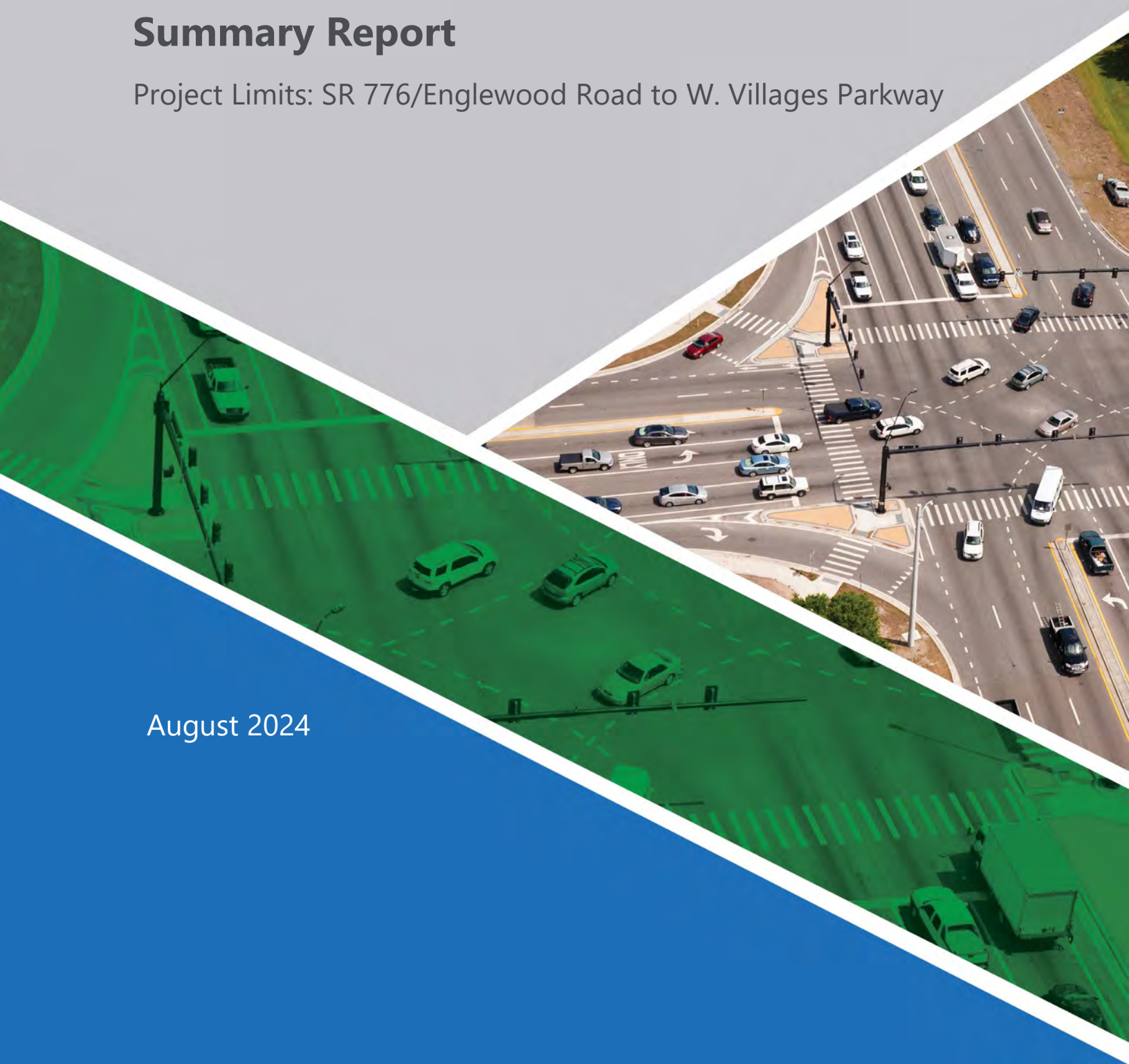
Sarasota County

Keyway Road

Preliminary Roadway Alignment Study

Summary Report

Project Limits: SR 776/Englewood Road to W. Villages Parkway



August 2024

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Prepared for:

Sarasota County

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1 INTRODUCTION

The purpose of this Preliminary Roadway Alignment Study (PRAS) is to document the Keyway Road Right-of-Way (ROW) Alignment Study that identified and evaluated optimum preliminary roadway alignments for the proposed improvements to approximately 4-miles of Keyway Road from State Road (SR) 776/Englewood Road to West Villages Parkway. This document serves as an initial guide to summarize stakeholder outreach, agency coordination, engineering and environmental analysis conducted to identify the optimal preliminary roadway alignment for the Keyway Road widening and extension.

The study includes assessment of soil suitability, existing/or planned utilities, land development plans, drainage analysis, environmental analysis and Concept Plans. Results are intended to serve as an initial guide to establish roadway and pond ROW requirements as part of the planned roadway extension, with potential revisions to the drainage system, lane width, design speed, bicycle lanes/sidewalks/ multi-use paths, lighting and landscaping.

1.1 Project Description

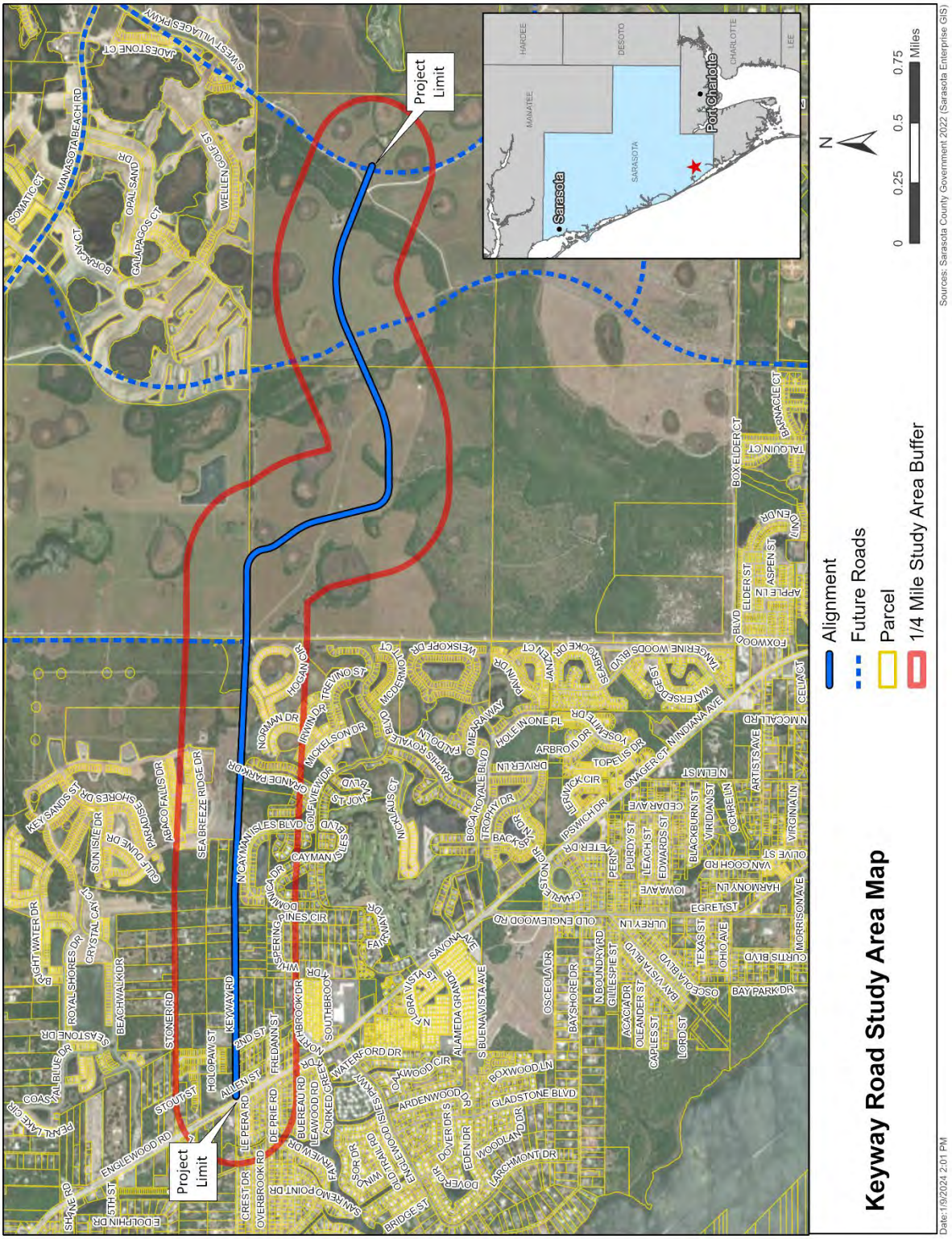
As shown in Figure 1-1, the limits of the Keyway Road extension study alignment begin at SR 776/Englewood Road at East Keyway Road and extend 4.01-miles east to a future extension of West Villages Parkway, just east of the Myakka Pines Golf Club. Two types of improvements are being considered. One is the widening of Keyway Road from SR 776/Englewood Road, 0.91-miles east to its current terminus, from two-lanes to four-lanes. The other is the extension of Keyway Road eastward from its current terminus to a proposed southern extension of West Villages Parkway, just east of the Myakka Pines Golf Club.

The location map shows a quarter-mile buffer to identify the resources in the immediate surroundings of the proposed alignment and to assess any potential concerns as a result of the development. This quarter-mile study area will be used throughout the document, and is reflected in Figure 1-1, which shows the parcel boundaries.

1.2 Need for the Project

The need for this 3.10-mile (mi) extension of Keyway Road was identified and documented in the Sarasota County Year 2040 Future Thoroughfare Plan, which is included in Element 4 (Mobility) of the Sarasota County Comprehensive Plan, Volume 2 (dated 10/25/2016). The proposed alignment is consistent with improvements identified in Table 10-5 of the Sarasota County 2040 Future Thoroughfare Plan. These improvements should adequately facilitate travel demand while minimizing potential community, environmental and economic-related concerns.

Figure 1-1: Keyway Road Study Area Map



2 STAKEHOLDER COORDINATION

2.1 Stakeholder Outreach

Stakeholder outreach and coordination with involved agencies should continue through the subsequent phases of this project. As part of this initial planning phase, coordination occurred with the following entities:

- Sarasota County Parks, Recreation, and Natural Resources
- Sarasota County Planning and Development Services, including representatives from Environmental Protection, Planning and Zoning, and Property Management
- Sarasota County Public Works, including representatives from Transportation Planning and Watershed Engineering
- Sarasota County Public Utilities
- Sarasota County Area Transit (now known as Breeze Transit)
- Sarasota County Solid Waste

2.2 Meetings

A virtual kickoff meeting was held on October 18, 2022, which included representatives from different Sarasota County departments as noted above. The discussion focused on the scope of this effort and where necessary data or information can be obtained for aerial images, recent developments, drainage, related studies, park facilities, and roadway design standards. It was agreed that the proposed typical sections should follow the County's Unified Development Code standards unless otherwise specified. Five additional coordination meetings were held throughout this phase of the project with representatives from Sarasota County to review progress and obtain comments on proposed typical sections and concepts.

Two additional meetings focusing on Keyway Road were held on December 6, 2022, and February 14, 2023. During the December 6th meeting, the focus was on the ability to fit the proposed right-of-way within the available space, especially considering the natural area covenants for both the Manasota and Beach Walk developments. During the February 14th meeting, additional concerns were raised regarding the Florida Power and Light transmission lines and easement on the north side of the alignment. The team was also asked to revise the limits of the study to include the existing portion of Keyway Road extending west to Englewood Road/SR 776.

On January 10, 2024, a public meeting to review the proposed alignment and concept was held at the Frances T. Bourne Jacaranda Public Library. This meeting included three other alignment studies in addition to Keyway Road. Notification of the meeting was sent to property owners within 300 feet of the proposed alignment. Over 250 participants attended the meeting. The most common questions and concerns centered on timing of construction, noise, visual impacts from lights, and impacts to wildlife, natural areas, or landscaping. Specific to Keyway Road, concern was expressed about the power lines on the north side, how they impacted the proposed alignment, recommendations to reduce proposed design and posted speed limits, and desire for a two-lane facility as opposed to four.

3 LAND USE

This section of the document reviews the existing conditions of the study area related to the built environment, including existing land use, zoning, future land use, and planned development data. This information helps to identify any sensitive land uses or populations that need to be considered in the development of the optimal alignment. Several sources of data were used to identify and quantify the existing conditions, including:

- Sarasota County Government, Enterprise GIS, 2022 – Zoning and Future Land Use
- Sarasota County Government, Planning and Development Services, 2022 – Planned Development
- State of Florida Department of Revenue, 2023– Existing Land Use

3.1 Existing Land Use

The existing land uses within the ¼ mile of the proposed right-of-way are shown in Figure 3-1. The dominant land use classifications are agricultural and residential, at 65 and 26 percent of the study area, respectively. Vacant land makes up the next highest existing land use at almost 4 percent. There are several parcels utilized for commercial, office, or retail use and a utility at the western end of the alignment. Table 3-1 lists the existing land uses by total acreage and percentage found within the study area.

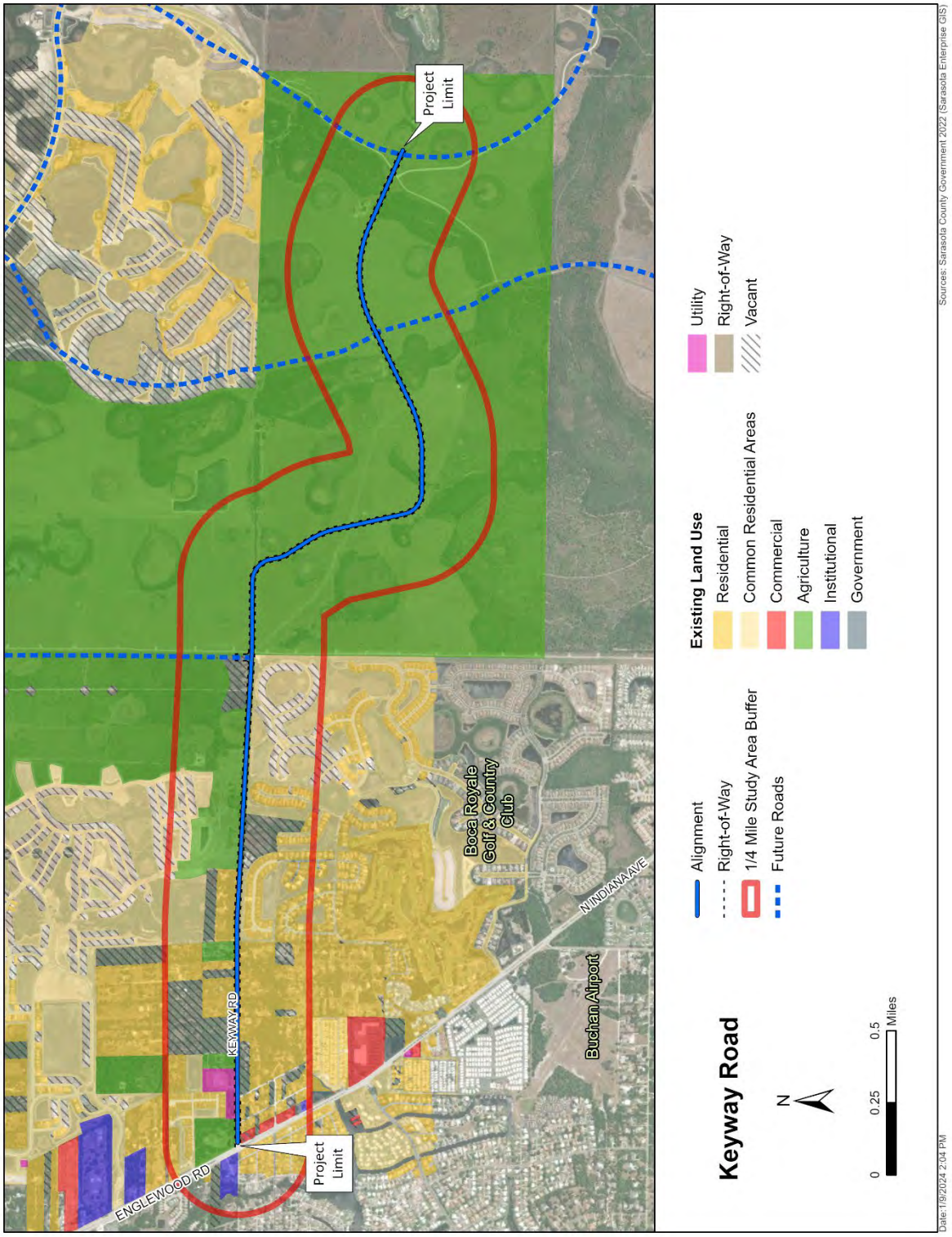
Table 3-1: Existing Land Use by Acreage and Percentage

Land Use Category	Acreage	% of Total
Agricultural	885.06	65.6%
Commercial/Office/Retail	4.34	0.3%
Conservation/Open Space	43.32	3.2%
Institutional	5.58	0.4%
Residential	351.28	26.1%
Utilities	9.15	0.7%
Vacant	49.42	3.7%
Total	**1,348.15**	**100.00%**

3.2 Zoning

Zoning information was identified using Sarasota County Government and City of North Port data. The zoning districts within the study area are identified in Figure 3-2 and summarized in Table 3-2. The zoning districts adjacent to the Keyway Road extension include the City of North Port's Village district and Sarasota County's Settlement Area Planned Development District, Residential Estate, Residential Single Family, Office, Professional and Institutional, and Open Use Rural districts. Brief descriptions of each of these districts, including all of the other zoning districts within the study area, are provided below.

Figure 3-1: Existing Land Uses



- North Port Village District (V) – This district is applied to the Wellen Park development and is meant to encourage development that reduces reliance on single occupant vehicles by arranging land uses closer to work and home while protecting environmental lands and ensuring the timely provision of public facilities through the preparation of a Village District Pattern Plan. The zoning code sets out the general provisions for the Village district. To understand the specific uses and regulations applicable to Wellen Park, the Pattern Plan for each village needs to be reviewed. More information on the village areas included in the study is provided in the following sections regarding Future Land Use and Planned Development.
- Sarasota County's Office, Professional and Institutional (OPI) – This district is for office, institutional, cultural, and allied uses of varying sizes. It is not intended to be a retail district. Residential uses are also permitted in this district to promote live-work and mixed-use opportunities. Nonresidential uses are permitted at a floor area ratio of 1.2. Residential density varies by unit type and use provisions.
- Sarasota County's Open Use Estate (OUE) – The purpose of this district is to provide for resource conservation and activities with an agricultural orientation. Permitted uses are limited to conservation, agriculture, very low-density residential development, recreation, and with limitations, institutional and other uses compatible with the character of the district. The maximum density allowed for residential is one unit per five acres. For nonresidential uses, the maximum building coverage is 20 percent, and the maximum building height is 35 feet.
- Sarasota County's Open Use Rural (OUR) – This district is intended for agricultural purposes and uses and to preserve lands with agricultural development potential. Single family dwelling units are permitted at 1 per 10 acres. This district is currently applied to lands within Winchester Ranch of Wellen Park. More information about the proposed development for this area is provided in the Planned Development section.
- Sarasota County's Residential Manufactured Home (RMH) – The purpose of this district is to allow for manufactured housing parks or subdivisions. Supporting accessory and nonresidential uses are allowed. This district is applied to existing (prior to October 27, 2003) and new parks or subdivisions. The setback and lot area requirements vary for existing versus new parks or subdivisions. The maximum density permitted is five units per acre.
- Sarasota County's Residential Multi Family (RMF) – This district allows for multifamily residential developments, including single-family detached and various types of attached residential units. Complimentary non-residential uses, such as day care, parks, and community recreation, are also permitted. There are three subdistricts with varying requirements for density and lot area. All three subdistricts exist within the study area. The maximum density allowed under each is six units per acre for RMF-1, nine units per acre for RMF-2, and 13 units per acre for RMF-3.
- Sarasota County's Residential Single Family (RSF) – The purpose of this district is to provide for single family development. There are four subdistricts with varying requirements for density, lot area and width, and yards. Two subdistricts adjacent to the proposed roadway

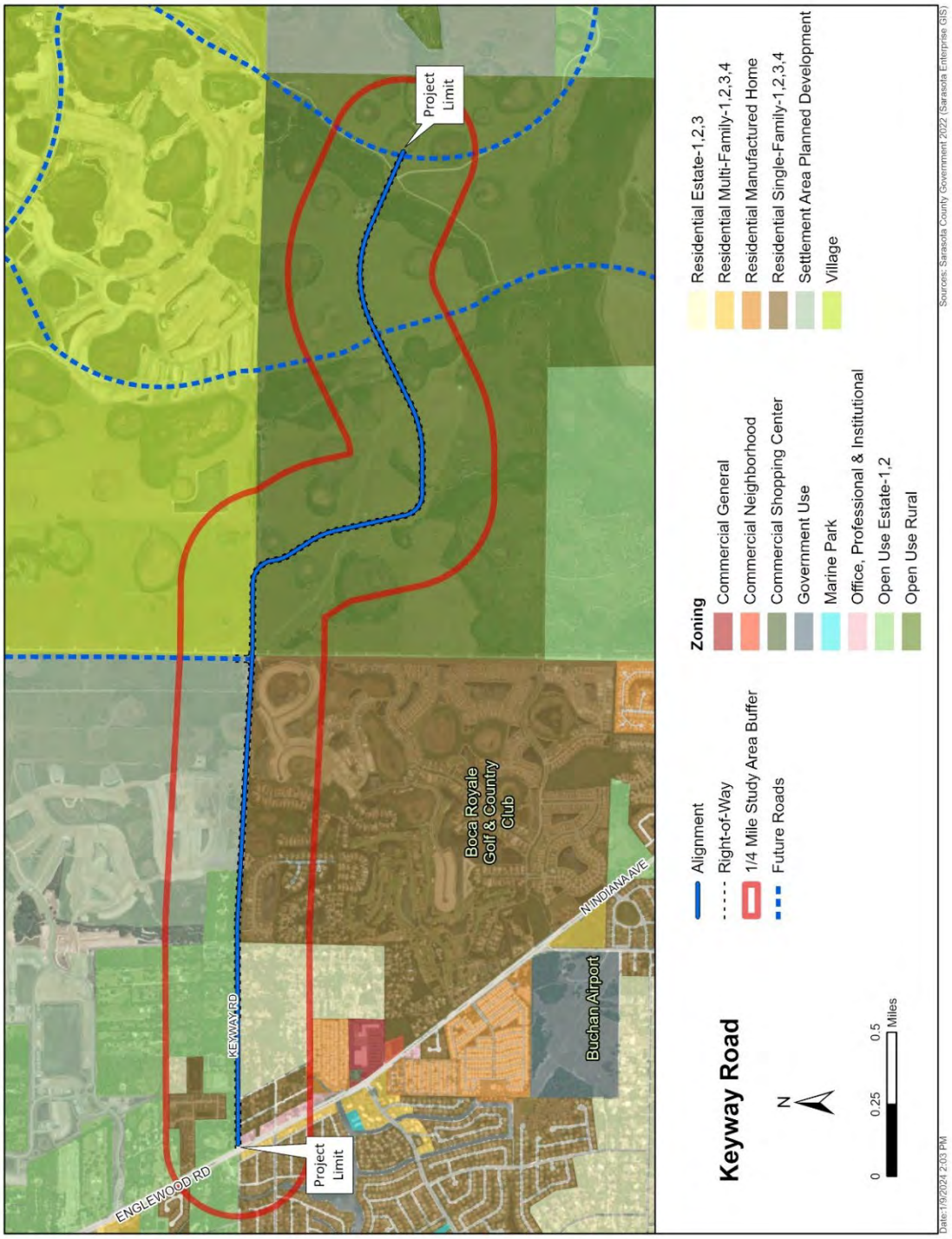
extension are 1 and 3. The maximum density allowed under RSF-1 is 2.5 units per acre and the maximum density allowed under RSF-3 is 4.5 units per acre. Both of these districts are applied to the Boca Royale Golf and Country Club, which is described in the Planned Development section.

- Sarasota County's Residential Estate (RE) – The purpose of this district is for large lot, estate-type development. Some nonresidential uses are allowed provided they do not conflict with the low-density estate character. There are three subdistricts with varying requirements for density, lot area and width, and yards. The only subdistrict included within the study area is RE-1, which allows for one dwelling unit for every two acres and nonresidential uses with a maximum building coverage of 25 percent and building height of 35 feet.
- Sarasota County's Settlement Area Planned Development District (SAPD) – This district is applied to the Villages of Manasota Beach, also known as BeachWalk by Manasota Key. More information about the specific development approved for this property is in the Planned Development section of this report. The district allows for mixed use developments under binding master plans that include:
    - At least one neighborhood, which provides a range of housing types, recreational space, and a neighborhood center (maximum size is 20,000 gross leasable square feet); and
    - An optional Village Center, which includes residential, commercial, office, public/civic uses, and public space within a planned development. The maximum size of the Village Center is 100 acres with a minimum land area requirement of 15% residential, 25% commercial/retail/office, 5% public/civic, and 5% public space. Maximum allowable land areas are 65% residential and 5% commercial/retail/office, with no maximums applicable to public/civic and public space uses.

Table 3-2: Zoning District by Acreage and Percentage

Zoning District	Acreage	% of Total
Sarasota County Districts		
Office, Professional and Institutional (OPI)	5.0	0.4%
Open Use Estate (OUE-1 & OUE-2)	127.8	9.5%
Open Use Rural (OUR)	687.2	51.2%
Residential Estate 1 & 2 (RE-1 & RE-2)	78.4	5.8%
Residential Manufactured Home (RMH)	0.3	0.0%
Residential Multi Family 1 (RMF-1)	4.4	0.3%
Residential Single Family (RSF-1, 2, 3 & 4)	216.8	16.2%
Settlement Area Planned Development	140.5	10.5%
City of North Port Districts		
Village	81.4	6.1%
Total	**1,342.0**	**100.0%**

Figure 3-2: Zoning



3.3 Future Land Use

The future land use designations were identified using Sarasota County Government and City of North Port data. The future land uses within the study area are shown in Figure 3-3 and summarized in Table 3-2. The dominant land use classifications adjacent to the Keyway Road extension alignment are Low Density Residential (<2 units per acre), Moderate Density Residential (≥2 to ≤5 units per acre), Rural (1 unit per 5 acres) and Semi-Rural (1 unit per 2 acres) in Sarasota County. The dominant future land use in the City of North Port is Village.

There are two portions of the study area that have special future development plans under the name of Wellen Park: the City of North Port's Village area and the southeastern quadrant of the study area located in Sarasota County. First, the City of North Port's Village Future Land Use Classification, is applied to an area formerly known as Thomas Ranch. The Village classification allows for a mixture of uses to be developed under a master plan. The plan for Wellen Park within the City of North Port has a maximum residential density of 16,400 dwelling units and includes a Town Center, which is located at the intersection of U.S. 41 and the proposed West Villages Parkway. This Town Center is outside of the Keyway Road study area, but the proposed West Villages Parkway intersects with the proposed Keyway Road extension at its eastern limit. Village "I" of Wellen Park is included in the study area. More information about Village "I" is provided in the following Planned Development section.

The Sarasota County portion of Wellen Park is known as the Winchester Ranch at Wellen Park Critical Area Plan, or CAP. The Winchester Ranch CAP covers approximately 3,600 acres and allows for a total of 8,999 residential dwelling units in addition to commercial, civic, and institutional uses. Nine different communities are identified in the CAP, three of which are included in the study area: D, E, and F. More information is provided in Figure 3-4 and in the following section on Planned Development.

3.4 Planned Development

There are five large residential communities and proposed land development projects within the vicinity of the Keyway Road alignment that were identified through recorded subdivision plats and field Right-of-Way maps provided by Sarasota County and Southwest Florida Water Management District environmental resource permit data. As shown in Figure 3-5, the developments include Beachwalk by Manasota Key, Boca Royale Golf & Country Club, Wellen Park Village "I", Winchester Florida Ranch LLLP and Boca Royale East. Each of these is described below.

- **BeachWalk by Manasota Key** - Currently under development by DiVosta Homes, BeachWalk by Manasota Key is a 782-acre gated community (proposed to include 1,563 dwelling units in three neighborhoods with various amenities) generally bounded by SR 776, Keyway Road, the municipal limits of the City of North Port and Manasota Beach Road. Illustrated in Figure 3-6, the development's master site plan reserves 100-feet of Right-of-Way for Keyway Road on the south. 60-feet is reserved for the future road alignment and 40-feet are intended to be provided for a landscape buffer. In addition, on the east, 120-feet of Right-of-Way is provided for the future Venice East Boulevard alignment.

Table 3-3: Future Land Use Designations

Future Land Use Designation	Use Types	Maximum Density or Intensity	Percent of Study Area
Low Density Residential	Single family residential and agricultural	<2 units per acre	25.2%
Light Office	Offices, cultural, institutional, and allied uses; residential allowed as part of mixed use	1.2 floor area	0.5%
Major Government Uses	Institutional, governmental, transportation, recreational, cultural, community and utility facilities	1.2 floor area	0.2%
Medium Density Residential	Residential and governmental	≥5 to ≤9 units per acre	0.5%
Moderate Density Residential	Residential and governmental	≥2 to <5 units per acre	13.4%
Office/Multi Family Residential	Office, multi-family residential, public and civic uses	Determined by development plan	4.2%
Rural	Single family residential and agricultural	1 unit/5 acres	32.5%
Semi-Rural	Single family residential and agricultural	1 unit/2 acres	17.6%
Village (City of North Port)	Mixed uses	Determined by master plan	5.9%
Water	Water	N/A	0.1%

- **Boca Royale Golf & Country Club** - The Boca Royale Golf & Country Club is located south of the Keyway Road alignment. Boca Royale Golf & Country Club is a private, 1,000-acre gated single-family and paired villa homes residential community centered around an 18-hole golf course, amenity center and clubhouse developed by Neal Communities.
- **Wellen Park Village "I"** - Wellen Park Village I is in the West Villages Improvement District (WVID) immediately east of Beachwalk at Manasota Bay. Created by an act of the Florida Legislature on June 17, 2004, the WVID is an independent, special taxing district authorized to plan, finance, construct, operate and maintain public infrastructure in the 11,000-acre Wellen Park development. The proposed Wellen Park Village I will include four residential neighborhoods, one mixed-use residential neighborhoods with civic and potentially commercial uses, and one 80-acre mixed use area identified as a Village Center with non-residential and residential uses. The 925-acre Village is entitled to 2,179 dwelling units, 37,500 square feet of commercial, and 12,500 square feet of office. A 170-foot FP&L utility easement is located parallel to a proposed north-south extension of Venice East Boulevard.

Figure 3-3: Future Land Uses

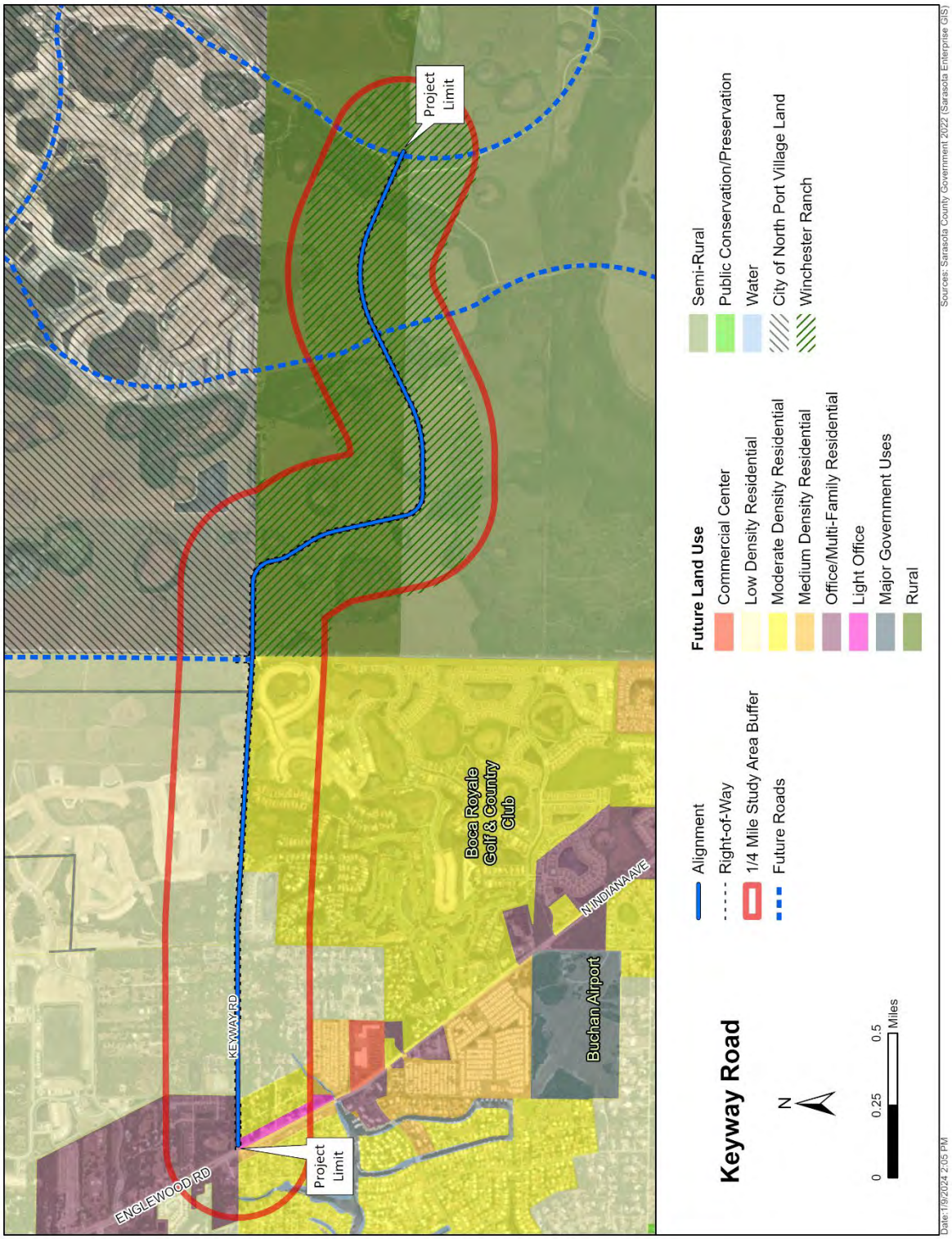
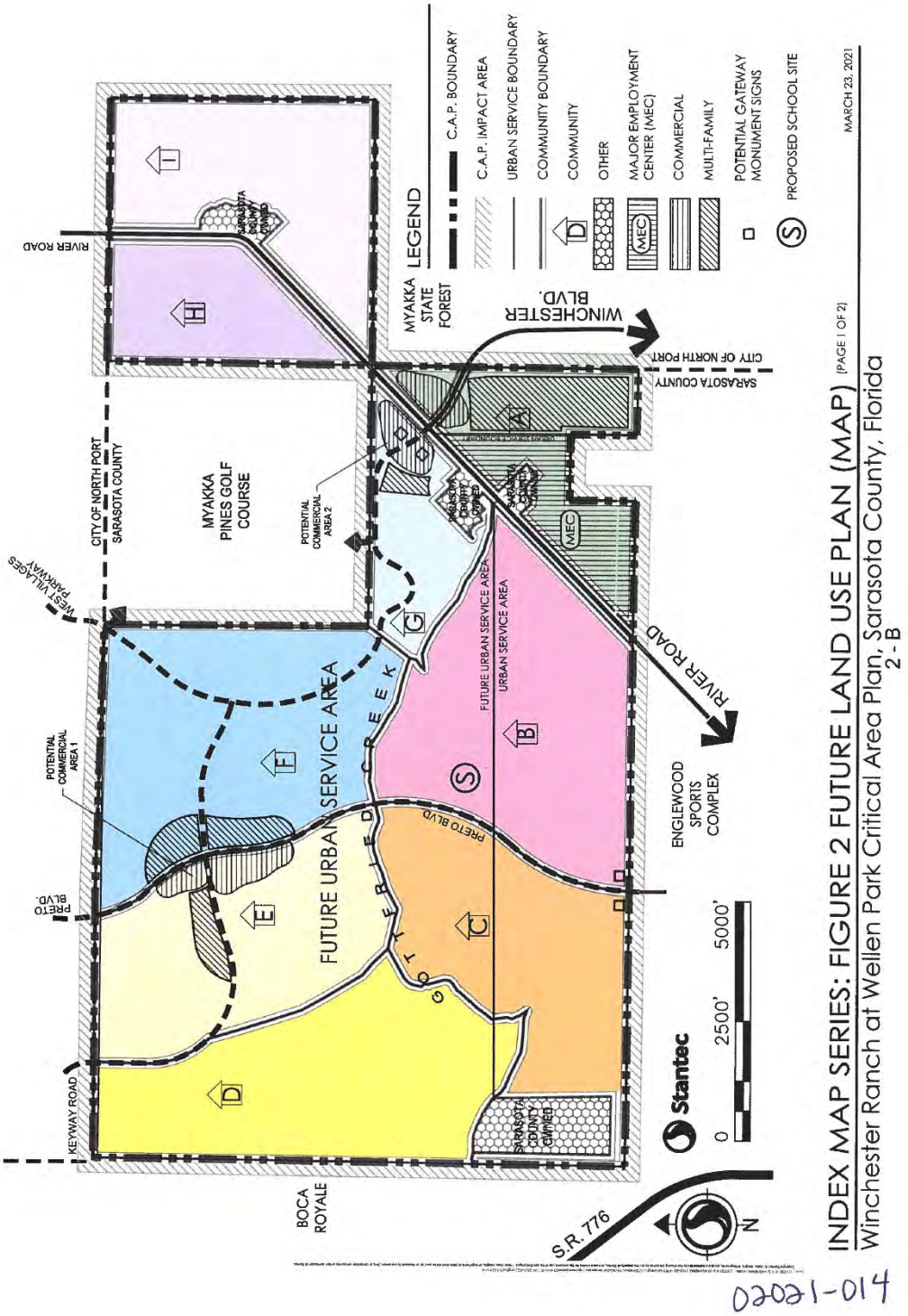


Figure 3-4: Wellen Park Critical Area Plan Future Land Use Map



- **Winchester Florida Ranch LLLP** - Winchester Florida Ranch LLLP is a proposed 3,600-acre mixed-use development located just south of Wellen Park and the City of North Port. Nine thousand residential units and 200,000 square feet of commercial space are anticipated to be developed over a 55-year-build out plan for Winchester Florida Ranch LLLP. The first proposed development, Boca Royale East, is being designed to preserve a 100-foot-wide future Keyway Road Right-of-Way as required by the Winchester Ranch Critical Area Plan.
- **Boca Royale East** - Boca Royale East is a proposed expansion of the Boca Royale Golf & Country Club subdivision by Neal Communities. The 825-unit residential development is planned for 505.45 acres of land located in the Winchester Florida Ranch LLLP property. August 2022 documentation provided by Sarasota County indicates the development includes 100-foot-wide future Keyway Road Right-of-Way as required by the Winchester Ranch Critical Area Plan. The overall Boca Royale East Development Concept Plan is depicted in Figure 3-7.

3.5 Community Resources

For the majority of this alignment, due to the undeveloped or developing nature of the adjacent area, there are no existing community resources that will be affected by the proposed right-of-way project. For the segment where the widening is proposed, from SR 776/Englewood Rd to the current terminus, there is only one community resource within the study area. This is the New Hope Baptist Church, located at 2100 Englewood Rd. It is on the west side of Englewood Rd and is not expected to be impacted by the proposed improvements to Keyway Road. This information is based on a desktop review of Google Maps, using imagery and data from 2023.

Figure 3-5: Planned Development

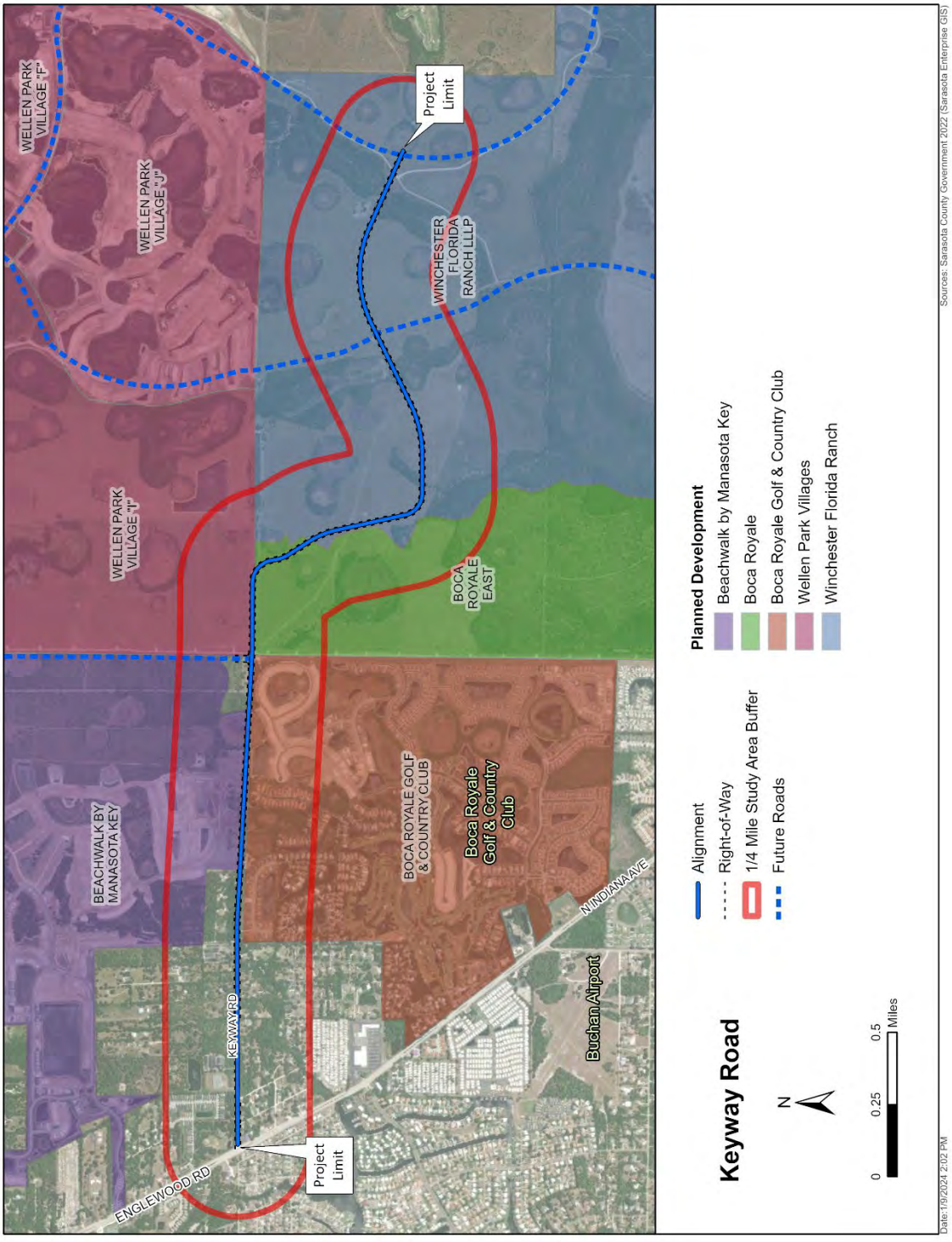


Figure 3-6: BeachWalk Subdivision – Phases 3 and 4 Construction Plans

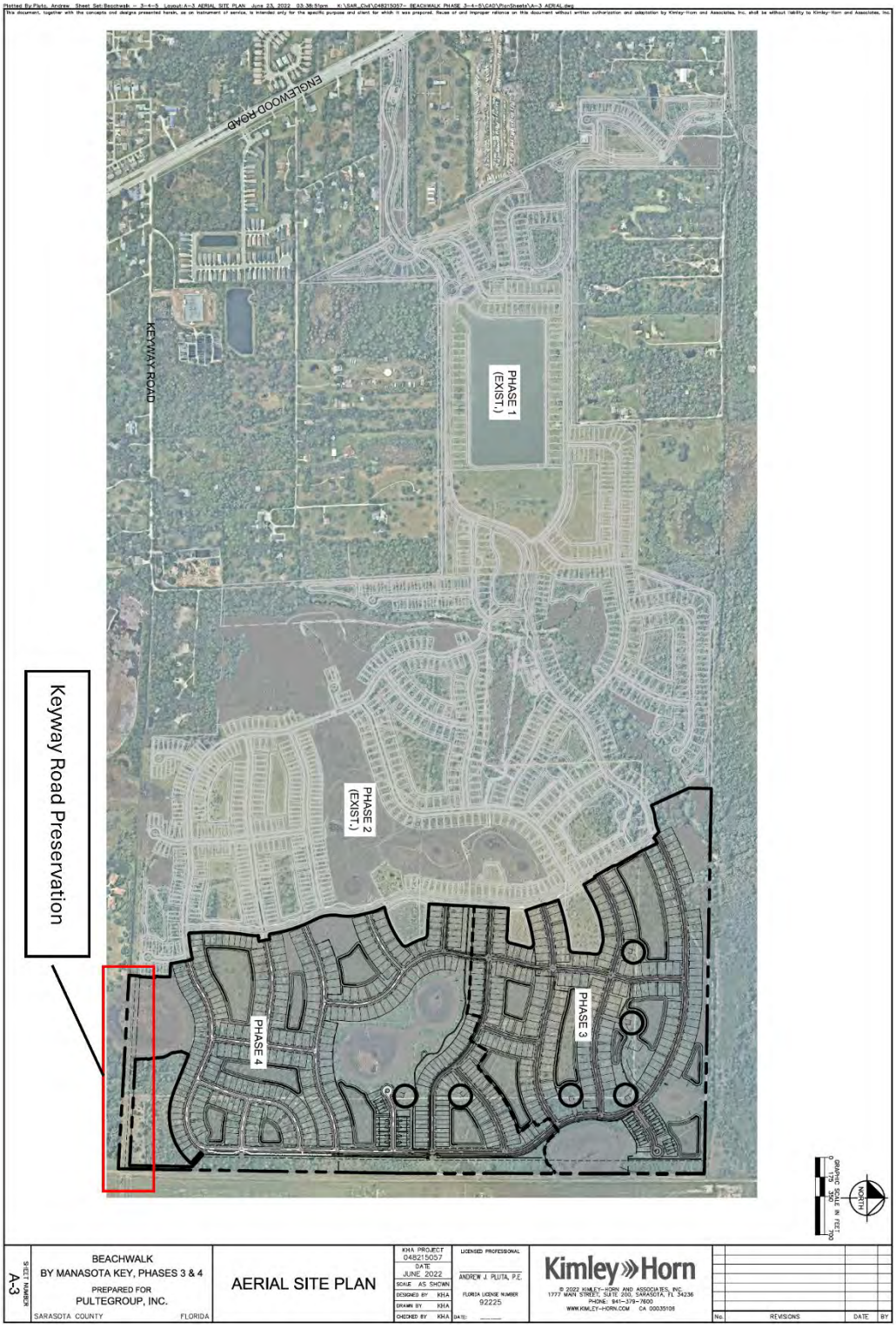


Figure 3-7: Boca Royale East Concept Plan

4 ENVIRONMENTAL SETTING

The study area's natural resources consist of diverse environmental features specifically wetlands, ponds, waterbodies, sparse vegetation, protected species, and other ecosystems that sustain the natural integrity of the area. The proposed alignment will add to the existing road network connectivity and further alter the terrestrial and aquatic landscape, potentially impacting the natural resources in the study area. All phases of road development, from construction to vehicular usage to maintenance affect the natural environment. The proposed road infrastructure is expected to increase mobility for the developing study area, which is anticipated to cause a shift in the population to spur further growth and development in the area. This has the potential to introduce several environmental concerns to the area including pollution, increased stormwater runoff, vehicle related mortality, impediments to animal migration, and habitat fragmentation. Hence, integrating environmental considerations at all phases of road development is critical to alleviating any potential negative impact on the natural resources while securing a functional infrastructure to support growth for the area.

4.1 Natural Resources

This section reviews the wetlands, floodplains, habitat, and protected species within the study area. Information on these resources was gathered from Sarasota County, Florida Department of Environmental Protection (FDEP), Florida Fish and Wildlife Conservation Commission (FWC), Florida Natural Areas Inventory (FNAI), South Florida Water Management District (SFWMD), U.S. Fish and Wildlife Services (USFWS) and the Federal Emergency Management Agency (FEMA).

4.1.1 Wetlands and Floodplains

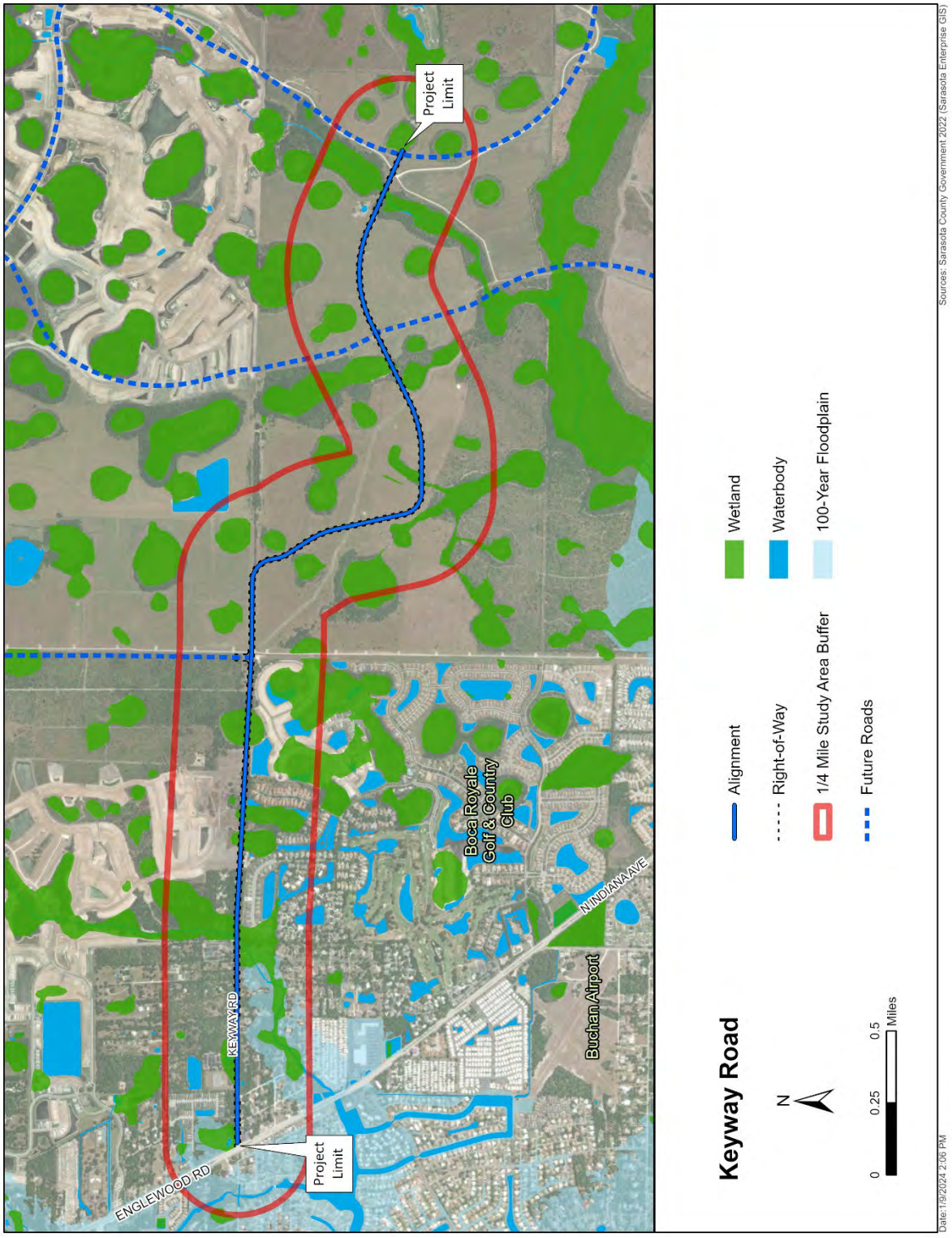
Wetlands and the 100-year floodplain within the study area are shown in Figure 4-1. Based on the data from SFWMD, there are four different wetland community types in the study area. As indicated in Table 4-1, the majority are freshwater marshes followed by stream and lake swamps. All of these are naturally occurring wetland areas, and several may be impacted by the proposed roadway extension.

Table 4-1: Wetlands and Floodplains

Wetland Type	Total Area (Acres)
Emergent Aquatic Vegetation	16.1
Freshwater Marshes	161.1
Stream and Lake Swamps (Bottomland)	76.3
Wet Prairies	30.4
Total Wetlands	**283.9**
Total 100 Year Floodplain	**107.6**
Total Waterbody	**34.7**

Sarasota County requires a minimum 30-foot-wide upland buffer outside of wetland areas to project their value and function. When the buffer consists of mesic hammock habitat, the buffer width is expanded to 50 feet. Impacts to wetlands are to be avoided or minimized if avoidance is not possible.

Figure 4-1: Wetlands, Floodplains, and Waterbodies



Any alterations to wetlands have to be mitigated in accordance with the County's Environmental Technical Manual, which requires compliance with the Uniform Mitigation Assessment Method (UMAM) or at a one-to-one ratio for herbaceous wetlands and two-to-one ratio for forested wetlands when UMAM is not applicable. Additional field evaluation of the affected wetlands and the proposed extension alignment is recommended to determine the applicability of UMAM and the mitigation required based on projected impacts.

4.1.2 Habitat and Protected Species

Literature searches were completed to identify protected species and any critical habitat that might occur within the study area. A data search of FNAI indicates that 32 federally and state listed animals and plants have the potential to occur in this location. Additional database searches included the following:

- USFWS, Information for Planning and Consultation, Threatened and Endangered Species in Florida, October 2020
- FDEP, Outstanding Florida Waters, April 2019
- FDEP, Special Outstanding Florida Waters, April 2019
- FDEP, Aquatic Preserve Boundaries, April 2019
- FDEP, Wild and Scenic Rivers, May 2021
- USFWS, Coastal Barrier Resources, March 2019
- SWFWMD, Land Use and Land Cover Classifications, 2017-2019

Per information from the Florida Department of Environmental Protection Open Data site, the study area is included in a Wood Stork (*Mycteria americana*) Core Foraging Area, meaning that active nesting occurs in the area. According to the Florida Fish and Wildlife Conservation Commission website, it may also be part of the Florida Scrub Jay (*Aphelocoma coerulescens*) consultation area. Information from FWC indicates that Sarasota County is part of the bird's distribution area and the last recorded observance of the species in the study area was in 2000 (per the University of Florida's GeoPlan Center data from 2013).

In addition to the protected species habitat in the study area, the Sarasota County Unified Development Code requires the protection of native habitats (Sec. 124-172). Although outdated, it was determined that the SFWMD land use and land cover classifications information provided the best data available to identify any such areas. Table 4-2 summarizes the non-urban and non-agricultural land use and land cover classifications identified in the study area. Figure 4-2 displays the location of these areas.

The protected species that have the potential to occur within the study area, per data from FNAI, are listed in Table 4-3. The probability of occurrence within the study area is shown as High, Moderate, or Low. A Low rating indicates there is potential for the species to occur in the area because the area is 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. A Moderate rating indicates the species is likely to occur in the area due to the overlap with a documented occurrence area and the availability of suitable habitat. A High rating indicates that the species has been documented in the area.

Table 4-2: Land Use and Land Cover Classifications

Description	Acreage	Percent of Total
Bays and Estuaries	0.7	0.1%
Emergent Aquatic Vegetation	15.7	3.3%
Freshwater Marshes	161.1	33.8%
Pine Flatwoods	129.1	27.0%
Open Lands	29.5	6.2%
Stream and Lake Swamps (Bottomland)	76.3	16.0%
Upland Hardwood – Coniferous Mix	34.5	7.2%
Wet Prairies	30.4	6.4%
TOTAL	**477.3**	**100.0%**

4.1.3 Grand Trees

Sarasota County's Trees Code (Chapter 54, Article XVIII) provides standards for tree protection on public and private lands, grand trees, and canopy roads. Although roads, utilities, and stormwater construction by the county, state and federal government are exempt from most of the requirements of this Article, there is no exemption for grand trees. A grand tree is defined as any tree meeting the point requirements set forth in this Article, which are based on trunk diameter at breast height, overall height, and average canopy spread, or which have been designated as a Florida State Champion, United States Champion, or World Champion by the American Forestry Association (AFA). A review of the AFA's Champion Trees Registry did not identify any specimens in Sarasota County. A similar review of the Florida Champion Tree Register, maintained by the Florida Department of Agriculture and Consumer Services, identified a champion South Florida Slash Pine that is a Florida Co-Champion tree. The exact location of this tree was withheld from the register. Before the design phase progresses, the alignment area should be inspected for trees that may meet the criteria outlined by this Article. Impacts to any grand trees should be avoided if possible. Coordination with a county environmental specialist will be needed.

4.2 Cultural Resources

Data from the Florida State Historic Preservation Office and the National Register of Historic Places was reviewed to identify any cultural or historical resources within the study area. No such resources were identified.

Figure 4-2: SFWMD Land Use and Land Cover Classifications

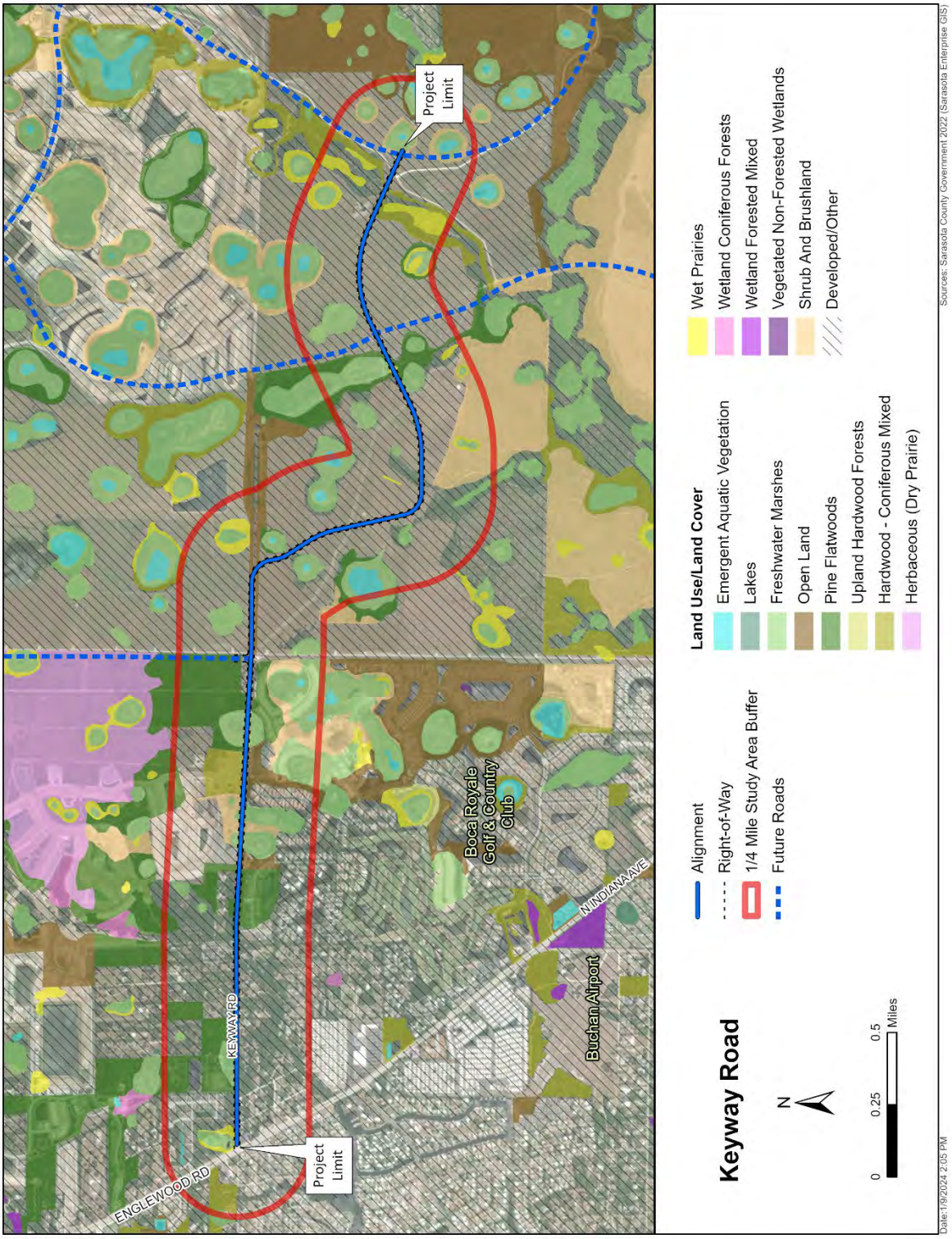


Table 4-3: Protected Plant and Animal Species and Their Likelihood to Occur

Common Name	Scientific Name	Likelihood	Status
Mammals			
Florida Long-tailed Weasel	*Mustela frenata peninsulae*	Low	N
Florida Manatee	*Trichechus manatus latirostris*	Low	FT
Florida Bonneted Bat	*Eumops floridanus*	Low	FE
Birds			
Florida Sandhill Crane	*Antigone canadensis pratensis*	Low	ST
Wood Stork	*Mycteria americana*	Moderate	FT
Florida Burrowing Owl	*Athene cunicularia floridana*	Low	ST
Great White Heron	*Ardea herodias occidentalis*	Low	N
Florida Scrub Jay	*Aphelocoma coerulescens*	Moderate	FT
Florida Prairie Warbler	*Setophaga discolor paludicola*	Low	N
Fish			
Gulf Sturgeon	*Acipenser oxyrinchus desotoi*	Low	FT
Reptiles/ Amphibians			
Eastern Indigo Snake	*Drymarchon couperi*	Moderate	FT
Gopher Tortoise	*Gopherus polyphemus*	Low	ST
Gopher Frog	*Lithobates capito*	Low	N
Hawksbill Sea Turtle	*Eretmochelys imbricata*	Low	FE
Kemp's Ridley Sea Turtle	*Lepidochelys kempii*	Low	FE
Flowering Plants			
Many-Flowered Grass-Pink	*Calopogon multiflorus*	Low	ST
Sand Butterfly Pea	*Centrosema arenicola*	Low	SE
Nodding Pinweed	*Lechea cernua*	Low	ST
Celestial Lily	*Nemastylis floridana*	Low	SE
Florida Beargrass	*Nolina atopocarpa*	Low	ST
Giant Orchid	*Pteroglossaspis ecristata*	Low	ST
Sand Dune Spurge	*Chamaesyce cumulicola*	Low	SE
Florida Goldenaster	*Chrysopsis floridana*	Low	SE
Sanibel lovegrass	*Eragrostis pectinacea var. tracyi*	Low	SE
Tampa Vervain	*Glandularia tampensis*	Low	SE
Pine Pinweed	*Lechea divaricata*	Low	SE
Smalls Flax	*Linum carteri var. smallii*	Low	SE
Florida Clapper Rail	*Rallus longirostris scottii*	Low	N
Scrub Bluestem	*Schizachyrium niveum*	Low	SE

*Status: FE means Federally Endangered; FT means Federally Threatened; SE means State Endangered; ST means State Threatened; N means Not Listed

4.3 Physical Resources

This section reviews the potential and known contamination sources and sites and the soil types found within the study area. Data for these resources was collected from FDEP, Sarasota County, and the US Department of Agriculture's Natural Resources Conservation Service. It also provides information related to utility companies, services, or facilities within the study area, which were identified using a combination of the Florida Sunshine 811 system and desktop reviews of aerial or street-level imagery.

4.3.1 Contamination

Data from the FDEP and Sarasota County regarding contaminated sites, abnormal spill events, brownfields, storage tanks, and Superfund sites was reviewed to determine if any potential contamination hazards exist within the study area. Three spill events and one storage tank contamination monitoring site were identified within the study area. All four of these are generally located within or near the Boca Royale Golf & Country Club. The storage tank contamination monitoring site is for non-retail petrol tanks located at the country club. The three spill events are sewer main line ruptures in the areas under development surrounding the Boca Royale Golf & Country Club. None of these contamination issues will impact the proposed alignment. There were no sites identified as regulated by the Resource Conservation and Recovery Act (RCRA).

4.3.2 Soils

The viability of road construction depends on the soil profile and its subgrade level properties. The soil characteristics in evaluating the soil conditions include mineralogical composition, grain size distribution, depth to rock, water table information, drainage characteristics, geologic origin, and presence of organic deposits. FDOT soils and foundation handbook suggest field engineers should provide detail subsurface conditions including the basic materials descriptions, detail drilling and sampling methods. The soil description and identification procedure should also involve visual examination and simple manual tests to identify soil characteristics, which should also be included in the material description. The material descriptions, classifications, and other information obtained during the subsurface explorations are heavily relied upon throughout the remainder of the investigation program and during the design and construction phases of a project. The manual further elucidates that the permeability and infiltration rate of the embankment materials should be estimated based on test results or knowledge of the material characteristics. This data, along with data on the depth to groundwater, can then be used in assessing the need for and in designing drainage systems, including pavement underdrains and retention, detention, and infiltration ponds (FDOT, 2000).

Table 4-4: Study Area Soils lists the soils found within the study area and their locations are shown in Figure 4-3. All of the soils identified within the study area are classified as hydric, based on the US Department of Agriculture's Natural Resources Conservation Service's Hydric Soils List.

Soils high in organic matter are not suitable for roadway foundations. Aggregates, which contain rocks and minerals, are the most suitable types for a long-lasting foundation. Prior to construction, testing should be conducted to identify the suitability of soil within the proposed alignment.

Table 4-4: Study Area Soils

Soil Type	Hydric Soil Type?	Total Area (Acres)
3. CYPRESS LAKE AND BRYNWOOD SOILS	Y	6.1
7. CASSIA FINE SAND	N	29.7
8. DELRAY FINE SAND, FREQUENTLY PONDED	Y	28.3
10. EAUGALLIE AND MYAKKA FINE SANDS	Y	612.9
22. HOLOPAW FINE SAND, FREQUENTLY PONDED	Y	212.8
25. MALABAR FINE SAND	Y	5.7
26. MANATEE LOAMY FINE SAND, FREQUENTLY PONDED	Y	6.6
31. PINEDA-PINEDA, WET, FINE SAND	Y	100.6
33. POMELLO FINE SAND	N	27.2
36. POPLE FINE SAND, WET	Y	33.1
50. CYPRESS LAKE-BRYNWOOD FINE SANDS	Y	3.9
53. CASSIA FINE SAND, URBAN	N	34.9
55. EAUGALLIE-MYAKKA FINE SANDS	Y	176.7
63. HOLOPAW FINE SAND, PONDED	Y	39.6
66. MANATEE LOAMY FINE SAND, PONDED	Y	14.6
68. ORISONO FINE SAND	Y	1.9
69. PINEDA FINE SAND	Y	20.0
71. POPLE FINE SAND, WET	Y	15.1

4.3.3 Utilities

A preliminary assessment was conducted to identify existing utility service lines or facilities within the study area so that any potential conflicts could be taken into consideration when determining and developing an optimal alignment. To accomplish this, a list of utility agencies/owners (UAOs) within a quarter mile of the proposed alignment was obtained by submitting a Sunshine 811 Design Ticket (#346206955). The Sunshine 811 service was used to provide a description and location of the proposed Keyway Road extension to each UAO and request additional information on their utilities within the area for planning and design purposes. Unlike Dig Tickets for construction activities, UOAs are not required by law to provide the specific location of their facilities in response to Design Tickets. Responses are optional. Table 4-5 shows the UAOs identified within the study area and any additional information provided in response to the Design Ticket request.

Figure 4-3: Soils

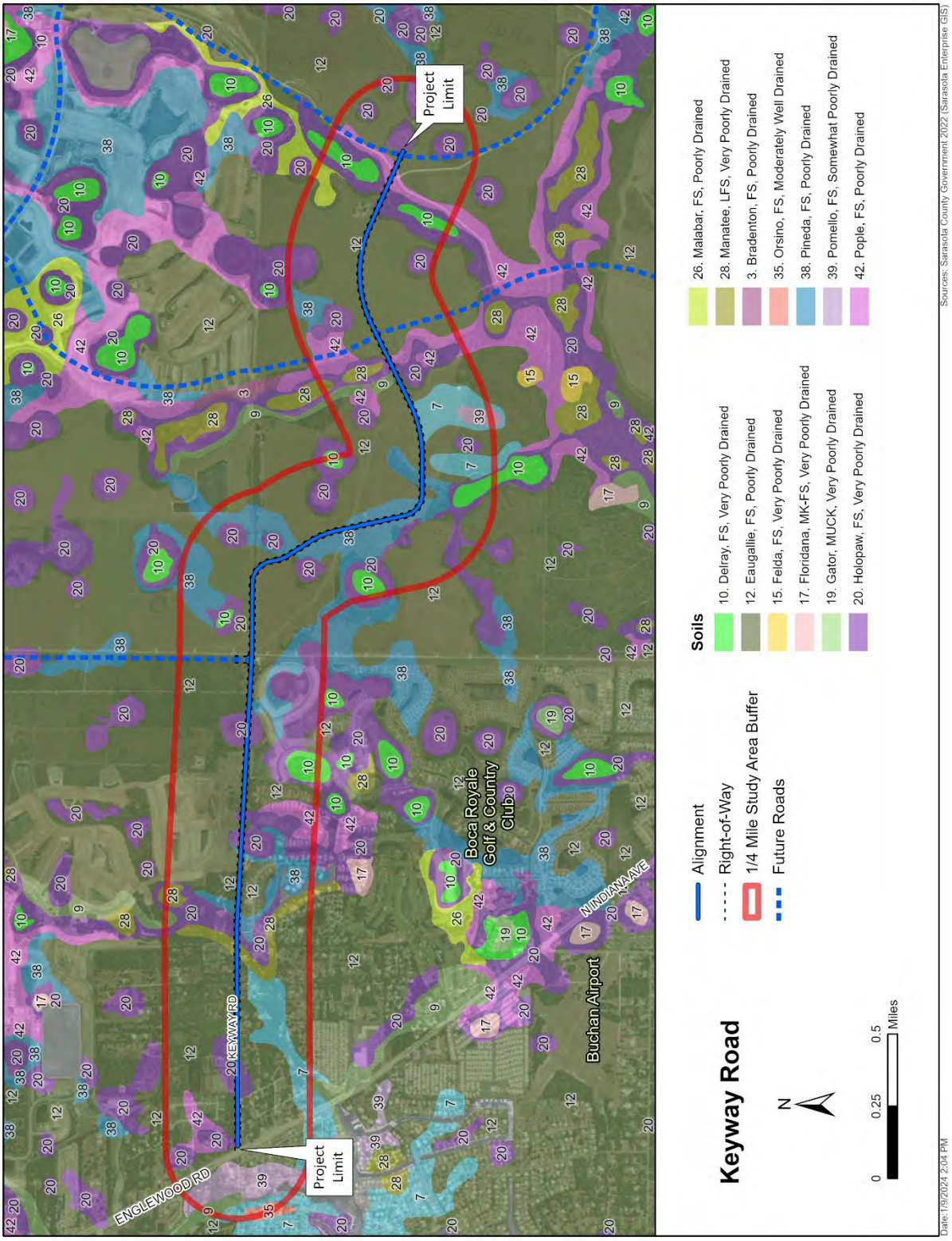


Table 4-5: Existing Utility Owners Within the Study Area

Agency/Owner	Utility Type	Response to Design Ticket*
Englewood Water District	Water	No Response – There are water lines in the area since the District map shows fire hydrants located along Keyway Rd but no information on the
Florida Power & Light - Sarasota	Electric	No Response
TECO Peoples Gas – Sarasota	Gas	No Conflict - Utility is outside of the requested work site.
Comcast	CATV	No Response
Frontier Communications	Communication Lines, CATV	No Response

**Responses to Sunshine811 Design Tickets are optional for utility owners*

Although contact information for each UAO was provided by the Sunshine 811 system, no additional coordination was conducted with UAOs as a part of this effort. Approximate locations and other information related to existing utilities was supplemented with a desktop review of available resources, such as publicly available map data and aerial imagery, where possible. There is a major utility conflict on the Keyway Road alignment west of Venice East Boulevard. A portion of the reserved right-of-way includes an overhead FPL utility easement with some large concrete poles. A two-lane alignment can be designed to fit within the corridor and remain outside of this utility easement. A four-lane alignment would require the removal of this utility corridor. Additional investigation, survey efforts, and coordination with UAOs will be needed as part of the design process to avoid or mitigate any potential unknown utility conflicts as the project is advanced and the alignment is refined.

5 ALTERNATIVE ANALYSIS AND DEVELOPMENT

5.1 Design Criteria

As discussed in the next section, an urban 35 mile per hour (MPH) Four-Lane Collector/Arterial typical section is being considered for the Keyway Road alignment from SR 776/Englewood Road to the future extension of West Villages Parkway. The Sarasota County Unified Development Code provides transportation technical details and design criteria for Sarasota County roadways. The general design control list and current design criteria for a 35 MPH urban Four-Lane Collector/Arterial typical section is listed in Tables 5-1 and 5-2.

Table 5-1: General Criteria Design Control List

Design Control	Urban Typical Section	Source
Functional Classification	Major Arterial	Sarasota County Comprehensive Plan
Context Classification	C3C – Suburban Residential	Sarasota County Completed Streets Implementation Strategies Plan
Proposed Access Management Classification	5	Sarasota County Access Management Regulations
Design/Posted Speed	40 mph	Sarasota County Completed Streets Implementation Strategies Plan
Design Year	2040	Sarasota County 2040 Future Thoroughfare Plan
Travel Lanes	4	Sarasota County Public Works
Facility within Urban Boundary	Yes	Sarasota County Comprehensive Plan
Stormwater Management Facilities	Closed	Sarasota County Unified Development Code

Table 5-2: Design Standards List for Four-Lane Collector/Arterial Typical Section

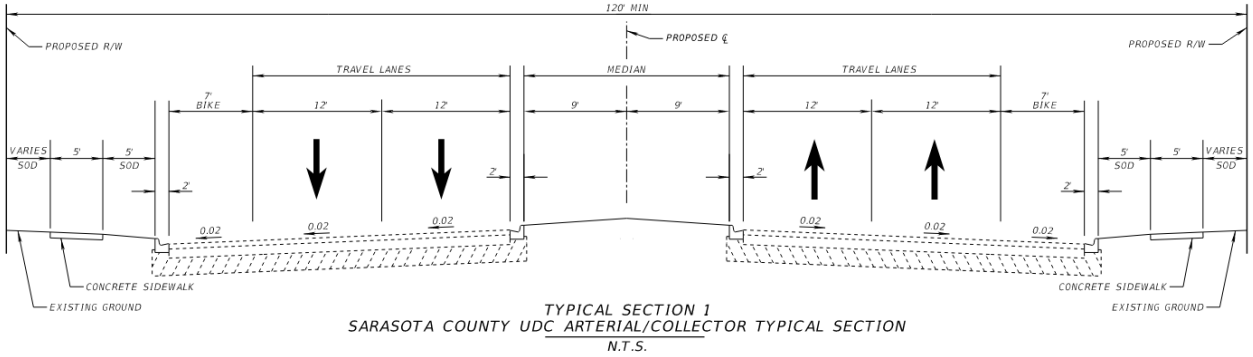
Design Control	Urban Typical Section
Typical Section Type	Urban
Travel Lane Width (ft.)	11 or 12 ft.
Curb & Gutter Width (ft.)	2 ft.
Sidewalk Width (ft.)	5 ft.
Bicycle Lane Width (ft.)	7 ft. buffered lane
Multiuse Path Width (ft.)	10 ft. min.
Right-of-Way Width (ft.)	120 ft. min.
Source: Sarasota County Unified Development Code	

5.2 Build Alternatives

Build Alternative 1

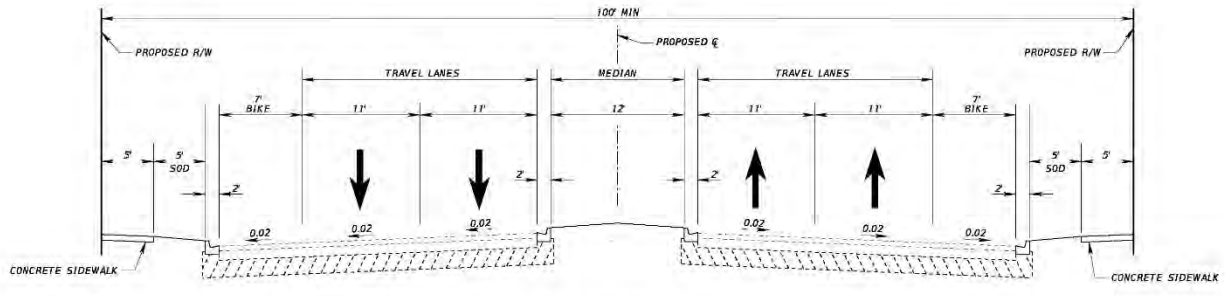
Using the design criteria noted in the previous section, two typical sections were developed for the extension of Keyway Road from Englewood Road to a future extension of West Villages Parkway. The first segment is depicted in Figure 5-1. It entails the construction of a 120-foot right-of-way four-lane collector/arterial road, with 12-foot-wide travel lanes, accompanied by two 7-foot bike lanes, and 5-foot sidewalks. The concept includes an 18-foot median and 5 feet of sod adjacent to the northbound and southbound travel lanes.

Figure 5-1: Keyway Road Typical Section Alternative 1



Build Alternative 2 involves the construction of a 100-foot right-of-way four-lane arterial road, depicted in Figure 5-2. This configuration is similar to Build Alternative 1; however, it features reduced travel lanes widths and a smaller median. The design includes 11-foot travel lanes and a 12-foot median, with 5-foot sidewalks on both sides.

Figure 5-2: Keyway Road Typical Section Alternative 2



5.3 Drainage Considerations

A desktop analysis was conducted to identify any potential stormwater management issues associated with the extension of Keyway Road. This effort concentrated on gathering data regarding the existing hydrologic and hydraulic features, documenting the occurrence and extent of Federal Emergency Management Agency (FEMA floodplains), reviewing Sarasota County's stormwater model, a review of all permits within the study area, as well as identifying permitting requirements with regard to water quality (treatment), water quantity (attenuation), special basin criteria, Outstanding Florida Waters, and nutrient impairments.

5.3.1 Data Collection

The study area is located in the South Coastal Drainage Watershed of the Manasota Basin, under the jurisdiction of the Southwest Florida Water Management District (SWFWMD). The topography is flat with existing ground elevations ranging from 5 to 15 feet. It was determined using FEMA FIRM documentation that Forked Creek and Gottfried Creek drain into Lemon Bay.

The study area is located within Water Body Identification Number (WBID) 2039, Forked Creek, and 2049, Gottfried Creek. Both are verified as impaired for dissolved oxygen and bacteria, while WBID 2039 is also impaired for copper by the Florida Department of Environmental Protection. Any discharges to an impaired WBID require a pollutant loading analysis to ensure that the post-development pollutant loadings do not exceed that of the existing condition.

Flood hazard areas shown on the FEMA Flood Insurance Rate Map (FIRM) were reviewed. These maps, which were accessed via the Sarasota County GIS website, identify portions of the study area as falling within the SFHA Zone AE. SFHA are defined as areas that have a 1-percent chance of flooding in any given year. Zone AE is defined as falling within the 100-year floodplain with base flood elevations determined. Within the study area, base flood elevations identified range from 10 to 13 feet. Floodplain compensation will be required for Zone AE encroachments.

There are numerous existing environmental resource permits within the study area. A comprehensive review of these permits is recommended during the design phase to determine the extent to which these permits will be impacted by the proposed extension.

5.3.2 Drainage Analysis

Stormwater management will be required for the extension of Keyway Road. Due to the amount of proposed development along the corridor, any future drainage analysis will need to consider these plans. General drainage patterns and the boundaries of the FIRMs are identified on the plan sheets along with potential culvert crossing locations in compliance with UDC Section 124-252, Stormwater Management Provisions. Below are drainage assumptions, observations, and processes regarding the Keyway Road alignment corridor.

- The drainage costs provided only included roadway collection (inlets) and conveyance (pipes). Storage ponds or discharge features, such as endwalls and MES, are not included in the cost estimate.
- The location of wetlands along the corridor were determined using Geographic Information System (GIS) shapefiles. The wetlands were assumed to be the low spots and the mid-point between low spots were assumed to be high spots. Inlet spacing was then calculated amongst these localized drainage areas.
- Special consideration should be given to the proposed Keyway Road alignment from stations 29+50 to 91+00. Keyway Road runs through Forked Creek and one of its tributaries at this station range, as seen on the plans.
- Ponds are assumed to be located at or near wetland locations.
- There will be at least one crossing of a large drainage ditch. A culvert may be needed so stormwater does not get cutoff from its discharge location.
- No subsurface utility engineering has taken place to date.

5.3.3 Floodplain Compensation Analysis

An initial floodplain compensation analysis was conducted, and is included in Appendix C. However, the data used for this analysis is out-of-date and should not be relied upon for future efforts. As the design of this roadway advances, a floodplain compensation analysis should be completed using the most up-to-date data and Sarasota County Stormwater ICPR files to demonstrate no adverse increases in flood stages for the 10, 25, and 100-year storm events. The Stormwater Management Provisions of UDC Section 124-252 must also be met.

5.4 Access Impacts and Relocation Potential

The preliminary optimal alignment will require dedication of public roadway right-of-way. Right-of-way may also be needed to accommodate storm water management facilities and floodplain compensation sites. However, the project is not anticipated to result in the relocation of any businesses, residences, or county-owned facilities. There are 36 parcels contiguous to the optimal alignment. Eight of these parcels are part of recently approved developments and may have already accounted for the corridor needs. Based on a GIS analysis of the concept plans relative to the parcel boundaries, 31 of the 36 parcels may be impacted by the proposed alignment. Of these 31, 19 parcels appear to require more than 0.1 acre, as indicated in Table 5-3. Impacts to existing access points are based on a desktop review of aerial images from Google Maps and may not represent current conditions.

Table 5-3: Potential Parcel Impacts

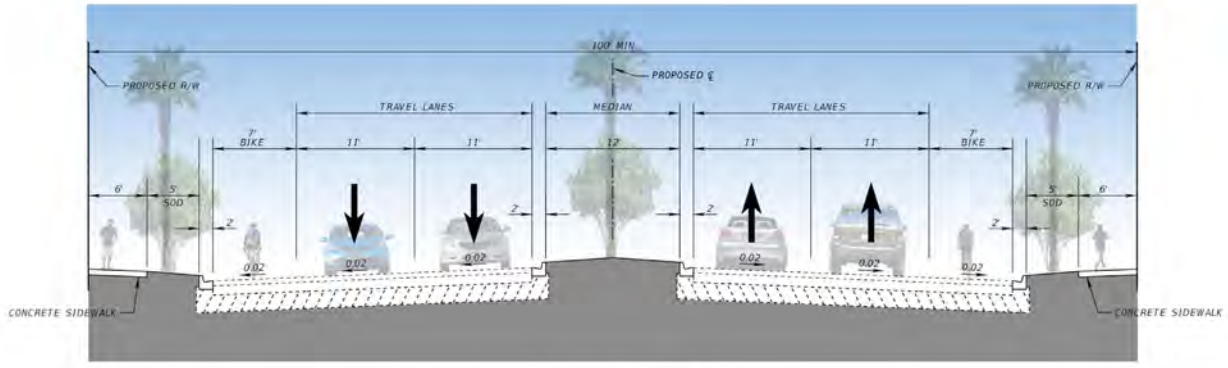
Parcel Id	Estimated Amount	Access Impact?	Notes
0481001010	3.3 acres	No	Currently undeveloped
0480150003	0.3 acres	Potential	Unimproved access from Keyway may require modification
0480160004	0.4 acres	Potential	Unimproved access from Keyway may require modification
0481001020	0.7 acres	No	Undeveloped
0482003020	2.5 acres	No	Undeveloped
0480150005	1.2 acres	No	Undeveloped
0481001000	5.9 acres	No	BeachWalk by Manasota Key project under development
0480110004	0.6 acres	Potential	Unimproved access from Keyway may require modification
0480110003	0.5 acres	No	Undeveloped
0480160005	0.4 acres	Potential	Unimproved access from Keyway may require modification
0480160002	0.3 acres	Potential	Unimproved access from Keyway may require modification
0480160003	0.3 acres	No	
0485010002	0.2 acres	Potential	Driveway modification
0480160001	0.5 acres	Potential	Driveway modification
0480150001	0.5 acres	Potential	Driveway modification
0825001000	9.6 acres	No	Winchester Ranch, right-of-way preserved
0827001000	13.8 acres	No	Winchester Ranch, right-of-way preserved
0805001000	3.5 acres	No	Wellen Park, Village I

6 OPTIMAL ALIGNMENT

The proposed roadway will be designed as a four-lane arterial road, adhering to the county's Unified Development Code (UDC). The alignment will extend 3.10-miles to the future West Villages Parkway, comprising two different segments from Englewood Road or SR 776 to the current terminus at Keyway Road. Both the widened segment and the extension are designed with a proposed speed of 40 mph. Concept Plans for Keyway Road are provided in Appendix B.

The new roadway will feature four 11-foot travel lanes, a 12-foot median, 7-foot bike lanes, and 6-foot sidewalks on both sides. The construction will take place within a 100' right-of-way corridor reserved by the Boca Royale East and Beachwalk developments for the future extension of Keyway Road. Figure 6-1 depicts the proposed typical section of the optimal alternative.

Figure 6-1: Keyway Road Optimal Alignment



Keyway Road

SR 776 (Englewood Road) to West Villages Parkway

6.1 Impact Summary

There are no identified community resources, cultural resources or contaminated sites within the study area. Due to the number of wetlands in the study area and the proposed developments that limit the alignment alternatives, some impacts to wetlands are anticipated. Another potential impact is to the existing Florida Power and Light utility lines located on the north side of the proposed alignment (west of East Venice Boulevard), which will be impacted by the proposed four-lane roadway. Table 6-1 quantifies the impacts associated with this alignment based on GIS analysis.

Federal, state, and local agencies typically require documentation of avoidance and minimization measure evaluations. By selecting an efficient, simple, best-fit alignment, impacts to resources such as wetlands, mesic hammocks, and Grand Trees will be avoided. As the project progresses to design, steps should be taken to accommodate the necessary setbacks for identified preservation areas. Since much of the eastern portion of the study area is a preservation area, it is anticipated that mitigation for impacts to certain habitat types will be needed.

Table 6-1: Environmental Impact Summary

RESOURCE	AMOUNT IMPACTED BY ALIGNMENT	ADDITIONAL INFORMATION
NATURAL ENVIRONMENT		
Agricultural lands	24.3 acres	
Wildlife habitat (Upland Forest)	5.8 acres	Desktop review; field assessment should be completed as part of the design phase if deemed necessary.
Wetlands and surface waters	5.8 acres	5.6 acres of wetland + 0.2 acres of waterbody
Floodplains	18.7 acres	This analysis needs to be revisited during design.
BUILT ENVIRONMENT		
Utility agency/owner	TBD	A four-lane road will impact the FPL power lines on the north side of the proposed alignment.
Relocations	0	
Parcels	31 parcels	Based on concept plans; will need to be reevaluated during the design phase.
Additional land	45.2	
CULTURAL RESOURCES		
Historic structures, bridges, & cemeteries	0	No such resources identified.
Archaeological sites	0	
Cultural resource groups	0	
CONTAMINATED SITES		
RCRA sites	0	No such resources identified.
Cultural resources	0	

Permits are typically prepared when 60% of design plans are completed. At that time, impacts can be assessed, coordination with permitting agencies can occur, and if necessary, mitigation options can be evaluated. Impacts on the adjacent lands will be evaluated as design progresses. Impacts to these features should be offset when access management details are determined.

6.2 Construction Cost

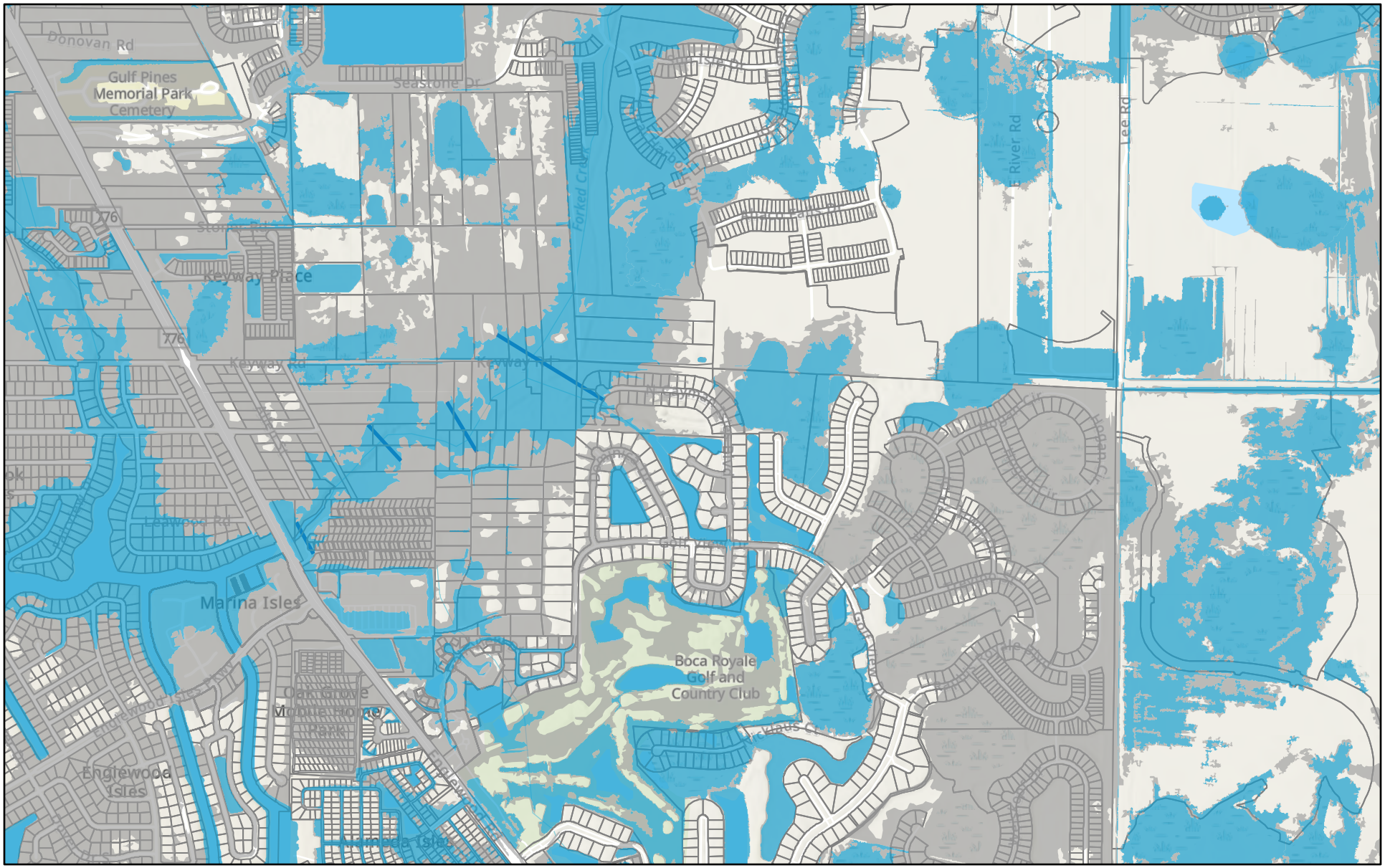
An estimate of the cost for constructing the recommended optimal roadway alignment of Keyway Road from Englewood Road to West Villages Parkway is approximately $48.05 million in 2023 dollars, based on FDOT's average unit cost for the Sarasota market area from December 1, 2022, through November 30, 2023. This includes costs for maintenance of traffic (8 percent) and mobilization (10 percent), but not final design and construction, engineering, and inspection. The estimate does not include real property/right-of-way acquisition costs. A contingency of 7 percent is included. The details of the cost estimate are provided in Table 6-2 below. Detailed cost estimate spreadsheets are provided in Appendix D.

Table 6-2: Preliminary Estimate of Total Construction Costs

Cost Component	Cost (in millions)
Roadway	$37.00
Signing & Pavement Markings	$0.33
Maintenance of Traffic	$3.04
Signalization	$0.37
ITS	$0.37
Mobilization	$3.80
Contingency	$3.14
Preliminary Estimate of Total Construction Costs	***$48.05***

APPENDIX A: FIRM MAPS

Sarasota County Flood Map



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1:18,056

0 0.13 0.25 0.5 mi

0 0.2 0.4 0.8 km

FEMA Flood Zone

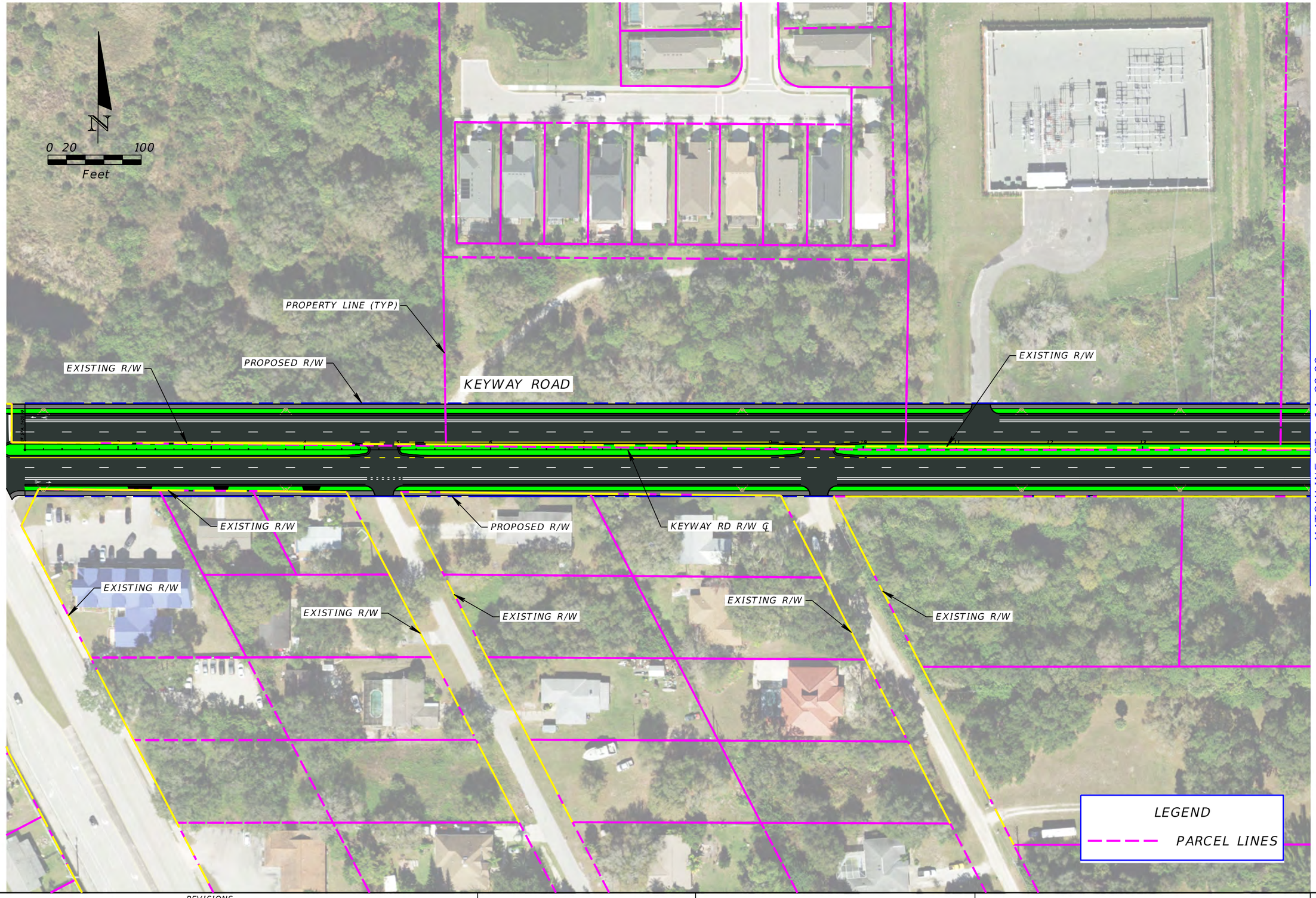
- Zone AE
- 0.2% Annual Chance Flood

- Parcel
- FEMA Base Flood Elevation

Esri Community Maps Contributors, University of South Florida, Charlotte County, Sarasota County GIS, FDEP, Esri, TomTom, Garmin, SafeGraph,

Sarasota County GIS Flood Locator App

APPENDIX B: CONCEPT PLANS



REVISIONS			
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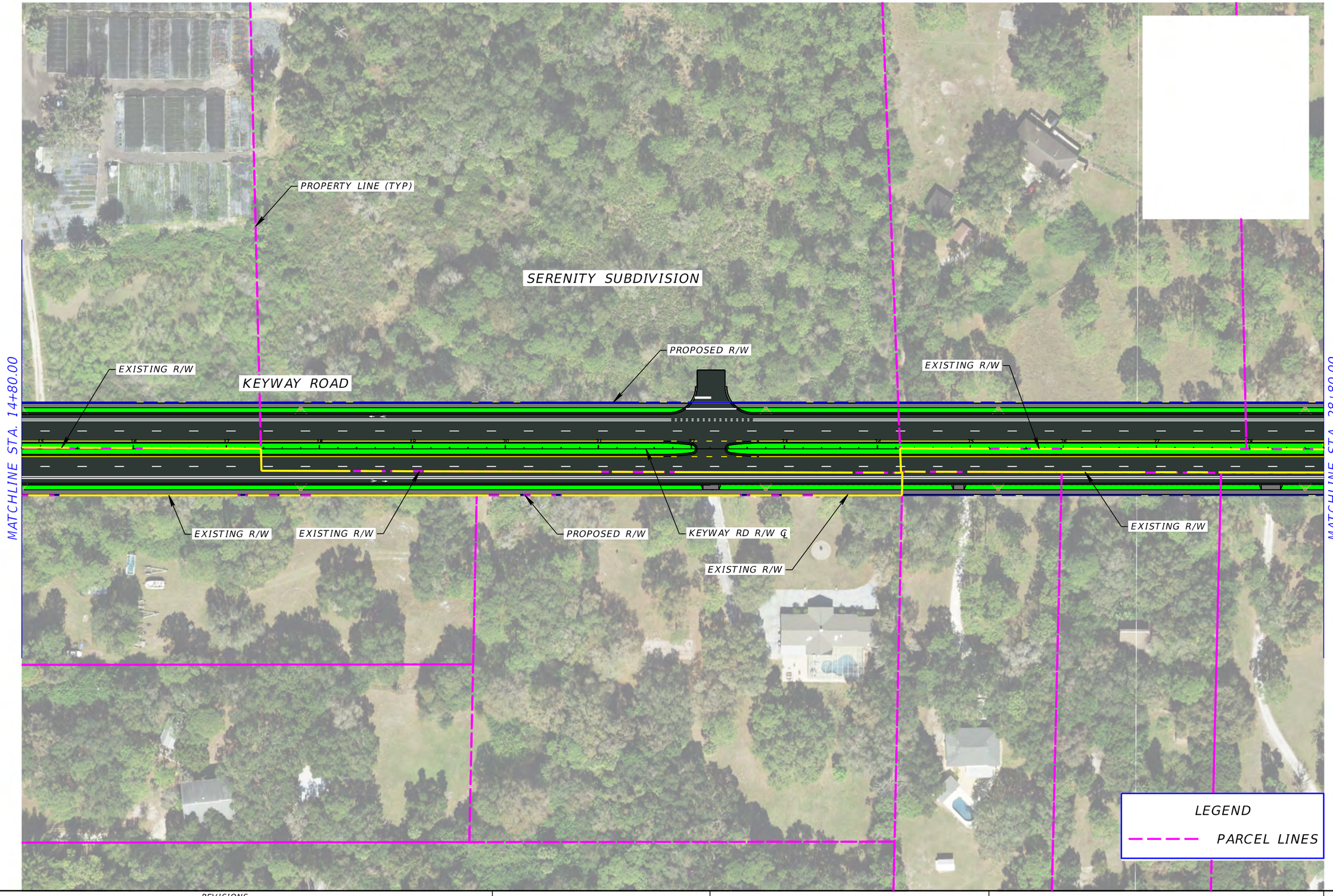
225 WATER STREET, SUITE 1510
JACKSONVILLE, FL 32202

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 1



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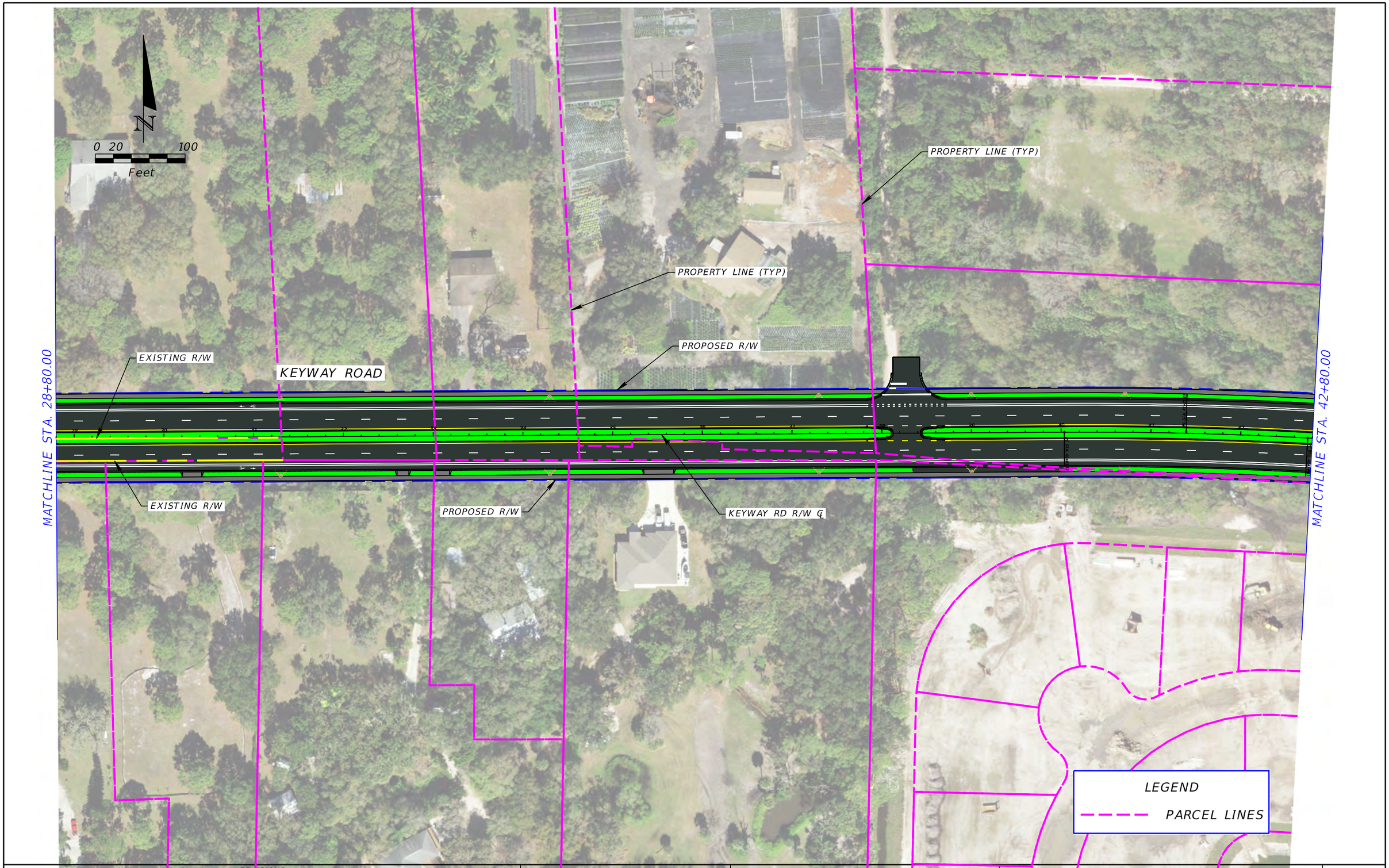
SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 2



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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

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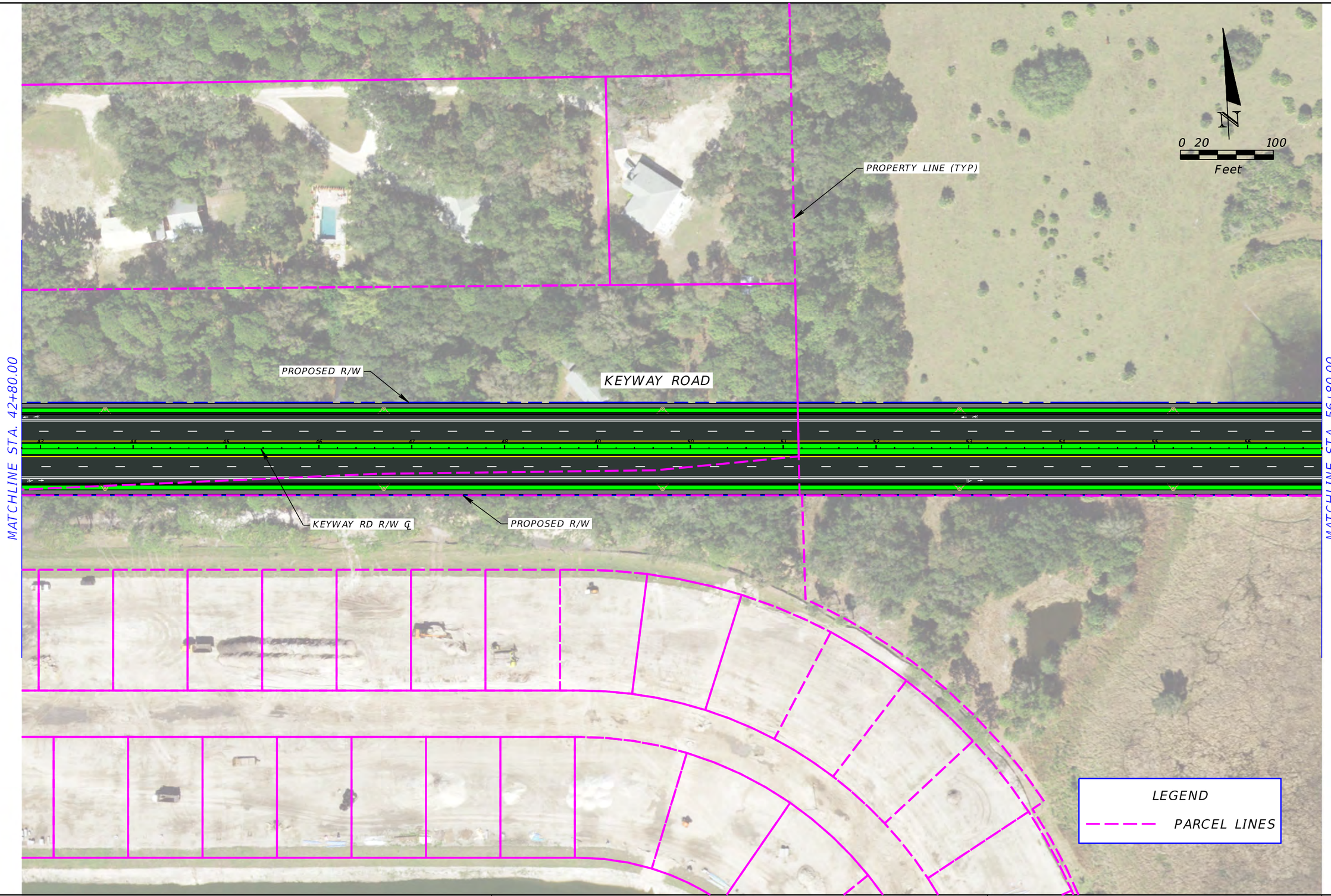

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

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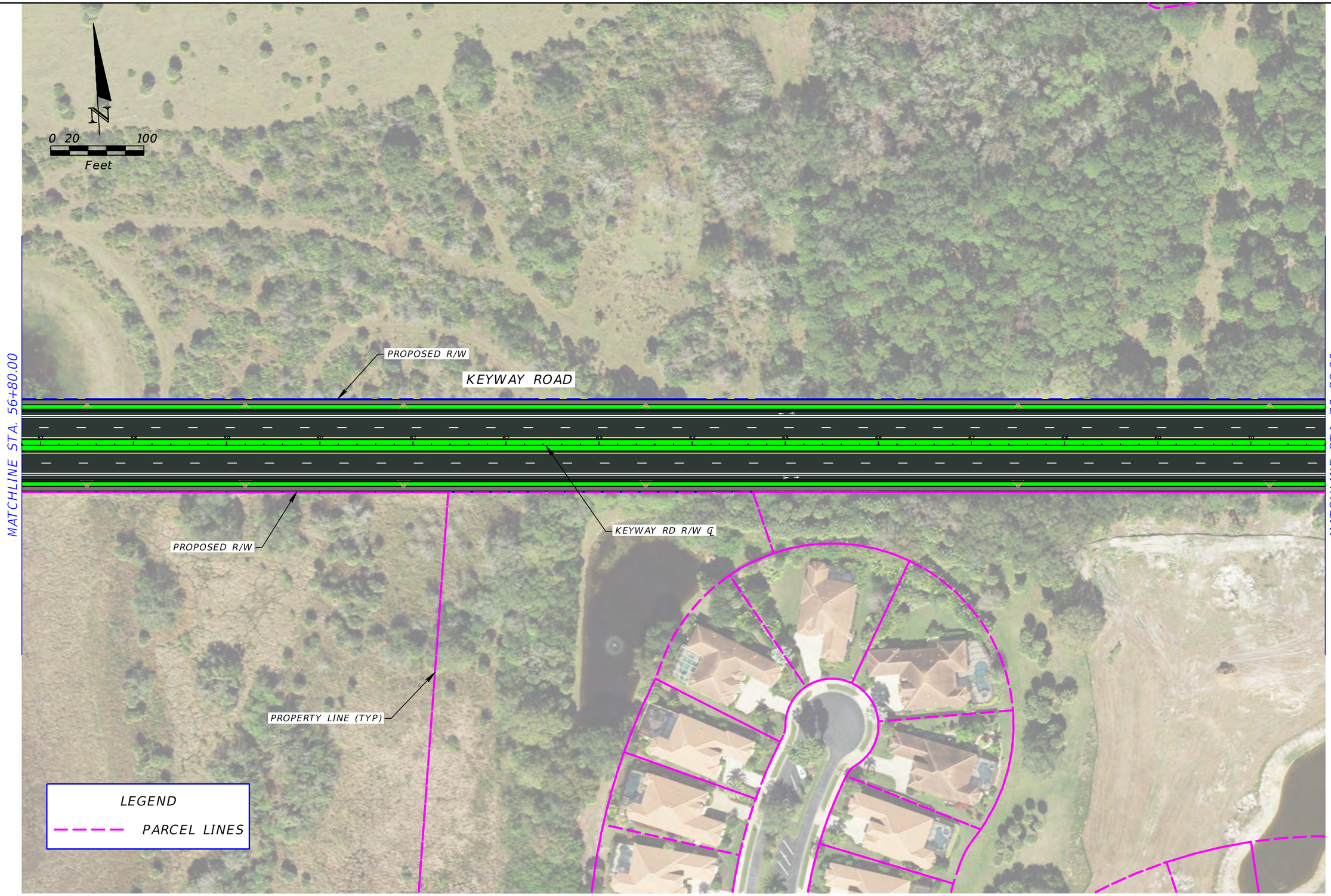

REVISIONS			
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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KEYWAY ROAD CONCEPTS

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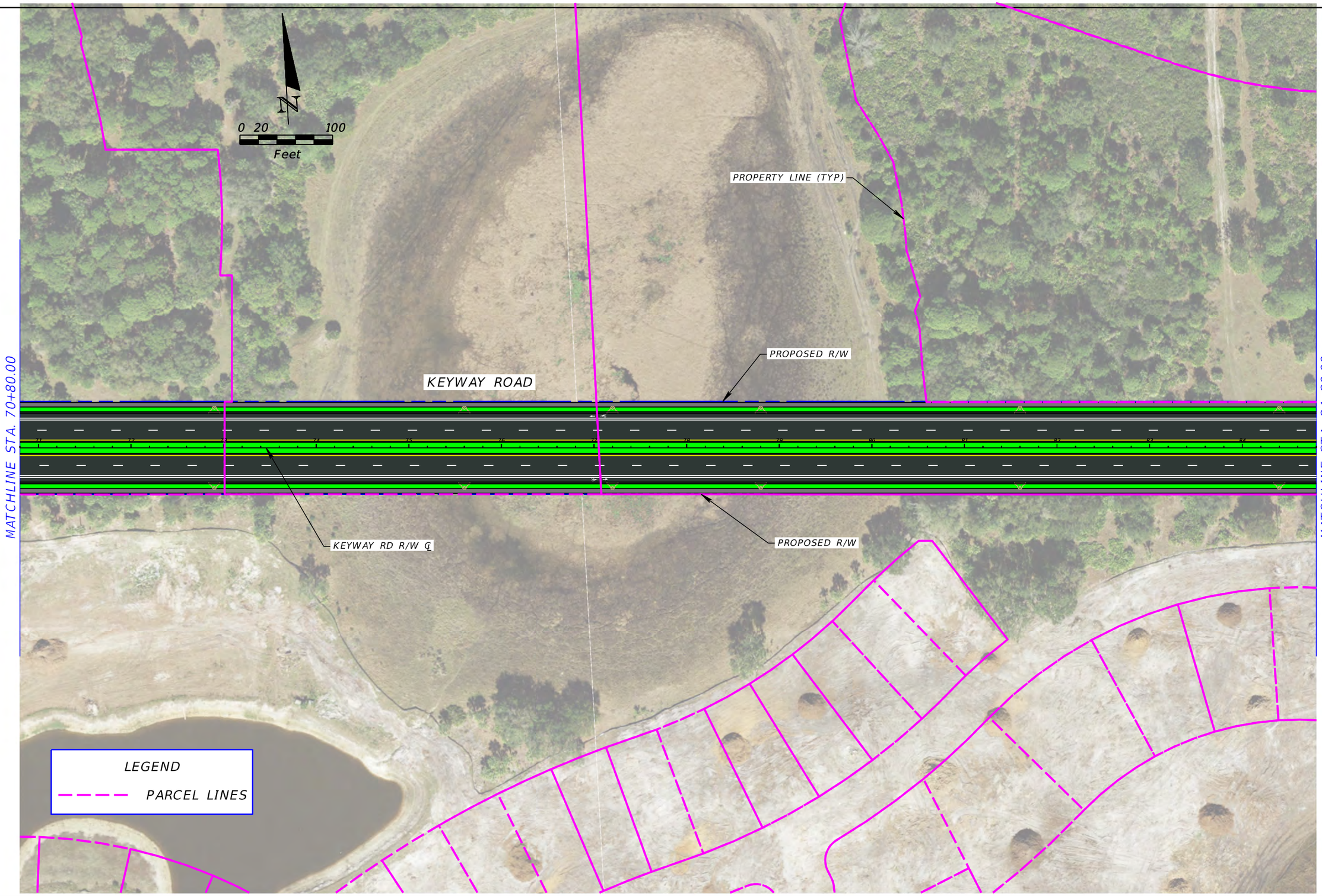

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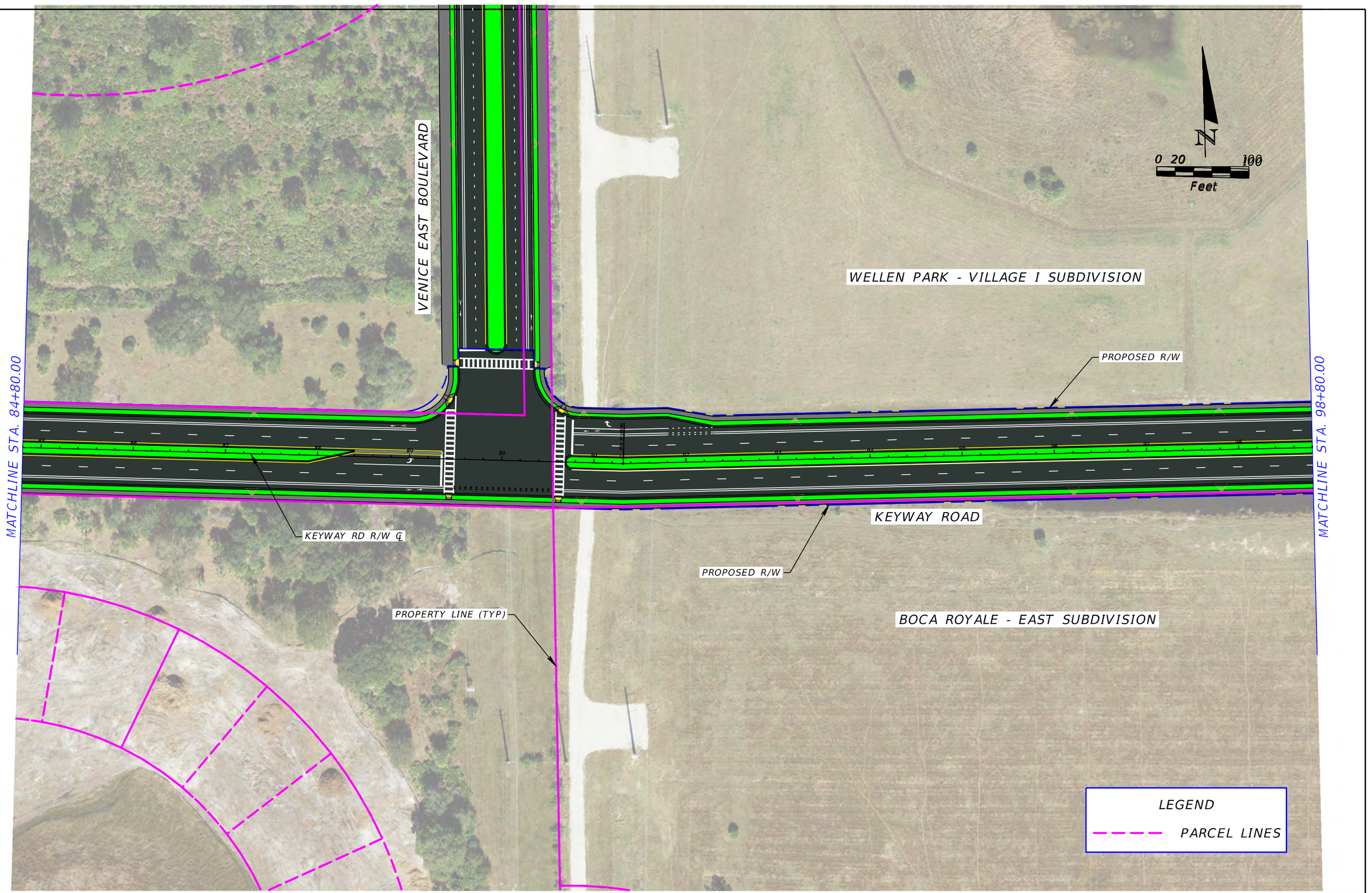
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 6



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

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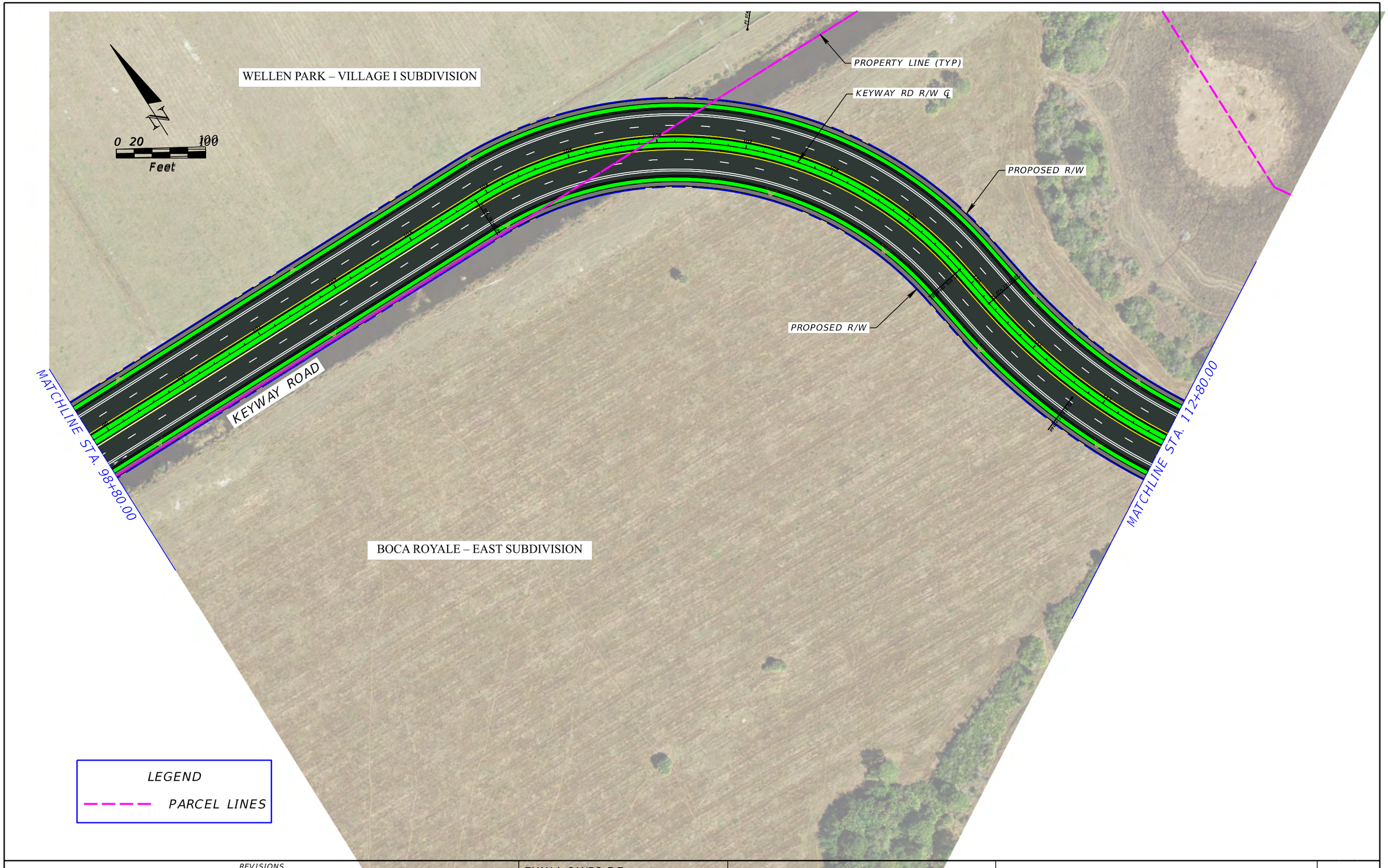


REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

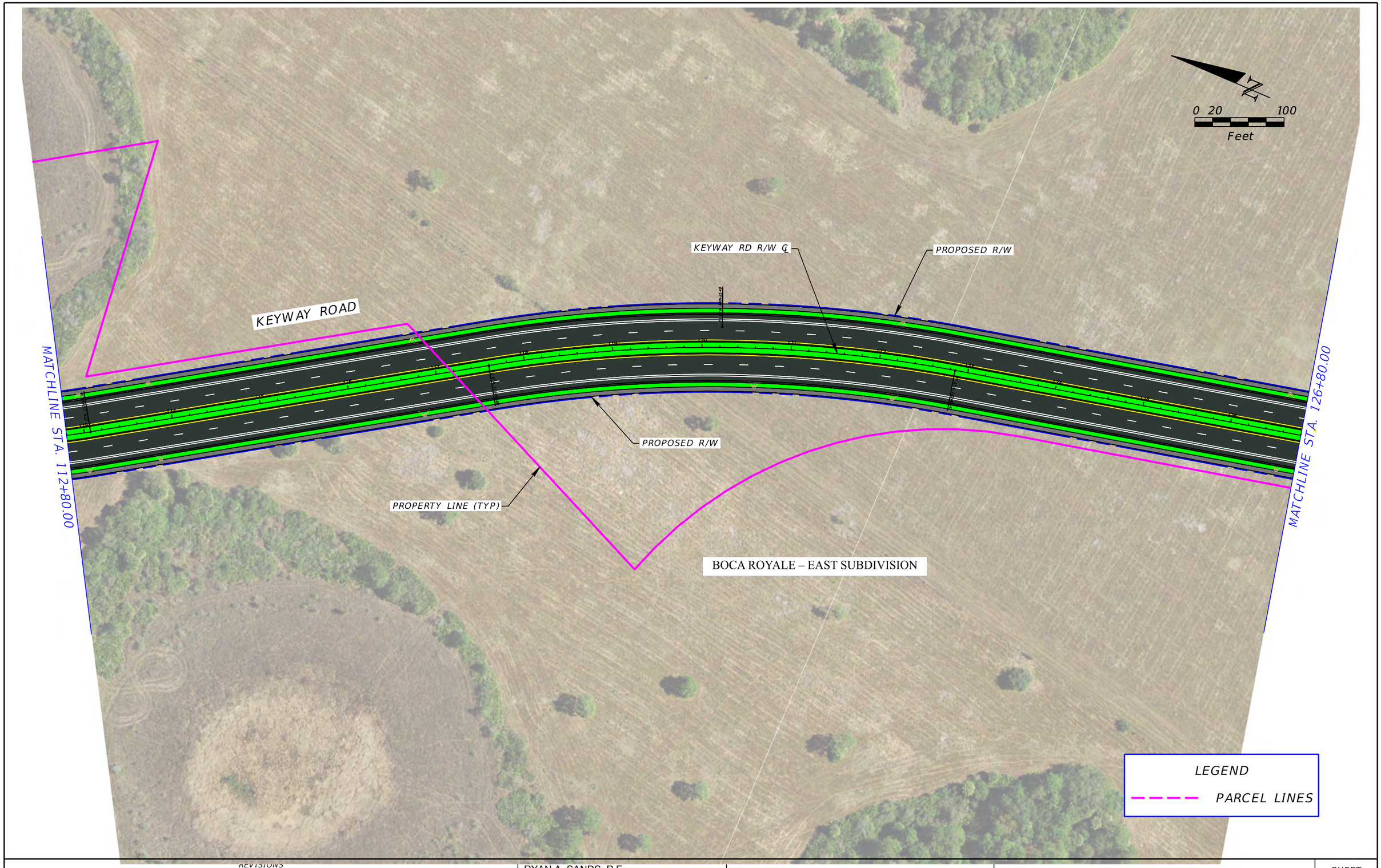
RYAN A. SANDS, P.E.
P.E. NO.: 87852
ALFRED BENESCH & COMPANY
225 WATER STREET, SUITE 1510
JACKSONVILLE, FL 32202

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 8



REVISIONS			
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P.E. NO.: 87852
ALFRED BENESCH & COMPANY
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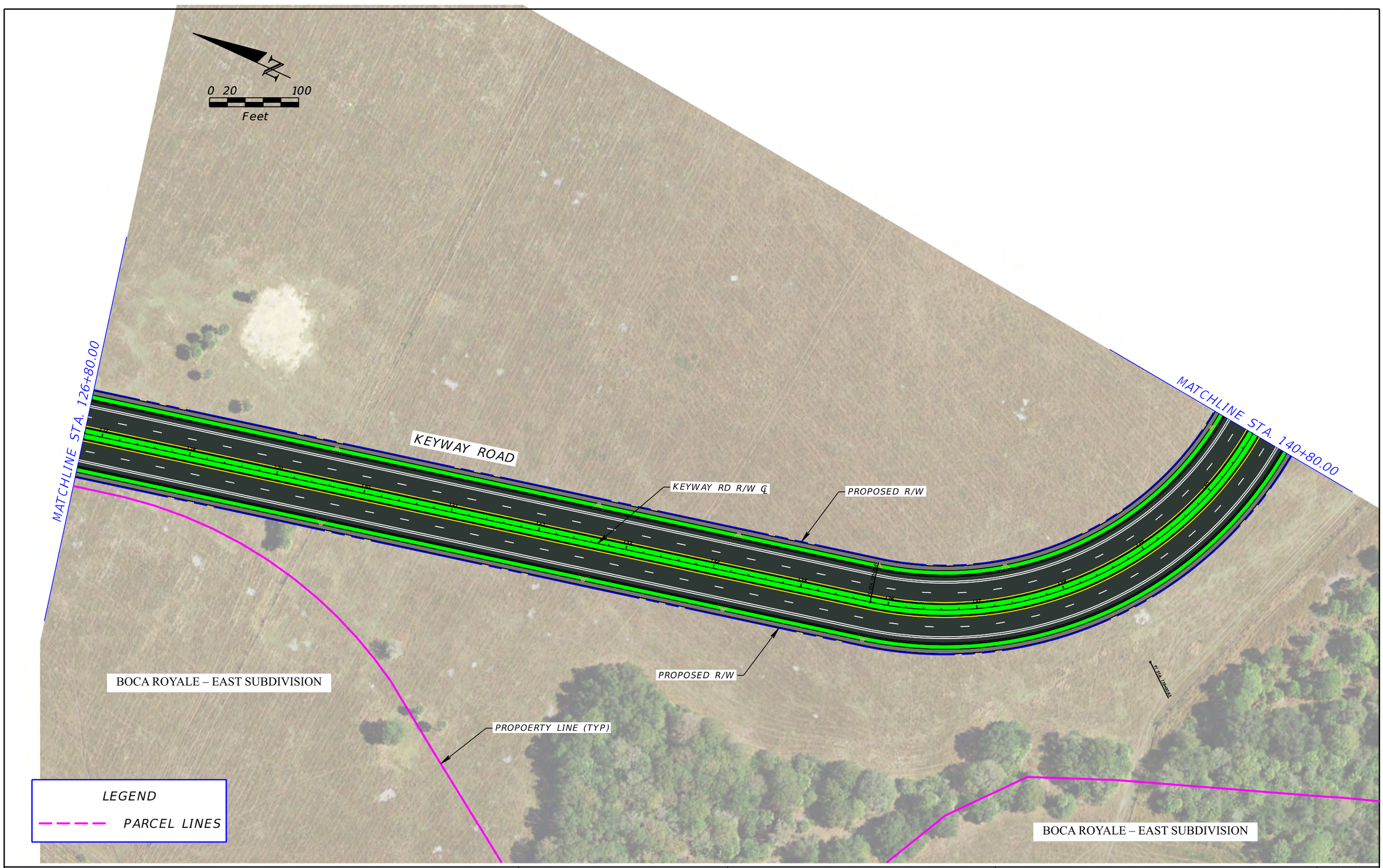
JACKSONVILLE, FL 32202

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 9



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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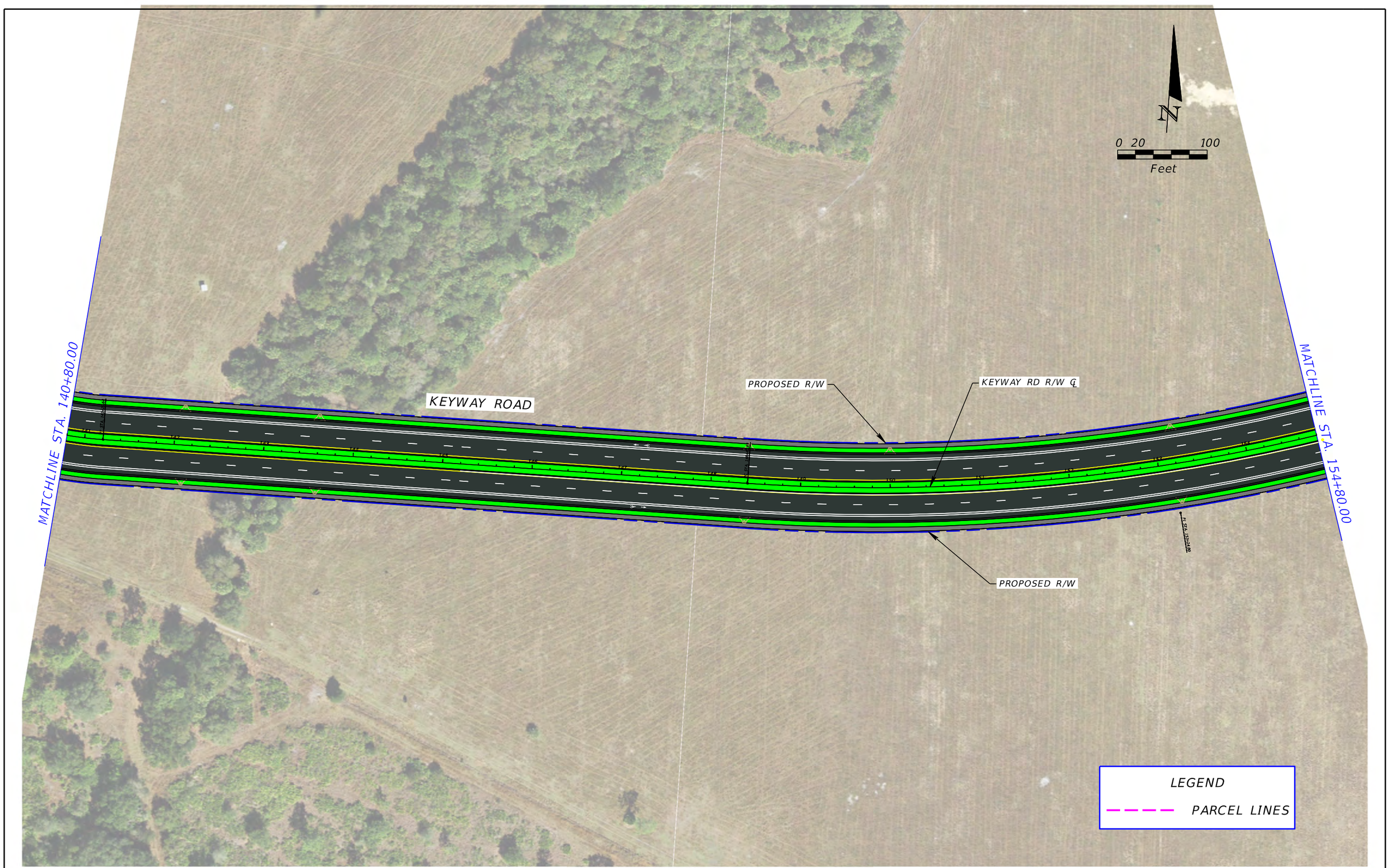
ALFRED BENESCH & COMPANY
225 WATER STREET, SUITE 1510
JACKSONVILLE, FL 32202

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 10



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

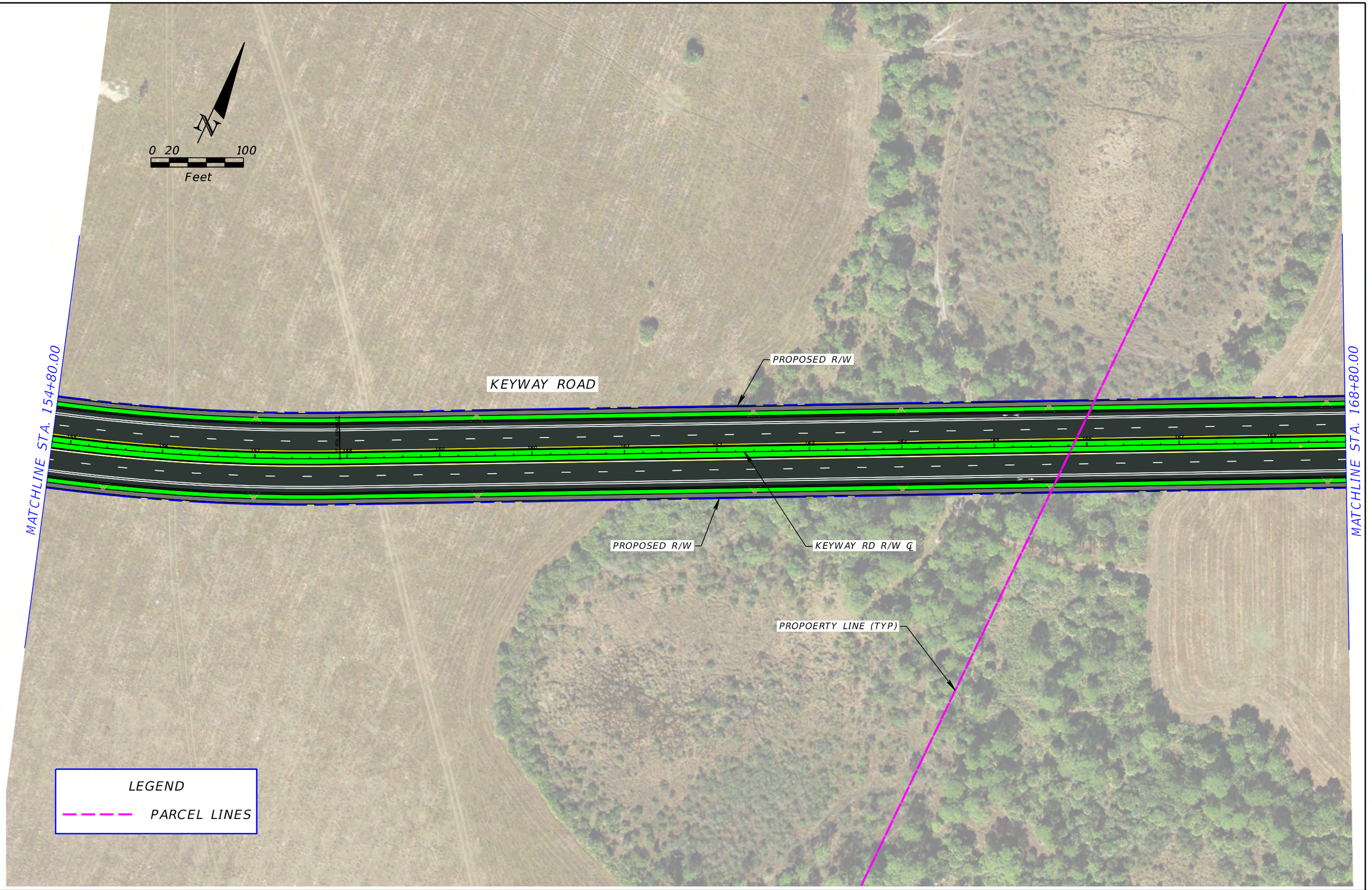
RYAN A. SANDS, P.E.
P.E. NO.: 87852
ALFRED BENESCH & COMPANY
225 WATER STREET, SUITE 1510
JACKSONVILLE, FL 32202

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 11



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

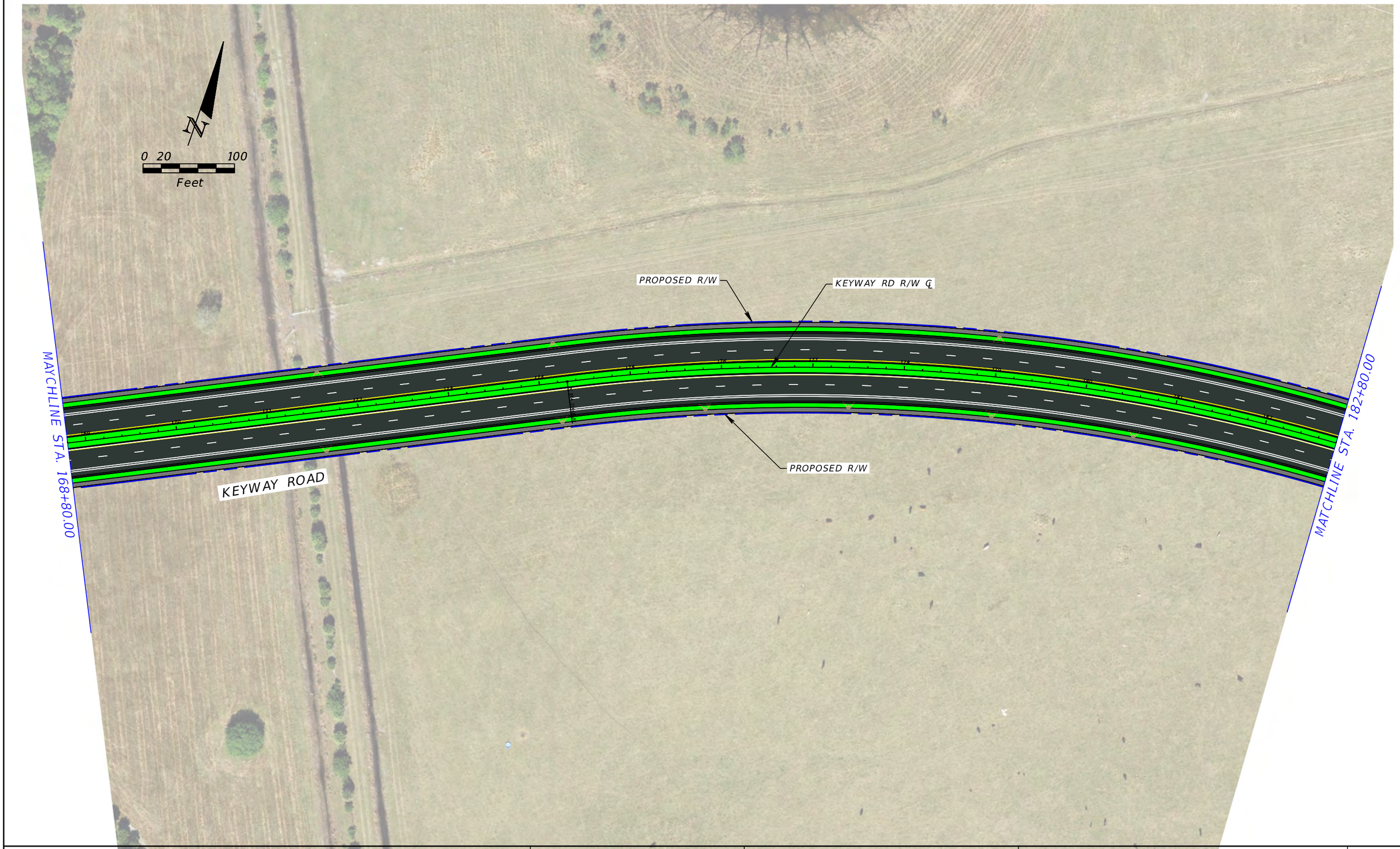
RYAN A. SANDS, P.E.
P.E. NO.: 87852
ALFRED BENESCH & COMPANY
225 WATER STREET, SUITE 1510
JACKSONVILLE, FL 32202

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 12



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

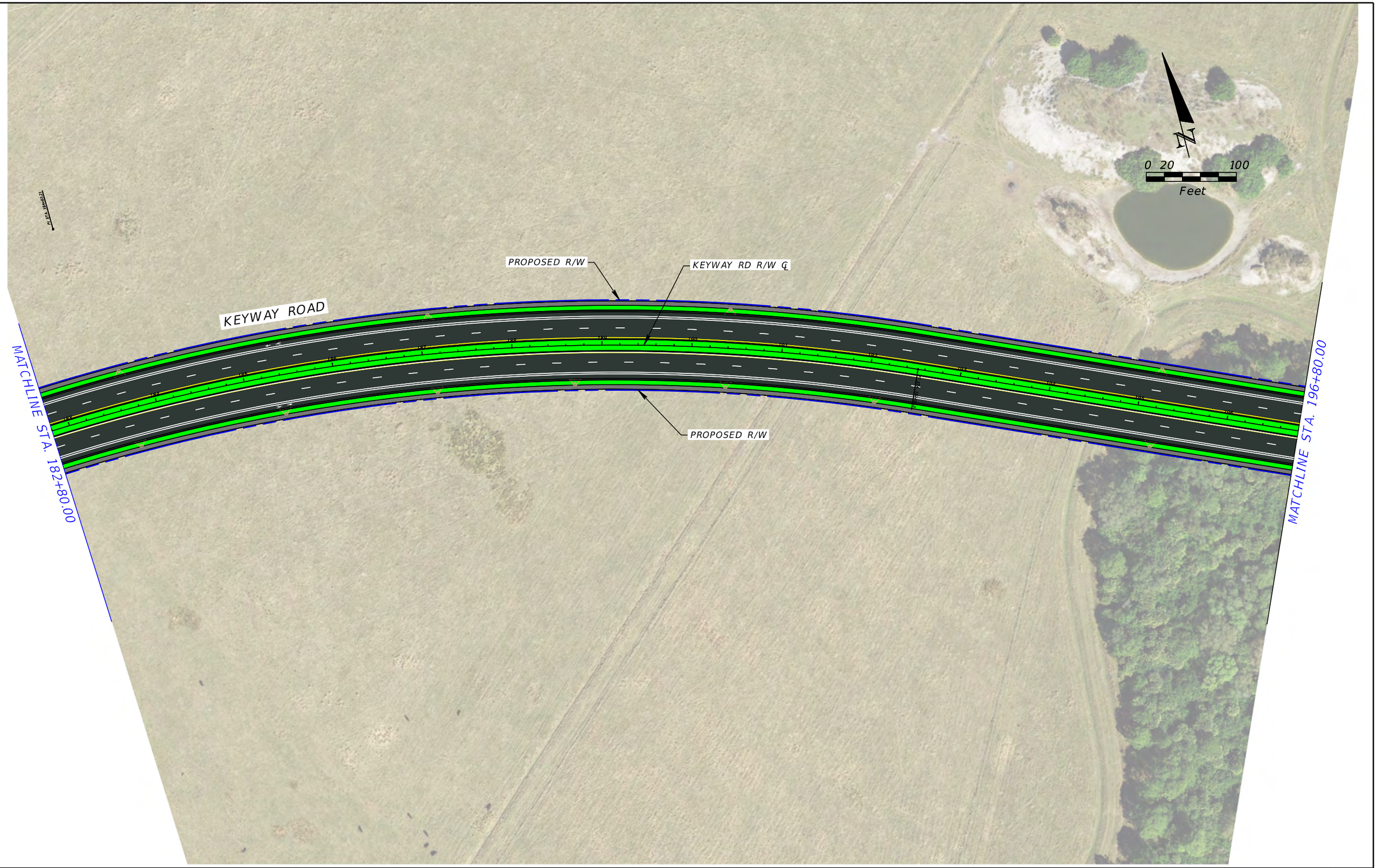
RYAN A. SANDS, P.E.
P.E. NO.: 87852
ALFRED BENESCH & COMPANY
225 WATER STREET, SUITE 1510
JACKSONVILLE, FL 32202

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 13



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

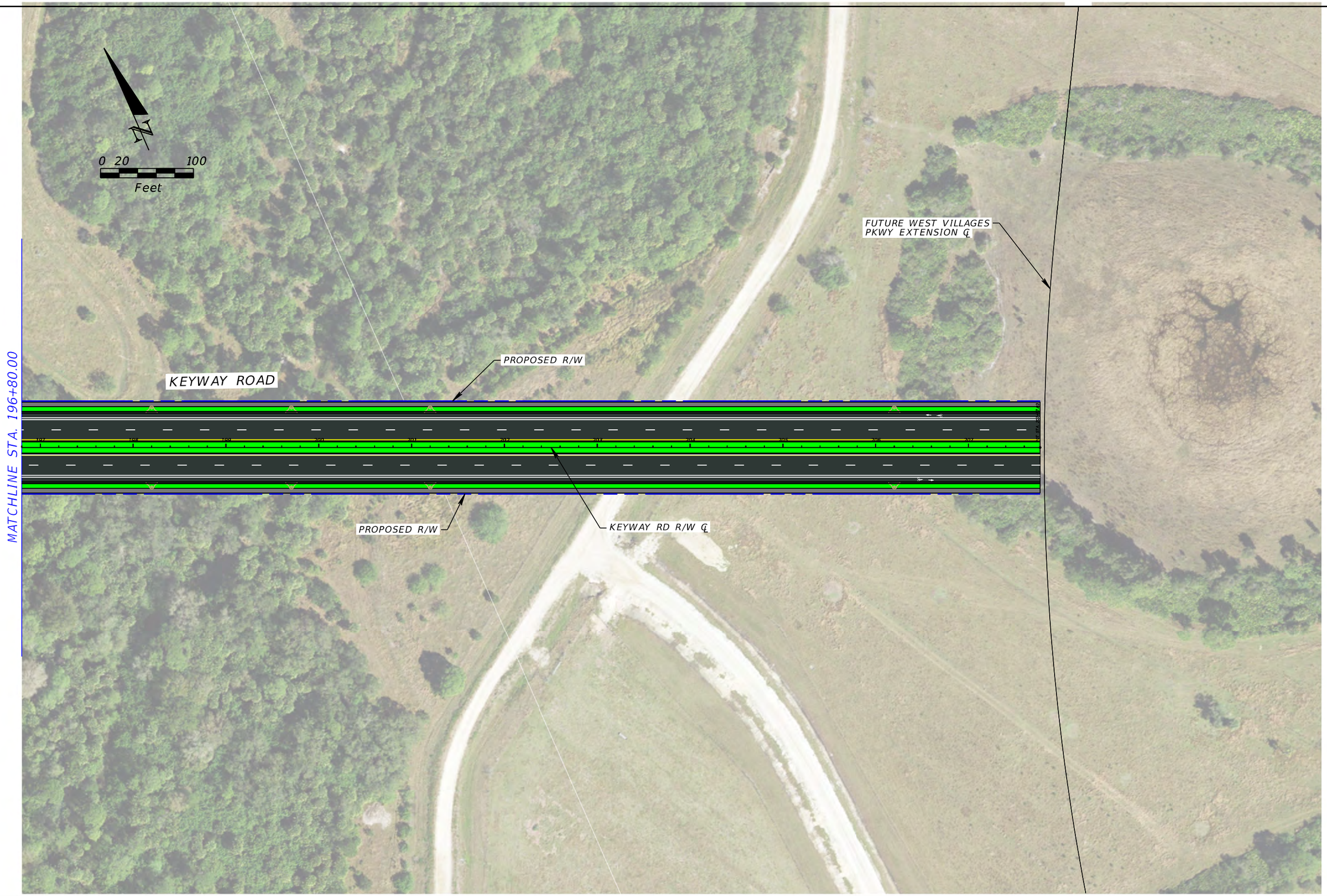
RYAN A. SANDS, P.E.
P.E. NO.: 87852
ALFRED BENESCH & COMPANY
225 WATER STREET, SUITE 1510
JACKSONVILLE, FL 32202

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 14



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RYAN A. SANDS, P.E.
P.E. NO.: 87852
ALFRED BENESCH & COMPANY
225 WATER STREET, SUITE 1510
JACKSONVILLE, FL 32202

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 15

Sarasota County

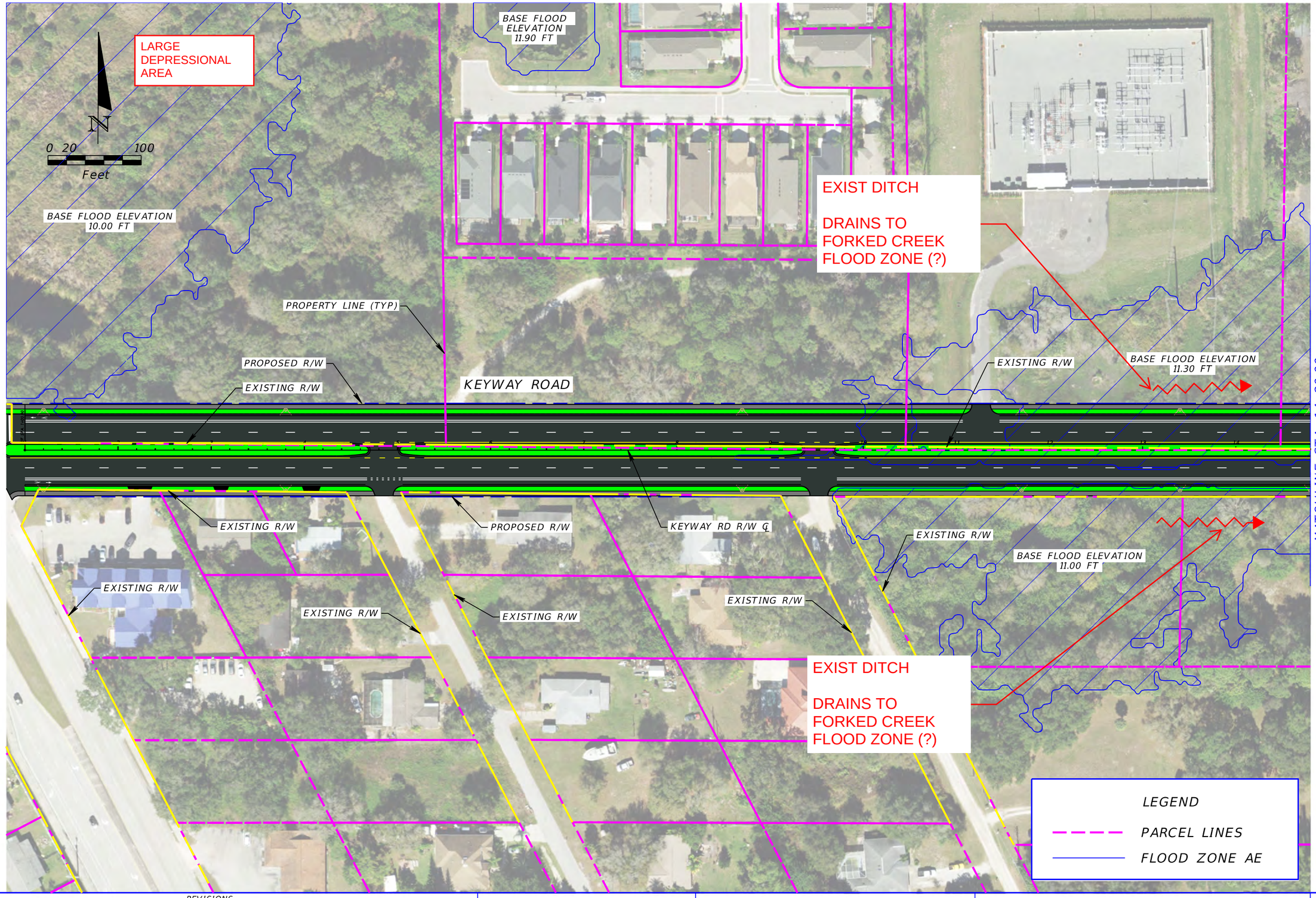
APPENDIX C: FLOODPLAIN COMPENSATION ANALYSIS

For the design phase, floodplain compensation sites (FPC) should be located adjacent to and hydraulically connected to the impact area. The Sarasota County Stormwater ICPR Lemon Bay drainage model was reviewed to determine initial impacts to the pending Zone AE floodplain. Twenty Zone AE impacts are identified on the plans and are summarized in Table C-1.

Table C-1: Zone AE Impacts

FPC #	Base Flood Elevation	Impacted ROW (Sq. ft)
1	10.00	270
2	11.30	51,880
3	11.00	12,642
4	10.70	5,163
5	9.50	2,523
6	9.90	72,253
7	10.80	113,141
8	10.70	3,294
9	12.80	77,790
10	12.80	114,615
11	12.30	75,315
12	13.10	44,548
13	12.90	7,471
14	12.30	57,404
15	11.50	36,108
16	11.60	16,390
17	11.70	25,484
18	10.20	26,014
19	11.00	32,335
20	11.00	40,765
	Total	**815,405**

Note: This analysis was completed using out-of-date floodplain information and should be redone in its entirety in the design phase.



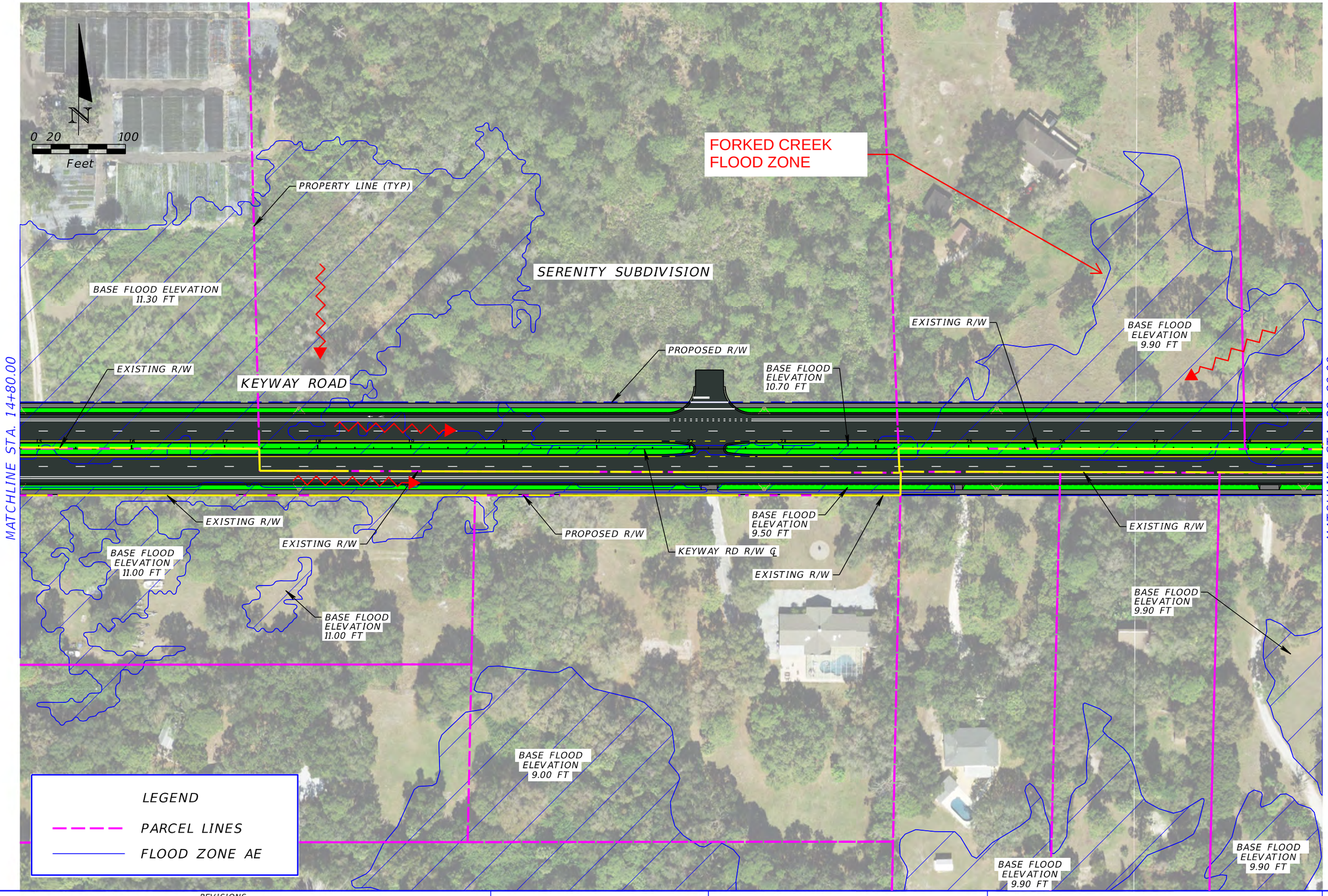
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 1



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 2

GOOGLE STREET VIEW IMAGERY OLD- CAN'T TELL IF EXISTING ROAD IS SUPPOSED TO BE PAVED OR DIRT

N

0 20 100
Feet

PROPERTY LINE (TYP)

PROPERTY LINE (TYP)

BASE FLOOD ELEVATION 10.80 FT

END OF EXIST. ROAD

EXISTING R/W

KEYWAY ROAD

PROPOSED R/W

MATCHLINE STA. 28+80.00

MATCHLINE STA. 42+80.00

EXISTING R/W

PROPOSED R/W

KEYWAY RD R/W ℄

RECOMMENDED: PIPES CONNECTING BOTH

BASE FLOOD ELEVATION 10.80 FT

BASE FLOOD ELEVATION 9.90 FT

LEGEND

PARCEL LINES

FLOOD ZONE AE

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

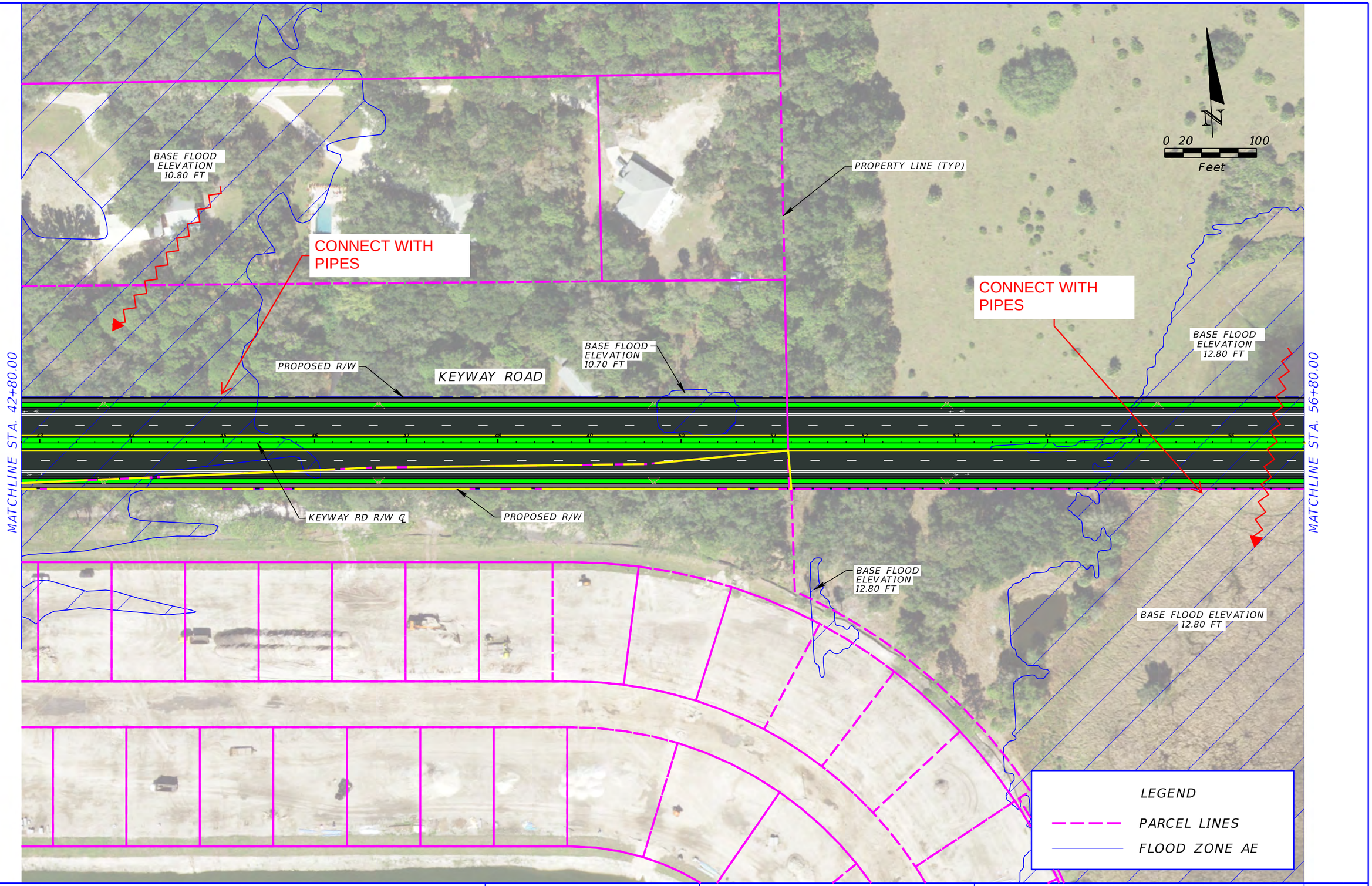
SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 3

ivaquer 6/13/2024 6:52:16 AM Default Y:\Florida\I8200000S\I8200023.01_Sarasota_Co_ROW\Eng_Docs\Roadway\Plans\Keyway Rd\PLANRD03.dgn



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

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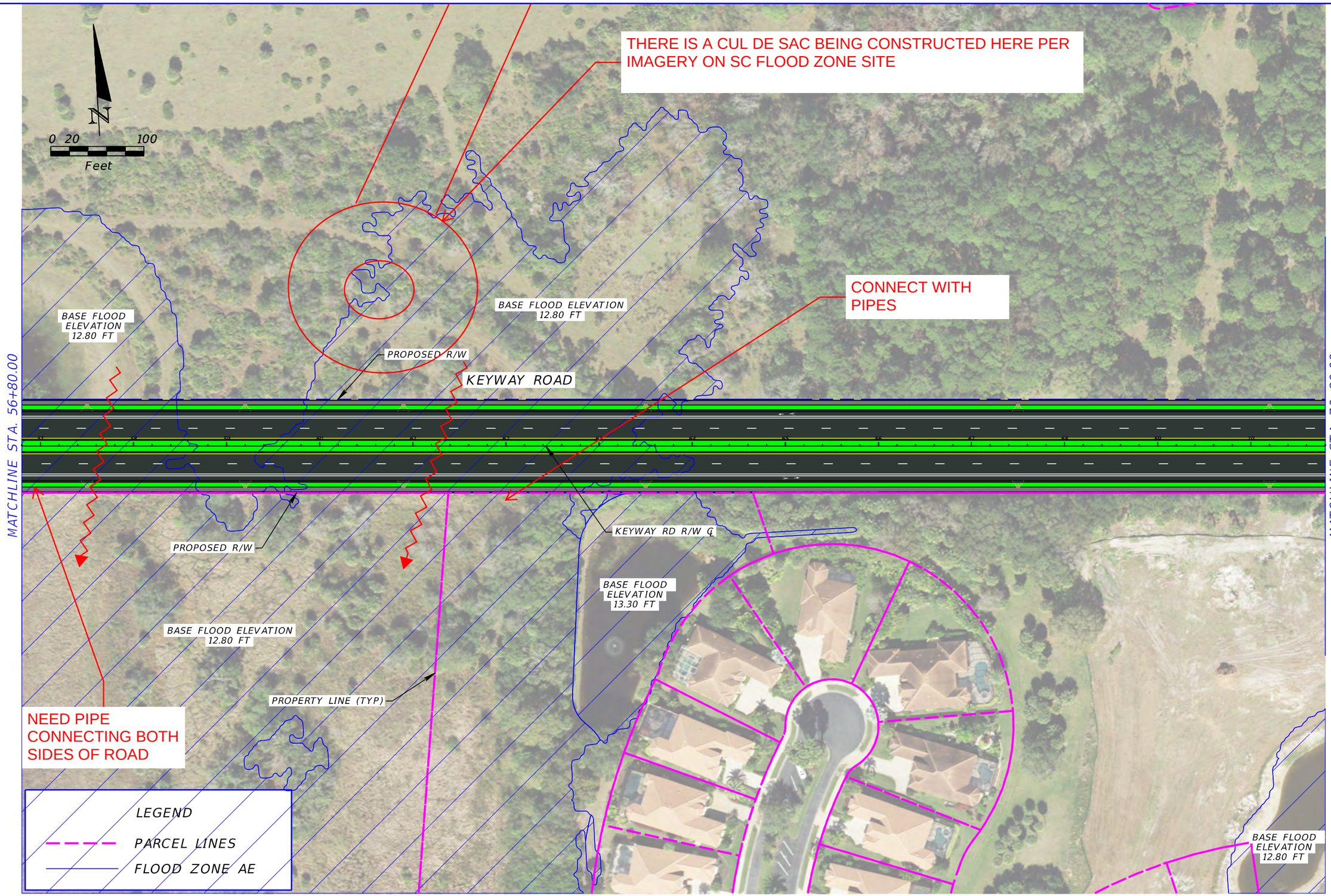


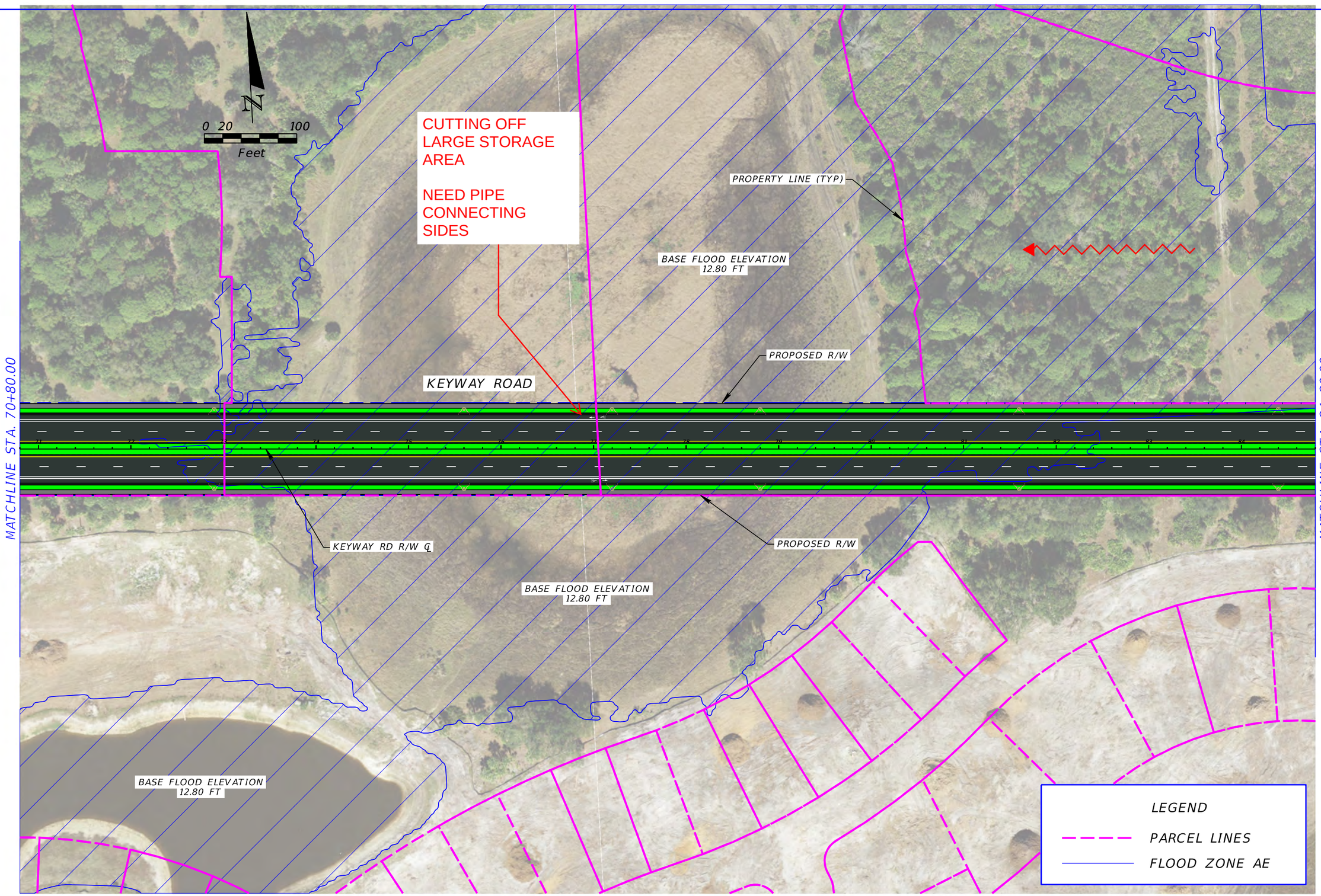
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 5



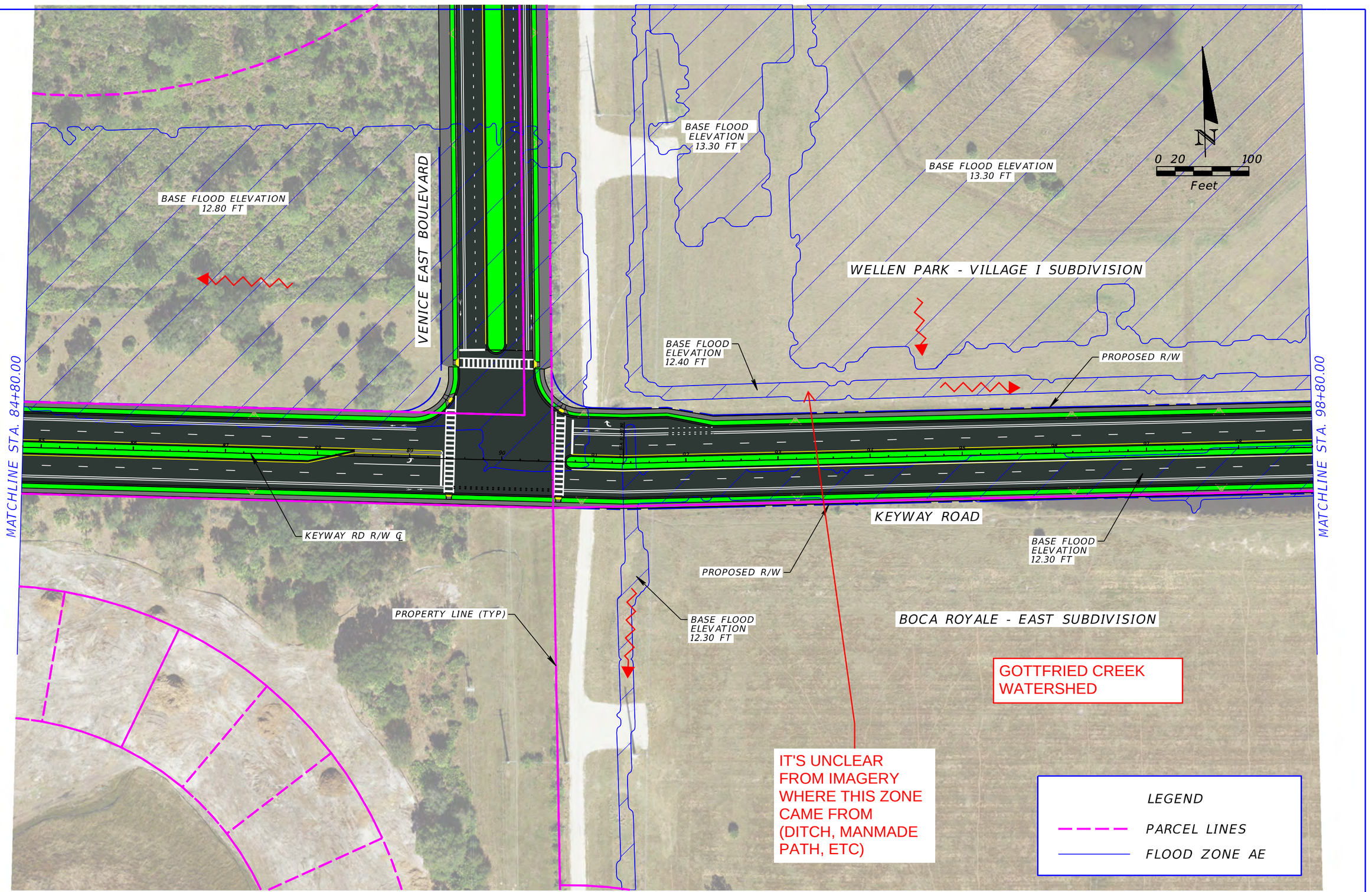
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 6



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 7

WELLEN PARK – VILLAGE I SUBDIVISION

BASE FLOOD ELEVATION 12.40 FT

BASE FLOOD ELEVATION 12.30 FT

PROPERTY LINE (TYP)

KEYWAY RD R/W ℄

PROPOSED R/W

BASE FLOOD ELEVATION 13.10 FT

PROPOSED R/W

BASE FLOOD ELEVATION 13.10 FT

0 20 100

Feet

KEYWAY ROAD

MATCHLINE STA. 98+80.00

MATCHLINE STA. 112+80.00

GOTTFRIED CREEK WATERSHED

BOCA ROYALE – EAST SUBDIVISION

BASE FLOOD ELEVATION 12.90 FT

LEGEND

PARCEL LINES

FLOOD ZONE AE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 8

BASE FLOOD ELEVATION
12.30 FT

0 20 100
Feet

BASE FLOOD ELEVATION
13.10 FT

PIPE CONNECTING
BOTH SIDES

KEYWAY RD R/W ℄

PROPOSED R/W

KEYWAY ROAD

PROPOSED R/W

MATCHLINE STA. 112+80.00

PROPERTY LINE (TYP)

MATCHLINE STA. 126+80.00

BASE FLOOD ELEVATION
12.90 FT

BASE FLOOD ELEVATION
12.80 FT

LEGEND

PARCEL LINES

FLOOD ZONE AE

REVISIONS

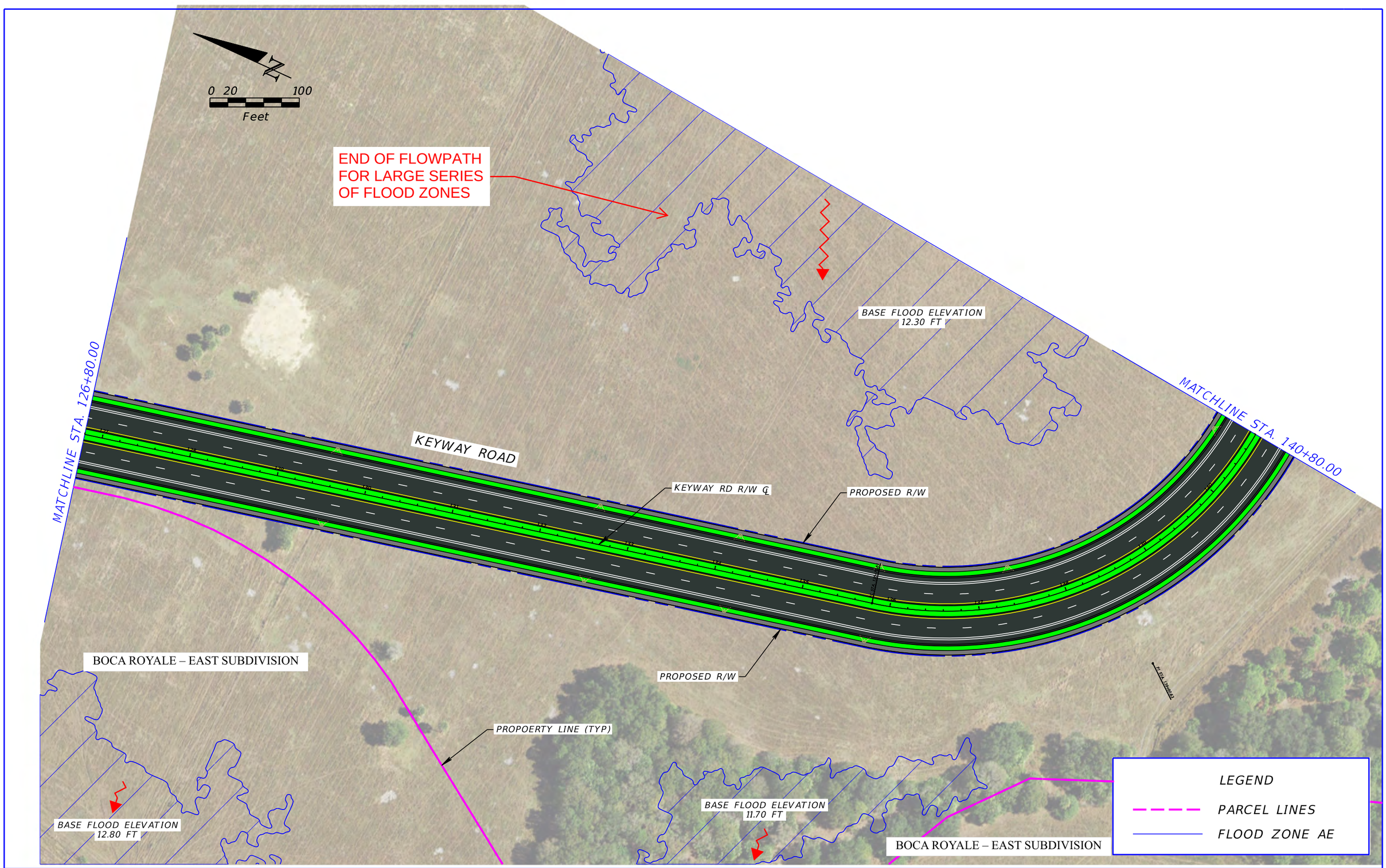
DATE	DESCRIPTION	DATE	DESCRIPTION

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO.
9



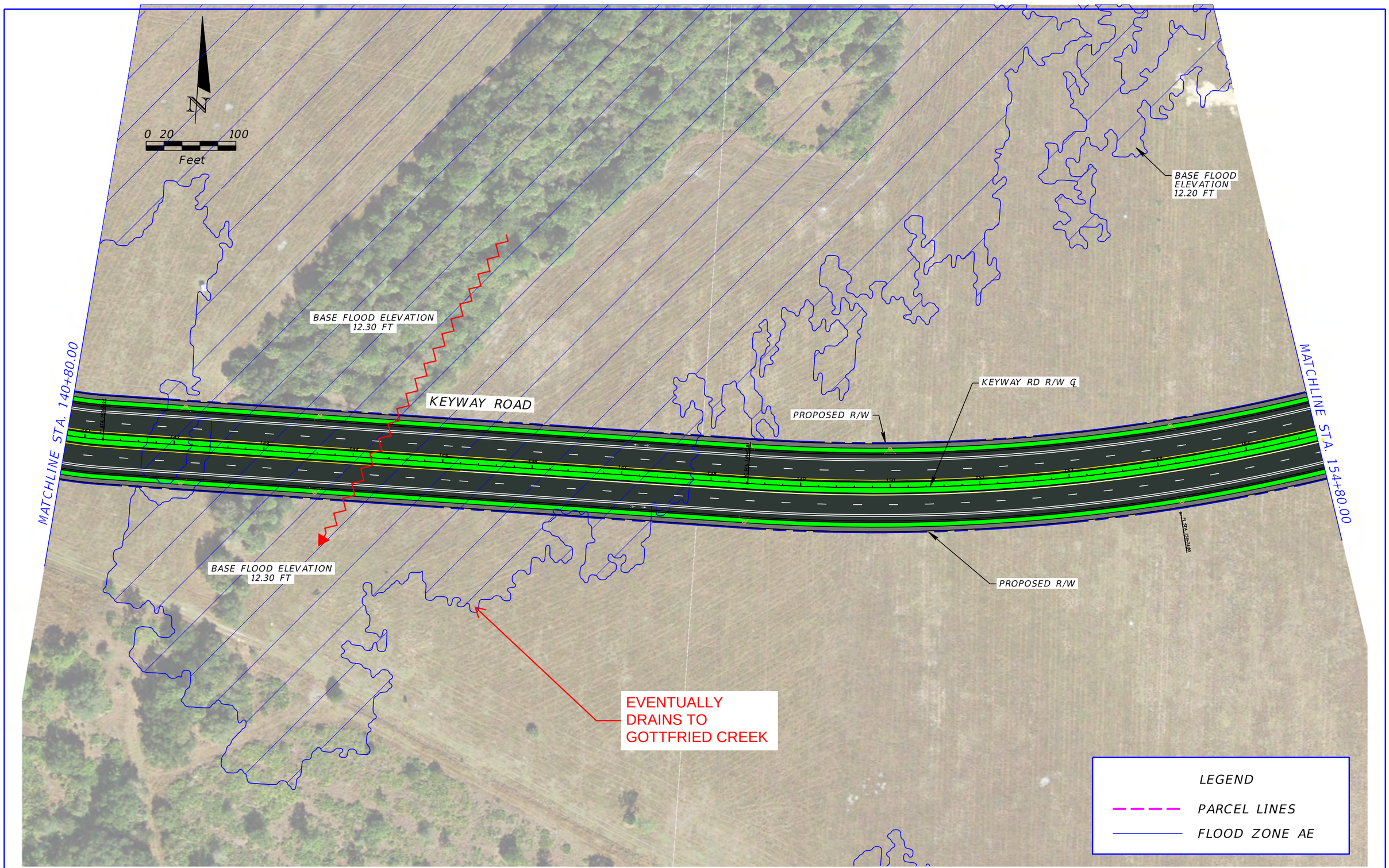
REVISIONS					
DATE	DESCRIPTION	DATE	DESCRIPTION		

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 10



REVISIONS				SARASOTA COUNTY			KEYWAY ROAD CONCEPTS	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
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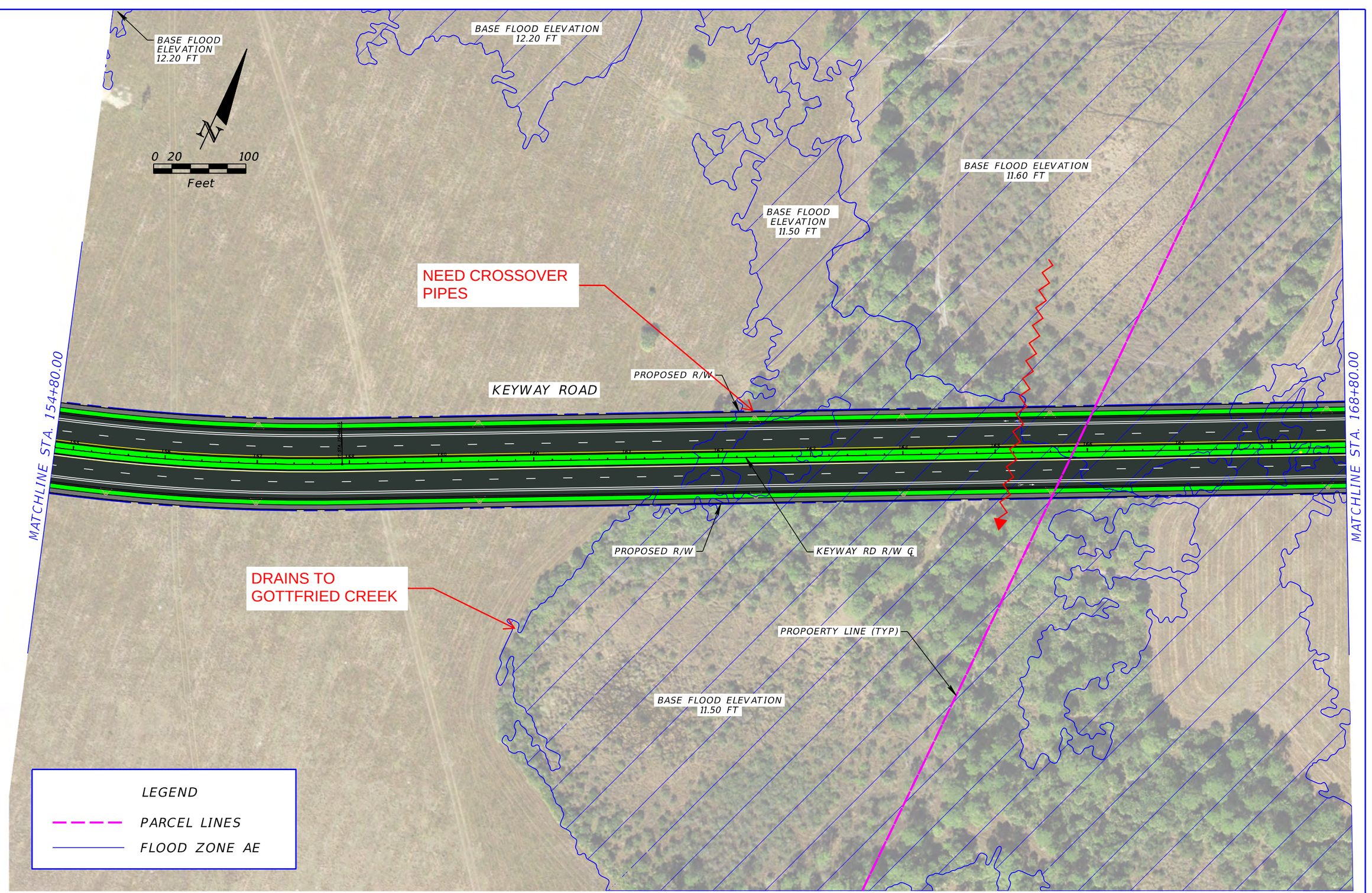


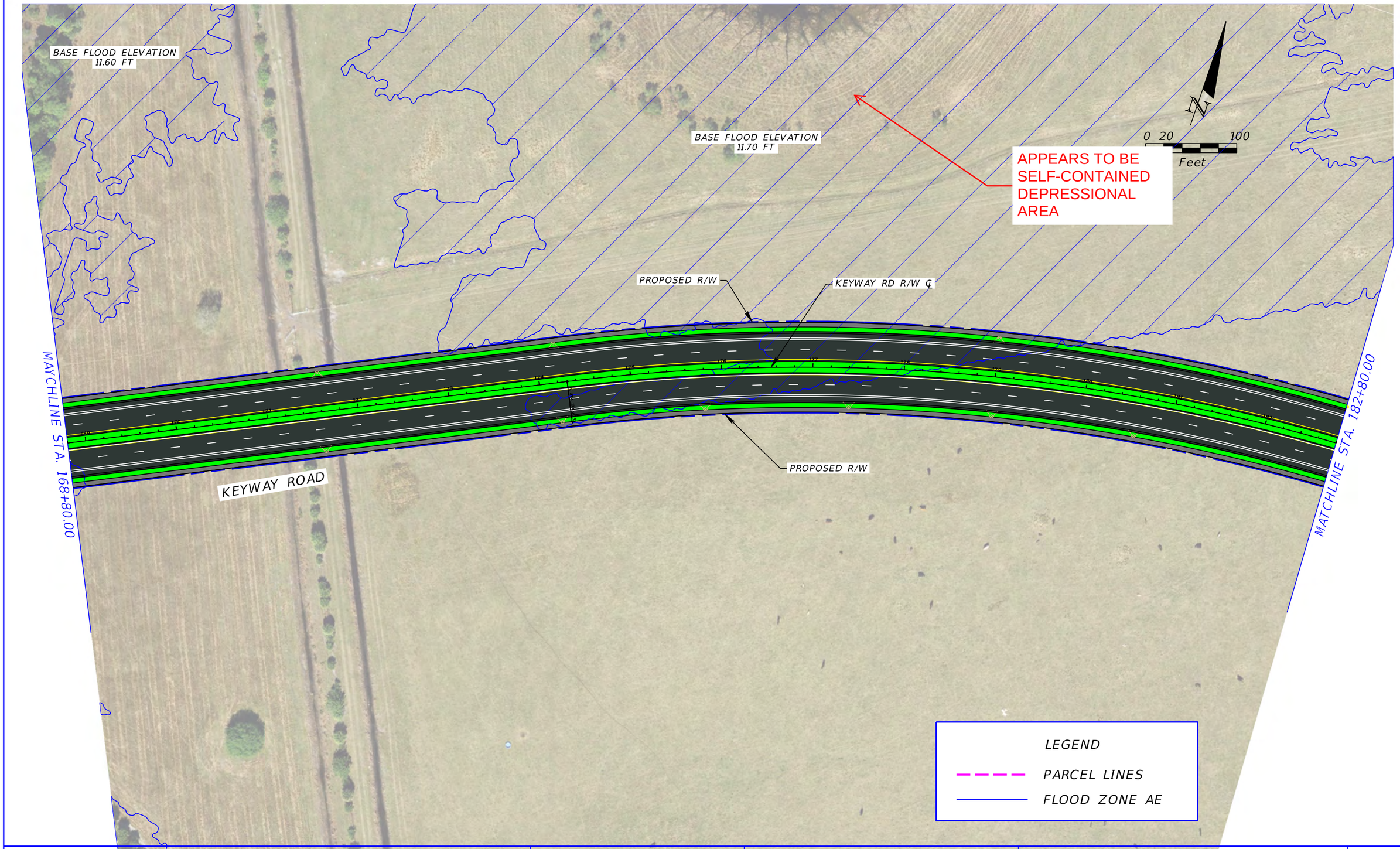
REVISIONS					
DATE	DESCRIPTION	DATE	DESCRIPTION		

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 12



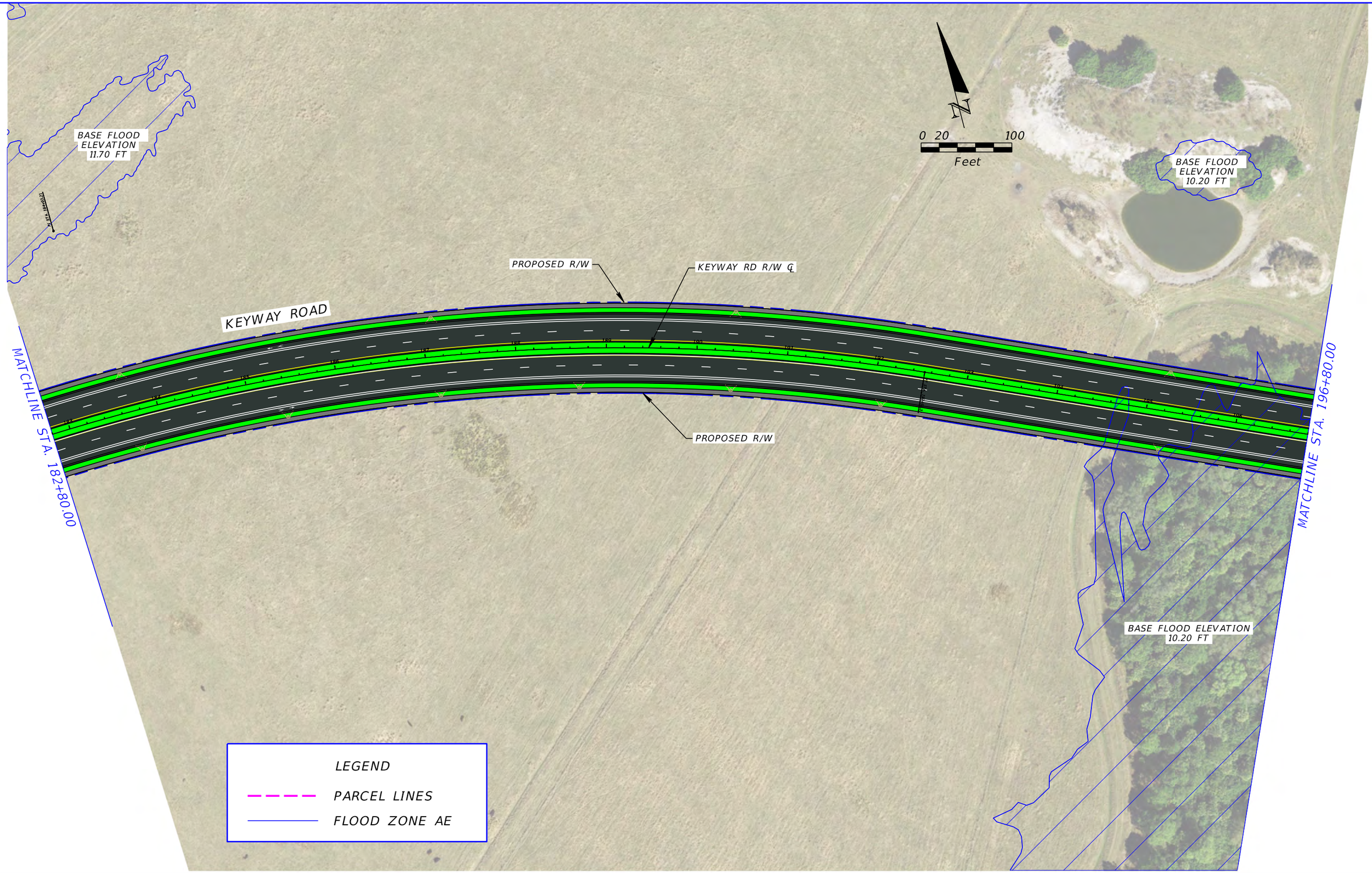
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO. 13



REVISIONS				SARASOTA COUNTY			KEYWAY ROAD CONCEPTS	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
				NA	SARASOTA	NA		14

GOTTFRIED CREEK
FLOOD ZONE

N

0 20 100
Feet

BASE FLOOD ELEVATION
11.00 FT

FUTURE WEST VILLAGES
PKWY EXTENSION ℄

BASE FLOOD ELEVATION
11.00 FT

KEYWAY ROAD

PROPOSED R/W

MATCHLINE STA. 196+80.00

PROPOSED R/W

BASE FLOOD ELEVATION
11.00 FT

KEYWAY RD R/W ℄

BASE FLOOD ELEVATION
11.00 FT

BASE FLOOD ELEVATION
10.20 FT

LEGEND

PARCEL LINES

FLOOD ZONE AE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

SARASOTA COUNTY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
NA	SARASOTA	NA

KEYWAY ROAD CONCEPTS

SHEET NO.
15

APPENDIX D: CONSTRUCTION COST ESTIMATES

ENGINEER'S ESTIMATE

SARASOTA COUNTY

FINANCIAL PROJECT ID # :	
PROJECT DESCRIPTION:	Sarasota County Right-Of-Way Studies - Keyway Road
PAY ITEM SPEC YEAR:	
SUBMITTAL TYPE:	
COUNTY:	Sarasota
DATE:	January 8, 2024
ENGINEERING CONSULTANT FIRM:	BENESCH
CONTACT NAME:	Ennis Davis, AICP
PHONE NUMBER:	
FILE VERSION:	
PAGE NUMBER:	

COMPONENT GROUPS

200 - ROADWAY			$36,995,458.46
300 - SIGNING & PAVEMENT MARKINGS			$332,700.70
400 - LIGHTING	*NOT USED*		
500 - SIGNALIZATION			$365,872.70
550 - ITS			$365,872.70
	COMPONENT SUB-TOTAL		$38,059,904.56
(102-1) MOT (Maintenance of Traffic)		8%	$3,044,792.36
	SUB-TOTAL		$41,104,696.92
(101-1) MOB (Mobilization)		10%	$3,805,990.46
	SUB-TOTAL		$44,910,687.38
Contingency		7%	$3,143,748.12
	SUB-TOTAL		$48,054,435.49
	PROJECT GRAND TOTAL		**$48,054,435.49**

NOTES:

Units Prices based on FDOT Item Average Unit Cost for Market Area 10 from 12/01/2022 to 11/30/2023

Quantities based on the Roadway Typical Section over the Length of the Project

Right-Of-Way Acquisition costs are not included.

ENGINEER'S ESTIMATE

SARASOTA COUNTY

FINANCIAL PROJECT ID:	
FILE VERSION:	
PAGE NUMBER:	

Roadway

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
0110 1 1	CLEARING & GRUBBING	LS	1	$ 1,507,056.00	$ 1,507,056.00
0120 1	REGULAR EXCAVATION	CY	80411	$ 34.39	$ 2,765,334.29
0120 6	EMBANKMENT	CY	53608	$ 38.98	$ 2,089,639.84
0160 4	TYPE B STABILIZATION	SY	151632	$ 18.56	$ 2,814,289.92
0285704	OPTIONAL BASE, BASE GROUP 04	SY	133252	$ 32.87	$ 4,379,993.24
0334 1 53	SUPERPAVE ASPHALTIC CONCRETE, TRAFFIC, PG76-22	TN	18323	$ 137.66	$ 2,522,344.18
0337 7 82	ASPHALT CONCRETE FRICTION COURSE, TRAFFIC C, FC-9.5, PG 76-22	TN	7329	$ 201.95	$ 1,480,091.55
0425 1341	INLETS, CURB, TYPE P-4, <10'	EA	170	$ 12,494.00	$ 2,123,980.00
0425 2 41	MANHOLES, P-7, <10'	EA	85	$ 13,458.00	$ 1,143,930.00
0430175124	PIPE CULVERT,OPTIONAL MATERIAL,ROUND, 24"S/CD	LF	27063	$ 249.76	$ 6,759,254.88
0430982129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	EA	10	$ 3,162.67	$ 31,626.70
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	82709	$ 42.49	$ 3,514,305.41
0522 2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	27570	$ 153.93	$ 4,243,850.10
0570 1 2	PERFORMANCE TURF, SOD	SY	370655	$ 4.37	$ 1,619,762.35
Roadway		**COMPONENT TOTAL**			**$ 36,995,458.46**

ENGINEER'S ESTIMATE

SARASOTA COUNTY

FINANCIAL PROJECT ID:	
FILE VERSION:	
PAGE NUMBER:	

Signing & Pavement Markings

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
0710 11101	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, SOLID 6"	GM	15.448	$ 11,208.20	$ 173,144.27
0710 11123	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, SOLID, 12"	LF	563	$ 1.20	$ 675.60
0710 11125	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, SOLID FOR STOP LINE OR CROSSWALK, 24"	LF	187	$ 1.34	$ 250.58
0710 11131	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, SKIP, 10-30 OR 3-9 SKIP 6" WIDE	GM	1.949	$ 516.73	$ 1,007.11
0710 11141	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, 2-4 DOTTED GUIDELINE/ 6-10 DOTTED EXTENSION, 6"	GM	0.047	$ 641.05	$ 30.13
0710 11160	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, MESSAGE OR SYMBOL	EA	26	$ 44.82	$ 1,165.32
0710 11170	PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, ARROWS	EA	28	$ 33.84	$ 947.52
0710 11201	PAINTED PAVEMENT MARKINGS, STADARD, YELLOW, SOLID, 6"	GM	7.639	$ 1,223.54	$ 9,346.62
0711 11123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" FOR CROSSWALK AND ROUNDABOUT	LF	563	$ 3.36	$ 1,891.68
0711 11125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE AND CROSSWALK	LF	187	$ 6.43	$ 1,202.41
0711 11141	THERMOPLASTIC, STANDARD, WHITE, 2-4 DOTTED GUIDELINE/ 6-10 GAP EXTENSION, 6"	GM	0.047	$ 2,440.98	$ 114.73
0711 11160	THERMOPLASTIC, STANDARD, WHITE, MESSAGE OR SYMBOL	EA	26	$ 160.54	$ 4,174.04
0711 11170	THERMOPLASTIC, STANDARD, WHITE, ARROW	EA	28	$ 61.88	$ 1,732.64
0711 14125	THERMOPLASTIC, PREFORMED, WHITE, SOLID, 24" FOR CROSSWALK	LF	330	$ 14.45	$ 4,768.50
0711 15101	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES WHITE, SOLID, 6"	GM	15.448	$ 5,591.42	$ 86,376.26
0711 15131	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES, WHITE, SKIP, 6",10-30 SKIP OR 3-9 LANE DROP	GM	1.949	$ 1,440.92	$ 2,808.35
0711 15201	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES, YELLOW, SOLID, 6"	GM	7.639	$ 5,637.51	$ 43,064.94
					$ -
Signing & Pavement Markings		**COMPONENT TOTAL**			**$ 332,700.70**

ENGINEER'S ESTIMATE

SARASOTA COUNTY

FINANCIAL PROJECT ID:	
FILE VERSION:	
PAGE NUMBER:	

Signalization

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
0630 2 11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	120	$ 16.87	$ 2,024.40
0630 2 12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	240	$ 34.01	$ 8,162.40
0632 7 1	CABLE, SIGNAL, FURNISH & INSTALL	PI	1	$ 18,337.45	$ 18,337.45
0635 2 11	PULL & SPLICE BOX, F&I, 13"X24" COVER SIZE	EA	12	$ 1,264.49	$ 15,173.88
0639 1 112	ELECTRICAL POWER SERVICE, F&I, OVERHEAD METER PURCHASED BY CONTRACTOR	AS	1	$ 4,913.00	$ 4,913.00
0639 2 1	SIGNALS, ELECTRICAL SERVICE WIRE	LF	150	$ 8.92	$ 1,338.00
0639 3 11	SIGNALS, ELECTRICAL SERVICE DISCONNECT, F&I,	EA	1	$ 1,630.00	$ 1,630.00
0641 2 12	PRESTRESSED CONCRETE POLE, F&I, TYPE P-II SERVICE POLE	EA	1	$ 2,178.64	$ 2,178.64
0646 1 11	ALUMINUM SIGNALS POLE, PEDESTAL	EA	4	$ 2,020.00	$ 8,080.00
0649 21 10	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 60'	EA	1	$ 83,500.00	$ 83,500.00
0649 21 13	STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, DOUBLE ARM 60'-50'	EA	1	$ 113,620.98	$ 113,620.98
0650 1 14	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 3 SECTION, 1 WAY	AS	5	$ 1,930.00	$ 9,650.00
0650 1 19	VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 5 SECTION CLUSTER, 1 W	AS	1	$ 3,260.00	$ 3,260.00
0653 1 11	PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 1 WAY	AS	4	$ 1,035.00	$ 4,140.00
0660 1110	LOOP DETECTOR INDUCTIVE, F&I, TYPE 10	EA	7	$ 488.20	$ 3,417.40
0660 2 106	LOOP ASSEMBLY, F&I, TYPE F	AS	7	$ 1,928.35	$ 13,498.45
0665 1 11	PEDESTRIAN DETECTOR, FURNISH & INSTALL, POLE OR CONTROLLER	EA	4	$ 371.05	$ 1,484.20
0670 5110	TRAFFIC CONTROLLER ASSEMBLY, F&I, NEMA	AS	1	$ 47,265.89	$ 47,265.89
0682 1113	ITS CCTV CAMERA, F&I, DOME PTZ ENCLOSURE - PRESSURIZED, IP, HIGH DEFINITION	EA	1	$ 8,425.00	$ 8,425.00
0684 1 1	MANAGED FIELD ETHERNET SWITCH, FURNISH & INSTALL	EA	1	$ 8,965.00	$ 8,965.00
0685 1 11	UNINTERRUPTIBLE POWER SUPPLY, FURNISH AND INSTALL, LINE INTERACTIVE	EA	1	$ 6,808.01	$ 6,808.01
Signalization			**COMPONENT TOTAL**		**$ 365,872.70**