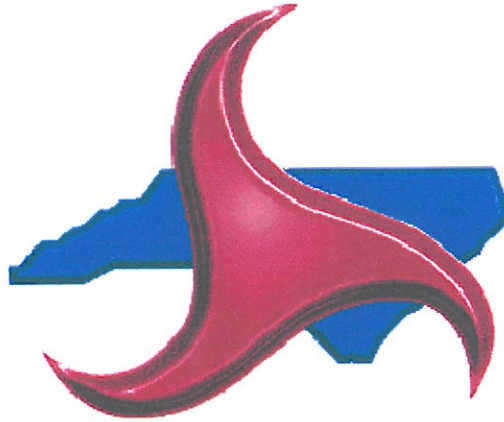


Bridge Design Speed Investigation

17BP.6.R.60

Bridge 118 over Gum Swamp on SR 1317
Columbus County

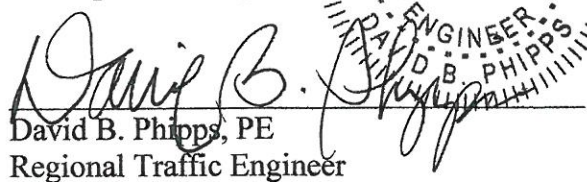


Document Prepared By:

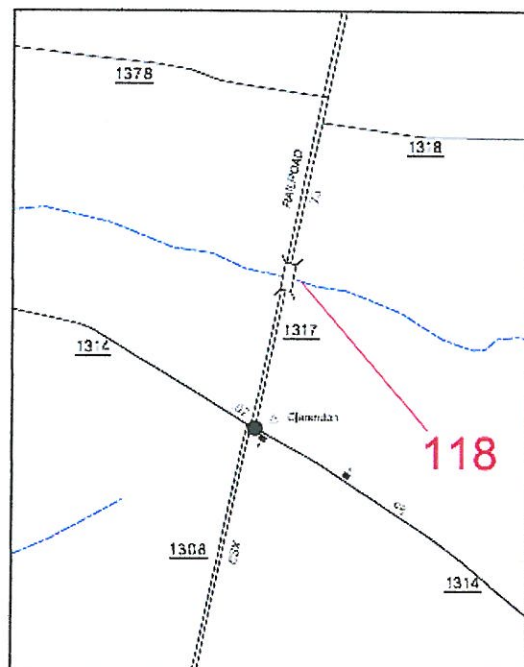
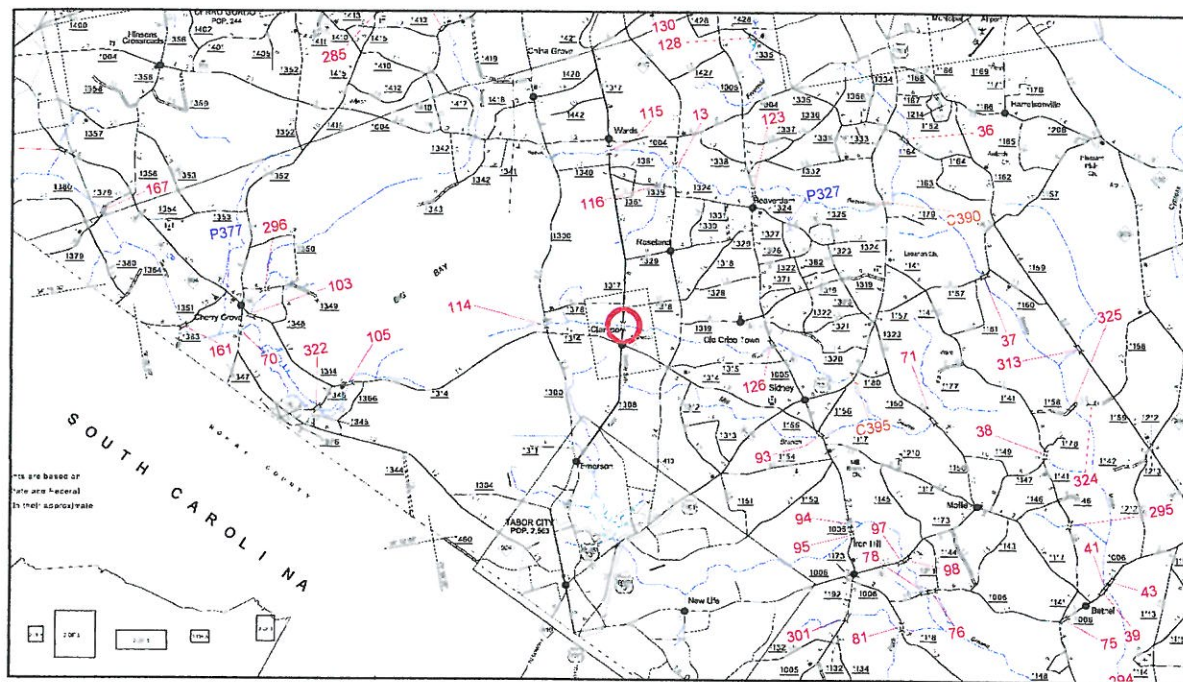
Regional Traffic Office – Sand hills Region
Transportation Mobility and Safety Division
North Carolina Department of Transportation

August 29, 2014

Principal Investigator & Project Manager


David B. Phipps, PE
Regional Traffic Engineer





Bridge 188 over Gum Swamp on SR 1317 in Columbus County

Bridge and Approach Investigation Checklist

Project 17BP.6.R.60
Description Bridge 118 over Gum Swamp
Route SR 1317
Division 6
County Columbus

Existing Speed Limit 55 ☐ Posted ☒ Statutory

Reasonable & Comfortable
Passenger Car Speed 55

Speed Data None.

Ball Bank Speed Study None. Roadway is relatively straight and flat in both directions.

Warning Signs at Bridge Type 3 Object Markers (OM-3L and OM-3R) - 2 each.

Roadside Development Rural area with fields, some wooded land and homes. There is a railroad track west of the roadway.

ADT History 2007: 750, 2009: 670, 2011: 690, 2013: 800.

Pedestrian/Bicycle Traffic Minimal expected.

Bridge and Approach
Digital Photos Attached

Approach Lane Width 9 ft.

Approach Shoulder Width: 5 ft.
Shoulder Type Soil/Grass.

Lane Width (existing bridge) 9 ft.

Shoulder width (existing bridge) 3 ft.

Strategic Corridor / Thoroughfare
Designation and Recommended
Cross Section n/a

Crash History and
Safety Considerations One collision in crash analysis. Vehicle traveled off of the roadway and into the creek. Approach and trailing guardrail on the new structure should prevent this type of collision.

Comments This section of SR 1317 is safe and reasonable at 55 mph.

Reasonable Bridge Speed 55 mph

Investigated by: David B. Phipps, PE Reviewed by: David B. Phipps, PE

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

Study Criteria Summary

County: COLUMBUS **City:** All and Rural
Date: 06/01/2004 **to** 05/31/2014 **Study:** MW41000030224
Location: Bridge #118 over Gum Swamp on SR 1317 (Clarendon Rd), 500 feet on each side.

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	103633522	0.275	12/21/2012 09:01	OTHER NON-COLLISION	\$ 3000	0	0	0	0	1	1	1	1	0	0	
Unit 1 : 4 Alchl/Drgs: 7 Speed: 55 MPH Dir: N Veh Mnvr/Ped Actn: 4 Obj Strk:																

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	1	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	0	0.00
Total Injury Crashes	0	0.00
Property Damage Only Crashes	1	100.00
Night Crashes	0	0.00
Wet Crashes	0	0.00
Alcohol/Drugs Involvement Crashes	0	0.00

Crash Severity Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	1	100.00
Fatal Crashes	0	0.00
Class A Crashes	0	0.00
Class B Crashes	0	0.00
Class C Crashes	0	0.00
Property Damage Only Crashes	1	100.00

Vehicle Exposure Statistics

Annual ADT = 900

Total Length = 0.196 (Miles)

0.315 (Kilometers)

Total Vehicle Exposure = 0.64 (MVMT)

1.04 (MVKMT)

Crash Rate	Crashes Per 100 Million Vehicle Miles	Crashes Per 100 Million Vehicle Kilometers
Total Crash Rate	155.23	96.45
Fatal Crash Rate	0.00	0.00
Non Fatal Crash Rate	0.00	0.00
Night Crash Rate	0.00	0.00
Wet Crash Rate	0.00	0.00
EPDO Rate	155.23	96.45

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

Miscellaneous Statistics

Severity Index =	1.00
EPDO Crash Index =	1.00
Estimated Property Damage Total = \$	3000.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
OTHER NON-COLLISION	1	100.00

Injury Summary

Injury Type	Number of Injuries	Percent of Total
Fatal Injuries	0	0.00
Class A Injuries	0	0.00
Class B Injuries	0	0.00
Class C Injuries	0	0.00
Total Non-Fatal Injuries	0	0.00
Total Injuries	0	0.00

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

Monthly Summary

Month	Number of Crashes	Percent of Total
Jan	0	0.00
Feb	0	0.00
Mar	0	0.00
Apr	0	0.00
May	0	0.00
Jun	0	0.00
Jul	0	0.00
Aug	0	0.00
Sep	0	0.00
Oct	0	0.00
Nov	0	0.00
Dec	1	100.00

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	0	0.00
Tue	0	0.00
Wed	0	0.00
Thu	0	0.00
Fri	1	100.00
Sat	0	0.00
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	0	0.00
0600-0659	0	0.00
0700-0759	0	0.00
0800-0859	0	0.00
0900-0959	1	100.00
1000-1059	0	0.00
1100-1159	0	0.00
1200-1259	0	0.00
1300-1359	0	0.00
1400-1459	0	0.00
1500-1559	0	0.00
1600-1659	0	0.00
1700-1759	0	0.00
1800-1859	0	0.00
1900-1959	0	0.00
2000-2059	0	0.00
2100-2159	0	0.00
2200-2259	0	0.00
2300-2359	0	0.00

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

Light and Road Conditions Summary

Condition	Dry	Wet	Other	Total
Day	1	0	0	1
Dark	0	0	0	0
Other	0	0	0	0
Total	1	0	0	1

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
SPORT UTILITY	1	100.00

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
2004	0	0	0	0
2005	0	0	0	0
2006	0	0	0	0
2007	0	0	0	0
2008	0	0	0	0
2009	0	0	0	0
2010	0	0	0	0
2011	0	0	0	0
2012	1	0	0	1
2013	0	0	0	0
2014	0	0	0	0
Total	1	0	0	1

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
2004	0	0
2005	0	0
2006	0	0
2007	0	0
2008	0	0
2009	0	0
2010	0	0
2011	0	0
2012	0	0
2013	0	0
2014	0	0
Total	0	0

Miscellaneous Totals

Year	Property Damage	EPDO Index
2004	\$ 0	0.00
2005	\$ 0	0.00
2006	\$ 0	0.00

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

Year	Property Damage	EPDO Index
2007	\$ 0	0.00
2008	\$ 0	0.00
2009	\$ 0	0.00
2010	\$ 0	0.00
2011	\$ 0	0.00
2012	\$ 3000	1.00
2013	\$ 0	0.00
2014	\$ 0	0.00
Total	\$ 3000	1.00

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road & Fixed Object	Angle	Side Swipe	Other
2004	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	1
2013	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1

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

Strip Diagram

Features	Milepost	Crash IDs
Structure:230118	0.26	
	0.27	
	0.28	103633522
	0.29	
	0.30	
	0.31	
	0.32	
	0.33	
	0.34	
	0.35	
	0.36	
	0.37	
	0.38	
	0.39	
	0.40	
	0.41	
	0.42	
	0.43	
	0.44	
	0.45	
	0.46	

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
MW41000030224	41000030224			76.8	8.4	900	40001317

Request Date	Courier Service	Phone No.	Ext.	Fax No.
07/16/2014		910 437 2614		910 437 0211

County			Municipality					
Name	Code	Div.	Name	Code	Y-Line Ft.	Begin Date	End Date	Years
COLUMBUS	23	6	All and Rural		0	06/01/2004	05/31/2014	10.00

Location Text	Requestor
Bridge #118 over Gum Swamp on SR 1317 (Clarendon Rd), 500 feet on each side.	David Phipps NCDOT Sandhills Region

Included Accidents	Old MP	New MP	Type
103633522	0.2	0.275	I

Fiche Roads

Name	Code
SR 1317	40001317
INSTITUTE	50014972
CLARENDON	50006168

Strip Road

Name	Code	Begin MP	End MP	Miles	Kilometers
SR 1317	40001317	0.262	0.458	0.196	0.315

County: Columbus

Description: Bridge 118

Route:SR 1317

Looking south



Looking north



Looking south



Looking north

