



FINAL DRAFT

Project Environmental Impact Report

State Road 414 Expressway Extension
Project Development and Environment Study
From US 441 to SR 434
Orange County and Seminole County, Florida

CFX Project Number: 414-227

Prepared for:

Central Florida Expressway Authority
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FEBRUARY 2022

**CENTRAL
FLORIDA
EXPRESSWAY
AUTHORITY**

CENTRAL FLORIDA EXPRESSWAY AUTHORITY FINAL PROJECT ENVIRONMENTAL IMPACT REPORT

1. PROJECT DESCRIPTION AND PURPOSE AND NEED

1.1 Project Information

Project Name: State Road 414 Expressway Extension

Project Limits: From US 441 to SR 434

County: Orange and Seminole

ETDM Number: N/A

CFX Project Number: 414-227

Project Manager: Will Hawthorne, P.E.

The Central Florida Expressway Authority is conducting the State Road 414 Expressway Extension Project Development and Environment Study to evaluate alternatives for a proposed grade-separated expressway extension of the tolled SR 414 (John Land Apopka Expressway). The PD&E Study is evaluating alternatives to provide system linkage between the western terminus of the SR 414 (John Land Apopka Expressway) and Interstate 4. The SR 414 Expressway Extension includes alternatives for a facility with up to two lanes in each direction from U.S. Highway 441 to State Road 434. The project limits extend along the existing SR 414 (Maitland Boulevard) corridor from US 441 (Orange Blossom Trail) to SR 434 (Forest City Road). Figure 1 presents the Project Location Map. The project goals include reduced congestion, enhanced mobility options for longer trips, multimodal enhancements, avoidance of right-of-way impacts to residences, and improved vehicle, pedestrian and bicyclist safety. Additional goals include avoiding and minimizing environmental impacts and implementing aesthetic design elements, such as landscaping and lighting. The objective of the PD&E Study is to develop a proposed alternative that is technically sound, environmentally sensitive and publicly acceptable.

1.2 Purpose and Need

The purpose of the proposed SR 414 Expressway Extension is to provide needed capacity on SR 414 and improve system connectivity between State Road 429 and I-4 to meet future traffic needs. The 2.3-mile-long project corridor of SR 414 is an arterial connecting two limited-access facilities. The proposed project will complete the limited-access gap between US 441 and SR 434 and provide limited-access regional connectivity between SR 429 and I-4. The proposed grade-separated SR 414 Expressway Extension will separate the through traffic from the local traffic, allowing for greater mobility and reduced congestion for both facilities. The proposed improvements are to 1) accommodate anticipated transportation demand, 2) improve safety, 3) improve system connectivity/linkage and 4) support multimodal opportunities.

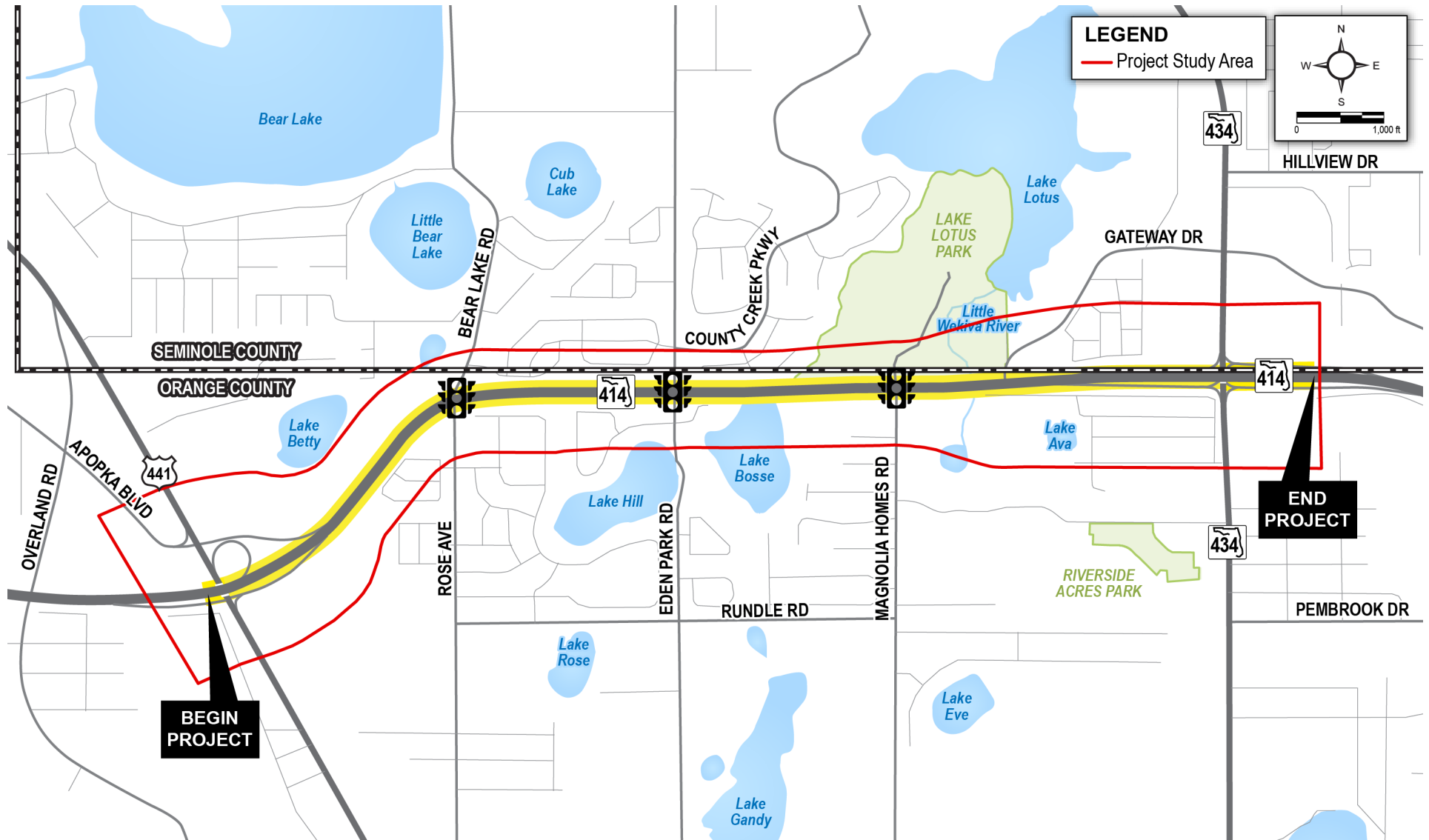


Figure 1. Project Location Map

1.2.1 Anticipated Traffic Demand

Traffic demand is based on the *Project Traffic Analysis Report*.¹ Traffic counts from October 2019 indicate that the annual average daily traffic on SR 414 is approximately 59,000 vehicles per day west of SR 434, exceeding an adopted Level of Service D. Within the project limits, the study corridor experiences significant peak-hour traffic congestion. In the existing condition, high-speed travelers on the limited-access facilities east and west of the project corridor transition to a signalized arterial roadway with lower speeds and multiple cross streets that provide access to significant residential land uses and serve as collector roadways. Within the study limits, the traffic signals along SR 414 are located approximately every 0.5 mile, which impedes traffic flow and increases travel time through the corridor by 15 minutes on average in the peak-hour direction. Preliminary traffic forecasts indicate that the AADT on SR 414 west of SR 434 will double by 2045. While there are no Developments of Regional Impact within the study area, residential land development projects are located in the northeast corner of US 441 and SR 414, as well as in the southeast corner of SR 434 and SR 414. Additionally, several mixed-use land development projects are located along SR 429 (Wekiva Parkway) northwest of the study area.

As noted in the PTAR, the Florida Bureau of Economic and Business Research estimates population in Orange County to grow 1.5 percent per year, Seminole County population is expected to grow 1.4 percent per year and Lake County population is anticipated to grow 1.7 percent per year. Employment growth rates are similar, with Orange County at 1.8 percent, Seminole County at 1.6 percent and Lake County at 1.7 percent. The Maitland Center, located on SR 414 just west of I-4, is a large office complex whose employment base contributes to the existing traffic congestion along SR 414 in the morning (eastbound direction) and afternoon (westbound direction) peak hours.

With increased population and employment growth in the region and continued development near SR 429, traffic volumes on SR 414 are expected to continue to increase. Traffic from eastern Lake County (west of the study area) heading to the employment centers in the Orlando Metropolitan Area is steadily increasing. The proposed improvements are needed to accommodate existing and future travel demand and to provide a limited-access connection between the northwestern portions of the Orlando Metropolitan Area and I-4.

1.2.2 Safety

According to crash data extracted from the state's Crash Analysis Reporting System, the study area experienced 694 total crashes between 2014 and 2018. Of these crash incidents, two fatalities were reported and another 164 resulted in injury.² In 2019, two pedestrian/bicycle fatalities occurred within the study area based on local media reports. However, the 2019 crash history is not yet available. By separating high-speed regional traffic from local traffic, along with improving the pedestrian and bicycle facilities, the proposed improvements will improve accommodations for pedestrians, bicyclists and motorized vehicles throughout the study area.

1.2.3 Improved System Connectivity/Linkage

As stated previously, there is a limited-access gap along SR 414 within the project study limits. Inter-regional traffic from surrounding counties and municipalities to the north and northwest travel through

¹ Central Florida Expressway Authority. 2021. *Project Traffic Analysis Report*. Prepared by CDM Smith, Inc. July.

² Ibid.

the study corridor to access the Orlando Metropolitan Area via SR 429 and I-4. The I-4 Ultimate Improvement Project (under construction) includes improvements to SR 414 that provide a limited-access facility between SR 434 and I-4 at the eastern end of the study area as well as increased I-4 capacity. SR 414 connects two Strategic Intermodal System facilities: SR 429 and I-4. On the west side of the interchange of SR 414/US 441 is a large industrial area and the Florida Central Railroad. Florida Central Railroad is a Class III railroad serving industries in Lake and Orange counties and connects to CSX Transportation railroad in Orlando. These industrial and commercial land uses generate a significant amount of truck traffic through the study corridor. The proposed improvements will improve the system to system connectivity between SR 429 and I-4 and improve regional connectivity among the surrounding areas. Additionally, the proposed project is anticipated to improve truck traffic mobility between I-4 and the industrial area at the western end of the study area, thereby supporting regional economies and interregional connectivity.

1.2.4 Multimodal Opportunities

The surrounding land use within the project limits is primarily residential. West of Gateway Drive, 5-foot-wide sidewalks are located on both sides of SR 414 along with a 4-foot-wide undesignated bicycle lane east of Bear Lake Road. These facilities connect to nearby trails and Lake Lotus Park within the study area. The proposed improvements consider wider sidewalks and dedicated buffered bicycle lanes to enhance walking and bicycling through the corridor and improve multimodal connectivity.

A shared-use park & ride lot is located within the study area at the southeast corner of Magnolia Homes Road and SR 414. The lot shares parking spaces with Lake Lotus Park for the park's tram service and includes 33 parking spaces. This shared-use park & ride lot operates on a 'first come, first served' basis and is accessible 24 hours a day.

The Central Florida Regional Transportation Authority (also known as LYNX) provides bus transit for three counties in the region: Orange, Seminole and Osceola. There is no LYNX bus service along SR 414. However, bus service is available within the study area along SR 434 and US 441. The LYNX service from SR 414 east of the study area provides a connection to SunRail. Improved transportation facilities along the corridor will enhance access to nearby bus stops and improve multimodal connections to transit options, such as LYNX and SunRail.

1.3 Proposed Improvements

As a result of the alternatives analyses conducted for the project, the proposed improvements include two new SR 414 Expressway Extension toll lanes in each direction from US 441 to SR 434, while maintaining the existing at-grade Maitland Boulevard access lanes with two lanes per direction on either side and below the SR 414 Expressway Extension. The at-grade portion of the facility on Maitland Boulevard will maintain the existing pavement width (60 feet) but shifts and restripes the existing lanes to provide a 7-foot-wide buffered bike lane east of Bear Lake Road. Figure 2 presents the typical section for the Preferred Alternative. The elevated expressway will cross four intersections (at Bear Lake Road/Rose Avenue, Eden Park Road, Magnolia Homes/Lake Lotus Park Road and Gateway Drive) and span two water features (Lake Bosse and Little Wekiva Canal). The project includes intersection improvements, stormwater management facility improvements and structural accommodations.

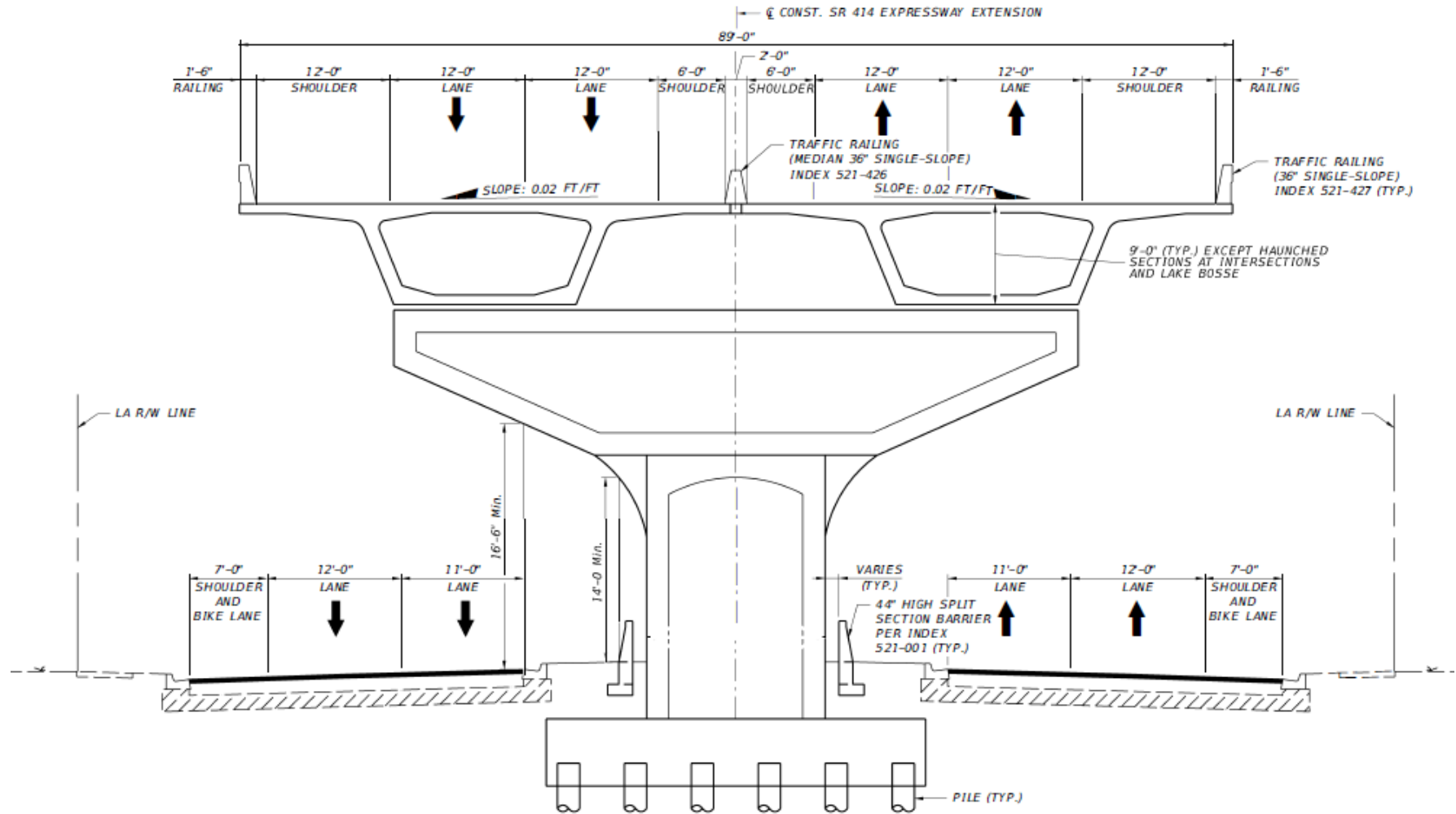


Figure 2. Preferred Alternative Typical Section

2. Environmental Analysis

Issues/Resources	*Substantial Impacts?				**Supporting Information
	Yes	No	Enhance	NoInv	
A. SOCIAL and ECONOMIC					
1. Social	[]	[X]	[]	[]	<u>Attachment 1.A.1</u>
2. Economic	[]	[]	[X]	[]	<u>Attachment 1.A.2</u>
3. Land Use Changes	[]	[X]	[]	[]	<u>Attachment 1.A.3</u>
4. Mobility	[]	[]	[X]	[]	<u>Attachment 1.A.4</u>
5. Aesthetic Effects	[]	[X]	[]	[]	<u>Attachment 1.A.5</u>
6. Relocation Potential	[]	[]	[]	[X]	<u>Attachment 1.A.6</u>
B. CULTURAL					
1. Historic Sites/Districts	[]	[]	[]	[X]	<u>Attachment 1.B.1</u>
2. Archaeological Sites	[]	[]	[]	[X]	<u>Attachment 1.B.2</u>
3. Recreation Areas	[]	[X]	[]	[]	<u>Attachment 1.B.3</u>
C. NATURAL					
1. Wetlands and Other Surface Waters	[]	[X]	[]	[]	<u>Attachment 1.C.1</u>
2. Aquatic Preserves and Outstanding FL Waters	[]	[]	[]	[X]	<u>Attachment 1.C.2</u>
3. Water Quality and Water Quantity	[]	[X]	[]	[]	<u>Attachment 1.C.3</u>
4. Wild and Scenic Rivers	[]	[]	[]	[X]	<u>Attachment 1.C.4</u>
5. Floodplains	[]	[X]	[]	[]	<u>Attachment 1.C.5</u>
6. Coastal Barrier Resources	[]	[]	[]	[X]	<u>Attachment 1.C.6</u>
7. Protected Species and Habitat	[]	[X]	[]	[]	<u>Attachment 1.C.7</u>
8. Essential Fish Habitat	[]	[]	[]	[X]	<u>Attachment 1.C.8</u>
D. PHYSICAL					
1. Highway Traffic Noise	[]	[X]	[]	[]	<u>Attachment 1.D.1</u>
2. Air Quality	[]	[X]	[]	[]	<u>Attachment 1.D.2</u>
3. Contamination	[]	[X]	[]	[]	<u>Attachment 1.D.3</u>
4. Utilities and Railroads	[]	[X]	[]	[]	<u>Attachment 1.D.4</u>
5. Construction	[]	[X]	[]	[]	<u>Attachment 1.D.5</u>
6. Bicycles and Pedestrians	[]	[]	[X]	[]	<u>Attachment 1.D.6</u>
7. Navigation	[]	[]	[]	[X]	<u>Attachment 1.D.7</u>

* Substantial Impacts? Yes = Substantial Impact; No = No Substantial Impact; Enhance = Enhancement; NoInv = Issue absent, no involvement.

**Supporting information is documented in the referenced attachment(s).

3. Anticipated Permits

- ☒ Individual Dredge and Fill Permit: Section 404
- ☐ Nationwide Permit
- ☐ Bridge Permit
- ☒ Environmental Resource Permit: Existing SJRWMD: 20930-1, Existing SJRWMD: 20930-2, Existing SJRWMD: 20432-27, SJRWMD: 20930-3, FDEP: 48-0262296-001, SJRWMD: 20930-7, SJRWMD: 20930-8, which all may be modified to include the proposed work
- ☒ Other: NPDES and SJRWMD Riparian Habitat Protection Zone

4. Engineering Analysis

Alternatives were developed considering multiple solutions of achieving the project goals of this PD&E Study. As part of the project development process, alternatives were developed to evaluate potential improvements along Maitland Boulevard and the addition of four new SR 414 express lanes. This section summarizes the analysis of alternatives.

4.1 No-Build Alternative

The No-Build Alternative for the study area assumes previously programmed improvements are built including widening SR 414 to six lanes (at-grade with no elevated expressway) from US 441 to SR 434 as noted in MetroPlan Orlando's *2045 Metropolitan Transportation Plan Cost Feasible Plan*, Adopted December 9, 2020. The No-Build Alternative is not funded in the Florida Department of Transportation 5-Year Work Program, adopted July 2021, and is no longer programmed. As part of this project, coordination with local transportation agencies was conducted to help inform and update local transportation plans. The previously programmed improvements to SR 414 do not meet the future traffic needs through the year 2045 nor the purpose and need for the project to accommodate future transportation demand or improve system connectivity. An at-grade widening of SR 414 to six lanes would result in precluding a four-lane expressway within the median (two lanes per direction) or require substantial ROW impacts. Similarly, at-grade widening of SR 414 to six lanes and a two-lane expressway within the median (one lane per direction) would result in ROW impacts and impact the ability to maximize the use of the existing median to accommodate infrastructure (such as utilities and drainage needs). Therefore, the No-Build Alternative is not the Preferred Alternative. However, the No-Build Alternative shall remain under consideration throughout the PD&E Study for public input and to provide a comparison to the Preferred Alternative.

4.2 Build Alternatives

Seven initial alternatives were developed and analyzed as part of this PD&E Study. Two typical section options were developed for the at-grade Maitland Boulevard, which included the No-Build Alternative. Four typical section options were developed for the elevated expressway.

All typical section options assumed the SR 414 Expressway Extension and the Maitland Boulevard local access lanes would be constructed within the existing ROW to avoid community and environmental impacts and, therefore, a variety of elevated expressway alternatives were developed within the median. All the potential typical sections were developed within the existing typical section footprint of 118 feet wide. The alignment is constrained by the ROW and median width needed for pier placement of the proposed elevated structure.

The development of Build Alternatives included typical sections, alignments and intersection configurations for the at-grade and elevated expressway facility. Initial options were developed, and a qualitative analysis was conducted to eliminate non-viable options.

4.2.1 Viable Alternatives

As a result of the qualitative evaluation process, two viable alternatives were evaluated for the Build Alternative.

Viable Alternative 1 includes:

- **SR 414 Maitland Boulevard:** Maintains the pavement footprint of the four-lane facility but shifts and restripes the lanes to provide a 7-foot-wide buffered bike lane; includes Type F curb and gutter in the median with split concrete barrier wall offset 8 feet from the median curb and gutter.
- **SR 414 Elevated Expressway:** A four-lane, grade-separated facility in the existing SR 414 Maitland Boulevard median, with 12-foot-wide express lanes (two per direction) separated by median barrier.

Viable Alternative 2 includes:

- **SR 414 Maitland Boulevard:** Same as Viable Alternative 1.
- **SR 414 Elevated Expressway:** A three-lane, grade-separated facility in the existing SR 414 Maitland Boulevard median, with 12-foot-wide express lanes separated by a movable barrier wall. Morning peak traffic is controlled by two lanes eastbound and one lane westbound, and afternoon peak traffic is controlled by one lane eastbound and two lanes westbound. A movable barrier would be shifted approximately 12 feet via a specialty vehicle twice daily.

Table 1 summarizes the qualitative evaluation for the Viable Alternatives.

Table 1. Qualitative Analysis of Build Alternatives

Evaluation Criteria	Viable Alternative 1 ^a	Viable Alternative 2
	Potential Impacts	
Potential ROW Impacts	None	None
Community Use Parcels Impacted	None	None
Non-Residential Parcels Impacted	None	None
Residential Parcels Impacted	None	None
Potential Non-Residential Relocations	None	None
Potential Residential Relocations	None	None
Potential Wetland Impacts	Low	Low
Potential Surface Water Impacts	Low	Low
Potential Contamination Impacts	Medium	Medium
Compatible with Left-Turn Lanes	Yes	Yes
Meets Traffic Demand	Yes	Yes

Table 1. Qualitative Analysis of Build Alternatives

Evaluation Criteria	Viable Alternative 1 ^a	Viable Alternative 2
	Potential Impacts	
Elevated Expressway Constructions Costs	High	Medium
Capital/Operating Costs	None	High

^a Viable Alternative 1 indicates the Preferred Alternative.

Construction costs are higher with Viable Alternative 1 but are offset by significant capital and operating costs associated with the movable barrier wall in Viable Alternative 2. Additionally, greater capacity is provided by Viable Alternative 1, which also provides for safer incident management. Therefore, Viable Alternative 1 is selected as the Preferred Alternative.

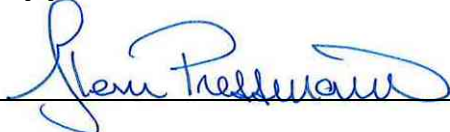
5. Commitments

Pending commitments identified after the Public Hearing.

6. CFX Adopted Preferred Alternative

Pending until after the Public Hearing and CFX Board approval.

7. ☒ Approved for Public Availability



CFX Chief of Infrastructure

02/24/2022

Date

8. Public Involvement

1. ☐ A public hearing is not required.
2. ☒ A public hearing will be held on March 31, 2022. This draft document is publicly available and comments can be submitted to Central Florida Expressway Authority until April 11, 2022.

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3. ☐ A public hearing was held on (insert date) and the transcript is available.
4. ☐ An opportunity for a public hearing was afforded and was documented (insert date).

9. Approval of Final Document

This project has been developed without regard to race, color, national origin, age, sex, religion, disability or family status.

The final PEIR reflects consideration of the PD&E Study and the public hearing.

CFX Executive Director

Date

10. Supporting Information

For supporting information for each issue/resource, refer to Attachment 1, Environmental Analysis, Attachment 2, Preferred Alternative Concept Plans, Attachment 3, Agency Concurrence Letters. Supporting documents for this PD&E Study include:

- Existing Conditions Technical Memorandum
- Typical Section Technical Memorandum
- Natural Resources Evaluation Report
- Water Quality Impact Evaluation Checklist
- Bridge Analysis Technical Memorandum
- Pond Siting Report
- Location Hydraulic Report
- Intelligent Transportation System Technical Memorandum
- Contamination Screening Evaluation Report
- Cultural Resource Assessment Survey
- Sociocultural Evaluation
- Noise Study Report
- Utility Assessment Package
- Air Quality Technical Memorandum
- Preliminary Engineering Report

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Acronyms and Abbreviations

AMA	Alternative Mobility Area
APE	Area of Potential Effects
BE	buried electric
BFE	base flood elevation
BFO	buried fiber optic
BMAP	basin management action plan
BMP	Best Management Practice
BT	buried telephone
BTV	buried television
CFX	Central Florida Expressway Authority
CRAS	Cultural Resource Assessment Survey
dB(A)	decibel
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FEMA	Federal Emergency Management Agency
FM	force main
FWC	Florida Fish and Wildlife Conservation Commission
I-4	Interstate 4
NAVD	North American Vertical Datum
NRHP	National Register of Historic Places
OE	overhead electric
OFOC	overhead fiber optic cable
OFW	Outstanding Florida Water
OT	overhead telephone
OTV	overhead television
PD&E	Project Development and Environment
ROW	right-of-way
RWM	reclaimed water main
SHPO	State Historic Preservation Officer
SJRWMD	St. Johns River Water Management District
SR 414	State Road 414
SR 429	State Road 429
SR 434	State Road 434
UAO	Utility Agency Owner
US 441	U.S. Highway 441
USFWS	U.S. Fish and Wildlife Service
WM	water main

Attachment 1

Environmental Analysis

A. Social and Economic

A.1 Social

The study area was reviewed to identify minority and/or low-income populations as well as under-represented population groups protected under *Title VI of the Civil Rights Act of 1964* and related nondiscrimination statutes and regulations. Of the 10 Census block groups that intersect with the Preferred Alternative, eight block groups have low-income and/or minority populations greater than the averages of Seminole or Orange counties. While the Census block group may not be representative of the specific neighborhoods and business affected by the Preferred Alternative (because of the large size of the block group compared to the affected area), it is assumed that sensitive populations may be affected by the project. However, no disproportionate impacts are expected to low-income and/or minority populations.

This project involves improvements to the existing SR 414 roadway, which serves as a physical barrier between the north and south sides of the roadway. The roadway already serves as a boundary from which development patterns have established. Therefore, adding limited-access toll lanes to the center of the existing SR 414 will not further isolate a portion of an ethnic group or neighborhood nor further separate residences from any community services facility. Additionally, the project area is divided by the Seminole and Orange County line, which acts as a boundary for county services including schools. The project corridor is mostly a limited-access roadway and has only one median opening (at Gateway Drive) for opposing traffic flow to access adjacent properties. Access to adjacent openings for opposing traffic flow must be done through the existing signalized intersections. The addition of the elevated expressway is not expected to change any existing median openings or intersections. Access to existing community facilities in the build condition will be maintained and is anticipated to be similar to the existing condition. Therefore, access to community facilities will not be impacted. Given the existing physical barrier presented by SR 414, the project improvements will result in minimal impacts to community cohesion.

There are no emergency facilities within or adjacent to the project study area. Emergency vehicle access will not change along the at-grade Maitland Boulevard as a result of the Preferred Alternative. Because the SR 414 elevated expressway provides a higher-speed travel option and congestion is anticipated to improve along Maitland Boulevard, emergency response times are anticipated to improve through this area.

This project has been developed without regard to race, color, national origin, age, sex, religion, disability or family status. No substantial impacts to the social environment are anticipated.

A.2 Economic

A review of the most recently adopted county comprehensive plans (2030 Orange County Comprehensive Plan and the adopted Seminole County Vision 2020 Comprehensive Plans) was performed for this evaluation. The plans provide a forecast of planned land use changes and economic impacts and help to evaluate the economic impacts related to the proposed improvements.

The adopted 2030 Orange County's Comprehensive Plan shows that the study area is within the County Urban Boundary Area. Approximately half of the study area is within an Orange County Alternative Mobility Area. The Orange County AMA is exempt from transportation concurrency requirements and

promotes urban development and redevelopment to maximize the use of existing public infrastructure. The proposed project does not include additional right-of-way that would impact the AMA. Economic enhancement of the AMA is expected because of increased mobility and access to the area. The adopted Seminole County Vision 2020 Comprehensive Plan shows that the study area is within the County Urban Boundary and further notes that SR 434 within the study area is an Urban Corridor. The Urban Corridor incentivizes a mixed development pattern consistent with the Central Florida Regional Growth Vision. The proposed improvements are expected to enhance economic development of the SR 434 Urban Corridor by improving mobility and access to the area.

The SR 414 corridor provides regional connectivity between Orange and Seminole counties (greater Orlando area) and Lake County (Apopka), providing system linkage to designated Strategic Intermodal Systems including SR 429 and I-4. The project improvements will provide enhanced mobility of people and goods along this corridor and may also provide a positive economic effect for regional freight mobility. The project improvements will provide enhanced mobility of people and goods along this corridor and may also provide a positive economic effect for regional freight mobility. The project supports regional plans for a transportation network that connects workforce residences with concentrated areas of economic activity. In that way, the limited-access SR 414 facility will facilitate commuting to regional economic centers, including the Maitland Center Office Park located on the eastern end of the corridor, the city of Altamonte Springs and downtown Orlando. For these reasons, the project is anticipated to enhance economic conditions.

A.3 Land Use Changes

Review of the Orange and Seminole county future land use maps¹ indicates that the future land use of the study area is expected to remain similar to the existing condition. The proposed project includes expanding an existing roadway corridor within an existing transportation network, and no ROW acquisition is anticipated. Stormwater resulting from the proposed improvements will be treated using the existing drainage ponds, which are expected to be modified with no additional ponds anticipated outside the existing ROW.

The purpose of the proposed project is to accommodate anticipated east-west travel demands forecasted for the study region. Additionally, there is a need in the region to relieve existing and future congestion. While regional growth is forecasted, it is not anticipated to occur because of the implementation of the proposed project. The proposed project is to support already forecasted growth and the needs that result from the growth. Therefore, no substantial land use changes are anticipated because of the project.

A.4 Mobility

The project will enhance regional connectivity by allowing vehicular through traffic more efficient passage through the study area using the limited-access SR 414 elevated expressway to avoid traffic signals and slower local traffic. This connectivity improves the regional transportation network and will be particularly beneficial during state-wide or regional evacuations. Connectivity to local businesses and residential areas will remain the same as the existing condition.

¹ Orange County Interactive Mapping System accessed February 16, 2021; Seminole County GIS Information Kiosk accessed March 1, 2021.

Access to the elevated facility is controlled and limited to two access points just east and west of the project corridor. Users of the SR 414 elevated expressway must use access ramps (entrance and exit) available just east of SR 434. Users may also access the elevated expressway if already traveling west on the SR 414 toll road (John Land Apopka Expressway). Because of limited ROW and residential property impacts, access to the elevated expressway within the project corridor was not feasible. By relocating through traffic from Maitland Boulevard onto the SR 414 elevated expressway, overall circulation through the study area improves. For local SR 414 Maitland Boulevard users, traffic movements will remain the same as the existing condition, but with reduced congestion and improved traffic circulation.

The Central Florida Regional Transportation Authority, also known as LYNX, provides bus transit for Orange, Seminole and Osceola counties. There are no LYNX routes along SR 414 within the project corridor, but service routes are present along SR 434 and US 441 in the study area. The LYNX service along Maitland Boulevard east of the study area provides a connection to the commuter rail, SunRail. Review of the LYNX Transit Development Plan Fiscal Year 2020–2029 indicates there are no proposed transit improvements along Maitland Boulevard within the project study area.

The proposed improvements enhance bicycle and motorist mobility along the SR 414 corridor.

A.5 Aesthetic Effects

The ends of the study corridor include commercial and industrial areas surrounding the interchanges at US 441 and SR 434, while the majority of the corridor includes residential neighborhoods that are mostly accessible from the corridor's intersections. Most residential properties lie behind existing noise walls along SR 414, limiting the view of the existing roadway from many residences. Where Maitland Boulevard abuts Lake Lotus Park, the roadway is lined by natural landscape to the north that is heavily treed. Just west of Lake Lotus Park on the south side of the roadway is Lake Bosse, which is visible from Maitland Boulevard.

The Preferred Alternative will change the viewshed along the study corridor with the implementation of the proposed improvements. The new toll lanes will be elevated approximately 30 feet above the at-grade Maitland Boulevard along the entire project corridor, altering the viewshed along Maitland Boulevard. The piers and their associated barrier wall for the SR 414 elevated expressway will be visible along the median of SR 414 Maitland Boulevard. The SR 414 elevated expressway will be visible above the existing noise walls that currently limit the view of the roadway from many of the residential neighborhoods along the project corridor. Because of its height, the elevated expressway will be visible to residences that are distant from the project corridor. The elevated expressway may also be visible from Lake Lotus Park where the existing condition does not include a view of a roadway because of the heavily treed landscaping surrounding the park. Depending on the time of day, the elevated expressway will cast a shadow over the at-grade SR 414 Maitland Boulevard travel lanes, sidewalks and bicycle lanes, changing the viewshed for all travel modes using the corridor.

The proposed improvements incorporate enhancements to aesthetics including opportunities for landscaping and hardscaping. Potential hardscape treatments will consist of cosmetic improvements to bridge structures, such as the use of color pigments in the concrete, texturing the surfaces, modifications to fascia walls, beams, and surfaces, or more pleasing shapes for columns and caps. During the Design phase both standard and unique aesthetic enhancements will be considered based on community input. Based on these reasons, no substantial aesthetic effects are anticipated.

In addition to the viewshed changes as a result of the Preferred Alternative, increased noise is also anticipated along the study corridor. Noise barriers such as a noise wall are exterior structures designed to prevent and mitigate noise sources, such as vehicle traffic. The project's *Noise Study Report* (CFX 2021j) includes an analysis of noise effects from the proposed improvements and identified reasonable and feasible noise walls adjacent to the Rose Pointe subdivision.

A.6 Relocation

The proposed improvements consist of no ROW impacts. Therefore, there are no anticipated residential or business relocations anticipated as part of this project and no involvement is anticipated with relocation.

B. Cultural

A Phase I Cultural Resource Assessment Survey was prepared for the proposed roadway alignment and included surveys for historic and archaeological sites. The CRAS also included surveys for historic and archaeological sites for 10 potential pond locations of which seven are existing. The State Historic Preservation Officer concurrence letter is provided in Attachment 3 (signed by the SHPO on September 7, 2021). The following sections summarize the results of the evaluation of cultural resources.

B.1 Historic Sites/Districts

The architectural survey resulted in the identification and evaluation of 24 historic resources within the SR 414 Expressway Extension Area of Potential Effects, including two previously recorded resources and 22 newly recorded resources. The two previously recorded historic resources are both linear resources (8OR10661, Seaboard Coastline Railroad, and 8OR11516, Orange Blossom Trail). The newly recorded historic resources include one resource group (8OR11668, Monroe Manor subdivision) and 21 structures (8OR11668-8OR11689). Based on the results of the current survey, both linear resources are recommended as ineligible for consideration in the National Register of Historic Places as neither maintain enough historic integrity. Monroe Manor is also not recommended for consideration in the NRHP neither individually nor as a contributing resource to a historic district, as the historic buildings within the group are not excellent examples of the architectural styles they represent nor associated with a prominent architect.

Based on the results of the historical survey and SHPO concurrence (September 7, 2021), the SR 414 Expressway Extension will have no effect on listed cultural resources or cultural resources eligible for listing in the NRHP. No further analysis is recommended.

B.2 Archaeological Sites

The archaeological survey within the Area of Potential Effects included the excavation of 20 shovel tests, of which one was positive for cultural material. As a result, one archaeological occurrence was recorded within the SR 414 Expressway Extension archaeological APE. Archaeological occurrences are, by definition, ineligible for consideration on the NRHP. One previously recorded archaeological site, the Little Wekiva East site (8SE01663), has been recorded within the archaeological APE. This site was previously determined to be ineligible for the NRHP by the State Historic Preservation Office, and the current survey found no evidence to change this recommendation. No other archaeological sites or archaeological occurrences were recorded within the SR 414 Expressway Extension archaeological APE.

Based on the results of the archaeological survey, the SR 414 Expressway Extension will have no effect on listed cultural resources or cultural resources eligible for listing in the NRHP. No further analysis is recommended.

B.3 Recreation Areas

The project would not directly impact any public parks or publicly owned lands intended for recreational use. The proposed improvements are not anticipated to encroach upon the Lake Lotus Park boundary. However, the Preferred Alternative will change the viewshed from the park grounds, as the elevated expressway will be visible from the park where the existing condition does not include a roadway view. Additionally, increased traffic noise within the park grounds is anticipated. The minor grade-separated overpass that exists over the Little Wekiva Canal to allow for an access road between the Lake Lotus Park and Ride lot and Lake Lotus Park will be maintained in the build condition. The existing Seminole Wekiva Trail along the north side of the corridor will also be maintained in the build condition. Therefore, no substantial impact to recreation areas are anticipated from this project.

C. Natural Environment

C.1 Wetlands and Other Surface Waters

The extent and types of wetlands in the project study limits were documented in accordance with Executive Order 11990, and the Florida Department of Transportation *PD&E Manual*, Part 2 Chapter 9; consideration was given to avoiding and/or minimizing wetland impacts.

Approximately 1 acre of wetlands and less than 0.5 acre of surface water impacts are expected to wetland systems considered jurisdictional by the Florida Department of Environmental Protection State 404 Program and the St. Johns River Water Management District, as a result of the Preferred Alternative. The wetlands are mixed forested and herbaceous wetland communities and have been impacted by the existing SR 414 and adjacent infrastructure. Nuisance/exotic vegetation and vines have become established along the edge. The surface waters contain emergent aquatic vegetation and mixed scrub-shrub species. These have also been impacted by the existing SR 414 and adjacent infrastructure.

Potential direct impacts to mixed forested wetlands are extremely minor and result from the placement of fill as well as the placement of support piers for the proposed elevated roadway associated with the existing bridge over Lake Bosse. Surface water impacts include the south side and north side of Little Wekiva Canal and result in less than 0.5 acre of impacts. This system is channelized on the south side of SR 414 and forms a natural stream profile on the north side of SR 414. A preliminary Uniform Mitigation Assessment Method score was not developed for this surface water as mitigation for impacts will not be required.

Potential indirect impacts anticipated to occur as a result of the Preferred Alternative may include shading and light from the elevated roadway structure. Potential indirect impacts will be assessed during the design and permitting phase when more design elements are known. Secondary impacts of migrating edge effects will likely occur. At locations where natural areas meet development, edge effects such as increased cover of nuisance/exotic vegetation and changes in microclimate generally take place. The wetlands within the Preferred Alternative project footprint already experience edge effects because of the existing SR 414 road surface and infrastructure. While the severity of these edge effects should not increase, it is expected that these effects would migrate to the new transitional area

between remaining wetlands and new construction. Because of the developed nature of the surrounding area, no cumulative impacts are anticipated to occur.

The Central Florida Expressway Authority will address wetland and/or surface water impacts and provide appropriate wetland mitigation in future phases of this project. Practicable measures to avoid or minimize impacts will be further addressed during final design for the project. Best Management Practices will be used for erosion control during construction to minimize impacts to any wetlands and surface waters that are affected by the proposed project, and unavoidable impacts to wetlands and surface waters will be mitigated pursuant to 373.4137 Florida Statutes to satisfy all mitigation requirements of Part IV, Chapter 373 Florida Statutes and *United States Code* Title 33, Section 1344, should state and/or federal regulations require it. Therefore, no substantial impacts to wetlands and/or surface waters are anticipated as a result of the Preferred Alternative.

C.2 Aquatic Preserves and Outstanding Florida Waters

There are no Outstanding Florida Waters per *Florida Administrative Code* Chapter 62-302 in the project area. A segment of the Little Wekiva River is listed as a State of Florida OFW. However, the OFW segment of the Little Wekiva River is the last 4 miles that flows through the Wekiva River Aquatic Preserve, which is outside of the project study area.

C.3 Water Quality and Stormwater

Water quality (treatment) and water quantity (attenuation) criteria are based on SJRWMD, FDOT, and CFX stormwater regulations.

The project is located within the Little Wekiva River Watershed, which is within the jurisdiction of the SJRWMD. The study corridor includes two existing bridge crossings that traverse waters: FDOT Bridge No. 770075 over Lake Bosse and FDOT Bridge No. 770074 over the Little Wekiva Canal. The majority of the study area is located within the Little Wekiva Canal Basin, which FDEP identifies as Water Body Identification No. 3004. The Little Wekiva Canal Basin is impaired for excessive concentrations of nitrates. There is an adopted FDEP Basin Management Action Plan for the Little Wekiva River Basin for reducing nitrates, total phosphorus and dissolved oxygen. Further, the study area falls within Wekiva Spring and Rock Springs, both of which are an Outstanding Florida Spring. The Wekiva Spring and Rock Springs have a pending BMAPs for the reduction of nitrates, but are expected to achieve phosphorus reductions as well. Because of the BMAPs, application of additional treatment volume and anti-degradation standards will be required. The study area is also located within the Wekiva River Hydrologic Basin and Wekiva Recharge Protection Basin and is subject to special treatment requirements.

The drainage patterns in the proposed conditions will remain the same as existing conditions, with basins outfalling into the Little Wekiva River, Lake Bosse and adjacent wetlands. The proposed drainage system for at-grade SR 414 Maitland Boulevard will convey stormwater via curb-and-gutter inlets and closed system into existing and proposed stormwater retention facilities for water quality treatment and attenuation before outfalling into the Little Wekiva River and Lake Bosse. The proposed drainage system for the new four-lane SR 414 Expressway Extension will consist of barrier wall inlets in a closed system similarly discharging into existing and proposed stormwater retention facilities for water quality treatment and attenuation before outfalling into tributaries and waterways of the Little Wekiva River and Lake Bosse.

Stormwater treatment and attenuation associated with the Preferred Alternative is proposed through the use of existing and proposed ponds and swales. Review of previous permits along the study corridor revealed that the project area is divided among 8 existing drainage basins with 3 existing CFX ponds (Ponds 4A, 4B and 4C) and 7 existing FDOT ponds [Ponds A, B, C, D, E, F and G (Pond G was transferred to another owner)]. The proposed drainage system includes maintaining the existing drainage basins, modifying existing Ponds 4A, 4B, 4C, C, D and E, and adding two new ponds (Ponds B1 and B2) and two new swales (Swales F and G). Refer to Attachment 2 for the pond and swale locations. Because a project goal is to not acquire additional ROW, existing permitted ponds within the study limits were evaluated first and then opportunities within the existing CFX and FDOT ROW were identified as potential new pond sites.

During the study, coordination between the study team and SJRWMD, FDOT, city of Altamonte Springs and Orange County took place to explore opportunities to discuss potential use of shared ponds and stormwater harvesting. In particular, a meeting with Orange County was held on August 27, 2020, to discuss Orange County Environmental Protection Division plans for the Little Wekiva/Lake Lotus Stormwater Project (in design) for water quality improvements to meet the requirements of the Wekiva River, Rock Springs Run and Little Wekiva Canal BMAP. There is potential for stormwater treatment credit associated with this future project. Further coordination with Orange County and the other agencies is expected to continue during the design and permitting phases.

The proposed stormwater facility design will include, at a minimum, the water quantity requirements for water quality impacts as required by the SJRWMD in Chapter 40C- 4.091(1)(a) and Rule 62-330.010 of the *Florida Administrative Code*. Therefore, no further mitigation for water quality impacts will be required. Refer to the project's *Pond Siting Report* (CFX 2021j) for more detail regarding the proposed drainage ponds.

Therefore, the proposed project is expected to have no substantial impacts to water quality and stormwater resources.

C.4 Wild and Scenic Rivers

There are no designated as Wild and Scenic Rivers or other protected rivers in the project area.

C.5 Floodplains

Floodplain impacts resulting from the project were evaluated pursuant to Executive Order 11988 of 1977, Floodplain Management.

The proposed project is within the 100-year floodplain and identified by the Federal Emergency Management Agency as being either of two floodplain zone types, defined as follows:

- Zone AE: Base Flood Elevation determined (quantified)
- Zone A: No BFE determined (approximated)

For areas in Zone A, the BFE was approximated using accepted practices and guidelines by FEMA with 1-foot contours (North American Vertical Datum) provided by Orange County Public Works dated 2007. Based on review of the FEMA Flood Insurance Rate Maps, the BFE at Lake Bosse is 63.8 feet (NAVD) (Zone AE) and the BFE at Little Wekiva River is approximately 65.0 feet (NAVD) (Zone A). Additionally, there is one designated regulatory floodway south of the Orange County-Seminole County border near the Lake Lotus Park parking lot and is identified in the FEMA Flood Insurance Study for Orange County as

the Little Wekiva River Regulatory Floodway. No impact to this regulatory floodway is expected as its limits end before the SR 414 ROW.

The SJRWMD allows for the “cup-for-cup” method to offset new fill put in the floodplain by excavating an additional floodable area to replace the lost flood storage area. Impacts to the 100-year floodplain are anticipated from the proposed construction of four 16-foot by 10-foot piers at SR 414 Over Lake Bosse Bridge. The proposed piers will result in approximately 2,470 cubic feet of impacts. To compensate for this impact, the existing Pond E footprint can be regraded. The existing pond berm and tie-down slope along the northern side of the pond can be reconstructed to provide 2,482 cubic feet of compensation. As a result, there will be no significant change in flood risk, and there will not be a significant change in the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, floodplain encroachment resulting from the proposed roadway extension and added bridge piers is not significant.

The proposed project will not create substantial differences in flood elevations nor cause adverse impacts to the floodplain as required by the SJRWMD permitting process. Impacts to the floodplain have been minimized to the extent practicable by limiting the total distance and area of the project within the 100-year floodplain. The encroachment and mitigation measures were analyzed, and the impact is found to be nominal. No impact is expected to the base flood, likelihood of flood risk, overtopping and backwater conditions. The impacts to flood elevations and limits by drainage features, such as the proposed bridge facilities, will be designed in accordance with the FDOT *Drainage Manual*, Topic No. 625-040-002, as a part of the design phase and no substantial impacts to floodplains are anticipated because of the project.

C.6 Coastal Barrier Resources

There are no Coastal Barrier Resources in the project area.

C.7 Protected Species and Habitat

The following evaluation was conducted pursuant to Section 7 of the Endangered Species Act of 1973 as amended as well as other applicable federal and state laws protecting wildlife and habitat.

A natural resource evaluation was performed as part of this study to document potential impacts to protected species and their habitats. The purpose of this evaluation was to document protected species and habitat, wetlands and Essential Fish Habitat; evaluate the project area's current potential to support species listed as endangered, threatened or of special concern; determine the effects of the Preferred Alternative's effects on any listed species in the project area; identify current permitting and regulatory agency coordination requirements for the project; and for coordination/consultation with federal and state agencies. Literature reviews, agency database searches and field reviews of potential habitat areas were conducted to identify state and federally protected species occurring or potentially occurring within the project study area. Project scientists conducted general surveys on May 7 and November 10, 2020.

The project's Natural Resources Evaluation Report was prepared under separate cover as part of the consultation required under Section 7 of the Endangered Species Act of 1973. The USFWS concurred with the findings of the NRE report on (*pending*). The USFWS concurrence letter is provided in Attachment 3 (*pending*). The Florida Fish and Wildlife Conservation Commission agreed (*pending*) with the determinations of effect in the NRE and support the project commitments for protected species (refer to Attachment 3).

The project area does not fall within US Fish and Wildlife Service designated critical habitat for any species. The project area occurs entirely within the USFWS consultation areas of the Florida scrub-jay (*Aphelocoma coerulescens*), Everglade snail kite (*Rostrhamus sociabilis plumbeus*) and partially within the consultation area of the sand skink (*Neoseps reynoldsi*); however, suitable habitat for these species does not occur within the study area. The project is within the 15-mile Core Foraging Area of Lawne Lake, and Eagle Nest Park wood stork rookeries.

Federally listed species with a determination of no effect by the project include the sand skink (*Neoseps reynoldsi*), Florida scrub-jay, red-cockaded woodpecker (*Dryobates borealis*) and the Everglade snail kite. Federally listed species with a determination of may be affected, but are not likely to be adversely affected by the project, include the Eastern indigo snake (*Drymarchon corais couperi*) and wood stork.

State-listed species with a determination of no adverse effect anticipated by the project include the gopher tortoise (*Gopherus polyphemus*), Florida sandhill crane (*Antigone pratensis canadensis*), Southeastern American kestrel (*Falco sparverius Paulus*) and wading birds including the little blue heron (*Egretta caerulea*) and roseate spoonbill (*Platalea ajaja*). State-listed species with a determination of no effect anticipated by the project include the short-tailed snake (*Lampropeltis extenuate*), Florida pine snake (*Pituophis melanoleucus mugitus*) and the Florida burrowing owl (*Athene cunicularia floridana*).

The project will have no effect on the bald eagle (*Haliaeetus leucocephalus*) or various state-protected bat species. There is no adverse effect anticipated to the Florida black bear (*Ursus americanus floridanus*). These two species or groups of animals that may occur in the project vicinity are not listed as threatened, endangered or species of special concern, but receive other legal protection.

There are 11 federally protected plant species with the potential to occur within the study area as they have been reported in Seminole and Orange counties. Near the existing roadway, the dominant vegetation is bahia grass (*Paspalum notatum*), which is regularly mowed. The project area is highly urbanized but in some potential offsite pond locations vegetated areas remain. These are typically hardwood and coniferous forests that have been impacted by their proximity to the existing roadway and nuisance exotic species were observed at forest edges. There is no effect on the 11 federally protected plant species, with narrow habitat requirements for sandhills, scrub and scrubby flatwoods, which are absent from the project area.

The highest quality wildlife habitat within the study area is associated with Lake Lotus Park, which contains forested wetlands, marshes and upland forested systems. The project area is in an SJRWMD Riparian Habitat Protection Zone associated with the Wekiva River Hydrologic Basin. Future coordination with the SJRWMD will be required to address potential impacts of approximately 0.3 acre to the Riparian Habitat Protection Zone during design and permitting phases of the project.

Multiple avenues of protection will be employed to negate and minimize any potential effects to these species. Some measures employed may include detailed surveys and agency coordination during the project design phase, including providing appropriate mitigation to offset impacts. During construction, BMPs, adherence to FDOT's *Standard Specifications for Road and Bridge Construction* and use of reconstruction surveys are strategies that will be considered, as needed, for protection of listed species. The most recent version of the USFWS Standard Protection Measures for the Eastern Indigo Snake will be adhered to during construction of the proposed project. For these reasons, no substantial impacts to protected species or their habitats are anticipated.

C.8 Essential Fish Habitat

There is no Essential Fish Habitat in the project area.

D. Physical Impacts

D.1 Highway Traffic Noise

A traffic noise study was performed pursuant to Title 23 of the *Code of Federal Regulations* Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise, Florida Statutes 335.17, State highway construction; means of noise abatement, and FDOT's *PD&E Manual*, Part 2 Chapter 18.

The purpose of the noise study was to identify noise-sensitive sites that would be impacted with the proposed project and evaluate abatement measures at impacted noise-sensitive sites. The field measurements for sound along the project corridor were obtained at two locations: eastbound side of SR 414 south of the Rose Pointe subdivision and eastbound side of SR 414 on Oranole Road. These field measurements were used as inputs into a computer model used to predict existing as well as future design year traffic noise levels with and without proposed roadway improvements. Traffic noise levels were predicted for the project's existing year (2019) and the design year (2045) No-Build and Preferred Alternatives. Within the study area, the following four types of land use have the potential to be impacted by traffic noise—residences, recreational areas, a trail and the exterior use of an office building.

Existing FDOT highway traffic noise barriers stand between SR 414 and most of the residential areas along the project corridor. The barriers were considered in the noise analysis of the No-Build Alternative and the Preferred Alternative. Locations of the noise barriers are presented in Attachment 2 and exist at residential subdivisions. Two noise barrier scenarios were evaluated: the first scenario would provide a noise barrier inside the SR 414 ROW and the second scenario would provide both a noise barrier inside the ROW and a noise barrier on the edge of the elevated toll facility (that is, on structure). The noise barrier within the SR 414 ROW was evaluated at heights ranging from 8 to 22 feet, and the noise barrier on the edge of the elevated toll facility was evaluated at a height of 8 feet, following the requirements of FDOT's Noise Policy. In the existing condition (year 2019) with the existing roadway geometry, traffic noise is predicted to range from 37.7 to 76.3 decibels. The project's traffic noise is predicted to range from 40.5 to 78.3 dB(A) for the design year (year 2045) No-Build Alternative with the programmed improvements to SR 414. Finally, traffic noise is predicted to range from 44.0 to 76.5 dB(A) with the Preferred Alternative. The predicted traffic noise levels associated with the Preferred Alternative in 2045 would approach, meet or exceed the noise abatement criteria, but the levels are not predicted to increase substantially (that is, greater than 15.0 dB(A) over existing levels).

The results of the highway traffic noise analysis indicate that the Preferred Alternative would impact 46 properties with residential land use and the Seminole Wekiva Trail in the design year (2045). Noise abatement measures evaluated for the impacted properties included traffic management measures, alignment modifications, buffer zones and noise barriers. However, further evaluation indicates that a noise barrier inside the ROW (Scenario 1) may be feasible and reasonable for 10 of the 46 impacted residences. These 10 properties are associated with the Rose Pointe subdivision located on the south side of SR 414 just east of the US 441 interchange (refer to Attachment 2 for the potential noise barrier location). There appear to be no feasible and reasonable measures to abate predicted traffic noise impacts for the remaining 36 residences or the Seminole Wekiva Trail. Table D-1 provides further details of the potential noise barrier associated with the Preferred Alternative.

Construction of feasible and reasonable noise abatement measures at the noise-impacted locations identified in Table D-1 and Attachment 2 are contingent upon the following conditions:

- Detailed noise analyses during the final design process support the need, feasibility and reasonableness of providing abatement.
- Cost analysis indicates that the cost of the noise barrier(s) will not exceed the cost reasonable criterion.
- Community input supporting types, heights and locations of the noise barrier(s) is provided to CFX.

Table D-1. Summary of the Potential Noise Wall included in the Preferred Alternative

Noise-Sensitive Area	Number of Impacted Receptors	Proposed Barrier Height/Length (feet)	Preliminary Noise Barrier Location	Number of Benefited Receptors ¹		Total Cost of Barrier ²	Cost Per Benefited Receptor ³
				Impacted	Total		
Rose Pointe Subdivision	14	16 / 807	Inside ROW along SR 414 Maitland Boulevard	10	10	\$387,360	\$38,736

¹ Receptors with a predicted reduction of 5 dB(A) or more are considered benefited.

² Estimated cost based on a unit cost of \$30 per square foot.

³ FDOT cost reasonable criterion is \$42,000 per benefited receptor

D.2 Air Quality

This project is not expected to create adverse impacts on air quality because the project area is in attainment for all National Ambient Air Quality Standards and because the project is expected to improve the Level of Service and reduce delay and congestion on all facilities within the study area.

Construction activities may cause short-term air quality impacts in the form of dust from earthwork and unpaved roads. These impacts would be minimized by adherence to applicable state regulations and to FDOT's *Standard Specifications for Road and Bridge Construction*. For these reasons, no substantial impacts to air quality are anticipated because of the proposed project. The project's *Air Quality Technical Memorandum* (CFX 2022a) documents the results of the air quality screening

D.3 Contamination

A contamination screening evaluation was conducted and documented in accordance with the *FDOT PD&E Manual*. The purpose of this survey was to identify, review and provide risk ratings for properties or facilities that have potential contamination sites that may be impacted by the proposed improvements. The evaluation included an identification of potential contamination sites within the study area, as documented in the project's *Level 1 Contamination Screening Evaluation Report* (CFX 2022e), available under separate cover.

Based on the Level 1 contamination screening evaluation, a total of 19 potential contamination sites were identified within the project limits. The following FDOT Risk Ratings were assigned to each potential contamination site:

- Risk Rating No: 0 Sites

- Risk Rating Low: 15 Sites
- Risk Rating Medium: 4 Sites
- Risk Rating High: 0 Sites

In addition, a total of eight potential pond alternatives were evaluated to address stormwater management. Not all the proposed stormwater ponds will be selected for use. Three pond alternatives were assigned a risk potential of Medium, which the others were assigned a risk potential of Low.

Medium Risk sites are recommended for Level II Impact to Construction Assessments, including soil and groundwater testing, if ROW acquisition or subsurface work is proposed on or adjacent to them. Level II Impact to Construction Assessments may be required for the Medium Risk pond sites, depending on the final pond locations and configurations.

Based on 1) the future completion of Level II field screening for the Medium Risk sites identified, 2) the completion of contamination remediation activities as determined necessary (following future testing activities) and 3) the inclusion of the appropriate contamination demarcation in the construction plans, contamination is not expected to have a substantial impact to the Preferred Alternative.

D.4 Utilities and Railroads

A utility assessment was performed to document the existing or planned utilities in accordance with the *FDOT PD&E Manual*.

Overhead and buried utilities extend along the project corridor. There are no railroads within the project limits. Utility Agency Owners were identified from a Sunshine 811 design ticket. A field review was also conducted to further identify any designated existing facilities in the project corridor. Preliminary utility coordination was initiated through written communication to the listed utility contacts. The UAOs were informed of the PD&E Study through the notification letters and were requested to provide information regarding the location, type, dimension and characteristics of any major utilities along or crossing the existing ROW. UAOs were requested to note if any utility facility is located within the CFX and FDOT ROWs by easement or permit and to provide an order-of magnitude, worst-case estimate for the cost of relocating any utilities affected by the proposed project.

Because the Preferred Alternative will be constructed within the existing ROW, impacts to most utilities are expected to be minimal. However, the Duke Energy Transmission overhead electrical lines and associated poles near SR 414 east of US 441 may be impacted because of the proposed roadway elevation changes. Additionally, Altamonte Springs-FDOT-Integrated Reuse and Stormwater Treatment pipe is located under the existing median of SR 414 beginning at the Seminole Wekiva Trail and extends 2,850 feet east. The piers associated with the SR 414 elevated expressway are anticipated to impact the A-FIRST pipe. During the study, coordination between CFX and the city of Altamonte Springs took place to determine feasible relocation options. Coordination will continue between the city of Altamonte Springs and CFX during the design phase to determine the new location of the pipeline. As a result of this coordination, CFX has committed to the following:

- Utilities requiring relocation separate and prior to construction will be conducted as a separate project in advance to this project. Interruption in services for relocated utilities will be minimized and coordinated with the appropriate agencies.

The estimated impacts to utility facilities resulting from the Preferred Alternative are itemized by location in Table D-2, along with estimated relocation costs. The estimated impacts are based on the data provided by the UAO as previously summarized. Actual utility impacts will be verified during the design phase, when a detailed survey and subsurface utility information is available. The total combined estimated cost for relocations is \$2.3 million.

Mitigation measures will be implemented during the design phase of the project to minimize impacts to the existing utilities. If impacts are unavoidable, design alternatives will be reviewed to allow for relocation of impacted facilities in a manner that minimizes cost to the UAO and disruption to their customers. The Preferred Alternative is expected to have no significant impact to utilities in the project area.

D.5 Construction

Construction activities for the proposed project may cause short-term impacts in the form of dust from earthwork and unpaved roads. These impacts will be minimized by adherence to applicable state regulations and to applicable *FDOT Standard Specifications for Road and Bridge Construction*.

Air quality is anticipated to be temporary resulting primarily from emissions associated with diesel-powered construction equipment and dust associated with fill materials and road constructions. Temporary noise and vibration impacts are also anticipated during construction from heavy equipment movement and other construction activities.

In terms of construction noise, the nearby businesses and residences within the project limits are construction noise and vibration-sensitive sites. Should unanticipated noise or vibration issues arise during the construction process, the Project Engineer, in coordination with CFX and the contractor, will investigate additional methods of controlling these impacts. Adherence to local construction noise and/or construction vibration ordinances by the contractor will also be required, where applicable.

Water quality effects resulting from erosion and sedimentation will be controlled in accordance with the *FDOT Standard Specifications for Road and Bridge Construction* and through the use of BMPs. Maintenance of traffic and sequence of construction will be planned and scheduled to minimize traffic delays throughout the project. Signs will be used to provide notice of access to local businesses and other pertinent information to the traveling public.

The *FDOT Standard Specifications for Road and Bridge Construction* provides measures to be followed during construction that significantly reduces the risk of potential water quality impacts associated with erosion and stormwater runoff during construction. Therefore, no substantial impacts are expected during the construction of the proposed project.

Table D-2. Utility Impacts from Preferred Alternative by Location

Utility Type	Transverse or Adjacent	General Location	Size	Approx. Length	Impacts	Cost Estimate
AT&T Florida						
BT, BFO	Transverse	Crossing SR 414 west side Orange Blossom Trail (US 441)	4" Conduit 100 Pair Cable 12, 24, & 48 Fiber Cables	500 feet	No anticipated impacts	\$0
BT	Transverse	Crossing SR 414 east side Orange Blossom Trail (US 441)	4" Conduit 1200 Pair Cable	500 feet	No anticipated impacts	\$0
BT, BFO	Transverse	Crossing SR 414 west side Bear Lake Road/Rose Avenue	4" Conduit 48 BFO	200 feet	No anticipated impacts	\$0
OFOC, OT	Transverse	Crossing SR 414 east side Bear Lake Road/Rose Avenue	48 BFO 200 Pair Cable	200 feet	New overhead construction	\$16,000
BT, BFO	Transverse	Crossing SR 414 east side Bear Lake Road/Rose Avenue along ROW limit	400 Pair & 1200 Pair Cables 12 BFO	200 feet	No anticipated impacts	\$0
BT, BFO	Transverse	Crossing SR 414 east side Eden Park Road	4" Conduit 144 BFO	150 feet	No anticipated impacts	\$0
BT, BFO	Transverse	Crossing SR 414 east side Gateway Drive	48 BFO 50 Pair Cables	150 feet	No anticipated impacts	\$0
BT, BFO	Transverse	Crosses SR 414 100' west of bridge ending at STA. 1569+50	12 BFO 25 Pair Cable	300 feet	No anticipated impacts	\$0

Table D-2. Utility Impacts from Preferred Alternative by Location

Utility Type	Transverse or Adjacent	General Location	Size	Approx. Length	Impacts	Cost Estimate
BT, BFO	Transverse	Crossing SR 414 west side Forest City Road	2-4" Conduits 24 BFO 2-144 BFO 2-600 Pair, 3-1200 Pair, & 2-1800 Pair Cables	450 feet	No anticipated impacts	\$0
Lumen (fka CenturyLink)						
BFO	Transverse	Crossing SR 414 east side Forest City Road	2" HDPE 144 BFO	450 feet	No anticipated Impacts	\$0
BFO	Adjacent	Runs along north side of SR 414, beginning at Forest City Road	1.25" HDPE 24 BFO	900 feet	No anticipated impacts	\$0
Charter Communications						
OTV	Transverse	Runs north until SR 414 east side of Orange Blossom Trail. Ends at intersection crossing	Unknown	±50 feet	No anticipated impacts	\$0
BFO	Transverse	Crossing SR 414 east side of Orange Blossom Trail	Unknown	500 feet	No anticipated impacts	\$0
OTV	Transverse	Runs north along east side of Rose Avenue	Unknown	±50 feet	No anticipated impacts	\$0
BTV	Transverse	Curves around the southeast corner at the intersection of Rose Avenue and SR 414	Unknown	±50 feet	No anticipated impacts	\$0
OTV	Adjacent	Runs along the south side of SR 414 from the Rose Avenue intersection	Unknown	1200 feet	No anticipated impacts	\$0
OTV	Transverse	Runs along west side of Magnolia Homes Road and ends at the intersection of SR 414	Unknown	±50 feet	No anticipated impacts	\$0

Table D-2. Utility Impacts from Preferred Alternative by Location

Utility Type	Transverse or Adjacent	General Location	Size	Approx. Length	Impacts	Cost Estimate
BTV	Transverse/Adjacent	Crosses SR 414 on the west side of Magnolia Homes Road and then runs adjacent to SR 414 for another 250 feet	Unknown	Total 500 feet	No anticipated impacts	\$0
OTV	Adjacent	Runs adjacent to SR 414 on the south side of the roadway until the Forest City Road intersection	Unknown	600 feet	No anticipated impacts	\$0
OTV	Transverse	Runs along west side of Forest City Road to the southwest corner at the SR 414 intersection	Unknown	±50 feet	No anticipated impacts	\$0
BTV	Transverse	Crosses SR 414 on the west side of Forest City Road and continues from the southwest corner northbound	Unknown	450 feet	No anticipated impacts	\$0
BFO	Transverse	Crosses SR 414 continuously on the east side of Forest City Road	Unknown	450 feet	No anticipated impacts	\$0
City of Altamonte Springs						
RWM	Adjacent	Runs parallel beneath SR 414, crossing US 441 Connects to 24" PVC that follows the length of the Seminole Wekiva Trail	24" HDPE	550 feet	No impacts anticipated	\$0
RWM	Transverse	Extends from the south side of the Seminole Wekiva Trail into the median of SR 414 Connects to 24" PVC that runs beneath the median on SR 414	24" PVC	100 feet	No impacts anticipated	\$0
RWM	Adjacent	Runs beneath median on SR 414 from Seminole Wekiva Trail for 2850 feet until 90° bend	24" PVC	2850 feet	New construction	\$427,500

Table D-2. Utility Impacts from Preferred Alternative by Location

Utility Type	Transverse or Adjacent	General Location	Size	Approx. Length	Impacts	Cost Estimate
RWM	Transverse	Crosses westbound SR 414 from median to north side of the roadway Connects 24" PVC pipes adjacent to SR 414	24" PVC with 42" Steel Casing	50 feet (with steel casing)	No impacts anticipated	\$0
RWM	Adjacent	Runs along the north side of SR 414 before 90° bend, extending RWM north on Eden Park Drive 42" Steel casing from northwest corner to northeast corner at Eden Park Drive intersection	24" PVC with 42" Steel Casing	800 feet 100 feet (Steel casing only)	No impacts anticipated	\$0
Duke Energy (Distribution)						
OE	Transverse	Runs along east side Orange Blossom Trail to the southeast corner of the SR 414 intersection	12.4 kV	±50 feet	No impacts anticipated	\$0
BE	Transverse	Crosses SR 414 on the east side of Orange Blossom Trail through the Seminole Wekiva Trail	12.4 kV	500 feet	No impacts anticipated	\$0
OE	Adjacent	Runs along the south side of SR 414 from the southeast corner of the Orange Blossom Trail intersection	12.4 kV	1700 feet	No impacts anticipated	\$0
OE	Transverse	Runs along the east side of Rose Avenue and connects to the southeast corner of SR 414 intersection	12.4 kV	±50 feet	No impacts anticipated	\$0
OE	Transverse	Crosses SR 414 on the east side of Rose Avenue (to be replaced/modified)	12.4 kV	200 feet	New overhead construction	\$65,500
OE	Transverse	Runs along east side of Bear Lake Road until the northwest corner at the SR 414 intersection	12.4 kV	±50 feet	No impacts anticipated	\$0

Table D-2. Utility Impacts from Preferred Alternative by Location

Utility Type	Transverse or Adjacent	General Location	Size	Approx. Length	Impacts	Cost Estimate
OE	Transverse	Runs along east side of Eden Park Road to the southeast corner at the intersection of SR 414	12.4 kV	±50 feet	No impacts anticipated	\$0
OE	Transverse	Crosses SR 414 from the southeast corner through the northeast corner on the east side of Eden Park Road (to be replaced/modified)	12.4 kV	150 feet	New overhead construction	\$35,500
OE	Transverse	Extends from the northeast corner on the east side of Eden Park Road north from the SR 414 intersection	12.4 kV	±50 feet	No impacts anticipated	\$0
OE	Transverse	Runs along west side of Magnolia Homes Road and ends at the southwest corner of the SR 414 intersection	12.4 kV	±50 feet	No impacts anticipated	\$0
OE	Transverse	Crosses SR 414 on the west side of Magnolia Homes Road to the northwest corner of the intersection (to be replaced/modified)	12.4 kV	150 feet	New overhead construction	\$33,500
BE	Transverse	Extends from the northwest corner of SR 414 and Magnolia Home Road north	12.4 kV	±50 feet	No anticipated impacts	\$0
OE	Transverse	Crosses SR 414 midway between the intersections of Gateway Drive and Forest City Road (to be replaced/modified)	12.4 kV	200 feet	New overhead construction	\$56,000
BE	Transverse	Crosses SR 414 west side of Forest City Road	12.4 kV	450 feet	No impacts anticipated	\$0
Duke Energy (Transmission)						
OE	Adjacent	Runs along south side of SR 414 to east of US 441	Unknown	1500 feet	No anticipated impacts	\$0

Table D-2. Utility Impacts from Preferred Alternative by Location

Utility Type	Transverse or Adjacent	General Location	Size	Approx. Length	Impacts	Cost Estimate
OE	Transverse	Crosses SR 414 between US 441 and Rose Avenue/Bear Lake Road	Unknown	650 ft	New overhead construction	\$1,172,500
OE	Adjacent	Runs along north side of SR 414 east of US 441 to Bear Lake Road	Unknown	1800 ft	No anticipated impacts	\$0
Lake Apopka Natural Gas						
Gas	Transverse (Offset from SR 414)	Runs along west side of Apopka Boulevard	4" HP Steel	None	No impacts anticipated	\$0
Gas	Transverse (Offset from SR 414)	Runs along east side of Apopka Boulevard	2" Steel	None	No impacts anticipated	\$0
Gas	Adjacent (Offset from SR 414)	Begins at bridge end and runs along south side of Winfield Street, connects to 2" steel along west side of Forest City Road	2" Steel	100 feet (adjacent to SR 414)	No impacts anticipated	\$0
Gas	Adjacent (Offset from SR 414)	Runs along south side of Joyann Street, connects to 2" steel along west side of Forest City Road	1.5" Steel	None	No impacts anticipated	\$0
Gas	Transverse	Runs along Forest City Road, connected to 2" steel and 1.5" steel on side streets	2" Steel	None	No impacts anticipated	\$0
Orange County Utilities						
FM	Transverse	Crosses SR 414 approx. 250' west of the intersection of Orange Blossom Trail	16" DIP	1000 feet	No impacts anticipated	\$0
FM	Transverse	Crosses SR 414 on the west side of Orange Blossom Trail	16" PVC	±900 feet	No impacts anticipated	\$0

Table D-2. Utility Impacts from Preferred Alternative by Location

Utility Type	Transverse or Adjacent	General Location	Size	Approx. Length	Impacts	Cost Estimate
WM	Transverse	Crosses SR 414 on the east side of Orange Blossom Trail	12" PVC (beneath SR 414) 6" DIP 16" DIP	±900 feet	No impacts anticipated	\$0
WM	Adjacent (beneath SR 414)	Runs below SR 414 travelway east of Orange Blossom Trail intersection in a series of connected water mains	2-8" PVC (offset approx. 8 feet from each other) 12" PVC (1000 feet)	1300 feet	No impacts anticipated	\$0
WM	Transverse (beneath SR 414)	Runs below SR 414 travelway east of Orange Blossom Trail intersection in a series of laterals	3-8" DIP 3-6" DIP 5-8" PVC	Varies	No impacts anticipated	\$0
WM	Transverse/Adjacent	Runs along west side of SR 414, crosses travelway, and extends on the east side of SR 414, connecting to 16" HDPE water main at the Rose Avenue intersection	12" PVC 24" Steel	800 feet (PVC) 156 feet (steel WM)	No impacts anticipated	\$0
WM	Transverse	Runs along west side of Rose Avenue, connecting to 12" PVC water main at the southwest corner on SR 414	16" HDPE	±50 feet	No impacts anticipated	\$0
FM	Transverse	Crosses eastbound travelway of SR 414 from Tealwood Cover neighborhood, connecting to median	6" PVC	±100 feet	No impacts anticipated	\$0
FM	Transverse	Runs along west side Magnolia Homes Avenue and crosses travelway to southeast corner at SR 414 intersection	10" PVC	±50 feet	No impacts anticipated	\$0
WM	Adjacent (Offset from SR 414)	Runs along south side of Oranole Road, offset from SR 414	3" AC	1600 feet	No impacts anticipated	\$0

Table D-2. Utility Impacts from Preferred Alternative by Location

Utility Type	Transverse or Adjacent	General Location	Size	Approx. Length	Impacts	Cost Estimate
Seminole County						
WM	Adjacent	Runs along west side of SR 414 with above grade interconnect piping adjacent to the sidewalk; connects at northwest intersection of Bear Lake Road and extends north	10" PVC	1100 feet	Potential impacts to interconnect piping	\$120,000
Zayo Group						
BFO	Transverse	Runs along the west side Forest City Road under SR 414	Unknown	200 feet	No anticipated impacts	\$0

Notes:

BE = buried electric

BFO = buried fiber optic

BT = buried telephone

BTV = buried television

FM = force main

OE = overhead electric

OFOC = overhead fiber optic cable

OT = overhead telephone

OTV = overhead television

RWM = reclaimed water main

WM = water main

D.6 Bicycles and Pedestrians

The project corridor includes continuous sidewalks that extend along both sides of SR 414 from US 441 to Gateway Drive. Further, sidewalks extend along all of the cross streets within the study area. The sidewalks discontinue at Gateway Drive, which limits pedestrian access to SR 434. Because of the limited ROW, the proposed improvements do not include enhancements to the existing sidewalks and therefore the pedestrian mobility will remain the same as the existing condition.

Undesignated bicycle lanes are present between Bear Lake Road and Gateway Drive through the use of wide shoulders along both sides of SR 414 (4 feet wide along the mainline and 8 feet wide along the bridges). In addition, bicycle lanes are present north of the study area at Eden Park Road and SR 434. The Preferred Alternative includes 7-foot-wide bicycle lanes adjacent to the outside travel lane in each direction, allowing for a safety buffer between the motorized vehicle travel lanes and the bicycle lanes. Bicyclists' improved mobility will allow for safer access to nearby transit and existing/planned trails. Bicycle facilities are expected to be enhanced as a result of the Preferred Alternative.

D.7 Navigation

The project will not affect any tidally influenced waterways, streams, or canals that are protected under Section 10 of the Rivers and Harbors Act. Therefore, the project will have no effect on navigation.

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Attachment 2

Preferred Alternative Concept Plans

CENTRAL FLORIDA
EXPRESSWAY AUTHORITY

PREFERRED ALTERNATIVE
CONCEPT PLANS

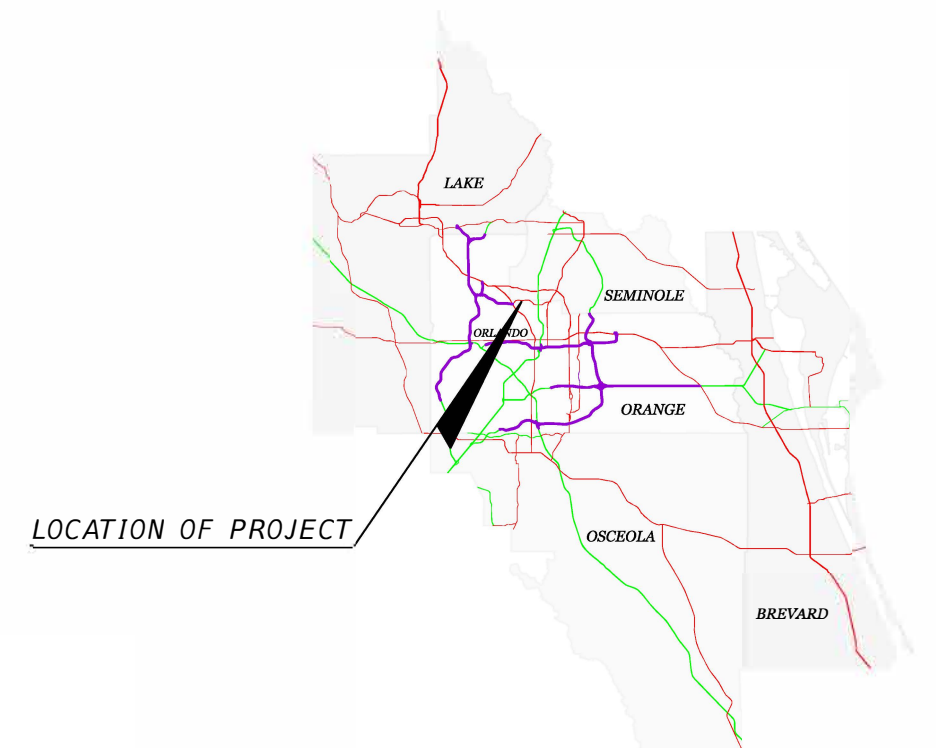
SR 414 MAITLAND BLVD.
EXPRESSWAY EXTENSION
US 441 TO SR 434

STATE ROAD NO. 414
CFX PROJECT NUMBER: 414-227

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
001	KEY SHEET TYPICAL SECTIONS (UNDER SEPARATE COVER)
002	PROJECT LAYOUT
003 - 005	CURVE & COORDINATE DATA
006 - 011	SR 414 ELEVATED PLAN SHEETS
012 - 017	SR 414 AT-GRADE PLAN SHEETS
018 - 024	PROFILE SHEETS

DRAFT CONCEPT
NOT FOR CONSTRUCTION
FEBRUARY 2022



LOCATION OF PROJECT

CENTRAL FLORIDA EXPRESSWAY AUTHORITY
GOVERNING BOARD

SEAN PARKS	CHAIRMAN, LAKE COUNTY REPRESENTATIVE
JERRY DEMINGS	VICE CHAIRMAN, ORANGE COUNTY MAYOR
LEE CONSTANTINE	TREASURER, SEMINOLE COUNTY REPRESENTATIVE
BRANDON ARRINGTON	OSCEOLA COUNTY REPRESENTATIVE
BUDDY DYER	MAYOR OF ORLANDO
JAY MADARA	GOVERNOR'S APPOINTEE
CHRISTOPHER MAIER	GOVERNOR'S APPOINTEE
RAFAEL E. MARTINEZ	GOVERNOR'S APPOINTEE
VICTORIA SIPLIN	ORANGE COUNTY REPRESENTATIVE
CURT SMITH	BREVARD COUNTY REPRESENTATIVE

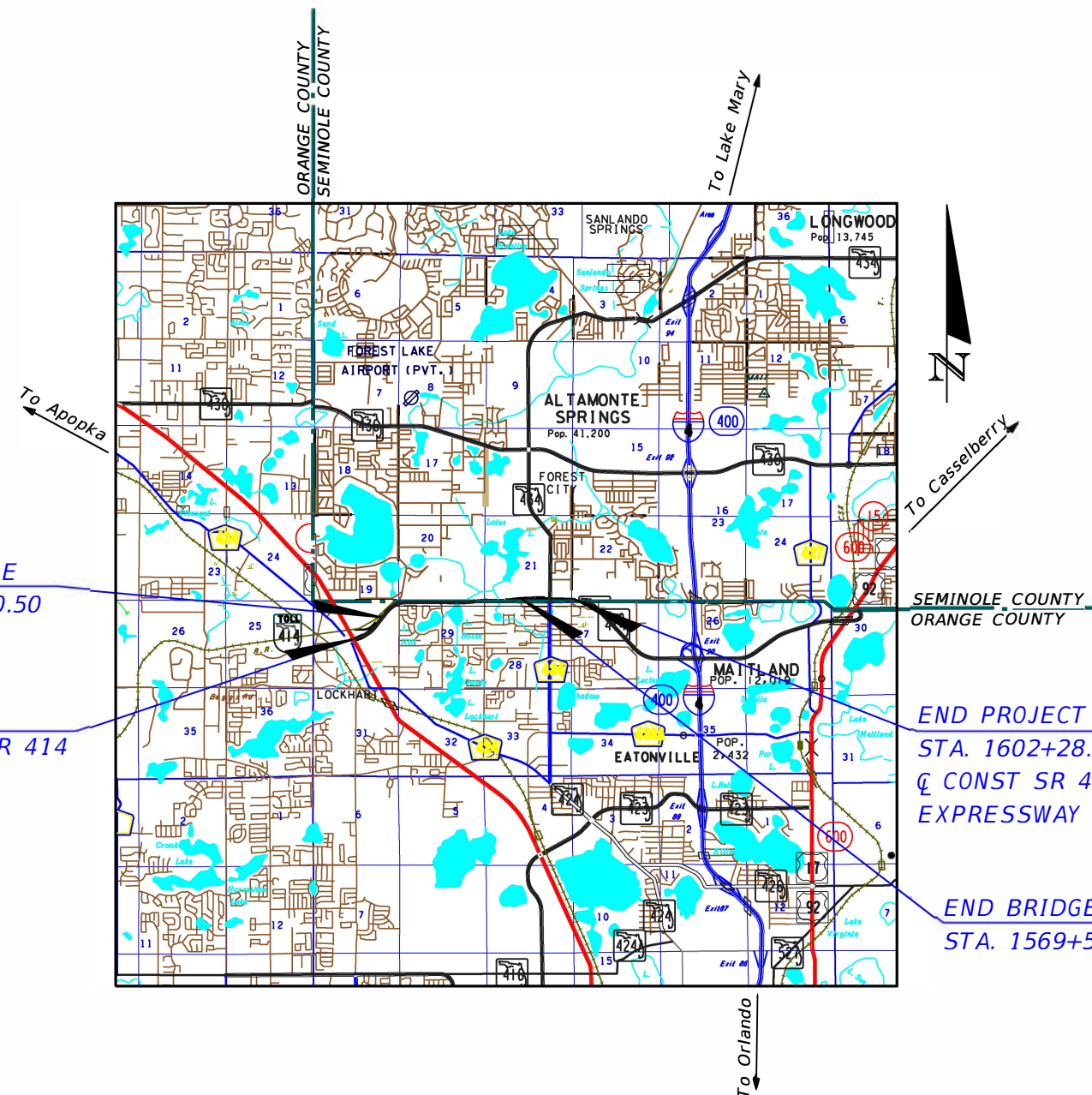
CFX PROJECT MANAGER:
WILL HAWTHORNE, P.E.

BEGIN BRIDGE
STA. 1481+10.50

BEGIN PROJECT
STA. 1452+90.59 @ CONST SR 414
EXPRESSWAY EXTENSION

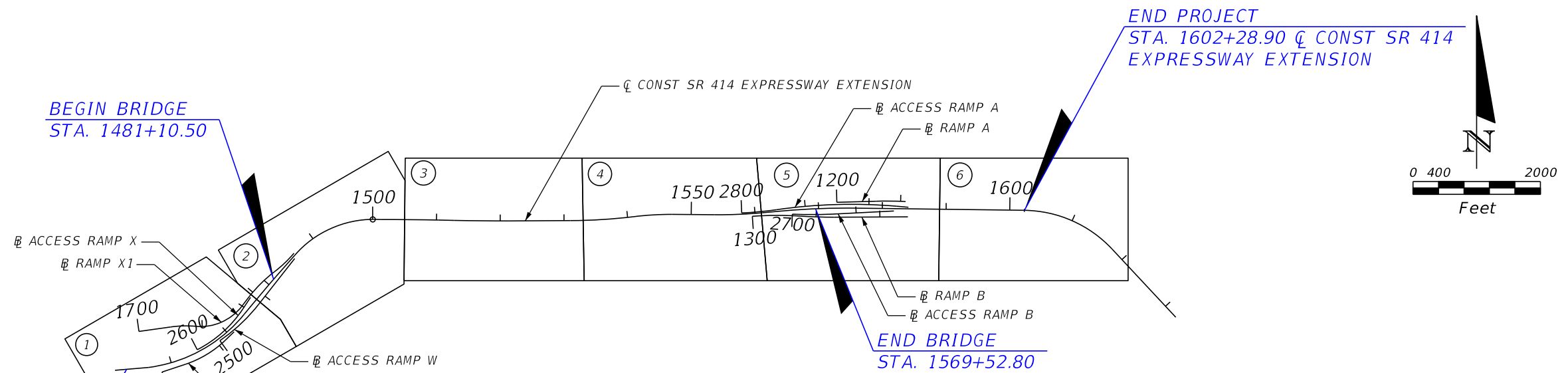
END PROJECT
STA. 1602+28.90
@ CONST SR 414
EXPRESSWAY EXTENSION

END BRIDGE
STA. 1569+52.80



SHEET
NO.

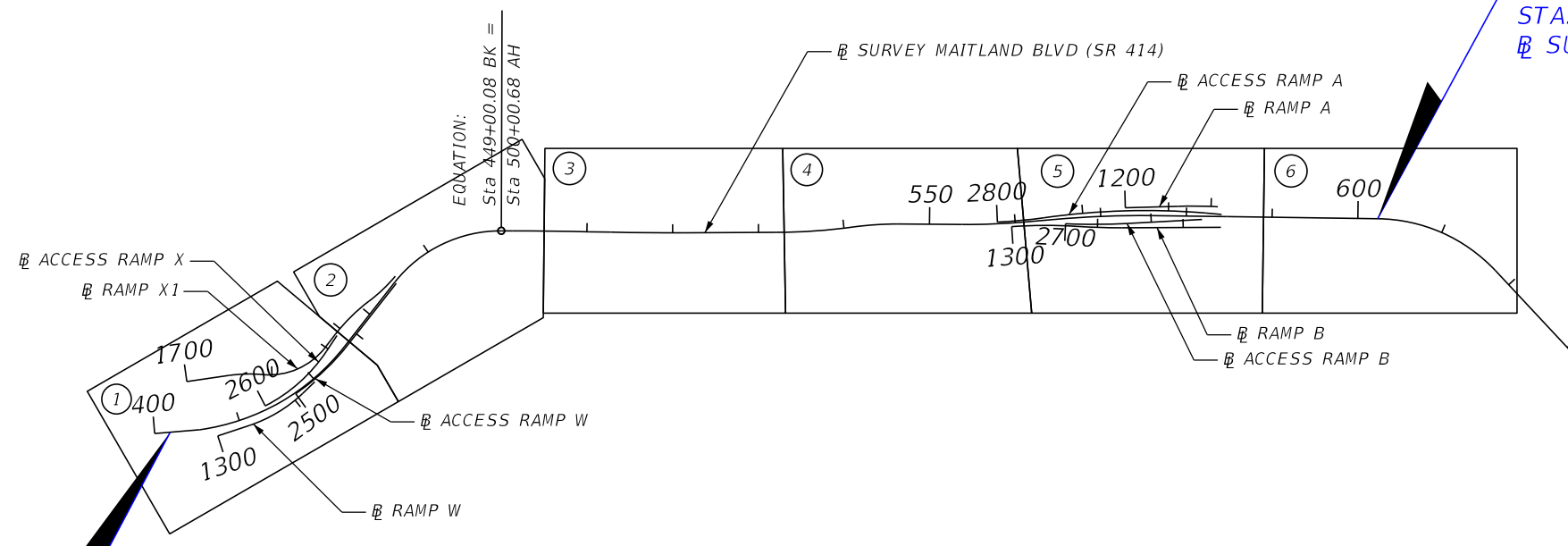
001



SR 414 ELEVATED

BEGIN PROJECT
STA. 1452+90.59 & CONST SR 414
EXPRESSWAY EXTENSION

END PROJECT
STA. 1602+28.90 & CONST SR 414
EXPRESSWAY EXTENSION =
STA. 602+28.92
& SURVEY MAITLAND BLVD



SR 414 AT-GRADE

BEGIN PROJECT
STA. 1452+90.59 & CONST SR 414
EXPRESSWAY EXTENSION =
STA. 401+80.00 & SURVEY MAITLAND BLVD
EXPRESSWAY EXTENSION

PRELIMINARY - SUBJECT TO CHANGE

ENGINEER OF RECORD: KRYSTAL H. BURNS, P.E.
P.E. LICENSE NO. 60883

JACOBS ENGINEERING GROUP INC.
200 S. ORANGE AVENUE, STE 900
ORLANDO, FL 32801; PHONE (407) 903-5001
CERTIFICATE OF AUTHORIZATION No. 000072

SR 414 MAITLAND BLVD.
EXPRESSWAY EXTENSION
US 441 TO SR 434

ROAD NO.
SR 414

PROJECT NO.
414-227

CENTRAL
FLORIDA
EXPRESSWAY
AUTHORITY

PROJECT LAYOUT

SHEET
NO.

002

CURVE AND COORDINATE DATA											
CHAIN	CURVE NO.	PC STA.	PT STA.	D	L	R	Direction	Design Speed	e _{max}	Superelev.	DESIGN NOTES
					LF	LF	LT/RT	mph	5%/10%	(ft./ft.)	
BL_SR414_PROP EXPRESSWAY	BL_SR414_PROP_3	1456+39.26	1459+58.55	2° 12' 13"	319.29	2600.00	LT	55 mph	10%-Rural	0.055	MATCH EXISTING 'e' ON BRIDGE
		COMPOUND CURVE									
	BL_SR414_PROP_4	1459+58.55	1473+95.17	2° 29' 59"	1436.61	2292.00	LT	50 mph	10%-Rural	0.049	
		REVERSE CURVE									
	BL_SR414_PROP_5	1473+95.17	1481+66.28	0° 16' 22"	771.11	21000.00	RT	50 mph	10%-Rural	NC	
	BL_SR414_PROP_8	1486+15.76	1500+15.52	3° 30' 00"	1399.76	1637.00	RT	50 mph	10%-Rural	0.065	AT BEAR LAKE RD/ROSE AVE
	BL_SR414_PROP_11	1501+27.07	1510+30.33	0° 06' 40"	903.26	51556.20	RT	50 mph	10%-Rural	NC	
	BL_SR414_PROP_14	1512+74.87	1521+34.87	0° 09' 53"	860.00	34768.27	LT	50 mph	10%-Rural	NC	
	BL_SR414_PROP_17	1530+98.79	1540+96.33	0° 41' 14"	997.53	8337.00	LT	50 mph	10%-Rural	NC	
		REVERSE CURVE									
	BL_SR414_PROP_18	1540+96.33	1546+96.60	1° 15' 00"	600.27	4584.00	RT	50 mph	10%-Rural	0.026	CURVE LENGTH CONSTRAINED BY PROPOSED PIER PLACEMENT WITHIN EXISTING BRIDGE MEDIAN
	BL_SR414_PROP_21	1553+63.52	1561+14.05	0° 43' 15"	750.53	7950.00	LT	50 mph	10%-Rural	RC	
	BL_SR414_PROP_24	1564+56.36	1576+02.56	0° 30' 00"	1146.19	11459.16	RT	50 mph	10%-Rural	NC	
	BL_SR414_PROP_27	1602+31.22	1617+69.55	3° 00' 00"	1538.33	1909.86	RT	50 mph	10%-Rural	0.06	MATCH EXISTING ROADWAY

NOTE: SHADING OF ADJACENT CURVES INDICATES COMPOUND CURVES OR REVERSE CURVES.

CURVE AND COORDINATE DATA

CHAIN	CURVE NO.	PC STA.	PT STA.	D	L	R	Direction	Design Speed	e _{max}	Superelev.	DESIGN NOTES
					LF	LF	LT/RT	mph	5%/10%	(ft./ft.)	
BL_SR414	BL_SR414_3	405+28.67	425+19.62	2° 12' 13"	1990.95	2600.00	LT	55 mph	10% - Rural	0.055	OVER US 441
EXISTING											
MAITLAND BLVD.	BL_SR414_6	434+73.95	449+00.08	3° 38' 52"	1426.13	1570.72	RT	45 mph	5% - Urban	RC	AT BEAR LAKE RD/ROSE AVE
STA EQN 449+00.08 BK = 500+00.68 AH											
	BL_SR414_9	501+27.16	510+30.43	0° 06' 40"	903.26	51556.20	RT	45 mph	5% - Urban	NC	
	BL_SR414_12	512+74.96	521+34.96	0° 09' 53"	860.00	34768.27	LT	45 mph	5% - Urban	NC	
	BL_SR414_15	532+09.25	541+20.01	0° 50' 53"	910.07	6755.80	LT	45 mph	5% - Urban	NC	
		REVERSE CURVE									
	BL_SR414_16	541+20.01	546+31.40	1° 38' 13"	511.38	3500.00	RT	45 mph	5% - Urban	NC	
	BL_SR414_19	553+78.79	561+00.00	0° 45' 00"	721.21	7639.44	LT	45 mph	5% - Urban	NC	
	BL_SR414_22	564+56.98	576+03.17	0° 30' 00"	1146.19	11459.16	RT	45 mph	5% - Urban	NC	
	BL_SR414_27	602+31.84	617+70.17	3° 00' 00"	1538.33	1909.86	RT	50 mph	10% - Rural	0.060	MATCH EXISTING ROADWAY

NOTE: SHADING OF ADJACENT CURVES INDICATES COMPOUND CURVES OR REVERSE CURVES.

PRELIMINARY - SUBJECT TO CHANGE

ENGINEER OF RECORD: KRYSTAL H. BURNS, P.E.
P.E. LICENSE NO. 60883

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SR 414 MAITLAND BLVD.
EXPRESSWAY EXTENSION
US 441 TO SR 434

ROAD NO.

SR 414

PROJECT NO.

414-227

CENTRAL
FLORIDA
EXPRESSWAY
AUTHORITY

CURVE & COORDINATE DATA

SHEET
NO.

004

CURVE AND COORDINATE DATA

CHAIN	CURVE NO.	PC STA.	PT STA.	D	L	R	Direction	Design Speed	e _{max}	Superelev.	DESIGN NOTES
					LF	LF	LT/RT	mph	5%/10%	(ft./ft.)	
RAMP A_ACC	RAMPA_ACC_1	2800+00.00	2805+45.18	1° 00' 00"	545.18	5730.00	LT	45 mph	5%-Urban	NC	CONNECTS TO AT-GRADE 45 MPH
		REVERSE CURVE									
	RAMPA_ACC_2	2805+45.18	2824+36.14	0° 41' 14"	1890.96	8337.00	RT	50 mph	10%-Rural	NC	
RAMP B_ACC	RAMPB_ACC_1	2700+00.00	2707+17.87	0° 45' 00"	717.87	7639.00	LT	50 mph	10%-Rural	RC	
RAMP W_ACC	RAMPW_ACC_1	2500+80.30	2508+32.53	2° 07' 19"	752.23	2700.00	LT	50 mph	10%-Rural	0.043	
RAMP X_ACC	RAMPX_ACC_1	2600+00.00	2609+65.89	2° 59' 59"	965.89	1910.00	LT	50 mph	10%-Rural	0.057	
RAMP A	RAMPA_3	1206+14.56	1210+46.50	1° 00' 00"	431.93	5730.00	RT	40 mph	5%-Urban	NC	
RAMP B	RAMPB_1	1300+00.00	1307+58.33	1° 00' 00"	758.33	5730.00	RT	40 mph	5%-Urban	NC	
		REVERSE CURVE									
	RAMPB_2	1307+58.33	1312+82.19	0° 45' 00"	523.87	7639.00	LT	40 mph	5%-Urban	NC	
RAMP W	RAMPW_3	1303+90.27	1311+17.40	3° 30' 00"	727.13	1637.00	LT	45 mph	5%-Urban	RC	
RAMP X1	RAMPX1_3	1704+99.54	1708+99.96	3° 16' 27"	400.41	1750.00	RT	45 mph	5%-Urban	RC	
		REVERSE CURVE									
	RAMPX1_4	1708+99.96	1717+17.94	6° 59' 45"	817.99	819.00	LT	45 mph	5%-Urban	0.030	
	RAMPX1_7	1719+14.15	1724+64.15	2° 45' 02"	550.00	2083.00	RT	45 mph	5%-Urban	NC	
		REVERSE CURVE									
	RAMPX1_8	1724+64.15	1728+89.15	2° 59' 59"	425.00	1910.00	LT	45 mph	5%-Urban	RC	

NOTE: SHADING OF ADJACENT CURVES INDICATES COMPOUND CURVES OR REVERSE CURVES.

PRELIMINARY - SUBJECT TO CHANGE

ENGINEER OF RECORD: KRYSTAL H. BURNS, P.E.
P.E. LICENSE NO. 60883

JACOBS ENGINEERING GROUP INC.
200 S. ORANGE AVENUE, STE 900
ORLANDO, FL 32801; PHONE (407) 903-5001
CERTIFICATE OF AUTHORIZATION No. 000072

SR 414 MAITLAND BLVD.
EXPRESSWAY EXTENSION
US 441 TO SR 434

ROAD NO.
SR 414

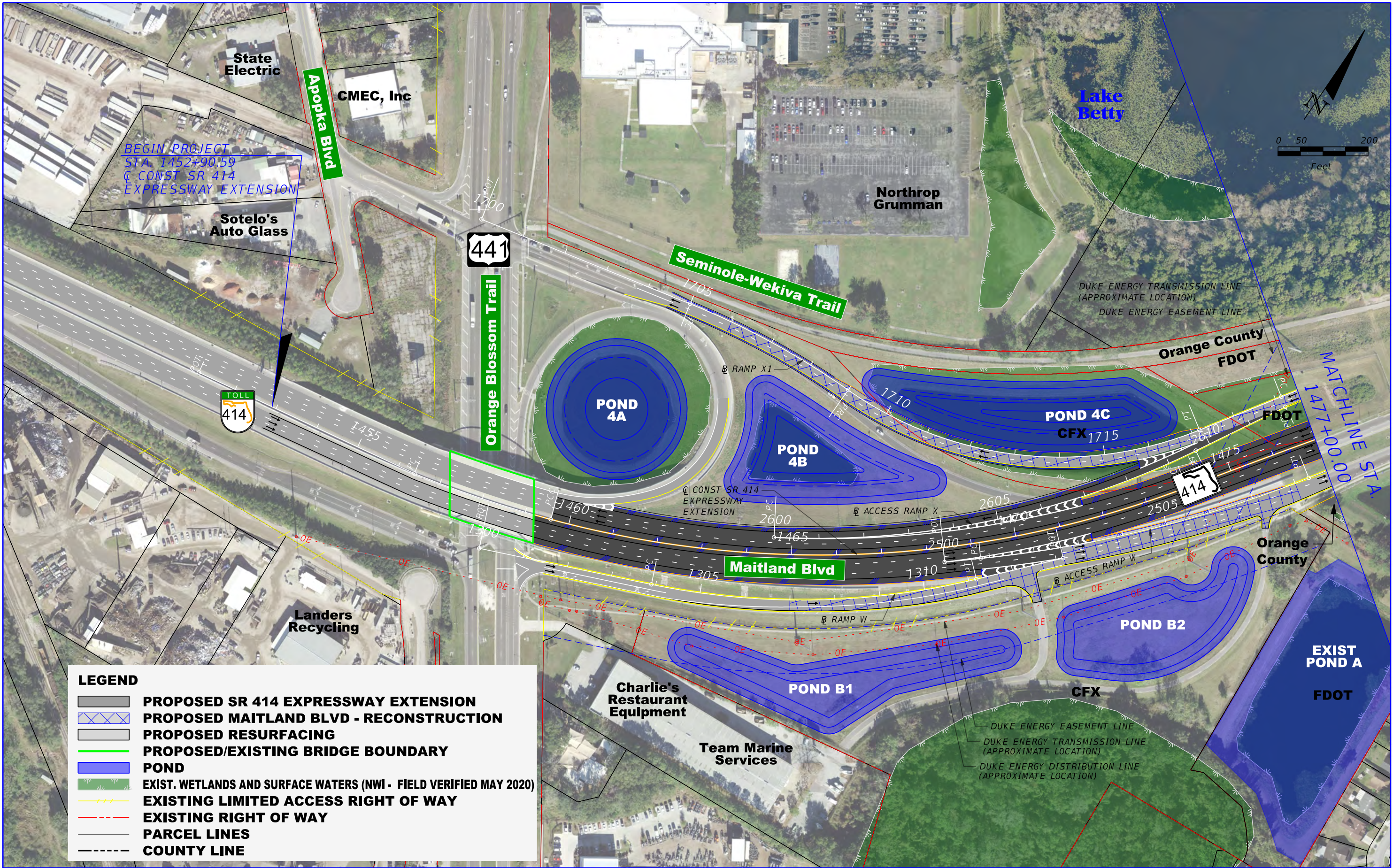
PROJECT NO.
414-227



CURVE & COORDINATE DATA

SHEET NO.

005



LEGEND

- PROPOSED SR 414 EXPRESSWAY EXTENSION
- PROPOSED MAITLAND BLVD - RECONSTRUCTION
- PROPOSED RESURFACING
- PROPOSED/EXISTING BRIDGE BOUNDARY
- POND
- EXIST. WETLANDS AND SURFACE WATERS (NWI - FIELD VERIFIED MAY 2020)
- EXISTING LIMITED ACCESS RIGHT OF WAY
- EXISTING RIGHT OF WAY
- PARCEL LINES
- COUNTY LINE

PRELIMINARY - SUBJECT TO CHANGE

ENGINEER OF RECORD: KRYSTAL H. BURNS, P.E.
P.E. LICENSE NO. 60883

JACOBS ENGINEERING GROUP INC.
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ORLANDO, FL 32801; PHONE (407) 903-5001
CERTIFICATE OF AUTHORIZATION No. 000072

SR 414 MAITLAND BLVD.
EXPRESSWAY EXTENSION
US 441 TO SR 434

ROAD NO.
SR 414

PROJECT NO.
414-227

**CENTRAL
FLORIDA
EXPRESSWAY
AUTHORITY**

SR 414 ELEVATED
PLAN SHEET (1)

SHEET
NO.

006



PRELIMINARY - SUBJECT TO CHANGE

ENGINEER OF RECORD: KRYSTAL H. BURNS, P.E.
P.E. LICENSE NO. 60883

JACOBS ENGINEERING GROUP INC.
200 S. ORANGE AVENUE, STE 900
ORLANDO, FL 32801; PHONE (407) 903-5001
CERTIFICATE OF AUTHORIZATION No. 000072

SR 414 MAITLAND BLVD.
EXPRESSWAY EXTENSION
US 441 TO SR 434

ROAD NO.
SR 414

PROJECT NO.
414-227

CENTRAL
FLORIDA
EXPRESSWAY
AUTHORITY

SR 414 ELEVATED
PLAN SHEET (2)

SHEET
NO.

007



PRELIMINARY - SUBJECT TO CHANGE

ENGINEER OF RECORD: KRYSTAL H. BURNS, P.E.
P.E. LICENSE NO. 60883

JACOBS ENGINEERING GROUP INC.
200 S. ORANGE AVENUE, STE 900
ORLANDO, FL 32801; PHONE (407) 903-5001
CERTIFICATE OF AUTHORIZATION No. 000072

SR 414 MAITLAND BLVD.
EXPRESSWAY EXTENSION
US 441 TO SR 434

ROAD NO.
SR 414

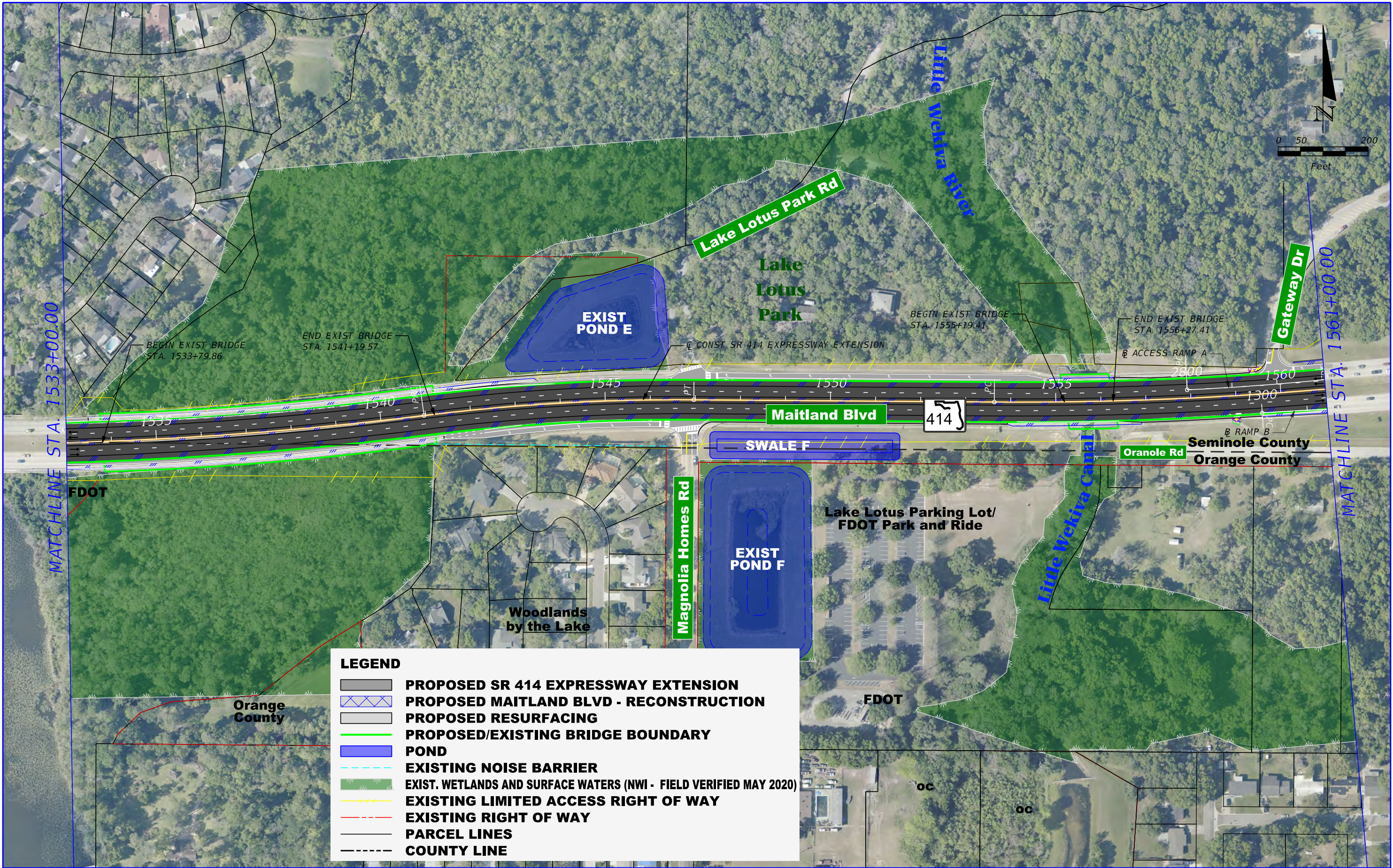
PROJECT NO.
414-227

CENTRAL
FLORIDA
EXPRESSWAY
AUTHORITY

SR 414 ELEVATED
PLAN SHEET (3)

SHEET
NO.

008



PRELIMINARY - SUBJECT TO CHANGE

ENGINEER OF RECORD: KRISTAL H. BURNS, P.E.
P.E. LICENSE NO. 60883

JACOBS ENGINEERING GROUP INC.
200 S. ORANGE AVENUE, STE 900
ORLANDO, FL 32801; PHONE (407) 903-5001
CERTIFICATE OF AUTHORIZATION No. 000072

SR 414 MAITLAND BLVD.
EXPRESSWAY EXTENSION
US 441 TO SR 434

ROAD NO.
SR 414

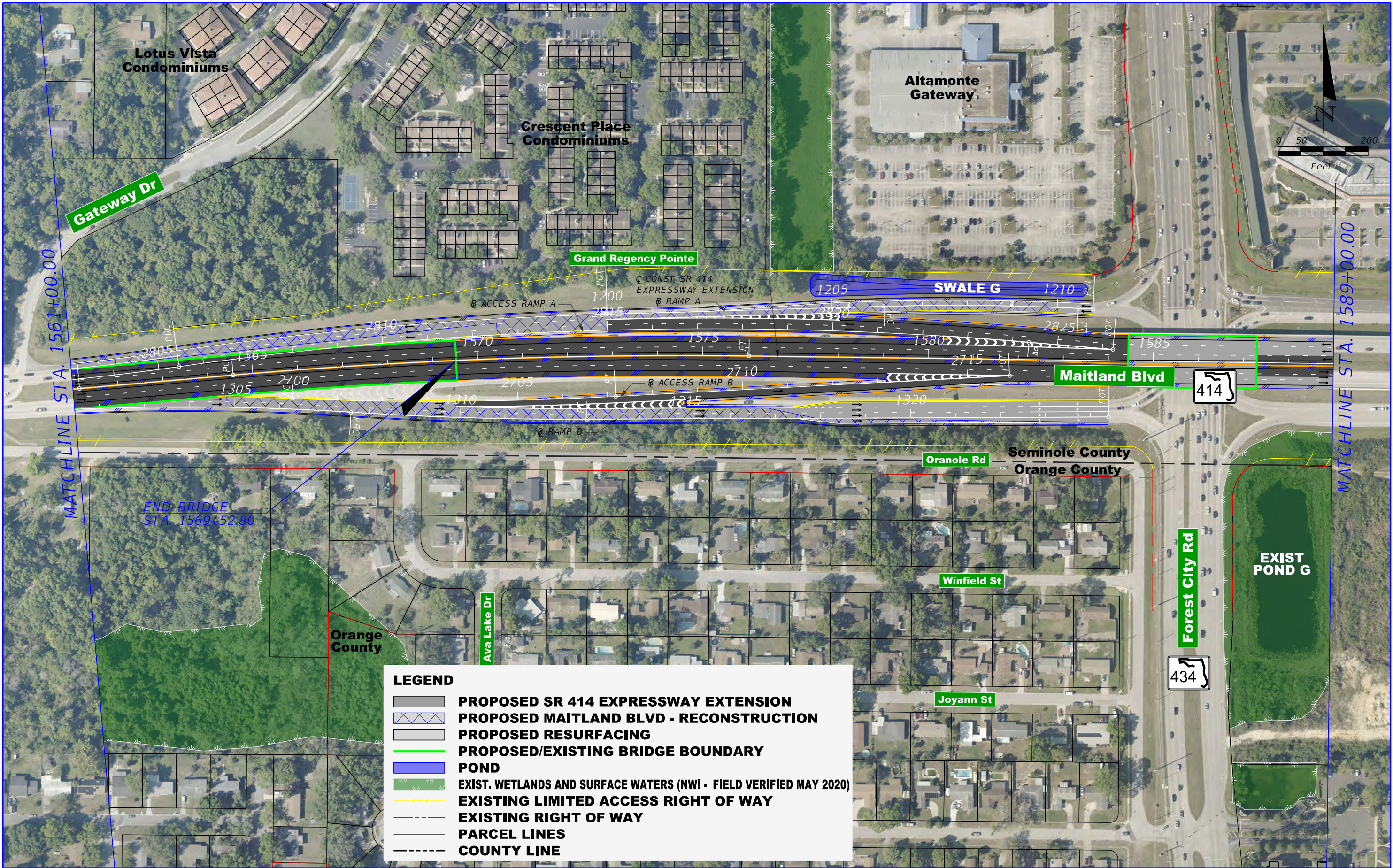
PROJECT NO.
414-227

CENTRAL
FLORIDA
EXPRESSWAY
AUTHORITY

SR 414 ELEVATED
PLAN SHEET (4)

SHEET
NO.

009



PRELIMINARY - SUBJECT TO CHANGE

ENGINEER OF RECORD: KRYSTAL H. BURNS, P.E.
P.E. LICENSE NO. 60883

JACOBS ENGINEERING GROUP INC.
200 S. ORANGE AVENUE, STE 900
ORLANDO, FL 32801; PHONE (407) 903-5001
CERTIFICATE OF AUTHORIZATION No. 000072

SR 414 MAITLAND BLVD.
EXPRESSWAY EXTENSION
US 441 TO SR 434

ROAD NO.
SR 414

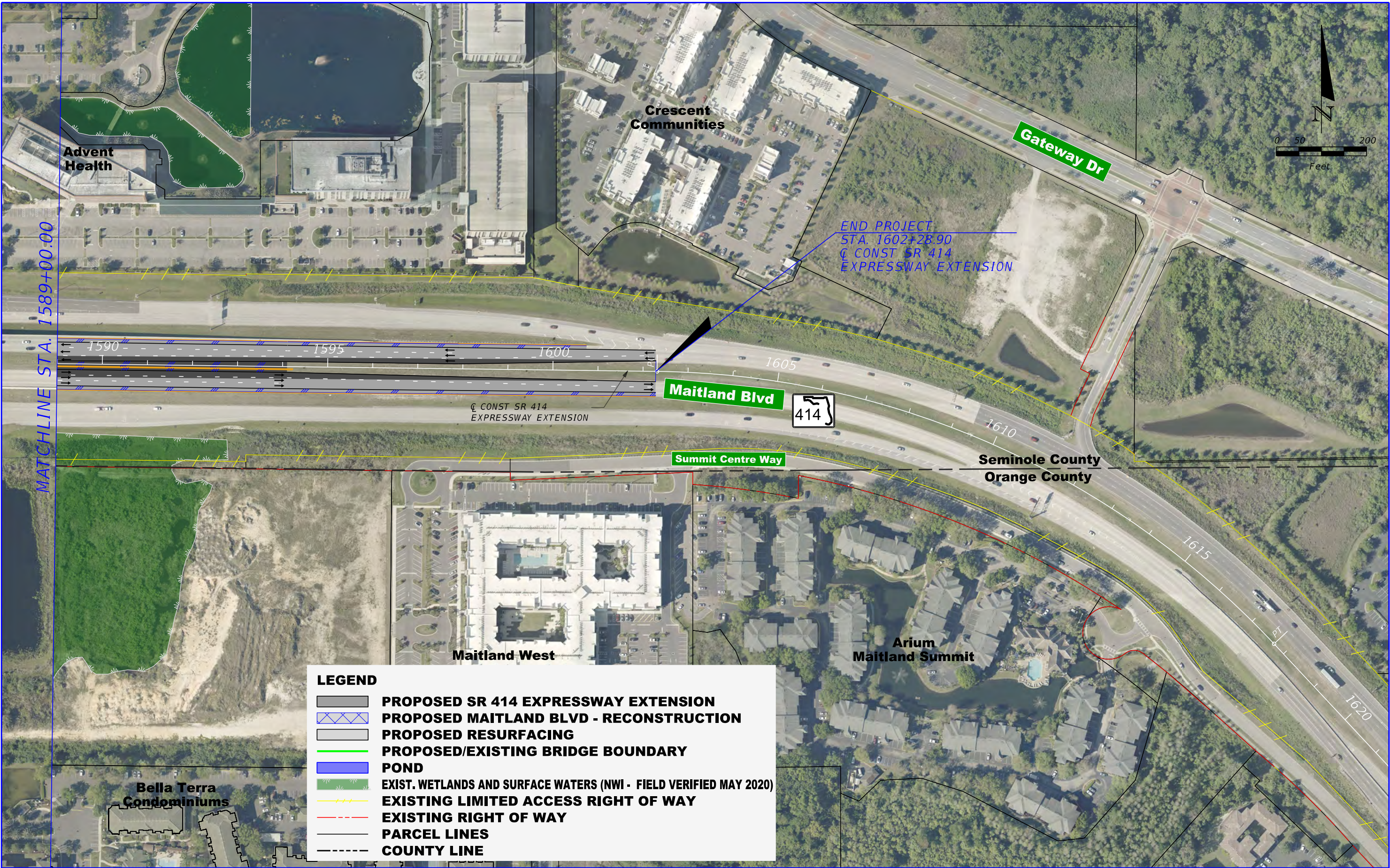
PROJECT NO.
414-227

CENTRAL
FLORIDA
EXPRESSWAY
AUTHORITY

SR 414 ELEVATED
PLAN SHEET (5)

SHEET
NO.

010



LEGEND

PROPOSED SR 414 EXPRESSWAY EXTENSION

PROPOSED MAITLAND BLVD - RECONSTRUCTION

PROPOSED RESURFACING

PROPOSED/EXISTING BRIDGE BOUNDARY

POND

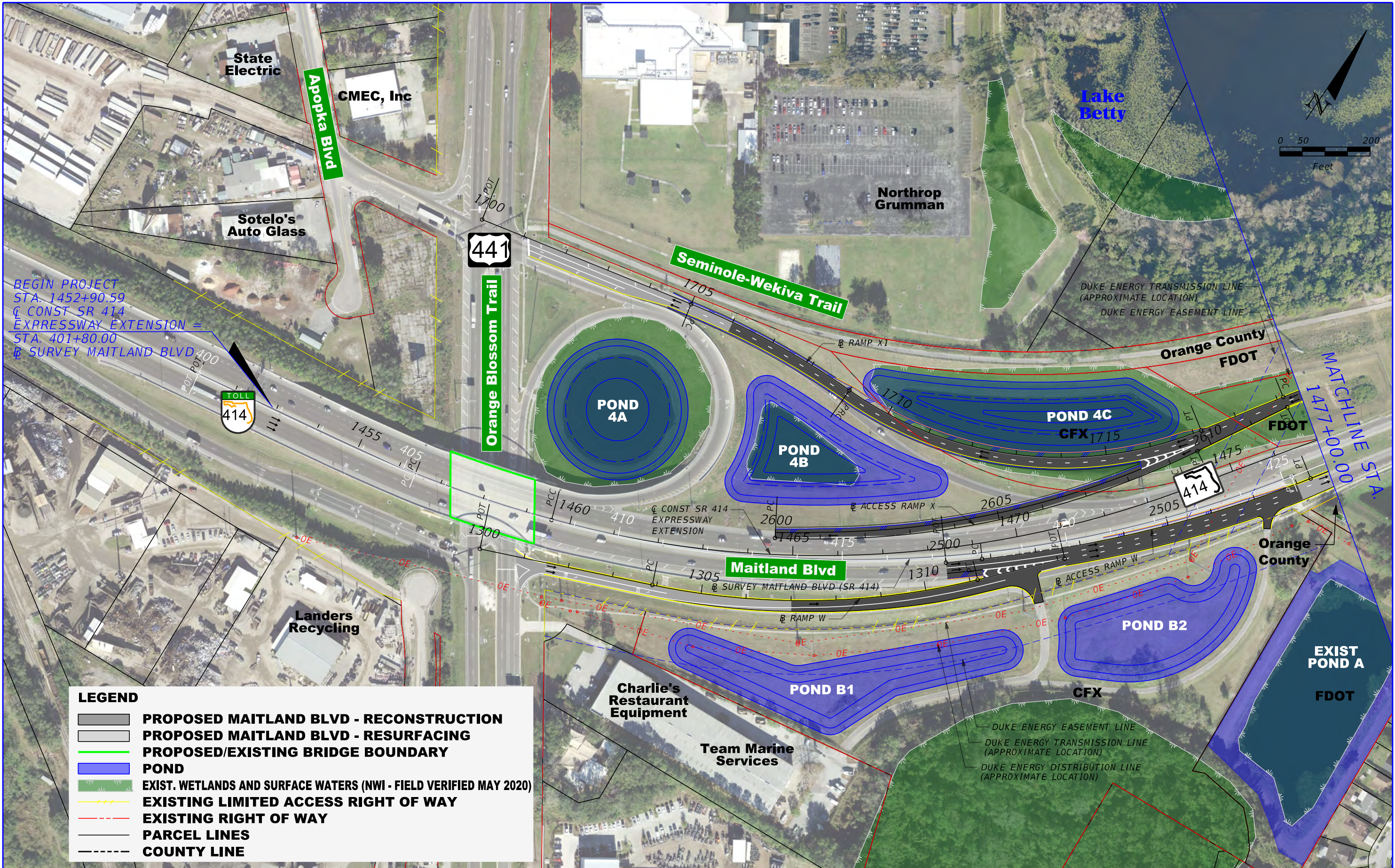
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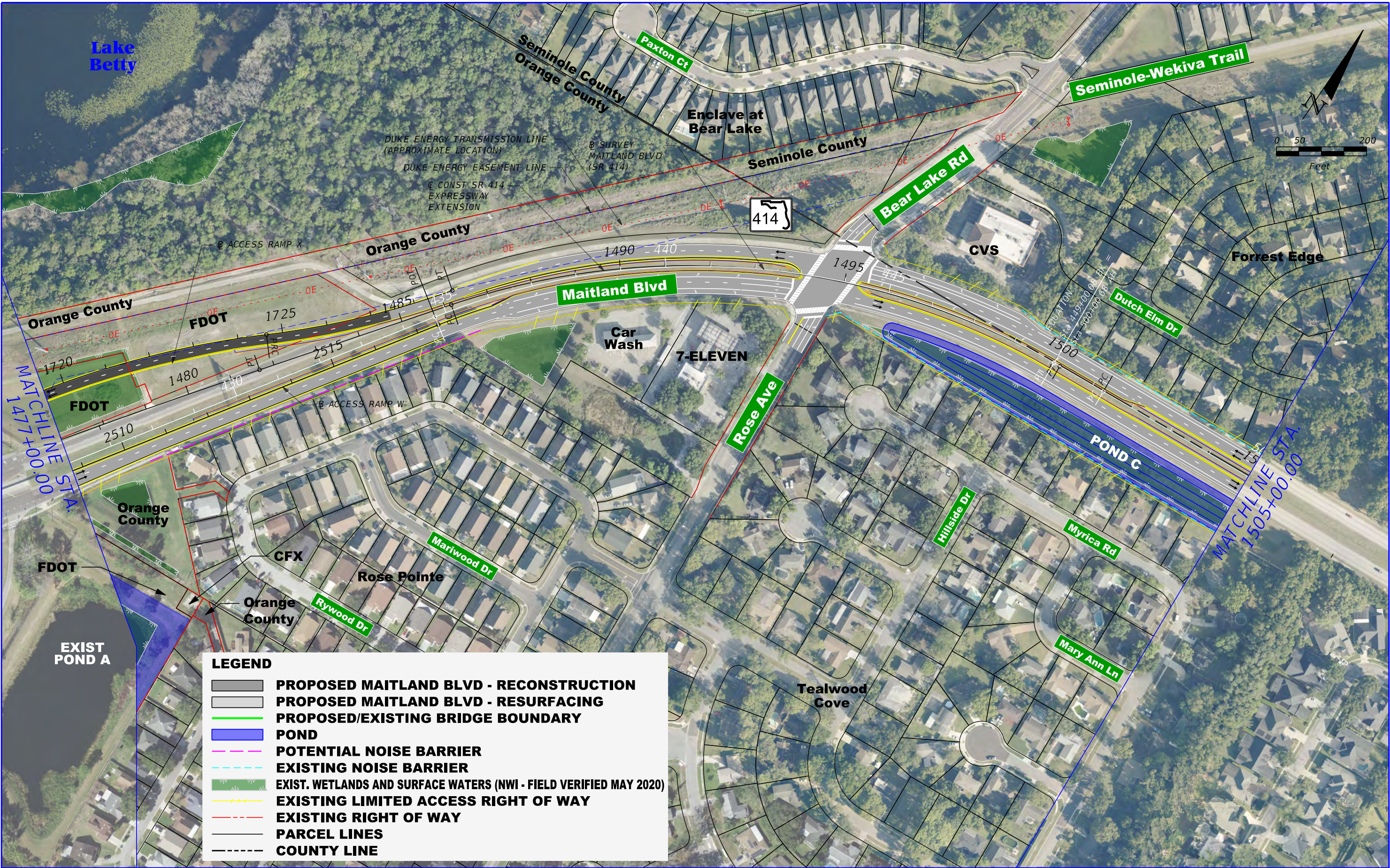
EXISTING LIMITED ACCESS RIGHT OF WAY

EXISTING RIGHT OF WAY

PARCEL LINES

COUNTY LINE





PRELIMINARY - SUBJECT TO CHANGE

ENGINEER OF RECORD: KRYSTAL H. BURNS, P.E.
P.E. LICENSE NO. 60883

JACOBS ENGINEERING GROUP INC.
200 S. ORANGE AVENUE, STE 900
ORLANDO, FL 32801; PHONE (407) 903-5001
CERTIFICATE OF AUTHORIZATION No. 000072

SR 414 MAITLAND BLVD.
EXPRESSWAY EXTENSION
US 441 TO SR 434

ROAD NO.
SR 414

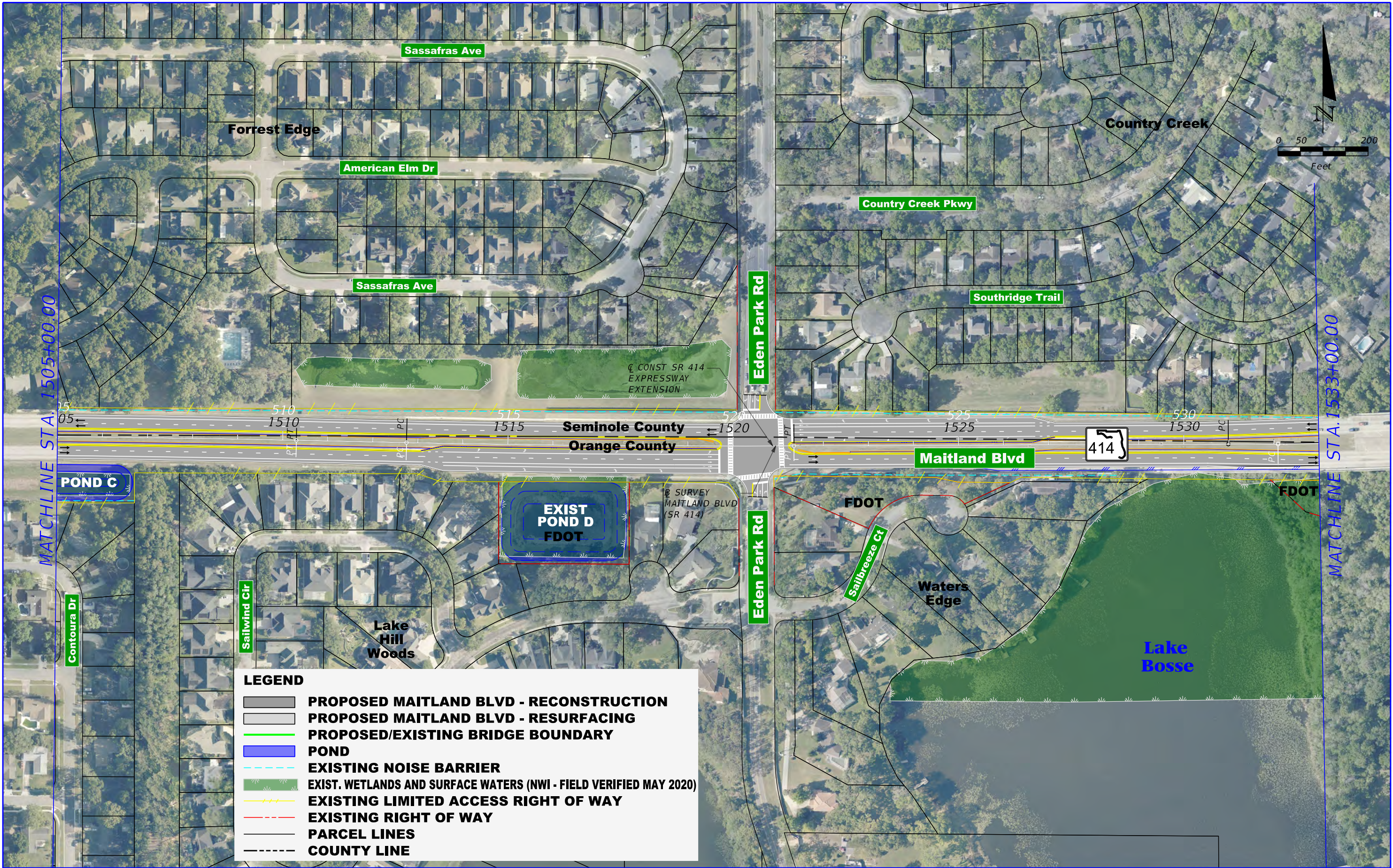
PROJECT NO.
414-227

CENTRAL
FLORIDA
EXPRESSWAY
AUTHORITY

SR 414 AT-GRADE
PLAN SHEET (2)

SHEET
NO.

013



PRELIMINARY - SUBJECT TO CHANGE

ENGINEER OF RECORD: KRYSTAL H. BURNS, P.E.
P.E. LICENSE NO. 60883

JACOBS ENGINEERING GROUP INC.
200 S. ORANGE AVENUE, STE 900
ORLANDO, FL 32801; PHONE (407) 903-5001
CERTIFICATE OF AUTHORIZATION No. 000072

SR 414 MAITLAND BLVD.
EXPRESSWAY EXTENSION
US 441 TO SR 434

ROAD NO.
SR 414

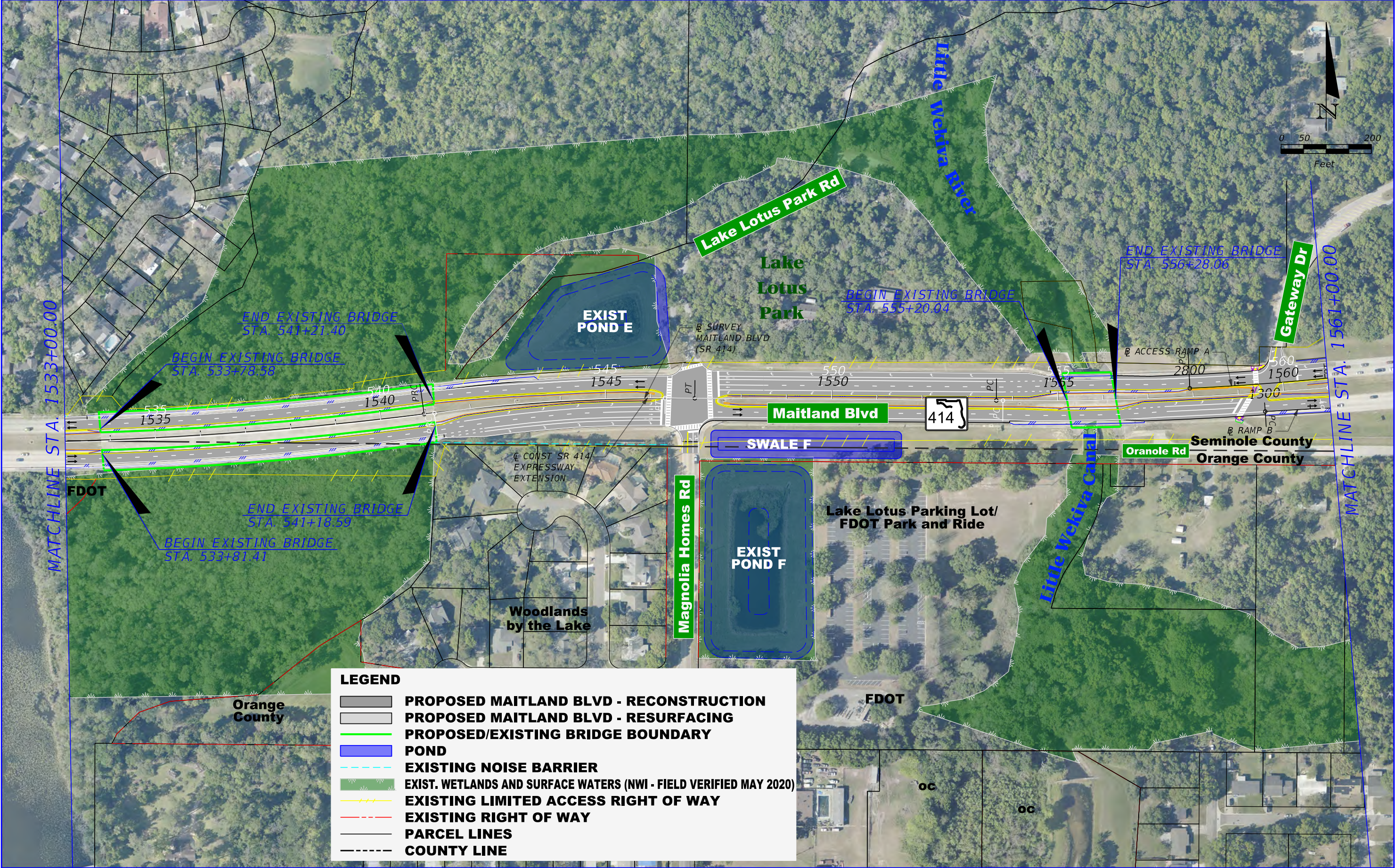
PROJECT NO.
414-227

**CENTRAL
FLORIDA
EXPRESSWAY
AUTHORITY**

*SR 414 AT-GRADE
PLAN SHEET (3)*

SHEET
NO.

014



LEGEND

PROPOSED MAITLAND BLVD - RECONSTRUCTION

PROPOSED MAITLAND BLVD - RESURFACING

PROPOSED/EXISTING BRIDGE BOUNDARY

POND

EXISTING NOISE BARRIER

EXIST. WETLANDS AND SURFACE WATERS (NWI - FIELD VERIFIED MAY 2020)

EXISTING LIMITED ACCESS RIGHT OF WAY

EXISTING RIGHT OF WAY

PARCEL LINES

COUNTY LINE



PRELIMINARY - SUBJECT TO CHANGE

ENGINEER OF RECORD: KRYSTAL H. BURNS, P.E.
P.E. LICENSE NO. 60883

JACOBS ENGINEERING GROUP INC.
200 S. ORANGE AVENUE, STE 900
ORLANDO, FL 32801; PHONE (407) 903-5001
CERTIFICATE OF AUTHORIZATION No. 000072

SR 414 MAITLAND BLVD.
EXPRESSWAY EXTENSION
US 441 TO SR 434

ROAD NO.
SR 414

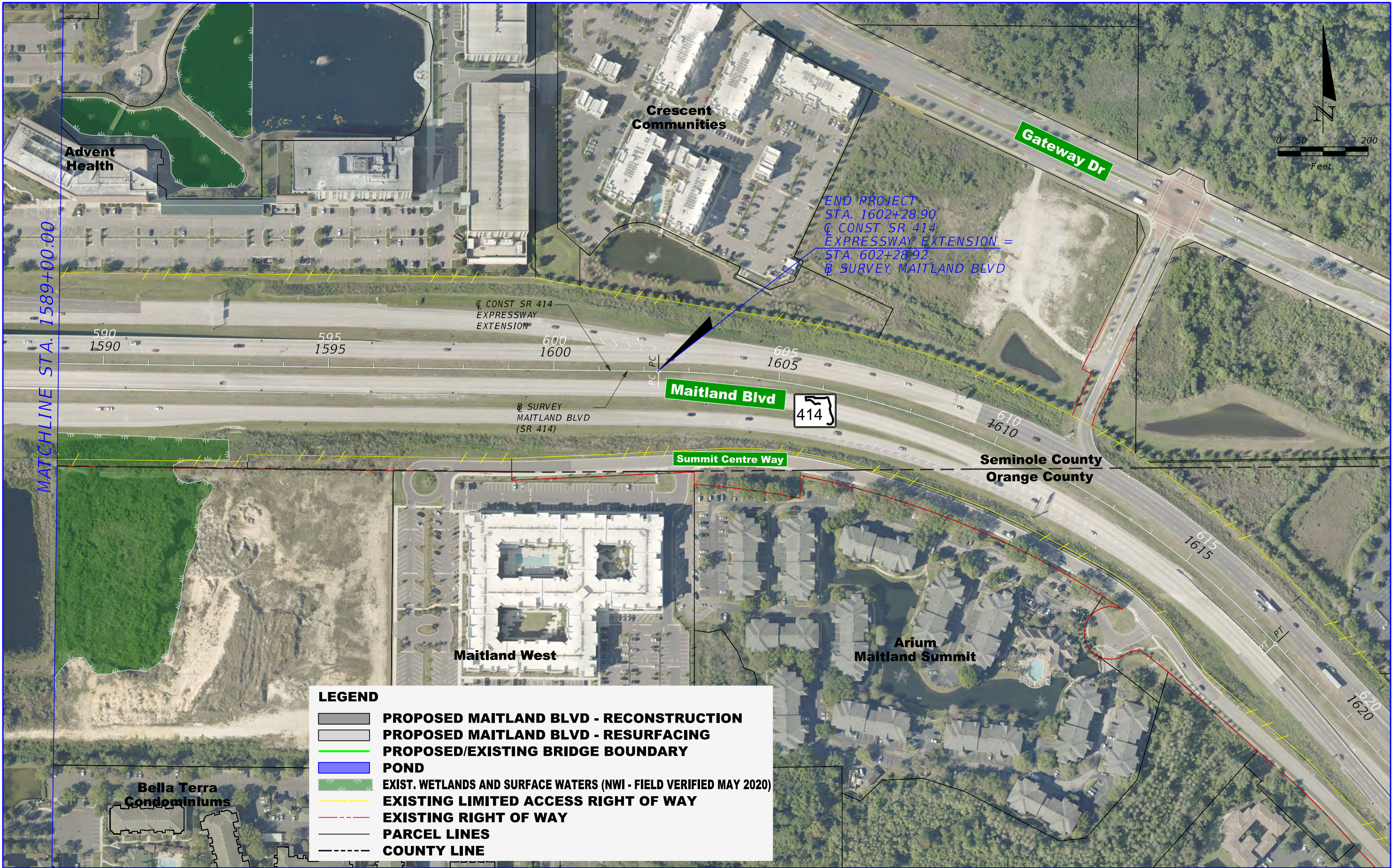
PROJECT NO.
414-227

CENTRAL
FLORIDA
EXPRESSWAY
AUTHORITY

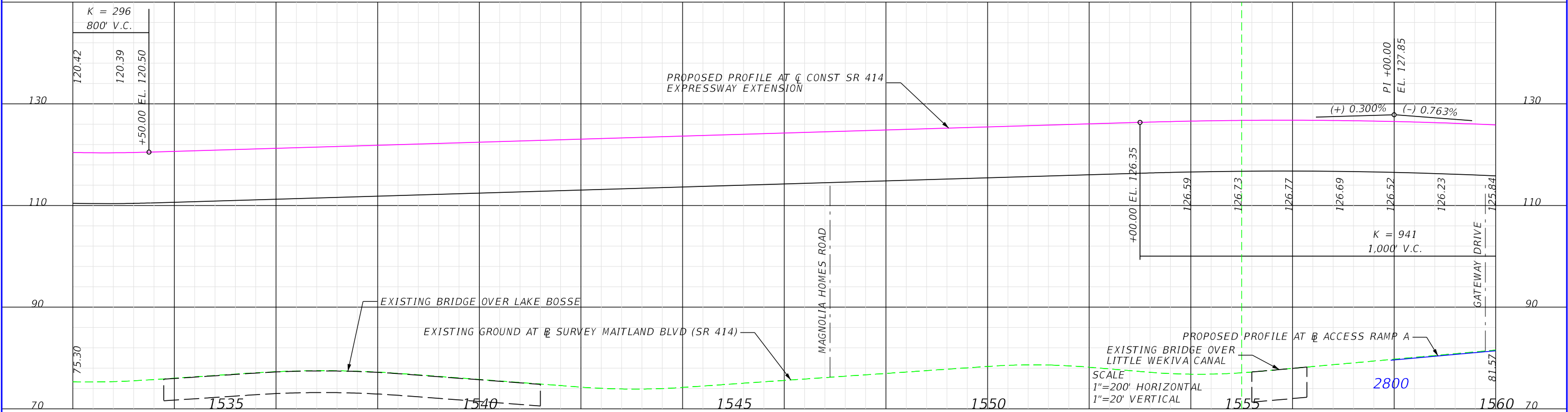
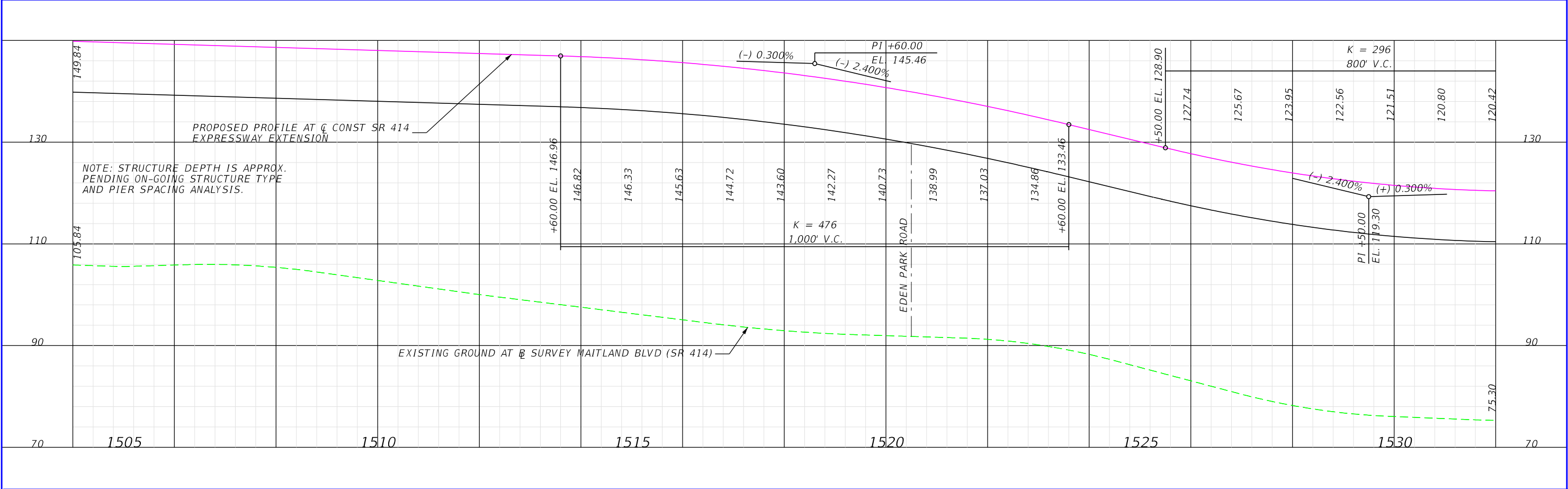
SR 414 AT-GRADE
PLAN SHEET (5)

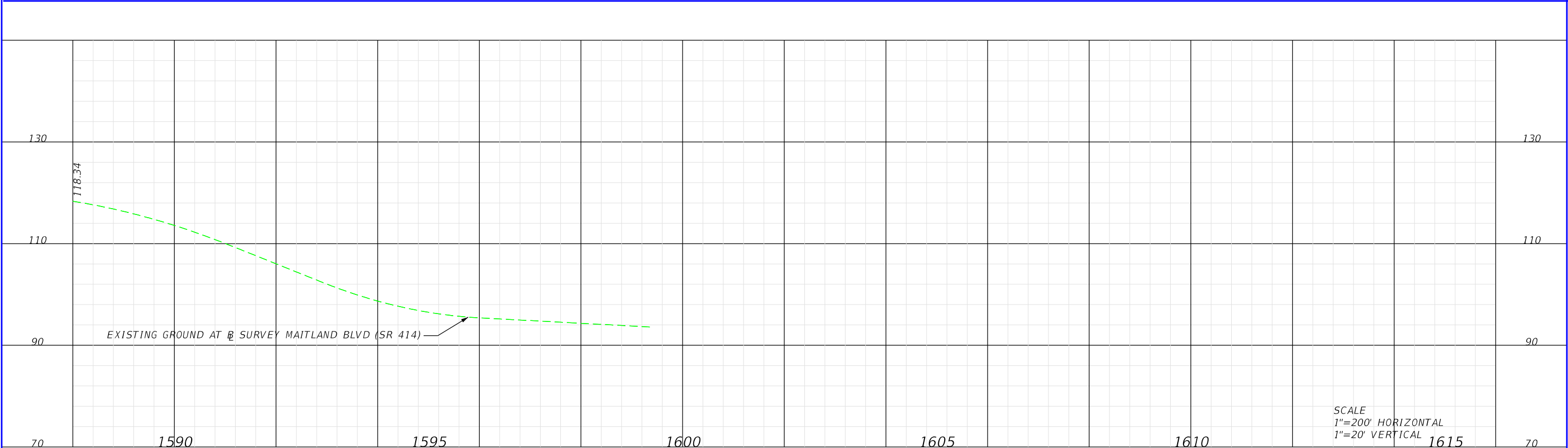
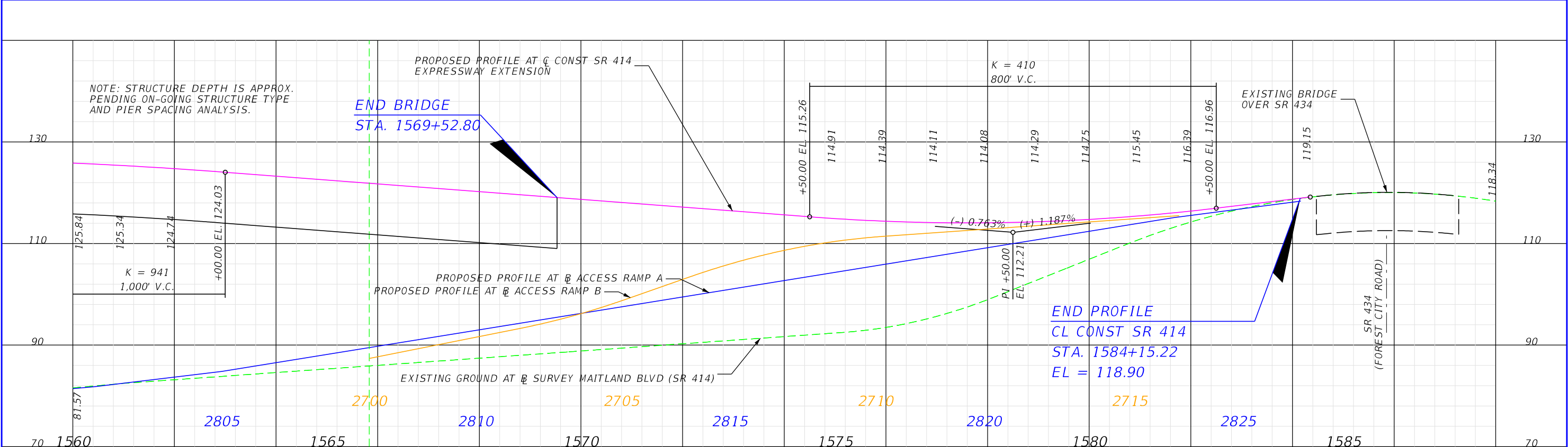
SHEET
NO.

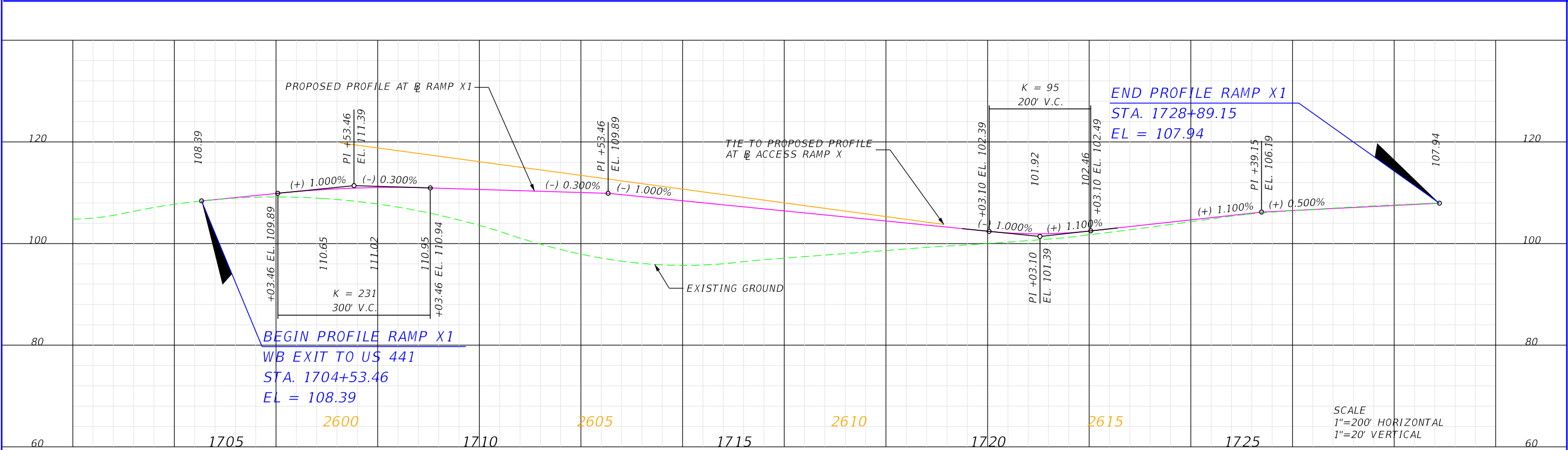
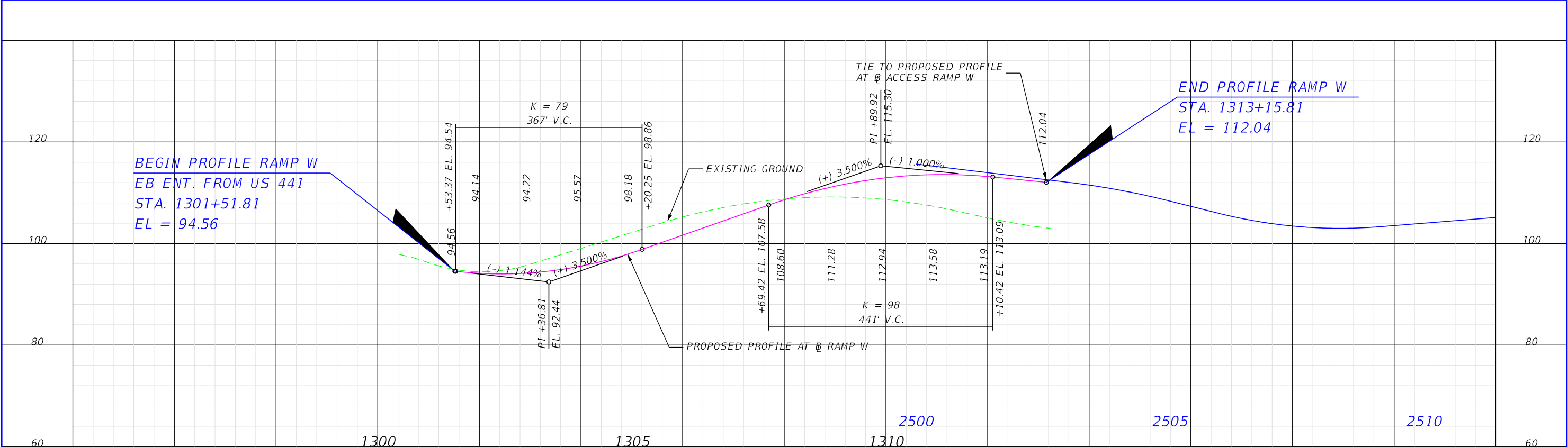
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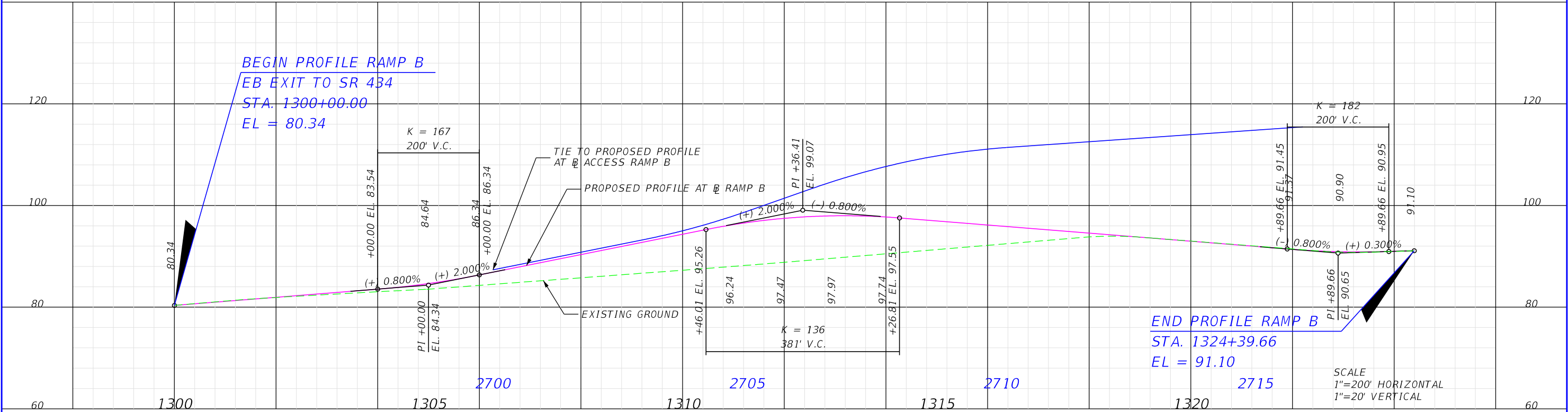
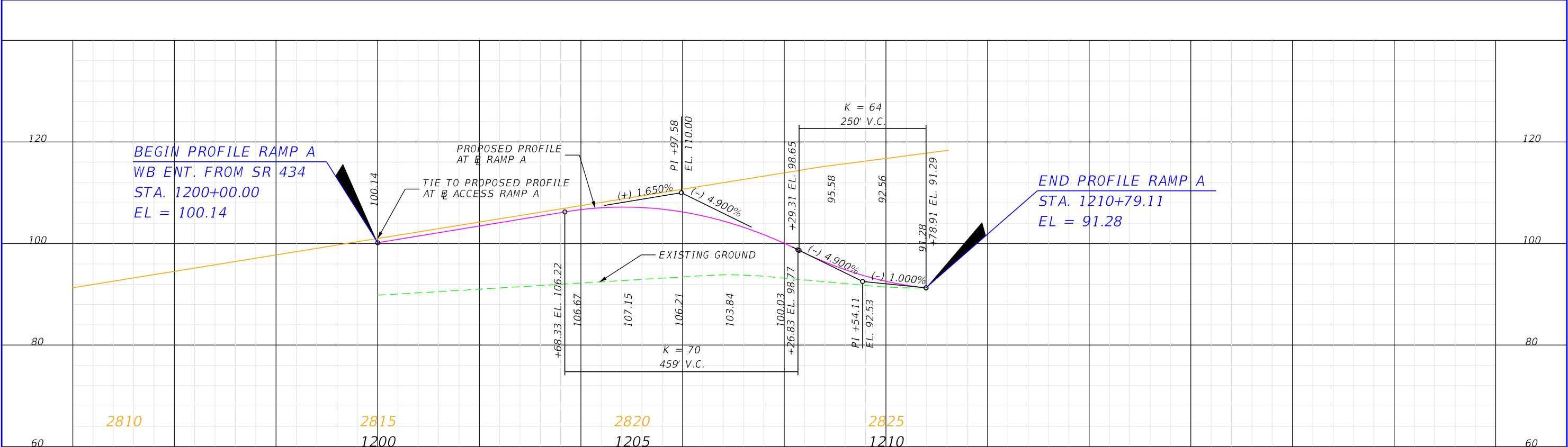


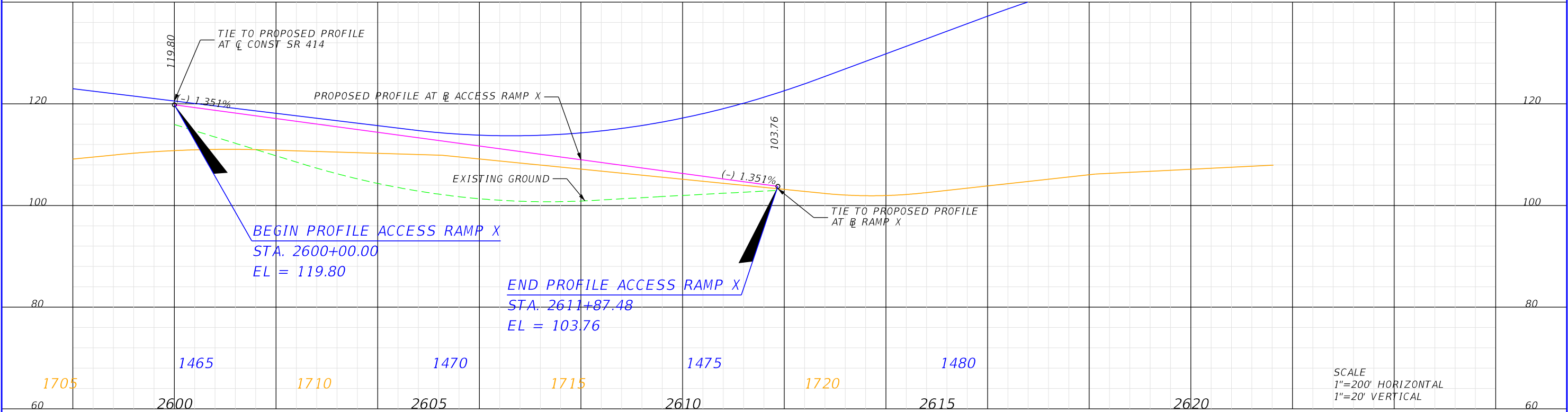
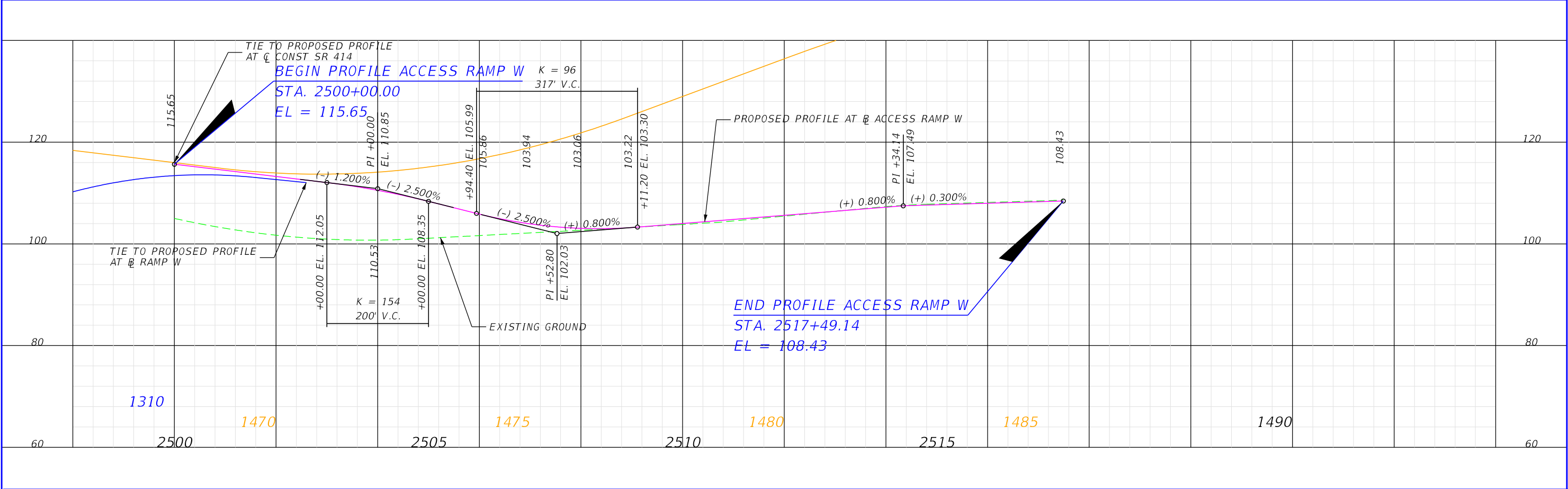
PRELIMINARY - SUBJECT TO CHANGE	ENGINEER OF RECORD: KRYSTAL H. BURNS, P.E. P.E. LICENSE NO. 60883		SR 414 MAITLAND BLVD. EXPRESSWAY EXTENSION US 441 TO SR 434	<div>CENTRAL FLORIDA EXPRESSWAY AUTHORITY</div>	SR 414 AT-GRADE PLAN SHEET (6)	SHEET NO.
	JACOBS ENGINEERING GROUP INC. 200 S. ORANGE AVENUE, STE 900 ORLANDO, FL 32801; PHONE (407) 903-5001 CERTIFICATE OF AUTHORIZATION No. 000072					
	ROAD NO. SR 414		PROJECT NO. 414-227			017











SCALE
1"=200' HORIZONTAL
1"=20' VERTICAL

PRELIMINARY - SUBJECT TO CHANGE

ENGINEER OF RECORD: KRYSTAL H. BURNS, P.E.
P.E. LICENSE NO. 60883
JACOBS ENGINEERING GROUP INC.
200 S. ORANGE AVENUE, STE 900
ORLANDO, FL 32801; PHONE (407) 903-5001
CERTIFICATE OF AUTHORIZATION No. 000072

SR 414 MAITLAND BLVD.
EXPRESSWAY EXTENSION
US 441 TO SR 434

ROAD NO.
SR 414

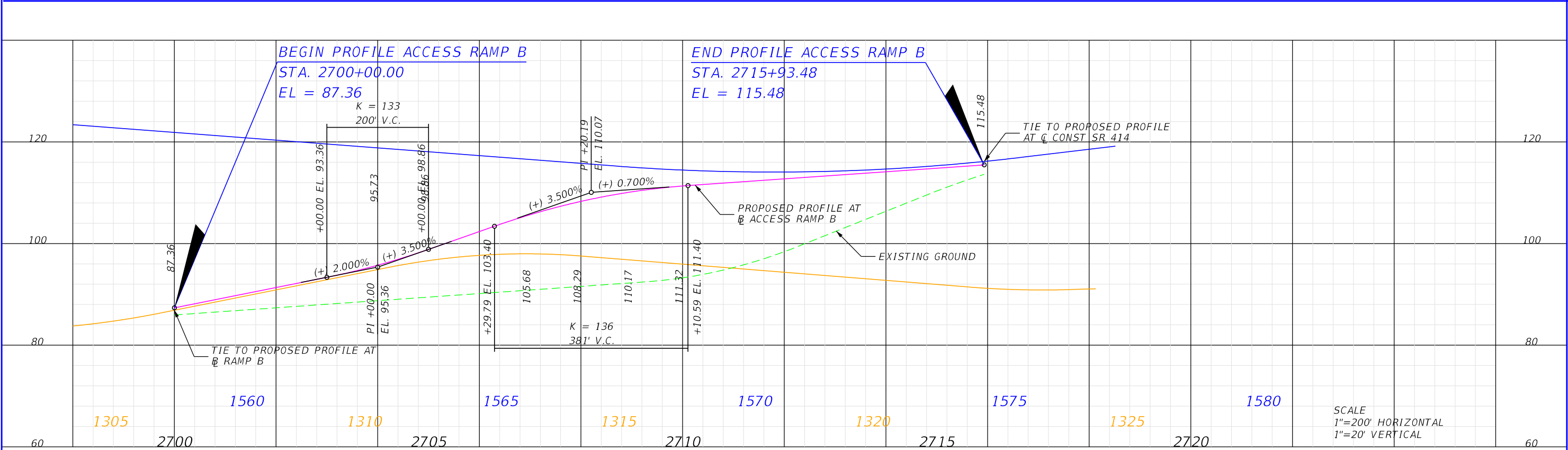
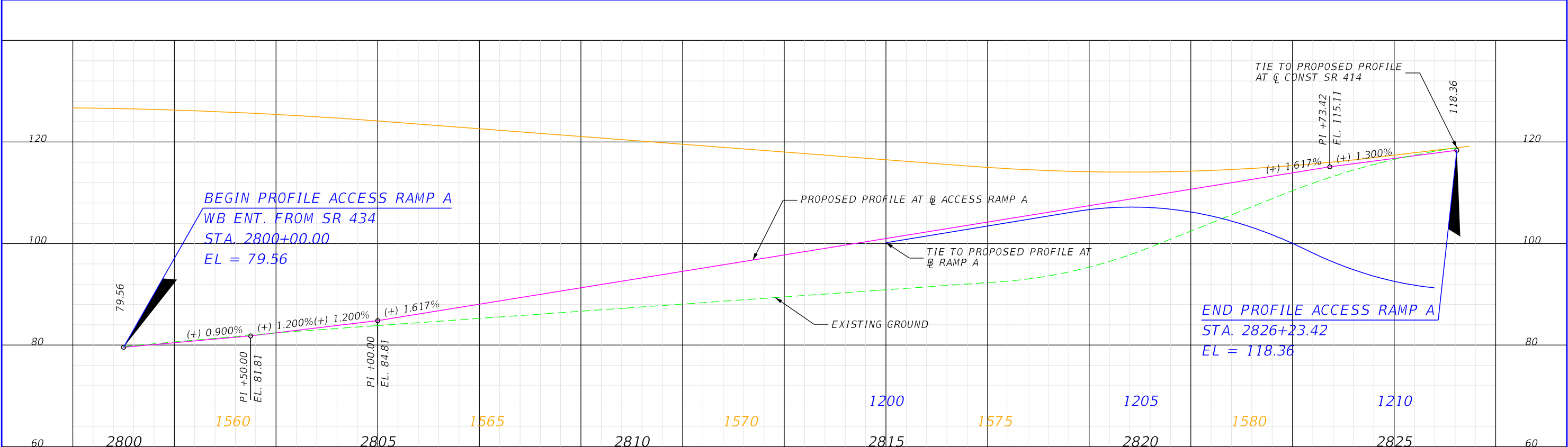
PROJECT NO.
414-227

CENTRAL
FLORIDA
EXPRESSWAY
AUTHORITY

ACCESS RAMPS X AND W
PROFILE SHEET (6)

SHEET
NO.

023



SCALE
1"=200' HORIZONTAL
1"=20' VERTICAL

Attachment 3
Agency Concurrence Letters
(*USFWS and FWC Pending*)

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

July 27, 2021

Timothy A. Parsons, Ph.D.,
Director and State Historic Preservation Officer
Florida Division of Historical Resources
Florida Department of State
R.A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250

Attn: Dr. Adrienne Daggett, Transportation Compliance Review Program

RE: Cultural Resource Assessment Survey
State Road 414 Expressway Extension
Project Development & Environment Study
Orange and Seminole Counties, Florida

Dear Dr. Parsons,

Enclosed please find one copy of the report titled *Cultural Resource Assessment Survey for the State Road 414 Expressway Extension Project Development & Environment Study from US 441 to State Road 434, Orange and Seminole Counties, Florida*. The Central Florida Expressway Authority (CFX) is reviewing various alternatives for a proposed grade-separated expressway extension of State Road (SR) 414 from SR 429 to US Highway 441. Total project length is approximately 2.3 miles (3.7 kilometers). The project also includes the construction of up to 10 retention ponds. All proposed work will take place within the existing right-of-way.

The project area of potential effects (APE) for the roadway was defined to include the existing SR 414 right-of-way where improvements are proposed. This APE was extended 328 feet (100 meters) from the existing right-of-way. The APE defined for the ponds includes the proposed pond footprints with the addition of a 30.5-meter (100-foot) buffer. The archaeological survey was conducted within the existing right-of-way, plus the pond footprints. The architectural history survey was conducted within the entire APE.

This cultural resource assessment survey (CRAS) was conducted in accordance with the requirements set forth in the National Historic Preservation Act of 1966, as amended, and Chapter 267, Florida Statutes (F.S.). The investigations were carried out in conformity with Part 2, Chapter 8 (Archaeological and Historical Resources) of the Florida Department of Transportation's (FDOT) Project Development and Environment (PD&E) Manual, FDOT's Cultural Resources Manual, and the standards contained in the Florida Division of Historical Resources (FDHR) *Cultural Resource Management Standards and Operations Manual* (FDHR 2003). In addition, this survey meets the specifications set forth in Chapter 1A-46, Florida Administrative Code.

Due to heavy disturbance within the archaeological APE, only 19 shovel tests were able to be excavated within the APE, of which one was positive for cultural material. As a result, one archaeological occurrence was recorded. Archaeological occurrences are, by definition, ineligible for consideration on the National Register of Historic Places (NRHP). The remainder of the APE was subjected to pedestrian survey and

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

surface inspection. One archaeological site, 8SE01663, has been previously recorded within the archaeological APE; however, this site was determined to be ineligible for the NRHP by the State Historic Preservation Officer (SHPO), and the current survey revealed that the site has been paved over and heavily modified by SR 414. No other archaeological sites or archaeological occurrences were identified and no further archaeological work is recommended.

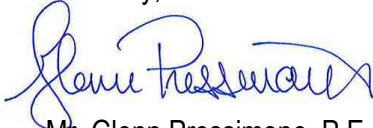
The architectural history survey resulted in the identification and evaluation of 24 historic resources, of which two were previously recorded (8OR10661 and 8OS11516) and 22 newly recorded (8OS11668-8OR01689). All of the resources are recommended ineligible for the NRHP. No existing or potential historic districts were identified. No further architectural history work is recommended.

Based on the results of this CRAS, it is the opinion of CFX that the proposed undertaking will have no effect on NRHP-listed or -eligible historic properties. No further work is recommended.

I respectfully request your concurrence with the findings of the enclosed report.

If you have any questions or need further assistance, please contact Sunserea Dalton, P.E., Project Manager, by email: sunserea.dalton@jacobs.com or by phone: 321-279-7566.

Sincerely,

A handwritten signature in blue ink, appearing to read "Glenn Pressimone".

Mr. Glenn Pressimone, P.E.
Chief of Infrastructure
Central Florida Expressway Authority

Enclosure

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

The Florida State Historic Preservation Officer:

☒ finds the attached report complete and sufficient and ☒ concurs/ ☐ does not concur with the findings and recommendations contained in this cover letter and the enclosed report.

☐ does not find the attached report complete and sufficient and requires additional information in order to provide an opinion on the potential effects of the proposed project on historic resources.

/s/ Jason Aldridge DSHPO

For: Timothy A. Parsons, Ph.D.
Director, Division of Historical Resources
& State Historic Preservation Officer

September 7, 2021
Date

2021-5317
DHR No.