

Spot Safety Project Evaluation

Project Information

Order ID: 41000038369

Project ID: W-5135

Location: SR 1520 (Old Maple Hill Road) from SR 1522 (Shaw Highway) to NC 50

County: Pender

City: Burgaw

Division: 3

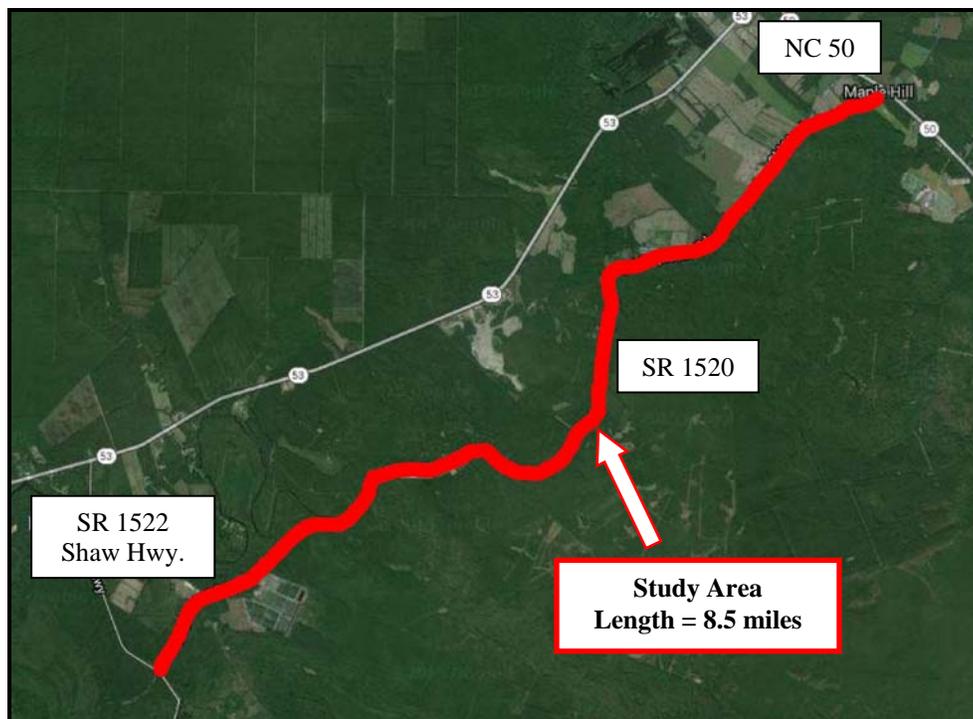
Signal ID: N/A

Countermeasure: Install spiral widening throughout the curves and install Vibraline along both edge lines for 8.5 miles.

Project Completion: November 11, 2011

Project Cost: \$1,100,000.00

Map/Aerial (from Google maps – Coordinates are 34.61365, -77.76832)



Naive Before and After Analysis

Before Period: July 1, 2007 to August 31, 2011 (4 years, 2 months)

Const. Period: September 1, 2011 to November 30, 2011 (3 months)

After Period: December 1, 2011 to January 31, 2016 (4 years, 2 months)

Analysis Criteria: Treatment data consisted of all crashes on SR 1520 (Old Maple Hill Rd.) with a 0-foot y-line from SR 1522 (Shaw Hwy. – MP 10.941) to NC 50 (MP 19.425)

Target Crashes: Lane departure crashes – Run-Off Road (right, left, straight); Fixed Object; Sideswipe (opposite direction), Rollover and Head-on.

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	47	48	+2.1%
Total Severity Index	10.6	8.3	-21.7%
Target Crashes	37	33	-10.8%
Target Crash Severity Index	10.3	11.0	+6.8%
Volume (2009, 2013)	100	200	+100.0%

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal Injury Crashes	0	0	N/A
Class A Injury Crashes	3	2	-33.3%
Class B Injury Crashes	23	17	-26.1%
Class C Injury Crashes	7	10	+42.9%
Property Damage Only	14	19	35.7%

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Motorcycle Lane Departure Crashes	31	29	-6.5%
Motorcycle Lane Departure Severity Index	11.4	12.1	6.1%
Vehicle Lane Departure Crashes	6	4	-33.3%
Vehicle Lane Departure Severity Index	4.7	2.85	-39.4%
Total Westbound Crashes	31	36	16.1%
Total Eastbound Crashes	16	12	-25.0%

Overall Summary Results

Total Crashes:	2.1 %	(Increase)
Total Crash Severity:	-21.7 %	(Reduction)
Target Crashes:	-10.8 %	(Reduction)
Target Crash Severity:	6.8 %	(Increase)
Volume:	100.0 %	(Increase)

Additional Summary Results

Motorcycle Lane Departure Crashes:	-6.5 %	(Reduction)
Motorcycle Lane Departure Severity:	6.1 %	(Reduction)
Vehicle Lane Departure Crashes:	-33.3 %	(Reduction)
Vehicle Lane Departure Severity:	-39.4 %	(Reduction)

Items for Discussion/Concerns

The total crashes experienced an increase of 2.1 % (47 to 48 crashes) between the before and after periods. The lane departure target crashes experienced a decrease between the before and after periods (37 to 33 crashes). The total crash severity experienced a decrease of 21.7% between the before and after periods. The lane departure target crash severity experienced an increase of 6.8% between the before and after periods.

Additionally, the majority of the target crashes in the study periods involved motorcycles. Motorcycle lane departure crashes experienced a slight reduction of 6.5% between the before and after periods. The vehicle lane departure crashes experienced a decrease of 33.3% between the before and after periods. Vehicles/motorcycles travelling in the westbound direction accounted for 31 out of 47 total crashes in the before period and 36 out of 48 total crashes in the after period. Additionally, the majority of the crashes occurred on either a Saturday or Sunday with 66.0% of crashes occurring during weekends in

the before period and 66.7% of crashes occurring during weekends in the after period. In addition, the average age of the driver in the motorcycle related crashes was around 29 years old.

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

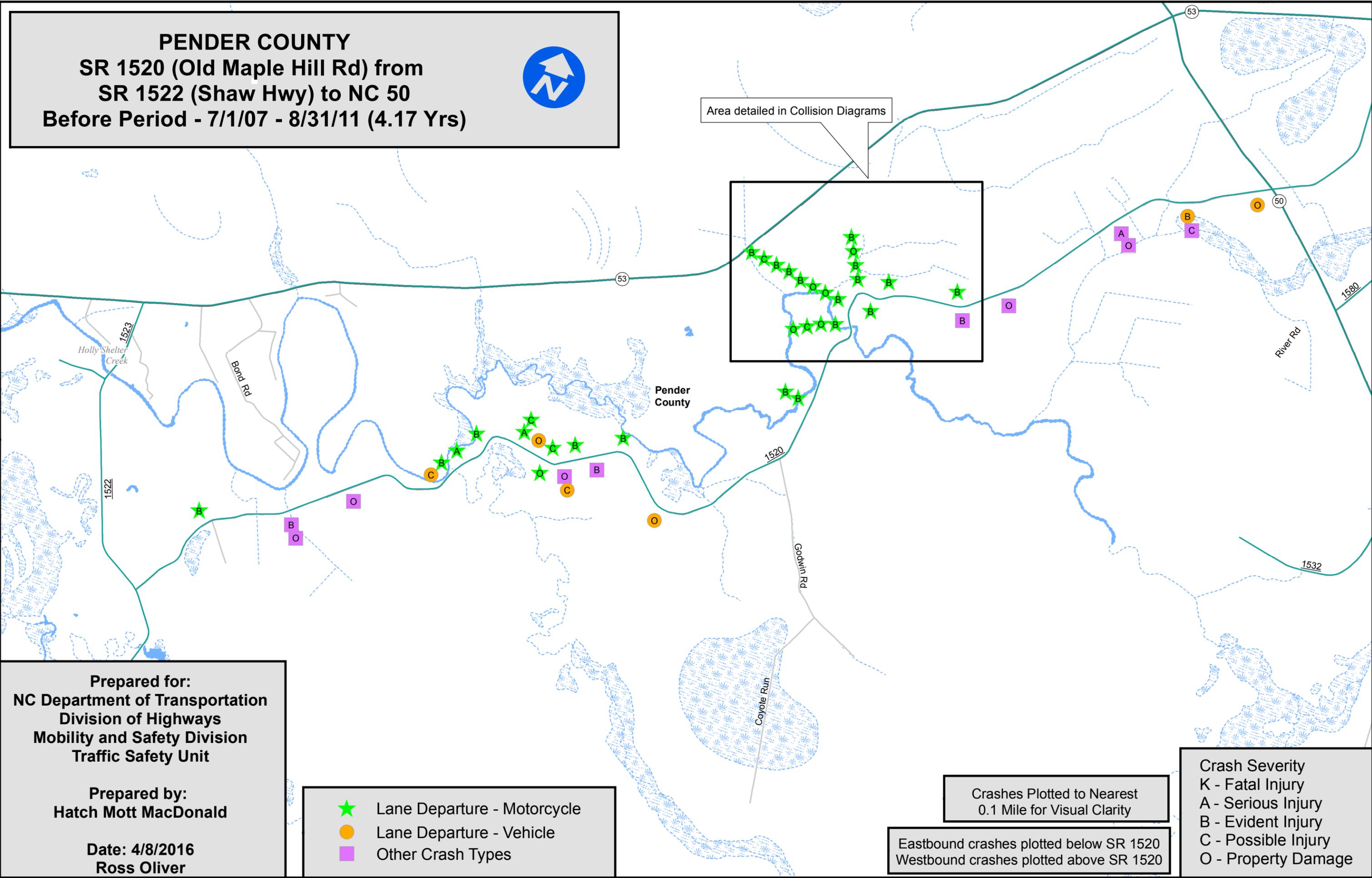
Data Prepared By

Principal Investigator: Ross Oliver
Work Group/Consultant: Hatch Mott MacDonald
Date: April 12, 2016

PENDER COUNTY
SR 1520 (Old Maple Hill Rd) from
SR 1522 (Shaw Hwy) to NC 50
Before Period - 7/1/07 - 8/31/11 (4.17 Yrs)



Area detailed in Collision Diagrams



Prepared for:
NC Department of Transportation
Division of Highways
Mobility and Safety Division
Traffic Safety Unit

Prepared by:
Hatch Mott MacDonald

Date: 4/8/2016
Ross Oliver

- ★ Lane Departure - Motorcycle
- Lane Departure - Vehicle
- Other Crash Types

Crashes Plotted to Nearest
 0.1 Mile for Visual Clarity

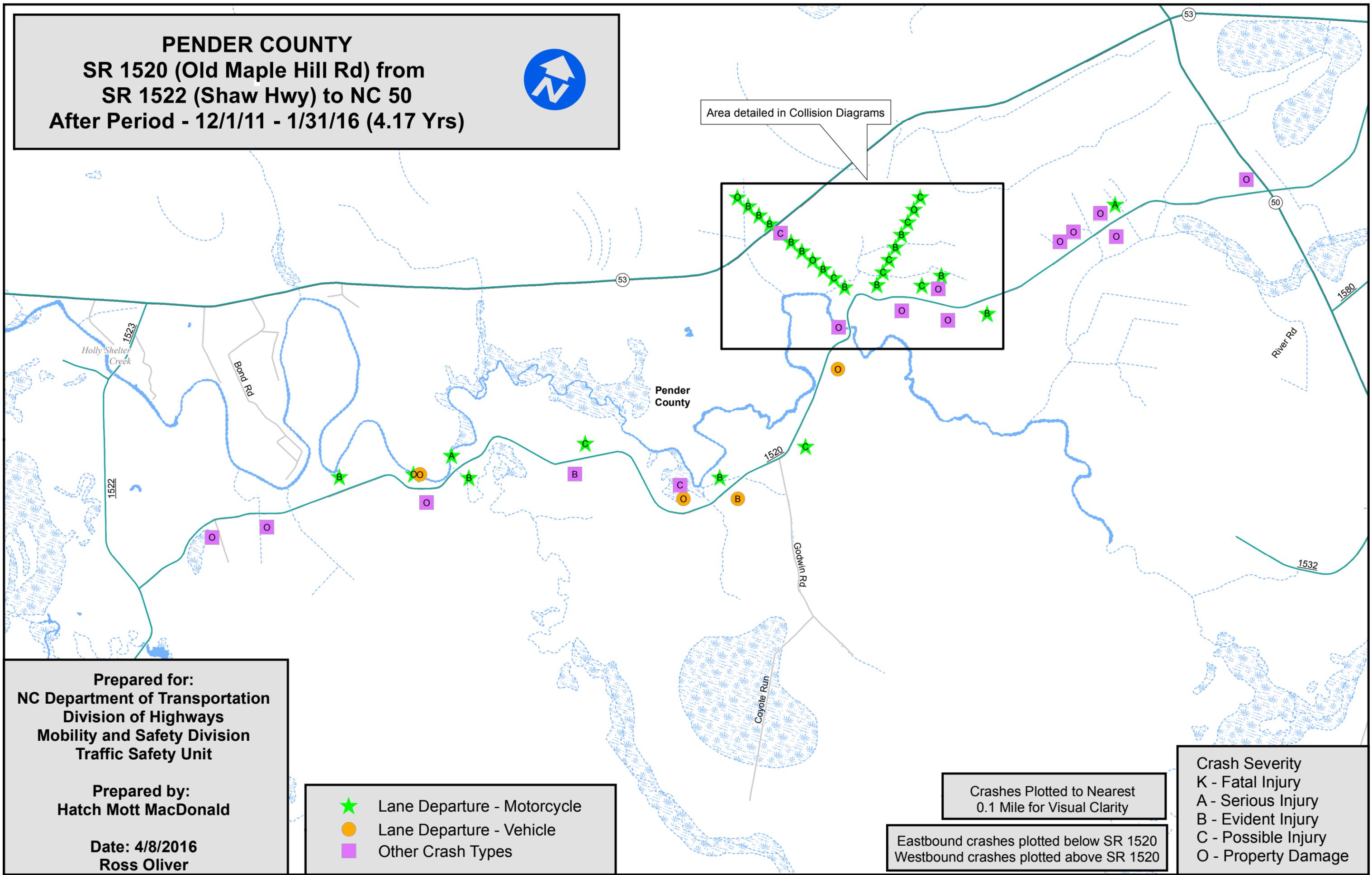
Eastbound crashes plotted below SR 1520
 Westbound crashes plotted above SR 1520

- Crash Severity**
- K - Fatal Injury
 - A - Serious Injury
 - B - Evident Injury
 - C - Possible Injury
 - O - Property Damage

PENDER COUNTY
SR 1520 (Old Maple Hill Rd) from
SR 1522 (Shaw Hwy) to NC 50
After Period - 12/1/11 - 1/31/16 (4.17 Yrs)



Area detailed in Collision Diagrams



Prepared for:
NC Department of Transportation
Division of Highways
Mobility and Safety Division
Traffic Safety Unit

Prepared by:
Hatch Mott MacDonald

Date: 4/8/2016
Ross Oliver

-  Lane Departure - Motorcycle
-  Lane Departure - Vehicle
-  Other Crash Types

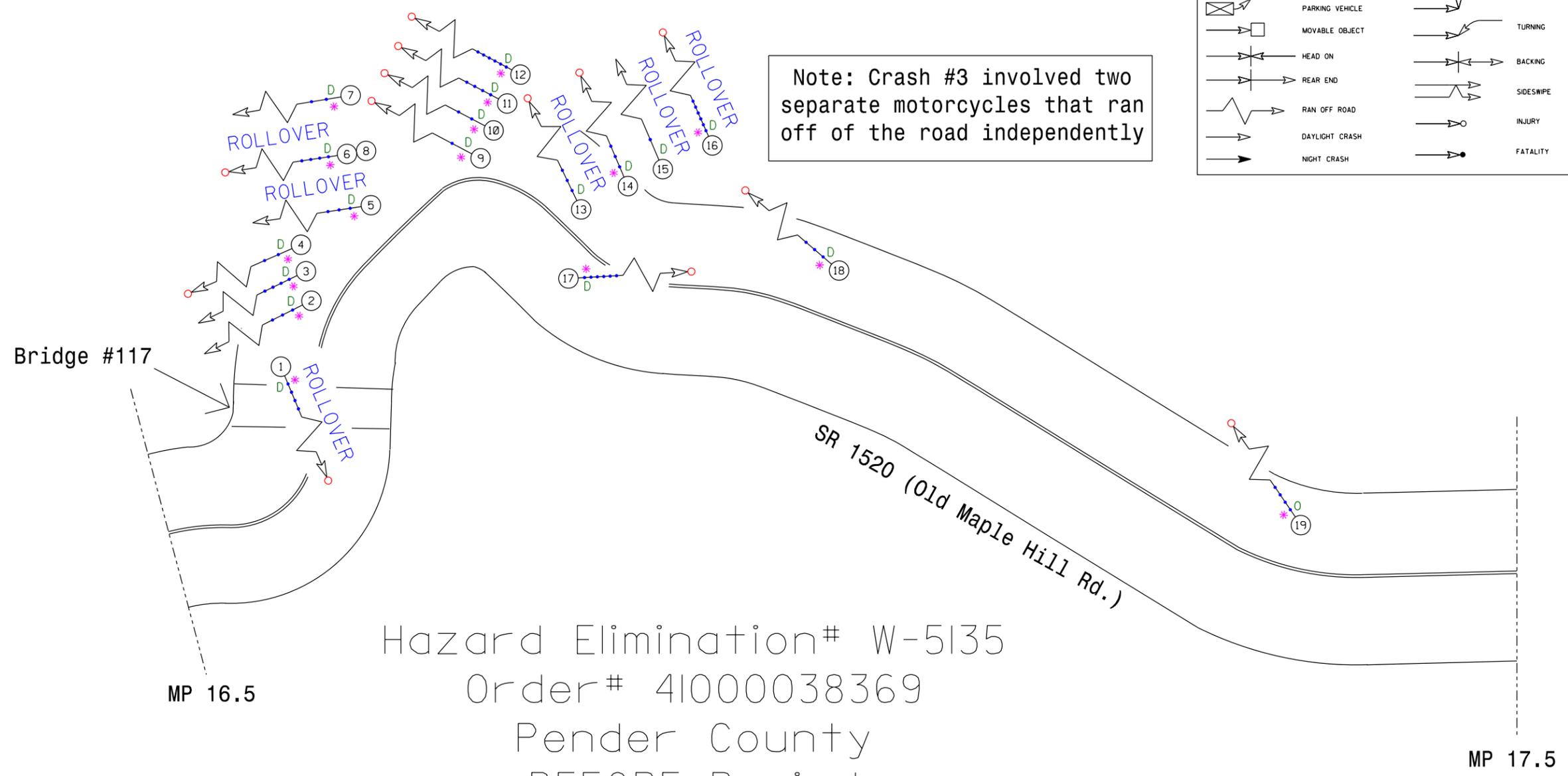
Crashes Plotted to Nearest
 0.1 Mile for Visual Clarity

Eastbound crashes plotted below SR 1520
 Westbound crashes plotted above SR 1520

- Crash Severity**
- K - Fatal Injury
 - A - Serious Injury
 - B - Evident Injury
 - C - Possible Injury
 - O - Property Damage

LEGEND	
	MOVING VEHICLE
	PARKED VEHICLE
	PARKING VEHICLE
	MOVABLE OBJECT
	HEAD ON
	REAR END
	RAN OFF ROAD
	DAYLIGHT CRASH
	NIGHT CRASH
	ANGLE
	TURNING
	BACKING
	SIDESWIPE
	INJURY
	FATALITY
	U-Turn
	9 MPH OR LESS
	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 AND UP
	SPEED UNKNOWN
	STOP SIGN
	ANIMAL
	PEDESTRIAN
	BICYCLE
	TRAIN
	DRIVER AT FAULT
	DRY
	WET
	ICY OR SNOWY
	Other

Note: Crash #3 involved two separate motorcycles that ran off of the road independently



Hazard Elimination# W-5135
 Order# 41000038369
 Pender County
 BEFORE Period
 7/1/2007 - 8/31/2011

Diagram shows all lane departure crashes in the vicinity of the horizontal curve at MP 16.8 on SR 1520

Approximate Mileposts: 16.5 to 17.5

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

TRAFFIC SAFETY UNIT

Date: 4/8/2016

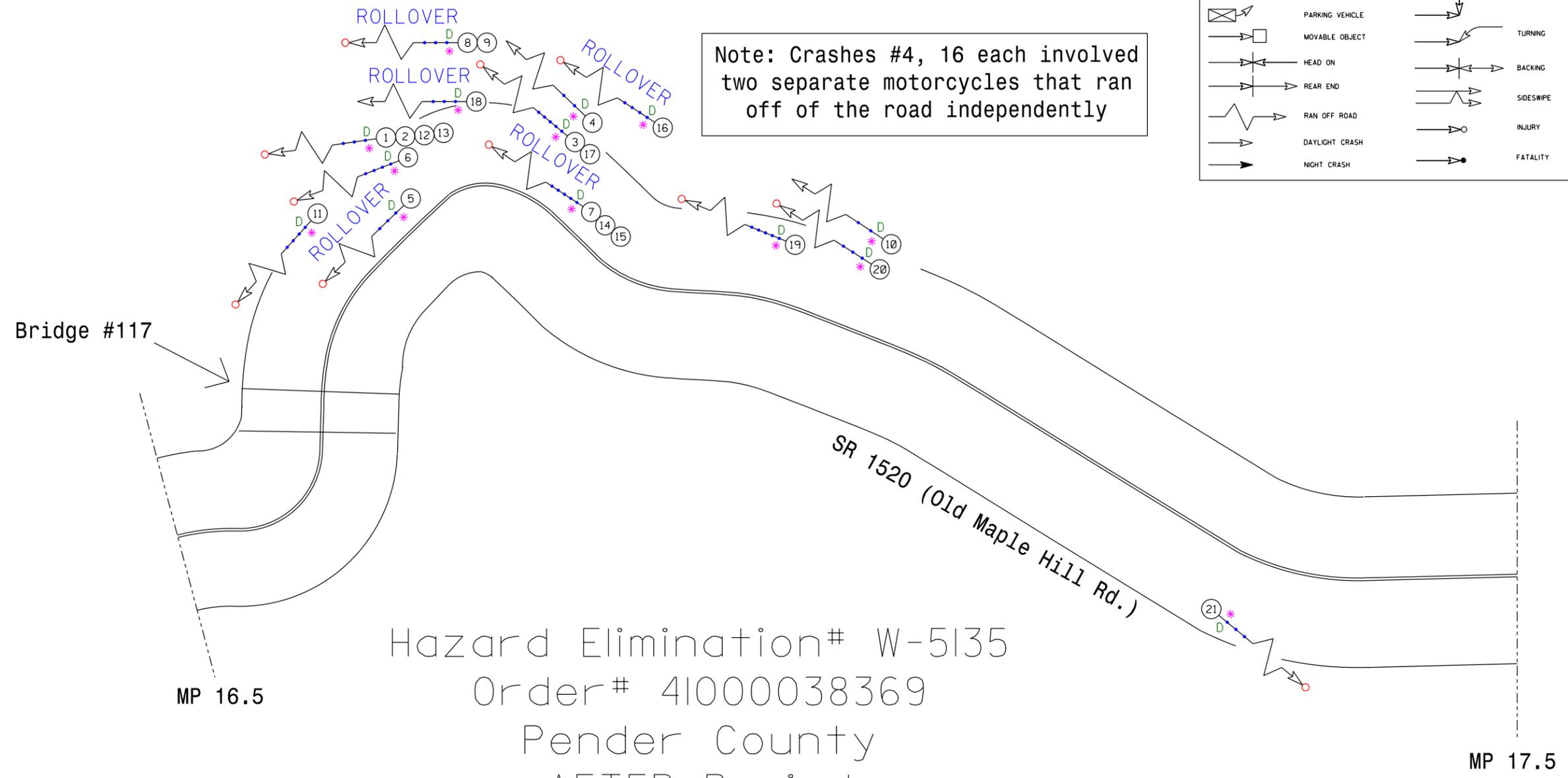
Prepared By: Ross Oliver



LEGEND

	MOVING VEHICLE		U-Turn		STOP SIGN
	PARKED VEHICLE		ANGLE		ANIMAL
	PARKING VEHICLE		9 MPH OR LESS		PEDESTRIAN
	MOVABLE OBJECT		10 MPH TO 19		BICYCLE
	HEAD ON		20 MPH TO 29		TRAIN
	REAR END		30 MPH TO 39		DRIVER AT FAULT
	RAN OFF ROAD		40 MPH TO 49		DRY
	DAYLIGHT CRASH		50 MPH TO 59		WET
	NIGHT CRASH		60 MPH TO 69		ICY OR SNOWY
			70 AND UP		Other
			SPEED UNKNOWN		

Note: Crashes #4, 16 each involved two separate motorcycles that ran off of the road independently



Hazard Elimination# W-5135
 Order# 41000038369
 Pender County
 AFTER Period
 12/1/2011 - 1/31/2016

Diagram shows all lane departure crashes in the vicinity of the horizontal curve at MP 16.8 on SR 1520

Approximate Mileposts: 16.5 to 17.5

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

TRAFFIC SAFETY UNIT

Date: 4/8/2016

Prepared By: Ross Oliver

