

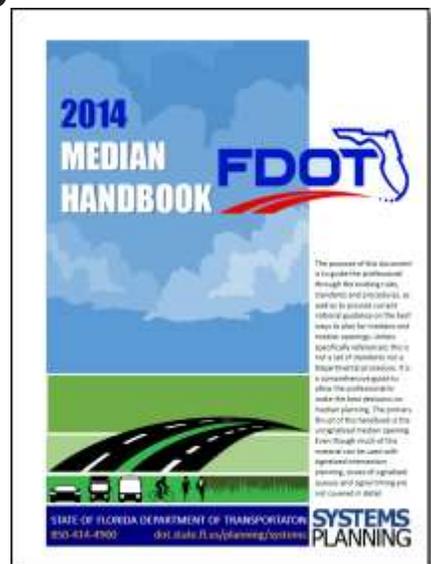


The 2014 Median Handbook *Planning for safer roads*

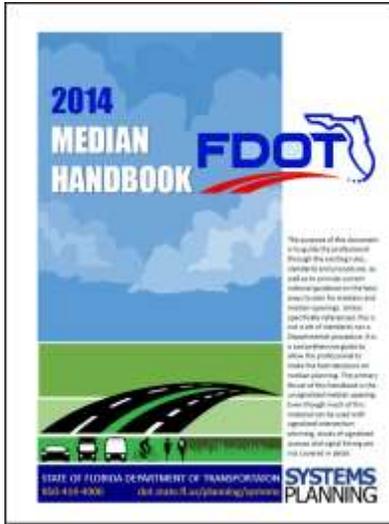


What's New in this 3rd Update?

- Updated References
- Standard Index
- Updated References
- Plans Prep Manual
- References to Florida Intersection Design Guide
- New chapter on roundabouts



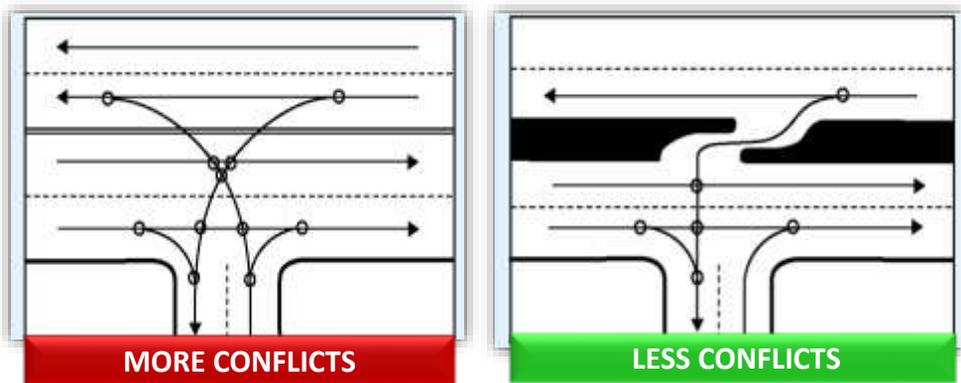
MEDIAN HANDBOOK PURPOSE



Purpose

...guidance **NOT** rule

Conflict Reduction is Key



More **conflicts** means more **crashes**

Conflict Reduction is Key



More **conflicts** means more **crashes**



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Directional Opening and Positive Guidance



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Illegal Maneuver



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Apalachee Parkway Before



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Same Road Today

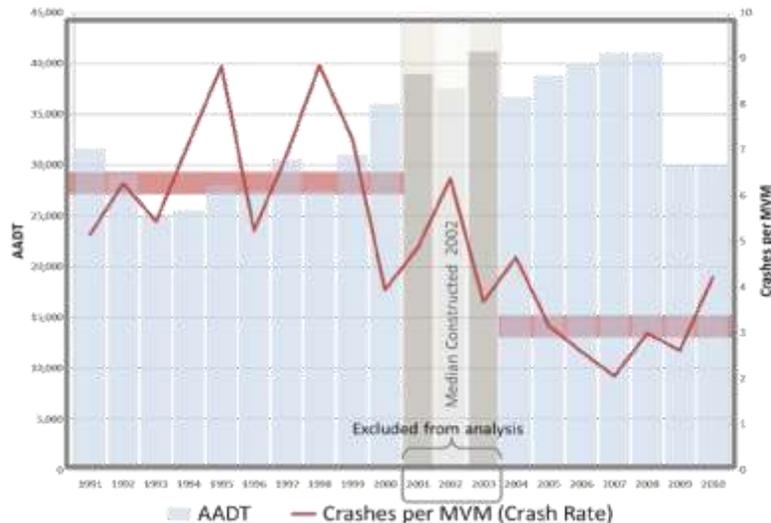


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Medians Increase Safety...

Exhibit 4

Before and After Safety Study of Apalachee Parkway Tallahassee Florida



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Fruitville Rd, Sarasota County

(RDW ID: 17040000; MP: 0.837)

Before – 9 Crashes



After – 2 Crashes



● Head-on ● Rear-end ● Left-turn ● Angle ● Bike/Ped ● Others



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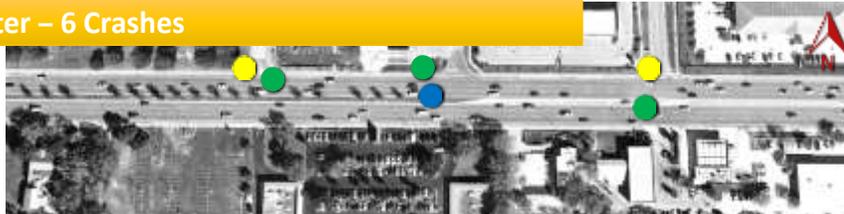
Fruitville Rd, Sarasota County

(RDW ID: 17040000; MP: 3.754)

Before – 14 Crashes



After – 6 Crashes



● Head-on ● Rear-end ● Left-turn ● Angle ● Bike/Ped ● Others



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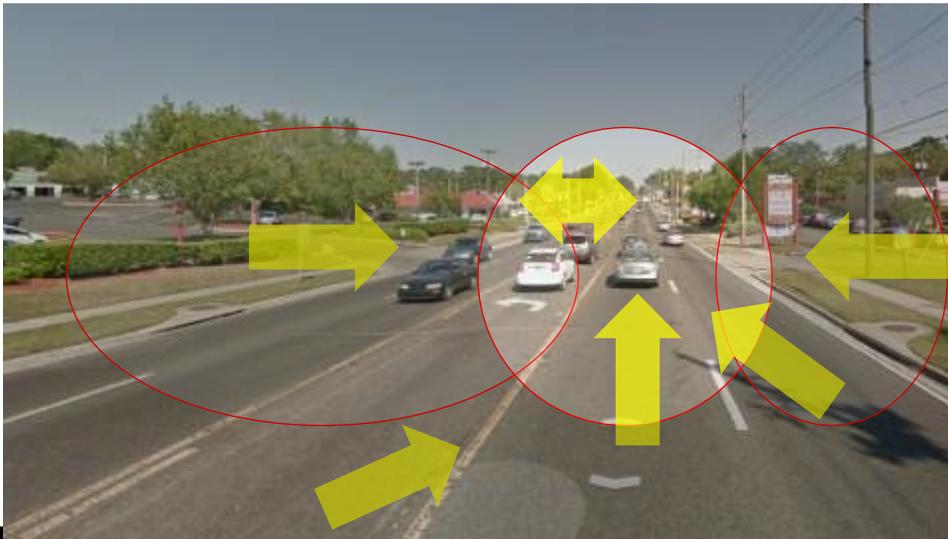
How do Medians Improve Safety?

- Less conflict
- Simplifies driver driving task
- Pedestrian refuge



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Center Turn Lane Driver Perspective



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Median - Driver Perspective



Midblock Crossing Locations

New Section



7.1.4 Installation Criteria



Traffic Engineering Manual

FDOT's Traffic Engineering Manual (TEM) (Section 3.8) provides installation criteria for marked mid-block crosswalks.

Placement of mid-block crosswalks should be based upon an identified need and not used indiscriminately. Important factors that should be considered when evaluating the need for a mid-block crosswalk include:

- (a) Proximity to significant generators
- (b) Pedestrian demand
- (c) Pedestrian-vehicle crash history
- (d) Distance between crossing locations

FDOT Traffic Engineering Manual

*Understanding
Medians and
Median Opening
Placement*

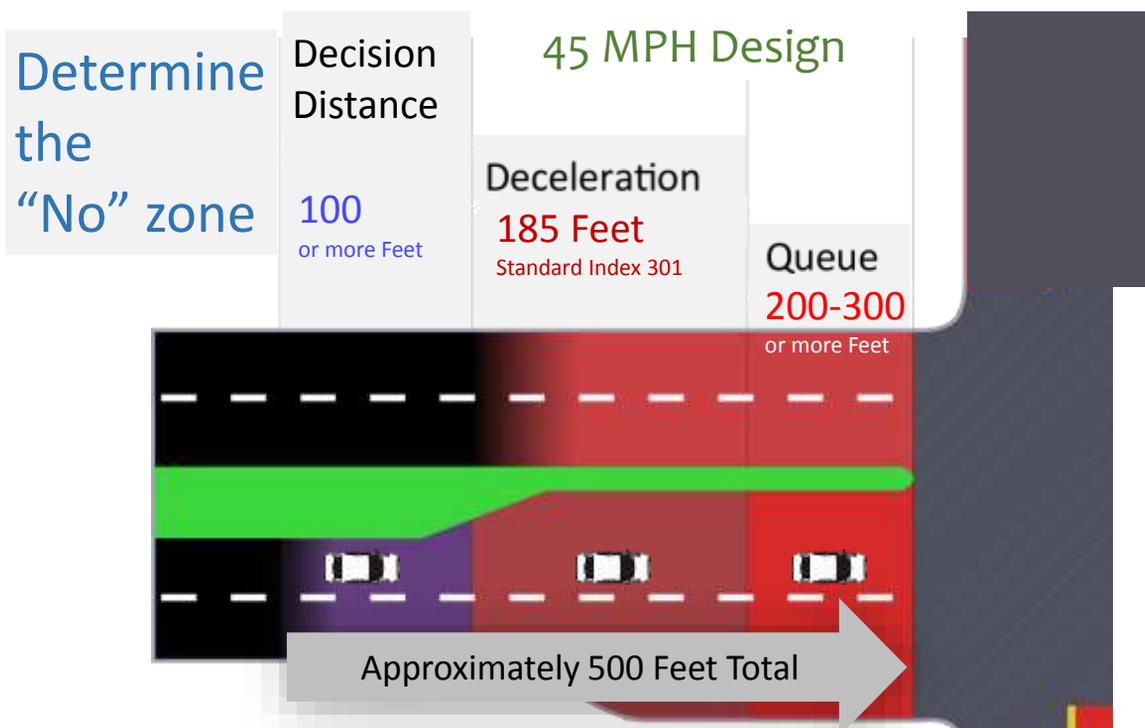
IMPORTANT CONCEPTS

of Medians and Median Openings Placement

Important Concepts



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Where NOT to put an opening



Opening within a turn lane.
A major lapse of driver expectancy.



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Where NOT to put an opening No Openings In Left Turn Lanes...



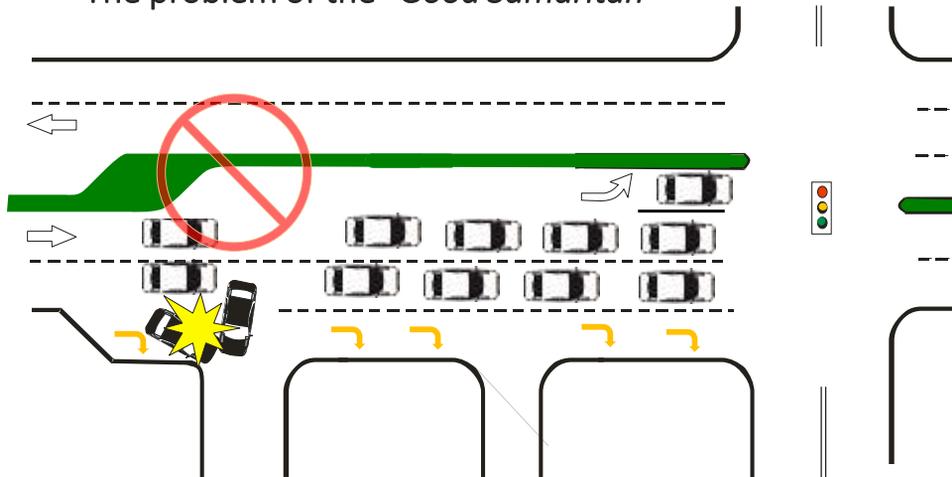
Illustrates opening within
the dual left turn portion
of a signalized intersection



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26

Also Avoid Median Openings
Across Right Turn Lanes
The problem of the "Good Samaritan"



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There are Still Samaritans!



Samaritans on Mount Getzhi, West Bank - 20060429 Public Domain

- Only 800 are left
- They live in the West Bank and Israel



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Taper and deceleration lengths

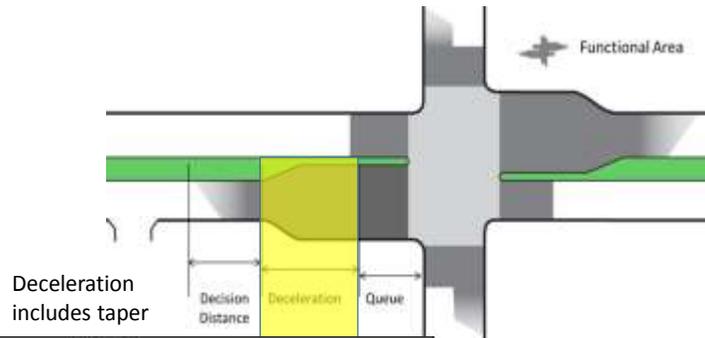
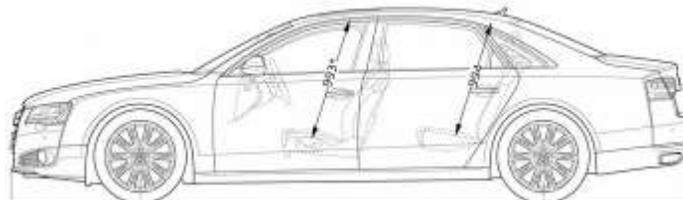


Exhibit 31
Deceleration Distances from the FDOT Design Standard Index 301

Design Speed (mph)	Entry Speed (mph)	Total Deceleration (ft)
35	25	145
45	35	185
50 Urban	40	240
50 Rural	44	290
55 Rural	48	350

Design Standards Index 301

Determining Queue Length



25 feet = 19 feet per Passenger Car + 6 feet

*Design queues are usually
1.5 to 2 times the average.*

Recommended Left Turn Queues for Unsignalized Intersections

Exhibit 34
Estimated queue storage for unsignalized median openings

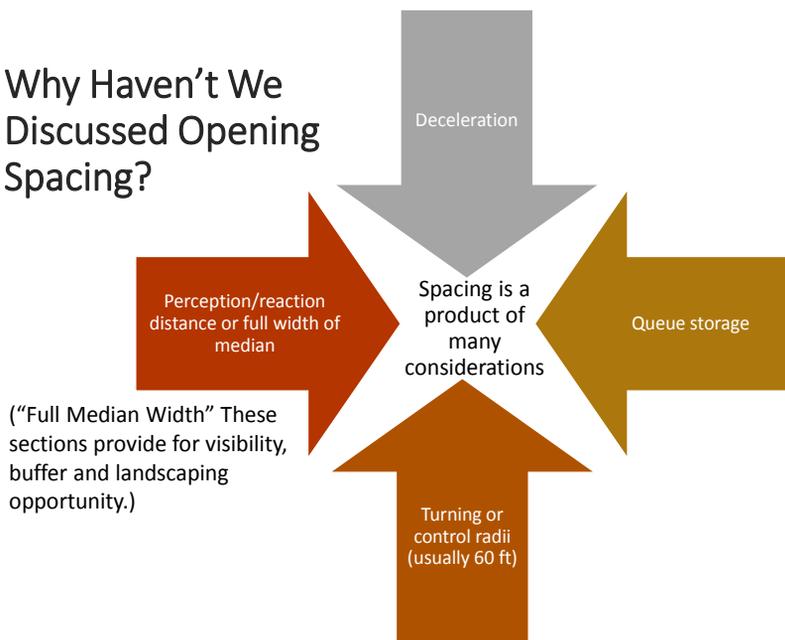
Lefts per Hour	Estimated Queue in feet
30	50*
40 – 50	75 *
60 – 70	100
80 – 90	125
100 – 110	150
120 – 140	175
150+	200

* Only use less than 100 ft in small towns, rural areas,
or where you expect low volumes in the future



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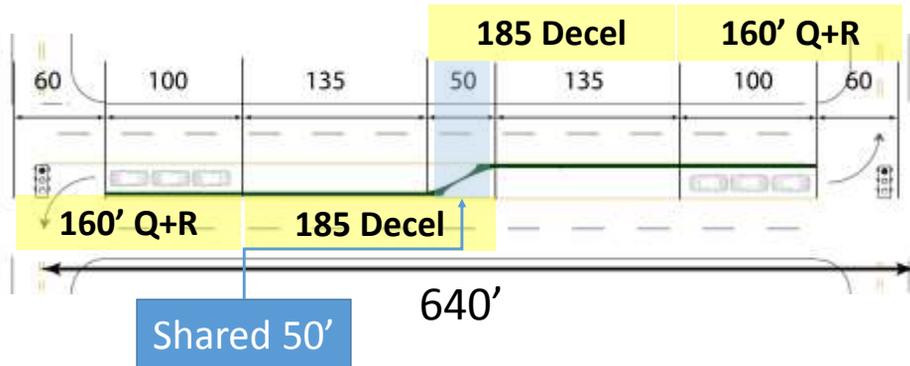
Why Haven't We Discussed Opening Spacing?



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One Very Tight Possible Scenario

Urban conditions @ 45 mph

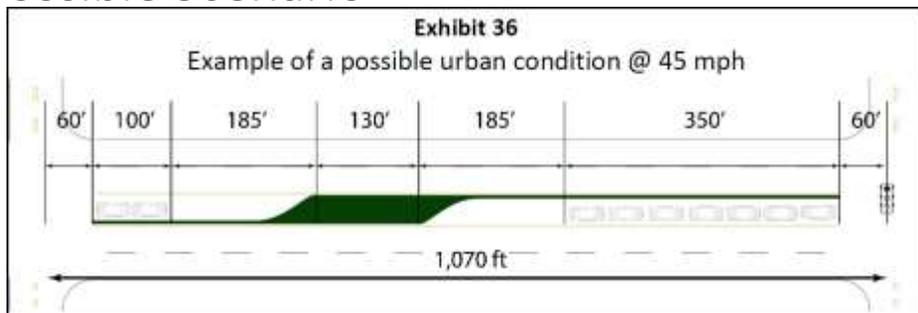


Picture not in book



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A Possible Scenario



Design speed – 45mph
urban location

Left Turn Queue Storage (Signalized)	= 350 ft
Deceleration	= 185 ft
Left Turn Queue Storage (Unsignalized)	= 100 ft
Deceleration	= 185 ft
Full width median	= 130 ft
Turn Radii	= 60 ft
TOTAL	1,070 ft

Some Urban Conditions at
45 MPH design

Problems With Wide Undefined Openings



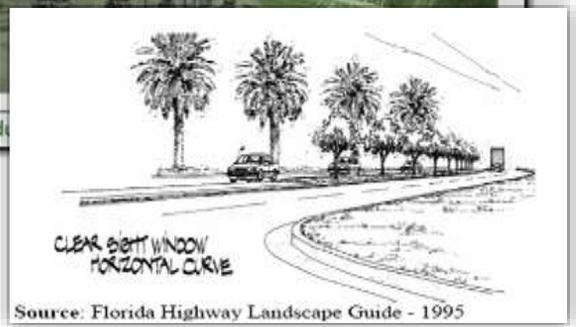
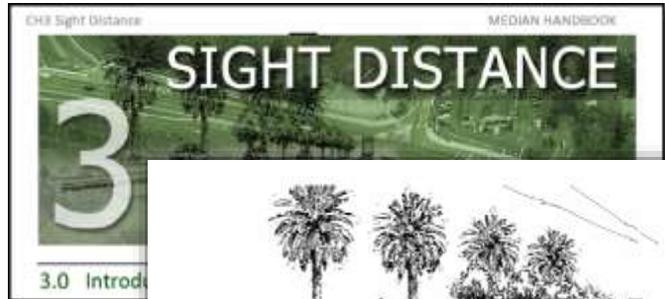








SIGHT DISTANCE



As It Relates to Medians and Median Opening Design

U-Turn Sight Distance



Exhibit 62

Sight distance for U-turn an unsignalized median opening

Speed (mph)	Sight Distance (ft)
35	520
40	640
45	830
50	1,040
55	1,250
60	1,540

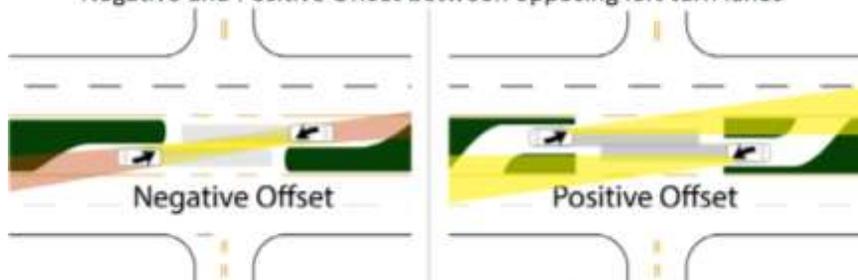


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Left Turn Lane Offset

Exhibit 63

Negative and Positive Offset between opposing left turn lanes



Source: Plans Preparation Manual Vol. 1, 2.13.3

NEGATIVE OFFSET
between opposing left
turn lanes

POSITIVE OFFSET
between opposing left
turn lanes



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Exhibit 66
Example of Positive Offset



Source: FHWA



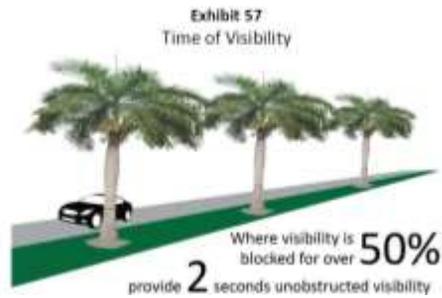
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Left turn offset also



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How to Fit Landscaping in Safely



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Sabal Palmetto Palm
Florida's State Tree



Cabbage palm (Sable palmetto) in Levy County, Florida



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Median Tree Spacing

Exhibit 69
Spacing of trees (in ft) from Index S46 (45 mph)

Speed	Feet between trees	
	> 4 ≥ 11 in. Diameter	> 11 ≥ 18 in. Diameter
30	25	90
35	30	105
40	35	120
45	40	135
50	50	150
55	55	165
60	60	180



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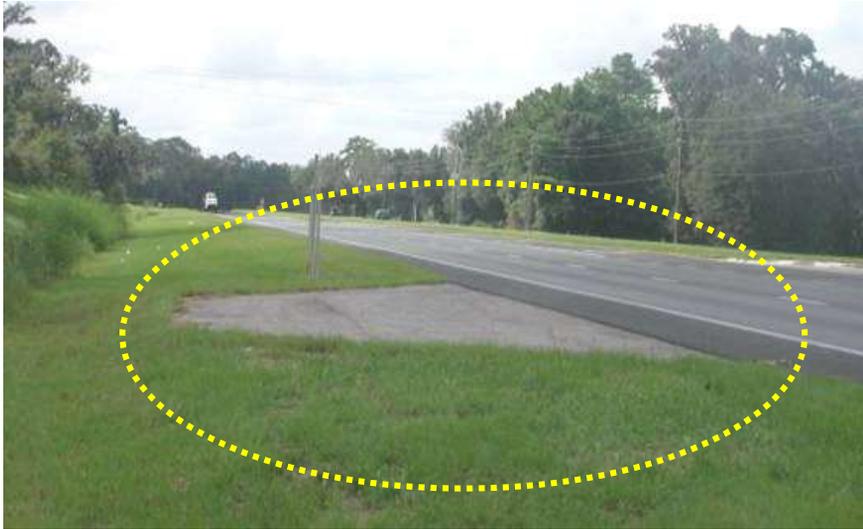
U-TURNS



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Isolated Bulb-Out – US 27 Marion Co.



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US 27 Marion County



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