

Hazard Elimination Project Evaluation

Project Information

Order ID: 41000032595

Project ID: W-5208B

Location: US 421 from Randolph County line to north of the Randolph County line for 0.8 miles

County: Randolph

City: Staley

Division: 8

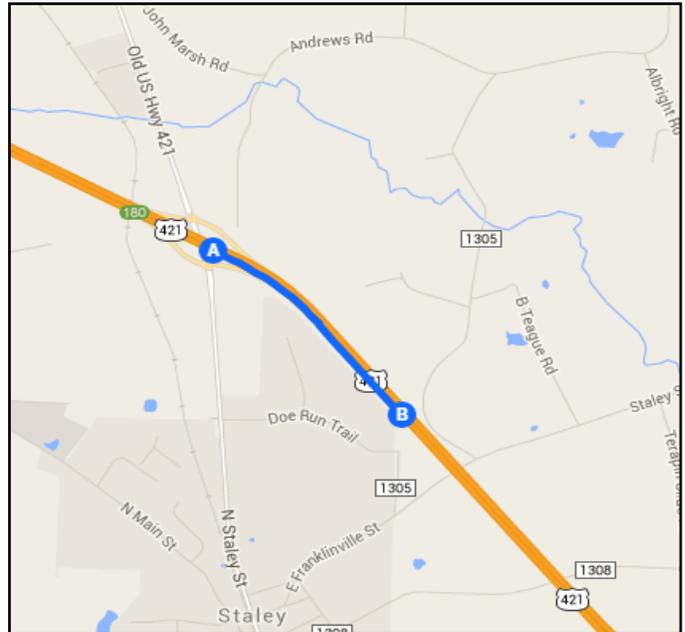
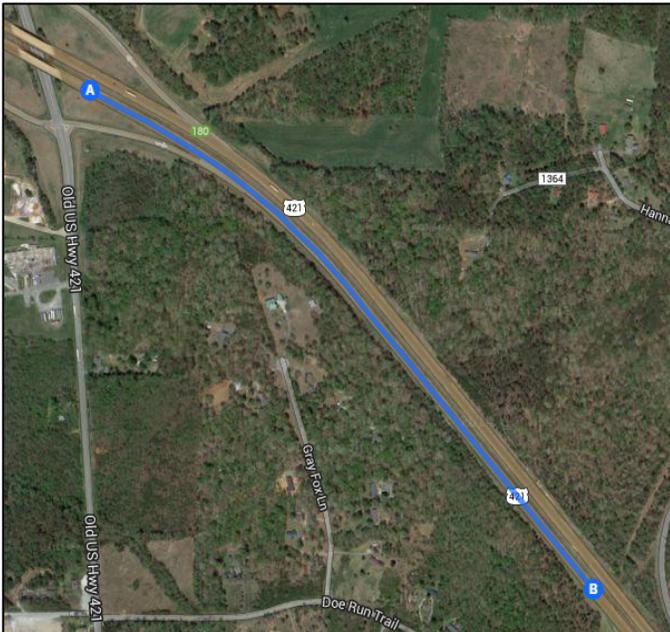
Signal ID: N/A

Countermeasure: Install rumble strips along inside and outside shoulders.

Project Completion: August 7, 2010

Project Cost: \$11,000

Map and Aerial (from Google Maps – Coordinates are 35.810696, -79.549050)



Naive Before and After Analysis

- Before Period: October 1, 2006 through June 30, 2010 (3.75 yrs)
- Construction Period: July 1, 2010 through September 31, 2010
- After Period: October 1, 2010 through June 30, 2014 (3.75 yrs)
- Analysis Criteria: Treatment data consisted of all crashes along US 421 from the Randolph County line to 0.8 miles north of the Randolph County line.
- Target Crashes: The target crashes for this project are Lane Departure crashes including Ran Off Road – Right, Ran Off Road – Left, Ran Off Road – Straight, Fixed Object, Head-on, Parked Motor Vehicle, and Overturn/Rollover.
- Correctable Crashes: Correctable crashes are Lane Departure crashes that are potentially correctable by rumble strips. Crashes are considered correctable if: the first event involved at least one vehicle crossing a roadway edge line; it was not caused by a vehicle swerving to avoid a vehicle, person, animal, or other object in the roadway; it was not caused by mechanical problems, blown tires, or a medical problem with the driver; it was not caused by the weather, such as hydroplaning or sliding on ice; and it was not clear from the crash diagram/narrative that the driver lost control prior to crossing the edge line.

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	12	11	- 8.3 %
Total Severity Index	2.35	1.00	- 57.4 %
Target Crashes	8	8	0.0 %
Target Crash Severity Index	2.85	1.00	- 64.9 %
Correctable Crashes	3	1	- 66.7 %
Correctable Severity Index	5.93	1.00	- 83.1 %
Volume (2008, 2012)	9700	10000	3.1 %

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	0	0	N/A
Class A injury Crashes	0	0	N/A
Class B injury Crashes	1	0	- 100.0 %
Class C Injury Crashes	1	0	- 100.0 %
Property Damage Only	10	11	10.0 %

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Wet/Icy Roadway Crashes	3	8	166.7 %

Overall Summary Results

Total Crashes:	- 8 %	(no change)
Total Crash Severity:	- 57 %	(reduction)
Target Crashes:	+ 0 %	(no change)
Target Crash Severity:	- 65 %	(reduction)
Correctable Crashes:	- 67 %	(reduction)
Correctable Severity:	- 83 %	(reduction)
Volume:	+ 3 %	(increase)

Items for Discussion/Concerns

In the After period, 8 of the 11 total crashes and 7 of the 8 target crashes occurred during icy or wet road 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: Ian Pike, Engineering Assistant
Checked by: Brad Robinson, PE

Work Group/Consultant: NCDOT - Safety Evaluation Group

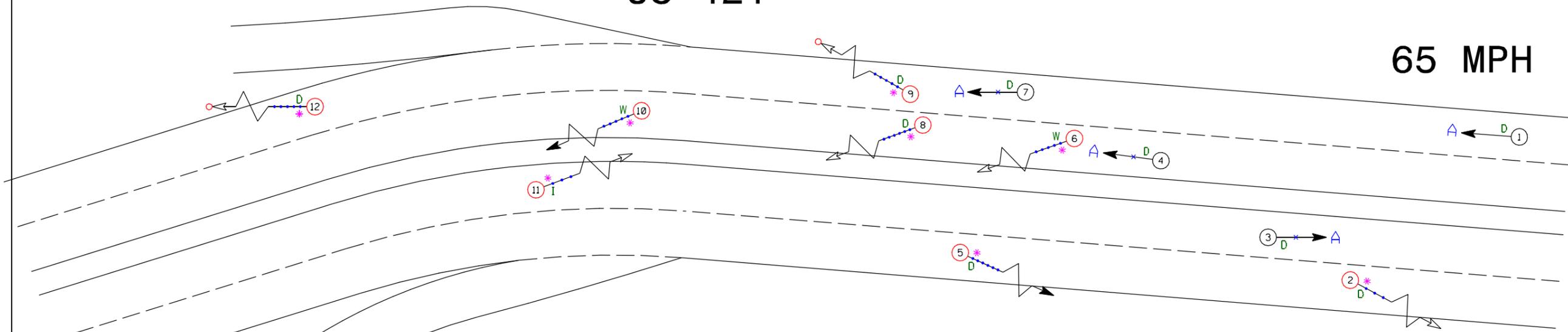
Date: November 24, 2014

W-5208B
 Order# 41000032595
 Randolph County
 BEFORE Period
 10/1/06 - 6/30/10

LEGEND			
	MOVING VEHICLE		ANGLE
	PEDESTRIAN		9 MPH OR LESS
	PAKED VEHICLE		10 MPH TO 19
	PARKING VEHICLE		20 MPH TO 29
	FIXED OBJECT		30 MPH TO 39
	HEAD ON		40 MPH TO 49
	REAR END		50 MPH TO 59
	RAN OFF ROAD		60 MPH TO 69
			OUT OF CONTROL
			INJURY
			FATALITY
			7 MPH OR LESS
			8 MPH TO 9
			10 MPH TO 19
			20 MPH TO 29
			30 MPH TO 39
			40 MPH TO 49
			50 MPH TO 59
			60 MPH TO 69
			70 MPH OR MORE
			SPEED UNKNOWN
			P PEDESTRIAN
			T TRAIN
			* DRIVER AT FAULT
			D DRY
			W WET
			I ICY OR SNOWY
			O ONLY

US 421

65 MPH



ADT (Year)
 9700 (2008)



Lane Departure
 Target Crashes

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

TRAFFIC SAFETY UNIT

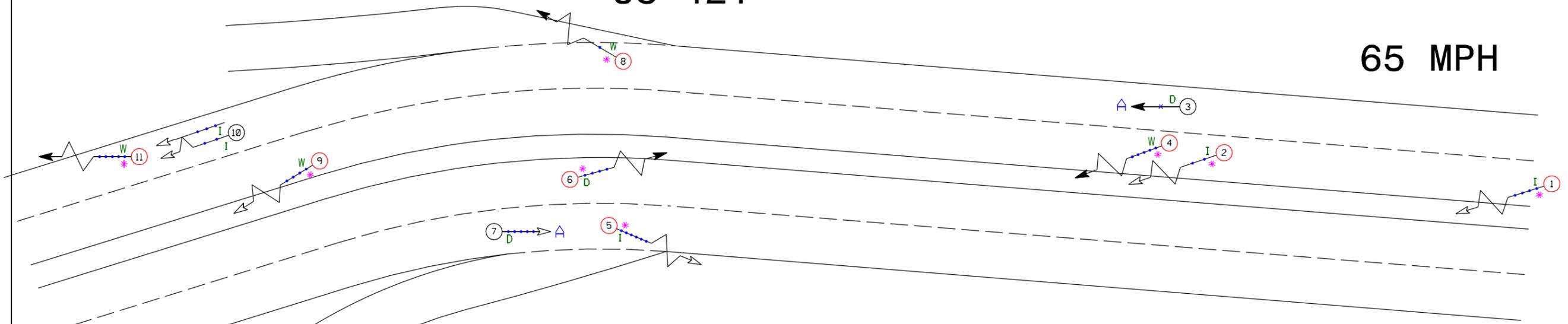
Date: 11-24-2014 Prepared By: Ian Pike

W-5208B
 Order# 41000032595
 Randolph County
 AFTER period
 10/1/10 - 6/30/14

LEGEND							
	MOVING VEHICLE		ANGLE		9 MPH OR LESS		PEDESTRIAN
	PEDESTRIAN		TURNING		10 MPH TO 19		TRAIN
	PAKED VEHICLE		BACKING		20 MPH TO 29		DRIVER AT FAULT
	PARKING VEHICLE		SIDESWIPE		30 MPH TO 39		DRY
	FIXED OBJECT		OUT OF CONTROL		40 MPH TO 49		WET
	HEAD ON		INJURY		50 MPH TO 59		ICY OR SNOWY
	REAR END		FATALITY		60 MPH TO 69		TO AND UP
	RAN OFF ROAD		SPEED UNKNOWN		70 AND UP		ONLY

US 421

65 MPH



ADT (Year)
 10000 (2012)



Lane Departure
 Target Crashes

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

TRAFFIC SAFETY UNIT

Date: 11-24-2014 Prepared By: Ian Pike