
Bridge Design Speed Investigation

B-5658

Structure #126 on SR 1310 (Edwards Road) over Big Peachtree Creek

Nash County



Document Prepared By:

Ramey Kemp & Associates, Inc.
5808 Faringdon Place, Suite 100
Raleigh, NC 27609

March 16, 2016

Project Manager

Jacob D. Carpenter, PE
Regional Manager

Principal Investigator

Joshua T. Reinke, PE
Transportation Engineer



Bridge and Approach Investigation Checklist

Project B-5658

Description Bridge #126 over Big Peachtree Creek

Route SR 1310 (Edwards Road)

Division 4

County Nash

Existing Speed Limit 55 mph ☐ Posted ☒ Statutory

Reasonable & Comfortable
Passenger Car Speed 45 mph

Speed Data Estimated 40-55 mph

Ball Bank Speed Study Curve Southwest of Bridge:
45 mph: NE approach - 4, SW approach - 4
50 mph: NE approach - 4, SW approach - 4
55 mph: NE approach - 6, SW approach - 4
Curve Northeast of Bridge:
40 mph: NE approach - 8, SW approach - 8
45 mph: NE approach - 11, SW approach - 10
50 mph: NE approach - 13, SW approach - 12

Warning Signs at Bridge 4x Bridge End Delineators, 2x Weight Limit (19 ton SV, 27 ton TTST)
2x 35 mph Cautionary Signs at Curve

Roadside Development Wooded/Residential/Agricultural

ADT History 365 vpd (From NCDOT TEAAS)
460 vpd (From NCDOT Traffic Volume Map - 2013)

Pedestrian/Bicycle Traffic Minimal Expected

Bridge and Approach
Digital Photos Attached

Approach Lane Width Northeast of Bridge - 18 ft, Southwest of bridge - 18 ft (total width)

Approach Shoulder Width Northeast of Bridge - <1 ft paved, 4-8 ft grass
Shoulder Type Southwest of Bridge - <1 ft paved, >8 ft grass

Lane Width (existing bridge) 17.75 ft (total width)

Shoulder width (existing bridge) 3 ft (~23.75 ft total width)

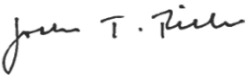
Strategic Corridor / Thoroughfare
Designation and Recommended
Cross Section SR 1310 is classified as a minor collector facility in the Statewide
Functional Classification System. 2-lane cross-section is recommended.

Crash History and
Safety Considerations Crash data completed from 01/01/06 to 12/31/15. Six collisions were
reported. Two collisions reported involved an animal. Four collisions involved
a fixed object.

Comments The design of the bridge and approaches should consider accommodating
up to a 25 ft wide farm machine. Dirt driveway located approximately 175
ft northeast of bridge.

Reasonable Bridge Speed 45 mph

Investigated by: Joshua T. Reinke, PE

Reviewed by: 

County: Nash

Route: SR 1310 (Edwards Road)

Date: 03/16/16

Northeast-bound

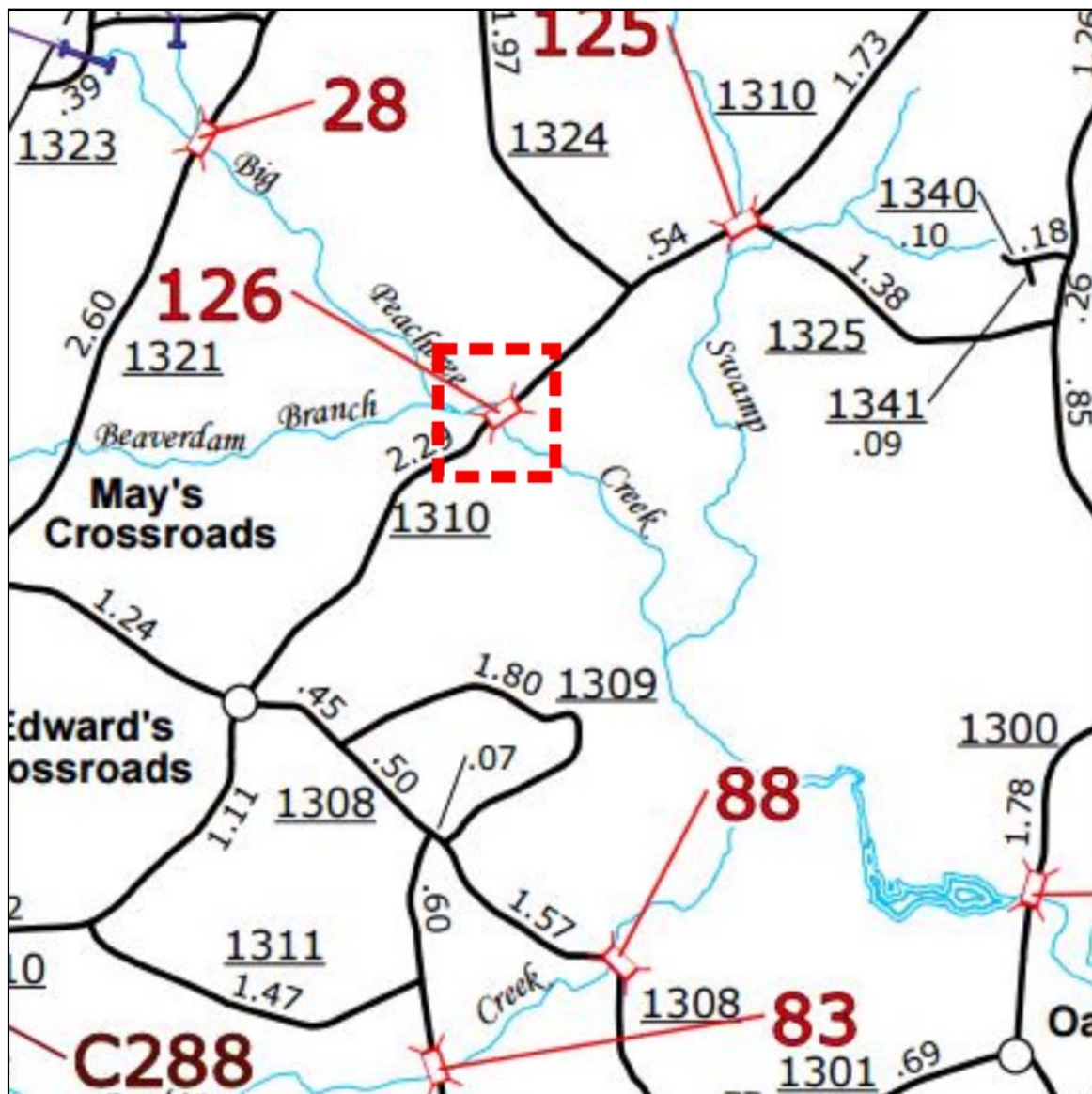
Northeast-bound



Southwest-bound

Southwest-bound





**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Study Criteria Summary

County: NASH **City:** All and Rural
Date: 1/1/2006 **to** 12/31/2015 **Study:** NASHBRIDGE126
Location: 500 feet either side of Bridge 126 on SR 1310 (Edwards Road) over Big Peachtree Creek

Report Details

Acc No	Crash ID	Milepost	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
						F	A	B	C	R	L	W	Ch	Ci	Dv	Op
1	101953352	3.382	02/05/2007 16:05	ANIMAL	\$ 2400	0	0	0	0	1	1	1		0		
Unit	1 : 2	Alchl/Drgs:	0	Speed:	0 MPH Dir: SW	Veh Mnvr/Ped Actn:				4	Obj Strk:			17		
2	103445185	3.425	05/02/2012 23:15	FIXED OBJECT	\$ 1100	0	0	0	1	1	5	1	3	0	0	
Unit	1 : 1	Alchl/Drgs:	5	Speed:	50 MPH Dir: NE	Veh Mnvr/Ped Actn:				4	Obj Strk:			49		
3	102769540	3.522	12/28/2009 17:21	FIXED OBJECT	\$ 1000	0	0	0	1	1	5	1	7	0	13	1
Unit	1 : 5	Alchl/Drgs:	0	Speed:	55 MPH Dir: N	Veh Mnvr/Ped Actn:				4	Obj Strk:			33		
4	102927864	3.522	07/31/2010 05:38	FIXED OBJECT	\$ 5000	0	0	1	0	1	5	1	7	0	13	1
Unit	1 : 1	Alchl/Drgs:	0	Speed:	60 MPH Dir: S	Veh Mnvr/Ped Actn:				4	Obj Strk:			33		
5	103363049	3.522	01/24/2012 14:59	FIXED OBJECT	\$ 2000	0	0	0	0	1	1	1	5	0	13	1
Unit	1 : 1	Alchl/Drgs:	0	Speed:	55 MPH Dir: W	Veh Mnvr/Ped Actn:				4	Obj Strk:			59		
6	103511467	3.522	07/30/2012 20:55	ANIMAL	\$ 800	0	0	0	0	1	5	1	1	0	0	
Unit	1 : 1	Alchl/Drgs:	0	Speed:	0 MPH Dir: N	Veh Mnvr/Ped Actn:				4	Obj Strk:			17		

**Legend for
Report Details:**

Acc No - Accident Number
Injuries: F - Fatal, A - Class A, B - Class B, C - Class C
Condition: R - Road Surface, L - Ambient Light, W - Weather
Rd Ch - Road Character
Rd Ci - Roadway Contributing Circumstances
Trfc Ctl - Traffic Control: Dv - Device, Op - Operating
Alchl/Drgs - Alcohol Drugs Suspected
Veh Mnvr/Ped Actn - Vehicle Maneuver/Pedestrian Action
Obj Strk - Object Struck

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Summary Statistics

High Level Crash Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	6	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	3	50.00
Total Injury Crashes	3	50.00
Property Damage Only Crashes	3	50.00
Night Crashes	4	66.67
Wet Crashes	0	0.00
Alcohol/Drugs Involvement Crashes	1	16.67

Crash Severity Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	6	100.00
Fatal Crashes	0	0.00
Class A Crashes	0	0.00
Class B Crashes	1	16.67
Class C Crashes	2	33.33
Property Damage Only Crashes	3	50.00

Vehicle Exposure Statistics

Annual ADT = 365

Total Length = 0.2 (Miles) 0.322 (Kilometers)

Total Vehicle Exposure = 0.27 (MVMT) 0.43 (MVKMT)

Crash Rate	Crashes Per 100 Million Vehicle Miles	Crashes Per 100 Million Vehicle Kilometers
Total Crash Rate	2250.60	1398.46
Fatal Crash Rate	0.00	0.00
Non Fatal Crash Rate	1125.30	699.23
Night Crash Rate	1500.40	932.30
Wet Crash Rate	0.00	0.00
EPDO Rate	10577.80	6572.74

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Miscellaneous Statistics

Severity Index =	4.70
EPDO Crash Index =	28.20
Estimated Property Damage Total = \$	12300.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
ANIMAL	2	33.33
FIXED OBJECT	4	66.67

Injury Summary

Injury Type	Number of Injuries	Percent of Total
Fatal Injuries	0	0.00
Class A Injuries	0	0.00
Class B Injuries	1	33.33
Class C Injuries	2	66.67
Total Non-Fatal Injuries	3	100.00
Total Injuries	3	100.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Monthly Summary

Month	Number of Crashes	Percent of Total
Jan	1	16.67
Feb	1	16.67
Mar	0	0.00
Apr	0	0.00
May	1	16.67
Jun	0	0.00
Jul	2	33.33
Aug	0	0.00
Sep	0	0.00
Oct	0	0.00
Nov	0	0.00
Dec	1	16.67

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	3	50.00
Tue	1	16.67
Wed	1	16.67
Thu	0	0.00
Fri	0	0.00
Sat	1	16.67
Sun	0	0.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Hourly Summary

Hour	Number of Crashes	Percent of Total
0000-0059	0	0.00
0100-0159	0	0.00
0200-0259	0	0.00
0300-0359	0	0.00
0400-0459	0	0.00
0500-0559	1	16.67
0600-0659	0	0.00
0700-0759	0	0.00
0800-0859	0	0.00
0900-0959	0	0.00
1000-1059	0	0.00
1100-1159	0	0.00
1200-1259	0	0.00
1300-1359	0	0.00
1400-1459	1	16.67
1500-1559	0	0.00
1600-1659	1	16.67
1700-1759	1	16.67
1800-1859	0	0.00
1900-1959	0	0.00
2000-2059	1	16.67
2100-2159	0	0.00
2200-2259	0	0.00
2300-2359	1	16.67

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Light and Road Conditions Summary

Condition	Dry	Wet	Other	Total
Day	2	0	0	2
Dark	4	0	0	4
Other	0	0	0	0
Total	6	0	0	6

Object Struck Summary

Object Type	Times Struck	Percent of Total
ANIMAL	2	33.33
BRIDGE RAIL END	1	16.67
EMBANKMENT	1	16.67
TREE	2	33.33

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
PASSENGER CAR	4	66.67
PICKUP	1	16.67
VAN	1	16.67

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Yearly Totals Summary

Accident Totals

Year	Total Accidents	Fatal Accidents	Injury Accidents	Property Damage Only Accidents
2006	0	0	0	0
2007	1	0	0	1
2008	0	0	0	0
2009	1	0	1	0
2010	1	0	1	0
2011	0	0	0	0
2012	3	0	1	2
2013	0	0	0	0
2014	0	0	0	0
2015	0	0	0	0
Total	6	0	3	3

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
2006	0	0
2007	0	0
2008	0	0
2009	0	1
2010	0	1
2011	0	0
2012	0	1
2013	0	0
2014	0	0
2015	0	0
Total	0	3

Miscellaneous Totals

Year	Property Damage	EPDO Index
2006	\$ 0	0.00
2007	\$ 2400	1.00
2008	\$ 0	0.00
2009	\$ 1000	8.40
2010	\$ 5000	8.40

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Year	Property Damage	EPDO Index
2011	\$ 0	0.00
2012	\$ 3900	10.40
2013	\$ 0	0.00
2014	\$ 0	0.00
2015	\$ 0	0.00
Total	\$ 12300	28.20

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road & Fixed Object	Angle	Side Swipe	Other
2006	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	1
2008	0	0	0	0	0	0	0
2009	0	0	0	1	0	0	0
2010	0	0	0	1	0	0	0
2011	0	0	0	0	0	0	0
2012	0	0	0	2	0	0	1
2013	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0
Total	0	0	0	4	0	0	2

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Strip Diagram

Features	Milepost	Crash IDs
Structure:630126	3.33	
	3.34	
	3.35	
	3.36	
	3.37	
	3.38	101953352
	3.39	
	3.40	
	3.41	
	3.42	103445185
	3.43	
	3.44	
	3.45	
	3.46	
	3.47	
	3.48	
	3.49	
	3.50	
	3.51	
	3.52	102769540 102927864 103363049 103511467
	3.53	

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
NASHBRIDGE126				76.8	8.4	365	40001310

Request Date	Courier Service	Phone No.	Ext.	Fax No.
--------------	-----------------	-----------	------	---------

County			Municipality					
Name	Code	Div.	Name	Code	Y-Line Ft.	Begin Date	End Date	Years
NASH	64	4	All and Rural		0	1/1/2006	12/31/2015	10.00

Location Text	Requestor
500 feet either side of Bridge 126 on SR 1310 (Edwards Road) over Big Peachtree Creek	

Included Accidents	Old MP	New MP	Type
103445185		3.425	I

Fiche Roads	
Name	Code
SR 1310	40001310

Strip Road					
Name	Code	Begin MP	End MP	Miles	Kilometers
SR 1310	40001310	3.325	3.525	0.200	0.322