
Bridge Design Speed Investigation

B-5656

Structure #133 on SR 1127 (Herring Road) over Yellow Swamp

Wayne County



Document Prepared By:

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April 28, 2016

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 "Joshua T. Reinke".

Joshua T. Reinke, PE
Transportation Engineer



Bridge and Approach Investigation Checklist

Project B-5656
Description Bridge #133 over Yellow Swamp
Route SR 1127 (Herring Road)
Division 4
County Wayne

Existing Speed Limit 55 mph ☐ Posted ☒ Statutory

Reasonable & Comfortable
Passenger Car Speed 55 mph

Speed Data Estimated 55 mph

Ball Bank Speed Study Curve North of Bridge:
55 mph: NB Approach - 6, SB Approach - 6
Curve South of Bridge:
55 mph: NB Approach - 5, SB Approach - 5

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

Roadside Development Wooded/Agricultural

ADT History 385 vpd (From NCDO TEAAS)
300 vpd (From NCDOT Traffic Volume Map - 2012)

Pedestrian/Bicycle Traffic Minimal Expected

Bridge and Approach
Digital Photos Attached

Approach Lane Width North of Bridge - 19 ft, South of Bridge - 18.5 ft (total width)

Approach Shoulder Width North of Bridge - <1 ft paved, >8 ft grass
Shoulder Type South of Bridge - <1 ft paved, >8 ft grass

Lane Width (existing bridge) 18 ft (total width)

Shoulder width (existing bridge) 3 ft (~24 ft total width)

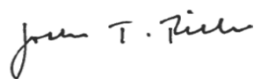
Strategic Corridor / Thoroughfare
Designation and Recommended
Cross Section SR 1127 is classified as a rural local facility in the Statewide Functional
Classification System. 2-lane cross-section is recommended.

Crash History and
Safety Considerations Crash Analysis completed for 01/01/06 to 12/31/15. Two collisions were
reported. Two collisions involved an animal.

Comments The design of the bridge and approaches should consider accommodating
up to a 25 ft wide farm machine. Driveway located approximately 750 ft
south of bridge.

Reasonable Bridge Speed 55 mph

Investigated by: Joshua T. Reinke, PE

Reviewed by: 

County: Wayne

Route: SR 1127 (Herring Road)

Date: 03/16/16

Northbound



Northbound

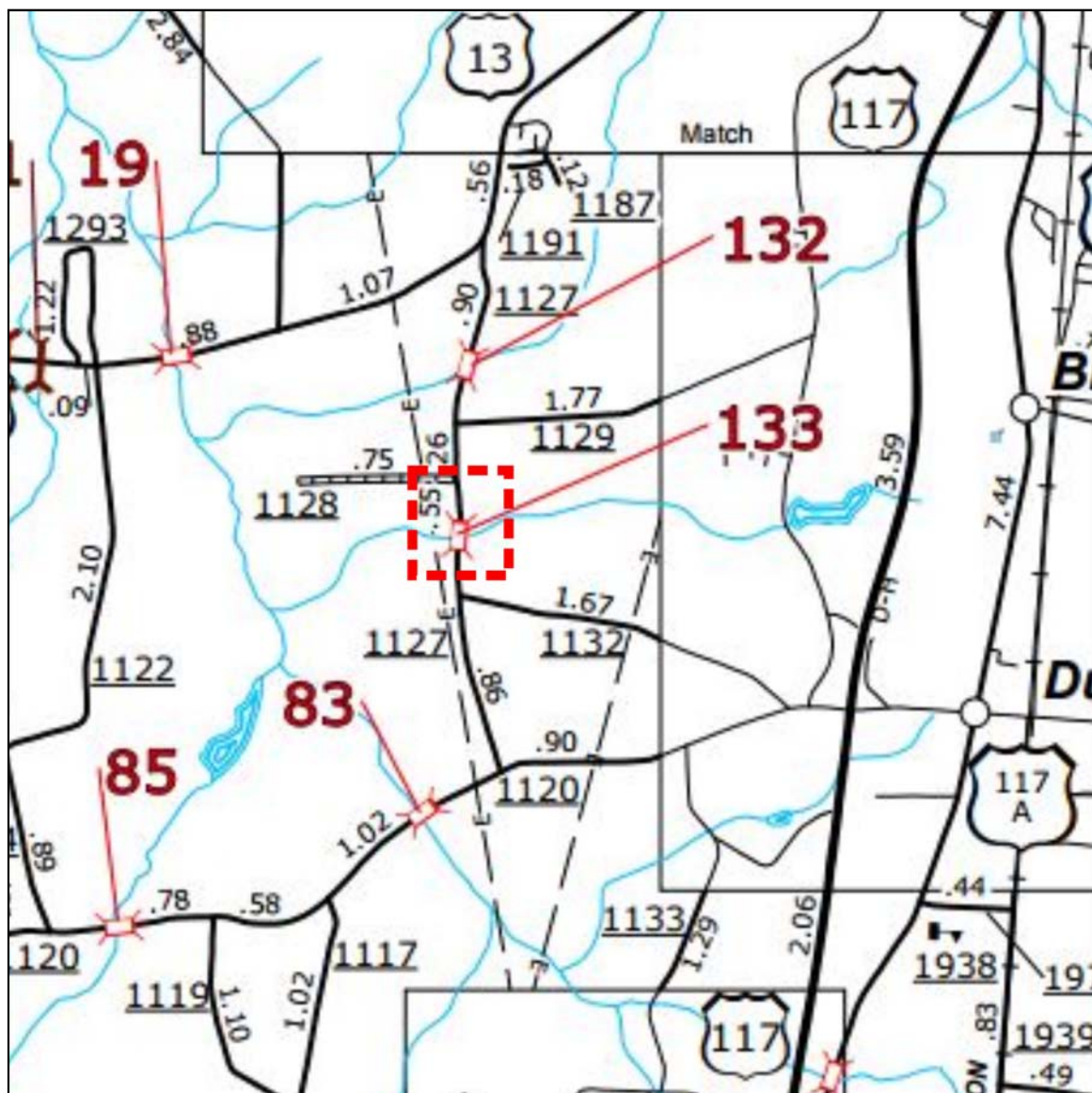


Southbound



Southbound





Bridge Location Map-Bridge #950133

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

Study Criteria Summary

County: WAYNE **City:** All and Rural
Date: 2/1/2006 **to** 1/31/2016 **Study:** WAYNEBRIDGE133
Location: 500 ft. either side of Bridge 133 on SR 1127 (Herring Rd) over Yellow Marsh Branch.

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	103339165	1.060	12/26/2011 20:32	ANIMAL	\$ 250	0	0	0	0	1	5	1	1	0	13	1
Unit 1 : 5 Alchl/Drgs: 0 Speed: 0 MPH Dir: S Veh Mnvr/Ped Actn: 4 Obj Strk: 17																
2	102032478	1.110	05/08/2007 02:00	ANIMAL	\$ 1500	0	0	0	0	1	5	2	1	0	13	1
Unit 1 : 1 Alchl/Drgs: 0 Speed: 55 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

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Summary Statistics

High Level Crash Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	2	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	0	0.00
Total Injury Crashes	0	0.00
Property Damage Only Crashes	2	100.00
Night Crashes	2	100.00
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	2	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	2	100.00

Vehicle Exposure Statistics

Annual ADT = 385

Total Length = 0.197 (Miles) 0.317 (Kilometers)

Total Vehicle Exposure = 0.28 (MVMT) 0.45 (MVKMT)

Crash Rate	Crashes Per 100 Million Vehicle Miles	Crashes Per 100 Million Vehicle Kilometers
Total Crash Rate	722.06	448.67
Fatal Crash Rate	0.00	0.00
Non Fatal Crash Rate	0.00	0.00
Night Crash Rate	722.06	448.67
Wet Crash Rate	0.00	0.00
EPDO Rate	722.06	448.67

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Miscellaneous Statistics

Severity Index =	1.00
EPDO Crash Index =	2.00
Estimated Property Damage Total = \$	1750.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
ANIMAL	2	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	1	50.00
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	50.00

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	1	50.00
Tue	1	50.00
Wed	0	0.00
Thu	0	0.00
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	1	50.00
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	0	0.00
1800-1859	0	0.00
1900-1959	0	0.00
2000-2059	1	50.00
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	2	0	0	2
Other	0	0	0	0
Total	2	0	0	2

Object Struck Summary

Object Type	Times Struck	Percent of Total
ANIMAL	2	100.00

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
PASSENGER CAR	1	50.00
VAN	1	50.00

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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	0	0	0	0
2010	0	0	0	0
2011	1	0	0	1
2012	0	0	0	0
2013	0	0	0	0
2014	0	0	0	0
2015	0	0	0	0
2016	0	0	0	0
Total	2	0	0	2

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
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
2015	0	0
2016	0	0
Total	0	0

Miscellaneous Totals

Year	Property Damage	EPDO Index
2006	\$ 0	0.00
2007	\$ 1500	1.00

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Year	Property Damage	EPDO Index
2008	\$ 0	0.00
2009	\$ 0	0.00
2010	\$ 0	0.00
2011	\$ 250	1.00
2012	\$ 0	0.00
2013	\$ 0	0.00
2014	\$ 0	0.00
2015	\$ 0	0.00
2016	\$ 0	0.00
Total	\$ 1750	2.00

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	0	0	0	0
2010	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	1
2012	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	2

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Strip Analysis Report

Strip Diagram

Features	Milepost	Crash IDs
Structure:950133	1.03	
	1.04	
	1.05	
	1.06	103339165
	1.07	
	1.08	
	1.09	
	1.10	
	1.11	102032478
	1.12	
	1.13	
	1.14	
	1.15	
	1.16	
	1.17	
	1.18	
	1.19	
	1.20	
	1.21	
	1.22	

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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
WAYNEBRIDGE133				76.8	8.4	385	

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
WAYNE	96	4	All and Rural		0	2/1/2006	1/31/2016	10.00

Location Text	Requestor
500 ft. either side of Bridge 133 on SR 1127 (Herring Rd) over Yellow Marsh Branch.	

Fiche Roads	
Name	Code
SR 1127	40001127
HERRING	50013791

Strip Road					
Name	Code	Begin MP	End MP	Miles	Kilometers
SR 1127	40001127	1.026	1.223	0.197	0.317