

Bridge and Approach Investigation Checklist

Project 17BP.11.R.111
Description Bridge # 47
Route SR 1351
Division Eleven
County Watauga

Existing Speed Limit 55 MPH

Reasonable & Comfortable
Passenger Car Speed 35-40 MPH

Speed Data _____

Ball Bank Speed Study _____

Warning Signs at Bridge Narrow Bridge, Bridge End Delineators

Roadside Development 10%

ADT History unknown

Pedestrian/Bicycle Traffic Unknown

Bridge and Approach
Digital Photos See Attached

Approach Lane Width 7 FEET

Approach Shoulder Width: 4 to 6 FEET
Shoulder Type grass

Lane Width (existing bridge) 7 FEET

Shoulder width (existing bridge) 1 FEET

Strategic Corridor / Thoroughfare
Designation and Recommended
Cross Section _____

Crash History and
Safety Considerations 3 crashes in 10 year study. All lane departure crashes.

Comments _____

Reasonable Bridge Speed 40 MPH

Investigated by: J. A. Hamrick, P. E.

Date: 8/4/2014

Reviewed by: _____



James A. Hamrick

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

Study Criteria Summary

County: WATAUGA **City:** All and Rural
Date: 5/1/2004 to 4/30/2014 **Study:** 41000029911
Location: 500 feet on Both Sides of Bridge Number 47 on Secondary Route 1351 (Castle Ford Road) over Grassy 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	Cl	Dv	Op
1	101366295	2.842	12/19/2004 15:30	RAN OFF ROAD - RIGHT	\$ 5500	0	0	0	0	4	1	4	7	1	13	2
Unit 1 : 4 Alchl/Drugs: 0 Speed: 30 MPH Dir: NE Veh Mnvr/Ped Actn: 4 Obj Strk:																
2	101367445	2.842	12/20/2004 20:15	RAN OFF ROAD - RIGHT	\$ 900	0	0	0	0	4	5	2	7	1	13	2
Unit 1 : 1 Alchl/Drugs: 0 Speed: 40 MPH Dir: NE Veh Mnvr/Ped Actn: 4 Obj Strk:																
3	102586891	2.842	05/08/2009 09:45	FIXED OBJECT	\$ 25000	0	0	0	0	2	1	2	3	0	13	1
Unit 1 : 4 Alchl/Drugs: 0 Speed: 45 MPH Dir: N Veh Mnvr/Ped Actn: 4 Obj Strk: 33																

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 Cl - Roadway Contributing Circumstances
- Trfc Ctl - Traffic Control; Dv - Device, Op - Operating
- Alchl/Drugs - 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	3	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	0	0.00
Total Injury Crashes	0	0.00
Property Damage Only Crashes	3	100.00
Night Crashes	1	33.33
Wet Crashes	1	33.33
Alcohol/Drugs Involvement Crashes	0	0.00

Crash Severity Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	3	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	3	100.00

Vehicle Exposure Statistics

Annual ADT = 250

Total Length = 0.194 (Miles) 0.312 (Kilometers)

Total Vehicle Exposure = 0.18 (MVMT) 0.29 (MVKMT)

Crash Rate	Crashes Per 100 Million Vehicle Miles	Crashes Per 100 Million Vehicle Kilometers
Total Crash Rate	1693.75	1052.45
Fatal Crash Rate	0.00	0.00
Non Fatal Crash Rate	0.00	0.00
Night Crash Rate	564.58	350.82
Wet Crash Rate	564.58	350.82
EPDO Rate	1693.75	1052.45

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Traffic Engineering Accident Analysis System
Strip Analysis Report**

Miscellaneous Statistics

Severity Index =	1.00
EPDO Crash Index =	3.00
Estimated Property Damage Total = \$	31400.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
FIXED OBJECT	1	33.33
RAN OFF ROAD - RIGHT	2	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	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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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	1	33.33
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	2	66.67

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	1	33.33
Tue	0	0.00
Wed	0	0.00
Thu	0	0.00
Fri	1	33.33
Sat	0	0.00
Sun	1	33.33

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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	33.33
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	1	33.33
1600-1659	0	0.00
1700-1759	0	0.00
1800-1859	0	0.00
1900-1959	0	0.00
2000-2059	1	33.33
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	1	1	2
Dark	0	0	1	1
Other	0	0	0	0
Total	0	1	2	3

Object Struck Summary

Object Type	Times Struck	Percent of Total
TREE	1	100.00

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
PASSENGER CAR	1	33.33
SPORT UTILITY	2	66.67

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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	2	0	0	2
2005	0	0	0	0
2006	0	0	0	0
2007	0	0	0	0
2008	0	0	0	0
2009	1	0	0	1
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	3	0	0	3

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	\$ 6400	2.00
2005	\$ 0	0.00
2006	\$ 0	0.00

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Strip Analysis Report**

Year	Property Damage	EPDO Index
2007	\$ 0	0.00
2008	\$ 0	0.00
2009	\$ 25000	1.00
2010	\$ 0	0.00
2011	\$ 0	0.00
2012	\$ 0	0.00
2013	\$ 0	0.00
2014	\$ 0	0.00
Total	\$ 31400	3.00

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road & Fixed Object	Angle	Side Swipe	Other
2004	0	0	0	2	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	1	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	3	0	0	0

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Strip Diagram

Features	Milepost	Crash IDs
Structure: 940047	2.67	
	2.68	
	2.69	
	2.70	
	2.71	
	2.72	
	2.73	
	2.74	
	2.75	
	2.76	
	2.77	
	2.78	
	2.79	
	2.80	
	2.81	
	2.82	
	2.83	
	2.84	101366295 101367445 102586891
	2.85	
	2.86	

**North Carolina Department of Transportation
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Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
41000029911	41000029911			76.8	8.4	250	40001351

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
WATAUGA	94	11	All and Rural		0	5/1/2004	4/30/2014	10.00

Location Text	Requestor
500 feet on Both Sides of Bridge Number 47 on Secondary Route 1351 (Castle Ford Road) over Grassy Creek	Jimmy Hamrick, PE NCDOT High Country and Foothills Region

Fiche Roads

Name	Code
SR 1351	40001351
CASTLE FORD	50005304

Strip Road

Name	Code	Begin MP	End MP	Miles	Kilometers
SR 1351	40001351	2.667	2.861	0.194	0.312

Bridge # 47

Watauga

4·7



SB SR 1351



SB SR 1351



SB SR 1351



NB SR 1351



NB SR 1351



NB SR 1351

WEIGHT
LIMIT
SINGLE VEHICLE
11 TONS
TRUCK TRACTOR
SEMITRAILER
15 TONS

Bridge # 46

Watauga

4 6

-2.4



SB SR 1351



SB SR 1351



SB SR 1351



NB SR 1351



NB SR 1351



NB SR 1351

