

Spot Safety Project Evaluation

Project Information

Order ID: 41000035889

Project ID: 03-06-217

Location: US-17 / NC-210 at SR 1561 (Sloop Point Rd) / SR 1726 (Machine Gun Rd)

County: Pender

City: Hampstead

Division: 3

Signal ID: N/A

Countermeasure: Convert Existing Median Opening to Directional Crossover and build U-Turns

Project Completion: August 10, 2011

Project Cost: \$405,000

Map and Aerial (from Google Maps) – Coordinates 34.434686, -77.631593



Naive Before and After Analysis

- Before Period: October 1, 2007 through December 31, 2010 (3 years, 3 months)
- Const. Period: January 1, 2011 through February 28, 2012
- After Period: March 1, 2012 through May 31, 2015 (3 years, 3 months)
- Analysis Criteria: Treatment data consisted of all crashes within 150 feet of the subject intersection for the US-17 and SR 1561 approaches.
- Target Crashes: Crossover Crashes were the selected Target Crashes and include crashes where the movement was prevented in the after period, including: Angle and Left Turn Different Roadway.

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	18	7	- 61.1 %
Total Severity Index	7.27	12.89	77.3 %
Target Crashes	7	0	- 100.0 %
Target Crash Severity Index	3.11	0.00	- 100.0 %
Volume (2009, 2013)	21,600	27,400	26.9 %

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	0	0	0.0 %
Class A injury Crashes	1	1	0.0 %
Class B injury Crashes	1	0	- 100.0%
Class C Injury Crashes	4	1	- 75.0 %
Property Damage Only	12	5	- 58.3 %

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Night Crashes	5	2	- 60.0 %
Wet Roadway Crashes	3	1	- 66.7%
Alcohol / Drugs Involvement Crashes	0	1	100.0 %
Animal Crashes	4	0	- 100.0 %

Overall Summary Results

Total Crashes:	- 61 %	(reduction)
Total Crash Severity:	77 %	(increase)
Target Crashes:	- 100 %	(reduction)
Target Crash Severity:	- 100 %	(reduction)
Volume:	27 %	(increase)

Additional Summary Results

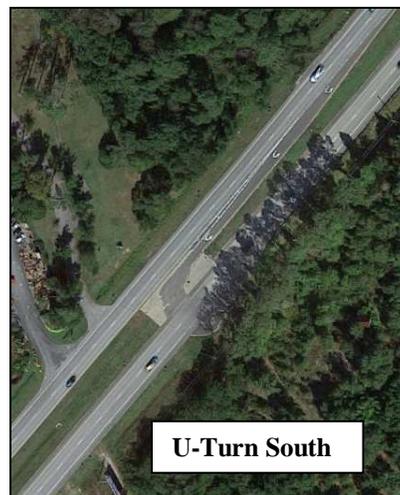
Additionally, the Safety Evaluation group examined the two U-Turn Locations for this crossover with the same before-after time periods and using a 150-foot y-line:

U-Turn North (Royal Tern Drive): 940-feet north/east of SR 1561 Intersection (MP 11.436)

U-Turn South (New Build): 1170-feet south/west of SR 1561 Intersection (MP 11.036)

U-Turn Locations	Before	After	Percent Reduction (-) Percent Increase (+)
U-Turn North (Royal Tern Drive)	3	5	66.7 %
U-Turn North Severity Index	3.47	3.96	14.1 %
U-Turn South (New Build)	1	6	100+ %
U-Turn South Severity Index	1.00	3.47	100+ %

Collision Diagrams are provided for both U-Turn Locations. The U-Turn North location (Royal Tern Drive) was upgraded with Flexible Post Delineators on July 17, 2014 due to safety concerns. Even though the crash totals have increased at both locations, none of the crashes appear to be in reference to a vehicle making the u-turn movement.



Items for Discussion/Concerns

The crossover has been effective at reducing the frequency of crashes at this location.

The before period included one A-Injury bicycle crash. The after period also included one A-Injury crash where a motorcycle fleeing from the police ran through the intersection striking the concrete crossover.

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

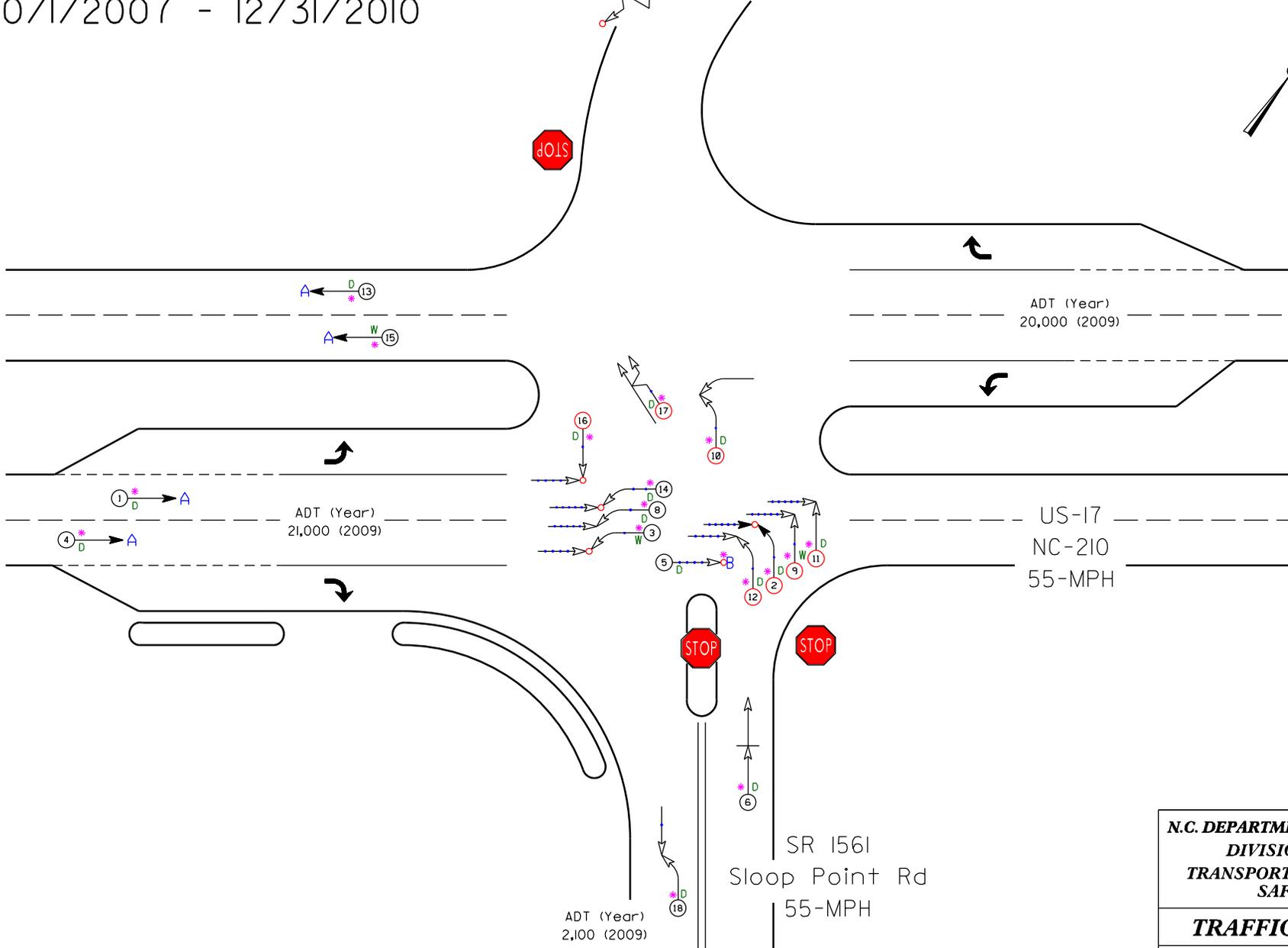
Data Prepared By

Principal Investigator: Jason B. Schronce, P.E.
Work Group/Consultant: NCDOT - Safety Evaluation Group
Date: July 2, 2015

SS# 03-06-217
 Order# 41000035889
 Pender County
 BEFORE Period
 10/1/2007 - 12/31/2010

SR 1726
 Machine Gun Rd
 45-MPH

LEGEND							
	MOVING VEHICLE		ANGLE		9 MPH OR LESS		P PEDESTRIAN
	PAKED VEHICLE		TURNING		10 MPH TO 19		T TRAIN
	PARKING VEHICLE		BACKING		20 MPH TO 29		* DRIVER AT FAULT
	FIXED OBJECT		HEAD ON		30 MPH TO 39		D DRY
	HEAD ON		SIDESWIPE		40 MPH TO 49		W WET
	REAR END		REAR END		50 MPH TO 59		I ICE OR SNOW
	RAN OFF ROAD		REAR END		60 MPH TO 69		SPEED UNKNOWN
			REAR END		70 AND UP		O OTHER
			FATALITY				



Crossover
Target Crashes

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DIVISION of HIGHWAYS
TRANSPORTATION MOBILITY and SAFETY DIVISION

TRAFFIC SAFETY UNIT

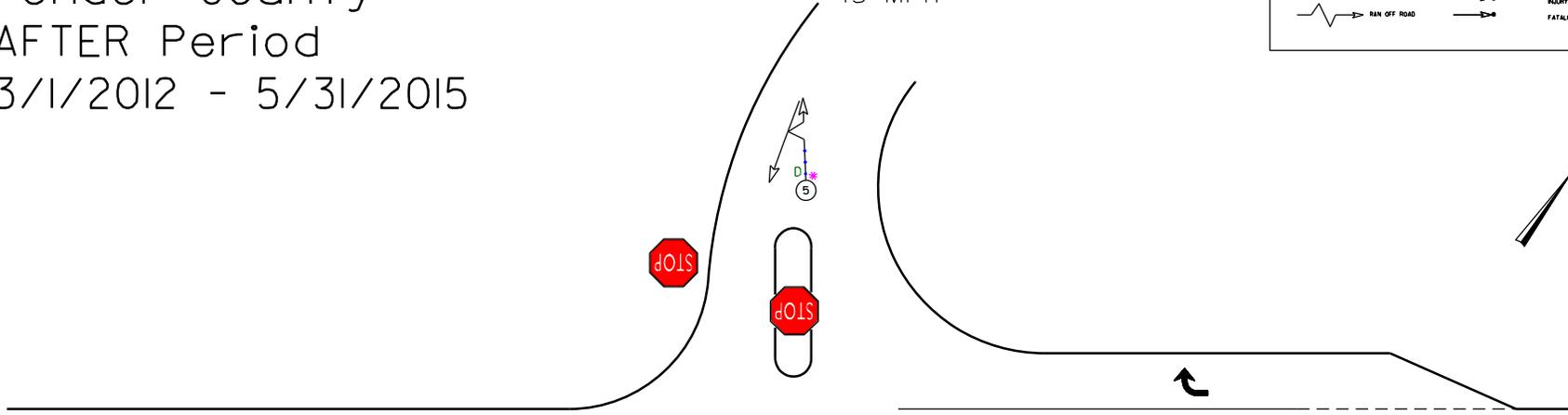
Date: 7-2-2015 Prepared By: J. Schronce

SS# 03-06-217
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 Pender County
 AFTER Period
 3/1/2012 - 5/31/2015

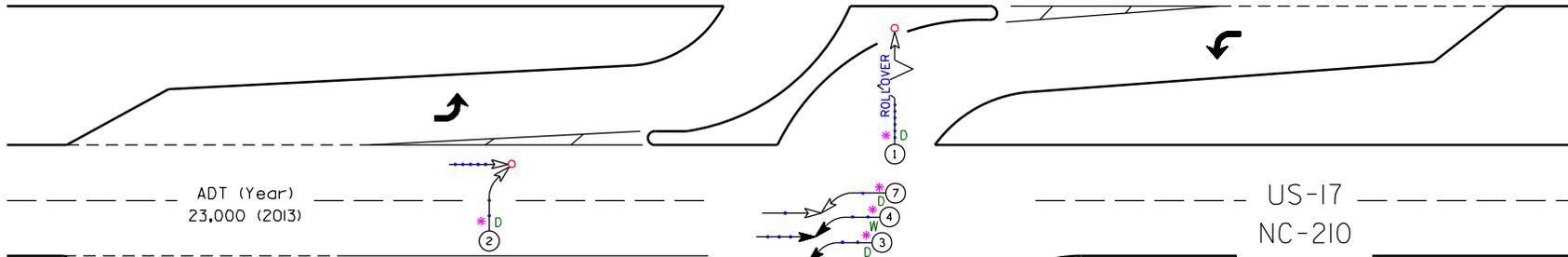
SR 1726
 Machine Gun Rd
 45-MPH

LEGEND

	MOVING VEHICLE		ANGLE		9 MPH OR LESS		PEDESTRIAN
	PARKEED 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 ON		TURNING		50 MPH TO 59		ICY OR SNOWY
	HEAD ON		TURNING		60 MPH TO 69		OTHER
	HEAD ON		TURNING		70 AND UP		
	RAN OFF ROAD		TURNING		SPEED UNKNOWN		

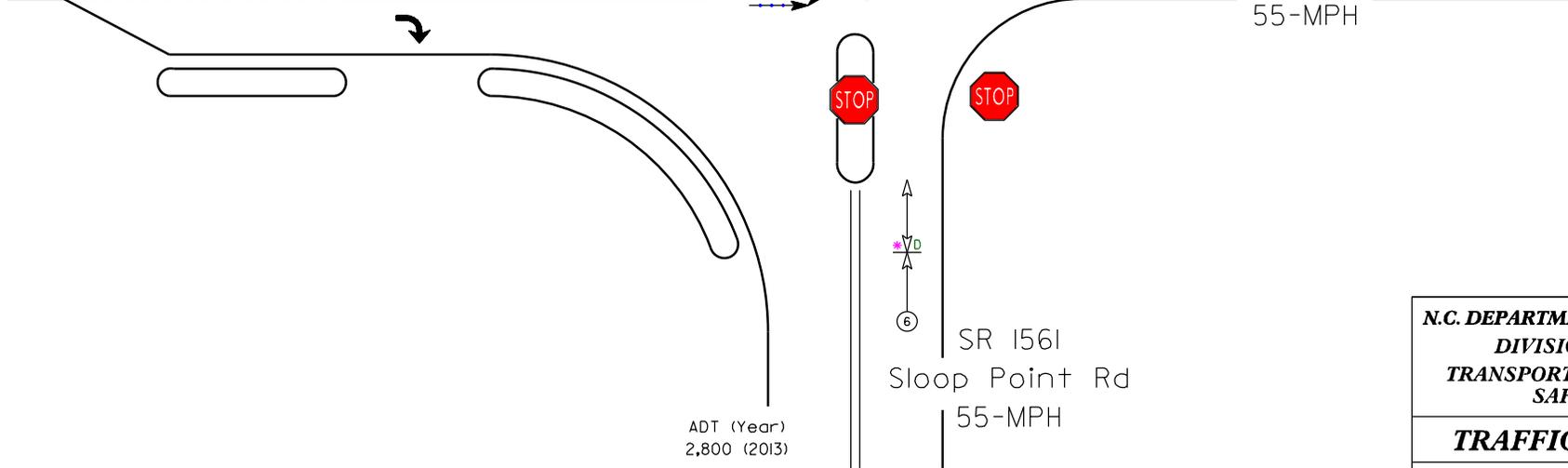


ADT (Year)
 29,000 (2013)



ADT (Year)
 23,000 (2013)

US-17
 NC-210
 55-MPH



ADT (Year)
 2,800 (2013)

SR 1561
 Sloop Point Rd
 55-MPH

Crossover
 Target Crashes

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DIVISION of HIGHWAYS
TRANSPORTATION MOBILITY and SAFETY DIVISION

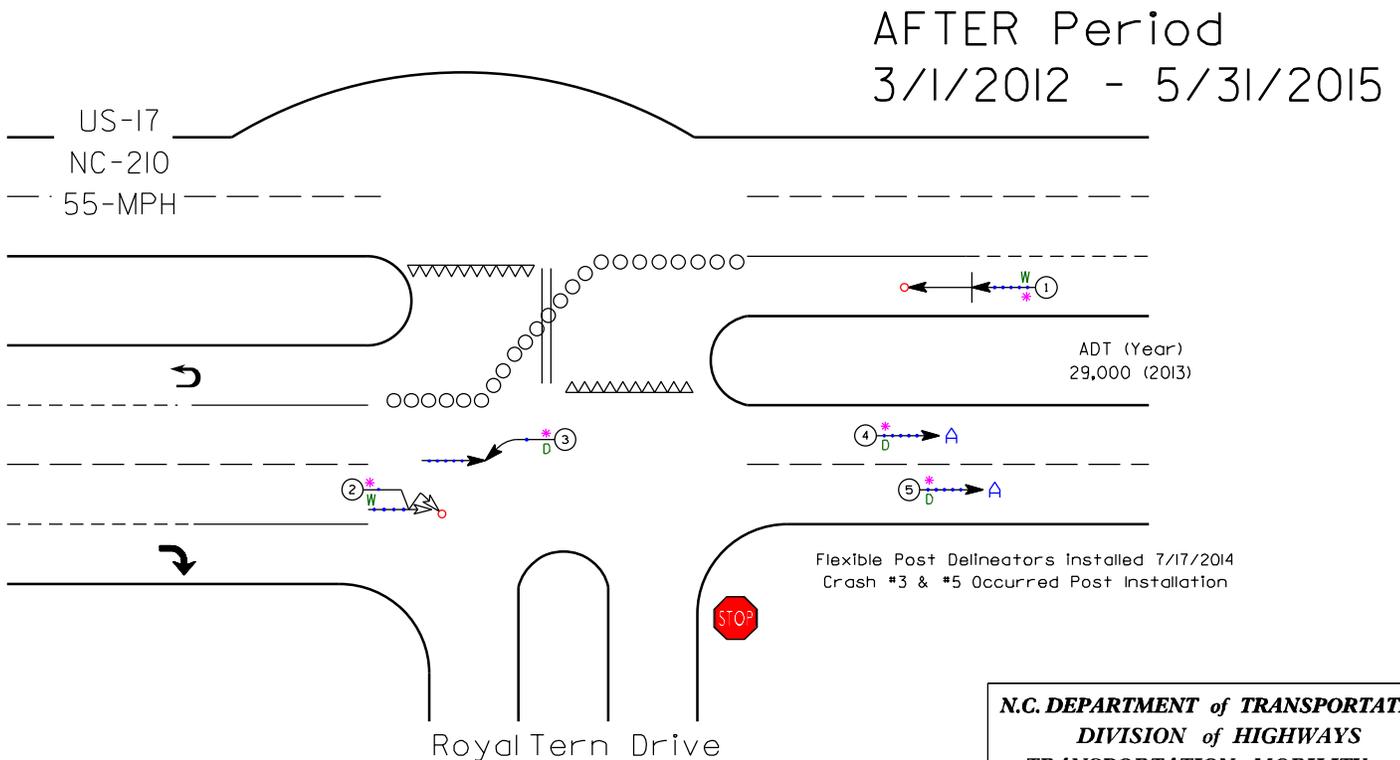
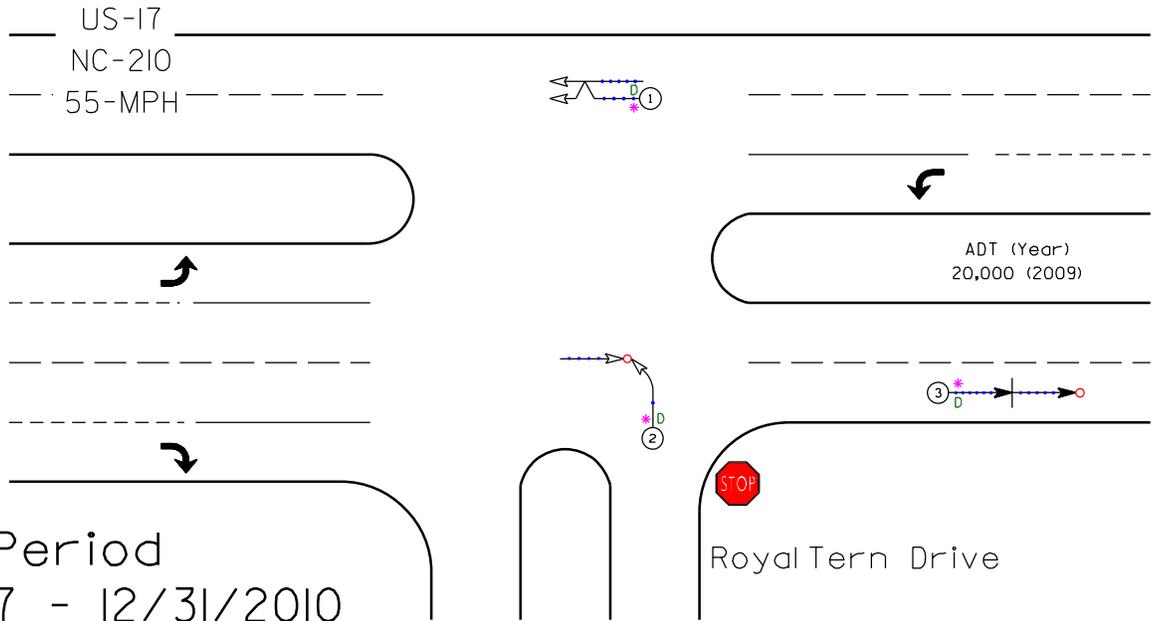
TRAFFIC SAFETY UNIT

Date: 7-2-2015 Prepared By: J. Schronce

SS# 03-06-217
 Order# 41000035889
 Pender County
 U-Turn North



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		INJURY		40 MPH TO 49		WET
	REAR END		FATALITY		50 MPH TO 59		ICY OR SNOWY
	RAN OFF ROAD		SPEED UNKNOWN		60 MPH TO 69		OTHER



U-Turn Related
 Target Crashes

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DIVISION of HIGHWAYS
TRANSPORTATION MOBILITY and
SAFETY DIVISION

TRAFFIC SAFETY UNIT

Date: 7-2-2015

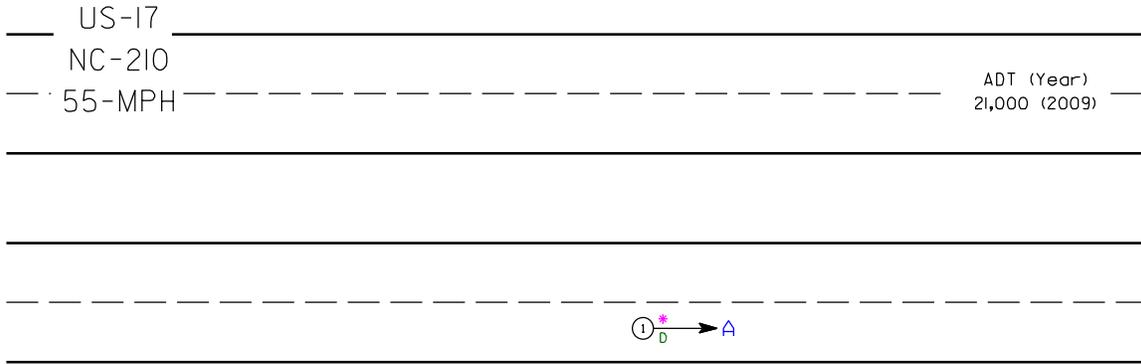
Prepared By: J. Schronce

SS# 03-06-217
 Order# 41000035889
 Pender County
 U-Turn South

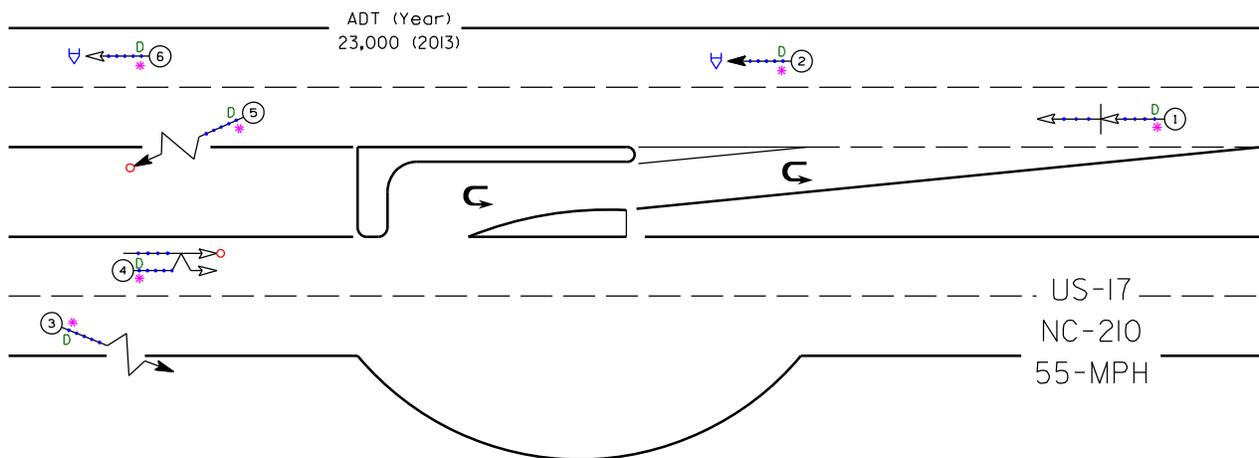


LEGEND							
	MOVING VEHICLE		ANGLE		9 MPH OR LESS		PEDESTRIAN
	PAUSED VEHICLE		TURNING		10 MPH TO 19		TRAIN
	PARKING VEHICLE		BACKING		20 MPH TO 29		DRIVER AT FAULT
	FIXED OBJECT		SIDEWALK		30 MPH TO 39		DRY
	HEAD ON		INJURY		40 MPH TO 49		WET
	REAR END		FATALITY		50 MPH TO 59		ICY OR SNOWY
	RAN OFF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

BEFORE Period
 10/1/2007 - 12/31/2010



AFTER Period
 3/1/2012 - 5/31/2015



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

TRAFFIC SAFETY UNIT

Date: 7-2-2015

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