



TRANSPORTATION SYMPOSIUM

2019

Modern Roundabouts

Dave Amato and Paul Hiers

Today's Presenters



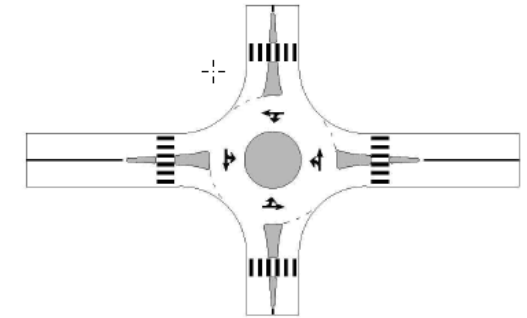
Paul Hiers, PE
Manager, Production Support Office



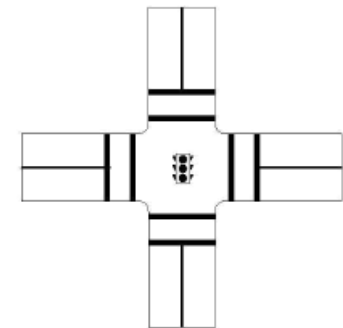
Dave Amato, PE
Innovative Intersection Specialist

Roundabout Evaluation 3-Step Process (RE)

- Introduced in 2015
- Tools to compare roundabouts to conventional intersections
- Focus on Safety, Operations, and Life Cycle Cost
- Change in FDOT culture
 - 1998 to 2014 – 1 roundabout project per year
 - 2015 to 2019 – 10 roundabout projects per year

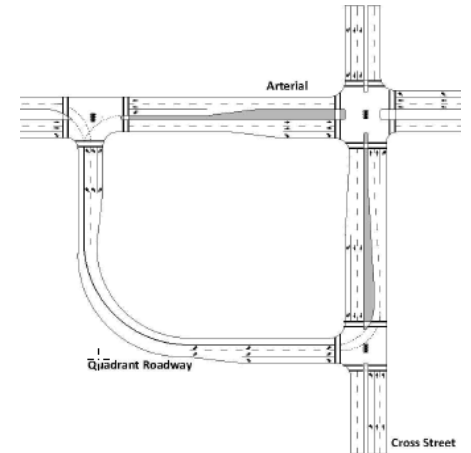
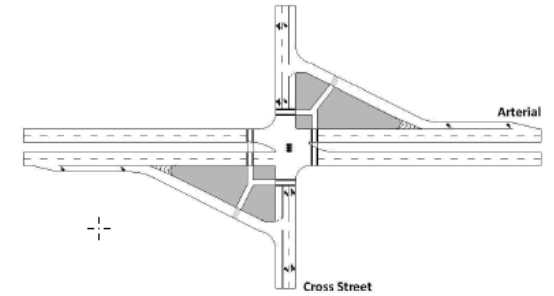
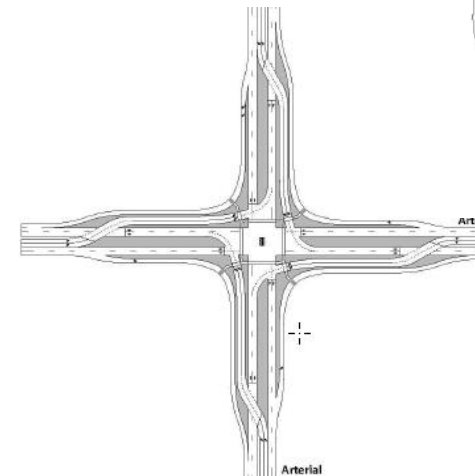
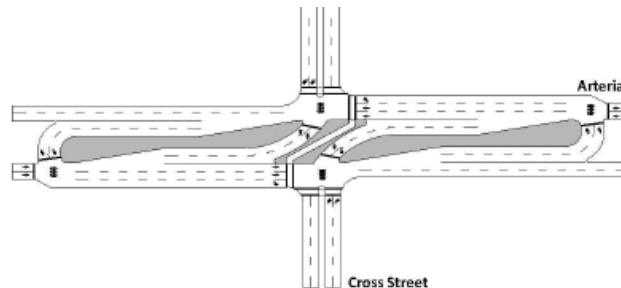
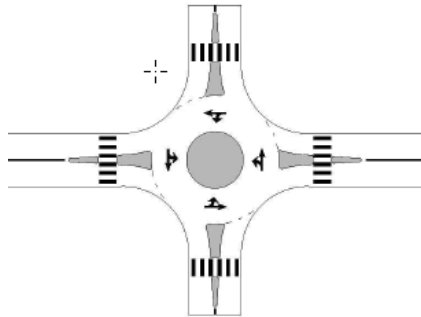
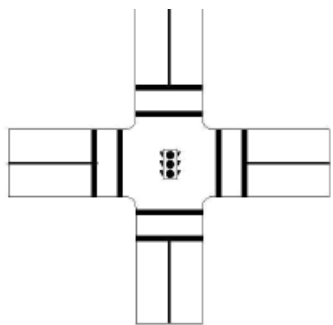


Comparison



Migration to Intersection Control Evaluation (ICE)

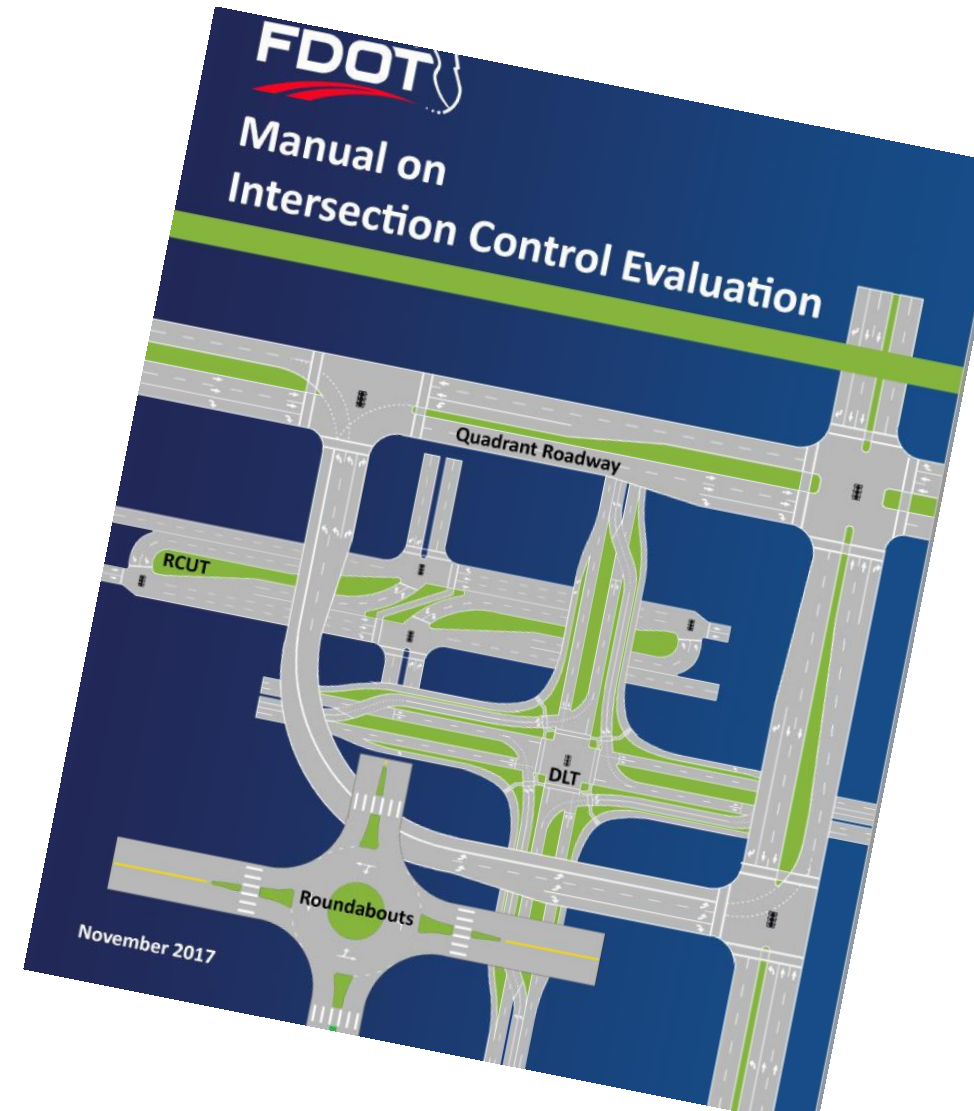
- Starting in 2020 Roundabout Evaluation will be replaced by ICE
- ICE similar to RE with focus on Safety, Operations, and Costs
- ICE expands the evaluation including more intersection configurations



Migration to Intersection Control Evaluation (ICE)

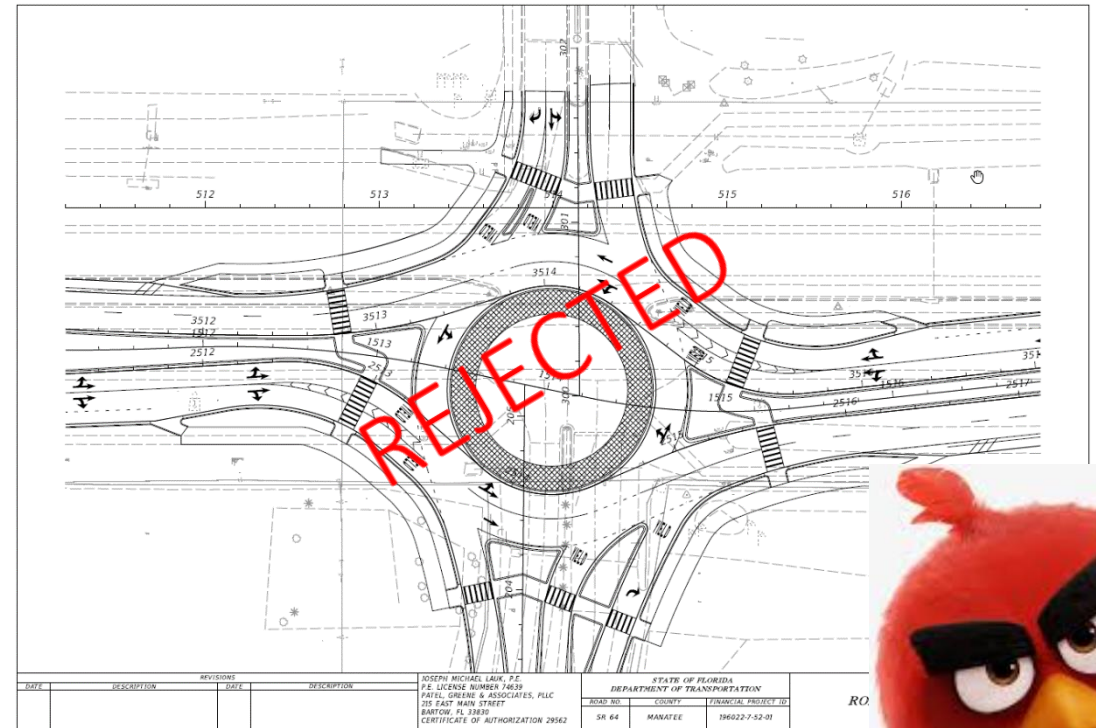
- ICE Policy/Process outlined in the FDOT ICE Manual
- Posted on the Traffic Engineering and Operations Office web site:

www.fdot.gov/traffic/TrafficServices/



Central Office Roundabout Review and Approval

- Roundabout Review Submittal will still be required
- Approval by the State Roadway Design Engineer will no longer be required



Thanks to our National Experts



Justin Bansen, P.E.
Kittelson & Associates



Kevin Kuhlow, P.E.
Ayers Associates

Change in FDOT Culture

1998 to 2014 – 1 RAB project per year

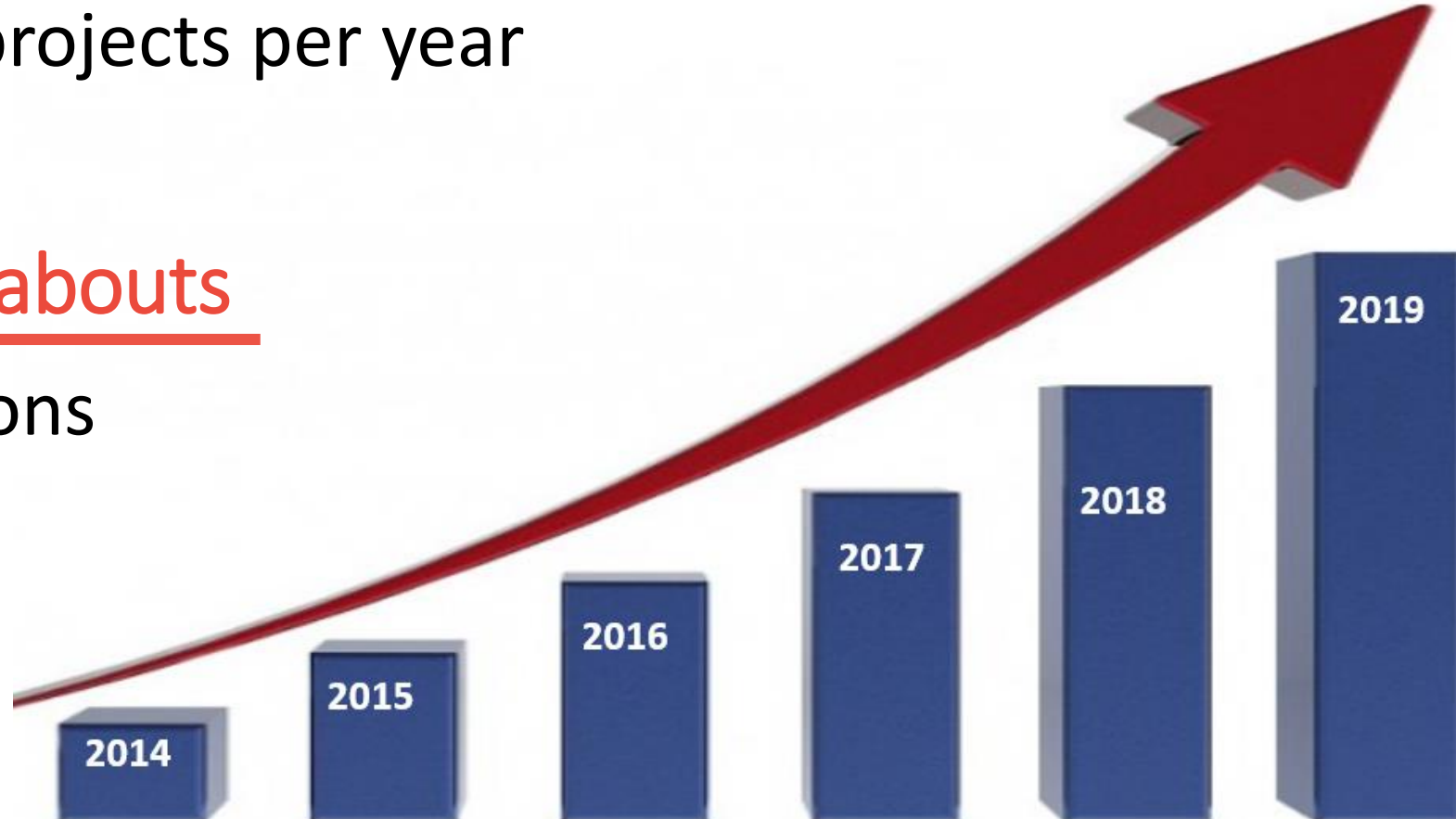
2015 to 2019 – 10 RAB projects per year

Construct Good Roundabouts

Individual Training Sessions

Optimized Geometrics

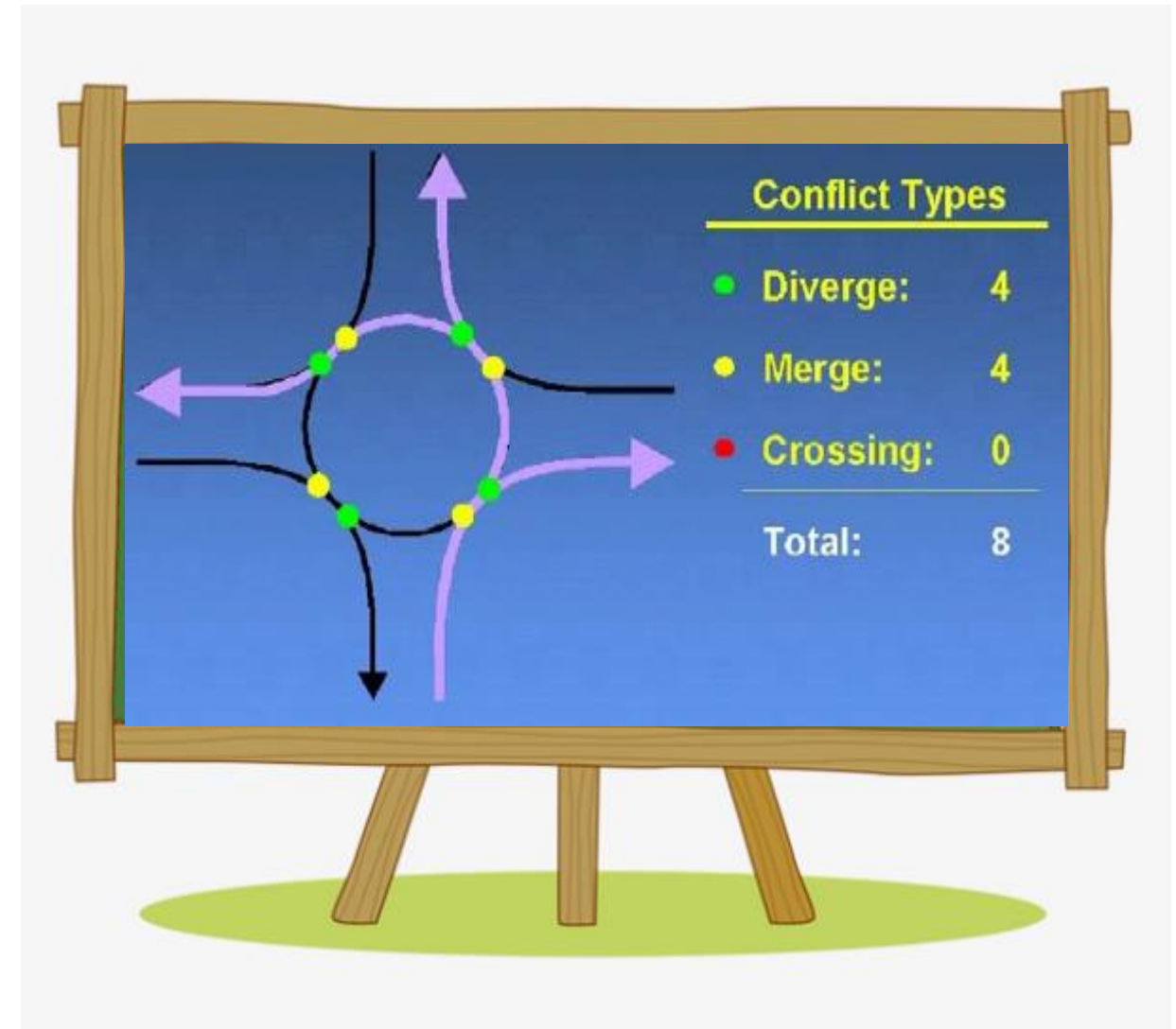
Public Acceptance



Roundabout Training

- June, 2018 Tallahassee
- Aug, 2018 Deland
- Sept, 2018 Tampa
- Sept, 2018 Orlando
- Feb, 2019 Ft. Lauderdale

360 Attendees



Words to Live By

Hunter S. Thompson:

“Anything worth doing, is worth doing right.”

\$1.5 M for single lane

\$2.8 M for 2-lane

American journalist best known for
writing *'Fear and Loathing in Las Vegas'*

Why Build Roundabouts?

- Traffic Safety - Reduce injury crashes by 76%
- Traffic Calming - Reduce vehicle speeds
- Pedestrian Safety - Focus on one traffic stream
- Operational Performance - Reduce overall delay
- Operations and Maintenance – Reduce costs
- Approach Roadway Width – Reduce impacts
- Environmental Factors
- Access Management and Land Use
- Aesthetics
- Operate during and after Hurricanes..... (Florida Engineering Society Journal)

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Florida Traffic Safety Coalitions

Lane Departure & Intersection

Impaired Driving

Pedestrian and Bicycle Safety

Occupant Protection

Motorcycle Safety

Safe Mobility for Life

Teen Safe Driving

Distracted Driving

Work Zone Safety

What makes a good roundabout?

- Control Speeds
- Accommodate Truck Movements



What makes a great roundabout?

SAFETY

- Speed Control
- Signing
- Lighting
- Landscaping

OPERATIONS

- Truck Accommodation
- Path Alignment / Overlap
- Build only what is needed

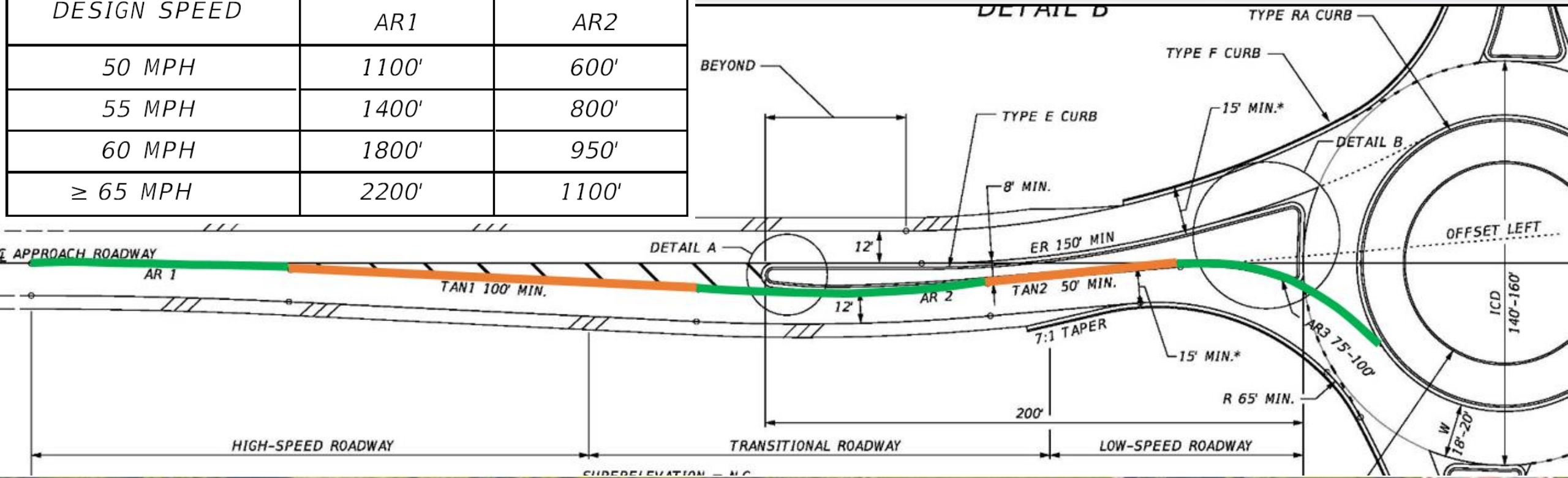
COMFORT

- Simple, Natural, Intuitive
- Alignment Transitions
- Gap Recognition

High Speed Approach



APPROACH ROADWAY DESIGN SPEED	RADIUS (TYP.)	
	AR1	AR2
50 MPH	1100'	600'
55 MPH	1400'	800'
60 MPH	1800'	950'
≥ 65 MPH	2200'	1100'



Alignment of Approaches and Entries

- Approach curves should be gentle, become successively smaller and should be sized based on the design speed and expected speed change
- Tangents should be used between reverse curves
- No superelevation of curves on approach



Chicaning

Don't do this!

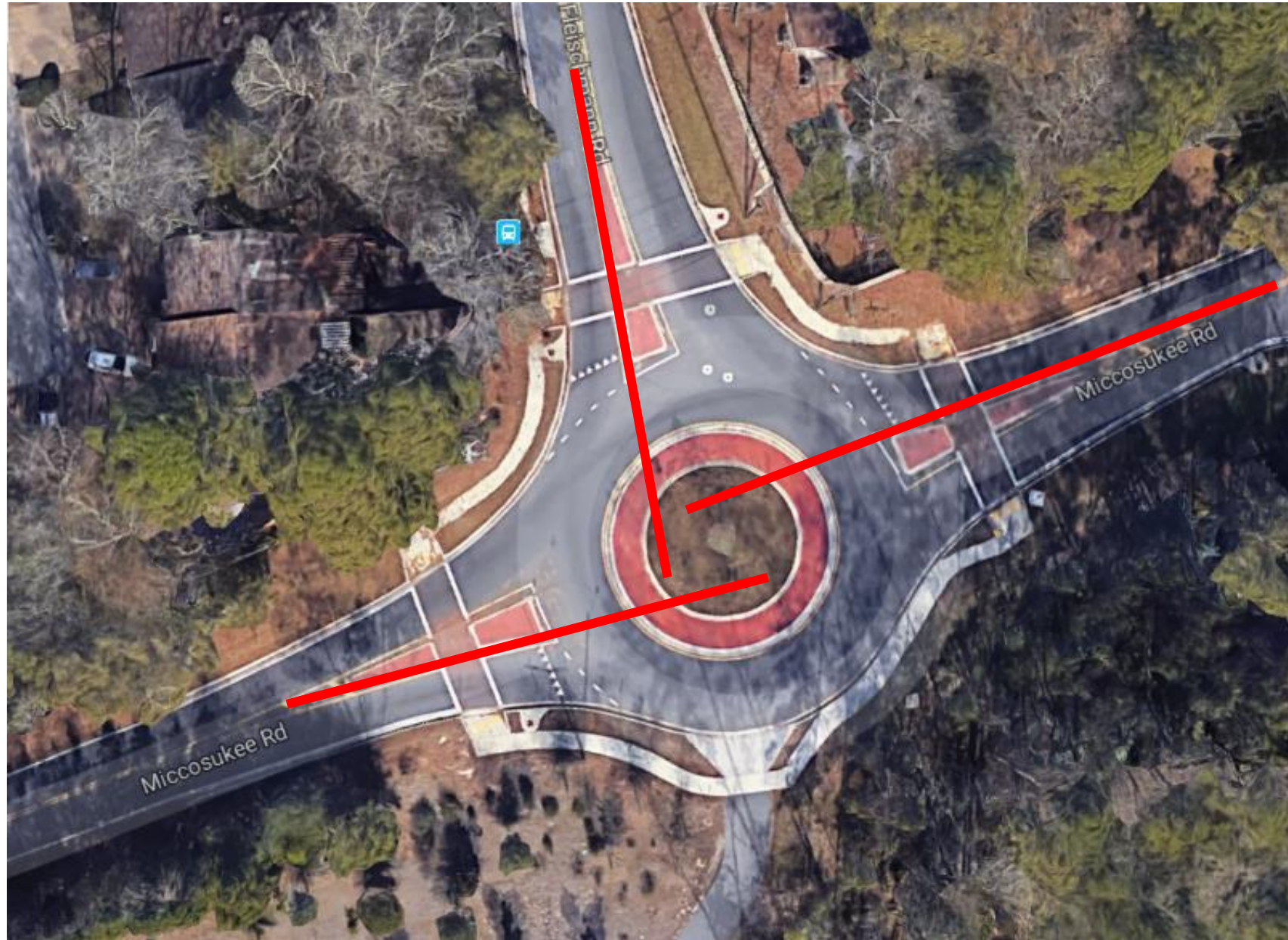
Only what is necessary
to create splitter island
or create off-set left
alignment



Miccosukee Rd

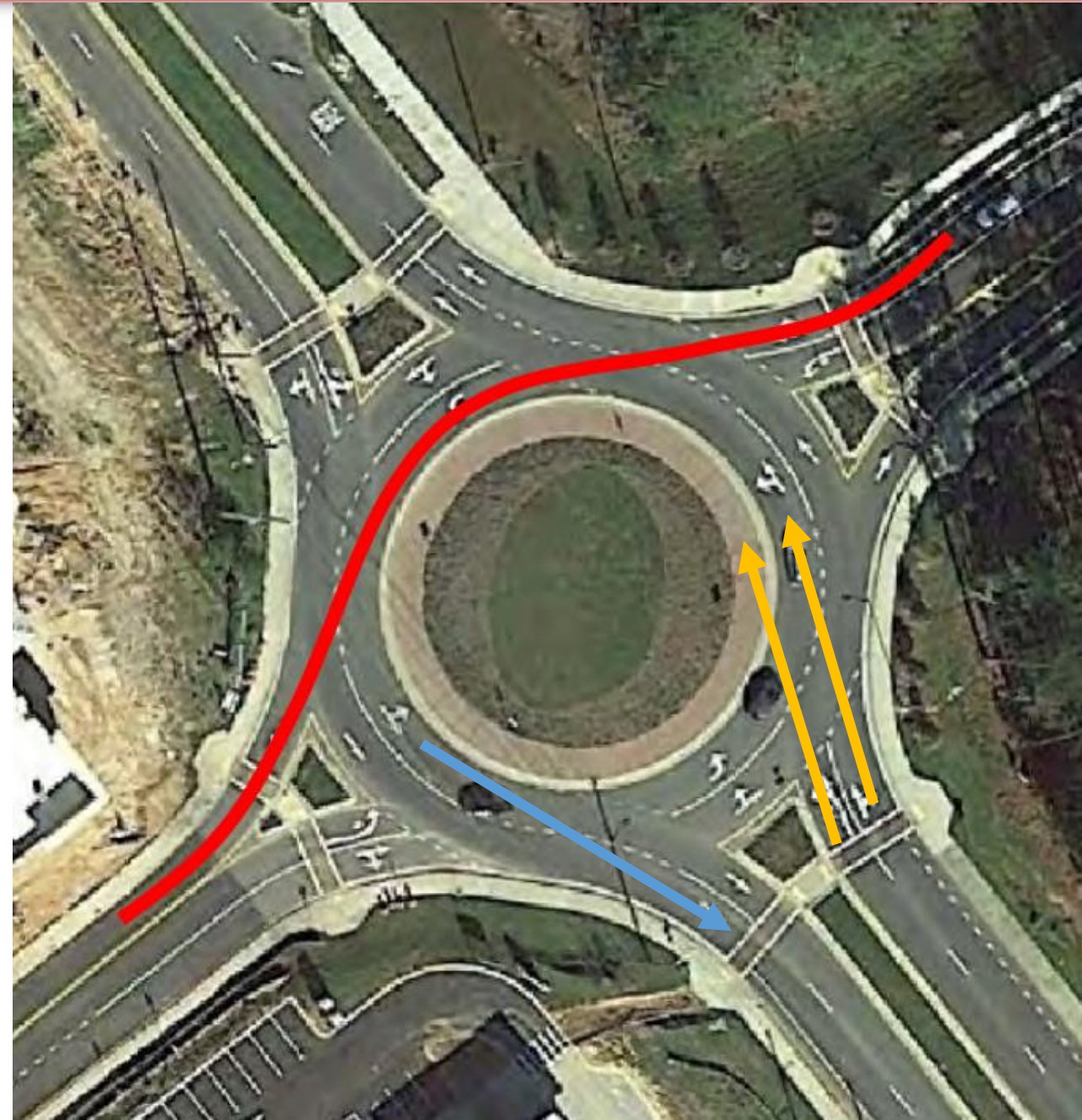
Off-set Right Approach

1. Gap Recognition
2. Driver Confidence



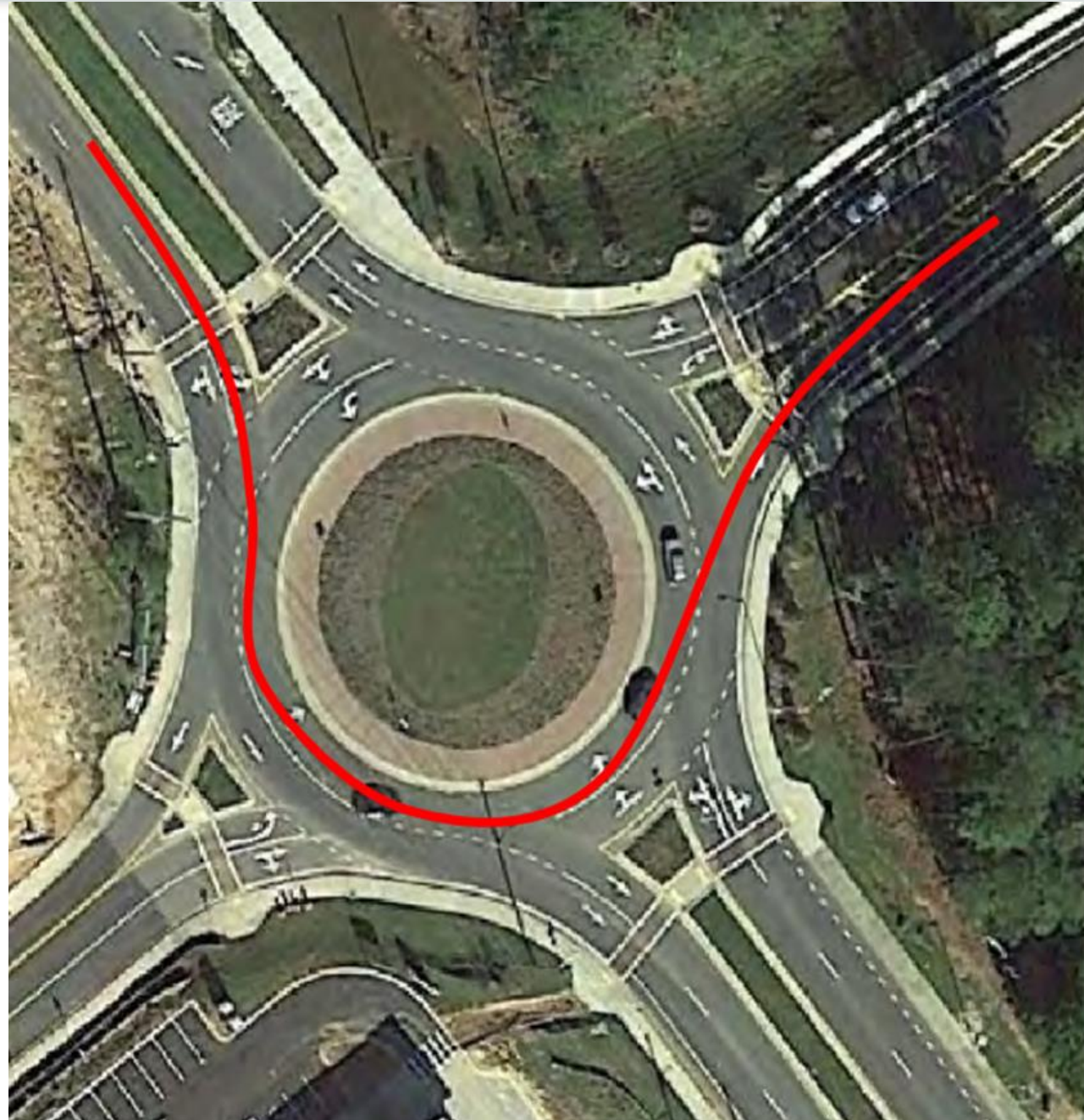
Bannerman Rd

- Misaligned lanes
- Path Overlap
- Poor deflection
- Too many lanes
- Required Lane Change in Circulatory Roadway (No spiral for left turn)

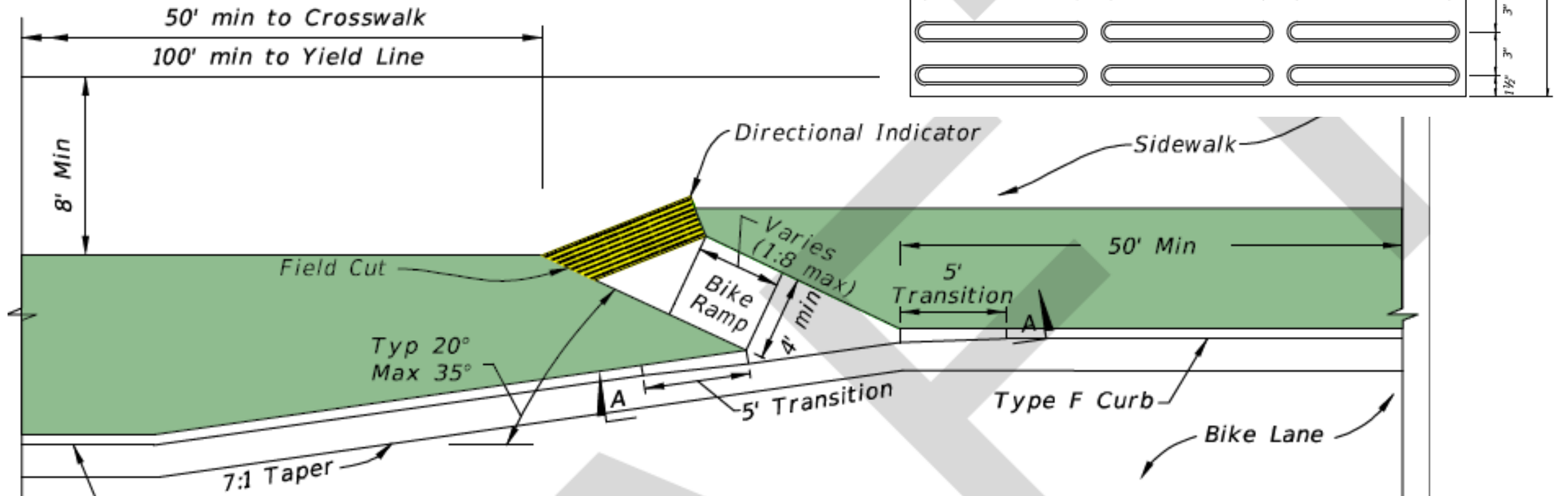


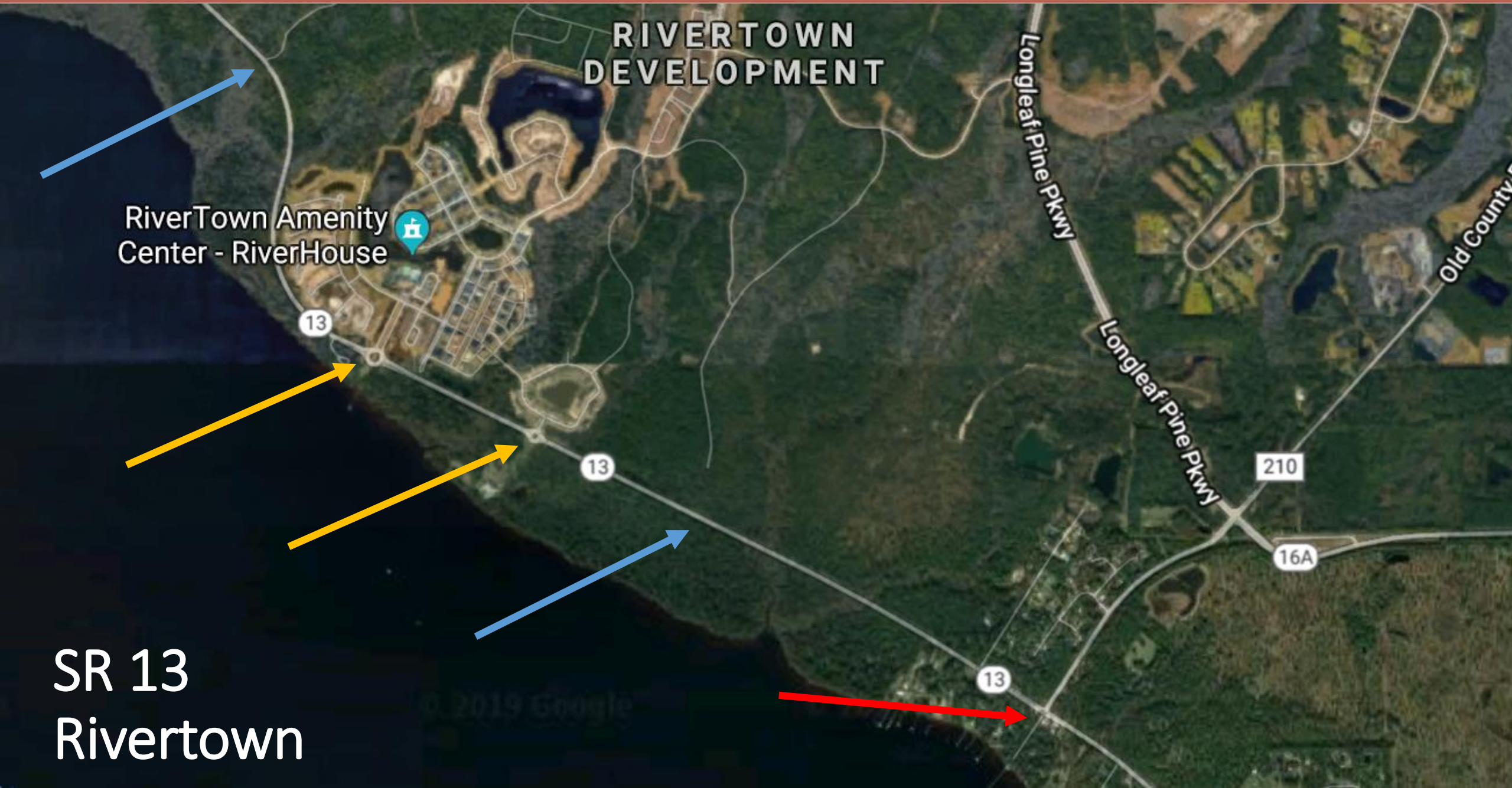
Bannerman Rd

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Directional Indicator





RiverTown Amenity
Center - RiverHouse

RIVERTOWN
DEVELOPMENT

Longleaf Pine Pkwy

Longleaf Pine Pkwy

Old County Rd

210

16A

13

13

SR 13
Rivertown

