

Bridge Design Speed Investigation

Bridge #371 on SR 1394 (Willow Creek Rd) over Willow Creek
Buncombe County



Document Prepared By:

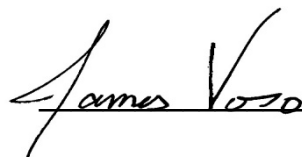
Mattern & Craig, Inc.
Consulting Engineers - Surveyors
12 Broad Street
Asheville, NC 28801
(828) 254-2201
FAX: (828) 254-4562

Commission No: 3350

June 21, 2013



Investigating Engineer


James Voso, PE

Bridge and Approach Investigation Checklist

Project 17BP.13.PE.1
Description Replace Bridge #371 on SR 1394 (Willow Creek Rd) over Willow Creek
Route SR 1394 (Willow Creek Road)
Division 13
County Buncombe

Existing Speed Limit 55 mph ☐ Posted ☒ Statutory

Reasonable & Comfortable
Passenger Car Speed 20 mph

Speed Data N/A

Ball Bank Speed Study Curve south of Bridge #371 had a ball bank indication of 10 at 20 mph.

Warning Signs at Bridge Bridge End Delineators both ends, Weight Limit (14 tons - single vehicle,
17 tons - truck tractor semitrailer), Narrow Bridge warning signs

Roadside Development Wooded south of bridge and farm land north of bridge.

ADT History Not available

Pedestrian/Bicycle Traffic Low

Bridge and Approach
Digital Photos (attached)

Approach Lane Width 9'

Approach Shoulder Width: 4'
Shoulder Type grass

Lane Width (existing bridge) 8.5'

Shoulder width (existing bridge) 1.5'

Strategic Corridor / Thoroughfare
Designation and Recommended
Cross Section Not a Strategic Corridor/Thoroughfare. Two lane cross section at 20
mph based on 3R guidelines.

Crash History and
Safety Considerations No crashes reported (4/1/2003 - 3/31/2013, 10 years)

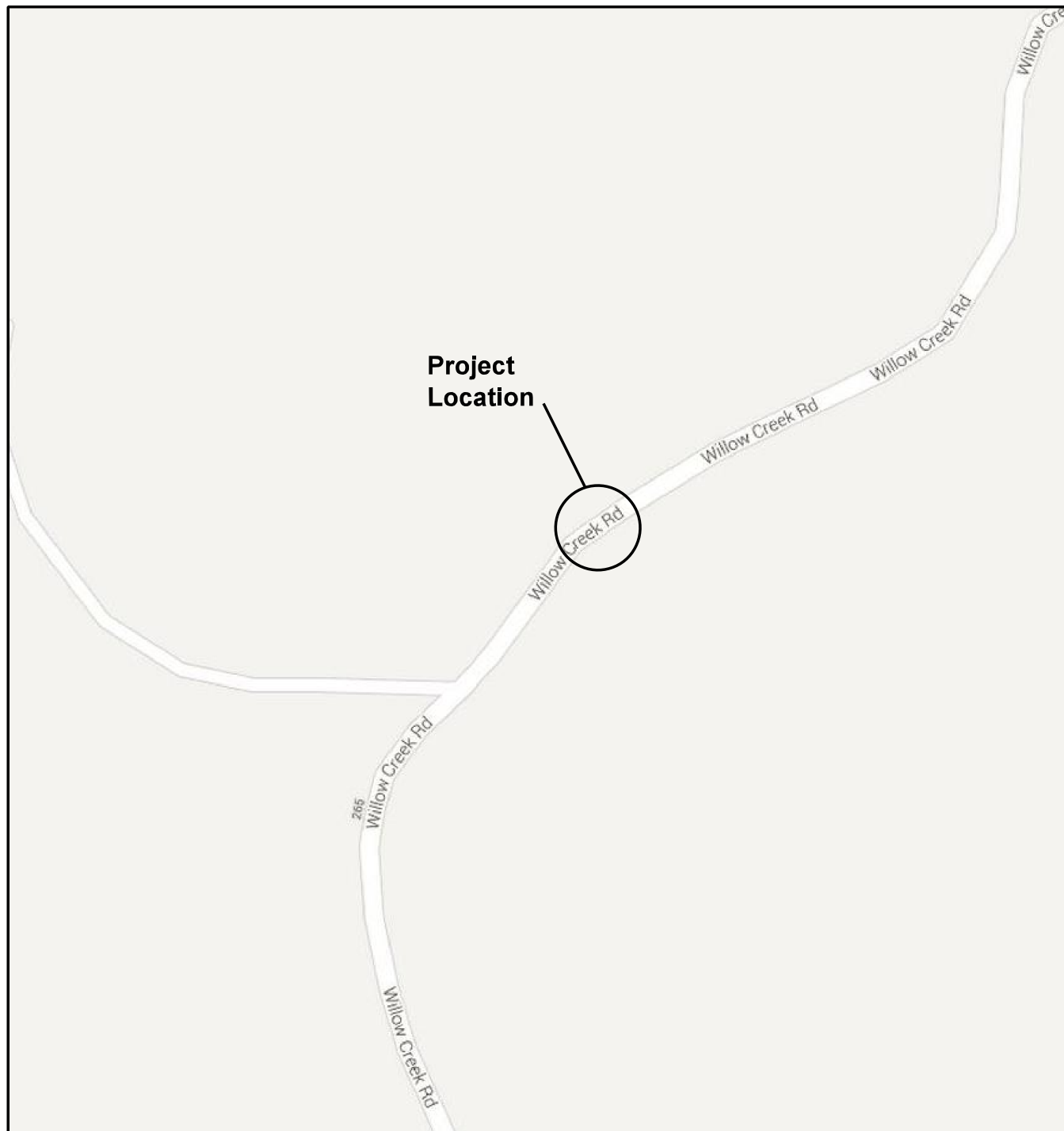
Comments Residential driveway near southwest corner of bridge. Bridge number
posted on bridge. Curve northeast of bridge does not affect travel
speed across bridge.

Reasonable Bridge Speed 20 mph

Investigated by: Mathew Bolden Reviewed by: James Voso

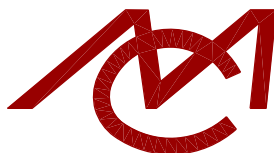


Bridge #371
Buncombe County
Division 13



VICINITY MAP

Bridge #371 on SR 1394
(Willow Creek Road)
over Willow Creek



Mattern & Craig
CONSULTING ENGINEERS • SURVEYORS

12 BROAD STREET
ASHEVILLE, NORTH CAROLINA 28801
(828) 254-2201
FAX (828) 254-4562

Comm. No. 3350

Bridge #371

Buncombe County

Division 13

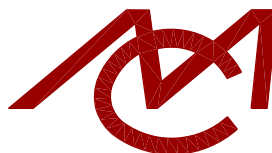


Northbound Approach



Northbound Approach at bridge

Bridge #371 on SR 1394
(Willow Creek Road)
over Willow Creek



Comm. No. 3350

Mattern & Craig
CONSULTING ENGINEERS • SURVEYORS

12 BROAD STREET
ASHEVILLE, NORTH CAROLINA 28801
(828) 254-2201
FAX (828) 254-4562

Bridge #371

Buncombe County

Division 13

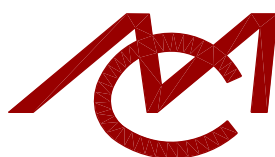


Southbound Approach



Southbound Approach at bridge

Bridge #371 on SR 1394
(Willow Creek Road)
over Willow Creek



Mattern & Craig

CONSULTING ENGINEERS • SURVEYORS

12 BROAD STREET
ASHEVILLE, NORTH CAROLINA 28801
(828) 254-2201
FAX (828) 254-4562

Comm. No. 3350

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

Study Criteria Summary

County: BUNCOMBE **City:** All and Rural
Date: 04/01/2003 **to** 03/31/2013 **Study:** BUNCOMBEBRIDGE371
Location: SR 1394 (Willow Creek Rd) from 500 feet west of Bridge 371 to 500 feet east of the bridge

Report Details

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
BUNCOMBEBRIDGE371				76.8	8.4	390	40001394

Request Date	Courier Service	Phone No.	Ext.	Fax No.
--------------	-----------------	-----------	------	---------

County			Municipality					
Name	Code	Div.	Name	Code	Y-Line Ft.	Begin Date	End Date	Years
BUNCOMBE	10	13	All and Rural		0	04/01/2003	03/31/2013	10.00

Location Text	Requestor
SR 1394 (Willow Creek Rd) from 500 feet west of Bridge 371 to 500 feet east of the bridge	

Excluded Accidents
103049705

Fiche Roads	
Name	Code
SR 1394	40001394
WILLOW CREEK	50033142

Strip Road					
Name	Code	Begin MP	End MP	Miles	Kilometers
SR 1394	40001394	6.033	6.233	0.200	0.322