STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

**TECHNICAL REPORT COVERSHEET**

650-050-38
ENVIRONMENTAL
MANAGEMENT
08/22

LOCATION HYDRAULICS REPORT

Florida Department of Transportation

District One

Burnt Store Road PD&E Study

Limits of Project: From Van Buren Parkway to Charlotte County Line

Lee County, Florida

Financial Management Number: 436928-1-22-01

ETDM Number: 14380

Date: March 2023

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022 and executed by the Federal Highway Administration and FDOT.

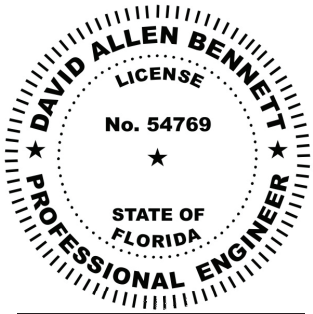
Authorized Signature

David A. Bennett, PE
Print/Type Name

Vice President of Water Resources
Title

1511 East SR 434, Suite 1001
Address

Winter Springs, FL 32708
Address



# LOCATION HYDRAULICS REPORT

**Florida Department of Transportation**

**District One**

## Burnt Store Road PD&E Study
## from Van Buren Parkway to Charlotte County Line
## Lee County, FL

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# LOCATION HYDRAULICS REPORT

Prepared by:

**CONSOR Engineers, LLC**
1511 East SR 434
Winter Springs, FL 32708

This Location Hydraulics Report is based solely upon the information made available to or gathered by CONSOR Engineers. CONSOR Engineers does not assume responsibility for conditions, which did not come to knowledge, or conditions not recognized as unacceptable at the time this report was prepared. CONSOR Engineers has performed drainage calculations and recommendations in this report in a manner consistent with sound practices and that level of care and skill normally exercised by members of the profession operating under similar circumstances.

This document and the information contained within have been prepared solely for the use of FDOT District One. This report consists of the following parts:

Sections 1 through 7

Appendices A through E and G

Appendix F is excluded from this seal

I, David A. Bennett, hereby certify that this report, as listed above, is true and correct, represents the described work and is in accordance with the requirements of this project.

This item has been electronically signed and sealed by David A. Bennett, PE on March 1, 2023 using a Digital Signature.

David A Bennett
Date: 2023.03.22 11:37:41-04'00'

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

CONSOR Engineers, LLC
1511 East SR 434, Suite 1001
Winter Springs, FL 32708
David A. Bennett, PE 54769

# EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT), District One, is conducting a Project Development and Environment (PD&E) Study to evaluate the proposed widening of Burnt Store Road (CR 765) from Van Buren Parkway to the Charlotte County Line in Lee County. The study also extends a quarter mile north into Charlotte County to tie-in to the existing four-lane segment. The total project length is approximately 5.7 miles, and the project limits are shown in **Figure 1**. The purpose of the PD&E Study is to evaluate and document the benefits, costs, and impacts of widening Burnt Store Road from the existing two-lane undivided roadway to four lanes, while accommodating a typical section expandable to six lanes. The proposed project may also include the addition of paved shoulders/marked bicycle lanes, sidewalks, and/or a shared-use path. The purpose of the PD&E Study is to document and evaluate engineering and environmental data that will aid Lee County, Lee Metropolitan Planning Organization (MPO), FDOT District One, and the FDOT Office of Environmental Management (OEM) in reaching a decision on the type, preliminary design, and location of the proposed improvements. The study was conducted to meet the requirements of the National Environmental Policy Act (NEPA) and other related federal and state laws, rules, and regulations.

There are ten existing cross drains. One of these ten is a bridge culvert located by Yucca Pen Creek. There is one bridge structure over the Gator Slough Canal. The project will impact the 100-year floodplain through both longitudinal and transverse impacts. The longitudinal impacts are a result of filling the floodplain areas associated with the proposed roadway widening within the project limits. Transverse impacts result from the extension and replacement of the existing cross drains. The floodplain encroachment areas were quantified based on the FEMA 100-year floodplain elevations (6 feet - NAVD'88), the estimated seasonal high-water table (SHWT) elevations, and the existing ground elevations using 1-foot LiDAR contours. The proposed profile grades were used to estimate the floodplain impacts, which may increase during the design phase if modifications to the profile are necessary.

Modifications to existing drainage structures (cross drain extensions) included in this project will result in an insignificant change in their capacity to carry floodwater. These modifications will cause minimal increases in flood heights and flood limits which will not result in any significant adverse impacts on the natural and beneficial floodplain values on any significant change in flood risk or damage. There will be no significant change in the potential for interruption or termination of emergency service or emergency

evacuation routes as the result of modifications to existing drainage structures. Therefore, it has been determined that his encroachment is not significant.

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# 1.0 - INTRODUCTION

CONSOR Engineers, LLC is a subconsultant to Scalar Consulting Group, which has been contracted by FDOT District One to prepare a Location Hydraulics Report (LHR) for the Burnt Store Road PD&E Study Project (FPN 436928-1-22-01) located in the City of Cape Coral in Lee County.

The purpose of this project is to enhance the operational and safety characteristics of Burnt Store Road by reducing congestion and improving mobility. The goal of the widening improvements is to better serve local and regional trips and improve overall safety.

# 2.0 – PROJECT DESCRIPTION

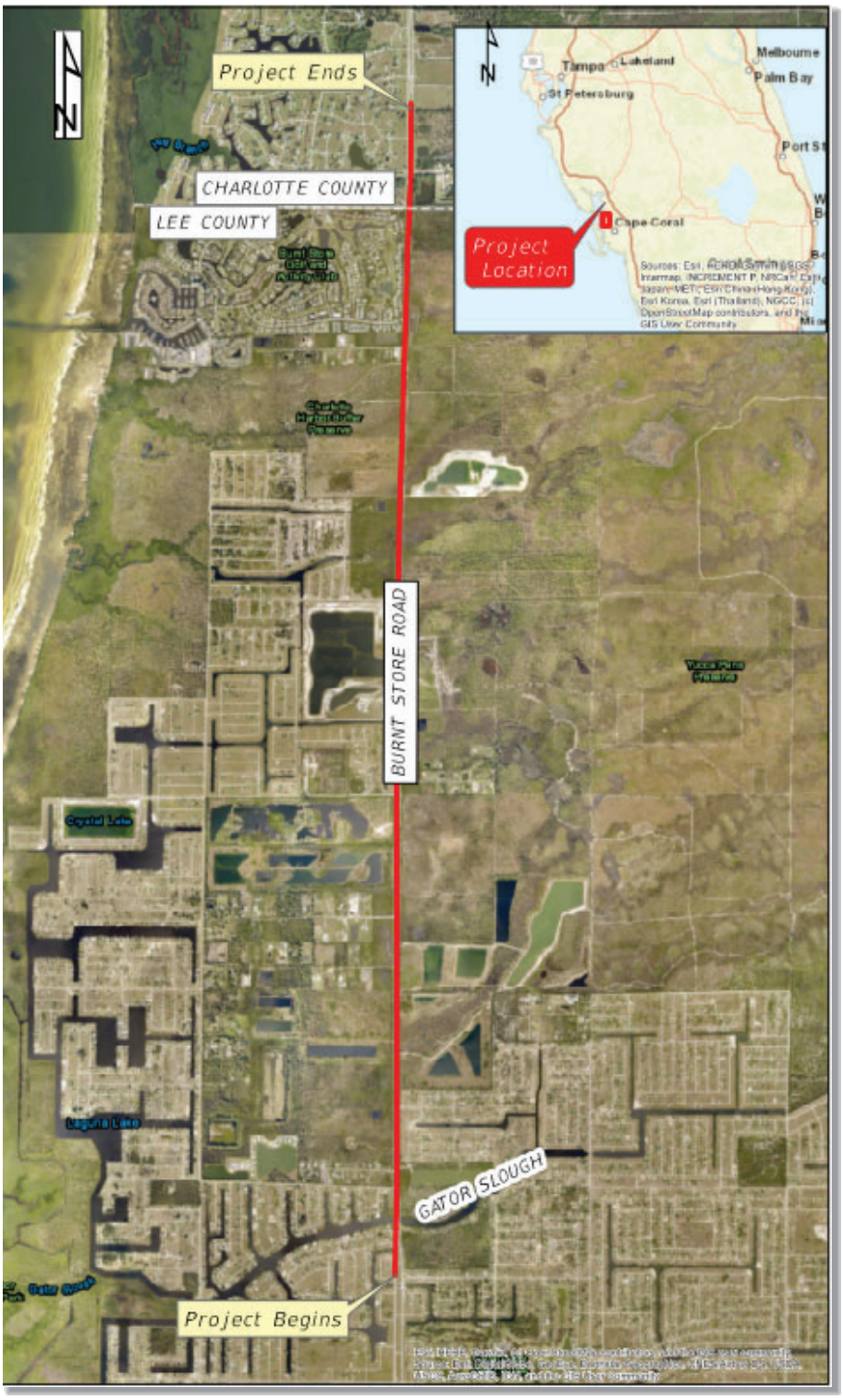
The Florida Department of Transportation (FDOT), District One, is conducting a Project Development and Environment (PD&E) Study to evaluate the proposed widening of Burnt Store Road (CR 765) from Van Buren Parkway to the Charlotte County Line in Lee County. The study also extends a quarter mile north into Charlotte County to tie-in to the existing four-lane segment. The total project length is approximately 5.7 miles, and the project limits are shown in **Figure 1**. The purpose of the PD&E Study is to evaluate and document the benefits, costs, and impacts of widening Burnt Store Road from the existing two-lane undivided roadway to four lanes, while accommodating a typical section expandable to six lanes. The proposed project may also include the addition of paved shoulders/marked bicycle lanes, sidewalks, and/or a shared-use path. The purpose of the PD&E Study is to document and evaluate engineering and environmental data that will aid Lee County, Lee Metropolitan Planning Organization (MPO), FDOT District One, and the FDOT Office of Environmental Management (OEM) in reaching a decision on the type, preliminary design, and location of the proposed improvements. The study was conducted to meet the requirements of the National Environmental Policy Act (NEPA) and other related federal and state laws, rules, and regulations.

The six-lane widening will have no impact to the LHR or the Bridge Hydraulic Report, as the widening will occur to the inside in the median. It falls within Sections 5, 6, 7, 8, 17, 18, 19, 20, 29, 30, 31 and 32; Township 43 South, and Range 23 East.

All elevations in this study reference the North American Vertical Datum of 1988 (NAVD'88). Elevations found in several environmental resource permits in the National Geodetic Vertical Datum of 1929 (NGVD'29) were converted to NAVD'88. The datum conversion is as follows:

NGVD29 = NAVD88 + 1.175’

*Figure 1 - Project Location Map*



# 3.0 – DESIGN CRITERIA

## 3.1 Rules & Regulations / Regulatory Agency Coordination

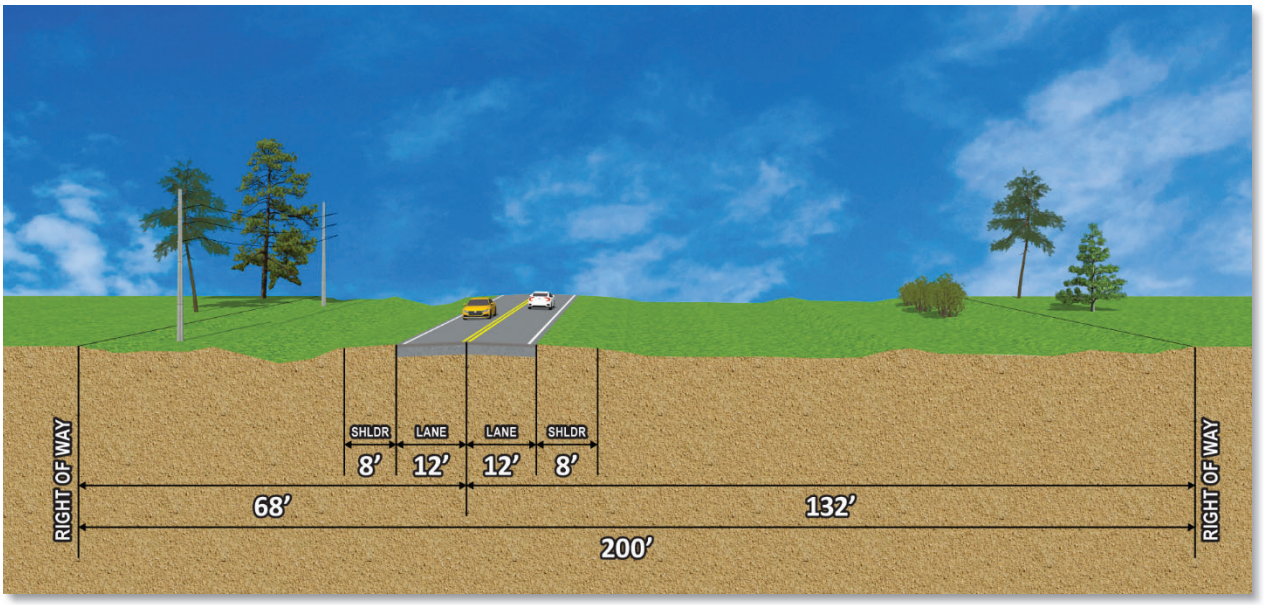
Project improvements will be designed to meet the regulatory requirements of SFWMD, the FDOT Drainage Manual, and the FDOT Design Manual. An Environmental Resource Permit will be required with SFWMD. A pre-application meeting with SFWMD was held on August 20, 2020, and a follow-up meeting on January 27, 2021. Refer to **Appendix E – Meeting Minutes.**

No net encroachment into the floodplain, between the average wet season water table elevation and the encompassed by the 100-year event, which will adversely affect the existing rights of others, will be allowed.

# 4.0 – EXISTING CONDITIONS

The existing typical section for Burnt Store Road consist of a two-lane undivided arterial with 200 feet of right-of-way and roadside ditches running parallel to Burnt Store Road. Refer to **Figure 2 – Existing Typical Section**. A field visit was conducted on September 20, 2020, to verify the accuracy of the facility.

*Figure 2 - Existing Roadway Typical Section*



## 4.1 Soils

According to the Natural Resource Conservation Service (NRCS) Soil Survey most of the project traverses hydrologic soil groups A/D, B/D and C/D. Soils A/D typically exhibit good drawdown capabilities when drained and poor drawdown capabilities when saturated. Soils B/D exhibit moderate drawdown capabilities when drained and poor drawdown capabilities when saturated. Soils C/D exhibit slow drawdown capabilities when drained and poor drawdown capabilities when saturated.

## 4.2 Land Use

The land use adjacent to the project corridor generally consists of undeveloped parcels of land with occasional residential homes. Portions of the project corridor are adjacent to limestone borrow pits. Borrow pits are not naturally occurring, generally steep sided and relatively deep.

## 4.3 Cross Drains

There are a total of ten cross drains within the project limits. The labeling convention of the cross drains follows the name of the basin where they are located. For example, CD-2 is in Basin 2, CD-3 is in Basin 3, and so on. There are no cross drains in Basin 1, therefore, CD-1 does not appear in **Table 1 – Summary of Existing Cross Drains**. This table provides a summary of all crossings. **Appendix A – Drainage Maps**, depicts the location of each crossing.

*Table 1 - Summary of Existing Cross Drains*

**Note: different data sources reference the size of this culvert slightly differently as a 10'x8', 9'x8' and 10'x7'. To be conservative a size of 10'x7' was used for the hydraulic analysis.*

| Cross Drain | Barrels | Size | Material | Existing Length (ft) | Station |
|---|---|---|---|---|---|
| CD-2 | 4 | 36" | RCP | 49 | 1333+08 |
| CD-3 | 2 | 30" | RCP | 53 | 1347+12 |
| CD-4 | 4 | 24" x 38" | ERCP | 85 | 1380+11 |
| CD-5 | 3 | 30" | RCP | 84 | 1435+11 |
| CD-6 | 4 | 24" | RCP | 44 | 1466+08 |
| CD-7 | 4 | 48" | RCP | 90 | 1492+87 |
| CD-8 | 2 | 30" | RCP | 47 | 1507+31 |
| CD-9* | 2 | 9' x 8' | Concrete Box | 62 | 1538+06 |
| CD-10L | 1 | 10' x 5' | Concrete Box | 42 | 1582+09 |
| CD-10C | 1 | 7' x 4' | Concrete Box | 106 | 1591+18 |

## 4.4 Bridge Structure and Bridge Culvert

There is one bridge structure within the project limits over Gator Slough Canal at the edges of Basins 1 and 2. It is located at approximately station 1307+00. A Bridge Hydraulic Memorandum was prepared and provided in **Appendix F**.

A bridge culvert is located near station 1538+06. It is designated in this report as CD-9 and shown in **Table 1 – Summary of Existing Cross Drains**. CD-9 is proposed to be extended. Refer to **Appendix C –Bridge Culvert Calculations**, for additional information.

## 4.5 Floodplain and Floodways

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) and Lee County's FIRMs were reviewed to determine the extent of the floodplain within the project limits. FEMA FIRMs with an effective date of August 28, 2008 indicate a portion of the project is within the 100-year floodplain. However, Lee County's FIRMs with an effective date of August 25, 2020 indicate the project is not within the 100-year floodplain. For the purpose of this report, it was assumed the project is located within floodplain zone AE, elevation 6 ft. This is the most conservative approach. There are no regulatory floodways within the project corridor.

**Table 2 – Summary of FIRMs**, provides a summary of the floodplain maps, including their effective dates. A graphical representation of these maps is provided in **Appendix B – FEMA and Lee County's Flood Insurance Rate Maps.**

*Table 2 - Summary of FIRMs*

| FIRM Panel No. | FEMA Panel Name | Effective Date |
|---|---|---|
| 12071C0235F | Lee County, Florida and Incorporated Areas | 28-Aug-08 |
| 12071C0235F | Flood Insurance Rate Map - Unincorporated Lee County | 25-Aug-20 |

## 4.6 History of Flooding

The north branch of Yucca Pen Creek was severed several decades ago by road and housing construction. FWC is looking into the feasibility of restoring the north branch flows. Ideally, FWC is interested in re-establishing flow under Burnt Store Road at the location of the historical north branch with a new culvert or low water crossing. This route, however, interfaces with Charlee Road and residential parcels (with constructed homes) on the west side of Burnt Store Road, before continuing eastward in the Charlotte

Harbor Preserve State Park property. Towards the outfall to the bay, the stream runs closely adjacent to additional home sites. It is important to ensure the off-site drainage will not cause any flooding to the adjacent and downstream properties.

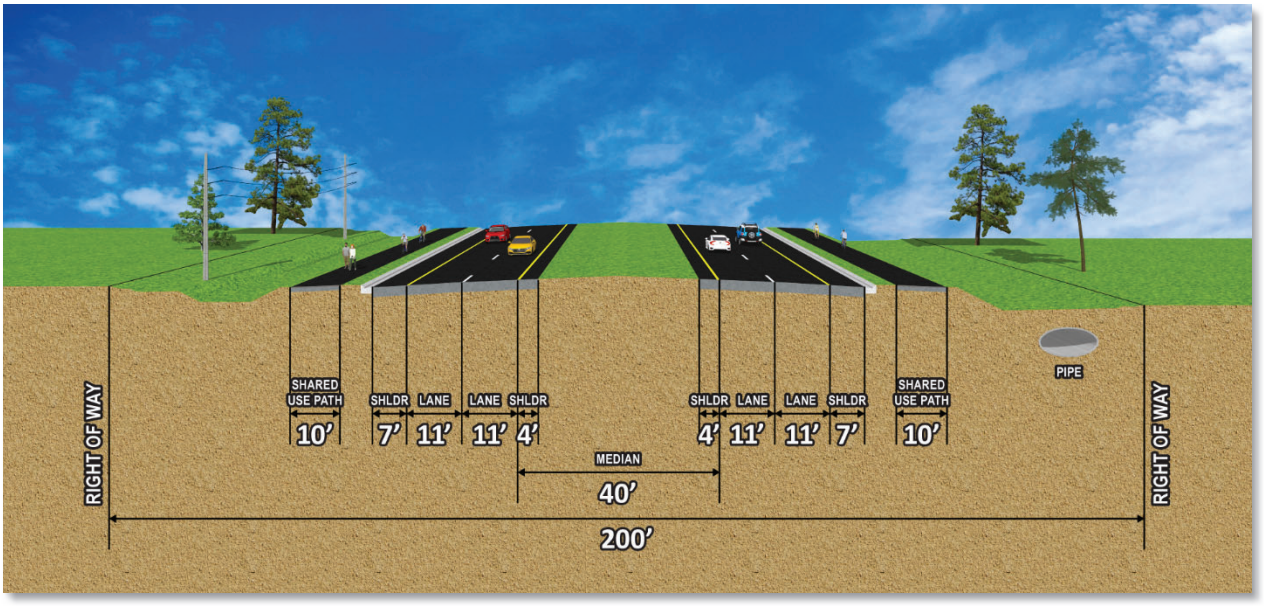
In addition, there is a large pocket wetland on the east side of Burnt Store Road that currently holds water flowing from the branch and it likely prevents road overtopping to a degree. With the widening of Burnt Store Road there may be potential impacts to this wetland and the water storage effect could be compromised. Another concept is to divert flows from the north branch southward, to Yucca Pen Creek along the east side of Burnt Store Road, and then flowing through the existing bridge culvert. While this may not be an ideal option from a hydrological restoration perspective, it could ensure that flows cross under Burnt Store Road.

The existing bridge culvert overtops at times; therefore, it is recommended to be upsized during the design phase. If additional water was routed here from the north branch, a downstream flood study would be needed. Historical disturbance appears to have re-routed many of the northeast-to-southeast flow-ways, causing several adjacent wetland areas to have become dehydrated. Based on aerial imagery, soil analysis, vegetative cover, and hydric indicators, it appears that only severe storm events re-hydrate many of these areas and simultaneously cause flooding of the roadway. Refer to **Appendix E – Meeting Minutes**, for additional information.

## 5.0 – PROPOSED CONDITIONS

The proposed roadway alternative consists of an urban typical section with four 11-foot lanes, two 7-foot outside shoulders, two 8-foot inside shoulders (4-foot paved, 4-foot unpaved), two 10-foot shared used paths, a ditch on the west side of the road up to 10 feet in width, a conveyance pipe up to 72” in diameter to replace the east roadside ditch and a 24-foot median. This typical section provides an opportunity for inside widening in the future with an additional two lanes. Refer to **Figure 3** for a graphical depiction of the proposed Burnt Store Road typical section.

*Figure 3 - Proposed Roadway Typical Section*




## 5.1 Cross Drains

The proposed roadway widening will require extensions to all ten cross drains along Burnt Store Road. Although they are recommended to be extended rather than replaced, this should be analyzed further during the design phase based on the latest culvert inspection reports and history of maintenance/repairs for each cross drain. Refer to **Table 3 – Proposed Cross Drain Modifications**, for more details on the cross drain extensions.

*Table 3 - Proposed Cross Drain Modifications*

| Cross Drain | Barrels | Size | Existing Length (ft) | Proposed Modification | Approximate Proposed Lenght (ft) | Station |
|---|---|---|---|---|---|---|
| CD-2 | 4 | 36" | 49 | Extension | 184 | 1333+08 |
| CD-3 | 2 | 30" | 53 | Extension | 184 | 1347+12 |
| CD-4 | 4 | 24" x 38" | 85 | Extension | 185 | 1380+11 |
| CD-5 | 3 | 30" | 84 | Extension | 155 | 1435+11 |
| CD-6 | 4 | 24" | 44 | Extension | 175 | 1466+08 |
| CD-7 | 4 | 48" | 90 | Extension | 187 | 1492+87 |
| CD-8 | 2 | 30" | 47 | Extension | 178 | 1507+31 |
| CD-9* | 2 | 9' x 8' | 62 | Replacement | 140 | 1538+06 |
| CD-10L | 1 | 10' x 5' | 42 | Extension | 171 | 1582+09 |
| CD-10C | 1 | 7' x 4' | 106 | Extension | 193 | 1591+18 |

**Note: different data sources reference the size of this culvert slightly differently as a 10'x8', 9'x8' and 10'x7'. To be conservative a size of 10'x7' was used for the hydraulic analysis.*

## 5.2 Bridge Structure and Bridge Culvert

There is one bridge structure over Gator Slough. For additional information refer to **Appendix F - Bridge Hydraulics Memorandum.**

There is one bridge culvert near station 1538+06. This culvert is proposed to be replaced. For additional information and the calculations refer to **Appendix C –Bridge Culvert Calculations.**

## 5.3 Floodplain and Floodways

The floodplain impacts were estimated using the cup-for-cup method to determine potential impacts to the 100-year floodplain and necessary compensation volumes. The exact impact volume will need to be assessed during the design phase when survey and geotechnical data become available. Floodplain impacts will be mitigated in a site designated as Pond 2 and Floodplain Compensation Area. In addition, Ponds 2A and 2B will be used for floodplain compensation, treatment, and attenuation. Refer to **Appendix A – Drainage Maps**, for a graphical depiction of these sites.

During the design phase, the conveyance west ditch should be optimized within the right-of-way to provide the maximum allowable floodplain compensation volume. Ponds 2A and 2B are included to provide additional floodplain compensation since the roadway design is still conceptual and the capacity of roadside ditches has not been designed. Ponds 2A and 2B were conservatively sized to compensate for the floodplain impact per encroachment area. These sites will likely be reduced during the design phase

once survey and geotechnical data become available. Refer to **Appendix D– Floodplain Compensation Calculations**, for the floodplain calculations and preliminary cross sections. Refer to **Table 4** for a summary of floodplain impacts and mitigation.

*Table 4 - Summary of Floodplain Impacts and Mitigation*

| Facility | Fill Volume (ac-ft) | Cut Volume (ac-ft) | Net Floodplain Impacts (Fill - Cut) (ac-ft) |
|---|---|---|---|
| Roadway | 7.76 | | |
| Pond 2A | 0.03 | 7.44 | |
| Pond 2B | 0.38 | 5.89 | |
| Pond 2 & FCA | 0.07 | 3.29 | |
| **Total** | **8.24** | **16.63** | **-8.39** |

The project will impact the 100-year floodplain through longitudinal and transverse impacts. The longitudinal impacts are a result of filling the floodplain areas associated with the proposed roadway widening. Transverse impacts result from the extension and replacement of the existing cross drains. The floodplain encroachment areas were quantified based on the FEMA 100-year floodplain elevations, estimated SHWT, and the existing ground elevations using 1-foot LiDAR contours. The proposed profile grades were used to estimate the floodplain impacts. These impacts may increase during the design phase if modifications to the profile are necessary.

## 5.4 Project Classification

Per FDOT PD&E Manual, Chapter 13, Section 13.2.2, the floodplain encroachment areas are classified as minimal. Minimal encroachments on a floodplain occur when there is floodplain involvement but the impacts on human life, transportation facilities, and natural and beneficial floodplain values are not significant and can be resolved with minimal efforts. Normally, these minimal efforts to address impacts consist of applying FDOT's drainage design standards and following the WMD's procedures to achieve results that will not increase or significantly change the flood elevations and/or limits.

## 5.5 Risk Evaluation

The proposed improvements were evaluated to determine whether there would be adverse floodplain impacts. The cross drains and bridge culvert will be reviewed during the design phase, once survey and

geotechnical data is available and a more thorough hydrologic method of analysis is utilized, to determine the impact of the extensions on the headwaters and backwaters.

The drainage structure extensions for this project are limited to hydraulically equivalent structures which are not expected to increase the backwater surface elevations. CD-9 is structurally deficient, and it is anticipated to be replaced due to its condition and age (approximately 60 years).

Modifications to existing drainage structures (cross drain extensions) included in this project will result in an insignificant change in their capacity to carry floodwater. These modifications will cause minimal increases in flood heights and flood limits which will not result in any significant adverse impacts on the natural and beneficial floodplain values on any significant change in flood risk or damage. There will be no significant change in the potential for interruption or termination of emergency service or emergency evacuation routes as the result of modifications to existing drainage structures. Therefore, it has been determined that his encroachment is not significant.

The replacement structure of CD-9 will perform hydraulically in a manner equal to or greater than the existing structure, and backwater surface elevations are not expected to significantly increase. Thus, there will be no significant adverse impacts on natural and beneficial floodplain values. 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, it has been determined that this encroachment is not significant.

### 5.6 Coordination with Local Agencies

A pre-application meeting with SFWMD was held on August 20, 2020, and a follow-up meeting on January 27, 2021. Several coordination meetings were held with different stakeholders such as the City of Cape Coral, Lee County, FDOT, Charlotte Harbor Preserve State Park, and Florida Fish and Wildlife Conservation Commission (FWC). Refer **to Appendix E – Meeting Minutes**, for additional information.

## 6.0 – RECOMMENDATIONS AND CONCLUSIONS

Roadway widening from project improvements will result in impacts to the adjacent FEMA Floodplains. The anticipated floodplain impacts due to the proposed roadway widening were calculated and floodplain compensation alternatives were identified. The floodplain impacts calculations are conservative and should be revised during design when survey and geotechnical data becomes available. Floodplain

compensation should be provided in the area designated as Pond 2 and Floodplain Compensation Area, in addition to Pond 2B and Pond 2C, which also serve as stormwater management facilities for treatment and attenuation.

## 7.0 – REFERENCES

FDOT Design Manual, 2022

FDOT Drainage Design Guide, 2022

FDOT Drainage Manual, 2022

FDOT Project Development & Environmental Manual, 2022

SFWMD ERP Applicant's Handbook Volumes I and II, 2020 and 2016

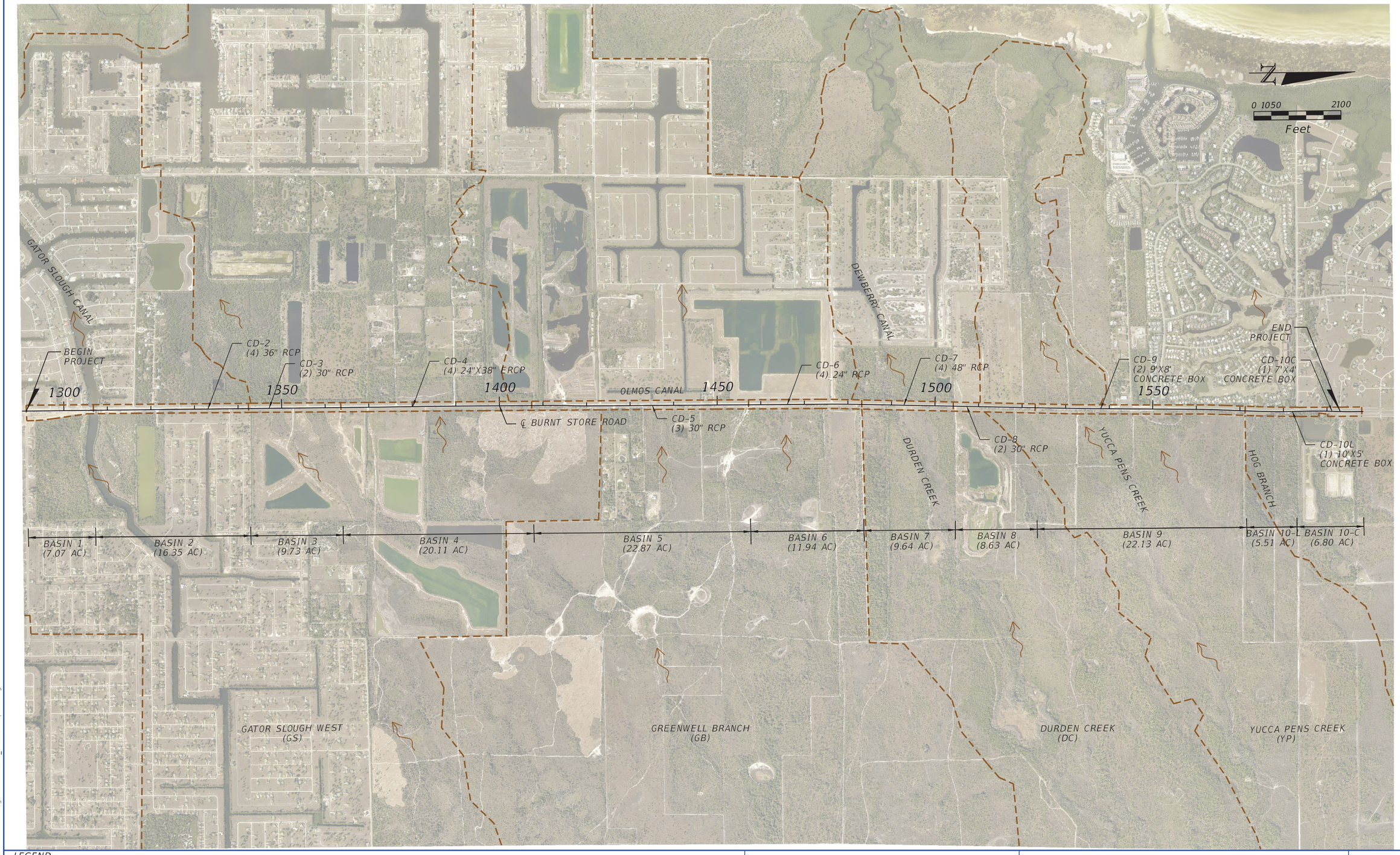
Federal Emergency Management Agency, 2008

Lee County's Flood Rate Insurance Map, 2020

Yucca Pen Hydrologic Restoration Plan, 2010

# APPENDIX A

## Drainage Maps




LEGEND

- BASIN DIVIDE
- FLOW PATTERN

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| CR 765 | LEE | 436928-1-22-01 |

# PRE-DEVELOPMENT DRAINAGE MAP

SHEET NO. 1

3/9/2023 12:54:45 PM yukyo.johnson
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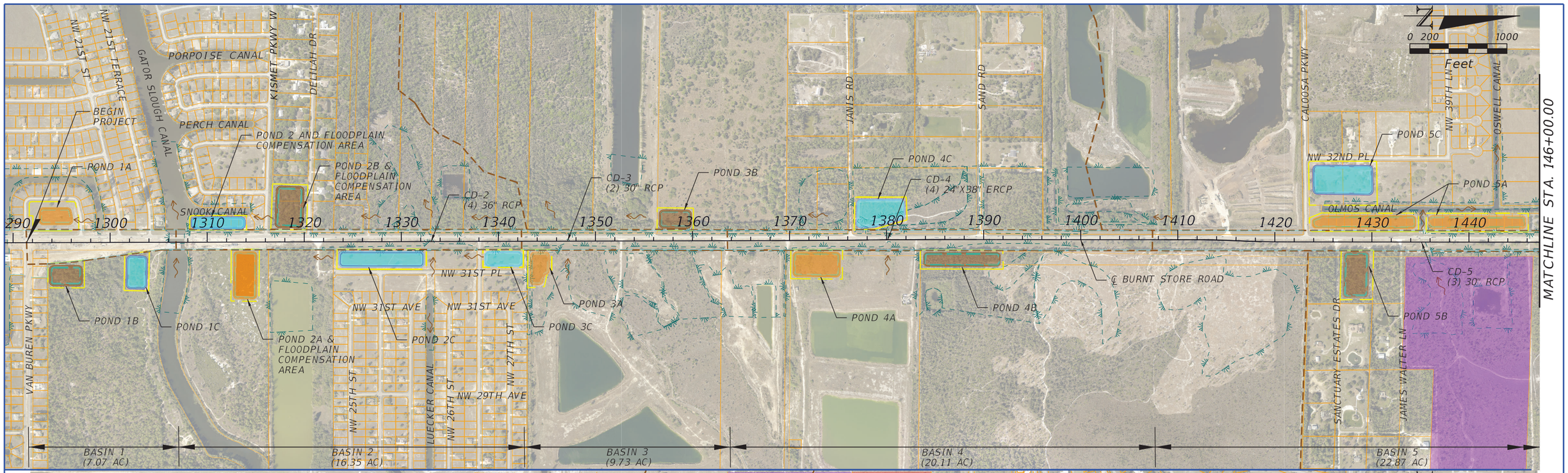


LEGEND

- R/W
- POND R/W
- WETLAND LIMITS
- PARCEL LINES
- BASIN DIVIDE
- FLOW PATTERN
- STATE CONSERVATION LANDS
- COUNTY CONSERVATION LANDS

POND ALTERNATIVES

- ALT A
- ALT B
- ALT C

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| CR 765 | LEE | 436928-1-22-01 |

# POST-DEVELOPMENT DRAINAGE MAP

SHEET NO. 2

3/9/2023 10:57:46 AM yukiyo.johnson
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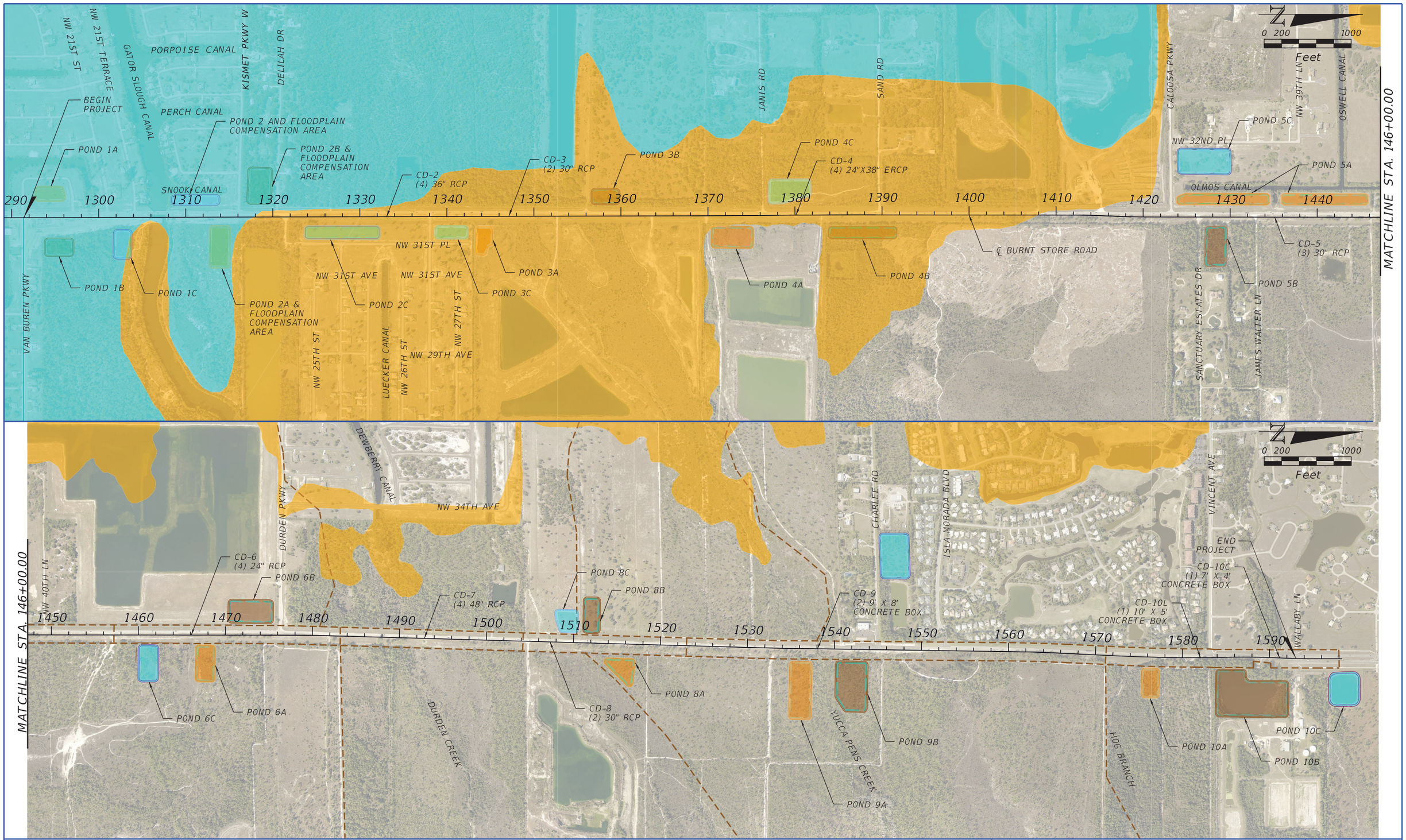
# APPENDIX B

# FEMA

# and

# Lee County's Flood Insurance Rate Maps




LEGEND

- FLOOD ZONE AE - EL. 6 FT
- FLOOD ZONE X
- POND R/W

POND ALTERNATIVES

- ALT A
- ALT B
- ALT C

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| CR 765 | LEE | 436928-1-22-01 |

# FEMA FLOODPLAIN MAP

SHEET NO. 1

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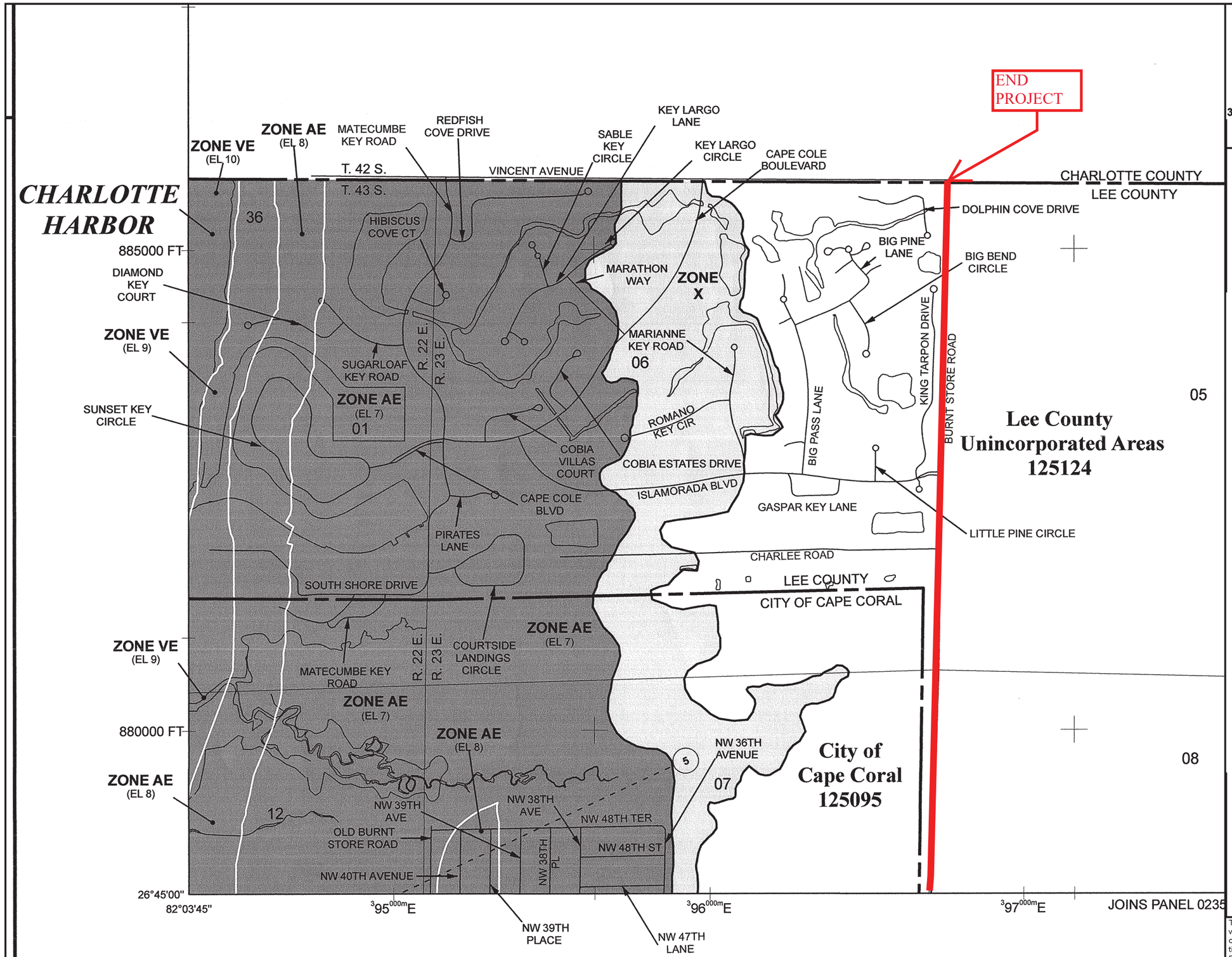



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 M

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0070F

# FIRM

FLOOD INSURANCE RATE MAP

LEE COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 70 OF 685

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

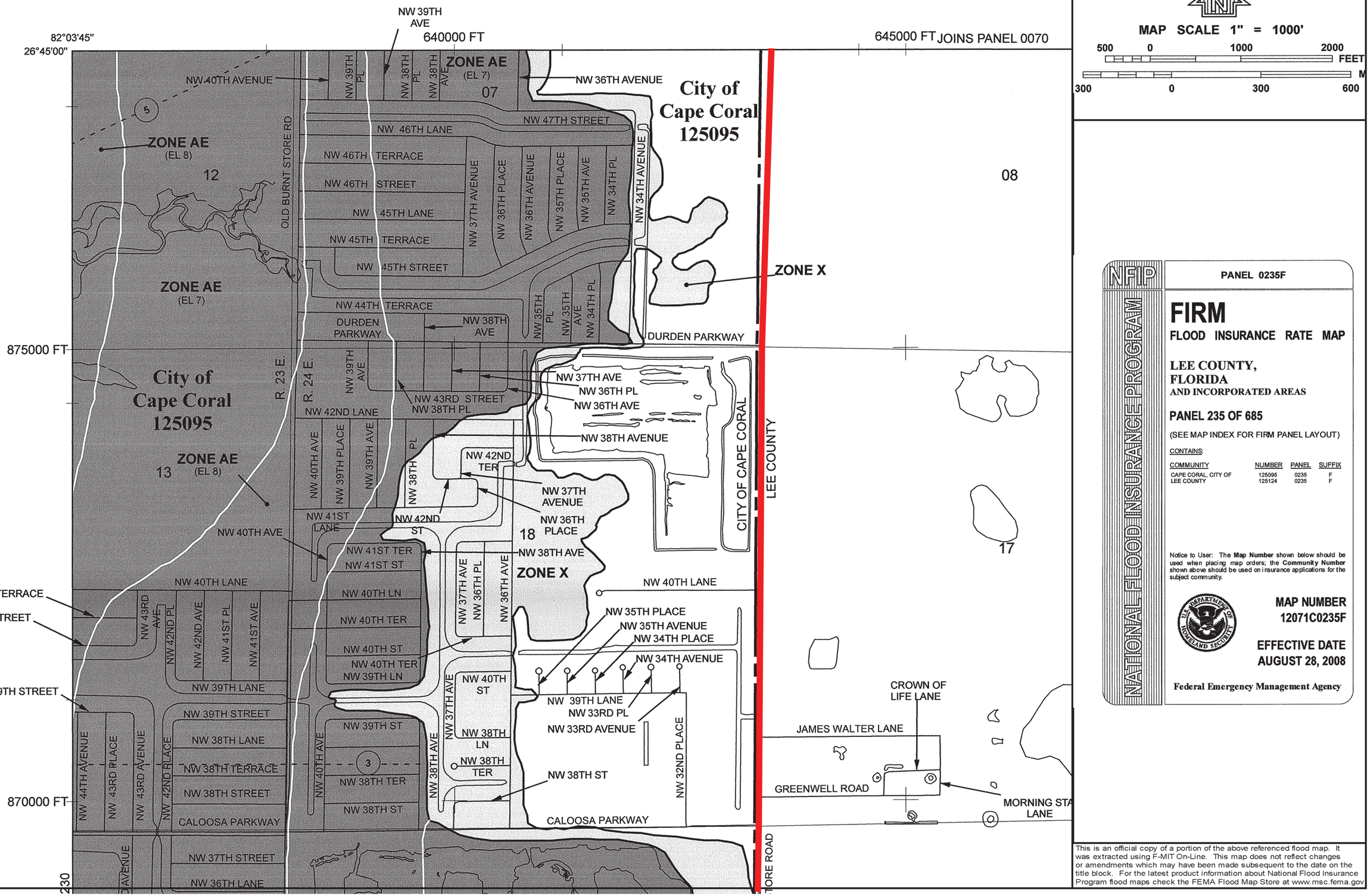
| COMMUNITY | NUMBER | PANEL | SUFFIX |
|---|---|---|---|
| CAPE CORAL, CITY OF | 125095 | 0070 | F |
| LEE COUNTY | 125124 | 0070 | F |

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

**MAP NUMBER**
**12071C0070F**

**EFFECTIVE DATE**
**AUGUST 28, 2008**

Federal Emergency Management Agency




MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 M

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0235F

# FIRM

## FLOOD INSURANCE RATE MAP

**LEE COUNTY, FLORIDA AND INCORPORATED AREAS**

**PANEL 235 OF 685**

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

| COMMUNITY | NUMBER | PANEL | SUFFIX |
|---|---|---|---|
| CAPE CORAL, CITY OF | 125095 | 0235 | F |
| LEE COUNTY | 125124 | 0235 | F |

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

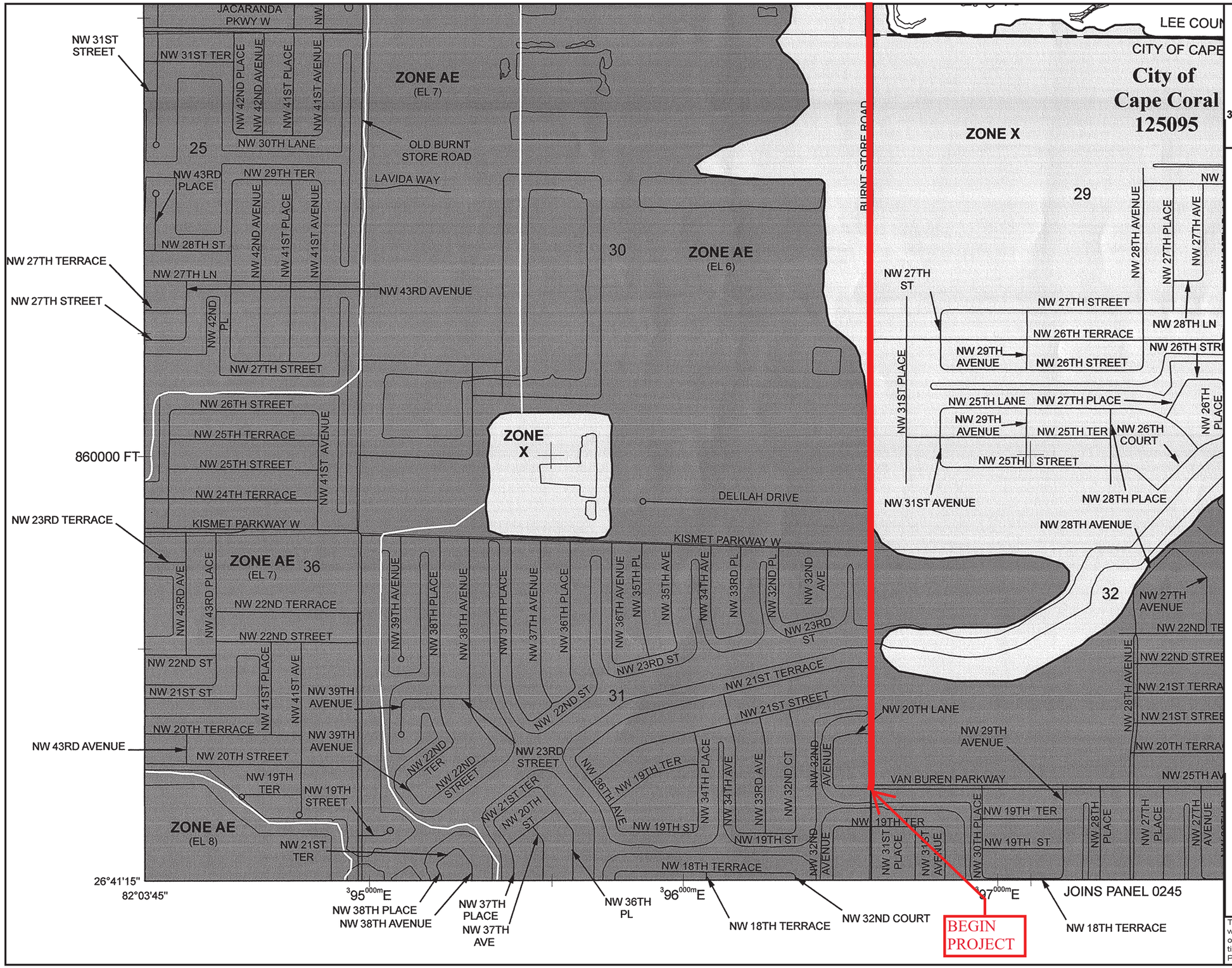
**MAP NUMBER**
**12071C0235F**

**EFFECTIVE DATE**
**AUGUST 28, 2008**

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov


870000 FT
865000 FT
JOINS PANEL 0230
NW 39TH STREET
NW 38TH LANE
NW 38TH TERRACE
NW 38TH STREET
CALOOSA PARKWAY
NW 44TH AVENUE
NW 43RD PLACE
NW 43RD AVENUE
NW 42ND PLACE
NW 39TH ST
NW 38TH LN
NW 38TH TER
NW 38TH ST
NW 40TH AVE
NW 38TH AVE
NW 33RD PL
NW 33RD AVENUE
NW 32ND PLACE
NW 38TH ST
CALOOSA PARKWAY
JAMES WALTER LANE
GREENWELL ROAD
MORNING STAR LANE
BURNT STORE ROAD
NW 37TH STREET
NW 36TH LANE
NW 36TH TER
NW 36TH ST
NW 42ND AVENUE
NW 41ST PLACE
NW 41ST AVENUE
24
R. 22 E.
R. 23 E.
OLD BURNT STORE ROAD
19
Lee County Unincorporated Areas 125124
20
NW 35TH STREET
NW 35TH LANE
NW 34TH TERRACE
NW 34TH STREET
NW 33RD LANE
NW 43RD PLACE
NW 41ST PLACE
NW 33RD STREET
NW 32ND LANE
NW 32ND TERRACE
NW 32ND STREET
JACARANDA PKWY W
ZONE X
ZONE AE
(EL 8)
SAND ROAD
JANIS ROAD
LEE COUNTY
CITY OF CAPE CO
City of Cape Coral 125095
NW 31ST STREET
NW 31ST TER
NW 30TH LANE
25
ZONE AE
(EL 7)
OLD BURNT STORE ROAD
LAVIDA WAY
NW 29TH TER
NW 28TH ST
NW 27TH LN
NW 43RD AVENUE
NW 42ND PL
7TH TERRACE
27TH STREET
30
ZONE AE
(EL 6)
BURNT STORE ROAD
ZONE X
29
NW 29TH
NW 28TH AVENUE
NW 27TH PLACE
NW 27TH AVE
NW 26TH PLACE
NW 27TH ST
NW 27TH STREET
NW 28TH LN
NW 26TH TERRACE
NW 26TH STREET
NW 29TH AVENUE
MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 M
NATIONAL FLOOD INSURANCE PROGRAM
NFIP
PANEL 0235F
FIRM
FLOOD INSURANCE RATE MAP
LEE COUNTY, FLORIDA
AND INCORPORATED AREAS
PANEL 235 OF 685
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
CAPE CORAL, CITY OF 125095 0235 F
LEE COUNTY 125124 0235 F
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER
12071C0235F
EFFECTIVE DATE
AUGUST 28, 2008
Federal Emergency Management Agency
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov


JACARANDA PKWY W
NW 31ST STREET
NW 31ST TER
NW 42ND PLACE
NW 42ND AVENUE
NW 41ST PLACE
NW 41ST AVENUE
ZONE AE
(EL 7)
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NW 30TH LANE
OLD BURNT STORE ROAD
NW 43RD PLACE
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LAVIDA WAY
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NW 27TH TERRACE
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NW 43RD AVENUE
NW 27TH STREET
NW 42ND PL
NW 27TH STREET
30
ZONE AE
(EL 6)
BURNT STORE ROAD
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NW 27TH AVE
NW 27TH ST
NW 27TH STREET
NW 26TH TERRACE
NW 28TH LN
NW 29TH AVENUE
NW 26TH STREET
NW 26TH STR
NW 31ST PLACE
NW 25TH LANE
NW 27TH PLACE
NW 29TH AVENUE
NW 25TH TER
NW 26TH COURT
NW 26TH PLACE
NW 25TH STREET
NW 31ST AVENUE
NW 28TH PLACE
NW 28TH AVENUE
860000 FT
NW 26TH STREET
NW 25TH TERRACE
NW 25TH STREET
NW 24TH TERRACE
NW 41ST AVENUE
ZONE X
DELILAH DRIVE
KISMET PARKWAY W
NW 23RD TERRACE
NW 43RD AVE
NW 43RD PLACE
ZONE AE
(EL 7)
36
NW 22ND TERRACE
NW 22ND STREET
NW 22ND ST
NW 41ST PLACE
NW 41ST AVE
NW 39TH AVENUE
NW 38TH PLACE
NW 38TH AVENUE
NW 37TH AVENUE
NW 37TH PLACE
NW 36TH PLACE
NW 36TH AVENUE
NW 35TH PL
NW 35TH AVE
NW 34TH AVE
NW 33RD PL
NW 32ND PL
NW 32ND AVE
NW 23RD ST
NW 21ST TERRACE
NW 21ST ST
NW 39TH AVENUE
31
NW 22ND ST
NW 21ST STREET
NW 20TH LANE
NW 20TH TERRACE
NW 43RD AVENUE
NW 20TH STREET
NW 39TH AVENUE
NW 22ND TER
NW 22ND STREET
NW 23RD STREET
NW 19TH TER
NW 19TH STREET
NW 21ST TER
NW 20TH ST
NW 36TH AVE
NW 19TH TER
NW 34TH PLACE
NW 34TH AVE
NW 33RD AVE
NW 32ND CT
NW 32ND AVENUE
NW 29TH AVENUE
VAN BUREN PARKWAY
NW 25TH AV
ZONE AE
(EL 8)
NW 21ST TER
NW 19TH TER
NW 19TH ST
NW 19TH ST
NW 31ST PLACE
NW 31ST AVENUE
NW 30TH PLACE
NW 28TH PLACE
NW 27TH PLACE
NW 27TH AVENUE
NW 18TH TERRACE
NW 32ND AVENUE
26°41'15"
82°03'45"
395 000m E
396 000m E
397 000m E
NW 38TH PLACE
NW 38TH AVENUE
NW 37TH PLACE
NW 37TH AVE
NW 36TH PL
NW 18TH TERRACE
NW 32ND COURT
NW 18TH TERRACE
JOINS PANEL 0245
BEGIN PROJECT
LEE COUN
CITY OF CAPE
City of Cape Coral 125095
MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 M
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 0235F
FIRM
FLOOD INSURANCE RATE MAP
LEE COUNTY, FLORIDA
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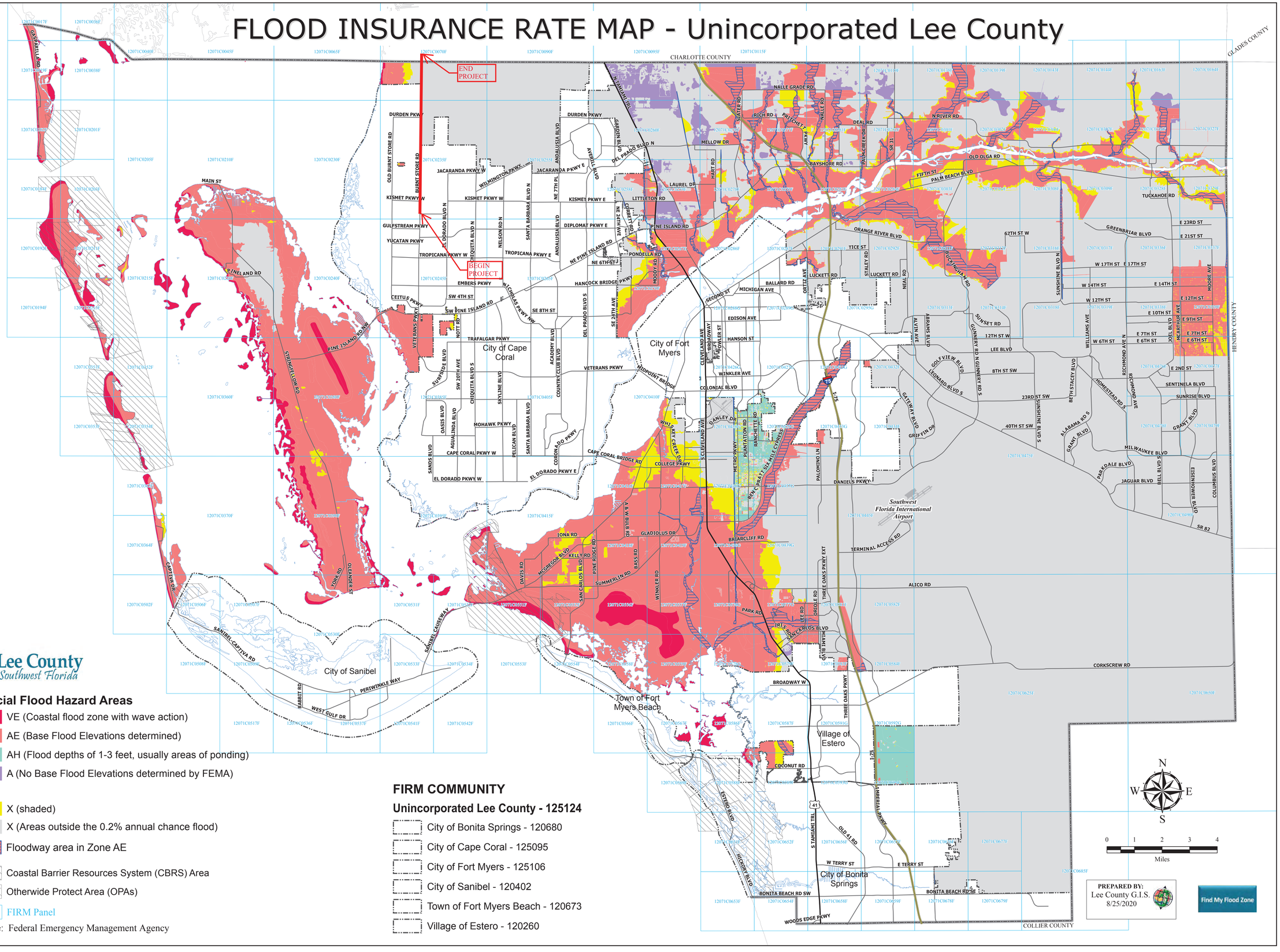
# FLOOD INSURANCE RATE MAP - Unincorporated Lee County




## Special Flood Hazard Areas

- VE (Coastal flood zone with wave action)
- AE (Base Flood Elevations determined)
- AH (Flood depths of 1-3 feet, usually areas of ponding)
- A (No Base Flood Elevations determined by FEMA)

- X (shaded)
- X (Areas outside the 0.2% annual chance flood)
- Floodway area in Zone AE
- Coastal Barrier Resources System (CBRS) Area
- Otherwide Protect Area (OPAs)
- FIRM Panel

Source: Federal Emergency Management Agency

## FIRM COMMUNITY

### Unincorporated Lee County - 125124

- City of Bonita Springs - 120680
- City of Cape Coral - 125095
- City of Fort Myers - 125106
- City of Sanibel - 120402
- Town of Fort Myers Beach - 120673
- Village of Estero - 120260

**PREPARED BY:**
Lee County G.I.S.
8/25/2020

Find My Flood Zone

# APPENDIX C

## Bridge Culvert Calculations

# CD-9 (Yucca Pens Creek)

Consor Engineers, LLC — Prepeared By: DAB 1/13/2023
Box Culvert Technical Memorandum — Checked By: FLG 1/16/2024
Summary of Stage Elevations

| | 50 Year | | 100 Year | | 500 Year | |
|---|---|---|---|---|---|---|
| | Existing | Proposed | Existing | Proposed | Existing | Proposed |
| Stage Elevations (ft) | 10.70 | 10.76 | 11.32 | 11.38 | 11.77 | 12.87 |
| | | | | | | |
| Net Increase in Stage (ft) | | 0.06 | | 0.06 | | 1.10 |

# HY-8 Culvert Analysis Report, CD-9 (Existing)

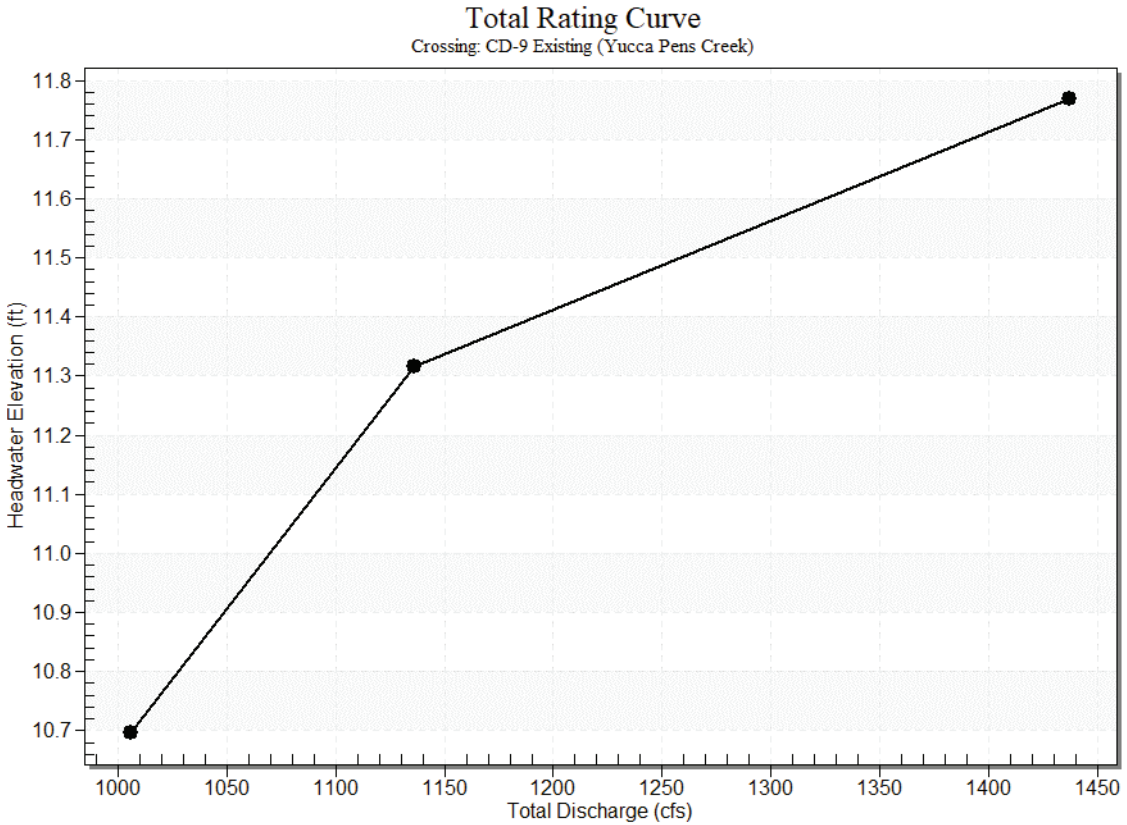
## Crossing Discharge Data

Discharge Selection Method: User Defined

**Table 1 - Summary of Culvert Flows at Crossing: CD-9 Existing (Yucca Pens Creek)**

| Headwater Elevation (ft) | Discharge Names | Total Discharge (cfs) | CD - 9 (Existing) Discharge (cfs) | Roadway Discharge (cfs) | Iterations |
|---|---|---|---|---|---|
| **10.70** | 50 Year | 1006.00 | 1006.00 | 0.00 | 1 |
| **11.32** | 100 Year | 1136.00 | 1136.00 | 0.00 | 1 |
| **11.77** | 500 Year | 1437.00 | 1229.24 | 207.62 | 8 |
| **11.50** | Overtopping | 1173.97 | 1173.97 | 0.00 | Overtopping |

## Rating Curve Plot for Crossing: CD-9 Existing (Yucca Pens Creek)



## Culvert Data: CD - 9 (Existing)

### Table 1 - Culvert Summary Table: CD - 9 (Existing)

| Discharge Names | Total Discharge (cfs) | Culvert Discharge (cfs) | Headwater Elevation (ft) | Inlet Control Depth (ft) | Outlet Control Depth (ft) | Flow Type | Normal Depth (ft) | Critical Depth (ft) | Outlet Depth (ft) | Tailwater Depth (ft) | Outlet Velocity (ft/s) | Tailwater Velocity (ft/s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **50 Year** | 1006.00 | 1006.00 | 10.70 | 6.70 | 4.296 | 1-S2n | 2.01 | 4.28 | 3.09 | 0.00 | 16.26 | 0.00 |
| **100 Year** | 1136.00 | 1136.00 | 11.32 | 7.32 | 4.937 | 5-S2n | 2.19 | 4.64 | 3.39 | 0.00 | 16.74 | 0.00 |
| **500 Year** | 1437.00 | 1229.24 | 11.77 | 7.77 | 5.408 | 5-S2n | 2.31 | 4.90 | 3.60 | 0.00 | 17.05 | 0.00 |

### Culvert Barrel Data

Culvert Barrel Type Straight Culvert

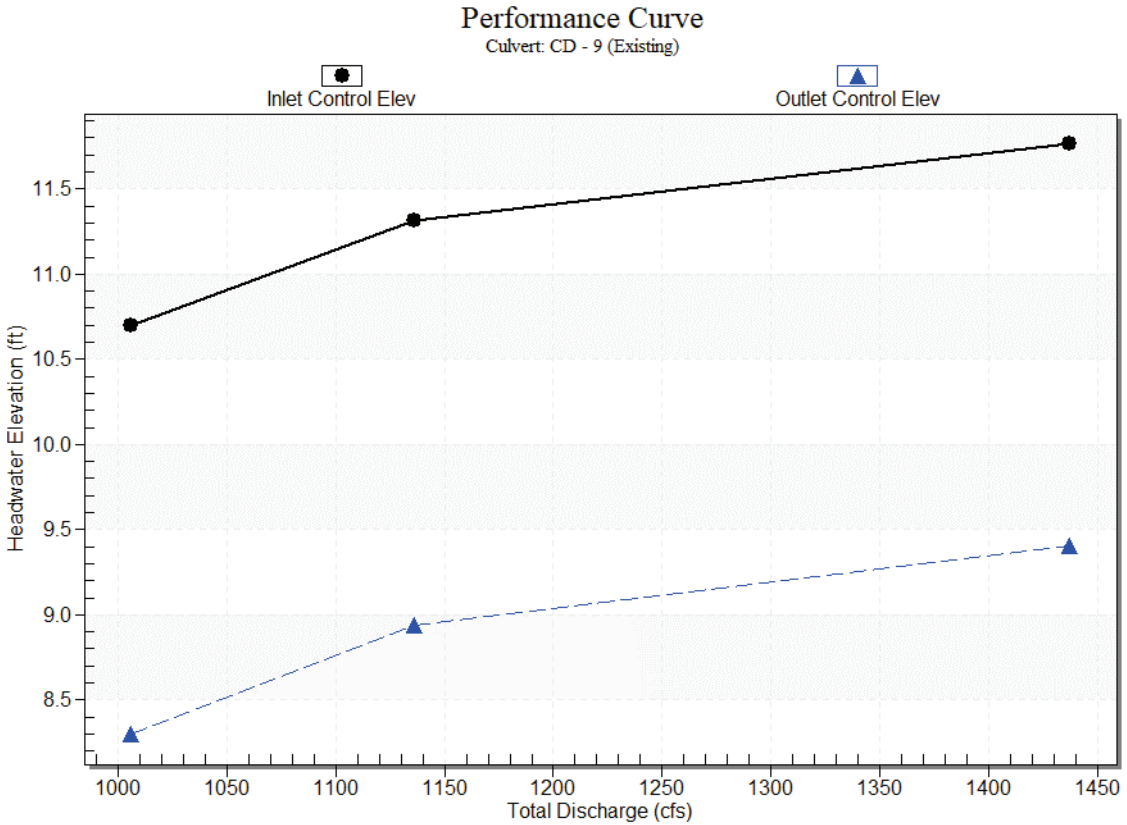
Inlet Elevation (invert): 4.00 ft,

Outlet Elevation (invert): 3.00 ft

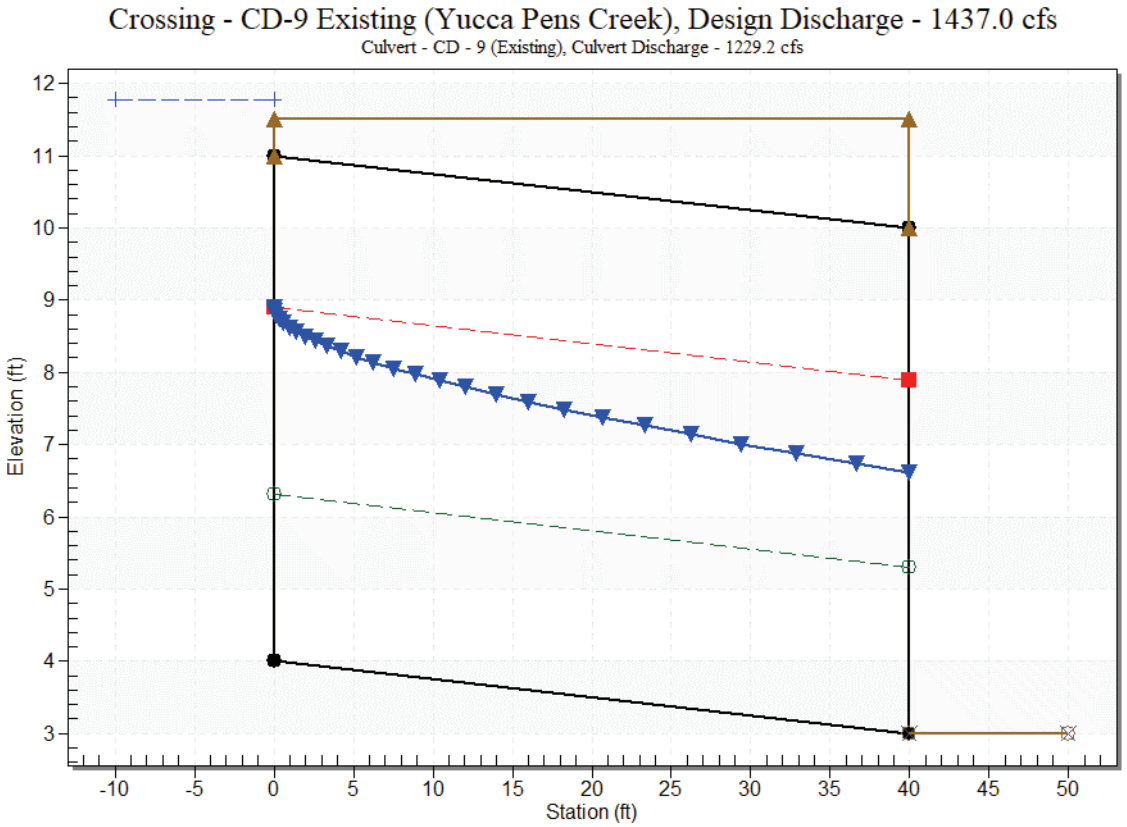
Culvert Length: 40.01 ft,

Culvert Slope: 0.0250

## Culvert Performance Curve Plot: CD - 9 (Existing)



## Water Surface Profile Plot for Culvert: CD - 9 (Existing)




## Site Data - CD - 9 (Existing)

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 4.00 ft

Outlet Station: 40.00 ft

Outlet Elevation: 3.00 ft

Number of Barrels: 2

## Culvert Data Summary - CD - 9 (Existing)

Barrel Shape: Concrete Box

Barrel Span: 10.00 ft

Barrel Rise: 7.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: 1:1 Bevel Headwall (Ke=0.2)

Inlet Depression: None

## Tailwater Data for Crossing: CD-9 Existing (Yucca Pens Creek)

**Table 2 - Downstream Channel Rating Curve (Crossing: CD-9 Existing (Yucca Pens Creek))**

| Flow (cfs) | Water Surface Elev (ft) | Depth (ft) |
|---|---|---|
| **1006.00** | 3.00 | 0.00 |
| **1136.00** | 3.00 | 0.00 |
| **1437.00** | 3.00 | 0.00 |

## Tailwater Channel Data - CD-9 Existing (Yucca Pens Creek)

Tailwater Channel Option: Enter Constant Tailwater Elevation

Constant Tailwater Elevation: 3.00 ft

## Roadway Data for Crossing: CD-9 Existing (Yucca Pens Creek)

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 500.00 ft

Crest Elevation: 11.50 ft

Roadway Surface: Paved

Roadway Top Width: 40.00 ft

# HY-8 Culvert Analysis Report, CD-9 (Proposed)

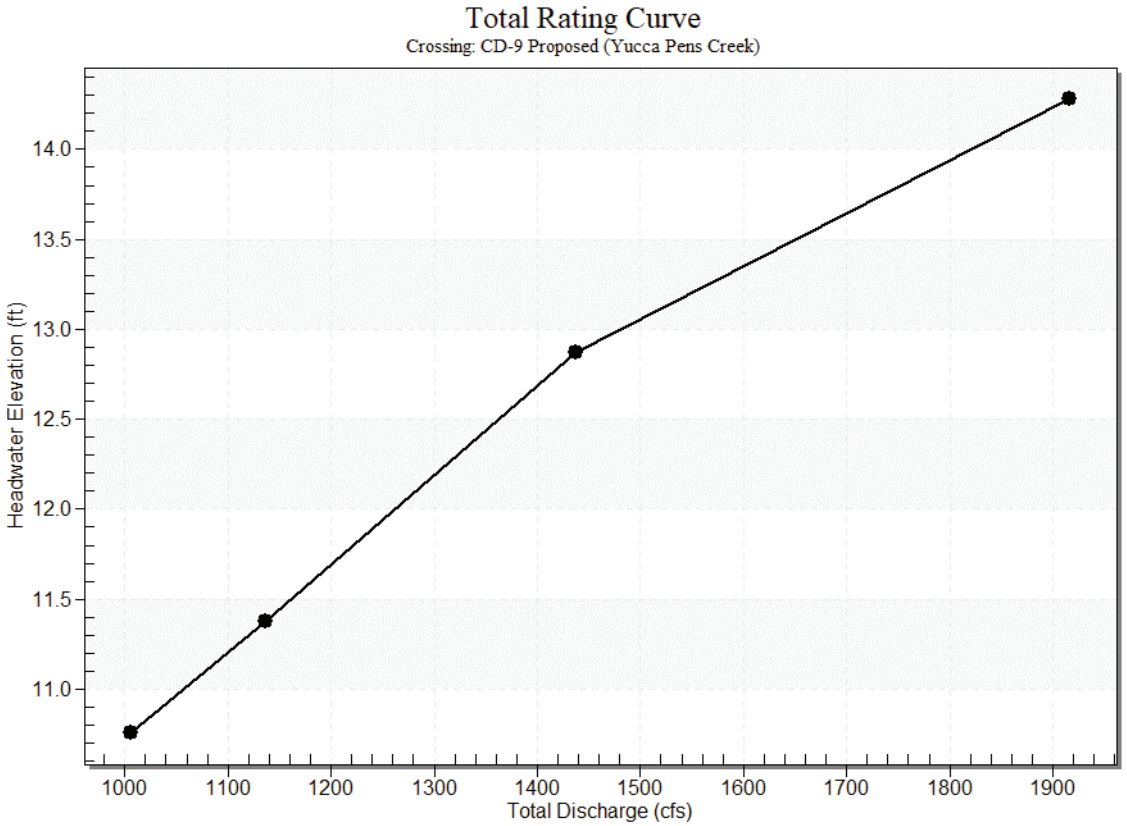
## Crossing Discharge Data

Discharge Selection Method: User Defined

**Table 1 - Summary of Culvert Flows at Crossing: CD-9 Proposed (Yucca Pens Creek)**

| Headwater Elevation (ft) | Discharge Names | Total Discharge (cfs) | CD - 9 (Proposed) Discharge (cfs) | Roadway Discharge (cfs) | Iterations |
|---|---|---|---|---|---|
| **10.76** | 50 Year | 1006.00 | 1006.00 | 0.00 | 1 |
| **11.38** | 100 Year | 1136.00 | 1136.00 | 0.00 | 1 |
| **12.87** | 500 Year | 1437.00 | 1437.00 | 0.00 | 1 |
| **14.00** | 29erto88ing | 1646.01 | 1646.01 | 0.00 | 29erto88ing |

## Rating Curve Plot for Crossing: CD-9 Proposed (Yucca Pens Creek)



## Culvert Data: CD - 9 (Proposed)

### Table 1 - Culvert Summary Table: CD - 9 (Proposed)

| Discharge Names | Total Discharge (cfs) | Culvert Discharge (cfs) | Headwater Elevation (ft) | Inlet Control Depth (ft) | Outlet Control Depth (ft) | Flow Type | Normal Depth (ft) | Critical Depth (ft) | Outlet Depth (ft) | Tailwater Depth (ft) | Outlet Velocity (ft/s) | Tailwater Velocity (ft/s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **50 Year** | 1006.00 | 1006.00 | 10.76 | 6.76 | 4.4v4 | 1pSvn | 3.11 | 4.vO | 3.43 | 0.00 | 14.6O | 0.00 |
| **100 Year** | 1136.00 | 1136.00 | 11.3O | 7.3O | 5.100 | 5pSvn | 3.3- | 4.64 | 3.75 | 0.00 | 15.16 | 0.00 |
| **500 Year** | 1437.00 | 1437.00 | 1v.O7 | O.O7 | 7.545 | 5pSvn | 4.0v | 5.43 | 4.46 | 0.00 | 16.11 | 0.00 |

## Culvert Barrel Data

Cul9ert Barrel Ty8e Straight Cul9ert

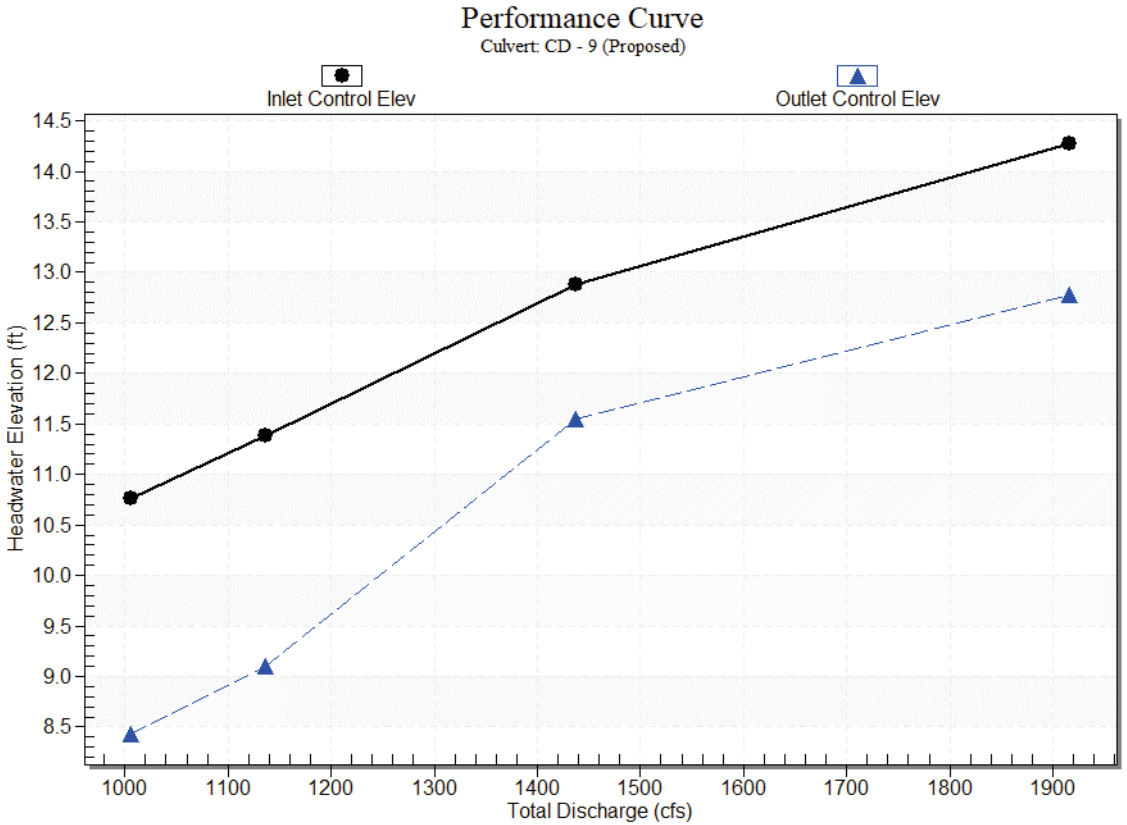
Inlet Ele9ation (in9ert): 4.00 ft,

2 utlet Ele9ation (in9ert): 3.00 ft

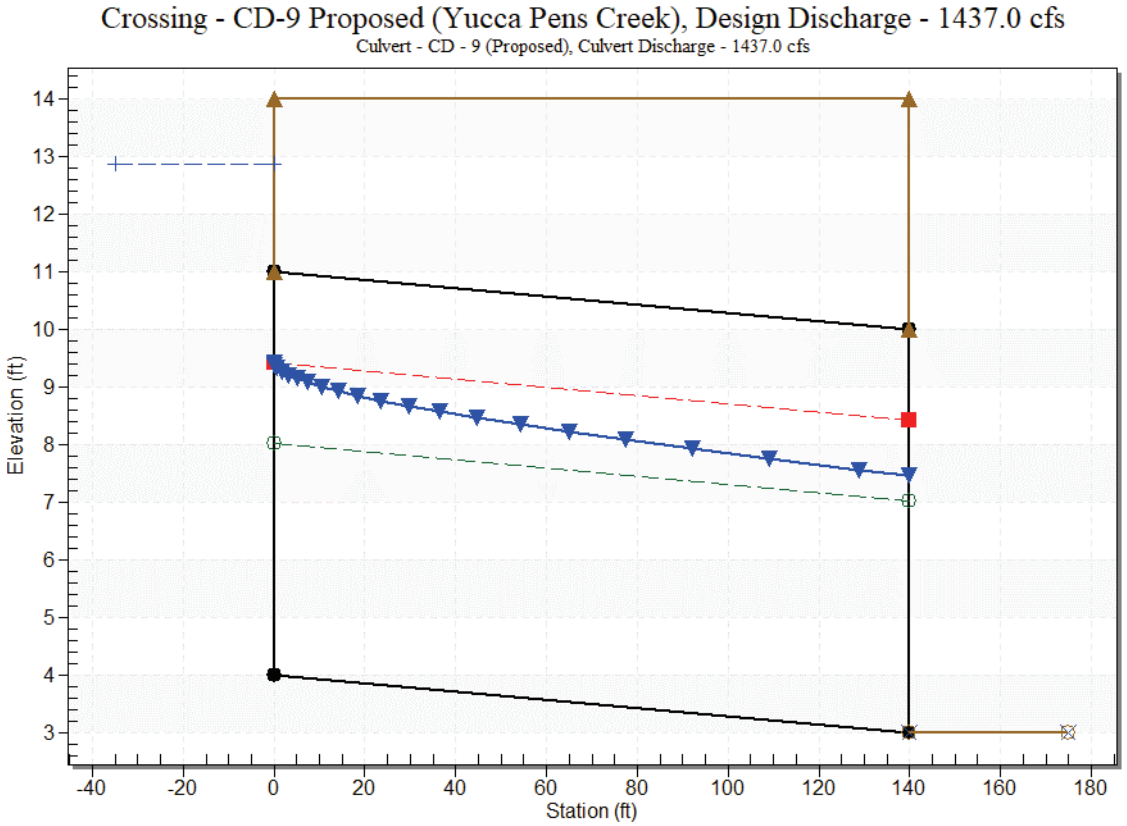
Cul9ert Length: 140.00 ft,

Cul9ert Slo8e: 0.0071

## Culvert Performance Curve Plot: CD - 9 (Proposed)



## Water Surface Profile Plot for Culvert: CD - 9 (Proposed)




## Site Data - CD - 9 (Proposed)

Site Data 28tion: Cul9ert In9ert Data

Inlet Station: 0.00 ft

Inlet Ele9ation: 4.00 ft

2utlet Station: 140.00 ft

2utlet Ele9ation: 3.00 ft

Number of Barrels: v

## Culvert Data Summary - CD - 9 (Proposed)

Barrel Sha8e: Concrete Box

Barrel S8an: 10.00 ft

Barrel Rise: 7.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.01v0

Cul9ert Ty8e: Straight

Inlet Configuration: 1:1 Be9el Headwall (Ke=0.v)

Inlet De8ression: None

## Tailwater Data for Crossing: CD-9 Proposed (Yucca Pens Creek)

**Table 2 - Downstream Channel Rating Curve (Crossing: CD-9 Proposed (Yucca Pens Creek))**

| Flow (cfs) | Water Surface Elev (ft) | Depth (ft) |
|---|---|---|
| **1006.00** | 3.00 | 0.00 |
| **1136.00** | 3.00 | 0.00 |
| **1437.00** | 3.00 | 0.00 |

## Tailwater Channel Data - CD-9 Proposed (Yucca Pens Creek)

Tailwater Channel 2 8tion: Enter Constant Tailwater Ele9ation

Constant Tailwater Ele9ation: 3.00 ft

## Roadway Data for Crossing: CD-9 Proposed (Yucca Pens Creek)

Roadway Profile Sha8e: Constant Roadway Ele9ation

Crest Length: 500.00 ft

Crest Ele9ation: 14.00 ft

Roadway Surface: Pa9ed

Roadway To8 Width: 140.00 ft

# APPENDIX D

## Floodplain Compensation Calculations

## Summary of Floodplain Imapcts and Mitigation

| Facility | Fill Volume (ac-ft) | Cut Volume (ac-ft) | Net Floodplain Impacts (Fill - Cut) (ac-ft) |
|---|---|---|---|
| Roadway | 7.76 | | |
| Pond 2A | 0.03 | 7.44 | |
| Pond 2B | 0.38 | 5.89 | |
| Pond 2 & FCA | 0.07 | 3.29 | |
| **Total** | **8.24** | **16.63** | **-8.39** |

| Fill-Roadway | | | | | | |
|---|---|---|---|---|---|---|
| **Station** | **Area (sqft)** | **Scale Factor** | **Area (sqft)** | **Area (ac)** | **Length (ft)** | **Volume (ac-ft)** |
| 1301+30 | 118.17 | 2 | 59.09 | 0.00136 | 0 | |
| 1302+00 | 183.35 | 2 | 91.68 | 0.00210 | 70 | 0.12 |
| 1303+00 | 17.82 | 2 | 8.91 | 0.00020 | 100 | 0.12 |
| 1304+00 | 0.00 | 2 | 0.00 | 0.00000 | 100 | 0.01 |
| 1305+00 | 0.06 | 2 | 0.03 | 0.00000 | 100 | 0.00 |
| 1306+00 | 632.17 | 2 | 316.09 | 0.00726 | 100 | 0.36 |
| 1307+00 | 0.00 | 2 | 0.00 | 0.00000 | 100 | 0.36 |
| 1308+00 | 131.56 | 2 | 65.78 | 0.00151 | 100 | 0.08 |
| 1309+00 | 41.03 | 2 | 20.52 | 0.00047 | 100 | 0.10 |
| 1310+00 | 33.73 | 2 | 16.87 | 0.00039 | 100 | 0.04 |
| 1311+00 | 36.55 | 2 | 18.28 | 0.00042 | 100 | 0.04 |
| 1312+00 | 36.56 | 2 | 18.28 | 0.00042 | 100 | 0.04 |
| 1313+00 | 53.14 | 2 | 26.57 | 0.00061 | 100 | 0.05 |
| 1314+00 | 183.73 | 2 | 91.87 | 0.00211 | 100 | 0.14 |
| 1315+00 | 194.08 | 2 | 97.04 | 0.00223 | 100 | 0.22 |
| 1316+00 | 221.64 | 2 | 110.82 | 0.00254 | 100 | 0.24 |
| 1317+00 | 320.28 | 2 | 160.14 | 0.00368 | 100 | 0.31 |
| 1318+00 | 343.32 | 2 | 171.66 | 0.00394 | 100 | 0.38 |
| 1319+00 | 362.14 | 2 | 181.07 | 0.00416 | 100 | 0.40 |
| 1320+00 | 341.81 | 2 | 170.91 | 0.00392 | 100 | 0.40 |
| 1321+00 | 221.77 | 2 | 110.89 | 0.00255 | 100 | 0.32 |
| 1322+00 | 260.47 | 2 | 130.24 | 0.00299 | 100 | 0.28 |
| 1323+00 | 350.64 | 2 | 175.32 | 0.00402 | 100 | 0.35 |
| 1324+00 | 314.65 | 2 | 157.33 | 0.00361 | 100 | 0.38 |
| 1325+00 | 316.95 | 2 | 158.48 | 0.00364 | 100 | 0.36 |
| 1326+00 | 301.80 | 2 | 150.90 | 0.00346 | 100 | 0.36 |
| 1327+00 | 346.98 | 2 | 173.49 | 0.00398 | 100 | 0.37 |
| 1328+00 | 354.17 | 2 | 177.09 | 0.00407 | 100 | 0.40 |
| 1329+00 | 330.98 | 2 | 165.49 | 0.00380 | 100 | 0.39 |
| 1330+00 | 317.52 | 2 | 158.76 | 0.00364 | 100 | 0.37 |
| 1331+00 | 320.32 | 2 | 160.16 | 0.00368 | 100 | 0.37 |
| 1332+00 | 347.46 | 2 | 173.73 | 0.00399 | 100 | 0.38 |
| | | | **Floodplain Impacts (Total Fill-Roadway)** | | | **7.76** |

| Fill-Pond 2A | | | | | | |
|---|---|---|---|---|---|---|
| **Station** | **Area (sqft)** | **Scale Factor** | **Area (sqft)** | **Area (ac)** | **Length (ft)** | **Volume (ac-ft)** |
| +0 | 2.58 | 2 | 1.29 | 0.00003 | 0.00 | |
| 1+00 | 8.19 | 2 | 4.10 | 0.00009 | 100.00 | 0.01 |
| 2+00 | 0.00 | 2 | 0.00 | 0.00000 | 100.00 | 0.00 |
| 3+00 | 2.18 | 2 | 1.09 | 0.00003 | 100.00 | 0.00 |
| 4+00 | 13.70 | 2 | 6.85 | 0.00016 | 100.00 | 0.01 |
| 4+94 | 8.80 | 2 | 4.40 | 0.00010 | 94.00 | 0.01 |
| | | | | | **SUM** | **0.03** |

| Fill-Pond 2B | | | | | | |
|---|---|---|---|---|---|---|
| **Station** | **Area (sqft)** | **Scale Factor** | **Area (sqft)** | **Area (ac)** | **Length (ft)** | **Volume (ac-ft)** |
| +0 | 92.870 | 2 | 46.44 | 0.00107 | 0.00 | |
| 1+00 | 96.790 | 2 | 48.40 | 0.00111 | 100.00 | 0.11 |
| 2+00 | 76.040 | 2 | 38.02 | 0.00087 | 100.00 | 0.10 |
| 3+00 | 72.640 | 2 | 36.32 | 0.00083 | 100.00 | 0.09 |
| 4+00 | 49.020 | 2 | 24.51 | 0.00056 | 100.00 | 0.07 |
| 4+27 | 69.460 | 2 | 34.73 | 0.00080 | 27.00 | 0.02 |
| | | | | | **SUM** | **0.38** |

| Fill-Pond 2 and Floodplain Compensation Area | | | | | | |
|---|---|---|---|---|---|---|
| **Station** | **Area (sqft)** | **Scale Factor** | **Area (sqft)** | **Area (ac)** | **Length (ft)** | **Volume (ac-ft)** |
| 1308+39 | 0.00 | 2 | 0.00 | 0.00000 | 0 | |
| 1309+00 | 0.00 | 2 | 0.00 | 0.00000 | 61.14 | 0.00 |
| 1310+00 | 0.00 | 2 | 0.00 | 0.00000 | 100.00 | 0.00 |
| 1311+00 | 29.42 | 2 | 14.71 | 0.00034 | 100.00 | 0.02 |
| 1312+00 | 31.34 | 2 | 15.67 | 0.00036 | 100.00 | 0.03 |
| 1313+00 | 0.00 | 2 | 0.00 | 0.00000 | 100.00 | 0.02 |
| 1313+95 | 0.00 | 2 | 0.00 | 0.00000 | 94.70 | 0.00 |
| | | | | | **SUM** | **0.07** |

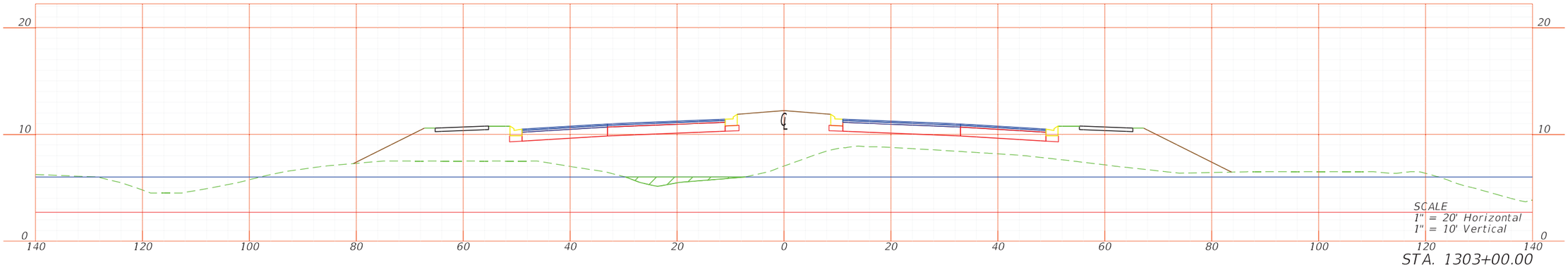
| | |
|---|---|
| **Floodplain Impacts (Total Fill-Ponds)** | **0.48** |

| Cut-Pond 2A | | | | | | |
|---|---|---|---|---|---|---|
| **Station** | **Area (sqft)** | **Scale Factor** | **Area (sqft)** | **Area (ac)** | **Length (ft)** | **Volume (ac-ft)** |
| +0 | 1334.92 | 2 | 667.46 | 0.01532 | 0.00 | |
| 1+00 | 1265.62 | 2 | 632.81 | 0.01453 | 100.00 | 1.49 |
| 2+00 | 1335.55 | 2 | 667.78 | 0.01533 | 100.00 | 1.49 |
| 3+00 | 1335.56 | 2 | 667.78 | 0.01533 | 100.00 | 1.53 |
| 4+00 | 1313.12 | 2 | 656.56 | 0.01507 | 100.00 | 1.52 |
| 4+94 | 1293.07 | 2 | 646.54 | 0.01484 | 94.00 | 1.41 |
| | | | | | **SUM** | **7.44** |

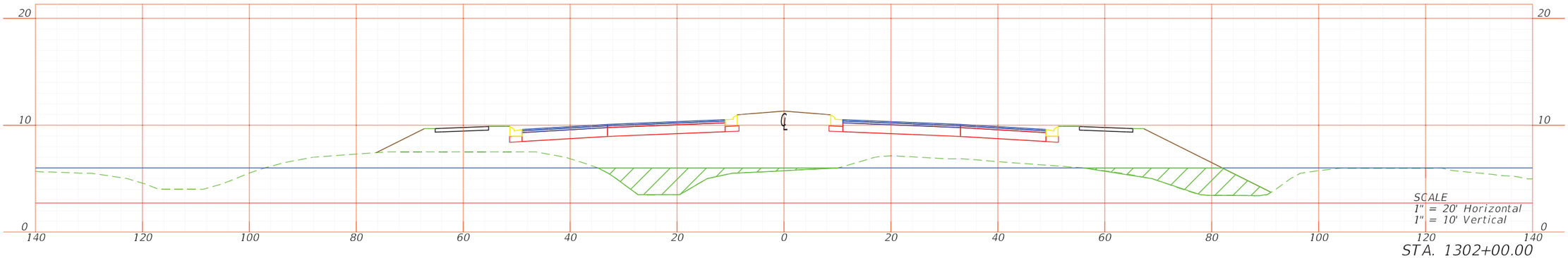
| Cut-Pond 2B | | | | | | |
|---|---|---|---|---|---|---|
| **Station** | **Area (sqft)** | **Scale Factor** | **Area (sqft)** | **Area (ac)** | **Length (ft)** | **Volume (ac-ft)** |
| +0 | 1128.990 | 2 | 564.50 | 0.01296 | 0.00 | |
| 1+00 | 1128.140 | 2 | 564.07 | 0.01295 | 100.00 | 1.30 |
| 2+00 | 1128.140 | 2 | 564.07 | 0.01295 | 100.00 | 1.29 |
| 3+00 | 1313.360 | 2 | 656.68 | 0.01508 | 100.00 | 1.40 |
| 4+00 | 1318.040 | 2 | 659.02 | 0.01513 | 100.00 | 1.51 |
| 4+27 | 1165.070 | 2 | 582.54 | 0.01337 | 27.00 | 0.38 |
| | | | | | **SUM** | **5.89** |

| Cut-Pond 2 and Floodplain Compensation Area | | | | | | |
|---|---|---|---|---|---|---|
| **Station** | **Area (sqft)** | **Scale Factor** | **Area (sqft)** | **Area (ac)** | **Length (ft)** | **Volume (ac-ft)** |
| 1308+39 | 523.63 | 2 | 261.82 | 0.00601 | 0 | |
| 1309+00 | 522.46 | 2 | 261.23 | 0.00600 | 61.14 | 0.37 |
| 1310+00 | 522.46 | 2 | 261.23 | 0.00600 | 100.00 | 0.60 |
| 1311+00 | 522.46 | 2 | 261.23 | 0.00600 | 100.00 | 0.60 |
| 1312+00 | 522.46 | 2 | 261.23 | 0.00600 | 100.00 | 0.60 |
| 1313+00 | 487.34 | 2 | 243.67 | 0.00559 | 100.00 | 0.58 |
| 1313+95 | 522.46 | 2 | 261.23 | 0.00600 | 94.75 | 0.55 |
| | | | | | **SUM** | **3.29** |

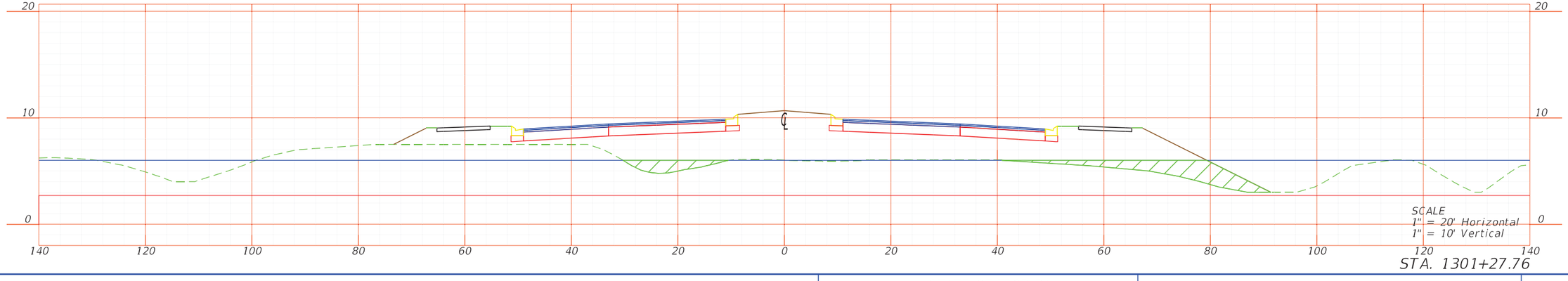
| | |
|---|---|
| **Floodplain Mitigation (Total Cut-Ponds)** | **16.63** |




STA. 1303+00.00




STA. 1302+00.00




STA. 1301+27.76

LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| CR 765 | LEE | 436928-1-22-01 |

# FLOODPLAIN IMPACTS AND MITIGATION ROADWAY

SHEET NO. 1

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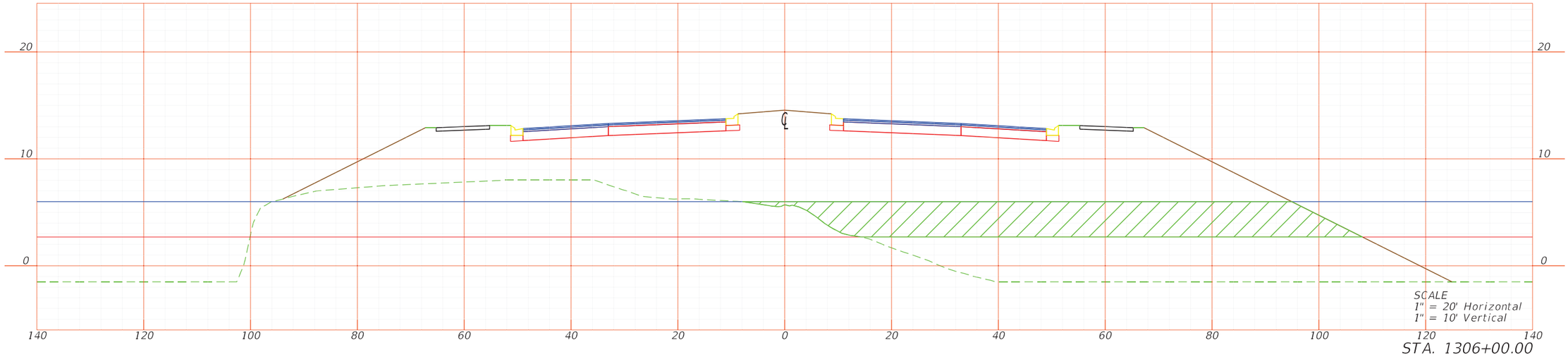


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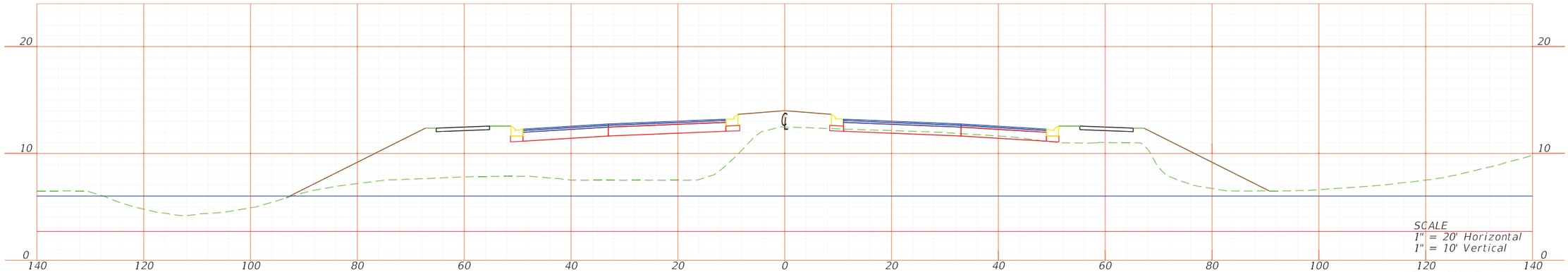


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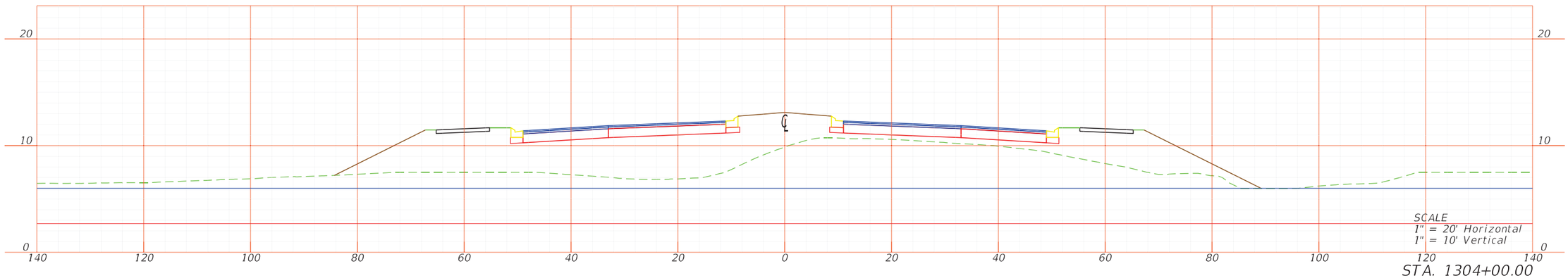


STA. 1304+00.00

LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

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# FLOODPLAIN IMPACTS AND MITIGATION ROADWAY

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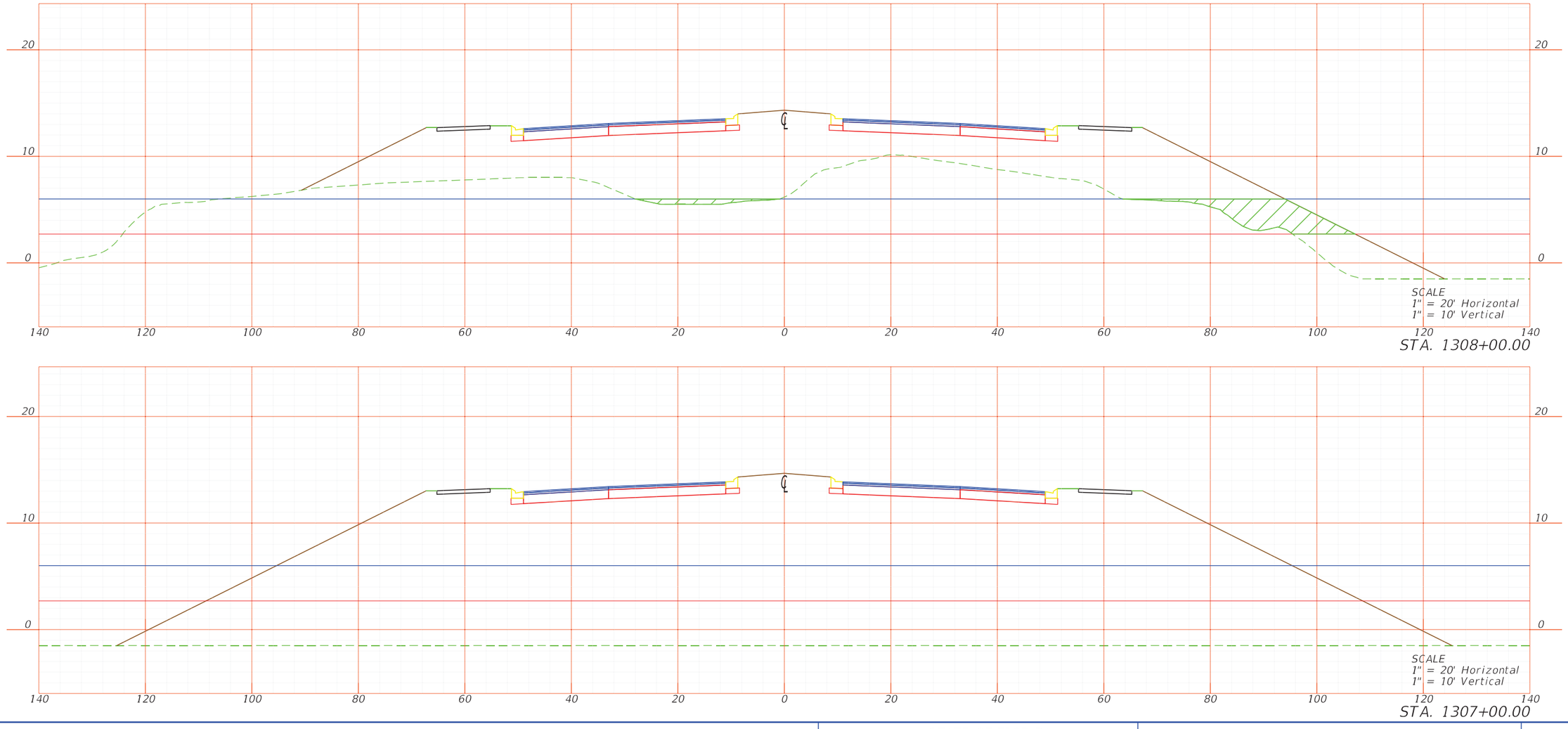


LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

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# FLOODPLAIN IMPACTS AND MITIGATION ROADWAY

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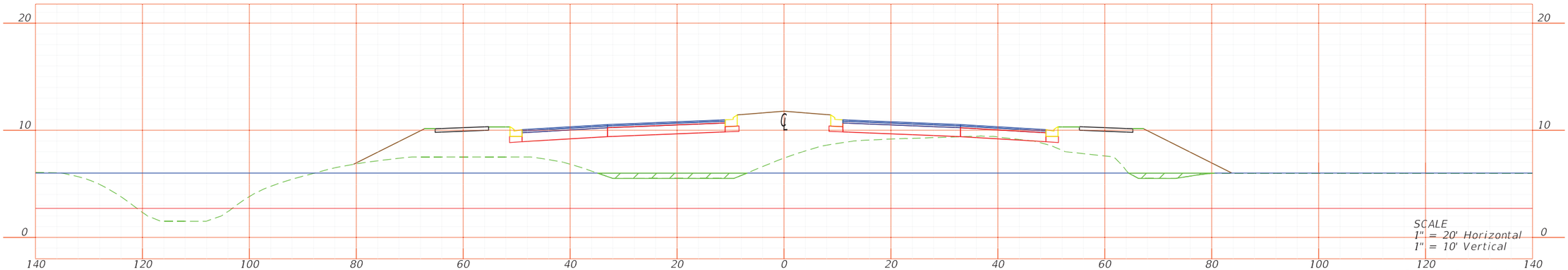


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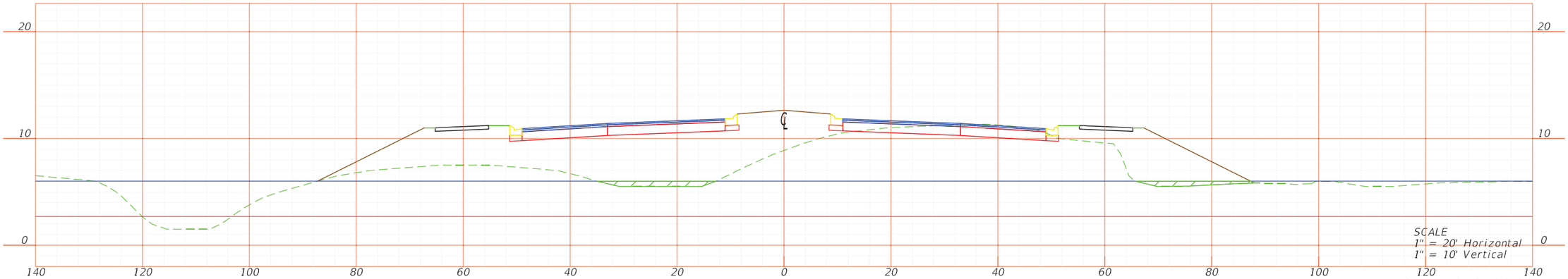


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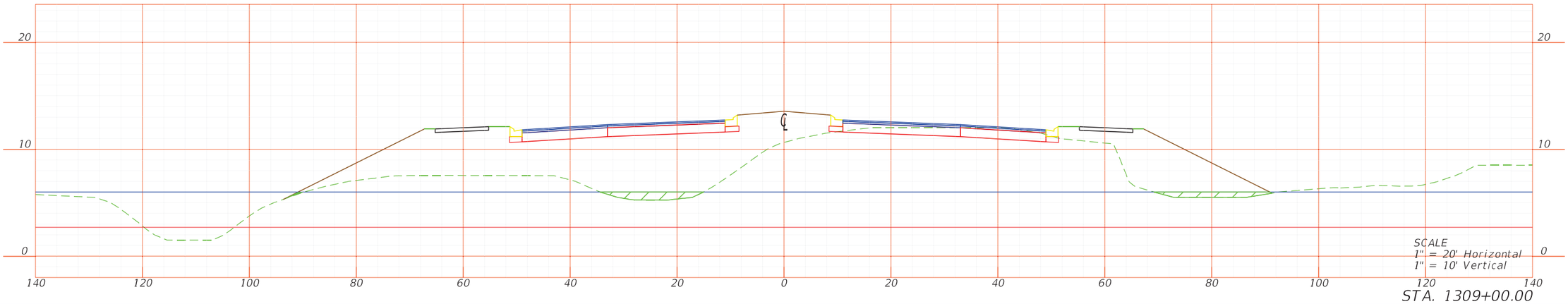


STA. 1309+00.00

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LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

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# FLOODPLAIN IMPACTS AND MITIGATION ROADWAY

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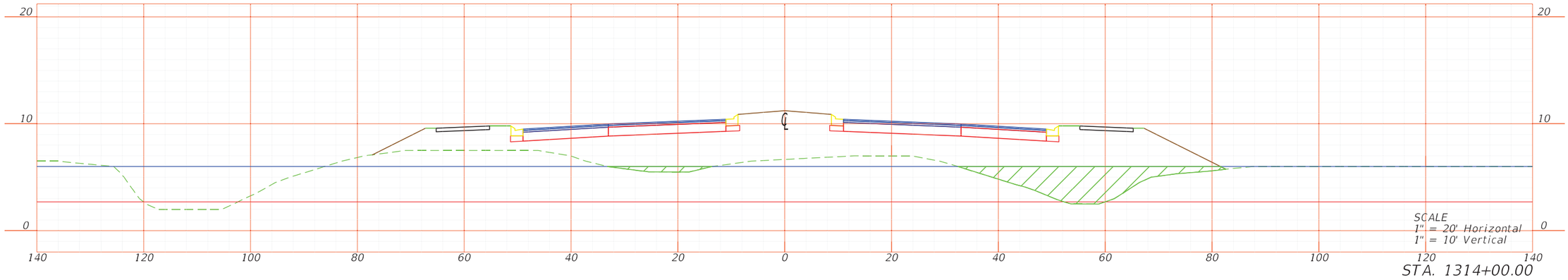


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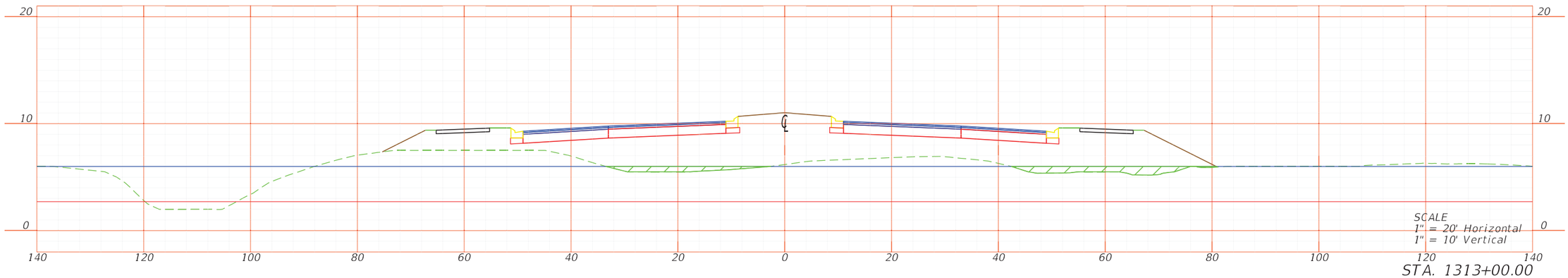


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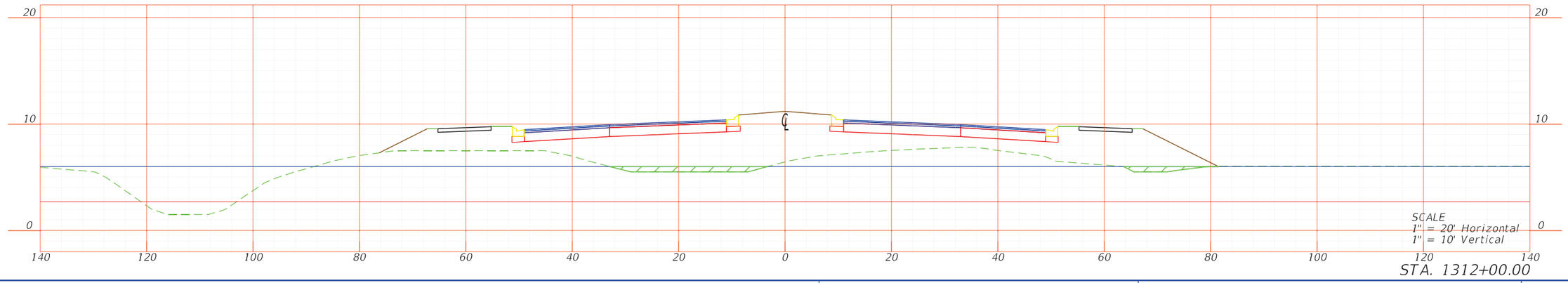


STA. 1312+00.00

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LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

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# FLOODPLAIN IMPACTS AND MITIGATION ROADWAY

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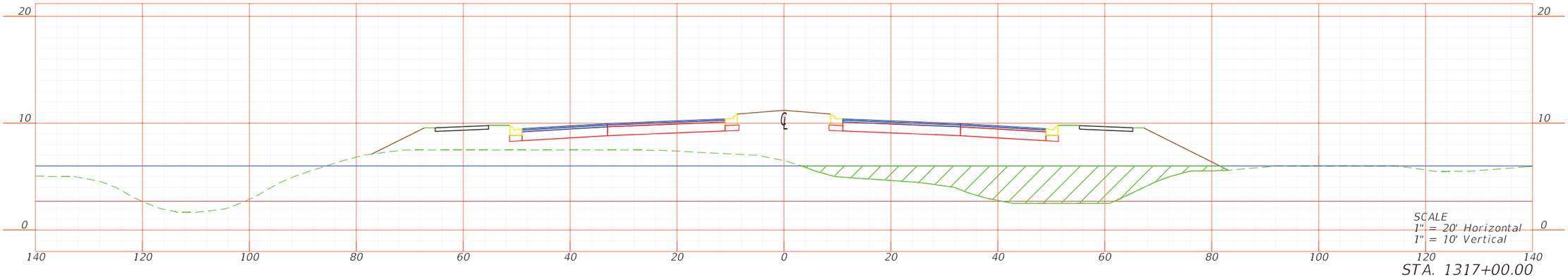


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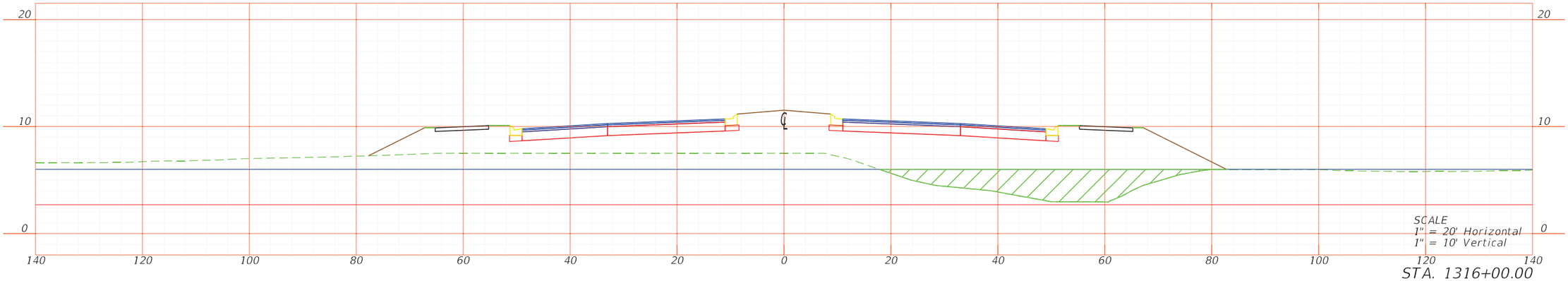


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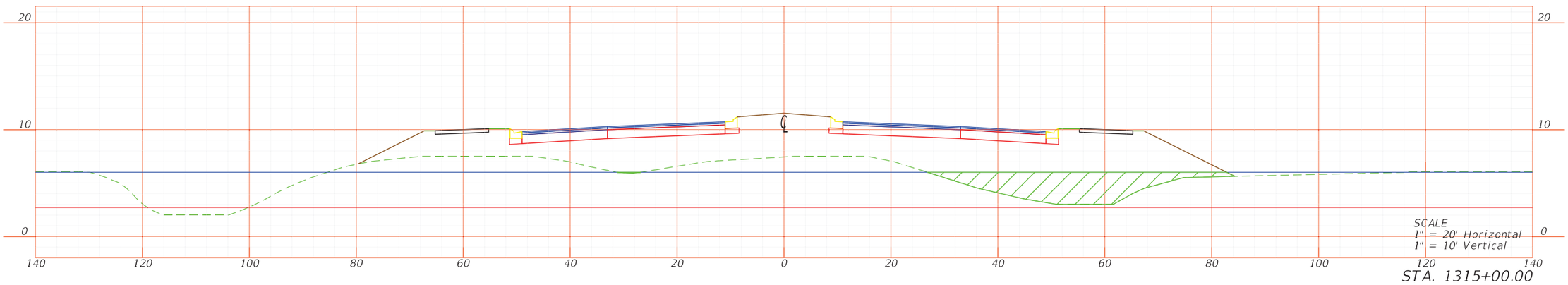


STA. 1315+00.00

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LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

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# FLOODPLAIN IMPACTS AND MITIGATION ROADWAY

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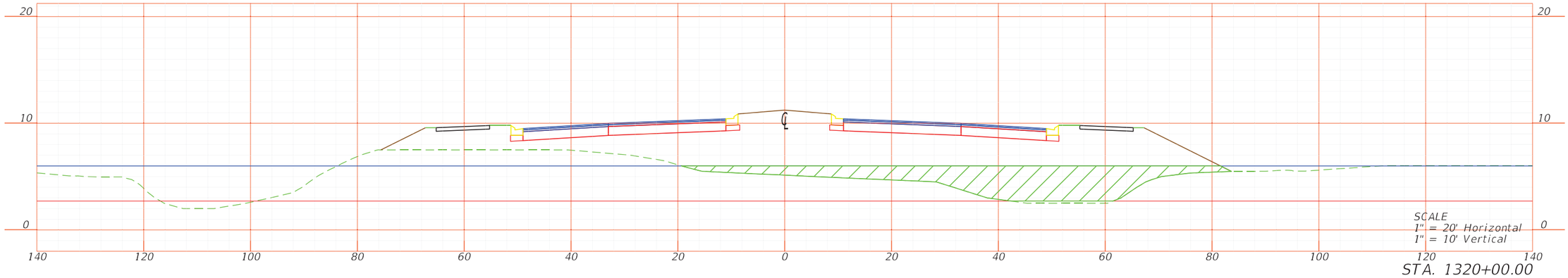


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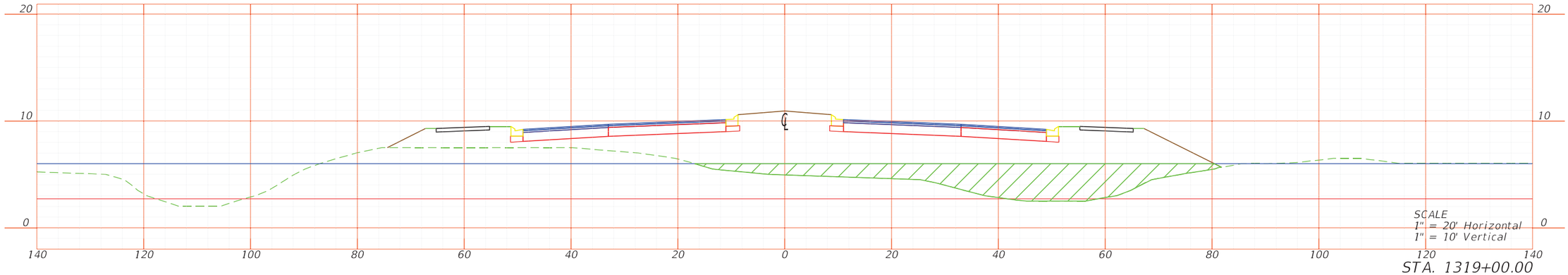


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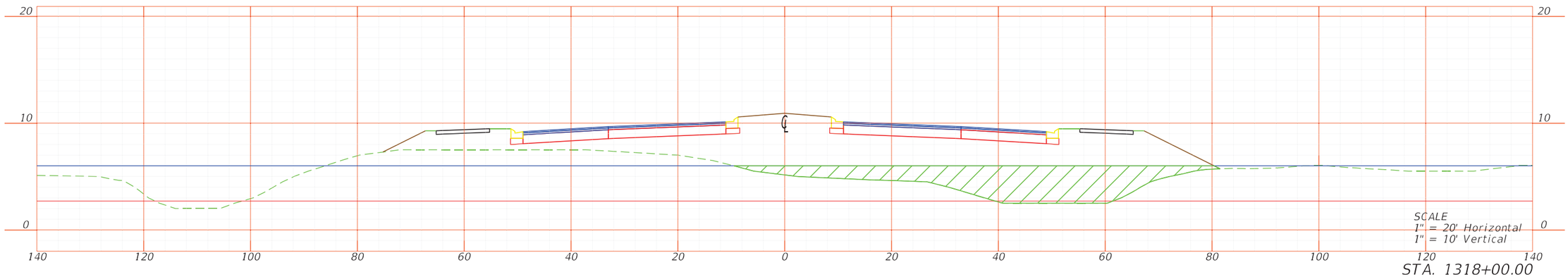


STA. 1318+00.00

LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

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# FLOODPLAIN IMPACTS AND MITIGATION ROADWAY

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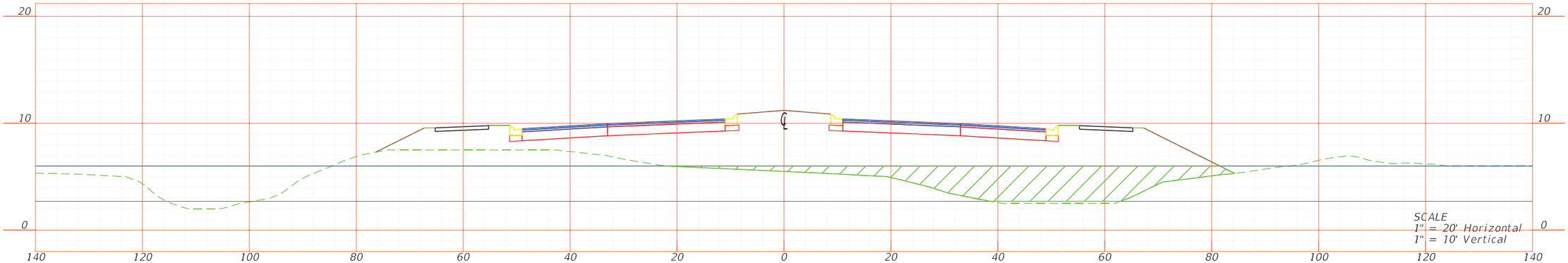
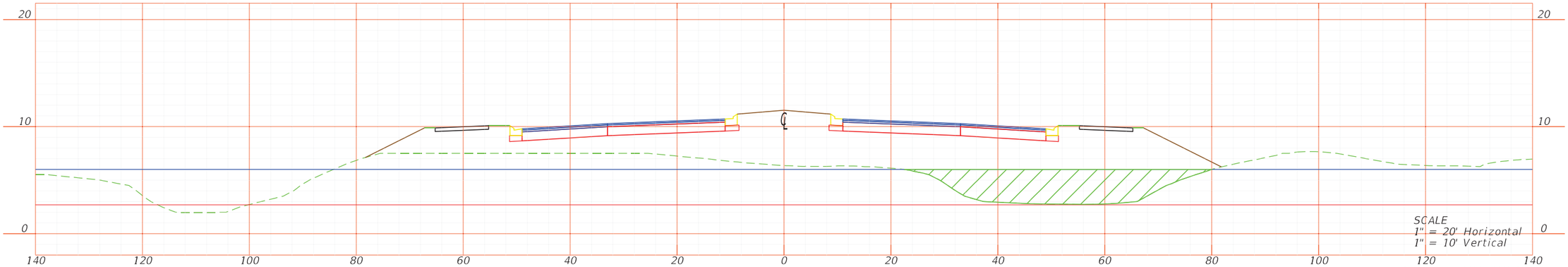



STA. 1323+00.00

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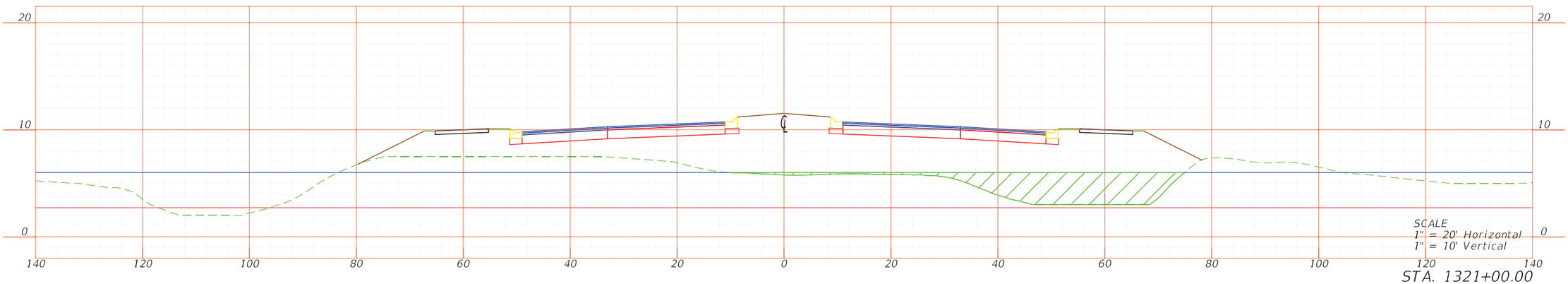


STA. 1321+00.00

LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

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# FLOODPLAIN IMPACTS AND MITIGATION ROADWAY

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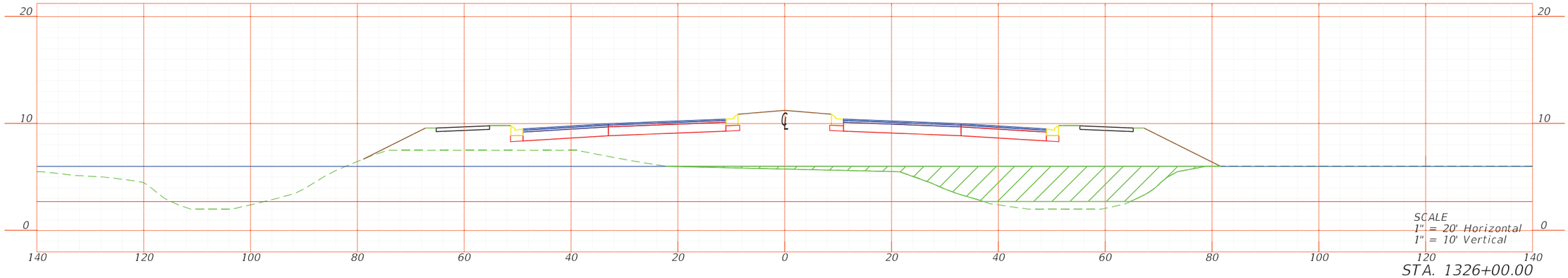


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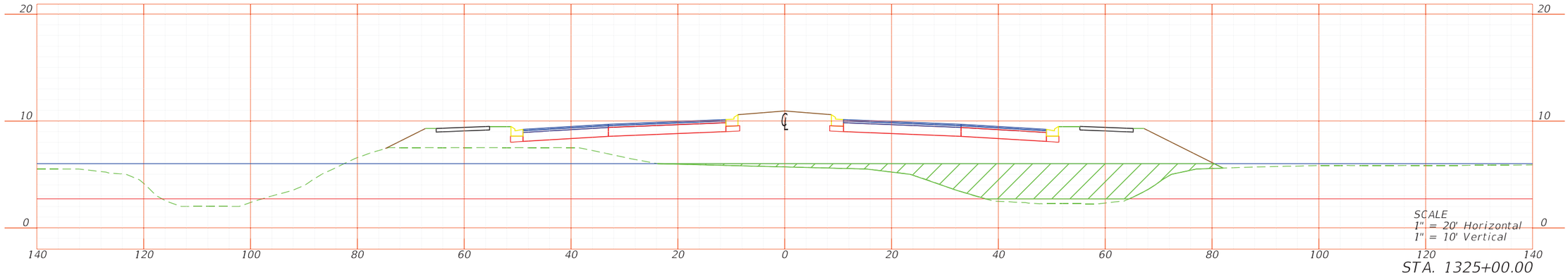


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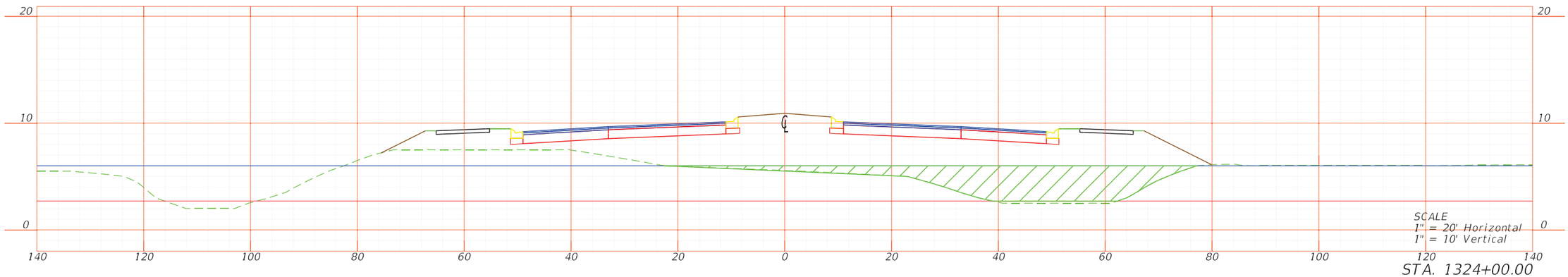


STA. 1324+00.00

LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

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# FLOODPLAIN IMPACTS AND MITIGATION ROADWAY

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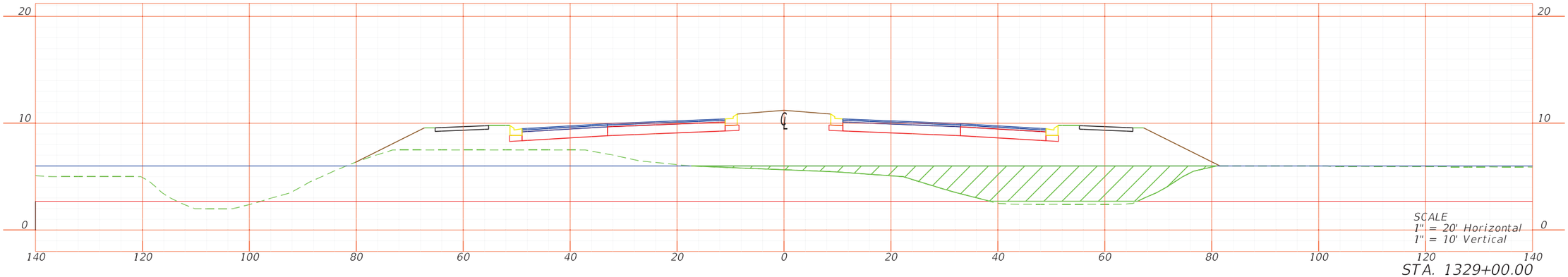


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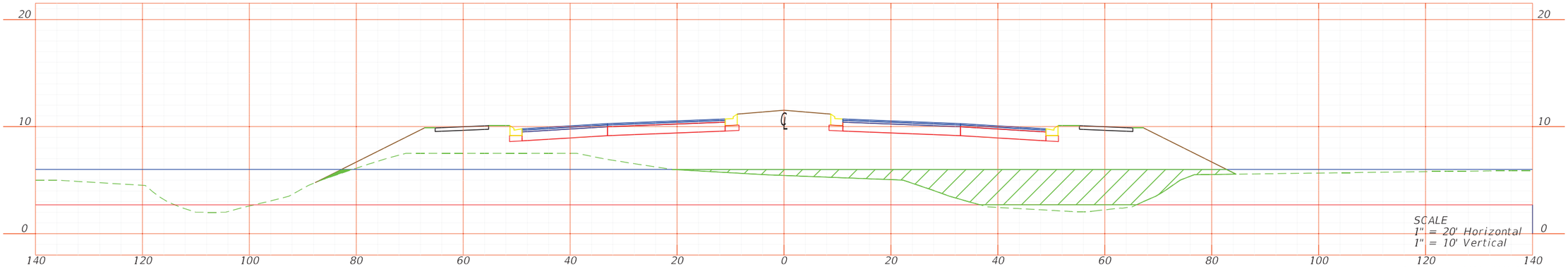


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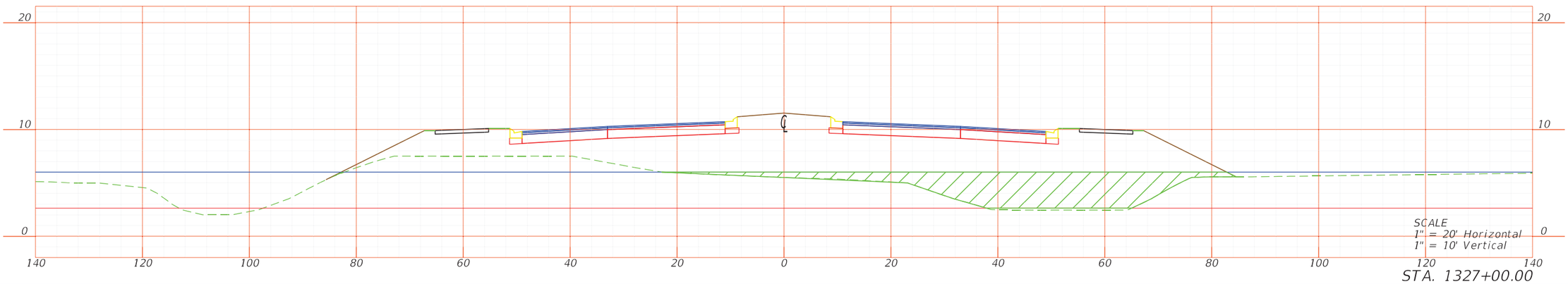


STA. 1327+00.00

LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

| STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION | | |
|---|---|---|
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# FLOODPLAIN IMPACTS AND MITIGATION ROADWAY

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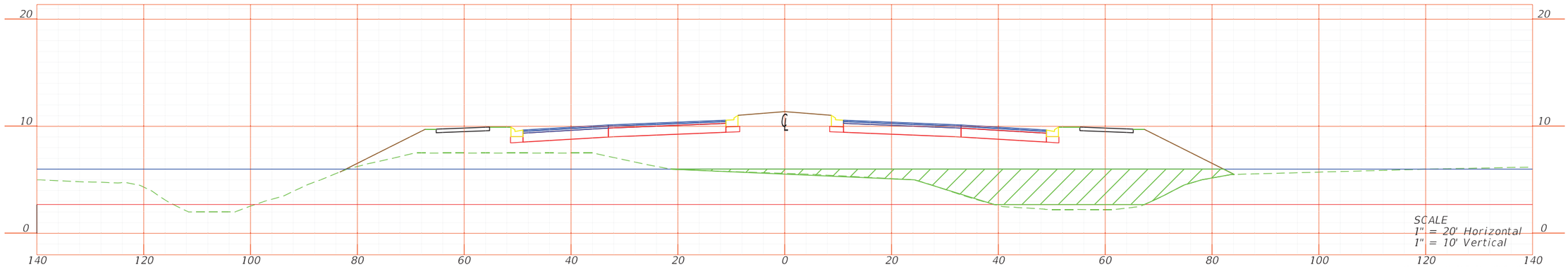


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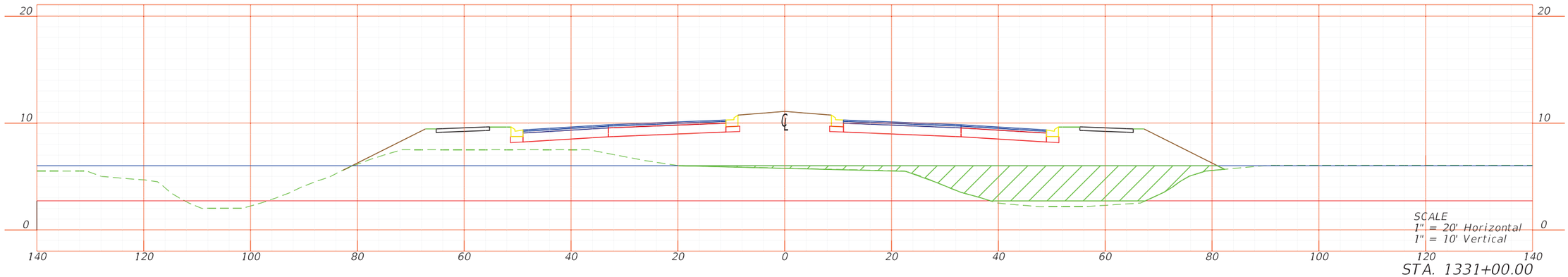
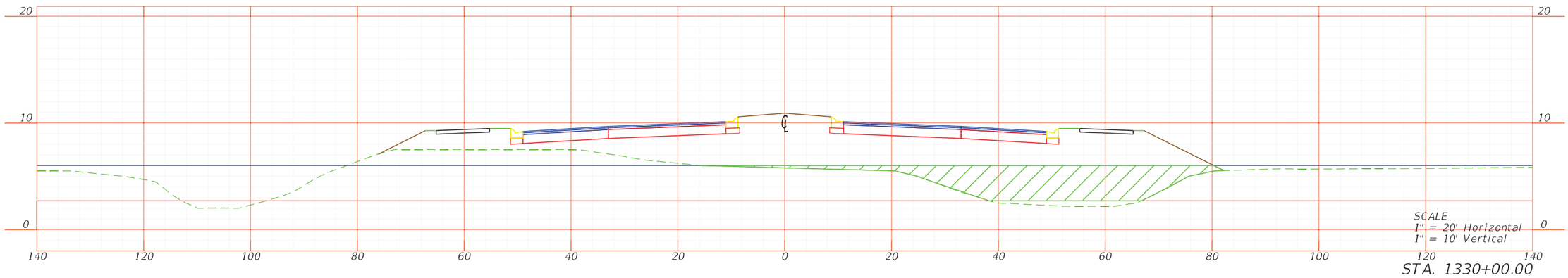



STA. 1331+00.00




STA. 1330+00.00

LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

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# FLOODPLAIN IMPACTS AND MITIGATION ROADWAY

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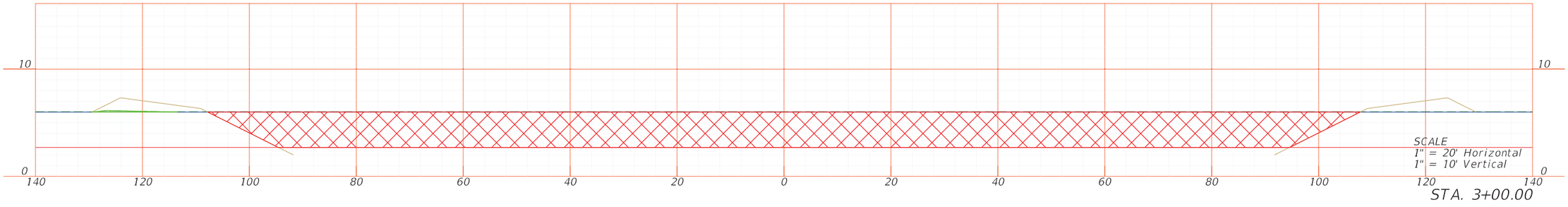
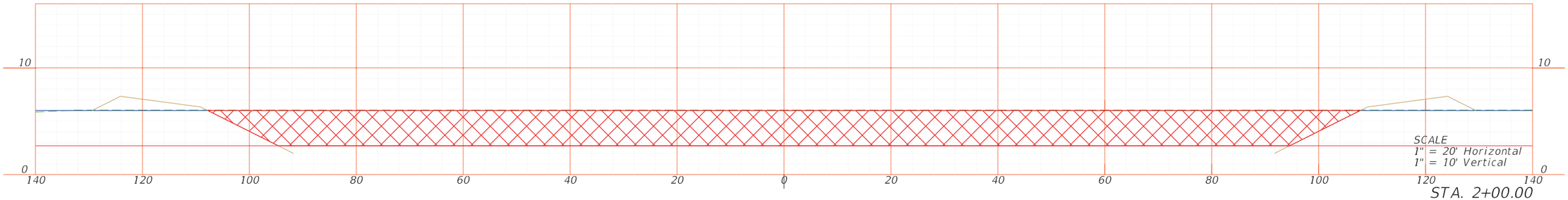
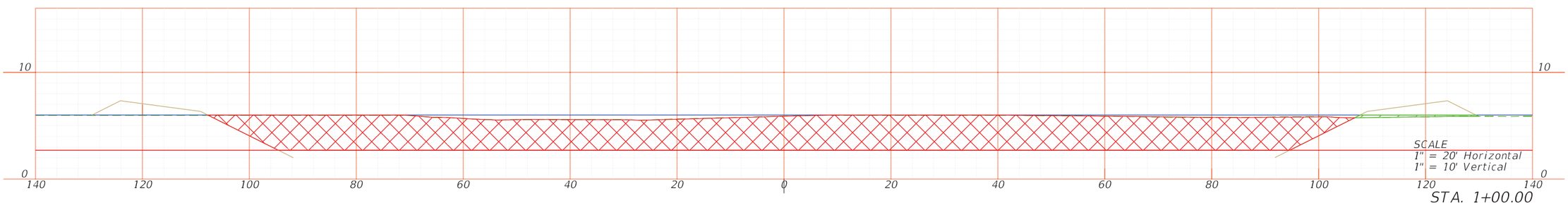


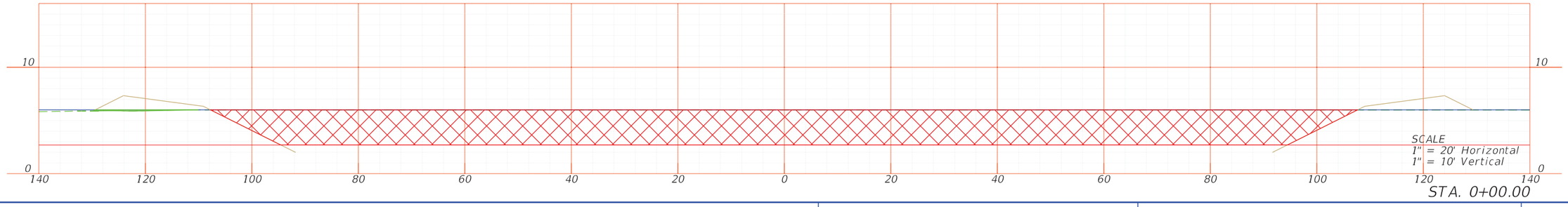

STA. 3+00.00




STA. 2+00.00




STA. 1+00.00

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LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| CR 765 | LEE | 436928-1-22-01 |

# FLOODPLAIN IMPACTS AND MITIGATION POND 2A

SHEET NO.

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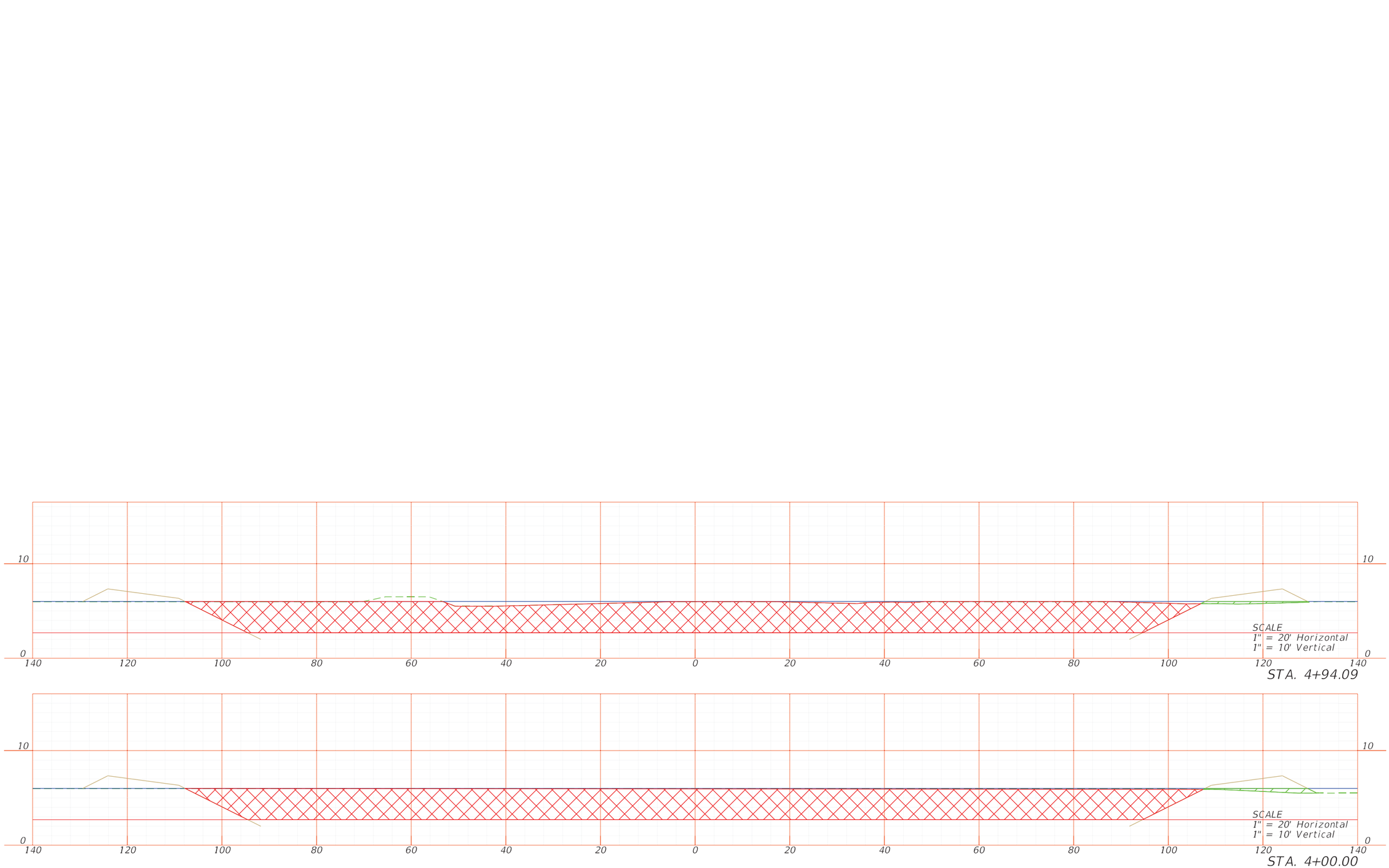


LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

| STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION | | | FLOODPLAIN IMPACTS AND MITIGATION POND 2A | SHEET NO. |
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| ROAD NO. | COUNTY | FINANCIAL PROJECT ID | | |
| CR 765 | LEE | 436928-1-22-01 | | 1 |

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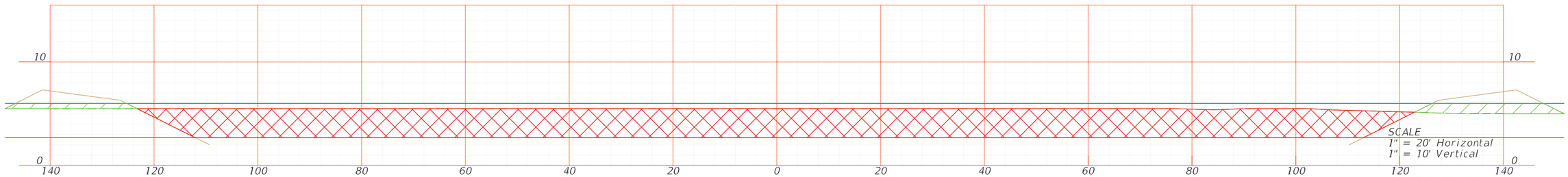


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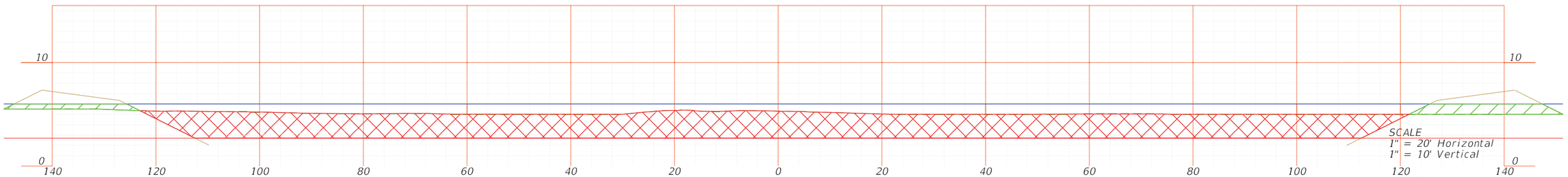


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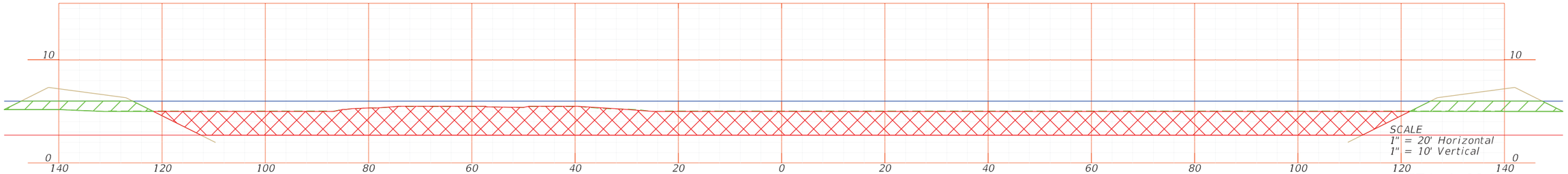


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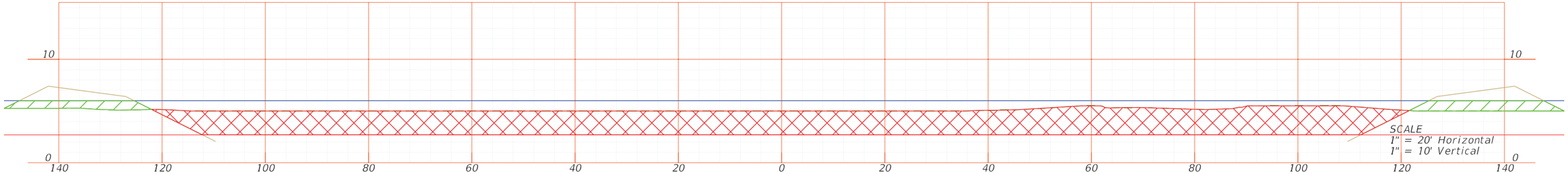


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LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| CR 765 | LEE | 436928-1-22-01 |

# FLOODPLAIN IMPACTS AND MITIGATION POND 2B

SHEET NO. 1

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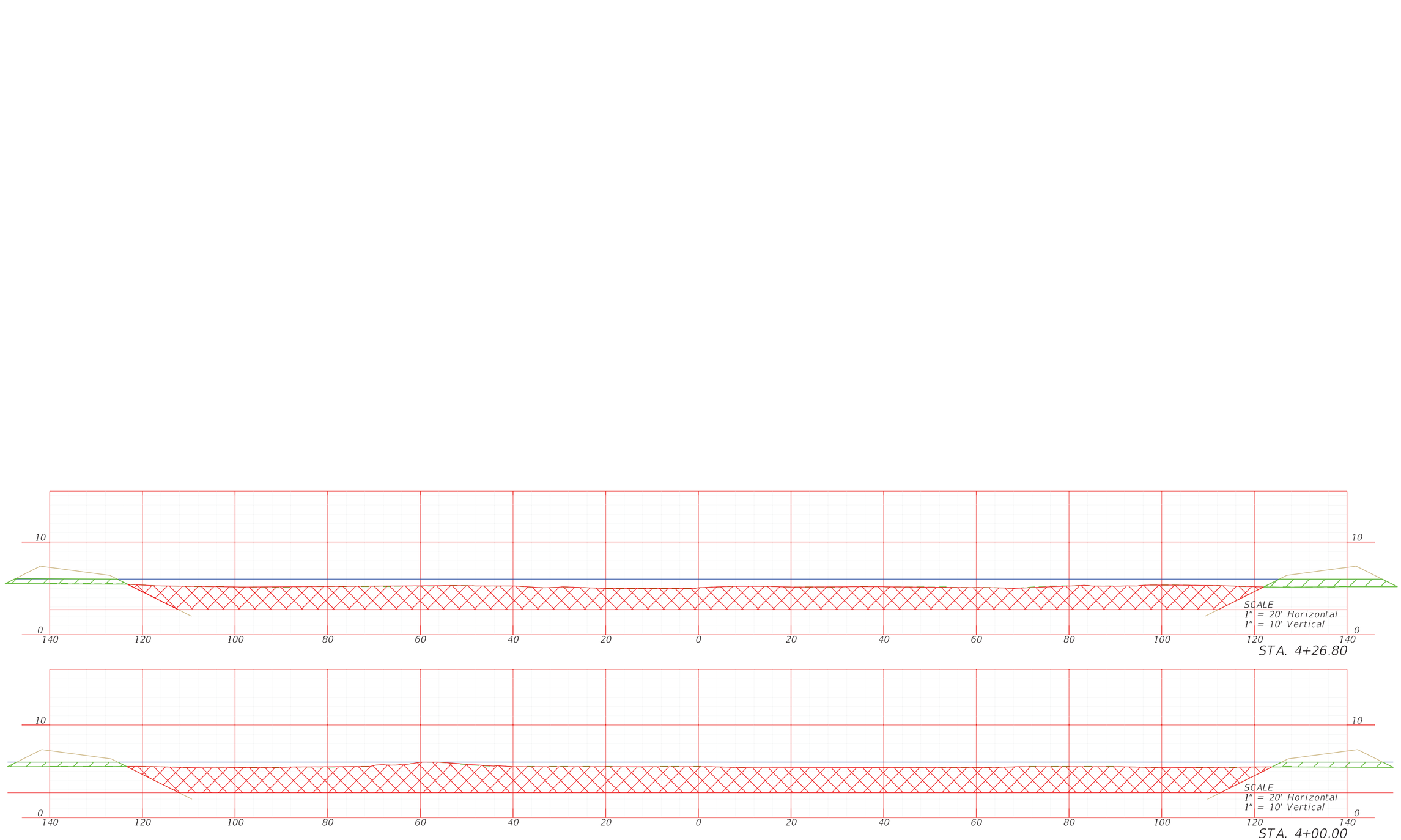


LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| CR 765 | LEE | 436928-1-22-01 |

# FLOODPLAIN IMPACTS AND MITIGATION POND 2B

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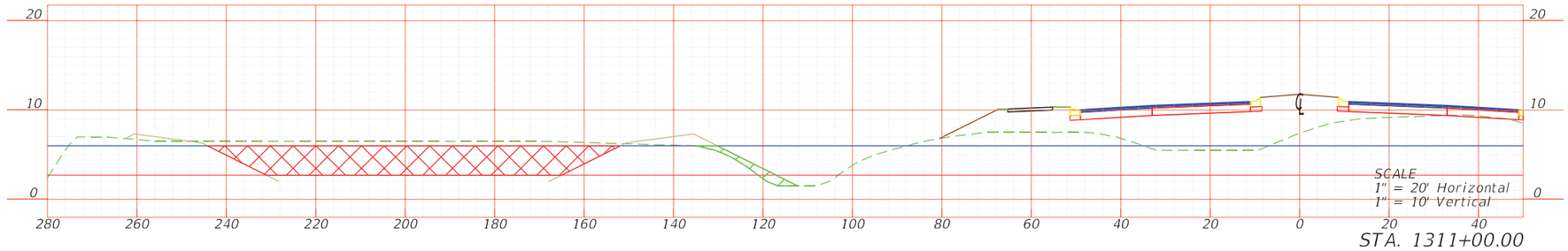


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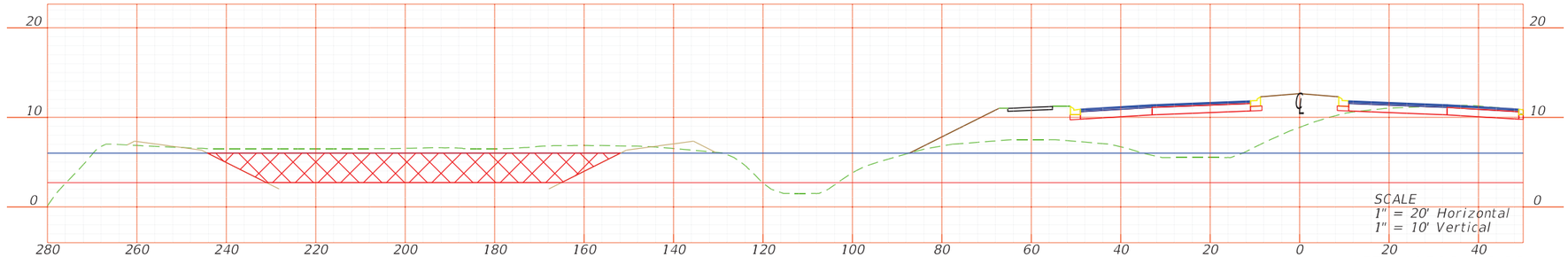


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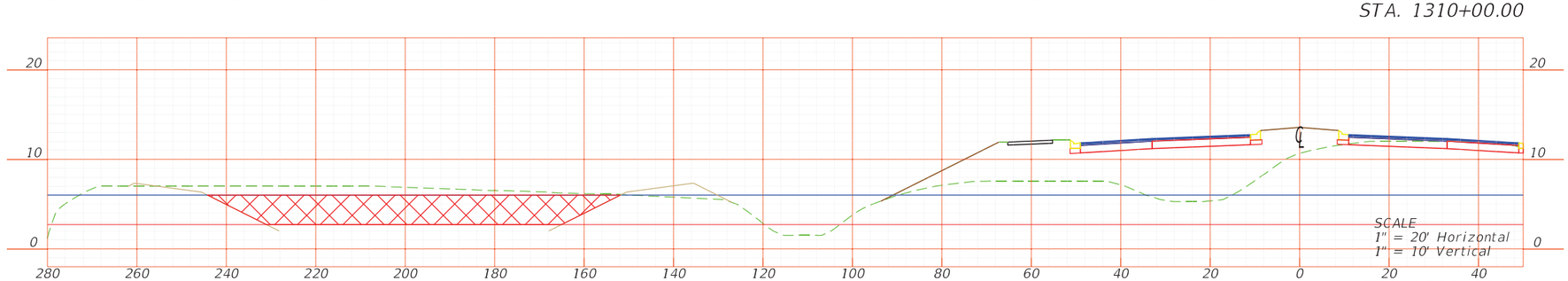


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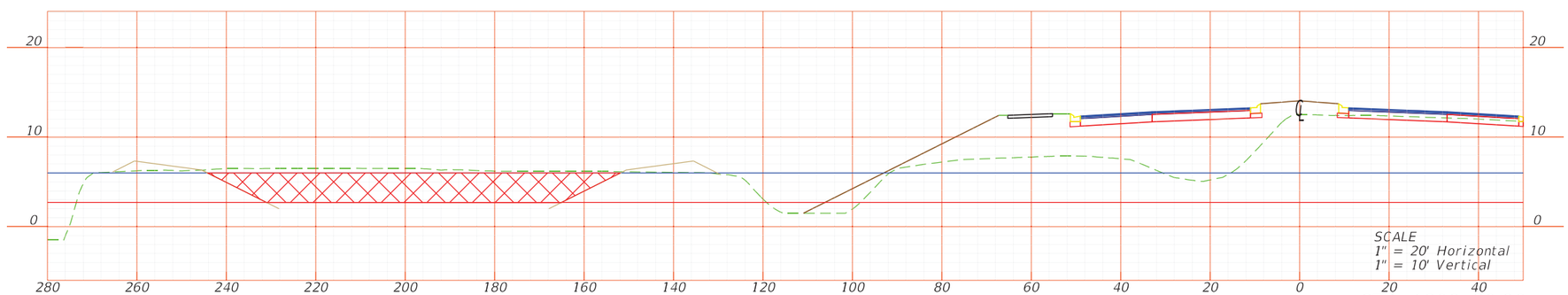


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LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

| STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION | | |
|---|---|---|
| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
| CR 765 | LEE | 436928-1-22-01 |

# FLOODPLAIN IMPACTS AND MITIGATION POND 2 & FCA

SHEET NO. 1

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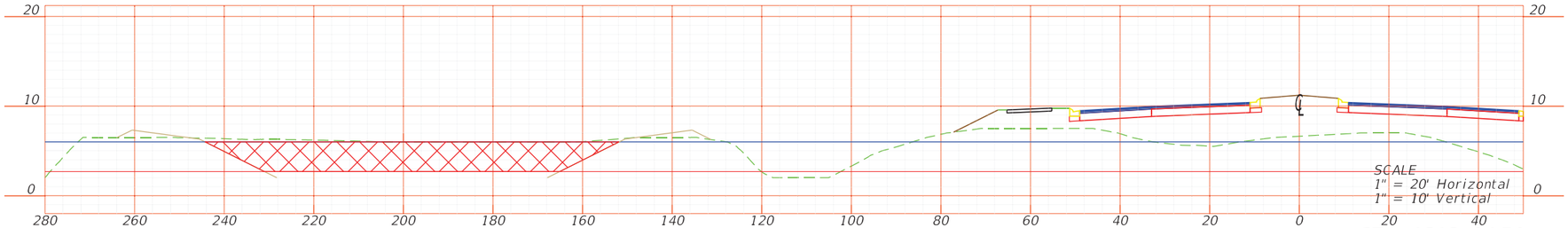


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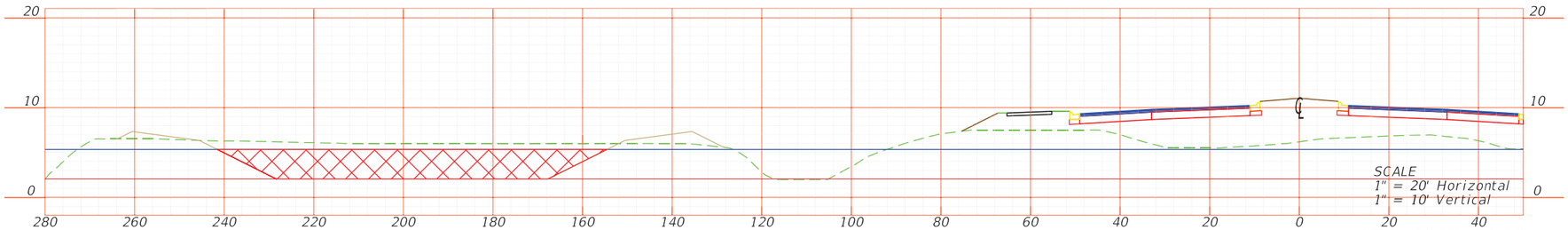


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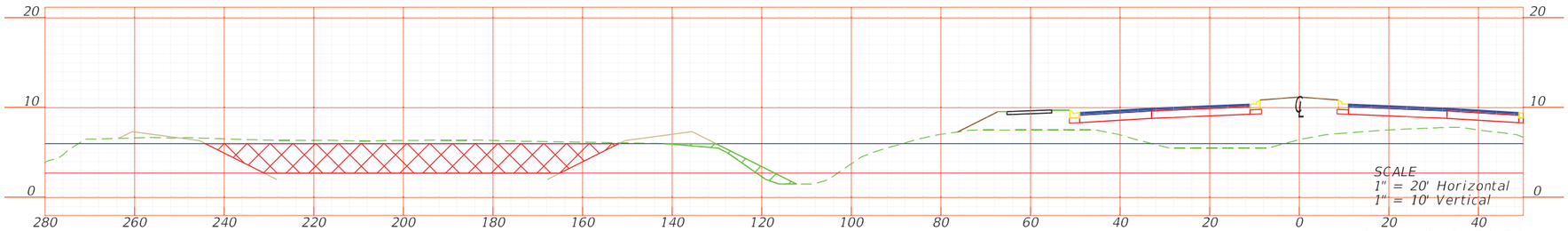


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LEGEND

- EXISTING GROUND
- PROP. GROUND
- FLOODPLAIN ELEV. 6'
- SHWT ELEV. 2.7'
- FILL
- CUT

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| CR 765 | LEE | 436928-1-22-01 |

# FLOODPLAIN IMPACTS AND MITIGATION POND 2 & FCA

SHEET NO. 1

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# APPENDIX E

## Meeting Minutes

# Meeting Minutes

| | | | |
|---|---|---|---|
| **Project:** | FPID No. 436928-1-22-01<br>Burnt Store Road PD&E Study from Van Buren Parkway to Charlotte CL | | |
| **Subject:** | Project Kickoff Meeting | | |
| **Date and time:** | February 25, 2020 1:30 PM | | |
| **Meeting place:** | FDOT District 1 Office | **Minutes by:** | Scalar Consulting Group Inc. |
| **Present:** | See sign-in Sheet | | |
| **Notes** | | | |

Following FDOT and Consultant team introductions, the group discussed specific disciplines followed by general project topics.

Drainage

The team is scoped to consider traditional stormwater ponds but will also evaluate potential joint-use options. Karina and Jennifer stated that we must make it clear in the documentation that any joint-use options are for County agreement since this is a county road. David Bennett (CONSOR) explained that we are not proposing co-mingling; a bypass-ditch system is anticipated to address off-site flows into the R/W (through drainage structures and to the west). Where possible, we will combine basins. Lee County expressed desire for off-site compensatory treatment/attenuation. As we get further into the drainage design and county coordination, Optional Services could be used if we are to evaluate this concept. David asked if District 1 would prefer a volumetric analysis for the pond sites or an ICPR analysis. It was agreed to prepare an ICPR model with all of the existing cross-drains.

The FEMA floodplain maps are being revised and may not yet be published. The floodplain areas are increasing based on our team's data collection. David explained that the SFWMD prefers cup-for-cup compensation but asked if Karina was aware of any existing models aside what we identified thus far (not at this time). When the project team is ready to meet with the SFWMD, we are to go through Nicole Monies (Permits) to add this project to the monthly meeting agenda. The LHR may be more involved for this project given the proposed ditch bypass system. For the BHR, INTERA is preparing a HEC-RAS model for the Gator Slough Canal. A BHR may also be needed for Yucca Pens Creek (existing bridge culvert).

Traffic

District 1 will provide the updated travel demand model which includes all future development plans. The 2045 model is in draft and District 1 will compare it to the 2040 model. Traffic data collection will occur in March 2020; March is high season and spring break is the week of March 16th (no collection that week to avoid spike in traffic). The draft Traffic Analysis Methodology will be developed and sent to District 1 for review and final approval before the team starts traffic analysis and develops the Project Traffic Analysis Report (PTAR). The team has several requests of Lee County for crash data, traffic data, and future development plans; these will be included in the County request from District 1/Steven.

Traffic and Typical Sections

The team is scoped to develop typical sections for 4-lanes, 4-lanes expandable to 6-lanes, and the "super street" which includes frontage roads and a wide median. Based on the existing data/model, a 6-lane facility does not appear to be warranted. The group agreed that following analysis of the current traffic data, we will see how close the traffic volumes are to the 6-lane warrant and then consult with OEM.

While the locals may want a designed typical section that allows for ultimate 6-lane widening, we would need more justification than local preference to recommend an expandable typical section.

Crash data
District 1 agreed to provide all crash data information through Signal Four Analytics. This will include the crash data spreadsheet, GIS shapefile, and long forms (police crash reports).

Roadway
Jay briefly described the design challenges including raising the profile grade change to meet base clearance requirements and address roadway flooding, modeling the corridor to accurately identify R/W acquisition need, and the identification and avoidance of utilities. We will need to meet with Lee County to discuss access management within the corridor given their Controlled Access Management Resolution which appears to prohibit left turns from side streets within the project limits.

Noise
KB Environmental explained that the noise effort can begin once the traffic data for noise studies spreadsheets are completed as part of the DTTM ant the typical sections of the proposed build alternatives are available. Noise contours will be created for each alternative under study to determine the number of potential noise impacts for the public workshop matrix. A detailed noise study will be completed for the preferred alternative.

Contamination
Data collection including field review is in progress.

Cultural Resources
There are no fatal flaws along the corridor. ACI will need the build alternatives to prepare the CRAS.

Natural Environment
Scalar will begin general species and wetland surveys in March. If we identify need for species-specific surveys (e.g. scrub-jay, Florida bonneted bat) we will notify District 1. Species-specific survey hours were discussed in negotiations but then it was determined to use Optional Services if needed.

Section 4(f)
Public lands (Section 4(f)) are adjacent to the corridor. Jennifer suggested the team review the property documentation (e.g. land management plans) for reference to transportation uses. If included, and impacts are within this designated area, Section 4(f) would not apply.

Public Involvement
The team has already submitted the draft PIP for District 1 review. Jennifer explained that going forward, any changes to the PIP will instead go into the Comments and Coordination Report. The PI templates will be going “live” but can be emailed now. A newsletter will be sent out in lieu of a public kickoff meeting. Prior to this, the project website must be set-up. Scalar is to provide project information in .html format to the DW Consultant who sets-up and manages the websites. Going forward, public hearings on county roadways will require that a County representative start the hearing with an address to the public. This will be part of the hearing script. As a new protocol for all Type 2 CEs, the consultant team will be required to publish a limitation of claims in the federal register, after the LDCA notice.

Coordination Protocols
The Consultant team can coordinate with District 1 Departments as needed and copy Steven. For now, Steven will be the point-person for County coordination. Steven will set-up the project kickoff meeting with Lee County, preferably in March. Kristin will provide Steven with a list of Lee County

Departments/personnel to include. It was discussed that this first meeting will be with Lee County alone, and we will then meet with Charlotte County, and then possibly the City of Cape Coral, separately. The team will combine later meetings if reasonable. Since this project is on a county facility, we must carefully document the local meetings and design decisions.

Funding and County Coordination

Since the project will extend into Charlotte County, the team discussed including Charlotte for informational purposes; funding, however, is from Lee County. Our team will confirm funding and design segments with Lee County. Currently, no funding is programmed beyond the PD&E Study. Jennifer advised that the team is to prepare a reasonable construction cost estimate and R/W estimate after the public workshop. This will be used for the work program update.

Schedule

Jennifer commented that the District will review the project documents after the public workshop to avoid multiple document reviews.

ETDM

ETDM information will be going to OEM for approval soon and expect that the summary data will be available May/June. This will include the Purpose and Need but not the Class of Action.

The following action items were developed:

| Item | Description and Action | Responsible |
|---|---|---|
| Existing Geotechnical Data | Include in compiled list of team data requests and send to Steven to submit to Lee County | Kristin/Steven |
| Existing crash and traffic data, future development plans | Include in compiled list of team data requests and send to Steven to submit to Lee County | Kristin/Steven |
| PI templates | District 1 to provide current templates to Scalar | Steven |
| Signal Four Analytics data | District 1 to provide crash data spreadsheet, GIS shapefile, and long forms (police crash reports) | D1 EMO- Patrick/Dave who have access |
| Schedule Lee County kickoff meeting | Contact Lee County to schedule kickoff meeting | Steven |
| Team field meeting | Schedule team field meeting, may be same day as county kickoff meeting | Kristin |

2/25/20 - Burnt Store Rd.
Sign-In

| | | | | |
|---|---|---|---|---|
| 1 | Steven Andrews | FDOT | steven.andrews@dot.state.fl.us |
| 2 | Kristin Caruso | Scalar | kcaruso@scalarin.com |
| 3 | Francina Gil | Consor | fgil@consoreng.com |
| 4 | David Bennett | Consa | dbennett@consoreng.com |
| 5 | Aniruddha Gotmare | SCALAR | agotmare@scalarinc.net |
| 6 | Karina Della Sera | FDOT - Drainage | Karina.dellasera@dot.state.fl.us |
| 7 | DAVID C. TURLEY | FDOT | david.turley@dot.state.fl.us |
| 8 | Vivianne Cross | FDOT | vivianne.cross@dot.state.fl.us |
| 9 | Lauren Peters | FDOT | lauren.peters@dot.state.fl.us |
| 10 | Jennifer Marshall | FDOT | jennifer.marshall@dot.state.fl.us |
| 11 | Christopher Simpson | FDOT | christopher.simpson@dot.state.fl.us |
| 12 | Jonathon Bennett | FDOT | jonathon.bennett@dot.state.fl.us |
| 13 | Patrick Bateman | FDOT | Patrick.Bateman@dot.state.fl.us |
| 14 | JAY WINTER | SCALAR | JWINTER@SCALARINC.NET |
| 15 | Ehsan Doustmohammadi | SCALAR | edoustmohammadi@scalarinc.net |
| 16 | Gwen Pipkin | FDOT | gwen.pipkin@... |
| 17 | John Scarlatos (phone) | Scalar | jscarlatos@scalarinc.net |
| 18 | Paul Looney (phone) | Scalar | plooney@scalarinc.net |
| 19 | Wayne Arner (phone) | KB Envi | |
| 20 | Lee Hutchinson (phone) | ACT | lhutchinson@aeiflorida.com |
| 21 | Marion Amy (phone) | ACT | maimy@aeiflorida.com |
| 22 | Mark Grosselin (phone) | Intera | mgosselin@intera.com |

# Meeting Minutes

| | | |
|---|---|---|
| **Project:** | FPID No. 436928-1-22-01<br>Burnt Store Road PD&E Study from Van Buren Parkway to Charlotte CL | |
| **Subject:** | Project Kickoff Meeting with Lee County | |
| **Date and time:** | March 31, 2020 1:00 PM | |
| **Meeting place:** | GoTo Meeting | **Minutes by:** Scalar Consulting Group Inc. |

**Present:**

**LCDOT**
David Murphy, Deputy Director
Stephen Jansen, Engineering-Traffic
Tom Marquardt, Public Works-Transportation
Vincent Miller, Engineering-Transportation

**Other Lee County Department Representatives**
Anura Karuna-Muni, Natural Resources
Karyn Allman, Land Stewardship
Tyler Marzella, Land Stewardship
Alvin (Chip) Block, Zoning

**FDOT**
Steven Andrews, Project Manager
Vivianne Cross, Environmental PM
Lauren Peters, Environmental PM

**FDOT Consultant Staff**
Kristin Caruso, Consultant PM (Scalar)
Rudy Gotmare, Deputy PM (Scalar)
Jay Winter, Roadway lead (Scalar)
Ehsan Doustmohammadi, Traffic Lead (Scalar)
David Bennett, Drainage Lead (CONSOR)
Francina Gil, Drainage (CONSOR)

**Notes**

Following Lee County, FDOT and Consultant team introductions, Kristin gave a brief overview of the project and the group discussed specific disciplines.

Project limits: Length is approximately 5.5 miles from Van Buren Parkway to Charlotte County line with an additional ¼-mile that extends into Lee County before the roadway transitions to 4-lanes. David M. indicated that this piece in Charlotte County has been briefly discussed in technical advisory committee meetings and they understand that an agreement would be needed to construct the project up to the 4-lane typical section.

Drainage

The team will be evaluating stormwater ponds as well as a bypass-ditch system which is anticipated to address off-site flows into the R/W (through drainage structures and to the west). As we get further into the drainage design and county coordination, we could potentially also evaluate off-site compensatory treatment. Anura commented that Charlotte Flatwoods Preserve could be an option. David B. concurred that and other County-owned parcels would be good options. Anura also recommended that the drainage team review the Northwest Lee County Surface Water Management Plan. The team will also prepare the project's Location Hydraulic Report which evaluates the floodplain impacts and analyzes the cross drain hydraulic capacities. Lee County staff suggested the use of their rainfall data collected by an outside contractor. The main contact for the County's hydrological monitoring is Scott Summerall. The 2005 Flood Study Report may be a good resource.

Environmental
Conservation lands are adjacent to the corridor and include Yucca Pens Preserve, Babcock Webb Yucca Pens Unit WMA, Charlotte Harbor Preserve State park, and Charlotte Harbor Buffer Preserve. Wetlands and protected species will be surveyed and assessed as part of the natural resources documentation. Similarly, cultural resources, contamination and noise will be evaluated. There is some potential for noise impacts at Burnt Store Marina.

Traffic and Planned Developments
The team will be collecting traffic data at intersections although this effort has been delayed due to the current health crisis. Ehsan asked if there was available traffic and/or crash data from the County. Stephen indicated that he would be able to provide some. Chip recently provided information on the one planned development within unincorporated Lee County and gave assistance for obtaining documentation for the others from the City of Cape Coral.

Structures
The southbound bridge over gator Slough Canal will be evaluated for improvement including replacement. The northbound bridge is new as part of the widening project to the south. Several culverts are located along the corridor. There is one bridge culvert at Yucca Pens Slough that the team will evaluate for extending. Vince indicated he can connect the team to a staff member to obtain additional structures data (plans, inspection reports).

Utilities
There are several utilities along the corridor, and most noteworthy is a CenturyLink building on the east side that the team will avoid. Impacts and relocation of this facility would be extremely costly ($10M plus). Vince explained that the Myriad Luxury Motorcoach Resort was required to bring utilities down from Charlotte County.

Roadway
Jay briefly described the design challenges including raising the profile grade change to meet base clearance requirements and address roadway flooding, and the identification and avoidance of utilities. David M. pointed out that the County recently scratch-coated this segment of Burnt Store Rd. to mitigate the rutting in advance of the rainy season. Regarding the Controlled Access Management Resolution, Stephen explained that the County had not yet brought the resolution to the Board in anticipation of this project development. The FDOT team will discuss access management with him in a separate meeting.

Typical Sections and Alignment
The FDOT team presented two typical sections currently under consideration, a 4-lane suburban and a 4-lane expandable to 6-lane suburban. These typical sections include 12’ travel lanes, a 6’ sidewalk on the west side and a 10’ trail on the east side and allow for the by-pass ditch previously discussed. The design speed for both is 60 mph. The LCDOT representatives discussed the potential of designing 11’ lanes with a 44’ raised median, which could be widened to the inside in the future for an ultimate 6-lane typical section. The roadway team will develop some additional typical sections and contact LCDOT for further discussion. Kristin explained that once we have a vetted typical section, we can evaluate the alignment along the existing 200’ of R/W and avoid and minimize impacts to adjacent parcels including the conservation properties.

Schedule and Public Involvement
The team provided a snapshot of the project schedule, with approximate dates for public meetings. Build alternatives under consideration will be presented at the Alternatives Public Meeting (tentatively scheduled for February 2021) and the Preferred Alternative will be presented at the Public Hearing (tentatively scheduled for January 2022). Vince requested that the FDOT team include Cella-Molnar

(public involvement firm) on project newsletters since they are working on the county projects and can help disseminate information on this study.

Other Discussion and Data Needs

The FDOT enquired about any available geotechnical data since new data collection for this project will be very limited. Anura directed the group to the Lee County Natural Resources website for well data. Scott Summerall may also be able to provide additional information. Chip suggested that we review Development Orders for site plans along the corridor and can contact Jessica Sulzer in Community Development.

Follow-Up Comments

Conservation 20/20 representatives pointed-out that hydrological restoration work has been completed on several of the adjacent conservation lands. Some portions of the county properties have management agreements with FDEP or are planned to have co-management with the FWC. It will be important to ensure that the roadway project does not adversely impact the ongoing restoration and maintenance activities or the native plant and wildlife populations onsite. Additionally, one aspect sometimes overlooked when evaluating potential impacts to adjacent conservation properties is access gates. Staff provided a map depicting locations of existing gates so that this issue can be considered.

The following action items were developed:

| Item | Description and Action | Responsible |
|---|---|---|
| Revise typical sections | Lee County would like to review alternatives to reduce lane and median width | Scalar to develop and FDOT team to provide to Lee County for further reviews |
| Traffic data | Lee County can provide | Scalar to contact Stephen to obtain |
| Controlled access management resolution | Lee County ready to discuss with FDOT team regarding our comments | FDOT team to contact Stephen for a separate meeting |
| Planned developments | Contact the City of Cape Coral for information on developments | Scalar |
| Structures information | Lee County to provide any additional available information | Scalar to email Vince |
| Geotechnical and hydrological data | Review documents and websites listed as potential sources of information | Scalar and CONSOR |
| Project mailing list | Add Cella-Molnar | Scalar |

# BURNT STORE ROAD PD&E STUDY
**FPID No. 436928-1-22-01**

## PROJECT KICKOFF MEETING WITH LEE COUNTY
**Tuesday, March 31, 2020**
**GoTo Meeting**
## SIGN-IN SHEET

| NAME | COMPANY/ENTITY AND DEPT/ROLE | E-MAIL ADDRESS | PHONE # |
|---|---|---|---|
| Steven Andrews | FDOT, Project Manager | Steven.Andrews@dot.state.fl.us | 863-519-2270 |
| Vivianne Cross | FDOT, Environmental PM | Vivianne.Cross@dot.state.fl.us | 863-519-2805 |
| Lauren Peters | FDOT, Environmental PM | Lauren.Peters@dot.state.fl.us | 863-519-2515 |
| David Murphy | LCDOT, Deputy Director, Public Works, Transportation | dmurphy@leegov.com | 239-533-8578 |
| Stephen Jansen | LCDOT, Transportation Engineering Manager, Traffic | jansensj@leegov.com | 239-533-8503 |
| Tom Marquardt | Lee County, Manager Public Works Programs- Transportation | tmarquardt@leegov.com | 239-533-8530 |
| Vincent Miller | LCDOT, Senior Engineer, Transportation | vmiller@leegov.com | 239-533-8577 |
| Anura Karuna-Muni | Lee County, Manager, Public Works Operations, Natural Resources | Akaruna-muni@leegov.com | 239-533-8131 |
| Karyn Allman | Lee County – Supervisor, Land Stewardship, Parks & Rec (Conservation 20/20) | kallman@leegov.com | 239-533-5313 |
| Tyler Marzella | Lee County - Land Stewardship Coordinator (Conservation 20/20) | tmarzella@leegov.com | 239-533-7275 |
| Alvin “Chip” Block | Lee County - Planner, Principal, Community Development | ablock@leegov.com | 239-533-8371 |

# BURNT STORE ROAD PD&E STUDY
**FPID No. 436928-1-22-01**

## PROJECT KICKOFF MEETING WITH LEE COUNTY
**Tuesday, March 31, 2020**
**GoTo Meeting**
## SIGN-IN SHEET

| NAME | COMPANY/ENTITY AND DEPT/ROLE | E-MAIL ADDRESS | PHONE # |
|---|---|---|---|
| Kristin Caruso | Scalar Consulting Group (SCG); Consultant PM | kcaruso@scalarinc.net | 813-988-1199 x209 |
| Aniruddha Gotmare | SCG, Deputy PM | agotmare@scalarinc.net | 561-429-5065 |
| Jay Winter | SCG, Roadway Lead | jwinter@scalarinc.net | 813-988-1199 x201 |
| Ehsan Doustmohammadi | SCG, Traffic Lead | edoustmohammadi@scalarinc.net | 407-440-3512 x202 |
| David Bennett | CONSOR, Drainage Lead | dbennett@consoreng.com | 407-378-3903 |
| Francina Gil | CONSOR, Drainage | fgil@consoreng.com | 407-957-1660 x2241 |
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# Meeting Minutes

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|---|---|---|---|
| **Project:** | FPID No. 436928-1-22-01<br>Burnt Store Road PD&E Study from Van Buren Parkway to Charlotte CL | | |
| **Subject:** | Progress Meeting #1 | | |
| **Date and time:** | June 2, 2020 9:00 AM | | |
| **Meeting place:** | GoTo Meeting | **Minutes by:** | Scalar Consulting Group Inc. |
| **Present:** | See sign-in Sheet | | |
| **Notes** | | | |

Roadway

The team held a design meeting with Lee County and finalized the typical section and design criteria based on Lee County coordination. One remaining item we are seeking to confirm with Central Office is Florida Greenbook criteria for median width in a high speed curbed roadway typical section, as the current design criteria does not address it. The roadway profile may require a 3-foot elevation increase due to seasonal high ground water data. Our horizontal alignment alternatives will incorporate this need. The alignments are in development.

Traffic

The Traffic Analysis Methodology memo has been approved. Development of the traffic operational analysis and PTAR has been delayed because of the pandemic affecting traffic data collection. D1 advised our team not to proceed with the data collection planned for late March. Traffic data collection is now tentatively anticipated in August/September pending the pandemic. The 5-year crash data (2015-2019) was obtained from Lee County and D1 approved use of this data in lieu of Signal Four Analytics data. The Lee County Access Management Resolution will be used for future traffic operational analysis.

Drainage

We discussed that the next Charlotte Harbor Flatwoods Initiative (CHFI) meeting is June 10th. Kristin and David will call-in (Kristin to forward invite to Steven and Vivianne) and FDOT had been approached by the group to present. We won't make a true presentation but will give an overview of the project. The land managers of the adjacent conservation areas are members of the group and are anticipated to be in attendance.

The group discussed the site challenges related to the off-site flows and the County request to consider upstream treatment/compensatory treatment to avoid traditional stormwater ponds within the roadway R/W. Preliminarily, there do not appear to be impaired basins which would provide this opportunity type but coordination with the CHFI group may provide additional information to consider.

Our team will get in touch with Nicole Monies when we are ready to schedule a SFWMD pre-app meeting. Nicole manages a monthly agenda with SFWMD to discuss FDOT projects.

Gwen mentioned that she received an email from Brian Barnett, requesting to add language to his previously submitted EST comments. The additional information was provided by Mike Kemmerer, land manager of Babcock Webb. It requests that the under-road hydrological flows be sufficient to handle historic flows to Charlotte Harbor. The group discussed that our participation in the June 10th meeting will be timely and allow us to get a better understanding of their long-term management goals and how that may interface with this project. Gwen will respond to Brian's email.

Natural Environment
Kristin asked to schedule a species strategy meeting, as is being done for some other current projects. Vivianne will set-up a meeting and Kristin will provide our team's current determination of effects for each species.

Public Involvement
The first public newsletter, which is to serve in lieu of a public kickoff meeting, was mailed in early May. Comments received thus far have all been positive. Some comments have requested widening to the east, adding a traffic light at Burnt Store Road marina, and evaluating particular intersections for safety of left turns.

Planning Consistency
Kristin asked how best to coordinate with Charlotte County/Charlotte County-Punta Gorda MPO to get the project within the County boundary added to their planning documents. Steven believes Michael Tisch is the FDOT Community Liaison for Charlotte County and he will look into this.

The following action items were developed:

| Item | Description and Action | Responsible |
|---|---|---|
| Charlotte Harbor Flatwoods Initiative | call-in to 6/10/20 meeting and provide project overview; forward invite to Steven and Vivianne | Kristin, David |
| median width | Confirm greenbook median width for ultimate condition with Central Office | Jay |
| Brian Barnett email | Respond re: hydrological concerns | Gwen |
| SFWMD pre-app | Coordinate with Nicole Monies to add project to agenda at an appropriate time | David |
| Species strategy meeting | Prepare preliminary DOE table and schedule meeting | Kristin and Vivianne |
| Planning consistency | Coordinate with Charlotte County-Punta Gorda MPO to add project to planning docs | Steven |

# BURNT STORE ROAD PD&E STUDY
**FPID No. 436928-1-22-01**

## PROGRESS MEETING #1
**Tuesday, June 2, 2020**
**GoTo Meeting**
## SIGN-IN SHEET

| NAME | COMPANY | POSITION | E-MAIL ADDRESS |
|---|---|---|---|
| Steven Andrews | FDOT | Project Manager | Steven.Andrews@dot.state.fl.us |
| Vivianne Cross | FDOT | Environmental Project Manager | Vivianne.Cross@dot.state.fl.us |
| Gwen Pipkin | FDOT | Environmental Manager | Gwen.Pipkin@dot.state.fl.us |
| Karina Della Sera | FDOT | Drainage Design | Karina.DellaSera@dot.state.fl.us |
| Kristin Caruso | Scalar Consulting Group | Consultant Project Manager | kcaruso@scalarinc.net |
| Aniruddha Gotmare | Scalar Consulting Group | Consultant Deputy Project Manager | agotmare@scalarinc.net |
| Jay Winter | Scalar Consulting Group | Consultant Roadway Lead | jwinter@scalarinc.net |
| Ehsan Doustmohammadi | Scalar Consulting Group | Consultant Traffic Lead | edoustmohammadi@scalarinc.net |
| John Scarlatos | Scalar Consulting Group | Consultant PI Lead | jscarlatos@scalarinc.net |
| David Bennett | CONSOR | Consultant Drainage Lead | dbennett@consoreng.com |
| Francina Gil | CONSOR | Consultant Drainage | fgil@consoreng.com |

# Meeting Minutes

| | |
|---|---|
| **Project:** | FPID No. 436928-1-22-01<br>Burnt Store Road PD&E Study from Van Buren Parkway to Charlotte CL |
| **Subject:** | North Branch Yucca Pen Creek Hydrology and Burnt Store Widening |
| **Date and time:** | July 24, 2020 9:00 AM |
| **Meeting place:** | TEAMS meeting **Minutes by:** Scalar Consulting Group Inc. |
| **Present:** | Corey Anderson, FWC Aquatic Habitat Section; Paul "Jay" Garner, FDEP, Charlotte Harbor Preserve State Park; Steven Andrews, FDOT; Gwen Pipkin, FDOT; Kristin Caruso, Scalar; David Bennett, Francina Gil, and Christian Cardoza- CONSOR |

**Notes**

Corey, who requested the meeting with the FDOT, led the discussion by introducing the overarching hydrological concern in the area which is timing and volume of hydrologic flows to the west from Babcock Webb WMA (across I-75, Burnt Store Rd., residential developments, and Old Burnt Store Rd.). Corey explained that the north branch of Yucca Pens Creek was severed several decades ago by road and housing construction. He is looking into the feasibility of restoring the north branch flows. Currently the tidal influence from the bay reaches Burnt Store Marina.

Ideally, he is interested in re-establishing flow under Burnt Store Rd. at the location of the historical north branch with a new culvert or low water crossing. This route, however, interfaces with Charlee Rd. and residential parcels (with constructed homes) on the west side of Burnt Store Rd., before continuing eastward in the Charlotte Harbor Preserve State Park property. David pointed out that towards the outfall to the bay, the stream runs closely adjacent to additional home sites. The group discussed the importance of ensuring no deleterious off-site drainage effects (flooding) to adjacent and downstream properties.

Corey noted that there is a large pocket wetland on the east side of Burnt Store Rd. that currently holds water flowing from the branch and it likely prevents road overtopping to a degree. There is potential that with the widening of Burnt Store Rd. and potential impacts to this wetland, the water storage effect could be compromised. The group discussed another concept of diverting the flows from the north branch southward, to Yucca Pens Creek along the east side of Burnt Store Rd., and then flowing through the existing bridge culvert. While this may not be an ideal option from a hydrological restoration perspective, it could ensure that flows cross under Burnt Store Rd. Corey explained that the existing bridge culvert overtops at times, therefore he believes it needs to be re-sized and if additional water was routed here from the north branch, a downstream flood study would be needed.

Gwen asked for Corey's contact information to provide to FDOT drainage staff (Karina Della Sera was invited to the meeting but unable to attend).

Corey Anderson
Aquatic Habitat Conservation and Restoration Biologist
Florida Fish and Wildlife Conservation Commission
585 Prineville Street, Port Charlotte, FL 33954
Mobile: 863-581-6898
Corey.Anderson@MyFWC.com

The following action items were developed:

| Item | Description and Action Deadline | Responsible |
|---|---|---|
| Presentation | Corey to send a copy of his presentation slides | Corey; complete |
| FDOT drainage staff coordination | Apprise FDOT drainage staff of discussion for input | David/Kristin/Steven |

*Follow-up email from Corey providing the presentation on 7/24/20:*
*Thank you for allowing me to share FWC and DEP's concerns and potential hydrological restoration project ideas related to Yucca Pen Creek and Burnt Store Road drainage. We appreciate your interest in mitigating risk to property from flooding and restoring natural flow ways around Burnt Store Road and Charlotte Harbor Preserve State Park. I am attaching the slides from today's discussion about surface water impacts from road widening, potential drainage options, and conceptual restoration of flows in North Branch Yucca Pen Creek. As I mentioned, some ecological lift (or possible mitigation) could be gained by improving drainage in the lower section of North Branch Yucca Pen Creek where trails have blocked flow to Charlotte Harbor since the 1970's. I appreciate the ability to bring these issues to your attention during the planning phase of the Burnt Store Road widening project and hope that there will be opportunities to satisfy all engineering, drainage, and natural systems objectives. Please feel free to reach out to me or the State Park partners to discuss any aspect further.*

# Meeting Minutes

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|---|---|
| **Project:** | FPID No. 436928-1-22-01<br>Burnt Store Road PD&E Study from Van Buren Parkway to Charlotte CL |
| **Subject:** | Meeting with South Florida Water Management District (SFWMD) |
| **Date and time:** | August 27, 2020 at 10:00 AM |
| **Meeting place:** | Virtual (Teams) **Minutes by:** Scalar Consulting Group Inc. |
| **Present:** | FDOT: Nicole Monies, Steven Andrews, Karina Della Sera, Sergio Figueroa<br>SFWMD: Melissa Roberts, Angelica Hoffert, Laura Layman<br>Scalar: Kristin Caruso, Katie Castor, Rudy Gotmare<br>Consor: David Bennett, Francina Gil |

**Notes**

**Introduction**: Kristin Caruso stated that the PD&E Study phase of this county road project is being conducted by FDOT and is following the NEPA process, but the design and construction phases will be conducted by Lee County. This PD&E Study will provide an evaluation of four alignment alternatives for 2-to-4 lane widening of Burnt Store Road from Van Buren Parkway to the Charlotte County Line. The project will tie-in to the recently constructed 4-lane typical section approximately 0.25-miles north of the county line. The alternatives include a left alignment, center alignment, right alignment, and best fit alignment. The widening would require a minimum of 30 feet of right-of-way to be acquired in various areas depending on the alternative. All alternatives propose replacement of the existing southbound bridge over Gator Slough Canal; the northbound bridge was recently replaced as part of the widening project to the south.

**Drainage**: David Bennett gave a brief overview of the hydrological conditions, explaining that there are some hydrological studies in the area to restore historic flows from east to west. There are nine water crossings along the project.

Attenuation discussion-

As part of the wet detention ponds he is designing to provide treatment, he asked if we need to also provide attenuation given proximity to the bay. The SFWMD requires attenuation for the 25-yr, 3-day storm if the profile of the road is raised.

Treatment discussion-

David asked if we would be required to treat all 4 lanes or the new impervious (2 lanes) even if the road will be raised, since we do not expect to be able to salvage any existing pavement. SFWMD responded that they would always encourage to treat as much as possible, but they will accept treatment for the new impervious (additional 2 lanes). Since the project eventually outfalls to an OFW/AP, we will need to provide an additional 50% of water quality treatment and nutrient loading calculations for nitrogen and phosphorus.

Floodplain discussion-

David asked if we would need to provide floodplain compensation in tidal floodplain areas. The project lies within flood zone AE (elevation 6 ft). For areas within the 100-year floodplain, we will need to provide compensation. SFWMD responded that they will accept cup-for-cup compensation within the proposed ponds.

Alternative drainage concepts-

David explained that although we will be providing a traditional off-site pond evaluation, Lee County requested that we also evaluate the potential for upstream compensatory treatment in lieu of on-site treatment. Lee County identified Charlotte Flatwoods Environmental Park (within Charlotte County) as a

potential location for upstream water quality improvements. Since the project's receiving waters are part of an OFW, SFWMD noted that they would have to see a proposed concept before they would be able to provide feedback as to whether that idea could be permittable. Given that the upstream land is predominantly conservation lands, and undeveloped, SFWMD preliminarily stated that it didn't appear there was sufficient "dirty water" to treat. Laura Layman suggested the team speak with Kim Fikoski (SFWMD, Charlotte Harbor Flatwoods Initiative member) regarding potential opportunities. Katie Castor mentioned that there were some potential upcoming developments such as Hudson Creek where we could partner with the developer for joint-use ponds. SFWMD agreed this concept is allowed but indicated that they believe the Hudson Creek development has slowed and may be many years out.

**Wetlands**: Katie Castor noted that historical disturbance appears to have re-routed many of the northeast-to-southwest flow-ways, causing several adjacent wetland areas to have become dehydrated. The National Wetlands Inventory (NWI) shows most of the east side of the road as herbaceous and forested wetlands, whereas only a portion of those areas were field-verified as wetlands during March 2020 field reviews. Based on aerial imagery, soil analysis, vegetative cover, and hydric indicators, it appears that only severe storm events (apparently less frequent than annually) re-hydrate many of these areas and simultaneously cause flooding of the roadway. Preliminary wetland impact acreages were calculated for each alternative using both field-verified wetland areas and historically documented wetland areas as shown in the NWI. Impacts range from 2.7 to 5.4 acres using the field-verified wetland areas, whereas the impacts range from 29.7 to 44.1 acres using the NWI wetland areas. Wet-season field reviews will be conducted in September 2020 and field-verified wetland polygons may be revised. SFWMD staff stated that regardless of historical wetland presence, wetland delineation during the design phase should reflect current conditions; therefore if the historic wetlands have been dehydrated and no longer meet wetland criteria as outline in chapter 62-340, F.A.C., these areas should be considered uplands. Kristin commented that our team spoke to some of the adjacent conservation land managers regarding site conditions and there was a general consensus that the area wetlands are experiencing reduced hydrology.

The team discussed that wetland mitigation will likely occur through purchase of mitigation credits. The team discussed Little Pine Island Mitigation Bank since it may be the most appropriate. Kristin asked if a cumulative impact analysis is still required since the bank is technically not in any drainage basins; Laura confirmed this. Laura mentioned that we need to use their proprietary wetland assessment method; Katie had been informed by the bank to use UMAM. We will need to verify this since the bank permit was not based on UMAM.

The following action items were developed:

| Item | Description and Action | Deadline | Responsible |
|---|---|---|---|
| **Compensatory Treatment Concepts** | Coordinate with Lee and Charlotte Counties to determine feasibility of upstream compensatory treatment | | David Bennett and Kristin Caruso |
| **Little Pine Island MB** | Confirm UMAM or proprietary assessment method | | Katie Castor |

SCALAR Consulting Group Inc.

# TELEPHONE CONVERSATION RECORD

Date: 8/27/2020 Time: 9:20 ☒ am ☐ pm

| CALL FROM: | | | CALL TO: | |
|---|---|---|---|---|
| Katie Castor, M.S. | | | Jason Thompson | |
| ORGANIZATION: | | | ORGANIZATION: | |
| Scalar Consulting Group Inc. | | | Charlotte County | |
| DIV/DEPT: | LOCATION: | TELEPHONE: | DIV/DEPT: | TELEPHONE: |
| Environmental | Tampa | 301-938-9668 | Flatwoods Environmental Park | (941) 613-3220 |

SUMMARY – HIGHLIGHTS – KEY POINTS – AGREEMENTS – COMMITMENTS:

**Burnt Store Road**
**FPID No. 436928-1-22-01**
**SCG Project No. SP19D1000**
**Lee County**

During a previous project coordination meeting, Lee County drainage staff had suggested the potential for an upstream compensatory treatment facility to be placed within the Charlotte County Flatwoods Environmental Park parcel. The purpose would be to reduce or eliminate the need for onsite stormwater treatment at Burnt Store Road. Upon speaking with Jason Thompson, the land manager of the Charlotte County property, he is not aware of any water quality issues on the property that could be corrected through compensatory treatment. He does not believe the adjacent landfills are contributing any contamination. When asked how he would feel about water quantity/flow improvements to the parcel, he said he would be open to ideas that would further the cause of the Charlotte Harbor Flatwoods Initiative (improving northeast-to-southwest sheet flow).

GENERAL SUBJECT OF DISCUSSION:

Burnt Store Road Drainage

ADDITIONAL DISTRIBUTION:

Kristin Caruso, M.S. (SCG)

*Distributed via e-mail

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SCALAR Consulting Group Inc.

# TELEPHONE CONVERSATION RECORD

Date: 8/28/2020 Time: 11:29 ☒ am ☐ pm

| CALL FROM: | | | CALL TO: | |
|---|---|---|---|---|
| Katie Castor, M.S. | | | Mike Kemmerer | |
| ORGANIZATION: | | | ORGANIZATION: | |
| Scalar Consulting Group Inc. | | | Florida Fish and Wildlife Conservation Commission | |
| DIV/DEPT: | LOCATION: | TELEPHONE: | DIV/DEPT: | TELEPHONE: |
| Environmental | Tampa | 301-938-9668 | Babcock Webb WMA | 941-833-2555 |

SUMMARY – HIGHLIGHTS – KEY POINTS – AGREEMENTS – COMMITMENTS:

**Burnt Store Road**
**FPID No. 436928-1-22-01**
**SCG Project No. SP19D1000**
**Lee County**

This discussion relates to the potential for an upstream compensatory treatment site (in lieu of on-site treatment) within (or upstream of) Babcock Webb WMA. The purpose of the conversation was to consider potential effectiveness or need for treatment opportunities just downstream of the Charlotte County landfill or the privately-owned disposal facility, both located north of the county line (adjacent to US 41). Upon asking Mike if he was aware of any water quality issues within Babcock-Webb coming from those facilities, he said that he is not aware of any water quality issues east of Burnt Store road (but FWC does not sample for contaminants either). The Charlotte Harbor Flatwoods Initiative hydrologic restoration project is not looking at contaminants either, only flow. He recommended we keep in touch with Roger Copp regarding our project.

FOLLOW-UP NOTES:

In order to determine whether any contamination is occurring downstream of the landfill and disposal facility parcels, Katie Castor conducted follow-up research using FDEP solid waste permitting and monitoring layers in Map Direct. She found that the landfills have exceedances in most of their groundwater monitoring reports, but FDEP doesn't seem to be alarmed by any of it. The following information was found:

Charlotte County Landfill

The facility was inspected (including a review of all monitoring reports) in December 2019 and determined to be in compliance. They have a deepwell injection permit, so that's where they discharge. The most recent groundwater monitoring report (January 2020) shows exceedance of thresholds for ammonia, chloride, iron, sodium, and TDS (all were relatively minor except iron was 9,640 – threshold is 300). They're in the process of putting together their second biannual monitoring report. From what I understand, exceedance of thresholds is kind of expected and is not considered a big deal unless it's alarming; they typically just need to keep monitoring.

Landfill parcel to the east – Southwest Land Developers Inc

Facility is closed, final inspection was 2018; no further monitoring required.

Landfill parcel to the southeast - SLD-Recycling and Disposal Facility

This Construction and Demolition Debris (C&D) disposal facility does not have a deepwell injection permit; leachate is treated and retained onsite. Groundwater monitoring in May exceeded thresholds for ammonia, arsenic, iron, sulfate, and TDS. Exceedances were not major except for iron (limit is 300, result was 9,300). The facility is in compliance and there doesn't appear to be any major concern regarding the groundwater exceedances. They still have one more permitted cell that has not yet been constructed; it will go to the west of the existing cells (where you see the dirt road going).

ADDITIONAL DISTRIBUTION:

Kristin Caruso, M.S. (SCG)

*Distributed via e-mail

*L:\00_Scalar Forms\Telephone Log (Individual & Agency).docx*

# Meeting Minutes

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|---|---|---|---|
| **Project:** | FPID No. 436928-1-22-01<br>Burnt Store Road PD&E Study from Van Buren Parkway to Charlotte CL | | |
| **Subject:** | Progress Meeting #3 | | |
| **Date and time:** | October 6, 2020 9:15 AM | | |
| **Meeting place:** | TEAMS Meeting | **Minutes by:** | Scalar Consulting Group Inc. |
| **Present:** | See sign-in Sheet | | |
| **Notes** | | | |

Roadway

Completed items: existing R/W determination, LiDAR and geotech data built-in to model and existing and proposed roadway profiles developed, horizontal and vertical alignments developed including drainage needs. We are tying-in to the existing bridge alignments over Gator Slough Canal. In progress: tie-in to 4-lane typical (proceeding but also awaiting decision between MPOs/FDOT on issue of continuing into Charlotte Co) and refinements to the Best Fit/Optimized alignment. This includes design modifications in certain areas to avoid or minimize R/W impacts where feasible- Burnt Store Marina, fire station, Century Link facility, parcels NW of Gator Slough Canal bridge, and several state lands are the areas of concern.

Traffic

Development of the traffic operational analysis and PTAR has been delayed because of the pandemic affecting traffic data collection. As per D1 guidance, we believe we can continue to hold off on traffic analysis until January 2021. In January, we will coordinate with D1 but at this time based on the guidance believe it may be best to proceed with Option 3 from the decision tree.

Utilities

Design team coordinated with Century Link on the facility north of Lee Co line. Impacts to the facility are fully reimbursable. We will look at design options that will involve some R/W take but not require relocation.

Drainage

The group discussed the FWC request for considering a new crossing under the road for Yucca Pens Creek- north branch. Kristin addressed the issue of potential risk to the project if we are making drainage recommendations to accommodate this potential but not certain future project. It may be better to hold off and see if this project moves forward and provides hydrological data to our team, for us to include in the study documents. Karina commented that we should perform the hydrologic calculations and recommend a cross drain size that could be constructed during the design phase by “others” to accommodate the bypassing of the offsite flow.

The team held a pre-application meeting with SFWMD. Floodplain compensation will be required for areas within the 100-year floodplain. Karina advised that the team should plan for a separate pond for floodplain compensation. Options for upstream compensatory treatment seem limited based on SFWMD regulatory staff comments that we would need to find and treat upstream “dirty water”- upstream areas are mostly conservation lands and fairly pristine. The team has investigated some upstream lands outside this area (e.g. landfills by US 41) and coordinated with land managers regarding water quality but there are no clear opportunities. Since Lee County has made it clear that they are interested in fully exploring this concept, we will touch base with the Charlotte Harbor Flatwoods Initiative group again for other

potential concepts that could be more fully explored by Lee Co as they proceed towards design and construction. For attenuation, David indicated that we may have some out of the box options such as using an existing wetland area within and adjacent to the roadway near Burnt Store Marina.

Pond siting is now underway.

Natural Environment

Section 4(f) and ARC lands- we do anticipate impacts to some state lands and there is a new chapter in the PD&E manual with process. This requires analysis of identifying lands for acquisition and donation to offset impacts on a 2:1 ratio. If not land purchase is not feasible, and uplands easement is required. Gwen was not aware of an example that could be used for this project in terms of documentation.

Our team completed a wet season field review for wetlands which was important since the area's hydrology is flashy. Our goal is to adequately estimate wetland involvement based on field conditions since the data sources are so different. We are holding off on the Florida bonneted bat acoustic surveys until a future project phase is funded.

Planning Consistency

Kristin updated the group on the pending issue with extending the project into Charlotte Co to tie-in to the existing 4-lane typical section. The study team held a coordination meeting with Lee and Charlotte MPOs regarding this topic. This would federalize the project for both counties and may not be desirable by Charlotte County. OJ plans to coordinate with Jennifer Marshall and OEM to facilitate a decision.

Public Involvement

District 1 is now proceeding with virtual public meetings. Our workshop is currently planned for February 2021. The group discussed that the issue with the segment within Charlotte Co must be resolved before the workshop. We would either show the Charlotte Co segment as "work by others", and no roadway design in that area, or, if it is determined we continue the PD&E into Charlotte County, we will show the tie-in to the 4-lane typical section.

The following action items were developed:

| Item | Description and Action | Responsible |
|---|---|---|
| Charlotte and Lee MPO coordination | Determine if this study will be shown to extend to 4-lane typical section in Charlotte Co or not | OJ |
| Lee MPO coordination | Determine if any future phases are programmed for future phases | OJ to request Mike Tisch to email MPO |
| | | |
| | | |
| | | |

# Meeting Minutes

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|---|---|---|---|
| **Project:** | FPID No. 436928-1-22-01<br>Burnt Store Road PD&E Study from Van Buren Parkway to Charlotte CL | | |
| **Subject:** | Design Criteria and Access Management Meeting with Lee County | | |
| **Date and time:** | November 20, 2020 11:00 AM | | |
| **Meeting place:** | GoTo Meeting | **Minutes by:** | Scalar Consulting Group Inc. |
| **Present:** | See attached Sign-In Sheet | | |

**Notes**

This meeting was held to update Lee County that with more evaluation of corridor drainage needs, the team determined that the west side existing ditch (present along approximately 2/3 of the corridor) will need to be maintained in the proposed typical section. This adds additional R/W need (see attached Typical Section #1) that made the team wish to take a step back and re-examine typical section alternatives.

The team developed 4 typical section options, these are attached to the minutes. Typical Section #4, which uses the median for conveyance, appears to be the preferred option based on drainage design, R/W impacts, and environmental impacts. The group discussed details of this option. Pros include limited R/W take (comparatively) and associated limited impact to adjacent conservation lands in particular the state lands, and ideal drainage design that exceeds treatment requirements. The main con is that for future widening to 6-lanes, the open median drainage design will need to be closed and a trunk line will need to be constructed. The team included a cost estimate for this in the comparison table (attached).

In answering Lee County questions, David B. explained that we will calculate spread for the final 6-lane construction. During the SFWMD pre-application meeting, SFWMD stated that we can treat just the new lanes. With this typical section option, we would be taking all water to the ponds and could likely treat all 4 lanes but would only treat the new lanes. The average pipe size would be 24-32 inches. Jay explained that the elevation change from the existing to the proposed roadway will be 2 to 3 feet. David M. asked about the inverted crown design and if we were familiar with any. David B. indicated that SR 520 in Orange County is an example. Kristin explained that there are fairly stringent compensation measures for taking R/W from state owned lands, and this is regardless of whether it is a designated park or conservation land.

Typical Section #2 was ranked as the next best option considering R/W, drainage and environmental issues. This one merges the 2 ditches on the left side. The left side of the roadway wouldn't be treated in this design, which is acceptable as per the SFWMD pre-app meeting.

Vince asked if we are tidally influenced, why doesn't that decrease our treatment and/or attenuation requirements. David B. explained that the SFWMD said they will require attenuation for the 25-yr, 3-day storm. He does agree with this assessment, he doesn't see this corridor as a non-attenuation situation. However he said that this will not increase the pond size by much, he believes the treatment volume will cover the attenuation volume. Again, the drainage design can treat a percentage of the water associated with the roadway improvements and the rest will flow through the corridor. Vince also asked about Typical Section #3, and why we didn't give this one more consideration. From a drainage perspective, this one does not adequately address the hydrological issues along the corridor. Also while David B. did contact

the SFWMD for a statement on whether comingling would be allowed, they have not responded. He is fairly confident that they will not allow/permit comingling for this area.

A question was asked about the bridge over Gator Slough Canal. The bridge would be sloped to the outside, and then there would be a rotation to slope towards the inside north of the canal.

The following action items were developed:

| Item | Description and Action | Responsible |
|---|---|---|
| Inverted crown highway examples | Lee County requested some examples of this design | Scalar |
| comingling | Response from SFWMD on comingling being permittable or not on this corridor | CONSOR |

# BURNT STORE ROAD PD&E STUDY
**FPID No. 436928-1-22-01**

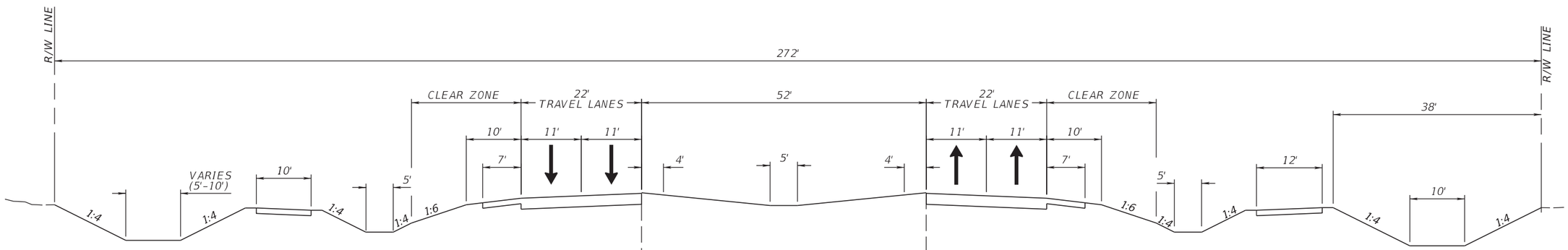
## TYPICAL SECTION MEETING WITH LEE COUNTY
**Friday, November 20, 2020**
**GoTo Meeting**
## SIGN-IN SHEET

| NAME | COMPANY/ENTITY AND DEPT/ROLE | E-MAIL ADDRESS | PHONE # |
|---|---|---|---|
| Steven Andrews | FDOT, Project Manager | Steven.Andrews@dot.state.fl.us | 863-519-2270 |
| Richard (OJ) Oujevolk | FDOT, District Project Development Manager | Richard.Oujevolk@dot.state.fl.us | 863-519-2293 |
| Gwen Pipkin | FDOT, District Environmental Manager | Gwen.Pipkin@dot.state.fl.us | 863-519-2375 |
| David Murphy | LCDOT, Deputy Director, Public Works, Transportation | dmurphy@leegov.com | 239-533-8578 |
| Stephen Jansen | LCDOT, Transportation Engineering Manager, Traffic | jansensj@leegov.com | 239-533-8503 |
| Tom Marquardt | Lee County, Manager Public Works Programs- Transportation | tmarquardt@leegov.com | 239-533-8530 |
| Vincent Miller | LCDOT, Senior Engineer, Transportation | vmiller@leegov.com | 239-533-8577 |
| Robert Price | LCDOT, Senior Engineer, Transportation | rprice@leegov.com | 239-533-9532 |
| Kristin Caruso | Scalar Consulting Group (SCG); Consultant PM | kcaruso@scalarinc.net | 813-988-1199 x209 |
| Jay Winter | SCG, Roadway Lead | jwinter@scalarinc.net | 813-988-1199 x201 |
| Ignacio de Almagro | SCG, Consultant Engineer | ialmagro@scalarinc.net | 305-205-3745 |
| David Bennett | CONSOR, Drainage Lead | dbennett@consoreng.com | 407-378-3903 |
| Francina Gil | CONSOR, Drainage Engineer | fgil@consoreng.com | 407-957-1660 x2241 |

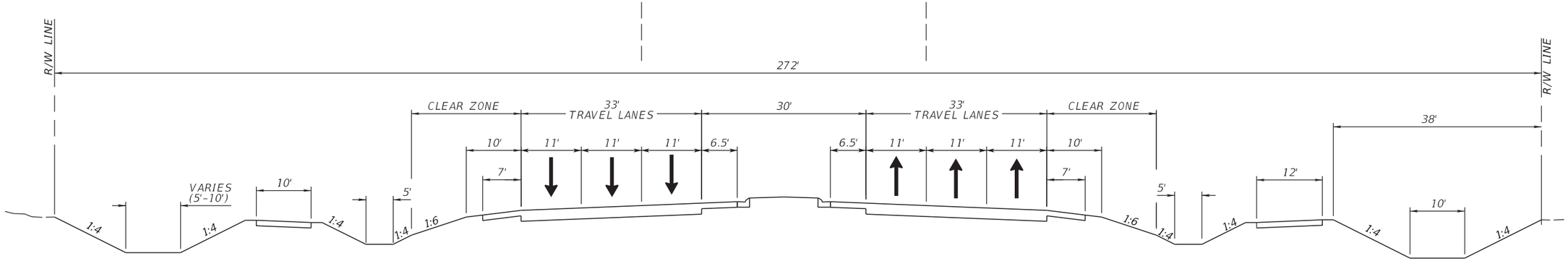
Burnt Store Road PD&E Study Typical Section Matrix
FPID No. 436928-1

| Typical Section Option | R/W impacts from Gator Slough Canal to Kismet Pkwy | R/W impacts from Caloosa Pkwy to fire station | R/W impacts at fire station | R/W impacts at state owned properties (3 locations- South, Middle, North) | R/W impacts at BSR Marina development | R/W impacts at Century Link parcel | Overall R/W impact estimate (acres) | Cost analysis | Pros | Cons | Overall Ranking (based on R/W need and drainage needs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | *all options require some R/W take on west side, some also need R/W on east side* | *east or west or combo R/W take options* | *east or west or combo R/W take options* | *east or west or combo R/W take options* | *east or west or combo R/W take options but east side take impacts North state land area* | *most R/W take on east side to tie-in to roadway to the north* | | | | | |
| #1- Road-side ditches between travel lanes and trail/sidewalk, offsite/bypass ditches on east and west sides where needed (up to 4 ditches total) | 95 ft- most on west side (whole parcel purchases needed) | 110 ft worst case 55 ft best case (whole parcel purchases needed if all on west side) | 80 ft best case<br>105 ft worst case (relocation if all on west side) | S- 75 ft (could avoid- all R/W take on west side)<br>M - 80 ft (could avoid some with R/W take on east side)<br>N - 70 ft | 100 ft worst case<br>40 ft best case (without gravity wall) | 105 ft worst case<br>95 ft best case<br>(relocation) | 45 | 45 acre R/W purchase | ideal drainage design, can meet or exceed treatment requirements, no comingling on either side | most environmentally impactful- Section 4(f), ARC, wetlands, species | 3 |
| #2- One combined ditch on west side between sidewalk and R/W line, road-side ditch and bypass ditch on east side (up to 3 ditches total) | 55 ft- approx. split on on west and east sides | 70 ft worst case<br>30 ft best case | 70 ft worst case<br>45 ft best case (relocation if all on west side) | S - 35 ft (could avoid- all R/W take on west side)<br>M - 45 ft (could avoid most with R/W take on east side)<br>N - 40 ft | 30 ft worst case<br>15 ft best case (without gravity wall) | 70 ft worst case<br>65 ft best case<br>(anticipate no relocation, new drive needed, more R/W take on west side than #3 and #4) | 34 | 34 acre R/W purchase | drainage design meets treatment requirements, no comingling on the east side | moderate impact to 4(f) and ARC lands, wetlands, species; comingling on the west side | 2 |
| #3- Combined ditches on both east and west sides between sidewalk/trail and R/W line (2 ditches total) | 20 ft on west side | 50 ft worst case<br>0 ft best case | 40 ft worst case<br>20 ft best case | S - 0 to 10 ft (could avoid- all R/W take on west side)<br>M - 10 ft (could avoid- all R/W take on east side)<br>N - 10 ft (could avoid with gravity wall) | 45 ft worst case<br>0 ft best case | 45 ft worst case<br>35 ft best case<br>(anticipate no relocation, new drive needed) | 19 | 19 acre R/W purchase | least impactive for environmental issues | undesirable drainage design, comingling on both sides, ponds will receive offsite runoff, may alter the exiting drainage condition | 3 |
| #4- Combined ditches on both east and west sides between sidewalk/trail and R/W line (2 ditches total) using median for drainage | 25 ft on west side | 60 ft worst case<br>0 ft best case | 50 ft worst case<br>30 ft best case | S - 0 to 15 ft (could avoid- all R/W take on west side)<br>M - 20 ft (could avoid- all R/W take on east side)<br>N - 15 ft (possibly could avoid with gravity wall) | 55 ft worst case<br>5 ft best case (without gravity wall) | 55 ft worst case<br>45 ft best case<br>(anticipate no relocation, new drive needed) | 22 | 22 acre R/W purchase plus $6,058,000 future expenditure for 6-laning (trunk line) | ideal drainage design, exceeds treatment requirements, no comingling on either side, existing drainage patterns can be maintained, close second to least impactive environmentally | future cost of median trunk line for conveyance to ponds | 1 |

Typical Section Option #1




TYPICAL SECTION
BURNT STORE ROAD
FOUR-LANE RURAL
EXPANDABLE TO SIX-LANE SUBURBAN




TYPICAL SECTION
BURNT STORE ROAD
SIX-LANE SUBURBAN

| REVISIONS | | | |
|---|---|---|---|
| DATE | DESCRIPTION | DATE | DESCRIPTION |
| | | | |

SCALAR CONSULTING GROUP INC.
13337 N. 56TH STREET
TAMPA, FLORIDA 33617
CERTIFICATE OF AUTHORIZATION NO. 29560

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| CR 765 | LEE | 436928-1-22-01 |

TYPICAL SECTION (1)

SHEET NO.



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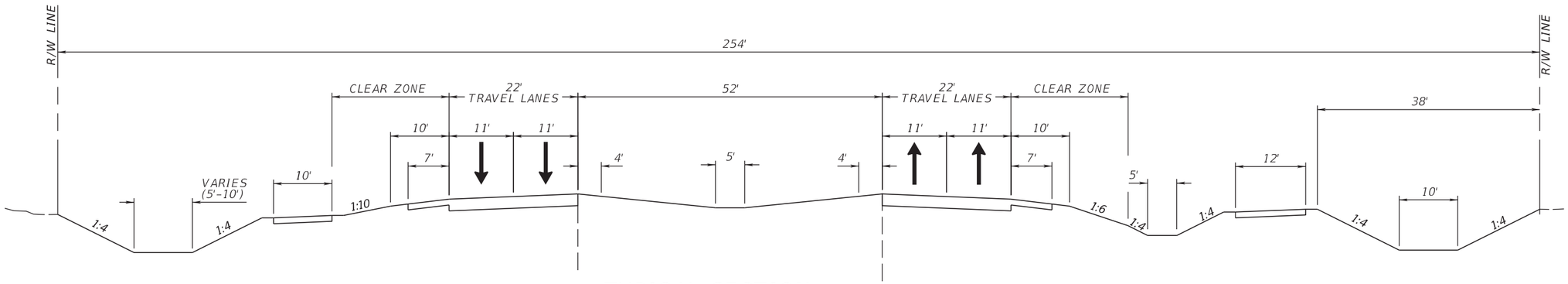
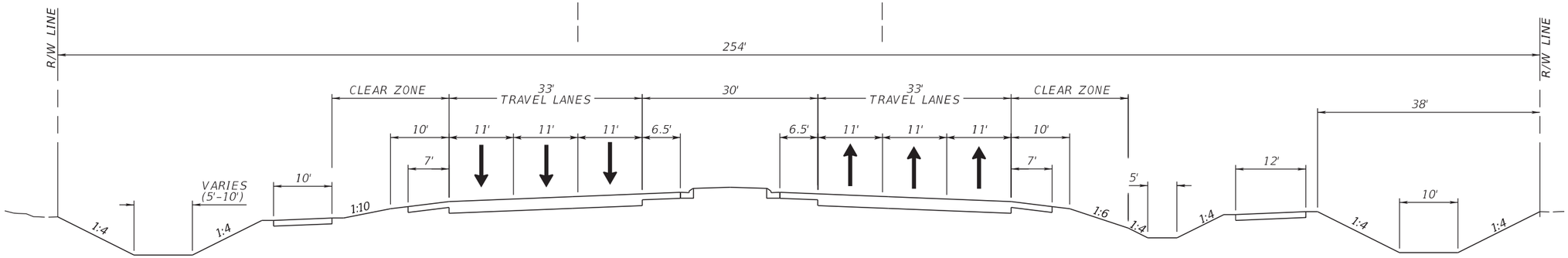
Typical Section Option #2




TYPICAL SECTION
BURNT STORE ROAD
FOUR-LANE RURAL
EXPANDABLE TO SIX-LANE SUBURBAN




TYPICAL SECTION
BURNT STORE ROAD
SIX-LANE SUBURBAN

| REVISIONS | | | | SCALAR CONSULTING GROUP INC.<br>13337 N. 56TH STREET<br>TAMPA, FLORIDA 33617<br>CERTIFICATE OF AUTHORIZATION NO. 29560 | STATE OF FLORIDA<br>DEPARTMENT OF TRANSPORTATION | | | TYPICAL SECTION (2) | SHEET NO. |
|---|---|---|---|---|---|---|---|---|---|
| DATE | DESCRIPTION | DATE | DESCRIPTION | | ROAD NO. | COUNTY | FINANCIAL PROJECT ID | | |
| | | | | | CR 765 | LEE | 436928-1-22-01 | | |



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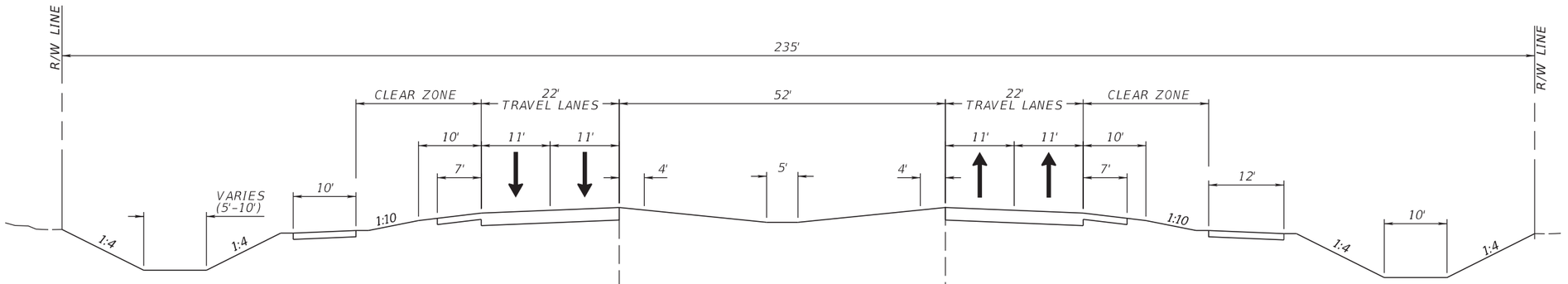
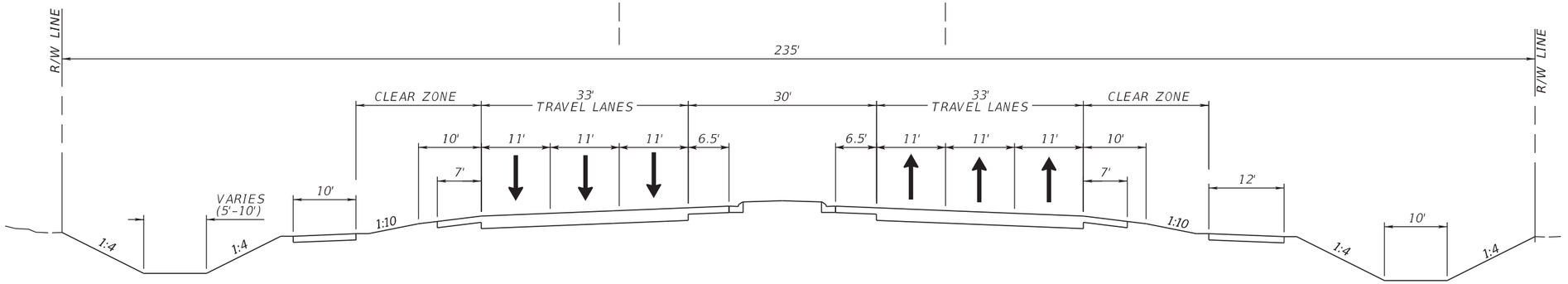
Typical Section Option #3




TYPICAL SECTION
BURNT STORE ROAD
FOUR-LANE RURAL
EXPANDABLE TO SIX-LANE SUBURBAN




TYPICAL SECTION
BURNT STORE ROAD
SIX-LANE SUBURBAN

| REVISIONS | | | |
|---|---|---|---|
| DATE | DESCRIPTION | DATE | DESCRIPTION |
| | | | |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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| CR 765 | LEE | 436928-1-22-01 |

TYPICAL SECTION (3)

SHEET NO.



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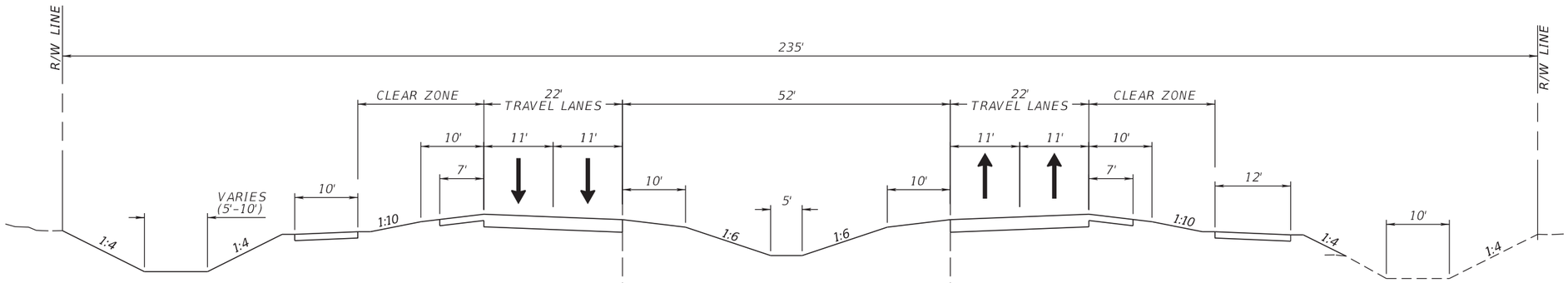
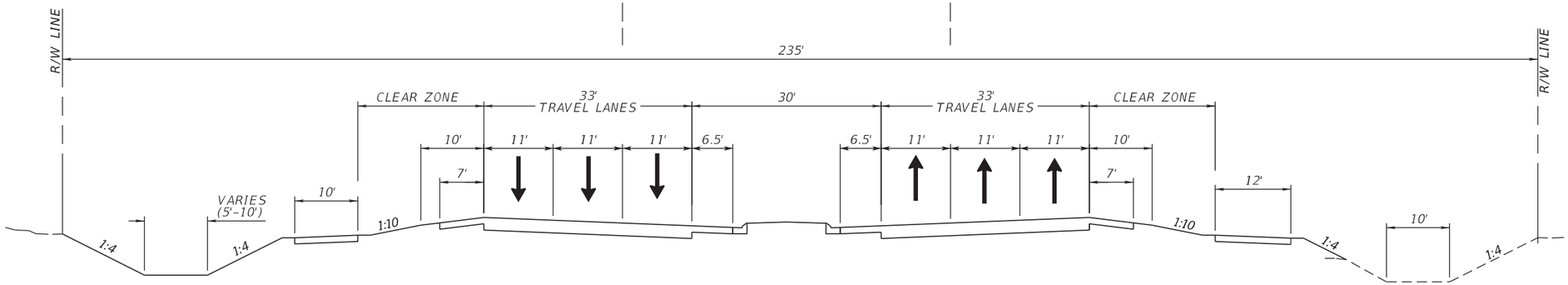
Typical Section Option #4




TYPICAL SECTION
BURNT STORE ROAD
FOUR-LANE RURAL
EXPANDABLE TO SIX-LANE SUBURBAN




TYPICAL SECTION
BURNT STORE ROAD
SIX-LANE SUBURBAN

| REVISIONS | | | |
|---|---|---|---|
| DATE | DESCRIPTION | DATE | DESCRIPTION |
| | | | |

SCALAR CONSULTING GROUP INC.
13337 N. 56TH STREET
TAMPA, FLORIDA 33617
CERTIFICATE OF AUTHORIZATION NO. 29560

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

| ROAD NO. | COUNTY | FINANCIAL PROJECT ID |
|---|---|---|
| CR 765 | LEE | 436928-1-22-01 |

TYPICAL SECTION (4)

SHEET NO.

Appendix E - Meeting Minutes

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# Meeting Minutes

| | |
|---|---|
| **Project:** | FPID No. 436928-1-22-01<br>Burnt Store Road PD&E Study from Van Buren Parkway to Charlotte CL |
| **Subject:** | Meeting with South Florida Water Management District (SFWMD) |
| **Date and time:** | January 27, 2021 at 10:00 AM |
| **Meeting place:** | Virtual (Teams) **Minutes by:** Scalar Consulting Group Inc. |
| **Present:** | FDOT: Nicole Monies, Brent Setchell, Karina Della Sera, Sergio Figueroa, Richard Oujevolk<br>SFWMD: Melissa Roberts, Angelica Hoffert, Laura Layman, Jon Wadas, Jewelene Harris, Kim Fikoski<br>Lee County: Vincent Miller, Nicholas DeFillippo<br>Scalar: Kristin Caruso<br>Consor: David Bennett<br>Water Science Associates- Roger Copp<br>Johnson Engineering- Andy Tilton |

**Notes**

**Introduction**: This meeting was requested to serve as a follow-up to the prior FDOT pre-application meeting held on August 27, 2020 and was discussed generally in a Lee County pre-application meeting with SFWMD on January 13, 2021. The meeting intent was to clarify prior direction/understanding from SFWMD and include additional parties with interest and involvement in the PD&E Study and future design and construction phases.

Comingling

The consultant team explained that since the August 2020 pre-application meeting, we have requested input from SFWMD on whether co-mingling would be allowed. If allowed, depending on the criteria, this would provide more options for the roadway typical section and result in a narrower footprint and less impacts to adjacent properties which include county and state conservation lands. Brent explained that the intent of House Bill 599 was to allow comingling and not result in a dual ditch system, which is what otherwise would be needed for this roadway.

The team discussed that the offsite flows are within undeveloped properties, and much of this property is under county or state conservation. SFWMD indicated that we wouldn't have to evaluate presumptive treatment for the contributing basin(s) given the lack of development. The off-site conservation areas would be included in the nutrient loading calculations and it will be demonstrated that the significant off-site flows don't short circuit the chosen treatment system.

Treatment

Brent explained that since the project does not directly outfall to Outstanding Florida Waters (OFW) (team provided a map of the OFWs), the direct discharge intent of the 50% additional treatment is not met, and additional treatment doesn't seem applicable to this project. He referenced the "Bob Brown memo" and FDOT's "rebuttal" memos which refutes the need to provide the additional treatment as reasonable assurance. The group discussed the concept that the regional benefit of this project would outweigh the need to address any additional treatment. SFWMD requested a copy of the Bob Brown memo and FDOT "rebuttal" memos and concurred that the 50% additional treatment would not be required since the project

does not have a direct discharge to the OFW. Angelica noted that if attenuation is going to be provided, the additional 50% treatment volume requirement may not pose too much of a hardship since the attenuation volume would likely be the controlling factor and not the additional treatment volume.

David reminded the group that in the August 2020 pre-app meeting, SFWMD concurred that with the proposal of complete reconstruction from 2-4 lanes, treatment of only the 2 new lanes (net new impervious area) would be required.

Post pollutant calculations will be required that show a net improvement to all discharges that outfall to impaired water bodies.

Attenuation

Brent explained that at a minimum, the project would need to demonstrate no adverse impacts to the downstream canal systems and no increase in staging. We could do so by providing a pre- versus post-analysis for attenuation.

Alternative drainage concepts

Brent asked Andy to discuss some potential concepts related to utilizing the adjacent conservation parcels for stormwater management. Andy described how a spreader-swale type system could benefit the eastern conservation lands by directing water to these lands that experience hydrological impacts (reduction of water quantity/staging). When this additional water from the roadway is modeled over the large basin, it would be a very tiny net increase. The property managers would be supportive of this concept.

Andy also discussed compensatory treatment on these adjacent conservation lands. Andy suggested a small depth of water could be stored across the upland conservation areas to provide the required treatment and also meet the attenuation requirements. Laura stated that she would want to see as much pre-treatment as possible before the water is directed to the conservation lands. SFWMD indicated that this upland water storage concept would be a viable treatment and attenuation alternative.

Roger spoke about the overall goal to reduce peak flows from these eastern properties (Babcock Webb/Yucca Pens Unit Wildlife Management Unit and Yucca Pens Preserve), specifically in the regions of Yucca Pens Creek and Durden Creek. The wetland systems exhibit hydroperiods shorter than historic. He also discussed how potentially adding a berm on the west side, downstream of these properties could assist with compensating volumetric storage.

Floodplain

Vincent asked why floodplain compensation would apply to this project given its proximity to the gulf. SFWMD explained that they would require compensation for riverine flooding but not tidal storm events.

Summary

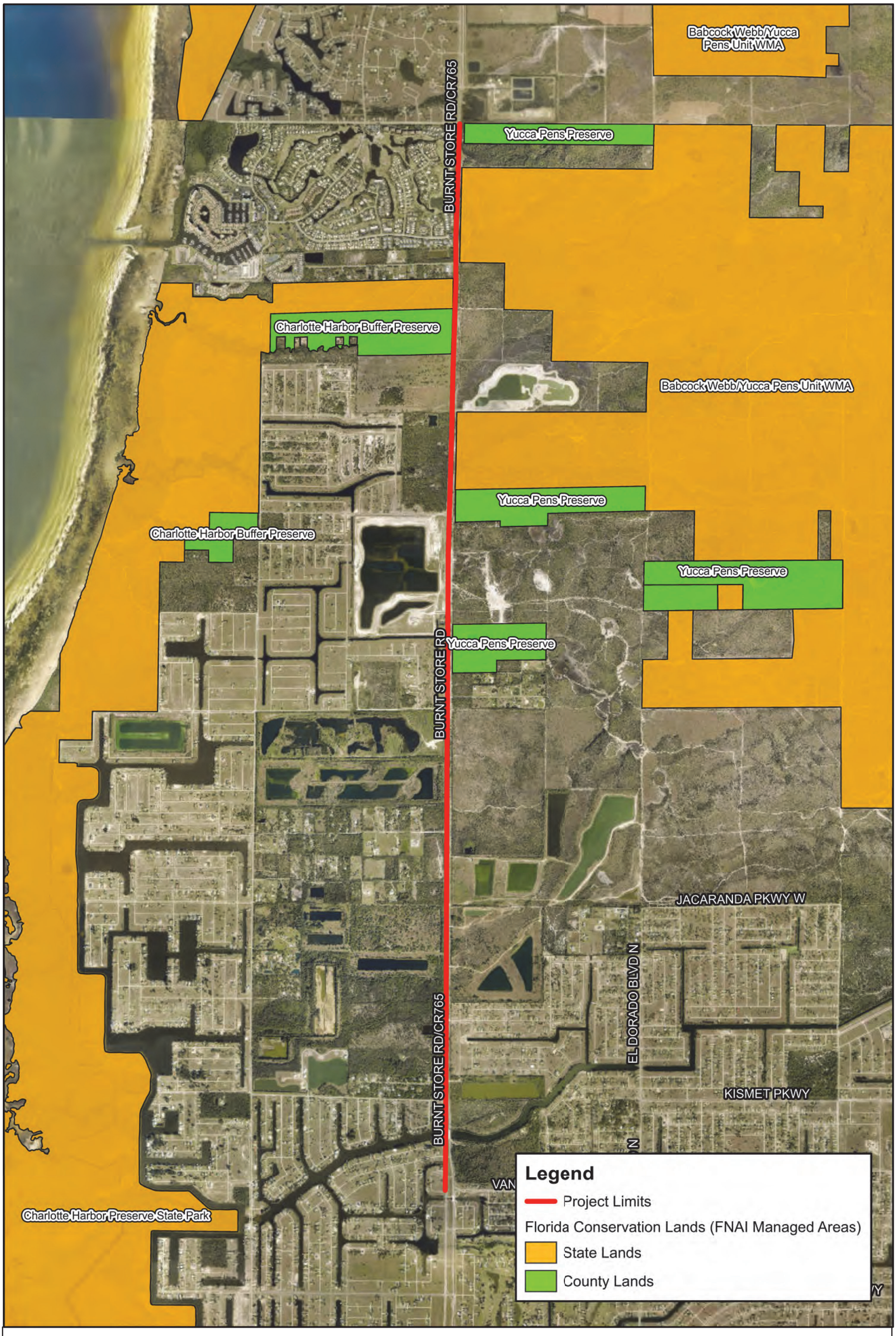
The following is the teams understanding from this meeting. **Please note that the drainage design criteria are of critical importance to this project, as these will now drive the selected typical section, estimated R/W impacts, environmental review of impacts, and overall approval of this PD&E Study by both the FDOT Office of Environmental Management (OEM) and Lee County, which will be responsible for all future phases of this project.**

1. Comingling is a permittable, viable option for this project. SFWMD will not require that the drainage analysis consider presumptive treatment of offsite flows, since the offsite contributing basin(s) are undeveloped. However, net improvement calculations must be provided to demonstrate that the comingled waters are not short circuiting the chosen treatment system.

2. Since the project doesn't have a direct discharge to OFWs, the additional 50% treatment volume requirement is not applicable.
3. Only the new lanes/pavement will require treatment as discussed in the August 2020 meeting.
4. An “out of the box” treatment and attenuation design is acknowledged to be desirable for this project by benefitting the regional hydrological restoration goals. Concepts such as attenuating and treating water on the eastern conservation lands, are valid.
5. In lieu of an off-site attenuation option, onsite attenuation via stormwater ponds can be provided using the 25-year, 3-day storm event. This is a permittable, viable option.

The following action items were developed:

| Item | Description and Action | Deadline | Responsible |
|---|---|---|---|
| **Bob Brown memo** | Provide copy to SFWMD participants | | FDOT Drainage |




**Conservation Lands**

Burnt Store Road (CR 765) Widening
From Van Buren Parkway to Charlotte County Line
FPID No. 436928-1-22-01
Lee County

Data Source: ESRI
Imagery Date: 2020

0 0.23 0.45 0.9 Miles


**Outstanding Florida Waters**

Burnt Store Road (CR 765) Widening
From Van Buren Parkway to Charlotte County Line
FPID No. 436928-1-22-01
Lee County

Data Source: ESRI
Imagery Date: 2020

0 0.25 0.5 1 Miles

# Meeting Minutes

| | | | |
|---|---|---|---|
| **Project:** | FPID No. 436928-1-22-01<br>Burnt Store Road PD&E Study from Van Buren Parkway to Charlotte CL | | |
| **Subject:** | Progress Meeting #5 | | |
| **Date and time:** | February 2, 2021 9:00 AM | | |
| **Meeting place:** | TEAMS Meeting | **Minutes by:** | Scalar Consulting Group Inc. |
| **Present:** | See sign-in Sheet | | |
| **Notes** | | | |

Traffic

Ehsan explained that when comparing the January 2021 traffic data to the January 2020 data (County data) for nearby locations, the data are comparable. Scalar thinks that traffic data collection would be appropriate for the 2021 peak season (Feb-March). It could also occur later in the year but would start to affect the schedule if not collected by mid-2021. Chris asked that Ehsan email the data so he could review it and then provide a Dept. recommendation/approval.

Planning Consistency

Kristin updated the group that Charlotte-Punta Gorda MPO, which originally indicated they preferred that the project not extend past the county line (thus federalizing this section), has decided that they would like the project to extend to the existing 4-lane typical section in Charlotte Co. Email concurrence was provided. No future phases are currently funded.

Roadway and Drainage

The following is a brief summary of agency coordination meetings since the last FDOT progress meeting:

1. November 20, 2020: the team discussed the 4 alternative typical sections with Lee County.
2. January 7, 2021: Lee County stated their preference is Typical Section #3 (comingling). They are not in favor of the inverted crown (option #4) which the team recommended. The County indicated they have received different direction from SFWMD and the group agreed on the importance of confirming criteria.
3. January 13, 2021: some FDOT and consultant reps called-in to this monthly pre-app meeting with Lee County and SFWMD. The project was only discussed generally.
4. January 27, 2021: FDOT pre-app with SFWMD. Main points discussed included:
    a. Comingling ok without treating contributing basin flows
    b. Compensatory attenuation and treatment on conservation lands to east- this will require various inter-agency agreements
    c. Floodplain comp for riverine flooding

The team discussed and agreed that typical section #3 can be designed. The main risk associated with this typical section is the potential for SFWMD to change expectations of the design criteria and concepts discussed in the January 27th pre-app meeting at a later date when the project goes to final design and permitting. Kristin asked what level of confirmation/commitment we could get from SFWMD, such as an MOU, or at minimum, clear email response back from SFWMD that they concur with the discussion. O.J. discussed that in the PD&E documentation, it must be clearly stated that these drainage concepts are an assumption on which the design will be based. Jeff commented that we must also be prepared to support why Typical Section #4 is not selected.

For drainage and specifically pond siting, David explained that we can site 2 standard pond options and one alternative/compensatory/out of the box option per basin. He asked how detailed the third option would need to be. OJ commented that since we have no control over the agreements that may occur on off-site lands, it may be most reasonable to provide the general information without drainage analysis/calcs. It may be most logical to select a standard pond as the preferred option per basin. He and Jeff commented that as with many projects that transition to design, pond sites change and a re-evaluation could be done to address different pond options such as if a compensatory option were ultimately selected. Kristin asked how this would impact the environmental evaluations for ponds, since some disciplines do only a preliminary review of the options and then more detailed evaluation of the preferred sites (e.g. cultural resources). Jeff commented that the desk-top review could be completed, with field work delayed to final design.

Utilities

The team received cost estimates for partial takes of the Century Link facility (now Lumen) ranging from $725K-$1.825M. We are still awaiting a full take estimate. When Charlotte County inquired, they were advised that a full take was not an option.

Structures

Kristin explained that the new NB bridge was designed approximately 18 inches higher than the original SB bridge, and that our team is anticipating that we will match the low member elevation of the NB bridge. She asked if the guidance we have heard on other D1 projects, regarding an account for 2-foot sea level rise, would apply here, or if this 18-inch rise is adequate. OJ explained that this issue is in flux right now and topics in discussion also include wave action and withstanding hurricanes. Karina stated that it makes sense to move forward with the criteria that we have now, and can revisit this later if there is new direction. Predrag commented that we have the constraining factor of the adjacent bridge so this plays a role in determining what is appropriate for this bridge elevation. The team agreed it would be reasonable to ask the County if they have any other input.

Public Involvement

The schedule currently shows the public workshop in May. The team discussed if this is still achievable given the delay and pending final approval of the typical section. Jeff commented that D1 expects to see an evaluation matrix 6 weeks in advance of the meeting. The group agreed to see what decisions are made by Lee County in the next few weeks and make a decision on the meeting date at the next progress meeting.

Natural Environment

Did not discuss.

The team agreed that another coordination meeting with Lee County is needed. Kristin will set-up this meeting. The points to cover include:

1. Confirming that Lee County understands the risk of typical section #3
2. Advise the County that they may be asked to provide documentation such as an MOU with adjacent state lands concerning their willingness to allow treatment and attenuation on their managed lands for completion of the PD&E Study
3. Revisit typical section #4 to obtain more detail as to why they do not favor this option
4. Ask what profile reductions could be considered such as slimming-down the 10-ft wide sidewalk on the west side
5. Ask if they have any comments on the low member elevation of the SB bridge to be replaced

The following action items were developed:

| Item | Description and Action | Responsible |
|---|---|---|
| Lee County coord meeting | Set-up another meeting | Kristin |
| Traffic data collection | Confirm appropriate to collect data this Feb/March- send data to Chris | Ehsan |
| | | |
| | | |
| | | |

# BURNT STORE ROAD PD&E STUDY
**FPID No. 436928-1-22-01**

## PROGRESS MEETING #5
## Tuesday, January 2, 2021
## TEAMS Meeting
## SIGN-IN SHEET

| NAME | COMPANY | POSITION | E-MAIL ADDRESS |
|---|---|---|---|
| Steven Andrews | FDOT | Project Manager | Steven.Andrews@dot.state.fl.us |
| Richard (OJ) Oujevolk | FDOT | District Project Development Manager | Richard.Oujevolk@dot.state.fl.us |
| Gwen Pipkin | FDOT | Environmental Manager | Gwen.Pipkin@dot.state.fl.us |
| Karina Della Sera | FDOT | Drainage Design | Karina.DellaSera@dot.state.fl.us |
| Jeff James | FDOT | District Contamination Impact Coordinator | JeffreyW.james@dot.state.fl.us |
| Chris Simpron | FDOT | Transportation Modeler/Planner | Christopher.simpron@dot.state.fl.us |
| Kristin Caruso | Scalar Consulting Group | Consultant Project Manager | kcaruso@scalarinc.net |
| Jay Winter | Scalar Consulting Group | Consultant Roadway Lead | jwinter@scalarinc.net |
| Aniruddha Gotmare | Scalar Consulting Group | Consultant DPM | agotmare@scalarinc.net |
| Ehsan Doustmohammadi | Scalar Consulting Group | Consultant Traffic Lead | edoustmohammadi@scalarinc.net |
| Predrag Milosavljevic | Scalar Consulting Group | Consultant Structures Lead | pmilosavljevic@scalarinc.net |
| Ignacio de Almagro | Scalar Consulting Group | Consultant Engineer | ialmagro@scalarinc.net |
| David Bennett | CONSOR | Consultant Drainage Lead | dbennett@consoreng.com |
| Francina Gil | CONSOR | Consultant Drainage | fgil@consoreng.com |
| Nicole Selly | KCA | In-house EMO support staff | nselly@kcaeng.com |
| | | | |

# Meeting Minutes

| | | | |
|---|---|---|---|
| **Project:** | FPID No. 436928-1-22-01<br>Burnt Store Road PD&E Study from Van Buren Parkway to Charlotte CL | | |
| **Subject:** | Typical Section and Drainage Meeting with Lee County | | |
| **Date and time:** | February 11, 2021 11:00 AM | | |
| **Meeting place:** | GoTo Meeting | **Minutes by:** | Scalar Consulting Group Inc. |
| **Present:** | See attached Sign-In Sheet | | |

**Notes**

This meeting was held to discuss drainage concepts and typical section selection following the January 2021 SFWMD pre-application meeting. Kristin updated the group that it appeared from the SFWMD meeting that comingling would be a viable design option for this project. The team will proceed with preparing roadway alternatives that will be based on what we have been calling “Typical Section #3”- which is the comingling option that combines ditches. This results in a single ditch on each side of the roadway, combining both off-site and on-site drainage. There is some risk in this option because SFWMD could indicate later, during final design and permitting, that comingling would not be permittable. Lee County acknowledges this potential but prefers Typical Section #3 over other options presented. To offset risk, Kristin explained that documentation of SFWMD confirmation/assurance will be needed. FDOT is trying to obtain written concurrence from the SFWMD regulatory department managers (engineering and environmental) through email submittal of the meeting minutes. To date, no responses have been received but Kristin will continue to touch base with SFWMD and may ask Lee County for assistance if SFWMD does not respond. Vincent expressed that other risk is impact to the adjacent properties (conservation lands and residential), and potential that the Lee Co Board of County Commissioners would not approve the project. Kristin stated that from the PD&E perspective, the property impacts are addressed as part of the study processes. OJ reiterated that FDOT’s intent is not to provide a conceptual design that is unfavorable to the county.

Kristin asked if any other adjustments could be made to the typical section, such as reducing the width of the sidewalk. No other adjustments are wanted/needed.

Regarding ponds, Kristin explained that we will be evaluating 3 options per basin, which will include 1 or more alternative concept (non-traditional pond site). Unless documentation is complete to demonstrate commitment between Lee County and an adjacent property owner for non-traditional options, we will need to “select” a traditional pond site option. This will ensure viability of the drainage design. However, any concepts and documentation developed will be included in the PD&E documentation.

Vincent expressed concern about completing the PD&E study that “selects” pond sites that would be unfavorable to the county and asked if the study would have to be done again in that scenario, or if the study expires after one year. OJ and Kristin discussed that it is common for pond sites to change following completion of the PD&E study, and that there is a re-evaluation process that addresses this type of a change. The approved PD&E study does not expire. The goal is to identify viable pond options, therefore at the PD&E phase, this tends to be traditional pond sites. At the time when ponds must be “selected”, if the County has an MOU, letter, etc. with a landowner that is specific enough to validate that alternative pond site option, there is a stronger chance that we could get that site approved by OEM. Vincent explained that he would like to get their Lee County DOT Director’s input on this approach because he

sees value in waiting for adjacent property owner agreements to be complete and included in the PD&E Study so that the desired pond options are “selected” in the PD&E phase. The team acknowledged that this approach would delay the project schedule.

Kristin asked if we could presume that the adjacent county-owned lands are available for pond siting. We were advised to contact Keith Gomez and Robert Clemens for County R/W questions.

Kristin asked if the County had input on the Gator Slough bridge elevation. Our coastal engineer will evaluate this but currently we are planning on matching the low member of the NB bridge. The team briefly discussed that sea level rise and coastal resiliency issues are being discussed now and are in flux. Lee County does not have information on a desired elevation.

Vincent confirmed that the Controlled Access Management Resolution for Burnt Store Road has been finalized and provided a copy during the meeting by email.

The project schedule was briefly discussed and Kristin indicated that the public meeting is tentatively scheduled for late May but may be pushed out a couple of months to allow time for the engineering and environmental analyses now that we have conclusion of the typical section decision. Vincent expressed that the County may have concerns with a May or summer meeting since it is out of season. OJ explained that with the pandemic, FDOT has been conducting virtual meetings and this removes the seasonal concerns. Vincent believes that the local population is less likely to attend a virtual meeting and would respond better to a more traditional method. He will discuss this with the Director for input.

The following action items were developed:

| Item | Description and Action | Responsible |
|---|---|---|
| County R/W | Are adjacent parcels available for stormwater pond use- ask R/W staff | Scalar |
| Pond site selection and public meetings | Obtain feedback from Lee Co DOT Director on pond selection in PD&E and timing of public meetings | Vincent |

# BURNT STORE ROAD PD&E STUDY
**FPID No. 436928-1-22-01**

## TYPICAL SECTION MEETING WITH LEE COUNTY
**Thursday, February 11, 2021**
**GoTo Meeting**
## SIGN-IN SHEET

| NAME | COMPANY/ENTITY AND DEPT/ROLE | E-MAIL ADDRESS | PHONE # |
|---|---|---|---|
| Steven Andrews | FDOT, Project Manager | Steven.Andrews@dot.state.fl.us | 863-519-2270 |
| Richard (OJ) Oujevolk | FDOT, District Project Development Manager | Richard.Oujevolk@dot.state.fl.us | 863-519-2293 |
| Karina Della Sera | FDOT, Drainage Lead | Karina.dellasera@dot.state.fl.us | 863-519-2750 |
| David Murphy | LCDOT, Deputy Director, Public Works, Transportation | dmurphy@leegov.com | 239-533-8578 |
| Stephen Jansen | LCDOT, Transportation Engineering Manager, Traffic | jansensj@leegov.com | 239-533-8503 |
| Tom Marquardt | Lee County, Manager Public Works Programs- Transportation | tmarquardt@leegov.com | 239-533-8530 |
| Vincent Miller | LCDOT, Senior Engineer, Transportation | vmiller@leegov.com | 239-533-8577 |
| Robert Price | LCDOT, Senior Engineer, Transportation | rprice@leegov.com | 239-533-9532 |
| Kristin Caruso | Scalar Consulting Group (SCG); Consultant PM | kcaruso@scalarinc.net | 813-988-1199 x209 |
| Jay Winter | SCG, Roadway Lead | jwinter@scalarinc.net | 813-988-1199 x201 |
| Rudy Gotmare | SCG, Consultant Deputy PM | agotmare@scalarinc.net | 561-429-5065 |
| David Bennett | CONSOR, Drainage Lead | dbennett@consoreng.com | 407-378-3903 |
| Michael Wilson | SCG, Roadway | mwilson@scalarinc.net | 813-988-1199 x222 |

# Meeting Minutes

| | | | |
|---|---|---|---|
| **Project:** | FPID No. 436928-1-22-01<br>Burnt Store Road PD&E Study from Van Buren Parkway to Charlotte CL | | |
| **Subject:** | Design Meeting with Lee County | | |
| **Date and time:** | June 28, 2021 2:30 PM | | |
| **Meeting place:** | GoTo Meeting | **Minutes by:** | Scalar Consulting Group Inc. |
| **Present:** | See attached Sign-In Sheet | | |

**Notes**

This meeting was held to update Lee County on the roadway alternatives, discuss right-of-way pinch points and impacts, and vet the pond site alternatives. Maps were provided to Lee County in advance by email when scheduling the meeting.

Kristin updated the group that the four roadway alignments have been developed and the following areas are in need of discussion:

1. Residential (mostly undeveloped) parcels on the west side north of Gator Slough Canal
    a. Northern-most parcel on the corner is now developed, driveway connects to Kismet Rd.
    b. Unless the County approves direct driveway connections to Burnt Store Rd., these lots will not be developable given need for access road and county building code requirements.

The group discussed that Kismet Rd. is a right in, right out intersection. The Burnt Store Road controlled access resolution does not allow backing into the roadway. Shared driveway connections could be an option but due to the narrow parcels to begin with they would need circular or hammerhead driveways. The Lee County board of commissioners is very hesitant to condemn a single-family residence however there does not seem to be a viable alternative. The team discussed that if the parcels will be rendered undevelopable, then complete takes may be prudent if the remainders can be used for stormwater management.

2. Residential (all undeveloped) parcels on the west side south of the fire station
    a. There is sufficient room to design an access road along these parcels which will connect to Caloosa Parkway North.

Lee County confirmed an access road is warranted here.

3. Northern segment between Burnt Store Marina and state lands
    a. Only the optimized/best-fit option can mostly avoid impacts to both sides, but a few feet of R/W acquisition will be needed. We currently are showing impacts to the west (development side) to the landscaping in front of the privacy wall.

Vince asked if FDOT could have a fall-back position of impacting the state lands since there are concerns about impacting the development. Jennifer mentioned that the state is very sensitive about impacts to their lands and Kristin briefly explained the process of Section 4(f) analysis (typically done once the preferred alternative has been identified, not for all viable alternatives) and land mitigation requirements.

OJ asked if Lee County would consider a design change to narrow the typical section. This would take the strain off the R/W impact concerns voiced by the County. For example, do we need the full median width, does this area need to allow for future 6-lane widening. The group discussed the design speed of 50 mph, we can’t have an urban typical section with curbing (which would only require a 22-ft median) at

50 mph, would need to reduce to 45 mph. The County would like to maintain the higher design speed and does want to deviate from the required median width. Any other changes would require variations and/or exceptions, which Lee County would be responsible for signing. Rudy commented that there is only so much we can do engineering-wise if we are working with a 235-foot typical section in existing 200-ft of R/W. Kristin asked if Lee County would consider a narrower sidewalk in this area (10-ft to 5-ft on the left side) and David asked about handrail with 5-ft gravity wall (design team doesn't think this will eliminate the entire impact however). Vince said handrail is an option, but the County needs to make sure it is maintainable. Vince asked if FDOT is assuming right in, right out U-turns. Vincent Avenue is the only intersection in the project limits with a full median opening. All the rest are one directional or two directional openings.

Jennifer asked if the County would sign something saying that they have a constraint in this area, because of the desire to not impact the Burnt Store Marina development. This would give the FDOT what is needed to move forward with the alternative to impact state lands and show this impact at a public workshop. Randy Cerchie, the Transportation Director is on vacation for a few weeks, the Lee County team would need input from him.

General topics discussed at the end of the roadway conversation:

1. Jennifer explained that the County should consider funding the full project for design next, as opposed to design and construction for a single segment. This seems prudent given the R/W and drainage needs along the project. Vince commented that this could transition to a LAP-type project for the next phase.
2. Lee County and FDOT will need to sign the typical section, and Lee County will need to approve any design variations and exceptions.

Pond siting discussion:

Kristin briefly described that there are 10 basins and the two of most concern for state lands have been *avoided*- the drainage team was able to combine basins to do so. Several options are on City of Cape Coral property and the team forwarded this exhibit to the City. The northern basin is in Charlotte County. Vince asked who would be maintaining that pond, Kristin explained that Charlotte County is aware of the basin and was contacted while the pond options were identified. Francina walked through a few of the basins to discuss sites, several basins have a co-mingling option that would use an existing pond/borrow pit. Kristin stated that the team is hoping to know if any of these are immediately undesirable, and if the County would be contacting the owners of the potential development sites to see if they are viable options (prior Lee County R/W direction was not for the team to contact anyone). Vince said we should try speaking with Robert Clements directly to discuss. For Basin 1, the County was not in favor of pond sites using existing median ponds because they wouldn't want to open the existing WMD permit. The County reminded the team to include pond options in Basin 2 as previously discussed.

Vince commented that there appeared to be too many postage-sized ponds and expressed concern that the drainage is assuming attenuation when his understanding from the SFWMD pre-application meeting was that we would not need to attenuate. The team clarified that only one site per basin will ultimately be selected/needed, we are showing 3 alternatives per basin. Francina did not believe that SFWMD stated attenuation was not needed. The group reviewed the meeting minutes which stated that *at a minimum, the project would need to demonstrate no adverse impacts to the downstream canals and no increase in staging.* At this PD&E level, we should assume worst case and later during design when more data is available (survey, geotechnical) if some basins do not need attenuation, the ponds can be modified. Vince also asked about the use of the conservation lands for stormwater needs. OJ expressed concern that tying this project with these off-site hydrological concepts may not be the best course of action. The group has discussed in the past that written agreements will be required (between the County and state agency), at this PD&E level the data is not available to determine viability and permit-ability of these

ideas, and the PD&E Study may not be approved unless these concepts are fully vetted. At this stage since drainage was able to avoid the sensitive basins and state lands, FDOT thinks this is a viable option for showing stormwater needs along the corridor for the PD&E study. Vince expressed that their group will talk to Randy about this topic again.

The following action items were developed:

| Item | Description and Action | Responsible |
|---|---|---|
| Land owner contacts | Speak to Robert Clements to explain need to reach out to owners of potential developments for viability of land use for stormwater | Scalar |
| R/W impacts and pond siting/selection | Obtain feedback from Lee Co DOT Director on impacts to Burnt Store Marina vs. state lands and pond siting | Vincent |

# Meeting Minutes

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|---|---|---|---|
| **Project:** | FPID No. 436928-1-22-01<br>Burnt Store Road PD&E Study from Van Buren Parkway to Charlotte CL | | |
| **Subject:** | Design Meeting with Lee County | | |
| **Date and time:** | September 1, 2021 10:00 AM | | |
| **Meeting place:** | Lee County Public Works | **Minutes by:** | Scalar Consulting Group Inc. |
| **Present:** | See attached Sign-In Sheet | | |

**Notes**

Introduction and Overview

Following Lee County, FDOT and Consultant team introductions, Kristin gave a brief overview of the project. This meeting was held to discuss the roadway and drainage engineering analysis completed to date; to seek a decision on which typical section would be most preferred by the County; and to seek additional comments on conceptual pond sites as well as identification of preferred sites. This will allow the project team to complete our alternatives analysis, where we will be looking at different alignments of the typical section to minimize environmental impacts and R/W impacts. Ultimately. we will need Lee County to sign the typical section and approve any needed exceptions and variations.

The project is approximately 5.5 miles from Van Buren Parkway to Charlotte County line. Given lack of logical termini if the project were to end at the county line and leave a ¼-mile segment of 2-lane road before the roadway transitions to 4-lanes, FDOT coordinated with Charlotte County and the Charlotte-Punta Gorda MPO on inclusion of this small segment in the study. Randy expressed that Lee County can only address construction within Lee County. The project team explained that Charlotte County and their MPO are in agreement with this approach to include and federalize this segment, they have added this roadway segment to their planning documentation (LRTP, CIP) for future project phases, and understand they will be responsible for R/W acquisition and construction. When Charlotte County widened Burnt Store Road to the north a few years back, they stopped short of the County line due to the constraint of the existing Centurylink fiberoptic building/hub.

Existing R/W is 200 feet along the project limits (less in Charlotte County). The team has been modeling the various typical sections with LiDAR data given that we understand the flooding issues along the corridor and find that the roadway profile will need to be raised as much as 3 feet. Given tie-down slopes, this widens-out the typical section and all typicals we've looked at involve some level of R/W impact for the mainline. We have been seeking to avoid and minimize R/W impacts wherever possible, and this is partly why we've looked at a number of typical sections, trying to balance the roadway elements/characteristics expressed by Lee County and the associated mainline R/W impacts. Other constraints include the existing Burnt Store Marina residential development and conservation lands (county and state managed). Randy commented that the properties are selling fast and development is ramping-up, so while the Burnt Store Road Marina may be the only current development, it will soon be the smallest along the corridor. The southbound bridge over Gator Slough Canal will be replaced; the northbound bridge was recently constructed as part of the Lee County reconstruction segment to the south.

Randy asked about the historical flows to the west and if we've accommodated for enough crossings so that we can assure the public that we will not impact the east-west flows and not cause any flooding to off-site parcels. There are nine (9) crossings along the corridor, we are completing a location hydraulic report, to analyze the existing cross drains based on proposed conditions to see if they need to be upsized or if additional crossings are needed. We've been in coordination with the Charlotte Harbor Flatwoods Initiative (CHFI) and they expressed that the water from the east is being shuttled to the south quickly, mostly bypassing the historical east-west flow pattern. Vincent added that they want to hold more water on the east side in Yucca Pens. Richard (OJ) commented that we will make sure that the roadway drainage is fully analyzed but that we cannot be tied to the regional drainage issues since that is beyond the scope of the project.

Randy asked if the project team considered the "super street" concept for this corridor and if we were given any direction by the County to do so. Kristin and Rudy explained that we did not, our understanding was that the super street typical was intended to terminate at Gator Slough Canal.

Traffic Projections

Ehsan provided an overview of the traffic data. Using the FDOT District 1 Regional Planning Model (travel demand model) which is unique to this area, and accounts for future development plans and socio-economic data, we derived an annual growth rate of 8.2%. This is higher than the state-wide average, and normally the growth rate is around 2-4% but this growth rate is reasonable based on the trend analysis, which shows a similar growth factor. Ehsan applied this to the existing traffic numbers and finds that 4-lane widening is needed in design year 2045. With 4-lanes the corridor will operate at Level C which is acceptable for a rural area. The need for 6-lanes appears around 2055, 10 years after the design year. OJ explained that since we are required to look at a 20-year horizon, will have to justify a typical section with expandability to 6-lanes to the Office of Environmental Management (FDOT Central Office in Tallahassee), we will need to properly document other elements such as the Lee County comprehensive plan, future development plans, and future growth management plan. We can show that it is prudent to select a typical section with the 6-lane expandability. The project team may need to reach out to the County for some assistance in this documentation process. Randy asked if we have been in coordination with Don Scott of the Lee County MPO; we have. He also pointed out the development of the Punta Gorda airport and how that will affect the area.

Typical Sections

Kristin and Jay began walking through the packet of typical sections which provided a history of the options analyzed to date. Design speeds were discussed, most of the typical section options would be 50 mph. The roadway south of the project is posted at 50 mph, and to the north in Charlotte County it is currently posted at 55 mph but OJ stated that Charlotte County is re-evaluating the speeds along Burnt Store Rd. particularly near US 41. Kristin mentioned that several comments have been received from the public with concerns about speeding and hopes that the road widening would include lower posted speeds. The group discussed disparate public opinions and that speeding is more of an enforcement issue. The 5-year crash data (2015-2019) shows 53 crashes within the study limits, 8 off-road crashes, no head-on crashes. Ehsan mentioned the median openings will be directional based on the Burnt Store Road access management resolution, which is anticipated to help enhance safety. *Update: After reviewing the long forms, four head-on crashes were identified resulted in no fatalities and three injuries.*

Randy suggested that the group skip to typical section #5, since that one, and #6, show the road within the existing 200-feet of R/W and appears to have the road elements they want. The group discussed the design speed would be 45 mph for the urban typical section and discussed that after the road is constructed and posted at 45 mph, the County could follow-up with a speed study and if crash rates aren't

high, it could be re-posted at 50 mph. The bike lane could be removed from the typical section, and instead provide two, 12-foot shared-use paths. OJ explained that they have been using questionnaires to ask the public what their current preferences are; FDOT is finding that people are trending towards preference of shared-use paths since they feel safer separated from the roadway. Randy mentioned that these paths require more maintenance. OJ stated that the team could send-out a questionnaire for this project to gauge local preference.

Also discussed was a modification of the interim 4-lane condition, whereby the median could be reduced and re-shaped to allow for an inside shoulder (4-feet) and an outside shoulder (5-feet). This would allow for an interim speed limit of 50 mph. The team discussed incorporation of two, 12-foot paths. Vince pointed out that this additional space between the travel lane and the gutter would help the spread calculations. When the road is widened to 6-lanes, the inside shoulders would be incorporated into travel lanes, and the outside 5-foot shoulders would either be retained and used for gutter spread/drainage or can be used as a shoulder. The design speed would be 45 mph but could be raised to 50 mph later.

Vince clarified that this typical section will start out as a closed drainage system and there are obviously additional drainage infrastructure costs. A cost estimate for the closed drainage system was provided in the packet. Jay clarified that with a closed drainage system, we will no longer be matching existing terrain but instead will be looking at a sawtooth profile (up 9 inches, down 9 inches, with 1:4 slopes). Randy mentioned that this road is on a toll corridor- so toll funds are coordinated with the City of Cape Coral and could be used for this project.

Vince asked if we are showing sufficient clear zone given the 2018 Greenbook criteria with the urban typical sections. The group discussed that for an urban roadway, while meeting clear zone is ideal, it is usually not feasible.

The group discussed gravity wall as an option for reducing R/W impacts in select areas, but the County is not in favor of gravity wall.

OJ emphasized that this is an ecologically-sensitive corridor and that with the NEPA process, we must consider avoidance and minimization of environmental impacts. He asked if the urban typical section avoids all or most of the conservation lands, and Kristin explained that while the urban typical section has not been modelled as fully as the other options, we do believe the R/W impacts will be very minor. The group reviewed the comparison table and Rudy clarified that we are talking about mainline impacts, not pond site impacts. A question was raised about treatment and David confirmed that new impervious pavement will need to be treated.

Drainage

OJ asked if we do find R/W impacts for the mainline in some areas, what areas of the roadway elements could the County live without. The group enquired if the ditch side slopes could be changed to 1:3.
David stated freeboard is about 1 foot, ditches will always be wet, and the ditches won't always be able to contain all the off-site flows, like today where there is standing water at times beyond the ditches. We will not be able to berm-up the backside of the ditches because this would cut-off the off-site flow. Our challenge is to make sure that the standing water is not increased to ensure that there are no impacts to adjacent properties. David stated that in design, it can be ensured that the ditches are graded properly to provide positive flow. Vince agreed that with submerged conditions, the issue is grade lines. The area is tidally influenced so during permitting, if we can show that there our outfalls have direct discharge, the SFWMD should concur that attention is not needed. However, by providing treatment volume, we anticipate that this may cover most of the attenuation volume. David commented that without comingling,

# Meeting Minutes

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|---|---|---|---|
| **Project:** | FPID No. 436928-1-22-01<br>Burnt Store Road PD&E Study from Van Buren Parkway to Charlotte CL | | |
| **Subject:** | Coordination Meeting with Lee County | | |
| **Date and time:** | March 7, 2022 1:00 PM | | |
| **Meeting place:** | Lee County Public Works | **Minutes by:** | Scalar Consulting Group Inc. |
| **Present:** | See attached Sign-In Sheet | | |

**Notes**

Introduction and Overview

Prior to the meeting formally starting, the team discussed that the high water table is driving the mainline R/W impacts. Currently the water over-tops the road in seasonal high rain events. For drainage the off-site flows would be routed to simply flow through the roadway footprint. While it is a tidal area, the water is not currently flowing through the system freely. Vince asked about side street tie-downs and if significant re-paving would be required to account for the tie-down slopes; the design team responded it would not be significant.

Following Lee County, FDOT and Consultant team introductions, Kristin explained that following the September 2021 meeting typical section conversation, the team proceeded to prepare conceptual plans with R/W impact avoidance in mind as the key issue. We are presenting three (3) alternatives with the goal to walk through them, collect comments, and move forward to a public workshop with all or preferably a sub-set of the alternatives in addition to the no-build alternative. The draft alternatives matrix presented is draft form, one item we are awaiting is the R/W costs.

OJ explained a recent issue with another project on a county road, where the FDOT Central Office legal dept. asked why FDOT was purchasing R/W on a county road. This stopped the project. Therefore, we'd rather use their cost estimates since it is not our purview to be securing eminent domain on county roads. Lee County agreed to provide the cost estimates.

The team then walked through the 3 alternatives while comparing to the typical sections (4-lane and ultimate 6-lane) and matrix. They consist of:

Alternative #1: Rural/suburban typical (4-lane expandable to 6-lane)

- This is the Best Fit of the "Comingling" option which was the preferred of the 4 open-drainage alternatives.
- R/W takes up to approx. 65 feet. Widening to east in some areas, west in others, some locations with widening on both sides. Most property impacts including potential relocations.
- Impacts to 2 County-managed conservation lands and to several county and city-owned vacant parcels.

Alternative #2: Urban typical (4-lane expandable to 6-lane)

- For off-site water management, need ditch on east side (road and road drainage all within existing R/W).
- Widening all on east side, impacts up to 20 feet. No relocations.

- Impacts to 2 County-managed conservation lands, 1 state managed land, and to several county and city-owned vacant parcels.

Alternative #3: Urban typical with Piped Offsite Flows (4-lane expandable to 6-lane)

- For off-site water management, pipe ditch on east side. This will allow all work to remain in existing R/W.

Pond sites- shown on the roll plots are the Lee Co-preferred sites as per R/W Dept communication. The group discussed the Basin 10 preference; 10A was Lee County's preference but 10B was sized for the 6-laning in Charlotte Co. and Charlotte was unsuccessful in communicating with the utility owner (pond 10A site) when they widened their road. For Basin 9- an additional option is shown as a preferred site since 9A and 9B were of concern to Lee Co (development planned). Basin 2 will have 2 pond sites. The construction costs in the matrix do not include costs for piping to ponds. Vince asked for a table to include square footage and dimensions of the pond sites. For pond sites, impacts for the preferred sites will eventually be included in the alternatives matrix for the hearing, but for the workshop, we would only show the # of pond sites needed.

Intersections- shown on the roll plots and correspond to the Burnt Store Rd. access management resolution, with one change at the fire station for a full median opening. Large trucks will not be able to make U-turns once the road is widened to 6-lanes. Bulb-outs or other allowances will be required.

Lumen (FKA CenturyLink) property impact- not substantial enough for any alternative that a relocation would be required. Right to cure- replacing the driveway and parking spots- is included in the matrix and cost was provided by the utility.

Vince asked what will happen if Charlotte Co prefers a different alternative or different typical section. Mike explained that we could do a transition if needed. Vince asked if utilities coming down from Charlotte Co are all on the west side and if they would all need to be relocated. Mike believes there will be some adjustments needed.

The group talked about the public workshop date- currently planned for late September but it could be sooner depending on the amount of refinements needed on the alternatives. OJ confirmed that seasonality of the meeting is not a concern- Randy said it is not for this particular area.

Funding and future phases- OJ mentioned that there is new funding being made available and some PD&E projects are including design efforts to make them more likely to receive construction funding. Some projects have recently been considered for design-build. Randy commented this project is a Tier-2 as per their BOCC. If federal funds become available, would we have design segments identified? The team commented it would be logical to break-out by basin divides. Rudy commented that the faster we push the project, the more shovel-ready it will be, and higher potential to be allocated federal funding.

Vince asked how we balance the NEPA documents with the schedule of design and construction. OJ explained that the timeframe of the PD&E Study isn't a concern, a re-eval will need to be done later to address design changes. They key is to get LDCA.

Alternatives for the public workshop

- Alt 2- further refinements could be made in select areas to reduce or avoid R/W impacts, such as adding a ditch for off-site flows. Access management edits can also be made. Open to Lee Co comments on this.

- We could go forward with just 1 alternative in addition to the no-build for the public workshop, but we need to document the decisions that were made to eliminate alternatives.

Planning consistency- OJ asked if there is a county document/plan that shows the need for 6-lanes, otherwise OEM could question why we need a typical section that allows for this widening. Otherwise we would need to update the MPOs needs plan for proper documentation. Vince mentioned the Burnt Store Rd. Bi-County Corridor Study.
OJ commented that Charlotte needs to have the project properly documented in their planning docs as well, right now they do show it in their needs plan.

Cost estimates (summary)

- Lee Co to prepare R/W cost estimates with data table from FDOT team.
- currently missing the new bridge over Gator Slough Canal, we are waiting on updates. All three options will increase.
- Do not include the pipes to ponds or any other pond-specific cost- this will be added later for the preferred pond sites.
- Do include Lumen property impacts specific to the cost to cure and relocation of utilities along the road (no building relocation required).

The following action items were developed:

| Item | Description and Action | Responsible |
|---|---|---|
| Pond information | Lee Co would like a table of the pond sites with sizes and dimensions- 1 week needed | Scalar team |
| R/W parcel information | Lee Co needs parcel impacts to prepare cost estimates- 1 week needed and combine with pond data | Scalar team |
| R/W cost estimates | Provide cost estimates within 1 month of receipt of parcel information | County |
| alternatives | Provide digital files of concept plans | Scalar team |
| alternatives | Lee Co. to provide comments within 1 month | County |
| county doc showing future plan for BSR | Check Bi-County Corridor Study | Scalar team |

# BURNT STORE ROAD PD&E STUDY
## FPID No. 436928-1-22-01

## LEE COUNTY COORDINATION MEETING
## Monday, March 7, 2022
## In-Person Meeting
## SIGN-IN SHEET

| NAME | AGENCY/COMPANY | POSITION | E-MAIL ADDRESS |
|---|---|---|---|
| Randy Cerchie | Lee County DOT | Director | rcherchie@leegov.com |
| Robert Price | Lee County DOT | Deputy Director | rprice@leegov.com |
| Thomas Marquardt | Lee County DOT | Manager, Operations | tmarquardt@leegov.com |
| Vincent Miller | Lee County DOT | Senior Engineer | vmiller@leegov.com |
| Jillian Scholler | Lee County DOT | Traffic Engineer | jscholler@leegov.com |
| Keith Gomez | Lee County DOT | Sr. Property Acquisition Agent | kgomez@leegov.com |
| Maria Britton | Lee County DOT | Land Acquisition Manager | mbritton@leegov.com |
| Steven Andrews | FDOT | Project Manager | Steven.Andrews@dot.state.fl.us |
| Richard (OJ) Oujevolk | FDOT | District Project Development Manager | Richard.Oujevolk@dot.state.fl.us |
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# Meeting Minutes

| | | | |
|---|---|---|---|
| **Project:** | FPID No. 436928-1-22-01<br>Burnt Store Road PD&E Study from Van Buren Parkway to Charlotte CL | | |
| **Subject:** | Coordination Meeting with City of Cape Coral and Lee County | | |
| **Date and time:** | May 2, 2022 1:30 PM | | |
| **Meeting place:** | GoToMeeting | **Minutes by:** | Scalar Consulting Group Inc. |
| **Present:** | See attached Attendee Sheet | | |

**Notes**

Introduction and Overview

Prior to the meeting formally starting, the team discussed that the public workshop is anticipated for July-August 2022. OJ commented that planning consistency is a critical item for the PD&E Study to obtain final approval (LDCA) and he has a meeting scheduled for May 3, 2022, with Lee County MPO and Charlotte-Punta Gorda MPO to discuss steps to achieve this milestone.

Kristin summarized that the PD&E team has prepared concept plans that include potential stormwater management and floodplain compensation sites. There are a total of ten (10) basins. Currently we have cited three (3) alternatives per drainage basin but only one (1) site will be needed per basin. Exceptions include: Basin 2 depicts four (4) sites and two (2) will be needed; Basin 7 lacks pond sites to avoid impacts to conservation lands (ponds were sized larger in the adjacent basin).

Three basins (Basins 2, 3 and 5) contain City of Cape Coral property and pond alternatives 2C, 3C, and 5C are in City land. These lands, based on information previously provided by Persides, were purchased with City stormwater and utility funds. Sites 2C and 3C are also within a group of parcels that was explored for the Northwest Filter Marsh Feasibility Study (2014). Pond 5C is in a group of parcels that Persides indicated may be needed for a future stormwater pond site for the widening of Caloosa Parkway. This meeting was scheduled to allow for Lee County and the City of Cape Coral to discuss the sites and what can be brought forward to the public for view and comment.

Persides explained that the City is actively marketing the sites in Basins 2 and 3. She referred back to the email correspondence she had with the project team (see attached). She expressed concern if these sites are shown to the public as potential sites given this status. She suggested that the team could use the City land on the east side of Burnt Store Road. Kristin commented that the drainage team did review those parcels but they were not quite wide enough to achieve adequate storage. Persides suggested that the access road (NW 31st Place) could be shifted to the east to provide more area. The team agreed to review this option commenting that it seems possible to shift Pond 2C; due to the basin divides it may not be possible to shift Pond 3C. Persides also expressed concern about Pond 5C and needing the property for a future City pond. Kristin asked if, since there is adjacent City land, should this site be ultimately selected (currently not a preferred location), could the City expand upon the site or construct a new site to the north.

Discussion followed that these sites are only options at this time, and that by showing them to the public it does not signify any firm plans for future use. Richard (OJ) explained that as with many PD&E studies, pond sites that are identified as preferred sites become unavailable (developed) at later times, and a re-

evaluation is then prepared to examine and select new pond sites. It was discussed that it would be preferred to show all of the sites as options and remove the “preferred” designation for the public workshop. The team discussed that it is common for the public to ask questions as to why undeveloped, public land is not considered for pond sites as opposed to eminent domain of private parcels. Persides commented that it still would not be preferred by the City to show these sites on City land that is being marketed but that she will notify the City Manager of the discussion and decision.

The following action items were developed:

| Item | Description and Action | Responsible |
|---|---|---|
| Ponds 2C and 3C possible relocation | Evaluate if sites can move to east side of road, can assume NW 31st Pl could shift if needed) ***(note: Completed 5/6/22 and both ponds can move to east side with road shift). This eliminates the City concern about showing potential ponds on land being marketed.*** | Scalar team/CONSOR |
| “preferred” labels | Remove “preferred” from all pond sites for preliminary concepts | Scalar team |
| Revised exhibit | Provide the City and County with revised exhibits showing the pond sites; Persides will forward on to the City Manager | Scalar team |
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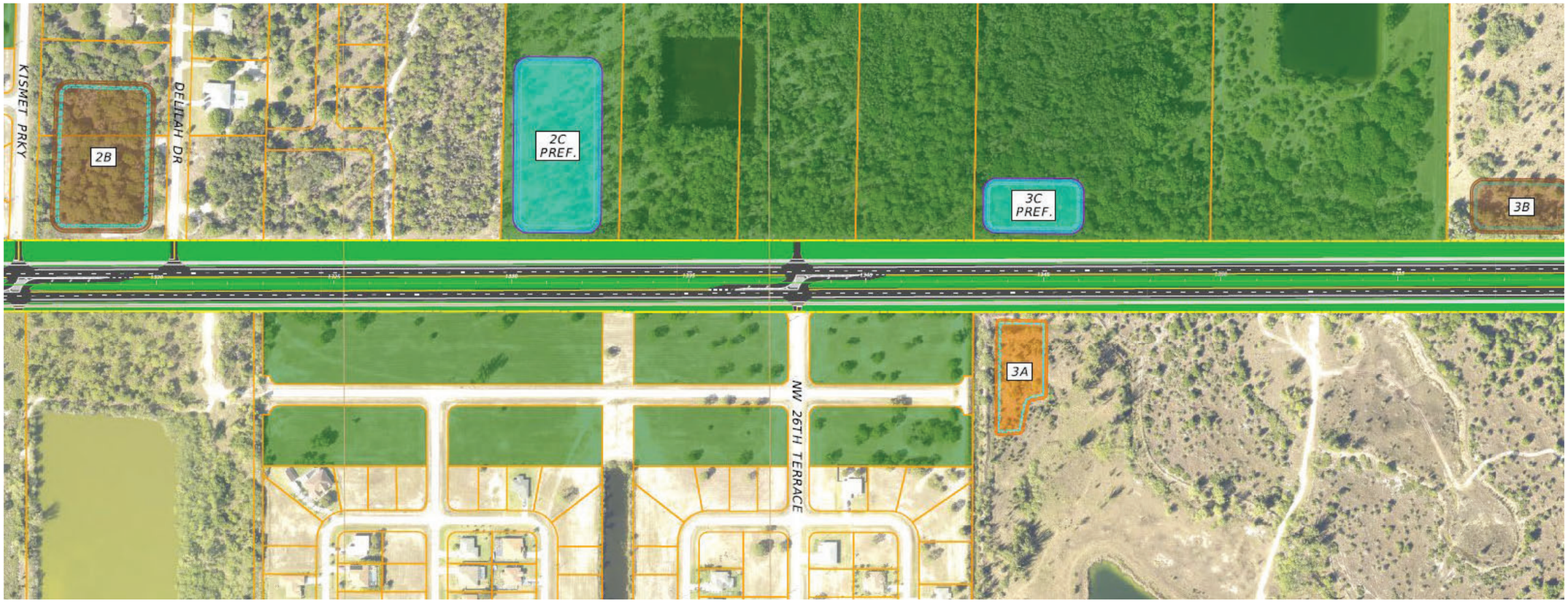
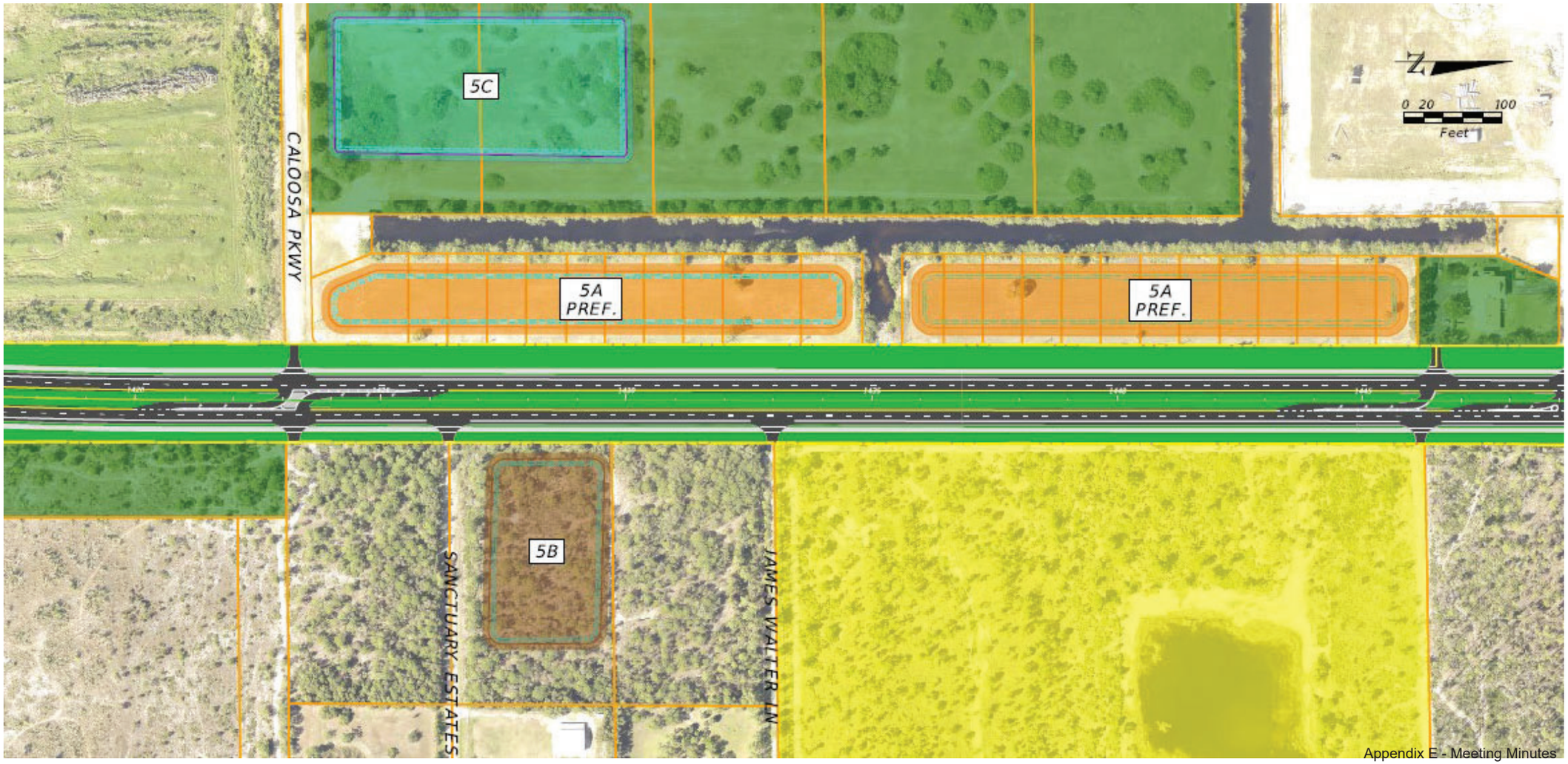
| | | |

Roll plot was on screen for GoToMeeting. Below is a clip of Pond sites 2 and 3C on City of Cape Coral property.



Roll plot was on screen for GoToMeeting. Below is a clip of Pond site 5C on City of Cape Coral property.



# BURNT STORE ROAD PD&E STUDY
## FPID No. 436928-1-22-01

## LEE COUNTY COORDINATION MEETING
## Monday, May 2, 2022
## GoToMeeting
## ATTENDEE LIST

| NAME | AGENCY/COMPANY | POSITION | E-MAIL ADDRESS |
|---|---|---|---|
| Randy Cerchie | Lee County DOT | Director | rcherchie@leegov.com |
| Robert Price | Lee County DOT | Deputy Director | rprice@leegov.com |
| Thomas Marquardt | Lee County DOT | Manager, Operations | tmarquardt@leegov.com |
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| Robert Clemens | Lee County DOT | Director, County Lands | clemenrg@leegov.com |
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| David Bennett | CONSOR | Consultant Drainage Lead | dbennett@consoreng.com |
| Francina Gil | CONSOR | Consultant Drainage Lead | fgil@consoreng.com |

# APPENDIX F

# Bridge Hydraulic Memorandum

see report under separate cover

# APPENDIX G

## Cross Drain Photos

# CD-2

# CD-3

# CD-4

# CD-5

# CD-6

# CD-7

# CD-8

# CD-9


# CD-10L

# CD-10C