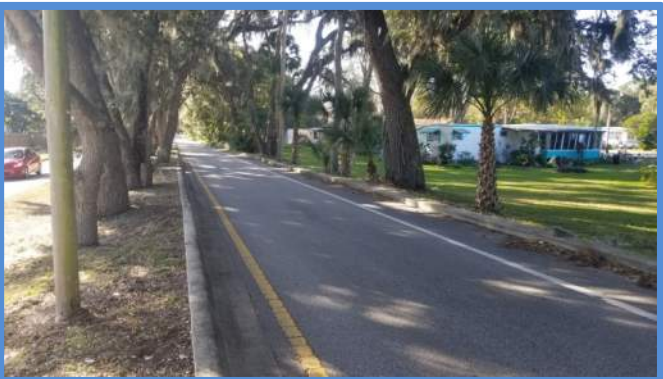


TRAIL & SIDEWALK FEASIBILITY STUDY – PHASE 1

Madeline Avenue, From County Road 483 (Clyde
Morris Boulevard) to State Road 5A (Nova Road) &
Bruner Road, From Stillwood Court to Madeline
Avenue

City of Port Orange

FINAL Report, January 2019



Prepared For:
River to Sea TPO



Prepared By:
Traffic Engineering Data Solutions, Inc.

Traffic Engineering Data Solutions, Inc.

This item has been digitally signed and sealed by Mikal R. Hale,
PE, on the date adjacent to the seal.

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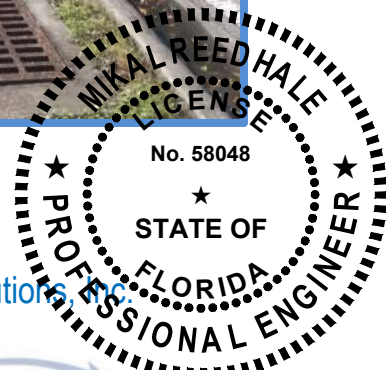


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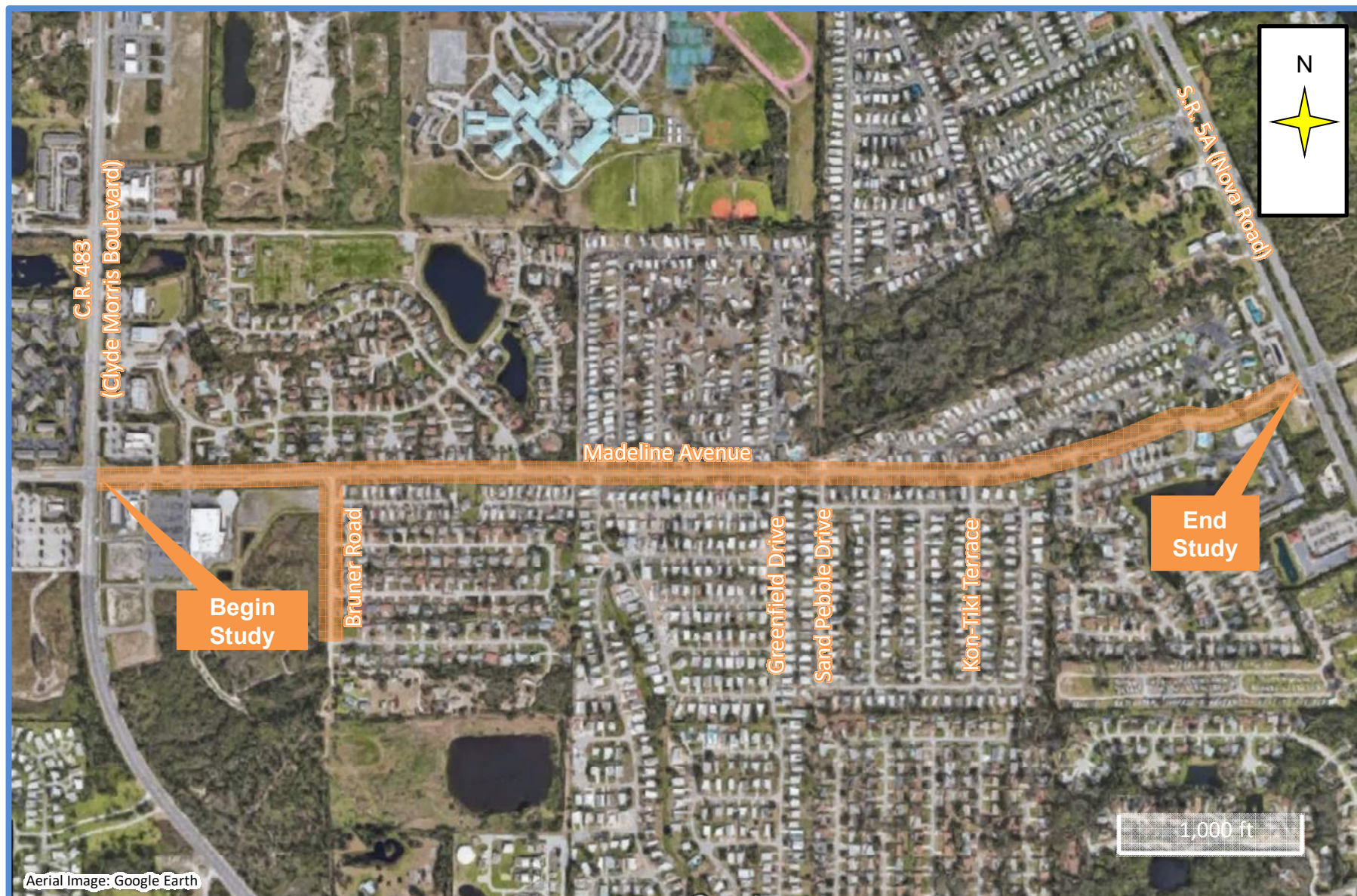
INTRODUCTION

The purpose of this study is to evaluate the feasibility of constructing a trail along Madeline Avenue, from County Road 483 (Clyde Morris Boulevard) to State Road 5A (Nova Road) (approximately 1.3 miles) and a sidewalk along the east side of Bruner Road from Stillwood Court to Madeline Avenue, in the City of Port Orange. The study limits are shown in **Figure 1**. The primary focus of this project will be to provide pedestrian and bicyclist connectivity along Madeline Avenue from S Williamson Boulevard to Nova Road via connectivity to Phase 2; Phase 2 evaluates the feasibility of constructing a trail and sidewalk along Madeline Avenue, from S Williamson Boulevard to Clyde Morris Boulevard. Phase 1 looks into providing an alignment that includes the trail on the north side of Madeline Avenue from Clyde Morris Boulevard heading east, then transitioning to the south side of Madeline Avenue up to Nova Road, with the transition occurring between Fall Drive and Kon Tiki Terrace. Additionally, Phase 1 includes a proposed sidewalk on the east side of Bruner Road that is proposed to connect to the existing sidewalk on the north side of Stillwood Court to the existing sidewalk on the south side of Madeline Avenue.

Currently, there is approximately 450 feet of sidewalk on the north side of Madeline Avenue from Clyde Morris Boulevard to Tradewinds Lane; there is also existing sidewalk on the south side of Madeline Avenue along its entire length from Clyde Morris Boulevard to Nova Road. One of the reasons for the proposed trail and sidewalk improvements along Madeline Avenue is to enhance safety for pedestrians and bicyclists. Currently, no shared-use path is available, and bicyclists do not have continuous segments of outside paved shoulder to ride on. The project purpose and scope for this study are further explained in Section 2.

In addition to providing safer access for pedestrians and bicyclists, the proposed trail and sidewalk along Madeline Avenue and Bruner Road would provide local residents with safer access to public transportation, commercial properties, and other community amenities within the area.

Figure 1
Project Location Map



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PROJECT PURPOSE AND SCOPE

Madeline Avenue is an east-west local collector roadway within the City of Port Orange, extending from S. Williamson Boulevard to Sauls Street. This section of Madeline Avenue is a two-lane predominantly undivided rural roadway with sections transitioning between rural and urban (no curb and/or gutter to curb and gutter) with a posted speed limit of 35 miles per hour. Currently, sidewalks are provided along Madeline Avenue from Clyde Morris Boulevard to Nova Road; there is approximately 450 feet of sidewalk on the north side of Madeline Avenue from Clyde Morris Boulevard to Tradewinds Lane and there is sidewalk on the south side of Madeline Avenue along its entire length from Clyde Morris Boulevard to Nova Road. Bruner Road is a north-south two-way local residential road (with no curb and gutter) serving residences on its east side and extending south of Madeline Avenue for a distance of approximately 0.2 miles.

One of the reasons for the proposed trail and sidewalk improvements along Madeline Avenue and Bruner Road is to enhance safety for pedestrians and bicyclists. Currently, no shared-use path is available, and bicyclists do not have continuous segments of outside paved shoulder to ride on.

A field review was conducted for the purposes of data collection, corridor evaluation, development of concept plans, and cost estimates. Items were investigated to identify conditions that may provide input to the determination of improvements, with focus predominantly on the items that impact the proposed trail and sidewalk improvements. Color photographs were taken along the study corridor with emphasis on obtaining visual information which would be of value to the City of Port Orange (the City), Volusia County (the County), the Florida Department of Transportation (FDOT), and the River to Sea Transportation Planning Organization (R2CTPO) during any subsequent project plans preparation activities. These include utility conflicts, right-of-way constraints, obstructions, unusual geometrics, deficient pavement markings. Typical sections and concept plans are provided in **Appendix A** and show existing roadway information and dimensions, including traffic control devices, driveways, sidewalks, signs, pavement markings, drainage inlets, buildings, utility and signal poles, lighting, and other fixed objects along with right-of-way lines. The Americans with Disabilities Act (ADA) requirements were used as requirements for the concept plans.

An ecological feasibility analysis was performed to identify potential impacts to wetlands and threatened and endangered species which would result from the proposed trail and sidewalk improvements included in this study. The permitting requirements and estimated mitigation costs required as a result of any potential wetland or species impacts resulting from the proposed improvements are also summarized. A desktop study was conducted that includes background research in the history of the project corridor, as well as a records search for previously recorded cultural resources and professional archaeological surveys within or near this segment of Madeline Avenue and Bruner Road.

Based on the data collection, site reviews, and project coordination meetings, concept plans (see **Appendix A**) were prepared showing the proposed trail and sidewalk improvements, drainage system modifications, driveway improvements, traffic signal adjustments, crosswalks,

and tie-ins to existing sidewalks and curb.

Volusia County's Long Range Capital Improvement Plan were reviewed for any scheduled improvements along the Madeline Avenue and Bruner Road study corridor. Based on Volusia County's Five- Year Capital Improvement Program, no improvements are currently planned on Madeline Avenue from Clyde Morris Boulevard to Nova Road or on Bruner Road from Stillwood Court to Madeline Avenue. Additionally, based on discussion at a coordination meeting with Volusia County and the City of Port Orange on October 15, 2018, there are no plans to widen or extend Madeline Avenue at this time.

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EXISTING CONDITIONS

The following section provides a general description of the characteristics observed within the project study limits in regards to the physical conditions, environmental conditions, drainage and utilities, and it also includes an assessment of the apparent right-of-way.

General Description

The study corridor is on Madeline Avenue (a collector roadway) from Clyde Morris Boulevard to Nova Road, a length of approximately 1.3 miles and on Bruner Road (a local residential road) from the north side of Stillwood Court to Madeline Avenue, a length of approximately 0.2 miles. Along the study corridor, Madeline Avenue is a two-lane predominantly undivided rural roadway (no curb and gutter) with a divided urban roadway section (curb and gutter) between Kon-Tiki Terrace and Lazy Hammock Drive. Currently, there is approximately 450 feet of existing sidewalk on the north side of Madeline Avenue from Clyde Morris Boulevard to Tradewinds Lane and there is existing sidewalk on the south side of Madeline Avenue along its entire length from Clyde Morris Boulevard to Nova Road. Bruner Road is a north-south two-way local residential road with no curb and gutter, extending south of Madeline Avenue for a distance of approximately 0.2 miles. The study area is predominantly residential, with some commercial. The residential and commercial developments along the study corridor are as follows:

- CVS Pharmacy
- Cumberland Farms gas station and convenience store
- Walmart Neighborhood Market
- Southwinds subdivision
- Gray Acres East 55+ community
- Laurelwood Estates 55+ community
- Lighthouse Pointe subdivision
- Barefoot Park subdivision
- BP gas station and convenience store
- 7-Eleven gas station and convenience store

Along the study corridor there are two signalized intersections Clyde Morris Boulevard and Nova Road. There are pedestrian features (crosswalks and pedestrian pushbuttons and signals) at all approaches of the two signalized intersections. The posted speed limit is 35 mph throughout the study corridor.

The project team assessed existing land uses, roadway typical sections, utilities, lighting, existing sidewalk and drainage items. Apparent right-of-way on Madeline Avenue varies from 50 feet wide to 100 feet wide. There are no railroad crossings within the study corridor. There is pedestrian walkway lighting as well as sporadic street lighting along the south side of Madeline Avenue in the vicinity of the Cumberland Farms gas station and Neighborhood Walmart (from Clyde Morris Boulevard to just west of Bruner Road). From Bruner Road eastward to Sand Pebble Circle there is sporadic street lighting along the south side of the

study corridor. From Sand Pebble Circle eastward, there is continuous street lighting along the south side of Madeline Avenue to approximately 130 feet east of Kon Tiki Terrace (station 295+80). There is no street lighting along the study corridor from station 295+80 to station 307+00 where the street lighting transitions to the north and continues on the north side of Madeline Avenue to Nova Road.

Driveways

There are three (3) driveways along the study corridor with recommended improvements, including two unpaved driveways and one paved driveway. The unpaved driveways do not meet ADA requirements. The paved driveway at Autumn Trail is recommended to be resurfaced because of the drainage improvements to the existing side drain, inlet and headwalls. It should be noted that the side streets turn-outs of Tradewinds Lane, Southwinds Drive, Kon-Tiki Terrace, and Red Pontiac Drive are all recommended to be resurfaced as part of this study. Along Bruner Road, there are no existing driveways; however, one resident parks their recreational vehicle off Bruner Road. At this location it is recommended that a concrete driveway apron be provided. It should be noted that the side street turn-outs of Madeline (private drive for Gray Acers West), both terminus of Viking Drive and Stillwood Court are also recommended to be resurfaced as part of this study. **Table 1** below shows driveways proposed to be reconstructed with concrete driveway aprons or milled and resurfaced (not including side streets), owner addresses and improvements. The concept plans within **Appendix A** identifies the driveways that are recommended to receive ADA-compliant improvements.

Table 1
Driveway Information
Madeline Avenue from Clyde Morris Boulevard to Nova Road

Current Driveway Material	Station Location (Appendix A)	Parcel ID	Property Location	Proposed Driveway Material
Dirt	272+50 (Lt.)	06-16-33-03-00-0001	Driveway to existing utility site	Concrete Driveway
Paved	279+25 (Lt.)	37-16-33-01-09-0040	Madeline Avenue & Autumn Trail	Asphalt Concrete
Dirt	286+10 (Lt.)	37-16-33-01-09-0040	Light house Pointe Driveway	Concrete Driveway
Dirt	502+20 (Rt.)	06-16-33-02-00-0010	1100 Viking Drive	Concrete Driveway





Light house pointe driveway



1100 Viking Drive

Right-of-Way

Madeline Avenue is maintained by the City of Port Orange within the study corridor. Apparent right-of-way lines were obtained from Volusia County's Geographic Information Services (GIS) website, and used to preliminarily assess the right-of-way width along the study corridor. However, several record engineering documents for Madeline Avenue and Bruner Road were also consulted to more accurately depict the existing apparent right of way, as the GIS did not appear accurate in several locations. Record documents suggest that right-of-way is at most 100 feet wide (varying from approximately 50 feet to 100 feet) through the entire study corridor for Madeline Avenue and the right-of-way is at most 60 feet wide for Bruner Road. The apparent right-of-way is also shown on the concept plans exhibits and in the typical section (see **Appendix A**).

Vinyl fence on the north side of Madeline Avenue
(Facing East)Wood fence on the south side of Madeline Avenue
(Facing West)On the east side of Bruner Road looking towards
Madeline Avenue (Facing North)

Utilities

A utility assessment was made along the study corridor during the field visit. From Clyde Morris Boulevard to Sand Pebble Circle there is existing sporadic street lighting at the intersections of Tradewinds Lane, Bruner Road, Southwinds Drive, Indian Hill Drive and Greenfield Drive. From Sand Pebble Circle eastward, there is continuous street lighting along the south side of Madeline Avenue to approximately 130 feet east of Kon Tiki Terrace (station 295+80). There is no street lighting along the study corridor from station 295+80 to station 307+00 where the street lighting returns on the north side of Madeline Avenue to Nova Road. There is also no street lighting on Bruner Road, however, Both Viking Drive intersections have street lighting. Overhead power lines are located on the south side of Madeline Avenue from Clyde Morris Boulevard to Lazy Hammock Drive. From Lazy Hammock Drive (station 307+00) the overhead power lines cross to the north side of Madeline Avenue and continue to Nova Road. Overhead power lines are located on the east side of Bruner Road. A total of 53 overhead utility poles and 19 luminaires were noted during the field visit.

The distance from the edge of pavement to the utility poles ranges from 5 to 10 feet. Sanitary sewer force main is present from Clyde Morris Boulevard to just west of Nova Road (station 312+15) where it transitions to gravity sewer and continues to Nova Road. There is sanitary sewer along the west side of Southwinds Drive that crosses Madeline Avenue at station 269+50 and there is sanitary sewer along the west side of Kon-Tiki Terrace which travels east to Red Pontiac Drive near the south right-of-way of Madeline Avenue. Water mains run along the south side of Madeline Avenue from Bruner Road to Kon-Tiki Terrace where it transitions to the north side of Madeline Avenue and continues to Nova Road. A small segment of underground telephone is located within the intersection of Madeline Avenue and Clyde Morris Boulevard. Gas mains run along the east side of Clyde Morris Boulevard.



Overhead power and utility lines along the south side of Madeline Avenue (Facing West)

Floodway / Floodplain

According to FEMA FIRM Panel 12127C0369J, as last revised September 29, 2017, no portions of the study corridor lie within Special Flood Hazard Areas (SFHAs), though portions of the existing right of way from approximately station 311+00 to the end of study corridor are

noted to be within the 0.2% Annual Chance Flood Hazard Areas, of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile.

Drainage and Permitting

Under Environmental Resource Permit (ERP) No. 23171-1, the St. Johns River Water Management District (SJRWMD) originally approved the Madeline Avenue Extension project on August 11, 1998 for roadway improvements within the Phase 2 study limits, which were as-built and certified complete in 2000. As of February 11, 2004, a permit determination was submitted to SJRWMD for safety improvements within the Phase 1 study corridor, including approximately 5,300 LF of proposed sidewalk and 1,200 LF of paving to construct a new eastbound lane on Madeline Avenue from approximately station 295+00 (near Kon Tiki Terrace) to station 309+00, as well as a 5' concrete sidewalk on the south side of the right of way from Clyde Morris Boulevard to Nova Road. On February 25, 2004, the SJRWMD issued a letter confirming the Madeline Avenue Safety Improvements did not meet the thresholds for a permit. As such, the proposed trail and sidewalk improvements are not expected to take place within previously permitted project areas. Refer to **Appendix D** where excerpts from ERP No. 23171-1 have been included, including copy of the permit determination correspondence and plans depicting the safety improvements.

As depicted in the concept plans in **Appendix A**, Volusia County LIDAR topography suggests that within the study corridor, the profiles of the existing rural roadways are relatively flat with less than 0.3% longitudinal slope in several areas. A series of high points and low points convey runoff from the Madeline Avenue to several depressional areas hosted on the private properties abutting the existing right of way, which do not appear to have positive outfall. There are a few drainage collection system components that in some instances, receive the runoff and convey it downstream, either across private property and/or the existing right of way to provide positive outfall. However, there is no evidence of stormwater management facilities that were designed to treat or attenuate the runoff from the right of way, and in several cases, runoff drains directly to the adjacent properties overland. Below is a brief summary of the predominant locations that receive runoff from the Madeline Avenue in more significant concentrations.

- Station 255+00 to Station 258+80 (RT) - Depressional area between the existing 8' concrete sidewalk and the existing right of way that was constructed in the Walmart Neighborhood Market project (ERP No. 90932-3)
- Station 257+00 (LT) – Natural depression within a common tract of the Southwinds residential subdivision
- Station 264+20 (LT) – Natural depression within a common tract of the Southwinds residential subdivision
- Station 270+80 (LT) – Natural depression within a common tract of the Southwinds residential subdivision
- Station 274+80 to Station 283+60 (LT) - Roadside swale equalized by an existing side drain underneath Autumn Trail
- Station 285+90 (LT) – Existing catch basin with outfall pipe which appears to cross parcel 37163301090040 (MHC Lighthouse LLC) to a low area on parcel 630501000040 (City of Port Orange) where it is directed northeasterly to the Nova Canal

- Station 295+00 to Station 313+00 (LT & RT) – Curb & gutter with a series of inlets and pipes which convey runoff to a shallow swale near station 311+00 (LT), where it is directed southerly to a depressional area prior to discharging easterly to the Nova Canal

Bruner Road is a crowned roadway. As depicted in the concept plans in **Appendix A**, Volusia County LIDAR topography suggests that the drainage from the eastern portion of Bruner Road travels south and is collected within a depressional area on a parcel owned by the City, which does not appear to have an outfall. In addition, SJRWMD does not appear to have any ERP records on file for this facility.

NOTE: Throughout all of the record document review completed during preparation of this feasibility study, no documents were discovered which demonstrated how legal rights were provided to the City of Port Orange for the various storage nodes or drainage collection/conveyance systems located on private properties. Further research into this issue may be warranted unless it is determined that prescriptive rights apply or other provisions were made previously.



Storm drain adjacent to inside of curb Red Pontiac Drive
(east) (Facing West)



Storm drain in vicinity of worn pedestrian ramp Sand Pebble
Circle (west) (Facing West)

Soils

The proposed shared-use path and sidewalk traverses through Astatula fine sands, Basinger fine sands, Daytona sands, Immokalee sands, Malabar fine sands, Myakka-Myakka fine sands, Paola fine sands, Satellite sands, Smyrna-Smyrna fine sands, Tavares fine sands, and Tuscahilla fine sands. A soils map is included in **Appendix C**. This map was prepared through the Web Soil Survey (WSS) operated by USDA Natural Resources Conservation Services (NRCS).

Environmental

An ecological feasibility study was completed for the proposed trail and sidewalk project by Environmental Services, Inc. (ESI). The purpose of the investigation was to preliminarily assess the work corridor for the presence of jurisdictional wetlands in accordance with the current methodologies of the U.S. Army Corps of Engineers (ACOE) and the St. Johns River Water Management District (SJRWMD). In addition, the study corridor was investigated for the potential presence and/or use of the area by any species protected by the Florida Fish and Wildlife Conservation Commission (FWC) and/or the U.S. Fish and Wildlife Service (FWS). The study was initiated with a review of topographic maps, soil survey information, and color infrared aerial photographs of the study area, along with relevant technical publications and field guides. Upon completion of the in-house review, ESI staff inspected the study area on October 10 and November 6, 2018.

ESI initiated the permitting history with a review of all available permits issued by SJRWMD along the project area. This review was performed to provide a clear historic picture of the on-site conditions prior to development along Madeline Avenue between Clyde Morris Boulevard and Nova Road. Projects reviewed include Clyde Morris Boulevard Improvements (SJRWMD Permit #s 29565 & 22767), Palmetto Pointe (SJRWMD Permit # 90932), Southwind Trails CVS (SJRWMD Permit #29624), 7-11 Convenience Store (SJRWMD Permit #103962), Fleming Car Wash (SJRWMD Permit #70137), and Nova Road (SJRWMD Permit #22818). Based on this review, no indications of any historic wetlands were noted within the proposed corridor. ESI also reviewed relevant permitting documentation from the City of Port Orange and Volusia County that included engineering plans and as-built documentation. ESI did not note anything within this documentation that indicated the potential presence of state or federally jurisdictional wetlands within the work area.

ESI investigated the proposed project corridor for the presence of any state or federally jurisdictional wetlands or surface waters in accordance with the current methodologies of ACOE and SJRWMD. ESI initiated the investigation with a review of historic and infrared aerial photography, along with National Wetlands Inventory (NWI) data and soils maps. This review was supplemented with the historic permitting review. Based on this information, no direct evidence of any wetlands or surface waters were noted. In October 2018, ESI staff performed a site review of the corridor to further investigate for the presence of any jurisdictional wetlands or surface waters within Phase I. At no point during the investigation were any wetlands noted within the proposed work area. Minor constructed swales were noted within portions of the right-of-way, but none exhibited sufficient hydrologic characteristics for either SJRWMD or ACOE to claim jurisdiction. If the proposed work within Phase I stays within or just outside the right-of-way of Madeline Avenue, ESI does not anticipate any need for wetland permitting or

mitigation for this project.

ESI also initiated a wildlife study of the Phase I corridor with a literature search of the listed species known to occur in this portion of Volusia County, Florida. The literature consulted included lists supplied by the Florida Fish and Wildlife Conservation Commission (FWC), the U.S. Fish and Wildlife Service (FWS), and the Florida Natural Areas Inventory (FNAI) along with technical publications and field guides. Based on this information, and knowledge of the specific habitat requirements for the individual listed species, the probability of each species occurrence on the site was considered.

Based on ESI's in-house review, it was noted that gopher tortoises (*Gopherus polyphemus*) could potentially utilize the property. The mapped soils types in the area indicated well-drained sandy soils which the species prefer, and gopher tortoises have been known to utilize maintained rights-of-way so long as sufficient forage is available. Based on the ESI site review, two gopher tortoise burrows were noted; one on the south side of Madeline Avenue approximately 100 feet west of the intersection of Madeline Avenue and Bruner Road, and one on just west of Bruner Road (Figure 2). Additional suitable habitat was noted on the north side of Madeline Avenue between Southwinds Drive and Tradewinds Lane, and along the Bruner Road. No tortoise burrows were noted in the area of additional suitable habitat, but no formal gopher tortoise survey was conducted. Refer the map provided in **Appendix B** for a depiction of existing gopher tortoise burrows observed and habitat areas.

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TRAIL AND SIDEWALK CONCEPT PLAN

As previously conveyed, the purpose of this study was to evaluate the feasibility of providing an alignment that includes a trail on the north side of Madeline Avenue from Clyde Morris Boulevard heading east, then transitioning to the south side of Madeline Avenue up to Nova Road, with the transition occurring between Fall Drive and Kon Tiki Terrace. Additionally, this study also looks into providing a sidewalk on the east side of Bruner Road that is proposed to connect to the existing sidewalk on the north side of Stillwood Court to the existing sidewalk on the south side of Madeline Avenue. This section discusses the trail and sidewalk concept plan and explains drainage and utilities improvements, field photos are included. The sidewalks in this study are designed to meet FDOT's current design standards with a minimum width of 6-feet. During design of the project, the FDOT standards may be reevaluated to determine if the sidewalk width may be reduced to 5-feet. It should be noted that the City currently has a requirement for fiberglass reinforcement in their concrete sidewalk construction details, but they are in the process of removing that requirement. This study incorporates the cost of fiberglass reinforcing; however, the City requirement should be examined during the design phase.

Shared-Use Path, Sidewalk, Driveways, Signing and Pedestrian Facilities

The requirements for shared use paths include path width, cross slopes, longitudinal grades, clearance, and separation from roadway. The standard width of shared use paths is 12 feet, however widths of 10 feet to 8 feet may be used where there is limited right-of-way. To meet ADA requirements the maximum cross slope on shared use paths is 2 percent and the maximum longitudinal grade is 5 percent. The standard horizontal clearance is 4 feet and the standard vertical clearance is 10 feet, however, a 2-foot horizontal clearance and an 8-foot vertical clearance may be used in constricted conditions. Shared use paths shall have a 5-foot separation from the edge of paved shoulder on flush shoulder roadways and a 4-foot separation from the back of curb on curbed roadways. The right-of-way in the Madeline Avenue corridor is constrained for virtually the entire length of the project with minimal distance between the edge of pavement and the right-of-way as well as numerous aboveground utility appurtenances. The shared use path designed in this project is restricted to an 8-foot width in most areas to provide the minimum 2-foot clearance and required separation from roadway.

- Construct an 8-foot minimum shared-use path along the north side of Madeline Avenue heading east and then transitioning to the south side of Madeline Avenue up to Nova Road, with the transitioning occurring at station 290+30 between Fall Drive and Kon Tiki Terrace.
- ADA compliant pedestrian ramps and intersection/pedestrian crosswalk lighting at the Clyde Morris Boulevard intersection with Madeline Avenue are accounted for in both Phase 1 and Phase 2, Madeline Avenue Feasibility studies. These improvements include:
 - Relocate the existing traffic signal cabinet.
 - Relocate the stop bar striping, and crosswalk striping.
 - Removal and replacement of traffic loops.
 - Required pedestrian push buttons and signals.

- The removal and construction of an existing ditch bottom inlet and pipe.
- Construct a mid-block pedestrian crosswalk with appropriate signing, rectangular rapid flashing beacons, and pavement striping at station 290+30 to transition the shared-use path from the north side of Madeline Avenue to the south side.
- Provide Accessible Pedestrian Signal (APS) improvements to assist pedestrians who are visually impaired.
- Construct a 6-foot sidewalk on the east side of Bruner Road to connect the existing sidewalk on the south side of Stillwood Court to the existing sidewalk on the south side of Madeline Avenue. The sidewalks in this study are designed to the current FDOT standards with a minimum width of 6-feet (during design of the project, the FDOT standards may be reevaluated to determine if the sidewalk width may be reduced to 5-feet).
- The following improvements are recommended for the north side of Madeline Avenue:
 - Construct a 12-foot shared-use path at station 246+50 which extends east to approximately 150 feet west of Bruner Road (station 258+00).
 - Remove existing crosswalk striping and restripe the crosswalk at station 249+80.
 - Remove and replace the existing Tradewinds Lane side street turnout at station 251+45, as needed to provide an ADA compliant trail crossing. Relocate the STOP sign with Street Name sign assembly, stop bar striping, and crosswalk striping.
 - Transition the shared-use path from a 12-foot trail to an 8-foot trail and continue the trail as an 8-foot path from station 258+00 to station 290+30 which is approximately 170 feet east of Fall Drive. At station 290+30 the trail transitions from the north side of Madeline Avenue to the south side.
 - Remove and replace the existing Southwinds Drive side street turnout at station 269+60, as needed to provide an ADA compliant trail crossing. Relocate the STOP sign with Street Name sign assembly, stop bar striping, and crosswalk striping.
 - Remove and replace the existing Autumn Trail driveway turnout at station 279+25, as needed for the removal of an existing inlet, pipe, and rip rap headwalls and the construction of new side drain and mitered end sections. Provide crosswalk striping.
 - Construct new concrete driveway turnout at station 286+10. Provide crosswalk striping.
 - Due to the existing conflicts with the proposed 8-foot shared-use path the following will be required:
 - From station 272+80 to station 278+80 and from station 279+60 to station 283+25, relocation of the existing white vinyl fence to the existing right-of-way will be required.
 - Remove any conflicting trees within right-of-way from station 272+80 to station 290+30. A tree survey will be necessary to help determine the type and number of trees recommended for removal.
 - Remove existing decorative sitting area just west of Fall Drive (station 288+90) which is encroaching existing right-of-way.

- The following improvements are recommended for the south side of Madeline Avenue:
 - Install a bus stop ahead sign at station 289+90.
 - At station 290+30 the trail transitions from the north side of Madeline Avenue to the south side. Construct an 8-foot shared-use path at station 290+30 which extends east to Nova Road (station 312+85). Due to the existing conflicts with the proposed 8-foot shared-use path the following will be required:
 - Relocate existing utility risers and transformers from at station 290+30, to station 269+00.
 - Right-of-way is constrained from station 295+60 to station 297+60 and therefore approximately 0.072 acres of right-of-way acquisition will be required.
 - Relocate existing “Barefoot Park” sign at station 294+00 which is encroaching in existing right-of-way.
 - Relocate the curve warning sign (W01-04R) at station 304+20.
 - Remove and replace the existing Kon-Tiki Terrace side street turnout at station 294+30, as needed to provide an ADA compliant trail crossing. Relocate the STOP sign with Street Name sign assembly, stop bar striping, and crosswalk striping.
 - Remove and replace the existing Red Pontiac Drive side street turnout at station 299+95, as needed to provide an ADA compliant trail crossing. Remove and replace the existing travel lane as needed for the modification of existing drainage structures and the construction of new type ‘F’ curb and gutter with trench drains. Relocate the stop bar striping, and crosswalk striping.
 - Remove and replace the existing travel lane as needed for the modification of an existing drainage structure at Lazy Hammock Drive (station 305+80).
 - Remove and replace the existing type ‘F’ curb and gutter at the 7-Eleven driveway (station 311+40) for the accommodation of sidewalk ramps.
- The following improvements are recommended for the east side of Bruner Road:
 - Construct a 6-foot sidewalk at station 500+50 which extends north to station 509+75 (during design of the project, the FDOT standards may be reevaluated to determine if the sidewalk width may be reduced to 5-feet).
 - Remove existing tree(s) within proposed sidewalk path.
 - There is a shed that is entirely on private property and is not proposed to be removed; however, the landscape timbers are to be removed as part of clearing and grubbing.
 - Install approximately 25 feet of pedestrian hand railing along both sides of the sidewalk from station 501+25 to station 501+50.
 - Provide crosswalks, stop bars, signage, and roadway resurfacing to meet ADA requirements at the intersection of Stillwood Court.
 - Provide crosswalks, stop bars, signage, and roadway resurfacing to meet ADA requirements at both intersections of Viking Drive.
 - Construct new concrete driveway at station 502+20.
 - Provide crosswalks, stop bars, signage, and roadway resurfacing to meet ADA requirements at the intersection of Madeline (Private drive for Gray Acres West).
 - Provide gravity wall to match existing grading from station 502+40 to station 504+25.

- Remove an existing asphalt flume and construct a new closed flume inlet with type 'F' curb and gutter to account for runoff to enter the existing pond at station 501+85.

Drainage and Permitting

The following drainage improvements are anticipated:

- Remove the existing ditch bottom inlet, cross drain, and two head walls at station 279+25 (LT). construct two new mitered end sections and 175 linear feet of cross pipe.
- Modify the existing catch basin at station 299+20 (RT) to a curb inlet.
- Modify the existing catch basin at station 300+20 (RT) to a curb inlet.
- Construct 560 linear feet of type 'F' curb and gutter with trench drain. (station 300+20 to station 305+90)
- Modify the existing catch basin at station 305+90 (RT) to a curb inlet.

Under provision in FAC 62-330.051, multi-use recreational paths less than 14' in width and sidewalks less than 6' in width typically qualify for exemption from ERP, which should pertain in this project, given that proposed improvements are not expected to be located within previously permitted project areas and no wetlands are present. However, channelization of runoff will likely occur in proposed conditions due to the fact that minimal capacity can be provided within roadside swales, as required to store and percolate runoff prior to discharging to the existing outfall locations. As such, sufficient basin analysis and drainage design should be included during the design phase to further assess the quantity of runoff being conveyed to the adjacent private properties, to ensure that existing conditions are not exacerbated.

NOTE: New easements or other agreements may need to be negotiated with the private entities unless other evidence is found demonstrating that legal rights were provided for conveyance of runoff to the various storage nodes or drainage collection/conveyance systems located on private properties.

Utilities

As a result of the right-of-way constraints, the proposed shared use path and sidewalk improvements are expected to have very limited excavation occurring below existing grade. Therefore, conflicts requiring the relocation of existing underground utilities are not expected for this project. Shared use paths required a four (4) foot horizontal clearance, however due to the restricted right-of-way, the horizontal clearance may be limited to two (2) for overhead utility poles, signs, and above ground utilities. Designing for a reduced horizontal clearance may eliminate the need for any overhead utility pole relocations.

Utility adjustments for this project are anticipated to include the adjustment of existing utility appurtenances to match finished grade, the relocation of utility risers. Based on limited field observations, at least sixteen (16) utility appurtenances will need to be adjusted to finished grade as a result of the proposed improvements. The concept plans included in **Appendix A**, depict the utility adjustments needed to accommodate the proposed sidewalk improvements along Madeline Avenue.

Environmental

Based on the wetlands study performed by ESI, no direct evidence of any wetlands or surface waters was noted. Therefore, any work that should occur within the maintained right-of-way or outside of the existing maintained right-of-way is not expected to impact any wetlands or surface waters.

Due to the nature of the proposed project, use of the area by a wide variety of protected species is not likely. The work area is within a highly urban environment and will primarily occur within an existing mowed and maintained right-of-way associated with a 2-lane roadway. The work area is alongside an existing 2-lane highway surrounded by agricultural and residential uses, and will primarily occur within an existing mowed and maintained right-of-way. Based on ESI's in-house review, it was noted that gopher tortoises (*Gopherus polyphemus*) could potentially utilize the property. The mapped soils types in the area indicated well-drained sandy soils which the species prefer, and gopher tortoises have been known to utilize maintained rights-of-way so long as sufficient forage is available. Based on the ESI site review, two gopher tortoise burrows were noted; one on the south side of Madeline Avenue approximately 100 feet west of the intersection of Madeline Avenue and Bruner Road, and one on just west of Bruner Road. Additional suitable habitat was noted on the north side of Madeline Avenue between Southwinds Drive and Tradewinds Lane, and along the Bruner Road. No tortoise burrows were noted in the area of additional suitable habitat, but no formal gopher tortoise survey was conducted.

Prior to any construction associated with Phase I of the Madeline Avenue Sidewalks, ESI recommends a 100 percent survey of the suitable habitat within the project area to determine the full extent of the species on-site. FWC will require a relocation permit for any burrow that fall within or directly adjacent to the proposed work area. ESI does not anticipate more than five burrows within the project area, and estimates a cost of \$10,000.00 to cover the surveying, relocation, and mitigation/recipient site fees associated with the effort. It should be noted that the City has a gopher tortoise mitigation bank and recipient site fees would not be required.

No other wildlife concerns were noted within the corridor for Phase I.

5

FINANCIAL FEASIBILITY

This section summarizes preliminary cost estimates for the design and construction of the proposed trail and sidewalk improvements along Madeline Avenue and Bruner Road. This cost estimate is completed for the purposes of the feasibility study and to allow the River to Sea TPO and City of Port Orange to prioritize planned trail and sidewalk improvements. The overall improvement costs were estimated based on FDOT historical unit prices from the FDOT Basis of Estimates. To adjust for potential future increases in the project's cost estimates, an annual inflation factor was applied based on FDOT guidelines. FDOT provides annual inflation factors for roadway construction costs. A listing of the FDOT approved inflation factors through 2028 is available in **Appendix E**.

The total cost of the improvements, including engineering and CEI, is estimated at approximately \$2,253,132 and is provided in **Table 2** on the following pages. Using FDOT inflation factors, the three-year breakdown for cost estimates is provided below:

- Year 1 (2019) cost estimate adjusted for inflation – \$2,316,219
- Year 2 (2020) cost estimate adjusted for inflation – \$2,376,441
- Year 3 (2021) cost estimate adjusted for inflation – \$2,435,852
- Year 4 (2022) cost estimate adjusted for inflation – \$2,502,620

Table 2
Cost Estimate
Madeline Avenue from Clyde Morris Boulevard to Nova Road
& Bruner Road, From Stillwood Court to Madeline Avenue

PAY ITEM NO.	PAY ITEM DESCRIPTION	UNIT	QUANTITY	2018 UNIT PRICE	AMOUNT
101-1	MOBILIZATION	LS	1	\$103,873.00	\$103,873.00
102-1	MAINTENANCE OF TRAFFIC	LS	1	\$114,969.00	\$114,969.00
104-10-2	SEDIMENT BARRIER	LF	13220	\$1.50	\$19,830.00
104-10	INLET PROTECTION SYSTEM	EA	12	\$111.00	\$1,332.00
110-1-1	CLEARING AND GRUBBING	AC	6,829	\$11,620.00	\$79,352.90
110-4-10	REMOVAL OF EXISTING CONCRETE	SY	1868	\$29.00	\$54,062.00
120-1	REGULAR EXCAVATION	CY	499	\$4.75	\$2,370.25
120-6	EMBANKMENT	CY	1292	\$8.50	\$10,982.00
160-4	TYPE B STABILIZATION	SY	80	\$4.50	\$360.00
285-706	OPTIONAL BASE, BASE GROUP B6	SY	80	\$18.50	\$1,480.00
337-10-1	PAVING EXIST ASPHALT PAVT. 1" AVG DEPTH	SY	3229	\$2.50	\$8,072.50
334-1-13	SUPER PAVE ASPHALTIC CONCRETE, TRAFFIC C	TK	10	\$89.00	\$890.00
337-7-82	APHALT CONCRETE FRICTION COURSE, TRAFFIC C, FC-9.5, PG 76-22	TK	182	\$140.00	\$25,480.00
400-0-11	CONCRETE CLASS XS, GRAVITY WALL	CY	120	\$146.00	\$17,520.00
425-1211	INLETS, CURB, TYPE 10, <10	EA	3	\$7,350.00	\$22,050.00
425-1521	INLETS, DT BOT, TYPE C, <10	EA	2	\$3,292.00	\$6,584.00
425-19-10	INLETS, CLOSED FLOW	EA	1	\$4,000.00	\$4,000.00
425-5-1	MANHOLE, ADJUST, UTILITIES	EA	2	\$1,405.00	\$2,810.00
425-6	VALVE BOX, ADJUST	EA	14	\$697.00	\$9,758.00
430-173-118	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 18", 60	LF	215	\$95.00	\$20,425.00
430-2	TRENCH DRAIN	LF	500	\$271.00	\$135,500.00
515-2-312	PROF BICYCLE RAILING, ALUM, 42" TYPE 2	LF	15	\$110.00	\$1,650.00
520-1-10	CONCRETE CURB & GUTTER, TYPE F	LF	1387	\$21.00	\$29,127.00
522-1	CONCRETE SIDEWALK, 8" THICK (WITH FIBER) (3000 PSI)	SY	6707	\$50.00	\$335,350.00
522-2	CONCRETE DRIVEWAY, 8" THICK	SY	159	\$60.00	\$9,540.00
527-2	DETECTABLE WARNING	SP	872	\$28.00	\$24,416.00
570-1-1	PERFORMANCE TURF	SY	0	\$0.84	\$0.00
570-1-2	PERFORMANCE TURF, SOG	SY	26,343	\$2.50	\$65,857.50
654-2-22	RECTANGULAR RAPID FLASHING BEACON, FURNISH & INSTALL - SOLAR POWERED, COMPLETE SIGN ASSEMBLY- BACK TO BACK	AS	2	\$8,515.00	\$17,030.00
630-2-11	COUNDIT, F&I, OPEN TRENCH	LF	400	\$8.00	\$3,200.00
630-2-12	COUNDIT, F&I, DIRECTIONAL BORE	LF	900	\$20.00	\$18,000.00
632-7-1	SIGNAL CABLE-B&W OR RED, F&I	PI	1	\$5,148.00	\$5,148.00
635-2-11	PULL & SPLICER BOX, F&I, 1.5" X 24"	EA	10	\$629.00	\$6,290.00
639-1-121	ELEC POWER SERV, F&I, UNDERGROUND, METER FURNISHED BY POWER COMPANY	EA	2	\$4,815.00	\$9,630.00
639-2-1	ELEC SERV WIRE, F&I	LF	2400	\$9.50	\$22,800.00
639-3-11	ELEC SERV DISCON, F&I, POLE NUT	EA	2	\$806.00	\$1,612.00
641-2-11	PRESTRESSED CONCRETE POLE, F&I, TYPE P-11 PEDISTAL	EA	8	\$1,450.00	\$11,600.00
646-1-12	ALUMINUM SIGNAL POLE, F&I, PEDESTRIAN DETECTOR POST	EA	2	\$981.00	\$1,962.00
653-1-12	PEDESTRIAN SIGNAL, F&I, LED COUNTDOWN, 2 WAY	AS	4	\$1,186.00	\$4,744.00
660-1-60	LOOP DETECTOR INDUCTIVE, REMOVE	EA	6	\$28.00	\$168.00
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	AS	6	\$849.00	\$5,094.00
665-1-12	PEDESTRIAN DETECTOR, F&I, ACCESSIBLE	EA	4	\$1,770.00	\$7,080.00
665-1-60	PEDESTRIAN DETECTOR, REMOVE	EA	6	\$55.00	\$330.00
670-5-110	TRAFFIC CONTROLLER, F&I, NEMA	EA	1	\$27,000.00	\$27,000.00
670-5-600	TRAFFIC CONTROLLER ASSEMBLY, REMOVE CONTROLLER WITH CABINET	AS	1	\$502.00	\$502.00
676-1-112	TRAFFIC SIGNAL CONTROL CABINET, F&I, NEMA 5-2	EA	1	\$2,448.00	\$2,448.00
700-1-11	SINGLE POST SIGN, F&I, GROUND MOUNT, UP TO 175#	AS	25	\$16,320.00	\$408,000.00
700-1-60	SINGLE POST SIGN, REMOVE	AS	21	\$35.00	\$735.00
711-11-123	THERMOPLASTIC, STANDARD WHITE, SOLID, 12"	LF	1558	\$2.50	\$3,895.00
711-11-125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24"	LF	232	\$4.50	\$1,044.00
711-14-123	THERMOPLASTIC, PREFORM, WHITE, SOLID, 12"	LF	46	\$8.41	\$388.77
711-14-125	THERMOPLASTIC, PREFORM, WHITE, SOLID, 24"	LF	27	\$15.38	\$415.26
711-16-201	THERMOPLASTIC, STD-OTH, YELLOW, SOLID, 6"	GN	0.009	\$3,968.91	\$35.72
713-17	THERMOPLASTIC, REMOVE EXISTING THERMOPLASTIC PAVEMENT MARKINGS	SP	200	\$7.28	\$1,456.00
715-1-12	LIGHTING CONDUCTORS, F&I, INSULATED, NO. 8 - 6	LF	2400	\$2.00	\$4,800.00
715-4-12	LIGHT POLE COMPLETE, F&I, STD POLE STD FOUNDATION, 35' MOUNTING HT	EA	5	\$6,076.00	\$30,380.00
715-7-11	LOAD CENTER, F&I, SECONDARY VOLTAGE	EA	2	\$10,466.00	\$20,932.00
715-300-1	POLE CABLE DISTRIBUTION SYSTEM, CONVENTIONAL	EA	5	\$546.00	\$2,730.00
-	LIGHT POLE BY POWER COMPANY	EA	3	\$2,000.00	\$6,000.00
1644800	FIRE HYDRANT, RELOCATE	EA	1	\$3,465.00	\$3,465.00
-	6" FENCE	LF	1	\$32.00	\$32.00
-		LS	1	\$200,000.00	\$200,000.00
CONSTRUCTION COSTS SUBTOTAL					\$1,568,131.79
RIGHT-OF-WAY ACQUISITION					\$200,000.00
-	SURVEYING	LS	1	\$ 45,000.00	\$ 45,000.00
-	CULTURAL RESOURCES	LS	1	\$ 10,000.00	\$ 10,000.00
-	ENVIRONMENTAL (PROTECTED SPECIES ASSESSMENT & GOPHER TORTOISE PERMITTING)	LS	1	\$ 10,000.00	\$ 10,000.00
-	ENGINEERING	LS	1	\$ 204,000.00	\$ 204,000.00
-	SOP	LS	1	\$ 12,000.00	\$ 12,000.00
-	CFI	LS	1	\$ 204,000.00	\$ 204,000.00
SURVEY / DESIGN / CFI SUBTOTAL					\$485,000.00
TOTAL PROJECT COST					\$2,253,131.79

FOOT INFLATION-ADJUSTED ESTIMATE	INFLATION FACTOR	PDC MULTIPLIER	ADJ COST
2019 ESTIMATED PROJECT COST	2.8%	1.028	\$2,316,219.49
2020 ESTIMATED PROJECT COST	2.8%	1.055	\$2,376,441.18
2021 ESTIMATED PROJECT COST	2.5%	1.081	\$2,435,852.21
2022 ESTIMATED PROJECT COST	2.7%	1.110	\$2,501,620.22

* Ultimate costs for Cultural Resources will be determined once results of initial survey are obtained
 * No costs have been included for gopher tortoise mitigation as the City has a gopher tortoise mitigation bank.

6

CONCLUSION

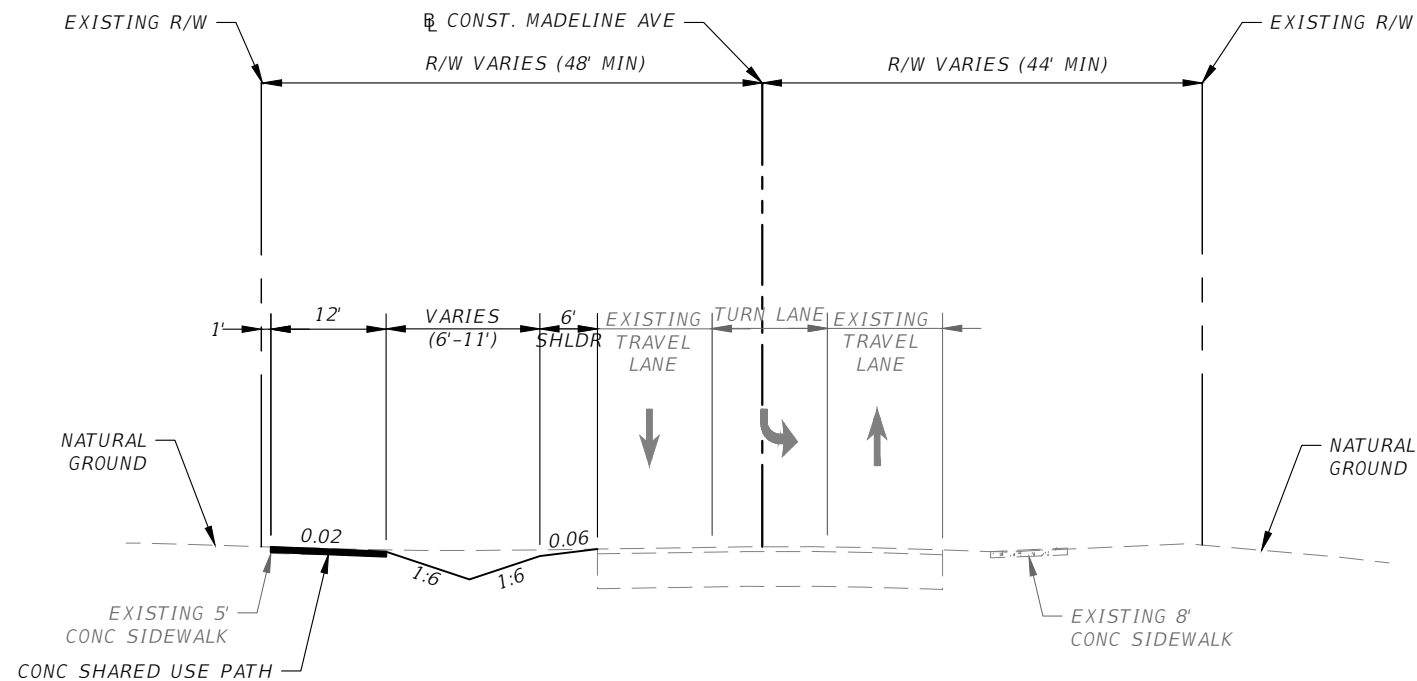
The purpose of this study was to evaluate the feasibility of constructing a trail along Madeline Avenue, from Clyde Morris Boulevard to Nova Road and a sidewalk along the east side of Bruner Road from Stillwood Court to Madeline Avenue, in the City of Port Orange. In addition, key components of the study include drainage considerations of Madeline Avenue. The primary purpose of this project would be to provide pedestrian and bicyclist connectivity along Madeline Avenue from Clyde Morris Boulevard to Nova Road. The following recommendations and conditions have been determined along the study corridor:

- It is recommended to construct an 8-foot minimum shared-use path on the north side of Madeline Avenue from Clyde Morris Boulevard heading east, then transitioning to the south of Madeline Avenue up to Nova Road, with the transition occurring between Fall Drive and Kon Tiki Terrace. Additionally, construct a 6-foot sidewalk on the east side of Bruner Road that is proposed to connect to the existing sidewalk on the north side of Stillwood Court to the existing sidewalk on the south side of Madeline Avenue (during design of the project, the FDOT standards may be reevaluated to determine if the sidewalk width may be reduced to 5-feet) (see concept plans in **Appendix A**).
- Construct a mid-block pedestrian crosswalk with appropriate signing and pavement striping at station 290+30 to transition the shared-use path from the north side of Madeline Avenue to the south side.
- Construct new asphalt concrete and concrete flared driveways in place of the existing dirt and paved driveways as needed to provide an ADA compliant trail crossings.
- Some drainage facilities along the study corridor are recommended to be modified including replacement and adjustment of drainage facilities to finished grade.
- Provide ADA compliant pedestrian ramps and intersection/pedestrian crosswalk lighting at the Clyde Morris Boulevard intersection with Madeline Avenue.
- The right-of-way in the Madeline Avenue corridor is constrained for virtually the entire length of the project with minimal distance between the edge of pavement and the right-of-way as well as numerous aboveground utility appurtenances. Additionally, a tree survey will be necessary to help determine the type and number of conflicting trees within right-of-way recommended for removal.
- The engineering and construction costs associated with these improvements are estimated at approximately \$2,253,132 in 2018.

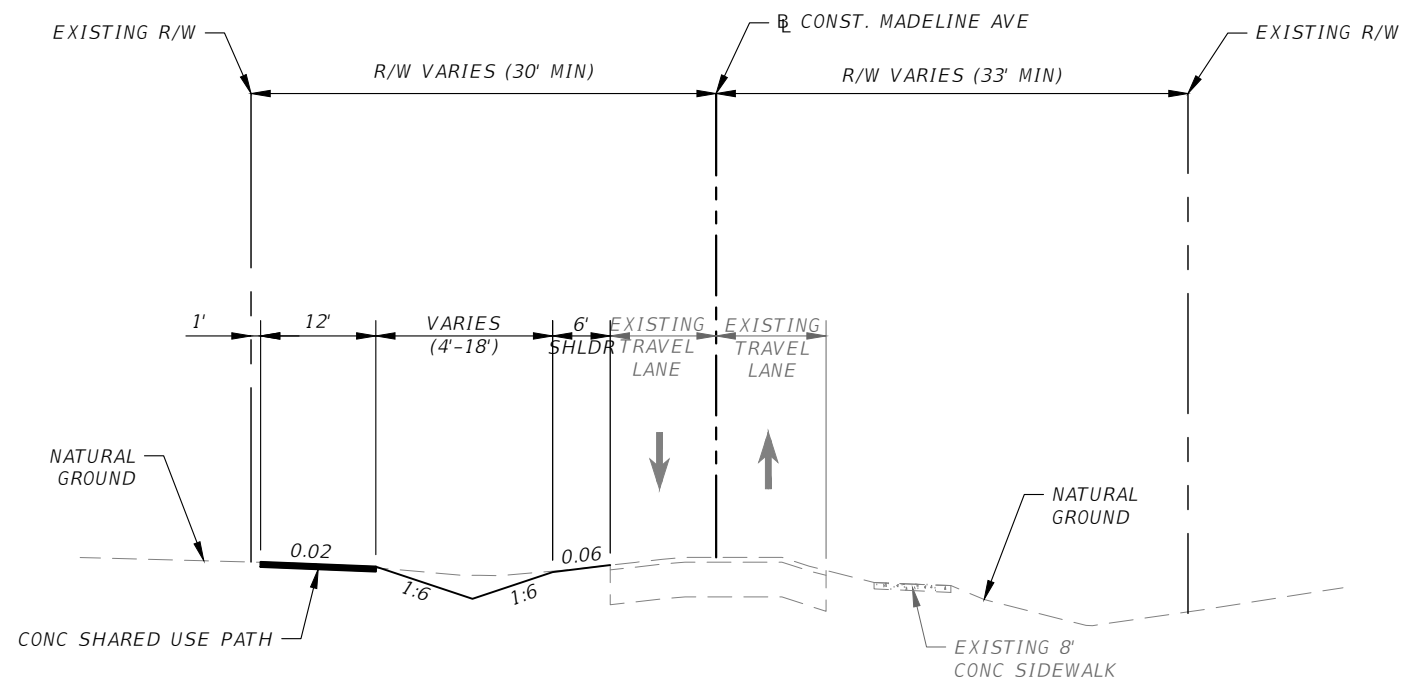
APPENDIX

APPENDIX A

TYPICAL SECTIONS AND CONCEPT PLANS

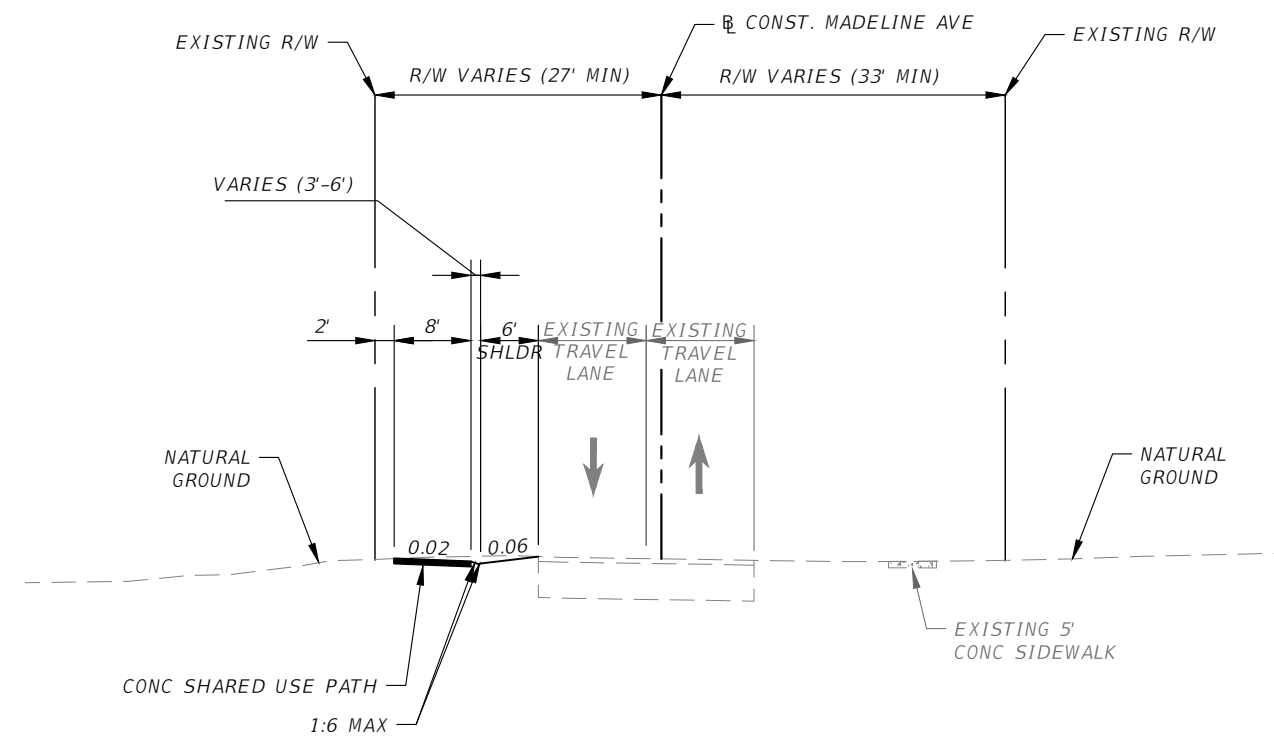


TYPICAL SECTION 01
MADELINE AVENUE
STA 246+50 TO STA 254+80

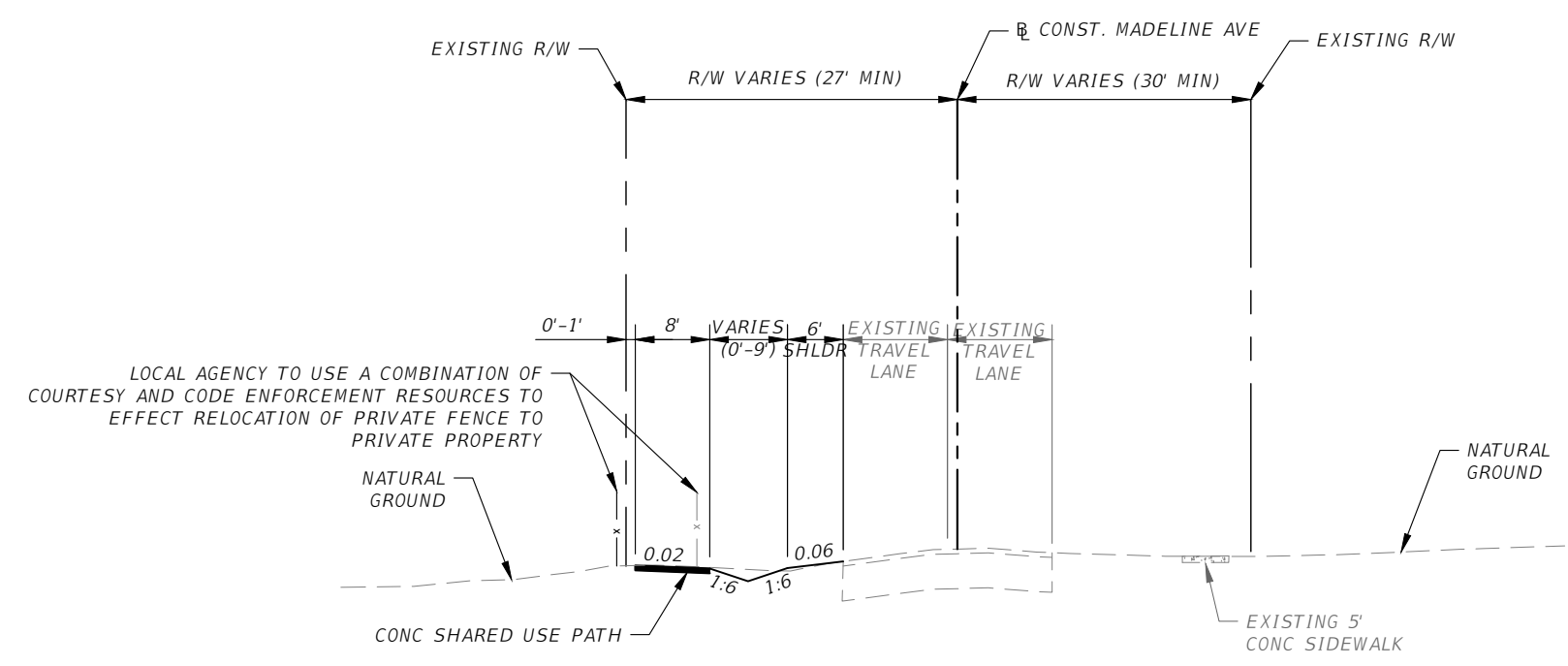


TYPICAL SECTION 02
MADELINE AVENUE
STA 254+80 TO STA 260+80

REVISIONS		 RIVER TO SEA Transportation Planning Organization VISION - PLAN - IMPLEMENT	 TRAFFIC ENGINEERING DATA SOLUTIONS, INC. Phone 386.753.0558 80 Spring Vista Drive Fax 386.753.0778 DeBary, FL 32713 CERTIFICATE OF AUTHORIZATION NO. 27392	MADELINE AVENUE TRAIL & SIDEWALK PHASE 1			TYPICAL SECTIONS PHASE 1	SHEET NO. 1
DATE	DESCRIPTION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
1/22/2019	REVISED PER CITY, FDOT, AND R2CTPO COMMENTS			..	VOLUSIA	----		

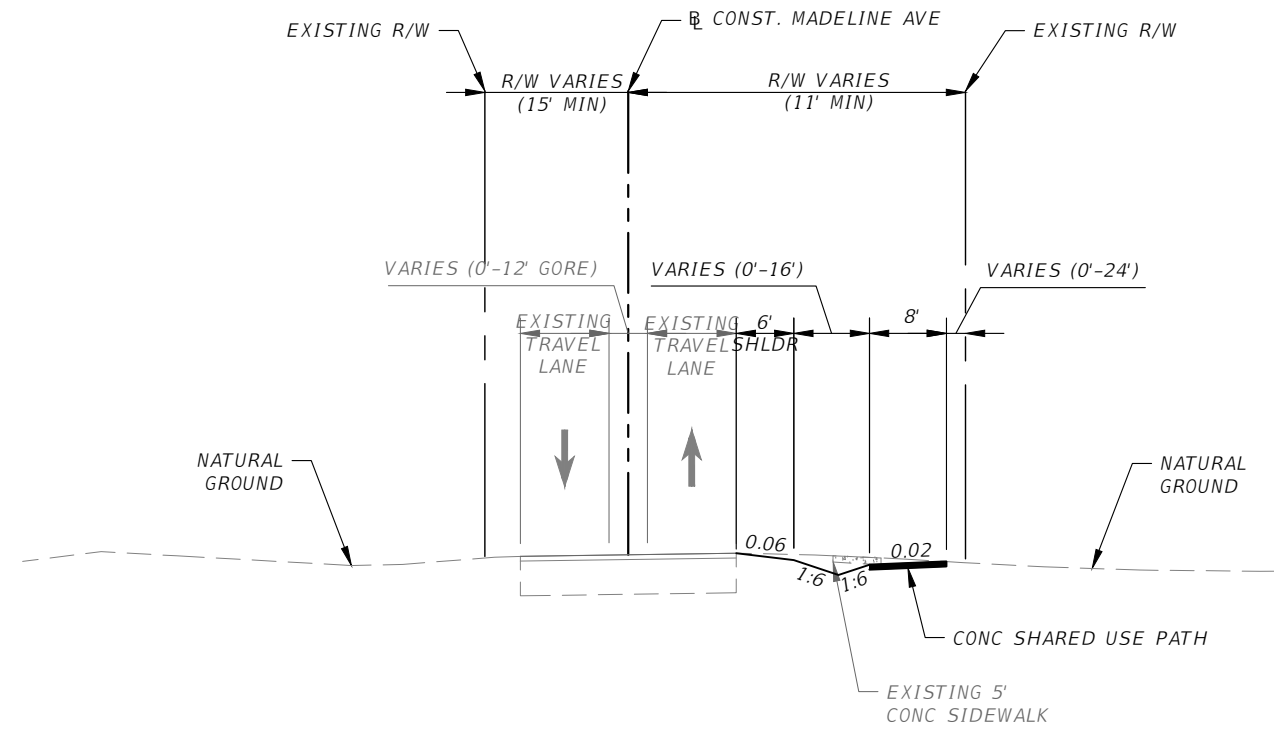


TYPICAL SECTION 03
MADELINE AVENUE
STA 260+80 TO STA 272+60

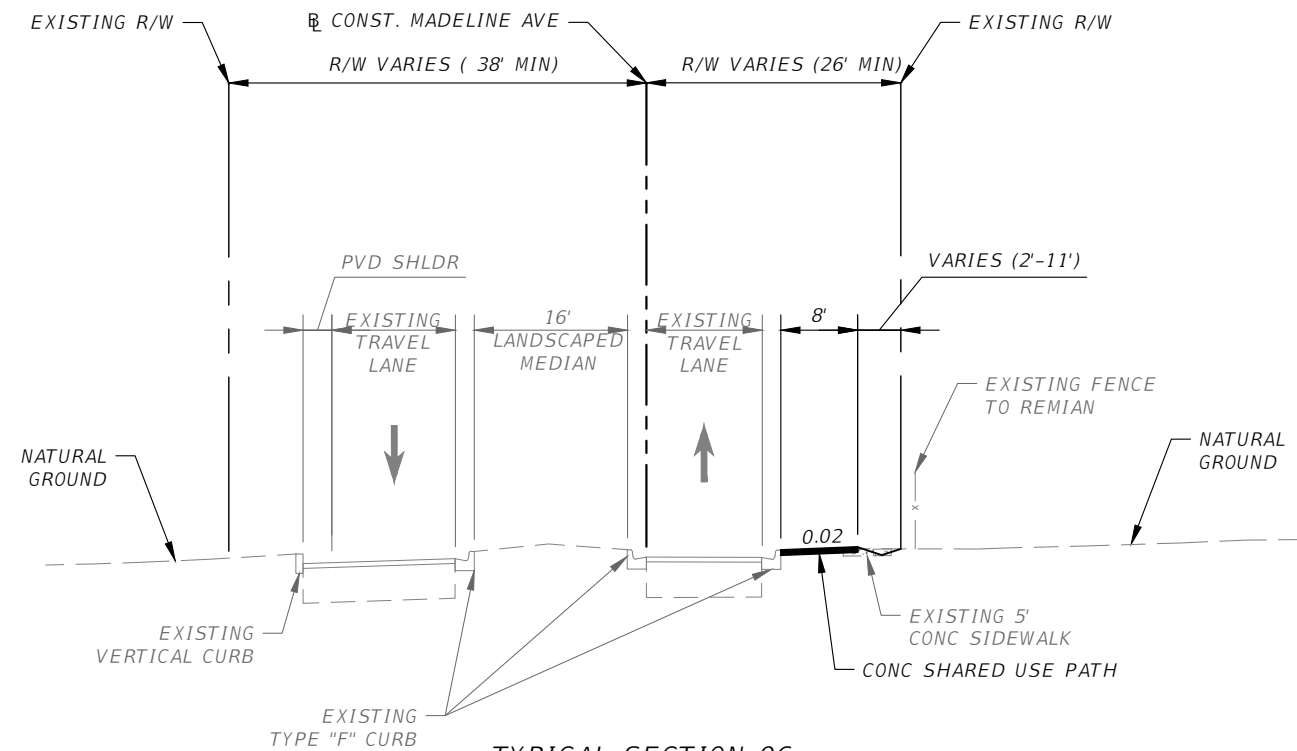


TYPICAL SECTION 04
MADELINE AVENUE
STA 272+60 TO STA 290+30

REVISIONS		 <small>TRAFFIC ENGINEERING DATA SOLUTIONS, INC.</small> <small>Phone 386.753.0558 80 Spring Vista Drive</small> <small>Fax 386.753.0778 DeBary, FL 32713</small> <small>CERTIFICATE OF AUTHORIZATION NO. 27392</small>		MADELINE AVENUE TRAIL & SIDEWALK PHASE 1			TYPICAL SECTIONS PHASE 1	SHEET NO. 2
DATE	DESCRIPTION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
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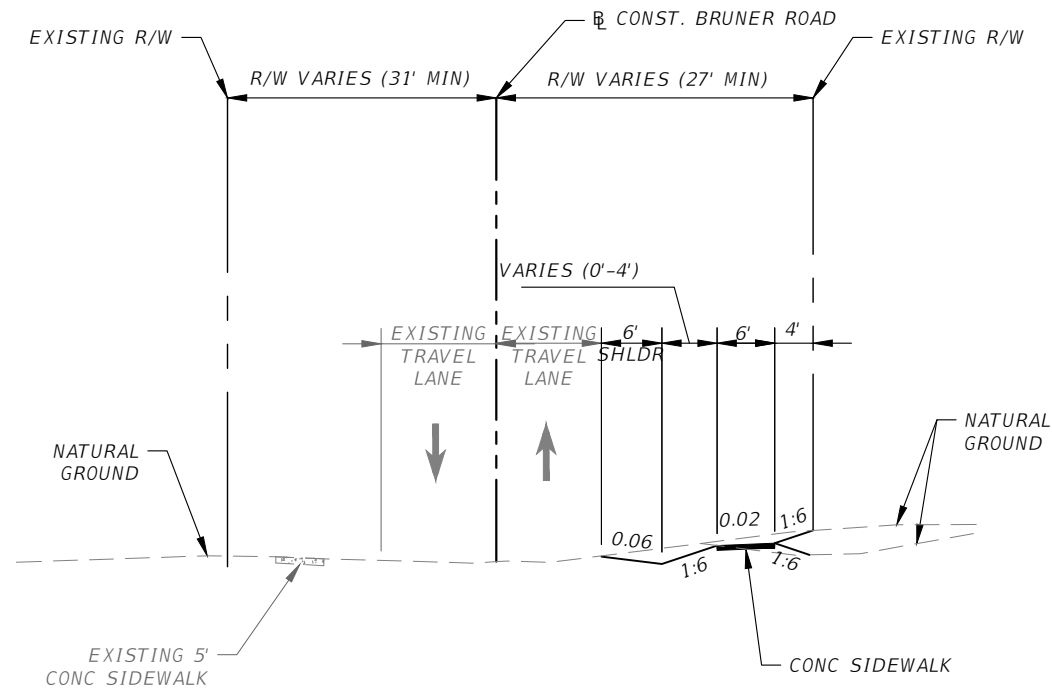


TYPICAL SECTION 05
MADELINE AVENUE
STA 290+30 TO STA 297+60
STA 306+20 TO STA 312+85



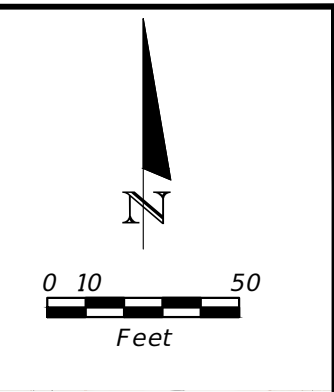
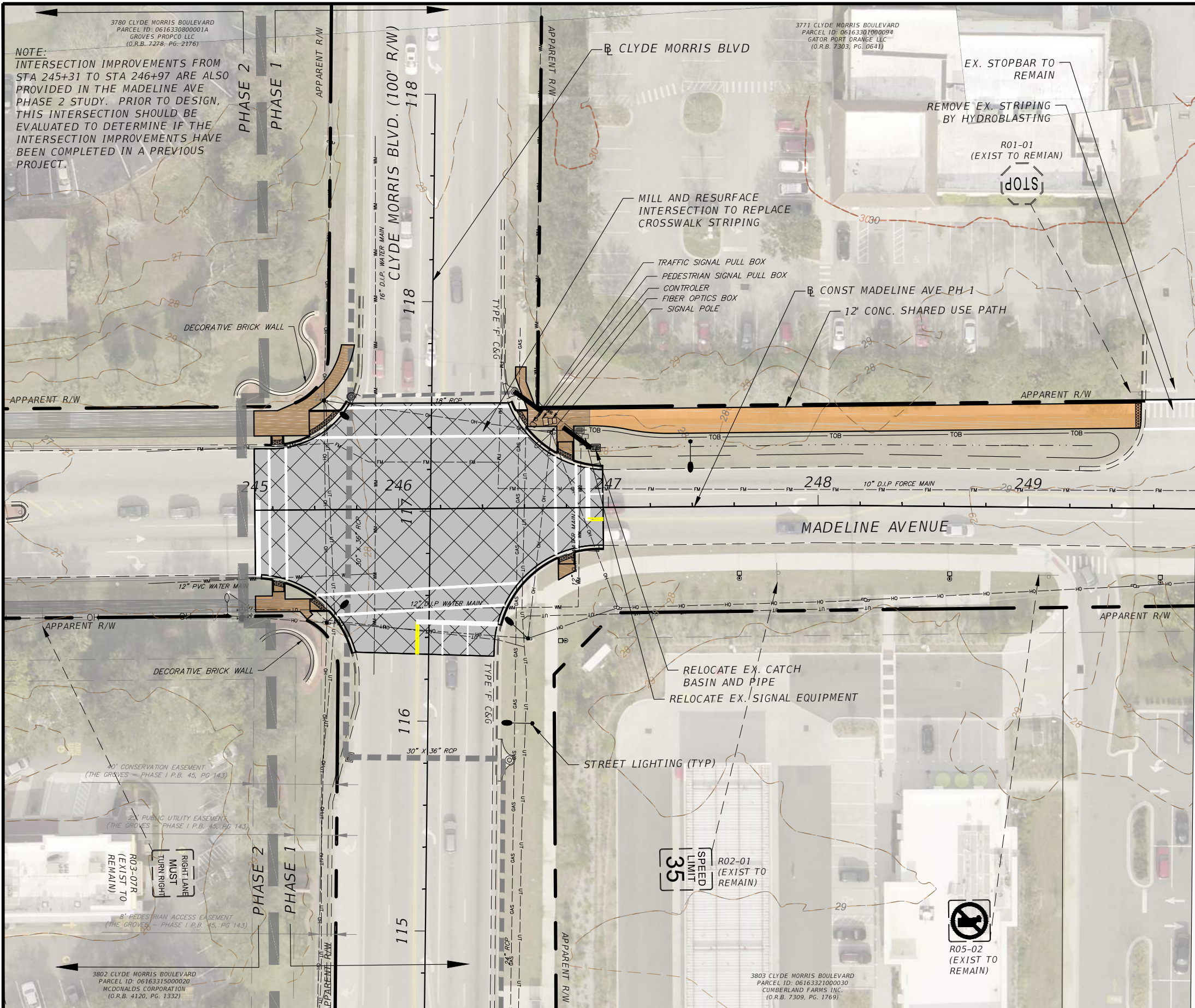
TYPICAL SECTION 06
MADELINE AVENUE
STA 297+60 TO STA 306+20

REVISIONS		 			MADELINE AVENUE TRAIL & SIDEWALK PHASE 1		TYPICAL SECTIONS PHASE 1	SHEET NO.
DATE	DESCRIPTION							
1/22/2019	REVISED PER CITY, FDOT, AND R2CTPO COMMENTS	 			ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
		 			..	VOLUSIA	----	3



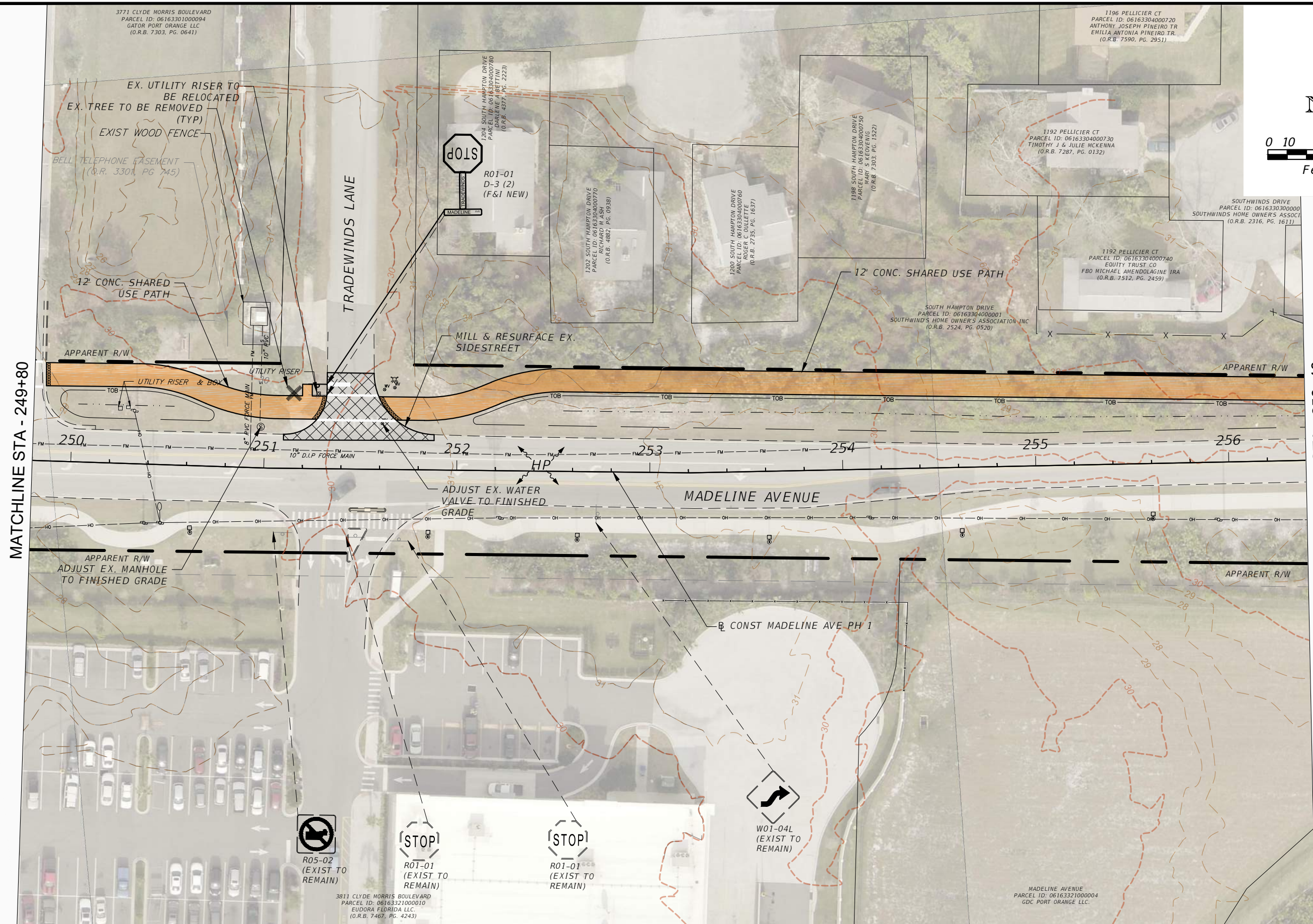
TYPICAL SECTION 07
BRUNER ROAD
STA 500+50 TO STA 509+75

REVISIONS				MADELINE AVENUE TRAIL & SIDEWALK PHASE 1			<p>TYPICAL SECTIONS PHASE 1</p>	<p>SHEET NO.</p>
DATE	DESCRIPTION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
1/22/2019	REVISED PER CITY, FDOT, AND R2CTPO COMMENTS		<p>TRAFFIC ENGINEERING DATA SOLUTIONS, INC. Phone 386.753.0558 80 Spring Vista Drive Fax 386.753.0778 DeBary, FL 32713 CERTIFICATE OF AUTHORIZATION NO. 27392</p>	..	VOLUSIA	----		4



MATCHLINE STA - 249+80

REVISIONS				MADELINE AVENUE TRAIL & SIDEWALK PHASE 1			CONCEPT PLANS PHASE 1	SHEET NO. 5
DATE	DESCRIPTION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
1/22/2019	REVISED PER CITY, FDOT, AND R2CTPO COMMENTS			..	VOLUSIA	----		



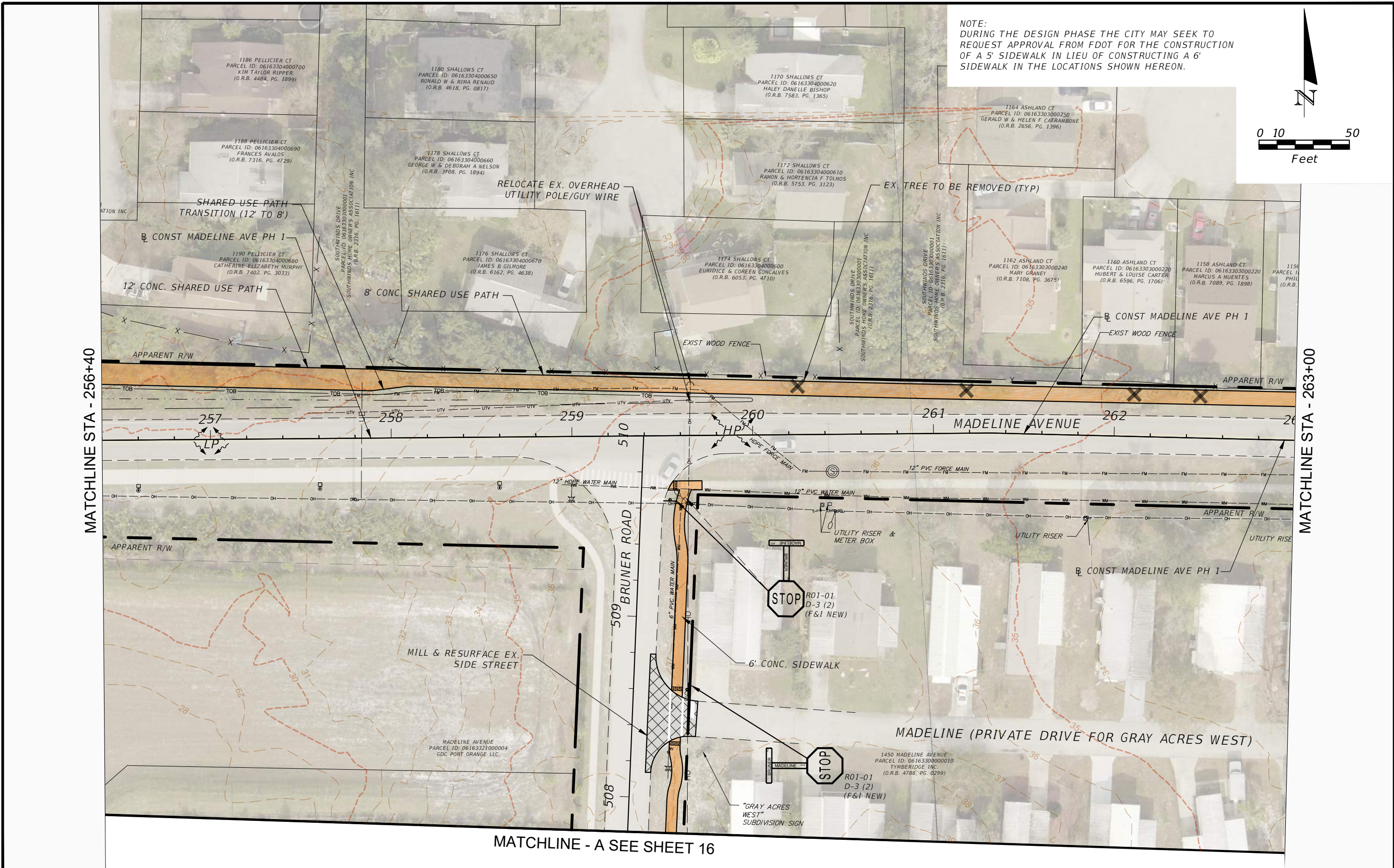
REVISIONS	
DATE	DESCRIPTION
1/22/2019	REVISED PER CITY, FDOT, AND R2CTPO COMMENTS



TRAFFIC ENGINEERING DATA SOLUTIONS, INC.
Phone 386.753.0558 80 Spring Vista Drive
Fax 386.753.0778 DeBary, FL 32713
CERTIFICATE OF AUTHORIZATION NO. 27392

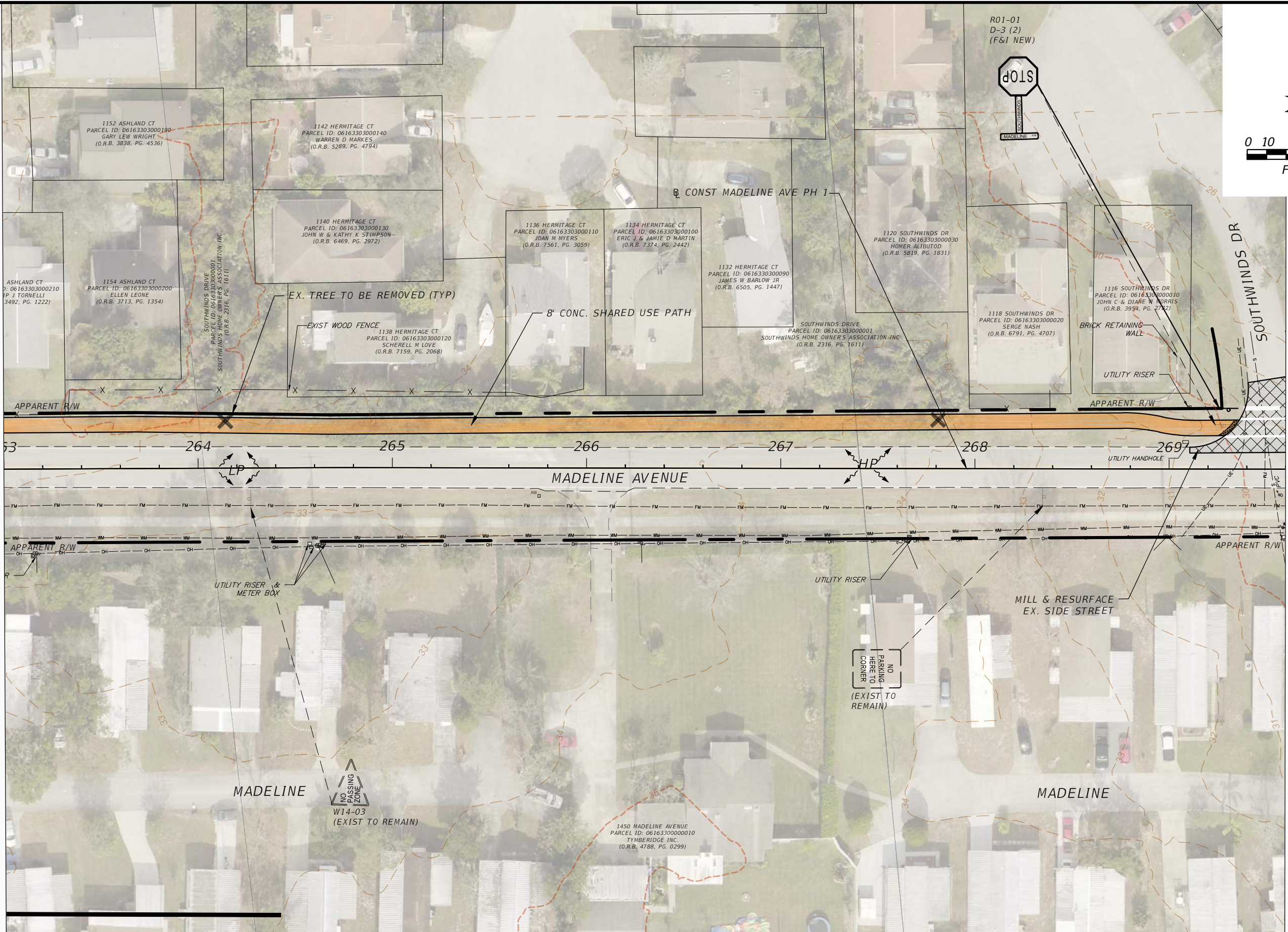
MADELINE AVENUE TRAIL & SIDEWALK PHASE 1		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
..	VOLUSIA	----

CONCEPT PLANS PHASE 1	
SHEET NO. 6	

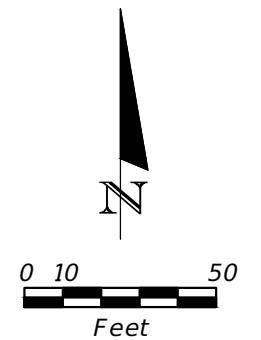


REVISIONS				 TRAFFIC ENGINEERING DATA SOLUTIONS, INC. Phone 386.753.0558 80 Spring Vista Drive Fax 386.753.0778 DeBary, FL 32713 CERTIFICATE OF AUTHORIZATION NO. 27392	MADLINE AVENUE TRAIL & SIDEWALK PHASE 1			CONCEPT PLANS PHASE 1	SHEET NO.
DATE	DESCRIPTION				ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
1/22/2019	REVISED PER CITY, FDOT, AND R2CTPO COMMENTS					..	VOLUSIA		----

MATCHLINE STA - 263+00



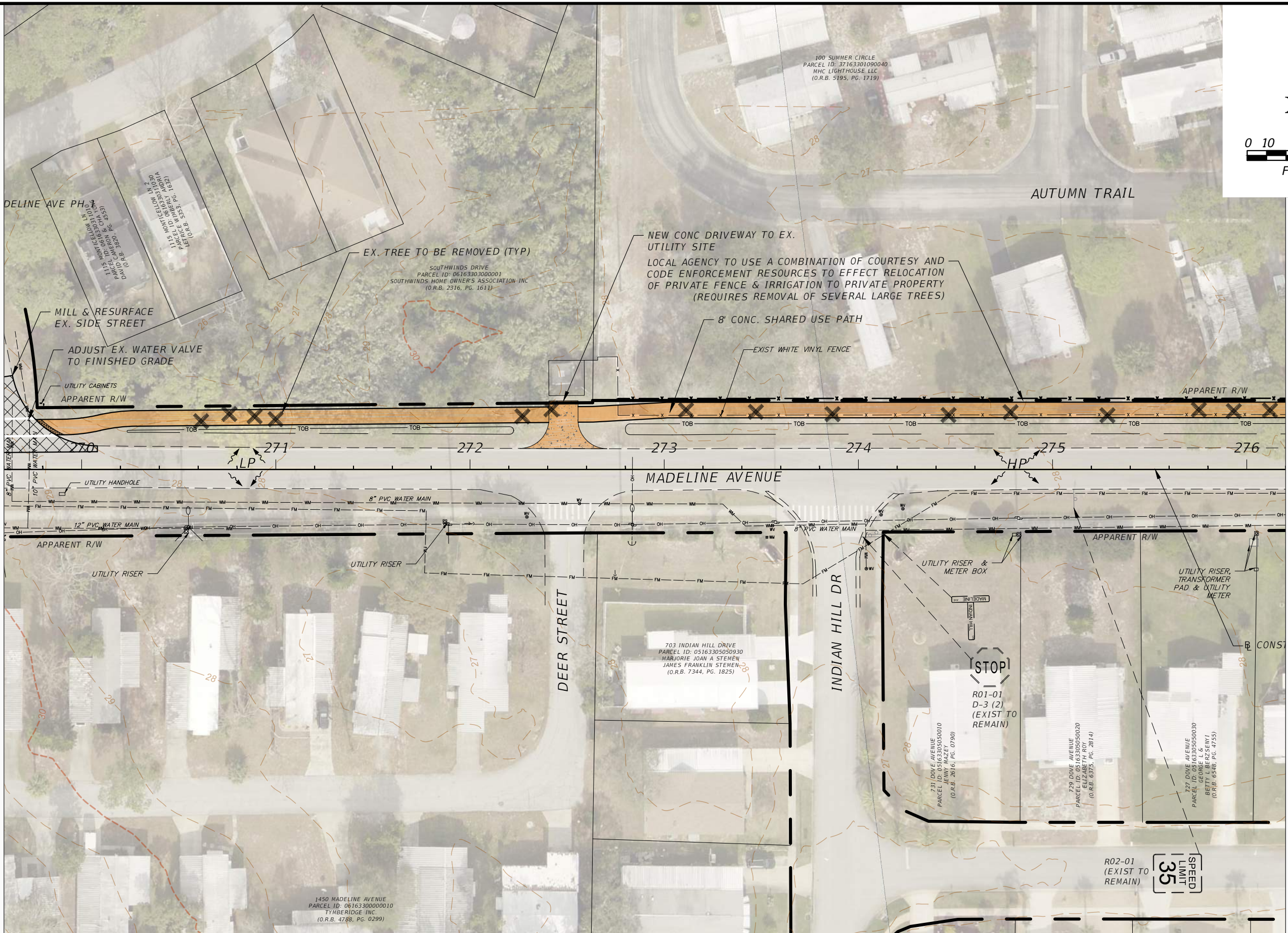
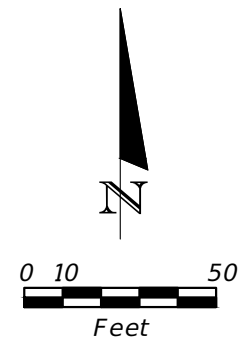
MATCHLINE STA - 269+60



REVISIONS		 			MADELINE AVENUE TRAIL & SIDEWALK PHASE 1		CONCEPT PLANS PHASE 1		SHEET NO.
DATE	DESCRIPTION								
1/22/2019	REVISED PER CITY, FDOT, AND R2CTPO COMMENTS				ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
		TRAFFIC ENGINEERING DATA SOLUTIONS, INC. Phone 386.753.0558 80 Spring Vista Drive Fax 386.753.0778 DeBary, FL 32713 CERTIFICATE OF AUTHORIZATION NO. 27392			..	VOLUSIA	----		8

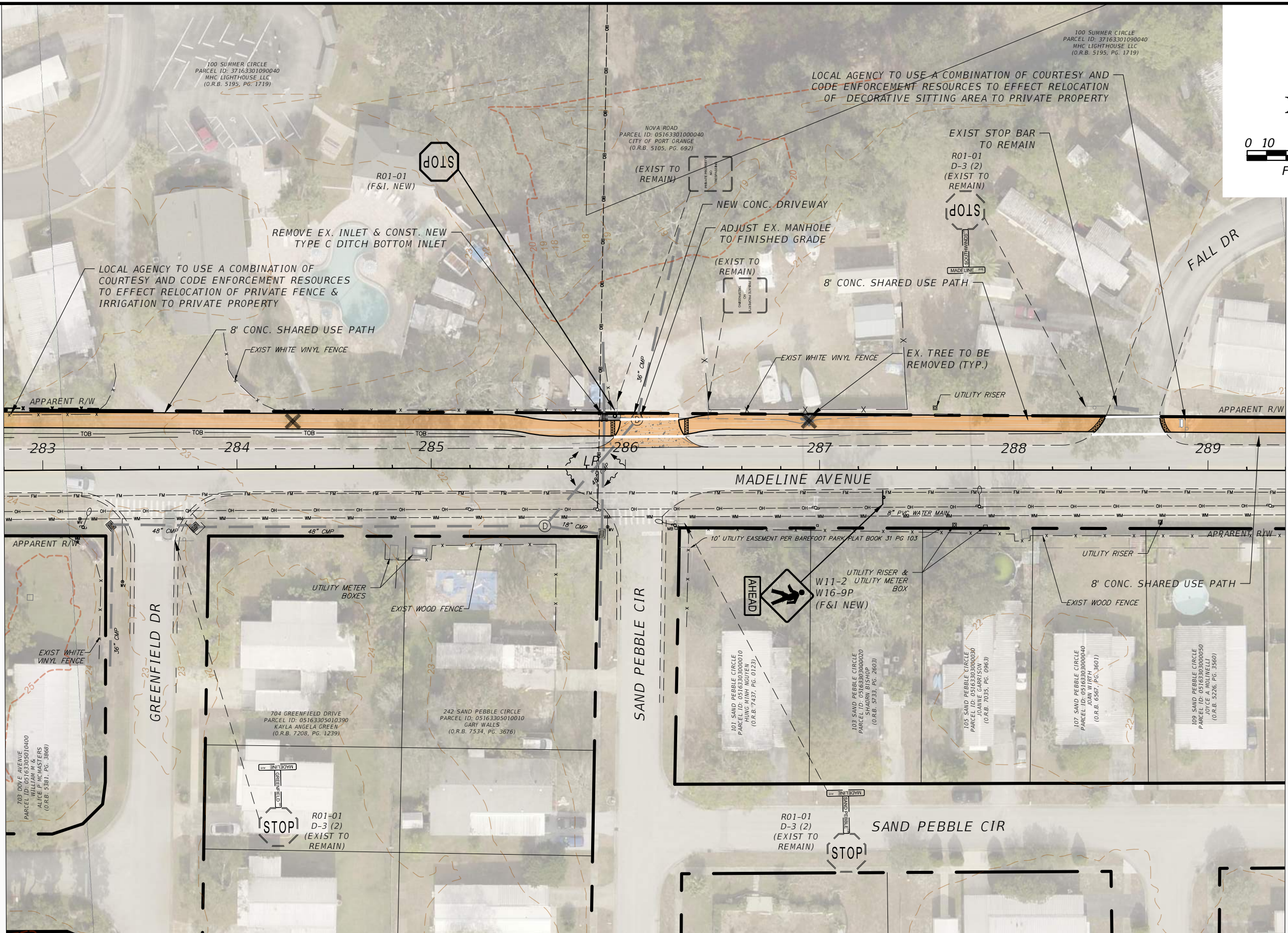
MATCHLINE STA - 269+60

MATCHLINE STA - 276+20

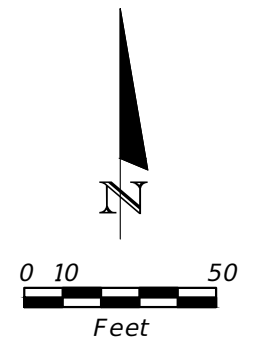


REVISIONS				MADELINE AVENUE TRAIL & SIDEWALK PHASE 1			CONCEPT PLANS PHASE 1		SHEET NO. 9
DATE	DESCRIPTION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID			
1/22/2019	REVISED PER CITY, FDOT, AND R2CTPO COMMENTS			..	VOLUSIA	----			

MATCHLINE STA - 282+80



MATCHLINE STA - 289+40



REVISIONS	
DATE	DESCRIPTION
1/22/2019	REVISED PER CITY, FDOT, AND R2CTPO COMMENTS

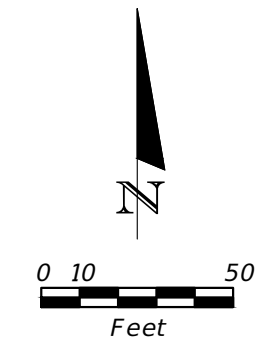
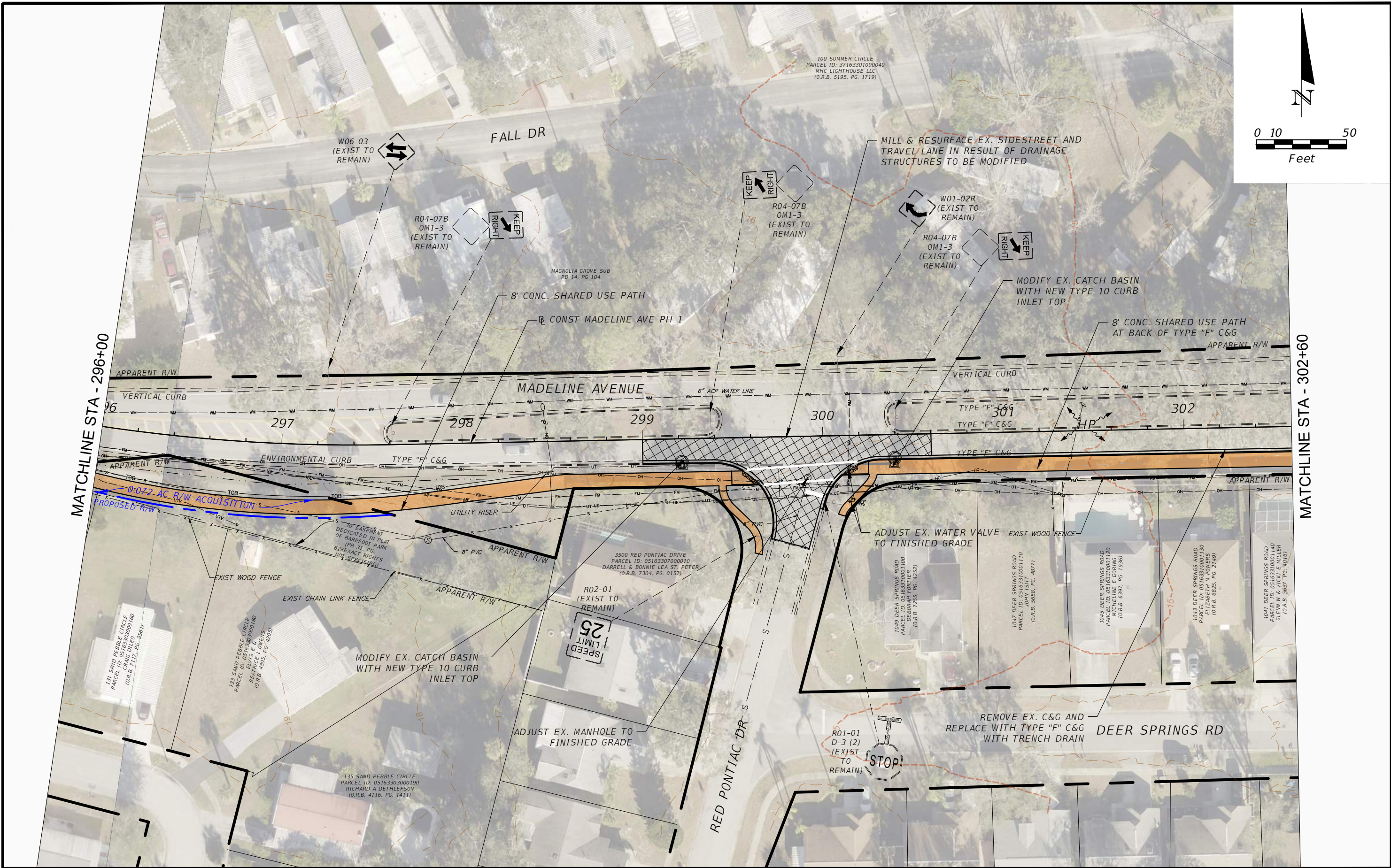


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Phone 386.753.0558 80 Spring Vista Drive
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CERTIFICATE OF AUTHORIZATION NO. 27392

MADLINE AVENUE TRAIL & SIDEWALK PHASE 1		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
..	VOLUSIA	----

CONCEPT PLANS PHASE 1	

SHEET NO.
11



REVISIONS	
DATE	DESCRIPTION
1/22/2019	REVISED PER CITY, FDOT, AND R2CTPO COMMENTS

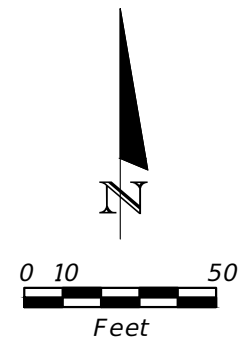
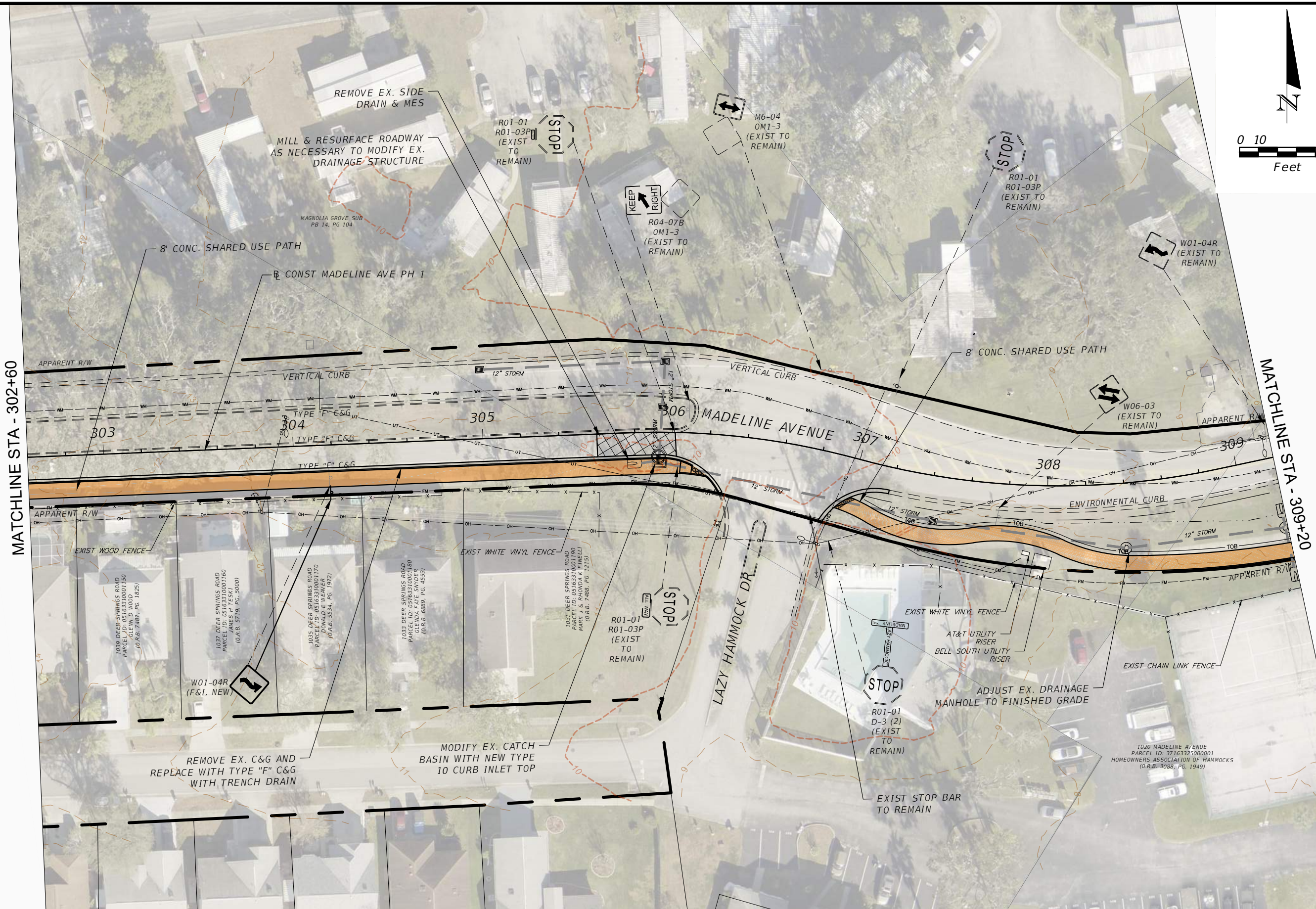


TEDS
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Phone 386.753.0558 80 Spring Vista Drive
Fax 386.753.0778 DeBary, FL 32713
CERTIFICATE OF AUTHORIZATION NO. 27392

MADELINE AVENUE TRAIL & SIDEWALK PHASE 1		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
..	VOLUSIA	----

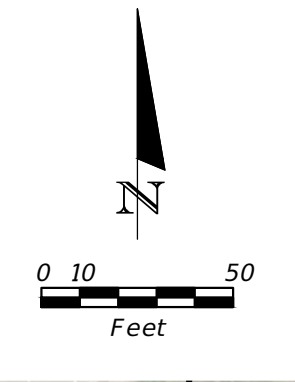
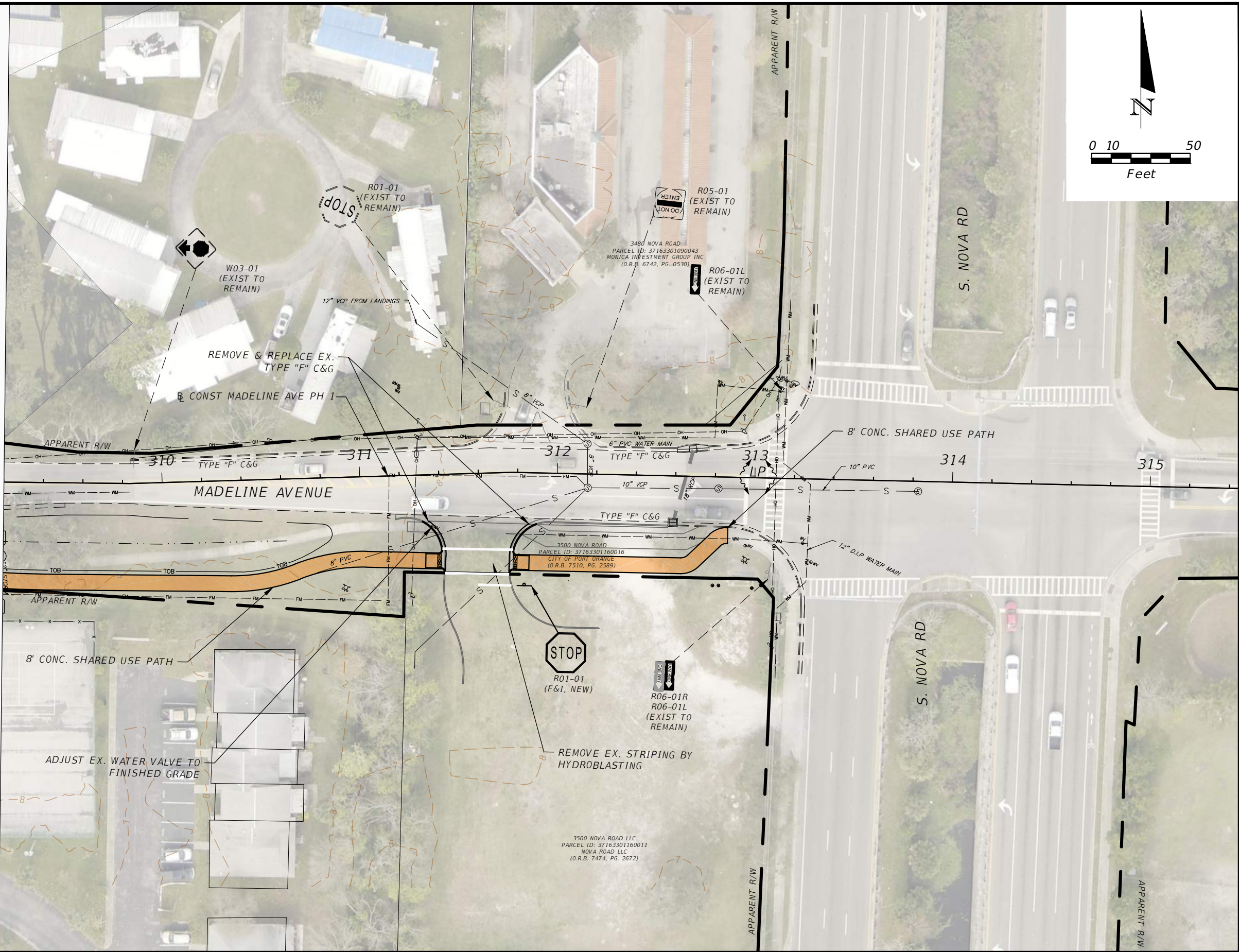
CONCEPT PLANS PHASE 1	

SHEET NO.
13



REVISIONS				MADELINE AVENUE TRAIL & SIDEWALK PHASE 1			CONCEPT PLANS PHASE 1	SHEET NO. 14
DATE	DESCRIPTION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
1/22/2019	REVISED PER CITY, FDOT, AND R2CTPO COMMENTS			..	VOLUSIA	----		

MATCHLINE STA - 309+20



REVISIONS	
DATE	DESCRIPTION
1/22/2019	REVISED PER CITY, FDOT, AND R2CTPO COMMENTS

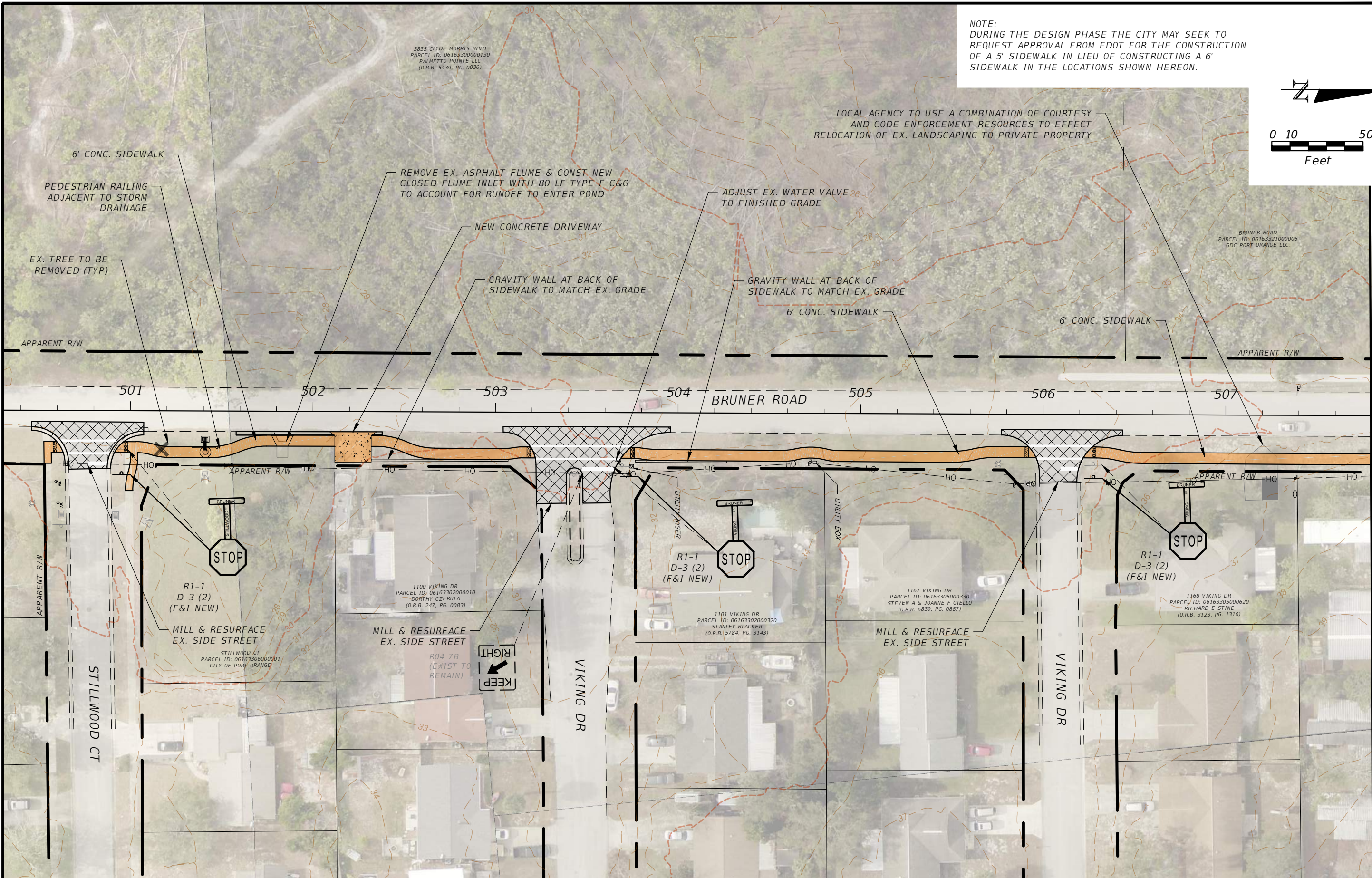


TEDS
TRAFFIC ENGINEERING DATA SOLUTIONS, INC.
Phone 386.753.0558 80 Spring Vista Drive
Fax 386.753.0778 DeBary, FL 32713
CERTIFICATE OF AUTHORIZATION NO. 27392

MADELINE AVENUE TRAIL & SIDEWALK PHASE 1		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
..	VOLUSIA	----

CONCEPT PLANS PHASE 1	

SHEET NO.
15



REVISIONS	
DATE	DESCRIPTION
1/22/2019	REVISED PER CITY, FDOT, AND R2CTPO COMMENTS



ROAD NO.		COUNTY	FINANCIAL PROJECT ID
..		VOLUSIA	----

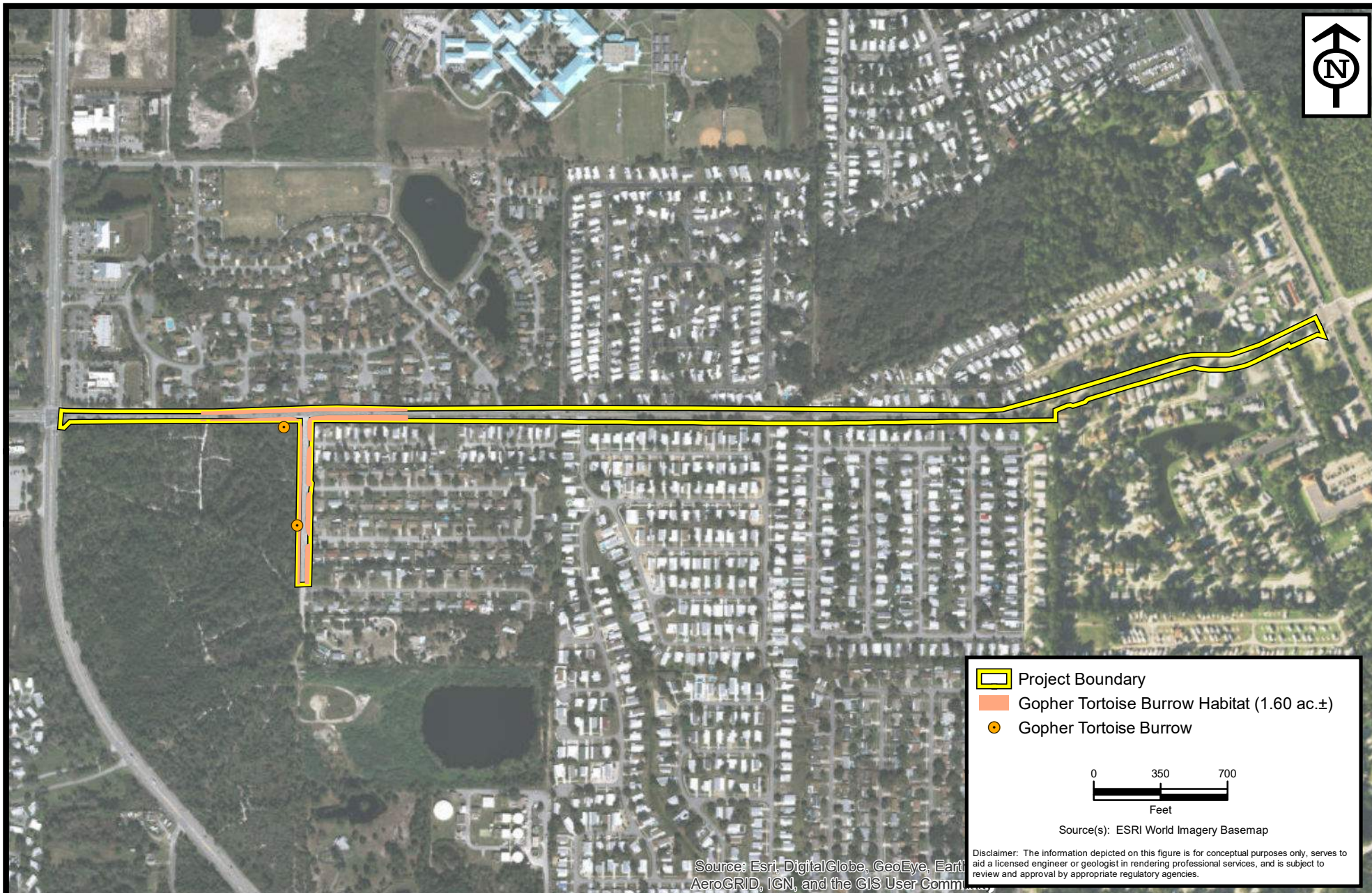
MADLINE AVENUE TRAIL & SIDEWALK PHASE 1		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
..	VOLUSIA	----

CONCEPT PLANS PHASE 1	
SHEET NO.	
16	

SHEET NO.	
16	

APPENDIX B

GOPHER TORTOISE MAP



**ENVIRONMENTAL
SERVICES, INC.**

7220 Financial Way, Suite 100
Jacksonville, Florida 32256
(904) 470-2200
(904) 470-2112 Fax

www.environmentalservicesinc.com

Feasibility Study

Madeline Avenue Sidewalks - Phase I

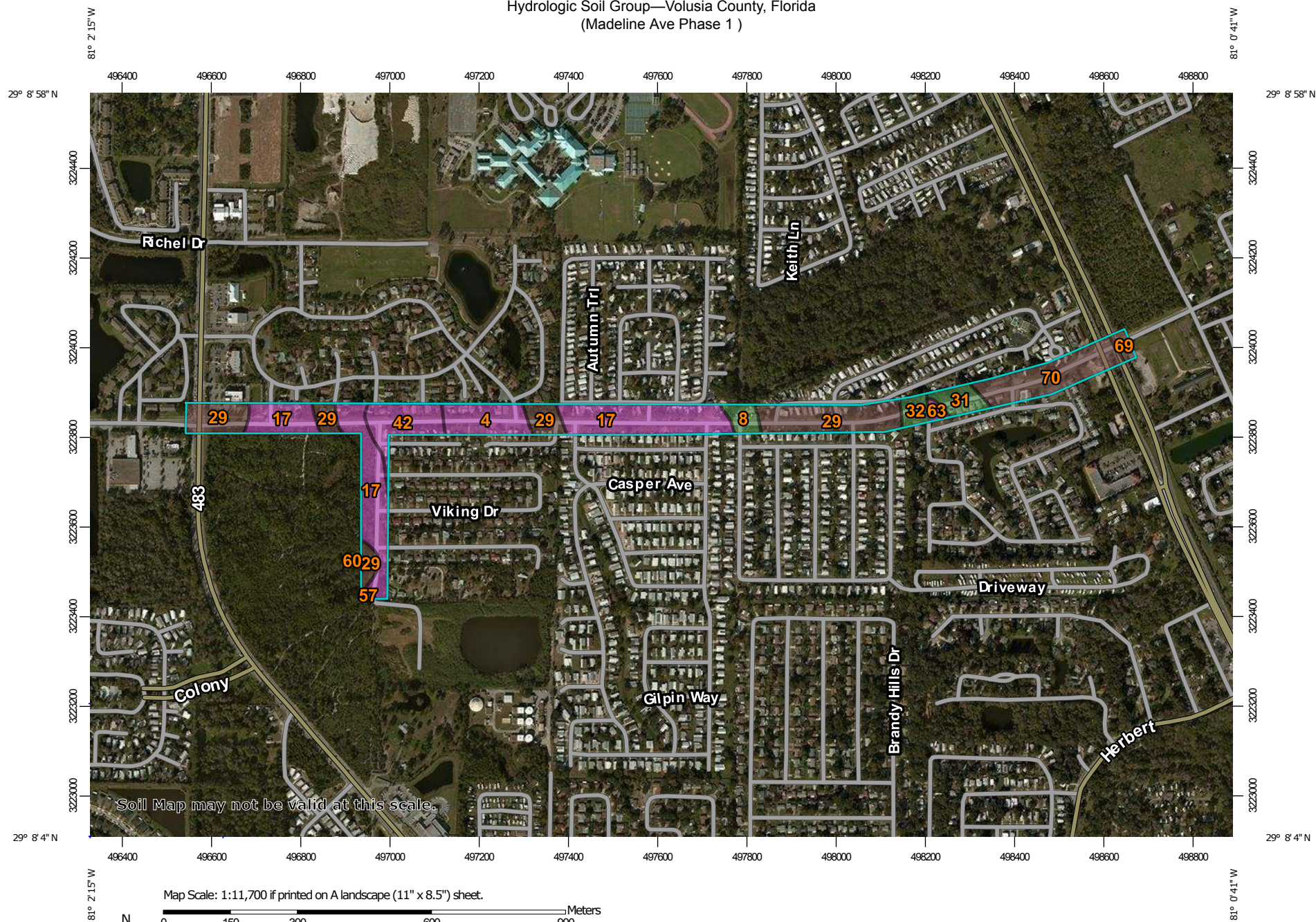
Volusia County, Florida

Project:	EJ18291.00
Date:	Nov. 2018
Drawn By:	AA
Checked By:	JRN
Approved By:	BAA
Figure:	2

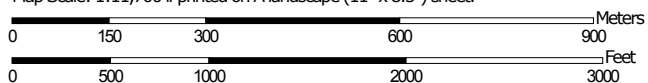
APPENDIX C

SOILS MAP

Hydrologic Soil Group—Volusia County, Florida (Madeline Ave Phase 1)



Map Scale: 1:11,700 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

1/7/2019
Page 1 of 4

MAP LEGEND

Area of Interest (AOI)









Area of Interest (AOI)

Soils

Soil Rating Polygons





-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available

Soil Rating Lines

-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available

Soil Rating Points






-  A
-  A/D
-  B
-  B/D

-  C
-  C/D
-  D
-  Not rated or not available

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Volusia County, Florida
Survey Area Data: Version 17, Sep 13, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 12, 2013—Dec 18, 2013

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
4	Astatula fine sand, 0 to 8 percent slopes	A	3.2	7.9%
8	Basinger fine sand, frequently ponded, 0 to 1 percent slopes	A/D	1.1	2.6%
17	Daytona sand, 0 to 5 percent slopes	A	14.1	34.5%
29	Immokalee sand	B/D	10.2	24.8%
31	Malabar fine sand	A/D	1.5	3.7%
32	Myakka-Myakka, wet, fine sands, 0 to 2 percent slopes	A/D	1.0	2.3%
42	Paola fine sand, 0 to 8 percent slopes	A	3.4	8.3%
57	Satellite sand, 0 to 2 percent slopes	A	0.1	0.3%
60	Smyrna-Smyrna, wet, fine sand, 0 to 2 percent slopes	A/D	0.0	0.1%
63	Tavares fine sand, 0 to 5 percent slopes	A	0.4	1.0%
69	Tuscawilla fine sand	B/D	0.5	1.3%
70	Tuscawilla-Urban land complex	B/D	5.4	13.2%
Totals for Area of Interest			41.0	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX D

EXCERPTS FROM ERP No 23171-1



St. Johns River Water Management District

Kirby B. Green III, Executive Director • David W. Fisk, Assistant Executive Director
David Dewey, Altamonte Springs Service Center Director

975 Keller Road • Altamonte Springs, FL 32714-1618 • (407) 659-4800

February 25, 2004

Mr. Jonathan A. Martin, P.E.
Kimley-Horn and Associates, Inc.
3660 Maguire Boulevard, Suite 200
Orlando, FL 32803

Re: Permit Determination Permit Related
Madeline Avenue Extension Safety Improvements ✓
DET - 127 - 463491, Referenced Permit: 4-127-23171-1

Dear Mr. Martin:

The District staff has completed its review of the proposed construction described in your letter and plans received in this office on February 11, 2004. We understand from this information that you propose to construct approximately 5,300 linear feet of sidewalk and approximately 1,200 linear feet of new pavement. As a result of the improvements, no new traffic will be generated by the pavement construction. Additionally, there are no planned alterations to be done to the existing stormwater system.

Based on the information provided in your letter, the project does not meet any of the permitting thresholds as specified in Chapters 40C-4 and 40C-42 of the Florida Administrative Code and therefore no Environmental Resource Permit is required prior to construction.

This letter applies only to the requirements of the St. Johns River Water Management District and does not relieve you from meeting the permit requirements of other agencies. The permit determination made in this letter is based upon the information you provided. If any information contained within this letter is not correct, or if any facts change in the future, you will need to notify the District immediately.

If you have any questions regarding this permit determination, please contact me at (407) 659-4833.

Sincerely,

William E. Carlie, Jr., Compliance Manager
Department of Water Resources

cc: PDS/NPR

GOVERNING BOARD

Duane Ottenstroer, CHAIRMAN
JACKSONVILLE

Ometrias D. Long, VICE CHAIRMAN
APOPKA

R. Clay Albright, SECRETARY
OCALA

David G. Graham, TREASURER
JACKSONVILLE

W. Michael Branch
FERNANDINA BEACH

John G. Sowinski
ORLANDO

William Kerr
MELBOURNE BEACH

Ann T. Moore
BUNNELL



Compliance Type: Permit Determination Permit Related

Permit No: 23171

Sequence No: 1

Rule: 40C-4

Compliance #: 463491

Counties:
Volusia

Applicant Name: Norpak Corporation - Riggio & Mitchell

Project Name: MADELINE AVENUE EXTENSION

Compliance Received Date: 11-feb-2004

Compliance Reviewers:
Carlie, Jr., William

Attached Sites:
Site Inspection # : Site Inspection Date

Compliance Due Date: 12-mar-2004

Action Log Table:
Mail Received, 11-feb-2004, , , Recv'd two sets of plans, and one copy of a cover letter

Discussion:

Compliance Status:

HP 2/12/04



Kimley-Horn
and Associates, Inc.



3660 Maguire Blvd.
Suite 200
Orlando, Florida
32803

TEL 407-898-1511
FAX 407-894-4791

Transmittal

Date: February 11, 2004 Job Number: 049204002

Project Name: Madeline Avenue Safety Improvements (Volusia County)

To: Mr. Bill Carley

St. Johns River Water Management District

975 Keller Road

Altamonte Springs, FL 32714

We are sending these by

☐ U.S. Mail ☐ FedEx ☒ Hand Deliver
☐ Other: _____

We are sending you

☒ Attached ☐ Under separate cover _____ the following items:
☐ Shop Drawings ☒ Prints/Plans ☐ Samples ☐ Specifications ☐ Change Orders
☐ Other: _____

Copies	Date	No.	Description
1			Letter
2			Civil Construction Plans

These are transmitted as checked below:

☐ For your use ☐ Approved as submitted ☐ Resubmit ☒ Copies for approval
☐ As requested ☐ Approved as noted ☐ Submit ☐ Copies for distribution
☐ For review and comment ☐ Returned for ☐ Return ☐ Corrected prints

Remarks:

RECEIVED
23 171-1
FEB 11 2004

PDS
ALTAMONTE SVC. CTR.

Copy to: File Signed Jeff Swisher, P.E.



Kimley-Horn
and Associates, Inc.



February 11, 2004

■
Suite 200
3660 Maguire Boulevard
Orlando, Florida
32803

Mr. Bill Carlie
St. John's River Water Management District
Altamonte Springs Service Center
975 Keller Road
Altamonte Springs, Florida 32714-1618

Re: Permit Determination for City of Port Orange
Madeline Avenue Safety Improvements
Volusia County, Sections 5 & 6 , Township 16 S, Range 33 E

Dear Bill:

Kimley-Horn and Associates is representing the City of Port Orange for a safety improvement project located within the Madeline Avenue road right-of-way. The project consists of 5,300 linear feet of proposed sidewalk and 1,200 linear feet of new pavement to provide two one-way paved roadways in lieu of the current existing 19 foot two-lane paved road. No new traffic will be generated. The safety improvement is required due to the fact that the road cannot accommodate a school bus and a large vehicle at the same time. The Avenue is lined with specimen oak trees that create significant safety, as well as clear zone issues. Widening is not possible as it would require removal of the many specimen oak trees lining the roadway. (See attached photos.) The design concept is to divide the road and have the existing pavement serve as a one-way westbound lane, and construct a new one-way eastbound lane; both meeting FDOT and the City of Port Orange design standards. This design will effectively reduce the impact on the trees while improving the safety for the City's residents.

Existing drainage patterns and outfall locations will not be altered, and best management practices will be utilized during construction. We are requesting a permit exemption to be granted for this proposed project based on Section 40C-42.0225. Attached are two sets of the construction plans for this project for your review.

23171-1
RECEIVED

FEB 11 2004

PDS
ALTAMONTE SVC. CTR.

■
TEL 407 898 1511
FAX 407 894 4791



Kimley-Horn
and Associates, Inc.



The City is requesting, if possible, your review by March 15, 2004 as the City Council is presenting the project to the residents during their regularly scheduled Public Hearing on March 16, 2004.

If you need any additional information please do not hesitate to contact my office.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Jonathan A. Martin, P.E.
Project Manager

JAM:mec
Enclosures: (see above)
049204002\wp\PermitLetter

23171-1
RECEIVED

FEB 11 2004

PDS
ALTAMONTE SVC. CTR.



Resource Management Routing Sheet

Application Number: 4-127-0343A-ERP

Date Issued: ay, August 11, 1998 ✓

Date Mail Processed:

6/5/2000

Date Mail Received:

6/1/2000

Applicant: D.S.C. OF NEWARK ENTERPRISES, INC.

Project Name: MADELINE AVENUE EXTENSION

Mail Type: AS-BUILTS

Mail Routed to :

Comments: WIL C.; 1 EN-45 & 1 SET OF PLANS

Data Capture Person: Karen Moody

Signature: Ymm *Monday, June 05, 2000*

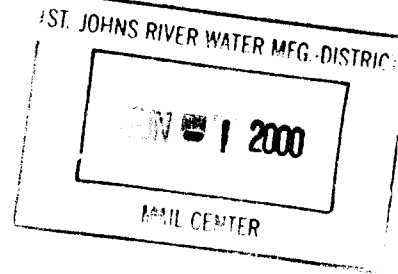


ZEV COHEN
& ASSOCIATES, INC.

AB wil c.
55 Seton Trail • Ormond Beach, FL. 32176
904-677-2482 • Fax: 904-677-2505
E-mail: Zev.Cohen@Worldnet.att.net

May 30, 2000

Ms. Gloria Lewis, Director
St. Johns River Water Management District
Post Office Box 1429
Palatka, FL 32177



RE: Madeline Avenue Extension
SJRWMD As-Built Certification
SJRWMD #4-127-0343-ERP
ZC 96105-P A ✓ 98

Dear Gloria:

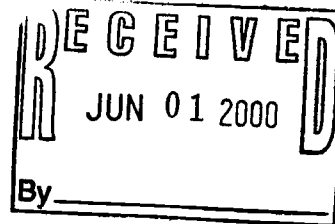
Enclosed please find our Final Certification for the St. Johns River Water Management District Stormwater discharge facility for the above-referenced project. One (1) copy of Form EN-45 (signed and sealed), and one (1) copy of the "As-Built" Survey (signed and sealed) are enclosed.

Thank you for your time and assistance with this project. Should you have any questions or require any additional information, please do not hesitate to contact me.

Sincerely,
ZEV COHEN & ASSOCIATES, INC

M. Dwight DuRant, P.E.
President

MDD/cm
Enclosure
96105109
cc: Sam Hamilton, P.E.
SJ File



**MSSW/STORMWATER AS-BUILT CERTIFICATION
BY A REGISTERED PROFESSIONAL***


PERMIT NUMBER: 4-127-0343-ERP

PROJECT NAME: Madeline Avenue Extension

INSPECTION DATE(S): December, 1999

I HEREBY CERTIFY THAT ALL COMPONENTS OF THIS STORMWATER MANAGEMENT SYSTEM HAVE BEEN BUILT SUBSTANTIALLY IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND IS READY FOR INSPECTION. ANY SUBSTANTIAL DEVIATIONS (NOTED BELOW) FROM THE APPROVED PLANS AND SPECIFICATIONS WILL NOT PREVENT THE SYSTEM FROM FUNCTIONING IN COMPLIANCE WITH THE REQUIREMENTS OF CHAPTERS 40C-4, 40C-41, OR 40C-42, F.A.C. (AS APPLICABLE), WHEN PROPERLY MAINTAINED AND OPERATED. THESE DETERMINATIONS HAVE BEEN BASED UPON ON-SITE OBSERVATION OF THE SYSTEM CONDUCTED BY ME OR BY MY DESIGNEE UNDER MY DIRECT SUPERVISION AND/OR MY REVIEW OF AS-BUILT PLANS CERTIFIED BY A REGISTERED PROFESSIONAL OR LAND SURVEYOR LICENSED IN THE STATE OF FLORIDA.

M. Dwight DuRant, P.E.
NAME (please print)


SIGNATURE OF PROFESSIONAL

Zev Cohen & Associates, Inc.
COMPANY NAME

#40318
FLORIDA REGISTRATION NUMBER

55 Seton Trail
COMPANY ADDRESS

5/30/00
DATE

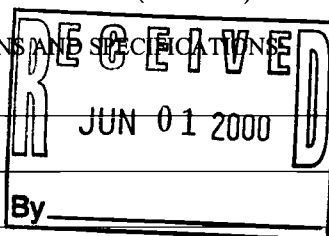
Ormond Beach, FL 32176
CITY, STATE, ZIP CODE

904-677-2482
TELEPHONE NUMBER

(Affix Seal)

SUBSTANTIAL DEVIATIONS FROM THE APPROVED PLANS AND SPECIFICATIONS

None



(NOTE: ATTACH TWO COPIES OF AS-BUILT PLANS WHEN THERE ARE SUBSTANTIAL DEVIATIONS)

WITHIN 30 DAYS OF INSPECTION OF THE SYSTEM, SUBMIT TWO COPIES OF THIS FORM TO:

DIVISION OF PERMIT DATA SERVICES
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
P.O. BOX 1429
PALATKA, FL 32178-1429

* A REGISTERED PROFESSIONAL IS DEFINED IN SUBSECTION 40C-42.021(1) AS "A PROFESSIONAL REGISTERED IN FLORIDA WITH THE NECESSARY EXPERTISE IN THE FIELDS OF HYDROLOGY, DRAINAGE, FLOOD CONTROL, EROSION AND SEDIMENT CONTROL, AND STORMWATER POLLUTION CONTROL TO DESIGN AND CERTIFY STORMWATER MANAGEMENT SYSTEMS". EXAMPLES OF REGISTERED PROFESSIONALS MAY INCLUDE PROFESSIONAL ENGINEERS LICENSED UNDER CHAPTER 471, F.S., PROFESSIONAL LANDSCAPE ARCHITECTS LICENSED UNDER CHAPTER 481, F.S., AND PROFESSIONAL GEOLOGISTS LICENSED UNDER CHAPTER 492, F.S., WHO HAVE THE REFERENCED SKILLS.



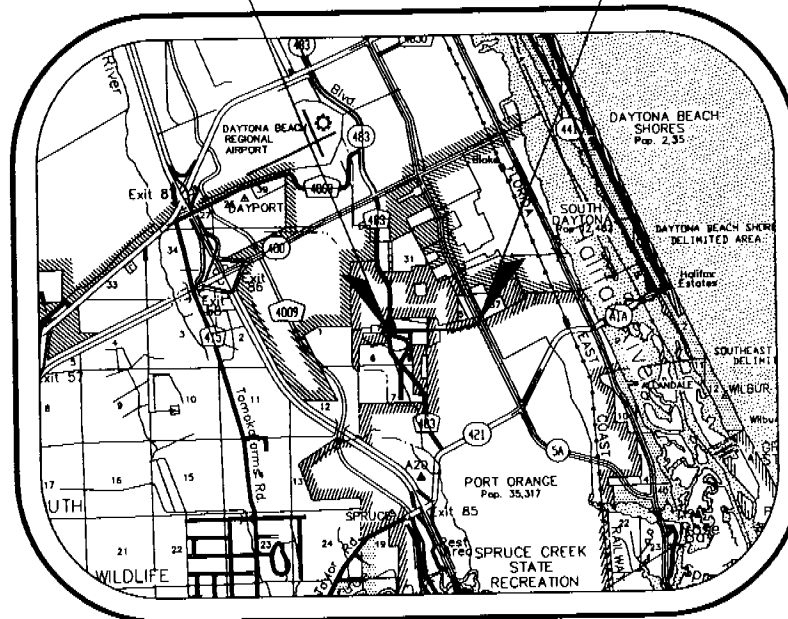
CONSTRUCTION PLANS FOR MADELINE AVENUE SIDEWALK & ROADWAY IMPROVEMENTS DISTRICT NO. 2 CITY OF PORT ORANGE, FLORIDA

STA. ??+??.
BEGIN CONSTRUCTION

STA. ??+??.
END CONSTRUCTION

BENCHMARKS USED

ELEVATIONS REFER TO N.G.V.D. OF 1929, PER U.S.C. & G.S. BENCHMARK V-225 HAVING A PUBLISHED ELEVATION OF 9.121 FEET.



VICINITY MAP
N.T.S.

LENGTH OF PROJECT		
	LF	MILES
MADLINE AVE.	XXXXX	XXXXX
TOTAL		

PORT ORANGE CITY COUNCIL

ALLEN GREEN
GEORGE STEINDOERFER
MARY MARTIN
ROBERT N. POHLMANN
DENNIS A. KENNEDY

MAYOR
DISTRICT 1
DISTRICT 2
DISTRICT 3
DISTRICT 4

KENNETH W. PARKER
WILLIAM R. WHITSON
WARREN PIKE

CITY MANAGER
ASST. CITY MANAGER
PUBLIC WORKS DIRECTOR

ABBREVIATIONS

REC RECOVERED	CON CENTERLINE
BPP BACKFLOW PREVENTER	INVERT
CM CONCRETE MONUMENT	SEC SECTION
TOS TOP OF BANK	TWP TOWNSHIP
TOS TOP OF SLOPE	RGE RANGE
SB SOIL BORING	(OP) CITY OF PORT ORANGE
STA STATION	(T) TANGENT
CO CLEANOUT	(NR) NON RADIAL
SAN SANITARY	(R) RADIAL
FMV FORCE MAIN VALVE	(P) PLATTED DIMENSION
HDP HIGH DENSITY POLYETHYLENE PIPE	(D) DECEDED DIMENSION
VCP VITREOUS CLAY PIPE	(M) MEASURED DIMENSION
CV CHECK VALVE	(C) CALCULATED DIMENSION
IR IRON ROD	R/W RIGHT OF WAY
EDP EDGE OF PAVEMENT	CONC CONCRETE
WV WATER VALVE	IRC IRON ROD & CAP
TSM TRAFFIC SIGNAL BOX	MES MEASURED END SECTION
PH FIRE HYDRANT	RCP REINFORCED CONCRETE PIPE
WM WATER METER	CMP CORRUGATED METAL PIPE
LP LIGHT POLE	CRS OFFICIAL RECORDS BOOK
ICV IRRIGATION VALVE	MB MAP BOOK
GA GUY ANCHOR	IP IRON PIPE
OPF CORRUGATED PLASTIC PIPE	MH MANHOLE
UPF DUCTILE IRON PIPE	PG PAGE
PVC POLYVINYL CHLORIDE	ID IDENTIFICATION
DRIVEWAY	(TYP) TYPICAL
D CENTRAL ANGLE	N&D NAIL AND DISK
R RADIUS	PL PLAT BOOK
L ARC LENGTH	EL ELEVATION
CB CHORD BEARING	CLF CHAIN LINK FENCE
CH CHORD DISTANCE	N&D NATIONAL GEODETIC VERTICAL DATUM
FPAL FLORIDA POWER & LIGHT COMPANY	USC & GS UNITED STATES COAST AND GEODETIC SURVEY

ADDITIONAL ABBREVIATIONS-TREE LEGEND

SB SUGARBERRY TREE	MG MAGNOLIA	TR TREE TYPE	TSR TREE SIZE (INCHES) DIAMETER AT BREAST HEIGHT
MP MAPLE TREE	BT BAY TREE		
SC SCALDING TREE	ELM TREE		
OK OAK TREE	CHERRY TREE		
SD SHEET GUM TREE	PI PALM TREE		
HK HICKORY TREE	HA HAZEL TREE		
SP SPRUCE TREE	OR ORANGE TREE		
GF GRAPEFRUIT TREE			

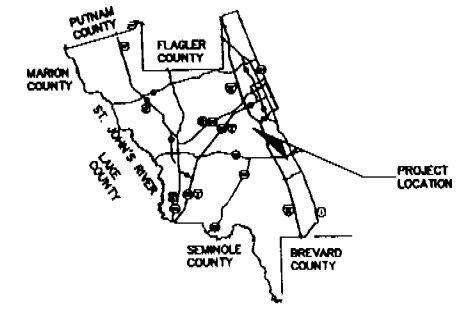
LEGEND

EB ELECTRIC BOX	TSM TRAFFIC SIGNAL BOX	SS BURIED SANITARY SEWER
MB MAIL BOX	CO CLEAN OUT	FO BURIED FIBER OPTIC CABLE
SM SIGN	TCB TRAFFIC CONTROL BOX	T BURIED TELEPHONE LINE
PH FIRE HYDRANT	TR TREE	W BURIED WATER LINE
WM WATER METER	CHP CROSS WALK POLE	E BURIED ELECTRIC LINE
GA GUY ANCHOR	LP LIGHT POLE	G BURIED GAS LINE
UPF DUCTILE IRON PIPE	WV WATER VALVE	TV BURIED TELEVISION LINE
IRON ROD WITH CAP	ICV IRRIGATION CONTROL VALVE	FM BURIED FORCE MAIN
CB CABLE TELEVISION BOX	FM FORCE MAIN VALVE	AU AERIAL UTILITY LINE
TEB TELEPHONE BOX	RV REUSE VALVE	
EM ELECTRIC METER	SB SOIL BORING	

CERTIFICATION TO PLANS

THIS IS TO CERTIFY THAT THE ROADWAY CONSTRUCTION PLANS AND SPECIFICATIONS AS CONTAINED HEREIN WERE DESIGNED TO APPLICABLE STANDARDS AS SET FORTH IN THE "MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION, AND MAINTENANCE FOR STREETS AND HIGHWAYS", STATE OF FLORIDA, AS PREPARED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION TALLAHASSEE, FLORIDA, DATED LATEST EDITION, EXCEPT AS REVISED HEREIN.

DATE: 2-11-07 ENGINEER: J. A. Martin, P.E. REG. NO. 54055



LOCATION MAP

INDEX OF SHEETS

SHEET	DESCRIPTION
1	COVER SHEET
2	DRAINAGE MAP
3	TYPICAL SECTIONS
4	GENERAL NOTES & SUMMARY OF QUANTITIES
5-8	SIDEWALK PLANS
9-12	ROADWAY PLAN & PROFILES
13-??	CROSS SECTIONS
??-??	SIGNING & PAVEMENT MARKING PLANS

UTILITY PROVIDERS IN AREA

POWER: FLORIDA POWER & LIGHT (386) 254-2375
GAS: PEOPLE'S GAS (407) 420-2693 EXT. 74693 / LORELYS GONZALEZ
CABLE: BRIGHTHOUSE NETWORKS (386) 445-8804 EXT. 1308 / LARRY HENDERSON
SANITARY SEWER: CITY OF PORT ORANGE (386) 756-5428 / ROBERT DAY
WATER: CITY OF PORT ORANGE (386) 756-5428 / ROBERT DAY
PHONE: SOUTHERN BELL (386) 322-0220 / LARRY FRESHKO
WASTE MANAGEMENT: CITY OF PORT ORANGE (386) 756-5428 / ROBERT DAY
SUNSHINE STATE ONE CALL OF FLORIDA, INC.
CALL 48 HOURS BEFORE YOU DIG
1-800-432-4770

PREPARED BY:

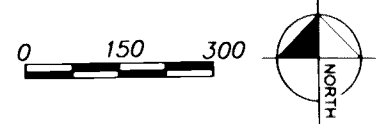
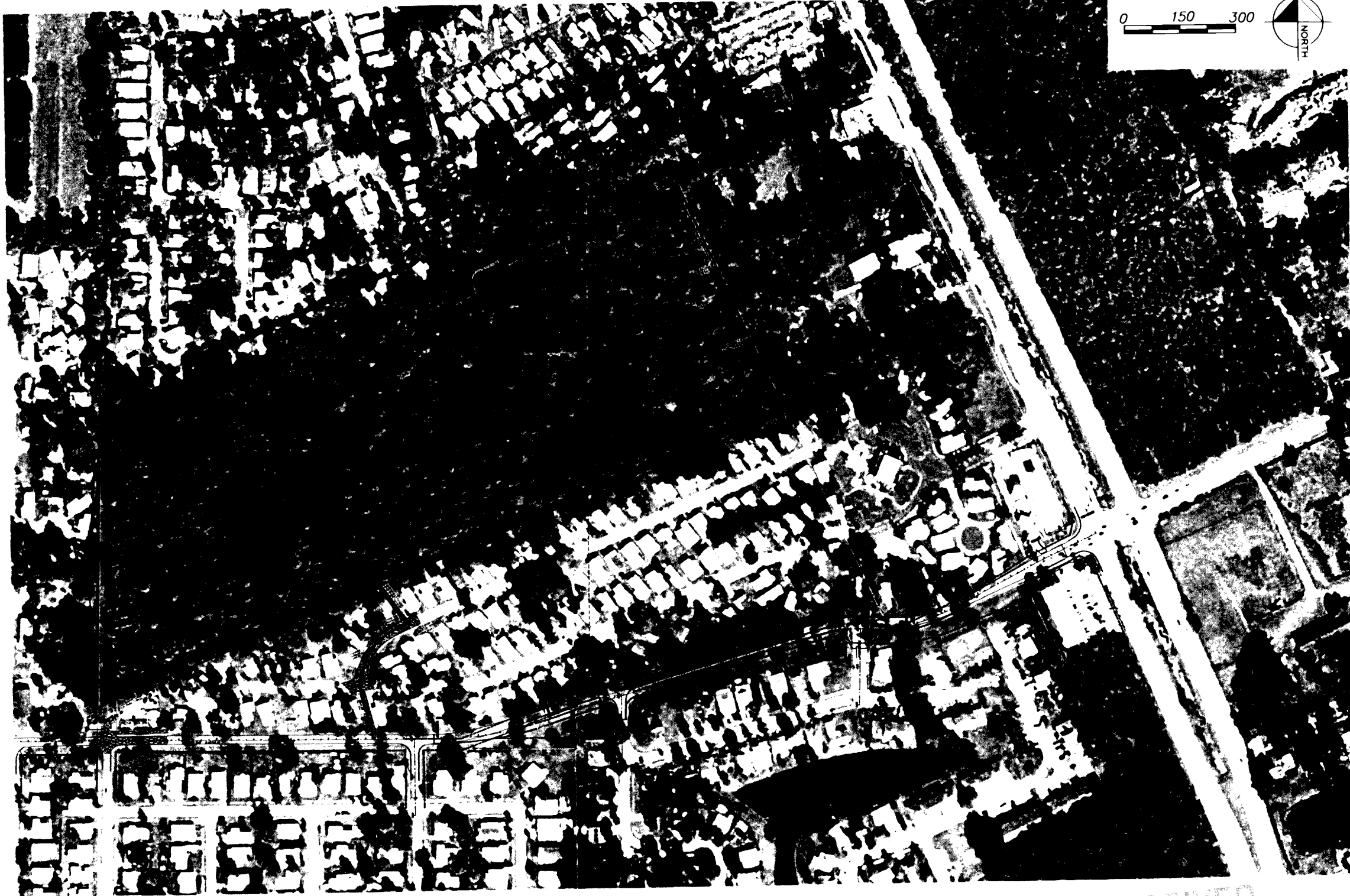
Kimley-Horn
and Associates, Inc.
3660 MAGUIRE BOULEVARD, SUITE 200, ORLANDO, FL 32803
PHONE: (407) 898-1511 FAX: (407) 894-4791
www.kimley-horn.com CA 00000696

REVISIONS RECEIVED

DESIGNED BY: RWS DATE:
CHECKED BY: JAM DATE:
APPROVED BY: MRH DATE:


SHEET 1
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Drawing name: 049204002.mxd, improve\CA\CONSTR\049204002.dwg, DRAIN-MAP, Feb 11, 2004, 9:55am, by: Robert Science



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**MADLINE AVENUE
SIDEWALK AND
ROADWAY IMPROVEMENTS**

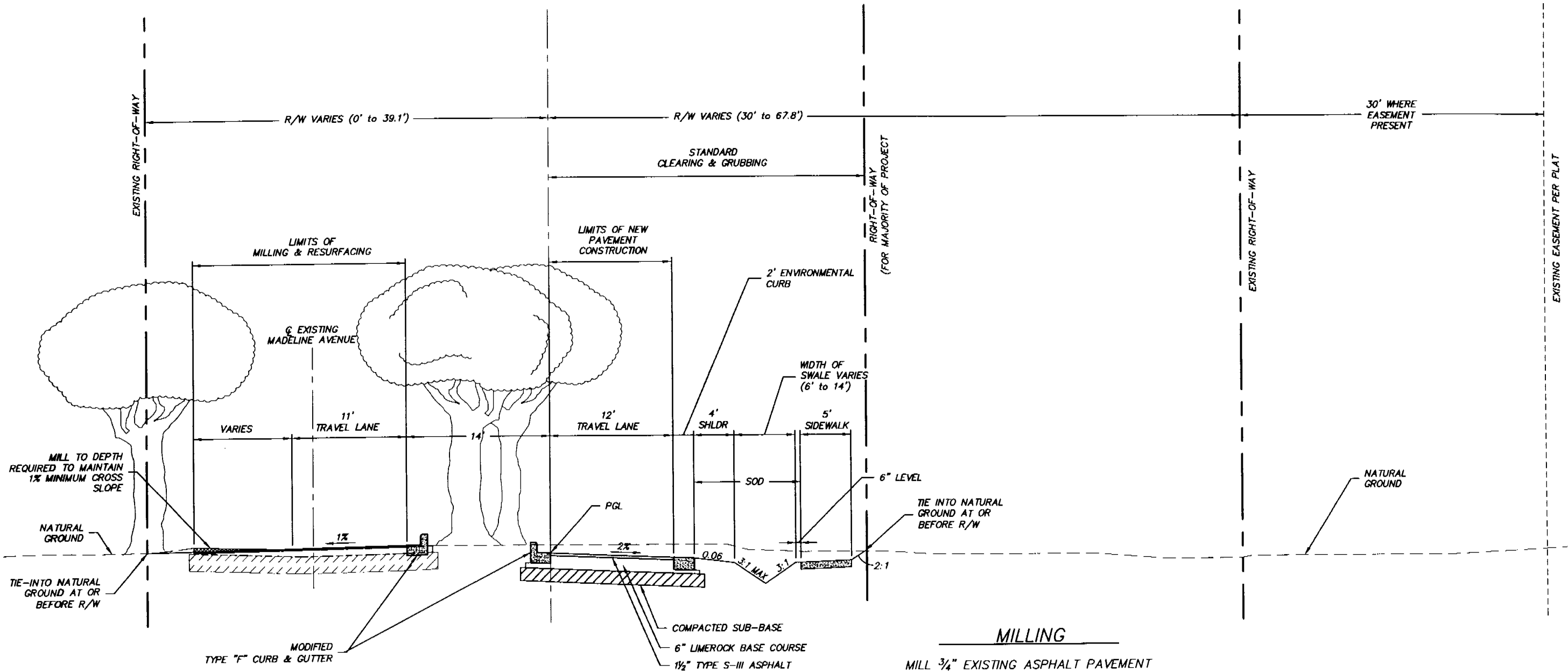
DATE	01/28/04
PROJECT NO.	049204002

DRAINAGE MAP

SHEET NUMBER

2 of

Drawing name: G:\049204002.mxd improve\CADD\CONSTR\03-TYP-SEC.dwg TYP. SECTIONS Feb 11, 2004 9:56am by Robert Spence



TYPICAL SECTION
MADELINE AVENUE
(STA. 94+81.49 to STA. 109+52.37)
DESIGN SPEED = 25MPH

- MILLING**
MILL $\frac{3}{4}$ " EXISTING ASPHALT PAVEMENT
- RESURFACING**
 $\frac{3}{4}$ " TYPE S-III BITUMINOUS ASPHALTIC CONCRETE
(MINIMUM MARSHALL FIELD STABILITY 1500)
- NEW PAVEMENT CONSTRUCTION**
- $\frac{1}{2}$ " TYPE S-III BITUMINOUS ASPHALTIC CONCRETE
(MINIMUM MARSHALL FIELD STABILITY 1500)
 - 6" LIMEROCK OR RECYCLED CONCRETE BASE (LBR 100)
COMPACTED TO 98% DENSITY BASED ON
AASHTO T-180 MODIFIED PROCTOR TEST
 - 6" SUB-BASE COMPACTED TO 98% DENSITY BASED
ON AASHTO T-180 MODIFIED PROCTOR
TEST WITH MINIMUM LBR 40.

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No	REVISIONS	DATE	BY

DESIGN ENGINEER:
Jonathon A. Martin, P.E.
FLORIDA REGISTRATION NUMBER:
[Signature]

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**MADELINE AVENUE
SIDEWALK AND
ROADWAY IMPROVEMENTS**

DATE
01/28/04
PROJECT NO.
049204002

TYPICAL SECTIONS

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH AND CONFORM TO THE MOST STRINGENT REQUIREMENT OF THE PROJECT SPECIFICATIONS, THE LATEST EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (FDOT), AND SUPPLEMENTS THERETO, AND THE CITY OF PORT ORANGE STANDARDS.
- ALL PERSONAL PROPERTY, EXCEPT MAIL BOXES WITHIN THE RIGHT-OF-WAY NOT RELOCATED BY PROPERTY OWNER SHALL BE REMOVED BY THE CONTRACTOR AS NECESSARY TO CONSTRUCT THE PROJECT IN ACCORDANCE WITH THE PLANS. MAIL BOXES SHALL BE RELOCATED BY THE CONTRACTOR IN ACCORDANCE WITH F.D.O.T. DESIGN STANDARD 532. PAYMENT WILL BE INCLUDED IN CLEARING & GRUBBING.
- THE DISPOSAL OF EXCESS EARTHWORK MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. APPROVAL OF DISPOSAL SITES SHALL BE OBTAINED FROM THE CITY OF PORT ORANGE PRIOR TO DISPOSAL. ALL EXCESS MATERIAL IS THE PROPERTY OF THE CONTRACTOR.
- ALL EXISTING TREES WITHIN THE RIGHT-OF-WAY ARE TO BE REMOVED, AND SHALL BE INCLUDED IN CLEARING AND GRUBBING PAY ITEM NO. 110-1-1.
- SOD ALL DISTURBED AREAS UNLESS OTHERWISE DIRECTED. SOD SHALL MATCH EXISTING TYPE SOD UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING PAVEMENT ELEVATIONS OF ALL DRIVEWAYS AND SIDEWALKS TO MATCH THE PROPOSED PAVEMENT TO THE EXISTING.
- ALL OFFSETS SHOWN ARE TO THE BASELINE OF CONSTRUCTION.
- PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
- THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS BASED ON AVAILABLE RECORDS AND SURVEYS BUT IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO AND IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WITH PROJECT CONSTRUCTION.
- ALL EXISTING UTILITIES ARE TO BE ADJUSTED AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES A MINIMUM OF TWO WORKING DAYS PRIOR TO EXCAVATION AS REQUIRED BY CHAPTER 77-153 OF THE FLORIDA STATUTES.
- ALL (P.R.M.'S) IRONS AND MONUMENTS SHOWN ON PLANS, OR FOUND, SHALL BE PRESERVED. THOSE SHOWN IN PROPOSED PAVEMENT SHALL BE PROTECTED WITH A CAST IRON VALVE BOX.
- ANY U.S.C. AND G.S. MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED. IF IN DANGER OF DAMAGE, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, AND BOTH SHALL NOTIFY: STATE GEODETTIC ADVISOR, RONNIE TAYLOR, SUITE 309, 3900 COMMONWEALTH BOULEVARD, TALLAHASSEE, FL, (904) 488-2427
- PUBLIC LAND CORNERS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED OR DISTURBED, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND THE COUNTY SURVEYOR (407) 836-7940. WITHOUT DELAY, BY TELEPHONE. THE CONTRACTOR SHALL PROVIDE WRITTEN FOLLOW UP CONFIRMATION WITHIN 48 HOURS OF TELEPHONE NOTIFICATION.
- WITHIN 21 CALENDAR DAYS AFTER NOTICE TO PROCEED, THE CONTRACTOR SHALL STAKE THE RIGHT-OF-WAY AT 50 FEET INTERVALS AND AT RIGHT-OF-WAY BREAKS WITH STATIONING SHOWN ON THE STAKES. NO INVOICE FOR PAYMENT WILL BE PROCESSED UNTIL THE RIGHT-OF-WAY HAS BEEN STAKED TO THE SATISFACTION OF THE ENGINEER. PAYMENT IS INCLUDED IN THE PRICE BID FOR ITEM NO. 101-1, "MOBILIZATION".
- EXISTING TRAFFIC SIGNS - THE CONTRACTOR SHALL RELOCATE EXISTING TRAFFIC SIGNS AS REQUIRED DURING CONSTRUCTION. SIGNS WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO THE CITY OF PORT ORANGE. THE CONTRACTOR SHALL REMOVE AND STORE EXISTING TRAFFIC SIGNS THAT ARE NOT USED DURING CONSTRUCTION. THE CONTRACTOR SHALL RE-INSTALL THE STORED SIGNS AS SHOWN ON THE SIGNING PLANS OR AS DIRECTED BY THE ENGINEER. SIGNS NOT TO BE RE-INSTALLED SHALL BE DELIVERED TO THE CITY OF PORT ORANGE'S TRAFFIC SIGN SHOP. DAMAGED SIGNS SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO THE CITY OF PORT ORANGE.
- CONTRACTOR IS TO MAINTAIN UNINTERRUPTED ACCESS TO ALL DRIVEWAYS AT ALL TIMES AND IS TO NOTIFY PROPERTY OWNERS FIVE DAYS PRIOR TO STARTING CONSTRUCTION.
- ALL PRIVATE AND PUBLIC PROPERTY AFFECTED BY THIS WORK SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THE CONDITION EXISTING. COST TO BE INCIDENTAL TO OTHER CONSTRUCTION AND NO EXTRA COMPENSATION WILL BE ALLOWED.
- ALL DRAINAGE PIPES SHALL BE REINFORCED CONCRETE PIPE, CLASS III, UNLESS OTHERWISE NOTED.
- MEASUREMENT OF DRAINAGE PIPE FOR PAYMENT SHALL BE DETERMINED FROM ACTUAL LENGTHS INSTALLED.
- ALL EXISTING DRAINAGE STRUCTURES AND PIPES WITHIN THE RIGHT-OF-WAY SHALL REMAIN, UNLESS OTHERWISE DIRECTED.
- ALL INLET/MANHOLE-PIPE JOINTS SHALL BE FILLED WITH NON-SHRINK GROUT, COVERED WITH AN ASPHALTIC MASTIC COATING, AND WRAPPED WITH A FILTER FABRIC MATERIAL PER SECTION.
- SUBSURFACE INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FOR USE IN ESTABLISHING DESIGN CRITERIA FOR THE PROJECT. THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED AND IS NOT TO BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INQUIRE OF THE ENGINEER IF ADDITIONAL INFORMATION IS AVAILABLE, TO MAKE ARRANGEMENTS TO REVIEW SAME PRIOR TO BIDDING, AND TO MAKE HIS OWN DETERMINATION AS TO ALL SUBSURFACE CONDITIONS.
- INSTALL A 2" MUCK BLANKET OR TOPSOIL TREATMENT ON ALL PERMANENT GRASS AREAS. COST TO BE INCLUDED IN ITEM 120-9.
- THE CONTRACTOR SHALL PERFORM HIS WORK IN ACCORDANCE WITH REQUIREMENTS OF FDOT DESIGN STANDARDS INDEX 102 & 103 EROSION & SEDIMENT CONTROL MEASURES INCLUDED IN THE BID PRICE FOR SECTION 104: "PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION". EXCLUDING ITEMS SPECIFIED ELSEWHERE. ENVIRONMENTAL CONTROLS SHALL BE USED AT LOCATIONS DESIGNATED IN THE PLANS AND/OR DESIGNATED BY THE ENGINEER.
- PRIOR TO BEGINNING ANY CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO THE CITY OF PORT ORANGE PUBLIC WORKS DEPARTMENT A SET OF FIELD NOTES VERIFYING THE BENCHMARK ELEVATIONS AND THE REFERENCE POINT TIES SHOWN ON THE TITLE SHEET AND PLAN AND PROFILE SHEETS, AND/OR A SET OF FIELD NOTES FOR ALL ADDITIONAL BENCHMARK AND REFERENCE POINT TIES PROPOSED TO BE USED IN CONSTRUCTING THE PROJECT WITH THEIR LOCATION, DESCRIPTION SIGNED AND SEALED BY A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA.
- ALL PAVEMENT MARKINGS TO BE PLACED BY CONTRACTOR.
- PROPOSED FLUMES, SIDEWALK CURB RAMP, AND CONNECTION TO EXISTING SIDEWALK TO BE INCLUDED IN TYPE F CONCRETE CURB & GUTTER PAY ITEM NO. 520-1-10.
- SOD SHALL BE STAKED ON ALL 1:2 SLOPES. COST TO BE INCLUDED IN SODDING PAY ITEM NUMBER 575-1-1.
- REMOVAL OF EXISTING CONCRETE DRIVEWAYS TO BE INCLUDED IN CLEARING & GRUBBING PAY ITEM NUMBER 110-1-1.
- COST OF STAKED SILT FENCE (TYPE III) TO BE INCLUDED IN PREVENTION, CONTROL, & ABATEMENT OF EROSION & 31. WATER POLLUTION PAY ITEM NUMBER 104-14.

TRAFFIC CONTROL NOTE

- ALL MAINTENANCE OF TRAFFIC ITEMS REQUIRED BY THE 600 SERIES INDICES SHALL BE SUPPLIED, INSTALLED, AND MAINTAINED TO PROPERLY MAINTAIN TRAFFIC AND DROP OFF CRITERIA IN THE WORK ZONE.

UTILITY PROVIDERS IN AREA

POWER: FLORIDA POWER & LIGHT (386) 254-2375
 GAS: PEOPLE'S GAS (407) 420-2693 EXT. 74693 / LORELYS GONZALEZ
 CABLE: BRIGHTHOUSE NETWORKS (386) 445-8804 EXT. 1308 / LARRY HENDERSON
 SANITARY SEWER: CITY OF PORT ORANGE (386) 756-5428 / ROBERT DAY
 WATER: CITY OF PORT ORANGE (386) 756-5428 / ROBERT DAY
 PHONE: SOUTHERN BELL (386) 322-0220 / LARRY FRESHKO
 WASTE MANAGEMENT: CITY OF PORT ORANGE (386) 756-5428 / ROBERT DAY

SUNSHINE STATE ONE CALL OF FLORIDA, INC.
 CALL 48 HOURS BEFORE YOU DIG
 1-800-432-4770

SUMMARY OF PAY ITEMS

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	
			PLAN	FINAL
101-1	MOBILIZATION	LS		
102-1	MAINTENANCE OF TRAFFIC	LS		
104-14	PREVENTION, CONTROL, & ABATEMENT OF EROSION & WATER POLLUTION	LS		
110-1-1	CLEARING AND GRUBBING	LS		
120-9	EXCAVATION, EMBANKMENT, AND GRADING	LS		
160-4	STABILIZATION TYPE B, 12" THICK, LBR 40	SY		
270-10	SOIL CEMENT BASE (10" THICK)	SY		
327-70-1	MILLING EXISTING ASPHALT PAVEMENT (1" AVG DEPTH)	SY		
331-2	TYPE "S" ASPHALTIC CONCRETE (MISC.)	TN		
331-72-20	TYPE-S ASPHALTIC CONCRETE (2") (INCLUDING TACK COAT)	SY		
337-5-3	ASPHALTIC CONCRETE FRICTION COURSE FC-3 (RUBBER), 1" THICK	SY		
425-1-521	INLET (DITCH BOTTOM TYPE C) (<10')	EA		
425-2-41	MANHOLE (P-7) (<10')	EA		
430-142-102	ELLIPTICAL CONCRETE PIPE CULVERT (CLASS III) (14" X 23")	LF		
430-984-402	MITERED END SECTION (CONCRETE ELLIPTICAL PIPE) (14" X 23")	EA		
520-1-10	CONCRETE CURB AND GUTTER (TYPE F)	LF		
522-1	CONCRETE SIDEWALK (4" THICK) (INCLUDING COMPACTION)	SY		
522-2	CONCRETE DRIVEWAY (6" THICK) (INCLUDING COMPACTION)	SY		
575-1-1	SODDING (INCLUDES FERTILIZER & WATER FOR SOD) (BAHIA)	SY		
700-40-1	SIGN SINGLE POST	AS		
700-46-21	RELOCATE EXISTING SIGN (SINGLE POST)	AS		
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	EA		
711-33-61	SKIP TRAFFIC STRIPE, THERMOPLASTIC (WHITE) (6")	LF		
711-34-61	SKIP TRAFFIC STRIPE, THERMOPLASTIC (YELLOW) (6")	LF		
711-35-241	SOLID TRAFFIC STRIPE, THERMOPLASTIC (WHITE) (24")	LF		
711-35-61	SOLID TRAFFIC STRIPE, THERMOPLASTIC (WHITE) (6")	LF		
711-36-181	SOLID TRAFFIC STRIPE, THERMOPLASTIC (YELLOW) (18")	LF		
711-36-61	SOLID TRAFFIC STRIPE, THERMOPLASTIC (YELLOW) (6")	LF		
711-4	DIRECTIONAL ARROW, THERMOPLASTIC	EA		

* NOTE: QUANTITIES INCREASED AS DIRECTED BY ORANGE COUNTY AND COULD BE FURTHER INCREASED AND/OR DECREASED, CONTINGENT UPON FIELD CONDITIONS DURING CONSTRUCTION.

SUMMARY OF SODDING

LOCATION	SIDE	P			F			FIELD BOOK REFERENCE
		L	W	SY	L	W	SY	
STA. TO STA.								
??+?? TO ??+??	LT	?	?	???				
TOTAL								

SUMMARY OF EARTHWORK

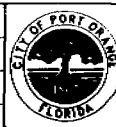
DESCRIPTION	PLAN	
	EXC.	FILL
MADELINE AVE.	?	?
TOTALS		

23171-1

DESIGN ENGINEER
 Jonathan A. Martin, P.E.
 FLORIDA REGISTRATION NUMBER
 12005

Kimley-Horn and Associates, Inc.
 2004 KIMLEY-HORN AND ASSOCIATES, INC.
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 DRAWN BY RWS
 CHECKED BY JAM



**MADELINE AVENUE
 SIDEWALK AND
 ROADWAY IMPROVEMENTS**

DATE
 01/28/04
 PROJECT NO.
 049204002

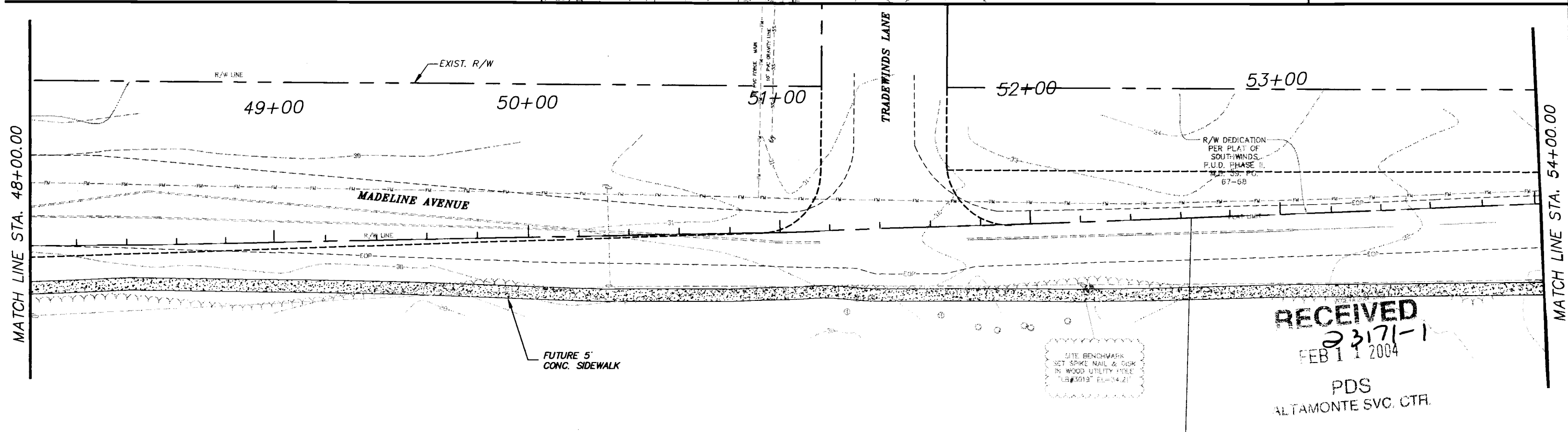
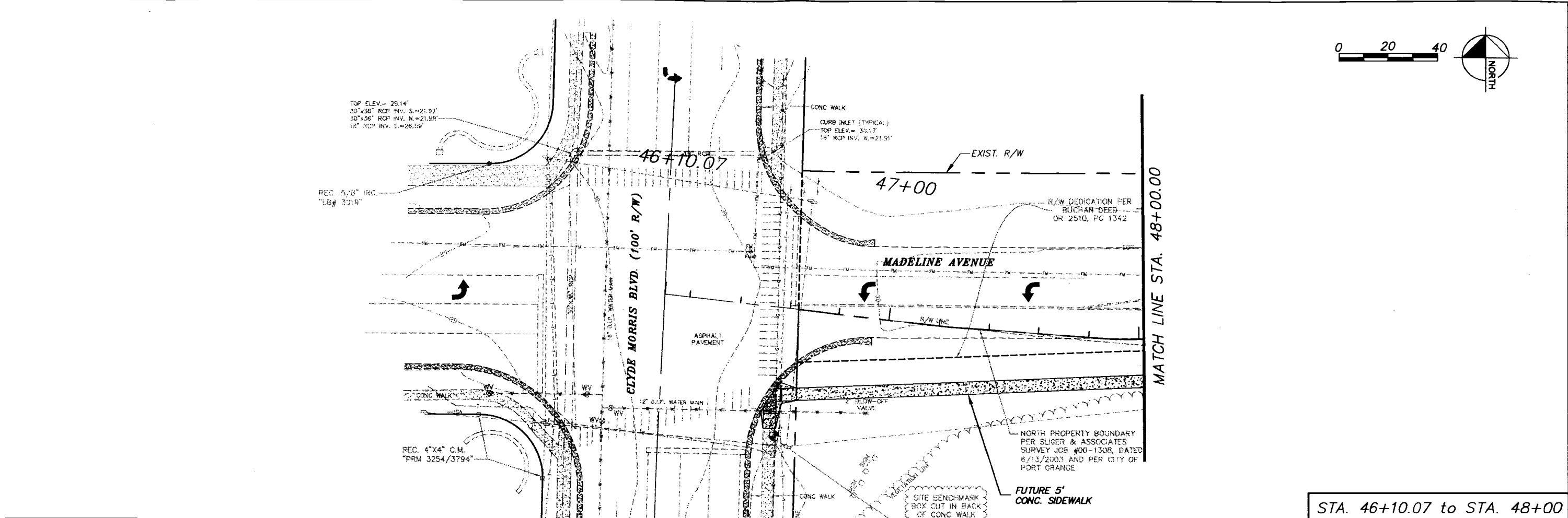
**GENERAL NOTES &
 SUMMARY OF QUANTITIES**

SHEET NUMBER

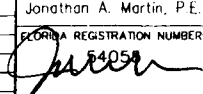

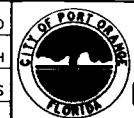
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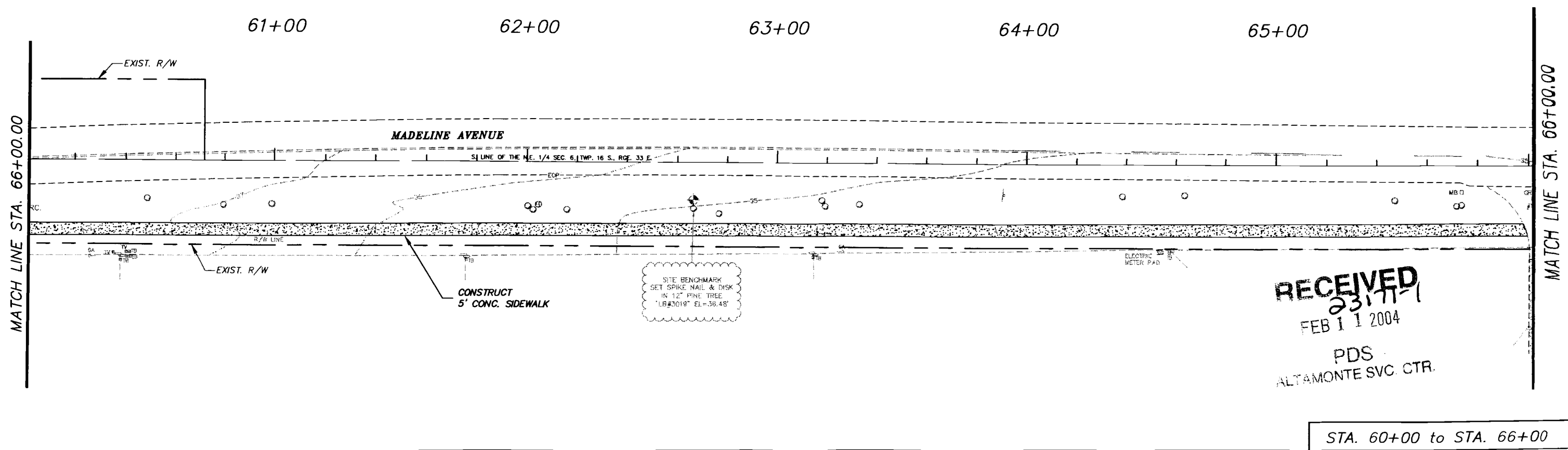
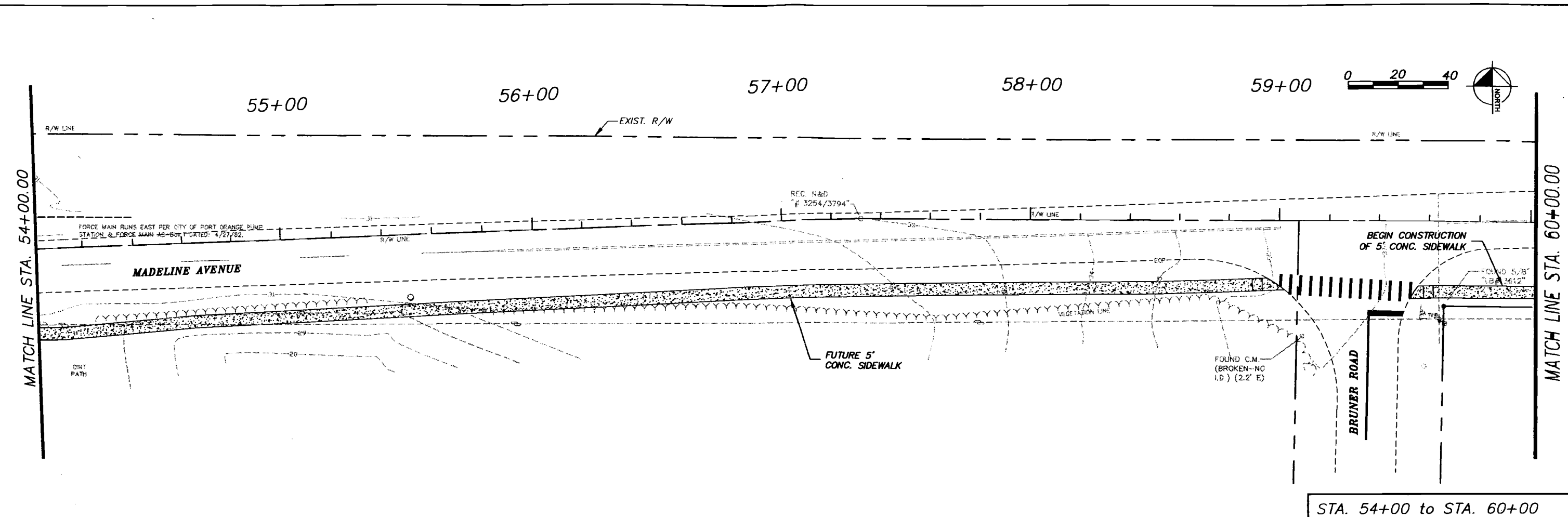


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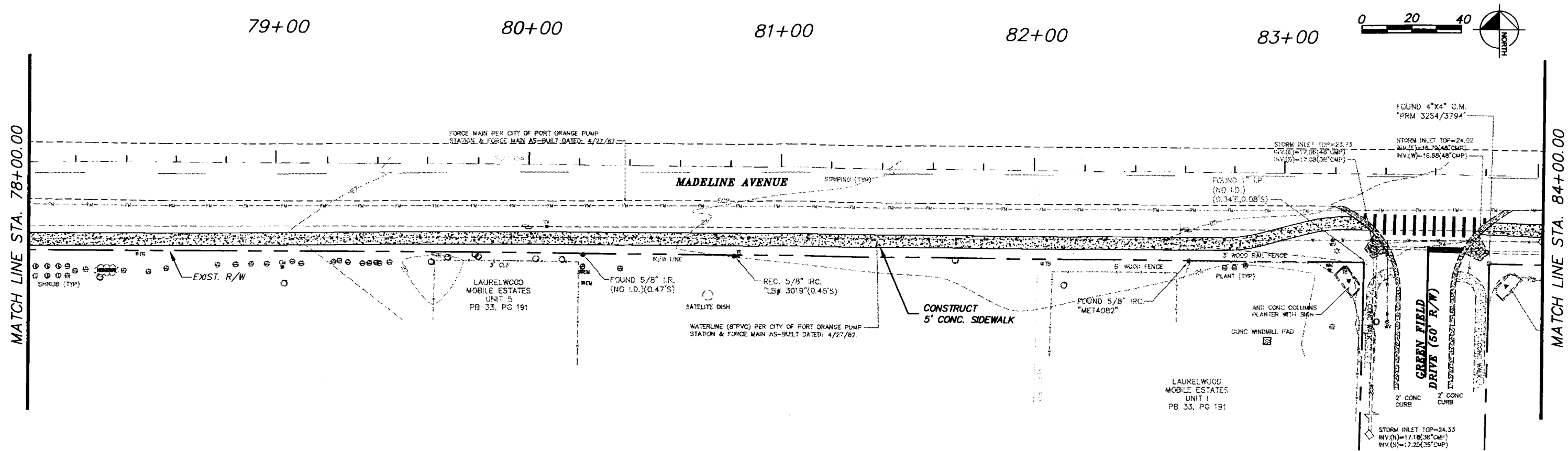
DESIGN ENGINEER: Jonathan A. Martin, P.E. 				 Kimley-Horn and Associates, Inc. 3660 MAGUIRE BLVD., SUITE 200, ORLANDO, FL 32803 PHONE (407) 898-1511 FAX (407) 894-4791 WWW.KIMLEY-HORN.COM CA 00000696		SCALE AS NOTED DESIGNED BY MRH DRAWN BY RWS CHECKED BY JAM		 MADELINE AVENUE SIDEWALK AND ROADWAY IMPROVEMENTS		DATE 01/28/04 PROJECT NO. 049204002	STA. 46+10.07 to STA. 48+00.00 STA. 48+00 to STA. 54+00.00	SHEET NUMBER 5 of 5
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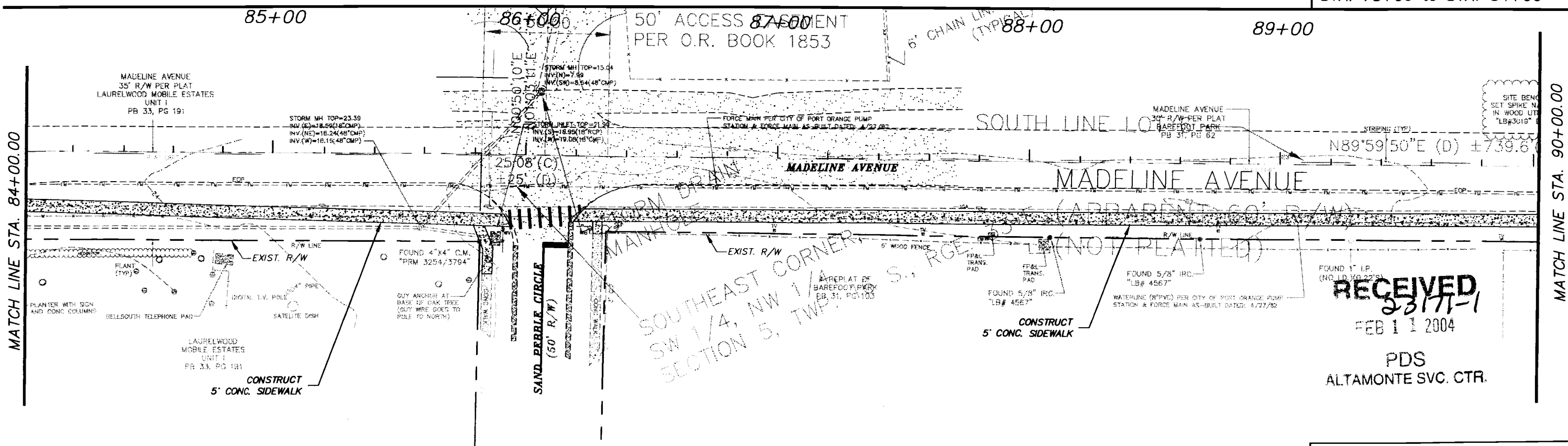
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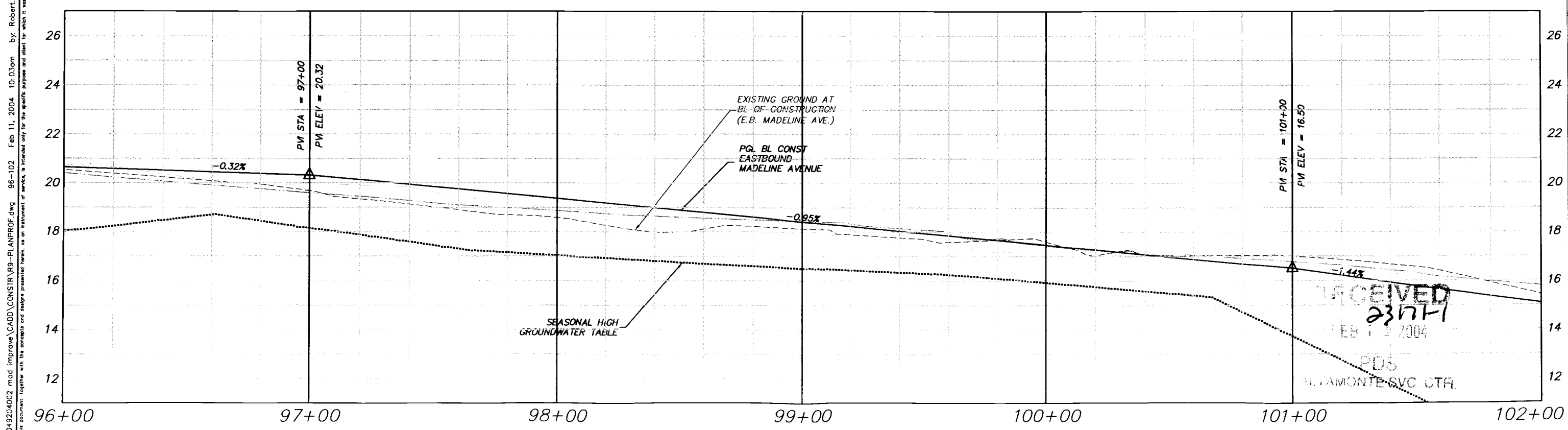
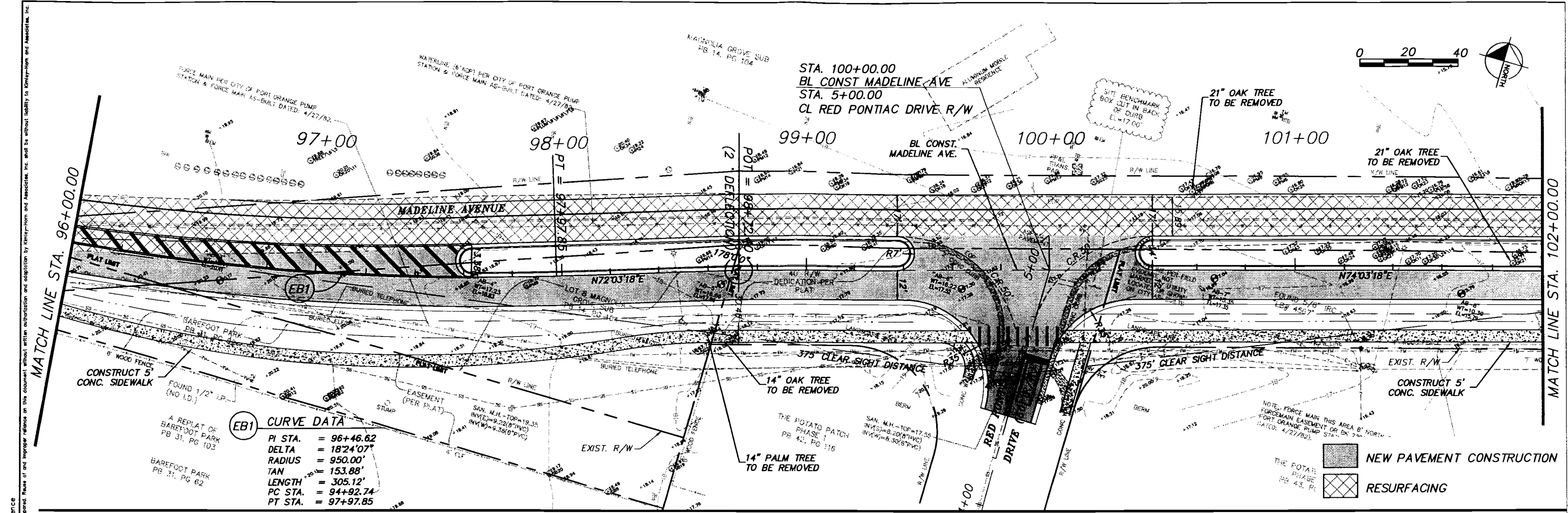


STA. 78+00 to STA. 84+00

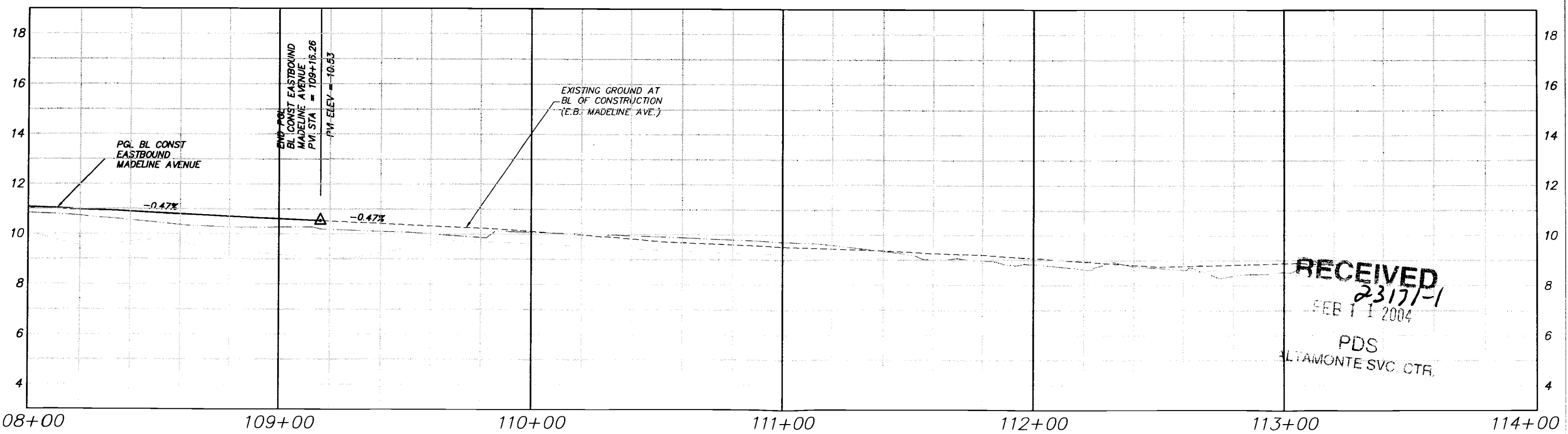
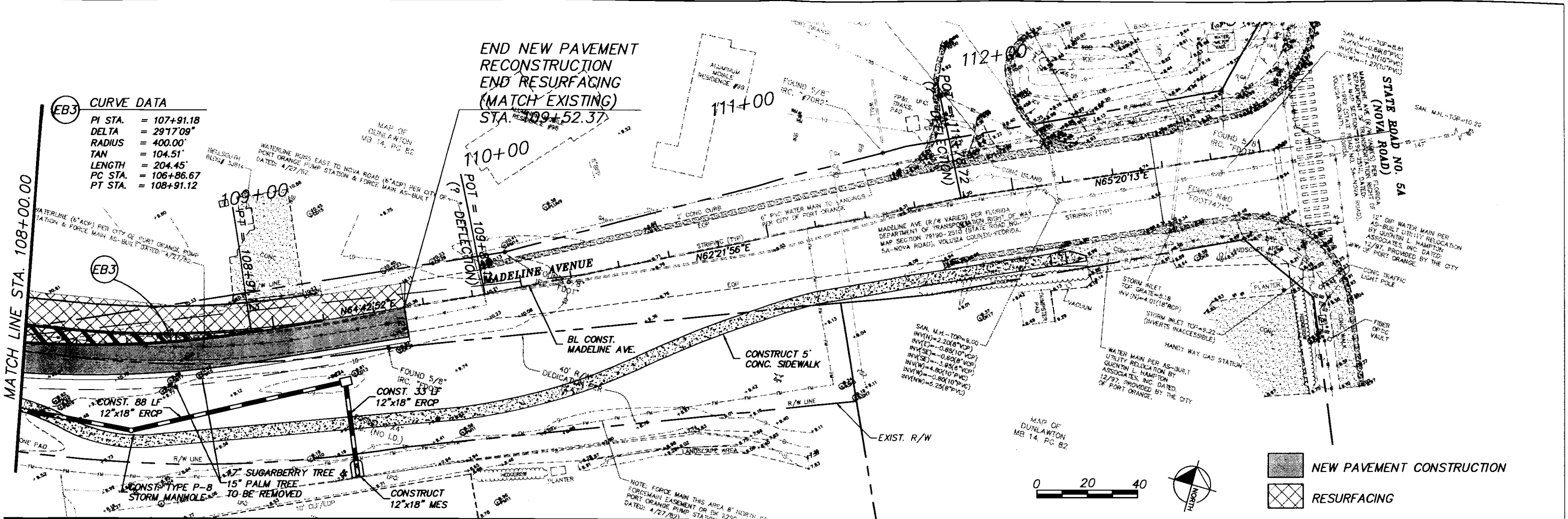


STA. 84+00 to STA. 90+00

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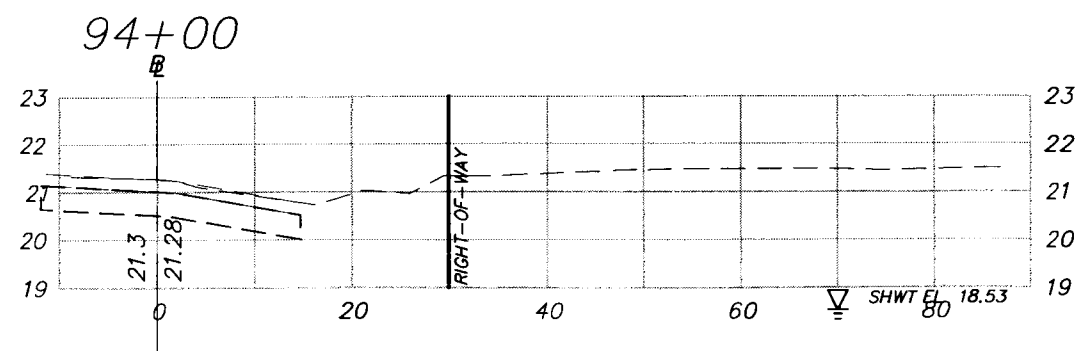
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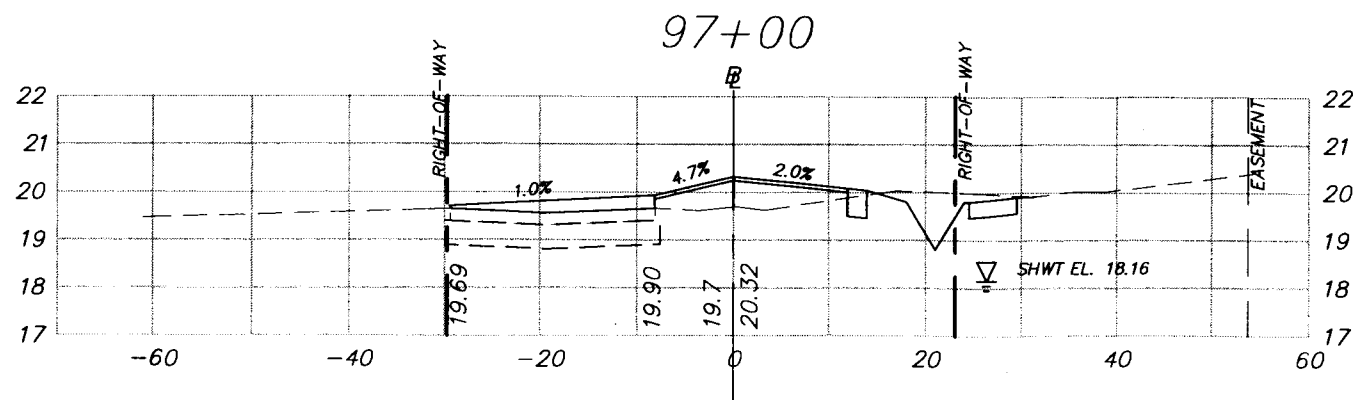
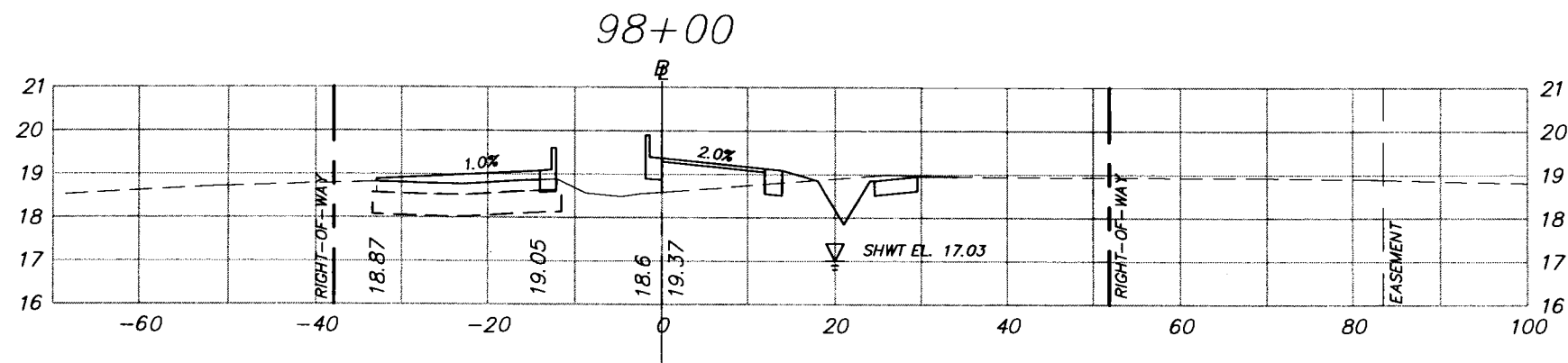
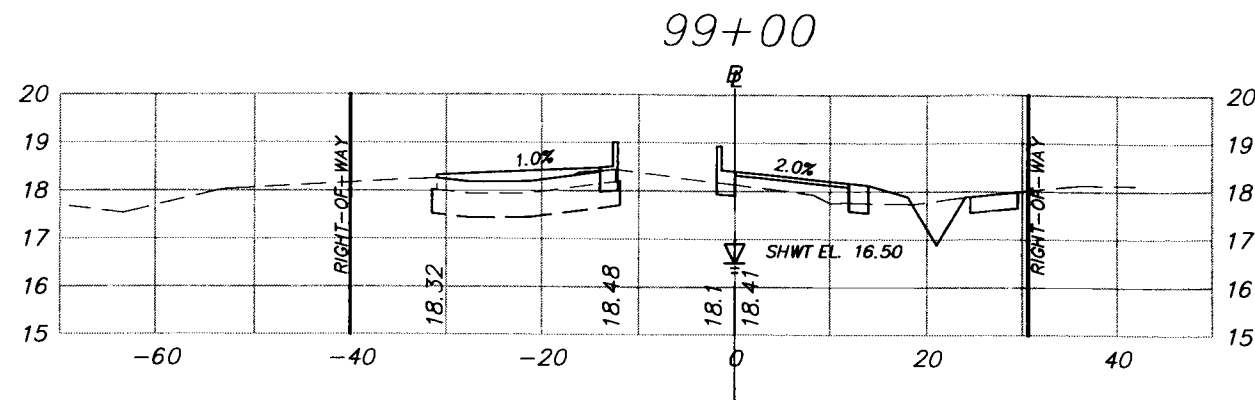
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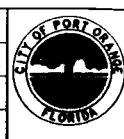
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ALTAMONTE SVC. CTR.

DESIGN ENGINEER:
Jonathan A. Martin, P.E.
FLORIDA REGISTRATION NUMBER:
54055

 **Kimley-Horn
and Associates, Inc.**
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3660 MAQUETTE BLVD., SUITE 200, ORLANDO, FL 32803
PHONE (407) 898-1511 FAX (407) 894-4791
WWW.KIMLEY-HORN.COM CA 00000896

SCALE AS NOTED
DESIGNED BY MRH
DRAWN BY RWS
CHECKED BY JAM



**MADLINE AVENUE
SIDEWALK AND
ROADWAY IMPROVEMENTS**

DATE
01/28/04
PROJECT NO.
049204002

**ROADWAY
CROSS SECTIONS
(STA. 97+00 to STA. 99+00)**

SHEET NUMBER
14 of 14

APPENDIX E

FDOT APPROVED INFLATION FACTORS



Inflation Factors

This “*Transportation Costs*” report is one of a series of reports issued by the Office of Policy Planning. It provides information on inflation factors and other indices that may be used to convert Present Day Costs (PDC) to Year Of Expenditure costs (YOE) or vice versa. This report is updated annually when the factors are posted within the FDOT Work Program Instructions.

Please note that the methodology for Inflationary adjustments relating to specific transportation projects should be addressed with the district office where the project will be located. For general use or non-specific areas, the guidelines provided herein may be used for inflationary adjustments.

Construction Cost Inflation Factors

The table on the next page includes the inflation factors and present day cost (PDC) multipliers that are applied to the Department’s Work Program for highway construction costs expressed in Fiscal Year 2017 dollars.

Other Transportation Cost Inflation Factors

Other indices may be used to adjust project costs for other transportation modes or non-construction components of costs. Examples are as follows:

The Consumer Price Index (CPI, also retail price index) is a weighted average of prices of a specified set of products and services purchased by wage earners in urban areas. As such, it provides one measure of inflation. The CPI is a fixed quantity price index and a reasonable cost-of-living index.

The Employment Cost Index (ECI) is based on the National Compensation Survey. It measures quarterly changes in compensation costs, which include wages, salaries, and other employer costs for civilian workers (nonfarm private industry and state and local government).

The monthly series, Producer Price Index for Other Non-residential Construction, is available from the Bureau of Labor Statistics (BLS). It is not exclusively a highway construction index, but it is the best available national estimate of changes in highway costs from month to month.



FLORIDA DEPARTMENT OF TRANSPORTATION

TRANSPORTATION COSTS REPORTS

Work Program Highway Construction Cost Inflation Factors

Fiscal Year	Inflation Factor	PDC Multiplier
2017	Base	1.000
2018	2.7%	1.027
2019	2.8%	1.056
2020	2.6%	1.083
2021	2.5%	1.110
2022	2.7%	1.140
2023	2.8%	1.172
2024	2.9%	1.206
2025	3.0%	1.242
2026	3.1%	1.281
2027	3.2%	1.322
2028	3.3%	1.365
2029	3.3%	1.410
2030	3.3%	1.457
2031	3.3%	1.505
2032	3.3%	1.555
2033	3.3%	1.606
2034	3.3%	1.659
2035	3.3%	1.714
2036	3.3%	1.770
2037	3.3%	1.829
Source: Office of Work Program and Budget, (Fiscal Year 2017 is July 1, 2016 to June 30, 2017)		

Advisory Inflation Factors For Previous Years

Another “*Transportation Costs*” report covers highway construction cost inflation for previous years. “*Advisory Inflation Factors For Previous Years (1987-2015)*” provides Present Day Cost (PDC) multipliers that enable project cost estimates from previous years to be updated to FY 2015. This report is updated about once a year. For the table and text providing this information, please go to <http://www.dot.state.fl.us/planning/policy/costs/RetroCostInflation.pdf>.

APPENDIX F

RECORD PLATS AND LAND RECORDS

BAREFOOT PARK MOBILE HOME SUBDIVISION

LEGAL DESCRIPTION
THE NE 1/4 OF SW 1/4 OF SECTION 5, TOWNSHIP 16 SOUTH,
RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA.

ENVIROM MOBILE HOME PARK

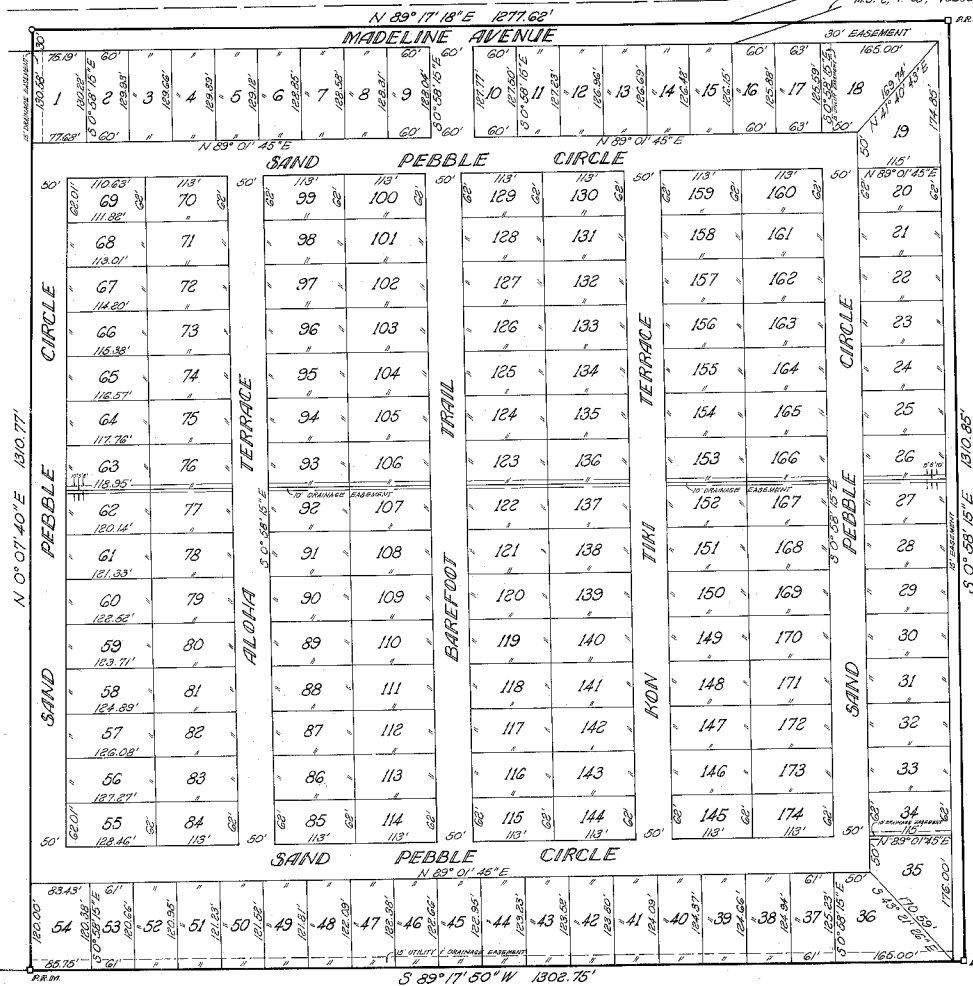
30' R/W AS PER MAP OF MAGNOLIA GROVE,
M.B. 2, P. 23, VOLUSIA COUNTY, FLORIDA.

SCALE: 1"=100'

UNPLATTED

UNPLATTED

6
7



NOTE:
5' DRAINAGE AND UTILITY EASEMENTS ARE HEREBY PROVIDED
ALONG THE REAR AND SIDE LOT LINES OF ALL LOTS SHOWN,
(10' OVERALL WITH AN ADJACENT LOT.)

PLAT BOOK 31
AND PAGE 82

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, That the Corporation named below, being the owner in fee simple of the lands described in the foregoing caption to this plat, hereby dedicates said lands and plat for the uses and purposes therein expressed and dedicates the Streets, alleys, thoroughfares, parks, canals and drainage easements shown hereon to the perpetual use of the public, and
IN WITNESS WHEREOF, has caused these presents to be signed and attested to by the officers named below and its corporate seal to be affixed hereto on Sept. 22, 1971
By C. D. Lowery President
Attest: George C. Sowa, Sec Secretary, Inc.

Signed and sealed in the presence of:
Martha G. Linder CORPORATE
Charles R. Byrdell SEAL
Richard R. Shubert

STATE OF FLORIDA COUNTY OF Volusia
THIS IS TO CERTIFY, That on Sept. 22, 1971
before me, an officer duly authorized to take acknowledgments in the State and County aforesaid, personally appeared C. D. Lowery and George C. Sowa President and Secretary, respectively of the above named corporation incorporated under the laws of the State of FLORIDA, to me known to be the individuals and officers designated in and who executed the foregoing Dedication and severally acknowledged the execution thereof to be their free act and deed as such officers thereunto duly authorized; that the official seal of said corporation is duly affixed thereto; and that the said Dedication is the act and deed of said corporation.
IN WITNESS WHEREOF, I have hereto set my hand and seal on the above date.

Virginia M. Long
NOTARY PUBLIC
My Commission Expires Sept 2, 1974 SEAL

CERTIFICATE OF SURVEYOR

KNOW ALL MEN BY THESE PRESENTS, That the undersigned, being a licensed and registered land surveyor, does hereby certify that on Sept. 2, 1971 he completed the survey of the lands as shown in the foregoing plat, that said plat is a correct representation of the lands therein described and platting; that permanent reference monuments have been placed as shown thereon as required by Chapter 177, Florida Statutes; and that said land is located in Volusia County, Florida. Dated Sept. 14, 1971
C. H. Phillips
Cert #4487

CERTIFICATE OF APPROVAL
BY ZONING BOARD

THIS IS TO CERTIFY, That on Sept. 22, 1971 the Zoning Board of the City of Port Orange approved the foregoing plat.
Janet A. Campbell Zoning Board Chairman

CERTIFICATE OF APPROVAL

THIS IS TO CERTIFY, That on Sept. 22, 1971 this plat was approved. By A. J. DeLeon City Engineer
THIS IS TO CERTIFY, That on SEPT 22, 1971 this plat was approved. By E. K. DeLeon City Attorney

CERTIFICATE OF APPROVAL BY
CITY COMMISSIONERS

THIS IS TO CERTIFY, That on Sept. 22, 1971 the foregoing plat was approved by the City Commissioners of Port Orange, Florida.
R. T. Sansbury Mayor

Attest:
Carl L. Hanley City Manager

CERTIFICATE OF CLERK

I HEREBY CERTIFY, That I have examined the foregoing plat and find that it complies in form with all the requirements of Chapter 177, Florida Statutes, and was filed for record on 11-1-71 at 2:19 PM, File No. 1971-11-1
W. M. M. M.
Clerk of the Circuit Court
in and for Volusia County, Fla.

A REPLAT OF:

LOTS 1 THRU 17, INCLUDING BAREFOOT TRAIL BETWEEN
MADELINE AVENUE AND SAND PEBBLE CIRCLE

ALL IN

BAREFOOT PARK MOBILE HOME SUBDIVISION

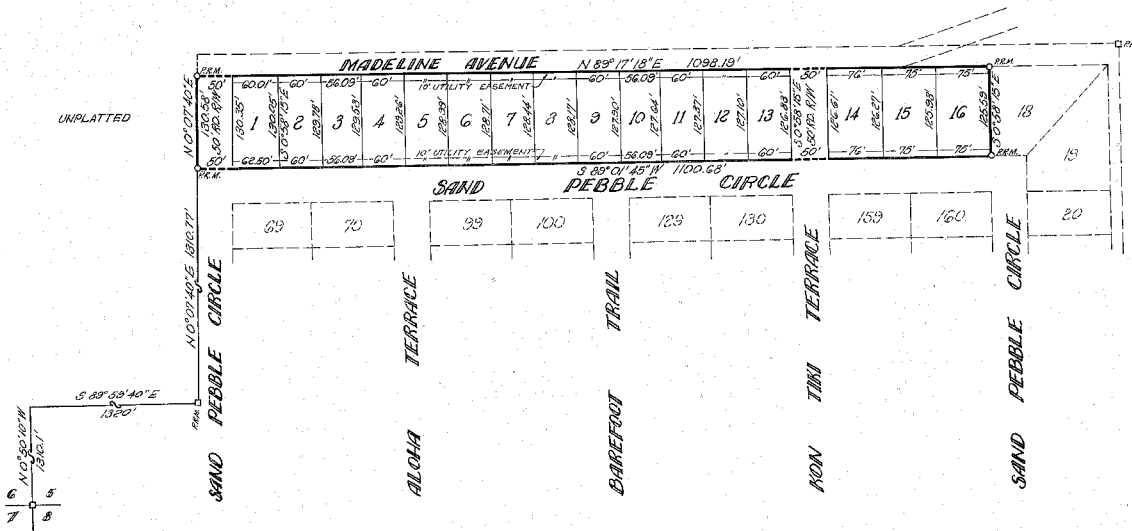
BEING THE NE 1/4 OF SW 1/4 OF SECTION 5, TOWNSHIP 16 SOUTH,
RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA, M.B. 31, P. 62.

MADELINE AVENUE
N 89° 17' 18" E 1098.18'

SCALE: 1"=100'

UNPLATTED

UNPLATTED



NOTE:
5' DRAINAGE AND UTILITY EASEMENTS ARE HEREBY PROVIDED
ALONG THE REAR AND SIDE LOT LINES OF ALL LOTS SHOWN.
(10' OVERALL WITH AN ADJACENT LOT)

PLAT BOOK AND PAGE

DEDICATION

52074

KNOW ALL MEN BY THESE PRESENTS, That the Corporation named below, being the owner in fee simple of the lands described in the foregoing caption to this plat, hereby dedicates said lands and plat for the uses and purposes therein expressed and dedicates the Streets, alleys, thoroughfares, parks, canals and drainage easements shown hereon to the perpetual use of the public, and
IN WITNESS WHEREOF, has caused these presents to be signed and attested to by the officers named below and its corporate seal to be affixed hereto on January 10, 1972
By Gary C. Davis President

Signed and sealed in the presence of:

Jerry R. Williams
Brenda Lawson
Bill D. Carter

CORPORATE
SEAL

STATE OF Georgia COUNTY OF Henry
THIS IS TO CERTIFY, That on January 10, 1972
before me, an officer duly authorized to take acknowledgments in the State and County aforesaid, personally appeared Gary C. Davis and Jerry R. Williams respectively of the above named corporation incorporated under the laws of the State of Georgia to me known to be the individuals and officers described in and who executed the foregoing Dedication and severally acknowledged the execution thereof to be their free act and deed as such officers thereunto duly authorized; that the official seal of said corporation is duly affixed thereto; and that the said Dedication is the act and deed of said corporation.
IN WITNESS WHEREOF, I have hereto set my hand and seal on the above date.

Mary H. Hester
NOTARY PUBLIC

My Commission Expires Aug. 2, 1972

SEAL

CERTIFICATE OF SURVEYOR

KNOW ALL MEN BY THESE PRESENTS, That the undersigned, being a licensed and registered land surveyor, does hereby certify that on Nov. 4, 1971 he completed the survey of the lands as shown in the foregoing plat, that said plat is a correct representation of the lands therein described and platted; that permanent reference monuments have been placed as shown thereon as required by Chapter 177, Florida Statutes; and that said land is located in Volusia County, Florida, Dated Nov. 11, 1971
E. D. Phillips Cert. No. 497

CERTIFICATE OF APPROVAL BY ZONING BOARD

THIS IS TO CERTIFY, That on JAN. 19, 1972 the Zoning Board of the City of Port Orange approved the foregoing plat.
Keshel E. Cator Zoning Board Chairman

CERTIFICATE OF APPROVAL

THIS IS TO CERTIFY, That on JAN. 19, 1972 this plat was approved. By L. J. Williams Jr. City Engineer

THIS IS TO CERTIFY, That on JAN. 19, 1972 this plat was approved. By E. W. Anderson City Attorney

CERTIFICATE OF APPROVAL BY CITY COMMISSIONERS

THIS IS TO CERTIFY, That on JAN-25, 1972 the foregoing plat was approved by the City Commissioners of Port Orange, Florida.

Attest: Mayor
City Manager

CERTIFICATE OF CLERK

I HEREBY CERTIFY, That I have examined the foregoing plat and find that it complies in form with all the requirements of Chapter 177, Florida Statutes, and was filed for record on
at . File No.

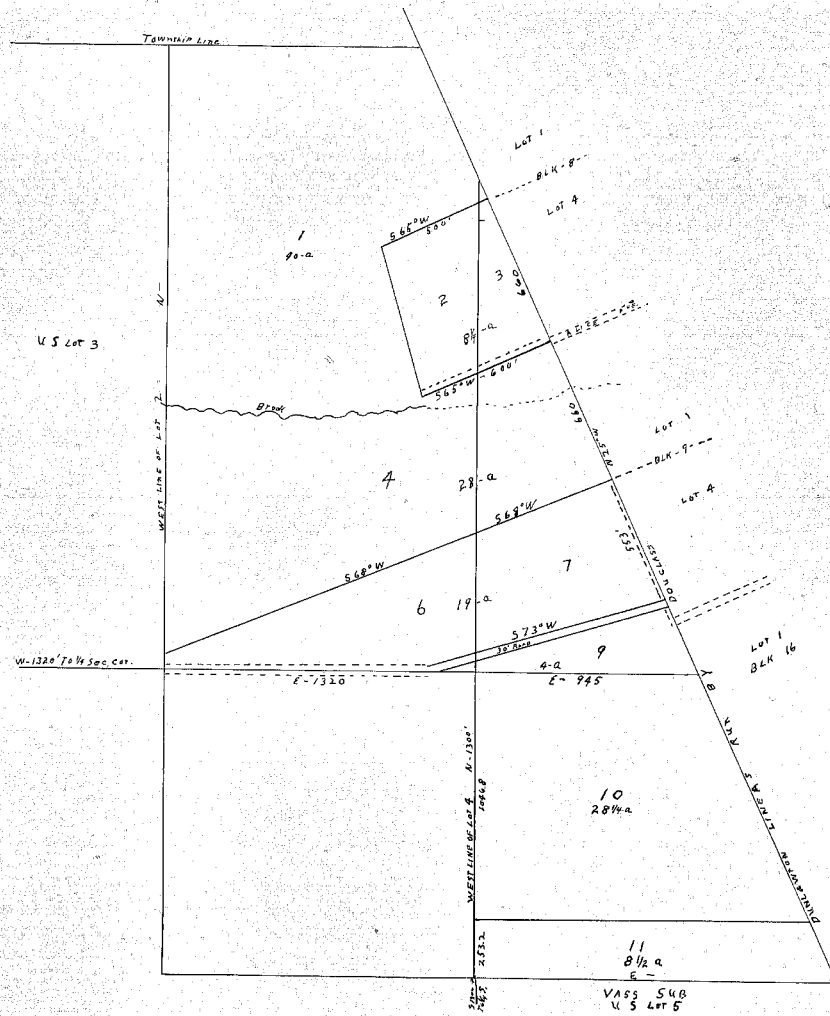
Clerk of the Circuit Court
in and for Volusia County, Fla.

14 - 104

14-104

MAP of
MAGNOLIA GROVE
Subdivision of
Lots 1, 2 and 4
Sec. 5, Twp 16 S Range 33 E
Volusia County
Florida

Scale 300' = 1 inch By S.B. Wilson
Nov. 9, 1895.



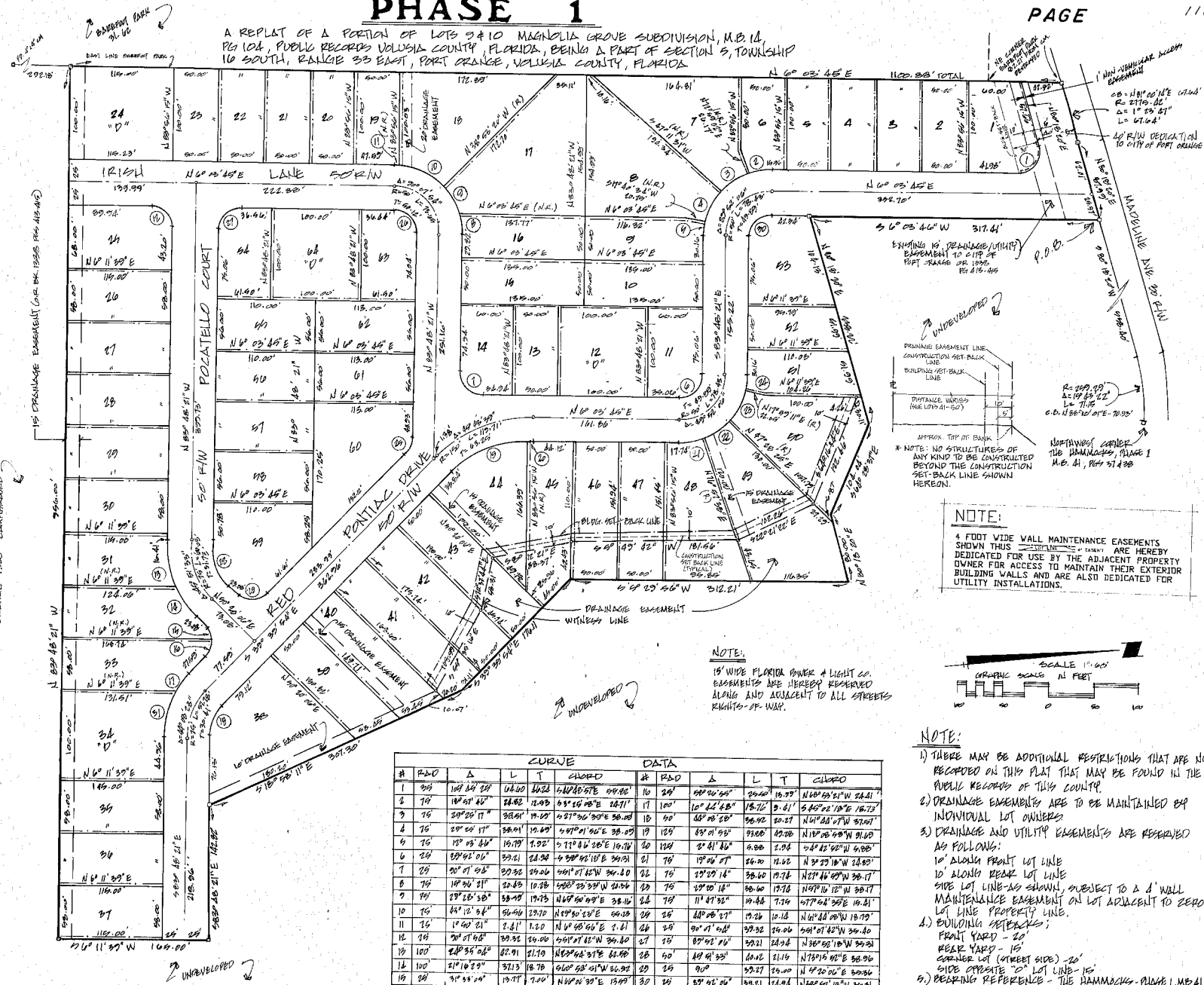
Scale - 300 ft to an inch

A True Copy of Map
in Map Book 2, Page 69
I. Waller Hawkins
Clerk Circuit Court
By M.R. Underhill
deputy

THE POTATO PATCH PHASE 1

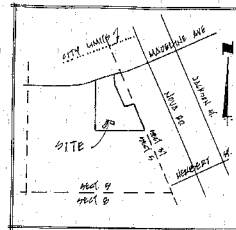
PLAT BOOK 42
PAGE 116

A REPLAT OF A PORTION OF LOTS 9 & 10 MAGNOLIA GROVE SUBDIVISION, M.B. 14, PG. 104, PUBLIC RECORDS VOLusia COUNTY, FLORIDA, BEING A PART OF SECTION 5, TOWNSHIP 10 SOUTH, RANGE 33 EAST, PORT ORANGE, VOLusia COUNTY, FLORIDA



THE POTATO PATCH PHASE 2

A REPLAT OF A PORTION OF LOTS 9 & 10, MAGNOLIA GROVE SUBDIVISION
AS PER MAP BOOK 14, PAGE 104, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA,
BEING A PART OF SECTION 5, TOWNSHIP 16 SOUTH, RANGE 33 EAST,
PORT ORANGE, VOLUSIA COUNTY, FLORIDA



VICINITY MAP
N19

FILED FOR RECORD
RECORD VERIFIED

000001

FILED FOR RECORD
RECORD VERIFIED

90 JAN -3 AM 8:22

PLAT BOOK
PAGE

43
37

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, THAT BACKWOODS, INC., A FLORIDA CORPORATION, BEING THE OWNER IN FEE SIMPLE OF THE LANDS DESCRIBED IN THE ATTACHED PLAT ENTITLED THE POTATO PATCH PHASE 2, LOCATED IN THE CITY OF PORT ORANGE, FLORIDA, DO HEREBY DEDICATE THE EASEMENTS SHOWN HEREON AND THE STREETS AND RIGHTS OF WAY TO THE CITY OF PORT ORANGE, FLORIDA, IN WITNESS WHEREOF, BACKWOODS, INC. HAS CAUSED THESE PRESENTS TO BE EXECUTED IN THEIR NAME, AND THEIR CORPORATE SEAL TO BE AFFIXED BY THE OFFICERS DULY AUTHORIZED ON THIS 19th DAY OF September 1989.

BACKWOODS, INC.

BY: *George C. Scott*
Ed. Grant

ATTEST: *Jim C. Scott*
James C. Scott

SIGNED, SEALED AND DELIVERED IN THE PRESENCE OF:

James C. Scott
James C. Scott

STATE OF FLORIDA, COUNTY OF VOLUSIA

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS 19th DAY OF September 1989, BY GEORGE C. SCOTT, PRESIDENT OF THE ABOVE NAMED CORPORATION, ON BEHALF OF THE CORPORATION.

James C. Scott
NOTARY PUBLIC
MY COMMISSION EXPIRES March 23, 1992

DEDICATION: (CONTINUED)

KNOW ALL MEN BY THESE PRESENTS, THAT BACKWOODS, INC., A FLORIDA CORPORATION, BEING THE OWNER IN FEE SIMPLE OF THE LANDS DESCRIBED IN THE ATTACHED PLAT ENTITLED THE POTATO PATCH PHASE 2, LOCATED IN THE CITY OF PORT ORANGE, FLORIDA, DO HEREBY DEDICATE PARCELS A, B AND C SHOWN ON THE PLAT TO THE HAMMOCKS LTD., A GEORGIA PARTNERSHIP, IN WITNESS WHEREOF, BACKWOODS, INC. HAS CAUSED THESE PRESENTS TO BE EXECUTED IN THEIR NAME, AND THEIR CORPORATE SEAL TO BE AFFIXED BY THE OFFICERS DULY AUTHORIZED ON THIS 19th DAY OF DECEMBER, 1989.

BACKWOODS, INC.

BY: *George C. Scott*
Ed. Grant

ATTEST: *James C. Scott*

SIGNED, SEALED AND DELIVERED IN THE PRESENCE OF:

James C. Scott
James C. Scott

STATE OF FLORIDA, COUNTY OF VOLUSIA

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS 19th DAY OF DECEMBER, 1989, BY GEORGE C. SCOTT, PRESIDENT OF THE ABOVE NAMED CORPORATION, ON BEHALF OF THE CORPORATION.

James C. Scott
NOTARY PUBLIC
MY COMMISSION EXPIRES March 23, 1992

JOINER AND CONSENT TO DEDICATION

INCORPORATED UNDER THE LAWS OF THE UNITED STATES OF AMERICA
COMMERCIAL NATIONAL BANK
I HEREBY CERTIFY THAT I AM THE HODLER OF A MORTGAGE LEND OR OTHER ENCUMBRANCE ON THE PROPERTY SHOWN AND DESCRIBED IN THE ATTACHED PLAT ENTITLED THE POTATO PATCH PHASE 2, LOCATED IN PORT ORANGE, VOLUSIA COUNTY, FLORIDA, AND HEREBY JOIN IN AND CONSENT TO THE DEDICATION SHOWN ON THE ATTACHED PLAT OF THE LANDS THEREIN AND DESCRIBED BY THE OWNER THEREOF, AND AGREE THAT ITS MORTGAGE, LEND OR OTHER ENCUMBRANCE WHICH IS RECORDED IN OFFICIAL RECORDS BOOK 17, PAGE 1432, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, IS SUBORDINATED TO THE DEDICATION. IN WITNESS WHEREOF, I HAVE SIGNED IN ITS CORPORATE NAME, ITS PRESIDENT, AND ITS CORPORATE SEAL TO BE AFFIXED BY THE OFFICERS DULY AUTHORIZED ON THIS 19th DAY OF September 1989.

Raymond A. Thomas
Raymond A. Thomas

ATTEST: *Dennis E. B.*
Dennis E. B.

SIGNED AND SEALED IN THE PRESENCE OF:
Charles L. Collins AND *Amelia E. Carstee*

STATE OF FLORIDA, COUNTY OF VOLUSIA

I HEREBY CERTIFY THAT ON September 19, 1989, BEFORE ME AN OFFICER DULY AUTHORIZED IN THE STATE AND COUNTY FOREGOING THIS TAKE ACKNOWLEDGEMENTS, PERSONALLY APPEARED *Raymond A. Thomas* AND *Dennis E. B.* AND THAT THEY ARE THE PERSONS DESCRIBED IN AND WHO EXECUTED THE FOREGOING JOINER AND CONSENT TO DEDICATION AND SEVERALLY ACKNOWLEDGED THE EXECUTION THEREOF TO BE THEIR FREE ACT AND DEED FOR THE USES AND PURPOSES THEREIN EXPRESSED.

WITNESS MY HAND AND SEAL IN THE STATE AND COUNTY FOREGOING THIS 19th DAY OF September 1989.
Amelia E. Carstee
NOTARY PUBLIC
MY COMMISSION EXPIRES 1-13-92 SHEET 1 OF 2

LEGAL DESCRIPTION:

A PORTION OF LOTS 9 & 10 MAGNOLIA GROVE SUBDIVISION AS RECORDED IN MAP BOOK 14, PAGE 104, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS;

AS A POINT OF BEGINNING COMMENCE AT THE NORTHWEST CORNER OF "THE HAMMOCKS" PHASE 1" AS RECORDED IN MAP BOOK 41, PAGES 37 AND 38, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, THENCE ALONG THE WEST LINE OF "THE HAMMOCKS" PHASE 1" S10°29'40"W A DISTANCE OF 167.56 FEET; THENCE S16°28'43"E A DISTANCE OF 589.68 FEET; THENCE N70°51'29"E A DISTANCE OF 184.90 FEET; THENCE S17°40'40"E A DISTANCE OF 341.64 FEET; THENCE DEPARTING THE WEST LINE OF "THE HAMMOCKS" PHASE 1" S18°58'11"E A DISTANCE OF 314.95 FEET; THENCE S14°22'47"E A DISTANCE OF 67.11'; THENCE N87°48'21"W A DISTANCE OF 487.02 FEET; THENCE N6°11'39"E A DISTANCE OF 245.00 FEET; THENCE N83°48'21"W A DISTANCE OF 142.82 FEET; THENCE N18°58'11"W A DISTANCE OF 307.30 FEET; THENCE N39°39'54"W A DISTANCE OF 174.11 FEET; THENCE N87°29'56"E A DISTANCE OF 312.21 FEET; THENCE S60°18'20"W A DISTANCE OF 80.00 FEET; THENCE N64°28'57"W A DISTANCE OF 104.04 FEET; THENCE S80°18'20"W A DISTANCE OF 238.22 FEET; THENCE N6°03'46"E A DISTANCE OF 317.41 FEET TO A POINT ON THE SOUTH LINE OF MADELINE AVE. (A 30' R/W AS ESTABLISHED); THENCE N80°18'20"E ALONG THE SOUTH LINE OF MADELINE AVE. A DISTANCE OF 538.40 FEET TO A POINT OF CURVATURE; THENCE CONTINUE ALONG THE SOUTH LINE OF MADELINE AVE. ALONG A CURVE CONCAVE SOUTHERLY HAVING A RADIUS OF 259.29 FEET AND THROUGH A CENTRAL ANGLE OF 15°43'20" A DISTANCE OF 71.13 FEET TO THE POINT OF BEGINNING.

CONTAINING 14.84 ACRES MORE OR LESS.

NOTES:

- 1) THERE MAY BE OTHER RESTRICTIONS THAT ARE NOT SHOWN ON THIS PLAT THAT MAY BE FOUND IN PUBLIC RECORDS OF THIS COUNTY.
- 2) DRAINAGE EASEMENTS ARE TO BE MAINTAINED BY INDIVIDUAL LOT OWNERS.
- 3) DRAINAGE AND UTILITY EASEMENTS INCLUDING F.P.L. ARE RESERVED AS FOLLOWS:
15' ALONG FRONT LOT LINES
10' ALONG REAR LOT LINES
SIDE LOT LINE - AS SHOWN SUBJECT TO A 4' WALL MAINTENANCE EASEMENT ON LOT ADJACENT TO ZERO LOT LINE PROPERTY LINE.
- 4) BUILDING SETBACKS:
FRONT YARD - 20'
REAR YARD - 15'
CORNER LOT (STREET SIDE) - 20'
SIDE OPPOSITE 10' LOT LINE - 15'
- 5) BEARING REFERENCE "THE HAMMOCKS" - PHASE 1, M.B. 41, PAGES 37 & 38.
○ - INDICATES PERMANENT REFERENCE MONUMENT
⊙ - INDICATES PERMANENT CONTROL POINT.

NOTE:

4 FOOT WIDE WALL MAINTENANCE EASEMENTS SHOWN THUS *(diagram of easement)* ARE HEREBY DEDICATED FOR USE BY THE ADJACENT PROPERTY OWNER FOR ACCESS TO MAINTAIN THEIR EXTERIOR BUILDING WALLS AND ARE ALSO DEDICATED FOR UTILITY INSTALLATIONS.

CERTIFICATE OF APPROVAL

THIS IS TO CERTIFY THAT ON December 22, 1989, THIS PLAT WAS APPROVED.

John H. Tamm
CITY ENGINEER

CERTIFICATE OF APPROVAL BY THE PLANNING COMMISSION

THE PORT ORANGE PLANNING COMMISSION HEREBY APPROVED THE FINAL PLAT FOR THE POTATO PATCH PHASE 2, ON November 22, 1989.

George McManus
CHAIRMAN, PORT ORANGE PLANNING COMMISSION

CERTIFICATE OF APPROVAL BY THE CITY COUNCIL

THIS IS TO CERTIFY THAT ON December 20, 1989, THE FOREGOING PLAT WAS APPROVED BY THE CITY OF PORT ORANGE, FLORIDA.

VIC MAYOR: *Samuel H. Parker*
ATTEST: *Manning J. Santana*
CITY CLERK

CERTIFICATE OF CLERK

I HEREBY CERTIFY THAT I HAVE EXAMINED THE FOREGOING PLAT AND FIND THAT IT COMPLIES IN FORM WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES, AND WAS FILED FOR RECORD ON 1-3-92.

Don A. Coffey, D.C.
CLERK OF THE CIRCUIT COURT IN AND FOR VOLUSIA COUNTY, FLORIDA

CERTIFICATE OF SURVEYOR

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED, BEING A LICENSED AND REGISTERED LAND SURVEYOR IN THE STATE OF FLORIDA, HEREBY CERTIFY THAT ON 12-22-89, I HAVE EXAMINED THE FOREGOING PLAT, COMPLETED THE SURVEY OF THE LANDS AS SHOWN ON THE FOREGOING PLAT, THAT SAID PLAT IS A CORRECT REPRESENTATION OF THE LANDS THEREIN DESCRIBED AND PLATTED, AND THAT THE SURVEY WAS MADE UNDER MY RESPONSIBLE DIRECTION AND SUPERVISION, THAT THE SURVEY DATA COMPLIES WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES, AND THAT PERMANENT REFERENCE MONUMENTS HAVE BEEN PLACED AS SHOWN THEREON AND MEETS THE MINIMUM TECHNICAL STANDARDS ADOPTED BY THE FLORIDA BOARD OF LAND SURVEYORS PURSUANT TO SECTION 472.027, FLORIDA STATUTES, AND THAT SAID LAND IS LOCATED IN PORT ORANGE, FLORIDA.

Scott V. Miller
SCOTT V. MILLER


DATED: 1/12/92

THE POTATO PATCH PHASE 2

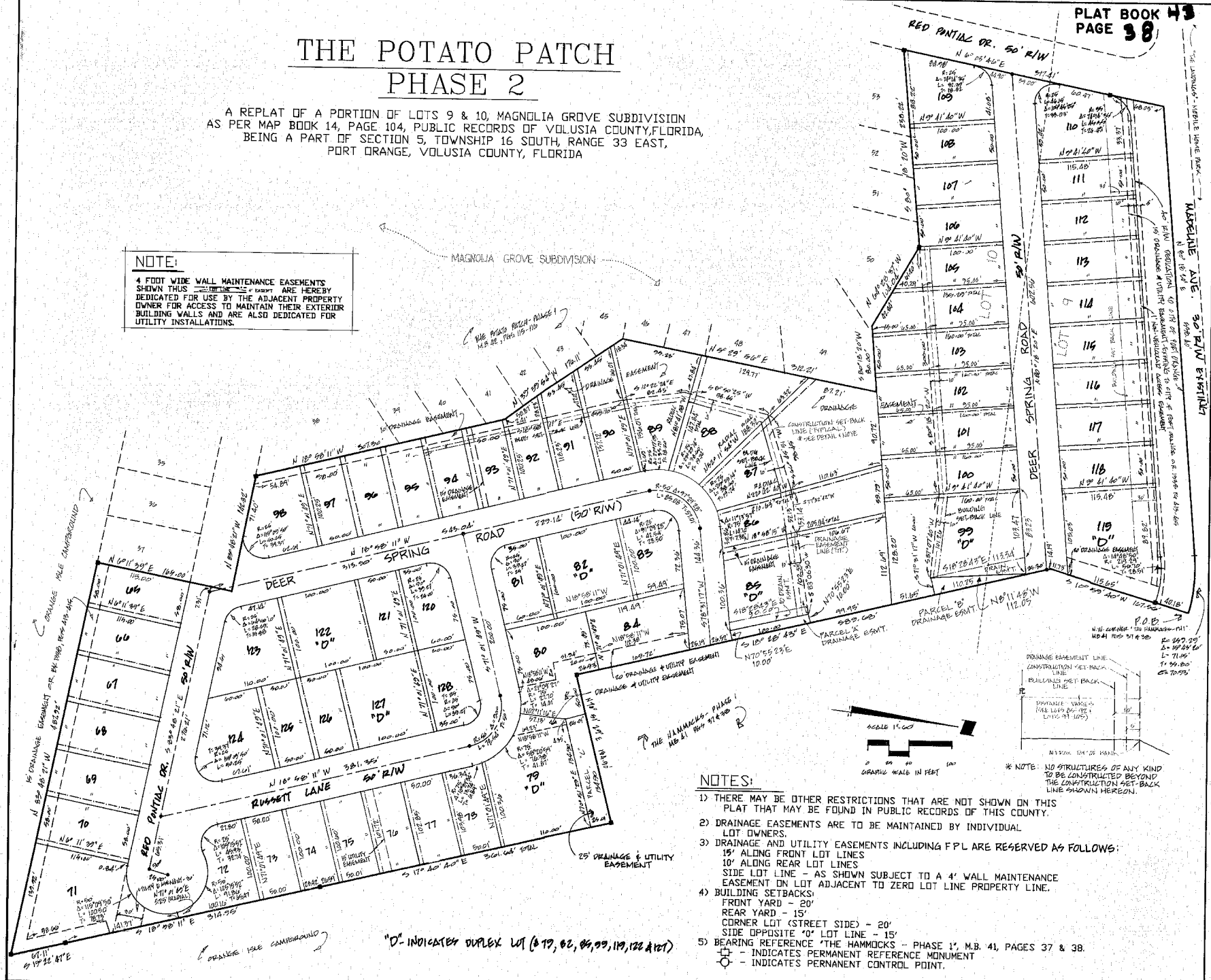
A REPLAT OF A PORTION OF LOTS 9 & 10, MAGNOLIA GROVE SUBDIVISION
AS PER MAP BOOK 14, PAGE 104, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA,
BEING A PART OF SECTION 5, TOWNSHIP 16 SOUTH, RANGE 33 EAST,
PORT ORANGE, VOLUSIA COUNTY, FLORIDA

PLAT BOOK 43
PAGE 38

NOTE:

4 FOOT WIDE WALL MAINTENANCE EASEMENTS
SHOWN THIS:  ARE HEREBY
DEDICATED FOR USE BY THE ADJACENT PROPERTY
OWNER FOR ACCESS TO MAINTAIN THEIR EXTERIOR
BUILDING WALLS AND ARE ALSO DEDICATED FOR
UTILITY INSTALLATIONS.

MAGNOLIA GROVE SUBDIVISION



NOTES:

- 1) THERE MAY BE OTHER RESTRICTIONS THAT ARE NOT SHOWN ON THIS PLAT THAT MAY BE FOUND IN PUBLIC RECORDS OF THIS COUNTY.
- 2) DRAINAGE EASEMENTS ARE TO BE MAINTAINED BY INDIVIDUAL LOT OWNERS.
- 3) DRAINAGE AND UTILITY EASEMENTS INCLUDING F.P.L. ARE RESERVED AS FOLLOWS:
15' ALONG FRONT LOT LINES
10' ALONG REAR LOT LINES
SIDE LOT LINE - AS SHOWN SUBJECT TO A 4' WALL MAINTENANCE EASEMENT ON LOT ADJACENT TO ZERO LOT LINE PROPERTY LINE.
- 4) BUILDING SETBACKS:
FRONT YARD - 20'
REAR YARD - 15'
CORNER LOT (STREET SIDE) - 20'
SIDE OPPOSITE "D" LOT LINE - 15'
- 5) BEARING REFERENCE "THE HAMMOCKS" - PHASE 1, M.B. 41, PAGES 37 & 38.
+ - INDICATES PERMANENT REFERENCE MONUMENT
○ - INDICATES PERMANENT CONTROL POINT.

A PORTION OF SECTION 6, TOWNSHIP 10 NORTH, RANGE 33 EAST, VOLusia COUNTY, FLORIDA
 REPLAT BENNETT'S SOUTH DAPTOLA
 N.D. 6, PG 11, & N.D. 16, PG 14, PUBLIC RECORDS OF
 VOLusia COUNTY, FLORIDA

Nov 19 8 02 AM '61

NOTE:
- TWO CONVENTIONAL AGENCIES, INCLUDING THE GOVERNMENT OF PAST GRASS, SHALL BE RESPONSIBLE FOR THE MAINTENANCE, UPKEEP & IMPROVEMENTS OF ALL PRIVATE PAVES ROADS, STREETS, EASEMENTS & RIGHTS OF WAY PROVIDING NEEDS AND ACCESS TO THE PROPERTY HEREIN SUBMITTED.
- ALL COMMON AREAS ARE SUBJECT TO A UTILITY EASEMENT.

TOTAL AREAS - 30.09 AC.
TOTAL # LOTS
SINGLE FAMILY - 59
TOWNHOUSE - 67
AREA PUBLIC USE - 5.75 AC.
AREA PRIVATE USE - 24.71 AC
L.F. STREETS - 5032.67
BREAK OF CLOSING IS
LESS THAN 1:10,000
TOTAL OPEN SPACE - 12.5 AC.

◻ - INDICATES P.E.M.
◉ - INDICATES P.C.F.

KNOW ALL MEN BY THIS PRESENTS THAT THE UNDERSIGNED BEING A LICENSED AND ~~REGISTERED~~ SURVEYOR DOES HERE BY CERTIFY THAT ON 5-26-81 I COMPLETED THE SURVEY OF THE LAND SHOWN IN THE FOREGOING PLAT; THAT SAID PLAT IS A CORRECT REPRESENTATION OF THE LAND THEREIN DESCRIBED AND ~~MADE~~ ^{PERMANENT} THAT REFERENCE MONUMENTS HAVE BEEN SET AS SHOWN THEREON AND AS REQUIRED BY CHAPTER 171, FLORIDA STATUTES AND THAT SAID LAND IS LOCATED IN VOLusia COUNTY FLORIDA
DATED 5-26-81

THIS IS TO CERTIFY THAT ON 4-14-81 THE FOREGOING
PLAT WAS APPROVED BY THE COUNCIL OF THE CITY
OF SEASIDE, FLORIDA

OF THE CITY OF PORT ORANGE

James R. Fisher
MAYOR: CITY OF PORT ORANGE

ATTEST;
by Maria J. Zeller
CITY CLERK: CITY OF PORT ORANGE

THIS IS TO CERTIFY ON ~~BEHALF~~ THE
PLANNING BOARD OF CITY OF FORT ORLAND
FLORIDA APPROVED THE FOREGOING PLAT

George J. Snyman.
PLANNING BOARD CHAIRMAN

CERTIFICATE OF APPROVAL
THIS IS TO CERTIFY ON 11/5/01 THE

THE FOREGOING PLAT AND FIND THAT IT COMPLIES
IN FORM WITH ALL REQUIREMENTS OF CHAPTER
177 FLORIDA STATUTES AND WAS FILED FOR
RECORD ON
AT
FILE NO.

CLERK OF CIRCUIT COURT IN
HOLMES COUNTY, FLORIDA

KNOW ALL MEN BY THESE PRESENTS THAT
JAMES P. SOULIAN
BEING THE OWNER FREE SINGLE OF THE LANDS
DESCRIBED IN THE ATTACHED PLAT ENTITLED "SOULIAN'S P.U.D.
PLAT 1" LOCATED IN VOLusia COUNTY, FLORIDA
HAS HEREBY ORDERED THAT THE LANDS SET OUT FOR THE USES AND
PURPOSES THEREIN EXPRESSED AND DEDICATED ALL STREETS
AND EASEMENTS, UTILITY RIGHTS OF WAY, AND DRAINAGE EASEMENTS
SHOWN OR DESCRIBED THEREON TO THE PERPETUAL USE OF THE
LANDS SET OUT FOR THE PURPOSES THEREIN EXPRESSED.
IN WITNESS WHEREOF HAS CAUSED THESE PRESENTS TO BE
SIGNED AND ATTESTED TO BY THE ABOVE SIGNED LANDLORD
TO BE SIGNED TO BE AFFIRED HERETO ON THIS 11TH DAY
OF MAY AD 1981


JAMES P. BUCHON
OWNER

(add)

SIGNED AND SEALED IN THE PRESENCE OF
Charles E. Thomas James P. Buchanan
WITNESS S WITNESS
STATE OF FLORIDA COUNTY OF VOLusia
I DO HEREBY CERTIFY THAT ON 5-10-61 BEFORE ME AN OFFICER
DULY AUTHORIZED TO TAKE ACKNOWLEDGEMENTS IN THE STATE
AND COUNTY AFORESAID PERSONALLY APPEARED
JAMES P. BUCHANAN

INDIVIDUAL DESCRIBED IN AND WHO EXECUTED THE
FOREGOING DEDICATION AND SEVERALLY ACKNOWLEDGED THE
EXECUTION THEREOF TO BE HIS FREE ACT AND DEED FOR
HIS USES AND PURPOSES THEREIN EXPRESSED.

IN WITNESS WHEREOF, I HAVE HEREBY SET MY HAND AND
SEAL ON THE ABOVE DATE
MY COMMISSION EXPIRES:
Thomas R. Kerner
NOTARY PUBLIC STATE OF FLORIDA

THE UNDERSIGNED HEREBY CERTIFIES THAT HE IS THE LIAISE
OF A MORTGAGE LENDER OR OTHER CREDITOR OF THE PROPERTY
SHOWN AND DESCRIBED IN THE ATTACHED PLAT ENTITLED
"LOTWILLOW RD., PHASE 2"
LOCATED IN VOLUNTA COUNTY, FLORIDA AND DOES HEREBY
ACKNOWLEDGE AND CONFIRM THE OPERATION OF THE LANDS
THEREIN DESCRIBED AND AGREES THAT HIS MORTGAGEE'S LIEN OR
OTHER ENCUMBRANCE WHICH IS RECORDED IN OFFICIAL RECORD
BOOKS OF ANY OF THE PUBLIC RECORDS OF VOLUNTA COUNTY,
FLORIDA SHALL BE SUBORDINATED TO SAID DEDICATION, IN
WITNESS WHEREOF, I HAVE CAUSED THESE PRESENTS TO BE
SIGNED.

RECEIVED: 9/28/06

THIS 16TH DAY OF MAY AD 1981

SAUEL JOSEPHINE
INDIVIDUALLY AND AS TRUSTEES
SIGNED AND SEALED IN THE PRESENCE OF:
[Signature] [Signature]

STATE OF FLORIDA COUNTY OF VOLusia:
 (THIS IS TO CERTIFY THAT ON 5/10/81) BEFORE ME AN
 OFFICER DULY AUTHORIZED TO TAKE ACKNOWLEDGMENTS IN
 THE STATE AND COUNTY AFORESAID, PERSONALLY APPEARED
SAMUEL ORSKINIK - INDIVIDUAL AND AS TESTEE
 WHO IS KNOWN TO ME AND WHO
 DESCRIBED IN AND WHO
 EXECUTED THE FOREGOING JOINDER AND CONSENT TO
 DESIGNATION AND SEVERALLY ACKNOWLEDGED THE
 EXECUTION THEREOF TO BE HIS FREE ACT AND DEED
 FOR THE USES AND PURPOSES THEREIN EXPRESSED

IN WITNESS WHEREOF I HAVE HERETO SET MY
HAND AND SEAL ON THE ABOVE DATE

MY COMMISSION EXPIRES:

COPIES
FIER
E

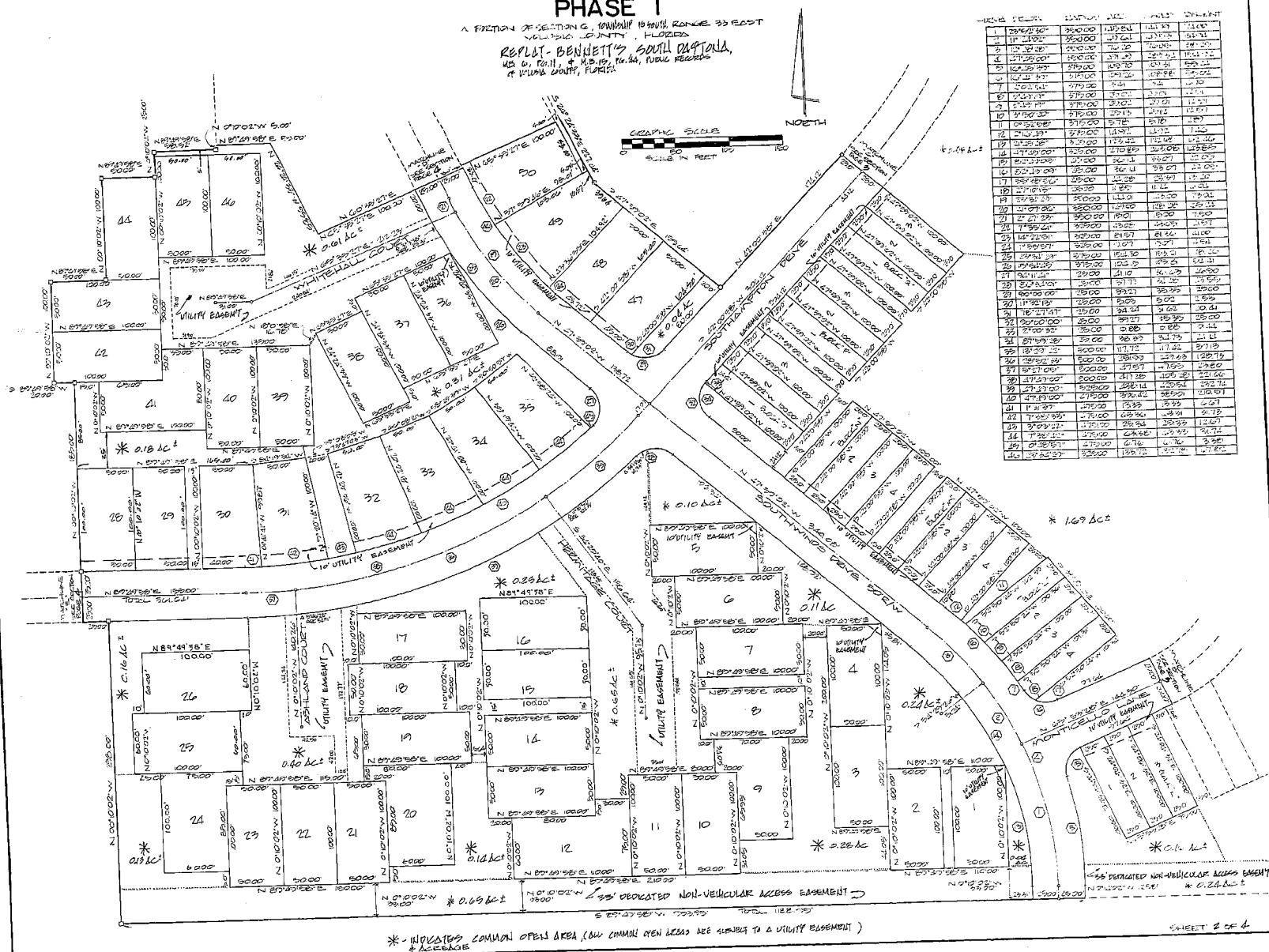
Thomas W. K...
NOTARY PUBLIC STATE OF FLORIDA

SEAL

PHASE I

A PORTION OF SECTION 6, TOWNSHIP 16 SOUTH, RANGE 33 EAST
COUNTY OF FLORIDA

REPLAT-BENNETT'S SOUTH DAYTONA,
 MS. 6, PG. 11, & M.B. 15, PG. 24, PUBLIC RECORDS
 of MIAMI COUNTY, FLORIDA



PLAT	BOOK 38	72
PAGE		

[illegible]

[illegible]

SOUTHWINDS P.U.D.

PHASE I

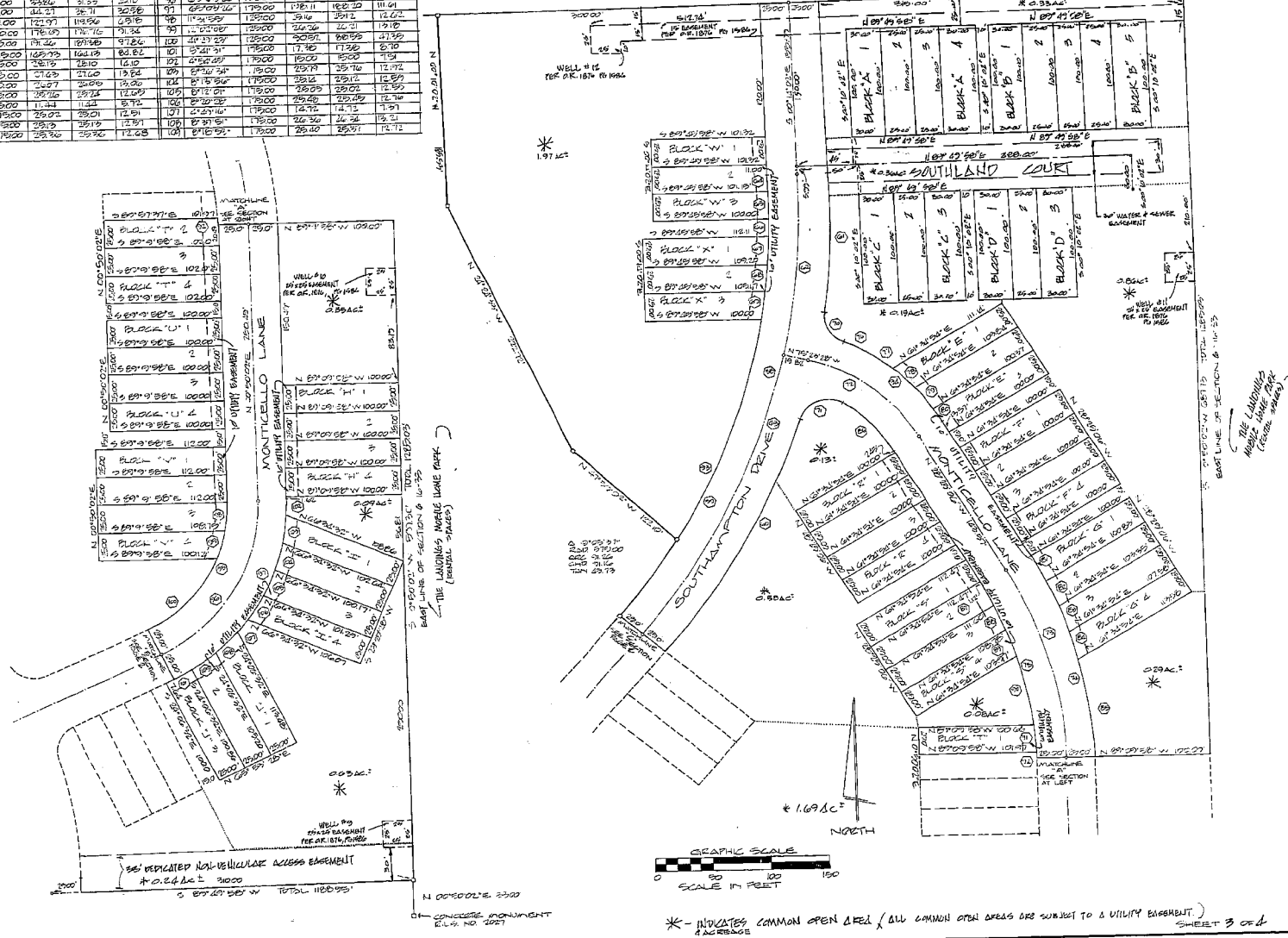
A. SECTION OF SECTION 6, TOWNSHIP 16 SOUTH, RANGE 33 EAST

— VOLUNTEER COUNTY, FLORIDA

REPLAT- BENNETT - SOUTH DAKOTA
M.B. 10, 1911, & M.B. 15, 1914, PUBLIC RECORDS OF

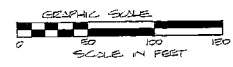
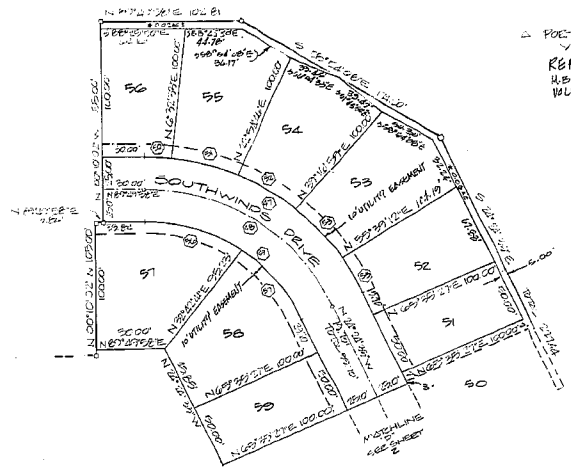
WOLFE COUNTY, FLORIDA

2500' 00"	15'	5-10 2A'	2500'	3500'
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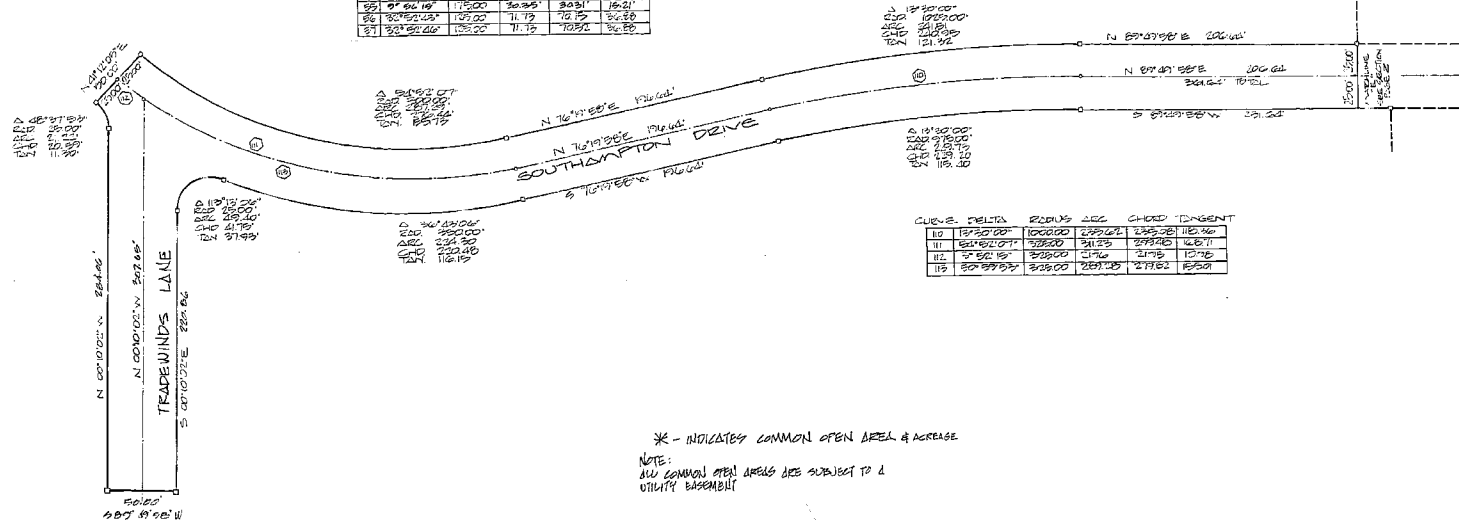


SOUTHWINDS P.U.D. PHASE I

A PORTION OF SECTION 6, TOWNSHIP 16 SOUTH, RANGE 33 EAST
VOLUNTEER COUNTY, FLORIDA
REPLAT - BENNETT'S, SOUTH DAYTONA
H.B. 6, P.G. 14, & H.B. 19, P.G. 14, PUBLIC RECORDS OF
VOLUNTEER COUNTY, FLORIDA



CURVE	DELTA	BEARS	ACC	CHORD	TANGENT
1	100° 00' 00"	175.00	200.00	175.00	175.00
2	100° 00' 00"	175.00	175.00	175.00	175.00
3	100° 00' 00"	175.00	175.00	175.00	175.00
4	100° 00' 00"	175.00	175.00	175.00	175.00
5	100° 00' 00"	175.00	175.00	175.00	175.00
6	100° 00' 00"	175.00	175.00	175.00	175.00
7	100° 00' 00"	175.00	175.00	175.00	175.00
8	100° 00' 00"	175.00	175.00	175.00	175.00
9	100° 00' 00"	175.00	175.00	175.00	175.00
10	100° 00' 00"	175.00	175.00	175.00	175.00
11	100° 00' 00"	175.00	175.00	175.00	175.00
12	100° 00' 00"	175.00	175.00	175.00	175.00
13	100° 00' 00"	175.00	175.00	175.00	175.00
14	100° 00' 00"	175.00	175.00	175.00	175.00
15	100° 00' 00"	175.00	175.00	175.00	175.00
16	100° 00' 00"	175.00	175.00	175.00	175.00
17	100° 00' 00"	175.00	175.00	175.00	175.00
18	100° 00' 00"	175.00	175.00	175.00	175.00
19	100° 00' 00"	175.00	175.00	175.00	175.00
20	100° 00' 00"	175.00	175.00	175.00	175.00
21	100° 00' 00"	175.00	175.00	175.00	175.00
22	100° 00' 00"	175.00	175.00	175.00	175.00
23	100° 00' 00"	175.00	175.00	175.00	175.00
24	100° 00' 00"	175.00	175.00	175.00	175.00
25	100° 00' 00"	175.00	175.00	175.00	175.00
26	100° 00' 00"	175.00	175.00	175.00	175.00
27	100° 00' 00"	175.00	175.00	175.00	175.00
28	100° 00' 00"	175.00	175.00	175.00	175.00
29	100° 00' 00"	175.00	175.00	175.00	175.00
30	100° 00' 00"	175.00	175.00	175.00	175.00
31	100° 00' 00"	175.00	175.00	175.00	175.00
32	100° 00' 00"	175.00	175.00	175.00	175.00
33	100° 00' 00"	175.00	175.00	175.00	175.00
34	100° 00' 00"	175.00	175.00	175.00	175.00
35	100° 00' 00"	175.00	175.00	175.00	175.00
36	100° 00' 00"	175.00	175.00	175.00	175.00
37	100° 00' 00"	175.00	175.00	175.00	175.00
38	100° 00' 00"	175.00	175.00	175.00	175.00
39	100° 00' 00"	175.00	175.00	175.00	175.00
40	100° 00' 00"	175.00	175.00	175.00	175.00
41	100° 00' 00"	175.00	175.00	175.00	175.00
42	100° 00' 00"	175.00	175.00	175.00	175.00
43	100° 00' 00"	175.00	175.00	175.00	175.00
44	100° 00' 00"	175.00	175.00	175.00	175.00
45	100° 00' 00"	175.00	175.00	175.00	175.00
46	100° 00' 00"	175.00	175.00	175.00	175.00
47	100° 00' 00"	175.00	175.00	175.00	175.00
48	100° 00' 00"	175.00	175.00	175.00	175.00
49	100° 00' 00"	175.00	175.00	175.00	175.00
50	100° 00' 00"	175.00	175.00	175.00	175.00
51	100° 00' 00"	175.00	175.00	175.00	175.00
52	100° 00' 00"	175.00	175.00	175.00	175.00
53	100° 00' 00"	175.00	175.00	175.00	175.00
54	100° 00' 00"	175.00	175.00	175.00	175.00
55	100° 00' 00"	175.00	175.00	175.00	175.00
56	100° 00' 00"	175.00	175.00	175.00	175.00
57	100° 00' 00"	175.00	175.00	175.00	175.00
58	100° 00' 00"	175.00	175.00	175.00	175.00
59	100° 00' 00"	175.00	175.00	175.00	175.00
60	100° 00' 00"	175.00	175.00	175.00	175.00



* - INDICATES COMMON OPEN AREA & ACRES
NOTE:
ALL COMMON OPEN AREAS ARE SUBJECT TO A
UTILITY EASEMENT

A PORTION OF SECTION 6, TOWNSHIP 16 SOUTH, RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA, REPLAT BENNETT'S SOUTH DAYTONA M.B. 6, PG. 11 & M.B. 15, PG. 44, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.

A PORTION OF SECTION 6, TOWNSHIP 16 SOUTH, RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA, REPLAT BENNETT'S SOUTH DAYTONA M.B. 6, PG. 11 & M.B. 15, PG. 44, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.

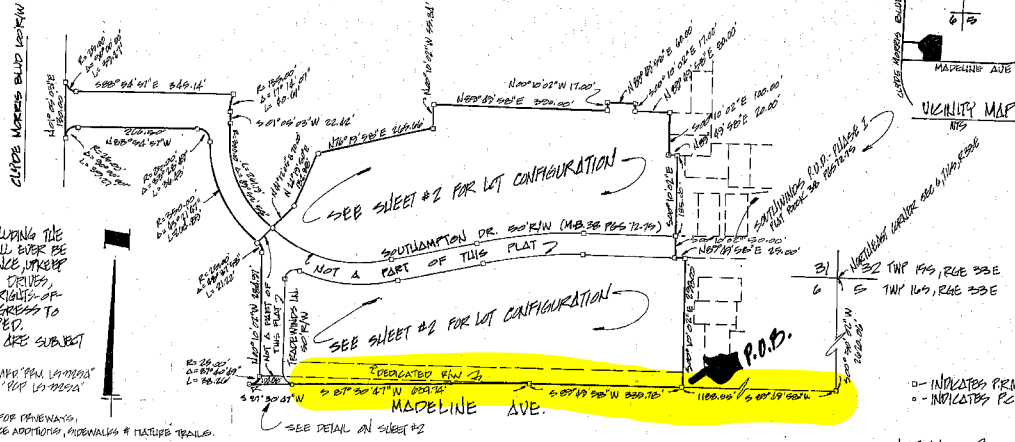
[illegible]

CONTAINING 12.22 ACRES MORE OR LESS.

TOTAL ARED - 12.22 AC.
TOTAL # LOTS - 41
DENSITY - 336 UNITS / ACRE
AREA PUBLIC USE - 6.57 AC.
AREA PRIVATE USE - 5.65 AC.
U.F. STREET - 1581
TOTAL OPEN SPACE - 6.58 AC.
ERROR OF CLOSURE IS LESS
THAN 1:10,000

1. NO GOVERNMENTAL AGENCY, INCLUDING THE GOVERNMENT OF PORT ORANGE, SHALL EVER BE RESPONSIBLE FOR THE MAINTENANCE, REPAIR OR IMPROVEMENTS OF ANY PRIVATE DRIVE, ROAD, STREET, EASEMENTS OR RIGHTS-OF-WAY PROVIDING ACCESS OR EGRESS TO THE PROPERTY HEREIN COVERED.
2. ALL COMMON OPEN AREAS ARE SUBJECT TO UTILITY EASEMENTS.

2. ■ DENOTES P.R.M. ~ 4 X 4 CTRY. LIGHT WFR "P.R.M. LAMPS"
4. ○ DENOTES P.C.F. ~ METAL DISK WFR "POP LAMPS"
9. □ DENOTES EXISTING P.R.M.
10. CONCRETE AREAS SUBJECT TO EASEMENTS FOR RENEWALS,
POOF OVERHANGS, AIR COND. UNITS, FIREPLACE ADDITIONS, ETC.



KNOW ALL MEN BY THIS PRESENCE, THAT THE UNDERSIGNED, BEING A LICENSED AND REGISTERED SURVEYOR, DOES HERE BY CERTIFY THAT ON 01/09/1989 I COMPLETED THE SURVEY OF THE LAND SHOWN IN THE FOREGOING PLAT THAT SAID THIS PLAT IS A CORRECT REPRESENTATION OF THE LAND HERE DESCRIBED AND PLATED THAT THE SAME IS A CORRECT MONUMENT HAVE BEEN SET AS SHOWN HEREON AS REQUIRED BY CHAPTER 177 FLORIDA STATUTES AND THAT SAID LAND IS LOCATED IN VOLUSIA COUNTY, FLORIDA
DATED 01/09/1989

USA SLICE PLATE

CITY COUNCIL OF CITY OF ^{PORT ORANGE}

THIS IS TO CERTIFY THAT ON DEC. 9, 1981 THE FOREGOING
PLAT WAS APPROVED BY THE COUNCIL OF THE CITY
OF PORT ORANGE, FLORIDA

James R. Hake
MAYOR: CITY OF PORT ORANGE

ATTEST

Marian J. Zelen
CITY CLERK OF PORT ORANGE

THIS IS TO CERTIFY ON Nov 24, 1981 THE
PLANNING ~~COMMISSION~~ OF CITY OF ~~PORT ORANGE~~
FLORIDA APPROVED THE FOREGOING PLAT

Judy L. Anderson
PLANNING ~~COMMISSION~~ CHAIRMAN

CERTIFICATE OF APPROVAL
THIS IS TO CERTIFY ON SEP. 15, 1993 THE
FOREGOING PLAT WAS APPROVED
John W. Long CITY ENGINEER

HEREBY CERTIFY THAT I HAVE EXAMINED
THE FOREGOING PLAT AND FIND THAT IT COMPLIES
WITH ALL REQUIREMENTS OF CHAPTER
FLORIDA STATUTES AND WAS FILLED FOR
RECORD ON 9-16-85
2:31 PM
E NO. 085033

W. V. Sawyer
CLERK OF CIRCUIT COURT IN
AND FOR VOLUNTA COUNTY, FLORIDA

KNOW ALL MEN BY THESE PRESENTS, THAT JAMES E. FULTON, ESQ., THE
OWNER OF THE PREMISES OF THE LANDS HEREIN DESCRIBED IN THE ATTACHED
ENTITLED "BUTTERFLY RAIL FENCE", LOCATED IN VOLusia COUNTY, FLORIDA,
HEREBY ORIGINATES, SIGNED AND AFFIXES TO THE USCS AND WITNESSES HEREON
EXPRESSED AND ORIGINALLY ATTACHED, RIGHT-TO-WAY, EASEMENT, ETC.,
IN FAVOR OF WAY, AND PLANNING EASEMENTS, HEREIN, AS THE OWNER,
THEREBY TO THE BENEFIT OF THE RAILROAD, FOR FUTURE USE AND AS
WITNESSES WHEREBY HAS CAUSED THESE PRESENTS TO BE SIGNED AND AFFIXED
TO BY THE INDIVIDUAL NAMED JELLYN AT THE 19TH DAY OF SEPTEMBER 1982

JAMES P. BILHART, NOTER
 DATED AND SEALED IN THE PRESENCE OF
Ronald White R. K. Smith
 WITNESS WITNESS

THE STATE OF FLORIDA COUNTY OF VOLUNTA
THIS IS TO CERTIFY THAT ON APRIL 19, 1980 JAMES F. EUGAN, DO
NOT KNOWN TO BE THE INDIVIDUAL DESCRIBED IN A WHO ENCOUNTERED THE
PROSECUTOR DEPARTMENT AND GENERALLY ACKNOWLEDGED THE EXECUTION
THEREOF TO BE HIS FREE ACT AND DEED FOR THIS DEEDS AND IT PROPOSES
THEREIN ENJOINED. IN WITNESS WHEREOF, I HAVE HEREBY SET MY HAND AND SEAL ON
THE ABOVE DATE.

Leonard F. Rogers
HONORARY PUBLIC PROSECUTOR OF FLORIDA
MY COMMUNICATION EXPIRES APRIL 17, 1980

MORTGAGE, LEASE, OR OTHER ENCUMBRANCE ON THE PROPERTY SHOWN AND DESCRIBED IN THE ATTACHED RPT ENTITLED "SOUTHWOODS RLD PHASE II, LOCATED IN VOLUNIA COUNTY, FLORIDA AND DEEDS REESEN, JOHN H. AND CONSENT TO THE DECLARATION OF THE LANDS THEREIN DESCRIBED AND AGREE THAT HIS MORTGAGE, LEASE, OR OTHER ENCUMBRANCE MUCH BE RECORDED IN THE OFFICIAL RECORDS BOOK 2314 PAGE 1127 OF THE PUBLIC RECORDS OF VOLUNIA COUNTY, FLORIDA SHALL BE RECORDED TO SAID DECLARATION, IN WITNESS WHEREOF HAS CAUSED THESE PRESENTS TO BE SIGNED THIS 9 DAY OF JULY, 19 92

PARTIES AND SIGNED IN THE PRESENCE OF
William Stalling Barbara J. Stalling
 STATE OF FLORIDA COUNTY OF DALLAS WINNEBAGO
 THIS 10 DAY OF CERTIFY THAT ON 8 JULY 1982 BEFORE ME
 PERSONALLY APPEARED SAID PARTIES AND WITNESSES
 TO BE THE INDIVIDUALS BEFORE MENTIONED AND WHO HAVE SIGNED THE
 FOREGOING WINNEBAGO DOCUMENT TO DELEGATION AND
 TO THE NORTH CAROLINA DELEGATION THEREBY TO BE
 HIS FREE AND DEED FOR THE LIFE AND FORTUNES THEREIN
 EXPRESSED
 WHEREOF WHEREOF I HAVE HEREIN SET MY HAND AND SEAL
 ON THE ABOVE DATE.

NOTARY PUBLIC, STATE OF FLORIDA.
MY COMMISSION EXPIRES 12-31-2006 7, 118-

I HEREBY CERTIFY THAT THE SIGNATURE OF SAID MORTGAGEE, LEND, IS AN ENDORSEMENT ON THE PROPERTY TAX MAP AND DEED FILED IN THE ATTACHED PLAT ENTITLED "SOUTHWEST PLAT HASEL'S LANE" IN VOLUSIA COUNTY, FLORIDA AND DOES NOT AFFECT JOHN AND CONNIE O' Brien's DEED TO THE LAND THEREIN DESCRIBED AND AGREES THAT HIS MORTGAGE, LEIN, OR OTHER ENCUMBRANCE WHICH IS RECORDED IN OFFICIAL RECORD BOOK 2356, PG(S) 1637 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA SHALL BE SUBORDINATED TO SAID DEED, IN WITNESS WHEREOF HAS CAUSED THESE PRESENTS TO BE SIGNED THIS 20 DAY OF JUNE 1981.

WITNESSES AND COALES IN THE PRESENCE OF
 WITNESS WITNESS
 STATE OF Florida

[illegible]

1. *Chlorophyll a* (Chl *a*) and *Chlorophyll b* (Chl *b*) were determined using the method of Arar and Collins (1987). The concentration of Chl *a* and Chl *b* was expressed as $\mu\text{g mL}^{-1}$ of the sample.

PLAT PREPARED BY:
BENNETT AND DAVIS, INC.
LOCALING MEMBERS
411 SEVILLE BLVD
-20 DAYTONA, FLORIDA

01/15/80

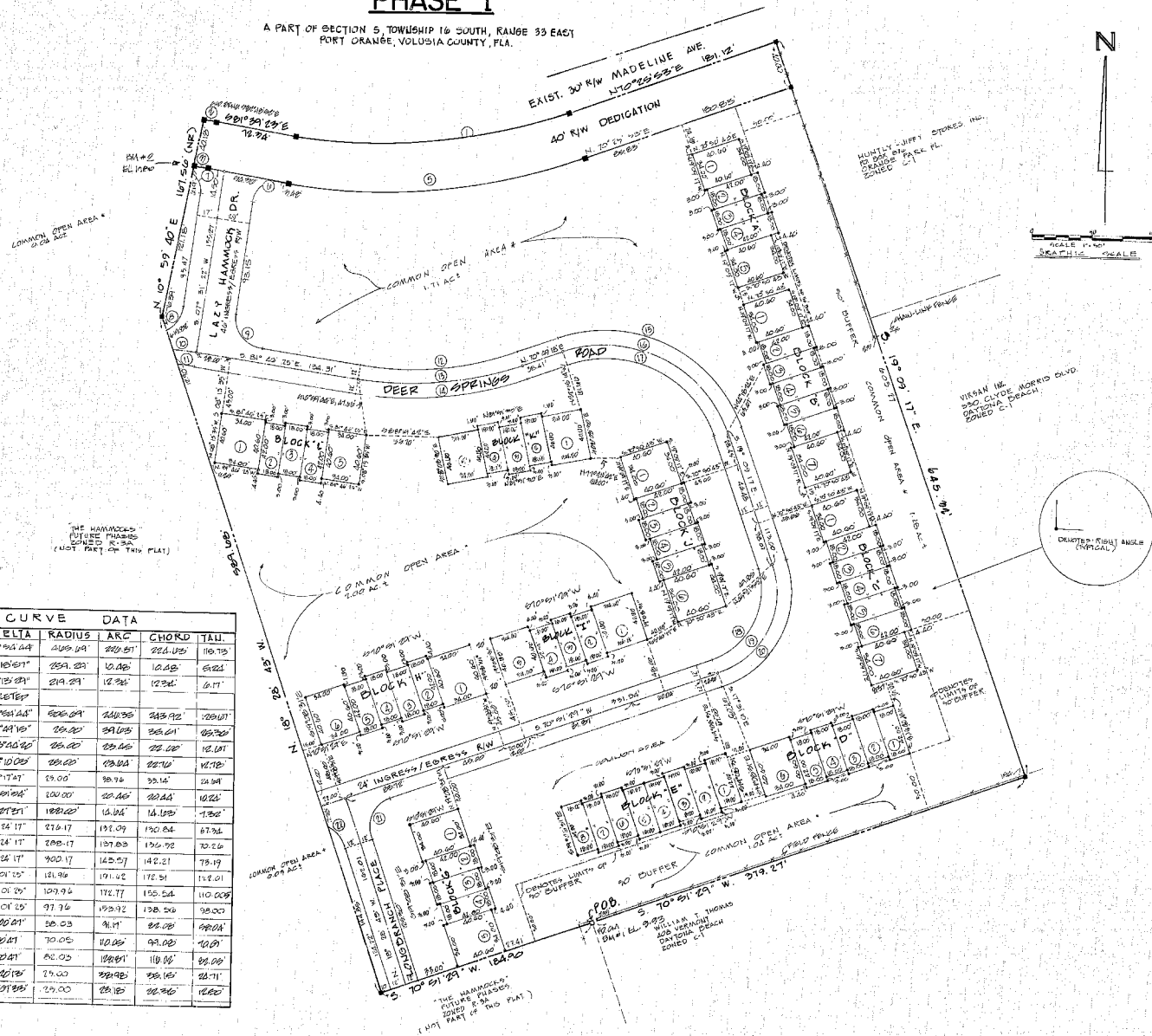
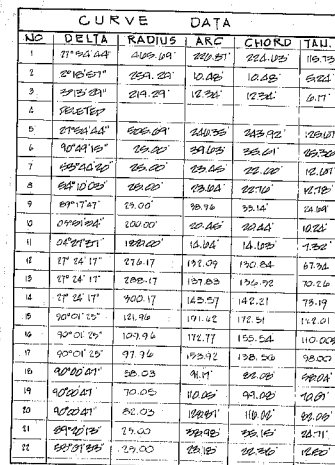
OLIVER & ASSOCIATES, INC.
2212 SW 13TH AVE
FORT CRANE, FLORIDA 32909
904-761-5985

4
3
2



PHASE I

A PART OF SECTION 5, TOWNSHIP 16 SOUTH, RANGE 33 EAST
PORT ORANGE, VOLUSIA COUNTY, FLA.



BECKS, BECKS & WICKERSHAM

ATTORNEYS AT LAW
DAYTONA BEACH, FLORIDA

BERRIEN BECKS, SR.
BERRIEN BECKS, JR.
CHRISTOPHER WICKERSHAM, SR.
TURA SCHNEBLY PAXSON
ROBERT M. CARR
THEODORE F. ZENTNER
JAMES L. ROSE

BECKS BUILDING
125 N. RIDGEWOOD AVENUE
P.O. DRAWER 2140
32015
TELEPHONE
(904) 252-2000

October 20, 1983

W. Denis Shelley, Esquire
313 South Palmetto Avenue
Daytona Beach, Florida 32014

RE: City of Port Orange - Southwinds P.U.D.

Dear Denis:

Per our conversation earlier today, you will find enclosed:

1. Right-of-Way Deed from James P. Buchan to the City of Port Orange, which encompasses the additional Madeline Avenue road right-of-way across the unplatted portion of Southwinds P.U.D. west of Phase II to Clyde Morris Boulevard. The legal description was obtained from Jim Buchan as provided by Gus Sliger.

2. Right-of-Way Deed from Southwinds Homeowners Association, Inc. to the City of Port Orange. This conveys to the City that parcel which is reflected on the plat of Phase I as a 33 foot non-vehicular access easement. I understand that the legal description was provided, again, by Jim Buchan.

3. First Amendment to Southwinds P.U.D. Development Agreement. Paragraph 1 modifies certain setback lines so as to require that buildings on these particular lots be moved northerly on those particular lots away from Madeline Avenue. I believe that two lots in Phase I adjacent to Madeline Avenue have already been built on and these will not be effected by this provision.

The second paragraph of the Amendment is intended to maintain the existing status of no direct vehicular access to Madeline Avenue where the City is acquiring the 33 foot non-vehicular easement. We have expanded on this to clarify the understanding of the parties that vehicular access will be only as agreed between the developer and the City at the time of platting or site plan review.

I believe the remaining portion of the Amendment to the P.U.D. Agreement is self-explanatory.

Should you have any questions, comments or proposed changes to any of the enclosures, please advise. If these instruments meet

W. Denis Shelley, Esquire
October 20, 1983
Page 2

with your approval and that of your clients, we would appreciate your having them executed and returned to me and I will arrange for execution by the City and recording.

I would further appreciate your giving me a letter confirming that the parties executing these instruments are the proper parties on these instruments and the only necessary parties needed to accomplish the intended purposes.

With best regards, I remain

Sincerely yours,

Robert M. Carr

RMC/bjr

Enclosures

cc: Darrel W. Kreighbaum, City Manager
John W. Lacey, PE, City Engineer ✓

RECEIVED
OCT 24 1983
CITY ENGINEER

5101346
BOOK PAGE

This instrument was prepared by

ROBERT M. CARR, ESQUIRE
BECKS, BECKS & WICKERSHAM
125 North Ridgewood Avenue
DAYTONA BEACH, FLORIDA 32014

Warranty Deed

(STATUTORY FORM—SECTION 689.02 F.S.)

(RIGHT-OF-WAY)

This Indenture, Made this 25 day of October 1983 Between

SOUTHWINDS HOMEOWNER'S ASSOCIATION, INC.

of the County of Volusia State of Florida, grantor, and

CITY OF PORT ORANGE, a Florida municipality

whose post office address is Post Office Box 5, Port Orange

of the County of Volusia State of Florida, grantee.

Witnesseth, That said grantor, for and in consideration of the sum of Ten and No/100 (\$10.00)

Dollars,

and other good and valuable considerations to said grantor in hand paid by said grantee, the receipt whereof is hereby acknowledged, has granted, bargained and sold to the said grantee, and grantee's heirs and assigns forever, the following described land, situate, lying and being in Volusia County, Florida, to-wit:

SEE LEGAL DESCRIPTION ATTACHED HERETO AS EXHIBIT "A"

This Deed is for Public Road right-of-way purposes and for the purpose of constructing, maintaining and operating water, sewer, and other utilities, drainage and all other proper municipal purposes.

DS Paid .45 Date NOV. 21 1983
County Volusia
Signature of Clerk

and said grantor does hereby warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

* "Grantor" and "grantee" are used for singular or plural, as context requires.

In Witness Whereof,

Signed, sealed and delivered in our presence:

Grantor has hereunto set grantor's hand and seal the day and year first above written.

SOUTHWINDS HOMEOWNER'S ASSOCIATION, INC.

Richard K. Martin, President

(Seal)

Cecelia C. Kithlear, Secretary

(Seal)

(Seal)

(Seal)

STATE OF FLORIDA
COUNTY OF VOLUSIA

I HEREBY CERTIFY that on this day before me, an officer duly qualified to take acknowledgments personally appeared Richard K. Martin as President and Southwinds Homeowner's Association, Inc., as Secretary of to me known to be the person described in and who executed the foregoing instrument and acknowledged before me that they executed the same.

WITNESS my hand and official seal in the County and State last aforesaid this 25 day of October 1983.

My commission expires 9/24/84

Robert J. Holman

Notary Public

5101340

BOOK PAGE

This instrument was prepared by

ROBERT M. CARR, ESQUIRE
BECKS, BECKS & WICKERSHAM
125 North Ridgewood Avenue
DAYTONA BEACH, FLORIDA 32014

Warranty Deed

(STATUTORY FORM—SECTION 689.02 F.S.)

(RIGHT-OF-WAY)

This Indenture, Made this 25 day of October 1983 Between

SOUTHWINDS HOMEOWNER'S ASSOCIATION, INC.

of the County of Volusia State of Florida grantor, and

CITY OF PORT ORANGE, a Florida municipality

whose past office address is Post Office Box 5, Port Orange

of the County of Volusia State of Florida grantee,

Witnesseth, That said grantor, for and in consideration of the sum of Ten and No/100 (\$10.00)

Dollars, and other good and valuable considerations to said grantor in hand paid by said grantee, the receipt whereof is hereby acknowledged, has granted, bargained and sold to the said grantee, and grantee's heirs and assigns forever, the following described land, situate, lying and being in Volusia County, Florida, to-wit:

SEE LEGAL DESCRIPTION ATTACHED HERETO AS EXHIBIT "A"

This Deed is for Public Road right-of-way purposes and for the purpose of constructing, maintaining and operating water, sewer, and other utilities, drainage and all other proper municipal purposes.

DS Paid .45 Date NOV. 21 1983
County Volusia
Signature of Clerk

and said grantor does hereby warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

* "Grantor" and "grantee" are used for singular or plural, as context requires.

In Witness Whereof,

Signed, sealed and delivered in our presence:

Grantor has hereunto set grantor's hand and seal the day and year first above written,
SOUTHWINDS HOMEOWNER'S ASSOCIATION, INC.

Richard K. Martin
Linda Waddle

Richard K. Martin (Seal)
Richard K. Martin, President
Cecelia C. Kithlear (Seal)
Cecelia C. Kithlear, Secretary (Seal)

STATE OF FLORIDA
COUNTY OF VOLUSIA

I HEREBY CERTIFY that on this day before me, an officer duly qualified to take acknowledgments, personally appeared Richard K. Martin as President and Southwinds Homeowner's Association, Inc., as Secretary of to me known to be the person described in and who executed the foregoing instrument and acknowledged before me that they executed the same.

WITNESS my hand and official seal in the County and State last aforesaid this 25 day of October 1983.

My commission expires

9/24/84

Robert J. [Signature]

Notary Public

25101341

BOOK PAGE

EXHIBIT "A"

COMMENCING AT THE SOUTHEAST CORNER OF SOUTHWINDS P.U.D.
PHASE I AS RECORDED IN PLAT BOOK 38, PAGES 72-75 PUBLIC
RECORDS OF VOLUSIA COUNTY, FLORIDA, SAID POINT BEING THE
POINT OF BEGINNING FOR THE FOLLOWING DESCRIBED PROPERTY:

FROM THE POINT OF BEGINNING THENCE S89°49'58"W ALONG THE
SOUTHERLY LINE OF SOUTHWINDS PHASE I A DISTANCE OF 1188.95
FEET TO THE SOUTHWEST CORNER OF SOUTHWINDS PHASE I;
THENCE N00°10'02"W A DISTANCE OF 33.00 FEET TO A POINT;
THENCE N89°49'58"E A DISTANCE OF 1189.53 FEET TO A POINT;
THENCE S00°50'02"W A DISTANCE OF 33.00 FEET TO THE POINT
OF BEGINNING; EXCEPTING THAT PORTION LYING IN SOUTHWINDS
DR. A 50 FEET RIGHT OF WAY AS NOW LAID OUT. CONTAINING
0.90 ACRES, MORE OR LESS.

106745

APPENDIX G

**RESPONSE TO COMMENTS
TECHNICAL MEMORANDUM**



Ref: 11076, TWO 2

TECHNICAL MEMORANDUM

To: Mr. Stephan Harris, Transportation Planner–Project Manager
From: Mr. Chris Walsh, P.E., Mr. Mikal Hale, P.E.
Subject: Madeline Ave Trail & Sidewalk - PH 1 – Response to Comments
Date: January 31, 2019

We have received comments on the Madeline Ave Trail & Sidewalk - PH 1. Comments and their respective responses are provided below. Should you have any questions, please contact Chris Walsh at (386) 753-0558.

Comments from the City of Port Orange – Planning Division:

(Tim Burman, Principal Planner (386) 506-5675/tburman@port-orange.org):

1. Attached is the recorded warranty deed for the right-of-way dedication of 33 feet along Madeline Avenue between Station 261 to 273 to the City of Port Orange. Revise the Feasibility Study to indicate minimum 8-wide sidewalk/multi-purpose trail can be constructed in the current right-of-way. In addition, attached is the letter received by the City on October 20, 1983 that states the Southwinds HOA has conveyed to the City the parcel which is reflected on the plat of Phase 1 as the 33-foot non-vehicular access easement along with 2006 Madeline Avenue roadway plans. Revise Page 13, Typical Section Sheet No. 2, and concept Plans Sheet No. 6, 7, 8, and 9 based on new right-of-way information.

Response: The feasibility study Page 13, Typical Section No. 3, the concept plans, and the cost estimate have all been revised to remove any mention of right of way acquisition from station 260+80 to 272+60, based on the new information provided. In the revised concept plans, the sidewalk/multi-purpose trail remains at 2 feet from the right-of-way, but there is no longer any need to remove and replace the fence in this area, and the Typical Section No. 3 has been updated accordingly.

2. The original Feasibility Study application was for a minimum 5' sidewalk along the east side of Brunner Road and the draft Feasibility Study calls for a 6' sidewalk (Sheet 4, 7 and 16). City request it is indicated in the Feasibility Study that the sidewalk along the east side of Brunner Road be designed as 6' wide with alternate bid quantities for a 5-foot sidewalk with a one-foot wide earthen berm between top of swale and 5-foot sidewalk to accommodate a 6-foot sidewalk. City may opt to build a 5' wide sidewalk to reduce construction and future maintenance cost.

Response: Per discussion on the January 16, 2019 phone conference, the study will remain showing a 6' sidewalk per current FDOT design guidelines, despite the fact that in the design phase, the City may revisit this subject to see if FDOT would approve the construction of a 5' sidewalk instead. A note to this effect has been added to Section 4 Trail and Sidewalk Concept Plan.

3. Sheet 6,7, and 8: Can the type of replacement fence (Southwinds Subdivision) not be specified to give flexibility on the type during design. Would the section of fence in Phase 1 of Southwinds Subdivision also need to be removed and replaced as it appears to be located in or along the right-of-way? At the meeting staff had with the Southwinds Subdivision design of the fence was discussed and staff indicated that type would be addressed at design stage.

Response: Per the response to Comment #1 above, the fence in Phase 1 of Southwinds Subdivision (station 260+80 to 272+60) will now remain in place, and in accordance with Comment #13 below, the fence along the Lighthouse Pointe Subdivision (sta. 272+80 to station 286+00) has now been labeled with a note suggesting the

City will coordinate its relocation with the property owners, such that it is no longer necessary to specify fence type, thereby allowing flexibility in the design phase.

4. The Feasibility Study application was for a minimum 8' sidewalk/multi-purpose trail along the north side of Madeline Avenue and the draft Feasibility Study calls for sidewalk/multi-purpose trail width between 8' to 12' (Sheet 5, 6, and 7). City request it is indicated in the Feasibility Study that the sidewalk/multi-purpose trail along the north side of Madeline Avenue be a minimum of 8' wide to give flexibility on the width during design. City may opt to build an 8' wide sidewalk/multi-purpose trail to reduce construction and future maintenance cost.

Response: Per FDM 224.4, shared use paths have a preferred width of 12-feet, a minimum width of 10-feet and may contain short segments of 8-feet in constrained conditions. Per discussion on the January 16, 2019 phone conference, the study will remain showing 10' and 12' shared use path where feasible per current FDOT design guidelines, as requested by Stephen Harris at the July 18, 2019 scoping meeting.

5. If Phase 1 is issued funding for construction prior to Phase 2 would any improvements at the intersection of Clyde Morris Blvd./Madeline Ave. shown in Phase 2 need to be constructed with Phase 1 to ensure compliance with ADA?

Response: Per discussion on the January 16, 2019 phone conference, the intersection improvements, including sidewalk reconfiguration, traffic signal improvements and street lights are designed to be completed all at once. These improvements should be constructed with the first phase that gets constructed. The cost estimate and concept plans have been revised so that both Phase 1 and Phase 2 include the costs for the intersection improvements, and a note has been added to the plans indicating the need for the intersection improvements to be evaluated to determine if they have been completed in a previous project.

6. In the Feasibility Study (Page 14 and Concept Plan Sheet 12 and 13) it indicated right-of-way being needed between 296 to 298 and references the right-of-way/easement boundary show on the Barefoot Park Plat (MB 31, Page 62); however, the replat for Barefoot Park (MB 31, PG 103) shows the right-of-way line for Madeline Avenue being adjacent to the Barefoot Park lots and that the pervious easement was dedicated as right-of-way.

Response: The Replat of Barefoot Park (PB 31 PG 103) essentially only addressed the areas within former Lots 1-17 (relocating the subdivision entrance to Kon-Tiki Terrace and creating new Lots 1-16), and it does not appear to have dedicated any new right of way for Madeline Avenue. As such, the study still includes references to proposed R/W in this area.

7. Are any improvements to the Madeline Avenue/Nova Road intersection anticipated to comply with ADA requirements? The City recently acquired right-of-way on the south side of Madeline Avenue, east of Nova Road and have future for a possible Madeline Avenue right turn lane, would the 8' sidewalk/multi-purpose trail at this intersection be able to be pull closer to the right-of-way line to prevent possible reconstruction with a future turn lane project?

Response: Improvements to the Madeline Avenue/Nova Road intersection are not anticipated as the current curb ramps are ADA compliant. With the exception of the eastern most 60 feet (where it transitions to meet the existing curb ramps) the sidewalk/multi-purpose trail was previously proposed at the right-of-way line adjacent to the 7-11 store. Installation of a future right turn lane would already require reconstruction of the curb return and curb ramps, as well as a small portion of the sidewalks. However, please see revised Sheet 15 where the transition has been redesigned to be more abrupt so as to limit the amount of reconstruction required.

Comments from the City of Port Orange – Engineering Division:

(Larry A. Roberts, Engineer (386) 506-5665 lroberts@port-orange.org; Lisa Epstein, Engineering Specialist (386) 506-5662 lepstein@port-orange.org; Valerie Duhl, Engineering Intern (386) 506-5664 vduhl@port-orange.org):

1. Include Bruner Road in the following:
 - a. Report title
 - b. Figure 1 Project Location Map

- c. Project Purpose and Scope paragraphs 1 and 5
- d. Existing Conditions General Description
- e. Existing Conditions Driveways
- f. Existing Conditions Right-of-Way including photos
- g. Existing Conditions Utilities
- h. Existing Conditions Drainage and Permitting
- i. Financial Feasibility
- j. Table 2 Cost Estimate
- k. Typical Section 07 Baseline of Construction callout
- l. Appendix C Soils Map

Response: Bruner Road from Stillword Court to Madeline Avenue has been included in the above-mentioned locations.

2. Clarify details within Driveway Information Table 1:

- a. Change Column 1 description from "Driveway Type" to "Current Driveway Material".
- b. Change Column 4 description from "Property Address" to "Property Location" and add better description for locations because the locations are not readily apparent based on the addresses provided.
- c. Change Column 5 description from "Proposed Improvement" to "Proposed Driveway Material".

Response: Columns 1, 4 and 5 have been revised as requested and a description has been added to the Property Location Column. In addition, the driveway on Bruner Road has been added to the table.

3. For driveway photos add picture of third driveway proposed for improvement and locations in the captions.

Response: The third driveway at Autumn Tail has been added and the captions match the property locations. In addition, a picture of the driveway on Bruner Road has been added.

4. Include a driveway apron at Bruner Rd. station 502+10.

Response: A driveway apron has been added at station 502+10.

5. Within the Floodway/Floodplain section, confirm FEMA FIRM Panel numbers (12127C0369J last revised 9/29/2017 and 12127C0368H last revised 2/19/2014) and change following as underlined: "0.2% Annual Chance Flood Hazard Areas of 1% annual chance..."

Response: The FEMA FIRM Panel number has been revised to 12127C0369J. The Floodway / Floodplain section has been revised as requested.

6. Add locations in the captions of Drainage and Permitting photos.

Response: Locations have been added to the captions of the Drainage and Permitting photos.

7. In Section 4's Sidewalk, Driveways, Signing and Pedestrian Facilities bullet 2, limit description of Clyde Morris improvements which are part of Phase 2.

Response: Per discussion on the January 16, 2019 phone conference, the Clyde Morris intersection improvements have been included with both Phase 1 and Phase 2 Madeline Avenue Feasibility Studies. Bullet 2 will remain and will also be included with Phase 2.

8. In Section 4's Sidewalk, Driveways, Signing and Pedestrian Facilities bullet 7, more details should be added for proposed Bruner Road work such as tree removal, signage types, removal of shed in right-of-way, 6" deep concrete sidewalk at driveway, and any required drainage grading or handrails.

Response: More Details have been added to bullet 7 for the proposed improvements in Bruner Road. Based on the aerial photograph, the shed appears to be entirely on private property and is not proposed to be removed, though the landscape timbers are to be removed as part of clearing & grubbing.

9. In Section 4 Environmental, please note the City has a gopher tortoise mitigation bank so those fees would not be required. Also conform the estimated environmental costs between this paragraph and Table 2 Cost Estimate. Include details for any potential opportunities for burrow mitigation exemptions.

Response: A note has been added to the study specifying the City's gopher tortoise mitigation bank and the fees have been removed from the cost estimate.

10. For all Typical Sections where varying widths are noted, add minimum width.

Response: As requested, minimums have been added to all typical sections with varying widths.

11. For Typical Section 3, confirm Greenbook minimum 5' width is available from sidewalk to shoulder.

Response: Per the FDOT Green Book Chapter 8, Section C.2.a, sidewalks may be placed as close to the edge of pavement as the grass shoulder point of flush shoulder roadways if existing physical constraints are present (6' from the edge of pavement).

12. In Typical Section 7, also show a transition to natural grade below the sidewalk.

Response: As requested, transition to natural grade below the proposed sidewalk has been added to Typical Section 7.

13. On Sheets 9-11 regarding fence and signage in right-of-way, indicate Local Agency to use a combination of courtesy and code enforcement resources to effect relocation of private fence and signs to private property. The sidewalk can be designed understanding the signs will be relocated.

Response: Sheets 9-11 have been revised with the requested note.

14. On Sheet 12, there is a bus stop ahead sign at 289+90 westbound; add one eastbound.

Response: Please see revised Sheet 12 where two (2) new signs with the existing message "All Traffic Both Directions Stop While School Buses Load or Unload" have been added in both the eastbound and westbound directions as requested.

15. On Sheet 16 on Bruner Road at station 501+90, revise the sidewalk route where it doesn't appear to have 5 feet of separation from the path of travel.

Response: The sidewalk at this location is transitioned closer to the roadway to accommodate the construction of a new closed flume inlet. FDOT Type 'F' curb and gutter will be constructed here allowing the sidewalk to be placed at the back of curb.

16. On Sheet 16, revise callout at shed in right-of-way at station 507+10 to indicate Local Agency to use a combination of courtesy and code enforcement resources to effect for shed at to be moved back on private property.

Response: Sheet 16 has been revised to indicate Local Agency to use a combination of courtesy and code enforcement resources to effect relocation of the landscape timbers, but based on the aerial photo and site visits, the existing shed sits on private property, approximately 5' east of the overhead pole line.

17. Estimate the need for handrails per FDOT Greenbook Chapter 8, Section F throughout the study including at Bruner Road station 501+50.

Response: The proposed trail is to be constructed over top of the existing catch basin near station 501+50 and based on our site observations, there are no excessive slopes in that vicinity that would warrant the need for handrails. Additionally, at both of the proposed gravity wall locations near Viking Drive, cross-sections of the existing ground based on LIDAR were sampled to evaluate the proposed improvements, which indicated that the retaining walls would not exceed 30" in height of exposed face, such that they would require handrails. Thus, no handrails have been added in Bruner Road.

18. In the study, add intersection lighting at Nova Road.

Mr. Stephan Harris
January 31, 2019

Response: In the July 18, 2018 Scoping meeting it was noted that lighting at the intersection of Nova Road would be handled separately as lighting at that intersection was currently being assessed separately under a different FDOT project.

19. In the plans, add new street lights:

- a. On north side of Madeline Avenue at midblock crosswalk
- b. To light Madeline Avenue and Nova Road intersection including medians and east side

Response: New street lighting has been added to the north side of Madeline Avenue at the midblock crosswalk, however, no lighting has been added to the Nova Road Intersection, as this intersection is currently being designed by FDOT.

20. Show existing street light at northwest corner of Madeline Avenue and Nova Road intersection.

Response: The existing street light on the northwest corner of Madeline Avenue and Nova Road has been depicted.

21. Photometric analysis and design of the intersection lighting (stop bar to stop bar in both directions) and midblock crosswalk lighting (back of sidewalk to back of sidewalk) will be required by the design engineer.

Response: Information acknowledged. The lighting design analysis (photometric analysis) is a standard analysis required as part of the lighting design efforts (thus, this fee is reflected in the engineering costs).

Comments from the City of Port Orange – Public Works:

(Alex Popovic, Engineering Intern (386) 506-5572 / apopovic@port-orange.org; Kristine Martin, Engineering Inspector (386) 506-5597 / kmartin@port-orange.org; Mick Neals, Solid Waste Manager (386) 506-5571 / mneals@port-orange.org):

1. Advisory: Please ensure proper grading at Autumn Trail after removal of existing inlet for runoff flow away from crosswalk and into reconfigured swale/MES.

Response: A proposed inlet has been included at Autumn Trail just outside of the crosswalk.

2. Advisory: Without any apparent addition of pedestrian or bicycle traffic, the sidewalk section between Tradewinds Lane to Brunner Road (Station 251+60 to 258+00) should be 8' instead of 12'.

Response: Per FDM 224.4, shared use paths have a preferred width of 12-feet, a minimum width of 10-feet and may contain short segments of 8-feet in constrained conditions. Per discussion on the January 16, 2019 phone conference, the study will remain showing 10' and 12' shared use path where feasible per current FDOT design guidelines, as requested by Stephen Harris at the July 18, 2019 scoping meeting.

3. NOTE: The intersection of Madeline Avenue and S. Nova Road has been developed and a new sidewalk installed along Madeline Avenue. The as-built drawings for the development are provided for your use.

Response: Whereas the study previously depicted the improvements as contained in the 7-11 store design plans, please see revised Sheet 15 where the as-built conditions have instead been depicted.

Comments from the City of Port Orange – Utilities / Right-of-Way:

(Linda Johnson, Right-of-Way Agent (386) 506-5755 / ljohnson@port-orange.org):

No comments.

Comments from FDOT

(Eric Brule, PE (386) 943-5567 / Eric.Brule@dot.state.fl.us)

1. Sheet 5 Concepts – relocate existing cabinet: does this work belong with Ph.II caused by the sidewalk/ramp work?

Response: During our January 16, 2019 phone conference with R2CTPO and the City, it was decided that the

intersection improvements would be included in both studies since there is no way to determine which project will be constructed first. Both studies were revised to include the cost to construct the intersection improvements with a clause noted on the pertinent concept plan sheets that the intersection will need to be analyzed during the design phase to ensure the improvements have not been completed during a separate project.

2. Sheet 10 Concepts – offsite drainage: are any of the improvements associated with the sidedrain extension blocking any offsite drainage coming to the roadway drainage system?

Response: Based on our site observations, this area is relatively flat, but just to ensure a mechanism is provided to pick up any such runoff that may be draining towards the roadway, a proposed inlet has now been included at Autumn Trail just outside of the crosswalk.

3. Sheet 11,12 Concepts – drainage Sta. 286+40 to 290+30 LT: This section does not appear to match the shoulder/drainage shown by the typical section. What is proposed along within this range?

Response: Right-of-way is constrained in this area (station 286+40 to 290+30). Please see revised Typical Section 4 has been revised to show a minimum dimension of 0' between the right-of-way and the shared use path, and revised Sheets 11 and 12 where the sidewalk has been placed out at the existing right of way such that a small swale can be achieved between the trail and the roadway.

4. Sheet 12 Concepts – use of RRFBs: Please be aware the City would currently need to follow procedures set by the MUTCD for interim approvals of RRFBs, March 20, 2018, if they haven't done so already. I've attached Interim (IA-21) Memorandum for reference. Also found at: https://mutcd.fhwa.dot.gov/res-interim_approvals.htm

Response: Information acknowledged.

5. Sheet 16 Concepts – 6" conc. Sta. 502+20 RT: This would need to be reviewed for eligibility with FHWA, with consideration given to its reason for exposure to vehicles.

Response: Information Acknowledged. During our January 16, 2019 phone conference, it was decided that a driveway apron would be provided at this location.

6. General: I don't believe private irrigation was referenced within the report. There appears to be sections within the apparent ROW and within the alignment of the trail.

Response: Please see revised Sheets 9 – 11 where the note requested in the City's Comment #13 above now also addresses the existing irrigation within the right of way in front of the Lighthouse Pointe Subdivision (from station 272+80 to station 285+90) that will need to be coordinated with the property owner in conjunction with relocation of the existing fence.

Comments from R2CTPO

(Stephan Harris (386) 226-0422 ext 20428 sharris@r2ctpo.org)

1. Page 2; Project Location Map – Include a scale on Figure 1.

Response: A scale has been included on the Project Location Map.

2. Page 6; Driveways – As in the phase 2 study, are these concrete driveway aprons that extend to the apparent ROW line? If so, clarify.

Response: Please see revised Table 1 which now clarifies that three (3) existing dirt driveways are proposed to be replaced with concrete driveway aprons, which will extend to the right-of-way. Autumn Trail is an existing asphalt driveway that acts as the entrance to the Lighthouse Pointe Subdivision, and will be milled and resurfaced to the right-of-way.

3. Page 7; Right-of-Way images – Include facing directions on both of these photos.

Response: Facing directions have been added to the right-of-way images.

4. Page 8; Overhead Power and utility lines image – Include facing direction on this photo.

Response: Facing directions have been added to the utility image.

5. Page 9; bullet #7 Noval spelling error – Nova

Response: The spelling error has been corrected.

6. Pages 9 and 10; Storm drain image – Include facing direction and Indicate the location of the storm drain.

Response: The location and facing directions have been added to the storm drainage images.

7. Page 13; Last bullet on sheet – Indicate the number, location and type of trees that need to be removed.
Recommend tree survey if necessary.

Response: Please see revised Section 4 Trail and Sidewalk Concept Plan of the report has been updated to specify that a tree survey should be conducted during the design phase.

8. Page 17; Financial Feasibility – Since Year 4 (2022) is in Table 2, include it here as well.

Response: Year four (4) has been added to the Financial Feasibility list.

9. Page 18; Table 2 Cost Estimate – Include Accessible Pedestrian Signal (APS) equipment.

Response: Accessible Pedestrian Signal equipment has been included in the Shared-Use Path, Sidewalk, Driveways, Signing and Pedestrian Facilities section as well as in the revised cost estimate.

10. Page 18; Table 2 Cost Estimate – Don't forget to include fiberglass rebar in concrete cost estimate.

Response: During our January 16, 2019 phone conference, the City indicated that they are in the process of removing the requirement for fiberglass rebar in their concrete sidewalk detail, but this new practice has not yet become effective. A note has been added to section four (4) regarding this requirement and fiberglass reinforcement has been denoted in the cost estimate in the description of pay item 522-1. The unit price for this item had previously accounted for fiberglass rebar to be included and therefore has not changed.

11. Page 18; Table 2 Cost Estimate – Why does Pay Item 700-1-50 have a quantity of 0?

Response: All street signs are proposed to be removed and new street signs are proposed to be furnished and installed. The pay item to relocate existing signs has been removed from the cost estimate.

12. Page 19; Conclusion – Right of way constraints should be mentioned here as well.

Response: As requested the Right of way constraints have been mentioned in the conclusion.

13. Page 19; Conclusion – Obstructions (trees) should be mentioned here as well.

Response: As requested the trees have been mentioned in the conclusion.

14. Concept Plan Phase 1 Sheet No. 5 – Indicate which trees need to be removed on these concept plans.

Response: Please see revised concept plans where the location of existing trees to be removed have been denoted in areas of proposed improvements.