Proposal to Develop Engineering Plans to Construct the 10th Street Ovalabout

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engenuity group inc.
ENGINEERS • SURVEYORS • GIS MAPPERS

Department of Public Works

TOWN OF LAKE PARK, FLORIDA
1923

Project Background

ROBERTO TRAVIESO, DIRECTOR OF PUBLIC WORKS


PROJECT LOCATION
Prosperity Farms Rd
10th St
10th Ct
10th Ct
Northern Dr
Northern Dr
Northern Dr
W Rd
Orange Dr
9th St
9th St
Magnolia Dr
3D

Project Background

- History of frequent and severe traffic accidents in project area
- Conducted Traffic Study in **2020** (O'Rourke Engineering & Planning)
  - Report available on Town's website
- Developed three (3) option:
  - Implement signalization improvements
  - Construct round-about (rotary) traffic element
  - Construct oval-about traffic element

Project Background

- Partnered with Palm Beach County (PBC) to design and construct the project

- Contracted with Engenuity Group to perform Feasibility Study and develop opinion of costs

What is an Ovalabout?

- A type of oval-shaped intersection or junction in which road traffic is permitted to flow in one direction (counterclockwise) around a oval-shaped island
- Widely consider a mobility and traffic safety-enhancement
- Traffic Calming benefits

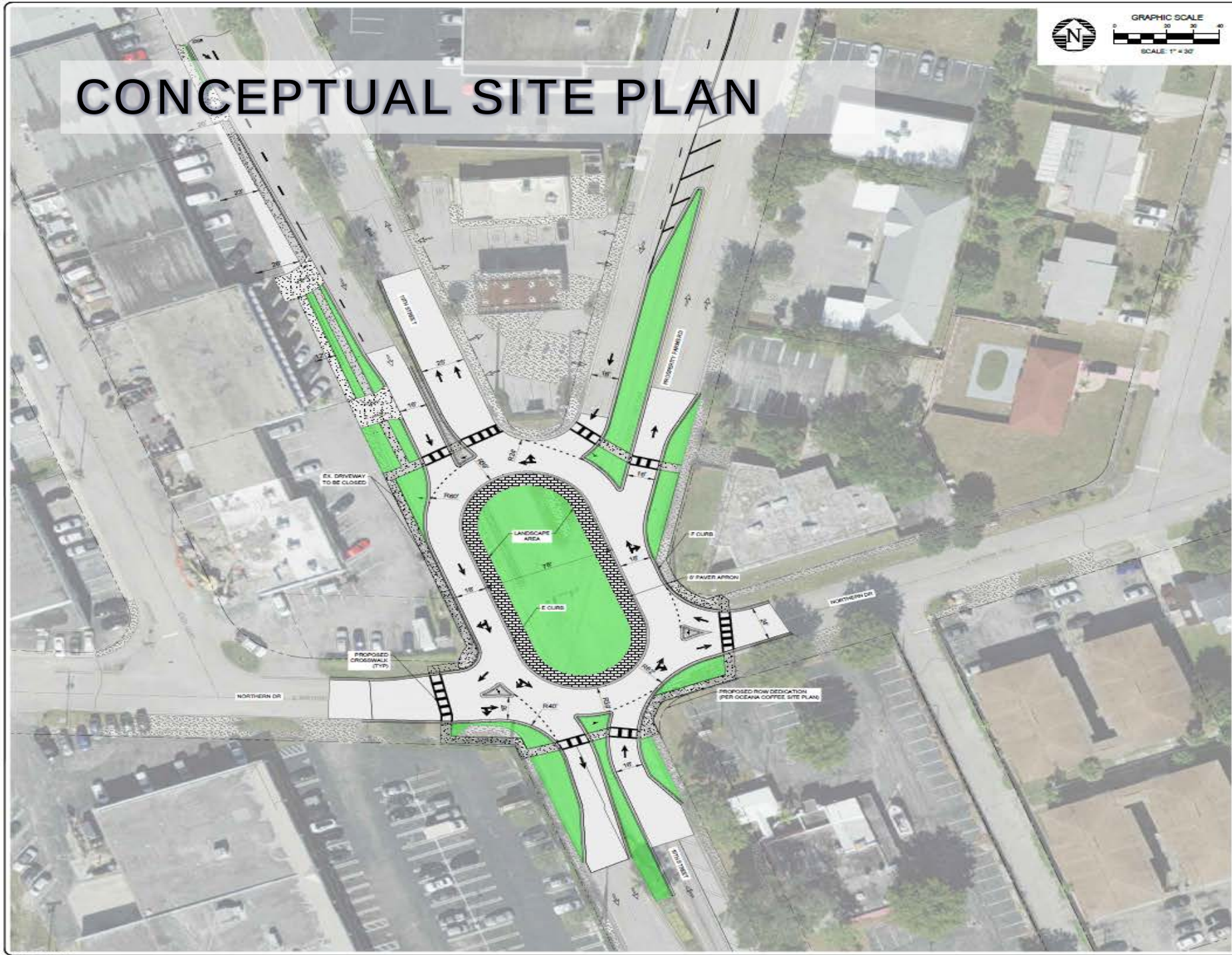
How Would an Ovalabout Help?

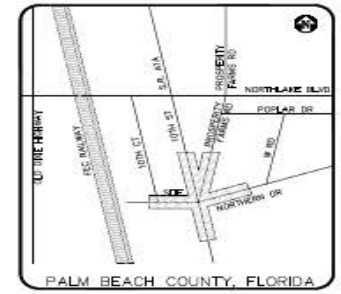
- Increased level of service
- Increased traffic safety, reduced travel speeds
- Increased mobility (I.e. protected crosswalks
- Landscape enhancements (plantings, art pedestal, etc.)

Conceptual Plans

ADAM SWANEY, PE

CONCEPTUAL SITE PLAN





LOCATION MAP
N.T.S.

ENGINEERING LEGEND:

- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED LANDSCAPE AREA
- PROPOSED PAVERS
- TRAFFIC FLOW DIRECTION
- CATCH BASIN / YARD DRAIN
- 25.00 FINISHED GRADE ELEVATION
- DRAINAGE FLOW DIRECTION

GENERAL NOTES:

1. ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND ARE REFERENCED TO BENCHMARK "V 402", ELEVATION= 16.706' (NAVD 88).
2. TOPOGRAPHIC SURVEY PERFORMED BY ENGENUITY GROUP INC. IN NOVEMBER 2020.
3. ALL REMOVED DEBRIS & DEMOLISHED MATERIAL TO BE REMOVED FROM THE SITE AND LEGALLY DISPOSED OF.
4. ALL CROSSWALKS SHALL MEET ADA. NO CROSS SLOPE SHALL EXCEED 2%
5. IF PROPOSED WORK DAMAGE PALM BEACH COUNTY ROADWAY, SIDEWALK AND/OR DRAINAGE SYSTEMS, THEN THEY WILL BE CONSTRUCTED REPAIRED OR REPLACED TO ITS ORIGINAL OR BETTER CONDITION AT NO COST TO THE PALM BEACH COUNTY.
6. PAVEMENT MARKINGS AND SIGNING IN PALM BEACH COUNTY RIGHT OF WAY, SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND PALM BEACH COUNTY TYPICAL T-1-21.
7. CONTRACTOR SHALL CONTACT PBC TRAFFIC OPERATIONS AT 561-233-3900 FORTY-EIGHT (48) HOURS PRIOR TO CONSTRUCTION IF WORK IS BEING DONE WITHIN 10 FEET OF ANY SIGNAL EQUIPMENT.
8. ANY DAMAGE TO SIGNAL EQUIPMENT CAUSED BY THE CONSTRUCTION OF THIS PROJECT MUST BE REPAIRED OR REPLACED TO ORIGINAL OR BETTER CONDITION AT NO COST TO PALM BEACH COUNTY.

LEGEND: (ABBREVIATIONS)

CB	CATCH BASIN
E	EAST
EL	ELEVATION
EXIST	EXISTING
FT	FEET OR FOOT
HDPE	HIGH DENSITY POLYETHYLENE PIPE
INV	INVERT
L	LEFT
LF	LINEAR FEET
N	NORTH
NTS	NOT TO SCALE
ORB	OFFICAL RECORD BOOK
OS	OFFSET
R	RADIUS OR RIGHT
RIM	RIM ELEVATION
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
R/W	RIGHT-OF-WAY
S	SOUTH
SVC	SERVICE
TYP	TYPICAL
W	WEST
M/E	MATCH EXISTING GRADE

CONCEPTUAL DESIGN PHASE

ADAM SWANEY, P.E., PROFESSIONAL ENGINEER LICENSE NO. 72226.
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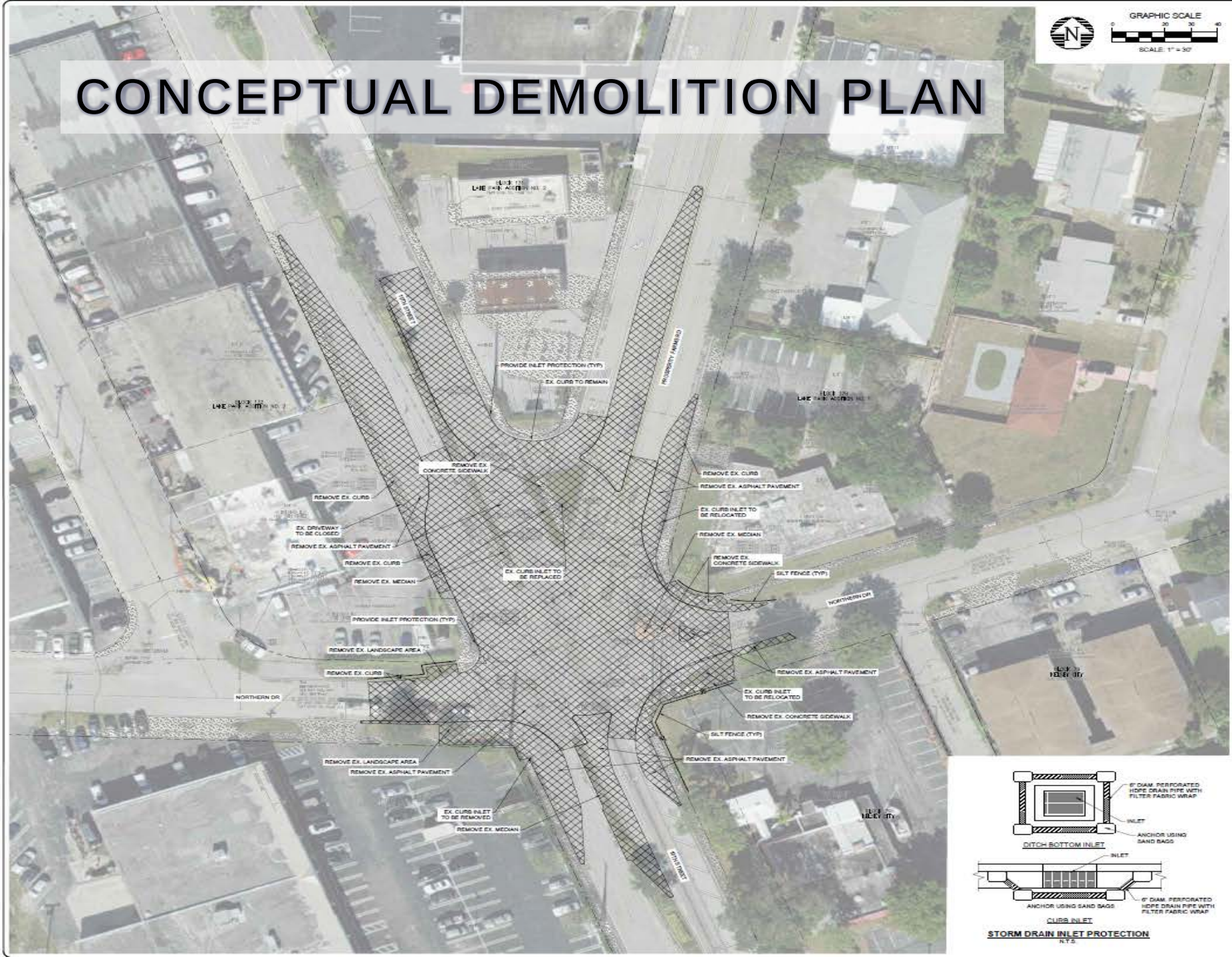
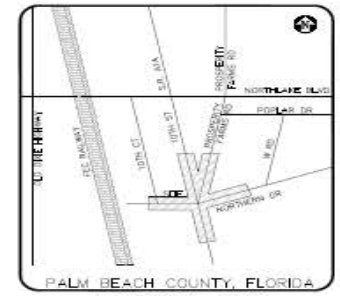
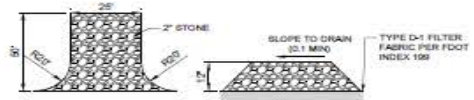
CONCEPTUAL DEMOLITION PLAN





LOCATION MAP
N.T.S.

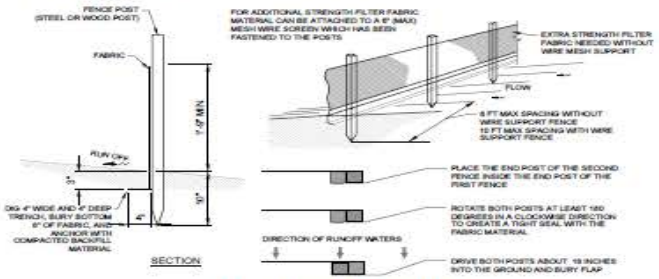
LEGEND:	
	DEMOLITION



TEMPORARY GRAVEL ENTRANCE
N.T.S.

SILT FENCE NOTES:

1. THE HEIGHT OF A SILT FENCE SHALL NOT EXCEED 36 INCHES (90 CM).
2. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS.
3. POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET (3 M) APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 12 INCHES (30 CM). WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6 FEET (1.8 M).
4. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES (10 CM) WIDE AND 4 INCHES (10 CM) DEEP ALONG THE LINE OF POSTS AND UP SLOPE FROM THE BARRIER.
5. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UP SLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH (25 MM) LONG, TIE WIRES, OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES (5 CM) AND SHALL NOT EXTEND MORE THAN 36 INCHES (90 CM) ABOVE THE ORIGINAL GROUND SURFACE.
6. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 8 INCHES (20 CM) OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES (90 CM) ABOVE THE ORIGINAL GROUND SURFACE.
7. FILTER CLOTH TO BE FASTENED SECURELY TO POSTS WITH TIES SPACED EVERY 24 INCHES AT TOP AND MID. SECTION. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
8. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE OR DEPTH OF ACCUMULATED SEDIMENT REACHES 6 INCHES.
9. SILT FENCE SHALL BE INSTALLED PER MANUFACTURES SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION AND SHALL NOT BE REMOVED UNTIL CONSTRUCTION IS COMPLETE.
10. THE CONTRACTOR SHALL INSPECT AND REPAIR THE SILT FENCE AFTER EACH RAIN EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
11. REMOVED SEDIMENT SHALL BE DEPOSITED IN AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFFSITE AND CAN BE PERMANENTLY STABILIZED.
12. THE SILT FENCE SHALL BE PLACED ON SLOPE CONTOUR TO MAXIMIZE ITS PONDING EFFICIENCY.
13. IF DITCH LEVEL IS DEEPER THAN 30", THEN A FLOATING SILT SCREEN SHALL BE USED.
14. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.
15. ALL PROJECTS REQUIRE SUBMITTAL OF POLLUTION PREVENTION PLAN.
16. ALL PROJECTS ≥ 1 AC, OR MORE MUST SUBMIT NOTICE OF INTENT (NOI) TO FDEP.



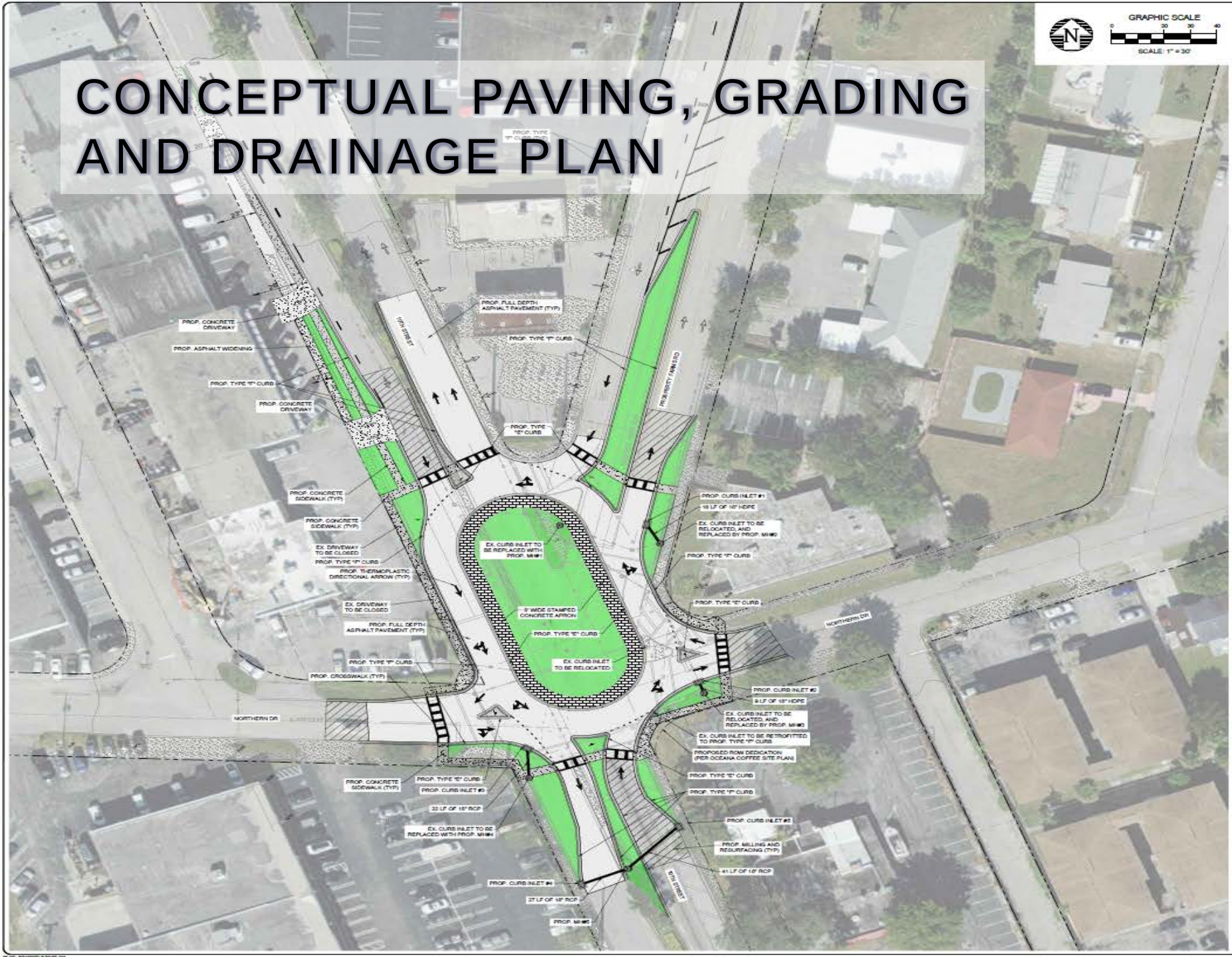
SILT FENCE INSTALLATION DETAIL
N.T.S.

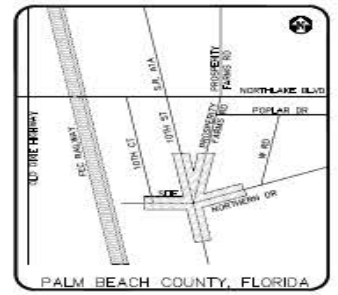
STORM DRAIN INLET PROTECTION
N.T.S.

CONCEPTUAL DESIGN PHASE

811 Know what's below. Call before you dig.

CONCEPTUAL PAVING, GRADING AND DRAINAGE PLAN





LOCATION MAP
N.T.S.

ENGINEERING LEGEND:

- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED LANDSCAPE AREA
- PROPOSED PAVERS
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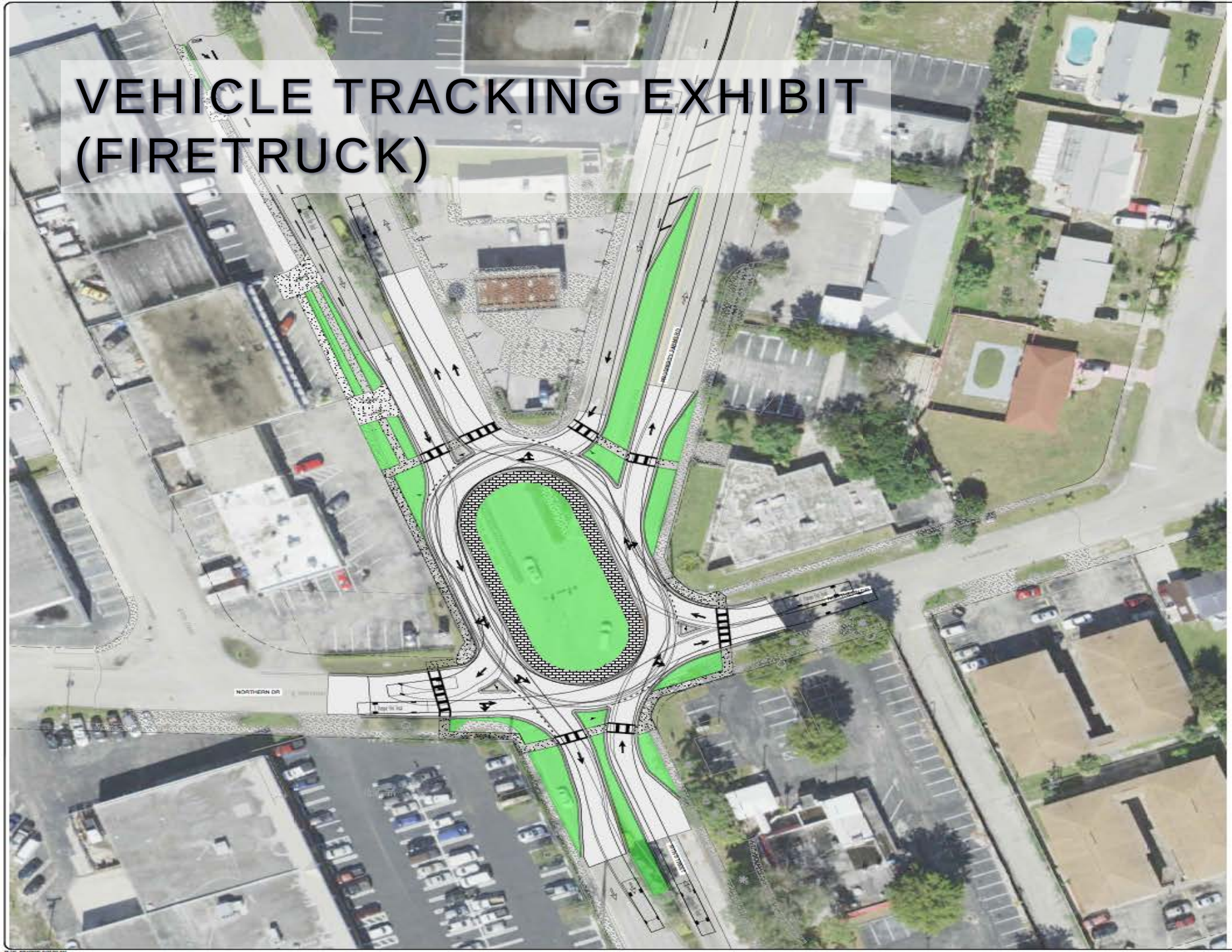
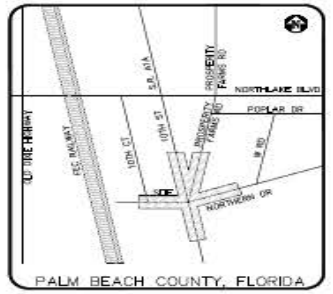
VEHICLE TRACKING EXHIBIT (FIRETRUCK)



GRAPHIC SCALE

0 20 30 40

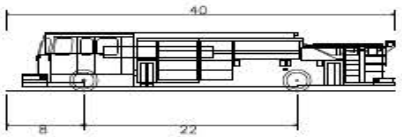
SCALE: 1" = 30'



LOCATION MAP

N.T.S.

LEGEND:	
	PROPOSED LANDSCAPE AREA
	TRAFFIC FLOW DIRECTION
	PROPOSED CONCRETE SIDEWALK
	PAVERS



Pumper Fire Truck	
Overall Length	40.000ft
Overall Width	8.167ft
Overall Body Height	7.745ft
Min Body Ground Clearance	0.656ft
Track Width	8.167ft
Lock-to-lock time	5.00s
Max Wheel Angle	45.00°

CONCEPTUAL ENGINEERING PLAN

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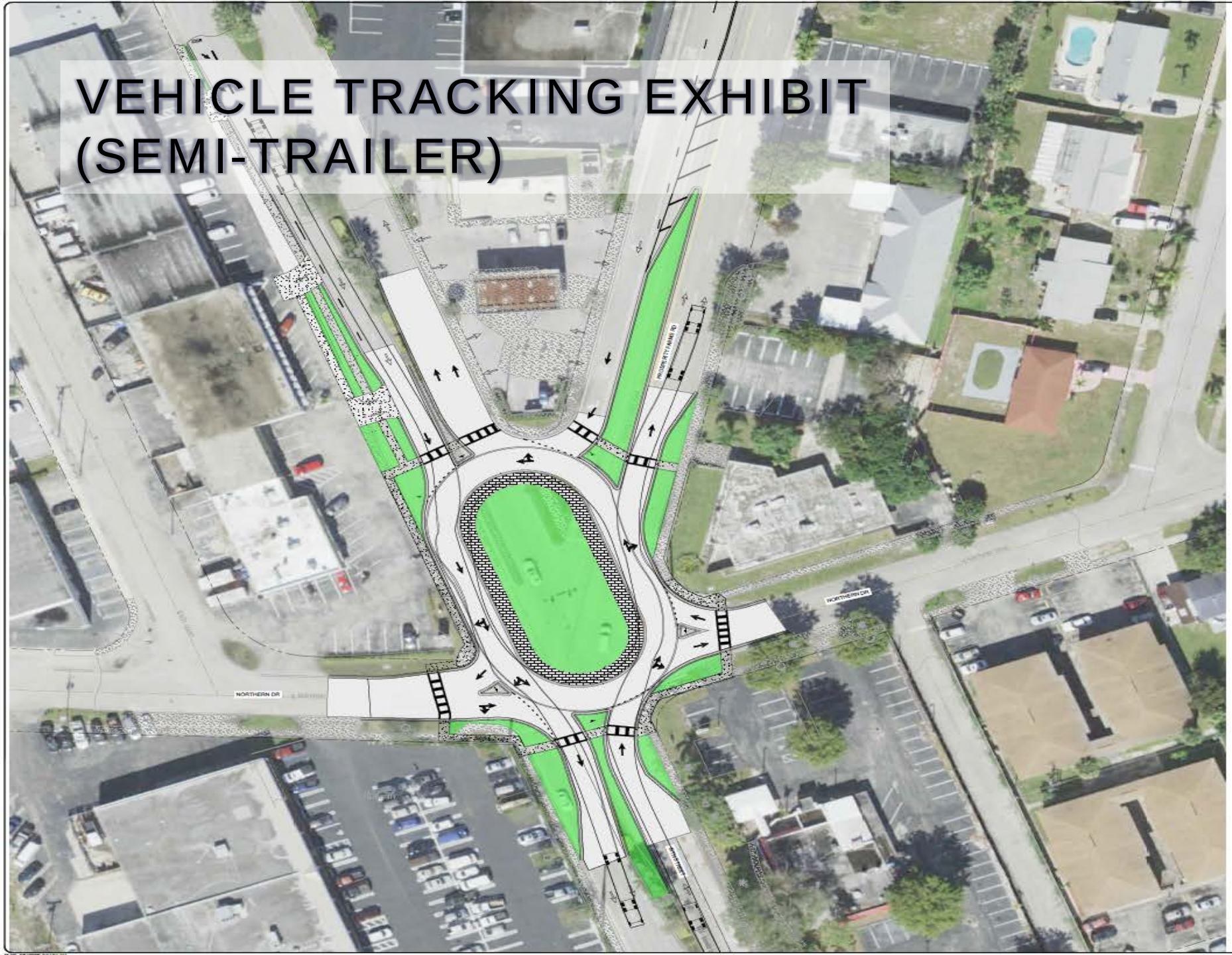
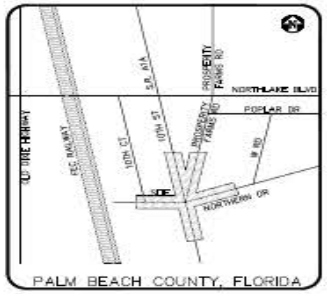
VEHICLE TRACKING EXHIBIT (SEMI-TRAILER)

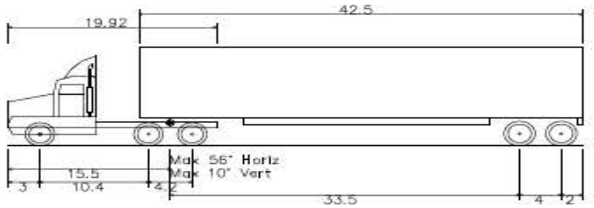


GRAPHIC SCALE
0 20 30 40
SCALE: 1" = 30'



LOCATION MAP
N.T.S.

LEGEND:	
	PROPOSED LANDSCAPE AREA
	TRAFFIC FLOW DIRECTION
	PROPOSED CONCRETE SIDEWALK
	PAVERS



WB—50 — Intermediate Semi—Trailer	
Overall Length	55.000ft
Overall Width	8.500ft
Overall Body Height	12.052ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock—to—lock time	6.00s
Max Steering Angle (Virtual)	17.90°

CONCEPTUAL ENGINEERING PLAN

Conceptual Cost Estimate

ADAM SWANEY, PE

Conceptual Cost Estimates

Description	Estimated Cost
SITE PREPARATION	$122,000
ROADWAY CONSTRUCTION	$308,941
SIDEWALK & ROAD CONSTRUCTION	$43,310
DRAINAGE CONSTRUCTION	$81,625
ADDITIONAL ITEMS	$275,000
MOBILIZATION & OTHER COSTS	$556,687
TOTAL:	**$1,387,563**

Design Cost Estimate and Next Steps

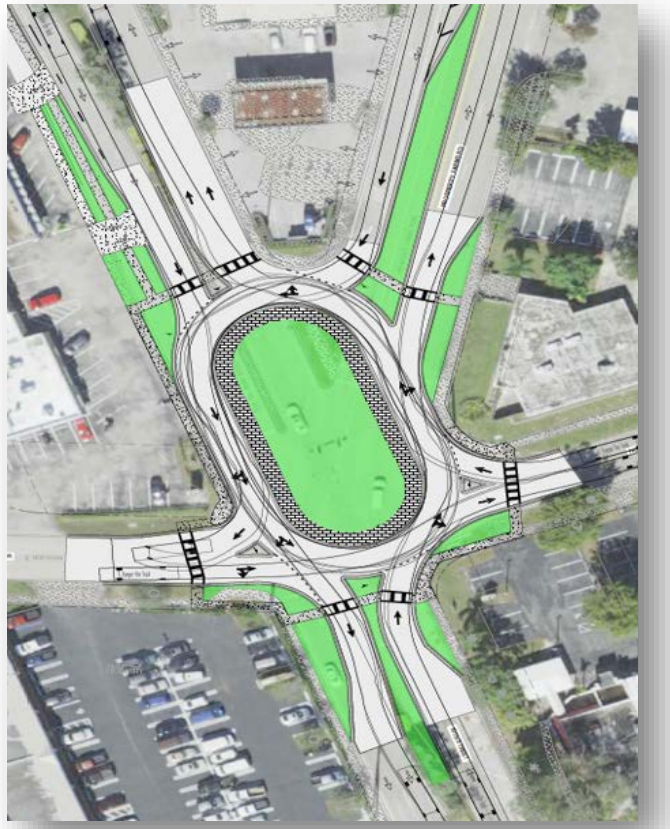
ROBERTO TRAVIESO, DIRECTOR OF PUBLIC WORKS

Design Cost Proposal

Description	Services Cost
TRAFFIC ANALYSIS UPDATE	$11,775.00
CONSTRUCTION DOCUMENTS	$61,500.00
PERMITTING	$12,000.00
CONSTRUCTION PHASE SERVICES	$18,000.00
GEOTECHNICAL & MAINTENANCE OF TRAFFIC	$7,575.00
BID COORDINATION / PUBLIC MEETINGS	$5,300.00
TOTAL:	**$126,092.00**

Implementation Timeline & Next Steps

- Perform traffic study to confirm Ovalabout service level supports projected increases to densities in the project area
- Develop Design Plans: **April 2023-June 2024**
- Continue to engage with Stakeholders regarding project design and implementation



Questions & Comments