

Hydraulics Unit Pre-Design Report (Pre-Scoping) for Structure #: 100142

Date: 08/27/2018

County: <u>Buncombe</u>	Stream: <u>Martin Creek</u>	Assigned to: <u></u>
Road #: <u>SR 2027</u>	Road Name: <u>Martins Creek Rd</u>	Prepared By: <u>HPM/wsh</u>
Division: <u>13</u>	Location: <u>0.3 m N JCT NC 197</u>	Hydro Mgr: <u>PAJ</u> Hydro Reviewer: <u>MTS</u>
Latitude: <u>35.79039</u>	Longitude: <u>-82.42376</u>	Project Type: <u>B-6016</u>

Existing Structure

Structure Type: <u>Bridge</u>	Yr Built: <u>1971</u>
Span Arrangement: <u>1@ 21'</u>	OAL (ft): <u>21.0</u> Skew: <u></u> Abutment Type: <u>Vertical -Timber</u>
Number of Barrels: <u></u> @ Span (ft): <u></u> x Rise (ft): <u></u>	
Bed to Crown (ft): <u>6.0</u>	Clear Roadway (ft): <u>24.3</u> Water Depth (ft): <u>1.0</u> Superstructure Depth: <u></u>
ADT: <u>280</u> Year ADT: <u>1995</u>	Scour Code (item113): <u>U</u> Prior Survey Completed: <u></u> Survey Date: <u></u>
Drainage Area: <u>2.71</u> Sq. Mi.	Drainage Area Source: <u>USGS Stream Stats</u> Roadway Overtops at Q100: <u></u>
Discharge Method: <u>USGS Regression Equations</u>	USGS Region: <u>2- Mountain</u> Stream Gage Number(if applicable): <u></u>
Q10 (cfs): <u></u> Q25 (cfs): <u>800</u> Q50 (cfs): <u>1,000</u> Q100 (cfs): <u>1,200</u> QBFE (cfs): <u></u>	
☐ Structure in Flood Hazard Zone Panel #: <u>9786</u> Panel Date: <u>01/06/2010</u>	Type of FIS: <u>LIMITED</u> Date of FIS: <u></u>

Environmental

Quad Map: <u>BARNARDSVILLE, NC</u>	River Basin: <u>French Broad</u>	Buffer Rule: <u></u>			
Primary Stream Classification		Other Stream Classification			
☐ Class B	☐ Class C	☐ SA	☐ SB	☐ Anadromous Fish	☐ Area of Environmental Concern
☐ SC	☐ SWL	☐ WL	☐ WS I	☐ CAMA County	☐ Federal Wild & Scenic Rivers
☒ WS II	☐ WS III	☐ WS IV	☐ WS V	☐ HSB Required	☐ NC Natural & Scenic Rivers
Supplemental Stream Classification				☐ Impaired [303d]	☐ Primary Nursery Area
☐ FWS	☒ HQW	☐ NSW	☐ ORW	☐ TVA	☐ Designated Shellfish Harvesting Area
☐ Sw	☒ Tr	☐ UWL	☐ w/in 0.5mi. of CA	☐ Designated Public Mountain Trout Waters	

Up/Down Stream Features

Upstream Feature: <u>Bridge</u>	Structure Type: <u>Timber Deck/ I Beams</u>
Location: <u>0.8 M N JCT NC 197</u>	Span Arrangement: <u>1@ 19' 2"</u> OAL (ft): <u></u>
Structure #: <u>100143</u> Route: <u>SR 2027</u>	Number of Barrels: <u></u> @ Span (ft): <u></u> x Rise (ft): <u></u>
Latitude: <u>35.79589</u> Longitude: <u>-82.41883</u>	
Prior Survey Completed: <u></u> Survey Date: <u></u>	Bed to Crown (ft): <u>5.0</u> Year Built: <u>1971</u>
Downstream Feature: <u>Bridge</u>	Structure Type: <u>Timber Deck/ I Beams</u>
Location: <u>.01 M N JCT NC 197</u>	Span Arrangement: <u>1 @ 41'</u> OAL (ft): <u>42.00</u>
Structure #: <u>100141</u> Route: <u>SR 2027</u>	Number of Barrels: <u></u> @ Span (ft): <u></u> x Rise (ft): <u></u>
Latitude: <u>35.78663</u> Longitude: <u>-82.42581</u>	
Prior Survey Completed: <u></u> Survey Date: <u></u>	Bed to Crown (ft): <u>11.0</u> Year Built: <u>1971</u>

Preliminary Structure Estimate [Office Estimate]

Structure Type: <u></u>	Skew: <u></u>
Dimensions/Spans: <u></u>	

Notes

Stream #:6-96-3-5

5
8-27

PREDESIGN-SCOPING REPORT

Project# B-6016
TIP# _____
Let Date _____
WBS# _____

County Buncombe (DIV. 13)

Bridge# 100142
Road# SR 2027 Martins Creek Rd
Stream Martin Creek

Type Of Request: POC Force Account TIP NCMA

Date 8/23/18 Name HPM

Assigned To PAJ/MTS

Checked By Wsh 8-27-18

BRN: NONE CO. FILE NONE

Prior Survey Date NONE (attach copy of prior survey)

Study By Scour Section NONE CODE: U PDR: NONE BSR: NONE

Flood Zone AE Detail Study LDS Date 1/6/2010 Panel# 9786

Quad Map Barnardsville SE Drainage Area 2.71 mi² From StreamStats
Q25 800 Q50 1000 cfs Q100 1200 Method Regression
LONG: -82.423756 Region 2
LAT: 35.790394

EXISTING BRIDGE INFORMATION YEAR BUILT: 1971

Location 0.3 mi N of JCT NC 197 CLEAR ROADWAY WIDTH 24.333'
Average Daily Traffic 280 1995 (6% T) I.A. % = _____ %
Length 21' Bed-To Crown 6' Water Depth 1'

Type Structure Timber floor on I-Beams

Type Spans 1@ 21'

Upstream Structure Bridge #100143

YR. BUILT: 1971

Location SR 2027 [0.8 mi N of JCT NC 197] LONG: -82.41829

Bed-To Crown 5' LAT: 35.795885

Timber floor on I-Beams (1@ 19'-2")

Downstream Structure Bridge #100141

YR. BUILT: 1971

Location SR 2027 [0.01 mi N of JCT NC 197] LONG: -82.425805

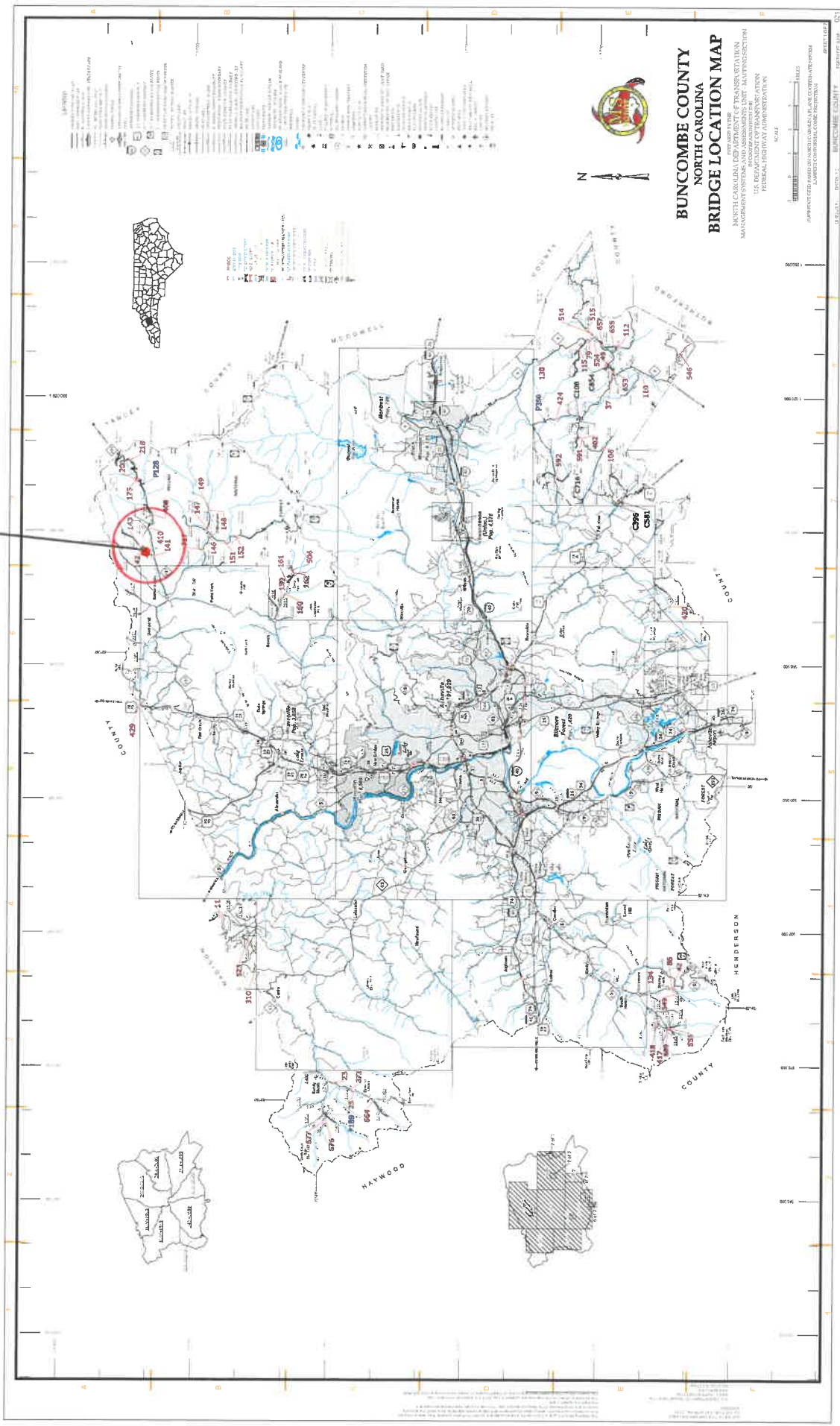
Bed-To Crown 11' LAT: 35.786634

Timber floor on I-Beams (1@ 41')

Trout Stream Yes ENVIRONMENTAL No TVA: Yes
High Quality Waters Yes Anadromous Fish No Primary Nursery Area No
Near Water Supply Intake _____ Nutrient Sensitive Waters No
Stream Classification WS-II; Tr, HQW CAMA County NO
DENR River Basin Info. French Broad STREAM #: 6-96-3-5

1,41,45,62

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StreamStats Report

Region ID:
Workspace ID:
Clicked Point (Latitude, Longitude):
Time:

NC
NC20180824111005049000
35.79040, -82.42375
2018-08-24 07:10:19 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	2.71	square miles
PCTREG1	Percentage of drainage area located in Region 1	0	percent
PCTREG2	Percentage of drainage area located in Region 2	100	percent
PCTREG3	Percentage of drainage area located in Region 3	0	percent
PCTREG4	Percentage of drainage area located in Region 4	0	percent
PCTREG5	Percentage of drainage area located in Region 5	0	percent

Peak-Flow Statistics Parameters (Peak Southeast US over 1 sqmi 2009 5158)

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	2.71	square miles	1	9000
PCTREG1	Percent Area in Region 1	0	percent	0	100
PCTREG2	Percent Area in Region 2	100	percent	0	100
PCTREG3	Percent Area in Region 3	0	percent	0	100
PCTREG4	Percent Area in Region 4	0	percent	0	100
PCTREG5	Percent Area in Region 5	0	percent	0	100

Peak-Flow Statistics Flow Report (Peak Southeast US over 1 sqmi 2009 5158)

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	PIu	SEp
2 Year Peak Flood	238	ft ³ /s	136	419	34.5
5 Year Peak Flood	441	ft ³ /s	252	770	34
10 Year Peak Flood	601	ft ³ /s	338	1070	35.1
25 Year Peak Flood	819	ft ³ /s	444	1510	37.5
50 Year Peak Flood	979	ft ³ /s	513	1870	39.6
100 Year Peak Flood	1170	ft ³ /s	592	2320	41.9

old regression equations:

	REGION 1	REGION 2
Q25	982.5478	819.13
Q50	1202.217	979.958
Q100	1402.961	1170.51

SITE: 100142

DATE: 8/27/2018

D.A. = 2.71 sq mi IpArea= 0.079

current regression equations: **2014-2050 PG 28.**

UPDATED: .1 to 3mi

	REGION 1	REGION 2
Q25	1123.017	
Q50	1390.545	
Q100	1678.824	

3mi TO 436mi

REGION 1

1.000965	Q25	1133.44
	Q50	1364.99
	Q100	1610.68



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STRUCTURE MANAGEMENT UNIT

ATTENTION: PRIORITY MAINTENANCE: BEAMS, TEMPORARY
REPAIRS: BEAMS

Structure Safety Report

Routine Element Inspection

COUNTY: BUNCOMBE STRUCTURE NUMBER: 100142 FREQUENCY: 24 MONTHS

FACILITY CARRIED: SR2027 MILE POST:

LOCATION: .3 MI.N.JCT.NC197

FEATURE INTERSECTED: MARTIN CREEK

LATITUDE: 35° 47' 25.46" LONGITUDE: 82° 25' 25.39"

SUPERSTRUCTURE: TIMBER FLOOR ON I-BEAMS

SUBSTRUCTURE: ABUTMENTS:YOUNT MASONRY

SPANS: 1 @ 21'

☐ FRACTURE CRITICAL ☐ TEMPORARY SHORING ☐ SCOUR CRITICAL ☐ SCOUR PLAN OF ACTION

PRESENT CONDITION: Poor INSPECTION DATE: 12/15/2016

POSTED SV: 17 POSTED TTST: 25

OTHER SIGNS PRESENT: DELINEATORS (4)



Sign noticed issued for		Number Required
<u>NO</u>	WEIGHT LIMIT	<u>0</u>
<u>NO</u>	DELINEATORS	<u>0</u>
<u>NO</u>	NARROW BRIDGE	<u>0</u>
<u>NO</u>	ONE LANE BRIDGE	<u>0</u>
<u>NO</u>	LOW CLEARANCE	<u>0</u>

DIRECTION OF INSPECTION S-N

DIRECTION MATCHES PLANS NO PLANS

SOUTH APPROACH LOOKING NORTH

INSPECTED BY JOSEPH HUNTSINGER	SIGNATURE <i>Joseph Huntsinger</i>	ASSISTED BY DAVID SANDERS
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UTILITY LINE ON THE RIGHT SIDE OF THE BRIDGE.



END BENT 1

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BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE

Run Date: 08/24/2017

COUNTY : BUNCOMBE	DIVISION : 13	DISTRICT : 2	STRUCTURE NUMBER : 100142	LENGTH : 21	FEET
ROUTE CARRIED : SR2027		FEATURE INTERSECTED : MARTIN CREEK			
LOCATED : .3 MI.N.JCT.NC197		BRIDGE NAME :		CITY :	
FUNC. CLASS : 09	SYST.ON : NFA	SYST.UNDER : NFA	ADT & YR : 280 1995	RAIL TYPE : LT 227 RT 227	
BUILT : 1971	BY : BMU	PROJ :	FED.AID PROJ :	DESIGN LOAD : Unknown	
REHAB :	BY :	PROJ :	ALIGNMENT : TAN	SKEW : 135	LANES : ON 2 UNDER 0
NAVIGATION : VC 0 FT		HC 0 FT	HT. CRN. TO BED : 6 FT	WATER DEPTH : 1 FT	
SUPERSTRUCTURE : TIMBER FLOOR ON I-BEAMS					
SUBSTRUCTURE : ABUTMENTS:YOUNT MASONRY					
SPANS : 1 @ 21'					
BEAMS OR GIRDERS : 15 LINES 9 I-BEAMS @ 1'-8 CENTERS					
FLOOR : 4X8 TIM/1.5 AWS	ENCROACHMENT :		DECK (OUT TO OUT) : 25.333 FT		
CLEAR ROADWAY : 24.333 FT	BETWEEN RAILS : 25 FT		SIDEWALK OR CURB : LT .3 FT RT .3 FT		
VERT.CL.OVER : 999.9 FT					
INV.RTG. : HS-1	OPE.RTG. : HS-1	CONTR.MEMBER : Int.Beam	POSTED : SV 12	TTST 19	DATE 08/22/2017
SYSTEM : Secondary S.R. Route			GREEN LINE ROUTE : N		
UNDER ROUTES AND CLEARANCES					

REMARKS :

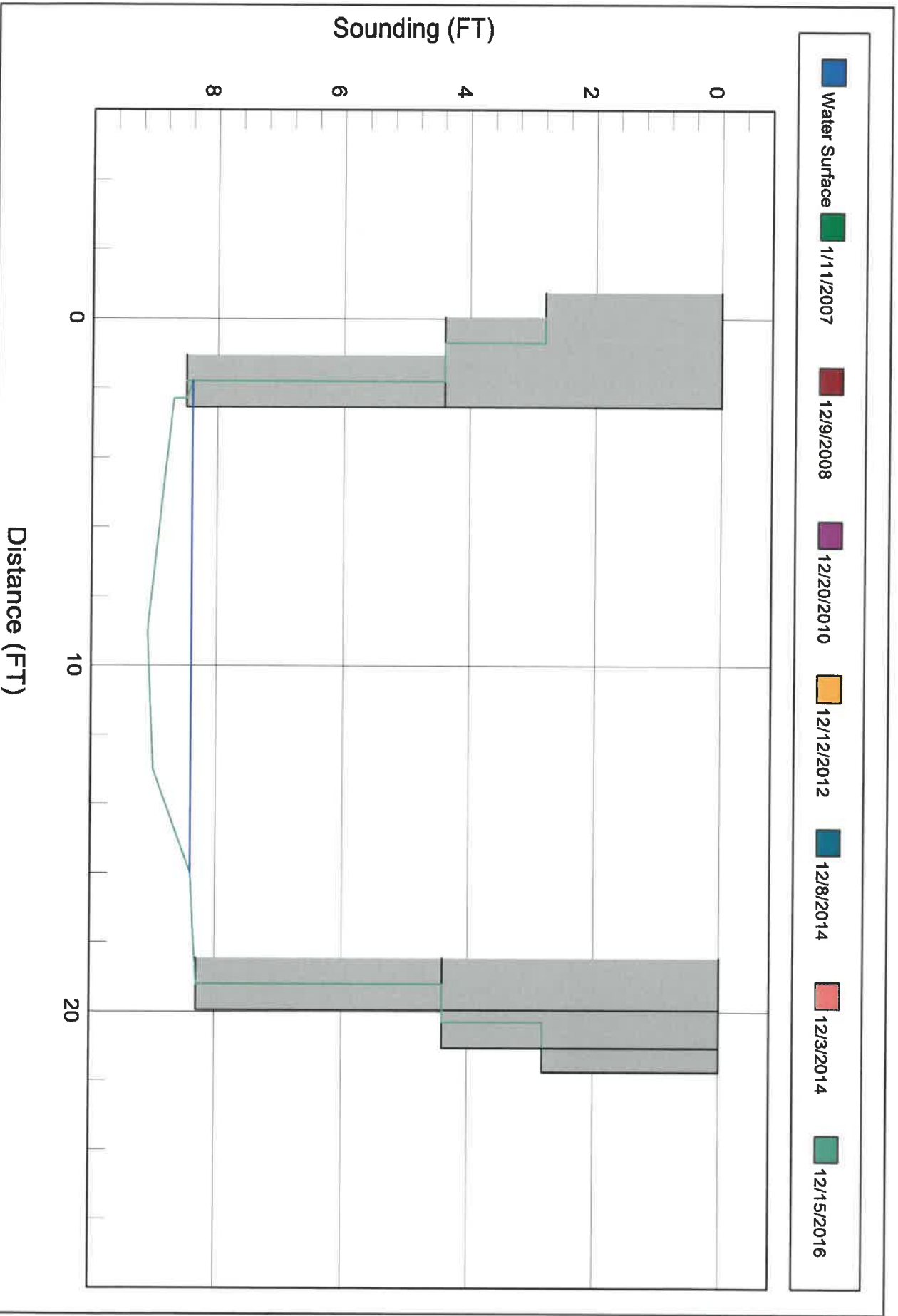
Bridge: 100142

County: BUNCOMBE

Date: 12/15/2016

Top of Rail = 0 FT (Sounding)

STREAMBED PROFILE (Downstream)



U/S Structure

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Structure: 100143

County: BUNCOMBE

Date: 12/15/2016

Structure Photos



UPSTREAM



UTILITY LINE ON THE LEFT SIDE OF THE BRIDGE

Structure: 100141

County: BUNCOMBE

Date: 12/15/2016

Structure Photos

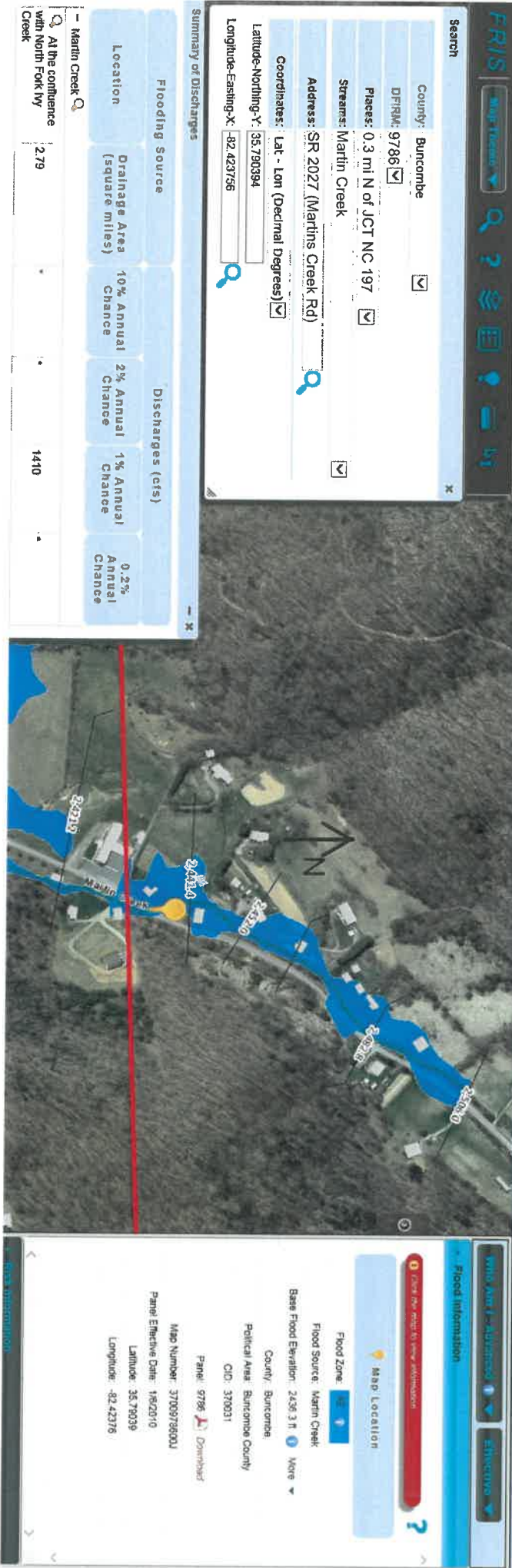


UTILITY LINES ON THE LEFT SIDE OF THE BRIDGE.

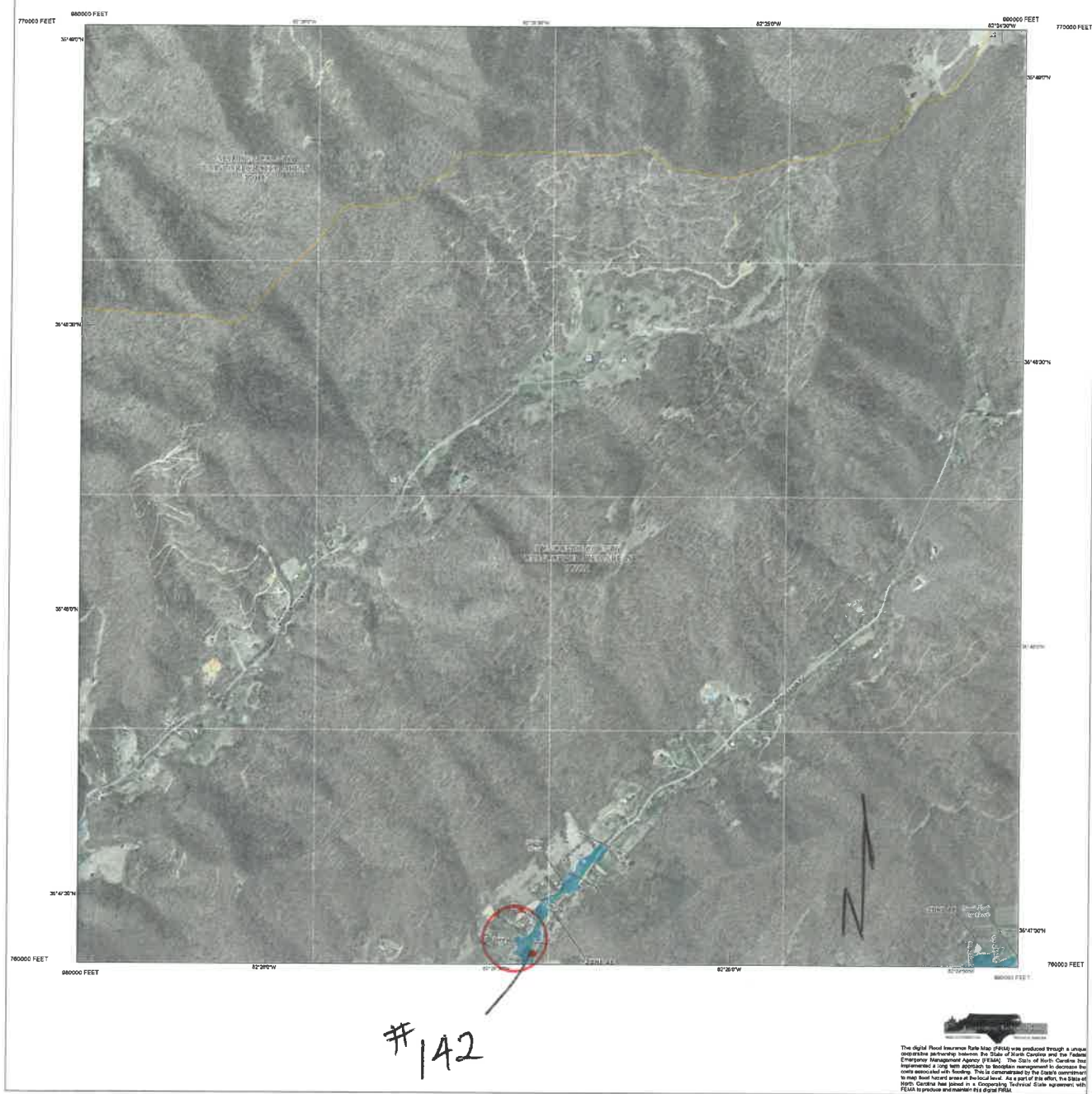


DOWNSTREAM

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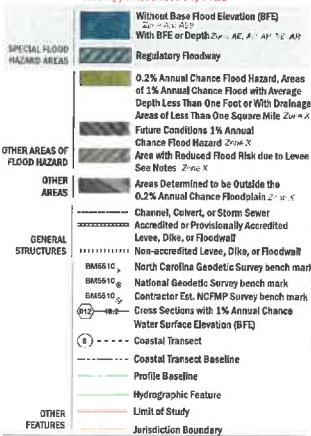


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The digital Flood Insurance Rate Map (FIRM) was produced through a unique cooperative partnership between the State of North Carolina and the Federal Emergency Management Agency (FEMA). The State of North Carolina has implemented a long-term program to facilitate management to determine the costs associated with flooding. This is complemented by the State's commitment to flood hazard areas of the local level. As a part of this effort, the State of North Carolina has joined in a Cooperative Federal State agreement with FEMA to produce and maintain this digital FIRM.

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR ZONE DESCRIPTIONS AND INDEX MAP
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING
DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
[HTTP://FIRIS.NC.GOV/FIRIS](http://FIRIS.NC.GOV/FIRIS)



NOTES TO USERS

For information and questions about this map, available products, associated with the FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FIRM Map Information Center at 1-877-FIRM-4444 (1-877-346-2444) or visit the FIRM Map Information Center website at FIRM.NC.GOV. You can also get an accompanying Flood Insurance Study report, Letter of Map Revision, and/or Letter of Map Amendment (LOMA) covering portions of the parcel, and digital versions of the FIRM map on a CD-ROM. Visit the North Carolina Floodplain Mapping Program website at <http://www.ncfloodmaps.org> or visit the FEMA Map Service Center.

Communities seeking to use adjacent FIRM parcels must obtain a current copy of the adjacent parcel as well as the current FIRM data. These may be obtained directly from the Map Service Center of the vendor listed above. For community and complete map data refer to the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6023.

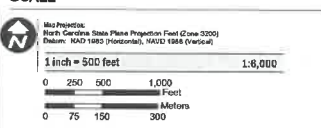
These maps and information are for informational purposes only. They are not intended to be used for any other purpose. The FIRM is a product of the National Flood Insurance Program (NFIP). The accuracy of the information can be determined from the metadata available in the digital FIRM products and in the National Flood Insurance Program (NFIP) website.

ACCREDITED LEASE NOTES TO USERS: If an accredited lease note appears on the parcel sheet with your local community to obtain more information, such as the required level of protection provided (which may be used to determine flood risk) or to obtain more information, such as the required level of protection provided (which may be used to determine flood risk) or to obtain more information, such as the required level of protection provided (which may be used to determine flood risk).

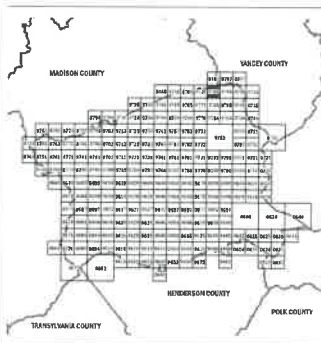
LIMIT OF MODERATE WAVE ACTION (LIMWA) NOTES TO USERS: For some coastal flooding zones, the AE Zone boundaries have been drawn by the local community to show the LIMWA. The LIMWA represents the approximate limit of the 100-year flood zone. The effect of wave height between the VE Zone and the LIMWA or between the LIMWA and the AE Zone for areas where VE Zones are not depicted, will be similar to, but not necessarily the same as, the VE Zone.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) NOTE
This map may include approximate boundaries of the CBRS for informational purposes only. Flood insurance is not available within CBRS areas for structures that are located within or adjacent to the CBRS. For more information, see the FEMA website at <http://www.fema.gov> or call FEMA at 1-800-344-7462.

SCALE



PANEL LOCATOR



FEMA

National Flood Insurance Program

NORTH CAROLINA FLOODPLAIN MAPPING PROGRAM

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

NORTH CAROLINA

PANEL 9786

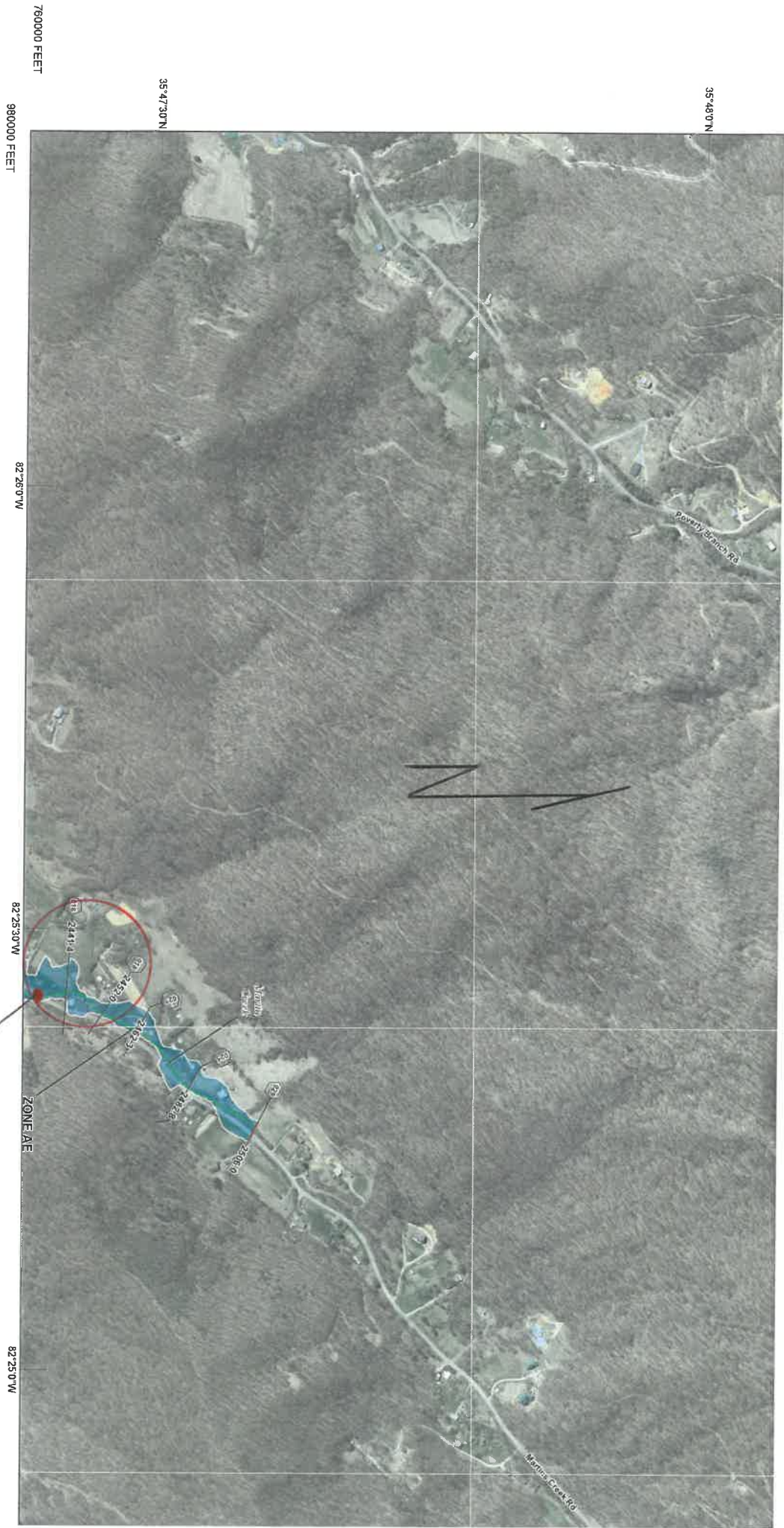
Panel Contains:

COMMUNITY
BUNCOMBE COUNTY
MADISON COUNTY

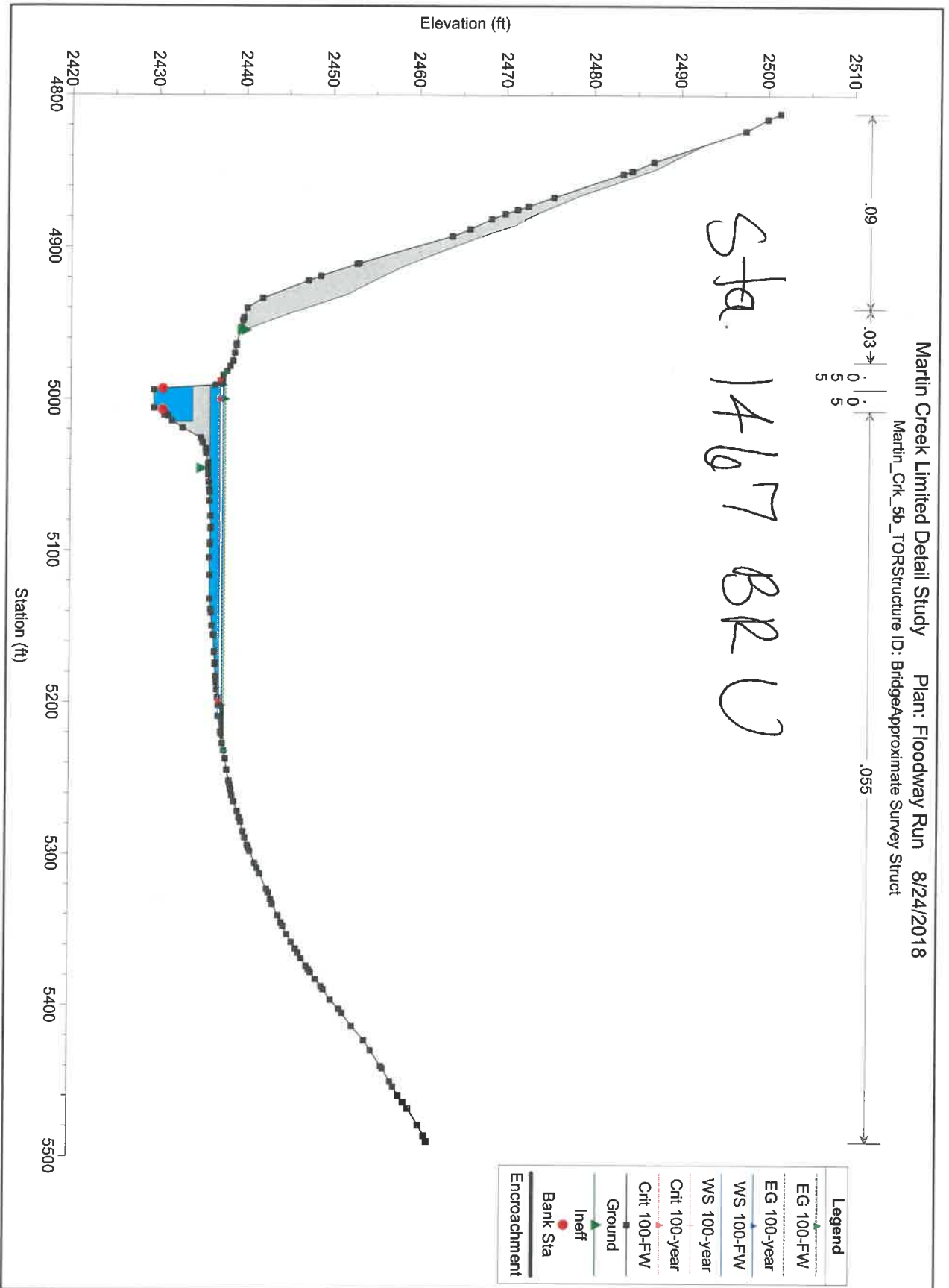
CID PANEL SUFFIX
370001 9786
370102 9786

MAP NUMBER
3700978600J

MAP REVISION
04/06/10



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