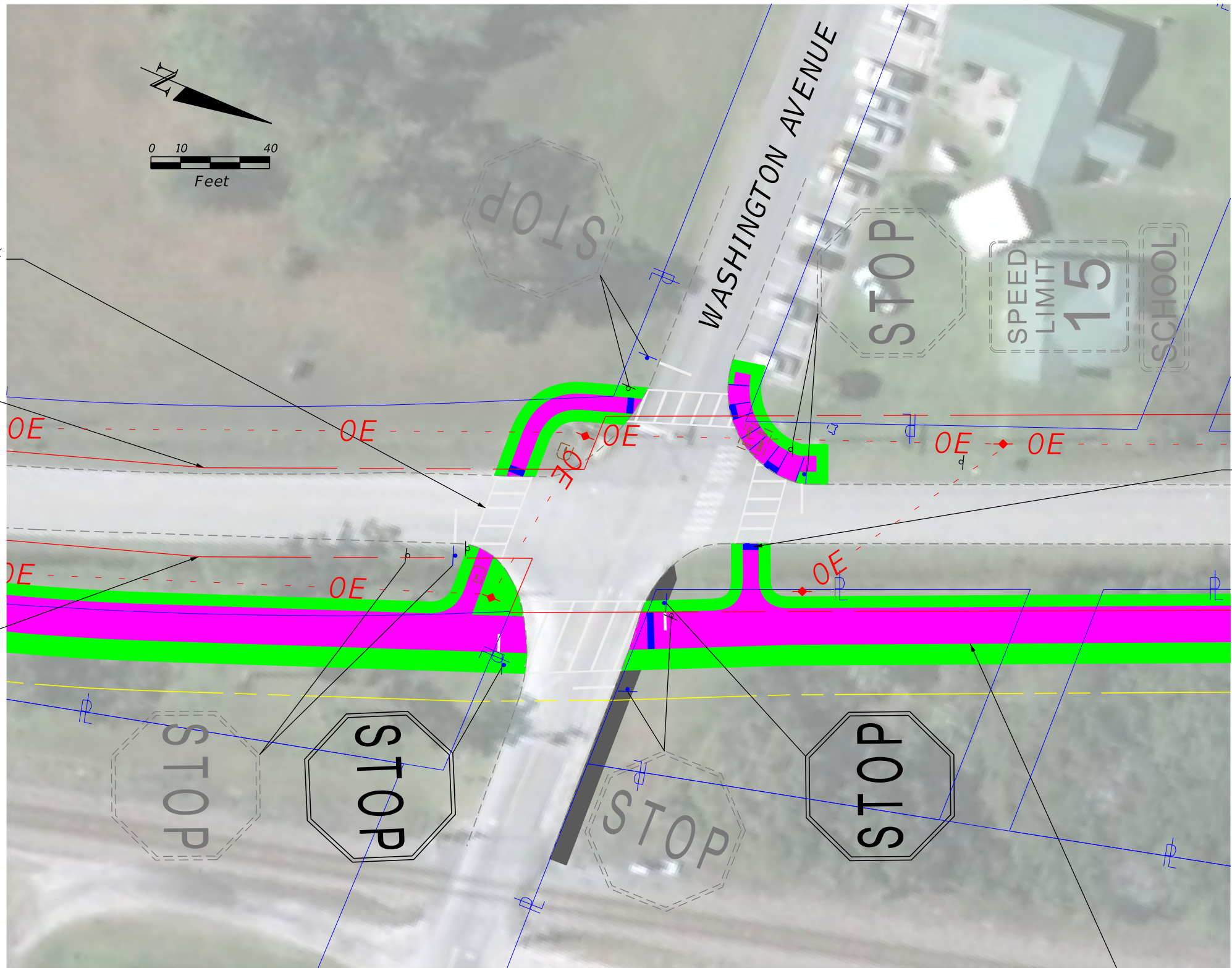


SEE NEXT SHEET FOR LIMITS BEYOND THIS POINT

LEGEND			
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	HEADWALL		FIRE HYDRANT
	MAILBOX		PULL BOX
	EXISTING SIGN		DRAINAGE INLET
	AT&T BOX		WATER LINE
	OVERHEAD UTILITY		APPARENT RIGHT-OF-WAY
	PROPOSED RIGHT-OF-WAY		TRUNCATED DOMES
	12' ASPHALT SHARED USE PATH		GRASS BUFFER STRIP
	EXISTING SIDEWALK		



LEGEND			
	POWER POLE		PROPOSED SIGN
	HEADWALL		FIRE HYDRANT
	MAILBOX		PULL BOX
	EXISTING SIGN		DRAINAGE INLET
			AT&T BOX
			WATER LINE
			OVERHEAD UTILITY
			APPARENT RIGHT-OF-WAY
			PROPOSED RIGHT-OF-WAY
			TRUNCATED DOMES
			12' ASPHALT SHARED USE PATH
			GRASS BUFFER STRIP
			EXISTING SIDEWALK



PROPOSED SPECIAL EMPHASIS CROSSWALK STRIPING (INDEX NO. 17346) (TYP.)

APPARENT RIGHT-OF-WAY

PROPOSED CURB RAMP WITH DETECTABLE WARNING SURFACE (TYP.) (INDEX NOS 304 & 310) (TYP.)

APPARENT RIGHT-OF-WAY

PROPOSED 12' SHARED USE PATH

LEGEND

	POWER POLE		PROPOSED SIGN		AT&T BOX		TRUNCATED DOMES
	HEADWALL		FIRE HYDRANT		WATER LINE		12' ASPHALT SHARED USE PATH
	MAILBOX		PULL BOX		OVERHEAD UTILITY		GRASS BUFFER STRIP
	EXISTING SIGN		DRAINAGE INLET		APPARENT RIGHT-OF-WAY		EXISTING SIDEWALK
					PROPOSED RIGHT-OF-WAY		

PROJECT CORRIDOR DESIGN PLANS

COUNTY ROAD 3
BICYCLE/PEDESTRIAN FEASIBILITY STUDY
TOWN OF PIERSON, FLORIDA

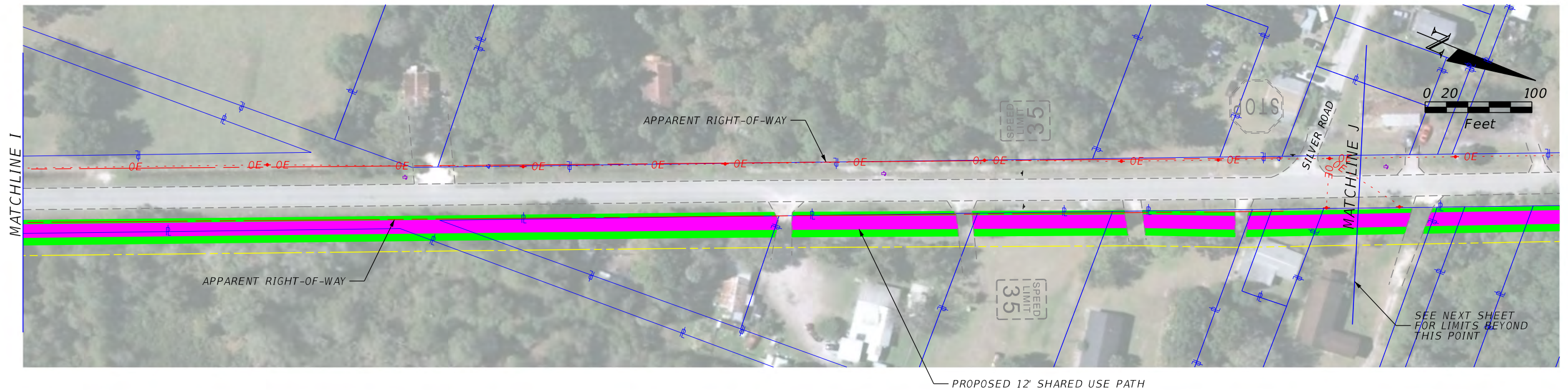
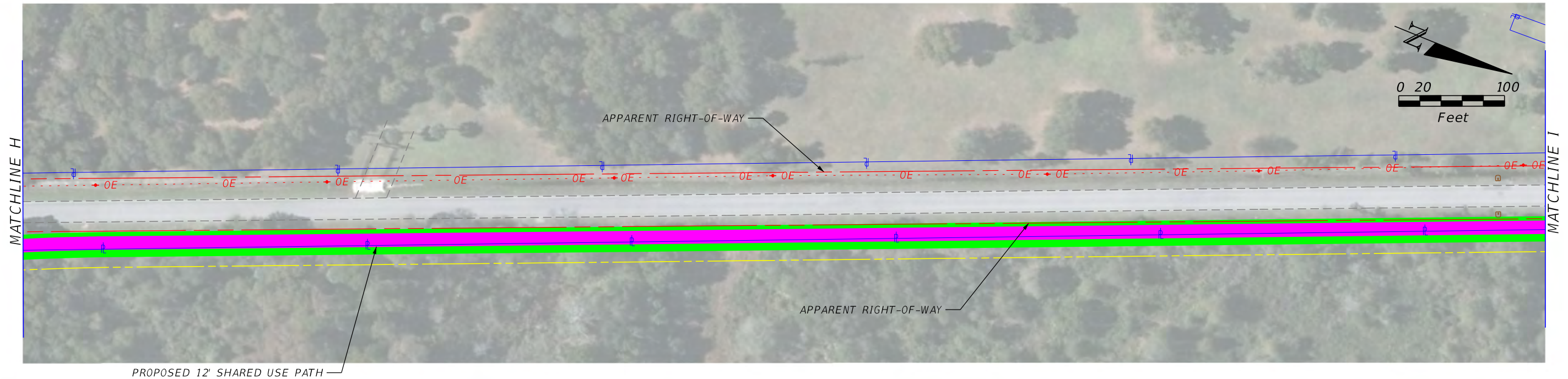


Kimley»Horn
3660 Maguire Boulevard, Suite 200
Orlando, Florida 32803

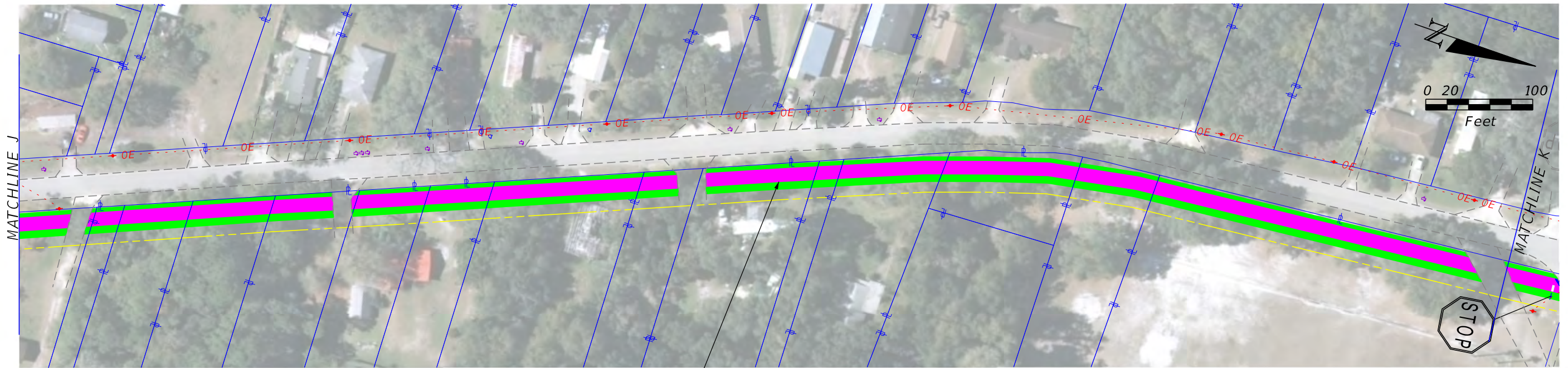
WASHINGTON AVENUE DETAIL

SHEET
NO.

4A



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	MAILBOX		PULL BOX		OVERHEAD UTILITY
	EXISTING SIGN		DRAINAGE INLET		APPARENT RIGHT-OF-WAY
			PROPOSED RIGHT-OF-WAY		12' ASPHALT SHARED USE PATH
			GRASS BUFFER STRIP		EXISTING SIDEWALK
			TRUNCATED DOMES		



PROPOSED 12' SHARED USE PATH



EXISTING R1-1 SIGN
TO BE RELOCATED

PROPOSED 12' SHARED USE PATH

LEGEND

	POWER POLE		PROPOSED SIGN		AT&T BOX		TRUNCATED DOMES
	HEADWALL		FIRE HYDRANT		WATER LINE		12' ASPHALT SHARED USE PATH
	MAILBOX		PULL BOX		OVERHEAD UTILITY		GRASS BUFFER STRIP
	EXISTING SIGN		DRAINAGE INLET		APPARENT RIGHT-OF-WAY		EXISTING SIDEWALK
					PROPOSED RIGHT-OF-WAY		

PROJECT CORRIDOR DESIGN PLANS

COUNTY ROAD 3
BICYCLE/PEDESTRIAN FEASIBILITY STUDY
TOWN OF PIERSON, FLORIDA

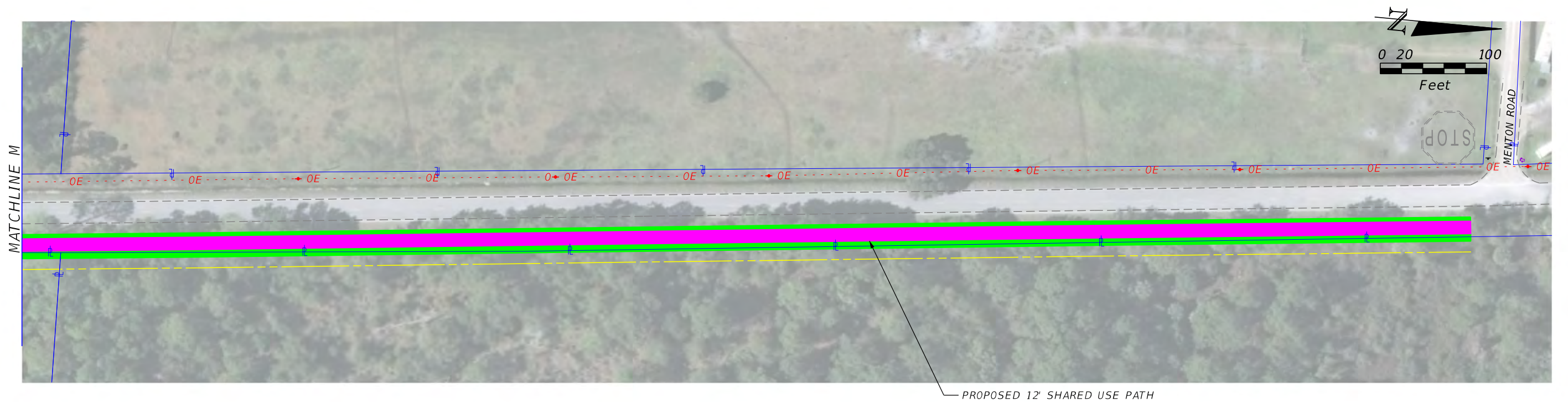
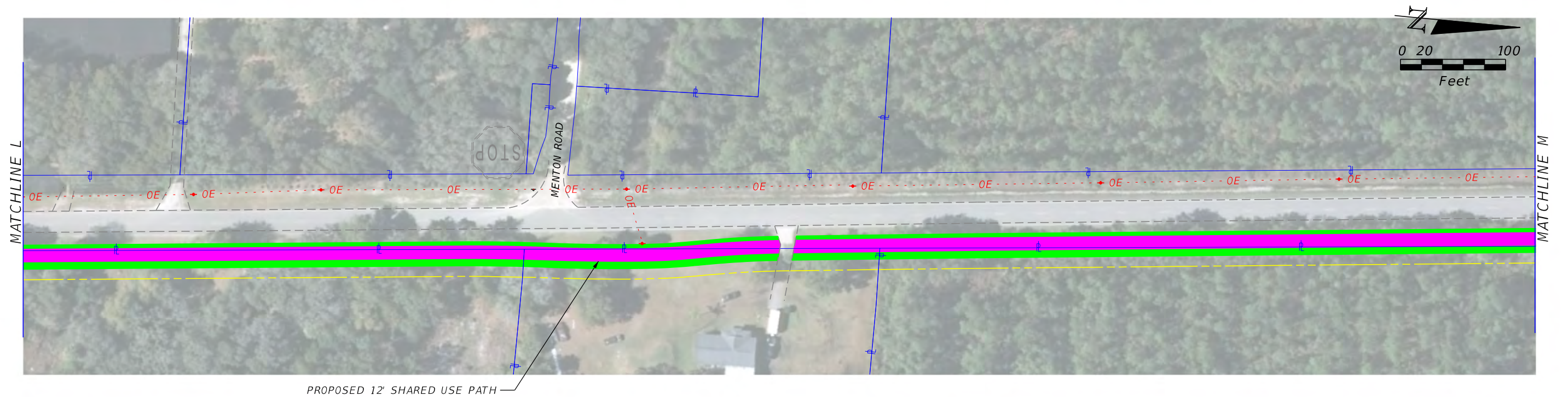


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3660 Maguire Boulevard, Suite 200
Orlando, Florida 32803

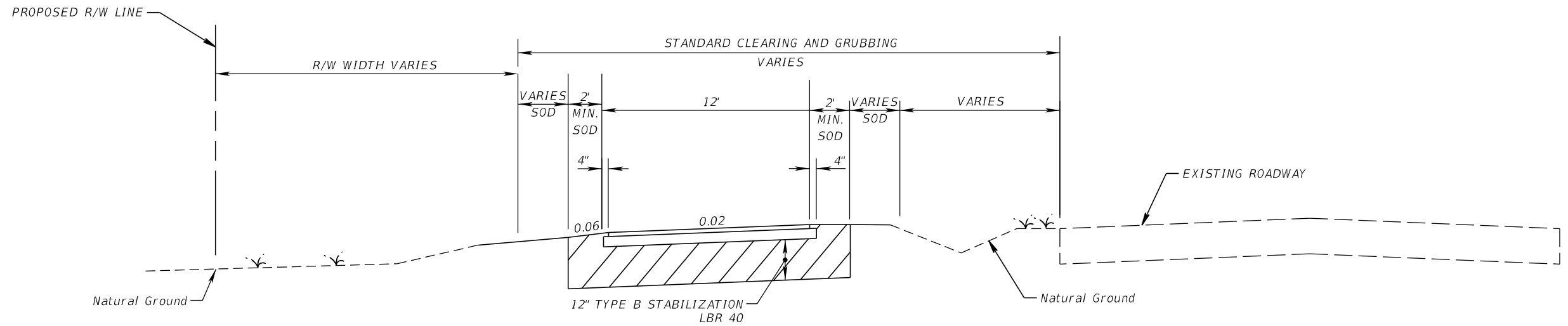
SECTION 6
SILVER ROAD TO SOUTH MENTON

SHEET
NO.

6



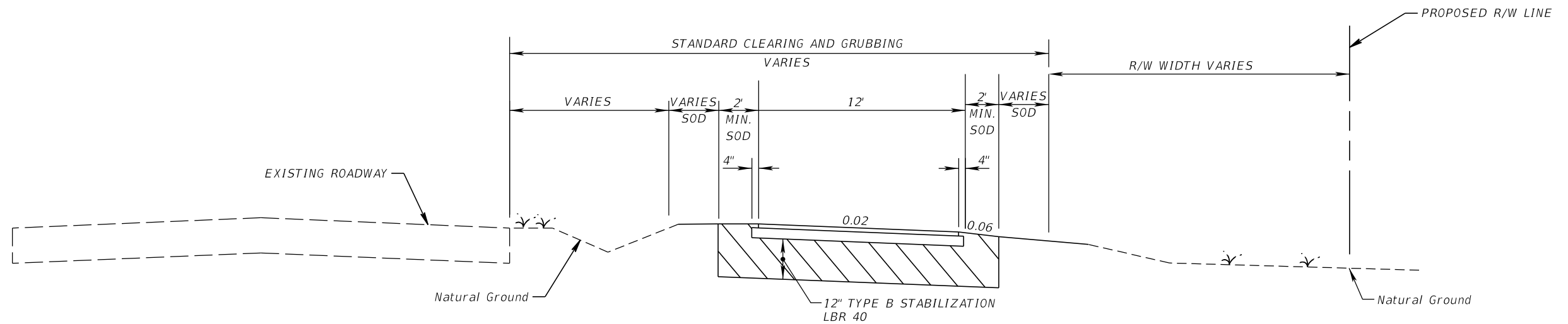
LEGEND			
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	HEADWALL		FIRE HYDRANT
	MAILBOX		PULL BOX
	EXISTING SIGN		DRAINAGE INLET
	AT&T BOX		WATER LINE
	OVERHEAD UTILITY		APPARENT RIGHT-OF-WAY
	PROPOSED RIGHT-OF-WAY		TRUNCATED DOMES
			12' ASPHALT SHARED USE PATH
			GRASS BUFFER STRIP
			EXISTING SIDEWALK



**TYPICAL SECTION
SHARED USE PATH
STEADMAN ROAD TO FIRST AVENUE**

PATH

OPTIONAL BASE GROUP 1 WITH
TYPE SP STRUCTURAL COURSE (TRAFFIC A) (1")



**TYPICAL SECTION
SHARED USE PATH
FIRST AVENUE TO N. MENTON ROAD**

PATH

OPTIONAL BASE GROUP 1 WITH
TYPE SP STRUCTURAL COURSE (TRAFFIC A) (1")

PROJECT CORRIDOR DESIGN PLANS

COUNTY ROAD 3
BICYCLE/PEDESTRIAN FEASIBILITY STUDY
TOWN OF PIERSON, FLORIDA



Kimley»Horn

3660 Maguire Boulevard, Suite 200
Orlando, Florida 32803

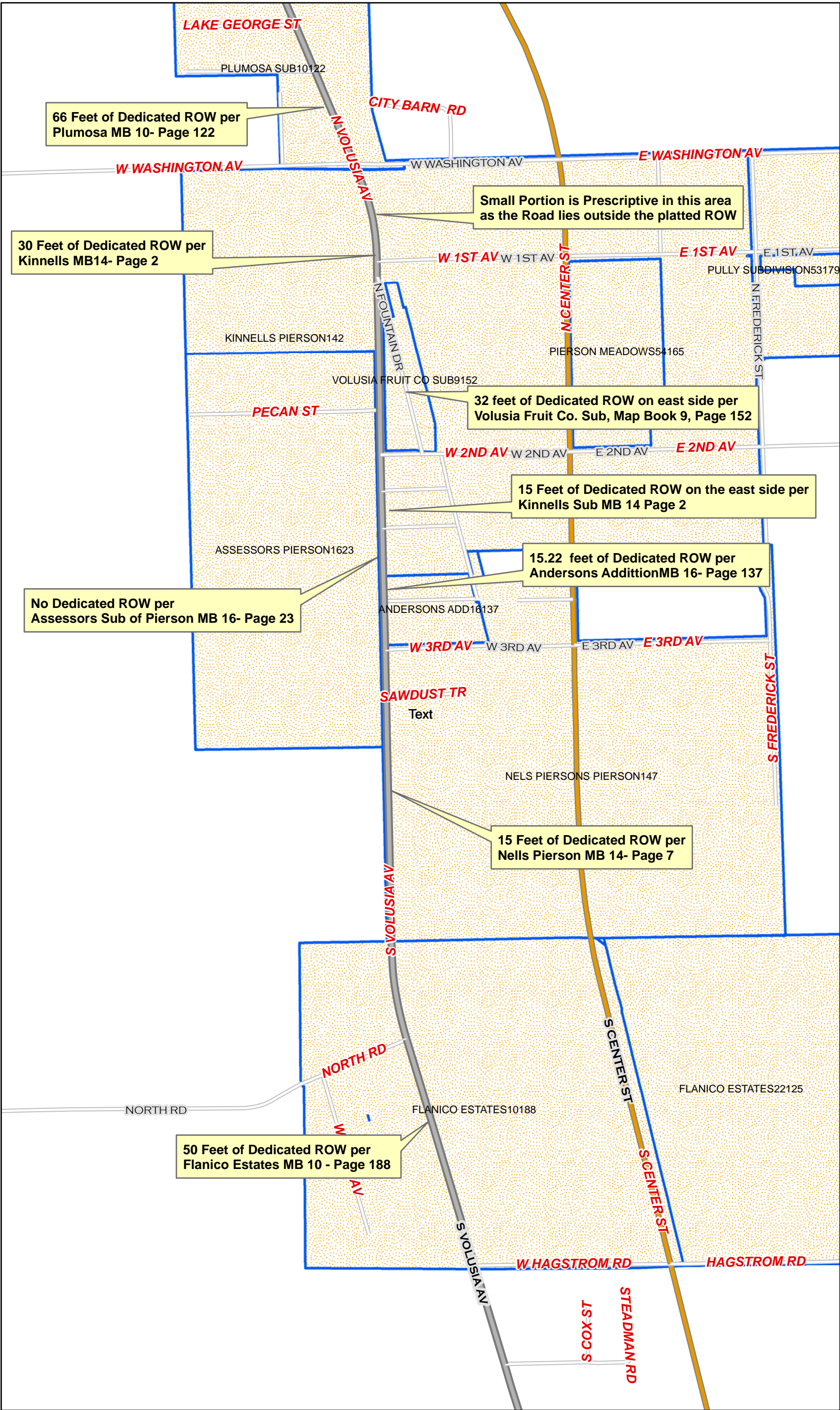
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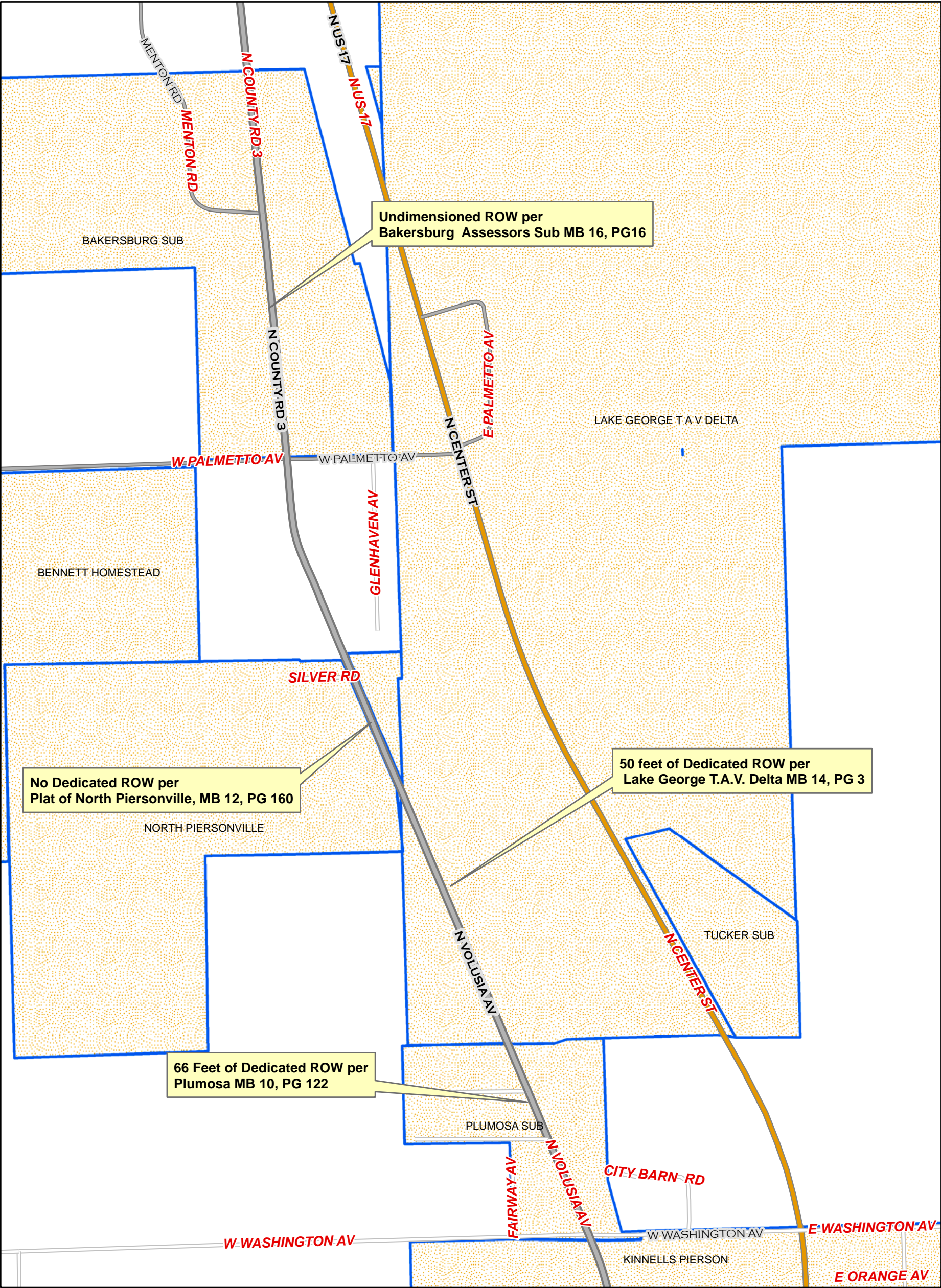
SHEET
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8

APPENDIX B

Right of Way Information





Match line - See Map #1

Map #2

County Road #3
Right of Way Info
This Map shows the dedicated ROW per the referenced plats
There is prescriptive ROW where there is no dedicated.
There may also be prescriptive ROW in addition to the platted ROW.



District 5 Right of Way Cost Estimate Confidence Ratings:

Introduction: The development of a right of way cost estimate is the product of four (4) essential components consisting of:

- (1) Quality and availability of the engineering or right of way exhibits.**
- (2) Quality and availability of market data.**
- (3) Time frame with which to develop the estimate.**
- (4) Ability and experience of the individual cost estimator.**

The combination of these four essential elements serves as the foundation for the overall reliability of the right of way cost estimate. The following confidence levels represent a summation of these essential elements as they pertain to the development and reliability of an individual right of way cost estimate.

A - High level of confidence – Usually prepared from 100% Right of Way Maps with excellent topography identified along with parcel sizes. Adequate sales and listing data are available. Adequate time is allowed to research available data and develop the estimate.

B - Good level of confidence – Prepared from maps which have identified parcels and definite acquisition areas. Adequate sales and listing data are available. Adequate time is allowed to research available data and develop the estimate.

C - Average level of confidence – Prepared from plans or maps which have identified parcels and definite acquisition areas. However, limited data and/or inadequate time required to analyze data typifies this confidence level.

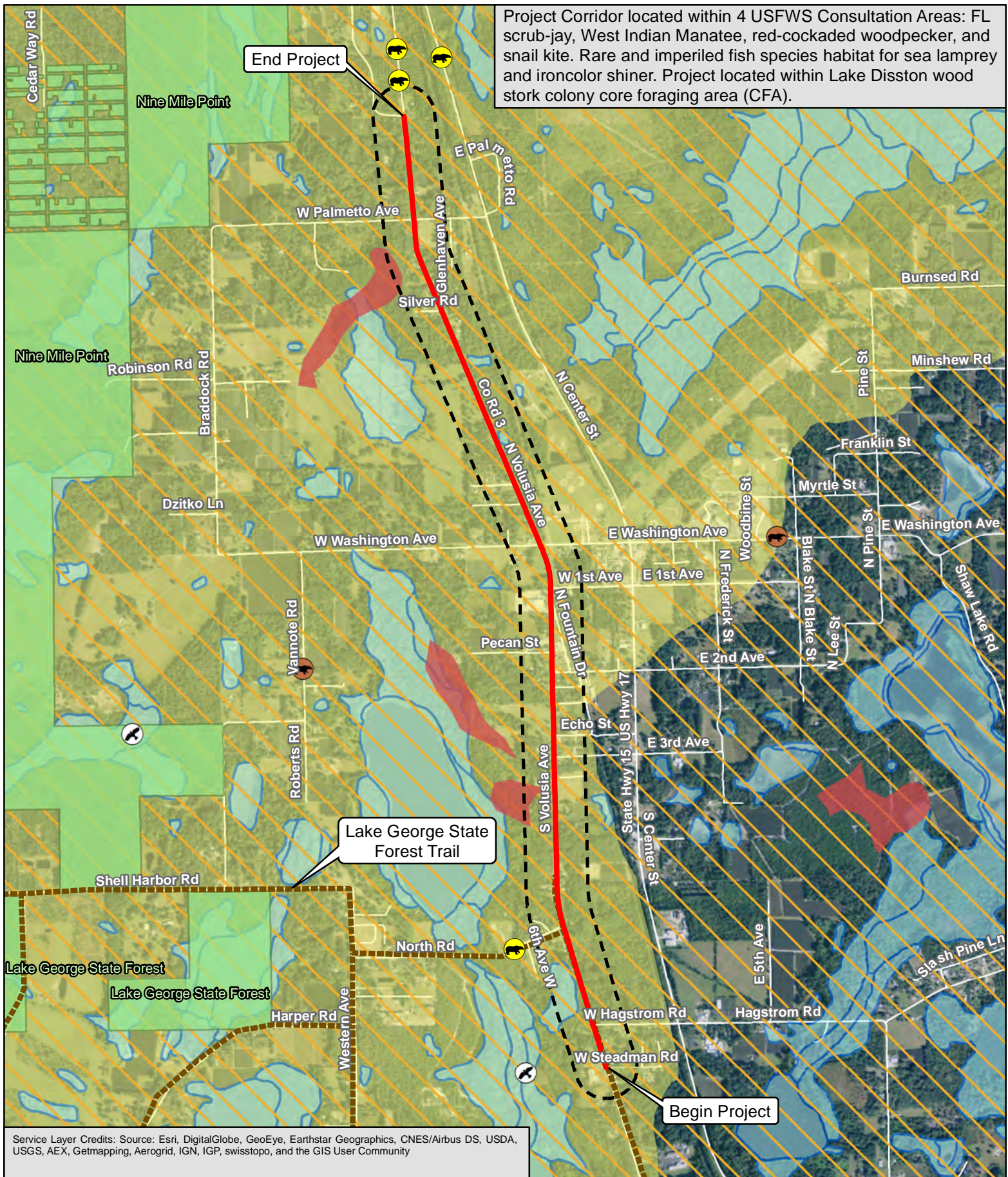
D - Fair level of confidence – Much of the needed data is lacking. Parcels may not be individually identified. A lack of project information as well as market data typifies this confidence level. Data lacking may include maps, sales, or adequate listing information. Time allowed to develop the estimate is not adequate to overcome these as well as other obstacles necessary to produce a more reliable estimate.

E - Poor level of confidence – Plans or aerial maps usually lack any identified parcels and have only approximate R/W widths or take areas to work from. Market data and processing time are inadequate to produce a more reliable estimate.

F - No confidence – None of the three elements consisting of plans/maps, market data, or adequate time necessary for the development of an accurate cost estimate are provided or available for consideration by the estimator.

APPENDIX C

Environmental Map



Legend

- | | | | |
|-----------------------------|----------------------|---------------------------------|------------------|
| Bald Eagle Nests | Project Corridor | Scrub-jay Habitat (FWS) | Black Bear Range |
| Black Bear Roadkill | Existing Trails | Publicly Managed Lands (FNAI) | Wetlands (NWI) |
| Black Bear Nuisance Reports | 500ft Project Buffer | Rare and Imperiled Fish Species | |
- 0 1,000 2,000 Feet

APPENDIX D

Comments and Responses

Comments on the Draft County Road 3 Shared Use Path Bicycle Pedestrian Feasibility Study

Draft Dated October 2015

Comments from Volusia County

Comments Dated 12/29/2015

COMMENT	RESPONSE
1. Since this is an extension of the Spring to Spring Trail and part of a larger regional showcase Trail system, please maintain a typical trail width of 12 feet and a minimum trail width of 10 feet. Please also utilize typical showcase trail design standards such as road crossings, signage, etc...	The conceptual alignment has been updated to include a 12' trail along the entire study limits. The trail has been updated to include typical pavement markings and signage, especially at the identified road crossings. The cost estimate has also been updated to reflect this.
2. Please comment on possible locations for a trailhead facility.	A discussion on possible trailhead locations has been included in the report. However, as this is an additional feature and not essential to the feasibility of the trail, the cost for a trailhead has not been included in the cost estimate.
3. Executive summary needs additional discussion regarding conclusions / recommendations and ROW acquisitions.	Additional discussion has been added to the executive summary and conclusion regarding the recommendations for next steps.
4. Please note that costs for utility adjustments or relocations are reimbursable to the utility companies for non-county projects within County right-of-ways. These costs need to be reflected in the cost estimate.	Since the trail is anticipated to require a significant amount of right of way acquisition, utility impacts are anticipated to be minor. The proposed trail is anticipated to be located outside of the roadway right of way and outside the path of existing utilities.
5. How was the \$425,000 of ROW cost determined? Need to add costs for ROW acquisition. Suggest additional ROW study as part of feasibility prior to advancing into design.	An analysis was conducted of the affected parcels and the value of the land to be acquired based on data from the property appraiser's website. Further discussion has been added to the report and appendix regarding the anticipated right of way acquisition.
6. Discuss the swale and drainage modifications in more detail and include discussion of possible SJRWMD permitting for the proposed drainage modifications. Please note that conveyance capacity within the existing swales should not be reduced. Please also note that the existing steep ditch slopes may be safety hazards to trail facilities and should be corrected as needed.	With the revised conceptual alignment, swale and drainage modifications are anticipated to be minimal. The trail is proposed to be located outside of the existing drainage system, and provide ample clear zone to the potential safety hazard of the steep ditch slopes. Some modifications will be needed, primarily at crossings, in order to accommodate ramps and crosswalks at the proposed locations. A discussion on permitting through SJRWMD has been added to Section 7.

Comments on the Draft County Road 3 Shared Use Path Bicycle Pedestrian Feasibility Study

Draft Dated October 2015

Comments from Volusia County

Comments Dated 12/29/2015

COMMENT	RESPONSE
7. Since wetlands and/or protected species habitats appear to be relatively close to the project corridor, SJRWMD or other environmental permits may be needed. Please include in the proposed scope of work and the cost estimate.	Additional discussion has been added to the report regarding permitting. However, it is recommended that permitting needs be re-evaluated once additional right of way information is acquired.
8. On the conceptual plan sheets, what does the green shading represent?	The green shading represents the addition/replacement of sod along the project corridor. The legend has been updated to include this symbol.
9. When the trail crosses existing driveways onto CR-3, please include replacement of driveways between trail and CR-3 per FDOT turnout standards.	Replacement of driveways has been included in the cost estimate.
10. When discussing project segments please be consistent or explain why there are differences between existing and proposed. For example, page 14 discusses 3 rd Ave to Short Street, but page 28 discusses 3 rd Ave to Washington Ave.	The existing project segments were based on similarities of the existing conditions. The proposed project segments were based on similarities with the proposed conceptual layout. Some of the existing segments were combined into "proposed segments" but the same break points were used.
11. Why does the preferred trail location shift to the East side at Washington Street?	Beginning around Washington Street, the east side of the roadway was determined to be preferential for the trail compared to the west side of the roadway. There were fewer driveways on the east side and the east side provides better access to existing parks and schools.
12. Figures 8-10 only show 2 pictures of the East side of CR-3. If the trail is proposed to be on the East side of CR-3, please include additional pictures of the east side of CR-3 to the North of Washington.	Additional pictures have been added to these figures as requested.

Comments on the Draft County Road 3 Shared Use Path Bicycle Pedestrian Feasibility Study

Draft Dated October 2015

Comments from Volusia County

Comments Dated 12/29/2015

COMMENT	RESPONSE
13. Please note that current county policy requires local municipalities to maintain new sidewalks and trails within city limits. Additionally, Volusia county typically only maintains a standard 5 foot wide sidewalk. Therefore the city will be responsible for <u>maintenance of the proposed trail.</u>	This policy is noted, and a highlight of the policy has been added in to the feasibility study.
14. In areas where roadside parking currently occurs, how will the sidewalk be protected from parking? Suggest providing 6 inch min. thick sidewalks in these locations.	With the revisions to the conceptual alignment, we are proposing a 12 foot asphalt trail throughout the corridor. Some parcels will need to be acquired to accommodate this trail, so some of the existing parking issues will no longer apply.
15. In areas without clearly defined driveways resulting in variable traffic patterns, suggest providing defined driveway aprons and also providing 6 inch min. thick sidewalks in these locations.	Replacement of driveways has been included in the cost estimate, and the shared use path is proposed to be a 12 foot wide asphalt path.
16. Please note that since the proposed trail will be along a County Roadway, the project will need to obtain a Volusia County right-of-way use permit.	This comment is noted, and has been added into the permitting section of the study.
17. Additional comments may be provided once the design plans are submitted for review.	Comment acknowledged.

Comments on the Draft County Road 3 Shared Use Path Bicycle Pedestrian Feasibility Study
Draft Dated October 2015

Comments from FDOT
Comments Dated 11/24/2015

COMMENT	RESPONSE
1. Please provide typical sections for the study corridor.	The typical sections have been added as requested.
2. The Engineer's Estimate specifies asphalt and concrete being used. Please illustrate what sections are being recommended for asphalt or concrete. Note 4 appears to be copied over from another project. There is no curb within the study corridor.	The entire shared use path is now proposed as asphalt. Note 4 of the Engineer's Estimate has been updated.
3. Agree that there is a lack of consistent R/W information along the corridor but what is meant by a "corridor specific boundary survey"? Is a survey recommended to specific areas lacking R/W info or for the entire study area?	A survey is recommended for the entire study area to determine the available right of way along the study limits.
4. How was the cost for R/W calculated in the Engineer's Estimate? What level of confidence do you have on this value? There is no clear assessment to how much R/W will be needed.	The discussion on right of way has been expanded to include additional details and a confidence rating. Due to the lack of right of way information available, these estimates should be updated after a survey is completed along the corridor.
5. CONCEPT PLANS PG 1-7:	
a. Based on the scale certain conflicts are detrimental to the design and cost estimate. For example, the proposed sidewalk shape conceals the existing white fence on page 3 of the concept plans. There is no mention of this fence being removed and it is not called out in the cost estimate. Suggest using 50 scale or smaller for the plans and/or a means other than colored shapes to display improvements.	Additional callouts have been added to the plans, and additional symbols have been added to the legend to help clarify the details of the conceptual alignment. However, the plans remain at 100 scale to show the conceptual alignment at the feasibility level. Note that some symbols appear larger on the conceptual plans for visibility. the fence in question was not anticipated to be impacted with the previous alignment. However, we have updated the conceptual alignment and the fence is now anticipated to be impacted. It has been added to the cost estimate accordingly.
b. What is the green shape running along the shared use path (SUP)?	The green shading represents the addition/replacement of sod along the project corridor. The legend has been updated to include this symbol.

Comments on the Draft County Road 3 Shared Use Path Bicycle Pedestrian Feasibility Study
Draft Dated October 2015

Comments from FDOT
Comments Dated 11/24/2015

COMMENT	RESPONSE
c. Please call out all existing and proposed crossings (including mid-block crossings) throughout the study area. Some are hard to see.	This callout has been added as requested for all crossings between the shared use path and designated roadways.
d. Please clarify between existing, proposed, and re-constructed sidewalks.	All sidewalks and shared use paths are proposed unless otherwise designated. Clarification has been added to the conceptual plans to identify existing sidewalks.
e. Will the sidewalk jog closer to CR 3 at dedicated streets to prevent sight distance issues?	The current conceptual alignment for the shared use path does not include jogs closer to CR 3, primarily due to the drainage concerns along the corridor. However this can be adjusted by the engineer during design. The sidewalk has been removed from the conceptual alignment.
f. How will driveways be handled where the sidewalk crosses? Was this included in the cost estimate?	The cost estimate has been updated to include replacement of existing asphalt and concrete driveways.
g. Are there any impacts to the ditches along CR 3?	The proposed trail is anticipated to be located outside of the existing roadside drainage and ditch features.
h. If R/W acquisition is being required to construct the sidewalk, was improvements to drainage structures such as existing cross drains and DBI's in conflict with the travel path considered?	The proposed trail is anticipated to be located outside of the existing roadside drainage and ditch features. Minor modifications will be required at intersections such as Washington. These intersection drainage improvements were included in the cost estimate.
6. CONCEPT PLANS PG 1:	
a. How will drainage be mitigated at the cross drains?	The proposed trail is anticipated to be located outside of the existing roadside drainage and ditch features. Minor modifications will be required at intersections such as Washington. These intersection drainage improvements were included in the cost estimate.
b. ADA ramps and crosswalk are not shown at North Rd crossing. Will they be proposed at this intersection? Was this included in the cost estimate?	Updated crossings have been included at all named streets. The cost estimate has also been updated to reflect this.

Comments on the Draft County Road 3 Shared Use Path Bicycle Pedestrian Feasibility Study
Draft Dated October 2015

Comments from FDOT
Comments Dated 11/24/2015

COMMENT	RESPONSE
7. CONCEPT PLANS PG 3:	
a. East sidewalk:	
<i>i.</i> Proposed sidewalk is in conflict with an existing inlet. Will inlet tops create safety issues for bicycle tires and wheelchairs? Will this impact the drainage effort required during design?	The sidewalk was removed from the conceptual alignment and this comment no longer applies.
<i>ii.</i> Aerial show vehicles parked where sidewalk is being proposed in front of the church. Suggest delineating on concept plans where 6" thick sidewalk will need to be placed due to vehicle exposure.	The sidewalk was removed from the conceptual alignment and this comment no longer applies.
<i>iii.</i> North of Echo St shows parcels impacted by sidewalk but no proposed R/W line is shown. Is R/W needed for this area?	The sidewalk was removed from the conceptual alignment and this comment no longer applies.
b. West sidewalk:	
<i>i.</i> Proposed R/W line stops south of 3 rd Ave but proposed sidewalk shows impacts to parcel(s). Is R/W needed for this area?	The proposed right of way lines have been updated to correspond with the revised conceptual alignment.
<i>ii.</i> Is there enough R/W where the sidewalk meanders the utility poles? Will additional RW be necessary to tie into the existing ground?	The conceptual alignment through this area has been revised and the new alignment will require R/W acquisition. This has been updated in the report and cost estimate.
<i>iii.</i> Is the existing white fence to be removed or relocated? Was this included in the cost estimate?	The previous conceptual alignment was not anticipated to require relocation of the fence. The revised conceptual alignment does require relocation and/or removal of the fence. This has been incorporated in the cost estimate.
<i>iv.</i> Business on SW corner of CR 3 and Pecan St. shows proposed 8' sidewalk through the existing parking in front of the building. How will the existing parking be dealt with?	The revised conceptual alignment shows significant right of way needs on this parcel. This parcel was assumed to be acquired in full.
<i>v.</i> No proposed ADA ramps and crosswalk are shown crossing Pecan St. Will they be proposed at this intersection? Was this included in the cost estimate?	Updated crossings have been included at all named streets. The cost estimate has also been updated to reflect this.

Comments on the Draft County Road 3 Shared Use Path Bicycle Pedestrian Feasibility Study
Draft Dated October 2015

Comments from FDOT
Comments Dated 11/24/2015

COMMENT	RESPONSE
vi. What is the shaded shape in the Ace Hardware parking lot? Will the number of parking spaces be reduced due to this? Will this impact drainage of the parking lot while maintaining ADA compliant cross slope? Will 6" thick concrete be used?	The conceptual alignment has been revised through this area. The driveway is proposed to be reconstructed to provide clarity on allowable vehicle paths to access the property.
vii. In areas where an existing inlet is shown within the proposed sidewalk and crosswalk is there sufficient clearance (i.e. 4-ft) around the inlet(s)? Will inlet tops create safety issues for bicycle tires and wheelchairs?	With the revised conceptual alignment, there do not appear to be any remaining conflicts with existing inlets.
8. CONCEPT PLANS PG 4:	
a. Is the study proposing to reconstruct the existing sidewalks running along the north side of 1 ST Ave and also along Washington Ave up to the railroad tracks? Will any work be done within the railroad R/W?	Coordination with the railroad will be needed, as they own the property between the railroad and the apparent County Road 3 right of way.
b. Why is there no proposed R/W line for parcels impacted between 1 ST Ave. and Washington Ave?	The proposed right of way lines have been updated to correspond with the revised conceptual alignment.
c. Will the inlet on the NW corner of Washington Ave and CR 3 remain within the center of the pedestrian landing? Will this be ADA compliant with adjacent proposed longitudinal and cross slopes? It appears that it is collecting runoff from the adjacent parking lot and CR 3.	The drainage features on all corners of this intersection will need to be updated in order to provide ADA compliant features. The cost of this is already incorporated in the cost estimate.
9. CONCEPT PLANS PG 4A:	
a. Will the sidewalk located on the SW corner of Washington Ave and CR 3 require ditch work and additional drainage structures? Was this included in the cost estimate?	Modifications will be required at this intersection. These intersection drainage improvements were included in the cost estimate.
10. CONCEPT PLANS PG 6:	
a. ADA ramps and crosswalk are not shown at Palmetto Ave crossing. Will they be proposed at this intersection? Was this included in the cost estimate?	Updated crossings have been included at all named streets. The cost estimate has also been updated to reflect this.

Comments on the Draft County Road 3 Shared Use Path Bicycle Pedestrian Feasibility Study
Draft Dated October 2015

Comments from FDOT
Comments Dated 11/24/2015

COMMENT	RESPONSE
11. CONCEPT PLANS PG 7:	
a. The 10' SUP appears to end off of the page. Was a logical terminus identified?	The conceptual alignment has been updated to end at the project limits at Menton Road.

Comments on the Draft County Road 3 Shared Use Path Bicycle Pedestrian Feasibility Study
Draft Dated October 2015

Comments from R2CTPO
Comments Dated 12/30/2015

COMMENT	RESPONSE
Figure 2 - Add a scale.	A scale has been added as requested.
Page 11 - Clarify how alignment of trail is affected by these obstacles	Additional discussion has been added to this section.
Page 18 - Provide more detail on your recommendations to resolve drainage issues at CR 3 and Washington Avenue intersection	Additional discussion has been added to this section.
Page 28 - The justification for narrowing the trail to an 8' sidewalk is inadequate. Maintain a 10' to 12' wide trail from 3rd Ave. to Washington Ave.	The conceptual plans have been updated to include a 12 foot trail along the project limits.
Page 28 - Provide justification why the proposed trail is not 12' wide.	The trail has been updated to be 12 feet standard.
Page 29 & 30. Remove the 2020 projection.	We have removed the 2020 projection from the table and text as requested.
Concept Plans - Add Trail symbol to legend, symbolize sidewalk in another color and add to legend.	The symbols have been added as requested.
Concept Sheet 4 - This line appears to be pointing to the roadway.	The line has been reviewed and revised as necessary.
Concept Sheet 6 - Where is the apparent right of way line on this sheet	Apparent right of way lines have been updated on this sheet.
Concept Sheet 7 - Where is the apparent right of way line on this sheet	Apparent right of way lines have been updated on this sheet.
Include the FDOT ROW Cost Estimate Confidence Ratings (refer to the attached file).	The Confidence Ratings have been added as requested.