

# Spot Safety Project Evaluation

## Project Information

Order ID: 41000030287

Project ID: 04-08-209

Location: Culvert #1 located 0.82 miles west of SR 1937

Culvert #2 located 0.2 miles east of 1934 on NC 55

County: Wayne

City: Mount Olive

Division: 4

Signal ID: N/A

Countermeasure: Install new guardrail along a two lane primary route at two separate culvert crossings with anchor units.

Project Completion: August 25, 2009

Project Cost: \$37,000

## Map and Aerial (from Google Maps, Google Coordinates are – C #1 - 35.203384,-78.035063, C # 2 - 35.200079,- 78.00586)



**Naive Before and After Analysis**

Before Period: October 1, 2004 through June 30, 2009 (4 years, 8 months)

Const. Period: July 1, 2009 through September 30, 2009

After Period: October 1, 2009 through June 30, 2014 (4 years, 8 months)

Analysis Criteria: Treatment data consisted of all crashes within 500 feet of the edge of guardrail on either side of each culvert on NC 55 with a 0-foot y-line.

Culvert # 1: the culvert is 0.82 mi west of SR 1937 (MP 12.955 - 13.245)

Culvert # 2: the culvert is 0.2 mi east of SR 1934 (MP 11.265-11.515).

Target Crashes: Lane Departure Crashes (Ran-Off Road, Fixed Object, Rollover, Head-On, Sideswipe-Opposite Direction)

<b><u>Culvert # 1: NC 55, 0.82 mi West of SR 1937 MP: 12.955 – 13.245</u></b>	<b>Before</b>	<b>After</b>	<b>Percent Reduction (-) Percent Increase (+)</b>
Total Crashes	4	1	- 75.0 %
Total Severity Index	21.8	8.4	- 61.5 %
Target Crashes – Lane Departure	3	1	- 66.7 %
Target Crash Severity Index	28.73	8.4	- 70.8 %
Volume (2007, 2012)	3,400	4,300	+ 20.9 %
Fatal injury Crashes	1	0	- 100.0 %
Class A injury Crashes	0	0	N/A
Class B injury Crashes	0	0	N/A
Class C Injury Crashes	1	1	0.0 %
Property Damage Only	2	0	- 100.0 %

<b><u>Culvert # 2: NC 55, 0.2 mi East of SR 1934 MP: 11.265-11.515</u></b>	<b>Before</b>	<b>After</b>	<b>Percent Reduction (-) Percent Increase (+)</b>
Total Crashes	1	0	- 100.0 %
Total Severity Index	1.0	0	- 100.0 %
Target Crashes – Lane Departure	0	0	N/A
Target Crash Severity Index	0	0	N/A
Volume (2007, 2012)	3,400	4,300	+ 20.9 %
Fatal injury Crashes	0	0	N/A
Class A injury Crashes	0	0	N/A
Class B injury Crashes	0	0	N/A
Class C Injury Crashes	0	0	N/A
Property Damage Only	1	0	- 100.0 %

**Overall Summary Results – Culvert # 1 (MP 12.995 – 13.245)**

Total Crashes:	- 75 %	(reduction)
Total Crash Severity:	- 62 %	(reduction)
Target Crashes:	- 67 %	(reduction)
Target Crash Severity:	- 71 %	(reduction)
Volume:	+ 21 %	(increase)

**Overall Summary Results – Culvert # 2 (MP 11.265 – 11.515)**

Total Crashes:	- 100%	(reduction)
Total Crash Severity:	- 100 %	(reduction)
Target Crashes:	N/A	(no change)
Target Crash Severity:	N/A	(no change)
Volume:	+ 21 %	(increase)

**Items for Discussion/Concerns**

Culvert # 1 experienced a reduction of crash frequency and severity.

Culvert # 2 did not have target crashes in the before or after period.

**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**

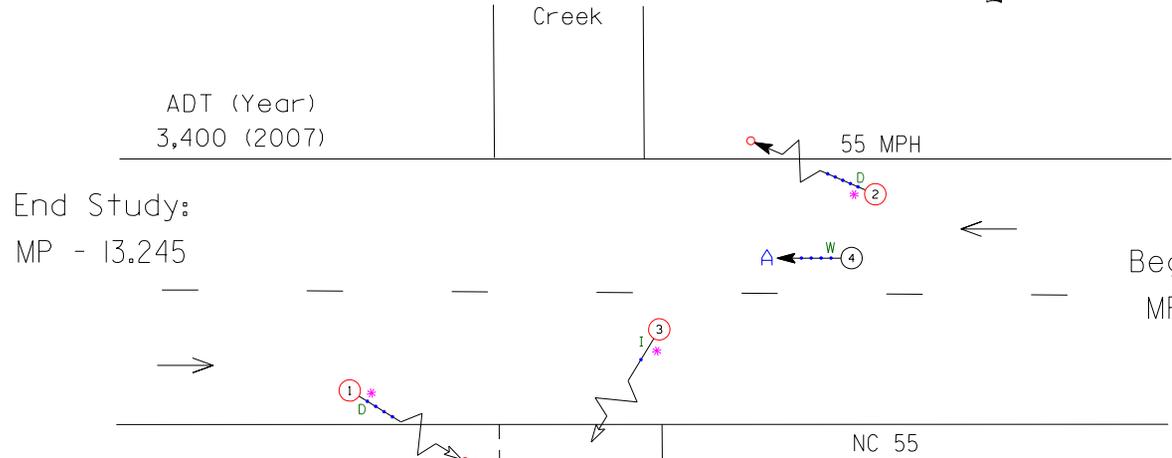
Principal Investigator: Elizabeth Scott, EI

Work Group/Consultant: Stantec Consulting Services Inc.

Date: September 19, 2014

SS# 04-08-209  
 Order# 41000030287  
 Wayne County

LEGEND							
	MOVING VEHICLE		ANGLE		9 MPH OR LESS		A ANIMAL
	PARKED VEHICLE		TURNING		10 MPH TO 19		P PEDESTRIAN
	PARKING VEHICLE		BACKING		20 MPH TO 29		B BICYCLE
	MOVABLE OBJECT		SIDESWIPE		30 MPH TO 39		T TRAIN
	HEAD ON		INJURY		40 MPH TO 49		D DRIVER AT FAULT
	REAR END		FATALITY		50 MPH TO 59		W WET
	RAN OFF ROAD		60 MPH TO 69		70 AND UP		I Icy or Snowy
	DAYLIGHT CRASH		SPEED UNKNOWN				O OTHER
	NIGHT CRASH						



Before Period  
 10/1/04 - 6/30/09

After Period  
 10/1/09 - 6/30/14

ADT (Year)  
 3,400 (2007)

End Study:  
 MP - 13.245

Begin Study:  
 MP - 12.955

ADT (Year)  
 4,300 (2012)

End Study:  
 MP - 13.245

Begin Study:  
 MP - 12.955

Countermeasure: Guardrail with Anchor Units

Culvert # 1  
 .82 mi West of SR 1937  
 (MP: 12.955 - 13.245)

Lane Departure  
 Target Crashes

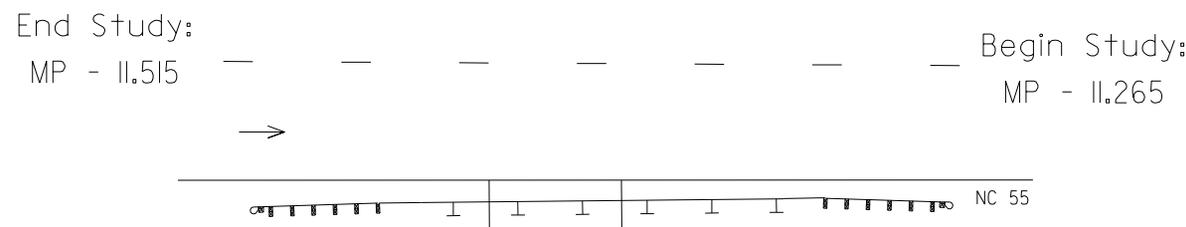
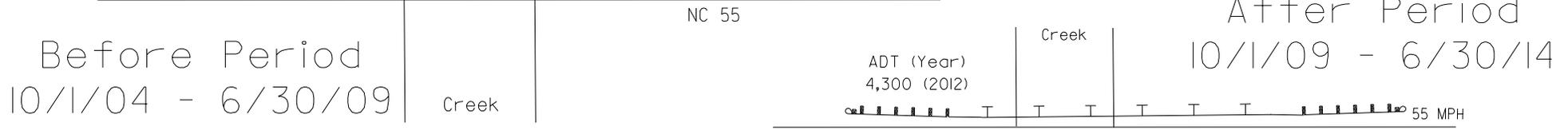
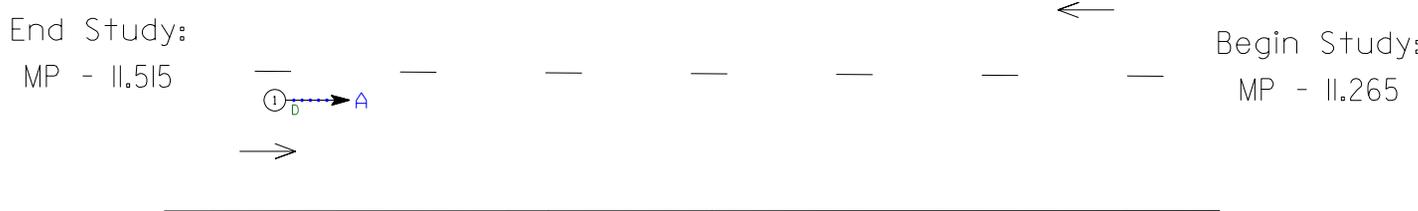
PREPARED FOR  
**N.C. DEPARTMENT of TRANSPORTATION**  
**DIVISION of HIGHWAYS**  
**TRANSPORTATION MOBILITY and**  
**SAFETY DIVISION**

Date: 9/8/2014  
 Prepared By: ESS

**Stantec**  
 Stantec Consulting Services Inc.  
 801 Jones Franklin Road  
 Suite 300  
 Raleigh, NC 27608  
 Tel. (919) 851-6866  
 Fax. (919) 851-7024  
 www.stantec.com  
 License No. F-9672

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LEGEND							
	MOVING VEHICLE		ANGLE		9 MPH OR LESS		A ANIMAL
	PARKED VEHICLE		TURNING		10 MPH TO 19		P PEDESTRIAN
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	NIGHT CRASH				10 MPH TO 19		O Other



Countermeasure: Guardrail with Anchor Units

Culvert # 2  
 .2 mi East of SR 1934  
 (MP: 11.265 - 11.515)



PREPARED FOR  
**N.C. DEPARTMENT of TRANSPORTATION**  
**DIVISION of HIGHWAYS**  
**TRANSPORTATION MOBILITY and**  
**SAFETY DIVISION**

Date: 9/18/2014  
 Prepared By: ESS

**Stantec**  
 Stantec Consulting Services Inc.  
 801 Jones Franklin Road  
 Suite 300  
 Raleigh, NC 27606  
 Tel. (919) 851-8866  
 Fax. (919) 851-7024  
 www.stantec.com  
 License No. F-0572