
Bridge Design Speed Investigation

850322

Structure #322 on SR 1622 (Beamer Road) over Stewarts Creek

Surry County



Document Prepared By:

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Project Manager

A handwritten signature in black ink, reading "Jacob D. Carpenter".

Jacob D. Carpenter, PE
Regional Manager

Principal Investigator

A handwritten signature in black ink, reading "Andrew Eagle".

Andrew Eagle, PE, PTOE
Traffic Engineer



Bridge and Approach Investigation Checklist

Project 13191

Description Bridge # 322 over Stewarts Creek

Route SR 1622 (Beamer Road)

Division 11

County Surry

Existing Speed Limit 55 ☐ Posted ☒ Statutory

Reasonable & Comfortable Passenger Car Speed 40

Speed Data 40-45 mph

Ball Bank Speed Study 35 mph: EB Approach - 4, EB Departure - 5, WB App - 5, WB Dep - 5
40 mph: EB App - 6, EB Dep - 9, WB App - 9, WB Dep - 7
45 mph: EB App - 10, EB Dep - 10, WB App - 10, WB Dep - 11

Warning Signs at Bridge 4x Bridge End Delineators, 2x Weight Limit (17 ton SV, 21 ton TTST),
2x Curve Ahead (20 mph), 2x One Lane Bridge

Roadside Development Residential, Farm

ADT History 800 vpd (From NCDOT TEAAS)

Pedestrian/Bicycle Traffic Minimal Expected

Bridge and Approach Digital Photos Attached

Approach Lane Width 9.5 ft

Approach Shoulder Width: 4-6 ft
Shoulder Type grass

Lane Width (existing bridge) 15 ft (one lane only)

Shoulder width (existing bridge) 2 ft (~19 ft total width)

Strategic Corridor / Thoroughfare Designation and Recommended Cross Section SR 1622 is classified as a rural local facility in the Statewide Functional
Classification System. 2-lane cross-section recommended.

Crash History and Safety Considerations Crash analysis completed for 7/1/2008 to 6/30/2013. One collision
reported. A vehicle ran off the road and struck an embankment.

Comments Local resident stated there had been several wrecks in the past 20 years
caused by the abrupt grade transition just east of the bridge. Reasonable
bridge speed 40 mph due to profile of road and single lane bridge.

Reasonable Bridge Speed 40

Investigated by: J. Andrew Eagle, PE, PTOE

Reviewed by: 

County: Surry

Bridge and Route: 850322 – SR 1622 Beamer Rd.
Eastbound

Date: 9/17/13



Westbound



Westbound



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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 = 800

Total Length = 0.208 (Miles) 0.335 (Kilometers)

Total Vehicle Exposure = 0.61 (MVMT) 0.98 (MVKMT)

Crash Rate	Crashes Per 100 Million Vehicle Miles	Crashes Per 100 Million Vehicle Kilometers
Total Crash Rate	164.51	102.22
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	164.51	102.22

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Miscellaneous Statistics

Severity Index =	1.00
EPDO Crash Index =	1.00
Estimated Property Damage Total = \$	8500.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
RAN OFF ROAD - RIGHT	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	0	0.00
Mar	0	0.00
Apr	0	0.00
May	0	0.00
Jun	1	100.00
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	0	0.00
Wed	0	0.00
Thu	1	100.00
Fri	0	0.00
Sat	0	0.00
Sun	0	0.00

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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	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	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	1	100.00
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	1	0	0	1
Dark	0	0	0	0
Other	0	0	0	0
Total	1	0	0	1

Object Struck Summary

Object Type	Times Struck	Percent of Total
EMBANKMENT	1	100.00

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
PICKUP	1	100.00

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Yearly Totals Summary

Accident Totals

Year	Total Accidents	Fatal Accidents	Injury Accidents	Property Damage Only Accidents
2003	0	0	0	0
2004	0	0	0	0
2005	0	0	0	0
2006	0	0	0	0
2007	1	0	0	1
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
Total	1	0	0	1

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
2003	0	0
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
Total	0	0

Miscellaneous Totals

Year	Property Damage	EPDO Index
2003	\$ 0	0.00
2004	\$ 0	0.00

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Year	Property Damage	EPDO Index
2005	\$ 0	0.00
2006	\$ 0	0.00
2007	\$ 8500	1.00
2008	\$ 0	0.00
2009	\$ 0	0.00
2010	\$ 0	0.00
2011	\$ 0	0.00
2012	\$ 0	0.00
2013	\$ 0	0.00
Total	\$ 8500	1.00

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road & Fixed Object	Angle	Side Swipe	Other
2003	0	0	0	0	0	0	0
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	1	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
Total	0	0	0	1	0	0	0

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Strip Diagram

Features	Milepost	Crash IDs
Structure:850322	0.96	
	0.97	
	0.98	
	0.99	
	1.00	
	1.01	
	1.02	
	1.03	
	1.04	
	1.05	
	1.06	
	1.07	
	1.08	
	1.09	
	1.10	
	1.11	
	1.12	
	1.13	
	1.14	
	1.15	102075036
	1.16	
	1.17	

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Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
SURRYBRIDGE322				76.8	8.4	800	40001622

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
SURRY	85	11	All and Rural		0	7/1/2003	6/30/2013	10.00

Location Text	Requestor
SR 1622 (Beamer Rd), 500 feet either side of Bridge 322	

Excluded Accidents
101357330
101792150
102251786
101313413

Fiche Roads	
Name	Code
SR 1622	40001622
BEAMER	50001985

Strip Road					
Name	Code	Begin MP	End MP	Miles	Kilometers
SR 1622	40001622	0.961	1.169	0.208	0.335