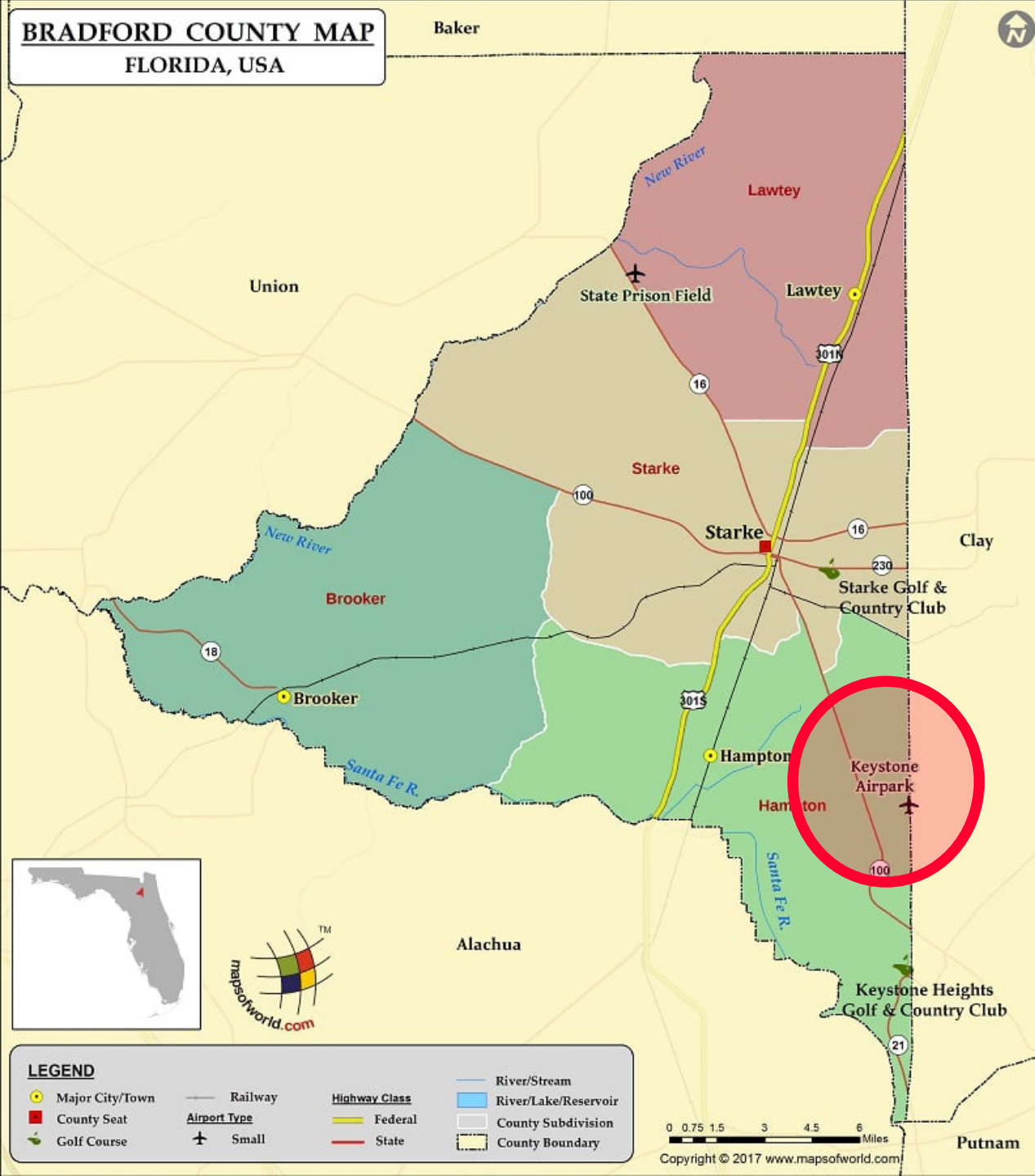


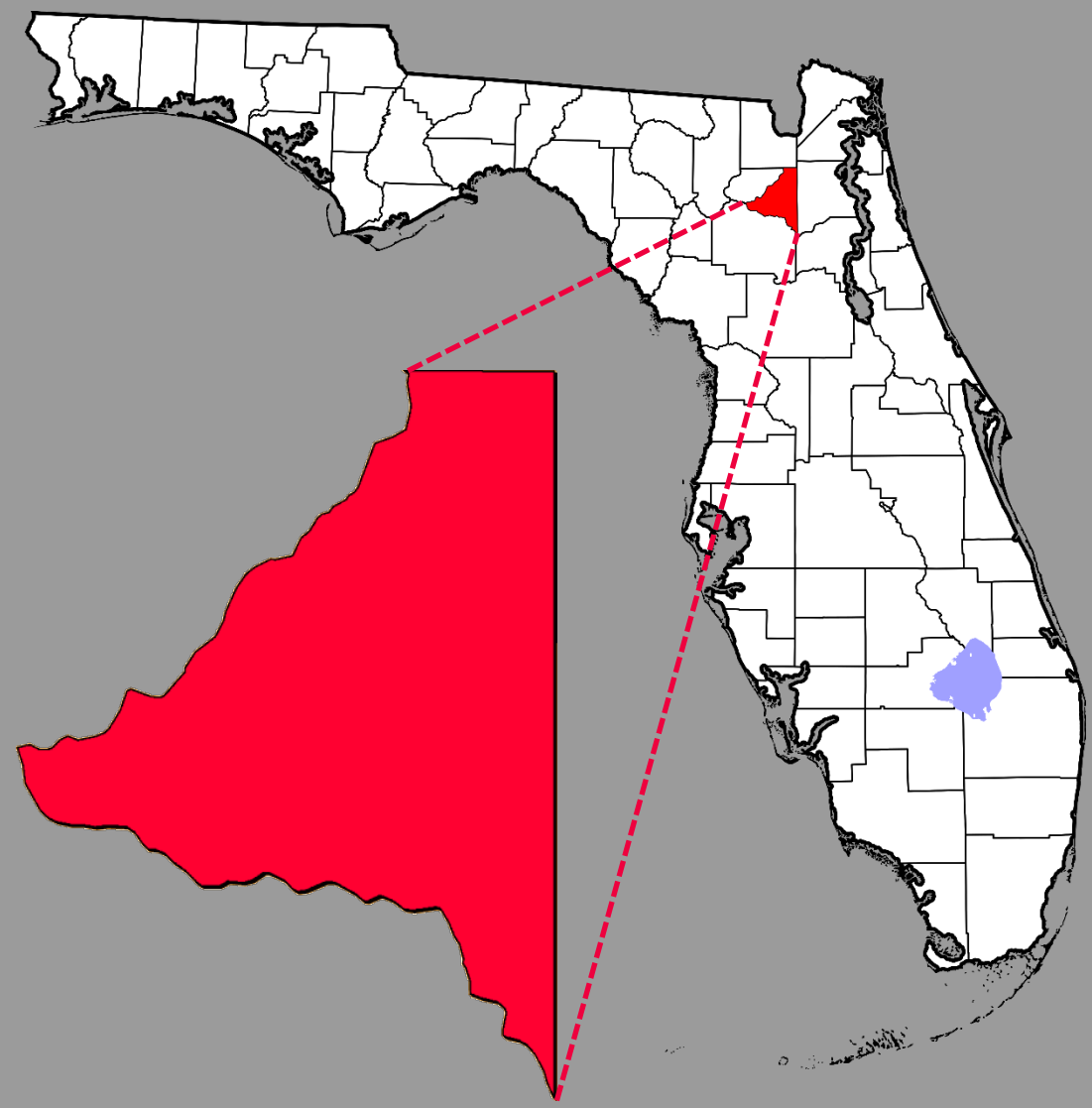




**BRADFORD COUNTY MAP**  
FLORIDA, USA



# Project Location



# Florida Department of Economic Opportunity (DEO)

“The Florida Department of Economic Opportunity (DEO) invests in the **prosperity** of all Floridians and their communities. DEO combines economic development initiatives, workforce support and training, and community development efforts to fuel **job creation** around the state. The state and federal programs administered by DEO help support local businesses, engage talented job seekers and enhance our state’s diverse communities.”

## Prosperity

Bradford County and the Keystone Heights Airport has made it a mission to improve the lives of the citizens that support them.

## Job Creation

Opportunities for trade & shipping, manufacturing, repair & restoration, and all supporting roles.



# Program Details

Bradford County / KHA awarded DEO grant  
Fall 2019

Keystone Heights Traffic Impact Analysis  
Begin Fall 2019  
Draft Fall 2020

FAA Environmental Assessment  
Begin Fall 2019  
Approved Winter 2022

Infrastructure Improvements Design &  
Permitting  
Begin Winter 2022

DEO Improvements Completion Deadline  
June 30, 2023

6 months



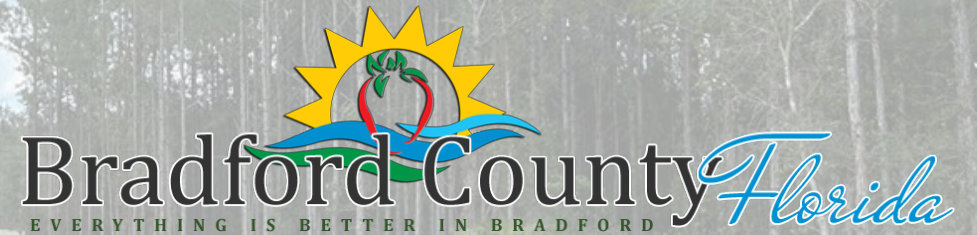


# Interested Parties

## Stakeholders

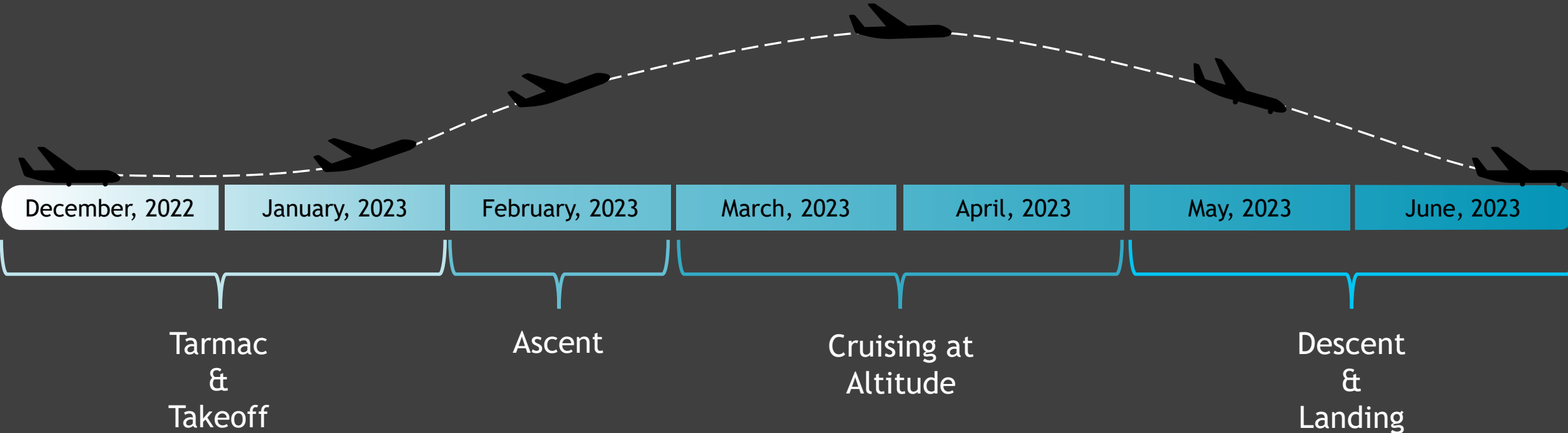


## Project Team



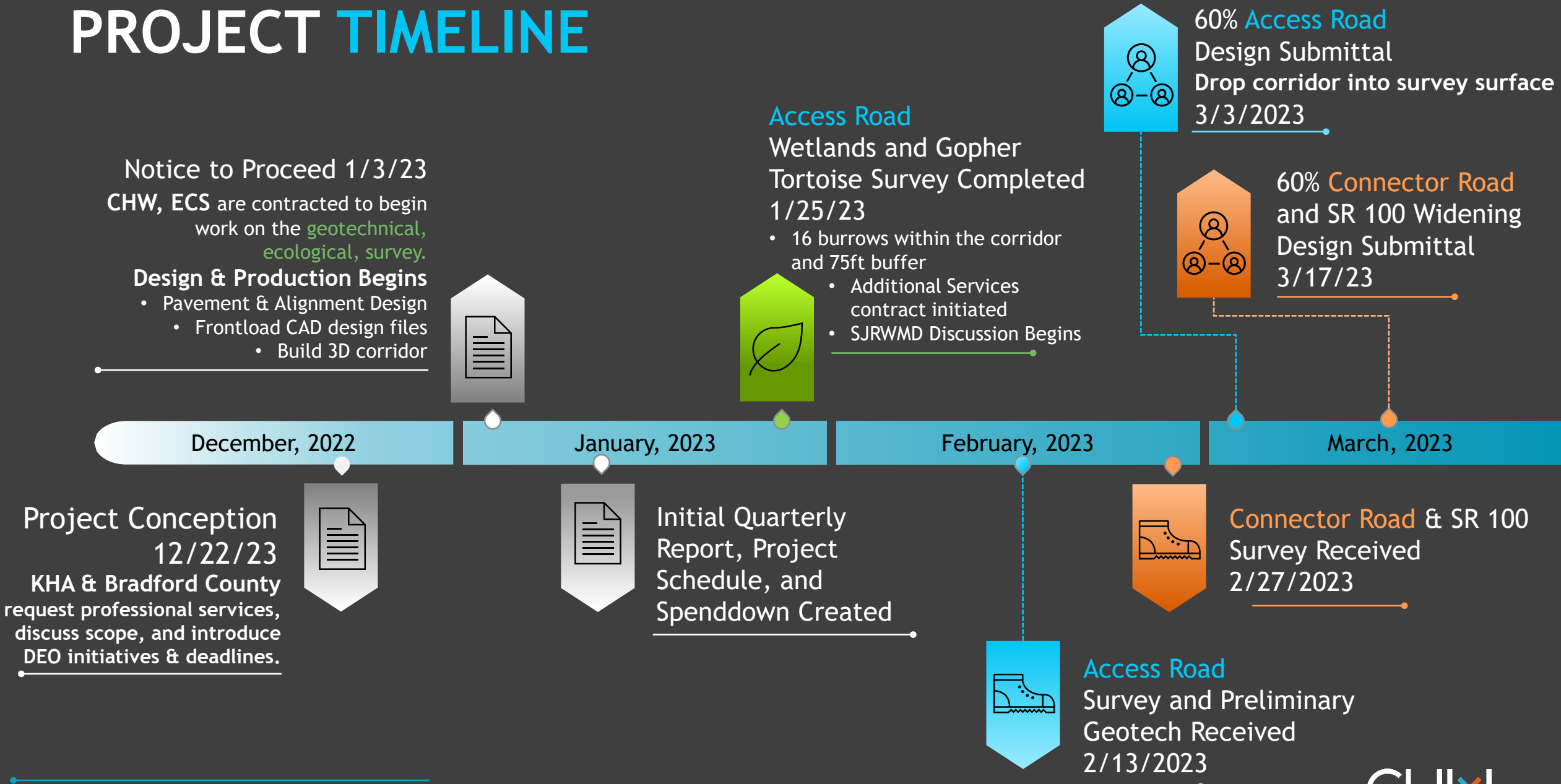
Hamilton Custom Services, LLC

# PROJECT Flight Path



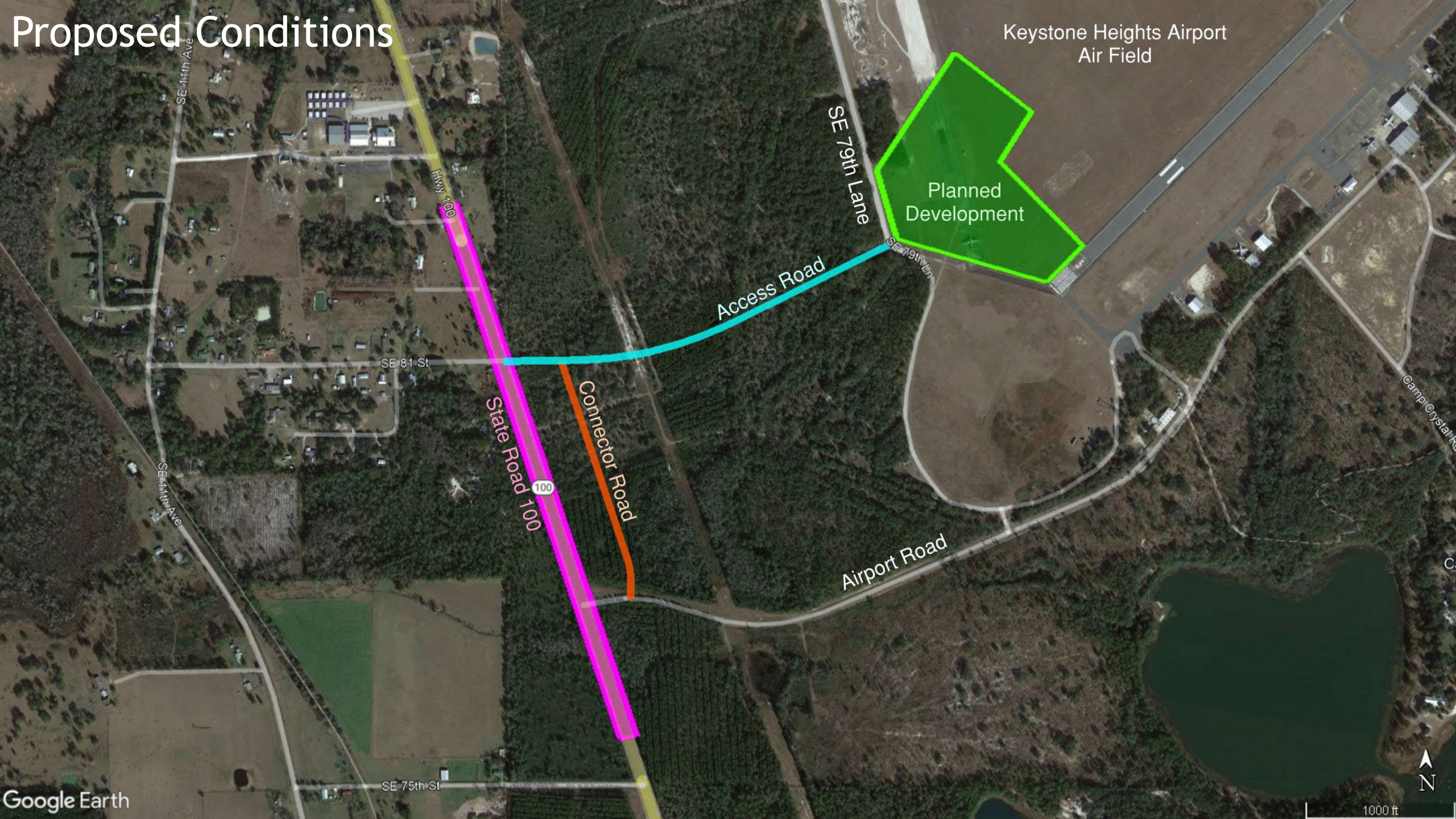


# PROJECT TIMELINE





# Proposed Conditions





# Keystone Heights Airport

## Traffic Impact Analysis

### TIA Limits

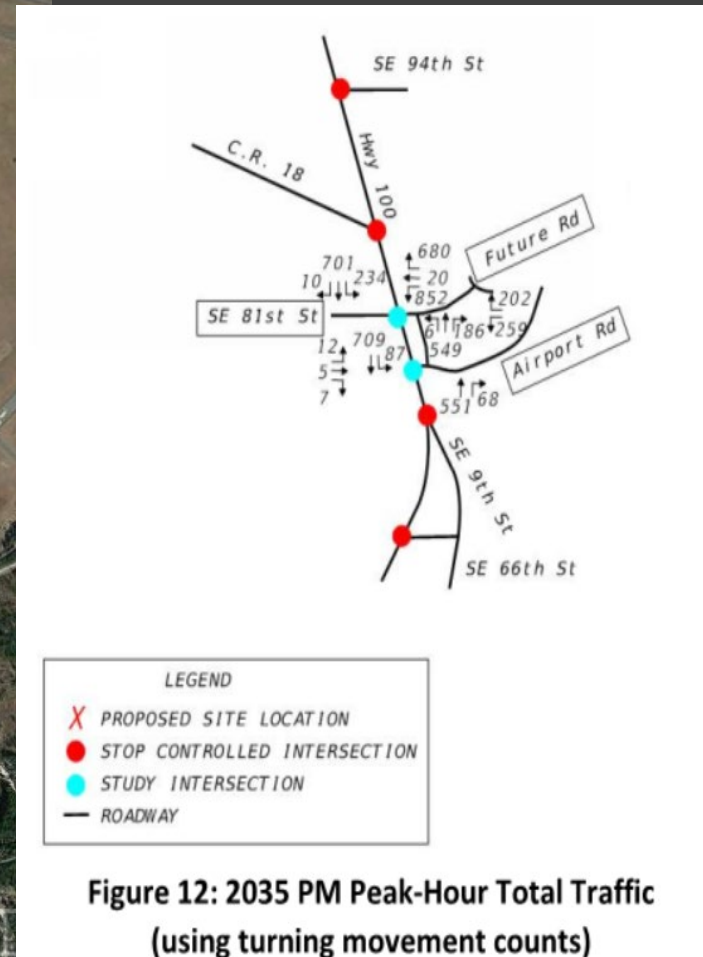
SE 94<sup>th</sup> Street to SE 66<sup>th</sup> Street

### 2035 Total Volume

2,587 from SE 66<sup>th</sup> to SE 94<sup>th</sup>

### Warrants based on 2035 Traffic Projections

- Left turn lane on SB SR 100 at Airport Road
- Right turn lane from NB SR 100 at Airport Road
- Left turn lane on SB SR 100 at Access Road
- Right turn lane on SB SR 100 at Access Road
- Traffic signal is not warranted





# Proposed Improvements

## Access Road from SR 100 to SE 79<sup>th</sup> Lane

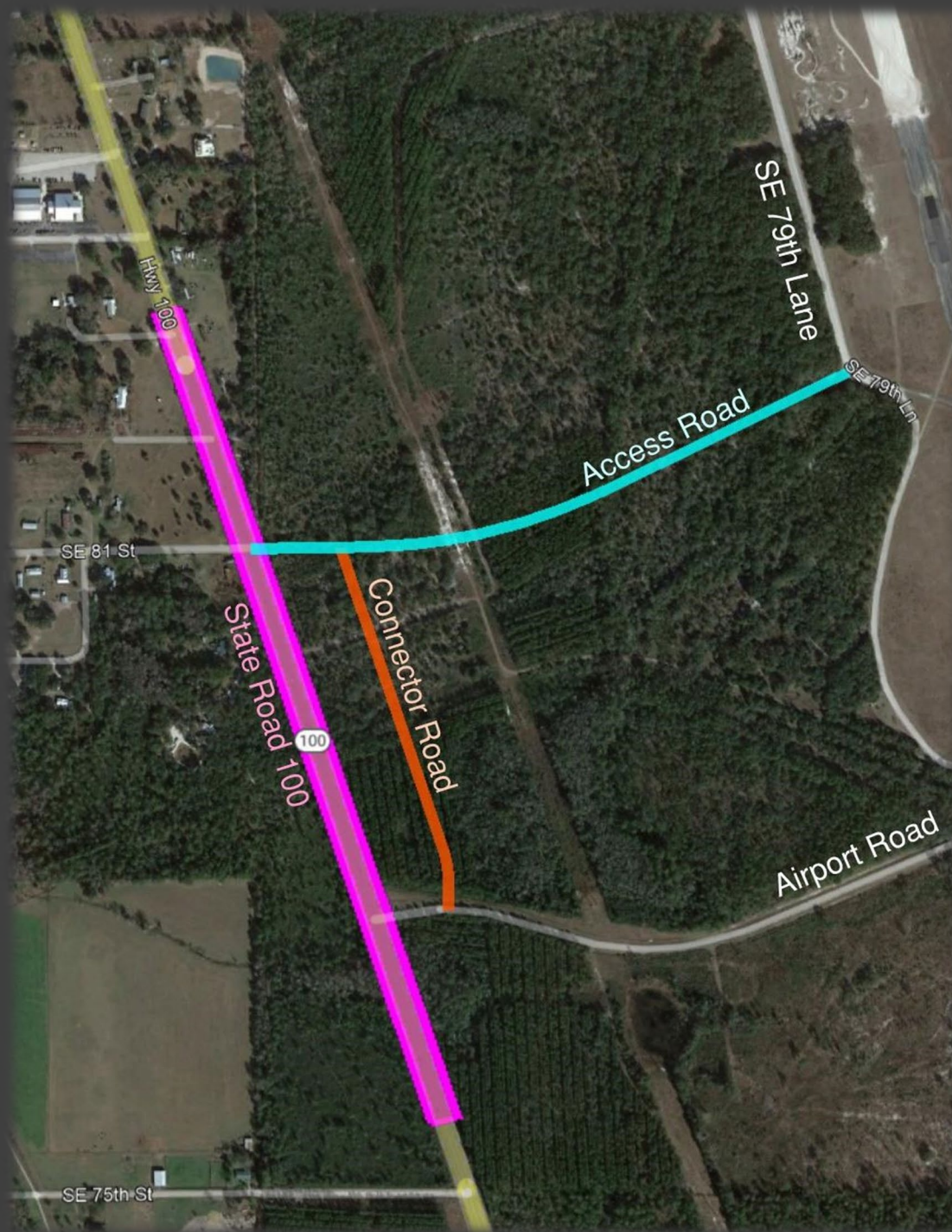
- 2-Lane Rural Section
- Fiber Infrastructure
- Storage Swales

## Connector Road from Access Road to Airport Road

- 2-Lane Rural Section
- Storage Swales
- MISS WETLANDS

## State Road 100 Widening & Turn Lane Additions

- Center Widening 2-lane to 3-lane section
  - Two Left Turn Lanes
  - Two Right Turn Lanes
  - Maintain existing drainage patterns
- 
- FDOT Coordination for Access/Connection Permitting





# PROJECT TIMELINE

Notice to Proceed 1/3/23

CHW, ECS are contracted to begin work on the **geotechnical, ecological, survey.**

## Design & Production Begins

- Pavement & Alignment Design
- Frontload CAD design files
- Build 3D corridor



December, 2022

Project Conception  
12/22/23

KHA & Bradford County request professional services, discuss scope, and introduce DEO initiatives & deadlines.



January, 2023

## Access Road

Wetlands and Gopher Tortoise Survey Completed  
1/25/23

- 16 burrows within the corridor and 75ft buffer
- Additional Services contract initiated
- SJRWMD Discussion Begins



February, 2023



Access Road  
Survey and Preliminary Geotech Received  
2/13/2023



60% Access Road  
Design Submittal  
Drop corridor into survey surface  
3/3/2023



60% Connector Road  
and SR 100 Widening  
Design Submittal  
3/17/23



Connector Road & SR 100  
Survey Received  
2/27/2023

March, 2023

# Project Scope Objectives

## Data Collection

### Geotechnical Analysis

- 92 Auger Borings
- 6 Bulk Samples (LBR Testing)
- Muck Probes
- Lab Testing

### Ecological Studies

- Threatened & Endangered Species Survey
- 100% Formal Gopher Tortoise Survey
- Wetlands Determination
- Migration Study

### Survey

- BL Survey Alignment and Control
- 3D Survey for all corridors

## Design & Permitting

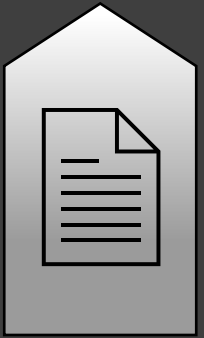
### Roadway & Drainage

- Alignment and typical section design
- New Construction pavement design
- Storage swales for runoff collection
- Ditch block concept
- SR 100 center-widening
- Maintaining SR 100 Drainage patterns

### Permitting

- Wetland
- Migration Study
- SRWMD - General Use Permit
- FWC - 7 Gopher Tortoise Relocations

Scope of Services Approved  
Notice to Proceed  
1/3/23



## Construction

### Access Road

- Roadway and swales
- Fiber Infrastructure

## Project Goals

**Access Road** - Design, Permit, Construct

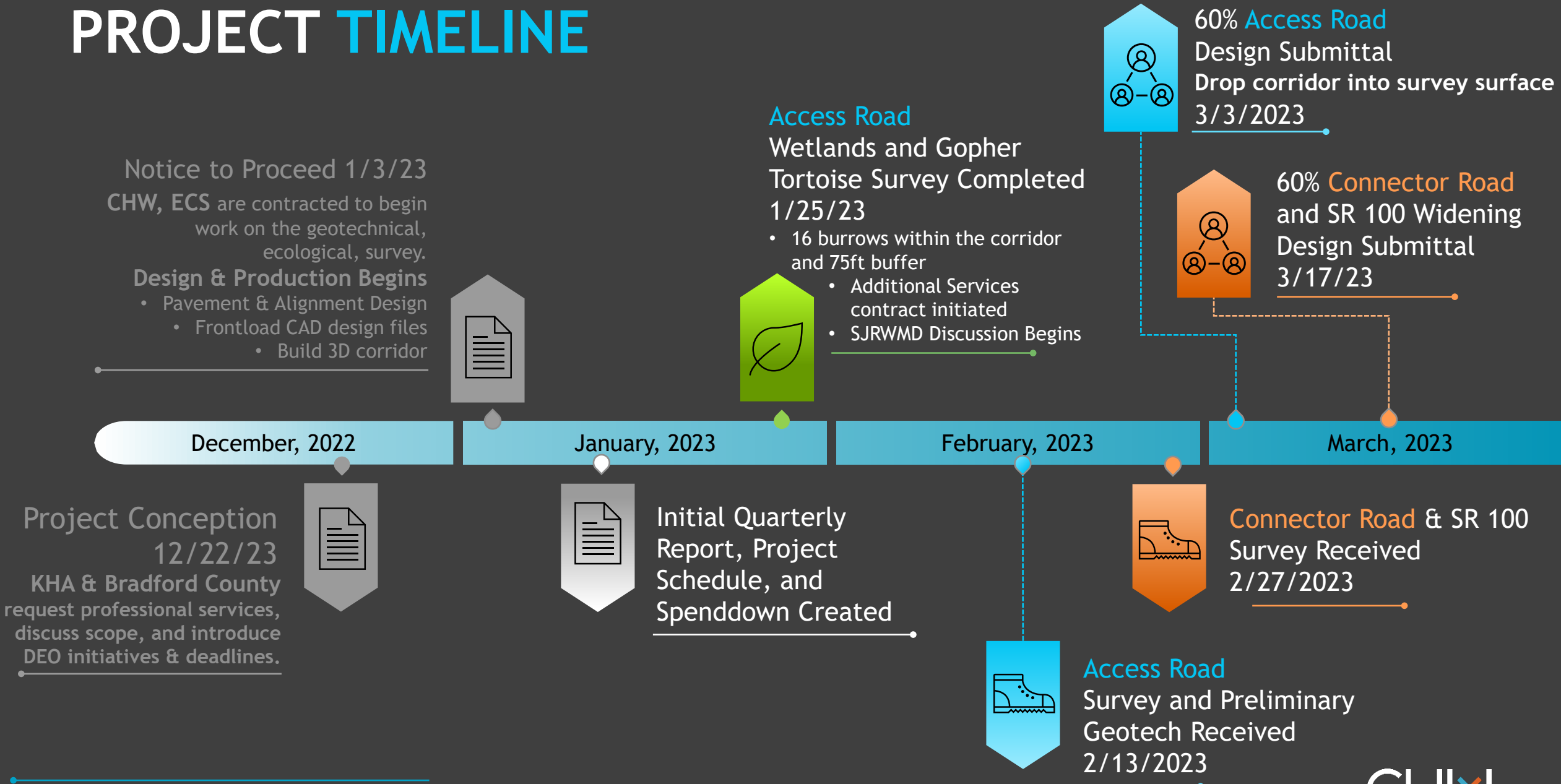
**Connector Road** - Design

**SR 100** - Design, FDOT Coordination

**AVOID WETLAND IMPACTS**



# PROJECT TIMELINE





# Initial **Project Spenddown**

## DEO Grant Amount: **\$2.3 Million**



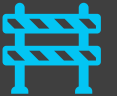
### Support Services

Survey - CHW  
Geotech - ECS  
Environmental - ECS



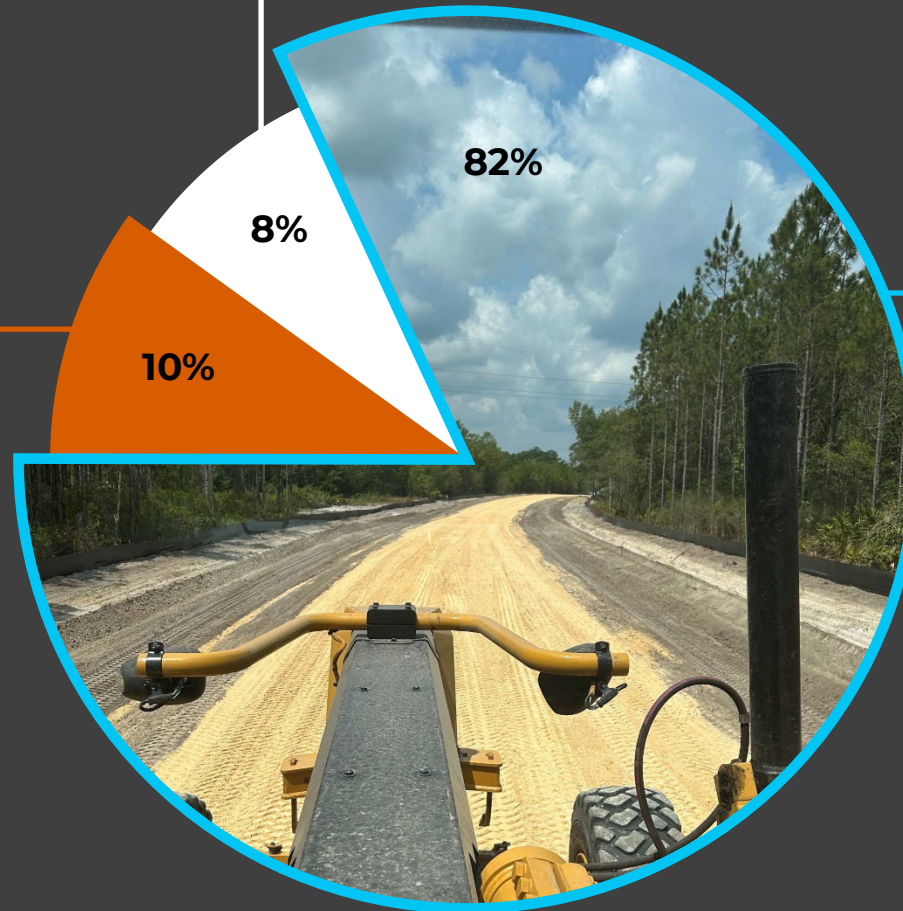
### Design Services - CHW

Project Management  
Roadway Design  
Existing Drainage Analysis  
Swale/Drainage Design  
Permitting Services  
Utility Coordination  
QA/QC  
Cost Estimating  
Post Design Services



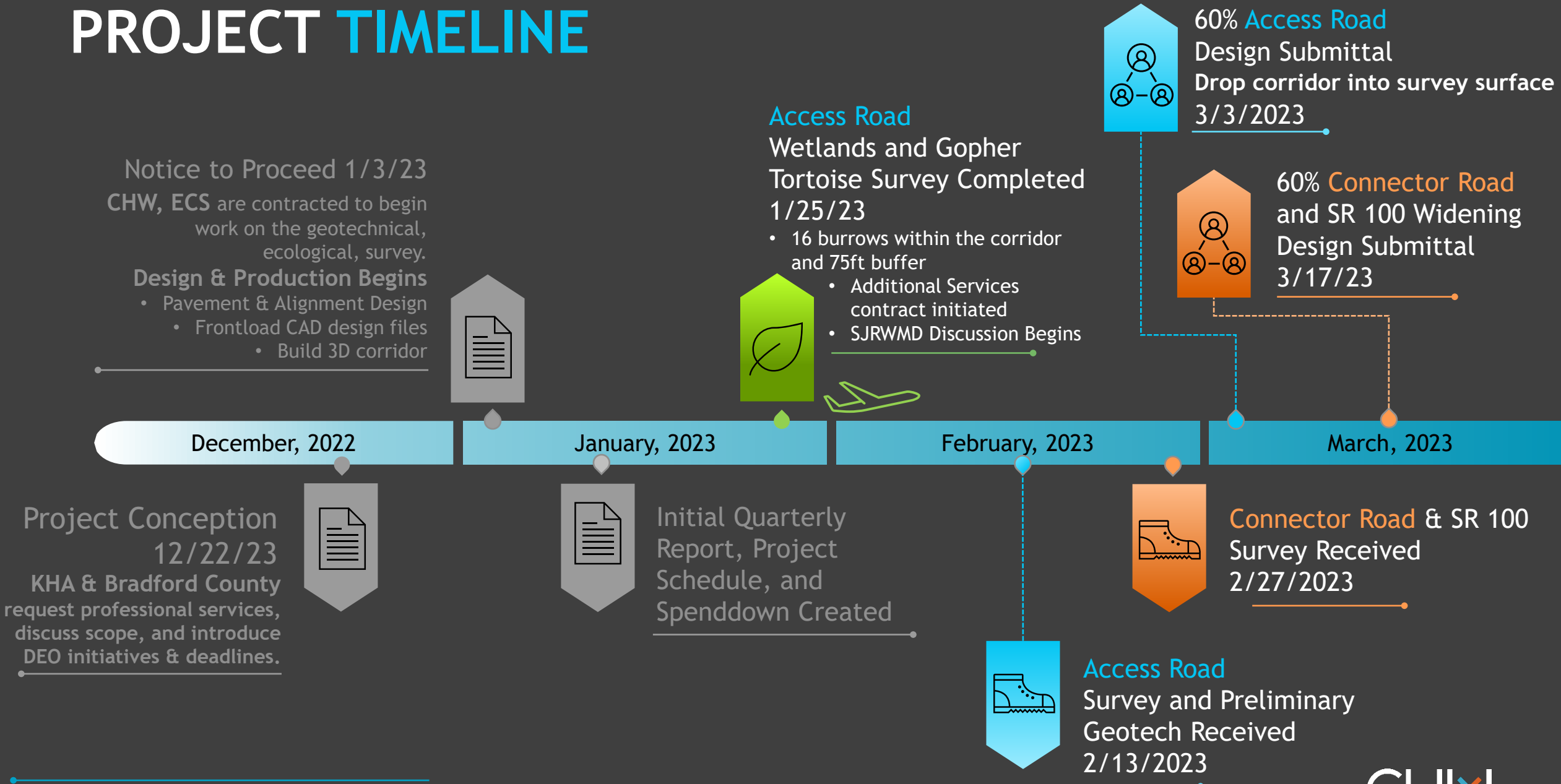
### Construction Services

Clearing - Hamilton Custom Services  
Roadway - Bradford County PW  
IT Infrastructure - Bradford County PW





# PROJECT TIMELINE











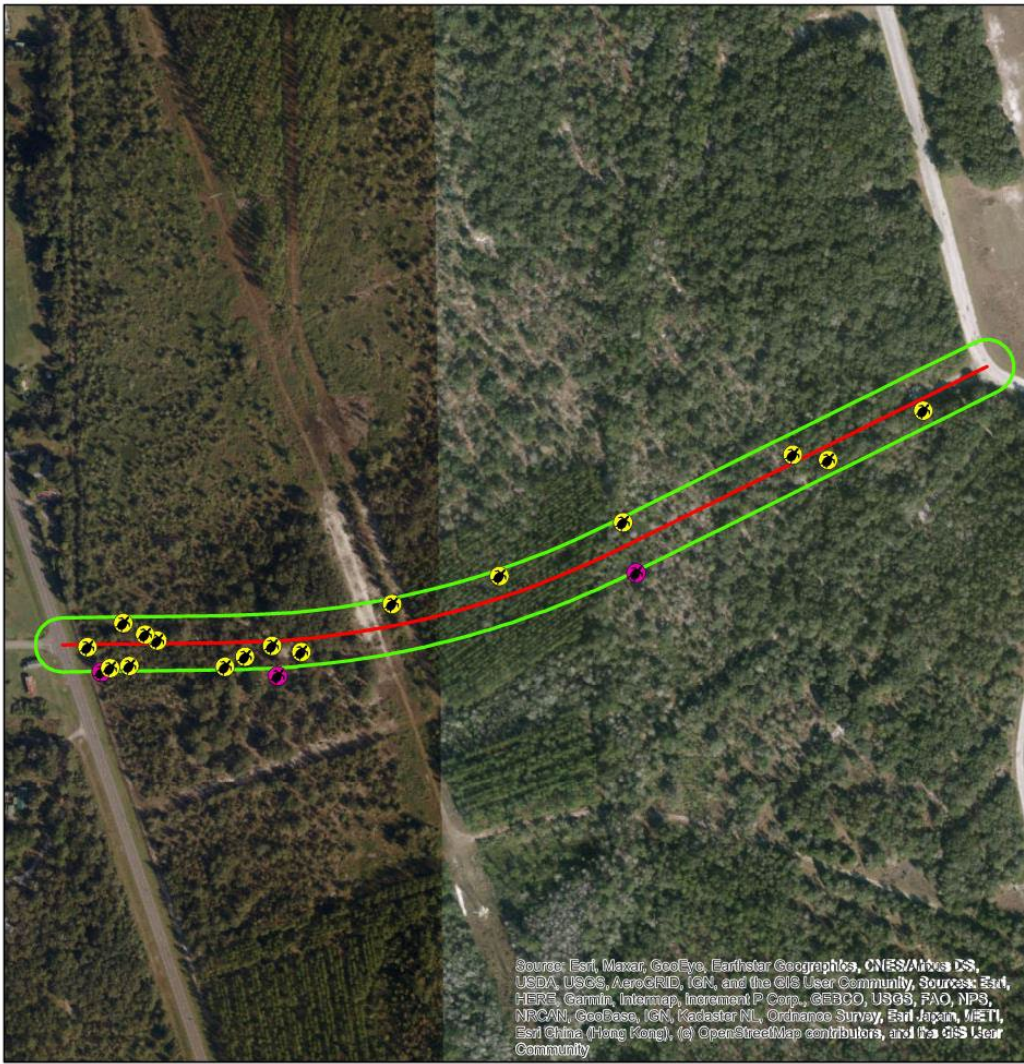












**KHA Access Road Site**  
Southeast 81st Street and US Hwy 100,  
Starke, FL 32091  
55:5542

**Gopher Tortoise Burrow Map**

0 145 290 580 870 Feet

- Tortoise Burrow Within 75ft Buffer
- Tortoise Burrow Outside 75ft Buffer
- Approximate Project Boundary
- 75ft Buffer



# Wetlands and Gopher Tortoise Survey Complete

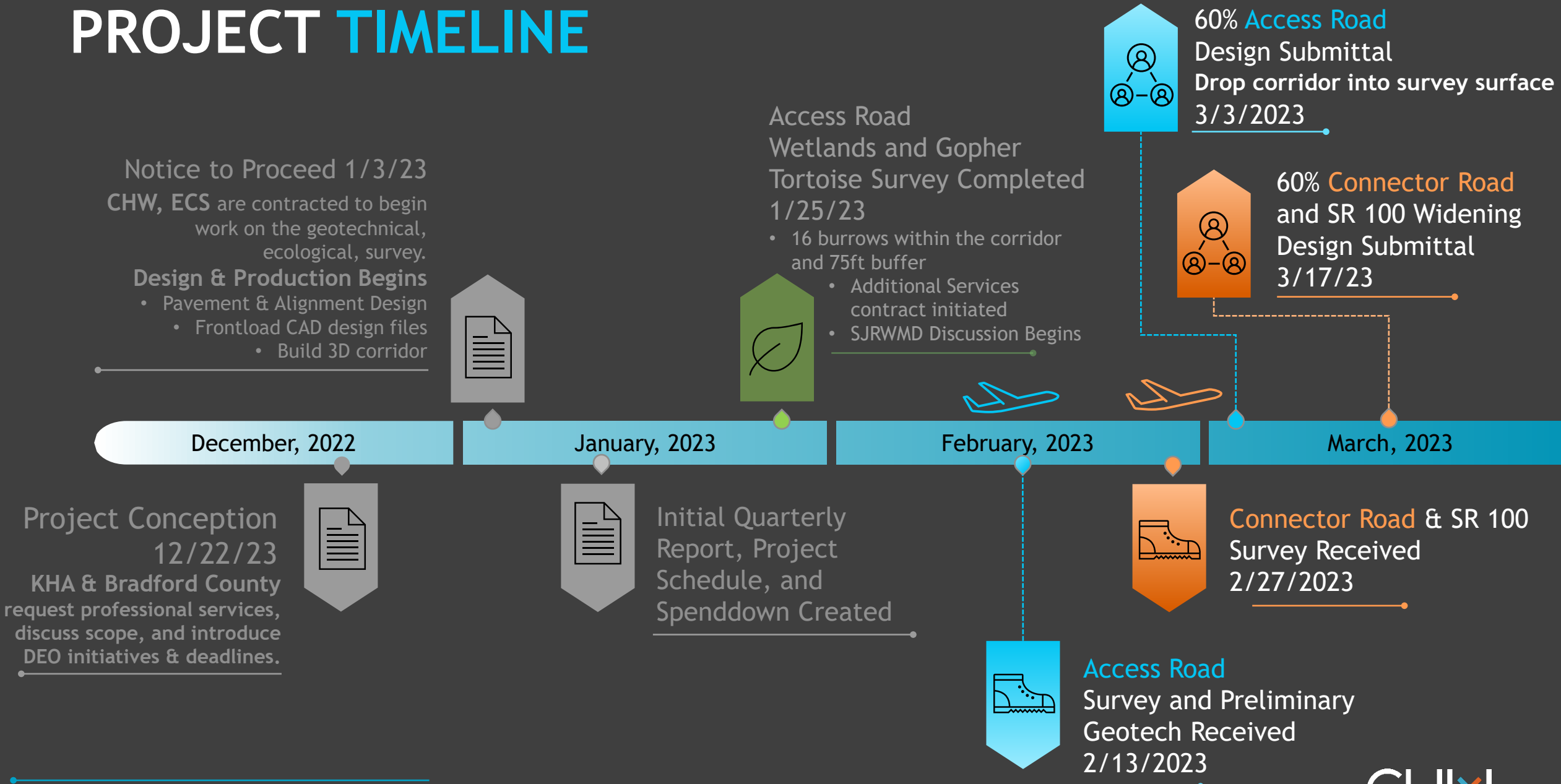
## 1/25/2023

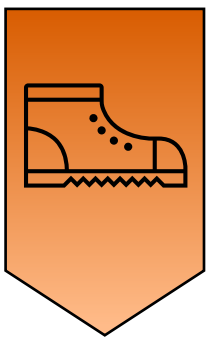
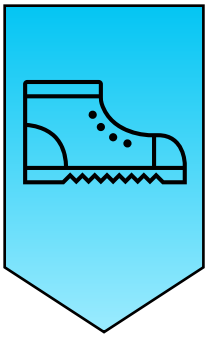
- 27 Gopher Tortoise Burrows **Total**
- 16 Gopher Tortoise Burrows in **Access Road Corridor**
  - **Additional Services Contract**
    - ECS to manage the relocation of gopher tortoises and perform final 100% GT survey
    - Hamilton Custom Services excavation





# PROJECT TIMELINE





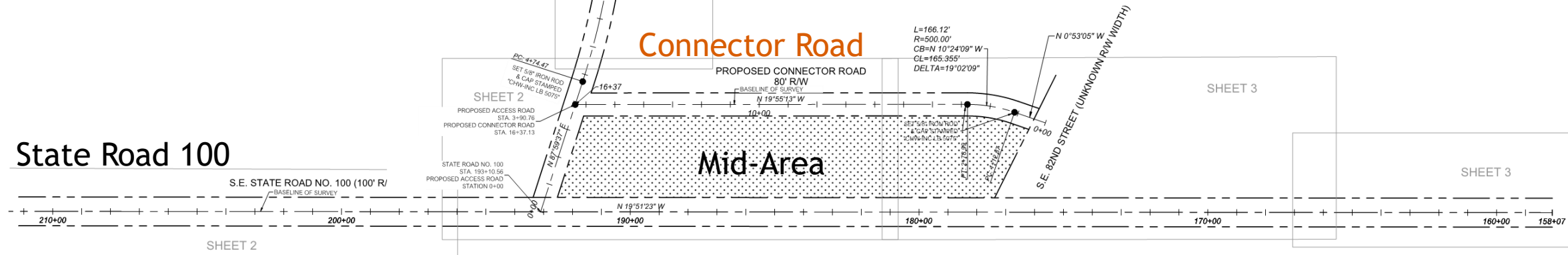
# Survey and Preliminary Geotech Received

Access Road

Connector Road

Mid-Area

State Road 100



## Survey Items

- Map SR 100 Alignment
- ECS Wetland Delineation Flags
- ECS Geotech Borings/Core Locations
- 3D Survey of SR 100 Exist R/W
- 3D Survey of Access Road and Connector Road Corridors
- 2D surface shots of mid-area
- Tree and above ground utilities
- Stake Access Road proposed R/W for Construction

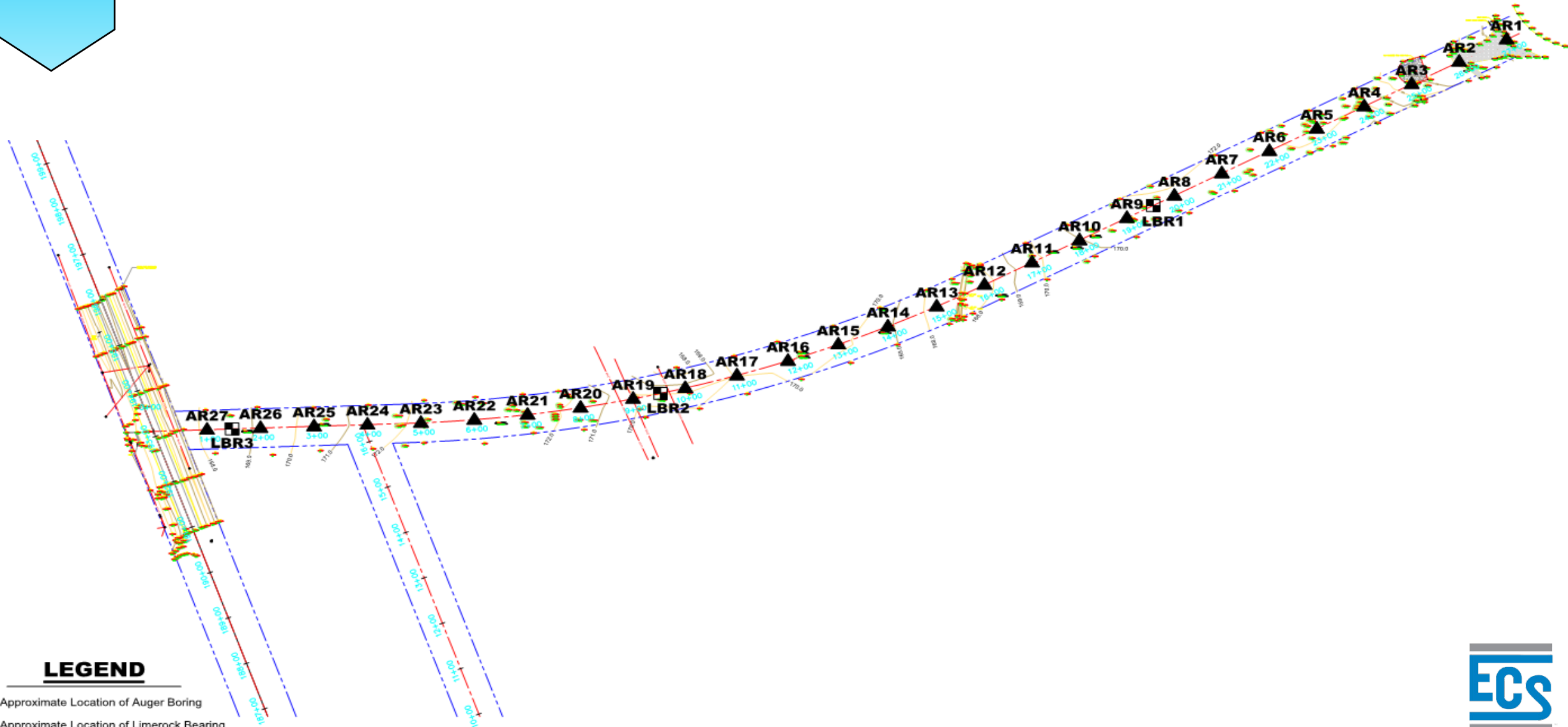




# Access Road

## Preliminary Geotech Received

Graphical Scale  
0' 200' 400'





## Access Road

Preliminary Geotech  
Received

### Geotechnical Analysis

- Soil Survey
- 21 Auger Borings drilled to 6 ft depth
- 6 Auger Borings drilled to 10 ft depth

Table 3.4.1 Subsurface Stratigraphy

| Stratum | Description   | Approximate Depth Range (ft beneath grade) | AASHTO Soil Classification |
|---------|---|--|----------------------------|
| 1       | Fine SAND, Fine SAND With Silt, and Fine SAND with Clay | 0 to 7                                     | A-3                        |
| 2       | Silty Fine SAND   | 7 to 10                                    | A-2-4                      |
| 3       | Clayey Fine SAND  | 3 to 10                                    | A-2-4                      |
| 4       | Very Clayey Fine SAND                                   | 4 to 10                                    | A-6                        |

### Geotechnical Findings

- Groundwater depths of 2 FT to greater than 10 FT
- Undercut unsuitable soils in strata 3 & 4
- Average unsaturated vertical infiltration rate: 7.2 ft/day
- Average horizontal hydraulic conductivity rate: 10.7 ft/day

Figure 3.3.1 Soil Survey Map



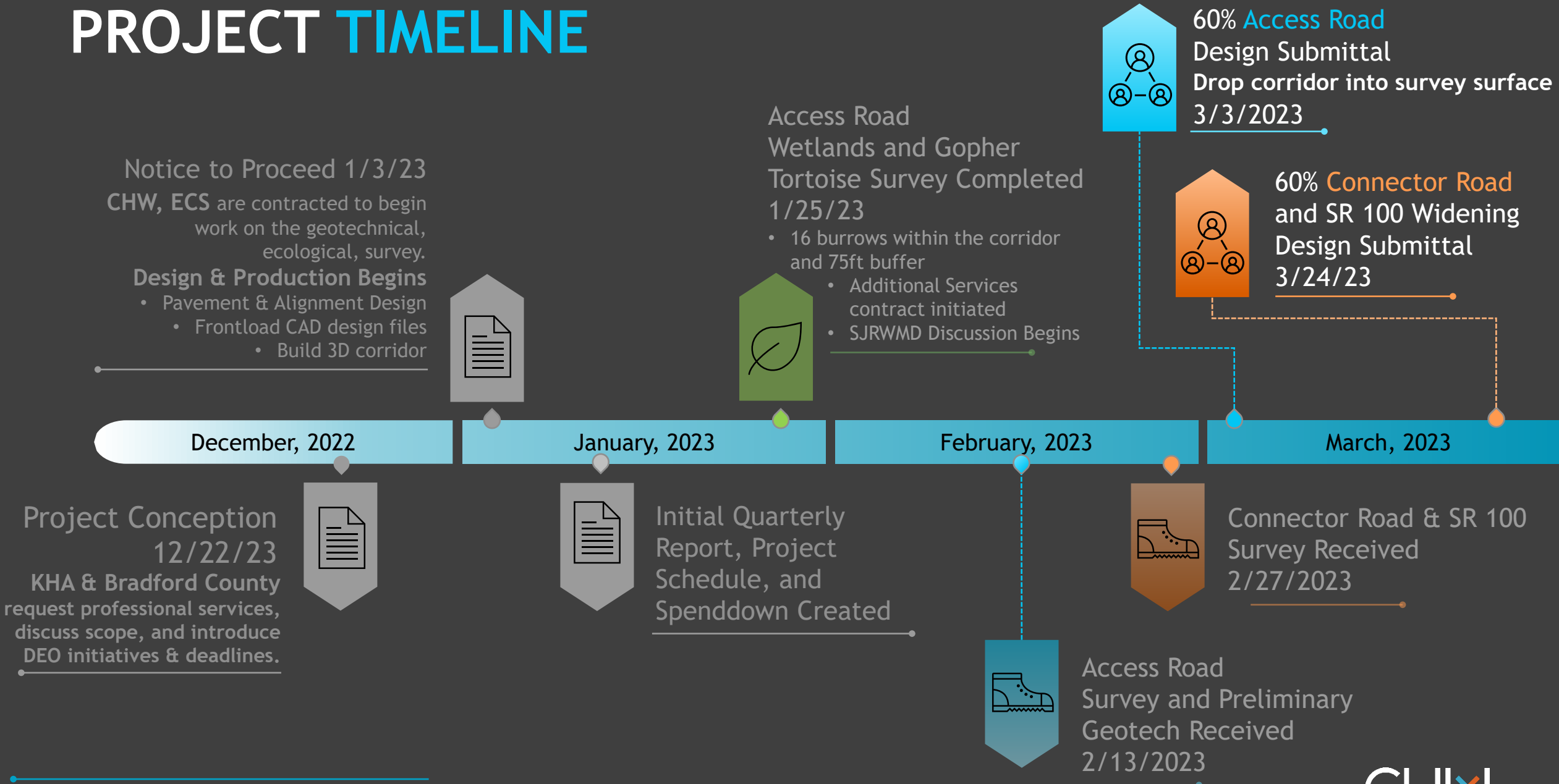
Table 3.3.1 Soil Survey Data

| Soil ID | Soil Type                                | Typical Profile   | Hydrology               | Hydrologic Soil Classification | Estimated Seasonal High Groundwater Level <sup>(1)</sup> |
|---------|--|---|-------------------------|--------------------------------|--|
| 2       | Albany fine sand, 0 to 5 percent slopes  | 0 to 50 inches: fine sand<br>50 to 60 inches: sandy loam<br>60 to 80 inches: sandy clay loam      | Somewhat poorly drained | A/D                            | 12-30  |
| 12      | Sapelo sand                              | 0 to 50 inches: sand<br>50 to 80 inches: sandy clay loam  | Poorly drained          | B/D                            | 6-18   |
| 17      | Blanton fine sand, 0 to 5 percent slopes | 0 to 42 inches: fine sand<br>42 to 48 inches: loamy fine sand<br>48 to 80 inches: sandy clay loam | Moderately well drained | A                              | 36-72  |

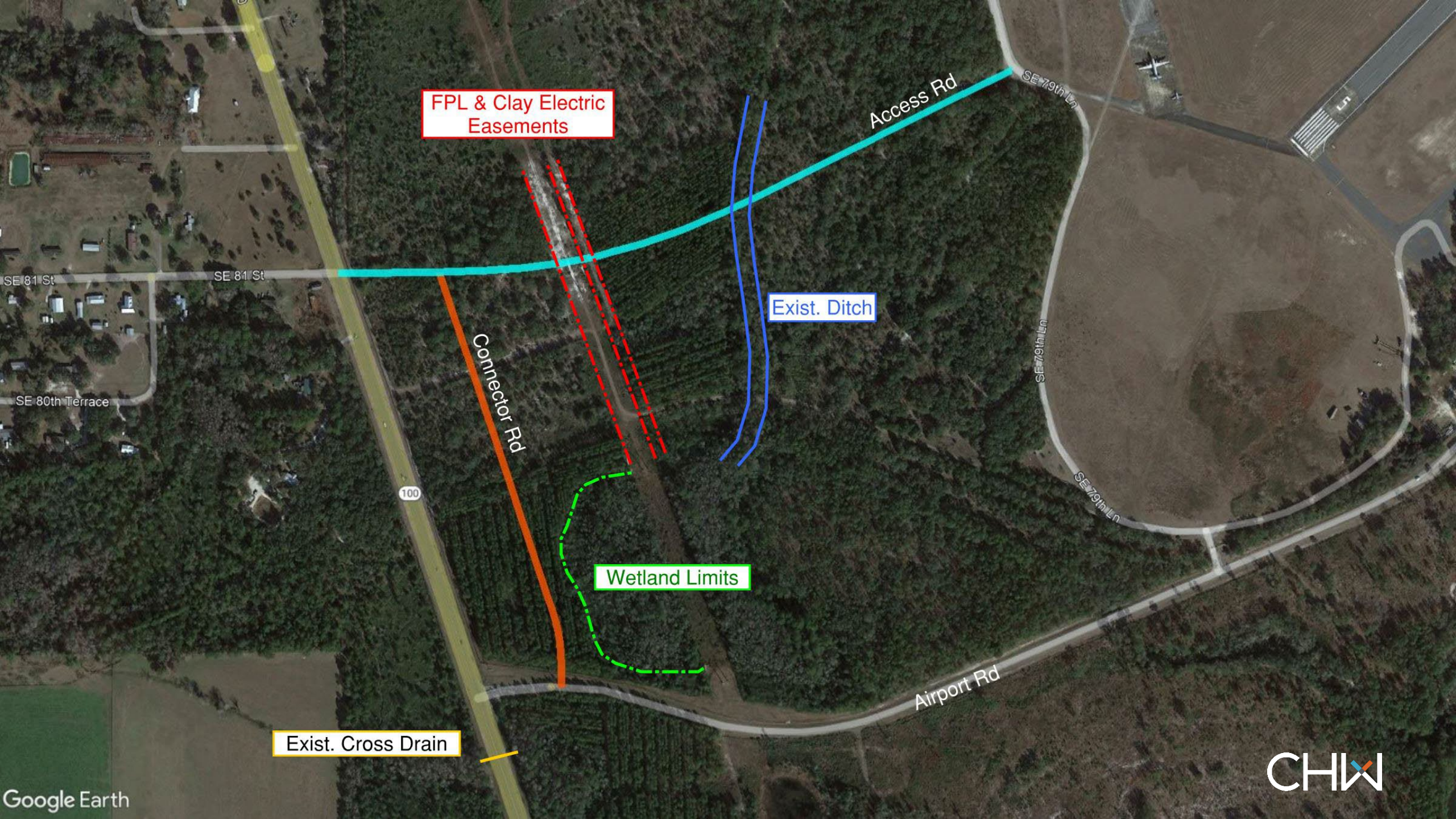
<sup>(1)</sup> Inches below ground surface at time of survey.



# PROJECT TIMELINE







FPL & Clay Electric  
Easements

Access Rd

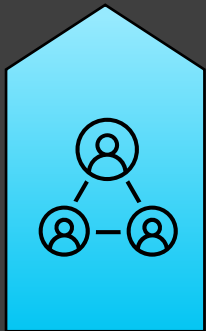
Exist. Ditch

Connector Rd

Wetland Limits

Exist. Cross Drain



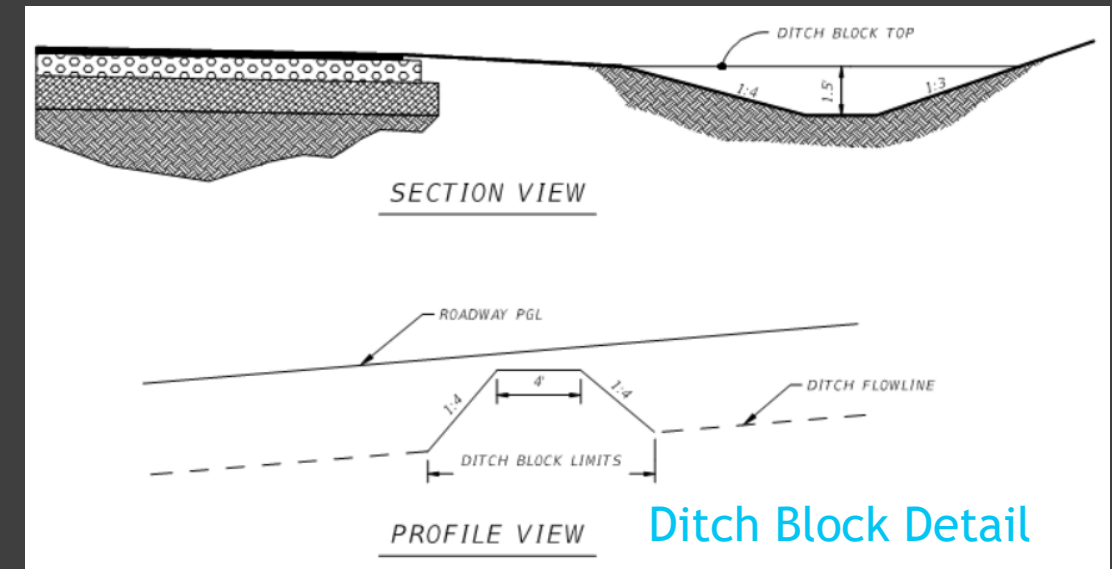
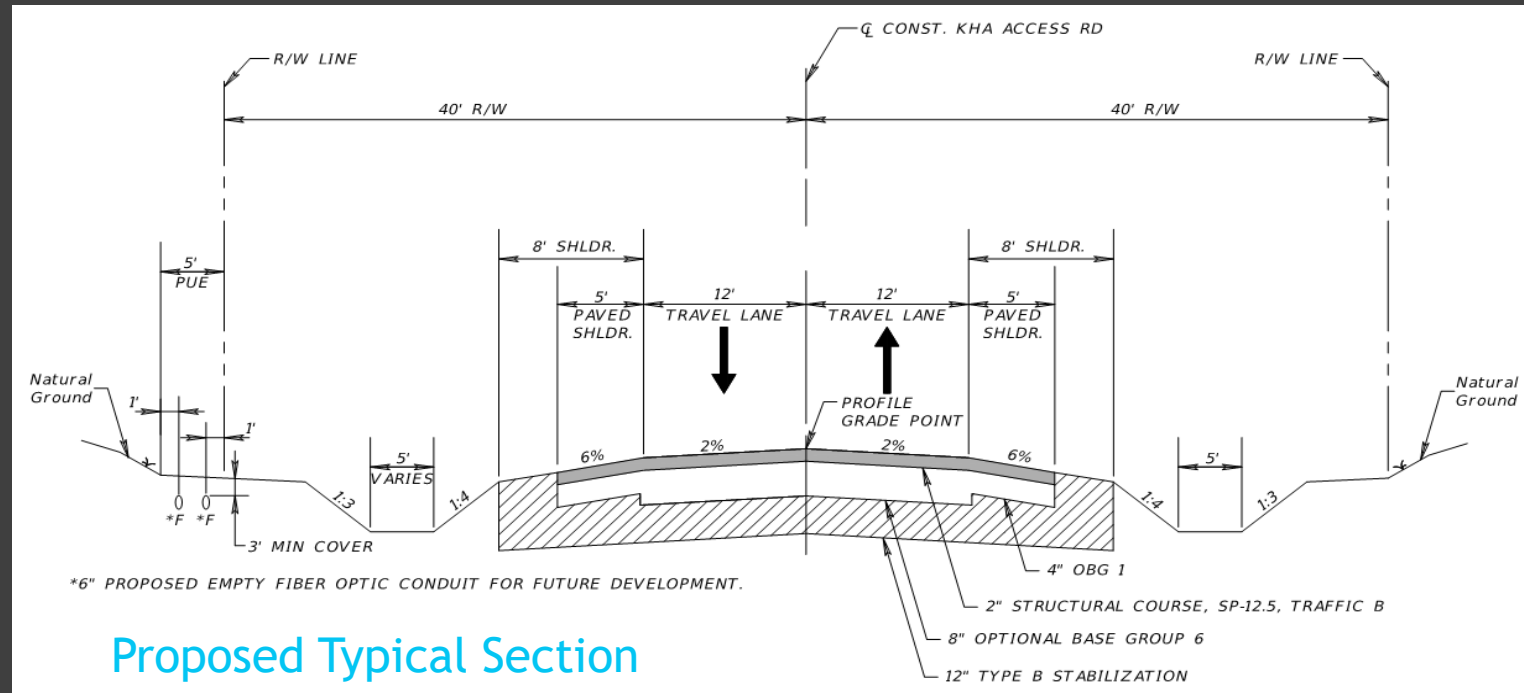


## Access Road

### 60% Design

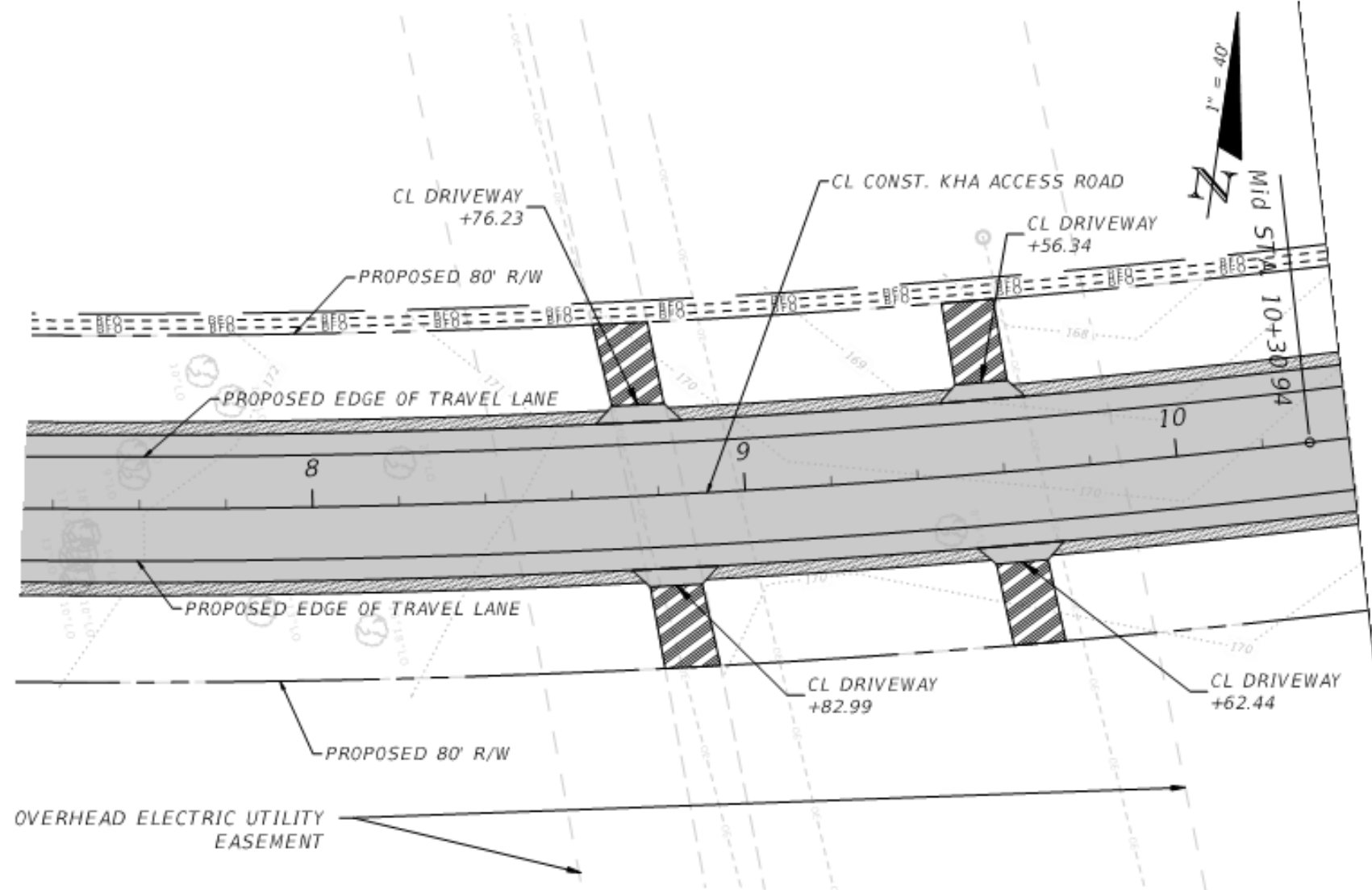
## Key Design Elements

- Roadway geometry per FDOT Standard
- Design Speed = Target Speed = 25 MPH
- Pavement Design >1.5M ESAL
- Dead End berm at beginning (SR 100 R/W)
- Supply access to Overhead Power easements
- Cross Drain at existing ditch
- Storage Swale Calculation
- Ditch blocks
- Tie into existing SE 79<sup>th</sup> Lane
- Fiber Infrastructure





## FPL & Clay Electric Easements



### Provide Access' for FPL and Clay Electric Utility Easements

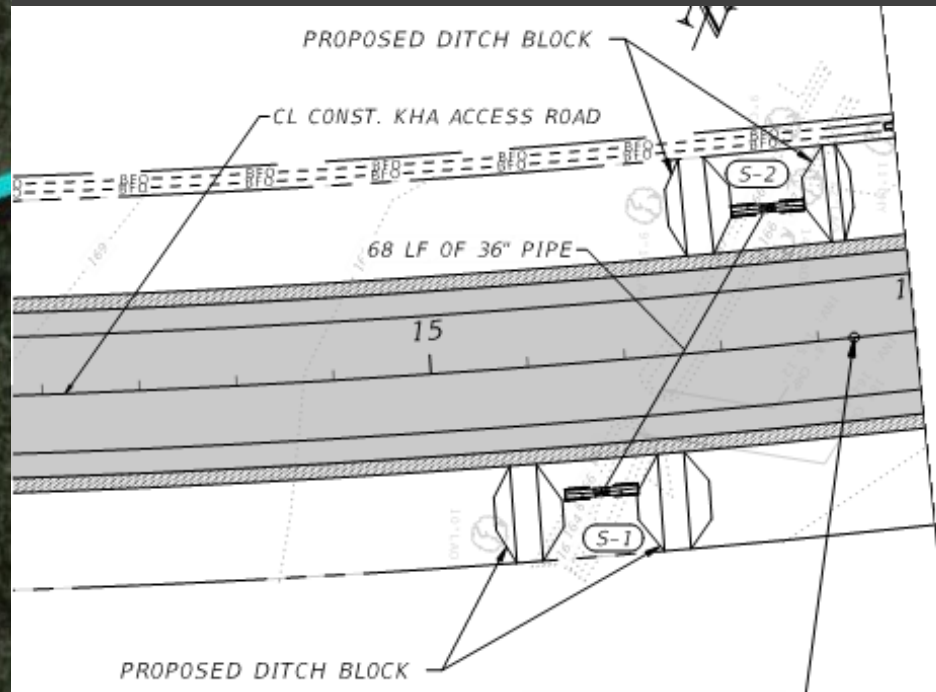
- Paved apron with asphalt milling driveway material
- Driveways serve as ditch blocks to stage storage



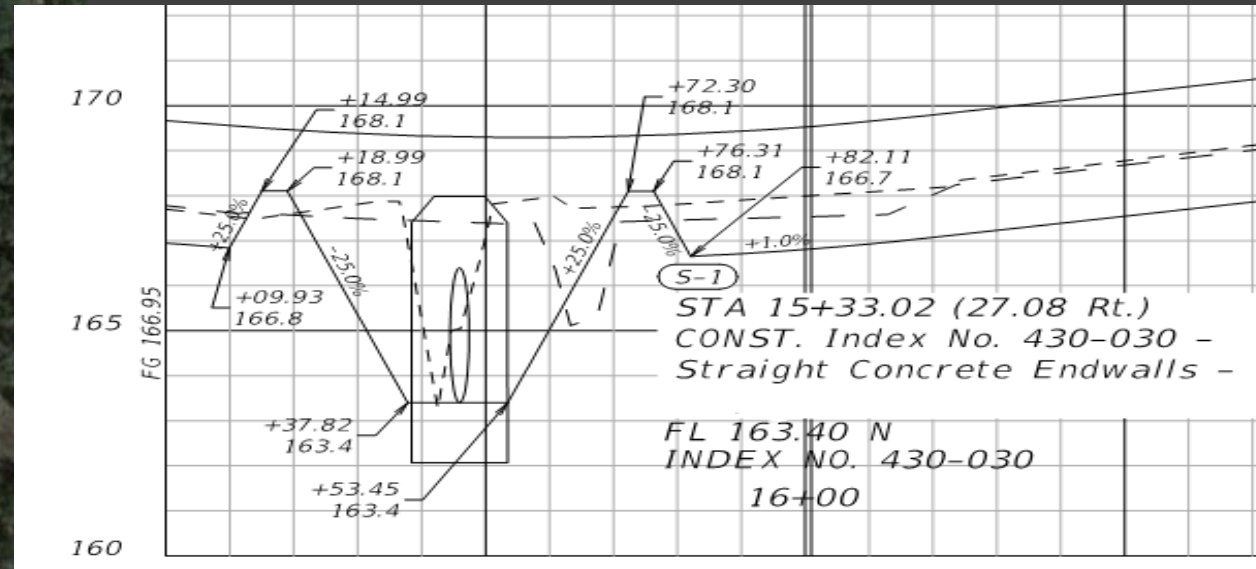


Access Rd

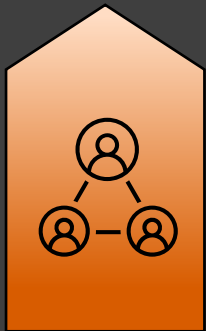
Exist. Ditch



Provide cross drain at  
existing ditch





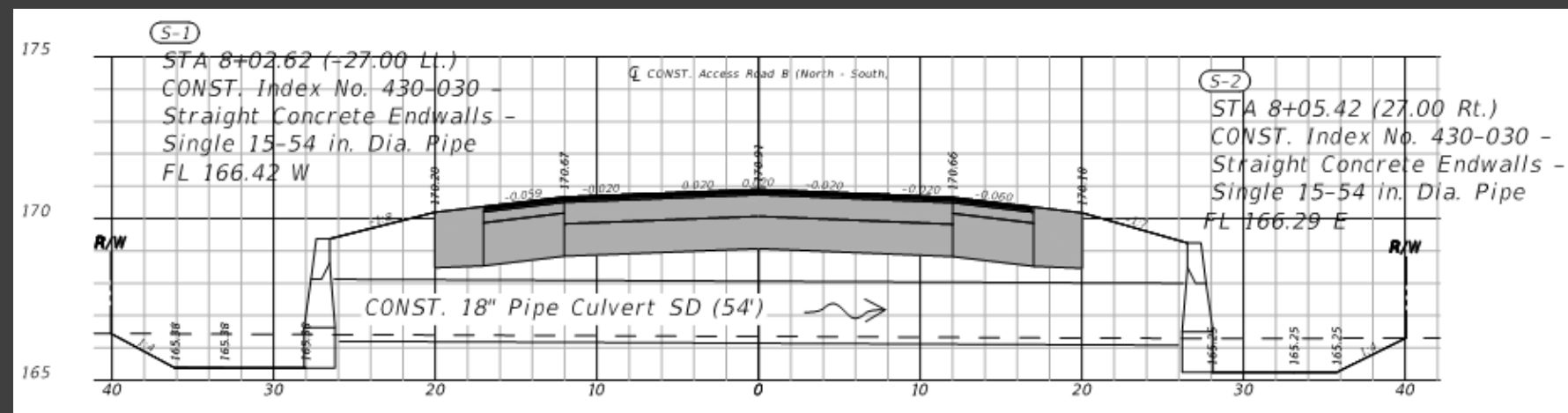
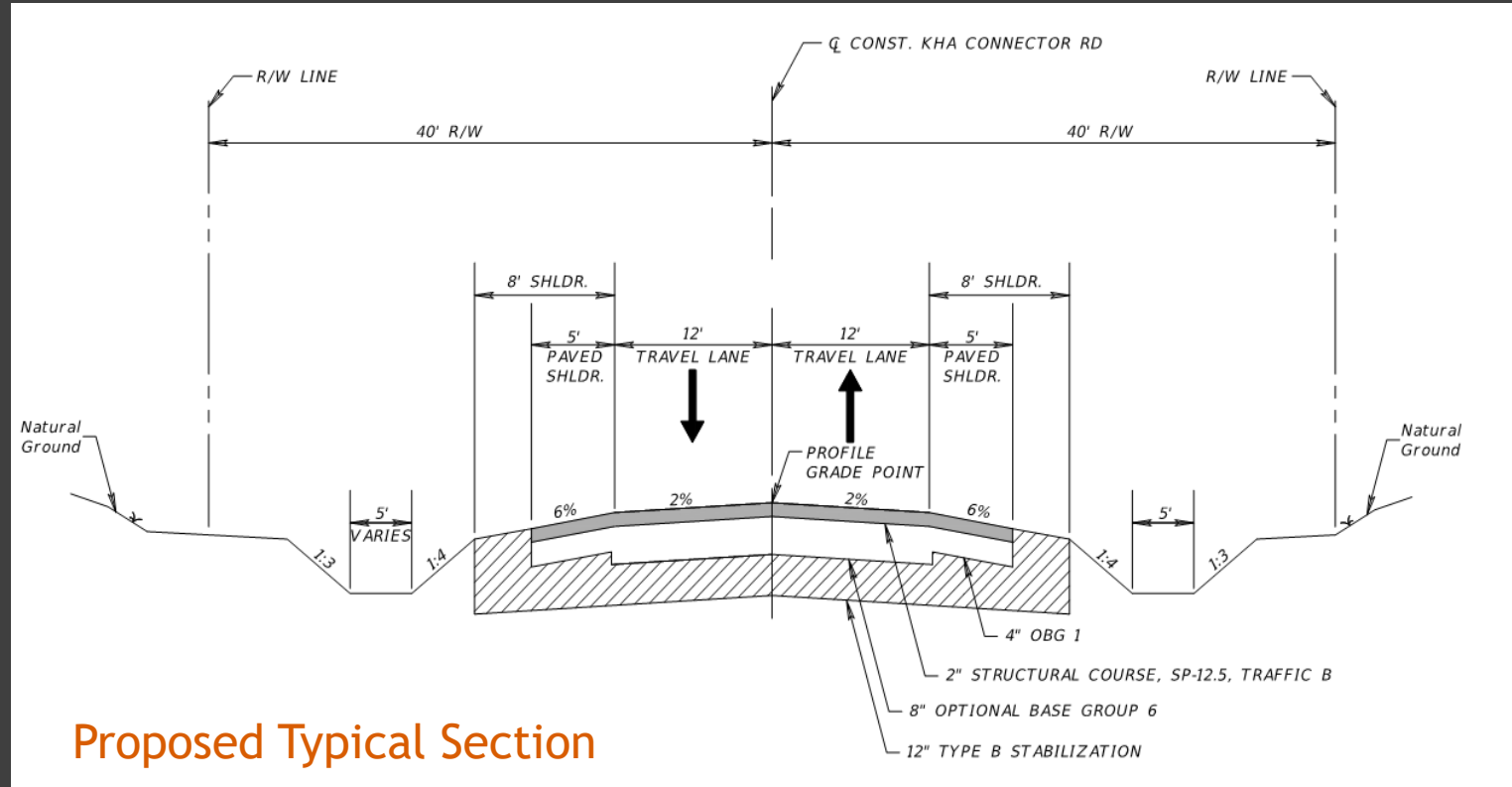


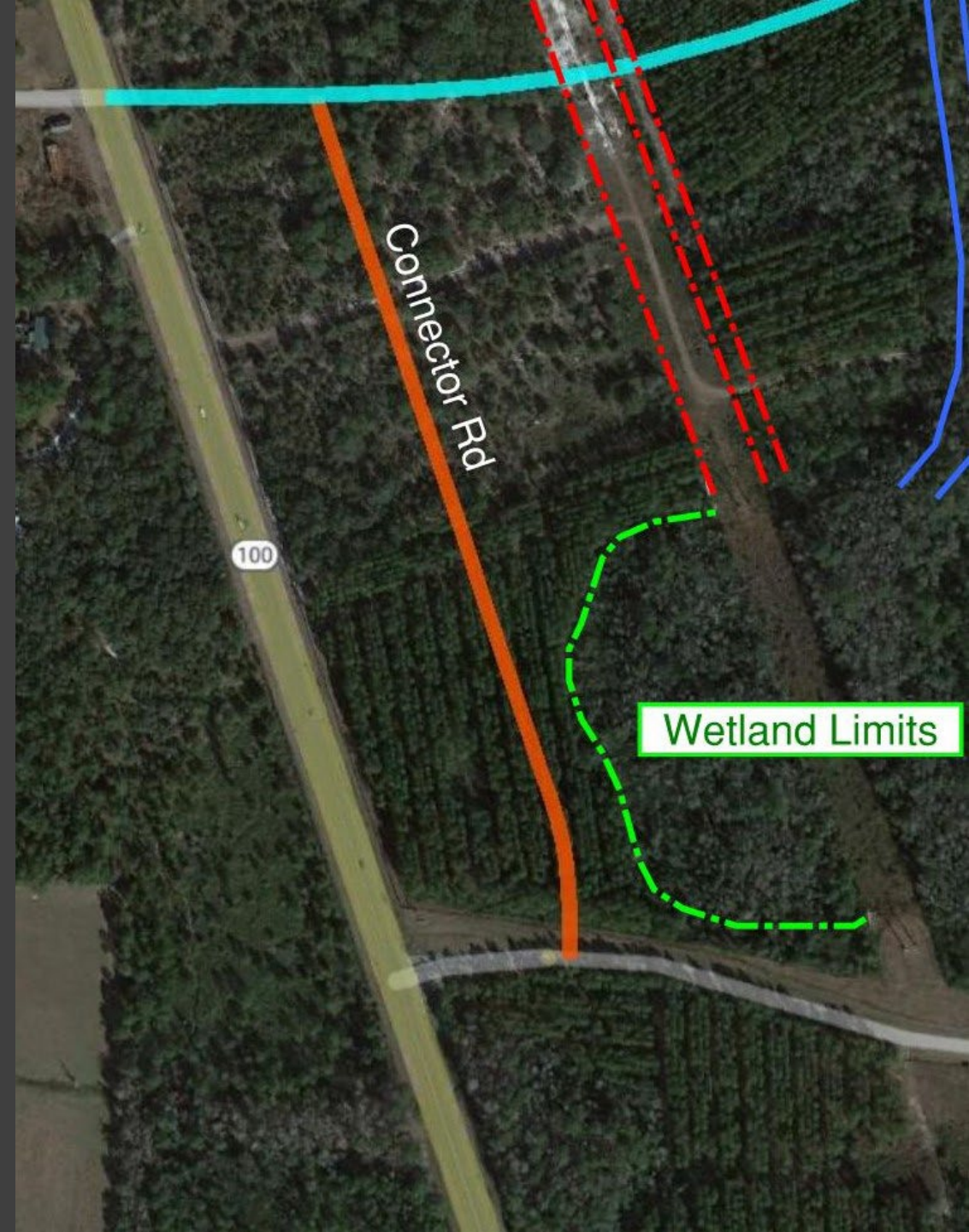
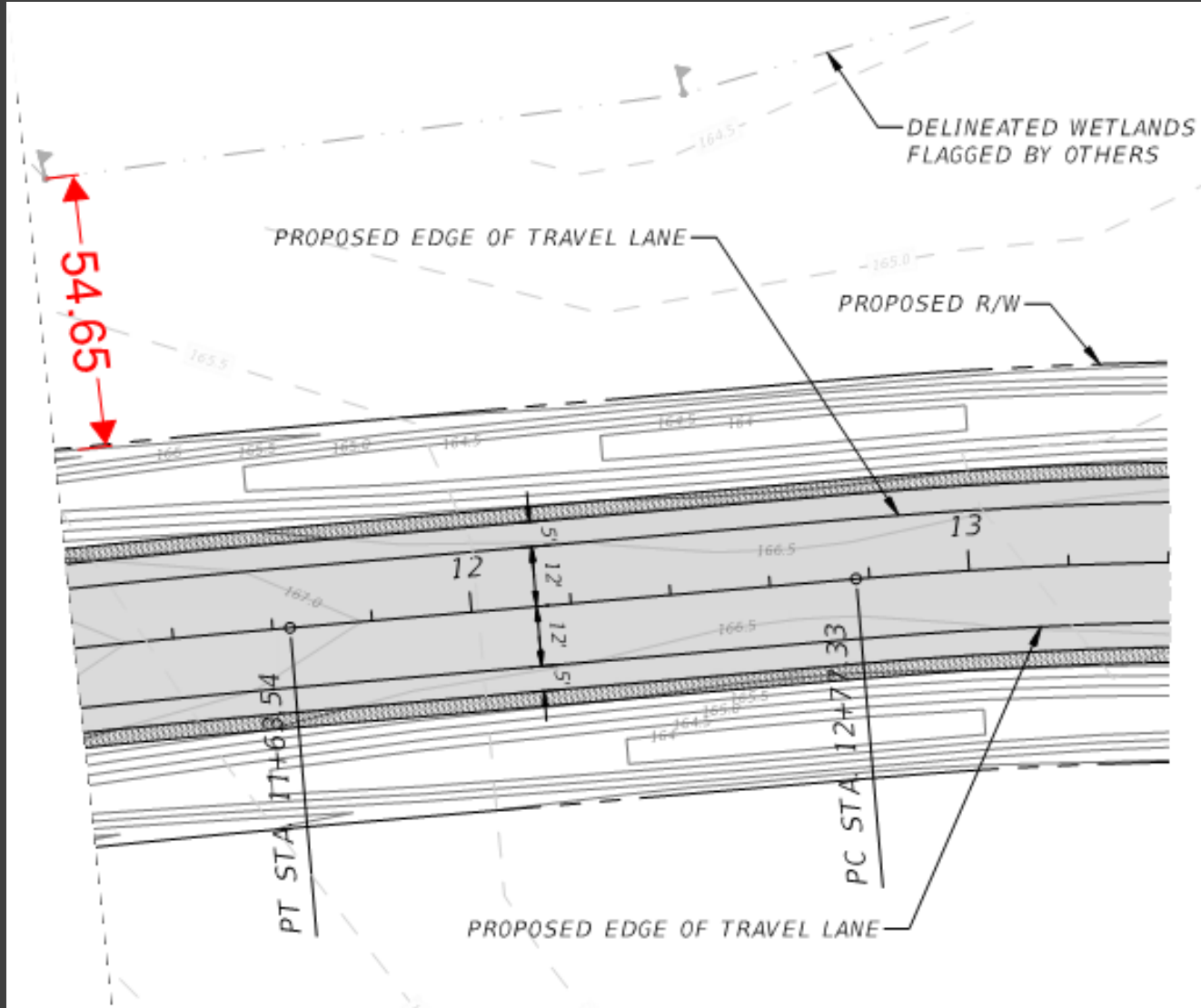
# Connector Road

## 60% Design Submittal

### Key Design Elements

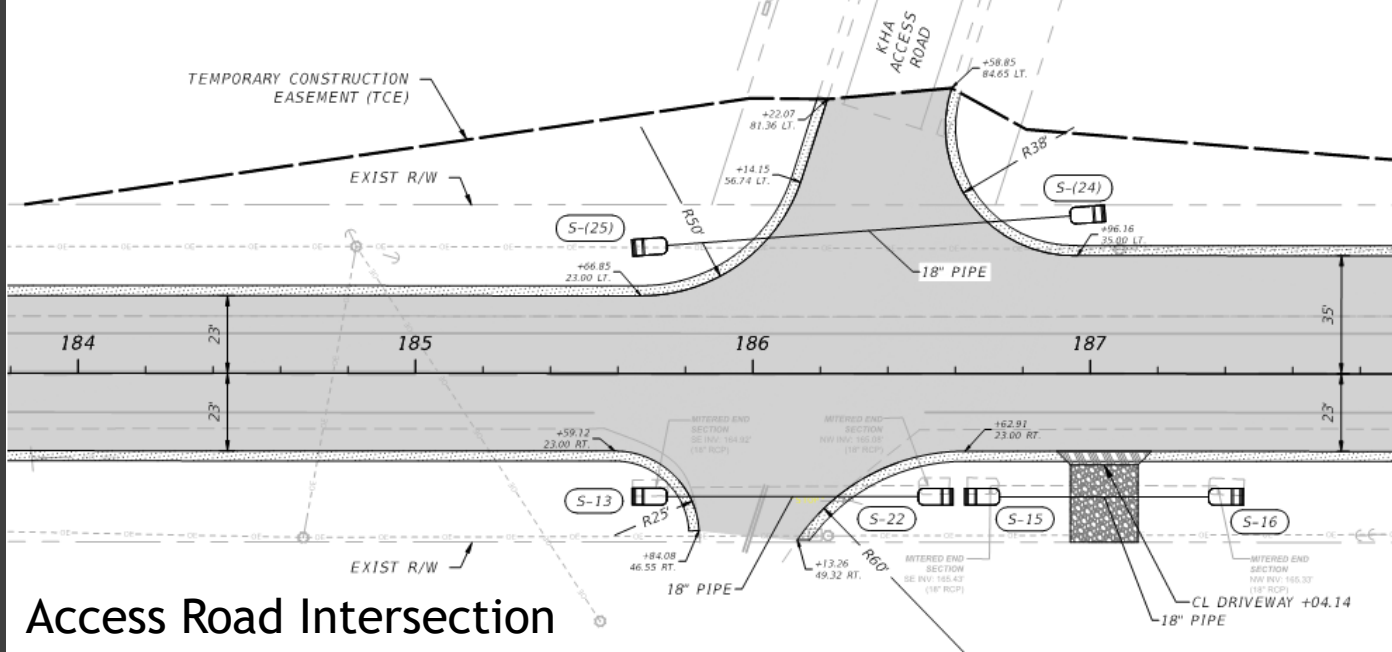
- Roadway geometry per FDOT Standard
- Design Speed = Target Speed = 25 MPH
- Pavement Design >1.5M ESAL
- Cross Drain at Low Point
- Storage Swales
- Avoid Wetlands



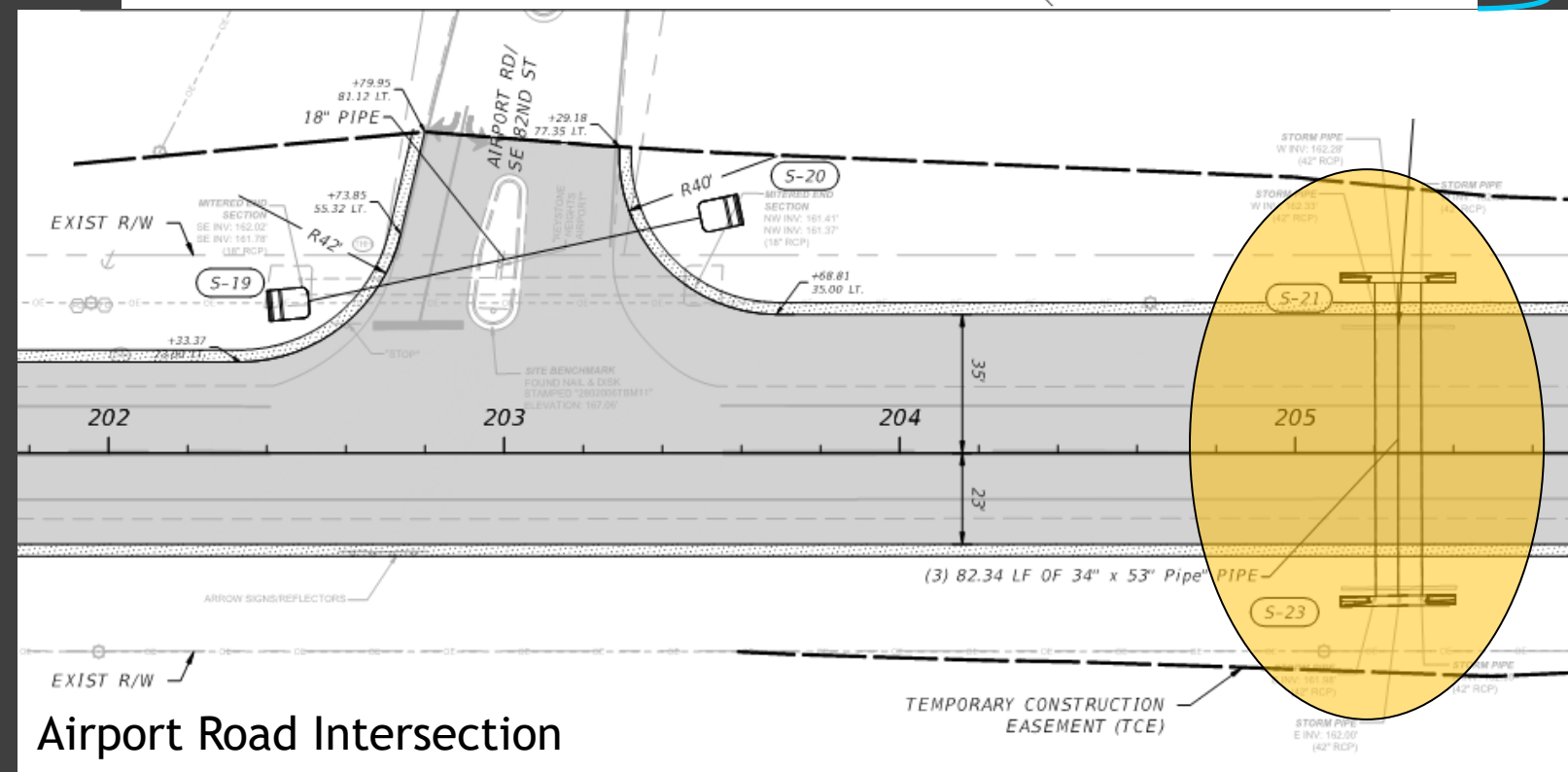




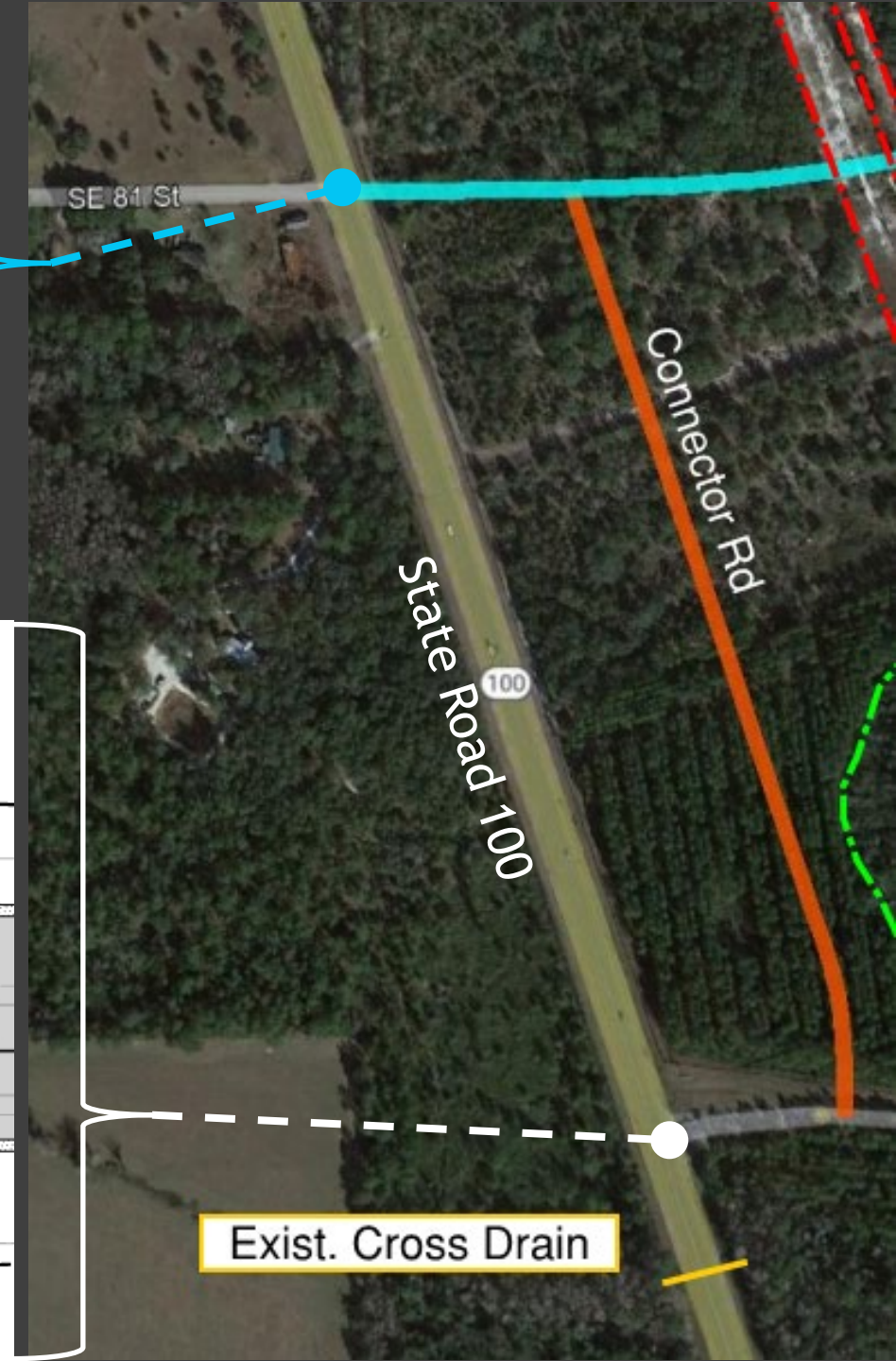




Access Road Intersection

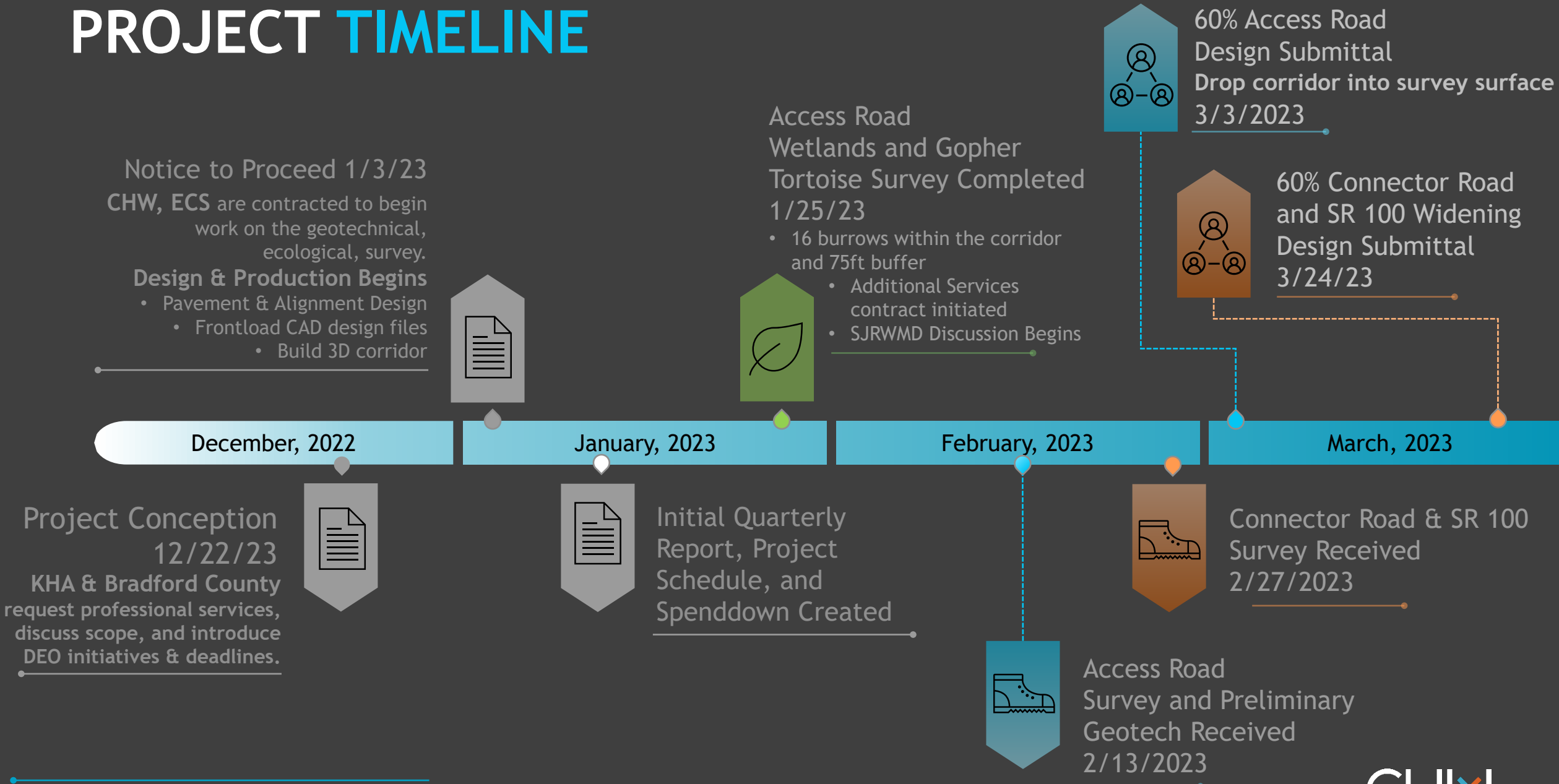


Airport Road Intersection

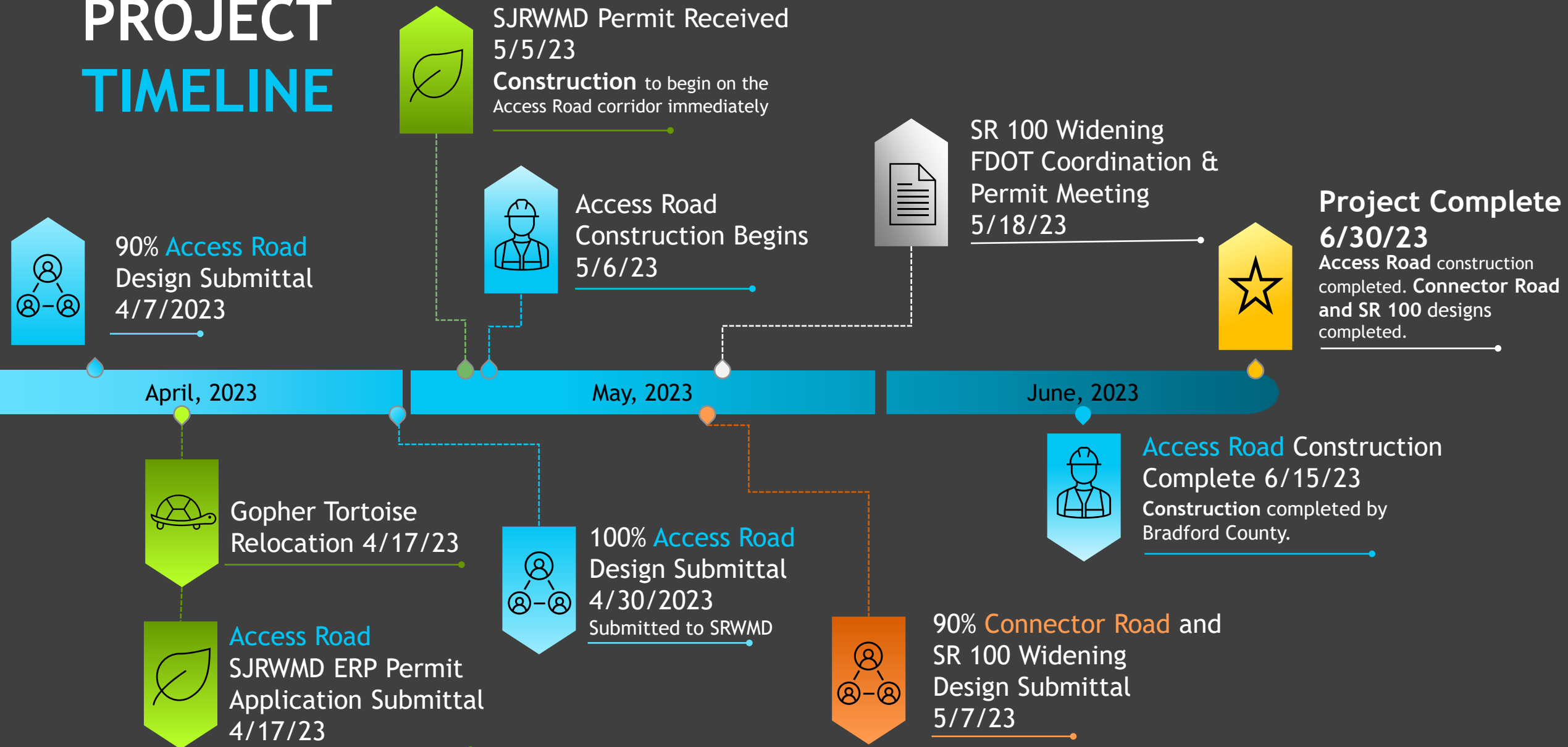




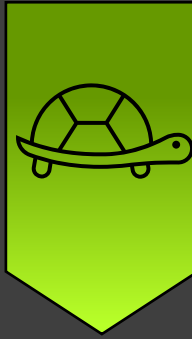
# PROJECT **TIMELINE**



# PROJECT TIMELINE







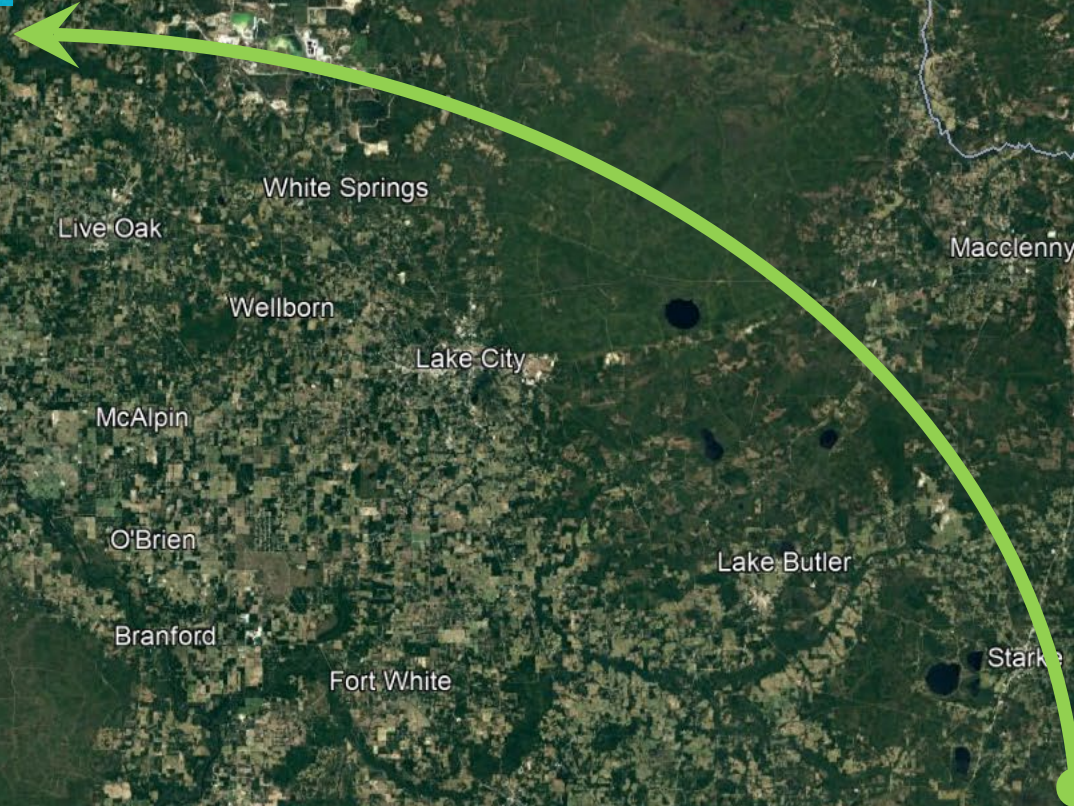
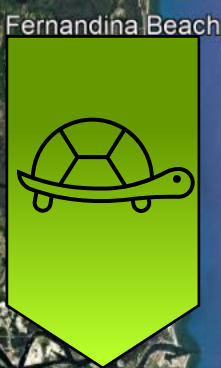
## Gopher Tortoise Relocation Access Road Details

- 16 burrows within corridor and 75' buffer
- 15 relocations estimated
- 7 active burrows found
- 7 gopher tortoises relocated to Skeeter Ranch
- \$5,000 per tortoise
- \$35,000 mitigation



Skeeter Ranch  
Gopher Tortoise Sanctuary

Gopher Tortoise  
Relocation  
4/17/23



KHA Access Road Corridor



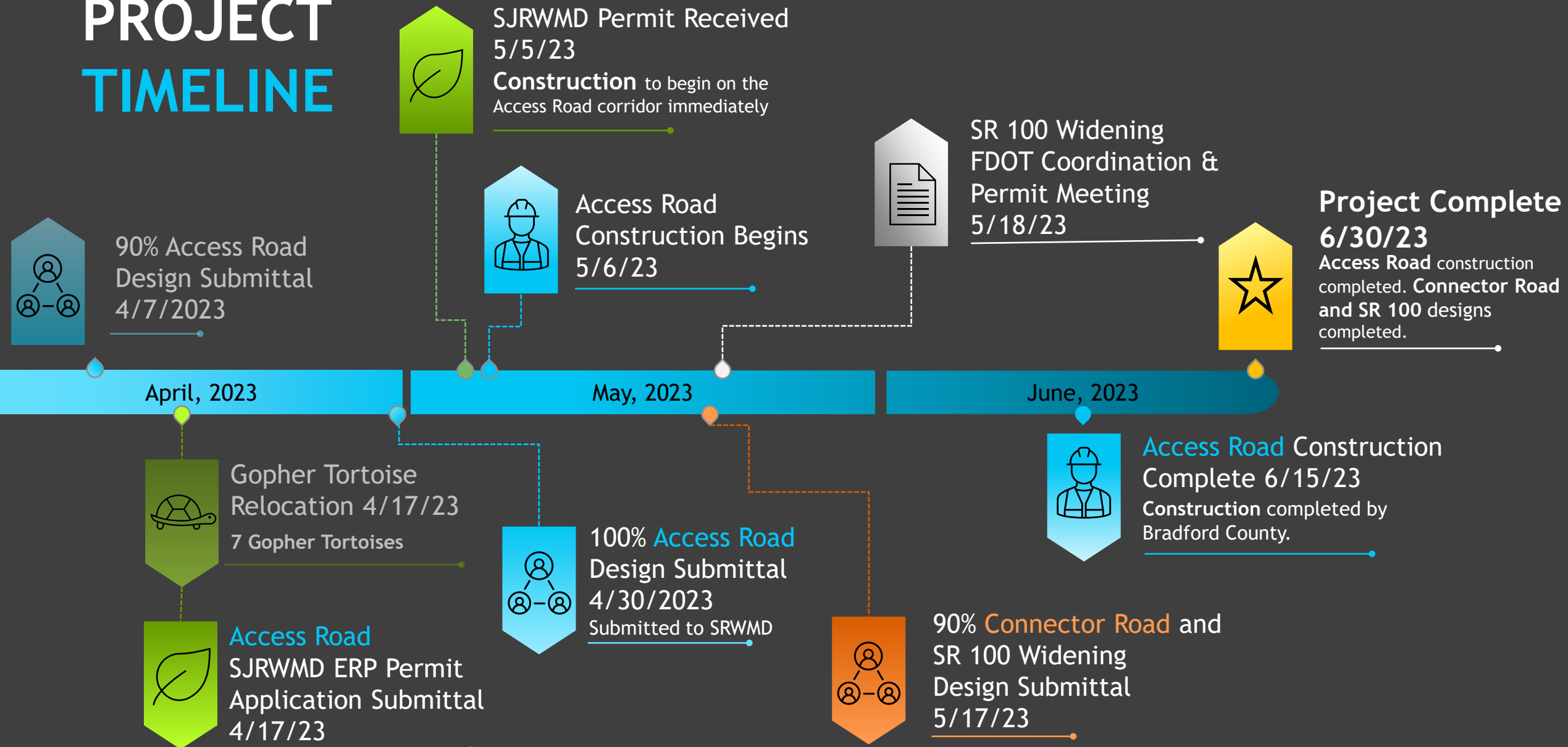




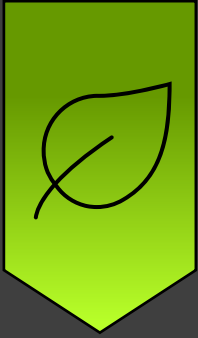




# PROJECT TIMELINE





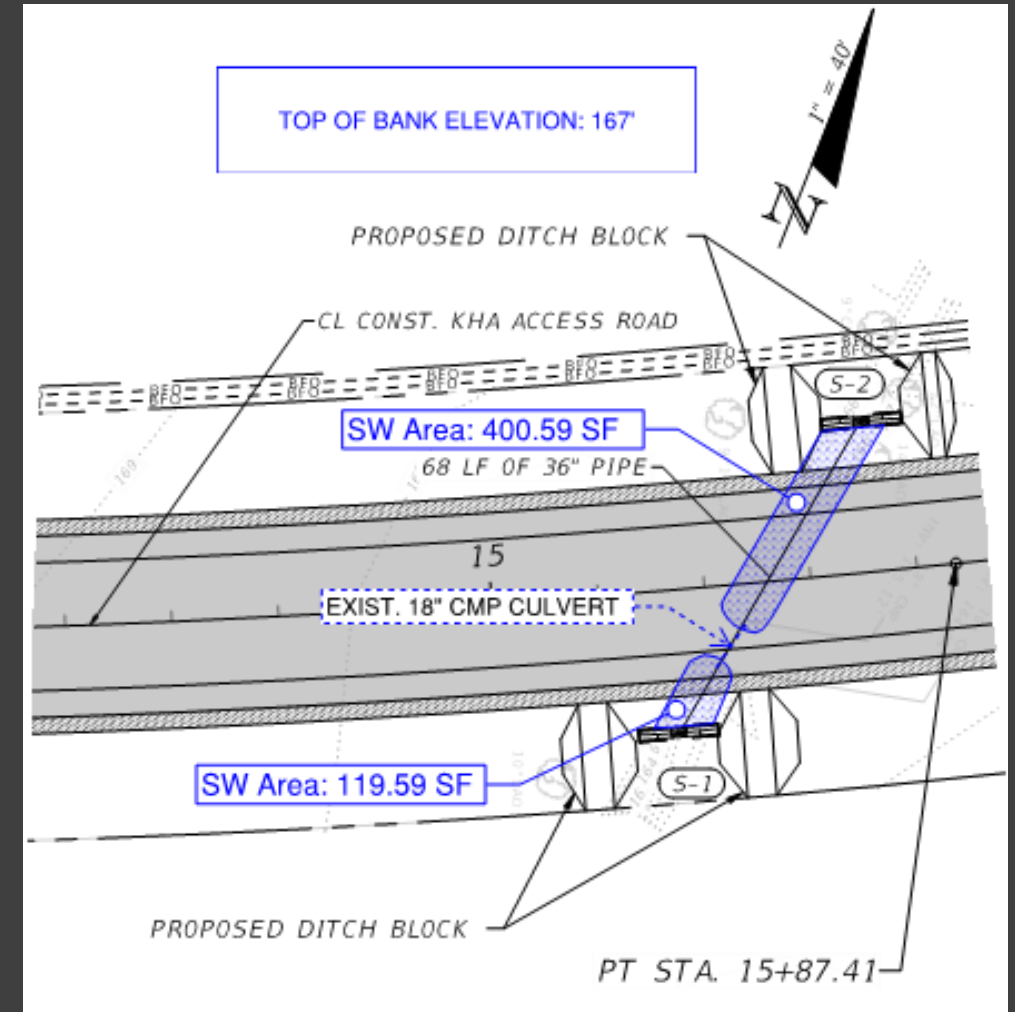


## Access Road

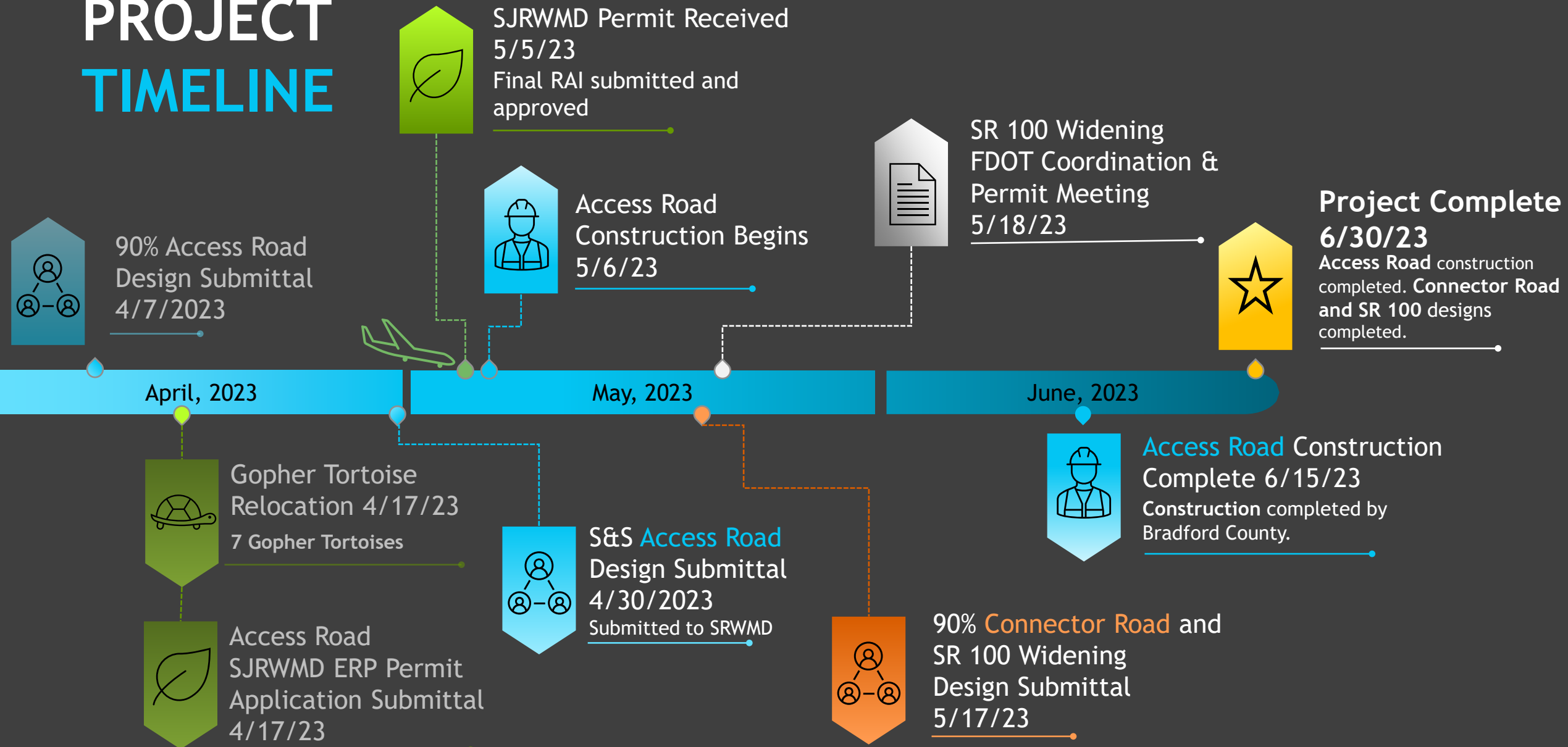
SRWMD ERP Permit Application Submittal  
4/17/23

### SJRWMD ERP Permit Details

- FWC Gopher Tortoise Relocation complete
- No FDEP mitigation required
- Surface Water impacts quantified: 0.012 AC
- Final Plans approved
- Silt fence in place approved during SJRWMD field visit
- No wetlands impacted
- Storage swales approved as Geotech reports sufficient hydro conductivity (vertically & horizontally)
  - Water Quality Treatment volume recovery of 36 hours
- Storage swales calculations show that 1.5' typical swale depth will contain adequate peak runoff storage for each roadway drainage basin @ 25-year, 24-hour storm event
  - Storage swales treated as separate ponds



# PROJECT TIMELINE









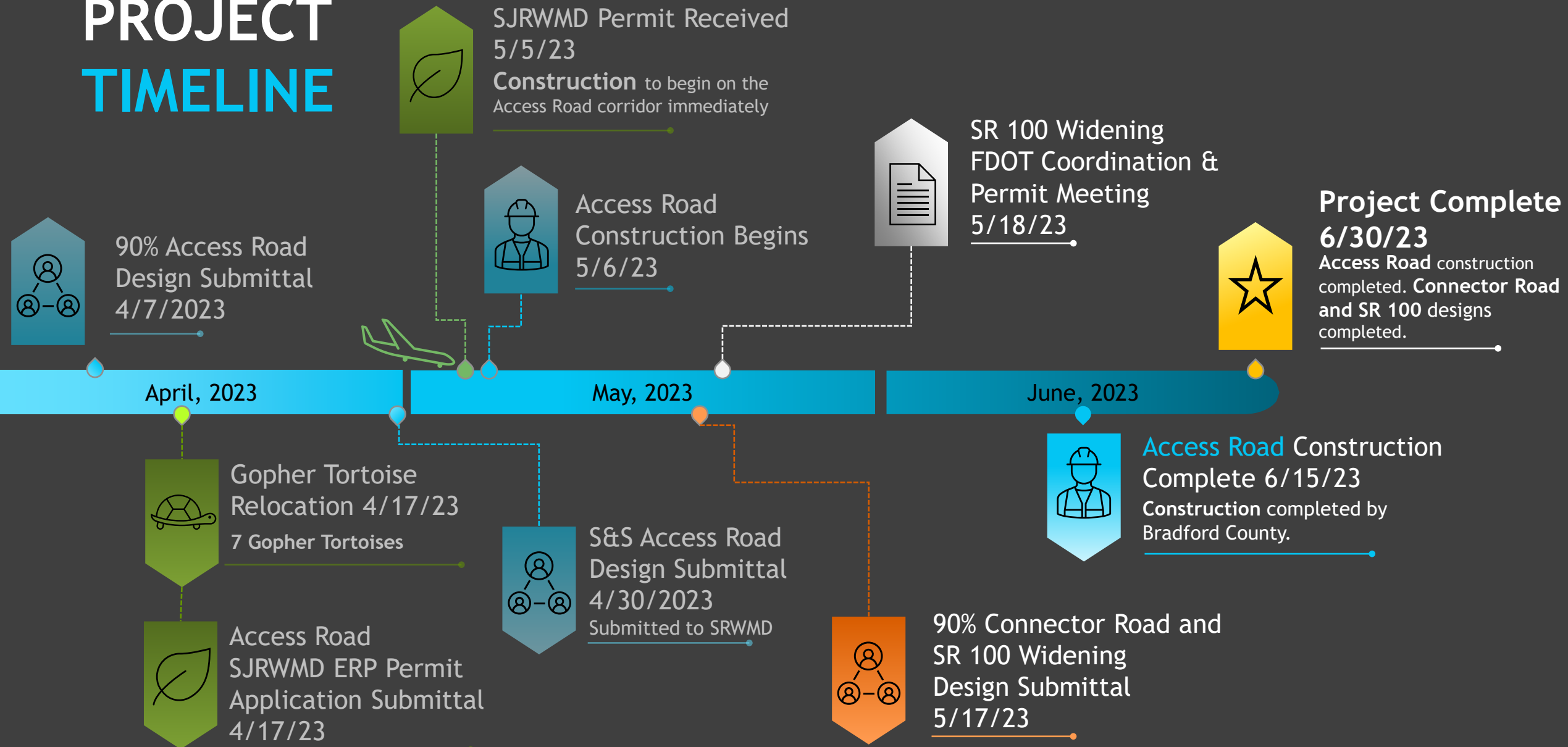






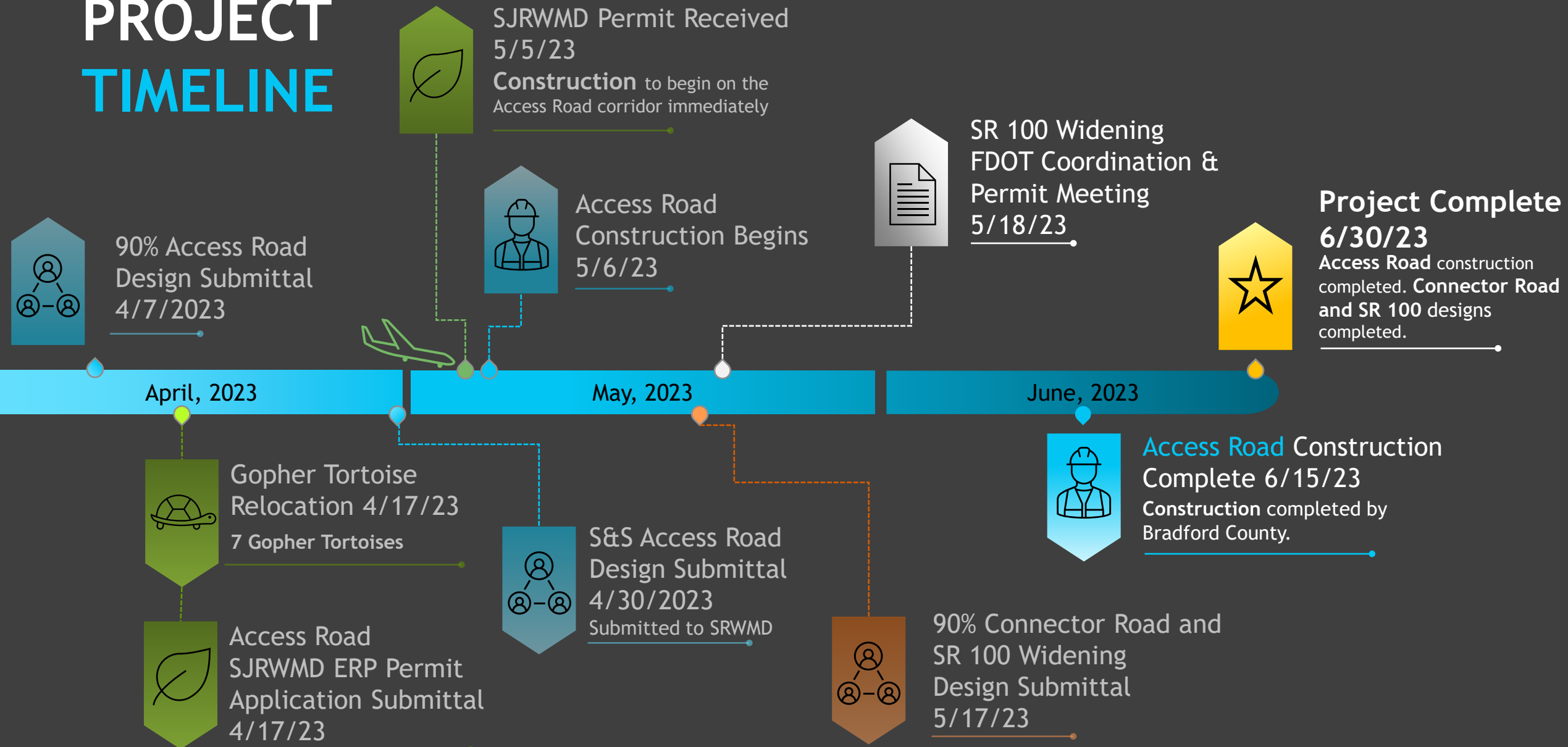


# PROJECT TIMELINE



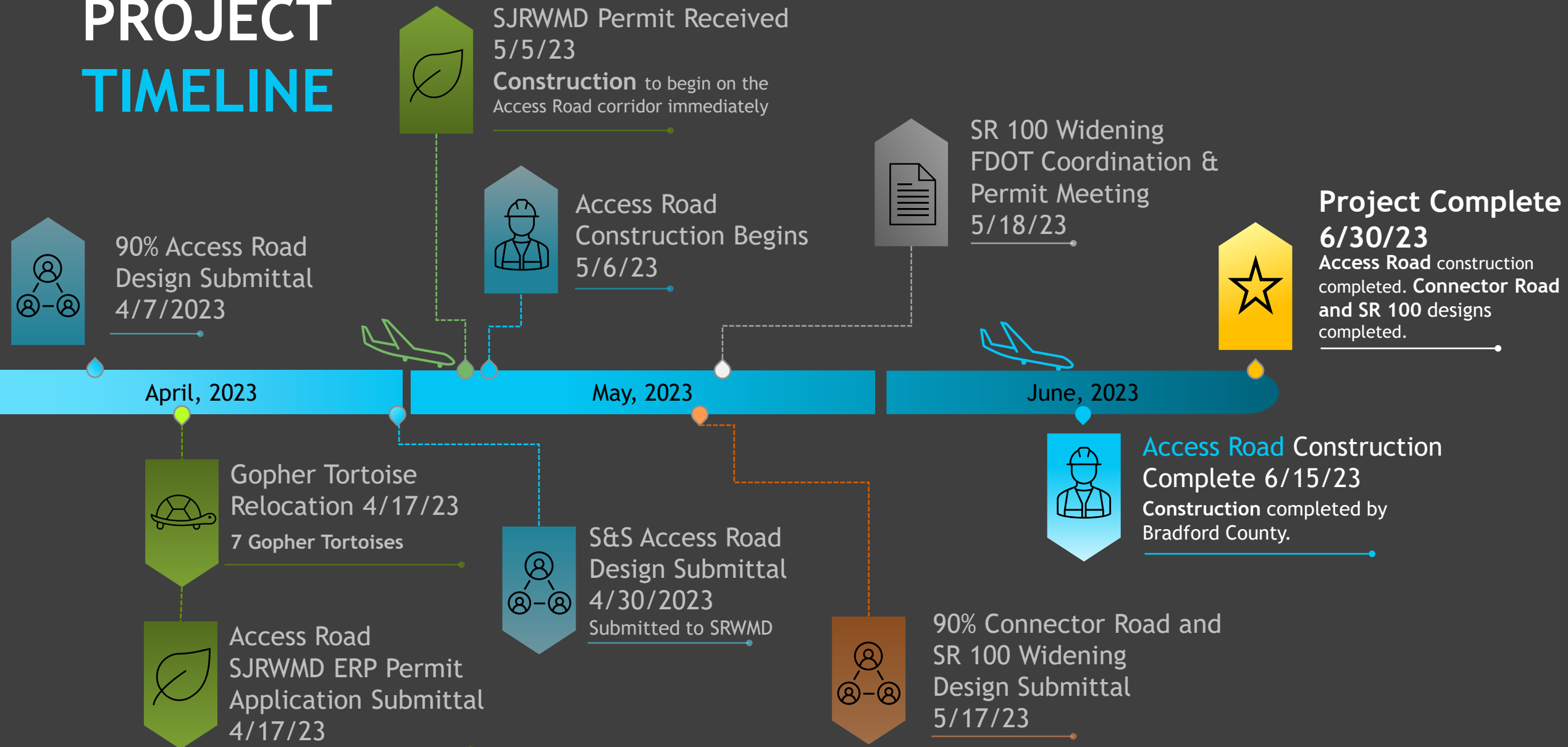


# PROJECT TIMELINE





# PROJECT TIMELINE







SPEED  
LIMIT  
25















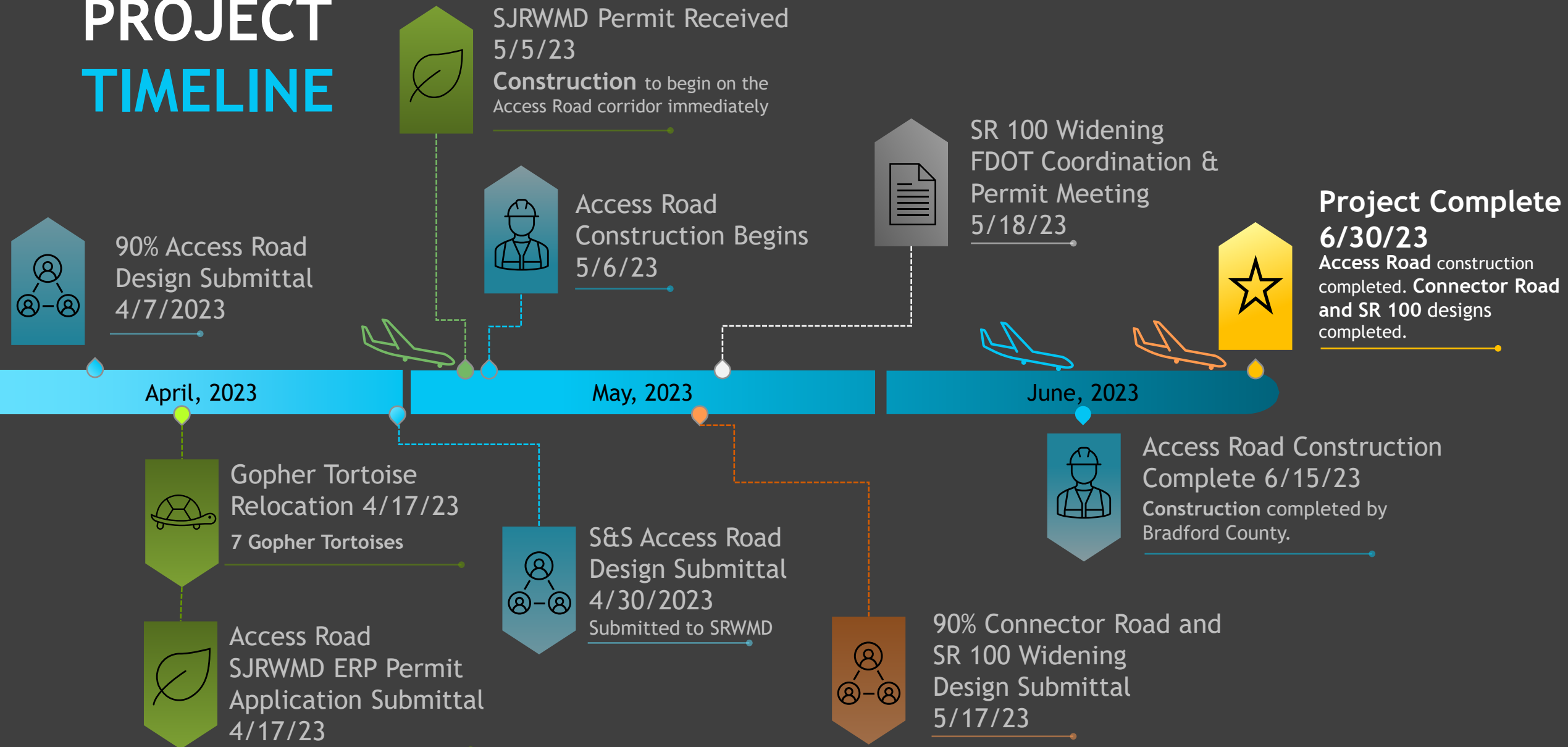








# PROJECT TIMELINE







**Project Complete**  
**6/30/23**  
Access Road construction  
completed. Connector Road and  
SR 100 designs completed.



4049 Reid Street • P.O. Box 1429 • Palatka, FL 32178-1429 • 386-329-4500 • www.sjrwmd.com



**Gopher Tortoise Conservation**  
FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION  
Division of Habitat and Species Conservation  
Wildlife Diversity Conservation Section  
620 South Meridian Street, Mail Station 2A  
Tallahassee, Florida 32399-1600  
(850) 921-1031

Permittee Name: City of Keystone Heights  
Permittee Address: 555 S Lawrence Blvd.  
KEYSTONE HEIGHTS, FLORIDA  
32656 UNITED STATES

Agent Name: William Pratsch  
Agent Address: ECS  
2815 Directors Row Suite 500  
ORLANDO, FLORIDA 32809  
UNITED STATES

IS AUTHORIZED TO:

- Capture, transport and relocate all gopher tortoise (*Gopherus polyphemus*) hatchlings less than or equal to 60 mm carapace length (CL), gopher tortoises greater than 60 mm CL by non-harmful means and to molest, damage or destroy gopher tortoise burrows while conducting these activities, subject to the following conditions and provisions, in association with development activities at the following site.

Total number of gopher tortoises authorized: 15

Authorized Capture Methods:

1. Capture gopher tortoises using bucket traps
2. Capture gopher tortoises using hand shovel excavation of gopher tortoise burrows
3. Transport, marking and release of gopher tortoises
4. Supervise backhoe excavation of gopher tortoise burrows to capture gopher tortoises

AUTHORIZED LOCATION(S): 9.95-acre KHA Expansion Project Site (Latitude 29° 50' 13.43" N Longitude 82° 3' 21.61" W), City STARK, County BRADFORD  
Off-site relocation  
Recipient Site Name: Skeeter Ranch Recipient Site - Reserved Tortoise Capacity: 15  
Unit Name: Skeeter Ranch Recipient Site - Reserved Tortoise Capacity: 15  
(Latitude 30° 26' 23.42" N Longitude 83° 4' 6.03" W), Counties HAMILTON  
Authorized under permit GTL-22-0005

Permittee Signature: *[Signature]* Date: *4/10/2023*  
Not valid unless signed. By signature, confirms that all information provided to issue the permit is accurate and complete, and indicates acceptance and understanding of the provisions and conditions listed below. Any false statements or misrepresentations when applying for this permit may result in felony charges and will result in revocation of this permit.

Authorized By: Jillian LeVasseur Authorized For: Melissa Tucker, Division Director

Authorizing Signature: *[Signature]* Date: 03/30/2023  
Wildlife Diversity Conservation Section

PERMIT NO. GTL-23-0001

Page: 1 / 4

COMPONENTS OF CONTRACT PLANS SET  
ROADWAY PLANS  
SIGNING AND PAVEMENT MARKING PLANS

BRADFORD COUNTY BOARD OF COUNTY  
COMMISSIONERS

**CONTRACT PLANS**

SR100 WIDENING  
FROM SE 84TH ST TO SE 75TH ST



**INDEX OF ROADWAY PLANS**

| SHEET NO. | SHEET DESCRIPTION                    |
|-----------|--------------------------------------|
| 1         | KEY SHEET                            |
| 2         | SIGNATURE SHEET                      |
| 3         | GENERAL NOTES                        |
| 4         | DRAINAGE MAP                         |
| 5         | TYPICAL SECTION                      |
| 6         | PROJECT LAYOUT                       |
| 7-14      | ROADWAY PLAN AND PROFILES            |
| 15-21     | SPECIAL PROFILES                     |
| 22-32     | CROSS SECTIONS                       |
| 33        | DRAINAGE CROSS SECTION               |
| 34        | STORMWATER POLLUTION PREVENTION PLAN |
| 35        | ROADWAY SOIL SURVEY                  |
| 35-38     | ROADWAY SOIL PROFILES                |
| 39        | TRAFFIC CONTROL PLANS                |

UNFINISHED STANDARD PLANS:  
Florida Department of Transportation, F2002-23 Standard plans for Road and Bridge Construction and applicable Technical Bulletin (TB) Standard Plans for Road Construction and associated TBs are available at the following website:  
<https://www.fdot.gov/design/standardplans/sprbk.htm>  
Standard Plans for Bridge Construction are included in the Structures Plans Catalogue.  
UNFINISHED STANDARD SPECIFICATIONS:  
Florida Department of Transportation, July 2002 Standard Specifications for Road and Bridge Construction at the following website:  
<http://www.fdot.gov/programmanagement/implementationspecbook>

**INDEX OF ROADWAY PLANS**

| SHEET NO. | SHEET DESCRIPTION                    |
|-----------|--------------------------------------|
| 1         | KEY SHEET                            |
| 2         | SIGNATURE SHEET                      |
| 3         | GENERAL NOTES                        |
| 4         | DRAINAGE MAP                         |
| 5         | TYPICAL SECTION                      |
| 6         | PROJECT LAYOUT                       |
| 7-9       | ROADWAY PLAN AND PROFILES            |
| 10-12     | SPECIAL PROFILES                     |
| 13-28     | CROSS SECTIONS                       |
| 29        | DRAINAGE CROSS SECTIONS              |
| 30        | STORMWATER POLLUTION PREVENTION PLAN |
| 31        | ROADWAY SOIL SURVEY                  |
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| 34        | TRAFFIC CONTROL PLAN                 |

UNFINISHED STANDARD PLANS:  
Florida Department of Transportation, F2002-23 Standard plans for Road and Bridge Construction and applicable Technical Bulletin (TB) Standard Plans for Road Construction and associated TBs are available at the following website:  
<https://www.fdot.gov/design/standardplans/sprbk.htm>  
Standard Plans for Bridge Construction are included in the Structures Plans Catalogue.  
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BRADFORD COUNTY BOARD OF COUNTY  
COMMISSIONERS

**CONTRACT PLANS**

KHA CONNECTOR ROAD  
FROM KHA ACCESS ROAD TO AIRPORT ROAD/SE 82ND ST



COMPONENTS OF CONTRACT PLANS SET  
ROADWAY PLANS

**INDEX OF ROADWAY PLANS**

| SHEET NO. | SHEET DESCRIPTION                          |
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| 1         | KEY SHEET                                  |
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| 4         | DRAINAGE MAP                               |
| 5         | TYPICAL SECTION                            |
| 6         | SPECIAL DETAILS                            |
| 7         | PROJECT LAYOUT                             |
| 8-12      | ROADWAY PLAN AND PROFILES                  |
| 13-18     | SPECIAL PROFILES                           |
| 19-41     | CROSS SECTIONS                             |
| 42        | DRAINAGE CROSS SECTION                     |
| 43        | STORMWATER POLLUTION PREVENTION PLAN NOTES |
| 44        | FIELD EXPLORATION DIAGRAM                  |
| 45        | ROADWAY SOIL SURVEY SHEET                  |
| 46-48     | ROADWAY SOIL PROFILES                      |
| 49-50     | TRAFFIC CONTROL PLANS                      |

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BRADFORD COUNTY BOARD OF  
COUNTY COMMISSIONERS

**CONTRACT PLANS**

KHA ACCESS ROAD  
FROM US 100 R/W TO KHA SE 79TH LN



SCALE: 1" = 200'

Ending of Project  
STA. 27+08.87 CL CORSE: KHA ACCESS ROAD

100% PLANS

NUMBER PLANS  
NUMBER OF RECORD  
COPY A CASH  
P.E. NO. 16146  
CWP  
BOS. HOWARD'S WAY, SUITE 102  
JACKSONVILLE, FL 32222  
CERTIFICATE OF AUTHORIZATION NO. 00872

BRADFORD COUNTY PROJECT MANAGER:  
JASON DODDS

| CONSTRUCTION<br>CONTRACT NO. | FISCAL<br>YEAR | SHEET<br>NO. |
|------------------------------|----------------|--------------|
| T-0000                       | 23             | 2            |







# Final Project Spenddown

## DEO Grant Amount: \$2.3 Million



### Support Services

Survey - CHW  
Geotech - ECS  
Environmental - ECS



### Design Services - CHW

Project Management  
Roadway Design  
Existing Drainage Analysis  
Swale/Drainage Design  
Permitting Services  
Utility Coordination  
QA/QC (Constructability & Biddability)  
Cost Estimating  
Post Design Services



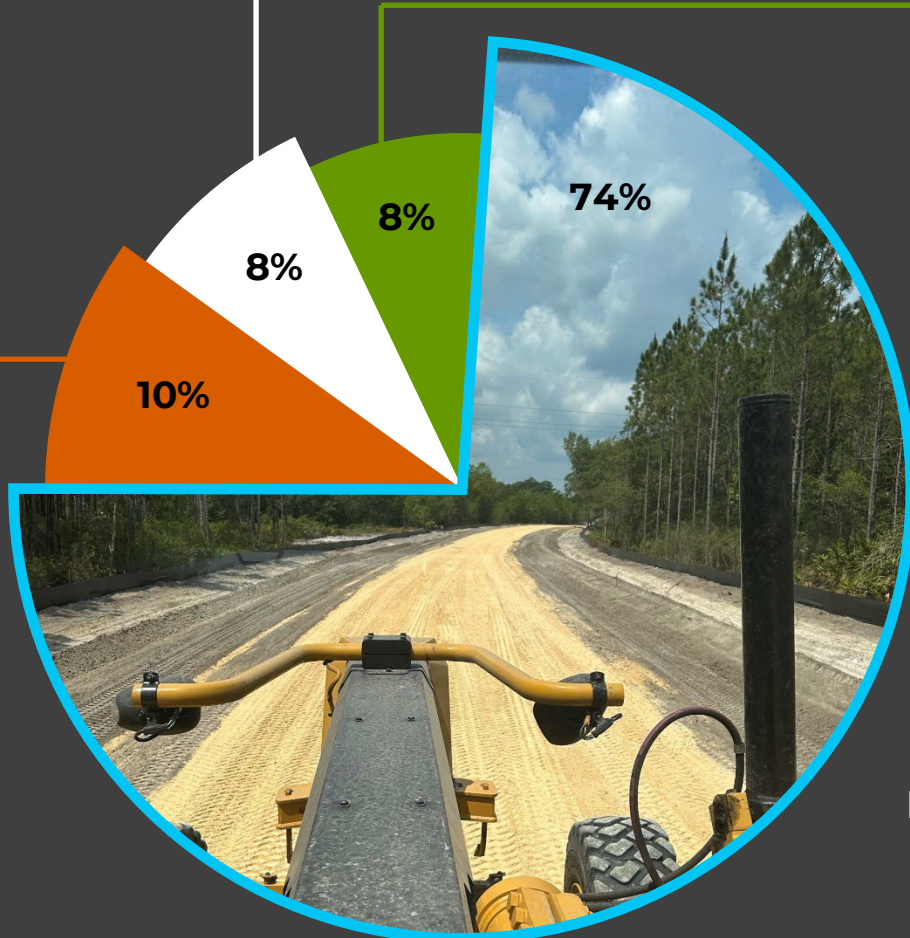
### Permitting Mitigation Services

Agency Coordination - ECS  
Production - CHW  
GT Relocation - Hamilton Custom Services



### Construction Services

Clearing - Hamilton Custom Services  
Roadway - Bradford County PW  
IT Infrastructure - Bradford County PW







# QUESTIONS

