

Spot Safety Project Evaluation

Project Information

Order ID: 41000031332

Project ID: 06-08-216

Location: US-401 (S. Main St) from 150' north of NC-210 to 150' north of McNeil

County: Harnett

City: Lillington

Division: 6

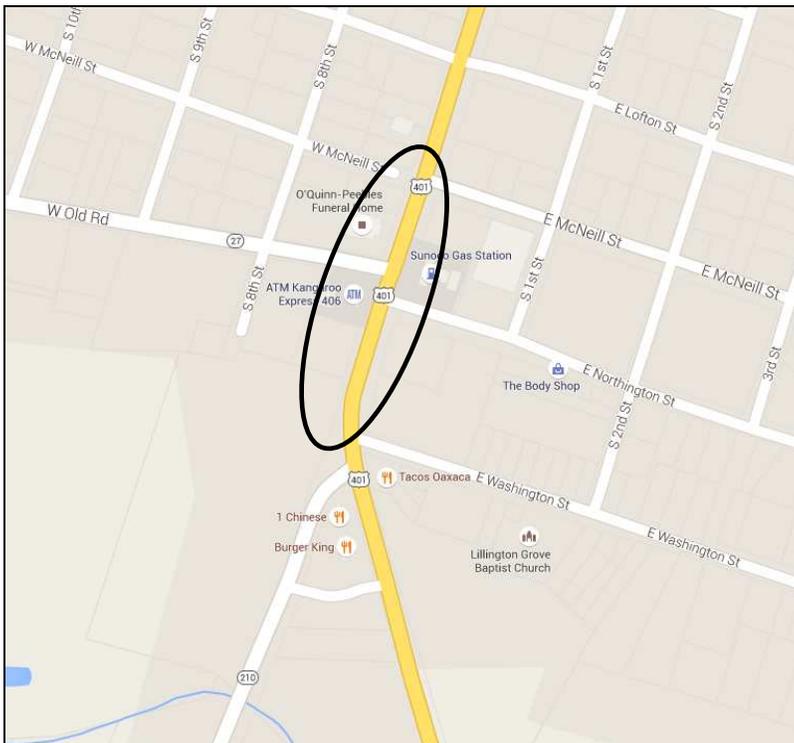
Signal ID: 06-0127

Countermeasure: Restripe roadway for Center Turn Lane (remove on-street parking) and Revise Traffic Signal to install protected/permitted left turn phase at McNeil Street

Project Completion: March 16, 2010

Project Cost: \$50,000

Map and Aerial (from Google Maps) – Coordinates 35.393025, -78.818582



US-401 (After Period)

Naive Before and After Analysis

Before Period: September 1, 2006 through December 31, 2009 (3 years, 4 months)

Const. Period: January 1, 2010 through March 31, 2010

After Period: April 1, 2010 through July 31, 2013 (3 years, 4 months)

Analysis Criteria: Treatment data consisted of all crashes on US-401 (S. Main Street) from 150-feet north of NC-210 southward to 150-feet north of McNeil Street with 150-foot Y-Line. The Intersections of NC-27 (W. Old Rd) and Northington Street occur within the limits; US-401 Mileposts 9.792 to 9.963 (0.171 mile).

Target Crashes: Two types of Target Crashes: Center Turn Lane Target Crashes (Rear-End in middle lanes and Left Turn Same Road from middle lane) and McNeil Street Left Turn Same Road Crashes.

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	44	44	0.0 %
Total Severity Index	2.35	3.19	35.7 %
Target Crashes – Center Turn lane	4	3	- 25.0 %
CTL Target Crash Severity Index	1.00	1.00	0.0 %
McNeil Left Turn Target Crashes	3	0	- 100.0 %
LTSR Target Crash Severity Index	5.93	0.00	- 100.0 %
Volume (2007, 2012)	15,900	17,500	10.1 %

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	0	0	0.0 %
Class A injury Crashes	0	0	0.0 %
Class B injury Crashes	2	2	0.0 %
Class C Injury Crashes	6	11	83.3 %
Property Damage Only	36	31	- 13.9 %

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Night Crashes	8	7	- 12.5 %
Wet Roadway Crashes	10	7	- 30.0 %
Alcohol/Drugs Involvement Crashes	2	0	- 100.0 %

Overall Summary Results

Total Crashes:	0 %	(no change)
Total Crash Severity:	36 %	(increase)
Combined Target Crashes:	- 57 %	(reduction)
Combined Target Crash Severity:	- 68 %	(reduction)
Volume:	10 %	(increase)

Items for Discussion/Concerns

From the before and after collision diagrams, this roadway segment experienced very similar crash patterns during the analysis. The crashes were concentrated at the non-signalized intersection of US-401 (S. Main Street) and NC-27 (W. Old Rd) within the limits. At this location, there were eleven (11) left turn different roadway crashes in the before period and eighteen (18) in the after period. The project countermeasure was successful at reducing the selected Target Crash types.

Additional Project and Analysis

From August to December 2013, under Spot Safety Project 06-11-12988, the intersection of McNeil Street and NC-27 (West Old Rd) were combined into a single traffic signal and the eastbound approach of McNeil Street was removed. The Safety Evaluation Group has provided an Extra Period to show crash data along this segment since these improvements.

After Period: 4/1/2010 – 7/31/2013 (3 years, 4 months)
Construction II: August – December 2013
Extra Period: 1/1/2014 – 3/31/2015 (1 year, 3 months)

<u>Treatment Information</u>	AFTER 3.33 Yrs	EXTRA 1.25 Years	Percent Reduction (-) Percent Increase (+)
Total Crashes	44	12	N/A
Total Severity Index	3.19	1.62	- 49.2 %
Total Crashes Per Year (CPY)	13.2 CPY	7.4 CPY	- 43.9 %

The frequency and severity of crashes along this roadway segment appear to be effected positively with the additional improvements to the McNeil traffic signal. The Safety Evaluation will complete a full Spot Safety Evaluation of this countermeasure when more data is available.

Data Prepared For

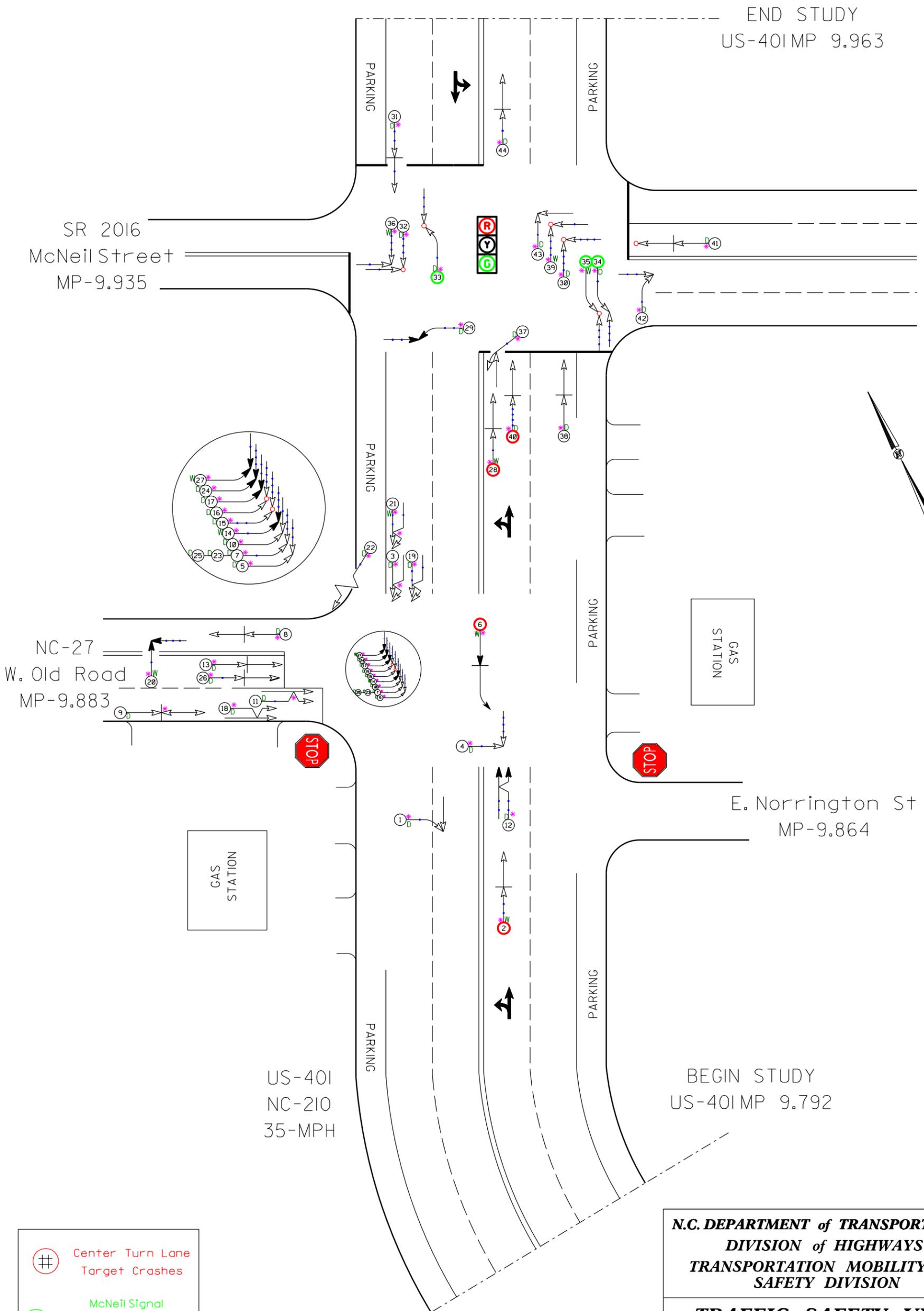
The Traffic Safety Unit *of the*
Transportation Mobility and Safety Division *of the*
Division of Highways *of the*
North Carolina Department of Transportation

Data Prepared By

Principal Investigator: Jason B. Schronce, PE
Work Group/Consultant: NCDOT - Safety Evaluation Group
Date: June 26, 2015

SS# 06-08-216
 Order# 41000031332
 Harnett County
 BEFORE Period
 9/1/2006 to 12/31/2009
 3.33 Years

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



Center Turn Lane
Target Crashes

McNeil Signal
Protected-Permissive
Target Crashes

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

TRAFFIC SAFETY UNIT

Date: 5-26-2015 Prepared By: J. Schronce

SS# 06-08-216
 Order# 41000031332
 Harnett County
 AFTER Period
 4/1/2010 to 7/31/2013
 3.33 Years

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

END STUDY
 US-401 MP 9.963

SR 2016
 McNeil Street
 MP-9.935

NC-27
 W. Old Road
 MP-9.883

E. Norrington St
 MP-9.864

US-401
 NC-210
 35-MPH

BEGIN STUDY
 US-401 MP 9.792

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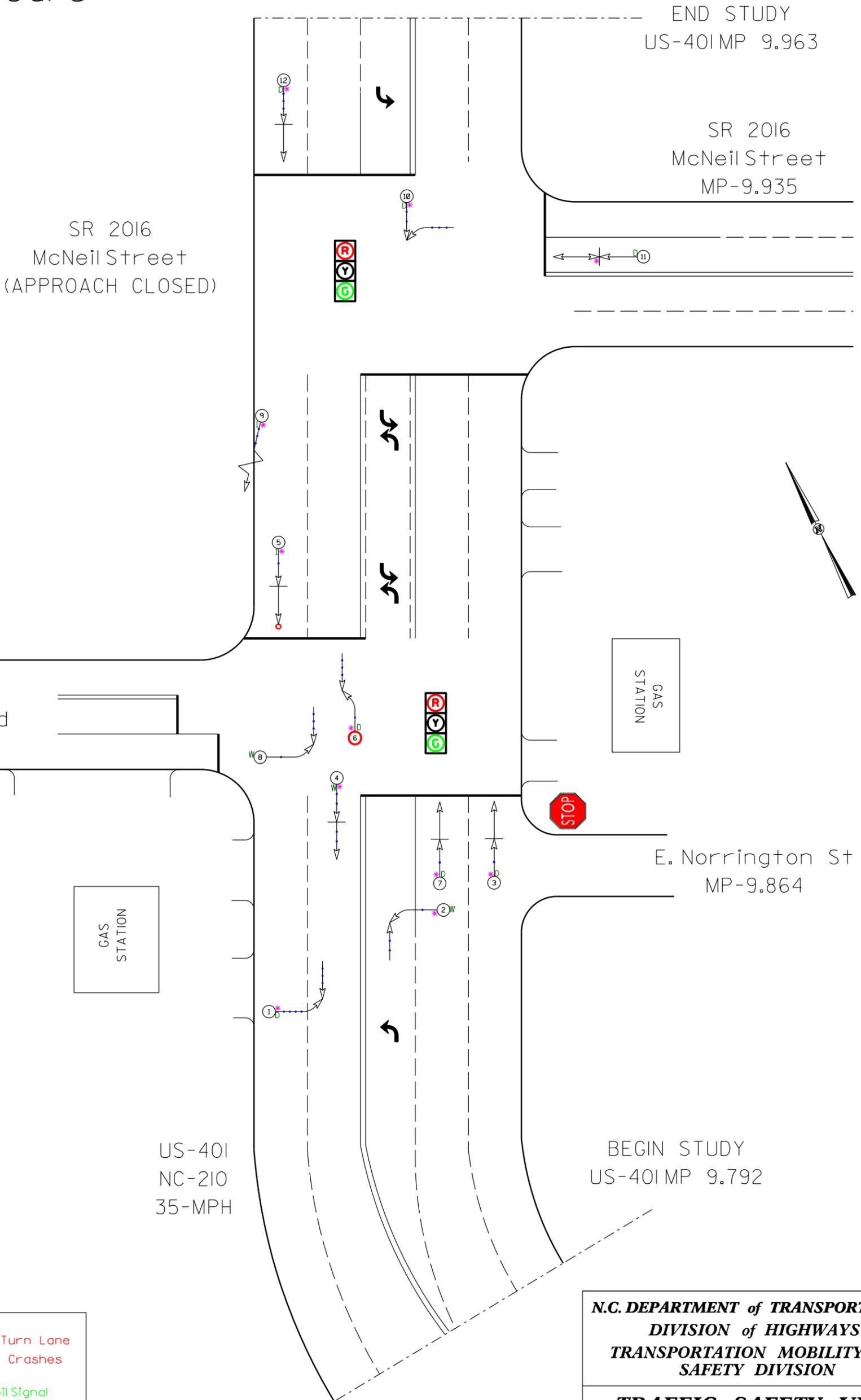
TRAFFIC SAFETY UNIT

Date: 6-1-2015

Prepared By: J. Schronce

SS# 06-08-216
 Order# 41000031332
 Harnett County
 EXTRA Period
 1/1/2014 to 3/31/2015
 1.25 Years

LEGEND							
	MOVING VEHICLE		ANGLE		9 MPH OR LESS		PEDESTRIAN
	PARKED VEHICLE		TURNING		10 MPH TO 19		TRAIN
	PARKING VEHICLE		BACKING		20 MPH TO 29		DRIVER AT FAULT
	FIXED OBJECT		SIDESWIPE		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



Center Turn Lane
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Date: 6-1-2015 Prepared By: J. Schronce