

Bridge Design Speed Study

Bridge # 000137 over South Fork Cane Creek on SR 2351 (Bethel-South Fork Rd)
Alamance County
WBS Element # 17BP.7.R.41

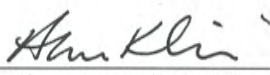


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April 24, 2012

Principal Investigator



Andrew D. Klinksiek, EI

Project Manager

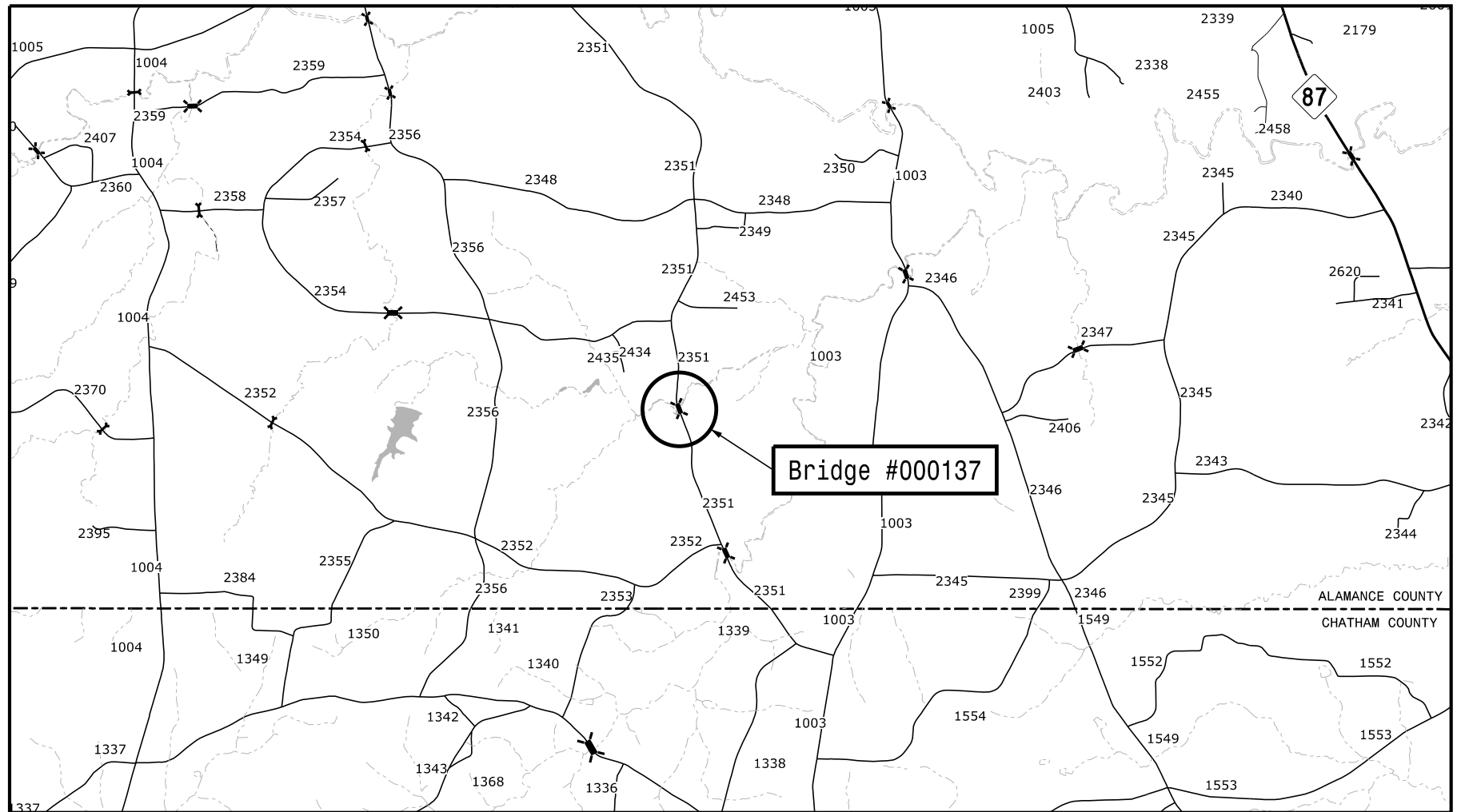


Bradley A. Reynolds, PE
Project Manager



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	000137	Bridge #137 over South Fork Cane Creek on SR 2351	35.86174911	-79.36971698

Bridge and Approach Investigation Checklist

Project 17BP.7.R.41

Description Bridge #137 over South Fork Cane Creek (Pine Hill Branch) on SR 2351

Route SR 2351 (Bethel-South Fork Rd)

Division 7

County Alamance

Existing Speed Limit 55 ☐ Posted ☒ Statutory

Reasonable & Comfortable Passenger Car Speed 55-60 mph

Speed Data No speed data collected due to sparseness of traffic

Ball Bank Speed Study Curve on north side of bridge ball banks at 8 degrees at 50 mph, 15 degrees at 55mph.

Warning Signs at Bridge W23-10 object markers, one located at each corner of the bridge.
Regulatory 17 ton/24 ton weight limit sign on each approach.
W5-2a Narrow Bridge on both approaches

Roadside Development Rural/Residential

ADT History 190 vpd from 2009 NCDOT Traffic Survey Map
190 vpd from 2003 NCDOT Traffic Survey Map

Pedestrian/Bicycle Traffic No bike or ped traffic observed during investigation. Little bike or ped traffic is expected on SR 2351.

Bridge and Approach Digital Photos See attached photos.

Approach Lane Width 18' overall pavement width with 9' lanes

Approach Shoulder Width: Varies from 9' to 12'±
Shoulder Type Grass

Lane Width (existing bridge) 19' overall pavement width with 8' lanes

Shoulder width (existing bridge) 1.5' /1.5'

Strategic Corridor / Thoroughfare Designation and Recommended Cross Section SR 2351 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 10 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 None.

Reasonable Bridge Speed 55mph

Investigated by: Andrew Klinksiek, EI Reviewed by: Bradley Reynolds, PE

County: Alamance

Description:

Bridge #137 over South Fork Cane Creek

Route: SR 2351

SR 2351 (Bethel-South Fork Rd) NB $\pm 50'$ from Bridge #137



SR 2351 (Bethel-South Fork Rd) NB $\pm 150'$ from Bridge #137



SR 2351 (Bethel-South Fork Rd) NB $\pm 100'$ from Bridge #137



SR 2351 (Bethel-South Fork Rd) NB $\pm 200'$ from Bridge #137



County: Alamance

Description:

Bridge #137 over South Fork Cane Creek

Route: SR 2351

SR 2351 (Bethel-South Fork Rd) NB ±250' from Bridge #137



SR 2351 (Bethel-South Fork Rd) SB ±50' from Bridge #137



SR 2351 (Bethel-South Fork Rd) SB ±100' from Bridge #137



SR 2351 (Bethel-South Fork Rd) SB ±150' from Bridge #137



County: Alamance

Description: Bridge #137 over South Fork Cane Creek

Route: SR 2351

SR 2351 (Bethel-South Fork Rd) SB ±200' from Bridge #137



SR 2351 (Bethel-South Fork Rd) SB ±250' from Bridge #137



Bridge Approach Speed Crash Analysis Request

Order # 41000018176

500 Feet on Both Sides of Bridge Number 137 on Secondary Route 2351 (Bethel-South Fork Road) over South Fork Cane 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:** 41000018176
Location: 500 Feet on Both Sides of Bridge Number 137 on Secondary Route 2351 (Bethel-South Fork Road) over South Fork Cane Creek

Report Details

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
41000018176	41000018176			76.8	8.4	185	40002351

Request Date	Courier Service	Phone No.	Ext.	Fax No.
02/28/2012				

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 137 on Secondary Route 2351 (Bethel-South Fork Road) over South Fork Cane Creek	Vickie L. Embry, P. E. Triad Region

Fiche Roads	
Name	Code
SR 2351	40002351
BETHEL SOUTH FORK	50038733
BETHEL	50002521
FORK	50010868

Strip Road					
Name	Code	Begin MP	End MP	Miles	Kilometers
SR 2351	40002351	4.506	4.702	0.196	0.315