

Spot Safety Project Evaluation

Project Information

Order ID: 41000034434

Project ID: 09-09-2685

Location: US-311 (I-74) Northbound Ramp to I-40 Westbound

County: Forsyth

City: Winston-Salem

Division: 9

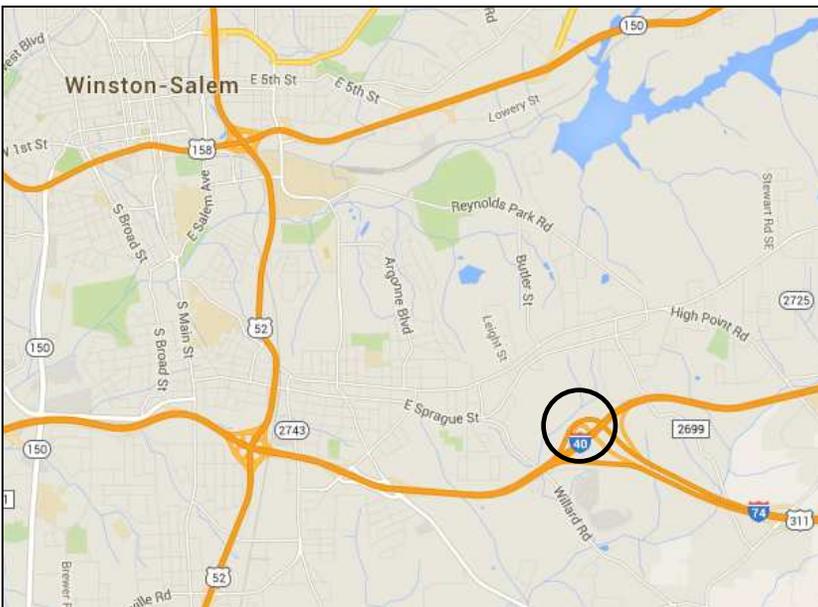
Signal ID: N/A

Countermeasure: Pavement Rehabilitation

Project Completion: December 2009 Project Cost: \$51,500

Additional Info: High Friction Surface Treatment (Failed) in August 2009
Signing Changes in December 2010
Rumblestrips and plowable Raised Pavement Markers in January 2011

Map and Aerial (from Google Maps) – Coordinates 36.065553, -80.189342



Naive Before and After Analysis

Before Period: August 1, 2005 through July 31, 2009 (4 years)

Const. Period: August 1, 2009 through January 31, 2011

After Period: February 1, 2011 through January 31, 2015 (4 years)

Analysis Criteria: Treatment data consisted of all crashes along the US-311 northbound ramp (single direction) from the I-40 Westbound overpass bridge west approximately 1325 feet with a 0-foot y-line.

Target Crashes: Lane Departure (LD) Crashes: Ran-Off Road (Left, Right, Straight), Fixed Object, Overturn/Rollover.

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	18	36	100.0 %
Total Severity Index	7.68	3.67	- 52.2 %
Target Crashes – Lane Departure	17	31	82.4 %
LD Target Crash Severity Index	8.07	3.86	- 52.2 %
Lane Departure Wet (Codes 2-3)	14	22	57.1 %
LD-Wet Severity Index	3.11	4.36	40.2 %
Volume (2007, 2013)	10,000	12,000	20.0 %

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	1	0	- 100.0 %
Class A injury Crashes	0	0	0.0 %
Class B injury Crashes	2	2	0.0 %
Class C Injury Crashes	4	11	+ 100.0 %
Property Damage Only	11	23	+ 100.0 %

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Night Crashes	5	12	+ 100.0 %
Wet Roadway Crashes	14	26	85.7 %
Alcohol / Drugs Involvement Crashes	1	2	100.0 %

Overall Summary Results

Total Crashes:	100 %	(increase)
Total Crash Severity:	- 52 %	(reduction)
Target Crashes:	82 %	(increase)
Target Crash Severity:	- 52 %	(reduction)
Volume:	20 %	(increase)

Additional Summary Results

Lane Departure Wet Crashes:	57%	(increase)
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Items for Discussion/Concerns

The evaluation was established to include the high friction asphalt application, treatment pavement rehabilitation, signing changes, and installation of rumblestrips all consolidated into one construction period.

The tables and collision diagrams continue to indicate a strong pattern of lane departure collisions as vehicles enter the curve. The after period shows that 71 percent of the lane departure collisions occurred during wet roadway conditions.

Data Prepared For

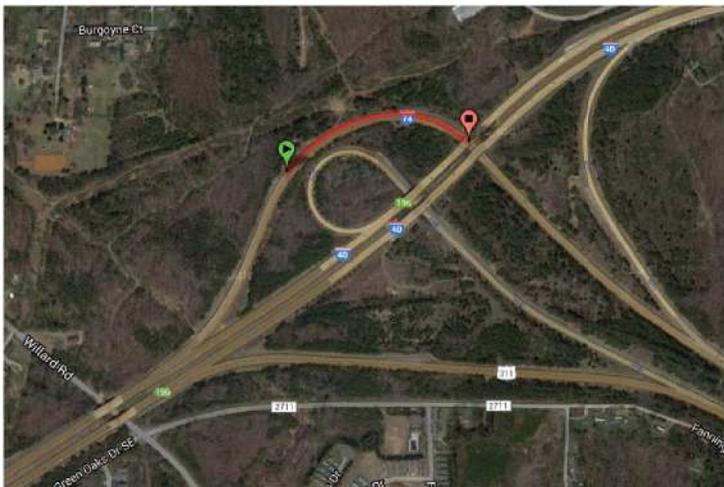
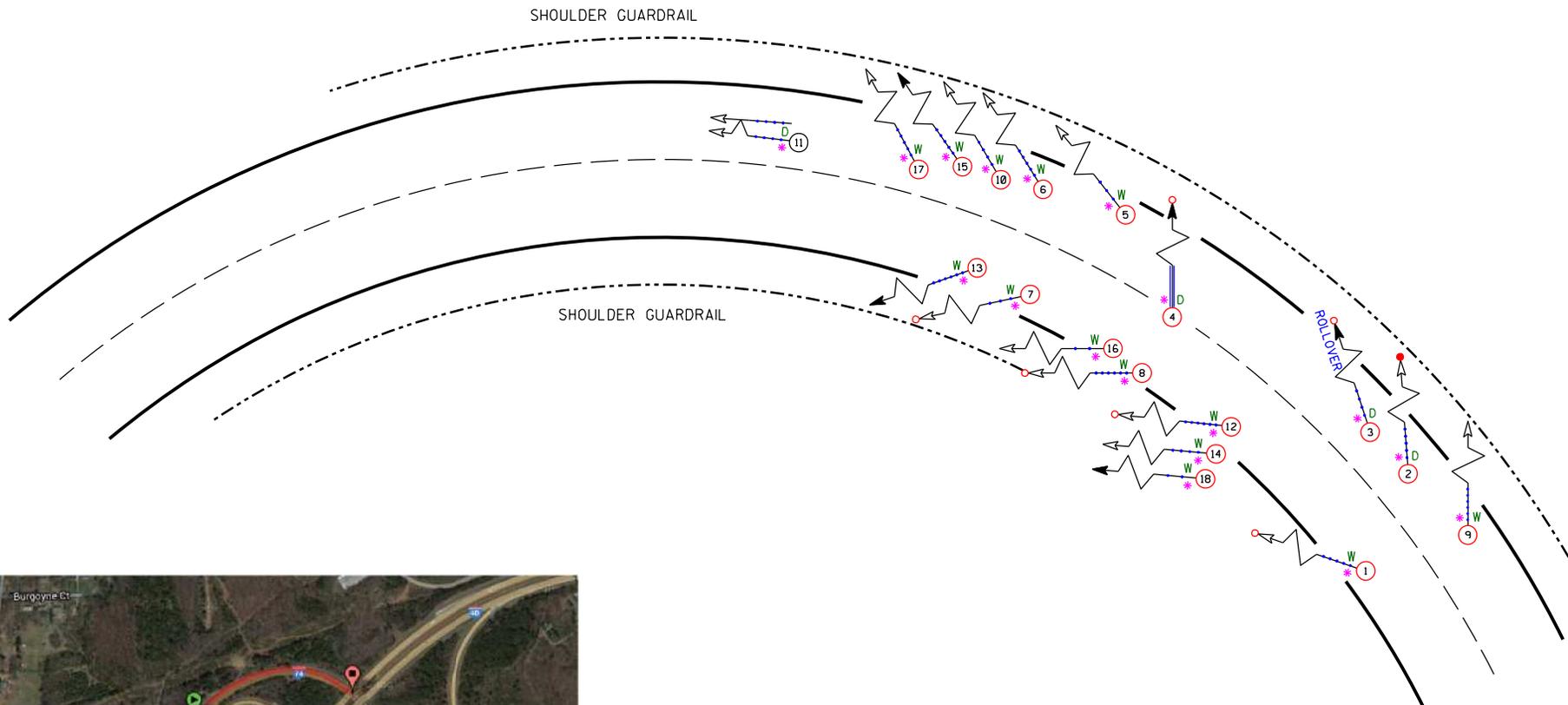
The Traffic Safety Unit *of the*
Transportation Mobility and Safety Division *of the*
Division of Highways *of the*
North Carolina Department of Transportation

Data Prepared By

Principal Investigator: Jason B. Schronce, PE
Work Group/Consultant: NCDOT - Safety Evaluation Group
Date: May 19, 2015

SS# 09-09-2685
 Order# 41000034434
 Forsyth County
 BEFORE Period
 8/1/2005 - 7/31/2009

LEGEND							
	MOVING VEHICLE		ANGLE		9 MPH OR LESS		PEDESTRIAN
	PAIRED VEHICLE		TURNING		10 MPH TO 19		TRAIN
	PARKING VEHICLE		BACKING		20 MPH TO 29		DRIVER AT FAULT
	FIXED OBJECT		SIDE-SWIPE		30 MPH TO 39		DRY
	HEAD ON		REAR END		40 MPH TO 49		WET
	REAR END		REAR END		50 MPH TO 59		ICY OR SNOWY
	RAN OFF ROAD		FATALITY		60 MPH TO 69		ICY OR SNOWY
					70 AND UP		OTHER
					80 AND UP		
					90 AND UP		
					100 AND UP		
					110 AND UP		
					120 AND UP		
					130 AND UP		
					140 AND UP		
					150 AND UP		
					160 AND UP		
					170 AND UP		
					180 AND UP		



Lane Departure
 Target Crashes

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
TRANSPORTATION MOBILITY and
SAFETY DIVISION

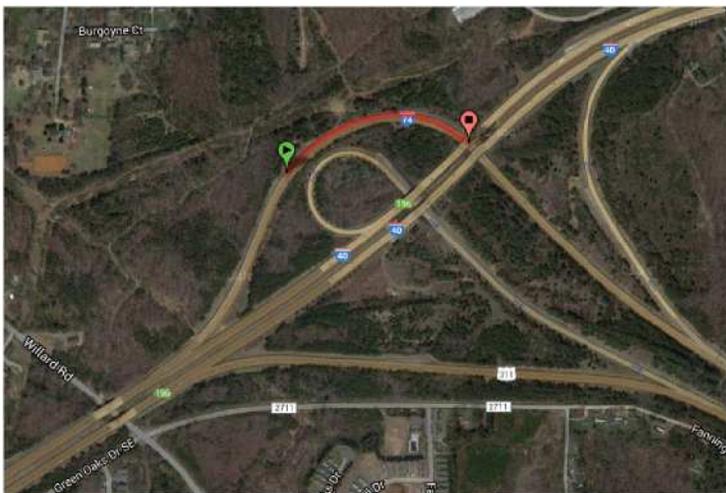
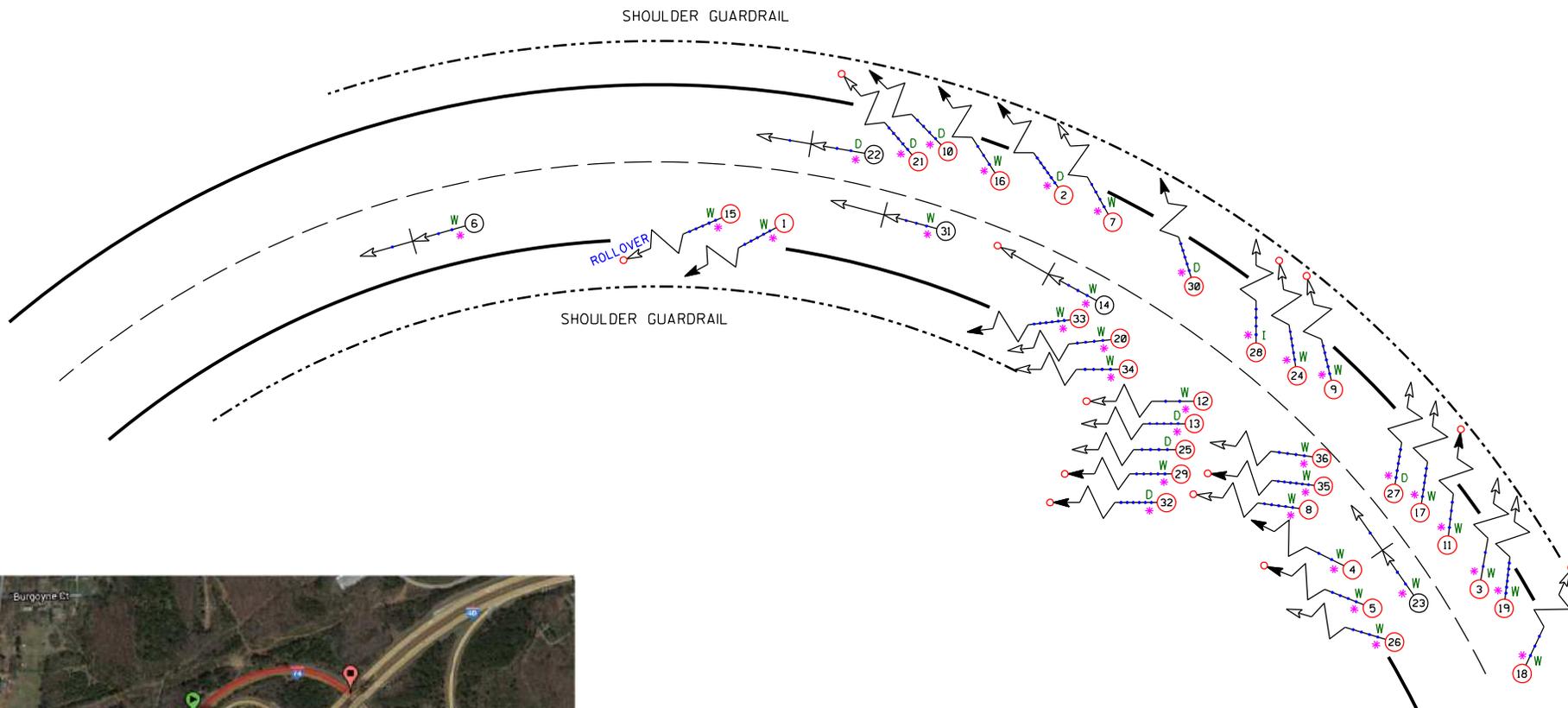
TRAFFIC SAFETY UNIT

Date: 4-29-2015

Prepared By: J. Schronce

SS# 09-09-2685
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 Forsyth County
 AFTER Period
 2/1/2011 - 1/31/2015

LEGEND							
	MOVING VEHICLE		ANGLE		9 MPH OR LESS		PEDESTRIAN
	PARKED VEHICLE		TURNING		10 MPH TO 19		TRAIN
	PARKING VEHICLE		TURNING		20 MPH TO 29		DRIVER AT FAULT
	FIXED OBJECT		TURNING		30 MPH TO 39		DRY
	HEAD ON		TURNING		40 MPH TO 49		WET
	HEAD END		TURNING		50 MPH TO 59		ICY OR SNOWY
	RAN OFF ROAD		TURNING		60 MPH TO 69		70 AND UP
			TURNING		70 AND UP		SPEED UNKNOWN
			TURNING		70 AND UP		OTHER



Countermeasures:
 High Friction (Failed) - Aug 2009
 Resurfacing - Dec-2009
 Signing Changes - Dec-2010
 Rumblestrips & RPMs - Jan-2011

Lane Departure
 Target Crashes

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