

Bridge Design Speed Study

Bridge # 000200 over Creek on SR 1110 (Mt Zion Rd)

Alamance County

WBS Element # 17BP.7.R.2



Document Prepared By:

HNTB North Carolina, P.C.

343 E. Six Forks Rd

Raleigh NC, 27609

NC License No: C-1554

April 24, 2012



Principal Investigator

Andrew D. Klinksiek, EI

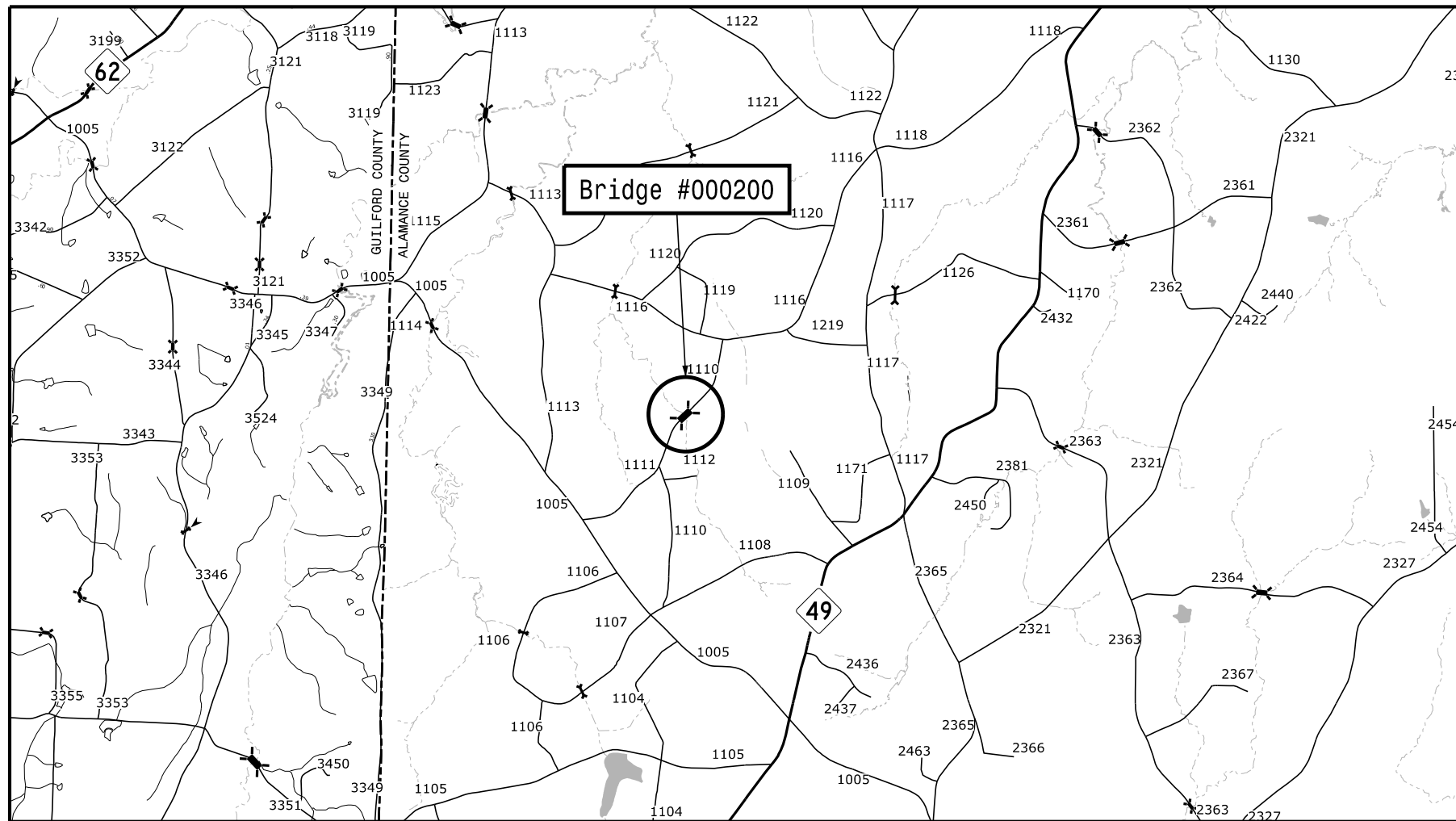
Project Manager

Bradley A. Reynolds, PE
Project Manager

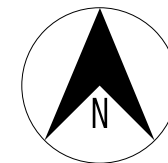
Division 7 - Alamance County

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	000200	Bridge #200 over Creek on SR 1110	35.94016667	-79.50861111



1"=5000'
SCALE

HNTB

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

Bridge and Approach Investigation Checklist

Project	<u>17BP.7.R.2</u>
Description	<u>Bridge #200 over Creek on SR 1110</u>
Route	<u>SR 1110 (Mt Zion Rd)</u>
Division	<u>7</u>
County	<u>Alamance</u>

Existing Speed Limit	<u>55</u> ☐ Posted ☒ Statutory
Reasonable & Comfortable Passenger Car Speed	<u>50-55 mph</u>
Speed Data	<u>No speed data points collected due to sparseness of traffic.</u>
Ball Bank Speed Study	<u>Slight curve on south side of bridge ball banks at 8 degrees at 50 mph and 12 degrees at 55mph. Slight curve on north side of bridge ball banks at 9 degrees at 50 mph and 12 degrees at 55 mph.</u>
Warning Signs at Bridge	<u>W23-10 object markers, one located at each corner of the bridge.</u> <u>No Regulatory weight limit signs were posted.</u> <u>W1-2L Curve Warning Signs on Northbound approach.</u> <u>W5-2a Narrow Bridge on both approaches.</u>
Roadside Development	<u>Rural Residential/Agricultural/Undeveloped</u>
ADT History	<u>220 vpd from 2010 NCDOT Traffic Survey Map</u> <u>220 vpd from 2002 NCDOT Traffic Survey Map</u>
Pedestrian/Bicycle Traffic	<u>No bike or ped traffic observed during investigation. Little bike or ped traffic is expected on SR 1110.</u>
Bridge and Approach Digital Photos	<u>See attached photos.</u>
Approach Lane Width	<u>17-19' overall pavement width with 8.5-9.5' lanes</u>
Approach Shoulder Width: Shoulder Type	<u>Varies from 7' to 11'±</u> <u>Grass</u>
Lane Width (existing bridge)	<u>23' overall pavement width with 9.5' lanes</u>
Shoulder width (existing bridge)	<u>2' /2'</u>
Strategic Corridor / Thoroughfare Designation and Recommended Cross Section	<u>SR 1110 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).</u>
Crash History and Safety Considerations	<u>No crashes have been reported in the vicinity of the bridge from 1/1/2002 to 12/31/2011 (10 years).</u>
Comments	<u></u> <u></u>

Reasonable Bridge Speed 55mph

County: Alamance

Description:

Bridge #200 over Creek

Route: SR 1110

SR 1110 (Mt Zion Rd) NB $\pm 50'$ from Bridge #200



SR 1110 (Mt Zion Rd) NB $\pm 100'$ from Bridge #200



SR 1110 (Mt Zion Rd) NB $\pm 150'$ from Bridge #200



SR 1110 (Mt Zion Rd) NB $\pm 200'$ from Bridge #200



County: Alamance

Description: Bridge #200 over Creek

Route: SR 1110

SR 1110 (Mt Zion Rd) NB $\pm 250'$ from Bridge #200



SR 1110 (Mt Zion Rd) SB $\pm 50'$ from Bridge #200



SR 1110 (Mt Zion Rd) SB $\pm 100'$ from Bridge #200



SR 1110 (Mt Zion Rd) SB $\pm 150'$ from Bridge #200



County: Alamance

Description: Bridge #200 over Creek

Route: SR 1110

SR 1110 (Mt Zion Rd) SB ±200' from Bridge #200



SR 1110 (Mt Zion Rd) SB ±250' from Bridge #200



Bridge Approach Speed Crash Analysis Request

Order # 41000018290

**500 feet on Both Sides of Bridge Number 200 on Secondary Route 1110 (Mt Zion 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:** 41000018290
Location: 500 feet on Both Sides of Bridge Number 200 on Secondary Route 1110 (Mt Zion Road) over Creek

Report Details

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
41000018290	41000018290			76.8	8.4	190	40001110

Request Date	Courier Service	Phone No.	Ext.	Fax No.
03/01/2012		(336)896-7037		

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 200 on Secondary Route 1110 (Mt Zion Road) over Creek	Vickie L. Embry, PE Triad Safety Region Winston Salem NC

Fiche Roads	
Name	Code
SR 1110	40001110
MOUNT ZION	50020741

Strip Road					
Name	Code	Begin MP	End MP	Miles	Kilometers
SR 1110	40001110	0.404	0.596	0.192	0.309