

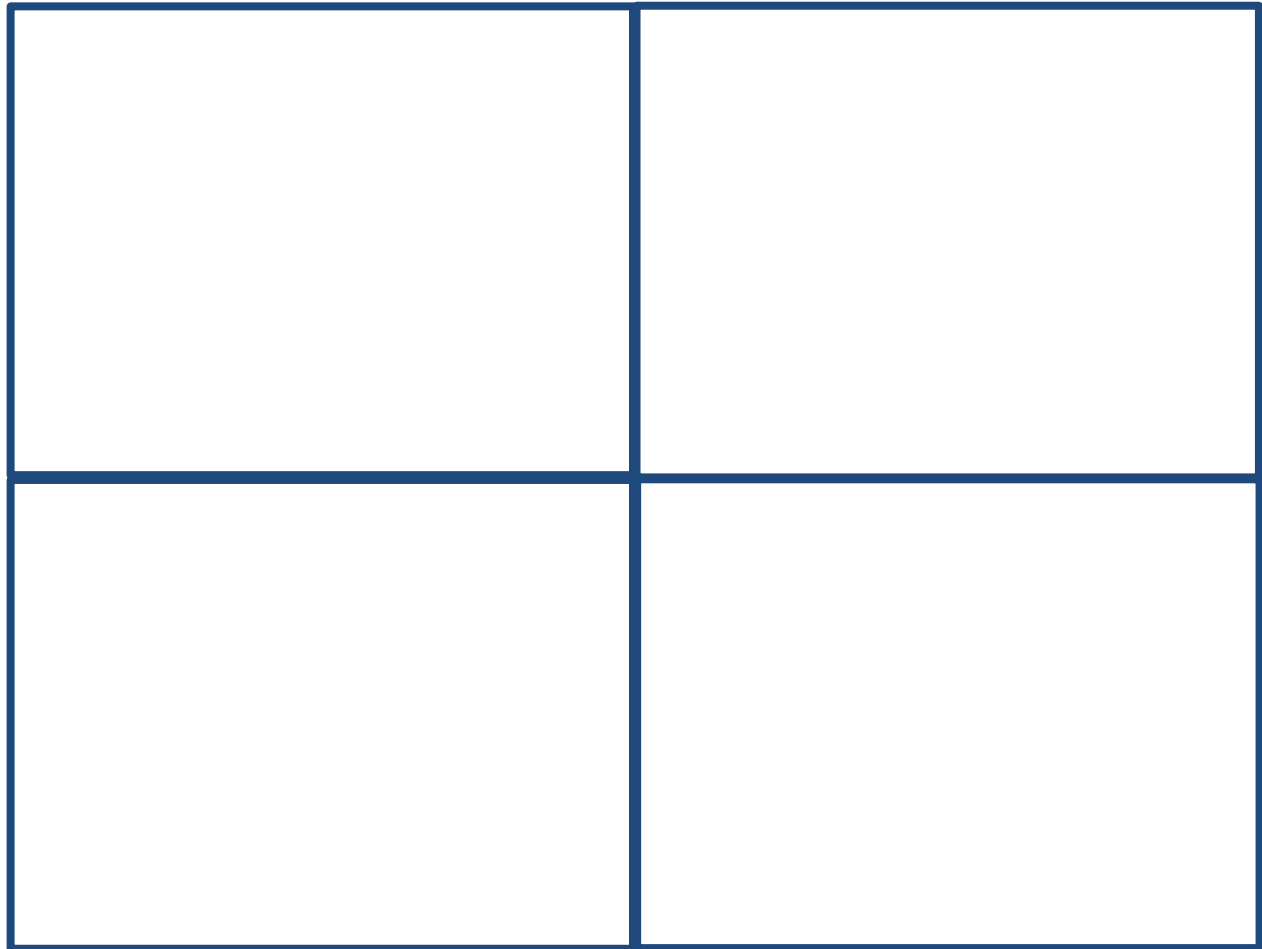
# SHARED USE PATH FEASIBILITY STUDY

**Magnolia Avenue**

**From Reed Canal Road to State Road 400 (Beville Road)**

**City of South Daytona**

FINAL Report, January 2022



Prepared For:  
River to Sea TPO



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# 1

## INTRODUCTION

As of January, 2015, the City of South Daytona (the City) filed a 2015 Application for Project Prioritization with the River to Sea Transportation Planning Organization (R2CTPO) for this project, a copy of which is included in **Appendix A**. The purpose of this study is to evaluate the feasibility of constructing a 12-foot wide Shared Use Path (SUP) along Magnolia Avenue, starting from Reed Canal Road and terminating at State Road 400 (Beville Road). In addition to providing a SUP, this study evaluates intersection lighting for pedestrian crossings at the signalized intersections of Big Tree Road and Beville Road. As shown in **Figure 1**, this study corridor is approximately 8,100 feet (1.5 miles) in length. The main objective of this study is to enhance safety for both pedestrians and bicyclists as they travel along the corridor. Improvements requested in the City's application include sidewalk removal, curbing, SUP installation, driveway replacement, minor roadway resurfacing, roadway reconstruction, tie-in grading, drainage considerations, utility relocation, and sodding.

There is an existing sidewalk located along the east side of Magnolia Avenue spanning from Reed Canal Road to Beville Road that varies in width between four (4) and six (6) feet wide in most areas, and is separated from the existing 10-foot travel lane by a utility strip. In many cases the utility strip is very narrow, leaving only one and a half (1.5) feet of separation from the roadway. The majority of the existing sidewalks along Magnolia Avenue are in good condition however many areas do not meet current accessibility requirements. There are no paved shoulders or bicycle lanes along either side of the roadway. The shared use path along Magnolia Avenue will provide local residents safer access to public transportation, commercial properties, and other community amenities within the area. The project purpose and scope for this study are further explained in Section 2.

## 2

### PROJECT PURPOSE AND SCOPE

An initial scoping meeting for this project was held on June 24, 2021 with members of the City, the Florida Department of Transportation (FDOT), Volusia County (the County), and R2CTPO in attendance.

As noted in the City's application, the purpose of the City's request is to improve north-south pedestrian access to those residents who live within the central part of South Daytona. The proposed project's connectivity includes the enhancement of access by replacing a narrow four to six-foot wide sidewalk with a 12-foot-wide SUP designed for pedestrians and bicyclists. While the majority of the proposed SUP is proposed at 12-foot width, there are a few segments proposed at only 8-foot width where conditions are constrained, as discussed during the comment resolution meeting with the City and the R2CTPO held December 16, 2021. The proposed project's proximity to community assets includes an elementary school, community center, numerous parks and a shopping center complete with a grocery store, all of which are within walking distance of the proposed SUP.

A base map was assembled with current aerial photography and GIS data available from the County, including parcel limits and LIDAR topography. In addition, the City provided CAD files containing utility maps of the corridor containing several of the existing elements including right-of-way, buildings, roadways, sidewalks, driveways, curbing, drainage facilities, signs, pavement markings, traffic control devices, lighting, and utilities. Available historical records were also obtained for a desktop review of the physical features present within the project corridor, including record documents from the St. Johns River Water Management District (SJRWMD) for roadway, site plan, & subdivision projects, etc. In addition, the City provided copies of the Contract Plans for the Big Tree Shared Use Path depicting a separate SUP facility that was recently constructed along Big Tree Road at the intersection with Magnolia Avenue.

Select items were added as supplemental material to the base map, and a field review was then conducted to further inventory the corridor and validate existing conditions. Physical features of the corridor were investigated to identify conditions that would have impact on the proposed SUP improvements for development of concept plans and a cost estimate. These include right-of-way constraints, unusual geometrics, visual obstructions, signing and pavement marking deficiencies, utility conflicts, etc. Color photographs were taken along the study corridor with emphasis on obtaining visual information which would be of value to the City, the County, R2CTPO, FDOT and/or the designer(s) that will complete plans preparation in any subsequent design phases of the project.

Upon compiling the base map information and conducting field reviews, an initial layout of proposed improvements was completed. Considerations were made for replacement of existing curb ramps and/or detectable warnings based on the current requirements of the Americans with Disabilities Act (ADA) to eliminate the associated liabilities from the corridor. Considerations were also made for the design requirements related to "off-system" projects, or projects not located on the State Highway System (SHS), as specified within the 2021 FDOT Design Manual (FDM), the 2018 Manual of Uniform Minimum Standards for Design,



Construction and Maintenance (Florida Greenbook), and other various publications.

An environmental feasibility analysis was performed to identify potential impacts to wetlands and threatened and endangered species which would result from the proposed SUP improvements included in this study. A cultural resources desktop feasibility study was also conducted with a review of background maps and technical publications, as well as a search of relevant databases.

During the initial scoping meeting, the City reported that there are no active Capital Improvement Projects (CIP's) or other development permit projects that would have impact on the proposed improvements and that Magnolia Avenue was recently milled and resurfaced from Big Tree Road (CR 4072) to State Road 400 (Beville Road). The FDOT also reported that there are no lighting retrofit projects in the vicinity of the project study limits.

Based on all the research completed, Typical Sections and Concept Plans were prepared showing all existing elements and the recommended improvements, copies of which have been included in **Appendix B**. Additionally, a cost estimate was prepared for the project, as included further within this report in Section 5 below.

# 3

## EXISTING CONDITIONS

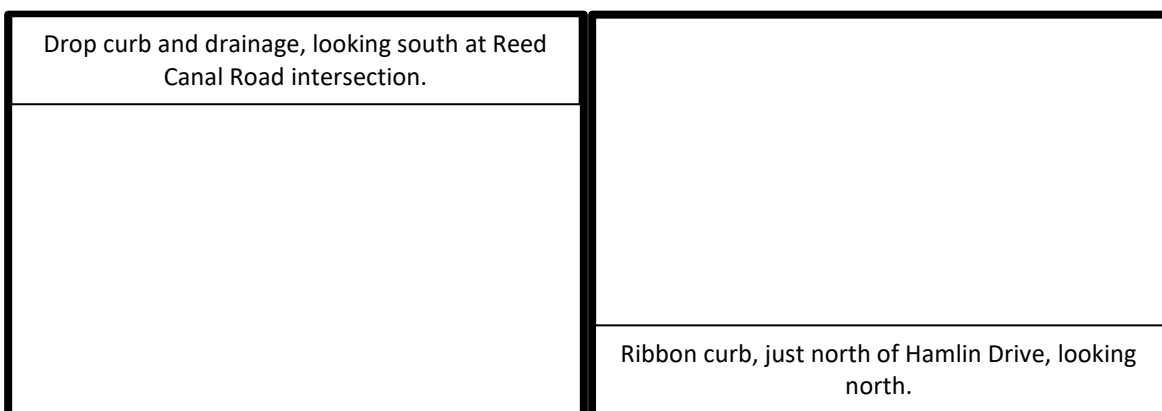
The following section provides a general description of the characteristics observed within the project study limits in regards to the physical conditions, environmental conditions, drainage, and utilities. Also included is an assessment of the apparent right-of-way.

### General Description

The study corridor is approximately 8,100 feet (1.5 miles) in length, extending from Reed Canal Road to State Road 400 (Beville Road) within the City of South Daytona. Both the east and west sides of the study corridor are predominantly occupied by single-family residences, with exception of a few commercial properties. There are two (2) parks located along the east side of the corridor; Central Park with entrance located just north of Big Tree Road near station 47+70 (RT), and Magnolia Park with entrance located just north near station 53+90 (RT).

Magnolia Avenue is a north-south, two-lane undivided, urban minor collector roadway maintained by the City of South Daytona. Within the study corridor, the posted speed limit is 25 miles per hour and travel lanes are predominately 10-foot wide but they increase in width when approaching the signalized intersections at Big Tree Road and State Road 400 (Beville Road). There is existing sidewalk along the east side of Magnolia Avenue that varies in width between 4 to 6 feet, which in some areas, is located very close to the existing 10-foot travel lane with little separation. While the existing sidewalk is in good condition throughout many areas, several portions of the path do not meet the current ADA requirements. With the exception of a short segment of sidewalk beginning at Aspen Drive (Station 55+40) and continuing to station 60+35 (LT), there are no sidewalk or other pedestrian facilities present on the west side, and there are no paved shoulders or bicycle lanes along either side of the roadway, such that bicyclists have to ride in the travel lanes.

Magnolia Avenue is a crowned roadway with curbing which alternates between drop curb (depressed) and ribbon curb (flat). Existing profile grade on Magnolia Avenue was analyzed utilizing LIDAR topography, which revealed that 0.3% longitudinal slope is not maintained over several portions of the roadway, and in some cases the roadway profile is nearly flat. The existing profile is included in **Appendix C**.



There are 45 driveways along the study corridor that would be affected by the proposed shared-use path including 30 along the east side and 15 along the west side. During a field visit the cross slopes of the existing driveways and side streets were measured to generally assess cross slope and the materials were noted. Driveways with excessive slopes will likely require temporary construction easements or right of entry agreements to construct the necessary tie grades back into private property. **Table 1** below provides an assessment of the existing driveways and side streets reviewed in the field.

**Table 1**  
**Summary of Driveways and Side Streets**

Item	Description	Existing Material	Approximate Station	Side	Slope	Replace? (Y or N)	TCE / ROE Required?
1	Driveway	Concrete	0+75	RT	-5.30%	Y	Y
2	Driveway	Concrete	20+55	RT	6.70%	Y	Y
3	Sidestreet (Palm Grove Court)	Asphalt	3+40	RT	-2.70%	Y	N/A
4	Driveway	Concrete	4+15	RT	8.50%	Y	Y
5	Driveway	Concrete	5+50	RT	8.00%	Y	Y
6	Driveway	Concrete	6+15	RT	3.80%	Y	Y
7	Sidestreet (Wells Drive)	Asphalt	6+75	RT	-1.70%	N	N/A
8	Driveway	Concrete	7+55	RT	6.10%	Y	Y
9	Driveway	Concrete	9+30	RT	5.00%	Y	Y
10	Sidestreet (Carey Drive)	Asphalt	10+15	RT	-1.90%	N	N/A
11	Sidestreet (Hamlin Drive)	Asphalt	13+40	RT	-0.80%	N	N/A
12	Driveway	Concrete / Brick Paver	15+85	RT	3.20%	Y	N
13	Sidestreet (Ponderosa Road)	Asphalt	16+80	RT	-2.10%	Y	N/A
14	Driveway	Concrete / Asphalt	18+90	RT	-1.40%	Y	N
15	Sidestreet (Lemon Road)	Asphalt	20+40	RT	-1.30%	N	N/A
16	Side Yard Acces	Sod (unpaved)	22+30	RT	N/A	Y	N
17	Sidestreet (Duncan Road)	Asphalt	24+05	RT	-2.90%	Y	N/A
18	Driveway	Concrete / Brick Paver	25+55	RT	0.00%	N	N
19	Driveway	Concrete	26+25	RT	-0.10%	Y	Y
20	Driveway	Concrete	27+05	RT	-0.70%	Y	Y
21	Sidestreet (Pineapple Road)	Asphalt	27+65	RT	-3.90%	Y	N/A
22	Driveway	Concrete	30+30	RT	-4.00%	Y	Y
23	Sidestreet (Valencia Road)	Asphalt	31+30	RT	-4.50%	Y	N/A
24	Driveway	Concrete	32+75	RT	-1.50%	N	N
25	Driveway	Concrete / Asphalt	33+40	RT	-0.90%	N	N
26	Driveway	Concrete	33+50	LT	-1.60%	Y	N
27	Driveway	Concrete	34+80	LT	-0.40%	Y	N
28	Sidestreet (Temple Road)	Asphalt	35+10	RT	-5.80%	Y	N/A
29	Driveway	Concrete	35+30	LT	-0.50%	Y	N
30	Driveway	Concrete	35+70	RT	-6.20%	Y	Y
31	Driveway	Concrete	36+15	LT	-3.90%	Y	N
32	Driveway	Concrete	36+60	RT	-6.00%	Y	Y
33	Driveway	Concrete	37+05	RT	-3.50%	Y	Y
34	Driveway	Concrete	37+20	LT	-3.50%	Y	N
35	Driveway	Concrete	37+40	RT	-2.90%	Y	Y

**Table 1 (cont.)**  
**Summary of Driveways and Side Streets**

Item	Description	Existing Material	Approximate Station	Side	Slope	Replace? (Y or N)	TCE / ROE Required?
36	Driveway	Concrete	38+85	LT	-4.50%	Y	N
37	Sidestreet (Patterson Drive)	Asphalt	39+35	RT	-1.90%	Y	N/A
38	Driveway	Concrete	40+05	RT	-0.20%	Y	Y
39	Driveway	Concrete / Brick Paver	40+20	LT	-2.00%	Y	N
40	Driveway	Concrete / Brick Paver	40+80	LT	-1.40%	Y	N
41	Driveway	Concrete	41+15	LT	0.60%	Y	N
42	Driveway	Concrete	41+45	RT	-1.40%	Y	Y
43	Driveway	Concrete	41+75	LT	-1.90%	Y	N
44	Driveway	Concrete	42+65	LT	-1.30%	Y	N
45	Driveway	Concrete	43+10	RT	-1.80%	Y	Y
46	Driveway	Asphalt	43+50	LT	-1.00%	Y	N
47	Driveway (City Park)	Concrete	47+70	RT	6.40%	Y	N/A
48	Driveway	Concrete	48+35	RT	7.20%	Y	Y
49	Driveway	Concrete	49+15	RT	5.20%	Y	Y
50	Driveway	Concrete	50+30	RT	1.50%	N	N
51	Sidestreet (Teague Street)	Asphalt	50+80	RT	-2.50%	Y	N/A
52	Side Yard Access	Unpaved (sod)	51+80	RT	N/A	Y	N
53	Driveway (City Park)	Asphalt	53+00	RT	4.90%	Y	N/A
54	Driveway (City Park)	Asphalt	53+85	RT	3.80%	Y	N/A
55	Sidestreet (Aspen Drive)	Asphalt	55+50	RT	-3.00%	Y	N/A
56	Driveway	Concrete	56+55	RT	14.50%	Y	Y
57	Driveway	Concrete	57+30	RT	7.90%	Y	Y
58	Driveway	Concrete	58+20	RT	3.70%	Y	Y
59	Driveway	Concrete	59+00	RT	0.90%	N	N
60	Driveway	Concrete	59+90	RT	3.90%	Y	Y
61	Driveway	Concrete	60+40	RT	2.60%	Y	Y
62	Driveway	Concrete	61+60	RT	3.90%	Y	Y
63	Driveway	Unpaved (sod)	64+50	LT	1.22%	N	N
64	Sidestreet (Silk Moss Court)	Asphalt	66+60	LT	-0.70%	N	N/A
65	Driveway	Concrete / Asphalt	70+30	LT	-2.30%	Y	
66	Sidestreet (Longshadow Road)	Asphalt	72+10	LT	1.20%	N	N/A
67	Driveway	Concrete	73+85	LT	1.70%	N	N
68	Driveway	Concrete (broken)	76+65	LT	N/A	N	N
69	Driveway	Concrete (broken)	77+40	LT	N/A	Y	Y
70	Driveway	Concrete	79+15	LT	1.00%	Y	N

Along the study corridor, there are two (2) existing traffic signals. The existing signal at the intersection of Big Tree Road is maintained by the County, while the existing signal at the intersection of State Road 400 (Beville Road) is maintained by FDOT.

Under provision in FAC 62-330.051, the construction of recreational paths less than 14 feet in width typically qualifies for exemption from Environmental Resource Permit (ERP). Nonetheless, below is a summary of ERP records on file with the St. Johns River Water Management District (SJRWMD) in the vicinity of the project, which contain design information relevant to systems receiving discharge from portions of the corridor, in the event that an exemption from ERP is not able to be obtained and instead, an ERP modification is required:

- ERP No. 23120-1 - Issued March 1996 for the construction of the Stormwater Drainage Improvements, Phase I, located throughout the City of South Daytona. This permit installed back flow prevention devices along Stevens Canal and Reed Canal to protect the residential area from flooding.
- ERP No. 23120-2 – Issued December 1996 for the South Daytona Drainage Improvements Phase II. This permit installed additional back flow prevention devices, as well as a pond and pumping system within the City-maintained wet detention pond located on Aspen Drive (station 56+00).
- ERP No. 23120-4 – Issued June 2003 for the construction of Chicago Avenue Stormwater collection system located near station 74+00 (RT). (ERP 23120-3 was never issued)
- ERP No. 79441-1 - Issued April 1999 for the construction of an exfiltration system associated with the Beville Magnolia Crossing Plaza near station 80+00 (RT).
- ERP No. 88299-1 – Issued May 2003 for the construction of an RV and boat storage facility with two (2) interconnected dry retention ponds located at the southwest corner of New York Avenue and Magnolia Avenue near station 77+00 (LT). It does not appear that the construction for this permit was ever initiated.
- ERP No. 88299-2 – Issued November 2005 for the modification of the stormwater management system within Magnolia Park near station 53+50 (RT).
- ERP No. 89943-1 – Issued October 2003 for the Martin Business Center, authorizing the construction of office buildings, associated parking area and a wet detention pond. This permit provided treatment for the proposed development prior to discharging into the adjacent the City maintained pond located on Aspen Drive (station 56+00).
- ERP No. 89943-2 – Issued January 2010 for South Daytona Public Works Improvements, authorizing construction of a building area, entrance road, parking area and a wet detention pond from station 61+20 (LT) to station 64+40 (LT). It appears the entrance road and stormwater pond were the only construction activities that took place.

### Utilities

As noted above, the City provided CAD files for utility mapping which depicted underground potable water, sanitary sewer, stormwater facilities, fiber optic cable, and overhead utility poles within the study corridor. This information was utilized for the base mapping and an assessment of existing utilities was made during the field visit. There is an existing lift station within the Magnolia Avenue right-of-way near station 76+00 (LT), though the City indicated this facility may possibly be relocated in the future. Overhead power lines are located throughout the corridor, some of which were contained within the utility map provided by the City, though this overhead line and pole information was also supplemented through tracing from aerial photographs.



Documents of record were researched for information to substantiate existing right-of-way. Refer to **Appendix D** for copies of the underlying plats obtained from the City and / or the Volusia County Clerk of Court's online database, which are arranged in sequential order from south to north along the corridor. All the plats obtained and reviewed confirmed the 60-foot right-of-way width, as depicted in the CAD file of the utility maps provided by the City. While the underlying plats substantiate the existing 60-foot right of way width, it is noted that the earliest one, Plat 11 (Blake / MB 15, pg 119) recorded October 30, 2014 showed Magnolia Avenue in a straight tangent only, whereas the existing right-of-way contains reverse curvature from station 62+00 to station 64+40 according to the utility maps provided in CAD by the City, which is reiterated in parcel maps from the County. Furthermore, none of the subsequently recorded plats that were able to be obtained in this study seemed to create this reverse curvature in the Magnolia Avenue right-of-way. However, it is noted that Plat 16 (Magnolia Lakes / PB 46, pg 14) more recently recorded on February 10, 1997, which created the five (5) single family home lots just south of the reverse curvature, specifically references the Magnolia Avenue right-of-way per the plat of the Town of Blake (MB 1, pg 38). Though a copy of this plat was not available through online records, it may substantiate the existing right-of-way through the reverse curvature. Under the circumstances, it is recommended that prior to any substantial design efforts taking place, survey should be completed to confirm the location of the existing right-of-way relative to the existing roadway elements.

#### Floodplain

According to FEMA FIRM Panel 12127C0367J, as last revised September 29, 2017, portions of the existing right-of-way lie within Special Flood Hazard Area (SFHA), specifically including Zone A from station 1+70 to station 10+40, and Zone AE from station 44+60 to station 64+70 with a Base Flood Elevation (BFE) determined to be 7.00' NAVD88. The Reed Canal Road and Big Tree Road intersections lie within Zone X, areas of minimal flood hazard. The remainder of the project corridor is noted to be within Zone X, 0.2% annual chance flood hazard, 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile. A copy of the referenced FEMA map is provided in **Appendix E**.

#### Soils

A soils map was prepared through the Web Soil Survey (WSS) operated by USDA Natural Resources Conservation Services (NRCS), a copy of which is included in **Appendix F**. The entire corridor is mapped with Tuscawillia-Urban Land Complex soils.

#### Environmental and Cultural Resources

An environmental feasibility study for the project was completed by Terracon Consultants, Inc. (Terracon). 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 SJRWMD. The study corridor was also 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). In addition, Terracon completed a cultural resource feasibility study for the proposed SUP project. 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, Terracon staff inspected the study area in September 2021. For further details, refer to the complete environmental feasibility study included in **Appendix G**.

# 4

## SHARED USE PATH CONCEPT PLAN

As previously mentioned, the purpose of this study was to evaluate the feasibility of removing existing sidewalk facilities and replacing them with a new 12-foot-wide SUP on the east side of Magnolia Avenue in order to provide safer access for pedestrians. In addition, the City desires lighting at the signalized intersections to improve pedestrian safety. This section discusses the SUP concept plan and the supporting drainage and utilities improvements required to implement the proposed SUP in accordance with the 2021 FDM, the 2018 Florida Greenbook, and other various design requirements related to “off-system” projects. At this time, the source of construction funding for this project has not yet been determined.

### Roadway and Shared Use Path Improvements

The FDOT Design Manual (FDM) Ch. 224 and Florida Greenbook Ch. 9.C. were reviewed for SUP design requirements, including path width, cross slopes, longitudinal grades, horizontal / vertical clearance, design speed, horizontal curvature, and separation from roadway. In accordance with FDM 224.4, the appropriate paved width for a two-directional SUP is dependent upon context, volume, and mix of uses. Widths range from 10 feet to 14 feet, with a standard width of 12-feet, which is also the minimum width preferred by R2CTPO. Additionally, it is noted that Shared-Use Nonmotorized Trails (SUNTrail) network facilities less than 12-feet in width require approval by the Chief Planner. For SUP's not in the SUNTrail network, minimum widths of 10-feet may be used where there is limited right-of-way, and short 8-foot wide sections may be used in constrained conditions.

In accordance with the requirements of FDM 224.5 and ADA, maximum cross slope on SUP facilities is 2% and the maximum longitudinal grade is 5% (FDM 224.6). In accordance with FDM 224.7, 4-foot clear areas adjacent to both sides of the path are to be maintained, with a 2-foot-wide graded area at a maximum 1:6 slope adjacent to both sides of the path, except in restricted conditions. Minimum vertical clearance is 10 feet (FDM 224.8). However, 12-foot vertical clearance is desirable for SUNTrail facilities. FDM 224.12 indicates SUP 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. Additionally, Florida Greenbook Ch. 3.C.5.b recommends minimum gutter grades of 0.3% for flat terrain.

In accordance with the City's goals for this project, a SUP with minimum width of 12-feet has been considered along the east side of Magnolia Avenue where possible. It is noted that in the vicinity of Central Park located on the northeast corner of the Big Tree Road intersection, the proposed SUP has been aligned on the interior of this public park property that is controlled by the City, from approximately station 44+80 to station 47+20. This avoids impacts to the root systems of several mature palm trees and oak trees located along the eastern right-of-way line that would likely be required to install the SUP in the right-of-way based on required grade changes and minimizing impacts to the existing storm drains in this vicinity. As a result, the existing 5-foot concrete sidewalk within the existing right-of-way is proposed to remain parallel the proposed SUP. It is noted that this park also contains an existing 8-foot concrete sidewalk routed along its south, east, and north sides, which provides similar connectivity for bicycles and pedestrians, though through a significantly longer, and less direct route than the proposed SUP.

As noted above, the existing Magnolia Avenue right-of-way is maintained at 60-feet width for the entire length of the project, but there are two (2) areas where the roadway is not centered within the right-of-way resulting in minimal distance between the edge of pavement and the eastern right-of-way line available to host the proposed SUP. There are also numerous aboveground utility appurtenances within these areas, which create additional constraints on the east side of the road.

The first right-of-way constraint on the east side of the right-of-way occurs from Valencia Road (station 31+30) to Big Tree Road (station 44+20). As such, the proposed SUP will be reduced to an 8-foot-width, and the existing roadway is proposed to be reconstructed and shifted to the west such that the SUP can be maintained on the east side of Magnolia Avenue with adequate separation from the roadway. Full reconstruction of the roadway is proposed. Given that the existing roadway profile is substandard in this area, and reconstruction of the roadway could possibly offer some opportunity to improve profile grade in this area, the existing ribbon curb is proposed to be replaced in like kind in these areas to maintain existing drainage patterns between the adjacent properties and the roadway. Driveways on the west side will be reconstructed to match the proposed roadway and the side streets intersecting Magnolia Avenue on the east side will be milled & resurfaced. Based on field observations, it appears there is ample existing asphalt on the roads in this area to support the proposed resurfacing of side streets, though pavement cores may need to be obtained during design to confirm.

The second right-of-way constraint on the east side of the road right-of-way occurs from Silver Pond Road (station 64+20) to State Road 400 (Beville Road) (station 80+60). As such, the SUP is proposed to cross Magnolia Avenue at the existing stop-controlled intersection of Aspen Drive located near station 55+20, and continue northerly on the west side of the road to the end of the project.

Refer to the Typical Sections and Concept plans in **Appendix B** for a depiction of the following roadway and SUP improvements that are recommended in this project:

- Construct an 8-foot-wide SUP along the east side of Magnolia Avenue from station 00+00 (RT) to station 2+00 (RT)
- Construct a 12-foot-wide SUP along the east side of Magnolia Avenue from station 2+00 (RT) to station 33+60 (RT)
- Construct an 8-foot-wide SUP along the east side of Magnolia Avenue from station 33+60 (RT) to station 42+00 (RT)
- Construct a 12-foot-wide SUP along the east side of Magnolia Avenue from station 42+00 (RT) to station 55+16.50 (RT)
- Construct a 12-foot-wide SUP along the west side of Magnolia Avenue from station 55+16.50 (LT) to station 80+00 (LT)
- Begin full depth roadway reconstruction to shift the roadway westerly (and possibly improve profile grade if applicable) from station 33+60 to station 44+05
- Remove & reconstruct curb returns at the following side streets for ADA compliance and/or reconnection of side streets (drop curb / ribbon curb):
  - Station 00+00 (RT) – Reed Canal Road
  - Station 03+40 (RT) – Palm Grove Court
  - Station 06+80 (RT) – Wells Drive
  - Station 10+10 (RT) – Cary Drive



- Station 16+80 (RT) – Ponderosa Road
  - Station 24+00 (RT) – Duncan Road
  - Station 27+60 (RT) – Pineapple Road
  - Station 31+30 (RT) – Valencia Road
  - Station 35+10 (RT) – Temple Road
  - Station 39+40 (RT) – Patterson Drive
  - Station 44+10 (RT) – Big Tree Road (CR 4072)
  - Station 50+80 (RT) – Teague Street
  - Station 55+40 (RT) – Aspen Drive
  - Station 66+60 (LT) – Silk Moss Court
  - Station 72+10 (LT) – Longshadow Road
  - Station 80+60 (LT) – Beville Road (SR 400)
- Mill and resurface the following side streets to construct decorative crosswalks with patterned pavement, which in some cases require reconstruction to achieve walkway cross-slope in accordance with ADA requirements, as noted on the Concept Plans:
  - Station 03+40 (RT) – Palm Grove Court
  - Station 06+80 (RT) – Wells Drive
  - Station 10+10 (RT) – Cary Drive
  - Station 13+40 (RT) – Hamlin Drive
  - Station 16+80 (RT) – Ponderosa Road
  - Station 20+10 (RT) – Lemon Drive
  - Station 24+00 (RT) – Duncan Road
  - Station 27+60 (RT) – Pineapple Road
  - Station 31+30 (RT) – Valencia Road
  - Station 35+10 (RT) – Temple Road
  - Station 39+40 (RT) – Patterson Drive
  - Station 50+80 (RT) – Teague Street
  - Station 55+40 (RT) – Aspen Drive
  - Station 56+00 (LT) – Aspen Drive
  - Station 66+60 (LT) – Silk Moss Court
  - Station 72+10 (LT) – Longshadow Road
- Construct ADA compliant pedestrian ramps with detectable warnings at all existing side street crossings
- Remove and replace numerous existing driveways (as shown on the Concept Plans) to achieve walkway cross-slope in accordance with ADA requirements or as necessary to implement swales within easements
- Remove and replace 13 mailboxes at the following approximate locations:
  - Station 30+45 (RT)
  - Station 33+45 (RT)
  - Station 34+60 (LT)
  - Station 35+40 (LT)
  - Station 36+20 (LT)
  - Station 36+80 (RT)
  - Station 37+40 (LT)
  - Station 37+60 (RT)
  - Station 38+60 (LT)

- Station 40+60 (LT)
- Station 41+60 (LT)
- Station 41+80 (RT)
- Station 42+80 (LT)
- Adjust all impacted manholes and valve boxes to finished grade

### Signing & Pavement Marking, Pedestrian Signalization, and Lighting

Given the proposed shift of the roadway to the west at Big Tree Road, the pedestrian detector and signal in the southeast quadrant of the intersection will need to be relocated to provide ADA compliant pedestrian ramps. The traffic signal heads for the northbound approach will have to be shifted approximately 4 feet to the west due to the shift in the roadway in order to provide twelve-foot lanes and improve alignment of the south leg approach and departure lanes with the north leg. The two (2) traffic signal heads will be shifted so that the signal heads are aligned with the northbound approach lane.

The SUP will cross from the east side of Magnolia Avenue to the west side near station 55+15 requiring that a pedestrian crosswalk be constructed with appropriate signing and pavement marking. In addition, a pedestrian crosswalk will be constructed across Aspen Drive at station 56+00 (LT). Four (4) luminaires should be provided at each proposed crosswalk location, with two (2) luminaires per traffic flow direction; one (1) in front of the crosswalk, and one (1) immediately after the crosswalk. There are currently three (3) existing luminaires in the vicinity of this intersection, and therefore four (4) additional luminaires will be needed. Due to the proximity of overhead electric lines on the east side, the additional luminaires required should be installed by the power company on a wooden pole, as there is not sufficient clearance to utilize the FDOT standard aluminum poles.

Both signalized intersections at Big Tree Road and at State Road 400 (Beville Road) have minimal pedestrian lighting at the existing crosswalks, and therefore will require supplemental lighting be installed in order to provide adequate intersection/pedestrian crosswalk lighting in accordance with FDM 231.2.1. This typically requires two (2) luminaires per traffic flow direction; one (1) in front of the crosswalk, and one (1) immediately after the crosswalk.

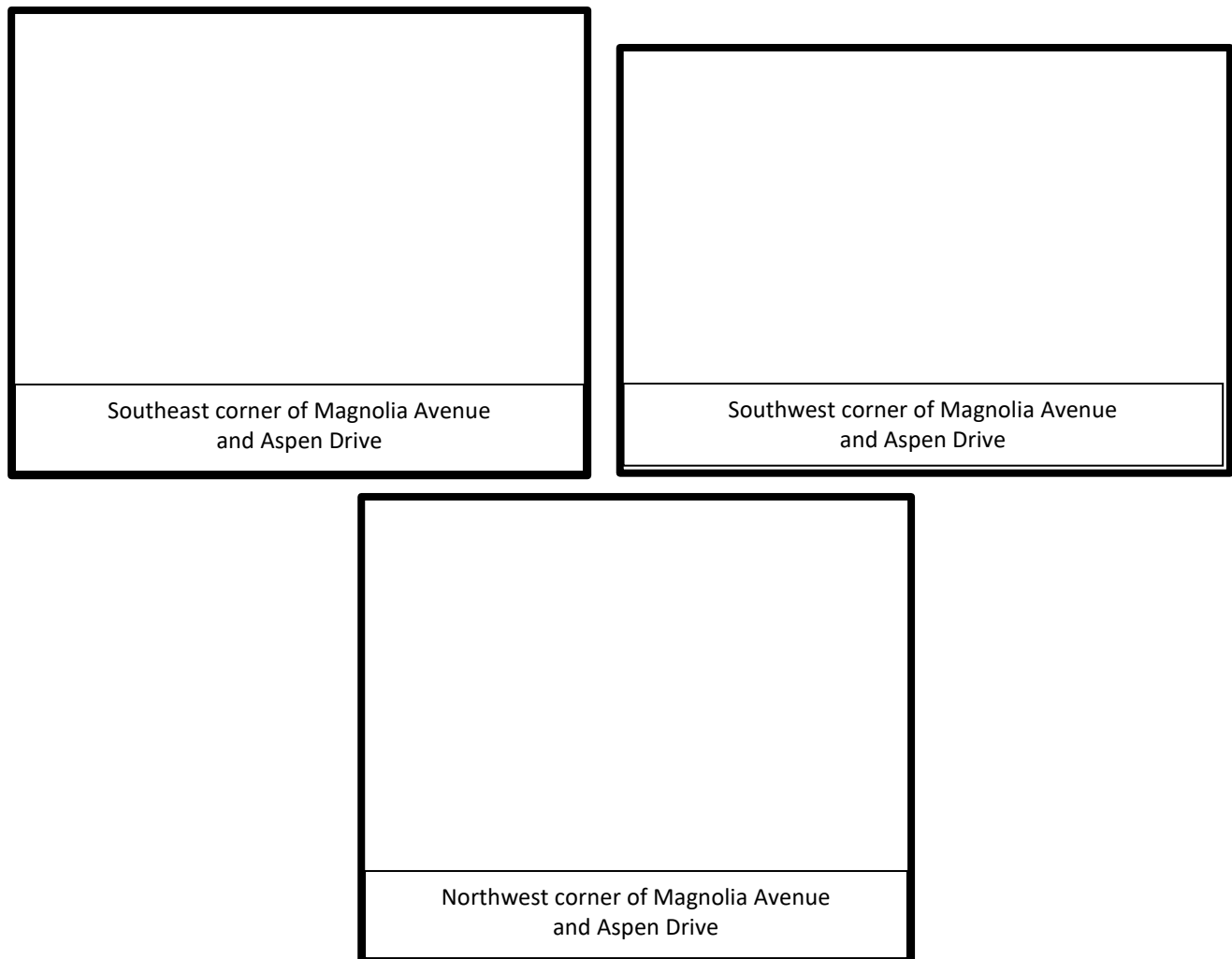
Refer to the Typical Sections and Concept plans in **Appendix B** for a depiction of the following signing & pavement marking, signalization, and lighting improvements that are recommended in this project:

- Construct a mid-block crossing with appropriate signage and striping at Station 62+00 where the proposed SUP crosses from the east side to the west side of Magnolia Avenue
- Construct new decorative crosswalks with patterned pavement and stop bars at all side streets that the SUP traverses through
- Remove and replace existing stop and street name signs at the following locations:
  - Station 03+40 (RT) – Palm Grove Court
  - Station 06+80 (RT) – Wells Drive
  - Station 10+10 (RT) – Carey Drive
  - Station 13+15 (RT) – Hamlin Drive
  - Station 16+80 (RT) – Ponderosa Road
  - Station 20+40 (RT) – Lemon Road

- Station 24+00 (RT) – Duncan Road
- Station 27+60 (RT) – Pineapple Road
- Station 31+30 (RT) – Valencia Road
- Station 35+10 (RT) – Temple Road
- Station 50+80 (RT) – Teague Street
- Station 66+60 (LT) – Silk Moss Court
- Station 72+20 (LT) – Long Shadow Road

### Drainage and Permitting

In the areas along Magnolia Avenue with existing drop curb present, runoff from the proposed SUP will be conveyed towards the existing roadway and directed downstream in the same manner as in existing conditions. Where there are existing catch basins adjacent to the roadway, the proposed SUP will need to be constructed flush with the catch basin aprons. There are three (3) existing inlets at Aspen Drive that contain concrete aprons with steep slopes that will present drop off hazards and will need to be removed and replaced with new inlets to accommodate the SUP.



In areas that contain existing ribbon curb, runoff from the existing roadway and proposed SUP will drain towards the right-of-way lines with shallow swales to be constructed at the back of the SUP to capture runoff and direct it to the collection system components within the intersecting side streets. In addition to receiving runoff generated within the areas of public right-of-way, these swales should be designed to also receive runoff from the adjacent private yards, providing opportunity for many of the homes that sit at lower elevation than the roadway to improve positive outfall to the roadway drainage systems. Unfortunately, based on available right-of-way, these swales will need to be constructed on private property such that perpetual drainage easements will need to be obtained. Where possible, the existing swale systems located within the intersecting side streets should be regraded to enhance the ability to achieve positive outfall from the new swales and private yards.

In portions of the project north of station 55+15 where the SUP is proposed on the west side of the roadway, the existing drainage system is comprised of a mixture of inlets and pipes, as well as a series of ditches and side drains. As shown in the Concept Plans provided in **Appendix B**, several of the drainage system components will need to be modified, replaced, or supplemented, including piping of the existing ditch from station 72+30 (LT) to station 75+65 (LT) to make room for the SUP. However, in these areas there appears to be adequate room within the right-of-way to provide a conventional shallow ditch, located between the proposed SUP on the west side of the road and the existing ribbon curb at the west edge of pavement, to receive runoff from the existing roadway and proposed SUP, such that it can be channelized and continue to be directed to the existing wet detention facility along Aspen Drive that is operated & maintained by the City.

Under provision in FAC 62-330.051, the construction of recreational paths less than 14 feet in width typically qualifies for exemption from ERP. However, the designer will need to analyze the extent of reduction in the capacity of existing swales / ditches and compare it to the increase in capacity of swales / ditches that will be created. An Application for Verification of Exemption should be submitted to SJRWMD during the design phase, though a pre-application may be necessary in the event that exemption is not granted and permitting is necessary.

Refer to the Typical Sections and Concept plans in **Appendix B** for a depiction of the following drainage improvements that are recommended in this project:

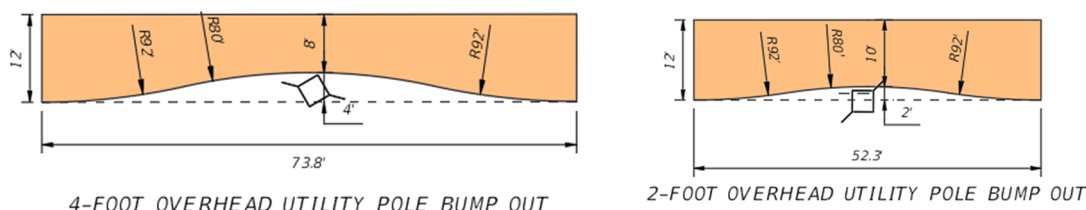
- Construct shallow swales at the following approximate station ranges:
  - Station 10+40 (RT) to Station 43+70 (RT)
  - Station 33+70 (LT) to Station 43+40 (LT)
  - Station 60+40 (LT) to Station 64+30 (LT)
  - Station 64+60 (LT) to Station 80+20 (LT)
- Obtain proposed drainage easements from several existing private property owners ranging from station 10+40 (RT) to station 43+70 (RT)
- Construct side drains with mitered end sections for proposed swales at driveway crossings located at the following approximate locations:
  - Station 11+05 (RT) – approximate length: 10-feet
  - Station 21+65 (RT) – approximate length: 10-feet
  - Station 26+60 (RT) – approximate length: 80-feet
  - Station 30+30 (RT) – approximate length: 35-feet

- Station 35+75 (RT) – approximate length: 20-feet
- Station 36+55 (RT) – approximate length: 20-feet
- Station 40+05 (RT) – approximate length: 20-feet
- Station 41+45 (RT) – approximate length: 30-feet
- Station 43+12 (RT) – approximate length: 40-feet
- Station 77+40 (LT) – approximate length: 40-feet
- Station 79+15 (LT) – approximate length: 60-feet
- Construct new curb inlets at the following approximate locations:
  - Station 54+90 (RT) – (Type 6) with additional pipe to make connection as shown
  - Station 55+45 (LT) – (Type 6) with additional pipe to make connection as shown
  - Station 56+10 (RT) – (Type 6) with additional pipe to make connection as shown
  - Station 56+25 (LT) – (Type V) with additional pipe to make connection as shown
  - Station 61+80 (RT) – (Type 4) convert catch basin to curb inlet
- Construct new catch basins / yard drains at the following approximate locations:
  - Station 70+60 (LT) – (Yard) with additional pipe to make connection as shown
  - Station 71+60 (LT) – (Yard) with additional pipe to make connection as shown
  - Station 73+65 (LT) – (Type C) with additional pipe to make connection as shown
  - Station 74+00 (LT) – (Type C) with additional pipe to make connection as shown
  - Station 75+95 (LT) – (Type C) with additional pipe to make connection as shown
  - Station 76+85 (LT) – (Type C) with additional pipe to make connection as shown
- Construct new manholes at the following approximate locations:
  - Station 55+25 (RT) – convert catch basin to manhole with J-bottom
  - Station 55+75 (RT)
  - Station 56+25 (RT) – convert catch basin to manhole
  - Station 72+30 (LT) – provide additional pipe to make connections as shown
  - Station 73+65 (LT) – provide additional pipe to make connections as shown
  - Station 74+00 (LT) – provide additional pipe to make connections as shown
  - Station 75+65 (LT) – provide additional pipe to make connections as shown
- Remove existing headwalls at the following approximate locations:
  - Station 72+30 (LT)
  - Station 73+65 (LT)
  - Station 74+00 (LT)
  - Station 75+50 (LT)
  - Station 77+80 (LT)
  - Station 77+95 (LT)

### Utilities

While there are numerous potable water mains, sanitary sewers, force mains, and other underground utilities located along Magnolia Avenue within the limits of proposed work, significant impact to these systems is not anticipated since much of the improvements will be constructed with only minimal depth of proposed excavation, as required for construction the proposed SUP and shallow swales. Based on limited field observations, several utility appurtenances will need to be adjusted to finished grade as a result of the proposed improvements, including meters and valve boxes, as they are located within, or in close proximity to, the proposed SUP alignment. Minor adjustment or relocation of utilities, such as telecommunication risers, may also be necessary.

As previously mentioned, FPL's recent hardening project placed new concrete poles on Magnolia Avenue in the areas between the back of curb and the existing right-of-way. In many cases, the new poles were constructed directly in the center of this area, leaving no room to provide a SUP without relocating the recently constructed utility poles. A total of 23 utility poles will need to be relocated, not including the 19 old wooden poles that are presumably intended to be removed in the near future. In some areas, the SUP was reduced to a width of 8 foot or 10 foot for a short segment, creating a bump out around the utility poles though standard horizontal clearance may not be able to be maintained for an instant right at the pole obstruction. These bump outs eliminate the need for the additional relocation of 14 overhead utility poles that appear to just have been recently installed. During design, further collaboration with the power company will be required to coordinate poles that can be relocated.



### Right-of-Way

As shown in the concept plans, perpetual drainage easements will likely need to be obtained from 19 different private property owners to construct swales and side drains proposed behind the SUP in areas where ribbon curb is present. Additionally, due to the excessive slopes on some of the existing driveway and need to install the 12-foot SUP at a maximum of 2% cross-slope, right of entry agreements or temporary construction easements will likely be required to construct tie-in grading and harmonizing improvement on several of the adjacent properties, as reported in **Table 1** in Section 3 of this report. There likely be costs associated with coordinating these agreements or easements, such as survey(s), appraisal(s), legal fee(s), etc. These costs are difficult to project until such time design has been completed and negotiations have occurred, but they have been preliminarily estimated at \$250,000, as reported within the cost estimate.

### Floodplain

As noted previously in this report, portions of the existing right-of-way from station 1+70 to station 10+40 and from station 44+60 to station 64+70 lie within Special Flood Hazard Area (SFHA). In general, these areas correspond to the station ranges captured within Typical Sections 1 and 4. As shown on these typical sections included in **Appendix B**, the proposed SUP is to be constructed at or below the existing grade such that impacts to the existing floodplain are not incurred. Under this scenario compensating storage analysis should not be required, which the designer will need to confirm after cross-sections are completed. If impacts are required during design, it is anticipated that volumes within the proposed swales could provide required compensating storage, while remaining directly connected to the existing floodplain.

### Environmental and Cultural Resources

Based on the environmental feasibility study performed by Terracon, no direct evidence of any wetlands or surface waters was noted within the right-of-way, and any work that should occur

within the right-of-way or just outside of the existing right-of-way is not expected to impact any wetlands or surface waters. Additionally, the study noted that no detrimental impacts to any state or federally listed species are anticipated. Lastly, the study indicated that it is likely that above ground historic resources that have yet to be recorded are within the area of potential effect of the current project, and that it is likely that some level cultural resource assessment will be required during the permitting process. For further details, refer to the complete environmental feasibility study included in **Appendix G**.



# 5

## FINANCIAL FEASIBILITY

This section summarizes the preliminary cost estimate prepared for the design and construction of the proposed SUP improvements along Magnolia Avenue from Reed Canal Road to State Road 400 (Beville Road). As completed in the feasibility study, this estimate is intended facilitate the R2CTPO and the City of South Daytona with prioritizing the proposed SUP 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 2059 is available in **Appendix H**.

The total cost of the improvements, including engineering and Construction Engineering Inspection (CEI), is estimated at approximately \$3,472,459.39, as presented in **Table 2** on the following pages. Using FDOT inflation factors, the three-year breakdown for cost estimates is provided below:

- Year 1 (2024) cost estimate adjusted for inflation – \$3,556,215.79
- Year 2 (2025) cost estimate adjusted for inflation – \$3,666,917.11
- Year 3 (2026) cost estimate adjusted for inflation – \$3,771,090.89



**Table 2**  
**Cost Estimate**  
**Magnolia Avenue Shared Use Path Feasibility Study**  
**From Reed Canal Road to State Road 400 (Beville Road)**

PAY ITEM NO.	PAY ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
0101 1	MOBILIZATION	LS	1	\$289,437.62	\$289,437.62
0102 1	MAINTENANCE OF TRAFFIC	LS	1	\$289,437.62	\$289,437.62
0104 10 3	SEDIMENT BARRIER	LF	8,100	\$1.74	\$14,094.00
0104 18	INLET PROTECTION SYSTEM	EA	25	\$155.53	\$3,888.25
0110 1 1	CLEARING & GRUBBING	AC	3.43	\$62,896.55	\$215,735.17
0110 23	TREE REMOVAL	EA	23	\$1,400.00	\$32,200.00
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	5,585	\$29.17	\$162,914.45
0110 7 1	MAILBOX, F&I SINGLE	EA	13	\$191.46	\$2,488.98
0120 1	REGULAR EXCAVATION	CY	3,375	\$22.21	\$74,958.75
0120 6	EMBANKMENT	CY	600	\$17.67	\$10,602.00
0160 4	TYPE B STABILIZATION	SY	2,994	\$9.35	\$27,993.90
285706	OPTIONAL BASE, BASE GROUP 06	SY	2,994	\$16.60	\$49,700.40
0327 70 6	MILLING EXISTING ASPHALT PAVEMENT, 1 1/2" AVG DEPTH	SY	1,505	\$1.98	\$2,979.90
0334 1 12	SUPERPAVE ASPHALTIC CONC, TRAFFIC B	TN	329.8	\$97.26	\$32,076.35
0425 2 41	MANHOLES, P-7, <10'	EA	5	\$6,407.68	\$32,038.40
0425 2 71	MANHOLES, J-7, <10'	EA	2	\$10,117.09	\$20,234.18
0425 1341	INLETS, CURB, TYPE P-4, <10'	EA	1	\$10,306.50	\$10,306.50
0425 1361	INLETS, CURB, TYPE P-6, <10'	EA	3	\$5,774.42	\$17,323.26
0425 1521	INLETS, DT BOT, TYPE C, <10'	EA	4	\$5,009.64	\$20,038.56
0425 1711	INLETS, GUTTER, TYPE V, <10'	EA	1	\$5,322.20	\$5,322.20
0425 5	MANHOLE, ADJUST	EA	14	\$1,432.06	\$20,118.84
0425 6	VALVE BOXES, ADJUST	EA	16	\$1,055.11	\$16,881.76
0430174112	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 12" SD	LF	377	\$91.86	\$34,631.22
0430174118	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 18" SD	LF	99	\$92.47	\$9,154.53
0430174124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" SD	LF	822	\$109.90	\$90,337.80
0430984121	MITERED END SECTION, OPTIONAL ROUND, 12" SD	EA	22	\$1,461.09	\$32,143.98
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	8,724	\$48.42	\$422,416.08
0522 2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	2,054	\$65.78	\$135,112.12
0523 1	PATTERNED PAVEMENT, VEHICULAR AREAS	SY	714	\$165.00	\$117,810.00
0527 2	DETECTABLE WARNINGS	SY	1,080	\$39.71	\$42,886.80
0570 1 2	PERFORMANCE TURF, SOD	SY	8,013	\$2.93	\$23,478.09
0650 1 14	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 3 SECTION, 1 WAY	AS	2	\$1,018.92	\$2,037.84
0653 1 12	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 2 WAYS	AS	1	\$1,265.38	\$1,265.38
0665 1 12	PEDESTRIAN DETECTOR, FURNISH & INSTALL, ACCESSIBLE	EA	1	\$1,356.41	\$1,356.41
0700 1 11	SINGLE POST SIGN, F&I GROUND MOUNT, UP TO 12 SF	AS	17	\$365.31	\$6,210.27
0700 1 60	SINGLE POST SIGN, REMOVE	AS	15	\$37.73	\$565.95
0700 11500	ELECTRONIC DISPLAY SIGN, RELOCATE	AS	1	\$2,111.22	\$2,111.22
0711 11123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" FOR CROSSWALK AND ROUNDABOUT	LF	1,163	\$2.50	\$2,907.50
0711 11125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE AND CROSSWALK	LF	185	\$4.83	\$893.55
0711 16201	THERMOPLASTIC, STANDARD-OTHER SURFACES, YELLOW, SOLID, 6"	GN	0.387	\$4,138.36	\$1,603.41
1644700	FIRE HYDRANT, ADJUST & MODIFY	EA	2	\$3,016.43	\$6,032.86
1644800	FIRE HYDRANT, RELOCATE	EA	3	\$3,016.43	\$9,049.29
-	YARD DRAIN	LF	2	\$3,500.00	\$7,000.00
-	RIBBON CURB / DROP CURB	LF	3,677	\$32.00	\$117,664.00
-	FENCING, RESET EXISTING	LF	1,634	\$30.00	\$49,020.00
-	LIGHT POLE BY POWER COMPANY	EA	14	\$3,000.00	\$42,000.00
<b>TOTAL</b>					<b>\$2,508,459.39</b>

RIGHT-OF-WAY ACQUISITION					\$250,000.00
-	SURVEYING & R/W MAPPING	LS	1	\$81,000.00	\$81,000.00
-	ARCHAEOLOGY	LS	1	\$4,500.00	\$4,500.00
-	HISTORICAL STRUCTURE SURVEY	LS	1	\$17,000.00	\$17,000.00
-	ENVIRONMENTAL (WETLANDS AND PROTECTED SPECIES ASSESSMENT)	LS	1	\$5,000.00	\$5,000.00
-	ENGINEERING	LS	1	\$241,000.00	\$241,000.00
-	GEOTECH	LS	1	\$8,500.00	\$8,500.00
-	SUE	LS	1	\$12,000.00	\$12,000.00
-	CEI	LS	1	\$345,000.00	\$345,000.00
<b>SURVEY / DESIGN / CEI SUBTOTAL</b>					<b>\$714,000.00</b>
<b>TOTAL PROJECT COSTS</b>					<b>\$3,472,459.39</b>
FDOT INFLATION-ADJUSTED ESTIMATE		INFLATION FACTOR	PDC MULTIPLIER	ADJUSTED COST	
2022 ESTIMATED PROJECT COST		BASE	1	\$3,472,459.39	
2023 ESTIMATED PROJECT COST		2.7%	1.027	\$3,566,215.79	
2024 ESTIMATED PROJECT COST		2.8%	1.056	\$3,666,917.11	
2025 ESTIMATED PROJECT COST		2.9%	1.086	\$3,771,090.89	

\* Ultimate costs for Environmental and Cultural Resources is estimated high because the project funding is unknown at this time, these costs will be determined once the source of funding is determined and results of initial surveys are obtained

\* No costs have been included for wetland mitigation

# 6

## CONCLUSION

The purpose of this study was to evaluate the feasibility of replacing the existing sidewalk facilities with a new Shared Use Path (SUP) on the east side of Magnolia Avenue from Reed Canal Road to State Road 400 (Beville Road) in the City of South Daytona, in order to provide increased pedestrian safety. The following improvements are recommended within study corridor:

- Construct a 12-foot-wide SUP along Magnolia Avenue with a crossing at Aspen Drive, near station 55+15 where it transitions from the east side of the road to the west side.
- Reconstruct the existing roadway to shift it westerly from station 33+60 to station 44+05 to provide adequate separation between the roadway and a reduced width SUP on the east side and allow access the existing City parks.
- Mill & resurface side streets and replace curb returns not in compliance with the requirements of ADA and provide decorative crosswalks with patterned pavement.
- Construct new concrete driveways as needed to provide ADA compliance.
- Construct swales to maintain existing drainage patterns in areas where existing ribbon curb is present.
- Modify existing drainage collection system components along the study corridor to allow for construction of the SUP.
- Acquire all necessary drainage easements, temporary construction easements, or right of entry agreements to construct swales, tie-in grading and other harmonizing improvements.
- Coordinate with the power company to provide pedestrian crosswalk lighting at Big Tree Road, the Aspen Drive, and State Road 400 (Beville Road).
- The engineering and construction costs associated with these improvements are estimated at approximately \$3,472,459.39 in 2022.

Based on analysis of the data, graphics, concept plans, and cost estimate provided within this report, it is concluded that this project is feasible.

## **APPENDIX A**

# **2015 APPLICATION FOR PROJECT PRIORITIZATION**



## 2015 Application for Project Prioritization

# Bicycle/Pedestrian Projects

January 2015

### **General Instructions:**

For the 2015 Call for Projects, the R2CTPO is accepting applications for Feasibility Studies and Project Implementation.

The R2CTPO has two different application forms for Bicycle/Pedestrian Projects. One is to be used when applying for a Feasibility Study; the other is to be used when applying for Project Implementation. When applying for Project Implementation, the applicant will also be required to submit a completed copy of FDOT's Project Information Application Form.

No project will advance beyond a Feasibility Study unless the R2CTPO receives an application for prioritization of the Project Implementation phase. Applications for prioritization of the Project Implementation phase will be accepted only if a Feasibility Study has already been completed or if the project does not require a Feasibility Study.

Applications will be ranked based on the information supplied in the application.

Incomplete applications will not be accepted.

### **Initial Project Screening:**

Any project submitted by a local government for consideration needs to meet the following screening criteria:

For any proposed facility to be considered eligible through the TPO process, the project must be included on the ***River to Sea TPO's Regional Trails Corridor Plan*** or an adopted ***Bicycle/Pedestrian Plan***.

Is this **Shared Use Path** project at least 12 feet wide?

- If **Yes** – the project is eligible.
- If **No** – justification is required to determine eligibility.

Is this **Sidewalk** project at least 5 feet wide?

- If **Yes** – the project is eligible.
- If **No** – the project application is not acceptable.

### **Award Limits:**

No more than \$1.5 million in SU funds will be awarded to any single project in any single application cycle, and no more than \$3 million in SU funds will be awarded over multiple years toward the completion of any single project. Waivers/exceptions may be granted by the R2CTPO Board. Other funds (in addition to SU funds) may be used to fund project phases or overall costs above these limits.

### **Local Match Requirement:**

**R2CTPO Resolution 2015-##** provides that the governmental entity requesting SU funds shall be required to match those funds programmed on the project with local funds at the ratios of 90/10 (SU/local). The local match shall be by project phase for each programmed phase including feasibility study. A non-federal cash match is required for a feasibility study. For all other phases, the local match is defined as non-federal cash match and/or in-kind services that advance the project. This resolution also reaffirms the R2CTPO's policy that the applicant (project originator) shall be responsible for any cost overruns encountered on a project funded with SU funds unless the project is on the state highway system, in which case, the State DOT shall be responsible for any cost overruns. Projects whose sponsors are willing and able to provide a local match **greater than 90/10 (SU/local)** will be awarded additional points.

### **Other Funding Requirements:**

Project applications submitted for bicycle/pedestrian funds that contain more than a strictly bicycle/pedestrian component (i.e. roadway improvements, bridge replacements, etc.) may be funded in part with SU funds. The limitations are as follows: a maximum of 10% of the total project cost may be funded with bicycle/pedestrian SU funds, but that amount MAY NOT exceed 10% of the total annual allotment of bicycle/pedestrian SU funds. These projects will be ranked separately and only the top two (2) projects will be recommended for funding in a given year. All project applications are subject to approval by the R2CTPO Board.

### **Electronic and "Hard Copy" Submittal Requirements:**

Any project submitted by a local government for consideration **MUST** include the following information/materials:

1. Applications and supporting documentation shall be submitted as digital media in Portable Document Format (PDF), compatible with MS Windows and Adobe Acrobat® Version 9.5 or earlier.
2. Electronic documents may be submitted through our FTP site, as an attachment to email, on a CD, DVD or USB flash drive.
3. The application and all supporting documentation shall be included in one electronic PDF file.
4. All document pages shall be oriented so that the top of the page is always at the top of the computer monitor.
5. Page size shall be either 8-1/2" by 11" (letter) or 11" by 17" (tabloid).
6. PDF documents produced by scanning paper documents are inherently inferior to those produced directly from an electronic source. Documents which are only available in paper format should be scanned at a resolution which ensures the pages are legible on both a computer screen and a printed page. We recommend scanning at 300 dpi to balance legibility and file size. If you are unable to produce an electronic document as prescribed here, please call us to discuss other options.
7. In addition to the digital submittal, we require one (1) complete paper copy of the application and all supporting documents. This must be identical to the digital submittal.
8. Submit any available right-of-way information.
9. **Each application MUST include a Project Map** that clearly identifies the termini of the project, Proximity to Community Assets and Network Connectivity through the use of a one (1) mile radius buffer for Shared Use Path projects and a one-half (½) mile radius buffer for Sidewalk projects. Maximum map size is 11" x 17".
10. In addition, all maps **MUST** include a **Scale** (in subdivisions of a mile), **North Arrow**, **Title** and **Legend**. Photographs are optional.

R2CTPO staff will provide assistance in completing an application  
to any member local government that requests it.



## 2015 Application for Project Prioritization – FEASIBILITY STUDY

# Bicycle/Pedestrian Projects

**Project Title:** Magnolia Avenue Shared Use Path

**Applicant (project sponsor):** City of South Daytona

**Date:** 3/25/15

**Contact Person:** Les Gillis, P.E.

**Job Title:** Public Works Director

**Address:** P.O. Box 214960, South Daytona, FL 32121-4960

**Phone:** 386.322.3080

**FAX:** N/A

**E-mail:** lgillis@southdaytona.org

**Governmental entity with maintenance responsibility for roadway facility on which proposed project is located:** The City of South Daytona will be the entity responsible for maintenance of the proposed shared use path.

*[If not the same as Applicant, attach letter of support for proposed project from the responsible entity. This letter of support must include a statement describing the responsible entity's expectations for maintenance of the proposed improvements, i.e., what the applicant's responsibility will be.]*

**Priority of this proposed project relative to other applications submitted by the Applicant:** 4

**Project Description:** The project involves the installation of a 12-foot wide concrete shared use path on Magnolia Avenue from Beville Road to Reed Canal Road. Aspects of construction will include sidewalk removal, curbing, path installation, driveway replacement, utility relocation and sodding. A minor amount of resurfacing of the intersecting roads would be completed to facilitate the installation of striping and decorative crosswalks there.

**Project Location** (include project length and termini, if appropriate, and attach location map): The project area is Magnolia Avenue from Beville Road to Reed Canal Road. The distance is approximately 8,000 feet. A map showing the proposed project location has been attached for your review.

**Project Eligibility for SU Funds (check the appropriate box):**

- ☒ the proposed improvement is located on the Federal-aid system;
- ☐ the proposed improvement is **not** located on the Federal-aid system, but qualifies as a type of improvement identified in 23 U.S.C. §133 that is not restricted to the Federal-aid system.

### **Project Purpose and Need Statement:**

In the space provided below, describe the purpose and need for this proposed project. It is very important that the Purpose and Need Statement is clear and complete. It will be the principle consideration in ranking the project application for a feasibility study. It must convince the public and decision-makers that the

expenditure of funds is necessary and worthwhile and that the priority the project is being given relative to other needed transportation projects is warranted. The Purpose and Need Statement will also help to define the scope for the feasibility study, the consideration of alternatives (if appropriate), and project design.

The purpose is analogous to the problem. It should focus on particular issues regarding the transportation system (e.g., mobility and/or safety). Other important issues to be addressed by the project should be identified as ancillary benefits. The purpose should be stated in one or two sentences as the positive outcome that is expected. For example, "The purpose is to provide a connection between a park and a school." It should avoid stating a solution as a purpose, such as: "The purpose of the project is to add a sidewalk." It should be stated broadly enough so that no valid solutions will be dismissed prematurely.

The need should establish the evidence that the problem exists, or will exist if anticipated conditions are realized. It should support the assertion made in the Purpose Statement. For example, if the Purpose Statement is based on safety improvements, the Need Statement should support the assertion that there is or will be a safety problem to be corrected. When applying for a feasibility study, you should support your Need Statement with the best available evidence. However, you will not be expected to undertake new studies.

The Purpose and Need Statement should address all of the following Priority Criteria:

1. **Proximity to Community Assets:** this measure will estimate the potential demand of bicyclists and pedestrians based on the number of productions or attractions the facility may serve within a one (1) mile radius for Shared Use Paths or a one-half (½) mile radius for Sidewalks. A maximum of 30 points will be assessed.
2. **Connectivity:** this measure considers the gaps that exist in the current network of bike lanes, bike paths and sidewalks. The measurement will assess points based on the ability of the proposed project to join disconnected networks or complete fragmented facilities. A maximum of 30 points will be assessed.
3. **Safety:** this measure provides additional weight to applications that have included safety as a component of the overall project and includes school locations identified as hazardous walking/biking zones and areas with significant numbers of safety concerns. A maximum of 25 points will be assessed.
4. **Public Support/Special Considerations:** describe whether the proposed facility has public support and provide documentation (e.g., letters of support/signed petitions/public comments from community groups, homeowners associations, school administrators). Describe any special issues or concerns that are not being addressed by the other criteria. A maximum of 5 points will be assessed.
5. **Local Matching Funds > 10%:** if local matching funds greater than 10% of the estimated project cost are available, describe the local matching fund package in detail. A maximum of 10 points will be assessed.

**Commentary:** The purpose of the proposed shared use path on Magnolia Avenue is to improve north-south pedestrian access to those residents who live within the central part of our City.

The City recently completed a shared use path project on Ridge Boulevard which runs east and west. This project would connect to that path and give the residents better access to the north and south through our City.

The proposed project's proximity to community assets include an elementary school, community center, numerous parks and a shopping center complete with a grocery store. All are within walking distance of the proposed path.

The proposed project's connectivity includes the enhancement of access by replacing a narrow four foot wide sidewalk with a 12-foot wide path designed for pedestrians and bicyclists. The proposed path would be an extension of our Ridge Boulevard Shared Use Path completed last year.

The proposed project's safety benefits include improved access for pedestrians by replacing the existing narrow sidewalk and creating a path for bicyclists to use rather than the travel lane. Magnolia Avenue is one of our City's busier streets and could be a well used path for pedestrians and bicyclists looking to get through our City

in the north-south direction.

The proposed project was presented to our City Council for consideration of approving a list of projects to submit for federal funding.

The City will contribute the required 10% match.


---



# PROJECT LOCATION MAP

## LEGEND:

- 1 RIVERFRONT PARK
- 2 REED CANAL PARK
- 3 JAMES STREET PARK
- 4 MAGNOLIA PARK
- 5 MELODIE PARK
- 6 NED WAGNER PARK
- 7 CITY HALL
- 8 PUBLIC WORKS
- 9 SUNSHINE PARK MALL – CITIZENS ALERT
- 10 SOUTH DAYTONA ELEMENTARY SCHOOL
- 11 PIGGOTTE COMMUNITY CENTER
- 12 BLAINE O'NEAL PARK
- 13 CENTRAL PARK
- 14 SOUTH DAYTONA PARK OF HONOR

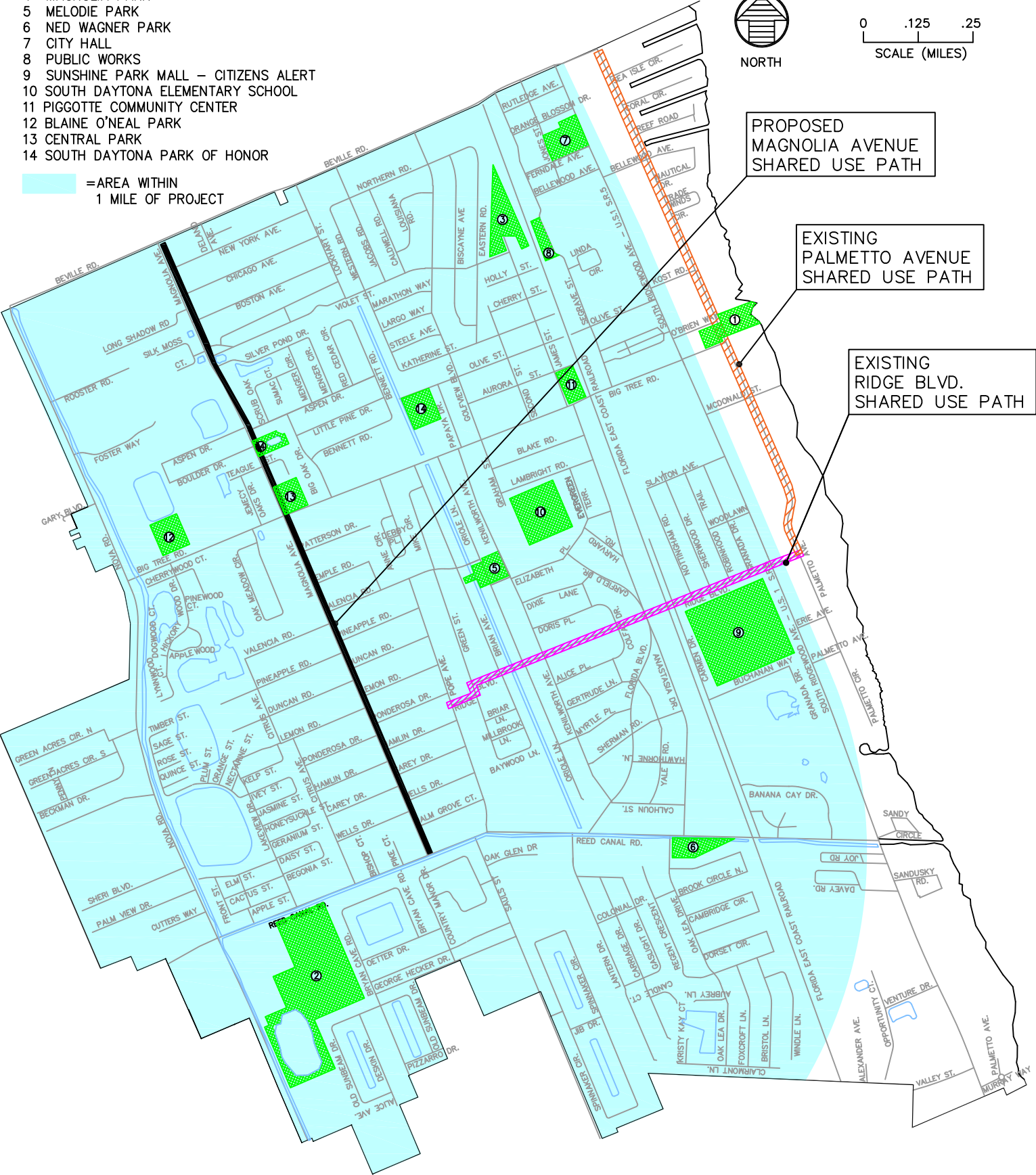
 =AREA WITHIN  
1 MILE OF PROJECT

South Daytona



NORTH

0 .125 .25  
SCALE (MILES)



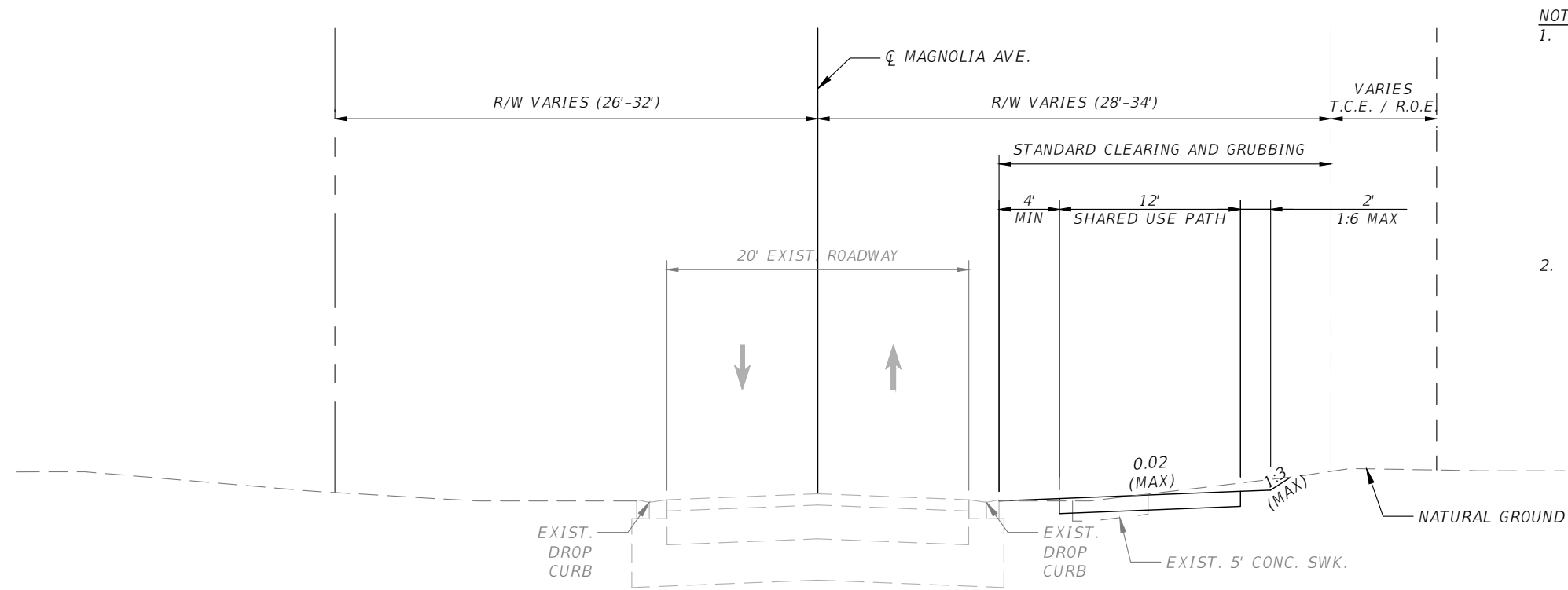
PROPOSED  
MAGNOLIA AVENUE  
SHARED USE PATH

EXISTING  
PALMETTO AVENUE  
SHARED USE PATH

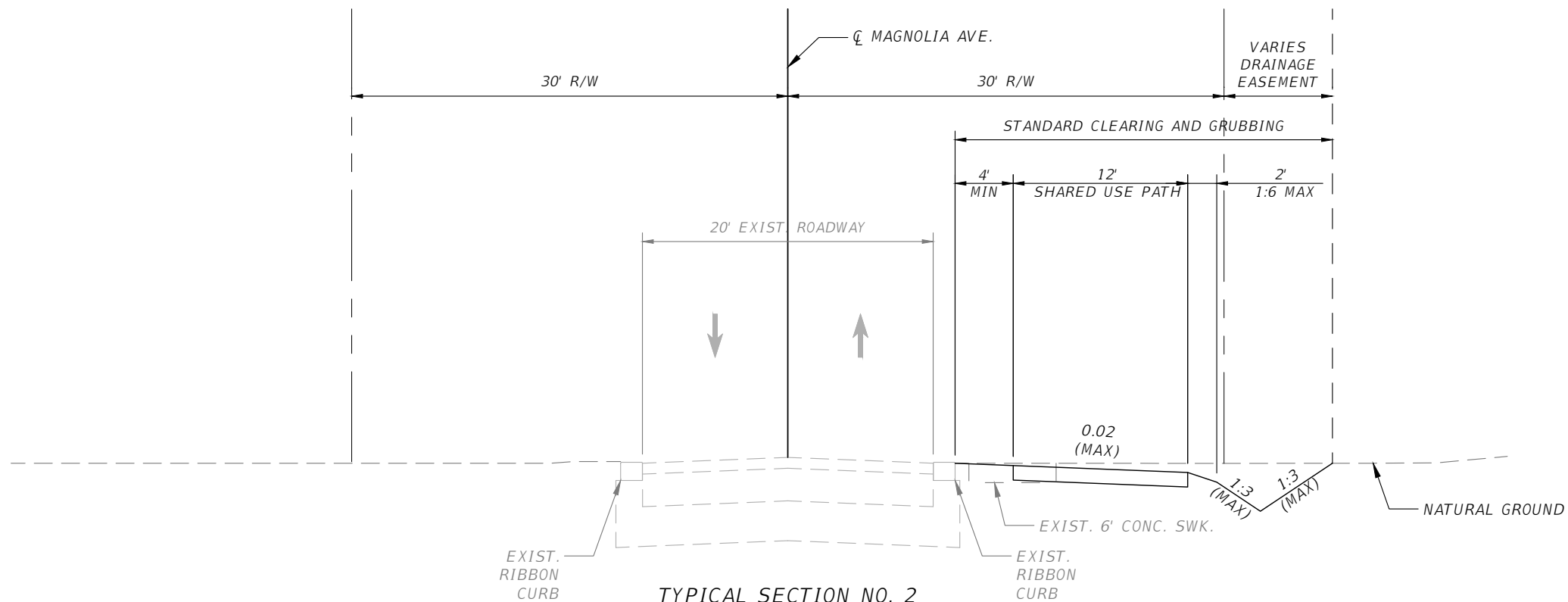
EXISTING  
RIDGE BLVD.  
SHARED USE PATH

**APPENDIX B**

**TYPICAL SECTIONS**  
**&**  
**CONCEPT PLANS**



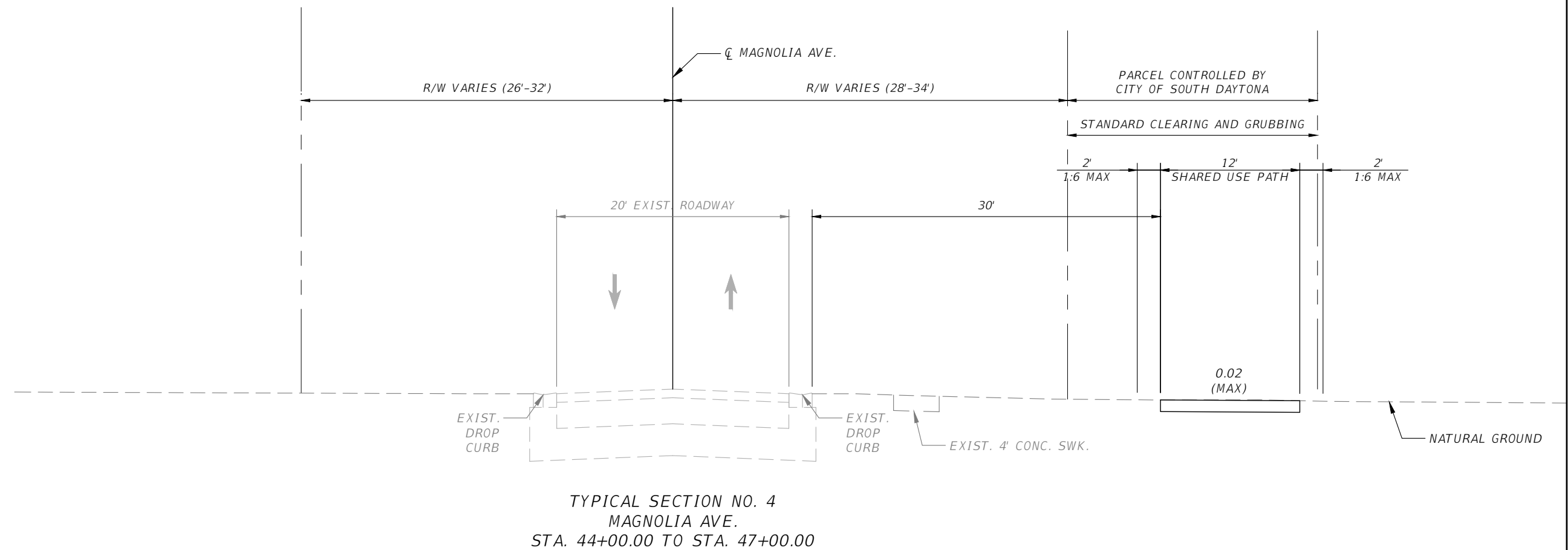
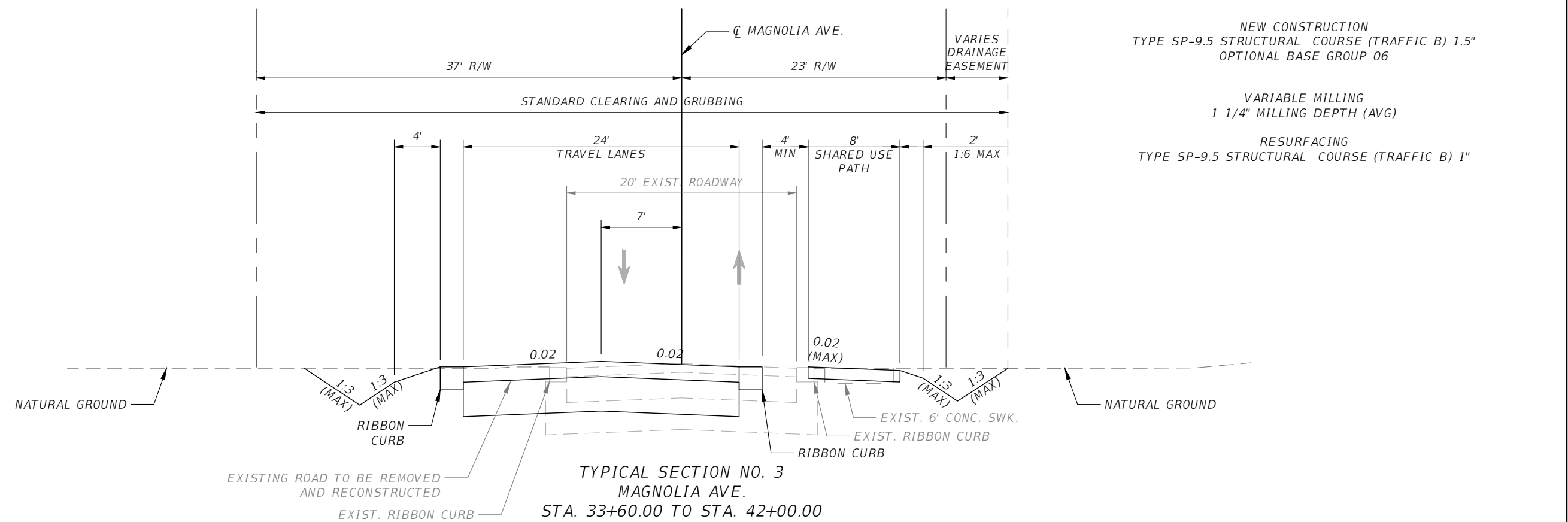
TYPICAL SECTION NO. 1  
MAGNOLIA AVE.  
STA. 0+00.00 TO STA. 10+20.00  
STA. 47+00.00 TO STA. 56+43.50



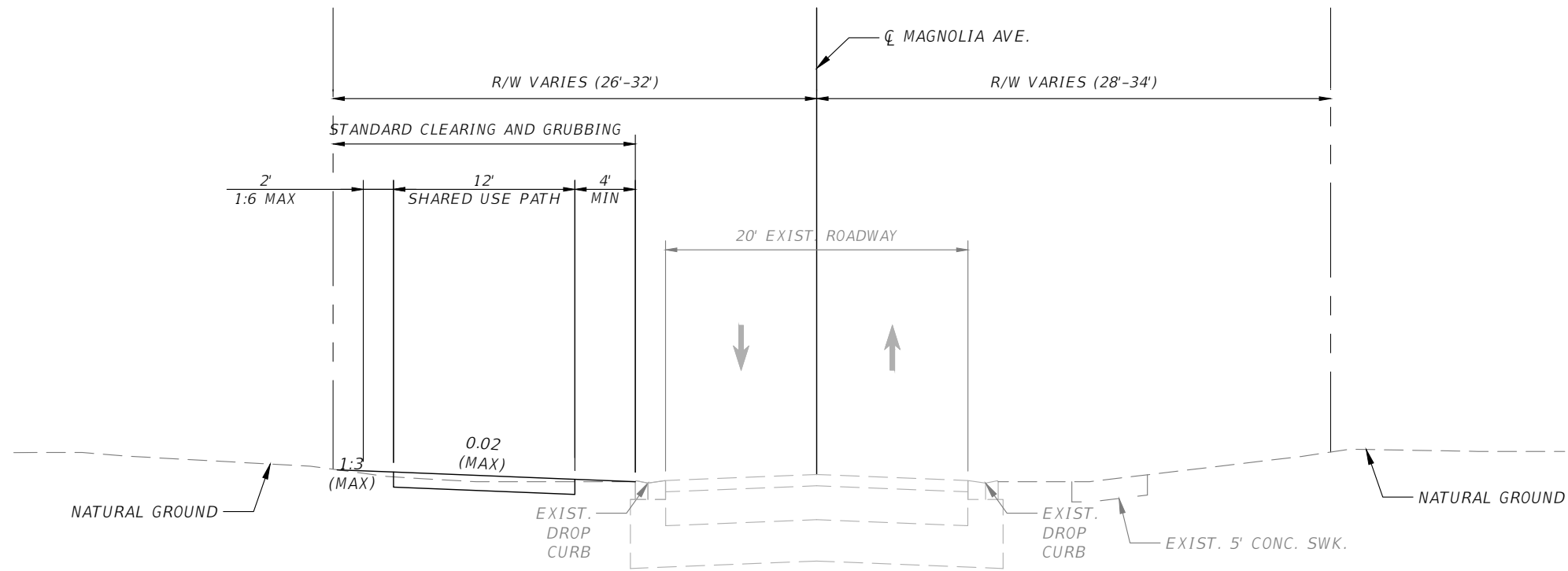
TYPICAL SECTION NO. 2  
MAGNOLIA AVE.  
STA. 10+20.00 TO STA. 33+60.00

- NOTES:**
1. THOUGH NOT SHOWN ON THE CONCEPT PLANS, TEMPORARY CONSTRUCTION EASEMENTS (T.C.E.'s) AND / OR RIGHT OF ENTRY (R.O.E.) AGREEMENTS WILL BE REQUIRED AT SEVERAL LOCATIONS FOR RECONSTRUCTION OF DRIVEWAYS, FENCES, PRIVATE APPURTENANCES, ETC. ON PRIVATE PROPERTIES AND HARMONIZATION. REFER TO TABLE 1 - SUMMARY OF DRIVEWAYS AND SIDE STREETS WITHIN THE REPORT FOR LOCATIONS WHERE THEY ARE ANTICIPATED TO BE REQUIRED.
  2. SIMILAR TEMPORARY RIGHTS FOR RECONSTRUCTION OF DRIVEWAYS AND SIDE DRAINS WILL ALSO BE REQUIRED FOR AREAS WITHIN PROPOSED DRAINAGE EASEMENTS AS SHOWN ON THE CONCEPT PLANS. HOWEVER, THESE TEMPORARY RIGHTS MAY BE ABLE TO BE INCORPORATED WITHIN THE SAME DRAINAGE EASEMENTS THAT WILL NEED TO BE FORMULATED TO SECURE PERPETUAL DRAINAGE ACCESS & MAINTENANCE RIGHTS, INSTEAD OF REQUIRING SEPARATE DOCUMENTS.

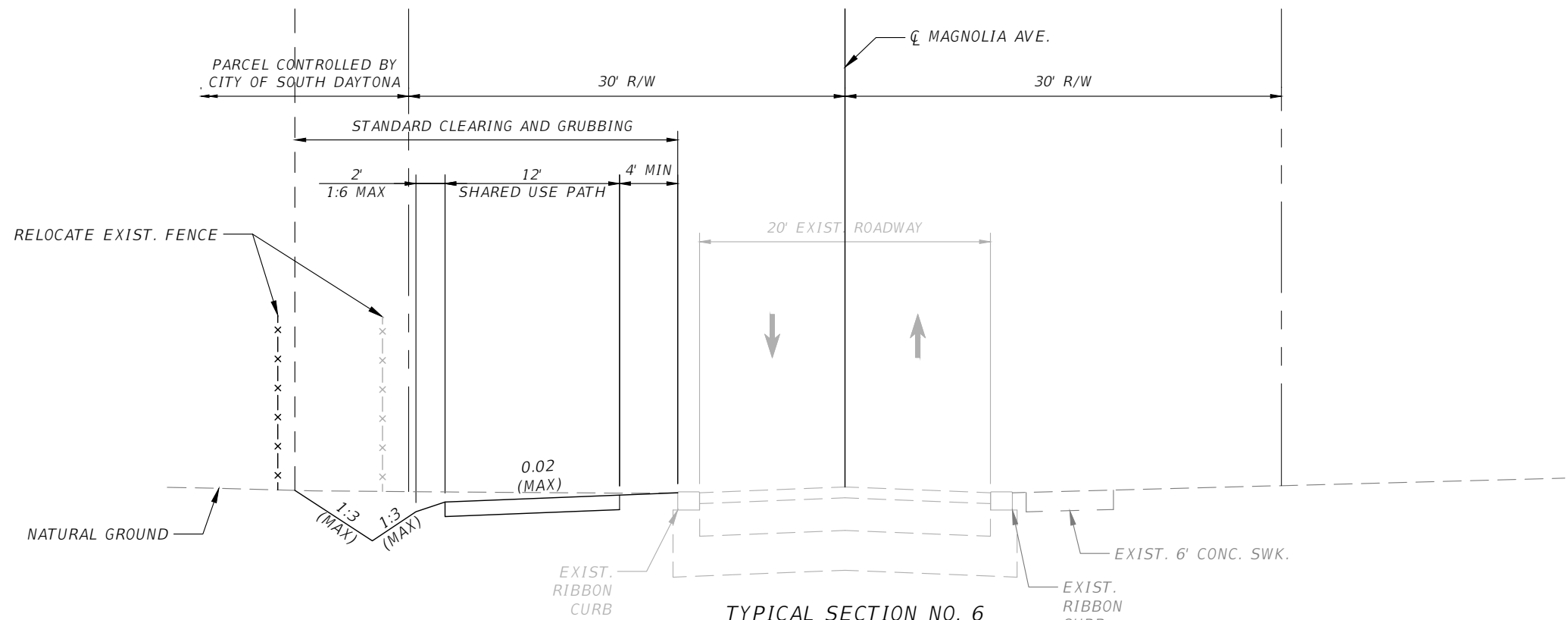
REVISIONS			 TRAFFIC ENGINEERING DATA SOLUTIONS, INC. Phone 386.753.0558 80 Spring Vista Drive Fax 386.753.0778 Delray, FL 32713 CERTIFICATE OF AUTHORIZATION NO. 27392	MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY		TYPICAL SECTION	SHEET NO.
DATE	DESCRIPTION			ROAD	COUNTY		
					VOLUSIA	-----	01



REVISIONS			 TRAFFIC ENGINEERING DATA SOLUTIONS, INC. Phone 386.753.0558 80 Spring Vista Drive Fax 386.753.0778 Delray, FL 32713 CERTIFICATE OF AUTHORIZATION NO. 27392	MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY		TYPICAL SECTION	SHEET NO.
DATE	DESCRIPTION			ROAD	COUNTY		
					VOLUSIA	-----	02

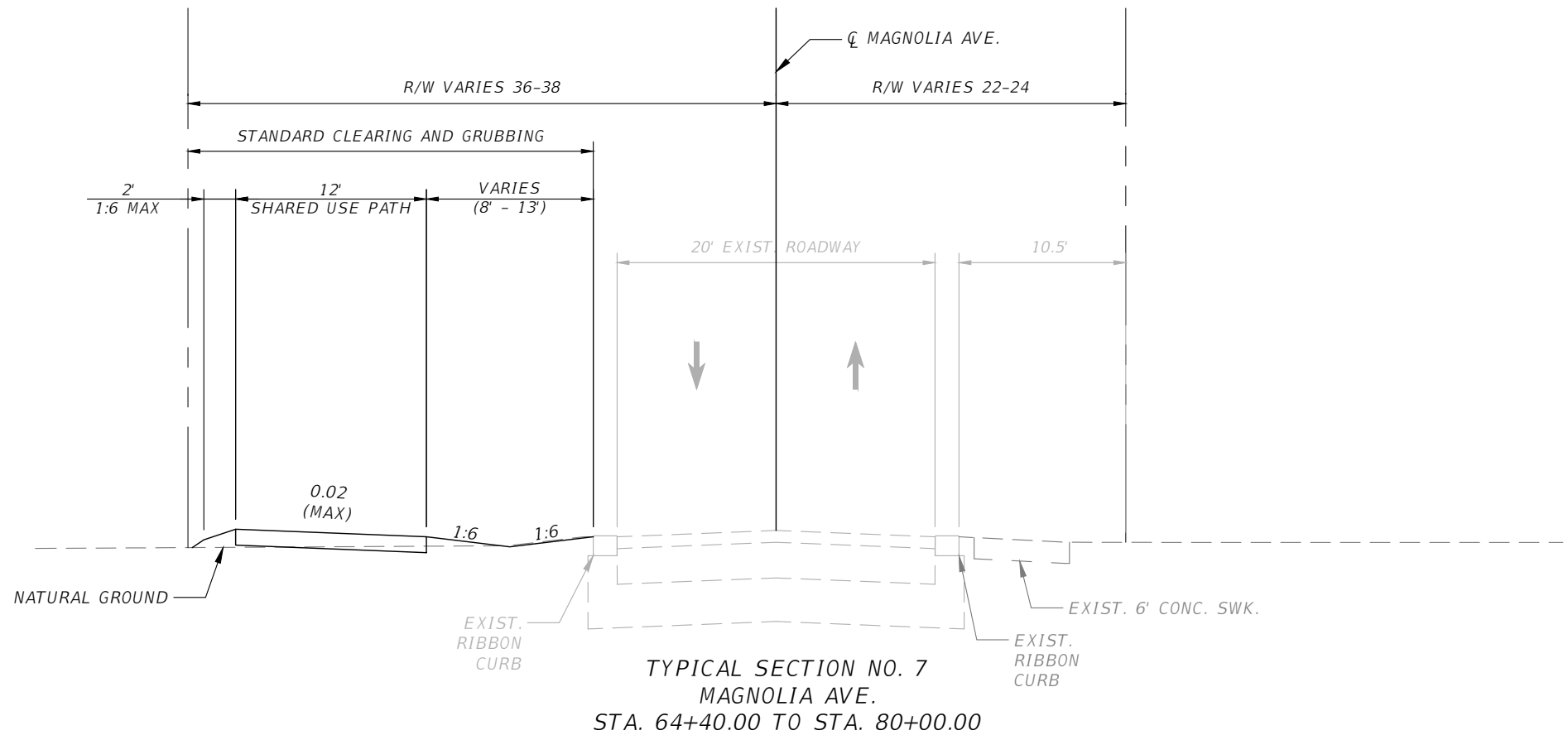


TYPICAL SECTION NO. 5  
MAGNOLIA AVE.  
STA. 55+16.50 TO STA. 60+50.00



TYPICAL SECTION NO. 6  
MAGNOLIA AVE.  
STA. 60+50.00 TO STA. 64+40.00

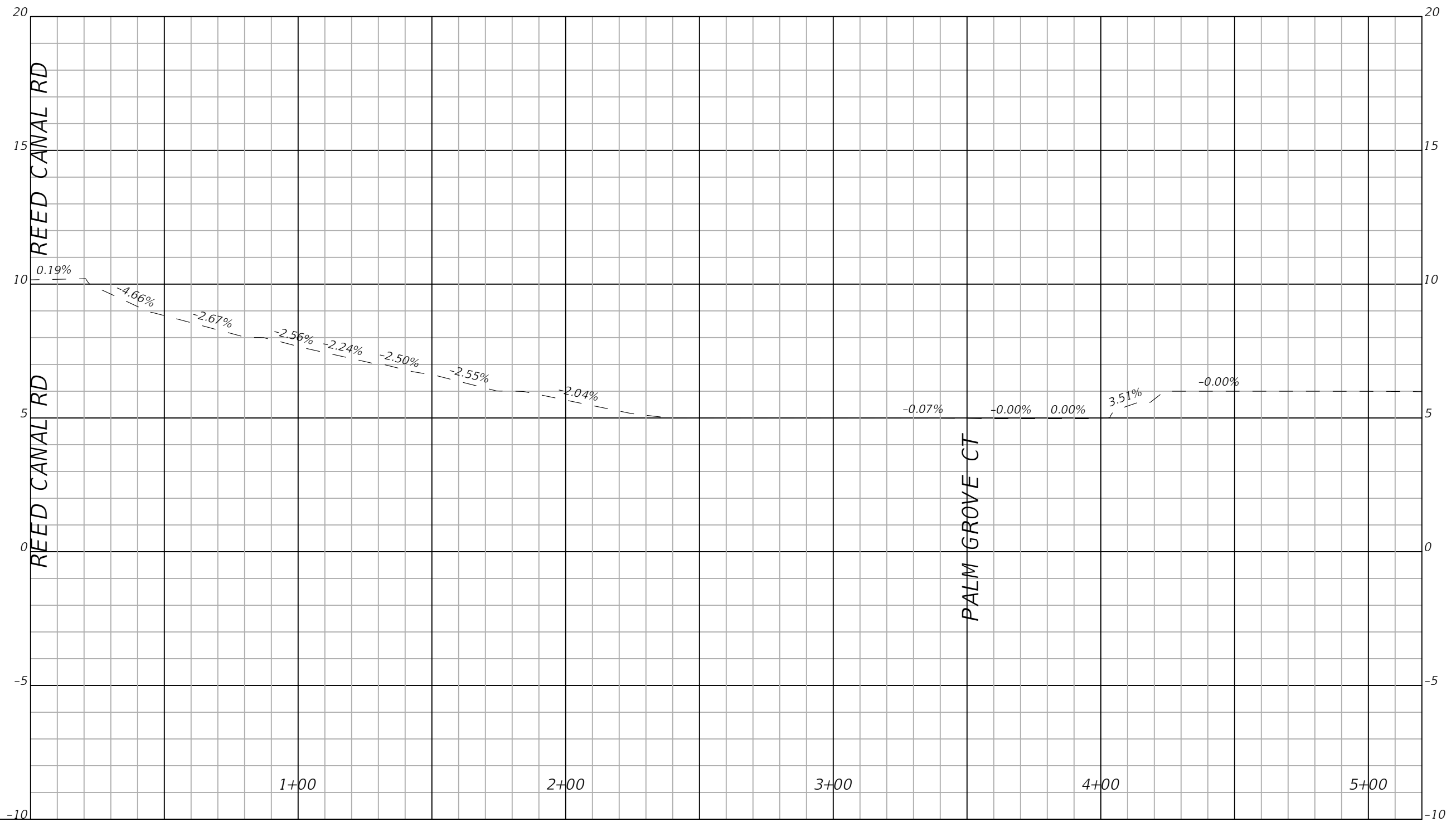
REVISIONS			 <small>TRAFFIC ENGINEERING DATA SOLUTIONS, INC. Phone 386.753.0558 80 Spring Vista Drive Fax 386.753.0778 Delray, FL 32713 CERTIFICATE OF AUTHORIZATION NO. 27392</small>	MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY			TYPICAL SECTION	SHEET NO.  03
DATE	DESCRIPTION			ROAD	COUNTY	FINACIAL PROJECT ID		
					VOLUSIA	-----		



- LEGEND
- | CONCEPT PLAN SYMBOLS |  |
|----------------------|--|
|                      | (4") CONCRETE SHARED USE PATH              |
|                      | (6") CONCRETE DRIVEWAY                     |
|                      | MILLING & RESURFACING                      |
|                      | ASPHALT PAVEMENT                           |
|                      | CONCRETE REMOVAL                           |
|                      | DETECTABLE WARNING SURFACE                 |
|                      | UTILITY POLE TO BE REMOVED                 |
|                      | UTILITY POLE REMOVAL FROM PREVIOUS PROJECT |
|                      | TREE REMOVAL                               |
|                      | PROPOSED STREET LIGHT                      |
|                      | PROPOSED MAILBOX                           |
|                      | PROPOSED DRAINAGE EASEMENT                 |

REVISIONS		 TRANSPORTATION PLANNING ORGANIZATION VISION • PLAN • IMPLEMENT	 TRAFFIC ENGINEERING DATA SOLUTIONS, INC. Phone 386.753.0558 80 Spring Vista Drive DeBary, FL 32713 CERTIFICATE OF AUTHORIZATION NO. 27392	MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY			TYPICAL SECTION & LEGEND	SHEET NO.
DATE	DESCRIPTION			ROAD	COUNTY	FINACIAL PROJECT ID		04
					VOLUSIA	----- - -		

MAGNOLIA AVE  
0+00.00-5+20.00



1" = 40' Horizontal  
1" = 4' Vertical

REVISIONS	
DATE	DESCRIPTION



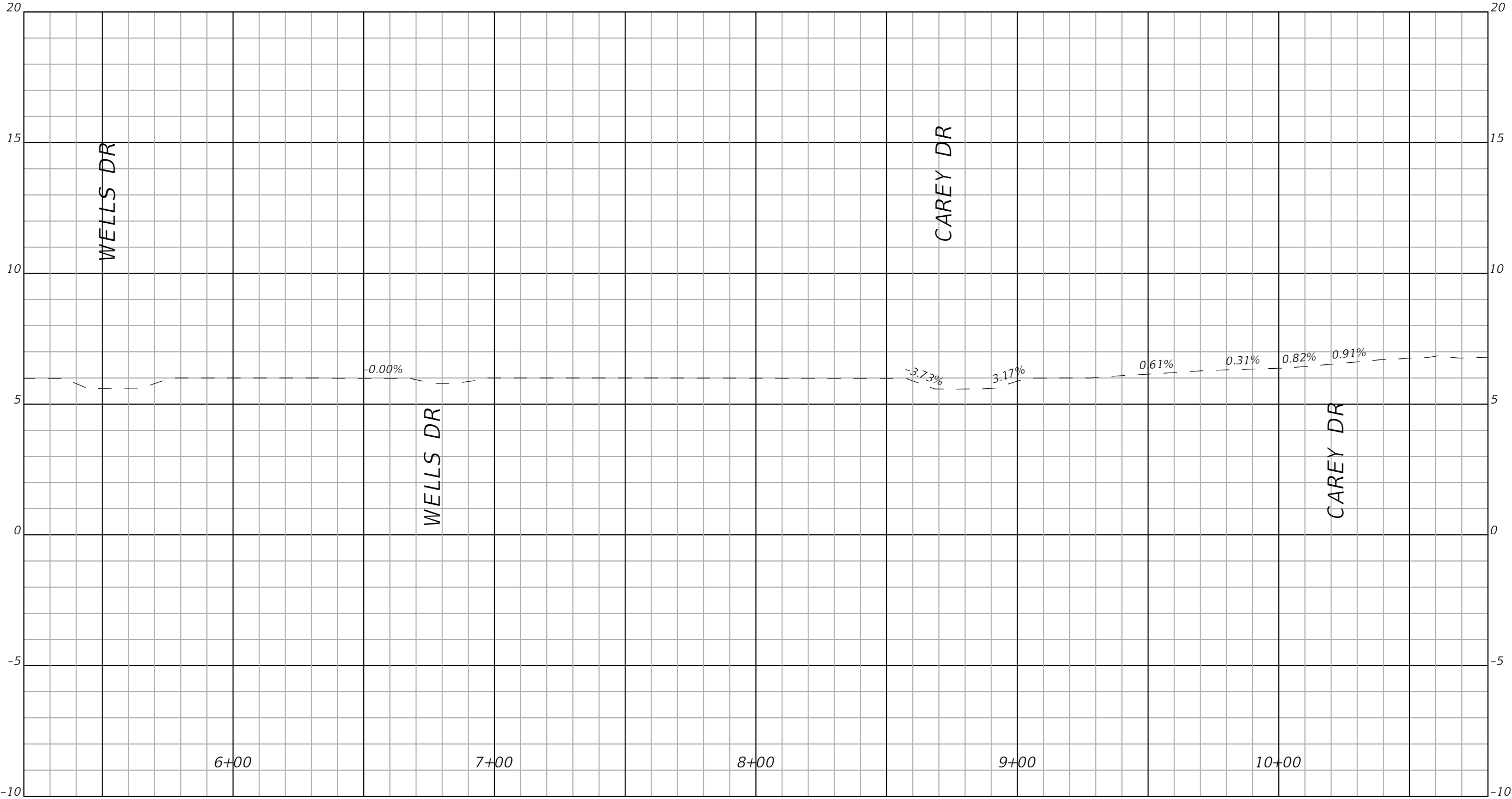
TRAFFIC ENGINEERING DATA SOLUTIONS, INC.  
Phone 386.753.0558 80 Spring Vista Drive  
Fax 386.753.0778 Delray, FL 33413  
CERTIFICATE OF AUTHORIZATION NO. 27392

MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY		
ROAD	COUNTY	FINACIAL PROJECT ID
	VOLUSIA	----- - -

CONCEPT PROFILE (1)	
01	

SHEET NO.
01

MAGNOLIA AVE  
5+20.00-10+80.00

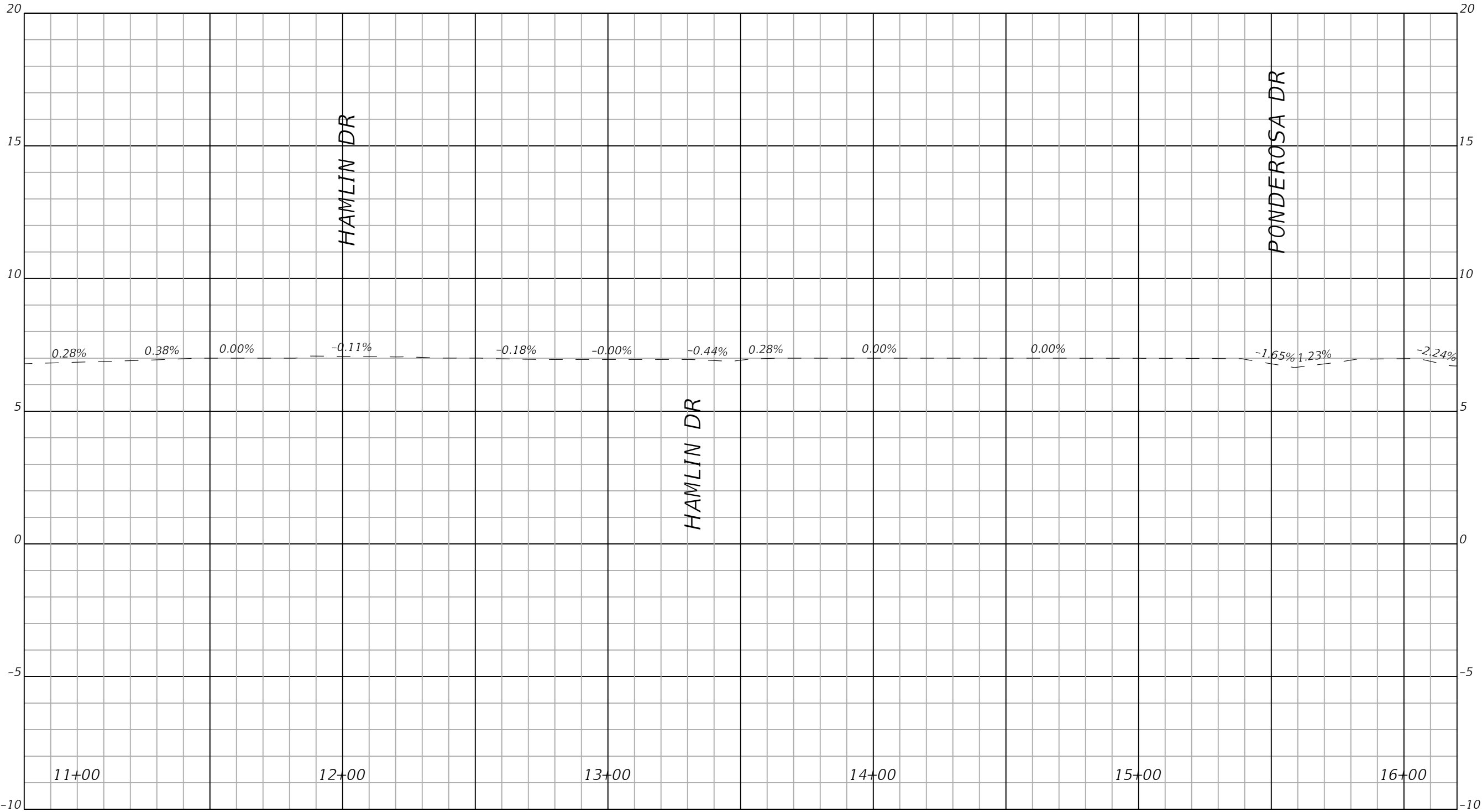


1" = 40' Horizontal  
1" = 4' Vertical

REVISIONS		  <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>	MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY			CONCEPT PROFILE (2)	SHEET NO.
DATE	DESCRIPTION		ROAD	COUNTY	FINACIAL PROJECT ID		02
				VOLUSIA	----- - -		



MAGNOLIA AVE  
10+80.00-16+20.00



1" = 40' Horizontal  
1" = 4' Vertical

REVISIONS	
DATE	DESCRIPTION



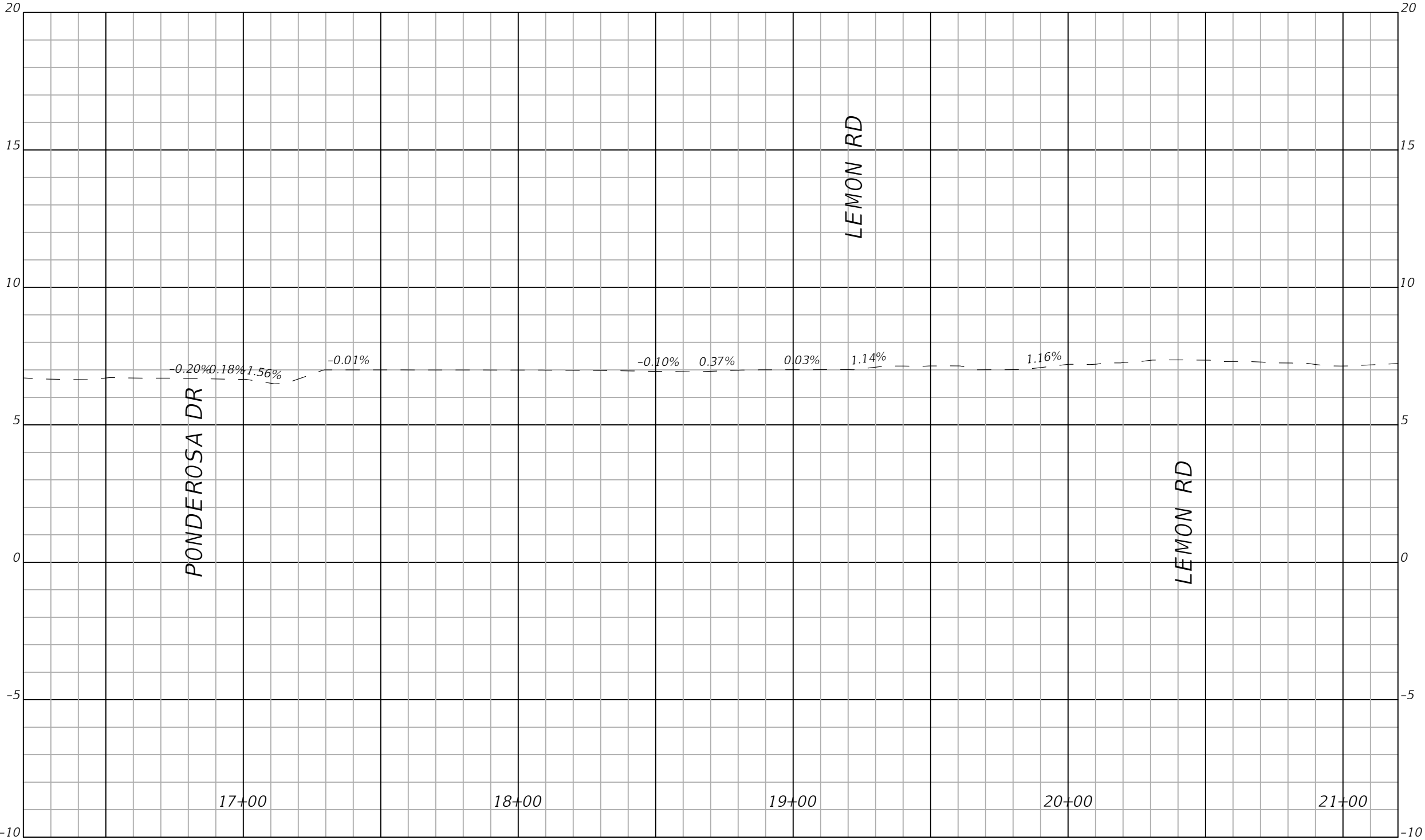
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Phone 386.753.0558 80 Spring Vista Drive  
Fax 386.753.0778 Delbury, FL 32713  
CERTIFICATE OF AUTHORIZATION NO. 27392

MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY		
ROAD	COUNTY	FINACIAL PROJECT ID
	VOLUSIA	----- - -

CONCEPT PROFILE (3)	

SHEET NO.
03

MAGNOLIA AVE  
16+20.00-21+20.00



1" = 40' Horizontal  
1" = 4' Vertical

REVISIONS	
DATE	DESCRIPTION



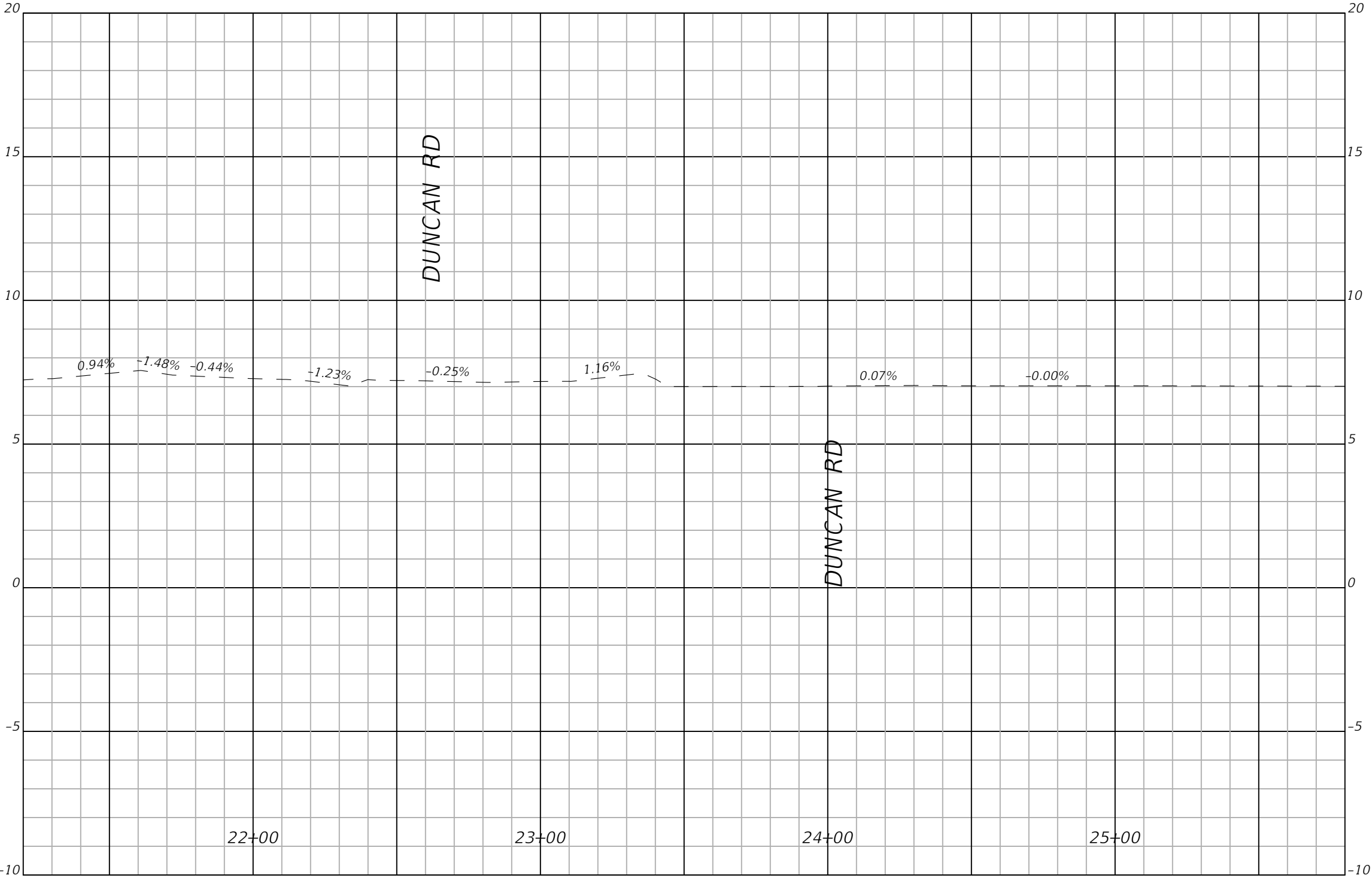
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TRAFFIC ENGINEERING DATA SOLUTIONS, INC.  
Phone 386.753.0558 80 Spring Vista Drive  
Fax 386.753.0778 Delray, FL 33413  
CERTIFICATE OF AUTHORIZATION NO. 27392

MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY		
ROAD	COUNTY	FINACIAL PROJECT ID
	VOLUSIA	----- - -

CONCEPT PROFILE (4)

SHEET NO.
04

MAGNOLIA AVE  
21+20.00-25+80.00



1" = 40' Horizontal  
1" = 4' Vertical

R E V I S I O N S	
DATE	DESCRIPTION



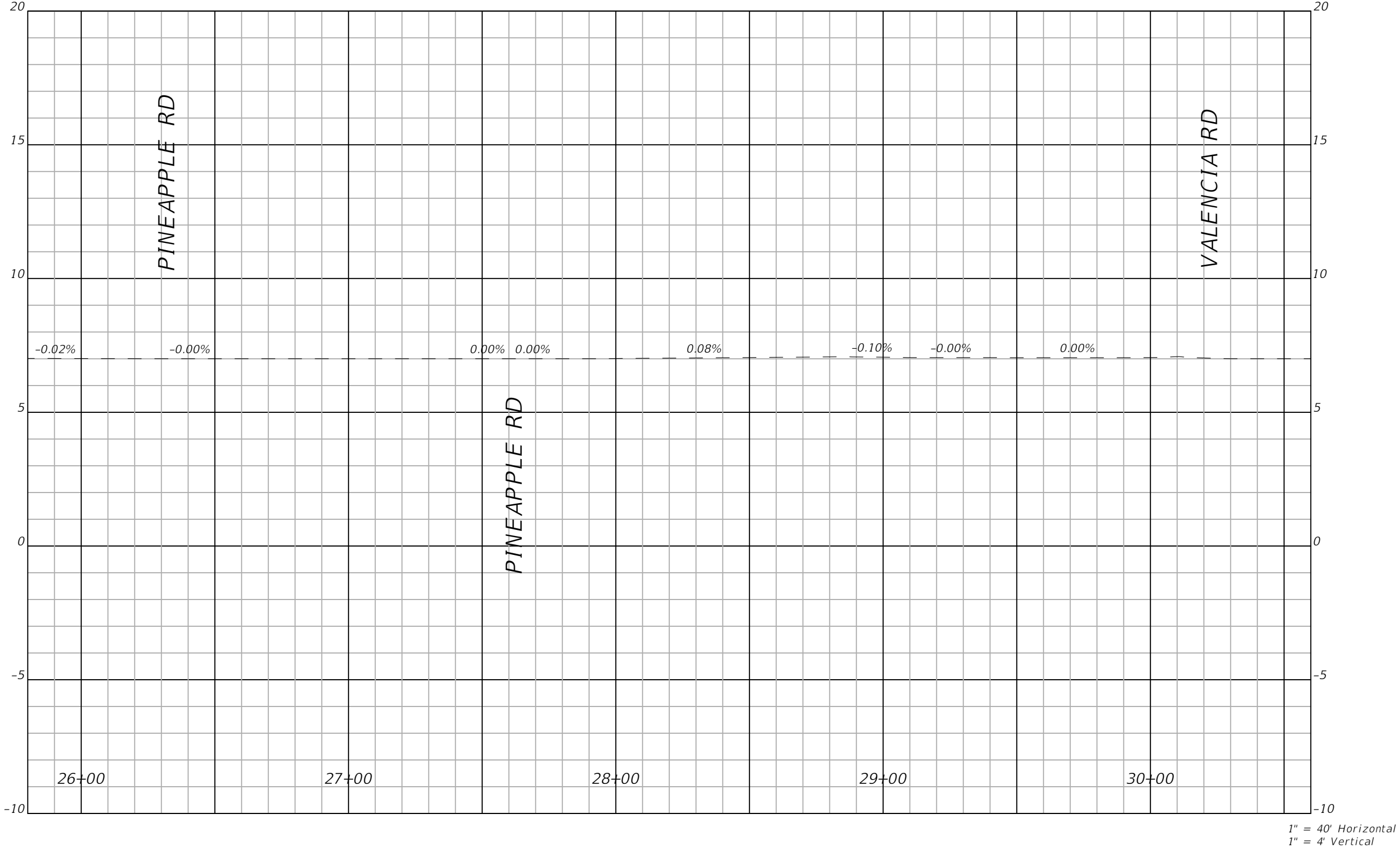
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TRAFFIC ENGINEERING DATA SOLUTIONS, INC.  
Phone 386.753.0558 80 Spring Vista Drive  
Fax 386.753.0778 Delbury, FL 32713  
CERTIFICATE OF AUTHORIZATION NO. 27392

MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY		
ROAD	COUNTY	FINACIAL PROJECT ID
	VOLUSIA	----- - -

CONCEPT PROFILE (5)

SHEET NO.
05

MAGNOLIA AVE  
25+80.00-30+60.00



REVISIONS	
DATE	DESCRIPTION

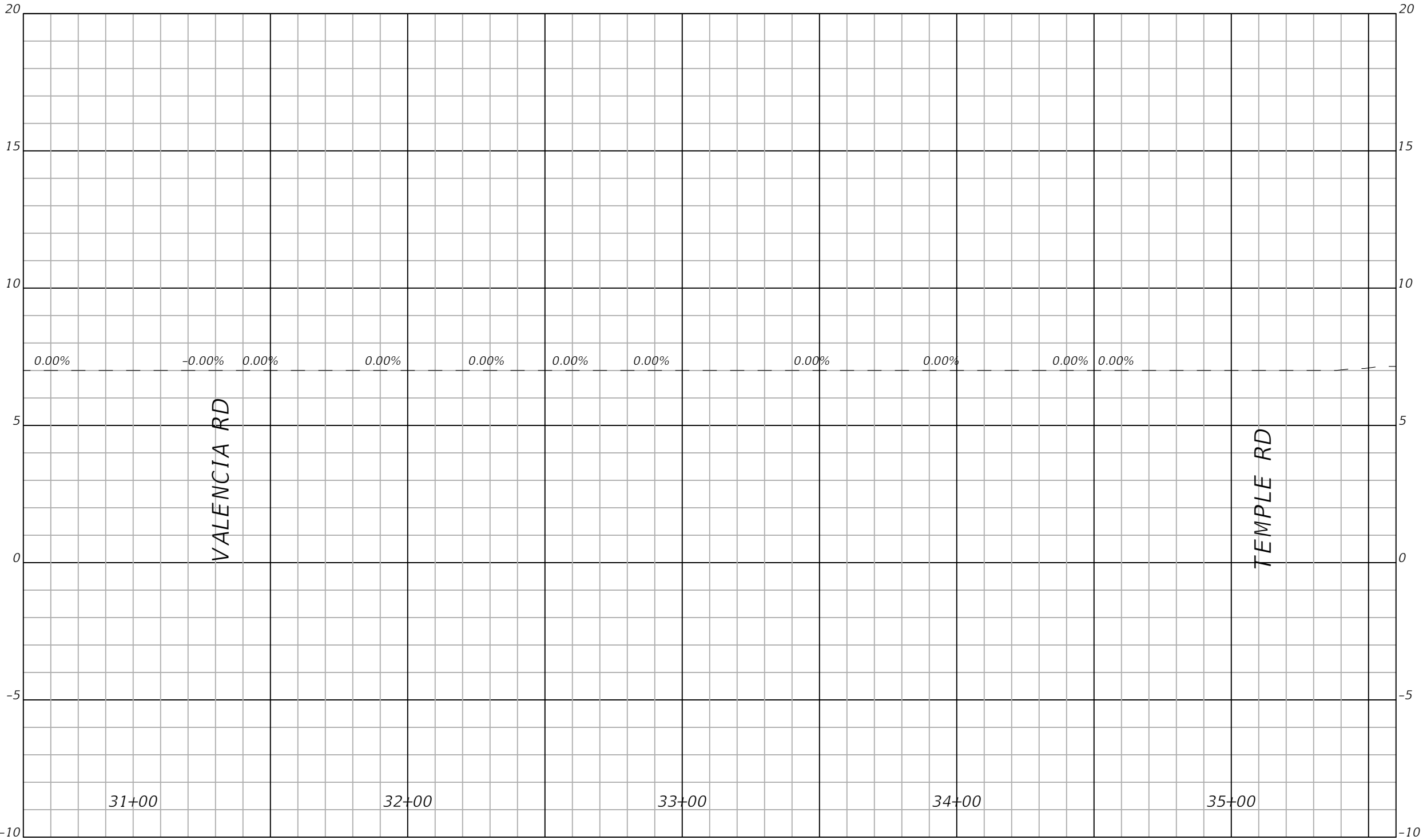


MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY		
ROAD	COUNTY	FINACIAL PROJECT ID
	VOLUSIA	----- - -

CONCEPT PROFILE (6)	
---------------------	--

SHEET NO.
06

MAGNOLIA AVE  
30+60.00-35+60.00



1" = 40' Horizontal  
1" = 4' Vertical

REVISIONS	
DATE	DESCRIPTION



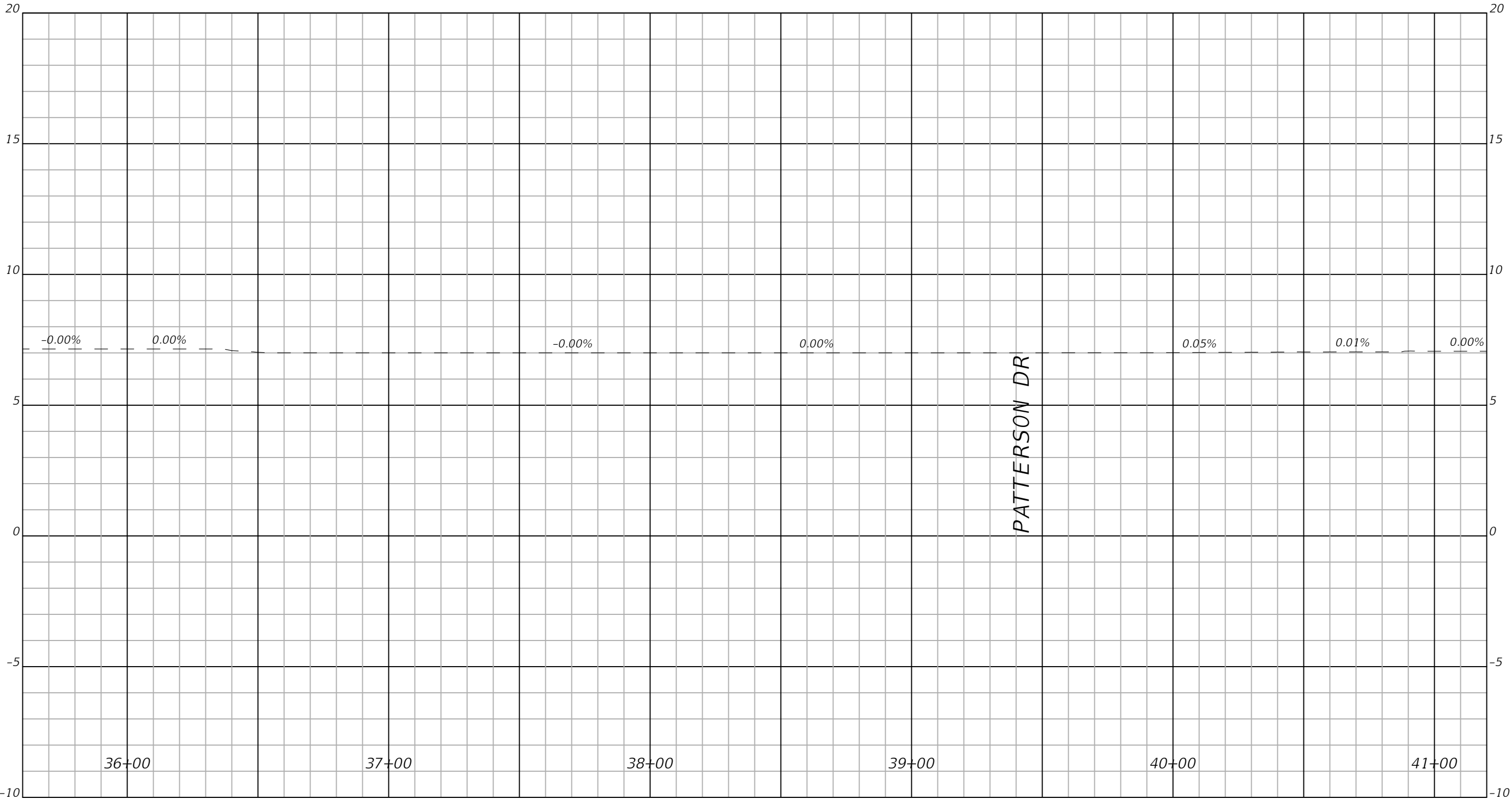
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TRAFFIC ENGINEERING DATA SOLUTIONS, INC.  
Phone 386.753.0558    80 Spring Vista Drive  
Fax 386.753.0778    Delray, FL 33413  
CERTIFICATE OF AUTHORIZATION NO. 27392

MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY		
ROAD	COUNTY	FINACIAL PROJECT ID
	VOLUSIA	----- - -

CONCEPT PROFILE (7)

SHEET NO.
07

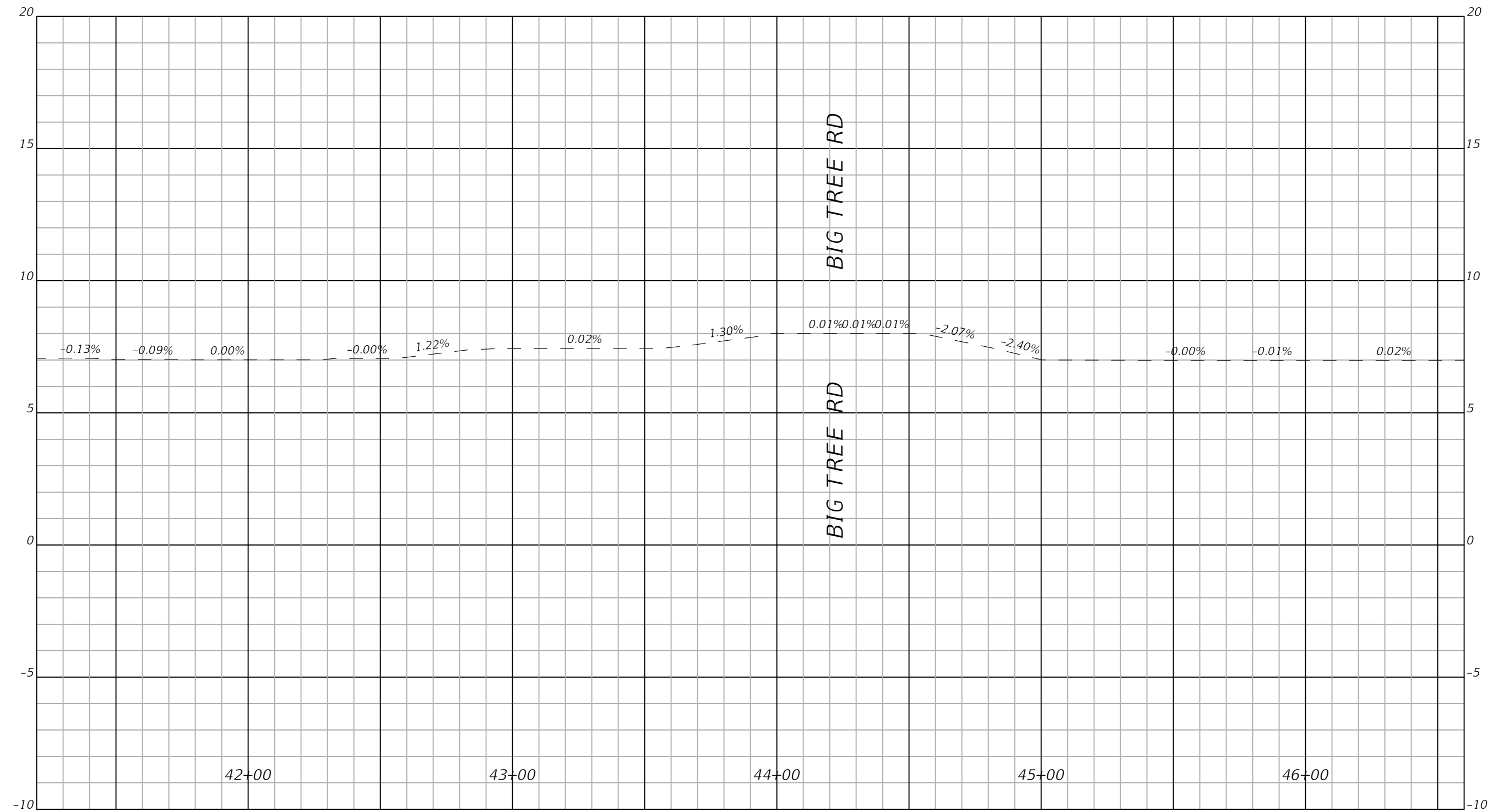
MAGNOLIA AVE  
35+60.00-41+20.00



1" = 40' Horizontal  
1" = 4' Vertical

REVISIONS		  <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>	MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY			CONCEPT PROFILE (8)	SHEET NO.
DATE	DESCRIPTION		ROAD	COUNTY	FINACIAL PROJECT ID		08
				VOLUSIA	----- - -		

MAGNOLIA AVE  
41+20.00-46+60.00



1" = 40' Horizontal  
1" = 4' Vertical

REVISIONS	
DATE	DESCRIPTION



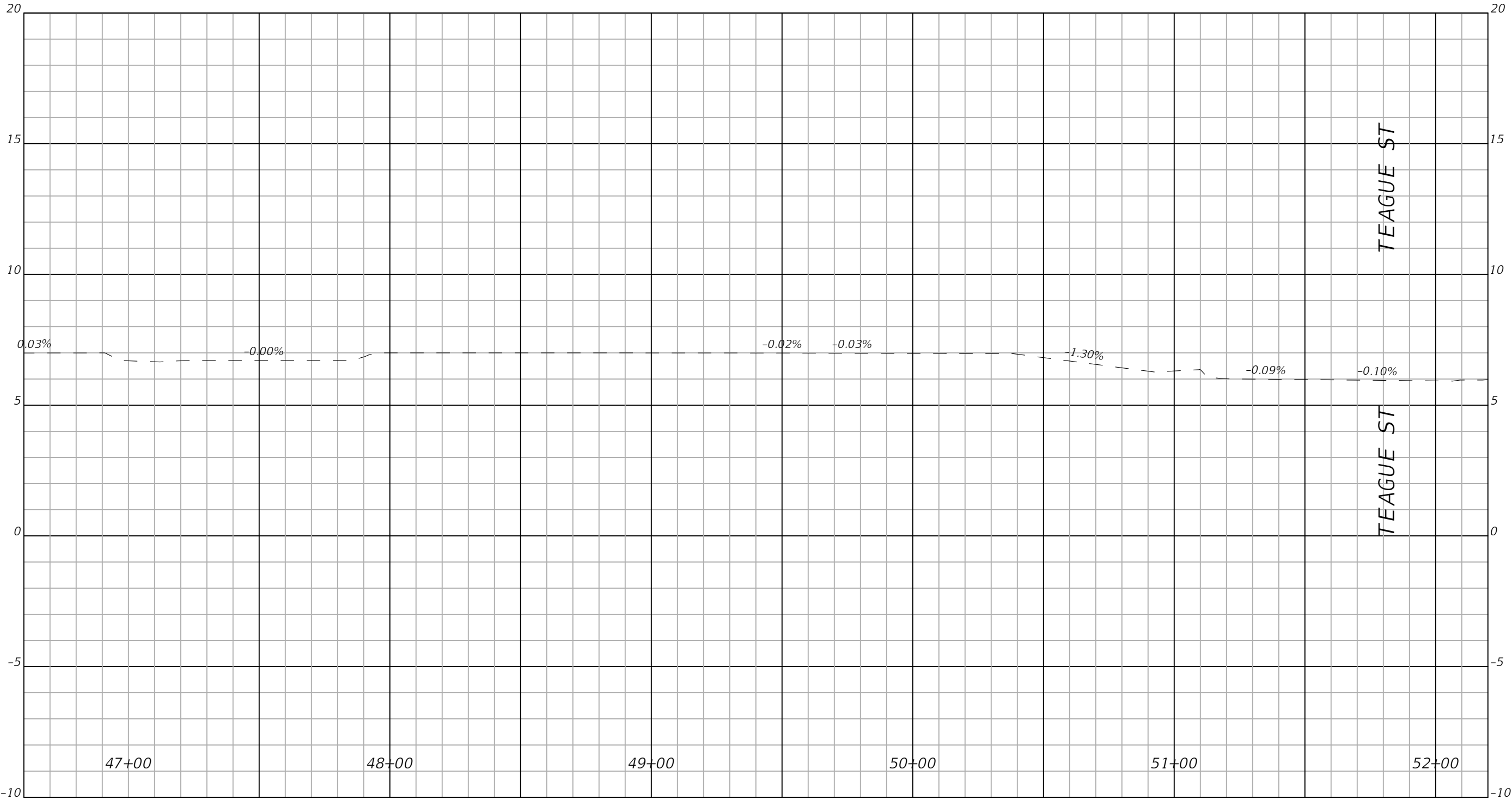
TRAFFIC ENGINEERING DATA SOLUTIONS, INC.  
Phone 386.753.0558 80 Spring Vista Drive  
Fax 386.753.0778 Delray, FL 33413  
CERTIFICATE OF AUTHORIZATION NO. 27392

MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY		
ROAD	COUNTY	FINACIAL PROJECT ID
	VOLUSIA	----- - -

CONCEPT PROFILE (9)	

SHEET NO.
09

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46+60.00-52+20.00

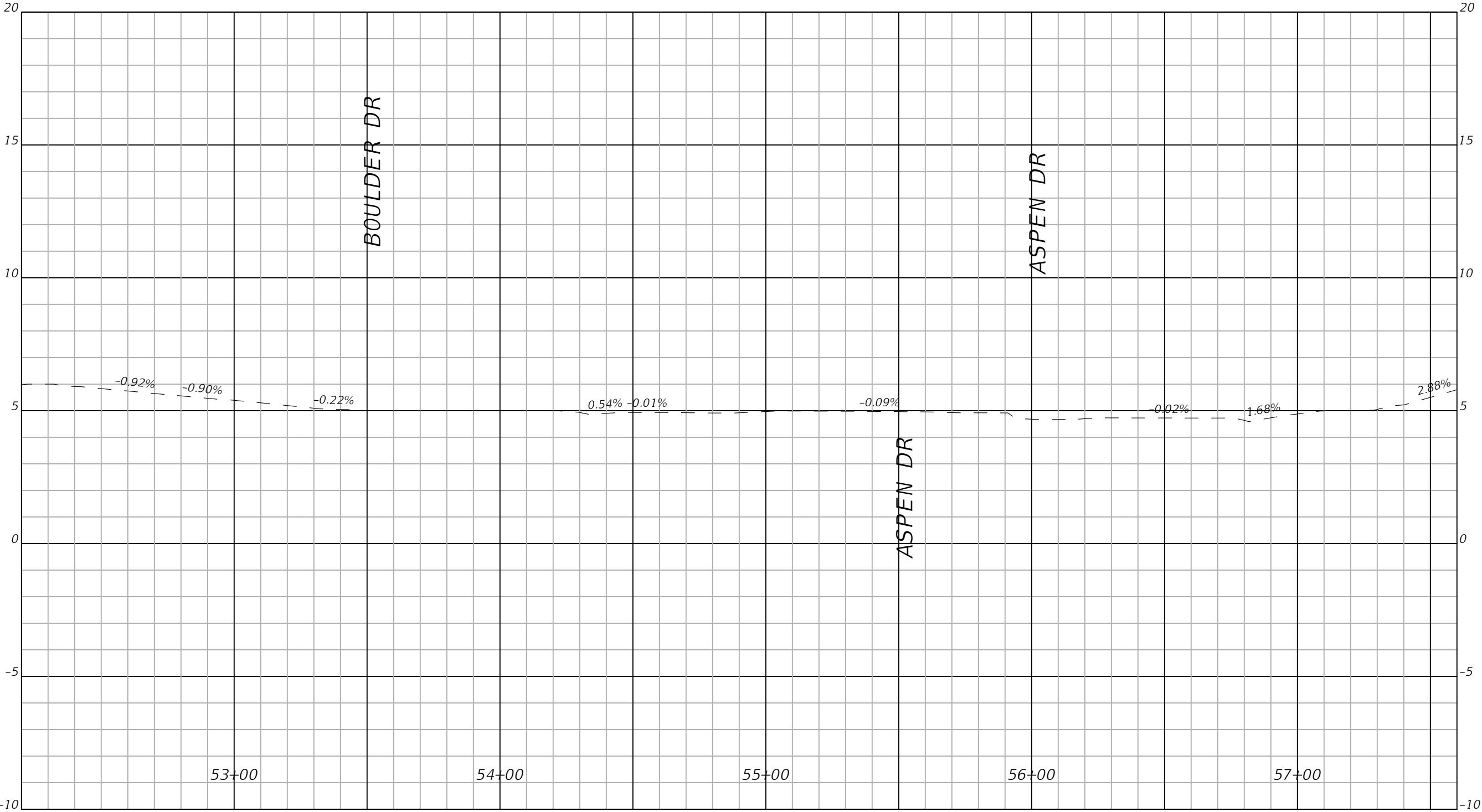


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1" = 4' Vertical

REVISIONS		  <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>	MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY			CONCEPT PROFILE (10)	SHEET NO.
DATE	DESCRIPTION		ROAD	COUNTY	FINACIAL PROJECT ID		
				VOLUSIA	----- - -		10



MAGNOLIA AVE  
52+20.00-57+60.00



1" = 40' Horizontal  
1" = 4' Vertical

REVISIONS	
DATE	DESCRIPTION

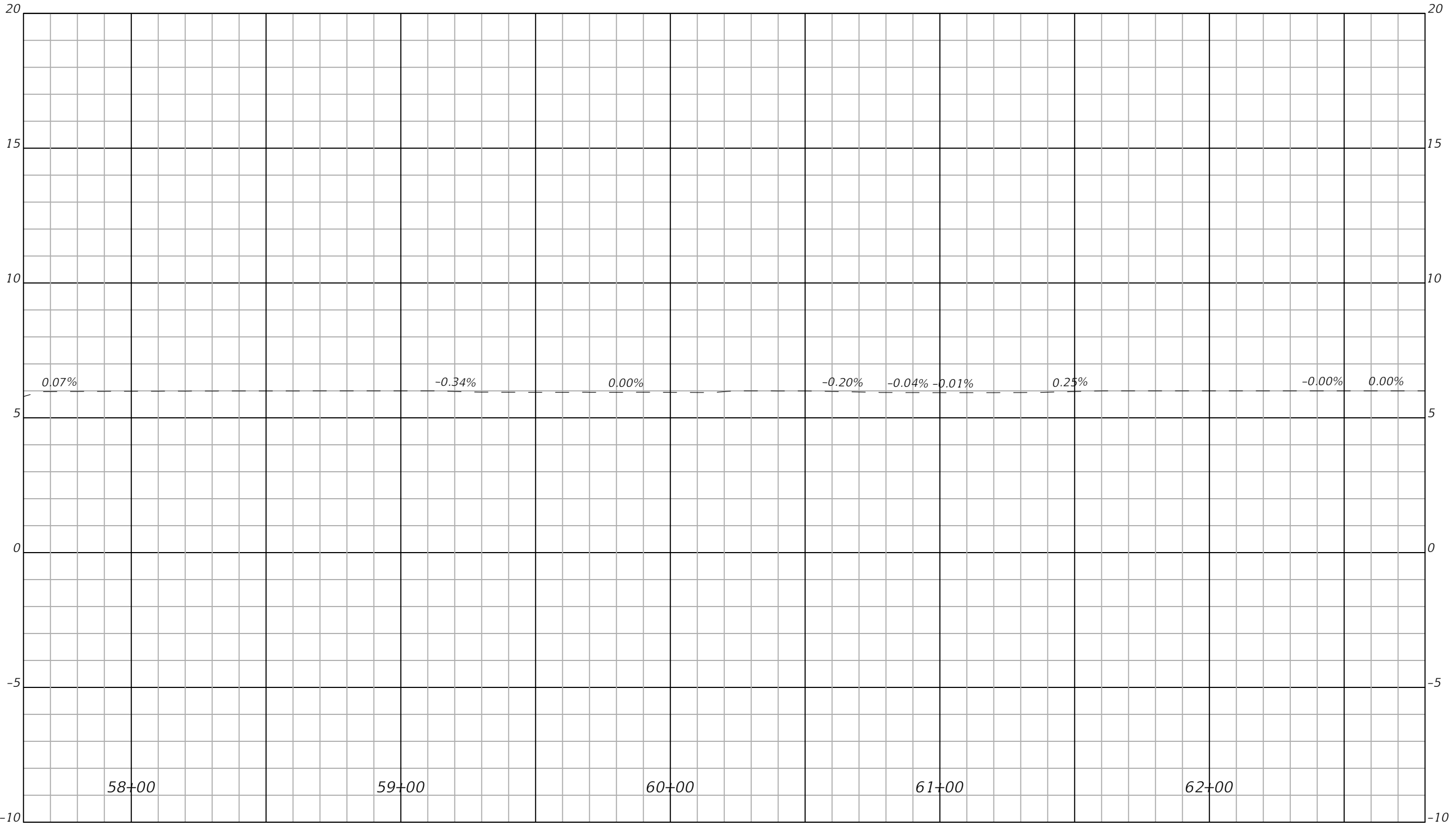


MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY		
ROAD	COUNTY	FINACIAL PROJECT ID
	VOLUSIA	----- - -

CONCEPT PROFILE (11)

SHEET NO.
11

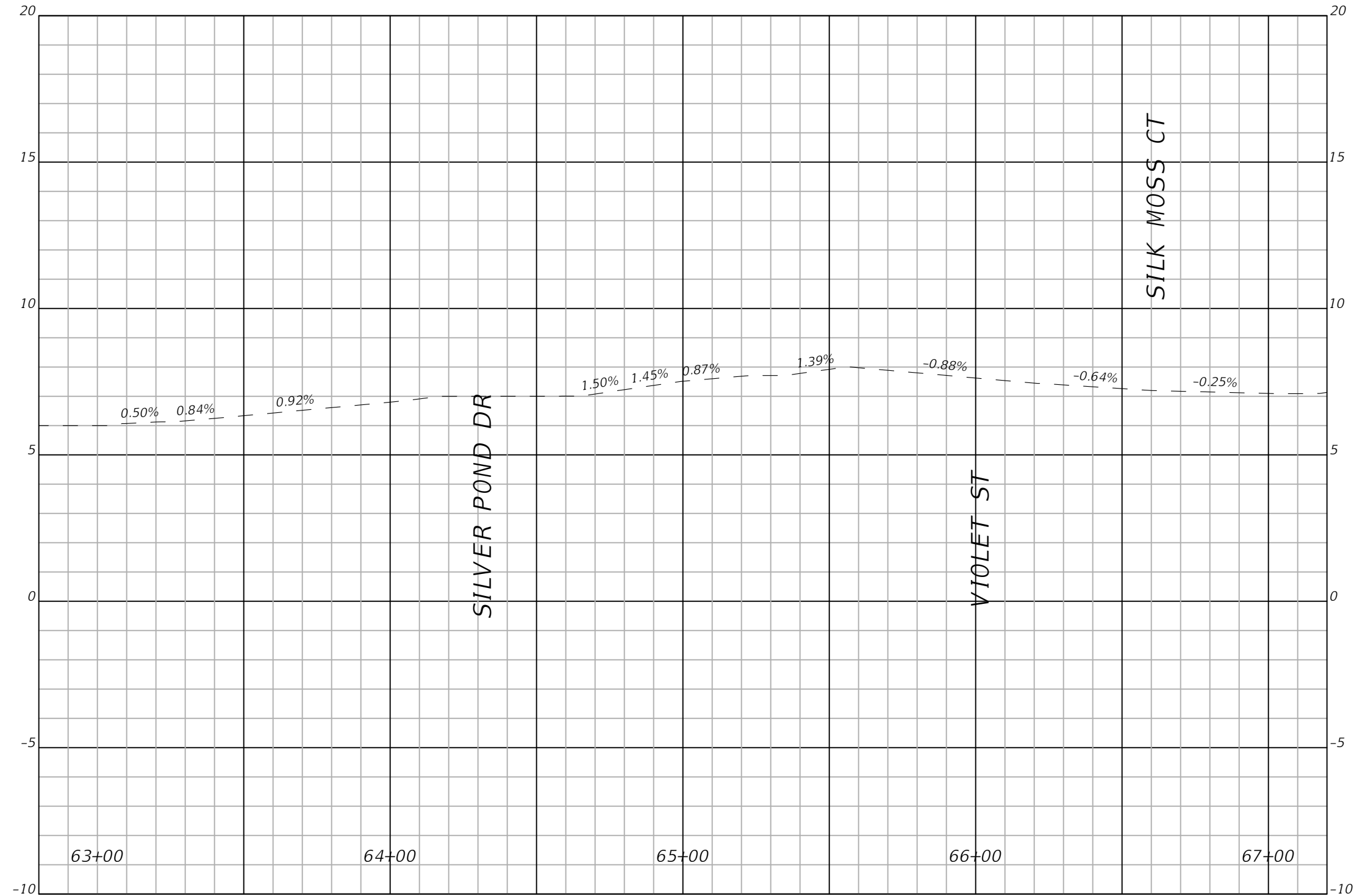
MAGNOLIA AVE  
57+60.00-62+80.00



1" = 40' Horizontal  
1" = 4' Vertical

R E V I S I O N S		  <p>TRAFFIC ENGINEERING DATA SOLUTIONS, INC. Phone 386.753.0558 80 Spring Vista Drive Fax 386.753.0778 Delray, FL 33413 CERTIFICATE OF AUTHORIZATION NO. 27392</p>	MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY		CONCEPT PROFILE (12)	SHEET NO.
DATE	DESCRIPTION		ROAD	COUNTY		
				VOLUSIA	----- - -	12

MAGNOLIA AVE  
62+80.00-67+20.00



1" = 40' Horizontal  
1" = 4' Vertical

R E V I S I O N S	
DATE	DESCRIPTION



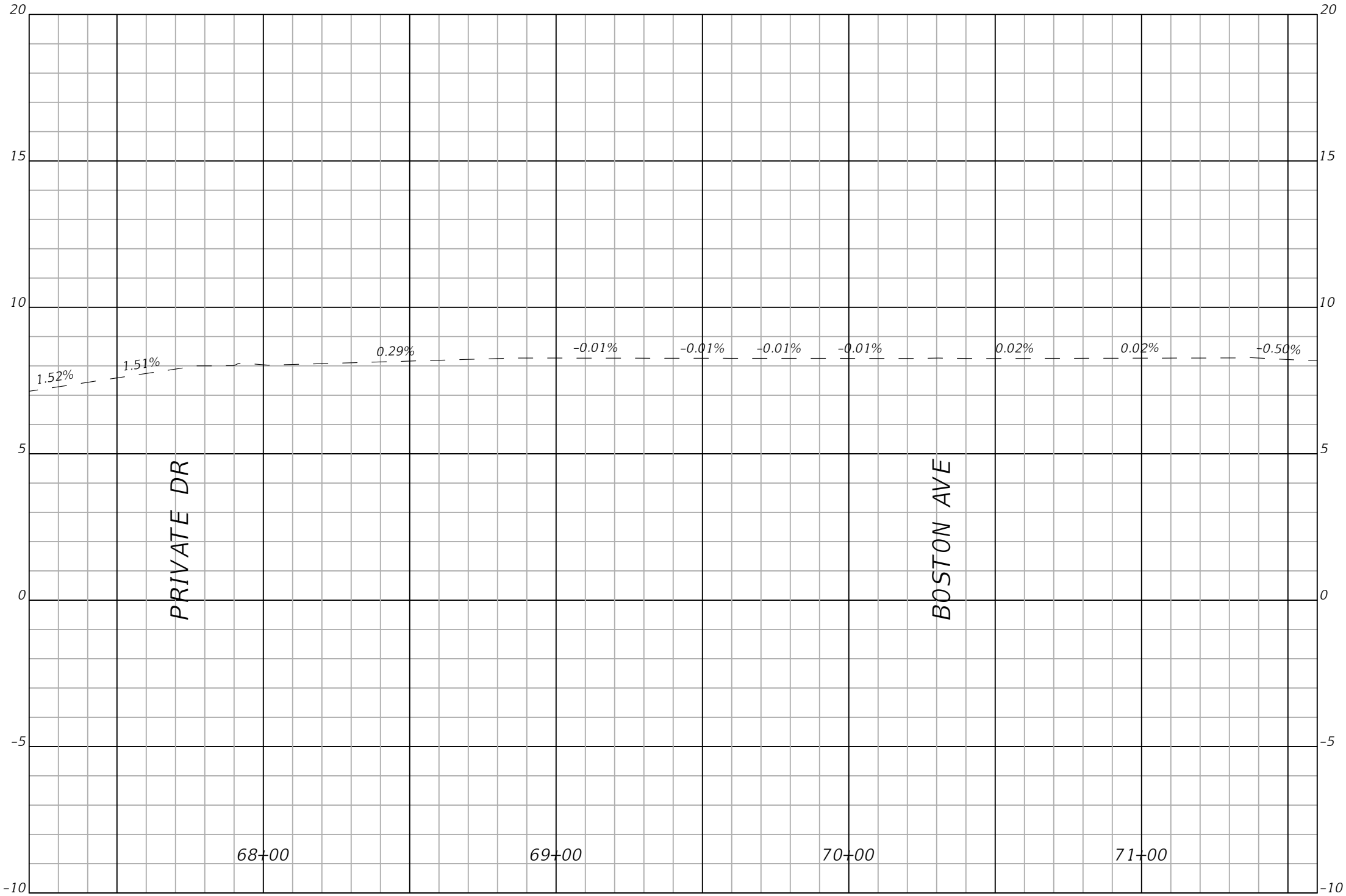
TRAFFIC ENGINEERING DATA SOLUTIONS, INC.  
Phone 386.753.0558 80 Spring Vista Drive  
Fax 386.753.0778 Delray, FL 33413  
CERTIFICATE OF AUTHORIZATION NO. 27392

MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY		
ROAD	COUNTY	FINACIAL PROJECT ID
	VOLUSIA	----- - -

CONCEPT PROFILE (13)	

SHEET NO.
13

MAGNOLIA AVE  
67+20.00-71+60.00



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1" = 4' Vertical

REVISIONS	
DATE	DESCRIPTION



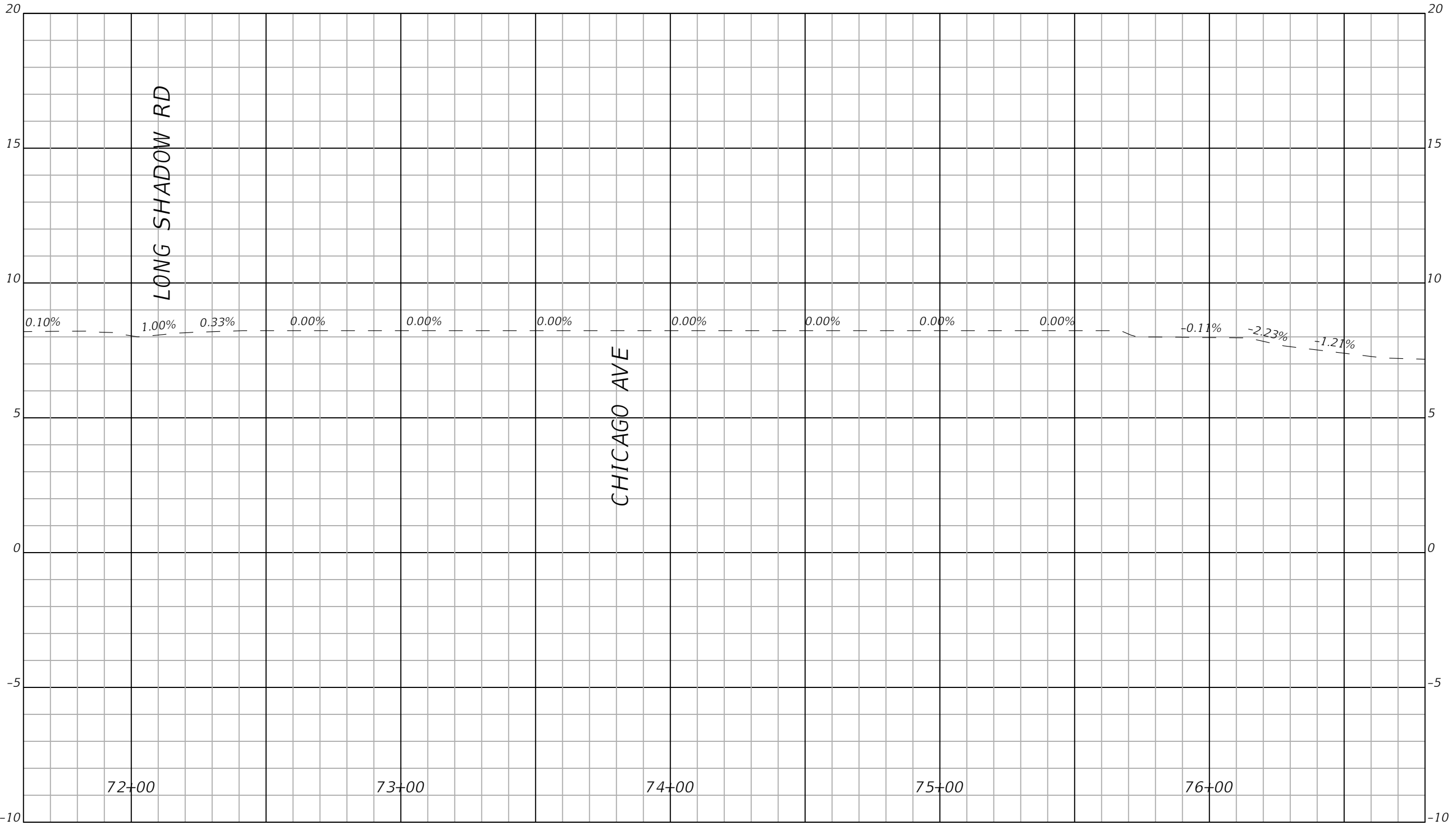
**TEDS**  
TRAFFIC ENGINEERING DATA SOLUTIONS, INC.  
Phone 386.753.0558 80 Spring Vista Drive  
Fax 386.753.0778 Delray, FL 33413  
CERTIFICATE OF AUTHORIZATION NO. 27392

MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY		
ROAD	COUNTY	FINACIAL PROJECT ID
	VOLUSIA	----- - -

CONCEPT PROFILE (14)

SHEET NO.
14

MAGNOLIA AVE  
71+60.00-76+80.00



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1" = 4' Vertical

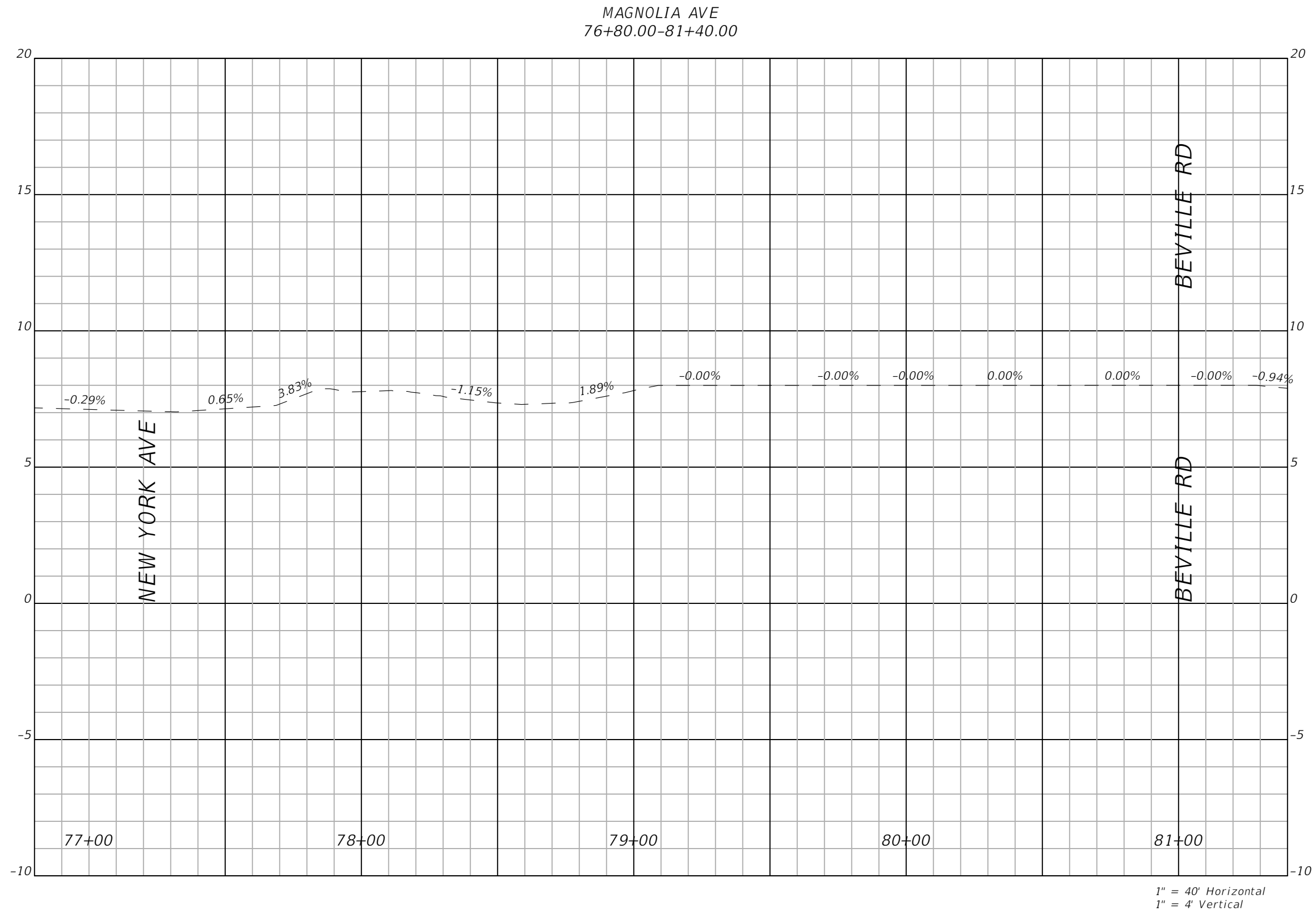
REVISIONS	
DATE	DESCRIPTION



MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY		
ROAD	COUNTY	FINACIAL PROJECT ID
	VOLUSIA	----- - -

CONCEPT PROFILE (15)

SHEET NO.
15



REVISIONS	
DATE	DESCRIPTION



TRAFFIC ENGINEERING DATA SOLUTIONS, INC.  
Phone 386.753.0558 80 Spring Vista Drive  
Fax 386.753.0778 Delray, FL 33413  
CERTIFICATE OF AUTHORIZATION NO. 27392

MAGNOLIA AVENUE SHARED USE PATH FEASIBILITY STUDY		
ROAD	COUNTY	FINACIAL PROJECT ID
	VOLUSIA	----- - -

CONCEPT PROFILE (16)

16

SHEET NO.
16

**APPENDIX D**

**RECORD PLATS**

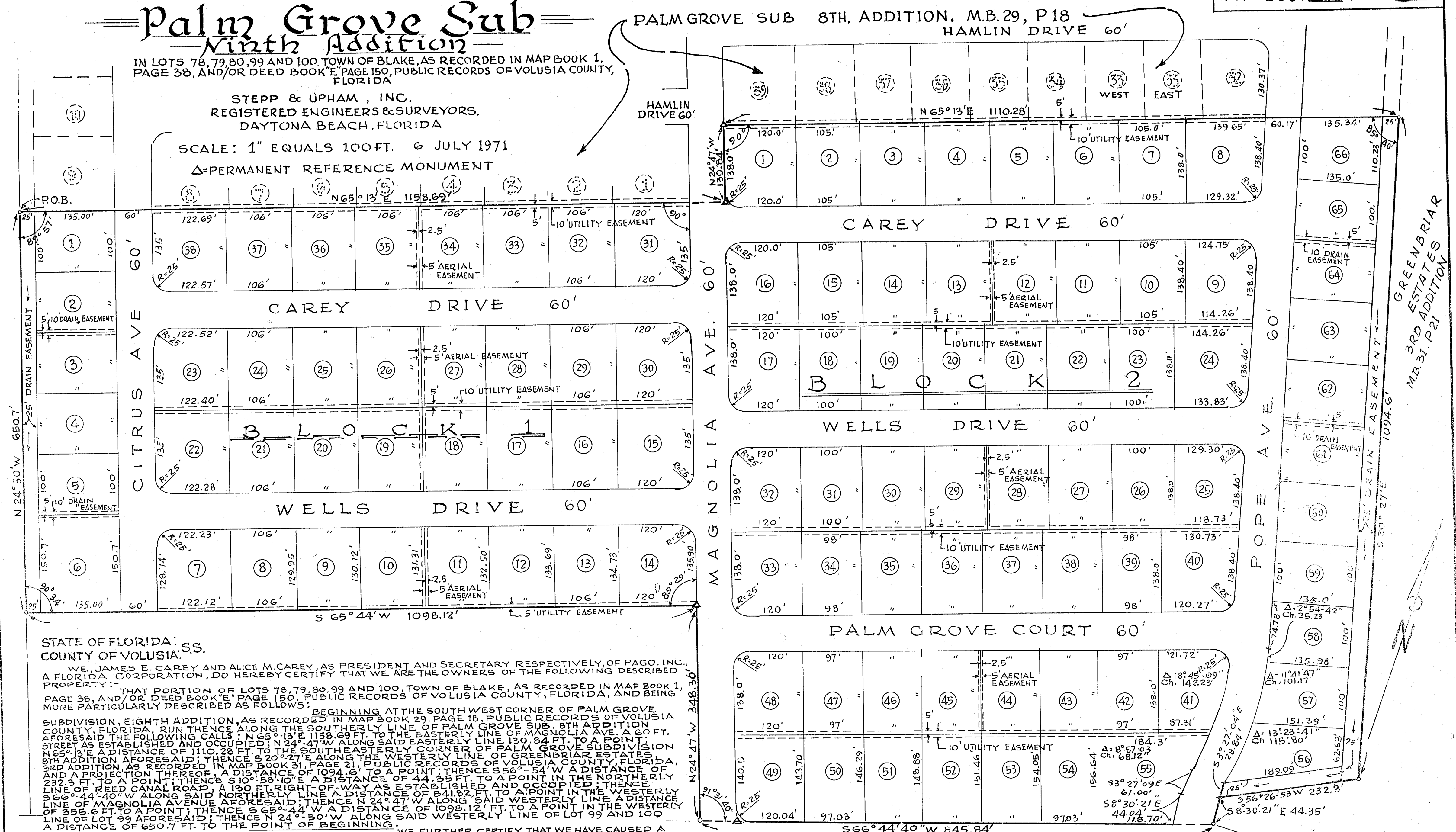


# Palm Grove Sub Ninth Addition

IN LOTS 78, 79, 80, 99 AND 100, TOWN OF BLAKE, AS RECORDED IN MAP BOOK 1, PAGE 38, AND/OR DEED BOOK "E" PAGE 150, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA

STAPP & UPHAM, INC.  
REGISTERED ENGINEERS & SURVEYORS,  
DAYTONA BEACH, FLORIDA

SCALE: 1" EQUALS 100 FT. 6 JULY 1971  
Δ=PERMANENT REFERENCE MONUMENT



STATE OF FLORIDA: S.S.  
COUNTY OF VOLUSIA: S.S.

WE, JAMES E. CAREY AND ALICE M. CAREY, AS PRESIDENT AND SECRETARY RESPECTIVELY, OF PAGO, INC., A FLORIDA CORPORATION, DO HEREBY CERTIFY THAT WE ARE THE OWNERS OF THE FOLLOWING DESCRIBED PROPERTY:

THAT PORTION OF LOTS 78, 79, 80, 99 AND 100, TOWN OF BLAKE, AS RECORDED IN MAP BOOK 1, PAGE 38, AND/OR DEED BOOK "E" PAGE 150, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT THE SOUTHWEST CORNER OF PALM GROVE SUBDIVISION, EIGHTH ADDITION, AS RECORDED IN MAP BOOK 29, PAGE 18, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, RUN THENCE ALONG THE SOUTHERLY LINE OF PALM GROVE SUB, 8TH ADDITION, AFORESAID, THE FOLLOWING CALS: N 65° 13' E 1158.69' TO THE EASTERLY LINE OF MAGNOLIA AVE 60 FT. STREET AS ESTABLISHED AND OCCUPIED; N 24° 47' W 348.30' TO THE SOUTHEAST CORNER OF PALM GROVE SUBDIVISION, 8TH ADDITION AFORESAID; THENCE S 20° 27' E ALONG THE WESTERLY LINE OF GREENBRIAR ESTATES, 3RD ADDITION, AS RECORDED IN MAP BOOK 31, PAGE 21, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, AND A PROJECTION THEREOF A DISTANCE OF 1094.6' TO A POINT; THENCE S 55° 54' W A DISTANCE OF 232.3' TO A POINT; THENCE S 10° 58' E A DISTANCE OF 44.35' TO A POINT IN THE NORTHERLY LINE OF REED CANAL ROAD A 120 FT. RIGHT-OF-WAY AS ESTABLISHED AND OCCUPIED; THENCE S 66° 44' 40' W ALONG SAID NORTHERLY LINE A DISTANCE OF 841.82' TO A POINT IN THE WESTERLY LINE OF MAGNOLIA AVENUE AFORESAID; THENCE N 24° 47' W ALONG SAID WESTERLY LINE A DISTANCE OF 355.6' TO A POINT; THENCE S 65° 44' W A DISTANCE OF 1098.12' FT. TO A POINT IN THE WESTERLY LINE OF LOT 99 AFORESAID; THENCE N 24° 50' W ALONG SAID WESTERLY LINE OF LOT 99 AND 100 A DISTANCE OF 650.7' FT. TO THE POINT OF BEGINNING. WE FURTHER CERTIFY THAT WE HAVE CAUSED A SURVEY AND REPLAT TO BE MADE OF SAID LANDS AS SHOWN HEREON AND THAT THE SAME IS CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF AND WE DO HEREBY DEDICATE TO PUBLIC USE FOREVER ANY AND ALL STREETS, LANES OR OTHER THOROUGHFARES AND EASEMENTS LYING WITHIN SAID PROPERTY LINES, AND WE DO HEREBY FILE THIS PLAT FOR PUBLIC RECORD.

PAGO INC.

*Deane Debow*  
*Wilbur C. Upson*  
*Paul J. Swadlow*  
*Jane V. Baker*  
WITNESSES

*James E. Carey*  
JAMES E. CAREY PRESIDENT  
*Alice M. Carey*  
ALICE M. CAREY SECRETARY

STATE OF FLORIDA: S.S.  
COUNTY OF VOLUSIA: S.S.

I HEREBY CERTIFY THAT ON THIS DAY BEFORE ME, AN OFFICER DULY AUTHORIZED IN THE STATE AND COUNTY AFORESAID TO TAKE ACKNOWLEDGEMENTS, PERSONALLY APPEARED JAMES E. CAREY AND ALICE M. CAREY, TO ME KNOWN TO BE THE PERSONS 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 STATE AND COUNTY LAST AFORESAID

THIS 21st DAY OF July A.D., 1971  
MY COMMISSION EXPIRES \_\_\_\_\_  
*Byron E. Trent*  
NOTARY PUBLIC

APPROVED AND ACCEPTED BY THE CITY OF SOUTH DAYTONA, FLORIDA  
THIS 21st DAY OF July A.D., 1971  
*Byron E. Trent*  
CLERK  
*David J. Brown*  
MAYOR

SURVEYORS CERTIFICATE  
I HEREBY CERTIFY THAT THE FOREGOING PLAT IS A CORRECT REPRESENTATION OF THE LAND SURVEYED AND THAT PERMANENT REFERENCE MONUMENTS HAVE BEEN PLACED AS REQUIRED BY THE SURVEY LAWS OF THE STATE OF FLORIDA

1971 JUL 22 REGISTERED SURVEYOR #669  
*W. H. Stepp*

CERTIFICATES OF APPROVAL:  
ZONING COMMISSION DATE July 21, 1971 CHAIRMAN *Donald McNeal*  
CITY ENGINEER *L.J. Dillard Jr.* DATE July 16, 1971  
CITY ATTORNEY *Robert Abraham* DATE July 22, 1971



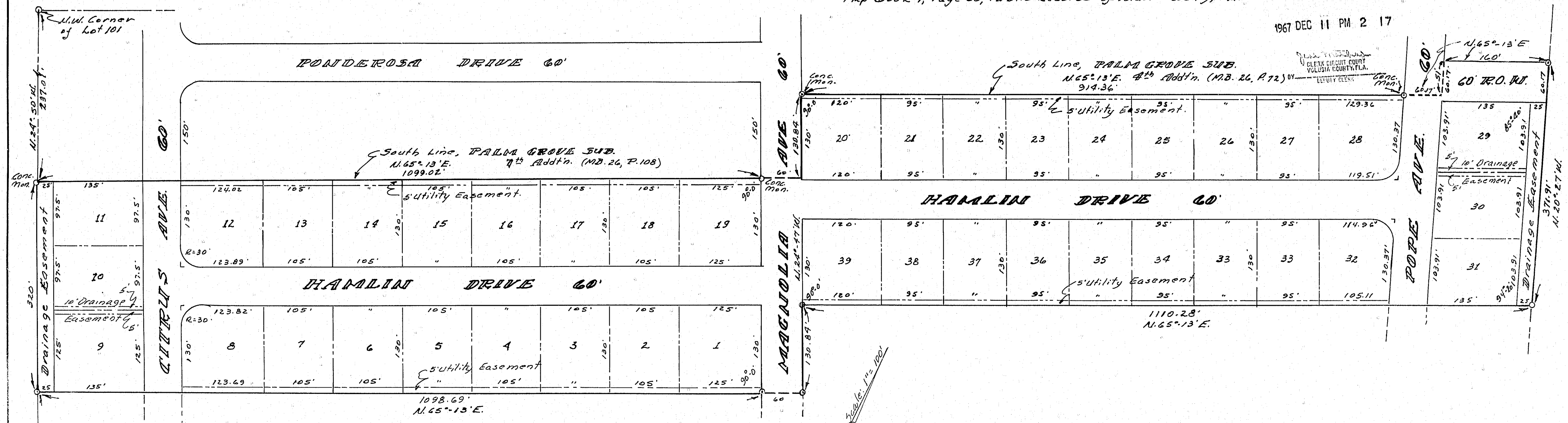
# "PALM GROVE SUB"

## EIGHTH ADDITION

In Lots 80, 81, 100 and 101, Town of Blake, of Record in Map Book 1, Page 38, Public Records of Volusia County, Fla.

FILED FOR RECORD  
RECORD VERIFIED  
BOOK PAGE

1967 DEC 11 PM 2 17



**CERTIFICATE:**  
This is to certify that the plat delineated hereon is a true and correct representation of the land surveyed, and that permanent reference monuments have been placed in conformance with the survey laws of the State of Florida.

16 October, 1967

*[Signature]*  
Registered Surveyor #718

STATE OF FLORIDA ss We, Edward B. Oliver and Thomas A. Koehler, as President and Secretary respectively of Palm Grove Sub, Inc., a Florida Corporation, do hereby certify that we are the owners of that portion of Lots 80, 81, 100 and 101, Town of Blake, of record in Deed Book 1, Page 150 (or Map Book 1, Page 38) Public Records of Volusia County, Florida, being described as follows: Begin at a concrete monument which marks the South west corner of Palm Grove Subdivision, Seventh Addition, of record in Map Book 26, Page 108, Public Records of Volusia County, Florida; thence easterly along the South line of Palm Grove Subdivision, Seventh Addition, and across Magnolia Avenue, a distance of 1159.02' to a point in the Easterly line of Magnolia Avenue; thence Northerly along the Easterly line of Magnolia Avenue, a distance of 130.84' to the South west corner of Palm Grove Subdivision, Fourth Addition, of Record in Map Book 26, Page 72, Public Records of Volusia County, Florida; thence Easterly along the South line of Palm Grove Subdivision, Fourth Addition, a distance of 914.53' to the South west corner of Lot 10, Palm Grove Subdivision, Fourth Addition; thence Northerly along the West line of Lot 10, a distance of 51.0' to a point; thence easterly and parallel to the North line of Lot 10, a distance of 160' to the East line of Palm Grove Subdivision, Fourth Addition; thence Southerly along said East line and extension thereof, a distance of 371.91' to a point; thence westerly and parallel to the aforesaid South line of Palm Grove Subdivision, Fourth Addition, a distance of 1110.28' to the Easterly line of Magnolia Avenue; thence Southerly along the Easterly line of Magnolia Avenue, a distance of 130.84' to a point; thence westerly and at right angles to Magnolia Avenue, being parallel to the South line of Palm Grove Subdivision, Seventh Addition, a distance of 1158.69' to the West line of Lot 100, Blake; thence Northerly along the West line of Lots 100 and 101, a distance of 320' to the point of beginning.

We further certify that we have caused a survey and replat to be made of said lands, as shown hereon, which is correct to the best of our knowledge, and belief. We do hereby dedicate, all streets, drives and thoroughfares to the use of the public forever, the easements to their prescribe uses, and do hereby file this plat for public record.

*[Signature]*  
Edward B. Oliver, Pres.  
*[Signature]*  
Thomas A. Koehler, Sec.

*[Signature]* Edna Ramson  
Witness as to both  
*[Signature]* Genevieve C. Keller

STATE OF FLORIDA ss On this day personally appeared before me, a Notary Public in the State and County aforesaid, Edward B. Oliver and Thomas A. Koehler, to me well known and known by me to be the persons who executed the foregoing instrument as President and Secretary respectively of Palm Grove Sub, Inc., and who did acknowledge before me that they executed the same, as and for and in behalf of said Corporation as its act and deed and for the purposes therein expressed.

In witness whereof I have set my hand and official seal hereunto on this 27th day of October, A.D. 1967.  
*[Signature]* Edna Ramson  
Notary Public  
My Commission Expires: Oct. 7, 1969

APPROVED AND ACCEPTED BY BOARD OF COUNTY COMMISSIONERS VOLUSIA COUNTY, FLORIDA, ON THIS DAY OF A.D. 1967.

ATTEST: *[Signature]* Clerk *[Signature]* Chairman

THIS IS TO CERTIFY THAT ON THIS 31 DAY OF OCT. A.D. 1967, THE ZONING COMMISSION OF THE 2nd DISTRICT, APPROVED THE FOREGOING PLAT.

*[Signature]*  
Zoning Chairman (Acting)

THIS IS TO CERTIFY THAT ON THIS 27th DAY OF Nov. A.D. 1967, THIS PLAT WAS APPROVED.

*[Signature]*  
County Engineer

THIS IS TO CERTIFY THAT ON THIS 7 DAY OF Dec. A.D. 1967, THIS PLAT WAS APPROVED.

*[Signature]*  
County Attorney

I HEREBY CERTIFY THAT I HAVE EXAMINED THE FOREGOING PLAT AND FIND THAT IT COMPLIES IN FORM WITH ALL THE REQUIREMENTS OF CHAPTER 119, FLORIDA STATUTES, AND WAS FILED FOR RECORD ON AT FILE NO.

JESS MATHAS  
Clerk of the Circuit Court  
in for Volusia County, Fla.  
By James J. Doyle, DEPUTY CLERK

# "PALM GROVE SUB"

## - SEVENTH ADDITION -

In Lots 101, 102 and 103, Blake, of Record in Map Book 1, Page 38, Public Records of Volusia County, Florida.

This is to certify that on the Volusia County Planning and Zoning Commission approved the above plat.

This is to certify that on this plat was approved.  
By: [Signature]  
County Attorney

STATE OF FLORIDA  
COUNTY OF VOLUSIA SS. We, Frank B. La Roche, and Thomas A. Koehler, as Vice President and Secretary respectively of Palm Grove, Inc., a Florida Corporation, do hereby certify that we are the owners of that portion of Lots 101, 102 and 103, Town of Blake, of record in Deed Book "E", Page 150 (or Map Book 1, Page 38), Public Records of Volusia County, Florida, described as follows: Begin at a concrete monument which marks the Southeast Corner of Palm Grove Subdivision, Sixth Addition, of record in Map Book 27, Page 174, Public Records of Volusia County, Florida; thence Westerly along the South line of Palm Grove Sub, Sixth Addition, a distance of 1099.96 to the West line of Lot 103, Blake; thence Southerly along the West line of Lots 103, 102 and 101, a distance of 720.0 to a point; thence Easterly and parallel to the South line of Palm Grove Sub, Sixth Addition, a distance of 1099.02 to the West line of Magnolia Avenue; thence Northerly along the Westerly line of Magnolia Ave. a distance of 720 to the point of beginning.

We further certify that we have caused a survey and replat to be made of said lands, as shown hereon, which is correct to the best of our knowledge and belief. We do hereby dedicate all streets and drives and thoroughfares to the use of the public forever, and do hereby file this plat for Public Record.

Frank B. La Roche  
Frank B. La Roche, V.P.

Thomas A. Koehler  
Thomas A. Koehler Sec.

Quinta C. Miller  
Witness  
as to both.

Genevieve C. Koehler

STATE OF FLORIDA  
COUNTY OF VOLUSIA SS. On this day, personally appeared before me, a Notary Public in the State and County aforesaid, Frank B. La Roche and Thomas A. Koehler, to me well known, and known by me to be the persons who executed the foregoing instrument as Vice president and Secretary respectively of Palm Grove, Inc., and who acknowledged before me that they executed the same, for and in behalf of said corporation, as and for its act and deed, and for the purposes therein expressed.

In witness whereof, I have hereunto set my hand and official Seal on this 2nd day of March A.D. 1966.

Genevieve C. Koehler  
Notary Public

My Commission Expires: Nov. 18, 1966

Accepted and approved by the Board of County Commissioners, Volusia County, Florida, on this 21 day of April A.D. 1966.

Attest: JESS MATHAS

[Signature]  
Clerk

Joe L. Wilson  
Chairman

### CERTIFICATE:

This is to certify that the plat delineated hereon is a true and correct representation of the land surveyed, and that permanent reference monuments have been placed in conformance with the survey laws of the State of Florida.

10 February, 1966

Photisha J. [Signature]  
Registered Surveyor #718

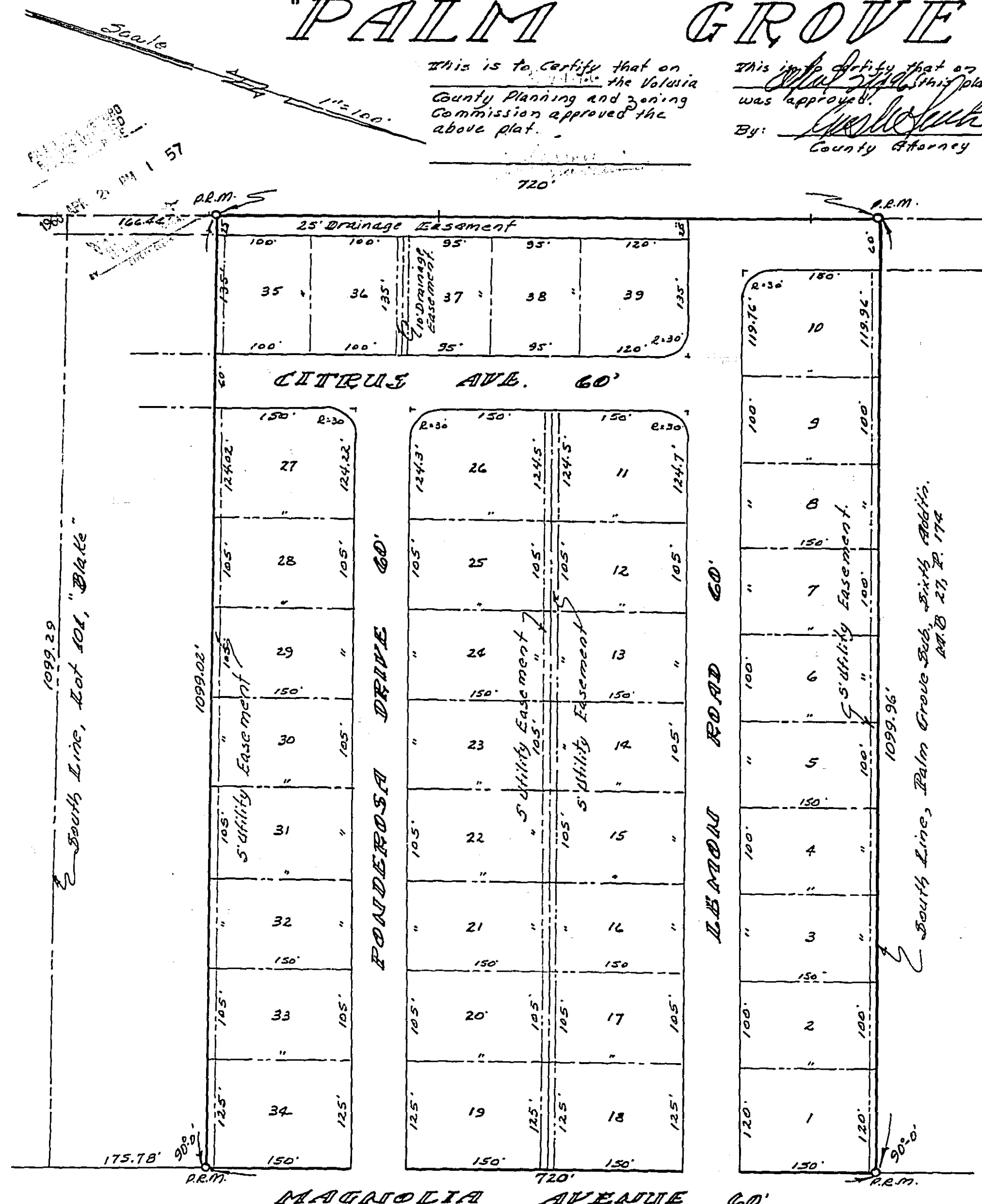
I hereby certify that I have examined the foregoing plat and find that it conforms in form with Chapter 177, Florida Statutes, and was filed for record on

File No: \_\_\_\_\_ at \_\_\_\_\_

Clerk of Circuit Court

Examined and Approved: W.D. [Signature]  
County Engineer  
Volusia County, Fla.

April 7, 1966  
Date.



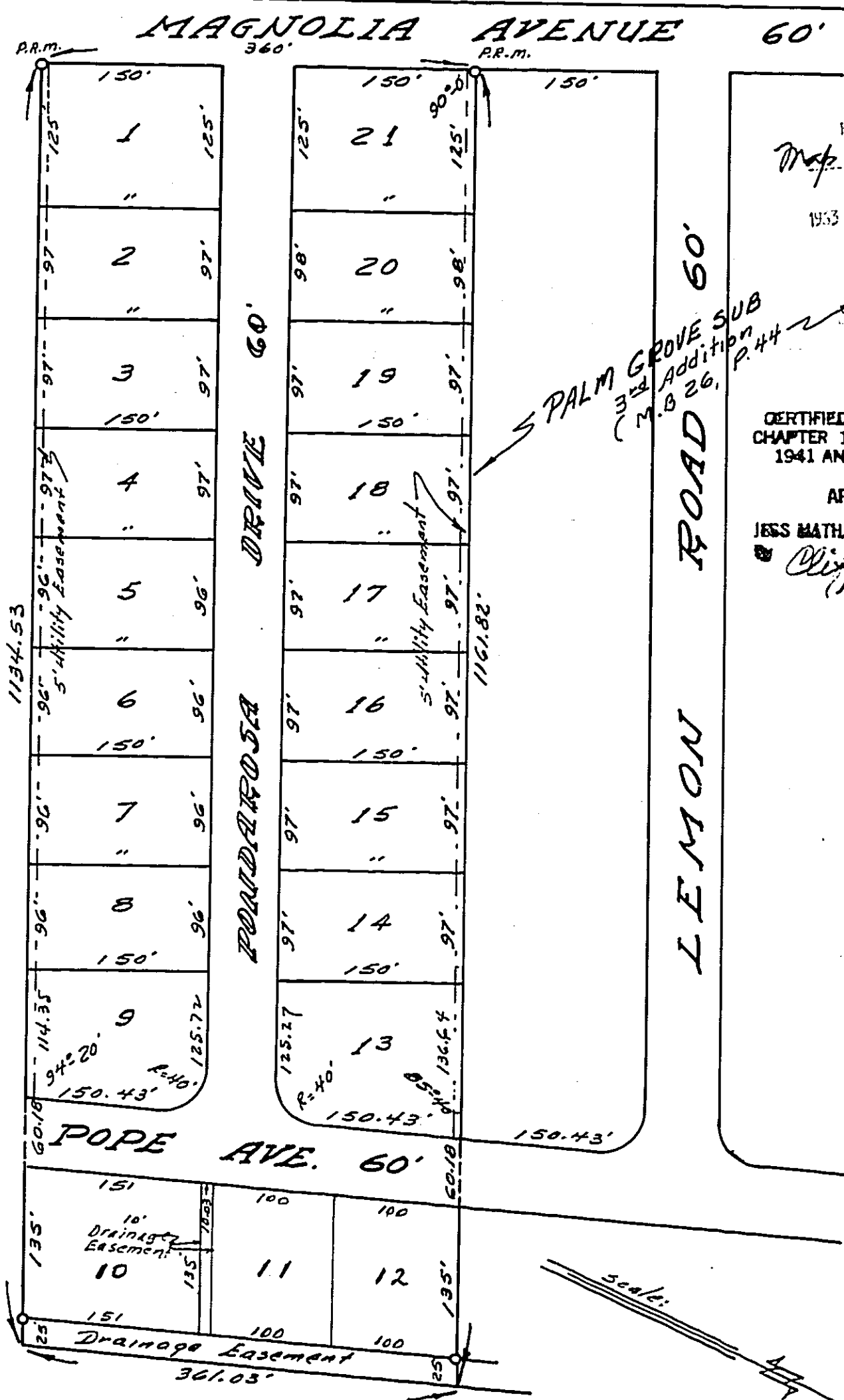
# PALM GROVE SUB.

MAP BOOK 26 PAGE 72

10133

## FOURTH ADDITION

In Lots 81 and 82, Town of Blake, as recorded in Deed Book "E", Page 159, Public Records of Volusia County, Florida.



FILED FOR RECORD  
RECORD VERIFIED  
BOOK 26 PAGE 72

1963 APR 4 PM 12 52

CERTIFIED IN COMPLIANCE WITH  
CHAPTER 177, FLORIDA STATUTES  
1941 AND FILED FOR RECORD

APR 4 1963

JESS MATHAS, CLERK CIRCUIT COURT

Clifford Betts

STATE OF FLORIDA ss. We, Frank B. La Roche and Thomas A. Koehler as Vice President and Secretary, respectively, of Palm Orange Grove, Inc., a Florida Corporation, do hereby certify that we are the owners of that portion of Lots 81 and 82, Town of Blake, of record in Deed Book "E", Page 159, Public Records of Volusia County, Florida, being more particularly described as follows: Begin at a concrete monument which marks the Southwest corner of Palm Grove Sub. 3rd Addition, of Record in Map Book 26, Page 44, Public Records of Volusia County, Florida; thence southerly along the East line of Magnolia Ave., a distance of 360' to a point; thence easterly and at right angles to said Magnolia Ave., a distance of 1134.53' to a point in the fence line dividing the Palm Orange Grove, Inc. property from that of, or formerly of, J.D. McLarty; thence northerly along said fence line, a distance of 367.03' to the Southeast corner of Palm Grove Sub. 3rd Addition; thence westerly along the South line of said Palm Grove Sub., a distance of 1161.82' to the point of beginning.

we further certify that we have caused a survey and replat to be made of said lands, which is correct to the best of our knowledge and belief; do hereby dedicate all streets, drives, and thoroughfares as shown hereon to the use of the Public forever, and the easements as shown to their prescribed uses, & do hereby file this plat for Public Record.

PALM ORANGE GROVE, INC.

By Frank B. La Roche  
Frank B. La Roche, (V.P.)

ATTEST: Thomas A. Koehler  
Thomas A. Koehler, (Sec.)

Witness  
as  
to both

Vera Marshall  
Lina Pina

STATE OF FLORIDA ss. On this day personally appeared before me, a Notary Public in the County and State aforesaid Frank B. La Roche & Thomas A. Koehler, to me well known and known by me to be the persons who executed the foregoing instrument as Vice president and Secretary respectively, of Palm Orange Grove, Inc., and who acknowledged before me that they executed the same for and in behalf of said Corporation, as and for its act and deed, and for the purposes therein expressed.

In witness whereof, I have hereunto set my hand and official seal on this 3rd day of April A.D., 1963

My Commission Expires: 3-19-67

Vera Marshall  
Notary Public

### CERTIFICATE:

This is to certify that the plat delineated hereon is a true and correct representation of the land surveyed & that permanent reference monuments have been placed in conformance to the Survey laws of the State of Florida

30 March, 1963

Registered Surveyor #718

ACCEPTED AND APPROVED BY THE BOARD OF COUNTY COMMISSIONERS, VOLUSIA COUNTY FLORIDA, ON THIS 4 DAY OF April A.D. 1963.

ATTEST:

Jess Mathas  
Clerk

Chairman



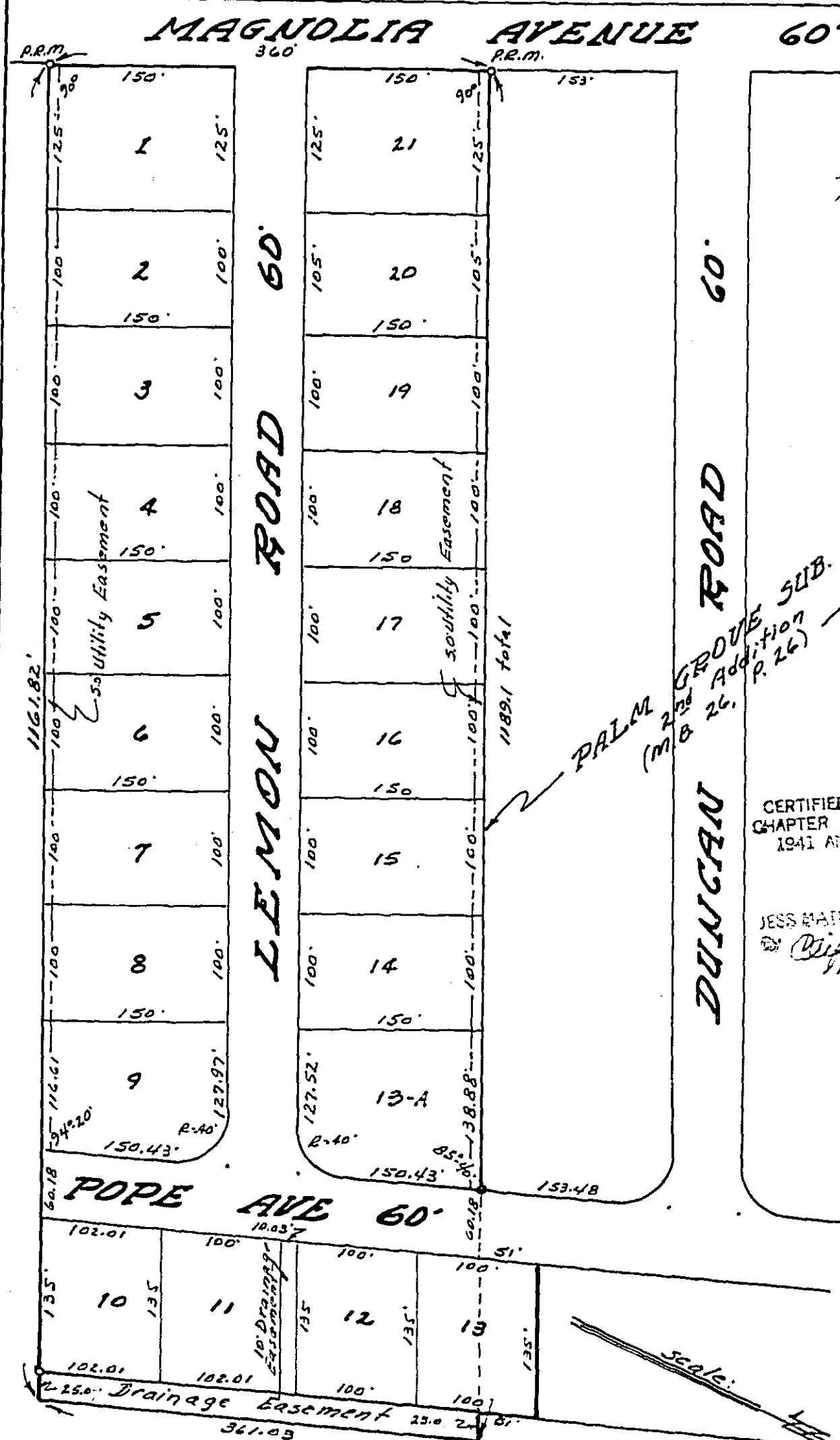
# PALM GROVE SUB.

MAP BOOK 26 PAGE 44

150'X100'

## THIRD ADDITION

In Lots 83 and 82, Town of Blake, as recorded in Deed Book "E", Page 150, Public Records of Volusia County, Florida.



FILED FOR RECORD  
RECORD VERIFIED  
1961 JUN 8 PM 1 50

CERTIFIED IN COMPLIANCE WITH  
CHAPTER 177, FLORIDA STATUTES  
1941 AND FILED FOR RECORD

JUN 8 1961

JESS MATTHEWS, CLERK CIRCUIT COURT  
By *Jess Matthews* Clerk from

STATE OF FLORIDA SS. We, Frank B. La Roche and Thomas A. Koehler as Vice President and Secretary, respectively, of Palm Orange Grove, Inc., a Florida Corporation, do hereby certify that we are the owners of that portion of Lots 82 and 83, Town of Blake, of record in Deed Book "E", Page 150, Public Records of Volusia County, Florida, being more particularly described as follows: Begin at a concrete monument which marks the Southwest Corner of Palm Grove Sub, 2nd Addition, of Record in Map Book 26, Page 26, Public Records of Volusia County, Florida; thence Southerly along the East Line of Magnolia Ave., a distance of 360.0' to a point; thence Easterly and at right angles to said Magnolia Ave., a distance of 1161.82' to a point in the fence line dividing the Palm Orange Grove, Inc., property from that of, or formerly of, J. D. McLaughlin; thence Northerly along said fence line, a distance of 360.3' to the Southeast corner of Palm Grove Sub, 2nd Addition; thence westerly along the South line of said Palm Grove Sub, a distance of 1189.1' to the P.O.B.; also the Southerly 21.0' of Lot 19, of Palm Grove Sub, 2nd Addition, as aforesaid.

We further certify that we have caused a survey and replat to be made of said lands, which is correct to the best of our knowledge and belief; do hereby dedicate all streets, drives, and thoroughfares as shown hereon, to the use of the Public forever, and the easements as shown to their prescribed uses, & do hereby file this plat for Public Record.

PALM ORANGE GROVE, INC.  
By *Frank B. La Roche*  
Frank B. La Roche, (V.P.)

Attest: *Thomas A. Koehler*  
Thomas A. Koehler, (Sec.)

Witness  
as  
to both

*Vera Marshall*

STATE OF FLORIDA SS. On this day personally appeared before me, a Notary Public in the County and State aforesaid, Frank B. La Roche & Thomas A. Koehler, to me well known and known by me to be the persons who executed the foregoing instrument as Vice president and Secretary respectively, of Palm Orange Grove, Inc., and who acknowledged before me that they executed the same for and in behalf of said Corporation, as and for its act and deed, and for the purposes therein expressed.

In witness whereof, I have hereunto set my hand and official seal on this 31st day of May, A.D., 1961.

*Vera Marshall*  
Notary Public

My Commission Expires: March 19, 1963.

### CERTIFICATE:

This is to certify that the plat delineated hereon is a true and correct representation of the land surveyed, & that permanent reference monuments have been placed in conformance to the Survey laws of the State of Florida.

31 May, 1961

*J. Matthews*  
Registered Surveyor #718

ACCEPTED AND APPROVED BY THE BOARD OF COUNTY COMMISSIONERS, VOLUSIA COUNTY, FLORIDA, ON THIS 1st DAY OF JUNE, A.D. 1961.

Attest: *Jess Matthews*  
Clerk

*Ham Saxon*  
Chairman

RECEIVED

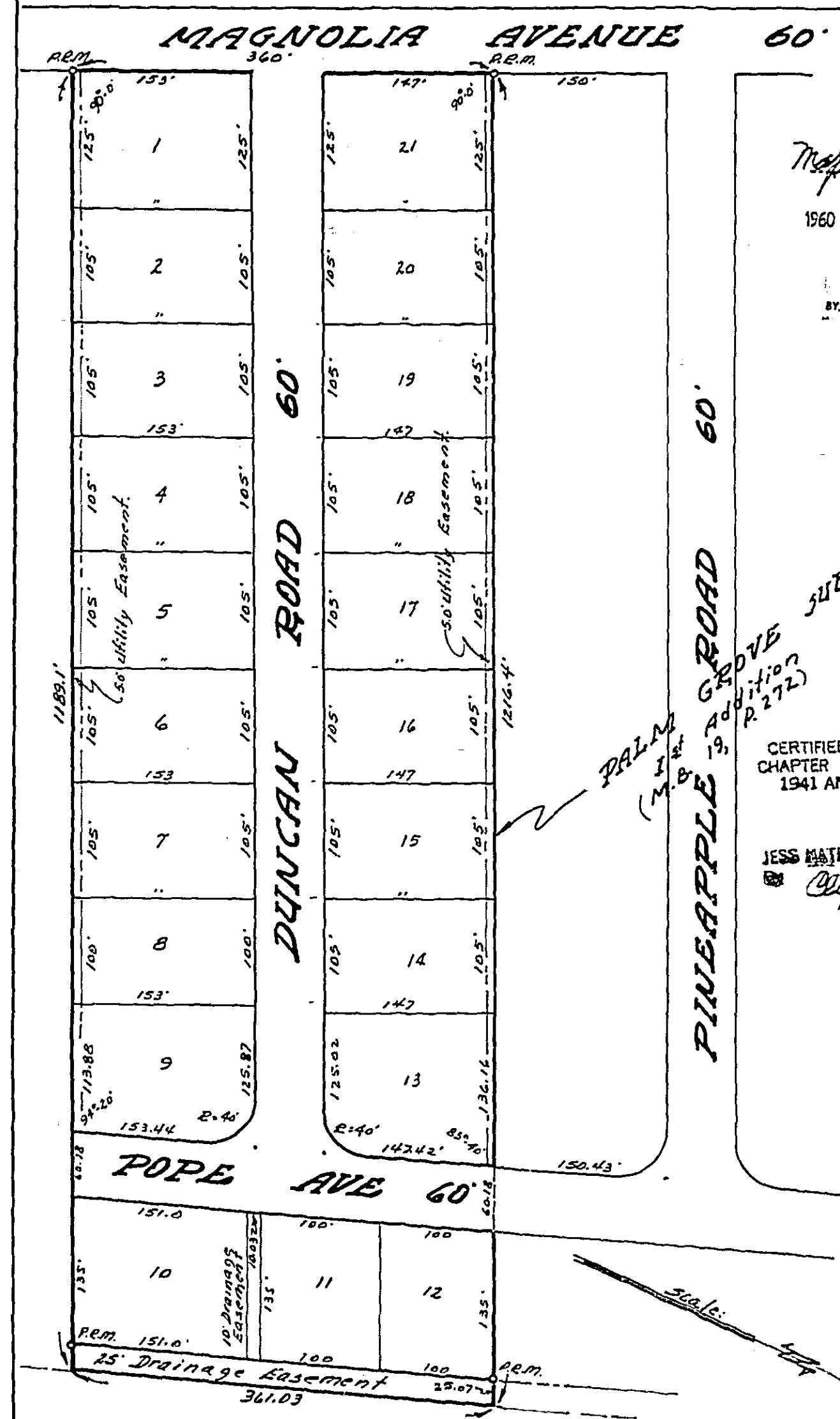
JUN 1 1961

Vol. Co. Engr. Dep't.

# PALM GROVE SUB.

## SECOND ADDITION

In Lots 83 and 84, Town of Blake, as recorded in Deed Book "E", Page 150, Public Records of Volusia County, Florida.



FILED FOR RECORD  
RECORD VERIFIED  
BOOK 86 PAGE 26  
1960 JUN 2 PM 3 32

CLERK OF CIRCUIT COURT  
VOLUSIA COUNTY FLA.  
DEPUTY CLERK

CERTIFIED IN COMPLIANCE WITH  
CHAPTER 177, FLORIDA STATUTES  
1941 AND FILED FOR RECORD  
JUN 2 1960

JESS MATIAS, CLERK OF CIRCUIT COURT  
Volusia County, Florida

STATE OF FLORIDA ss. COUNTY OF VOLUSIA ss. We, Frank B. La Roche and Thomas A. Koehler, as Vice President and Secretary, respectively, of Palm Orange Grove, Inc., a Florida Corporation, do hereby certify that we are the owners of that portion of Lots 83 and 84, Town of Blake, of record in Deed Book "E", Page 150, Public Records of Volusia County, Florida, being more particularly described as follows: Begin at a concrete monument which marks the Southwest Corner of Palm Grove Sub, First Addition, of Record in Map Book 19, Page 272, Public Records of Volusia County, Florida; thence southerly along the East line of Magnolia Avenue, a distance of 360.0' to a point; thence Easterly and at right angles to said Magnolia Avenue, a distance of 1189.1' to a point in the fence line dividing the Palm Orange Grove, Inc., property from that of, or formerly of J.D. McLarty; thence southerly along said fence line, a distance of 360.3' to the Southeast corner of Palm Grove Sub, First Addition; thence Westerly along the South line of Palm Grove Sub, First Addition aforesaid, a distance of 1216.4' to the point of beginning.

We further certify that we have caused a survey and replat to be made of said lands which is correct to the best of our knowledge and belief, do hereby dedicate all streets, drives, roads and avenues, as shown hereon, to the use of the Public forever, and the easements as shown to their prescribed uses, and do hereby file this plat for public record.

Frank B. La Roche  
Frank B. La Roche, V.P.  
Thomas A. Koehler  
Thomas A. Koehler, Sec.  
Witness to both  
Genivieve C. Koehler  
Verna Marshall

STATE OF FLORIDA ss. COUNTY OF VOLUSIA ss. On this day personally appeared before me, a Notary Public in the County and State aforesaid, Frank B. La Roche and Thomas A. Koehler, to me well known and known by me to be the persons who executed the foregoing instrument as Vice president and Secretary, respectively, of Palm Orange Grove, Inc., and who acknowledged before me that they executed the same, for and in behalf of said corporation, as and for its act and deed, and for the purposes therein expressed.

In witness whereof I have hereunto set my hand and official seal on this 20th day of April A.D. 1960.

Verna Marshall  
Notary Public  
My Commission Expires: 3-19-63

CERTIFICATE:  
This is to certify that the plat delineated hereon is a true and correct representation of the land surveyed, and that permanent reference monuments have been placed in conformance to the survey laws of the State of Florida.

20 April, 1960  
[Signature]  
Registered Surveyor #718

ACCEPTED AND APPROVED BY THE BOARD OF COUNTY COMMISSIONERS, VOLUSIA COUNTY, FLORIDA, ON THIS DAY OF AD. 1960.

ATTEST: [Signature] Clerk [Signature] Chairman

RECEIVED  
APR 21 1960

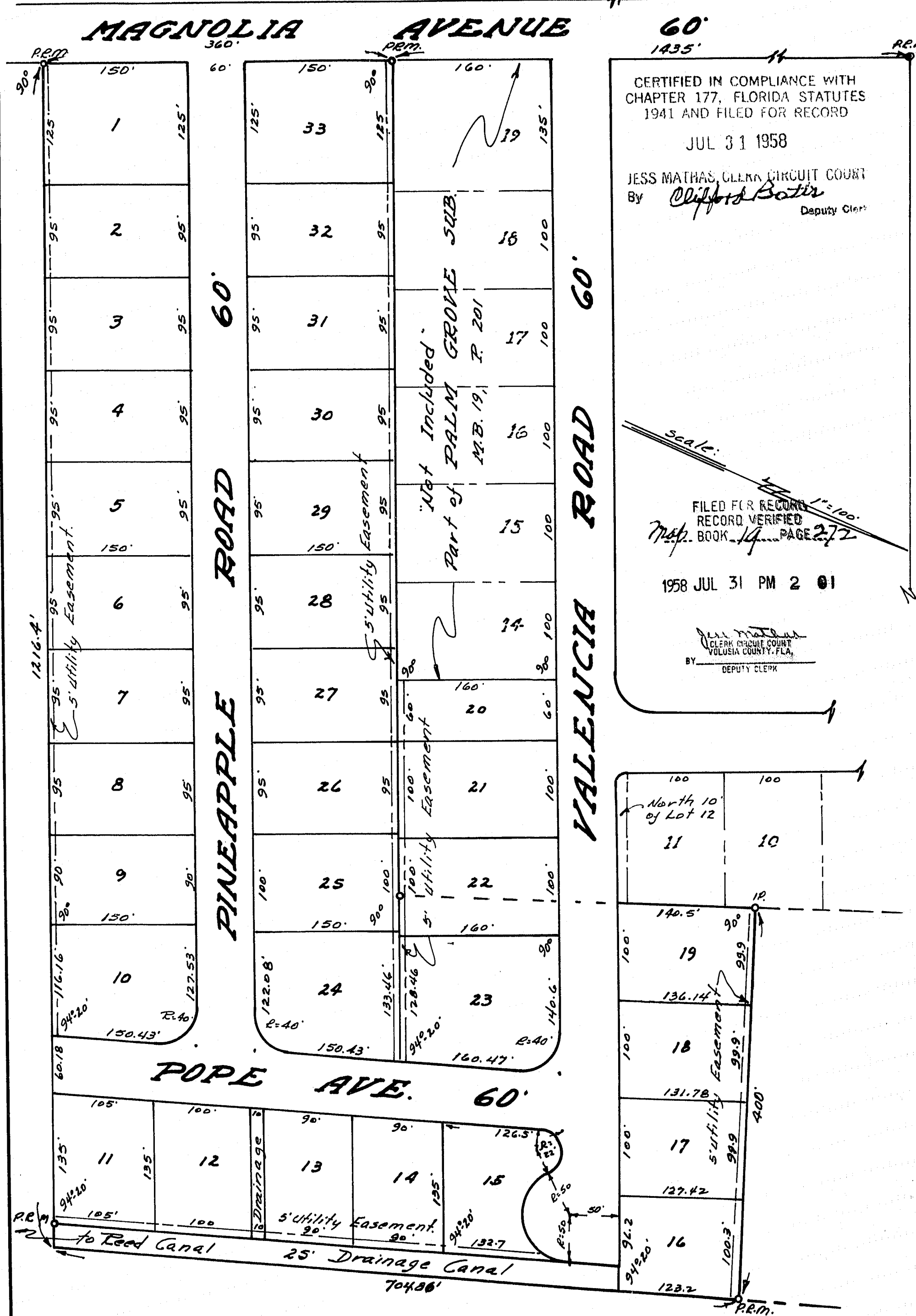
VOL. CO. ENGINE, DEPT.

# PALM GROVE SUB.

19504

## FIRST ADDITION

In Lots 84, 85 and 86, Town of Blake as recorded in Deed Book 'E', Page 150, Public Records of Volusia County, Fla.



STATE OF FLORIDA  
COUNTY OF VOLUSIA SS

We, Thomas A. Koehler and Frank B. La Roche, as Vice-president and Secretary, respectively of Palm Orange Grove, Inc., a Florida Corporation, do hereby certify that we are the owners of that part of Lots 84, 85 and 86, Town of Blake, of Record in Deed Book 'E', Page 150, Public Records of Volusia Co., Florida, being more particularly described as follows:  
Begin at a concrete monument which marks the Southwest Corner of Palm Grove Sub., of record in Map Book 19, Page 201, Public Record of Volusia County, Florida; thence Southerly along the East line of Magnolia Avenue, a distance of 360' to a point; thence Easterly and at right angles to said Magnolia Ave., a distance of 1216.4' to a point in the fence line dividing the Palm Orange Grove, Inc. property from that of, or formerly of, J.D. McLarty; thence Southerly along said fence line, a distance of 709.86' to the Southeast corner of the property of, or formerly of, C.O. Swindell; thence Westerly and along the South line of said Swindell property, a distance of 400' to the South west corner of said lands, being on the East line of Palm Grove Sub. aforesaid; thence Southerly along the said East line of said Palm Grove Sub., a distance of 360.6' to the Southeast Corner of said Palm Grove Sub.; thence westerly along the Southerly line of said Palm Grove Sub., a distance of 855.1' to the point of beginning. Also, Lot 13, and Lot 12 excepting the Northerly 10' thereof, of said Palm Grove Sub.

We further certify that we have caused a survey and replat to be made of said lands which is correct to the best of our knowledge and belief; do hereby dedicate all streets, drives, roads and Avenues as shown hereon, to the use of the public forever, and the easements as shown to the prescribed uses, and do hereby file this plat for public Record.

Thomas A. Koehler  
Thomas A. Koehler, Sec.  
Frank B. La Roche  
Frank B. La Roche, V.P.  
witness as to both.  
Katherine C. Koehler  
Katherine M. Lancaster

STATE OF FLORIDA  
COUNTY OF VOLUSIA SS

On this day personally appeared before me, a Notary Public in the County and State aforesaid, Thomas A. Koehler and Frank B. La Roche, to me well known and known by me to be the persons who executed the foregoing instrument as vice president and secretary, respectively of Palm Orange Grove, Inc., and who acknowledged before me that they executed the same, for and in behalf of said Corporation, as and for its act and deed, and for the purposes therein expressed.

In witness whereof I have hereunto set my hand and official seal on this 31st day of July AD. 1958.  
Katherine M. Lancaster  
Notary Public  
My Commission Expires: Nov. 11, 1961

APPROVED BY THE BOARD OF COUNTY COMMISSIONERS  
VOLUSIA COUNTY, FLORIDA, THIS 31ST DAY OF July  
AD. 1958  
Attest: Tim Sayon  
Chairman  
Jess Mathas  
Clerk

CERTIFICATE:  
This is to certify that the plat delineated hereon is a true and correct representation of the land surveyed, and that permanent reference monuments have been placed, in conformance to the Survey laws of the State of Florida.  
2 July 1958  
Registered Surveyor #718



# "PALM GROVE SUB."

## SIXTH ADDITION

In Lots 103, 104, 123 and 124, Town of Blake, of Record in Deed Book "E", Page 150, Public Records, Volusia County, Fla.

CERTIFIED IN COMPLIANCE WITH  
CHAPTER 177, FLORIDA STATUTES  
1941 AND FILED FOR RECORD  
MAY 14 1964

JESS MATHAS, CLERK CIRCUIT COURT  
Clifford B. La Roche

FILED FOR RECORD  
RECORD VERIFIED  
MAY 14 1964  
1964 MAY 14 11 11 05

STATE OF FLORIDA ss. We, Frank B. La Roche, and Thomas A. Koehler, as Vice President and Secretary respectively of Palm Grove, Inc., a Florida Corporation, do hereby certify that we are the owners of that portion of Lots 103, 104, 123 and 124, Town of Blake, of record in Deed Book "E", Page 150, (or Map Book 1, Page 38) Public Records of Volusia County, Florida, described as follows: Begin at the Northeast Corner of said lot 104; thence Southerly along the Easterly line of Lot 104 and 103, a distance of 750' to a point; thence Westerly and at right angles to the Easterly line of lot 103, being the Westerly line of Magnolia Avenue, a distance of 1699.95' to a point; thence Northerly along a line that is 500' Easterly of, and parallel to, the Westerly line of lots 123 and 124, a distance of 731.37' to the Northerly line of lot 124; thence Easterly along said Northerly line of lot 124, a distance of 1700.85' to the Point of Beginning.

We further certify that we have caused a survey and replat to be made of said lands, as shown hereon, which is correct to the best of our knowledge and belief. We do hereby dedicate all streets, drives and thoroughfares to the use of the Public forever, the easements to their prescribed uses, and do hereby file this plat for Public Record.

Frank B. La Roche  
Frank B. La Roche, V.P.

Thomas A. Koehler  
Thomas A. Koehler, Sec.

Witness as to both  
Jere Marshall  
Donald M. Fleming

STATE OF FLORIDA ss. On this day personally appeared before me, a Notary Public in the State and County aforesaid, Frank B. La Roche and Thomas A. Koehler, to me well known and known by me to be the persons who executed the foregoing instrument as Vice President and Secretary respectively of Palm Grove, Inc., and who acknowledged before me that they executed the same, for and in behalf of said Corporation, as and for its act and deed, and for the purposes therein expressed. In witness whereof I have hereunto set my hand and official seal on this 24th day of February, A.D. 1964.

My Commission Expires: 2-3-67

Donald M. Fleming  
Notary Public

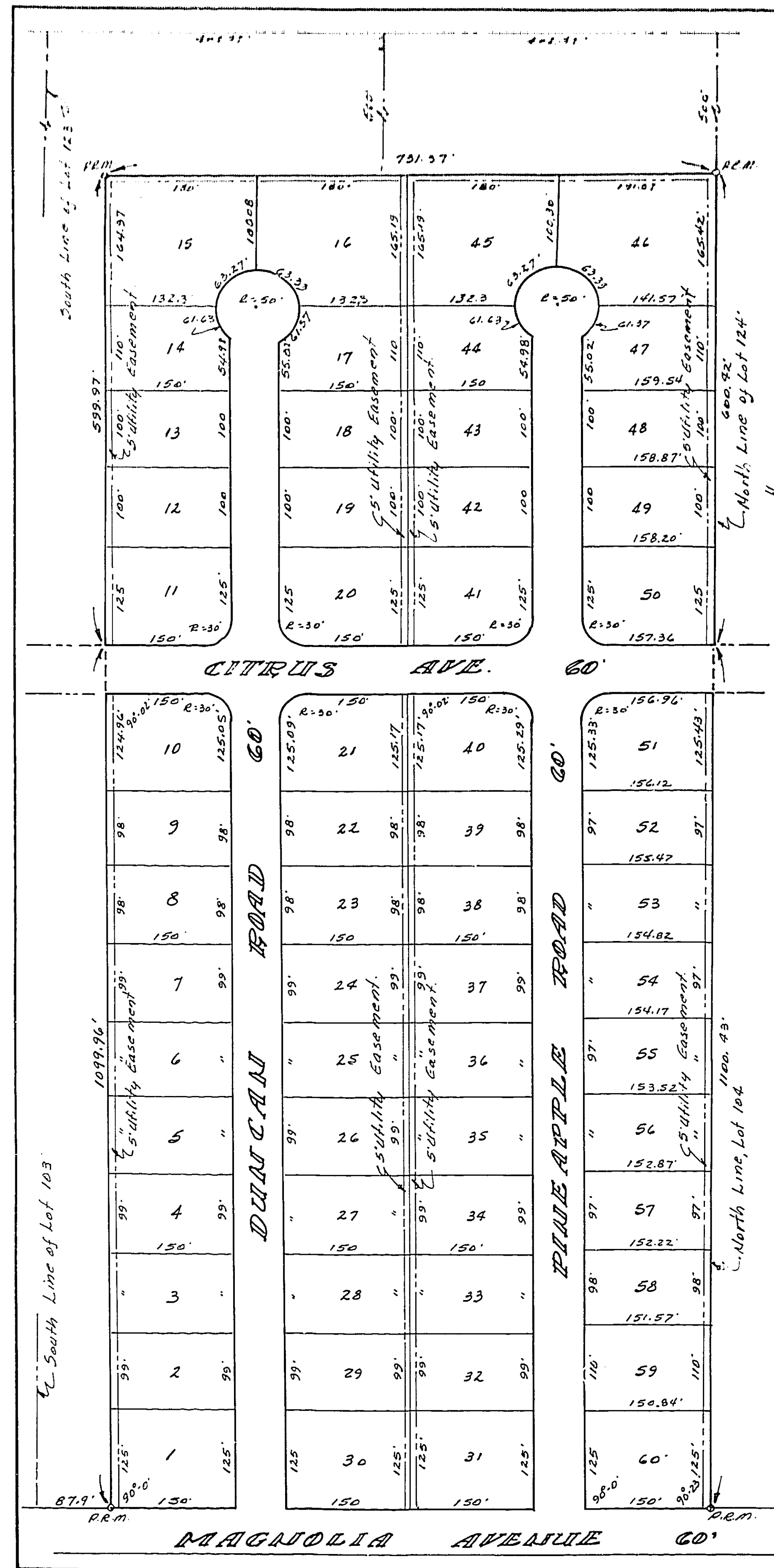
CERTIFICATE:  
This is to certify that the plat delineated hereon is a true and correct representation of the land surveyed, and that permanent reference monuments have been placed in conformance with the Survey laws of the State of Florida.  
20 February, 1964

Donald M. Fleming  
Registered Surveyor #718

ACCEPTED AND APPROVED BY THE BOARD OF COUNTY COMMISSIONERS,  
VOLUSIA COUNTY, FLORIDA, ON THIS 7th DAY OF May, A.D. 1964.

ATTEST: JESS MATHAS  
Clerk  
By: [Signature]  
Deputy Clerk

Jim Larson  
Chairman



**FIFTH ADDITION**

CERTIFIED IN COMPLIANCE WITH  
CHAPTER 177, FLORIDA STATUTES  
1941 AND FILED FOR RECORD

**MAY 14 1967**

JESS MATHAS, CLERK CIRCUIT COURT

Clifford B. Bette

FILED FOR SECOND  
RECORD VERIFIED  
Map. BOOK 76 PAGE 141

1964 MAY 14 PM 11 05

*In Lot 105, Blake, Map Book 1, Page 38, Public  
Records of Volusia County, Florida.*

STATE OF FLORIDA  
COUNTY OF VOLUSIA \$5 I, Elizabeth Lane Oliver, Widow,  
do hereby certify that I am the owner of Lot 105, Town of Blake, of  
Record in Deed Book "E", Page 150, and/or Map Book 1, Page 38, Public  
Records of Volusia County, Florida

I further certify that I have caused a survey and replat to be made of said land, as shown hereon, and which is correct to the best of my knowledge and belief. I do hereby dedicate all streets, drives, avenues and thoroughfares to the use of the Public forever, the easements to their prescribed uses, and do hereby file this plat for Public Record.

Elizabeth Lane Oliver

Witness: Thomas G. Koehler

STATE OF FLORIDA  
COUNTY OF VOLUNZIA      SS      On this day personally appeared before me, a Notary Public in the State of Florida, Elizabeth Lane Oliver, to me well known and known by me to be the person who executed the foregoing instrument, and who did acknowledge before me that she executed the same as her own free act and deed, and for the purposes therein expressed.

In witness whereof I have hereunto  
set my hand and official seal on this 25<sup>th</sup> day of FEBRUARY AD 1964

Thomas G. Kohler  
Notary Public

My Commission Expires: DECEMBER 25, 1966

**CERTIFICATE:**

THIS IS TO CERTIFY THAT THE PLAT DELINEATED HEREON IS A TRUE AND CORRECT REPRESENTATION OF THE LAND SURVEYED, AND THAT PERMANENT REFERENCE MONUMENTS HAVE BEEN PLACED IN CONFORMANCE WITH THE SURVEY LAWS OF THE STATE OF FLORIDA.

20 February, 1964

*M. T. Hark*  
Registered Surveyor #718

ACCEPTED AND APPROVED BY THE BOARD OF COUNTY COMMISSIONERS, POLUSIA COUNTY, FLORIDA, ON THIS 7<sup>th</sup> DAY OF MAY A.D. 1964.

ATTEST: JESS MATHIAS

John Lyons  
Chairman

By: J. J. Doyle  
Deputy Clerk

A subdivision of apart of Lots 85, 86 and 87, Town of Blake.

On this day, personally appeared before me, a notary public in the county and state aforesaid, Philo A. Orton, to me well known and known by me to be the person who executed the foregoing instrument as President of Palm Orange Grove, Inc., a Florida Corporation, and who acknowledged to me that he executed the same as President of said corporation, for and in behalf of said corporation, as and for its act and deed, and for the purposes therein expressed.

Kenneth R. Austin  
Notary Public

On this day, personally appeared before me, a Notary Public in the County and State aforesaid, Elizabeth Lane Oliver, to me well known and known by me to be the person who executed the foregoing instrument as Secretary of Palm Orange Grove, Inc., a Florida Corporation, and who acknowledged before me that she executed the same as Secretary of said Corporation, for and in behalf of said Corporation, as and for its act and deed, and for the purposes therein expressed.

Thomas G. Toehles  
Notary Public

County of Volusia ) We, Philo A. Orton and Elizabeth Lane Oliver, as President and Secretary respectively of Palm Orange Grove, Inc., a Florida Corporation, do hereby certify that we are the owners of that portion of Lots 85, 86 and 87, Blake, according to the plat of Record in Deed Book "E" Page 150, Public Records of Volusia County, Florida, being more particularly described as follows: Beginning at a point in the Easterly line of Magnolia Avenue, a 60' Street as now laid out, said point being a distance of 665.0', S. 24° 47' E, from a concrete monument which marks the intersection of the said east line of Magnolia Avenue with the South line of Big Tree Road, as now laid out; thence S. 24° 47' E. along the said East line of Magnolia Ave., a distance of 770' to a point; thence N. 65° 13' E. a distance of 855.1' to a point; thence N. 22° 17' W., and in part along the Westerly line of the lands, now or formerly belonging to "Swindell", a distance of 745' more or less to a point that is 665', S. 24° 47' E. of the South line of Big Tree Road afore said; thence S. 66° 53' W. a distance of 888' to the Point of Beginning.

We further certify that we have caused a survey and replat to be made of said lands which is correct to the best of our knowledge and belief. We do hereby dedicate all streets, roads, avenues and thoroughfares to the use of the public forever; and dedicate the easements as shown hereon for the purposes expressed, and do hereby file this plat for public record.

This is to Certify that the plat delineated hereon is a true and correct representation of the land surveyed, and that permanent reference monuments have been placed in conformance with the survey laws of the state of Florida.

Wiggert and Matejka  
Engineers & Surveyors  
Daytona Beach, Florida

LESS MATTHEW, CLERK CIRCUIT COURT  
By *Clifford Rott*  
Deputy Clerk

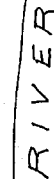
By L.R. Horne C.E. July 1877 Drawn by A.R. Sweet, Pawkt, K.I.

By Jno. W. Dickins Clerk  
Volusia County Florida

I, Sam'l. D. Jordan, Clerk of the Circuit Court in and for the State and County aforesaid, do hereby certify that the map as shown hereon is a true and correct copy of the original as appears of record in my office in Deed Book E, page 150.

Sam'l D. Jordan  
Clerk Circuit Court.

Scale:  $1'' = 600'$



I, W. Hawkins  
clerk  
By W. Hawkins  
Deputy



STATE OF FLORIDA  
COUNTY OF VOLUSIA

13631

We, Cowart and Childre Builders Inc., a Florida Corporation, do hereby certify that we are the owners of part of Lots 89, 90, 109 and 110, Town of Blake, as recorded in Map Book 1, Page 38, Public Records of Volusia County, Florida, being more particularly described as follows:

From a reference point, being a concrete monument marking the Northeast corner of Lot 108, of said Blake, as the same is now established and recognized; run N. 24° 47' W., 50 ft. to a point in the center line of Big Tree Road (formerly Halifax Avenue); thence N. 65° 29' E., along said center line, for a distance of 80 ft. to a point therein; thence N. 40° 31' W., 52.05 ft. to a point in an old fence corner, the same being the Point of Beginning; thence run along the said old fence line for the following courses and distances, to wit: N. 23° 52' 40" W., 340.62 ft.; thence N. 65° 46' 50" E., 344.05 ft.; thence N. 25° 17' 20" W., 402.35 ft.; thence S. 66° 01' 20" W., 501.95 ft.; thence leaving a fence said old fence line, run S. 24° 47' E., 115.07 ft.; thence S. 5° 35' 50" W., 60.32 ft.; thence S. 24° 47' W., 580 ft. to a point in the Northerly Right-of-way line of Big Tree Road (Halifax Avenue) aforesaid; thence N. 65° 29' E., and along said Northerly Right-of-way line, a distance of 180.07 ft. to the POINT OF BEGINNING.

We further certify that we have caused a survey and replat to be made of said land as shown hereon, and that the same is correct to the best of our knowledge and belief, and we do hereby dedicate to the use of the Public forever any and all streets, avenues and other thoroughfares and easements lying within said boundary lines, and we do hereby file this plat for Public Record.

WITNESS: Vernon M. Carver

★ COWART & CHILDRÉ BUILDERS, INC. ★

WITNESS: Lindsay A. Martenson

N.J. Cowart  
N.J. COWART, PRES.

WITNESS: Vernon M. Carver

Hilda V. Cowart  
HILDA V. COWART, SEC.

WITNESS: Lindsay A. Martenson

STATE OF FLORIDA  
COUNTY OF VOLUSIA

I hereby certify that on this day before me, an officer duly authorized in the State and County aforesaid to take acknowledgements, personally appeared N.J. Cowart and Hilda V. Cowart, to me known to be the persons described in and who executed the foregoing instrument and acknowledged before me that they executed the same this April 3, 1959.

My commission expires July 31 1962

E. R. Smith  
NOTARY PUBLIC

Approved by the Board of County Commissioners of Volusia County, Florida.

by: Jim Saxon  
CHAIRMAN

Attest: Jess Mathas  
Date: May 8, 1959

Filed for record by the office of the Clerk of the Circuit Court of Volusia County, Florida.

by: \_\_\_\_\_  
AUTHORIZED REPRESENTATIVE

SURVEYOR'S CERTIFICATE:

I hereby certify that the foregoing plat is a correct representation of the land surveyed and that Permanent Reference Monuments have been placed as required by the Survey Laws of the State of Florida.

V.H. Deppa  
Registered Surveyor #669

Approved by the County Engineer of Volusia County, Florida.

Approved by District Two Zoning Board.

James R. Lender  
CHAIRMAN

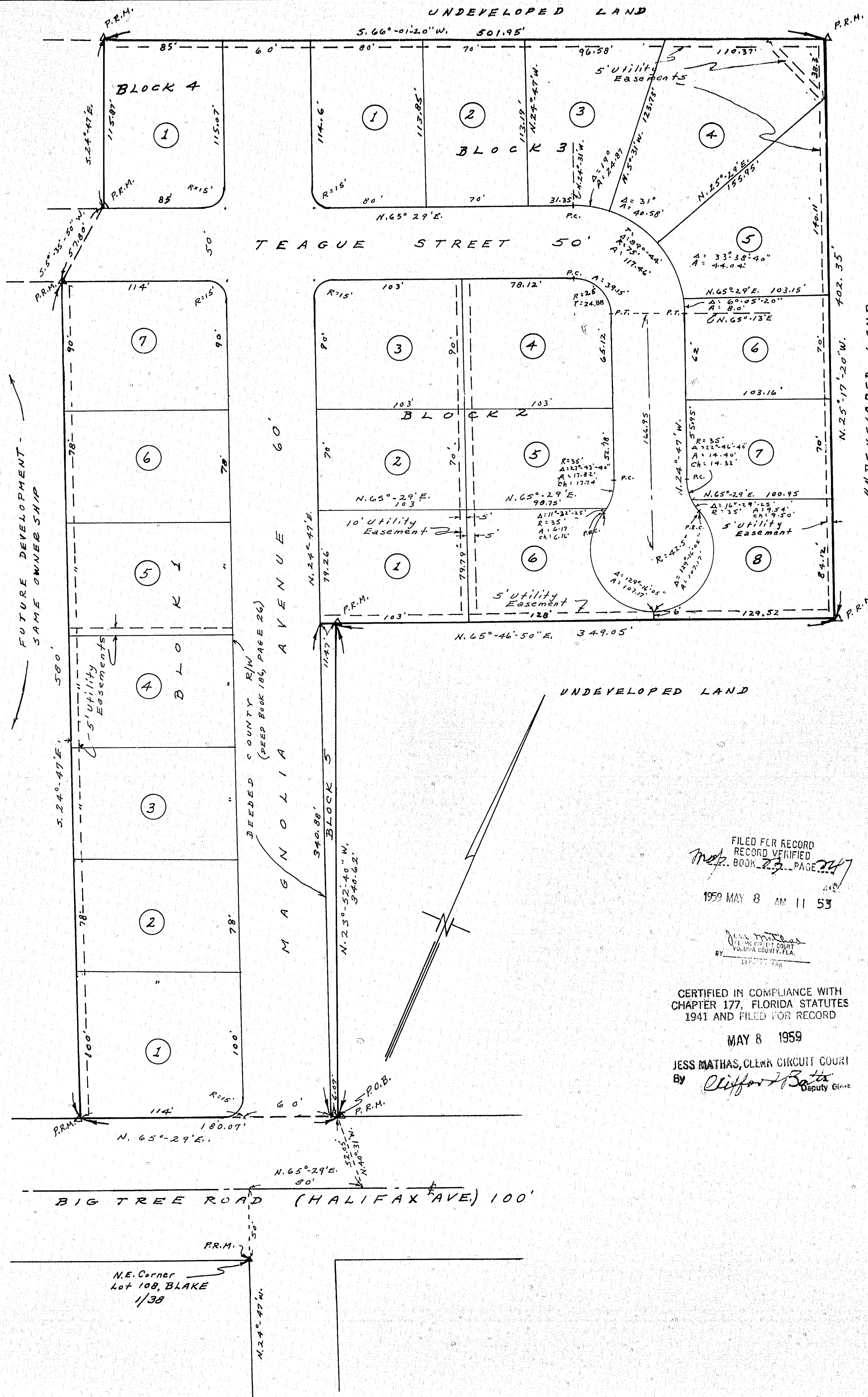
- BIG TREE ACRES -

Sub. of part of Lots 89, 90, 109 and 110, Town of Blake, recorded in Map Book 1, Page 38, Public Records of Volusia County, Florida.

STEPPING,  
Registered Engineers & Surveyors,  
Daytona Beach, Fla.

Scale: 1" = 50 Ft.

25 February, 1959



FILED FOR RECORD  
RECORD VERIFIED  
MAP BOOK 22 PAGE 247

1959 MAY 8 AM 11 53

CERTIFIED IN COMPLIANCE WITH  
CHAPTER 177, FLORIDA STATUTES  
1941 AND FILED FOR RECORD

MAY 8 1959

JESS MATHAS, CLERK CIRCUIT COURT  
By Clifford B. Batts Deputy Clerk



# BIG TREE VILLAGE ~ PHASE I

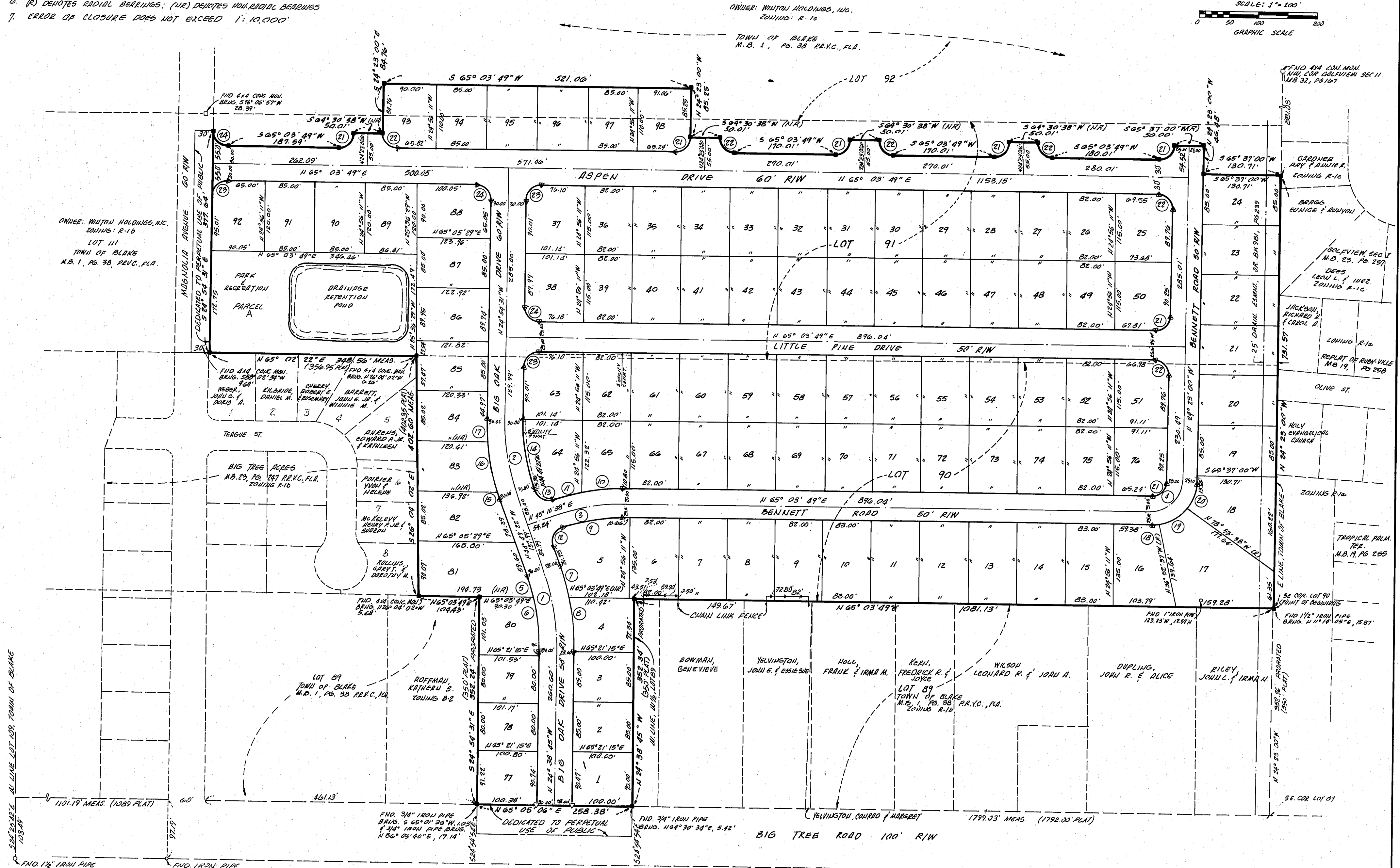
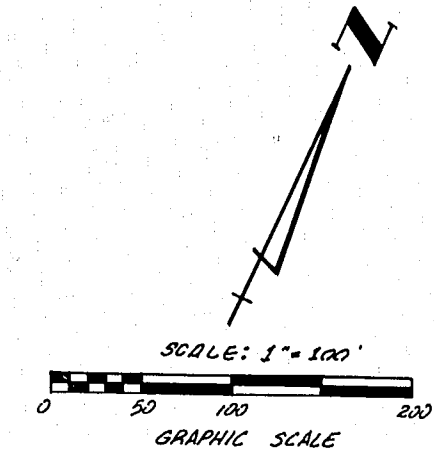
PLAT BOOK 35

PAGE NO. 157

A REPLAT OF A PORTION OF THE TOWN OF BLAKE  
MAP BOOK 1, PAGE 38 VOLUSIA COUNTY, FLORIDA  
CITY OF SOUTH DAYTONA

## NOTES

1. SEE SHEET 1 OF 2 FOR CURVE DATA
2. DENOTES P.R.M. - 4" x 4" CONC. MON. W/ METAL DISK STAMPED P.R.M. L.S. 2494
3. DENOTES P.C.P. - 1" x 4" CONC. MON. WITH METAL DISK STAMPED P.C.P. L.S. 2494
4. BEARING STRUCTURE BASED ON THE WEST LINE OF GOLFVIEW SUBDIVISION, SECTION 11, BEING N 24° 25' 00" W
5. UNLESS OTHERWISE NOTED A 6.5' DRAINAGE & UTILITY IS PROVIDED ALONG THE SIDE & REAR LOT LINES OF ALL LOTS (B' OVERALL WITH ADJACENT LOT) EXCEPT THOSE CORNER LOTS WITH SIDE YARDS ADJACENT TO STREET.
6. (R) DENOTES RADIAL BEARINGS; (NR) DENOTES NON-RADIAL BEARINGS
7. ERROR OF CLOSURE DOES NOT EXCEED 1" IN 10,000'



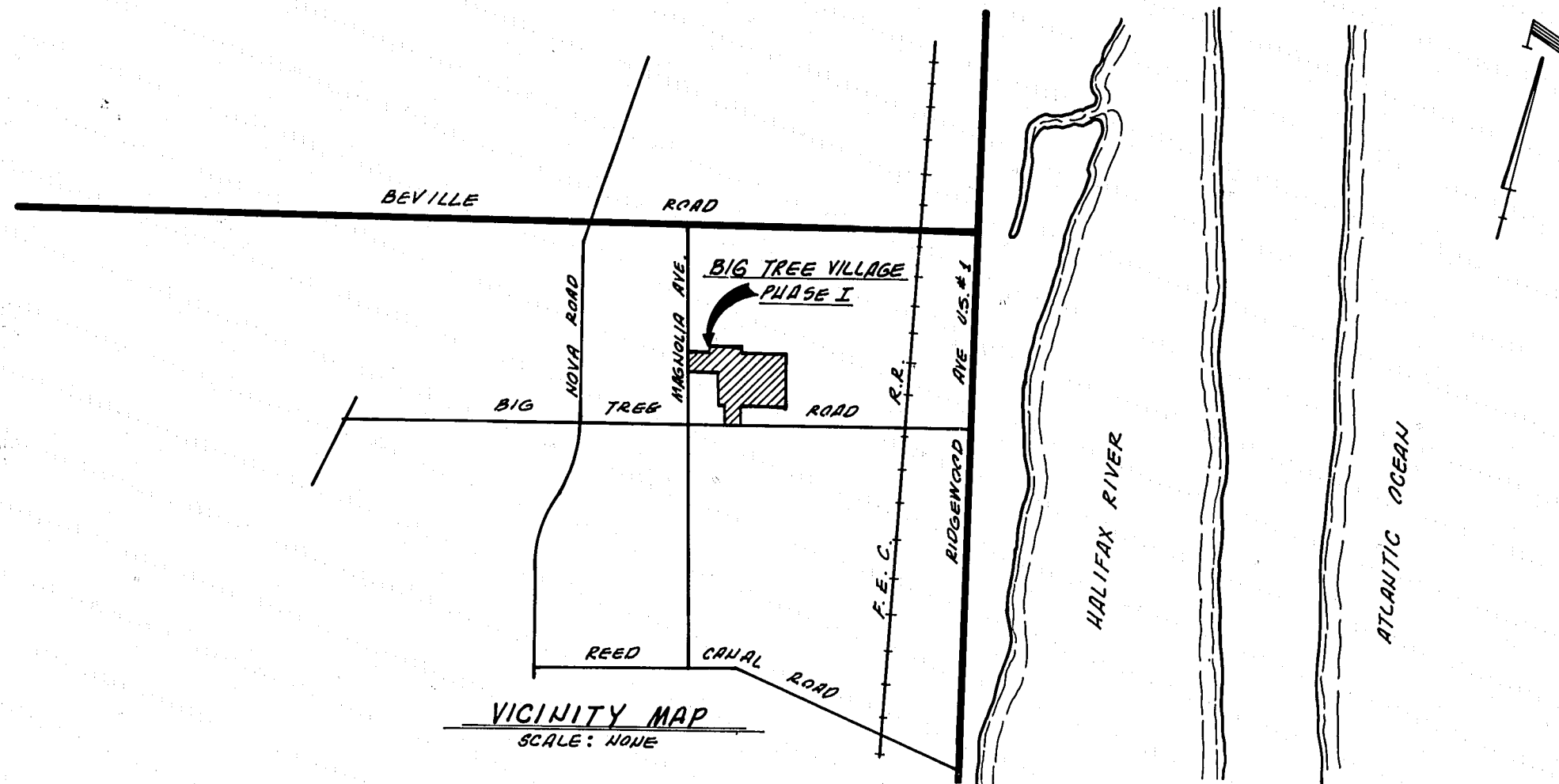
# BJC TREE VILLAGE ~ PHASE I

A REPEAT OF A PORTION OF THE TOWN OF BLAKE  
MAP BOOK 1, PAGE 38 VALUSIA COUNTY, FLORIDA  
CITY OF SOUTH DAYTONA

THE WEST 1/2 OF LOT 89, LESS THE WESTERLY 461.13 FEET THEREOF; AND LESS THE EASTERLY 180.00 FEET THEREOF; AND LOT 90, LESS THAT PART OF BIG TREE ACRES,  
AS RECORDED IN MAP BOOK 23 PAGE 247, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA; AND A PORTION OF LOT 92 AND ALL OF LOT 91, TOWN OF BLAKE,  
AS RECORDED IN MAP BOOK 1, PAGE 30, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA; BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FROM THE SOUTHWEST CORNER OF LOT 89, OF SAID TOWN OF BLAKE, RUN N 24° 23' 00" W ALONG THE EASTERLY LINE OF SAID TOWN OF BLAKE A DISTANCE OF 352.70  
FEET TO THE SOUTHEAST CORNER OF SAID LOT 90, AND TO THE POINT OF BEGINNING; THENCE CONTINUE N 24° 23' 00" W ALONG THE EASTERLY LINE OF SAID TOWN OF BLAKE A DISTANCE  
OF 781.57 FEET, THENCE DEPARTING THE EASTERLY LINE OF SAID TOWN OF BLAKE, RUN S 65° 37' 00" W A DISTANCE OF 50.00 FEET TO POINT SAID POINT BEING THE P.C. OF A CURVE WITH A TANGENT BEARING OF 52° 23' 00" E AND BEING CONVEX  
NORTHWEST AND HAVING A RADIUS OF 25.00 FEET, RUN THENCE SOUTHWESTERLY AND SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 89° 26' 49" A DISTANCE  
OF 39.03 FEET TO THE P.T. OF SAID CURVE, THENCE S 65° 03' 49" W A DISTANCE OF 180.01 FEET TO THE P.C. OF A CURVE CONVEX NORTHWEST AND HAVING A RADIUS OF 25.00 FEET,  
THENCE RUN SOUTHWESTERLY AND NORTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 90° 33' 11" A DISTANCE OF 39.51 FEET TO THE P.T. OF SAID CURVE, THENCE FROM A  
TANGENT BEARING OF N 24° 23' 00" W RUN S 64° 30' 38" W A DISTANCE OF 50.01 FEET TO A POINT, SAID POINT BEING THE P.C. OF A CURVE WITH A TANGENT BEARING OF S 24° 23' 00" E  
AND BEING CONVEX NORTHWEST AND HAVING A RADIUS OF 25.00 FEET, RUN THENCE SOUTHWESTERLY AND SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE  
OF 89° 26' 49" A DISTANCE OF 39.03 FEET TO THE P.T. OF SAID CURVE, THENCE S 65° 03' 49" W A DISTANCE OF 170.01 FEET TO THE P.C. OF A CURVE CONVEX NORTHWEST AND HAVING  
A RADIUS OF 25.00 FEET, RUN THENCE SOUTHWESTERLY AND NORTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 90° 33' 11" A DISTANCE OF 39.51 FEET TO THE  
P.T. OF SAID CURVE, THENCE FROM A TANGENT BEARING OF N 24° 23' 00" W RUN S 64° 30' 38" W A DISTANCE OF 50.01 FEET TO A POINT, SAID POINT BEING THE P.C. OF A CURVE WITH A  
TANGENT BEARING OF 52° 23' 00" E AND BEING CONVEX NORTHWEST AND HAVING A RADIUS OF 25.00 FEET, RUN THENCE SOUTHWESTERLY AND SOUTHWESTERLY ALONG THE ARC OF  
SAID CURVE THROUGH A CENTRAL ANGLE OF 89° 26' 49" A DISTANCE OF 39.03 FEET TO THE P.T. OF SAID CURVE, THENCE S 65° 03' 49" W A DISTANCE OF 170.01 FEET TO THE P.C.  
OF A CURVE CONVEX NORTHWEST AND HAVING A RADIUS OF 25.00 FEET, RUN THENCE SOUTHWESTERLY AND SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL  
ANGLE OF 90° 33' 11" A DISTANCE OF 39.51 FEET TO THE P.T. OF SAID CURVE, THENCE FROM A TANGENT BEARING OF N 24° 23' 00" W RUN S 64° 30' 38" W A DISTANCE OF 50.01 FEET, THENCE  
N 24° 23' 00" W A DISTANCE OF 85.25 FEET, THENCE S 65° 03' 49" W A DISTANCE OF 50.01 FEET, THENCE S 24° 23' 00" E A DISTANCE OF 84.70 FEET, THENCE S 64° 30' 38" W A  
DISTANCE OF 50.01 FEET TO A POINT, SAID POINT BEING THE P.C. OF A CURVE WITH A TANGENT BEARING OF 52° 23' 00" E AND BEING CONVEX NORTHWEST AND HAVING A  
RADIUS OF 25.00 FEET, RUN THENCE SOUTHWESTERLY AND SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 89° 26' 49" A DISTANCE OF 39.03 FEET  
TO THE P.T. OF SAID CURVE, THENCE S 65° 03' 49" W A DISTANCE OF 189.59 FEET TO THE P.C. OF A CURVE CONVEX NORTHWEST AND HAVING A RADIUS OF 25.00 FEET, RUN  
THENCE SOUTHWESTERLY AND NORTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 90° 01' 40" A DISTANCE OF 39.28 FEET TO THE P.T. OF SAID CURVE, AND TO THE  
EASTERLY LINE OF MAGNOLIA AVENUE, A 60 FOOT RIGHT-OF-WAY AS SHOWN ON THE PLAT OF SAID TOWN OF BLAKE, THENCE S 24° 54' 31" E ALONG THE EASTERLY LINE OF SAID MAGNOLIA  
AVENUE, A DISTANCE OF 377.64 FEET TO THE SOUTHWEST CORNER OF SAID LOT 91, AND TO A POINT ON THE NORTHERLY LINE OF SAID BIG TREE ACRES, THENCE N 65° 02' 28" E  
ALONG THE SOUTHERLY LINE OF SAID LOT 91 AND ALONG THE NORTHERLY LINE OF SAID BIG TREE ACRES, A DISTANCE OF 340.56 FEET TO THE NORTHWEST CORNER OF SAID  
BIG TREE ACRES, THENCE S 26° 02' 02" E ALONG THE EASTERLY LINE OF SAID BIG TREE ACRES, A DISTANCE OF 402.60 FEET TO AN INTERSECTION WITH THE SOUTHERLY LINE OF SAID  
LOT 90, THENCE N 65° 03' 49" E ALONG THE SOUTHERLY LINE OF SAID LOT 90, A DISTANCE OF 104.43 FEET TO THE EASTERLY LINE OF THE WESTERLY 461.13 FEET OF SAID  
LOT 89, THENCE S 24° 54' 31" E ALONG THE EASTERLY LINE OF THE WEST 461.13 FEET OF SAID LOT 89, A DISTANCE OF 352.24 FEET TO THE NORTHERLY LINE OF HALIFAX AVENUE  
(BIG TREE ROAD), A 100 FOOT RIGHT-OF-WAY, AS SHOWN ON THE PLAT OF SAID TOWN OF BLAKE, THENCE N 65° 03' 49" E ALONG THE NORTHERLY LINE OF SAID HALIFAX AVENUE, A DISTANCE OF  
258.38 FEET TO THE WESTERLY LINE OF THE EASTERLY 180.00 FEET OF THE WEST 1/2 OF SAID LOT 89, THENCE N 24° 38' 45" W ALONG THE EASTERLY LINE OF THE WEST 1/2 OF SAID LOT 89,  
A DISTANCE OF 352.34 FEET TO THE NORTHERLY LINE OF SAID LOT 89, THENCE N 65° 03' 49" E ALONG THE NORTH LINE OF SAID LOT 89 A DISTANCE OF 1081.13 FEET TO THE POINT  
OF BEGINNING.

TOGETHER WITH THAT PART AS LIES IN MAGNOLIA AVE AND BIG TREE RD.  
CONTAINING 3155 ACRES



N/O	DELTA	RADIUS	ARC	CHORD	TANGENT	CHORD BEARING
1	20° 10' 37"	379.44'	138.55'	137.64'	70.00'	534° 44' 03"E
2	19° 54' 51"	370.26'	128.69'	128.04'	65.00'	134° 51' 56"N
3	19° 53' 10"	325.00'	112.80'	112.24'	56.97'	555° 07' 13"N
4	09° 26' 49"	50.00'	78.06'	70.37'	49.52'	520° 20' 24"W
5	05° 35' 52"	363.44'	35.51'	35.49'	17.77'	142° 01' 23"W
6	14° 34' 44"	363.44'	92.48'	92.73'	46.99'	113° 56' 08"N
7	07° 35' 52"	421.44'	55.83'	55.84'	27.98'	341° 01' 24"E
8	12° 34' 45"	481.43'	92.53'	92.34'	46.45'	530° 56' 09"E
9	19° 53' 10"	300.00'	104.12'	103.60'	52.59'	555° 07' 13"W
10	11° 44' 17"	350.00'	71.70'	71.58'	35.98'	559° 11' 40"W
11	08° 08' 54"	350.00'	49.78'	49.73'	24.93'	549° 15' 05"W
12	90° 00' 00"	26.24'	41.22'	37.11'	26.24'	500° 10' 39"W
13	90° 00' 00"	24.24'	38.08'	34.28'	24.24'	1389° 49' 22"W
14	19° 54' 51"	340.26'	118.26'	117.67'	59.73'	1134° 51' 56"W
15	09° 42' 40"	400.26'	11.75'	11.95'	5.98'	1143° 58' 02"W
16	12° 21' 46"	400.26'	87.06'	86.89'	43.70'	1136° 52' 49"N
17	05° 44' 25"	400.26'	40.10'	40.08'	20.07'	1127° 46' 43"W
18	11° 56' 26"	75.00'	15.63'	15.60'	7.84'	1159° 05' 36"E
19	42° 01' 01"	75.00'	55.00'	53.78'	28.80'	1132° 06' 53"E
20	35° 29' 22"	75.00'	44.46'	45.72'	24.00'	1106° 38' 19"N
21	09° 26' 49"	75.00'	39.03'	35.18'	24.76'	320° 20' 24"W
22	90° 33' 11"	25.00'	39.51'	39.53'	25.24'	1469° 39' 24"W
23	89° 58' 20"	25.00'	39.26'	35.35'	24.99'	320° 04' 39"N
24	90° 01' 40"	25.00'	39.28'	35.36'	25.01'	1469° 55' 21"W

PLAT BOOK 35

PAGE NO.

156

DEDICATION (CORPORATION)

KNOWN ALL MEN BY THESE PRESENTS, THAT PORT ORANGE PRODUCTIONS, INC. INCORPORATED UNDER THE LAWS OF THE STATE OF FLORIDA, BEING THE OWNER IN FEE SIMPLE OF THE LANDS DESCRIBED IN THE ATTACHED PLAT, ENTITLED, "BIG TREE VILLAGE - PHASE I," LOCATED IN THE CITY OF SOUTH DAYTONA, (COUNTY OF VOLUSIA, STATE OF FLORIDA, HEREBY DEDICATES SAID LANDS AND PLAT FOR THE USES AND PURPOSES THEREIN EXPRESSED, AND DEDICATES ALL STREETS, AVENUES, ROADS, ALLEYS, THOROUGHFARES, PARKS, CHURCHS, UTILITY EASEMENTS, UTILITY RIGHT-OF-WAYS, AND DRAINAGE EASEMENTS SHOWN OR DESCRIBED THEREON, TO THE PERPETUAL USE OF THE PUBLIC, FOR PROPER PURPOSES, AND IN WITNESS WHEREOF, HAS CAUSED THESE PRESENTS TO BE SIGNED AND ATTESTED TO BE THE OFFICERS NAMED BELOW AND ITS CORPORATE SEAL TO BE AFFIXED HEREOF ON THIS 16 DAY OF APRIL A.D. 1979.

PORT ORANGE PRODUCTIONS, INC.

PORT ORANGE PRODUCTIONS, INC.  
BY: James C. Seem  
PRESIDENT  
PORT ORANGE PRODUCTIONS, INC.  
ATTEST: Diana A. Varnum  
SECRETARY

SIGNED, SEALED AND DELIVERED IN THE  
PRESENCE OF: 1 11

Anthony A. Sciullo  
Thomas A. Williams  
Thomas M. Oeffel

STATE OF FLORIDA, COUNTY OF VOLUSIA

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME  
THIS 16 DAY OF APRIL, A.D. 1979 BY GEORGE C. SCOTT,  
PRESIDENT, DIPAK D. JOBALIA, SECRETARY, OF PORT ORANGE  
PRODUCTIONS, INC. A FLORIDA CORPORATION ON BEHALF  
OF THE CORPORATION.

NOTARY PUBLIC, STATE OF FLORIDA AT LARGE  
MY COMMISSION EXPIRES SEP. 21, 1994  
BONDED THROUGH MORGAN & CO. LABRARY, INC.

Constance A. Haskell  
NOTARY PUBLIC

CERTIFICATE OF SURVEYOR

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED, BEING A LICENSED AND REGISTERED LAND SURVEYOR, DOES HEREBY CERTIFY THAT ON 5 JUNE 78, 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 THE CITY OF SOUTH ORLANDA, COUNTY OF VOLUNIA, STATE OF FLORIDA.

Walter T. Mims DATED: 20 MAR 79  
WALTER T. MIMS REGISTRATION NO. 2494

CERTIFICATE OF APPROVAL

THIS IS TO CERTIFY, THAT ON April 17, 1979  
THIS PLAT WAS APPROVED BY Matthew Flanigan  
CITY ENGINEER

CERTIFICATE OF APPROVAL BY THE PLANNING BOARD

THIS IS TO CERTIFY, THAT ON FEBRUARY 21, 1979 THE  
PLANNING BOARD OF THE CITY OF SMITH DAYTONA, FLORIDA  
APPROVED THE FOREGOING PLAN.

John H. McFike  
PLANNING BOARD CHAIRMAN

CERTIFICATE OF APPROVAL BY THE CITY COUNCIL

THIS IS TO CERTIFY THAT ON FEBRUARY 27, 1979 THE  
FOREGOING PLAT WAS APPROVED BY THE CITY COUNCIL OF  
THE CITY OF SOUTH DAYTONA, FLORIDA

MAYOR OF THE CITY OF SOUTH DAYTONA Edgar Bunker

CITY CLERK OF THE CITY OF SOUTH DAVENPORT Beggs & P.

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 5-3-79 AT                      FILE No.                     

— A. Hays Deputy Clerk

### GENERAL INFORMATION

SUBDIVIDER - PORT ORANGE PRODUCTIONS, INC.

ENGINEER: GEORGE C. SCOTT  
P.O. BOX 157  
PORT ORANGE, FLA.

SURVEYOR: WALTER T. MIMS  
SLIGER, MIMS, INC.  
3921 S. NOVA ROAD  
PORT ORANGE, FLA.

ZONING - R.1C

TOTAL No LOTS - 98

LINEAL FEET OF STREET - 6000 ± L.F.

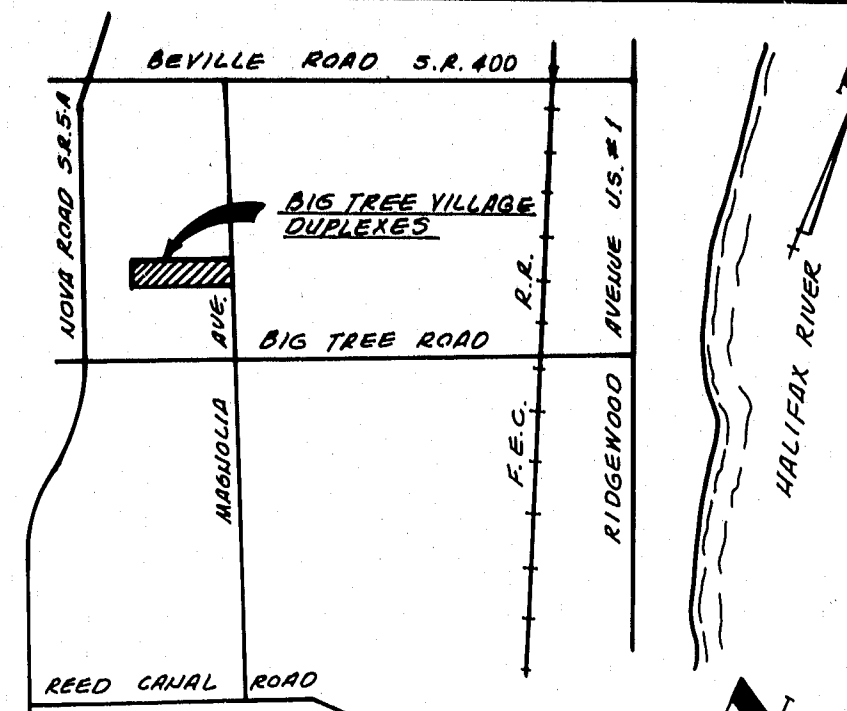


# BIG TREE VILLAGE~DUPLEXES

A REPLAT OF LOT 111 OF, THE TOWN OF BLAKE, AS RECORDED IN MAP BOOK 1: PAGE 38, VOLUSIA COUNTY, FLORIDA

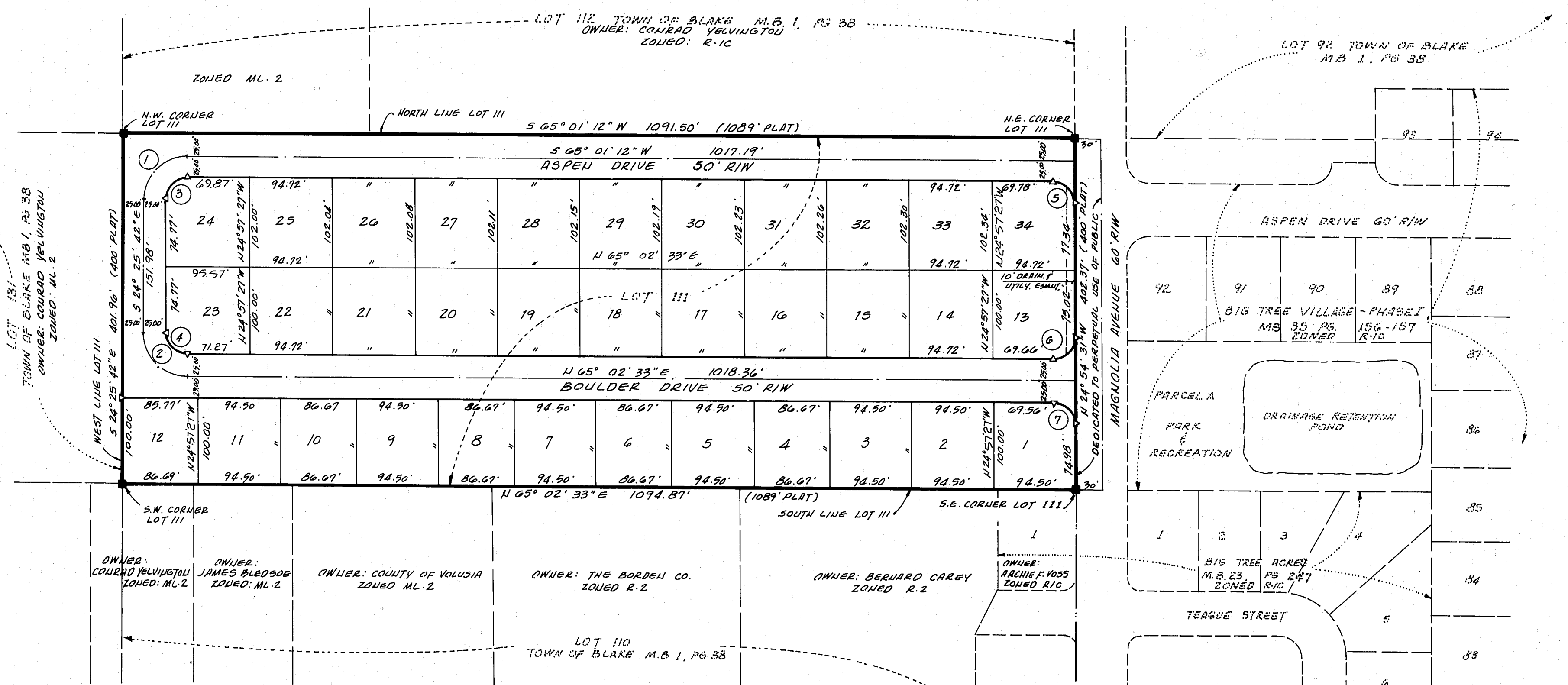
003479

JAN 13 1 03 PM '80



VICINITY MAP  
SCALE: NONE

SCALE: 1"=100'  
0' 50' 100' 200'  
GRAPHIC SCALE



NO.	DELTA	RADIUS	ARC	CHORD	CHD BRNG
1	89°26'54"	50.00'	78.06'	70.37'	N20°17'45"E
2	90°31'45"	50.00'	79.00'	71.04'	N69°41'35"W
3	89°26'54"	25.00'	39.03'	35.185'	N20°17'45"E
4	90°31'45"	25.00'	39.50'	35.52'	N69°41'35"W
5	90°04'17"	25.00'	39.30'	35.38'	N69°56'40"W
6	89°57'04"	25.00'	39.25'	35.34'	N20°04'01"E
7	90°02'56"	25.00'	39.29'	35.37'	N69°55'59"W

GENERAL INFORMATION:  
SUBDIVIDER: BIG TREE VILLAGE, INC.  
P.O. BOX 157  
PORT ORANGE, FL. 32019  
ENGINEERS: SCOTT & JOBALIA, INC.  
3875 SO. NOVA RD.  
PORT ORANGE, FL. 32019  
SURVEYORS: SLIGER-MIMS, INC.  
3821 SO. NOVA RD.  
PORT ORANGE, FL. 32019

- GENERAL NOTES:
- DENOTES PERMANENT REFERENCE MONUMENT, A 4x4 CONCRETE MONUMENT MARKED, PRM LS 2494
  - △ DENOTES PERMANENT CONTROL POINT, A 4x4 CONCRETE MONUMENT OR AN IRON ROD WITH METAL CAP MARKED, PCP LS 2494
  - BEARING STRUCTURE IS BASED ON THE RECORD PLAT OF BIG TREE VILLAGE, PHASE 1
  - EXISTING ZONING R-2
  - LINEAR FEET OF STREETS: 2344.59 FEET
  - ERROR OF CLOSURE DOES NOT EXCEED 1 FOOT IN 10,000 FEET

NOTE: UNLESS SHOWN OTHERWISE A 7.50 FOOT WIDE DRAINAGE AND UTILITY EASEMENT IS HEREBY PROVIDED ALONG THE SIDE AND REAR LOT LINES. (15.00 FEET TOTAL WITH ADJUTING LOT)

PLAT BOOK 36  
PAGE 112

## DEDICATION

KNOW ALL MEN BY THESE PRESENTS, THAT BIG TREE VILLAGE, INC. INCORPORATED UNDER THE LAWS OF THE STATE OF FLORIDA, BEING THE OWNER IN FEE SIMPLE OF THE LANDS DESCRIBED IN THE ATTACHED PLAT, ENTITLED, BIG TREE VILLAGE - DUPLEXES, LOCATED IN THE CITY OF SOUTH DAYTONA, COUNTY OF VOLUSIA, STATE OF FLORIDA, HEREBY DEDICATES SAID LANDS AND PLAT FOR THE USES AND PURPOSES THEREIN EXPRESSED, AND DEDICATES ALL STREETS, AVENUES, ROADS, ALLEYS, THOROUGHFARES, PARKS, CANALS, UTILITY EASEMENTS, UTILITY RIGHT-OF-WAYS, AND DRAINAGE EASEMENTS SHOWN OR DESCRIBED THEREON, TO THE PERPETUAL USE OF THE PUBLIC, FOR PROPER PURPOSES, 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 THIS 13 DAY OF DEC. A.D. 1979.

BIG TREE VILLAGE, INC.  
BY: George C. Scott  
PRESIDENT  
ATTEST: Dorothy A. Johnson  
SECRETARY

SIGNED, SEALED AND DELIVERED IN THE PRESENCE OF:  
Peterson A. Palmer

Anthony J. Scialto  
STATE OF FLORIDA, COUNTY OF VOLUSIA  
THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS 13 DAY OF DEC. A.D. 1979, BY GEORGE C. SCOTT, PRESIDENT OF, BIG TREE VILLAGE, INC., A FLORIDA CORPORATION, ON BEHALF OF THE CORPORATION.  
Dorothy A. Johnson  
NOTARY PUBLIC  
MY COMMISSION EXPIRES April 9, 1982

## JOINDER AND CONSENT TO DEDICATION

SECURITY FIRST FEDERAL SAVINGS AND LOAN ASSOCIATION, INCORPORATED UNDER THE LAWS OF THE UNITED STATES OF AMERICA, HEREBY CERTIFIES THAT IT IS THE HOLDER OF A MORTGAGE, LIEN, OR OTHER ENCUMBRANCE UPON THE PROPERTY SHOWN, AND DESCRIBED IN THE ATTACHED PLAT ENTITLED, BIG TREE VILLAGE - DUPLEXES, LOCATED IN THE CITY OF SOUTH DAYTONA, FLORIDA, DOES HEREBY JOIN IN, AND CONSENT TO THE DEDICATION SHOWN ON THAT PLAT OF THE LANDS THEREIN AND DESCRIBED BY THE OWNER THEREOF, AND AGREES THAT ITS MORTGAGE, LIEN OR OTHER ENCUMBRANCE, WHICH IS RECORDED IN OFFICIAL RECORDS BOOK 2136, PAGE(S) 1974 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, SHALL BE SUBORDINATED TO THE SAID DEDICATION. IN WITNESS WHEREOF, SECURITY FIRST FEDERAL SAVINGS AND LOAN ASSOCIATION, HAS CAUSED THESE PRESENTS TO BE SIGNED IN ITS CORPORATE NAME BY ITS VICE PRESIDENT, ITS CORPORATE NAME TO BE HEREUNTO AFFIXED AND ATTESTED TO BY ITS ASSISTANT SECRETARY THIS 11 DAY OF Jan. A.D. 1980.

BY: Robert M. Anderson  
VICE PRESIDENT  
ATTEST: Robert M. Anderson  
ASSISTANT SECRETARY

SIGNED, SEALED AND DELIVERED IN THE PRESENCE OF  
Patricia J. Bradley  
Shirley F. Oliver

STATE OF FLORIDA, COUNTY OF VOLUSIA  
THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS 11 DAY OF Jan. A.D. 1980, BY Robert M. Anderson OF SECURITY FIRST FEDERAL SAVINGS AND LOAN ASSOCIATION, A UNITED STATES OF AMERICA CORPORATION, ON BEHALF OF THE CORPORATION.  
Shirley F. Oliver  
NOTARY PUBLIC  
MY COMMISSION EXPIRES 9-15-82

## CERTIFICATE OF SURVEYOR

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED, BEING A LICENSED AND REGISTERED LAND SURVEYOR, DOES HEREBY CERTIFY THAT ON 5 JUNE 1979 HE COMPLETED THE SURVEY OF THE LANDS 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 IS LOCATED IN THE CITY OF SOUTH DAYTONA, COUNTY OF VOLUSIA, STATE OF FLORIDA.

DATED: 12 DEC 1979 FLA. REG. NO. LS 2494  
Walter T. Mims  
WALTER T. MIMS

## CERTIFICATE OF APPROVAL

THIS IS TO CERTIFY THAT ON Nov. 27, 1979  
THIS PLAT WAS APPROVED BY W. A. Cross  
CITY ENGINEER

CERTIFICATE OF APPROVAL BY PLANNING BOARD  
THIS IS TO CERTIFY THAT ON Nov. 21, 1979 THE PLANNING BOARD OF THE CITY OF SOUTH DAYTONA, FLORIDA APPROVED THE FOREGOING PLAT  
W. M. Crossley  
PLANNING BOARD CHAIRMAN  
ACTING

CERTIFICATE OF APPROVAL BY THE CITY COUNCIL OF THE CITY OF SOUTH DAYTONA, FLORIDA  
THIS IS TO CERTIFY THAT ON Nov. 27, 1979 THE FOREGOING PLAT WAS APPROVED BY THE CITY COUNCIL OF THE CITY OF SOUTH DAYTONA, FLORIDA.  
Edgar Bennett  
MAYOR OF THE CITY OF SOUTH DAYTONA, FLORIDA

ATTEST: Raymond E. Smith  
CITY CLERK OF THE CITY OF SOUTH DAYTONA, FLORIDA

## 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 1-15-80  
AT FILE NO. T. A. Hays Deputy  
CLERK OF THE CIRCUIT COURT IN AND FOR VOLUSIA COUNTY, FLORIDA

# MAGNOLIA LAKES

CITY OF SOUTH DAYTONA

A REPLAT OF A PORTION OF LOT 112, TOWN OF BLAKE  
AS RECORDED IN MAP BOOK 1, PAGE 38, PUBLIC RECORDS  
VOLUSIA COUNTY, FLORIDA

## DESCRIPTION:

A PORTION OF LOT 112, TOWN OF BLAKE, AS RECORDED IN MAP BOOK 1, PAGE 38, PUBLIC RECORDS OF CITY OF SOUTH DAYTONA, VOLUSIA COUNTY, FLORIDA, DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHEAST CORNER OF BIG TREE VILLAGE DUPLEXES, A SUBDIVISION RECORDED IN MAP BOOK 36, PAGE 112, SAID PUBLIC RECORDS; THENCE SOUTH 64°36'04" WEST ALONG THE NORTHERLY RIGHT OF WAY LINE OF ASPEN DRIVE, A 50' RIGHT OF WAY, AS SHOWN ON SAID BIG TREE VILLAGE DUPLEXES, 109.87 FEET; THENCE NORTH 27°51'31" WEST, 402.69 FEET, TO THE NORTHERLY LINE OF SAID LOT 112; THENCE NORTH 64°34'43" WEST, ALONG SAID NORTHERLY LINE, 127.65 FEET TO THE WESTERLY RIGHT OF WAY LINE OF MAGNOLIA AVENUE, A 60' RIGHT OF WAY AS SHOWN ON SAID TOWN OF BLAKE; THENCE SOUTH 25°19'39" EAST ALONG SAID WESTERLY RIGHT OF WAY LINE, 402.37 FEET TO THE POINT OF BEGINNING.

LOT 113  
TOWN SELF  
OFFICIAL RECORDS BOOK 3549  
PAGE 1621

BOOK: 46 PAGE: 14  
Diane M. Maloney  
Volusia County, Clerk of Court

PLAT BOOK 46 PAGE 14

## DEDICATION

KNOW ALL MEN BY THESE PRESENTS THAT ROBERT D. MARTIN AND RICHARD K. MARTIN, BEING THE OWNERS IN FEE SIMPLE OF THE LANDS DESCRIBED IN THE FOREGOING CAPTION TO THIS PLAT, ENTITLED "MAGNOLIA LAKES", HEREBY DEDICATES SAID LANDS AND PLAT FOR THE USES AND PURPOSES HEREIN EXPRESSED AND HEREBY DEDICATES THE ROADS, DRAINAGE & UTILITY EASEMENTS SHOWN HEREON TO THE PERPETUAL USE OF THE PUBLIC.

IN WITNESS WHEREOF, ROBERT D. MARTIN AND RICHARD K. MARTIN HAVE PRESENTS TO BE SIGNED, SEALED AND ATTESTED TO BY THE PERSONS BELOW ON THIS 27th DAY OF February 1996

## WITNESSES

NAME: Robert D. Martin  
NAME: Richard K. Martin  
NAME: Dianne M. Maloney  
NAME: Dianne M. Maloney

STATE OF FLORIDA, COUNTY OF VOLUSIA  
THIS IS TO CERTIFY THAT, ON February 6th, 1996, BEFORE ME, AN OFFICER DULY AUTHORIZED TO TAKE ACKNOWLEDGEMENTS OF STATE AND COUNTY AFORESAID, PERSONALLY APPEARED ROBERT D. MARTIN AND RICHARD K. MARTIN, TO ME KNOWN TO BE THE PERSONS WHO EXECUTED THE FOREGOING INSTRUMENT AND ACKNOWLEDGED THE EXECUTION THEREOF. THEY ARE KNOWN TO ME AND HAVE TAKEN AN OATH.

IN WITNESS WHEREOF, I HAVE HERETO SET MY HAND AND SEAL ON THE ABOVE DATE  
Debra Ann Crawford  
NOTARY PUBLIC  
STATE OF FLORIDA AT LARGE  
MY COMMISSION EXPIRES: 8/17/00  
TITLE/RANK: Exec. Asst.  
COMMISSION NUMBER: CC 574874

CERTIFICATE OF SURVEYOR  
KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED BEING A REGISTERED LAND SURVEYOR, DOES HEREBY CERTIFY THAT ON FEBRUARY 6, 1996, THE SURVEY WAS COMPLETED OF THE LANDS AS SHOWN ON THE PLAT THAT SAID PLAT IS A TRUE AND CORRECT REPRESENTATION OF THE DESCRIBED AND PLATTED; THAT THE SURVEY WAS MADE UNDER MY DIRECTION AND SUPERVISION; THAT THE SURVEY DATA COMPLES WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES, AND MEETS THE TECHNICAL STANDARDS ADOPTED BY THE FLORIDA BOARD OF LAND SURVEYING, PURSUANT TO SECTION 472.027, FLORIDA STATUTES, AND THAT SAID SURVEY WAS MADE IN ACCORDANCE WITH THE CITY OF DAYTONA, FLORIDA.

J. E. ZAPERT, P.L.M. 4046  
Sept. 11, 1996

CERTIFICATE OF APPROVAL  
THIS IS TO CERTIFY THAT ON August 27, 1996, THE FOREGOING PLAT WAS APPROVED BY THE CITY ENGINEER.  
BY: [Signature]  
CITY ENGINEER

CERTIFICATE OF APPROVAL BY THE CITY OF SOUTH DAYTONA  
THIS IS TO CERTIFY THAT ON August 27, 1996, THE FOREGOING PLAT WAS APPROVED BY THE CITY OF SOUTH DAYTONA.  
BY: [Signature]  
CITY MANAGER

CERTIFICATE OF APPROVAL BY THE PLANNING COMMISSION  
THIS IS TO CERTIFY THAT ON August 27, 1996, THE FOREGOING PLAT WAS APPROVED BY THE PLANNING COMMISSION OF THE CITY OF SOUTH DAYTONA, FLORIDA.  
BY: John M. Keenan  
PLANNING COMMISSION CHAIRMAN

CERTIFICATE OF APPROVAL  
THIS IS TO CERTIFY THAT ON August 27, 1996, THE FOREGOING PLAT WAS APPROVED BY THE CITY ATTORNEY.  
BY: [Signature]  
CITY ATTORNEY

CERTIFICATE OF APPROVAL  
THIS IS TO CERTIFY THAT ON August 27, 1996, THE FOREGOING PLAT WAS APPROVED BY THE CITY CLERK.  
BY: [Signature]  
CITY CLERK

CERTIFICATE OF LITIGATION  
I HEREBY CERTIFY THAT I HAVE EXAMINED THE FOREGOING PLAT AND IT COMPLIES WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES, AND HAS BEEN APPROVED BY THE CITY OF SOUTH DAYTONA.  
J. E. ZAPERT, P.L.M. 4046  
Sept. 11, 1996

## GRAPHIC SCALE

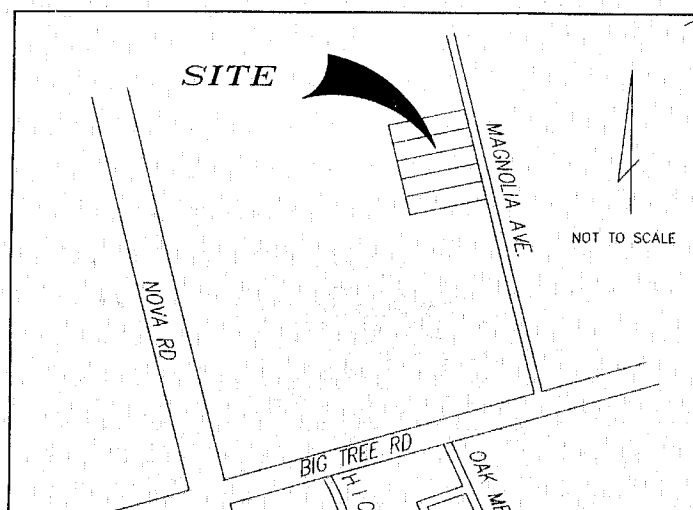


( IN FEET )  
1 inch = 60 ft

## NOTES:

- DIMENSIONS ARE SHOWN IN FEET AND DECIMALS THEREOF.
- NOTICE: THERE MAY BE ADDITIONAL RESTRICTIONS AND/OR OTHER MATTERS THAT ARE NOT SHOWN ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
- ERROR OF CLOSURE DOES NOT EXCEED 1 IN 10,000.
- DRAINAGE, CONSTRUCTION, UTILITY & F.P.L. CO. EASEMENTS ARE, UNLESS SHOWN OTHERWISE, ARE AS FOLLOWS:  
10 FOOT ALONG FRONT OF ALL LOTS  
5 FOOT ALONG SIDE OF ALL LOTS
- THE TERM "UTILITIES" AS USED ON THIS PLAT SHALL INCLUDE, BUT NOT BE LIMITED TO SEWER, SECURITY, TELEPHONE, ELECTRIC, CABLE TELEVISION SYSTEMS, POTABLE WATER, AND DRAINAGE STRUCTURES. SANITARY SEWER, AND POTABLE WATER MAINS SHALL BE OWNED AND MAINTAINED BY THE CITY OF SOUTH DAYTONA.  
ALL PLATTED UTILITY EASEMENTS SHOWN HEREON SHALL BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF CABLE TELEVISION SERVICES SUBJECT TO THE TERMS AND CONDITIONS SET FORTH IN 177.091(29), FLORIDA STATUTES (1991), WHICH TERMS AND CONDITIONS ARE INCORPORATED HEREIN BY REFERENCE.
- NO GOVERNMENTAL AGENCY, INCLUDING THE CITY OF SOUTH DAYTONA, SHALL EVER BE RESPONSIBLE FOR THE MAINTENANCE, UPKEEP OR IMPROVEMENTS OF ANY PRIVATE DRIVES, ROADS, STREETS, EASEMENTS OR RIGHT OF WAY, DRAINAGE IMPROVEMENTS, OR ANY OTHER IMPROVEMENTS.

## SITE



NOT TO SCALE

# COUNTRY CLUB GARDENS DAYTONA

State of Florida,  
County of Volusia,  
Ellen Vining, Trustee, being duly sworn, says that he  
is the owner of the following described property:  
All of Lots 95, 96 & 97, of Horne's Map of Blake, Volusia Co.,  
Florida. That he has caused a survey and subdivision to be  
made of said lots according to plan herewith which to the  
best of his knowledge is correct.  
Ellen Vining, Trustee

Signed, sworn to and acknowledged  
before me this 11th day of April A.D. 1925  
Alice G. Osteen  
Notary Public, State of Florida  
My Commission expires July 13 1925

Being a subdivision of Lots 95, 96 & 97 of Horne's Map of Blake.  
VOLUSIA COUNTY, FLORIDA  
Scale: 60'=1 inch.

George A. Graham  
Civil Engineer & Surveyor

Jan. 1925

Match Line See Sheet N° 2

AVE.	50.5	1	4	50.5	AVE.	50.5	1	4	50.5	AVE.	50.5	1	4	50.5	AVE.	50.5	4	50.5
	147			147		50.5	3	6	50.5		50.5	3	6	50.5		50.5	39	50.5
	50.5	3	6	50.5		50.5	2	17	5		50.5	2	29	5		50.5	2	50.5
	50.5	2	5	5		50.5	1	4	50.5		50.5	1	4	50.5		50.5	1	50.5
	50.5	1	4	50.5		50.5	3	6	50.5		50.5	3	6	50.5		50.5	6	50.5
	50.5	3	6	50.5		50.5	2	16	5		50.5	2	28	5		50.5	5	50.5
	50.5	2	4	5		50.5	1	4	50.5		50.5	1	4	50.5		50.5	4	50.5
	50.5	1	4	50.5		50.5	3	6	50.5		50.5	3	6	50.5		50.5	38	50.5
	50.5	3	6	50.5		50.5	2	15	5		50.5	2	27	5		50.5	2	50.5
	50.5	2	3	5		50.5	1	4	50.5		50.5	1	4	50.5		50.5	1	50.5
BEVILLE	50.5	1	4	50.5	NEW YORK	50.5	3	6	50.5	CHICAGO	50.5	3	6	50.5	BOSTON	50.5	5	50.5
	50.5	3	6	50.5		50.5	2	14	5		50.5	2	26	5		50.5	4	50.5
	50.5	2	2	5		50.5	1	4	50.5		50.5	1	4	50.5		50.5	37	50.5
	50.5	1	4	50.5		50.5	2	13	4		50.5	2	25	4		50.5	2	50.5
	50.5	2	1	4		50.5	1	3	50.5		50.5	1	3	50.5		50.5	1	50.5
	50.5	1	3	50.5		50.5	1	4	50.5		50.5	1	4	50.5		50.5	1	50.5
	50.5	2	4	50.5		50.5	3	6	50.5		50.5	3	6	50.5		50.5	3	50.5
	50.5	3	6	50.5		50.5	2	17	5		50.5	2	29	5		50.5	2	50.5
	50.5	2	5	5		50.5	1	4	50.5		50.5	1	4	50.5		50.5	1	50.5
	50.5	1	4	50.5		50.5	3	6	50.5		50.5	3	6	50.5		50.5	6	50.5

Filed Apr. 11 1925  
Sam'l D. Jordan - cke  
by: Clifford Botts - p.c.

A TRUE COPY  
OF MAP IN  
Map Book N° 7  
Page 59

Clerk Circuit Court  
by Deputy Clerk



50.5	147	3		147	6	
50.5		2	12		5	
50.5	147	1		147	4	
50.5		3			6	
50.5		2	11		5	
50.5	147	1		147	4	
50.5		3			6	
50.5		2	10		5	
50.5	147	1		147	4	
50.5		3			6	
50.5		2	9		5	
50.5	147	1		147	4	
50.5		3			6	
50.5		2	8		5	
50.5	147	1		147	4	
50.5		3			6	
50.5		2	7		5	
50.5	147	1		147	4	
50.5		3			6	
50.5		2	6		5	

50.5	3	147	6	147
"	2	24	5	
50.5	1	147	4	147
50.5	3		6	
"	2	23	5	
50.5	1	147	4	147
50.5	3		6	
"	2	22	5	
50.5	1	147	4	147
50.5	3		6	
"	2	21	5	
50.5	1	147	4	147
50.5	3		6	
"	2	20	5	
50.5	1	147	4	147
50.5	3		6	
"	2	19	5	
50.5	1	147	4	147
50.5	3		6	
"	2	18	5	

50	147	3	147	6
"	2	36	5	
50.5	1		4	
147			147	
50.5	3		6	
"	2	35	5	
50.5	1		4	
147			147	
50.5	3		6	
"	2	34	5	
50.5	1		4	
147			147	
50.5	3		6	
"	2	33	5	
50.5	1		4	
147			147	
50.5	3		6	
"	2	32	5	
50.5	1		4	
147			147	
50.5	3		6	
"	2	31	5	
50.5	1		4	
147			147	
50.5	3		6	
"	2	30	5	

Ave.	50.5	148	6
	"		5
	"		4
	"		42
	"		3
	"		2
	50.5		1
	50.5	148	6
	"		5
	"		4
BOSTON	"		41
	"		3
	"		2
	50.5		1
		148	
	50.5		6
	"		5
	"		4
	"		40
	"		3
	"		2
	50.5		1
		148	
	50.5		6
	"		5

Match Line See Sheet No 1

A TRUE COPY  
OF MAP IN  
Map Book No 7  
Page 59

Clerk Circuit Court  
by: Deputy Clerk

**APPENDIX E**

**FEMA MAPS**

**APPENDIX F**

**USDA SOILS MAPS**

## 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.

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 20, Aug 27, 2021

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

Date(s) aerial images were photographed: Jan 6, 2019—Feb 25, 2019

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
70	Tusawilla-Urban land complex	B/D	62.7	100.0%
<b>Totals for Area of Interest</b>			<b>62.7</b>	<b>100.0%</b>

## 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 G**

**ENVIRONMENTAL FEASIBILITY STUDY**

**(by Terracon Consultants, Inc.)**

**Environmental Feasibility Study**  
**Magnolia Avenue Sidewalk**  
**South Daytona Beach, Volusia County, Florida**

**October 29, 2021**

Terracon Project No. H1217738

**Prepared for:**

Traffic Engineering & Data Solutions, Inc.  
Debary, Florida

**Prepared by:**

Terracon Consultants, Inc.  
Winter Park, Florida

terracon.com

**Terracon**

Environmental



Facilities



Geotechnical



Materials

October 29, 2021



Traffic Engineering & Data Solutions, Inc.  
80 Spring Vista Drive  
Debary, Florida 32713

Attn: Mr. Chris Walsh  
P: (386) 753-0558  
E: [cwalsh@teds-fl.com](mailto:cwalsh@teds-fl.com)

RE: Environmental Feasibility Study  
Magnolia Avenue Sidewalk  
South Daytona Beach, Volusia County, Florida  
Terracon Project No. H1217738

Dear Mr. Walsh:

Terracon Consultants, Inc. (Terracon) is pleased to submit the enclosed environmental feasibility study for the above-referenced site. The scope of this assessment included a wetland review, listed species review, and a cultural resource desktop study.

This work was performed in general accordance with the scope of services outlined in the Agreement for Services dated July 7, 2021. As requested, attached is the environmental feasibility study. This report was prepared for the exclusive reliance of Traffic Engineering & Data Solutions, Inc. ("client"). Use or reliance by any other party is prohibited without the written authorization of the client and Terracon.

We trust that this information will assist you in your evaluation of the site. If you have questions concerning this report, or if we can assist you in other matters, please contact us.

Sincerely,  
**Terracon Consultants, Inc.**

Brian P. Brandon, PWS  
Senior Staff Scientist

Gary K. Howalt, PWS  
Sr. Principal/Environmental  
Department Manager

Terracon Consultants Inc. 1675 Lee Rd Winter Park, FL 32789-2207

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Environmental



Facilities



Geotechnical



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## **1.0 SITE DESCRIPTION AND PURPOSE**

The site consists of a ±1.5 mile long right-of-way (ROW) located along the eastern side of Magnolia Avenue between Reed Canal Road and State Road 400 (Beville Road). The site currently consists of an existing concrete sidewalk and a landscaped ROW through a residential area of South Daytona Beach. The project location is depicted in Appendix A, Exhibit 1.

It is the understanding of Terracon that the current concrete sidewalk is proposed to be removed and replaced with a 12-foot side sidewalk in order to increase accessibility within this portion of the city. The proposed project would also involve enhancements to road crossings, installation of infrastructure, and other minor improvements along the pathway. It is also the understanding of Terracon that the project is in the pre-planning phase and a feasibility study is warranted to identify any potential impacts to wetlands, listed species, and/or cultural resources. The following sections outline Terracon's methodologies, findings, and conclusions to assess these resources.

## **2.0 METHODOLOGY**

### **2.1 Wetland Review**

Terracon initially reviews readily available published resources to preliminarily identify features indicative of jurisdictional resources on the project site or in the immediate vicinity. The Natural Resource Conservation Service (NRCS) Soil Survey for Volusia County, the National Wetland Inventory (NWI), and the Florida Department of Transportation (FDOT) Florida Land Use, Cover and Forms Classification System (FLUCFCS) are also reviewed. An assessment for wetlands and/or jurisdictional surface waters is then conducted on site utilizing the Florida Department of Environmental Protection (FDEP) Wetlands Delineation Manual<sup>1</sup> and 62-340 F.A.C. If present, potential wetland areas are located and evaluated based on the three wetland parameters of hydrophytic vegetation, hydrology, and hydric soil indicators. This methodology generally requires two of the three parameters be present to be considered a wetland.

Hydrophytic vegetation is assessed by identifying plant species and their assigned wetland indicator rating of obligate (occur in wetlands >99% of the time), facultative wet (occur in wetlands 67-99% of the time), facultative (occur in wetlands 34-66% of the time), facultative upland (occur in wetland 1-33% of the time), and upland (occur in wetlands <1% of the time). Hydrophytic vegetation is determined to be present when at least 50% of the dominant plant species are rated obligate, facultative wet.. Hydrology is determined based on several primary indicators (surface water, water marks, drift deposits, reduced iron presence, oxidized rhizospheres, etc.) and secondary indicators (soil surface cracks, drainage patterns, crawfish burrows, shallow aquitard, etc.). Wetland hydrology is determined to be present when at least one indicator is present.

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<sup>1</sup>Gilbert, K.M., J.D. Tobe, R.W. Cantrell, M.E. Sweely, and J.R. Cooper. 1995. The Florida Wetlands Delineation Manual. FDEP, Tallahassee, FL.

Hydric soil is determined by investigating soil features such as soil color, and evidence of redoximorphic features which are features that are formed by the processes of reduction, translocation, and/or oxidation of Fe and Mn oxides formerly called mottles and low chroma colors. These features are commonly found in hydric soils.

Potential wetland areas or jurisdictional surface waters initially identified through the review of readily available resources are located on site and delineated by designating boundaries with flagging tape. The locations of the flags are then recorded on a Trimble TDC150 handheld GPS unit with sub-meter accuracy.

## **2.2 Listed Species Assessment**

The site is preliminarily investigated for the presence of state and federally protected animal and plant species and their habitat.<sup>2</sup> Literature and agency file searches are conducted to identify the potential occurrence of state and federally protected animal species on the site. A review of Geographical Information System databases<sup>3</sup> containing listed species observations and a map review is performed prior to the field assessment. The USFWS Information, Planning, and Conservation (IPAC) and Florida Natural Areas Inventory (FNAI) search engines are also utilized to determine potential occurrences.

USFWS-IPAC identifies potential occurrences and habitat for federally listed threatened and endangered species, proposed listed and candidate species, and designated critical habitat. The FNAI search engine identifies potential occurrences of both federally and state listed species. The results of the USFWS-IPAC and FNAI search results are then compiled to produce Table 1 (see Appendix C). The search results are supplemented by data from the FWC. Absence of documented sightings on-site or in the immediate vicinity does not ensure that protected species are not present. The lack of documented sightings in the databases may indicate that the area has not been surveyed or did not previously contain habitat. Additional FWC databases researched for this assessment include Map Direct, wading bird colonies, the eagle nest locator, and GIS data layers of species occurrences. Database search results are included in Appendix D.

The site assessment is performed along meandering pedestrian transects of each habitat type and include visual and aural observations by a qualified biologist. Table 1 provides a list of state and federally protected animal and plant species with the potential to occur within the vicinity of the site in Volusia County, Florida, and makes a recommendation as to whether further investigations are warranted.

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<sup>2</sup>Species-specific survey methods were not used as this is a preliminary site inspection.

<sup>3</sup>The data was obtained from the Florida Fish and Wildlife Conservation Commission and the Florida Natural Areas Inventory.

## **2.3 Desktop Cultural Resources Assessment**

A desktop cultural resource assessment of the site is conducted to determine any potential developmental constraints related to historic resources. Included in a desktop assessment is a review of the Florida Master Site File (FMSF) database to determine if any previously recorded cultural resources are located within or nearby the study area, as well as determining if a professional cultural resource survey has already been completed for the site. In addition, historic maps and aerial photography are reviewed to supplement the desktop investigation.

## **3.0 EXISTING SITE CONDITIONS**

Terracon initially conducted a desktop review of readily available resources to preliminarily identify features indicative of jurisdictional resources and listed species on the site or in the immediate vicinity. A site visit was then conducted on September 17, 2021 to verify the results of the desktop findings, as well as to collect data pertaining wetland conditions and listed species habitat. The following is a summary of our findings.

### **3.1 Soil Descriptions**

According to the Natural Resources Conservation Service (NRCS) Soil Survey for Volusia County, Th entire project area is mapped with the following soil type:

- 70 – Tuscawilla-Urban Land Complex: This soil type is found in flats on marine terraces. Parent material is sandy and loamy marine deposits. Drainage is poor, and average depth to groundwater is from 0 to 12 inches below ground surface (bgs). A typical profile consists of fine sand to a depth of 10 inches, including a 7 inch deep eluvial layer; followed by a layer of fine sandy loam to a depth of 40 inches bgs; and a layer of fine sand parent material to a depth of 80 inches bgs. According to the NRCS soil survey, this soil type is considered hydric. However, the urban land component of this soil profile is the dominant feature for the project area. These areas are characterized by film material and impervious surfaces such as sidewalks, roads, homes, and built up rights-of-way.

The NRCS Soil Survey Map for the site is included as Exhibit 3.

### **3.2 National Wetland Inventory Map**

The NWI map of the site was reviewed to identify potential wetlands and surface waters. The map for the site was published by USFWS and depicts probable wetland areas and other Waters of the US and Waters of the State based on stereoscopic analysis of high-altitude aerial photographs, topographic maps, and soil survey information. The NWI map does not depict any wetlands or surface waters within the project boundaries. The NWI does depict several stormwater ponds and the Reed canal within the vicinity of the project area; however, based on



the distance of these features from the project area, no impacts area anticipated. The NWI map for the site is included in Appendix A as Exhibit 4.

### **3.3 FLUCFCS Map**

An initial assessment of land use/land cover of the site was conducted utilizing FLUCFCS to identify current land uses for the site. The data used to produce this map is provided by the Florida Department of Transportation (FDOT), utilizing a combination of aerial photography interpretation, Landsat MultiSpectral Scanner (MSS) data, and Landsat Thematic Mapper (TM) data. The current conditions are discussed below and are depicted on Exhibit 5.

#### Roads and Highways (Mapped FLUCFCS Code – 814) – ±3.64 acres

The project area is located within an improved ROW adjacent to Magnolia Avenue. As such, the appropriate land use type is consistent with Roads and Highways in that it is a part of the roadway infrastructure and is utilized to move people and/or goods and services. The project area was observed to consist primarily of landscaped lawn grasses and concrete. No significant vegetative community could be discerned within the project area.

## **4.0 WETLAND REVIEW**

### **4.1 Wetland Assessment**

The site was reviewed by Brian P. Brandon on September 17, 2021 to determine if the wetlands or jurisdictional surface waters were present within the project boundaries, or within a regulated buffer to a jurisdictional wetland or surface water feature. Based on the site reconnaissance, there are no wetland or jurisdictional surface water features or their buffers located in the project area. It should be noted that Terracon observed a network of roadside ditches along the western ROW of Magnolia Avenue. The ditches crossed underneath the project area in two observed locations and continued perpendicular to the project area. These ditches were observed to be upland cut, did not contain perennial or ephemeral flow (only contains water in response to precipitation), and did not contain wetland vegetation. As such, the ditches are non-jurisdictional features.

### **4.2 State/County Jurisdiction**

No wetlands or jurisdictional surface waters were observed on or adjacent to the project area during the site reconnaissance. The roadside ditches that were observed adjacent to the project area represent non-jurisdictional features that would not require any permitting actions or mitigation related to impacts to wetlands or jurisdictional surface waters.

### **4.3 Federal Jurisdiction**

The “assumed waters rule” was approved by the US Environmental Protection Agency and entered into the federal register on December 22, 2020. As such, the FDEP has assumed

jurisdiction over wetlands under Section 404 of the Clean Water Act from USACE via the State 404 program. The USACE will retain jurisdiction over projects that impact wetlands adjacent to navigable waters, wetlands within 300 feet of navigable waters and certain other waters. The other Section 404 permits and wetland assessments will be administered and reviewed by FDEP. The wetlands on-site were evaluated to determine which agency would assume jurisdiction over wetlands on the site. Because the site does not contain retained waters, the wetlands on site are “state assumed” waters and would fall under the jurisdiction of the FDEP if the wetlands are determined to be considered “Waters of the United States” (WOTUS).

Currently WOTUS are assessed by the Clean Water Act (CWA) pre-2015 definition of WOTUS. This definition of WOTUS includes the implementation of rulemaking as decided in the Supreme Court’s decision of the consolidated cases *Rapanos v. United States* and *Carabell v. United States*. Specifically, the following waters will be under federal jurisdiction pursuant to the CWA:

- Traditional navigable waters (TNWs)
- Wetlands adjacent to TNWs
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (3 months)
- Wetlands that directly abut such tributaries

The following waters will be considered jurisdictional if a significant nexus (contributes to the physical, chemical, or biological integrity of downstream TNWs) exists between these features and traditional navigable waters:

- Non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary

The following waters will be considered non jurisdictional under the CWA:

- Swales or Erosional features (gullies, small washes characterized by low volume, infrequent or short duration flows)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

In accordance with the current regulatory definition of WOTUS, the ditches observed adjacent to the site would be considered non-jurisdictional to the CWA and any impacts to the ditches should not require authorization under the State 404 Program.

## **5.0 LIMITED LISTED SPECIES ASSESSMENT**

### **5.1 Listed Wildlife**

The site was investigated for the presence of state and federally protected animal species and their habitat. Site photographs are shown in Appendix B. Our observations for each potential listed species are shown in Table 1 (Appendix C). Observations of habitat and findings of potential species involvement were derived from the field assessment and should be used for preliminary planning purposes only.

The assessment included walking meandering pedestrian transects through all habitat types on site and collecting data of any listed species based on aural and visual observations. No suitable habitat or species occurrences were observed on site during the site reconnaissance.

### **5.2 Migratory Birds**

No migratory birds, nests, or eggs protected under the migratory bird treaty act (MBTA), bald and golden eagle protection act (BGEP), or endangered species act (ESA) was noted on the site during the site reconnaissance. In addition, Terracon referenced the bald eagle nest locator dataset provide through FDEP's Map Direct database, as well as the eagle mapper made available through the National Audubon Society's Eagle Watch Program website. According to these sources, there are no bald eagle nests documented to occur on site or within the 660 foot protection zone buffer.

## **6.0 CULTURAL RESOURCES DESKTOP REVIEW**

Cultural resource staff at Terracon conducted a search of the Florida Master Site File (FMSF) database in order to determine if cultural resources have been recorded within or near the project area or if the proposed corridor has been previously subjected to archaeological testing. Archaeological site location information is classified as sensitive, please limit the distribution of this information to project personnel.

As a result of the FMSF search, no archaeological sites or above ground historic structures have been recorded within the project boundaries. Expanding the search to include the general vicinity (0.50-miles) revealed no known cultural resources. Within 0.5-miles radius of the Magnolia Sidewalk corridor a total of four cultural resource surveys, two historic properties survey, and two cell tower surveys have been conducted. These include the following:

- 2019 cultural resource assessment survey approximately 0.15-miles east of the southern end of the project area.
- 2016 archaeological cell tower survey approximately 0.22-miles west of the project area.
- 2004 historic resource survey approximately 0.4-miles west of the project area.

- 2003 cultural resource cell tower survey approximately 0.37-miles west of the project area.
- 2001 archaeological and historical property cellular tower survey approximately 0.17-miles west of the northern end of the project area.
- 1996 historic property survey located approximately 0.23-miles south of the southern end of the project area identified 65 new resources, and 81 previously recorded resources, none of which are within the general vicinity of the project area.
- 1993 cultural resource assessment survey approximately 0.3-miles northeast of the project area.
- 1992 cultural resources survey adjacent to the north end of the project area.
- 1983 cultural resource assessment survey approximately 0.35-miles west of the project area.

According to historic United States Geological Survey (USGS) topographical maps, this portion of South Daytona, within Magnolia Avenue was largely undeveloped until the 1970's. Development appears to have boomed after that to the population the area is today.

Despite the low development activity depicted on the various USGS maps, a search of the Volusia County property appraiser website revealed 62 structures along both sides of Magnolia Avenue that were built since 1939, with most of the structures having been built in the 1950s and 1960s. These structures are considered historic and currently have not been recorded or their National Register of Historic Places (NRHP) status assessed.

Due to the sprawling development of the area, as well as the urban-land complex soils of the general vicinity, it is unlikely an archaeological study will yield any significant resources. However, the Volusia County property appraiser website search revealed 62 above ground historic resources adjacent to the project corridor. While these structures will not be directly impacted by the proposed project, the sidewalk may be considered an adverse visual effect and depending on the project funding might require a historic resource study. This type of study is similar to a cultural resource assessment survey (CRAS) but would focus on historic structures built 50 or more years ago.

## **7.0 CONCLUSIONS AND RECOMMENDATIONS**

The site was investigated to determine the landward extent of wetlands on the site. Based on the results of our assessment, Terracon makes the following conclusions and recommendations.

- No wetlands or jurisdictional surface waters were observed within the study corridor or within 25 feet of the project corridor. The project area transected two ditches, but these ditches were upland cut and should not be considered jurisdictional to any of the regulatory agencies.

## Environmental Feasibility Study

Magnolia Avenue Sidewalk ■ South Daytona Beach, Florida

September 30, 2021 ■ Terracon Project No. H1217738



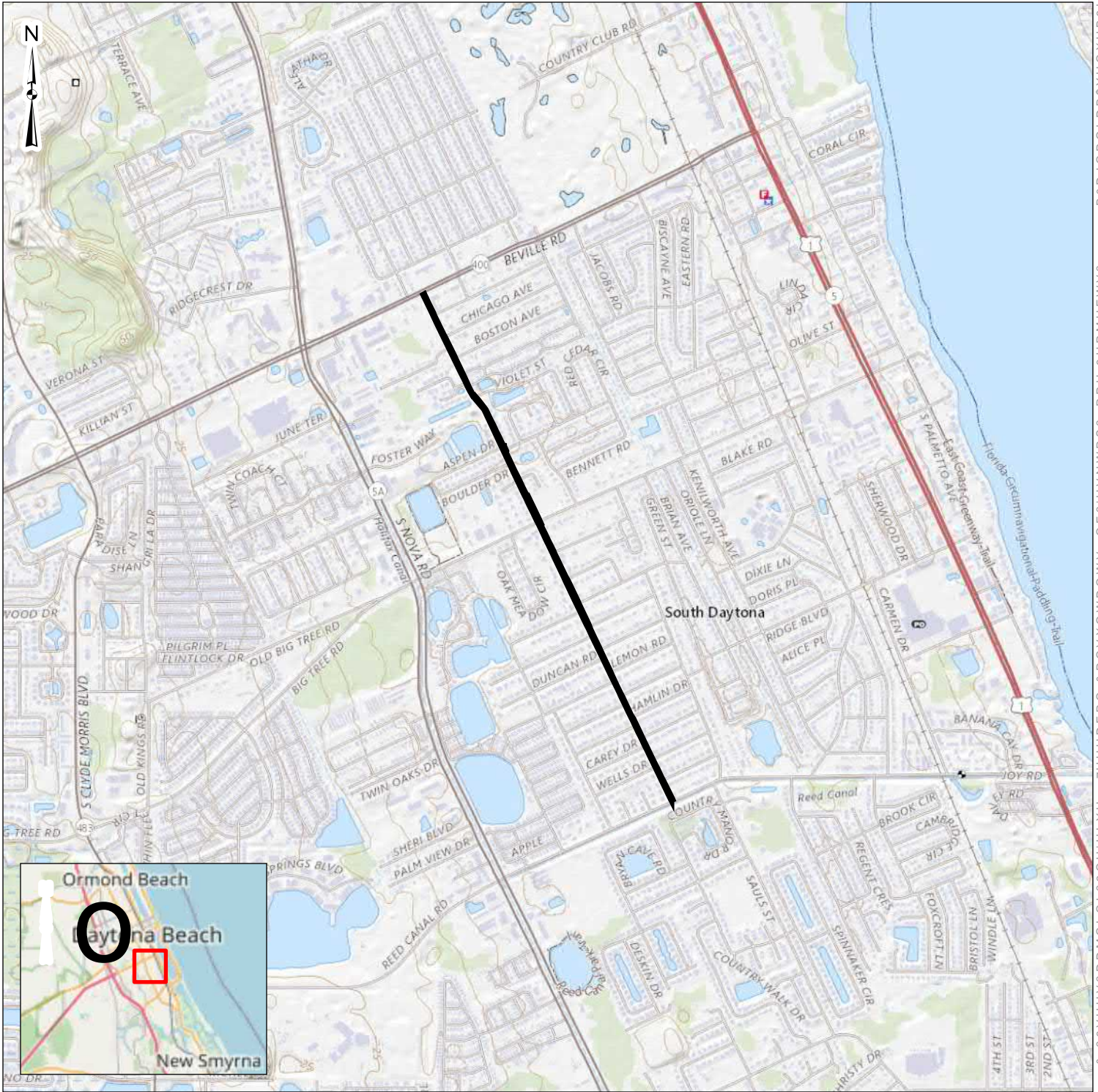
- No impacts to species listed as threatened or endangered is anticipated as part of the proposed development.
- Due to the presence of 62 historic structures adjacent to the project area, a CRAS may be required during the NEPA process to evaluate the eligibility of these resources for the NRHP. If a CRAS is required, Terracon can prepare an appropriate scope of work and fees at the client's request.

## 8.0 STANDARD OF CARE

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, express or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies or other third-party resources supplying information used in the preparation of the report. These services were performed in accordance with the scope of work agreed to by the client. Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of wetlands may have been latent, inaccessible, unobservable, or not present during our services.

## **APPENDIX-A – EXHIBITS**





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**Terracon**

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## **APPENDIX-B – PHOTOS**



**Environmental Feasibility Study**

Magnolia Avenue Sidewalk ■ South Daytona Beach, Florida

September 30, 2021 ■ Terracon Project No. H1217738



**Photo #1** Northern section of project area

**Photo #2** Southern portion of project area

**Photo #3** Central portion of project area

**Photo #4** Typical cross street

**Photo #5** Typical roadside ditch

**Photo #6** Typical culvert under project area

## **APPENDIX-C – SPECIES LIST**

**Table 1. State and federally listed animal species for Volusia County, Florida. The list was derived from USFWS-IPAC and FNAI online search engines and includes terrestrial species only. Observations of habitat and findings of potential species involvement were derived from the field assessment**

Species	FWS Status	State Status	Habitat Description	Habitat Present
<b>REPTILES</b>				
Eastern Indigo Snake ( <i>Drymarchon couperi</i> )	T	FT	Broad range of habitats, from scrub and sandhill to wet prairies and mangrove swamps. In northern part of range, often winters in gopher tortoise burrows in sandy uplands but forages in more hydric habitats. Requires very large tracts to survive.	No suitable habitat observed on site. Tract not large enough
Florida Pine Snake ( <i>Pituophis melanoleucus mugitus</i> )		SSC	Habitats with relatively open canopies and dry sandy soils, in which it burrows. Especially sandhill and former sandhill, including old fields and pastures, but also sand pine scrub and scrubby flatwoods. Often coexists with pocket gophers and gopher tortoises.	No suitable habitat observed on site. Soils on site are too wet to support this species.
Gopher Tortoise ( <i>Gopherus polyphemus</i> )	C	ST	Typically found in dry upland habitats, including sandhills, scrub, xeric oak hammock, and dry pine flatwoods; also commonly uses disturbed habitats such as pastures, old fields, and road shoulders.	No suitable habitat observed on site, soils are too wet.
<b>BIRDS</b>				
Eastern Black Rail ( <i>Laterallus jamaicensis jamaicensis</i> )	T		Brackish and saltwater marshes	No suitable habitat observed on site
Florida Scrub-jay ( <i>Aphelocoma coerulescens</i> )	T	FT	Inhabits fire-dominated, low-growing, oak scrub habitat found on well-drained sandy soils. May persist in areas with sparser oaks or scrub areas that are overgrown, but at much lower densities and with reduced survivorship.	No suitable habitat observed on site
Wood Stork ( <i>Mycteria americana</i> )	T	FT	Nests colonially in a variety of inundated forested wetlands, including cypress strands and domes, mixed hardwood swamps, sloughs, and mangroves. Increasingly nesting in artificial habitats (e.g., impoundments and dredged areas with native or exotic vegetation) in north and central Florida. Forages mainly in shallow water in freshwater marshes, swamps, lagoons, ponds, tidal creeks, flooded pastures and ditches	No suitable habitat present – forested wetlands are not inundated so foraging/nesting is not probable
<b>PLANTS</b>				
Celestial Lily ( <i>Nemastylis floridana</i> )		E	Wet flatwoods, prairies, marshes, cabbage palm hammocks edges.	No suitable habitat observed on site
Coastal Vervain ( <i>Glandularia maritima</i> )		E	Back dunes, dunal swales, coastal hammocks, sandy open areas.	Suitable habitat present, species not observed
Florida Beargrass ( <i>Nolina atopacarpa</i> )		T	Scrub, sandhill, scrubby flatwoods, and xeric hammock	No suitable habitat observed on site
Florida Spiny-Pod ( <i>Matelea floridana</i> )		E	Bluffs, pine-oak-hickory woods	No suitable habitat observed on site
Large Flowered rosemary ( <i>Conradina grandiflora</i> )		T	Sandhill and scrub habitat	No suitable habitat observed on site

Many-flowered Grass Pink ( <i>Calopogon multiflorus</i> )		T	Fire maintained damp pinelands and meadows	No suitable habitat observed on site
Nodding Pinweed ( <i>Lechea cernua</i> )		T	Sand pine scrub	No suitable habitat observed on site
Pondspice ( <i>Litsea aestivalis</i> )		E	Peaty soils in edges of baygalls, flatwoods ponds, and cypress domes.	No suitable habitat observed on site
Rugel's Pawpaw ( <i>Deeringothamnus rugelii</i> )	E	E	Open slash pine or longleaf pine flatwoods with wire grass and saw palmetto – endemic to Volusia County	No suitable habitat observed on site
Sand Butterfly Pea ( <i>Centrosema arenicola</i> )		E	Sandhill, scrubby flatwoods, dry upland woods.	No suitable habitat observed on site
Scrub Lupine ( <i>Lupinus aridorum</i> )	E	E	Openings in sand pine scrub and rosemary scrub	No suitable habitat observed on site

**TABLE 1 KEY**

<sup>1</sup> No longer listed in Florida as of January 11,2017, but is part of the *Imperiled Species Management Plan*

<sup>2</sup> No longer listed in Florida as of January 11,2017. Commensal species with gopher tortoise.

**FEDERAL LEGAL STATUS:** Definitions derived from U.S. Endangered Species Act of 1973, Sec. 3. Note that the federal status given by FNAI refers only to Florida populations and that federal status may differ elsewhere.

**C** = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.

**E** = Endangered: species in danger of extinction throughout all or a significant portion of its range.

**T** = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.

**SAT** = Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.

**STATE LEGAL STATUS:** Provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant state agency. Definitions derived from "Florida's Endangered Species and Species of Special Concern, Official Lists" published by Florida Fish and Wildlife Conservation Commission, 1 August 1997, and subsequent updates.

**C** = Candidate for listing at the Federal level by the USFWS

**FE** = Listed as Endangered Species at the Federal level by the USFWS

**FT** = Listed as Threatened Species at the Federal level by the USFWS

**FT(S/A)** = Federal Threatened due to similarity of appearance

**ST** = State population listed as Threatened by the FWC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.

**SSC** = Listed as Species of Special Concern by the FWC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species. (SSC\* for *Pandion haliaetus* (Osprey) indicates that this status applies in Monroe county only.)



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
North Florida Ecological Services Field Office  
7915 Baymeadows Way, Suite 200  
Jacksonville, FL 32256-7517  
Phone: (904) 731-3336 Fax: (904) 731-3045



In Reply Refer To:  
Consultation Code: 04EF1000-2021-SLI-1614  
Event Code: 04EF1000-2021-E-02568  
Project Name: Magnolia Avenue Sidewalk

September 28, 2021

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

### To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>;

<http://www.towerkill.com>; and

[www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html).

[http://](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html)

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- Migratory Birds

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**North Florida Ecological Services Field Office**

7915 Baymeadows Way, Suite 200

Jacksonville, FL 32256-7517

(904) 731-3336

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## Project Summary

Consultation Code: 04EF1000-2021-SLI-1614

Event Code: Some(04EF1000-2021-E-02568)

Project Name: Magnolia Avenue Sidewalk

Project Type: RECREATION CONSTRUCTION / MAINTENANCE

Project Description: Improvements to sidewalk and curbs to enhance public use of pathway

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@29.1675278,-81.0175478517281,14z>



Counties: Volusia County, Florida

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## Endangered Species Act Species

There is a total of 13 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

NAME	STATUS
West Indian Manatee <i>Trichechus manatus</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. <b><i>This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.</i></b> Species profile: <a href="https://ecos.fws.gov/ecp/species/4469">https://ecos.fws.gov/ecp/species/4469</a>	Threatened

## Birds

NAME	STATUS
Eastern Black Rail <i>Laterallus jamaicensis ssp. jamaicensis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/10477">https://ecos.fws.gov/ecp/species/10477</a>	Threatened
Florida Scrub-jay <i>Aphelocoma coerulescens</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/6174">https://ecos.fws.gov/ecp/species/6174</a>	Threatened
Wood Stork <i>Mycteria americana</i> Population: AL, FL, GA, MS, NC, SC No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8477">https://ecos.fws.gov/ecp/species/8477</a>	Threatened

## Reptiles

NAME	STATUS
Atlantic Salt Marsh Snake <i>Nerodia clarkii taeniata</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/7729">https://ecos.fws.gov/ecp/species/7729</a>	Threatened
Eastern Indigo Snake <i>Drymarchon corais couperi</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/646">https://ecos.fws.gov/ecp/species/646</a>	Threatened
Gopher Tortoise <i>Gopherus polyphemus</i> Population: eastern No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/6994">https://ecos.fws.gov/ecp/species/6994</a>	Candidate
Green Sea Turtle <i>Chelonia mydas</i> Population: North Atlantic DPS There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/6199">https://ecos.fws.gov/ecp/species/6199</a>	Threatened
Hawksbill Sea Turtle <i>Eretmochelys imbricata</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/3656">https://ecos.fws.gov/ecp/species/3656</a>	Endangered
Leatherback Sea Turtle <i>Dermochelys coriacea</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/1493">https://ecos.fws.gov/ecp/species/1493</a>	Endangered
Loggerhead Sea Turtle <i>Caretta caretta</i> Population: Northwest Atlantic Ocean DPS There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/1110">https://ecos.fws.gov/ecp/species/1110</a>	Threatened

## Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## Flowering Plants

NAME	STATUS
Rugel's Pawpaw <i>Deeringothamnus rugelii</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/5355">https://ecos.fws.gov/ecp/species/5355</a>	Endangered

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

## Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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1. The [Migratory Birds Treaty Act](#) of 1918.
  2. The [Bald and Golden Eagle Protection Act](#) of 1940.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
<b>American Kestrel <i>Falco sparverius paulus</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9587">https://ecos.fws.gov/ecp/species/9587</a>	Breeds Apr 1 to Aug 31
<b>Bald Eagle <i>Haliaeetus leucocephalus</i></b> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a>	Breeds Sep 1 to Jul 31

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NAME	BREEDING SEASON
Great Blue Heron <i>Ardea herodias occidentalis</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Jan 1 to Dec 31
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a>	Breeds elsewhere
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Ruddy Turnstone <i>Arenaria interpres morinella</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Swallow-tailed Kite <i>Elanoides forficatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/8938">https://ecos.fws.gov/ecp/species/8938</a>	Breeds Mar 10 to Jun 30

## Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence

in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

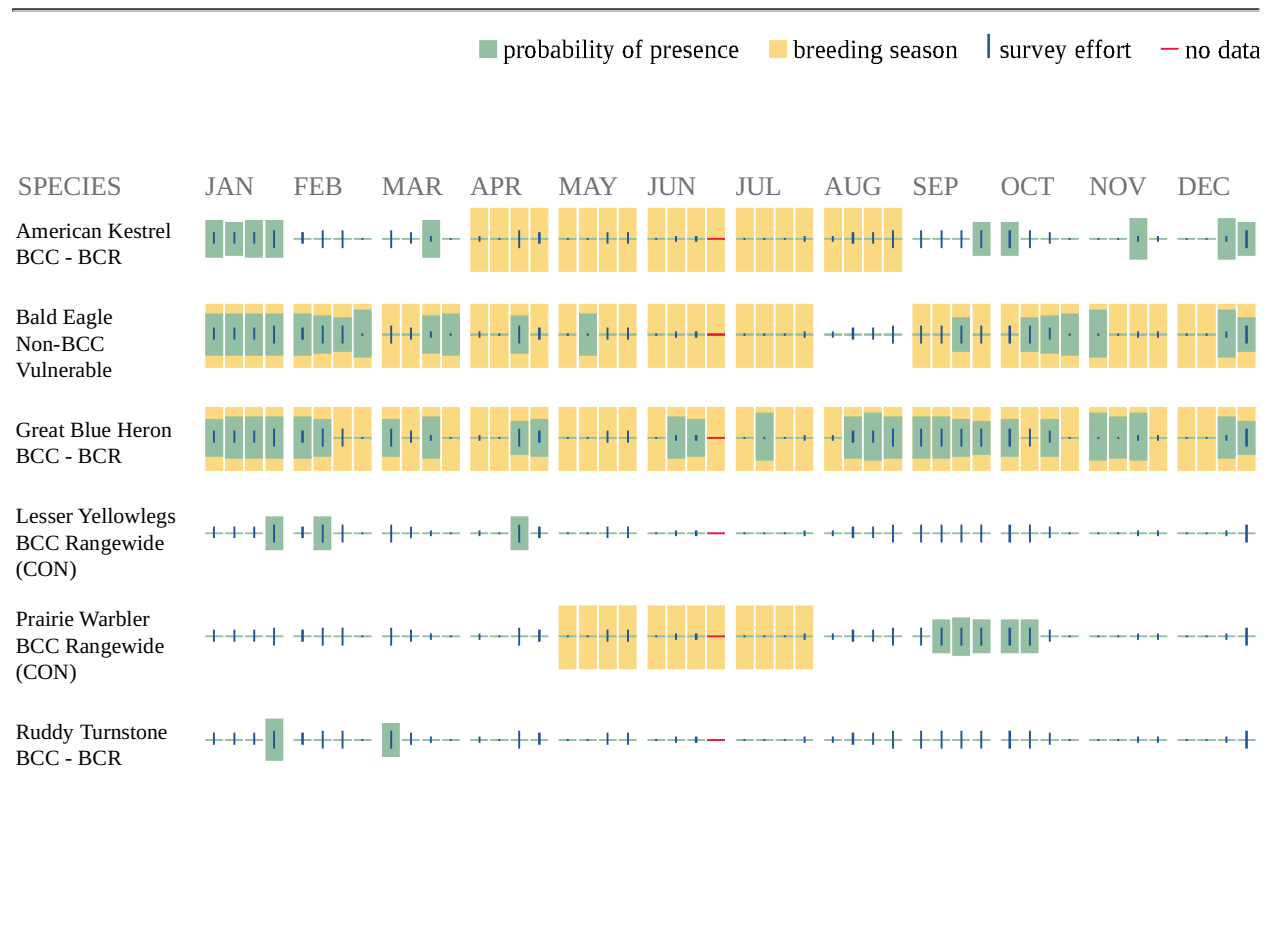
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

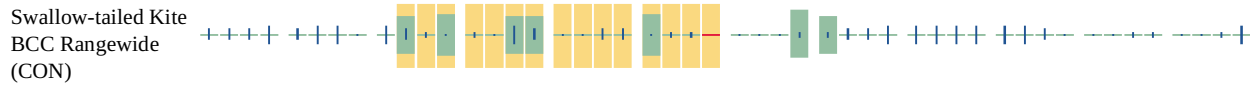
**No Data (—)**

A week is marked as having no data if there were no survey events for that week.

## Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

## Migratory Birds FAQ

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

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Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

**What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

**Proper Interpretation and Use of Your Migratory Bird Report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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## Florida Natural Areas Inventory

### Biodiversity Matrix Query Results

#### UNOFFICIAL REPORT

Created 9/28/2021

(Contact the FNAI Data Services Coordinator at 850.224.8207 or [kbrinegar@fnai.fsu.edu](mailto:kbrinegar@fnai.fsu.edu) for information on an official Standard Data Report)

NOTE: The Biodiversity Matrix includes only rare species and natural communities tracked by FNAI.

#### Report for 6 Matrix Units: 54132 , 54133 , 54134 , 54452 , 54453 , 54454

	<p><b>Descriptions</b></p> <p><b>DOCUMENTED</b> - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit.</p> <p><b>DOCUMENTED-HISTORIC</b> - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit; however the occurrence has not been observed/reported within the last twenty years.</p> <p><b>LIKELY</b> - The species or community is <i>known</i> to occur in this vicinity, and is considered likely within this Matrix Unit because:</p> <ol style="list-style-type: none"> <li>1. documented occurrence overlaps this and adjacent Matrix Units, but the documentation isn't precise enough to indicate which of those Units the species or community is actually located in; <i>or</i></li> <li>2. there is a documented occurrence in the vicinity and there is suitable habitat for that species or community within this Matrix Unit.</li> </ol> <p><b>POTENTIAL</b> - This Matrix Unit lies within the known or predicted range of the species or community based on expert knowledge and environmental variables such as climate, soils, topography, and landcover.</p>
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#### Matrix Unit ID: 54132

##### 1 Documented Element Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Haliaeetus leucocephalus</i> Bald Eagle	G5	S3	N	N

##### 0 Documented-Historic Elements Found

0 **Likely** Elements Found

**Matrix Unit ID: 54133**

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

1 **Likely** Element Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Mesic flatwoods</i>	G4	S4	N	N

**Matrix Unit ID: 54134**

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

1 **Likely** Element Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Haliaeetus leucocephalus</i> Bald Eagle	G5	S3	N	N

**Matrix Unit ID: 54452**

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

2 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Mesic flatwoods</i>	G4	S4	N	N
<i>Trichechus manatus</i> West Indian Manatee	G2	S2	LE	FE

**Matrix Unit ID: 54453**

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

1 **Likely** Element Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Trichechus manatus</i> West Indian Manatee	G2	S2	LE	FE

**Matrix Unit ID: 54454**

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

1 **Likely** Element Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<a href="#"><i>Trichechus manatus</i></a> West Indian Manatee	G2	S2	LE	FE

**Matrix Unit IDs: 54132 , 54133 , 54134 , 54452 , 54453 , 54454****22 Potential** Elements Common to Any of the 6 Matrix Units

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Acipenser oxyrinchus oxyrinchus</i> Atlantic Sturgeon	G3T3	S1	LE	FE
<a href="#"><i>Calopogon multiflorus</i></a> Many-flowered Grass-pink	G2G3	S2S3	N	T
<a href="#"><i>Centrosema arenicola</i></a> Sand Butterfly Pea	G2Q	S2	N	E
<i>Conradina grandiflora</i> Large-flowered Rosemary	G3	S3	N	T
<a href="#"><i>Deeringothamnus rugelii</i></a> Rugel's Pawpaw	G1	S1	LE	E
<a href="#"><i>Drymarchon couperi</i></a> Eastern Indigo Snake	G3	S3	LT	FT
<a href="#"><i>Eretmochelys imbricata</i></a> Hawksbill Sea Turtle	G3	S1	LE	FE
<a href="#"><i>Glandularia maritima</i></a> Coastal Vervain	G3	S3	N	E
<a href="#"><i>Gopherus polyphemus</i></a> Gopher Tortoise	G3	S3	C	ST
<a href="#"><i>Heterodon simus</i></a> Southern Hognose Snake	G2	S2	N	N
<i>Lechea cernua</i> Nodding Pinweed	G3	S3	N	T
<a href="#"><i>Litsea aestivalis</i></a> Pondspice	G3?	S2	N	E
<a href="#"><i>Lupinus aridorum</i></a> Scrub Lupine	G1	S1	LE	E
<i>Matelea floridana</i> Florida Spiny-pod	G2	S2	N	E
<a href="#"><i>Nemastylis floridana</i></a> Celestial Lily	G2	S2	N	E
<a href="#"><i>Neofiber alleni</i></a> Round-tailed Muskrat	G3	S3	N	N
<a href="#"><i>Nerodia clarkii taeniata</i></a> Atlantic Salt Marsh Snake	G4T1Q	S1	LT	FT
<i>Nolina atopocarpa</i> Florida Beargrass	G3	S3	N	T
<i>Phyllophaga elongata</i> Elongate June Beetle	G3	S3	N	N
<a href="#"><i>Pituophis melanoleucus muqitus</i></a> Florida Pine Snake	G4T3	S3	N	SSC
<i>Setophaga discolor paludicola</i> Florida Prairie Warbler	G5T3	S3	N	N
<a href="#"><i>Ursus americanus floridanus</i></a> Florida Black Bear	G5T2	S2	N	N

**Disclaimer**

The data maintained by the Florida Natural Areas Inventory represent the single most comprehensive source of information available on the locations of rare species and other significant ecological resources statewide. However, the data are not always based on comprehensive or site-specific field surveys. Therefore, this information should not be regarded as a final statement on the biological resources of the site being considered, nor should it be substituted for on-site surveys. FNAI shall not be held liable for the accuracy and completeness of these data, or opinions or conclusions drawn from these data. FNAI is not inviting reliance on these data. Inventory data are designed for the purposes of conservation planning and scientific research and are not intended for use as the primary criteria for regulatory decisions.

**Unofficial Report**

These results are considered unofficial. FNAI offers a [Standard Data Request](#) option for those needing certifiable data.



# Florida Department of Environmental Protection



## Map Direct AIR (Area of Interest Report) Standard Map

### Point of Interest:

29°10'18.4969" x -81°1'11.5530"

29.171804697613375 x -81.01987583836701

Search Radius: 5 miles

Report Created on Fri Sep 24 2021 at 12:53:43

Map Direct v7.210922

Township/Range/Section: 15S33E41

South Daytona, Volusia County 32119

FDEP Regulatory District: Central District

Water Management District: SJRWMD

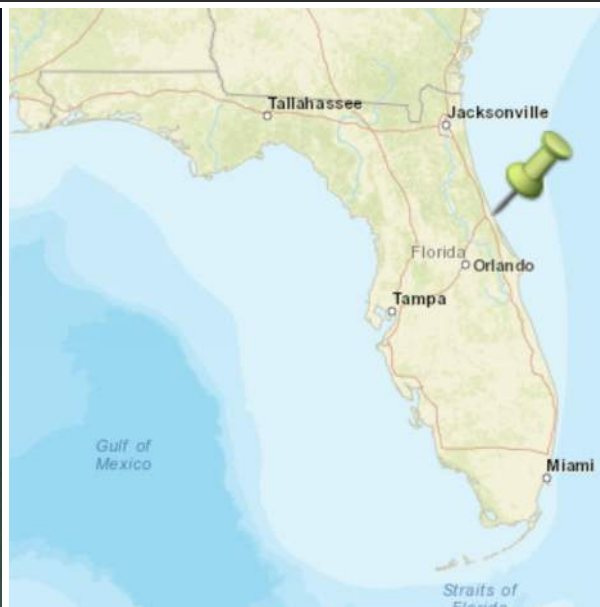
FL House District 26 :: FL Senate District 7

US Congressional District 6

HUC Basin Area: Daytona-St. Augustine

Waterbody ID: 2664

State Land DM ID:



## Search Result Summary

Features Found	Data Layer	Metadata	Spreadsheet
0	Florida Woodstork Nesting Colonies	<a href="#">Layer Information</a>	--
0	Wood Stork Active Nesting Colonies - 2500 Foot Buffer	<a href="#">Layer Information</a>	--
0	Wood Stork Active Nesting Colonies	<a href="#">Layer Information</a>	--
9	Fish and Wildlife Conservation Commission (FWC) Eagle Nests - 660 Foot Buffer	<a href="#">Layer Information</a>	Download as Spreadsheet

# Search Result Details

Fish and Wildlife Conservation Commission (FWC) Eagle Nests - 660 Foot Buffer: 9 Found.

#1 of 9 from Fish and Wildlife Conservation Commission (FWC) Eagle Nests - 660 Foot Buffer

OBJECTID	2021
NESTID	VO126
COUNTY	Volusia
TOWNSHIP	15S
RANGE	33E
SECTION	40
GAZ PAGE	75
LATDM	29 10.70
LONGDM	81 02.12
ACTIVE98	-
ACTIVE99	-
ACTIVE00	-
ACTIVE01	-
ACTIVE02	-
ACTIVE03	-
ACTIVE04	-
ACTIVE05	-
ACTIVE06	-
ACTIVE07	-
ACTIVE08	-
ACTIVE09	-
ACTIVE10	*
ACTIVE11	*
ACTIVE12	Y
ACTIVE13	*
LASTACT	2012
LASTSURVEY	2012
LATDEC	29.178333
LONGDEC	-81.035333
LATALB	578113.589018
LONGALB	687816.820905
BUFF DIST	201.168402
SHAPE.AREA	127052.604734
SHAPE.LEN	1263.770384

#2 of 9 from Fish and Wildlife Conservation Commission (FWC) Eagle Nests - 660 Foot Buffer

OBJECTID	2083
NESTID	VO123
COUNTY	Volusia
TOWNSHIP	14S
RANGE	32E
SECTION	42
GAZ PAGE	75
LATDM	29 14.53
LONGDM	81 02.52
ACTIVE98	-
ACTIVE99	-
ACTIVE00	-
ACTIVE01	-
ACTIVE02	-
ACTIVE03	-
ACTIVE04	-
ACTIVE05	-
ACTIVE06	-
ACTIVE07	-
ACTIVE08	-
ACTIVE09	Y
ACTIVE10	*
ACTIVE11	*
ACTIVE12	-
ACTIVE13	*
LASTACT	2009
LASTSURVEY	2012
LATDEC	29.242167
LONGDEC	-81.042
LATALB	585184.227835
LONGALB	686999.717409
BUFF DIST	201.168402
SHAPE.AREA	127052.608848
SHAPE.LEN	1263.770404

#3 of 9 from Fish and Wildlife Conservation Commission (FWC) Eagle Nests - 660 Foot Buffer

OBJECTID	2078
NESTID	VO100
COUNTY	Volusia
TOWNSHIP	15S
RANGE	33E
SECTION	31

#4 of 9 from Fish and Wildlife Conservation Commission (FWC) Eagle Nests - 660 Foot Buffer

OBJECTID	2020
NESTID	VO038
COUNTY	Volusia
TOWNSHIP	16S
RANGE	33E
SECTION	18



GAZ PAGE	75
LATDM	29 09.10
LONGDM	81 02.40
ACTIVE98	-
ACTIVE99	-
ACTIVE00	-
ACTIVE01	-
ACTIVE02	Y
ACTIVE03	Y
ACTIVE04	N
ACTIVE05	Y
ACTIVE06	Y
ACTIVE07	Y
ACTIVE08	N
ACTIVE09	Y
ACTIVE10	*
ACTIVE11	*
ACTIVE12	Y
ACTIVE13	*
LASTACT	2012
LASTSURVEY	2012
LATDEC	29.151667
LONGDEC	-81.04
LATALB	575142.385141
LONGALB	687434.929222
BUFF DIST	201.168402
SHAPE.AREA	127052.601772
SHAPE.LEN	1263.770369

GAZ PAGE	75
LATDM	29 07.00
LONGDM	81 02.01
ACTIVE98	-
ACTIVE99	-
ACTIVE00	-
ACTIVE01	-
ACTIVE02	U
ACTIVE03	-
ACTIVE04	-
ACTIVE05	-
ACTIVE06	-
ACTIVE07	-
ACTIVE08	-
ACTIVE09	*
ACTIVE10	*
ACTIVE11	*
ACTIVE12	-
ACTIVE13	*
LASTACT	1986
LASTSURVEY	2012
LATDEC	29.116667
LONGDEC	-81.0335
LATALB	571272.105611
LONGALB	688159.487009
BUFF DIST	201.168402
SHAPE.AREA	127052.611769
SHAPE.LEN	1263.770419

#5 of 9 from Fish and Wildlife  
Conservation Commission (FWC) Eagle  
Nests - 660 Foot Buffer

OBJECTID	2210
NESTID	VO103
COUNTY	Volusia
TOWNSHIP	15S
RANGE	33E
SECTION	40
GAZ PAGE	75
LATDM	29 11.40
LONGDM	81 01.10
ACTIVE98	-
ACTIVE99	-
ACTIVE00	-
ACTIVE01	-
ACTIVE02	-
ACTIVE03	Y
ACTIVE04	Y
ACTIVE05	Y
ACTIVE06	Y
ACTIVE07	Y
ACTIVE08	Y

#6 of 9 from Fish and Wildlife  
Conservation Commission (FWC) Eagle  
Nests - 660 Foot Buffer

OBJECTID	2211
NESTID	VO075
COUNTY	Volusia
TOWNSHIP	16S
RANGE	33E
SECTION	15
GAZ PAGE	75
LATDM	29 06.57
LONGDM	80 59.24
ACTIVE98	Y
ACTIVE99	Y
ACTIVE00	Y
ACTIVE01	Y
ACTIVE02	Y
ACTIVE03	Y
ACTIVE04	Y
ACTIVE05	Y
ACTIVE06	Y
ACTIVE07	Y
ACTIVE08	Y

ACTIVE09	Y
ACTIVE10	*
ACTIVE11	*
ACTIVE12	Y
ACTIVE13	*
LASTACT	2012
LASTSURVEY	2012
LATDEC	29.19
LONGDEC	-81.018333
LATALB	579448.508872
LONGALB	689435.578715
BUFF DIST	201.168402
SHAPE.AREA	127052.608284
SHAPE.LEN	1263.770402

ACTIVE09	Y
ACTIVE10	*
ACTIVE11	*
ACTIVE12	Y
ACTIVE13	*
LASTACT	2012
LASTSURVEY	2012
LATDEC	29.1095
LONGDEC	-80.987333
LATALB	570585.237927
LONGALB	692662.573902
BUFF DIST	201.168402
SHAPE.AREA	127052.620243
SHAPE.LEN	1263.770461

#7 of 9 from Fish and Wildlife  
Conservation Commission (FWC) Eagle  
Nests - 660 Foot Buffer

OBJECTID	2209
NESTID	VO035
COUNTY	Volusia
TOWNSHIP	16S
RANGE	33E
SECTION	18
GAZ PAGE	75
LATDM	29 07.00
LONGDM	81 02.00
ACTIVE98	-
ACTIVE99	-
ACTIVE00	-
ACTIVE01	-
ACTIVE02	-
ACTIVE03	N
ACTIVE04	-
ACTIVE05	-
ACTIVE06	-
ACTIVE07	-
ACTIVE08	-
ACTIVE09	*
ACTIVE10	*
ACTIVE11	*
ACTIVE12	-
ACTIVE13	*
LASTACT	1983
LASTSURVEY	2012
LATDEC	29.116667
LONGDEC	-81.033333
LATALB	571272.495087
LONGALB	688175.673531
BUFF DIST	201.168402
SHAPE.AREA	127052.611769
SHAPE.LEN	1263.770419

#8 of 9 from Fish and Wildlife  
Conservation Commission (FWC) Eagle  
Nests - 660 Foot Buffer

OBJECTID	2212
NESTID	VO049
COUNTY	Volusia
TOWNSHIP	15S
RANGE	33E
SECTION	32
GAZ PAGE	75
LATDM	29 09.20
LONGDM	81 01.60
ACTIVE98	Y
ACTIVE99	Y
ACTIVE00	Y
ACTIVE01	Y
ACTIVE02	Y
ACTIVE03	Y
ACTIVE04	N
ACTIVE05	N
ACTIVE06	N
ACTIVE07	N
ACTIVE08	N
ACTIVE09	N
ACTIVE10	*
ACTIVE11	*
ACTIVE12	N
ACTIVE13	*
LASTACT	2003
LASTSURVEY	2012
LATDEC	29.153333
LONGDEC	-81.026667
LATALB	575358.55409
LONGALB	688724.96876
BUFF DIST	201.168402
SHAPE.AREA	127052.603541
SHAPE.LEN	1263.770378

#9 of 9 from Fish and Wildlife  
Conservation Commission (FWC) Eagle  
Nests - 660 Foot Buffer

OBJECTID	2023
NESTID	VO102
COUNTY	Volusia
TOWNSHIP	15S
RANGE	32E
SECTION	21
GAZ PAGE	75
LATDM	29 11.06
LONGDM	81 05.81
ACTIVE98	-
ACTIVE99	-
ACTIVE00	-
ACTIVE01	-
ACTIVE02	-
ACTIVE03	Y
ACTIVE04	Y
ACTIVE05	Y
ACTIVE06	Y
ACTIVE07	Y
ACTIVE08	N
ACTIVE09	Y
ACTIVE10	*
ACTIVE11	*
ACTIVE12	Y
ACTIVE13	*
LASTACT	2012
LASTSURVEY	2012
LATDEC	29.184333
LONGDEC	-81.096833
LATALB	578637.612584
LONGALB	681831.686708
BUFF DIST	201.168402
SHAPE.AREA	127052.612896
SHAPE.LEN	1263.770424

***No Results Found:***

Florida Woodstork Nesting Colonies

Wood Stork Active Nesting Colonies

Wood Stork Active Nesting Colonies - 2500 Foot Buffer

\*\*\* END OF REPORT \*\*\*

## **APPENDIX-D – RESUMES**

# Brian P. Brandon, PWS

## GROUP MANAGER

### PROFESSIONAL EXPERIENCE

Mr. Brandon has 8 years of experience as an environmental professional, specializing in the investigation and management of environmental due diligence and natural resources projects in the southeastern United States. His expertise includes wetland delineation, wetland permitting and compliance, mitigation plans, habitat assessments, floral/vegetation surveys, threatened and endangered species surveys, migratory bird evaluations, creation and maintenance of avian protection programs, and tribal and agency consultation pursuant to the National Environmental Policy Act (NEPA). Experience also includes coordination with the United States Fish and Wildlife Service, Florida Fish and Wildlife Conservation Commission (FWC), Federal Communications Commission (FCC), various state and tribal historic preservation offices (HPOs), the Florida Department of Environmental Protection (FDEP), United States Army Corps of Engineers (USACE), and all Florida Water Management Districts for various permitting projects.

### EXAMPLE PROJECT EXPERIENCE

#### Orange County Public Schools – Continuing Contract

Senior Staff Scientist for this continuing environmental consulting services contract with Orange County Public Schools. The scope of services include sand skink surveys, burrowing owl surveys, gopher tortoise burrow surveys and permitting, wetland delineations and permitting, and consultation with the Orange County Environmental Protection Division, FWC, and USFWS.

#### Enterprise Road – Deltona, FL

Senior Staff Scientist and Project Manager for a proposed commercial development. The scope of services includes a wetland assessment and delineation, listed species review, agency review of the wetland delineation, preparation of UMAM data sheets, cultural resources review, and environmental permitting.

#### Port Orange Site – Port Orange, FL

Senior Staff Scientist and Project Manager for commercial development (multi-family housing). The scope of services included wetland delineation, permitting, and mitigation plan; threatened and endangered species assessment, and cultural resources assessment.

#### Town West Apartments – Port Orange, FL

Senior Staff Scientist and Project Manager for commercial development (multi-family housing). The scope of services included wetland delineation, permitting, and mitigation plan; threatened and endangered species assessment, and cultural resources assessment. The project resulted in a NPR from federal permitting. State permitting is ongoing.

### EDUCATION

Bachelor of Science, Biology  
University of Central Florida, 2012

Graduate Certificate, Wetlands and  
Water Resource Management,  
University of Florida, 2020

**YEARS WITH TERRACON: 2**  
**YEARS WITH OTHER FIRMS: 6**

### CERTIFICATIONS

Professional Wetland Scientist,  
PWS

FWC Authorized Gopher Tortoise  
Agent

Burrowing Owl Agent

Certified Florida Master Naturalist

CPR, AED, and Basic First Aid

### ADDITIONAL TRAINING

38-Hour Army Corps of Engineers  
Wetland Delineation Training  
Program

40-hour Hazardous Waste  
Operations and Emergency  
Response Certification

### AFFILIATIONS

Florida Native Plant Society –  
Tarflower Chapter

National Association of  
Environmental Professionals

Ecological Society of America

National Audubon Society

Florida Association of  
Environmental Soil Scientists

Society of Wetland Scientists

*\* Work performed prior to joining Terracon.*

## Brian Brandon (continued)

### **Durando Yeehaw Ranch – Yeehaw Junction, Florida**

Senior Staff Scientist and Project Manager for land analysis that includes demography of saw palmetto (*serenoa repens*) stands, agricultural soil analysis, and land use analysis to determine the correlation between palmetto densities and productivity and available soil nutrients on site. The 12,000-acre project site was proposed to be utilized for saw palmetto propagation and harvesting.

### **Placid Solar Projects – Highlands County**

Senior Staff Scientist and Project Manager for a proposed 2,000 acres solar farm. Scope of services includes wetland delineation and permitting assistance, gopher tortoise and burrowing owl surveys, formal surveys for crested caracara, Florida scrub-jay, Florida bonneted bat, sand skinks and blue-tailed mole skinks, Southeastern American kestrel, and agency consultation.

### **Village of Royal Palm Beach Pathway – Royal Palm Beach, FL**

Senior Staff Scientist and Project Manager for an ecological study on a 3.15 mile long transmission right-of-way and adjacent foot path. The scope of services included a burrowing owl survey and threatened and endangered species survey.

## **ADDITIONAL EXPERIENCE**

### **NEPA Assessments – Alabama, Florida, Georgia, North Carolina, South Carolina, Tennessee\***

Project Manager and Lead Biologist. Conducted regulatory compliance reviews for proposed telecommunications tower facilities. Reviews included consultation with the State Historic Preservation Offices, Native American Tribal Organizations, Certified Local Government officials, and the general public. Ordered and reviewed Cultural Resource Assessments prepared by Secretary of the Interior qualified archaeologists.

### **Biological Assessments - Alabama, Florida, Georgia, North Carolina, South Carolina**

Project Manager and Lead Biologist. Analyzed habitat structure and performed surveys to determine anticipated impacts to threatened and endangered species and species of special concern pursuant to Section 7 of the Endangered Species Act. Species-specific surveys include Gopher Tortoise, migratory bird evaluations, bats, Red cockaded Woodpeckers, Florida Scrub-Jays, and various vegetation surveys. Consulted with lead agency for determinations of “no adverse effect” findings and coordinated permitting when necessary.

### **Wetland Delineations –Florida, Georgia, Maryland\***

Project Manager and Lead Wetland Scientist. Determined the landward extent of wetlands and other surface waters in accordance with Florida Administrative Code 62-340 and the Army Corps of Engineers wetland delineation methodology. Delineated wetland boundaries and coordinated Environmental Resource Permits (ERP's), Nationwide Permits, and Individual Permits with the FDEP, USACE, and all Water Management Districts.

### **Migratory Bird Evaluations and Avian Protection Programs – Nationwide\***

Director of Migratory Bird Services. Managed and directed a team of scientists to conduct evaluations/formal surveys of Osprey, Bald Eagle, Red-tailed Hawk, Great Horned Owl, Crested Caracara, Crows, Ravens, Eastern Kingbirds, and other migratory birds for compliance with the Migratory Bird Treaty Act (MBTA), Bald and Golden Eagle Protection Act, and Endangered Species Act. Determined nest status and facilitated permit actions. Created and maintained Avian Protection Programs for various national clientele.

# Resume

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## Gary K. Howalt, PWS

### Environmental Department Manager III/Senior Principal

#### PROFESSIONAL EXPERIENCE

Gary has over 42 years of diverse technical and project management experience in environmental assessment programs, including 33 years with Terracon Consultants, Inc. His experience includes the collection and analysis of biological materials, water quality and quantity, and sediment samples from a variety of freshwater, estuarine, and marine environments; wildlife habitat analysis; and wetlands and endangered species ecology and permitting. He has performed the ecological assessments needed to identify development potential and constraints to development for a variety of industrial, public and private utility, commercial, residential and highway projects. He also assists in designing, implementing, and monitoring mitigation plans to create wetlands and the restoration of native habitats. In addition, Gary negotiates and coordinates activities with the various federal, state and local environmental agency representatives during his permitting efforts. He has been involved in various wildlife reports and field surveys for protected species on projects that require permitting and coordination with federal, state and local wildlife agencies for biological opinions and permitting regarding endangered, threatened and other protected species. His responsibilities extend to the management of interdisciplinary projects, assigning and supervising personnel performing environmental services, client liaison, and participation in agency hearings and workshops.

#### PROJECT EXPERIENCE

##### **The District Mixed Use Development, District Community Development District - Duval County FL**

Wetland assessment, delineation and permitting, endangered/threatened species surveys and cultural resource assessment

##### **Cape Canaveral National Cemetery, Department of Veterans Affairs - Brevard County, FL**

Site Specific Environmental Assessment of the Gravesite Expansion and Cemetery Improvements for Phase II of the National Cemetery

##### **Black Creek Water Resource Development Project, St. Johns River Water Management District - Clay County, FL**

Wetland assessment, delineation and permitting, endangered/threatened species surveys and cultural resource assessment

#### EDUCATION

Bachelor of Arts, Biology, University of South Florida, 1977

#### AFFILIATIONS

American Water Resources Association

Florida Section American Water Resources Association

Society of Wetland Scientists

Florida Engineering Society

#### CERTIFICATIONS

Certified Wetland Delineator, ACOE

Professional Wetland Scientist, PWS

Certified SCUBA Diver

FDEP Field Sampling Training Course for Groundwater/Soil, Surface Water, Wastewater, Sediment, Ultra-trace Metals, and Biology/Habitat

Health & Safety Training Course for Hazardous Waste Sites – 40 hours OSHA Program



# Resume

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## Gary K. Howalt, PWS (continued)

### **Canaveral Port Authority, Environmental Consulting Services - Brevard County, FL**

Wetland assessment and permitting, endangered/threatened species surveys

### **Levy Nuclear Plant - Levy, Citrus, Marion, Pasco, Hernando, Pinellas Counties, FL**

Wetland mitigation plan

### **JEA, Environmental Consulting Services - Duval County, FL**

Wetland assessment and permitting, endangered/threatened species surveys, permitting and relocation

### **Florida Power and Light Company, Environmental Consulting Services Statewide - Juno Beach, Palm Beach County, FL**

Wetland assessment and permitting, endangered/threatened species surveys

### **Kingsland Business Park - Camden County, GA**

Wetland assessment and permitting, endangered/threatened species surveys

### **World Commerce Center Development of Regional Impact (DRI) - St. Johns County, FL**

Wetland assessment and permitting, endangered/threatened species surveys

### **Bartram Park Development of Regional Impact (DRI) - Duval and St. Johns County, FL**

Wetland assessment and permitting, endangered/threatened species surveys

### **Canaveral Port Authority, Multimodal Terminal - Brevard County, FL**

Environmental feasibility assessment of a barge rail terminal

### **Canaveral Port Authority, SR 528 Rail Corridor Study - Brevard County, FL**

Wetland and endangered species assessment

### **Kennedy Space Center to Port Canaveral, Brevard Crossing - Brevard County, FL**

Feasibility assessment of rail alignment and environmental impact assessment

### **Canaveral Port Authority SR524 Parcel, Brevard Crossing - Brevard County, FL**

Ecological due diligence

### **JAXPORT Intermodal Container Transfer Facility - Duval County, FL**

Environmental permitting, gopher tortoise assessment and permitting, historic gun range cleanup

# Resume

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## Gary K. Howalt, PWS (continued)

### **JAXPORT Dames Point Marine Terminal - Duval County, FL**

TraPac stormwater pond littoral shelf planting design and monitoring

### **Norfolk Southern Corporation Railroad Y-track addition and railroad track extension, Westlake Industrial Park - Duval County, FL**

Environmental assessment and permitting

### **St. Johns Forest single family residential development - St. Johns County, FL**

Wetland assessment and permitting, endangered/threatened species surveys

### **Florida Communities Trust Grant Application, Management Plan Development, Preservation Project Jacksonville, City of Jacksonville - Duval County, FL**

Wetland assessment and permitting, endangered/threatened species surveys

### **Wills Branch, City of Jacksonville - Duval County, FL**

Drainage improvement study

### **CR 210 and US 1 Interchange - St. Johns County, FL**

FDOT design build, wetland and endangered & threatened species assessment, permitting

### **MLK Interchange - Duval County, FL**

FDOT design build, wetland and endangered & threatened species assessment, permitting

### **San Sebastian Bridge Replacement - St. Johns County, FL**

FDOT design build, wetland and endangered & threatened species assessment, permitting, mitigation planting and monitoring

### **SR 9B Phase I - Duval County, FL**

FDOT design build, wetland and endangered & threatened species assessment, permitting, mitigation planting and monitoring

### **FDOT District 2, Districtwide Environmental Services Contract**

Wetland and endangered & threatened species assessment, permitting, mitigation planting and monitoring

### **I-95 Overland Bridge - Duval County, FL**

FDOT Project Development and Environment (PD&E) assessments for wetlands and protected species, wetland delineation, permitting

## **APPENDIX H**

# **FDOT APPROVED INFLATION FACTORS**



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## **Inflation Factors**

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This “*Transportation Costs*” report is 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 future Year Of Expenditure costs (YOE) or vice versa. This report is updated regularly based on 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 2022 dollars (FY 2022 runs from July 1, 2021 to June 30, 2022).

### **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, administered by the Bureau of Labor Statistics (BLS). 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 Highway and Street Construction, is also available from BLS. It provides national-level estimates of past and recent highway construction inflation. The Producer Price Index (PPI) web site is <http://www.bls.gov/ppi/home.htm>.



# FLORIDA DEPARTMENT OF TRANSPORTATION

## TRANSPORTATION COSTS REPORTS

### Work Program Highway Construction Cost Inflation Factors

Fiscal Year	Inflation Factor	PDC Multiplier
2022	Base	1.000
2023	2.7%	1.027
2024	2.8%	1.056
2025	2.9%	1.086
2026	3.0%	1.119
2027	3.1%	1.154
2028	3.2%	1.191
2029	3.3%	1.230
2030	3.3%	1.270
2031	3.3%	1.312
2032	3.3%	1.356
2033	3.3%	1.400
2034	3.3%	1.447
2035	3.3%	1.494
2036	3.3%	1.544
2037	3.3%	1.595
2038	3.3%	1.647
2039	3.3%	1.702
2040	3.3%	1.758
2041	3.3%	1.816
2042	3.3%	1.876
2043	3.3%	1.938
2044	3.3%	2.002
2045	3.3%	2.068
2046	3.3%	2.136
2047	3.3%	2.206
2048	3.3%	2.279
2049	3.3%	2.354
2050	3.3%	2.432
2051	3.3%	2.512
2052	3.3%	2.595
2053	3.3%	2.681
2054	3.3%	2.769
2055	3.3%	2.861
2056	3.3%	2.955
2057	3.3%	3.053
2058	3.3%	3.153
2059	3.3%	3.257

## **APPENDIX I**

# **RESPONSE TO COMMENTS TECHNICAL MEMORANDUM**



Ref: 11076, TWO 7

**TECHNICAL MEMORANDUM**

**To:** Mr. Stephan Harris, Transportation Planner–Project Manager  
**From:** Mr. Chris Walsh, P.E., Mr. Mikal Hale, P.E.  
**Subject:** Magnolia Avenue Shared Use Path Feasibility Study  
**Date:** January 10, 2022

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We have received comments on the Magnolia Avenue Shared Use Path Feasibility Study. 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 South Daytona – Public Works Department:

(Brian Peek, Engineer – [bpeek@southdaytona.org](mailto:bpeek@southdaytona.org) / 386-332-3080)

1. You and I had discussed the concrete poles that were installed along Magnolia Avenue. This appears to have occurred in late 2017 or 2018.

**Response:** Per discussion at the 12/16/2021 comment coordination meeting, while the City's request for this project originated in 2015, the current Public Works Director (Brian Peek, PE) was not involved in the project until after the newer utility poles were installed by the power company. The concept plans have been revised to avoid impacts to utility poles where feasible, but during design, further coordination with the power company will be required to coordinate poles that can be relocated.

2. The shift of the roadway will likely not be supported by residents in that area.

**Response:** Per discussion at the 12/16/2021 comment coordination meeting, the path has been reduced to 8-foot width between sta. 33+00 and sta. 44+00 such that the westerly shift of the roadway could be reduced to minimize impacts to the property owners on the west side. It is noted that shifting the roadway provides for better alignment of the NB & SB lanes at the Big Tree Road intersection.

3. Instead of the mid-block crossing, could the path shift to the west side at the Magnolia and Big Tree intersection? There looks to be available right of way on the west side and this avoids all the power poles through this section.

**Response:** Per discussion at the 12/16/2021 comment coordination meeting, the existing roadway meanders back and forth within the existing R/W, which results in constraints on the west side from sta. 49+00 to sta. 53+00. As such, the path has been maintained on east side of the road up to the stop-controlled intersection of Aspen Drive, which serves as an existing school bus stop. The crosswalk is now located near sta. 55+20, allowing the trail to cross over to the west side of the roadway and continue north.

4. In 2004 the City spent \$15,000 per house to pipe in the swales in this corridor. This will likely not be received well by residents.

**Response:** Per discussion at the 12/16/2021 comment coordination meeting, piping previously installed by the City is shown within the concept plans, which for the most part consists of ditch bottom inlets within the side street R/W where sidewalk is not present and there is more room for swales. However, given that; 1) runoff is currently directed onto several front lawns in existing conditions, 2) much of existing roadway does not provide the minimum grades needed to introduce curb and gutter, and 3) the fact that a 12' wide trail is now being incorporated, the proposed swales within drainage easements are essential to provide special ditch profiles that convey the runoff to the inlets / swales within the intersecting side streets.



5. Do all concrete driveways in the path not being replaced comply to ADA?

Response: Yes, a field visit was conducted and a smart level was placed on every driveway, with the resulting slopes reported in **Table 1 – Summary of Driveways and Side Streets** within the Feasibility Study. ADA compliance will need to be further assessed during design.

6. Appendix C profile is illegible

Response: The profile in the Feasibility Study was intended for PDF viewing only. However, per discussion at the 12/16/2021 comment coordination meeting, Appendix C has been revised to contain individual 11x17 sheets for the profile information, with numbers that correspond to the concept plans.

7. Can the apparent ROW be elaborated upon? Are we unsure of where the right of way line exists?

Response: The ROW depicted is from the CAD files that were furnished by the City. While the contents of the CAD file do appear to be based on actual surveying, the R/W lines were labeled as apparent because there were no property corners, monumentation, section lines, etc. or notes within the CAD files suggesting they were the product of actual surveying.

8. To fit with the City's standard designs we would need to have stamped asphalt crosswalks at all intersections (like Big Tree Shared Use Path).

Response: The plans have been revised to specify patterned pavement to provide decorative crosswalks. As discussed in the 12/16/2021 comment coordination meeting, the costs for patterned pavement may not be deemed eligible for reimbursement.

9. Can path be reduced in width from 12-feet? This might help in not having to secure drainage easements as in STA 18+00 or to help avoid a roadway shift at STA 34+00.

Response: As discussed in the 12/16/2021 comment coordination meeting, the R2CTPO prefers 12-foot shared use paths, however, segments of 8-foot-wide path are acceptable where conditions are constrained. Required drainage swales were proposed on the east side properties between Carey Drive and Big Tree Rd (sta. 10+40 to sta. 44+00), which represents roughly 50% of the project corridor. Therefore, the path was only reduced to an 8-foot width in select areas as summarized below:

- Sta. 0+19.46 to Sta. 2+10 - bump out to save two (2) recently installed utility poles
- Sta. 33+20 to Sta. 44+00 – to save two (2) recently installed utility pole and minimize the road reconstruction
- Sta. 47+80 to Sta. 48+80 - bump out to save recently installed utility pole
- Sta. 51+80 to Sta. 52+60 - bump out to save recently installed utility pole
- Sta. 62+50 to Sta. 64+00 - bump out to save two (2) recently installed utility poles

It is important to note that during design further coordination with the power company will be required to determine which poles can most easily be relocated to allow for minimum reductions in trail width.

Comments from R2CTPO - Transportation:

(Stephan C. Harris, Transportation Planner – Project Manager – [sharris@r2ctpo.org](mailto:sharris@r2ctpo.org) / 386-226-0422)

1. Utilities Discussion – Page 9 text revision requested.

**Response:** The revision has been completed with language added to capture that the City may modify or relocate the existing lift station in the future, which will need to be coordinated during design.

2. Cost Estimate – Include luminaires recommended on page 15.

**Response:** Within the cost estimate, the pay item entitled “Light Pole by Power Company” (with a unit cost of \$3,000.00) is a complete assembly, such that it previously accounted for the luminaires discussed on page 15.

3. Plan Sheet 19 – Indicate which trees are recommended for removal.

**Response:** An additional field review was conducted to identify the existing trees within the western R/W. The existing trees that are recommended for removal have been depicted on the Concept Plans and included in the cost estimate.

We anticipate this information satisfactorily addresses these comments. Please let us know should you require any additional information.

Sincerely,

TRAFFIC ENGINEERING DATA SOLUTIONS, INC.

A handwritten signature in blue ink, appearing to read 'Mikal'.

Mikal Reed Hale, P.E.  
Sr. Project Manager