

Bridge Design Speed Study

Bridge # 000152 over North Prong Rocky River on SR 2307 (Staley Store Rd)

Alamance County

WBS Element # 17BP.7.R.1



Document Prepared By:

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April 24, 2012

Principal Investigator

A handwritten signature in black ink, appearing to read "Andrew Klinksiek", written over a horizontal line.

Andrew D. Klinksiek, EI

Project Manager

A handwritten signature in black ink, appearing to read "Bradley Reynolds", written over a horizontal line.

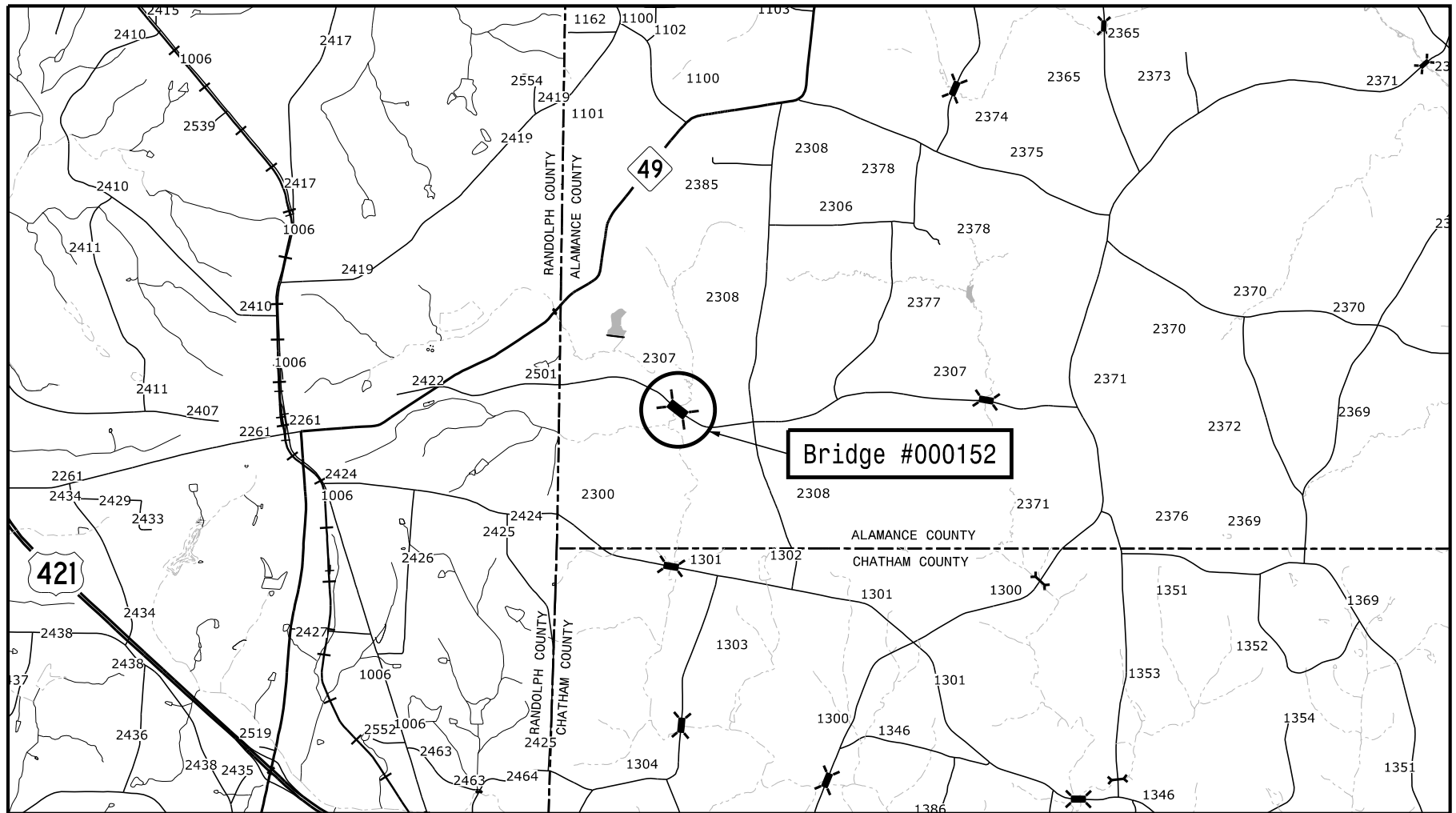
Bradley A. Reynolds, PE
Project Manager



Division 7 - Alamance County

Design Build Year 2 Bridge Program

Bridge locations plotted based on coordinates provided by Bridge Management



Division	County	Structure Number	Structure Description	Latitude	Longitude
7	Alamance	000152	Bridge #152 over North Prong Rocky River on SR 2307	35.85588982	-79.5294532

Bridge and Approach Investigation Checklist

Project	17BP.7.R.1
Description	Bridge #152 over North Prong Rocky River on SR 2307
Route	SR 2307 (Staley Store Rd)
Division	7
County	Alamance

Existing Speed Limit	45	☒ Posted	☐ Statutory
Reasonable & Comfortable Passenger Car Speed	45-50 mph		
Speed Data	Only 9 speed data points collected due to sparseness of traffic. 42 mph, 38 mph, 36 mph, 49 mph, 29 mph, 57 mph, 42 mph, 40 mph, 36 mph		
Ball Bank Speed Study	Slight curve on east side of bridge ball banks at 3 degrees at 45 mph, 6 degrees at 50mph and 11 degrees at 55 mph. Slight curve on west side of bridge ball banks at 8 degrees at 50 mph.		
Warning Signs at Bridge	W23-10 object markers, one located at each corner of the bridge. Regulatory 20 ton/29 ton weight limit sign on each approach. W5-2a Narrow Bridge on both approaches. R2-1 45mph speed limit sign just past bridge on both approaches.		
Roadside Development	Residential/Agricultural/Wood Mill		
ADT History	1000 vpd from 2010 NCDOT Traffic Survey Map 1000 vpd from 2002 NCDOT Traffic Survey Map		
Pedestrian/Bicycle Traffic	No bike or ped traffic observed during investigation. Little bike or ped traffic is expected on SR 2307.		
Bridge and Approach Digital Photos	See attached photos.		
Approach Lane Width	19' overall pavement width with 9.5' lanes		
Approach Shoulder Width: Shoulder Type	Varies from 8' to 12'± Grass		
Lane Width (existing bridge)	19' overall pavement width with 8.5' lanes		
Shoulder width (existing bridge)	1' /1'		
Strategic Corridor / Thoroughfare Designation and Recommended Cross Section	SR 2307 is classified as a local roadway, therefore it is recommended that the minimum cross section follow the NCDOT "R-R-R Guide" with a minimum of 11 foot lane widths and 3 foot shoulder widths (6 foot graded shoulder width where guardrail is to be installed).		
Crash History and Safety Considerations	No crashes have been reported in the vicinity of the bridge from 1/1/2002 to 12/31/2011 (10 years).		
Comments	If the bridge lane widths are widened the approach speeds may be greater than the posted 45 mph speed limit. Edwards Wood Products and Daniels Lumber Products located approximately 700' west of the bridge generate heavy vehicle traffic including logging trucks.		

Reasonable Bridge Speed 50mph

County: Alamance

Description:

Bridge #152 over North Prong Rocky River

Route: SR 2307

SR 2307 (Staley Store Rd) WB $\pm 50'$ from Bridge #152



SR 2307 (Staley Store Rd) WB $\pm 150'$ from Bridge #152



SR 2307 (Staley Store Rd) WB $\pm 100'$ from Bridge #152



SR 2307 (Staley Store Rd) WB $\pm 200'$ from Bridge #152



County: Alamance

Description:

Bridge #152 over North Prong Rocky River

Route: SR 2307

SR 2307 (Staley Store Rd) WB ±250' from Bridge #152



SR 2307 (Staley Store Rd) EB ±50' from Bridge #152



SR 2307 (Staley Store Rd) EB ±100' from Bridge #152



SR 2307 (Staley Store Rd) EB ±150' from Bridge #152



County: Alamance

Description:

Bridge #152 over North Prong Rocky River

Route: SR 2307

SR 2307 (Staley Store Rd) EB ±200' from Bridge #152



SR 2307 (Staley Store Rd) EB ±250' from Bridge #152



Bridge Approach Speed Crash Analysis Request

Order # 41000018375

500 feet on Both Sides of Bridge Number 152 on Secondary Route 2307 (Staley Store Road) over Creek in Alamance County

Document Prepared By:

Safety Planning Group
Traffic Safety Systems Management Unit
Transportation Mobility and Safety Division
North Carolina Department of Transportation

Note: The crash statistics have been generated and are available through North Carolina's Crash Database. This database provides an inventory of **reported** crashes on record that have occurred at this location. Please note that many traffic crashes go unreported for a variety of reasons, and this report simply provides a listing of all crashes on record that occurred within 0 feet of the section described above.

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

Study Criteria Summary

County: ALAMANCE **City:** All and Rural
Date: 01/01/2002 **to** 12/31/2011 **Study:** 41000018375
Location: 500 feet on Both Sides of Bridge Number 152 on Secondary Route 2307 (Staley Store Road) over Creek

Report Details

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
41000018375	41000018375			76.8	8.4	440	40002307

Request Date	Courier Service	Phone No.	Ext.	Fax No.
02/13/2012				

County			Municipality					
Name	Code	Div.	Name	Code	Y-Line Ft.	Begin Date	End Date	Years
ALAMANCE	0	7	All and Rural		0	01/01/2002	12/31/2011	10.00

Location Text	Requestor
500 feet on Both Sides of Bridge Number 152 on Secondary Route 2307 (Staley Store Road) over Creek	Vickie L. Embry, PE NCDOT Triad Region

Fiche Roads	
Name	Code
SR 2307	40002307
STALEY STORE	50029001

Strip Road					
Name	Code	Begin MP	End MP	Miles	Kilometers
SR 2307	40002307	2.455	2.649	0.194	0.312