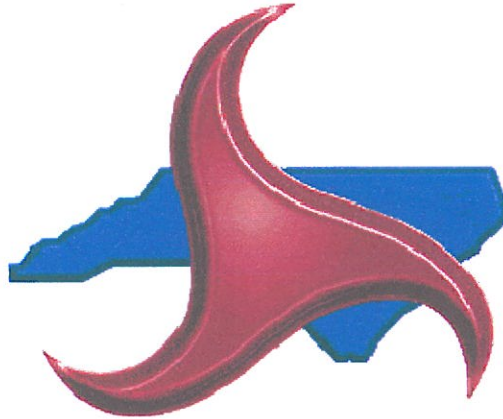


17BP.9.R.62 Bridge Design Speed Study

Bridge #840224 on SR 1647 (Tom Shelton Rd) southwest of Sandy Ridge

Stokes County

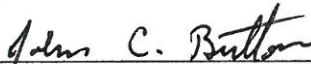


Document Prepared By:

Regional Traffic Office – Triad Region
Traffic Safety Unit
Transportation Mobility and Safety Division
North Carolina Department of Transportation

December 9, 2014

Principal Investigator:



John C. Button, PE, PLS
Triad/Regional Traffic Safety Engineer



Bridge and Approach Investigation Checklist

Project 17BP.9.R.62
Description Bridge #840224 over Mill Creek
Route SR 1647 (Tom Shelton Road)
Division 9
County Stokes

Existing Speed Limit 55 ☐ Posted ☒ Statutory

Reasonable & Comfortable 35 mph eastbound approach.
Passenger Car Speed 25 mph westbound approach.

Speed Data No speed data collected because of sparseness of traffic.

Ball Bank Speed Study Curve located on the westbound approach to the bridge ball banked at 12 degrees
Curve located on the eastbound approach to the bridge ball banked at 10 degrees

Warning Signs at Bridge (4) W10-23 signs delineating bridge ends.
STOP AHEAD Sign located on west side of bridge.

Roadside Development Rural

ADT History 2013 AADT = 120 vpd per NCDOT Traffic Map.
2003 AADT = 150 vpd per NCDOT Traffic Map.

Pedestrian/Bicycle Traffic SR 1647 is not listed as a bicycle route or pedestrian
route on the Stokes County Comprehensive Plan Maps.

Bridge and Approach See attached photos.
Digital Photos

Approach Lane Width 19'-8" overall pavement width; 9'-1"/7'-10" lane widths.

Approach Shoulder Width: Varies 6' to 7' +/-
Shoulder Type Grass

Lane Width (existing bridge) 24'-2" overall pavement width; 8'-7"/7'-10" lane widths.

Shoulder width (existing bridge) 30"/33"

Strategic Corridor / Thoroughfare According to NCDOT Functional Class Map, SR 1647 is a local route.
Designation and Recommended Recommend the 3R Guideline of 10' lane widths and 3' shoulder widths
Cross Section (6' shoulder widths where guardrail is installed) as a minimum cross section.

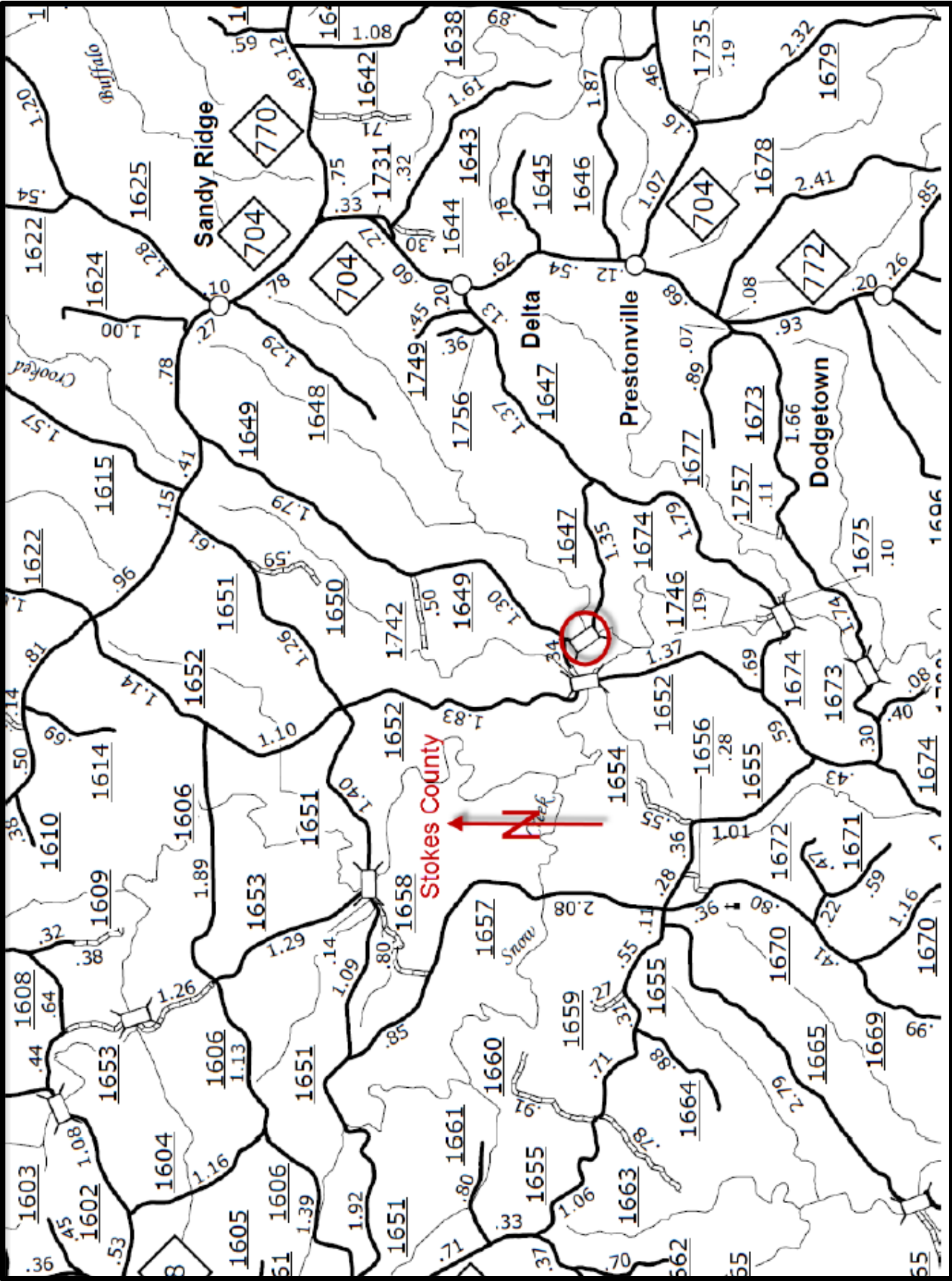
Crash History and One crash (deer crash) reported in the vicinity of the bridge from 10/01/2004 to 9/3/
Safety Considerations Crash was not related to the bridge or bridge approaches.

Comments _____

Reasonable Bridge Speed 40 mph

Investigated by: John Button 12/08/2014 Reviewed by: _____

Bridge #840224 Location Map















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	1	100.00
Wet Crashes	1	100.00
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 = 140

Total Length = 0.198 (Miles) 0.319 (Kilometers)

Total Vehicle Exposure = 0.1 (MVMT) 0.16 (MVKMT)

Crash Rate	Crashes Per 100 Million Vehicle Miles	Crashes Per 100 Million Vehicle Kilometers
Total Crash Rate	987.82	613.80
Fatal Crash Rate	0.00	0.00
Non Fatal Crash Rate	0.00	0.00
Night Crash Rate	987.82	613.80
Wet Crash Rate	987.82	613.80
EPDO Rate	987.82	613.80

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Traffic Engineering Accident Analysis System
Strip Analysis Report**

Miscellaneous Statistics

Severity Index =	1.00
EPDO Crash Index =	1.00
Estimated Property Damage Total = \$	1200.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
ANIMAL	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

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Monthly Summary

Month	Number of Crashes	Percent of Total
Jan	0	0.00
Feb	1	100.00
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	0	0.00

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	0	0.00
Tue	1	100.00
Wed	0	0.00
Thu	0	0.00
Fri	0	0.00
Sat	0	0.00
Sun	0	0.00

North Carolina Department of Transportation
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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	1	100.00
0500-0559	0	0.00
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	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

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Light and Road Conditions Summary

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

Object Struck Summary

Object Type	Times Struck	Percent of Total
ANIMAL	1	100.00

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
PICKUP	1	100.00

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
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Yearly Totals Summary

Accident Totals

Year	Total Accidents	Fatal Accidents	Injury Accidents	Property Damage Only Accidents
2004	0	0	0	0
2005	1	0	0	1
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	0	0	0	0
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	\$ 1200	1.00
2006	\$ 0	0.00

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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	\$ 0	0.00
2013	\$ 0	0.00
2014	\$ 0	0.00
Total	\$ 1200	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	1
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	0
2013	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1

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Strip Analysis Report

Strip Diagram

Features	Milepost	Crash IDs
Structure:840224	2.79	
	2.80	101417425
	2.81	
	2.82	
	2.83	
	2.84	
	2.85	
	2.86	
	2.87	
	2.88	
	2.89	
	2.90	
	2.91	
	2.92	
	2.93	
	2.94	
	2.95	
	2.96	
	2.97	
	2.98	

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Strip Analysis Report

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
41000032355	41000032355			76.8	8.4	140	40001647

Request Date	Courier Service	Phone No.	Ext.	Fax No.
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County			Municipality					
Name	Code	Div.	Name	Code	Y-Line Ft.	Begin Date	End Date	Years
STOKES	84	9	All and Rural		0	10/1/2004	9/30/2014	10.00

Location Text	Requestor
500 feet on Both Sides of Bridge Number 224 on Secondary Route 1647 (Tom Shelton Road) over Mill Creek	Brian C. Thomas, PE Triad Region

Fiche Roads	
Name	Code
SR 1647	40001647
TOM SHELTON	50038199
DELTA CHURCH	50008242

Strip Road					
Name	Code	Begin MP	End MP	Miles	Kilometers
SR 1647	40001647	2.785	2.983	0.198	0.319