

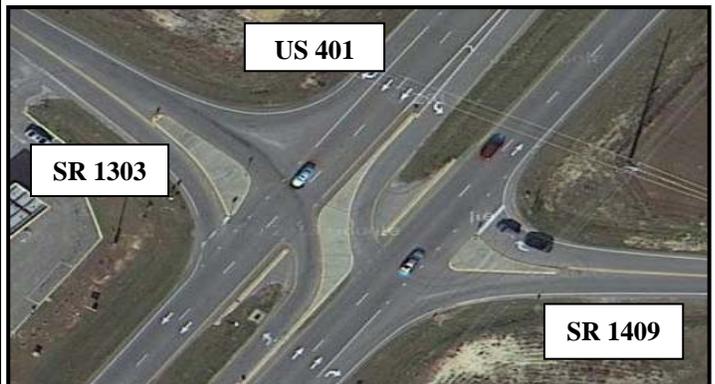
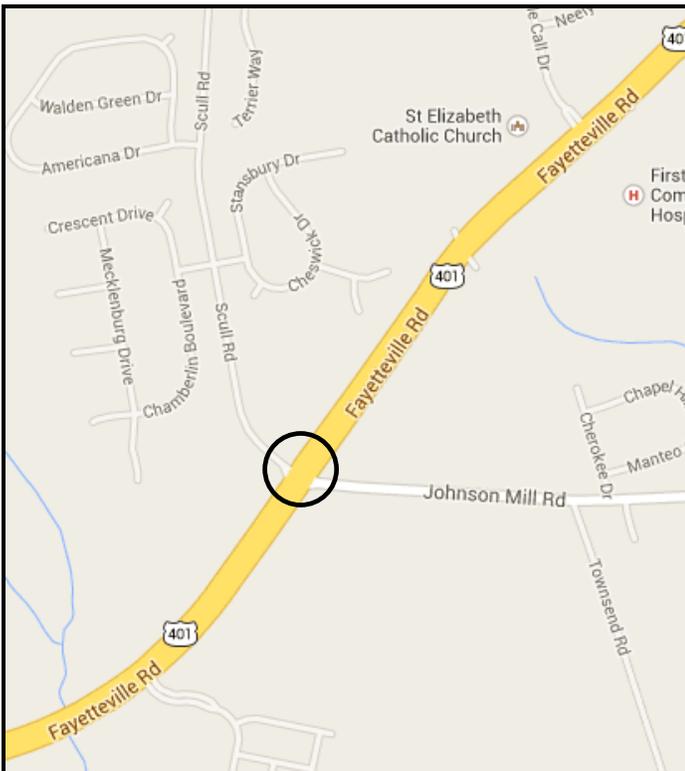
Spot Safety Project Evaluation

Project Information

Order ID: 41000027715
Project ID: 08-06-219
Location: US 401 at SR 1409 (Johnson Mill Rd)/SR 1303 (Scull Rd)
County: Hoke
City: East of Raeford
Division: 8
Signal ID: N/A
Countermeasure: Directional Crossover
Project Completion: September 17, 2008 Project Cost: \$250,000

Map and Aerial (from Google Maps & Hoke County GIS)

Before Period (Top) & After Period (Bottom)



Naive Before and After Analysis

Before Period: April 1, 2003 through May 31, 2008 (5 years, 2 Months)

Const. Period: June 1, 2008 through September 30, 2008

After Period: October 1, 2008 through November 30, 2013 (5 years, 2 Months)

Analysis Criteria: Treatment data consisted of all crashes within 150 feet of the subject intersection and crashes occurring between MP 13.908 and MP 14.485 of US 401

Target Crashes: Crossover Crashes (Left-Turn, Different Roadways & Angle) were the target crashes for the applied countermeasure.

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	48	25	- 47.9 %
Total Severity Index	7.20	3.37	- 53.2 %
Target Crashes	27	1	- 96.2 %
Target Crash Severity Index	9.04	3.37	- 62.7 %
Volume (2005, 2011)	21,800	24,500	+ 12.4 %

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	0	0	N/A
Class A injury Crashes	1	0	- 100.0 %
Class B injury Crashes	7	2	- 71.4 %
Class C Injury Crashes	23	6	- 73.9 %
Property Damage Only	17	17	N/A

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Angle Crashes (Target)	26	0	- 100.0 %
Left Turn, Different Roadway (Target)	1	1	N/A
Left Turn, Same Roadway	7	4	- 42.9 %

Overall Summary Results

Total Crashes:	- 48 %	(reduction)
Total Crash Severity:	- 53 %	(reduction)
Target Crashes:	- 96 %	(reduction)
Target Crash Severity:	- 63 %	(reduction)
Volume:	+ 12 %	(increase)

Items for Discussion/Concerns

- Typically, crossover installations occur on median divided roadways and the Safety Evaluation Group evaluates the closest U-turn locations for crash migration.
- A general search analyzing for U-turn related crashes was completed for the after period. One (1) U-turn crash was found at the southernmost U-turn location on US 401. No U-turn related crashes were found at the northernmost U-turn location.

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: Justin Green, EI
Work Group/Consultant: NCDOT - Safety Evaluation Group
Date: February 12, 2014

US 401 (Fayetteville Rd)
55 MPH
ADT (Year)
20,000 (2005)

SR 1303 (Scully Rd)
55 MPH
ADT (Year)
1,750 (2005)

US 401 (Fayetteville Rd)
55 MPH
ADT (Year)
20,000 (2005)

SR 1409 (Johnson Mill Rd)
55 MPH
ADT (Year)
1,750 (2005)

LEGEND

	MOVING VEHICLE		ANGLE		5 MPH OR LESS		PEDESTRIAN
	PEDESTRIAN		TURNING		10 MPH TO 19		TRAIN
	PAKED VEHICLE		BACKING		20 MPH TO 29		DRIVER AT FAULT
	PARKING VEHICLE		SIDE-SWIPE		30 MPH TO 39		DRY
	FIXED OBJECT		OUT OF CONTROL		40 MPH TO 49		WET
	HEAD ON		REAR END		50 MPH TO 59		ICY OR SNOWY
	REAR END		RAN OFF ROAD		60 MPH TO 69		ICY OR SNOWY
	RAN OFF ROAD		NARROW		TO AND UP		ONLY
	FATALITY		NARROW		SPEED UNKNOWN		

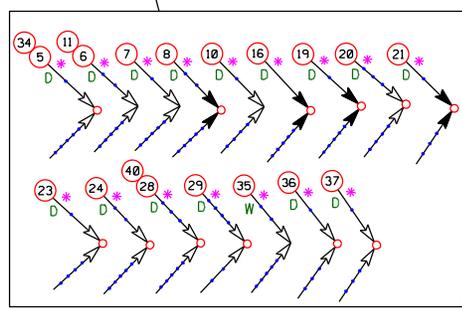
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Hoke County
BEFORE Period
4/1/03 - 5/31/08

Note Crash #33: Vehicle 1 (Bicyclist) failed to yield the right of way to vehicle 2

Note Crash #13: Vehicle struck tow truck that was parked in the travel lane

Note Crash #46: Vehicle 2 was struck by a rock that flew from vehicle 1

Note Crash #22: Vehicle 1 ran off road in avoidance of vehicle 2 attempting left turn (No Contact Between Vehicles)



Crossover
Target Crashes

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

TRAFFIC SAFETY UNIT

Date: February 2014

Prepared By: J. Green

US 401 (Fayetteville Rd)
55 MPH
ADT (Year)
23,000 (2011)

SR 1303 (Scully Rd)
55 MPH
ADT (Year)
1,500 (2011)

US 401 (Fayetteville Rd)
55 MPH
ADT (Year)
23,000 (2011)

SR 1409 (Johnson Mill Rd)
55 MPH
ADT (Year)
1,500 (2011)

LEGEND

	MOVING VEHICLE		ANGLE		5 MPH OR LESS		PEDESTRIAN
	PEDESTRIAN		TURNING		10 MPH TO 19		TRAIN
	PAKED VEHICLE		BACKING		20 MPH TO 29		DRIVER AT FAULT
	PARKING VEHICLE		SIDESWPE		30 MPH TO 39		DRY
	FIXED OBJECT		OUT OF CONTROL		40 MPH TO 49		WET
	HEAD ON		OUT OF CONTROL		50 MPH TO 59		ICY OR SNOWY
	REAR END		OUT OF CONTROL		60 MPH TO 69		ICY OR SNOWY
	RAN OFF ROAD		OUT OF CONTROL		70 MPH TO 79		ICY OR SNOWY
			HAZY		80 MPH TO 89		ONLY
			FATALITY		90 MPH TO 99		
					SPEED UNKNOWN		

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Hoke County
AFTER Period
10/1/08 - 11/30/13

Note Crash #18: Vehicle 2 was struck by a box that flew from vehicle 1

Note Crash #19: Vehicle 1 struck a directional signal that was in roadway



Crossover Target Crashes

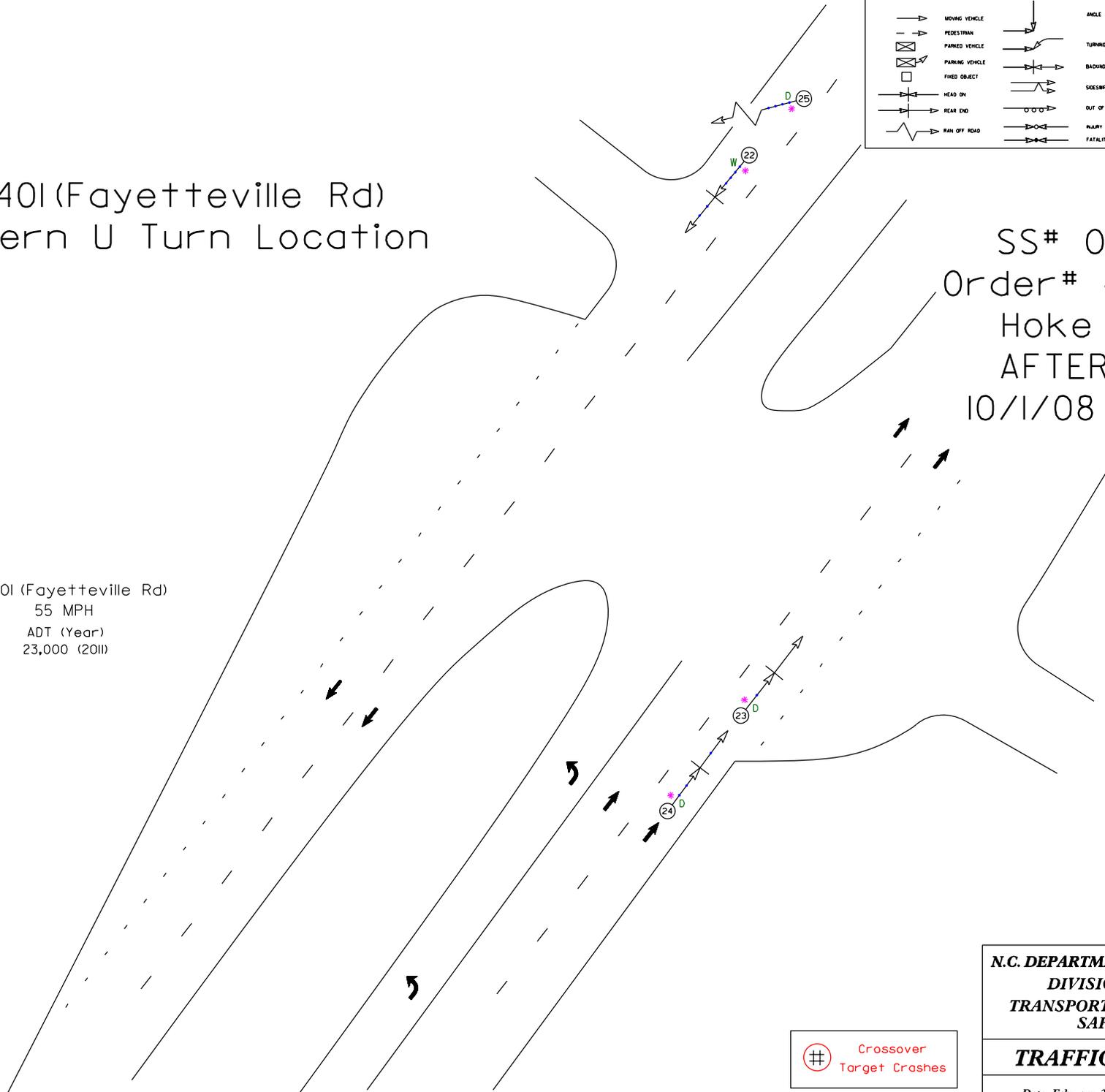
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TRANSPORTATION MOBILITY and SAFETY DIVISION

TRAFFIC SAFETY UNIT

Date: February 2014 Prepared By: J. Green

US 401 (Fayetteville Rd) Northern U Turn Location

US 401 (Fayetteville Rd)
55 MPH
ADT (Year)
23,000 (2011)



LEGEND							
	MOVING VEHICLE		ANGLE		5 MPH OR LESS		PEDESTRIAN
	PEDESTRIAN		TURNING		10 MPH TO 19		TRAIN
	PAKED VEHICLE		BACKING		20 MPH TO 29		DRIVER AT FAULT
	FIXED OBJECT		SIDESWPE		30 MPH TO 39		WET
	HEAD ON		OUT OF CONTROL		40 MPH TO 49		ICY OR SNOWY
	REAR END		BLURRY		50 MPH TO 59		ONLY
	RAN OFF ROAD		FATALITY		TO AND UP		SPEED UNKNOWN

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AFTER Period
10/1/08 - 11/30/13

Crossover
Target Crashes

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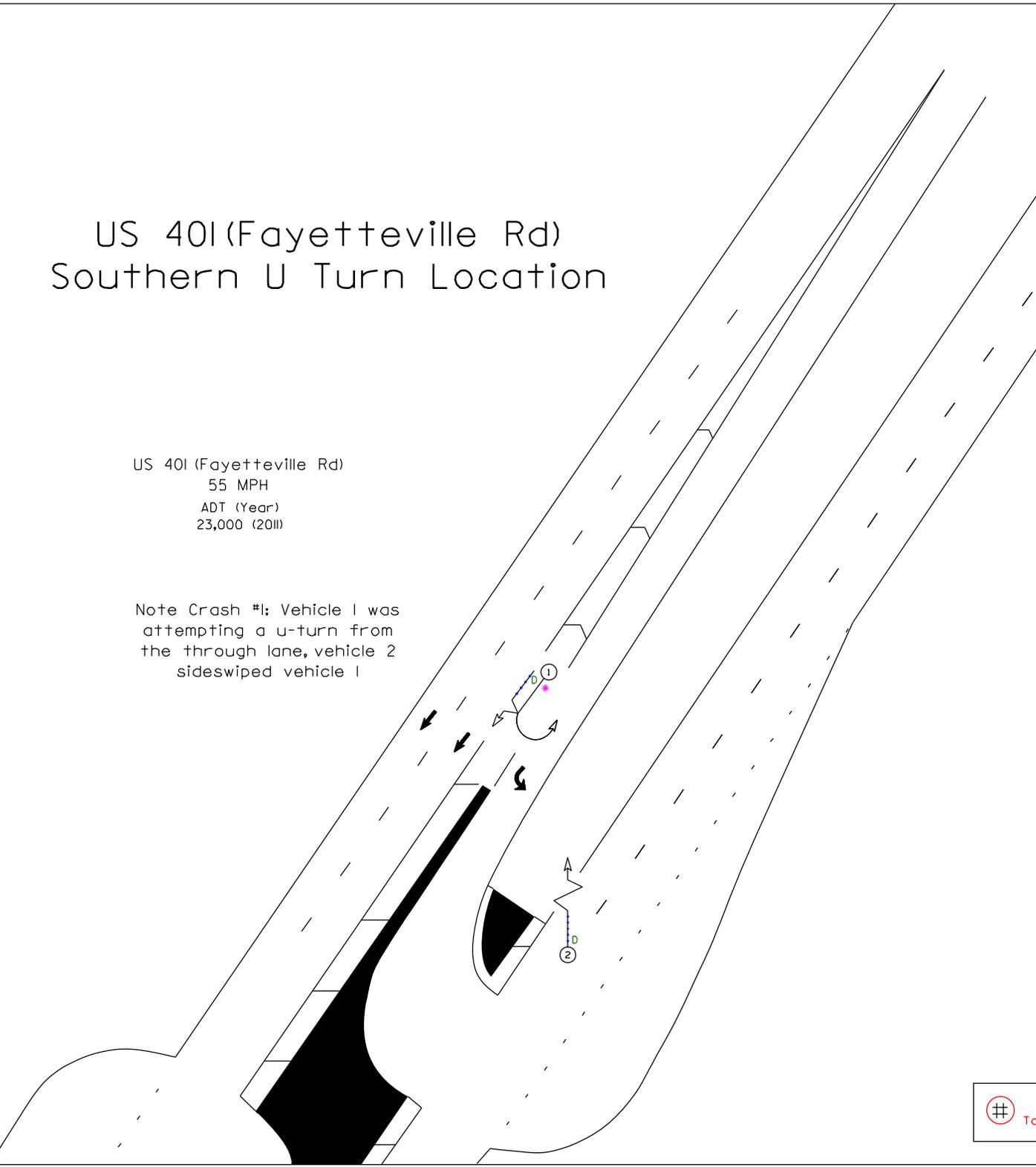
TRAFFIC SAFETY UNIT

Date: February 2014 Prepared By: J. Green

US 401 (Fayetteville Rd) Southern U Turn Location

US 401 (Fayetteville Rd)
55 MPH
ADT (Year)
23,000 (2011)

Note Crash #1: Vehicle 1 was attempting a u-turn from the through lane, vehicle 2 sideswiped vehicle 1



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

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AFTER Period
10/1/08 - 11/30/13



Crossover
Target Crashes

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TRAFFIC SAFETY UNIT

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