

PES

SENIOR DESIGN FINAL PRESENTATION

**Panther Engineering
Services, INC.**

- Lissy Ventura
- Vincent Roustit
- David Mendez
- John Paul Hermida
- Kevin Hernandez



Introduction / Overview

Panther Engineering Services, INC.



Passionate Engineering Students

Panther Engineering Services represents a group of passionate FIU Engineering students.



Goal :

Panther Engineering Services looks forward to widen and reconstruct State Road 860/ Miami Gardens Drive I-75 to NW 75 Pl. Our main goal is to please the inhabitants of the area, pedestrian and bicyclists.



Transportation Engineering



Development Services



Drainage



ASCE Projects



Construction Management



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PANTHER ENGINEERING SERVICES, INC.

Organizational
**CHART+ TEAM
ROLES**



Lissy Ventura
Project Manager



David Mendez
*Quality Assurance /
Quality Control Manager*



Vincent Roustit
Assistant Project Manager



John Hermida
Roadway Engineer



Kevin Hernandez
Drainage Engineer

Quality Control / Quality Assurance

Panther Engineering Services, INC.



Quality Assurance will be taken care of by the Project Manager of the project as they must make sure that the project is running on time and on schedule.



The Project Kick-Off meeting will take place once the project is awarded.



We will have a system to keep up with the project life cycle management (PLM)

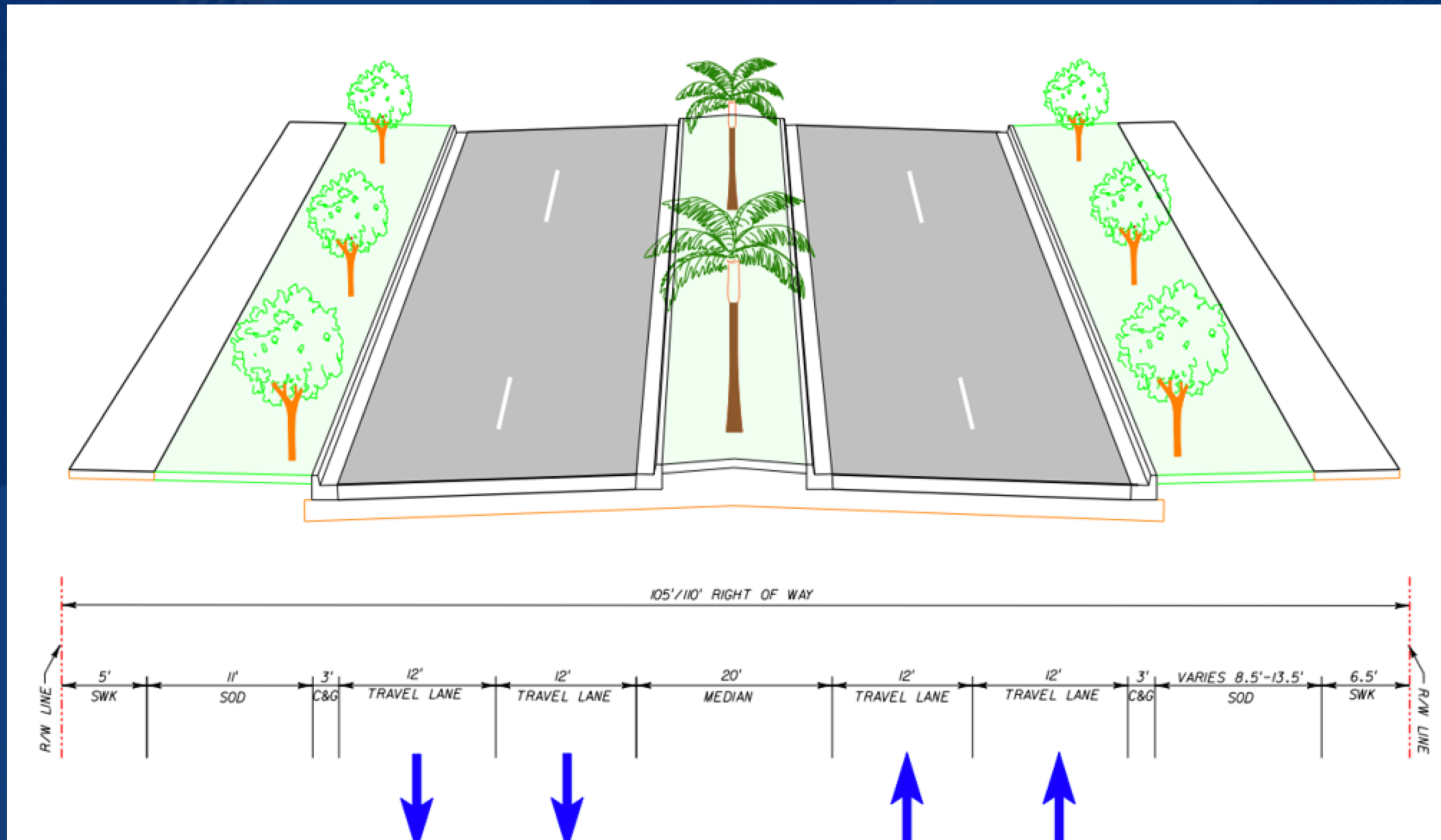


- The project manager and or anyone assigned by the project manager to ensure deliverables are according to PES quality control process
- Final Calculations and Plans must be reviewed with the QA/QC Manager

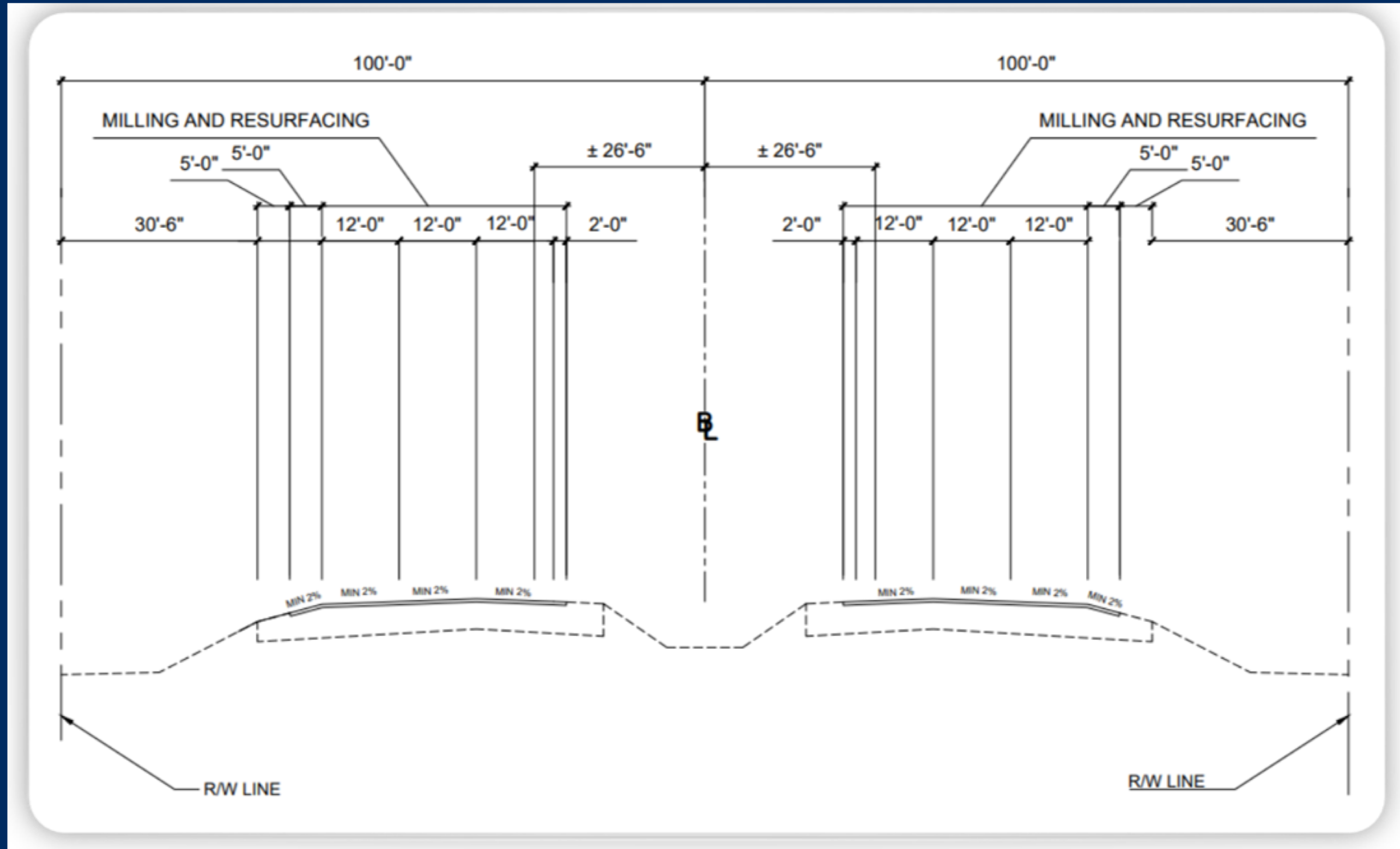
- Final calculations must be checked by another independent engineer working on the project team
- Communication will be maintained throughout the entirety of the project.

Quality Control/Quality Assurance Process

Existing Typical Section



Proposed typical section



Pavement Design

CURRENT CONDITIONS

Crack Value of 6.4/10
Lack of Drainage

ACTIONS REQUIRED

Milling
Resurfacing
Widening of Pavement

STANDARDS

- FDOT Flexible Pavement Design Manual
- FDOT Pavement Coring and Condition Data Report
- AASHTO Guide for Design of Pavement Structures
- DERM
- ADA

Pavement Calculations

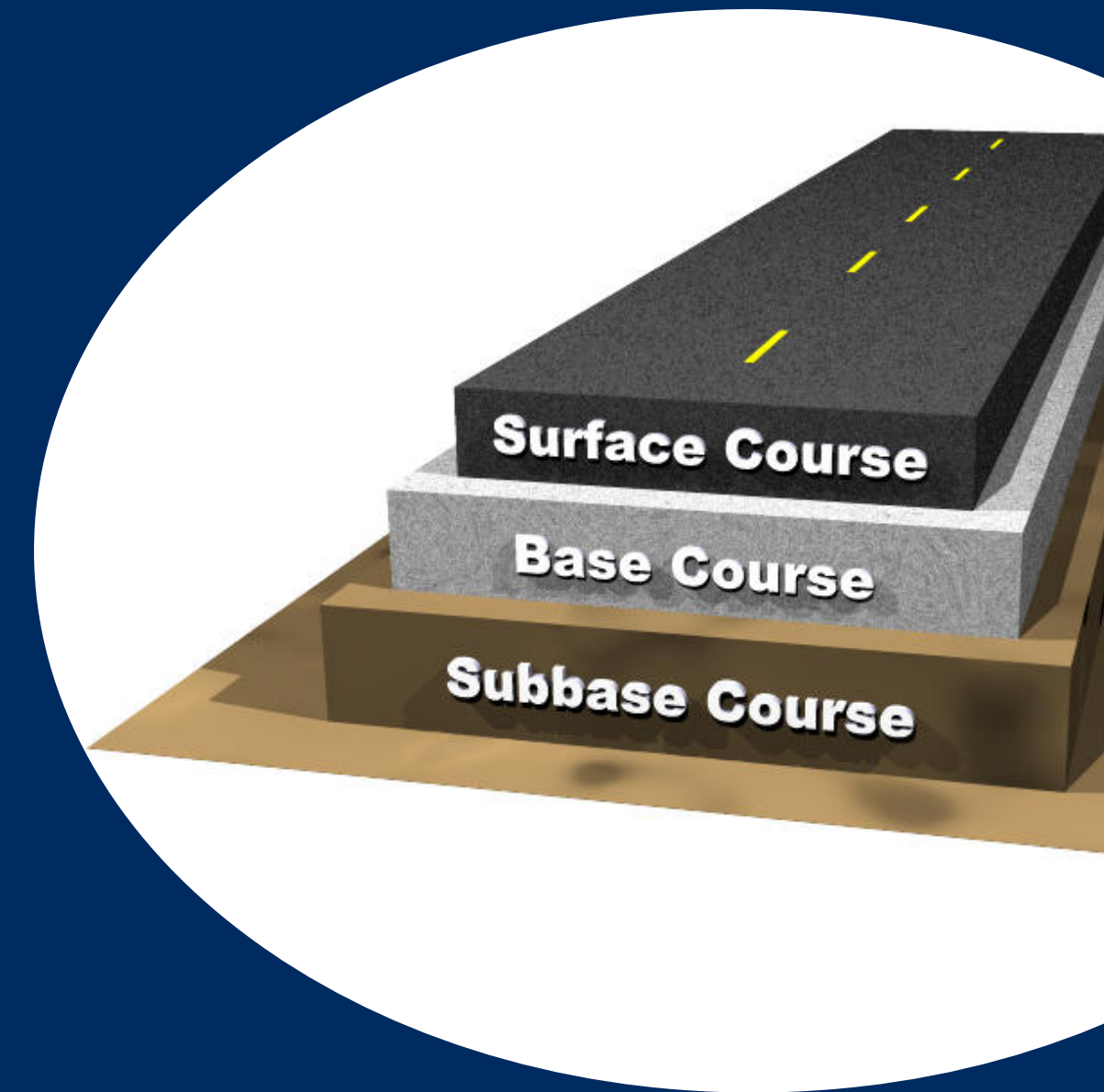
METHODS

- **18 Kip Equivalent Single Axle Load Analysis**
- **95-99% Reliability (rehabilitated roadway)**
- **Resilient Modulus: 12,000 psi**
- **Design Period: 20 years**

RESULTS

- **Milling Depth = 1 ½ in**
- **Repaving Depth = 1 ½ in**
- **Weighted Layer Thickness (SNC) = 4.08 in**
- **Friction Course Dense Graded (FC-12.5) = 1 ½ in**

- **2% maximum grade from sidewalk to medium**
- **2% minimum for vehicular lanes**



Community Awareness Plan (CAP)

01 Mitigation of Community issues that may present during the construction process.

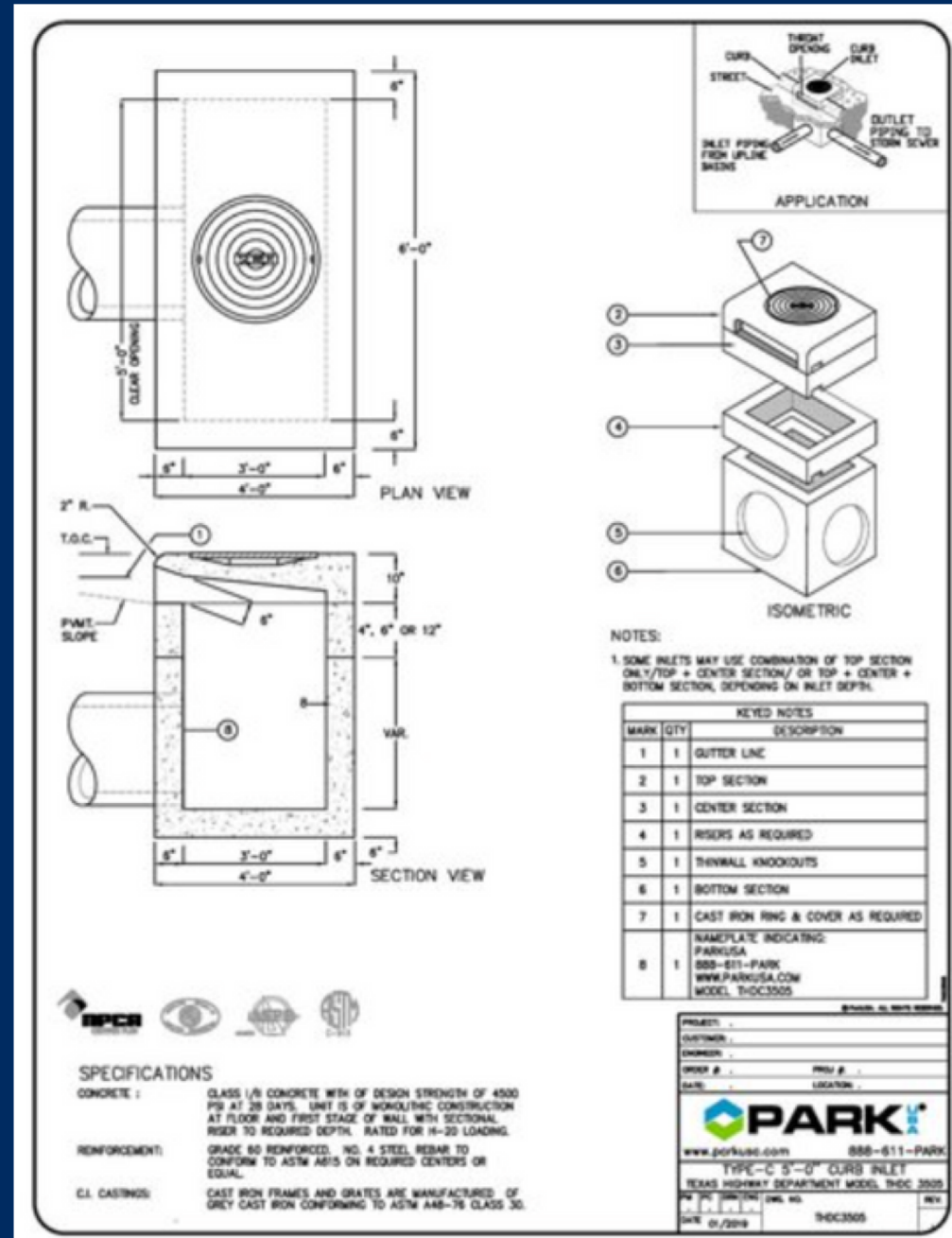
02 Reach out to community for input

03 Work with community to resolve issues



SWPPP

Storm Water Pollution Prevention Plan



Drainage Inlet Detail

1.C.AREA ESTIMATES

TOTAL SITE AREA: 14.5 ACRES

TOTAL SITE AREA TO BE DISTURBED: 14.5 ACRES

1.D RUNOFF DATA:

RUNOFF COEFFICIENTS:

BEFORE: 0.7

DURING: 0.7

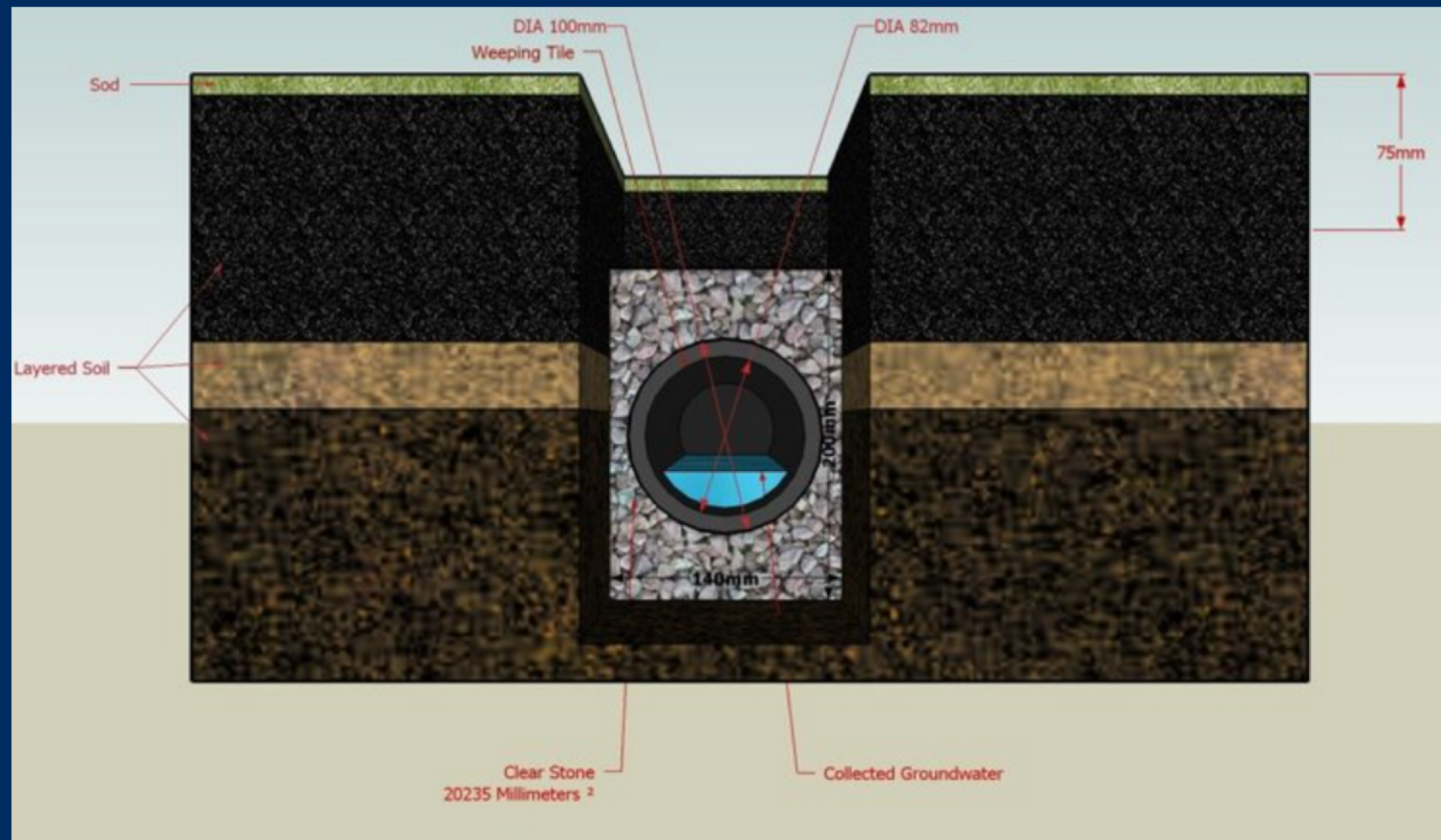
AFTER: 0.7

SOILS DATA: THE RESULTS OF THE SOIL BORINGS ALONG THE ROADWAY ARE SHOWN IN THE ROADWAY SOIL SURVEY SHEET(S). THE RESULTS OF SOIL BORINGS DONE IN THE PONDS ARE SHOWN ON THE POND DETAIL SHEETS. THE NUMBERS FOR THESE ARE IDENTIFIED ON THE KEY SHEET OF THESE CONSTRUCTION PLANS. IN GENERAL, THE SOILS ARE CLAYEY SANDS.

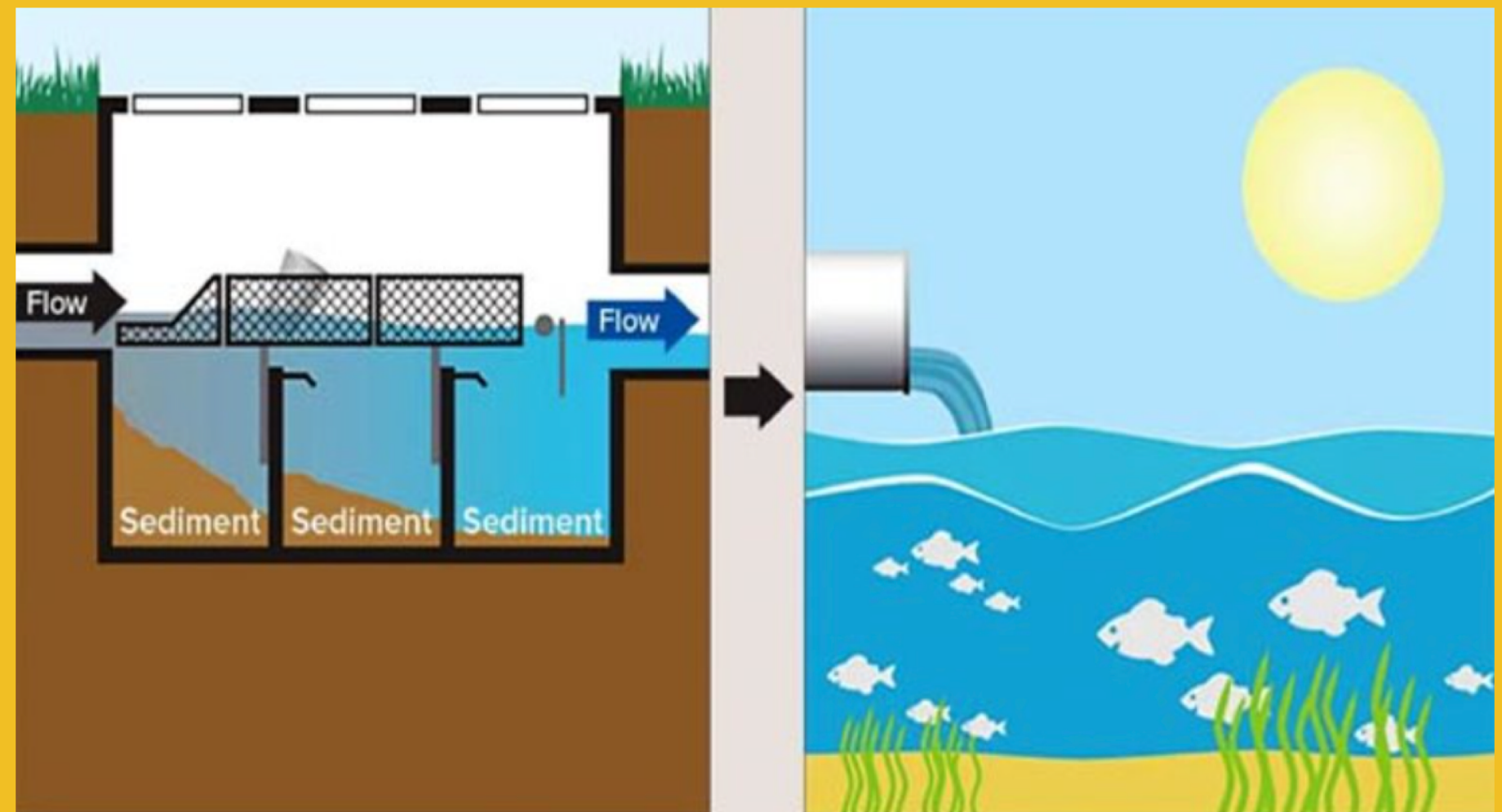
SWPPP Calculations

SWPPP

Storm Water Pollution Prevention Plan

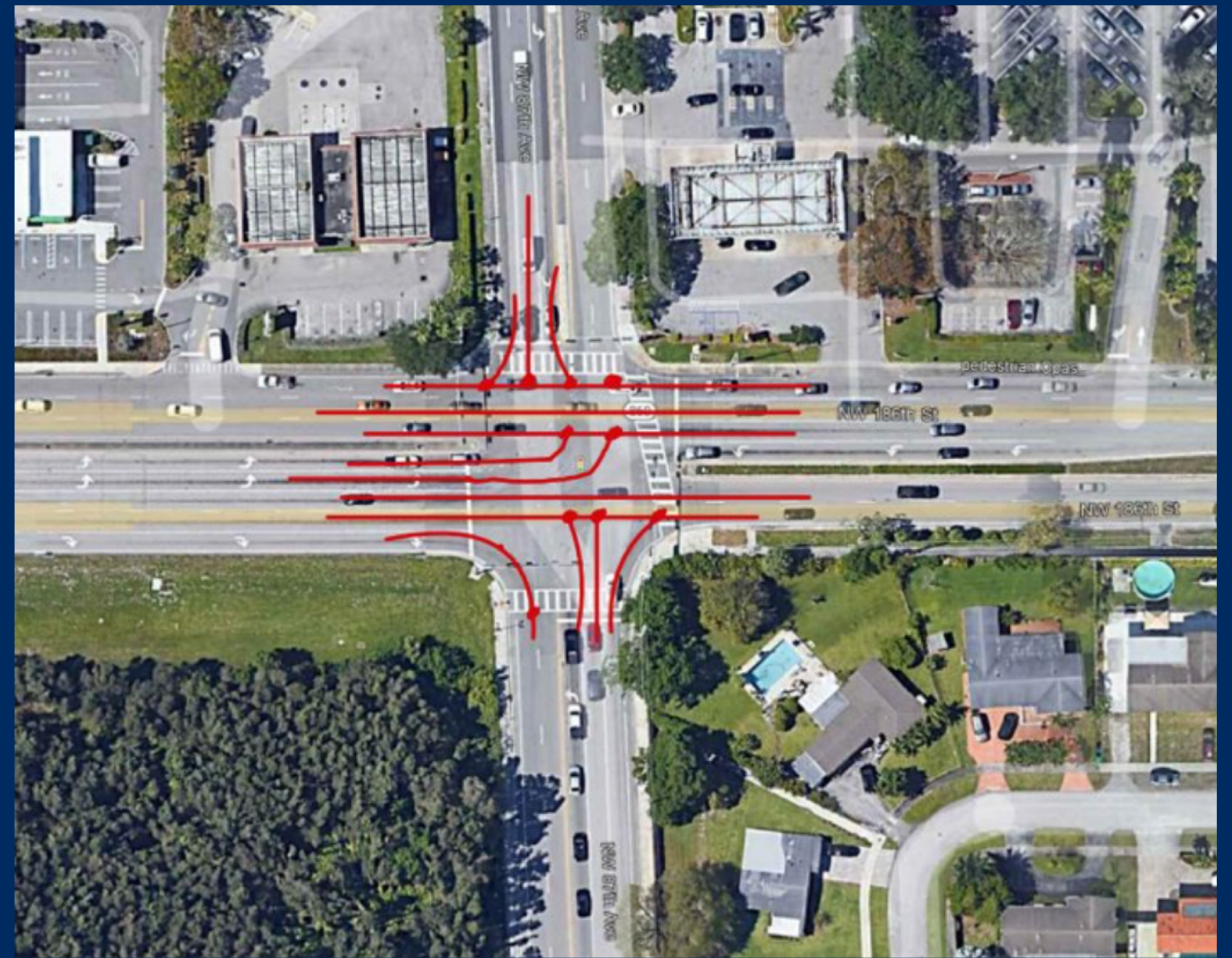
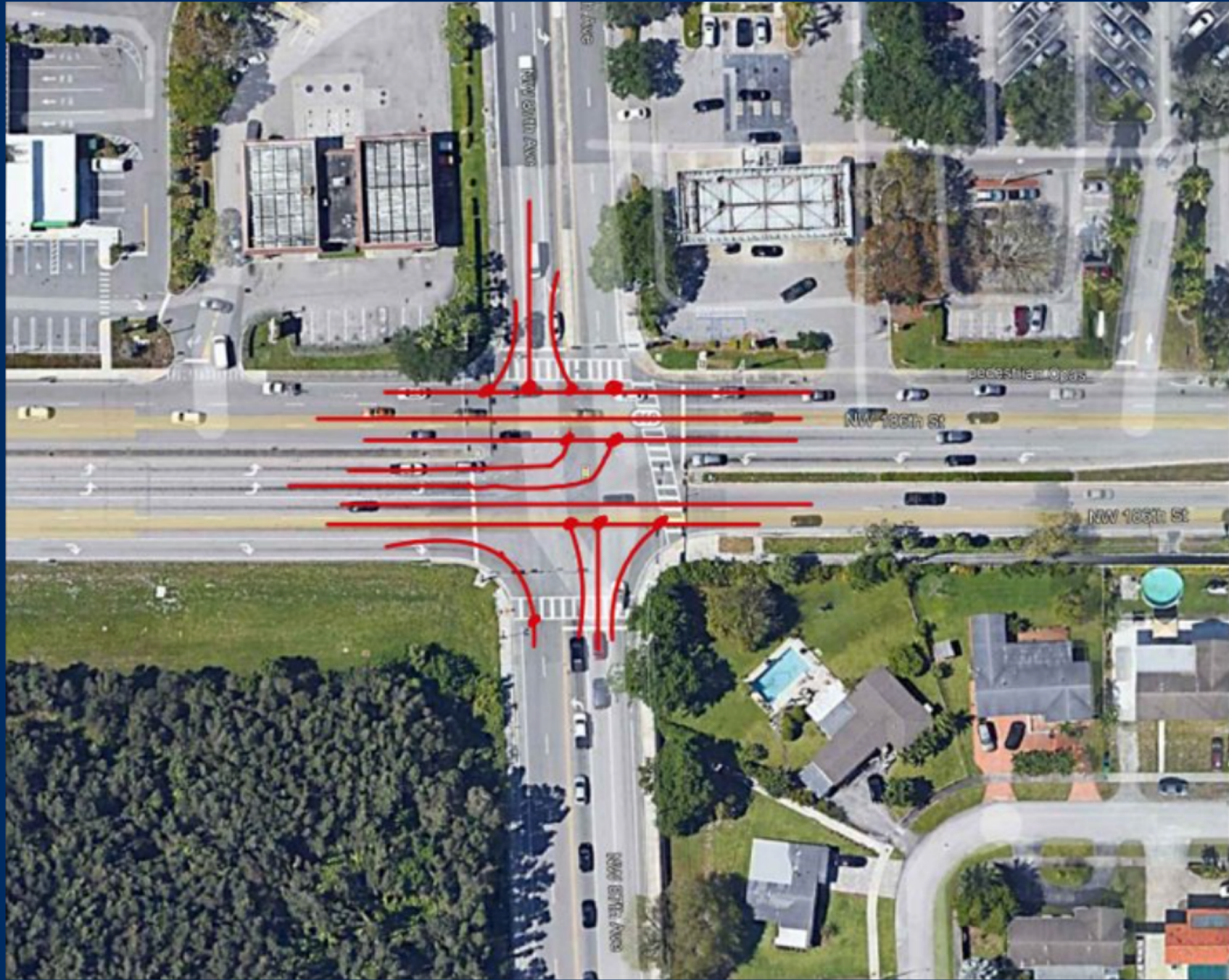


French Drain Diagrams

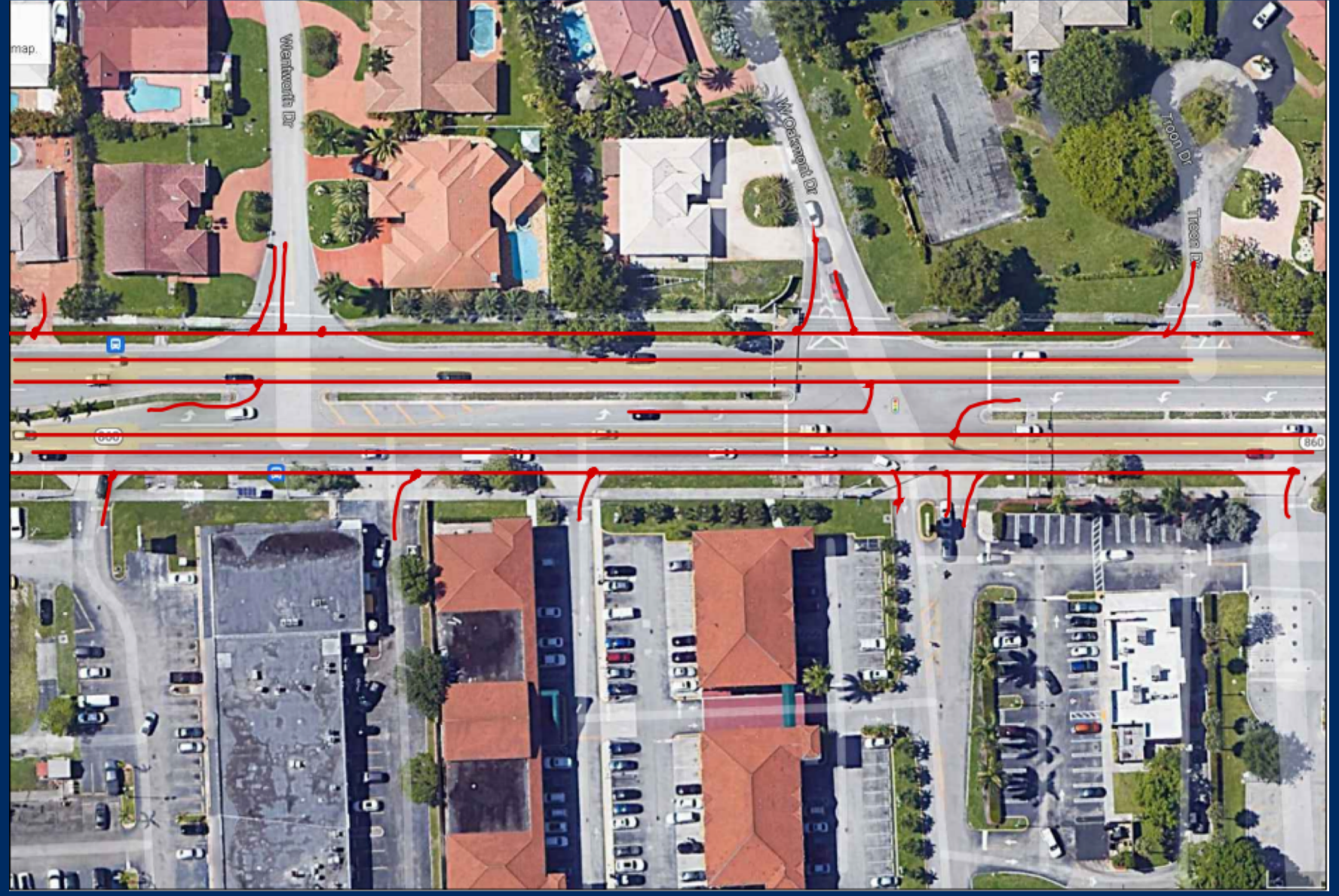
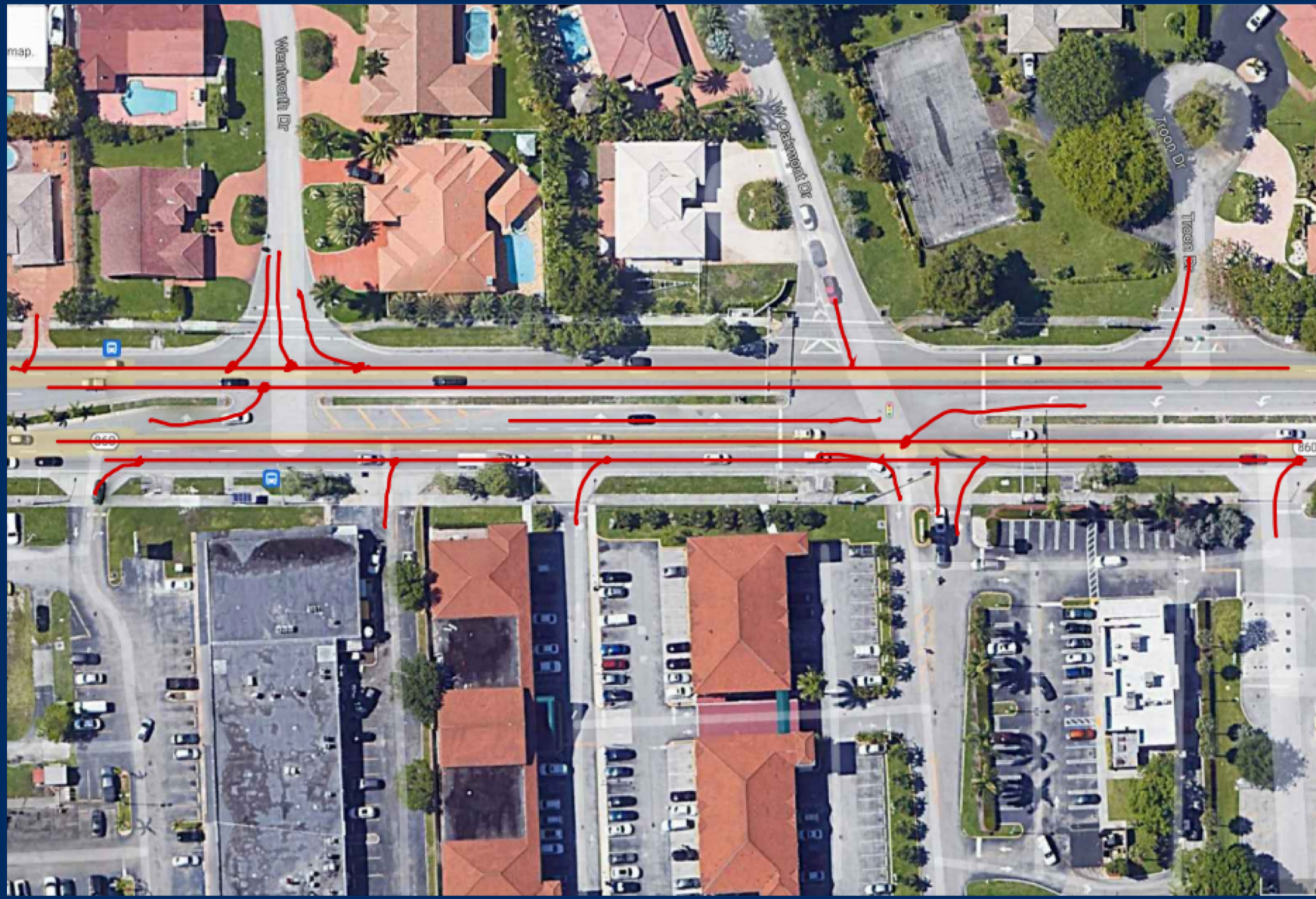


Baffle Boxes

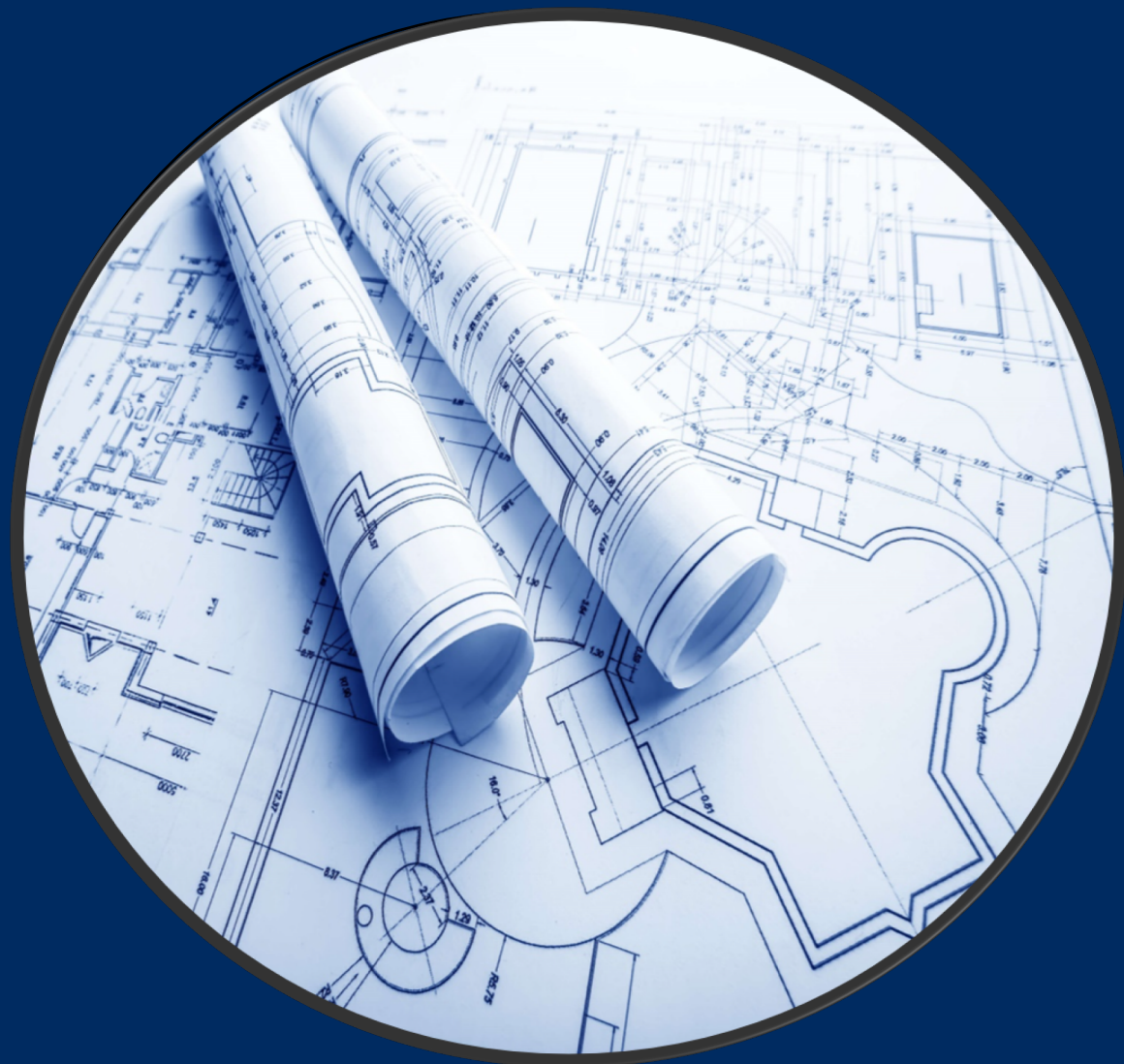
Access Management Plans



Access Management Plans



Construction Plans



Issued for Construction

1. Layout plans
2. Typical section plan
3. Paving, grading & drainage
4. Pavement marking and signing plans.

CONSTRUCTION COSTS

SCOPE OF WORK

- Earthwork = \$591,902
- Roadway Work = \$1,175,264
- Shoulder Work = \$1,103,160
- Median Work = \$202,461
- Drainage Work = \$684,431
- Signage Work = \$27,089
- Signalization = \$1,076,009
- Lighting = \$441,108

COST ANALYSIS

- Long-Range Estimate (LRE)
- Allowance & Contingencies
 - Design Reconsiderations
 - Utility Relocation
 - Material Delays/Shortages
 - MOT Adjustments
- Adjusted for Inflation

TOTAL COSTS = \$5,293,000

Conclusion

- Panther Engineering Services is committed to improving state road 860 and use our previous experiences in the field.
- Safety is our priority
- We are looking forward to keep working on the construction plans and provide any additional service necessary to improve state road 860.





THANK YOU
FOR TRUSTING PES!

Panther Engineering Services, INC.

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