

County: Ashe	Stream: HELTON CREEK	Assigned to:	
Road #: SR 1526	Road Name: JOHN GRIFFITH ROAD	Prepared By: nas/wsh	
Division: 11	Location: 50' S JCT NC 194	Hydro Mgr: PFF	Hydro Reviewer: MTS
Latitude: 36.35498	Longitude: 81.47970	Project Type: 17BP.11.R.136	

Existing Structure

Structure Type: Timber Deck/ I Beams	Yr Built: 1965			
Span Arrangement: 1@25'5", 1@38'1", 1@8'8"	OAL (ft): 72.0	Skew:	Abutment Type: Vertical -Timber	
Number of Barrels:	@ Span (ft):	x Rise (ft):		
Bed to Crown (ft): 11.0	Clear Roadway (ft):	Water Depth (ft): 2.0	Superstructure Depth:	
ADT: 40	Year ADT: 2000	Scour Code (item113): 0	Prior Survey Completed: ☐ Survey Date:	
Drainage Area: 25.8	Sq. Mi.	Drainage Area Source: USGS Stream Stats	Roadway Overtops at Q100: ☐	
Discharge Method: USGS Regression Equations	USGS Region: 2- Mountain	Stream Gage Number(if applicable):		
Q10 (cfs):	Q25 (cfs): 4,200	Q50 (cfs): 4,900	Q100 (cfs): 5,800	QBFE (cfs):
☐ Structure in Flood Hazard Zone Panel #: 2072 Panel Date: 11/04/2009 Type of FIS: DETAILED Date of FIS:				

Enviromental

Quad Map: GRASSY CREEK, NC	River Basin: New	Buffer Rule:			
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: Bridge	Structure Type: RC DECK ON CONC GIRE			
Location: 75' N JCT SR 1669	Span Arrangement: 1 @ 62' 2", 2 @ 60', 1 @ 62' OAL (ft): 245.0			
Structure #: 040032	Route: NC 194	Number of Barrels:	@ Span (ft):	x Rise (ft):
Latitude: 36.55555	Longitude: 81.49664			
Prior Survey Completed: ☐	Survey Date:	Bed to Crown (ft): 17.0	Year Built: 1981	
Downstream Feature: Bridge	Structure Type: Timber Deck/ I Beams			
Location: 25' south JCT NC 194	Span Arrangement: 1 @ 31' 10" OAL (ft): 32.00			
Structure #: 040483	Route: SR 1525	Number of Barrels:	@ Span (ft):	x Rise (ft):
Latitude: 36.54848	Longitude: 81.47061			
Prior Survey Completed: ☐	Survey Date:	Bed to Crown (ft): 8.0	Year Built: 1966	

Preliminary Structure Estimate [Office Estimate]

Structure Type: Cored Slab	Skew: 90
Dimensions/Spans: 1 @ 70'	

Notes

Stream# 10-2-27

OFFICE ESTIMATE:

PREDESIGN-SCOPING REPORT

Project# 17BP.11.R.136

TIP#

Let Date

WBS#

County

ASHE

DIV.

11

Bridge#

040 321

Road#

SR 1526 JOHN GRIFFITH RO.

Stream

HELTON CRK. ✓

Type Of Request: POC Force Account TIP NCMA

Date 7/21/16 Name wshAssigned To PFF/MTSChecked By NAS 7-25-16 ✓BRN. NONE CO. ✓ FILE NONE ✓Prior Survey Date NONE (attach copy of prior survey)Study By Scour Section NONEFlood Zone AE Detail Study DETAILED Date 11/4/09 Panel# 2072 ✓ xB.M. Info N/A (ESM DA = 24.0 SQ. M) ✓Quad Map GRASSY CREEK Drainage Area 25.8 SQ. M. From STREAMSTATS USGSQ25 4200 cfs Q50 4900 cfs Q100 5800 cfs MethodLONG: 81.479696 ✓LAT: 36.549752 ✓NEW REG. EQN.REGION 2IA = 0.17%

EXISTING BRIDGE INFORMATION

Location 50 FTS. JCT. NC 194Average Daily Traffic 40 (2000) 0% TRK YEAR BUILT: 1965Length 72' Bed-To-Crown 11' Water Depth 2'Type Structure TIMBER VERTICAL E.BTS. FLR (ON I BEAMS), POSTS, SILLS, PIER MASSIVE CONCRETEType Spans 1e 25'5", 1e 38'1", 1e 8'8"Upstream Structure 040 032 ✓ RC FLR ON CONC. GIRDERS YR. BUILT: 1981 (1e 62' 2e 60' 1e 62')Location ON NC 194 / 175' N. JCT. SR 1669 ✓ LONG: 81.496636 ✓Bed-To-Crown 17' (H₂O = 2' DEEP) ✓ Prior Survey N/A LAT: 36.555549 ✓Downstream Structure 040 483 ✓ YR. BUILT: 1966Location ON RAY DAVIS RD / SR 1525 (25' S. JCT. NC 194) / 1e 31' 10" TIMBER FLR ON I BEAMS / ABUT-RCBed-To-Crown 8' (H₂O = 3' deep) ✓ Prior Survey N/ALAT: 36.548484 ✓LONG: 81.470614 ✓

ENVIRONMENTAL

TVA: NO ✓Trout Stream YES Anadromous Fish NO Primary Nursery Area NO ✓High Quality Waters YES ORW Nutrient Sensitive Waters NO ✓Near Water Supply Intake NO CAMA County NOStream Classification C, Tr, ORW, + ✓ STREAM #: 08-07-02 ✓ AUSUBBAS SUB BASIN CODEDENR River Basin Info. NEW ✓ (10-2-27) ASSIGNED UNIT

NUMBER

AUNUMBER

1, 4, 15, 23

DS = 28

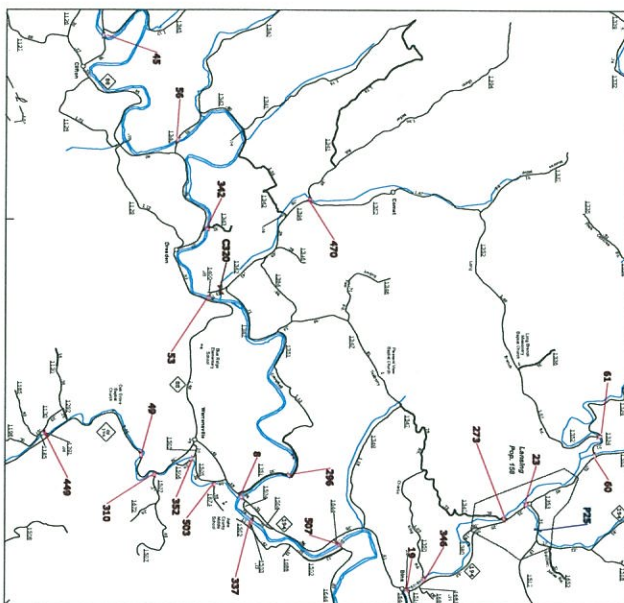
US

PSR

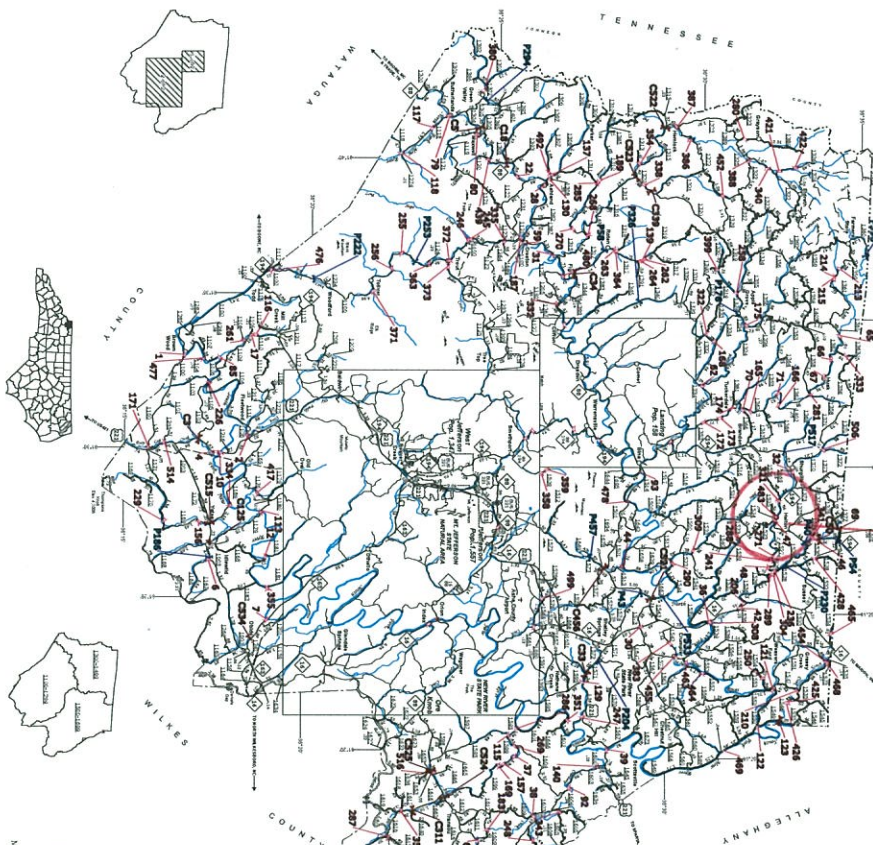
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(1 of 2)

The MSA's goal is to provide the most accurate and current information possible. Map data is compiled from numerous sources with varying dates of publication and map accuracy standards. As a result, the accuracy, currency and completeness of the data provided will vary. Map includes state-maintained roads and information on many city roads. The information shown on this map was last updated on September 1, 2015. For additional information, visit www.msa.net, www.msa.net/landfill/missouri and click on Data Providers or contact us at (855) 836-8480.



Lansing and Vicinity



#321

ASHE COUNTY
NORTH CAROLINA

BRIDGE LOCATION MAP

LEGEND

- Interstate
- State Route
- US Route

Scale: 0 5 10 Miles

North Arrow

ASHE COUNTY, NORTH CAROLINA

BRIDGE LOCATION MAP

LEGEND

- Interstate
- State Route
- US Route

Scale: 0 5 10 Miles

North Arrow

ASHE COUNTY, NORTH CAROLINA

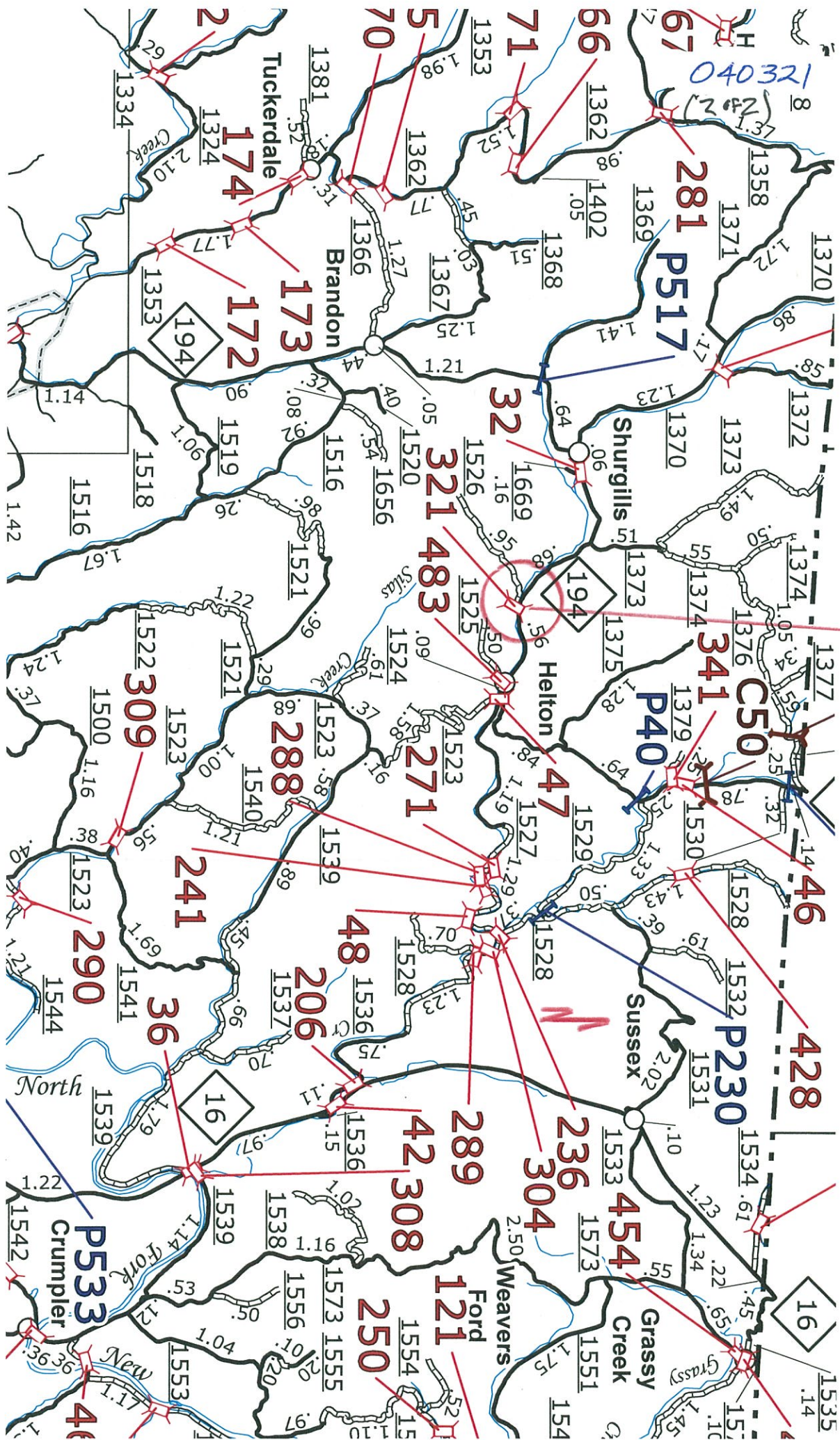
BRIDGE LOCATION MAP

LEGEND

- Interstate
- State Route
- US Route

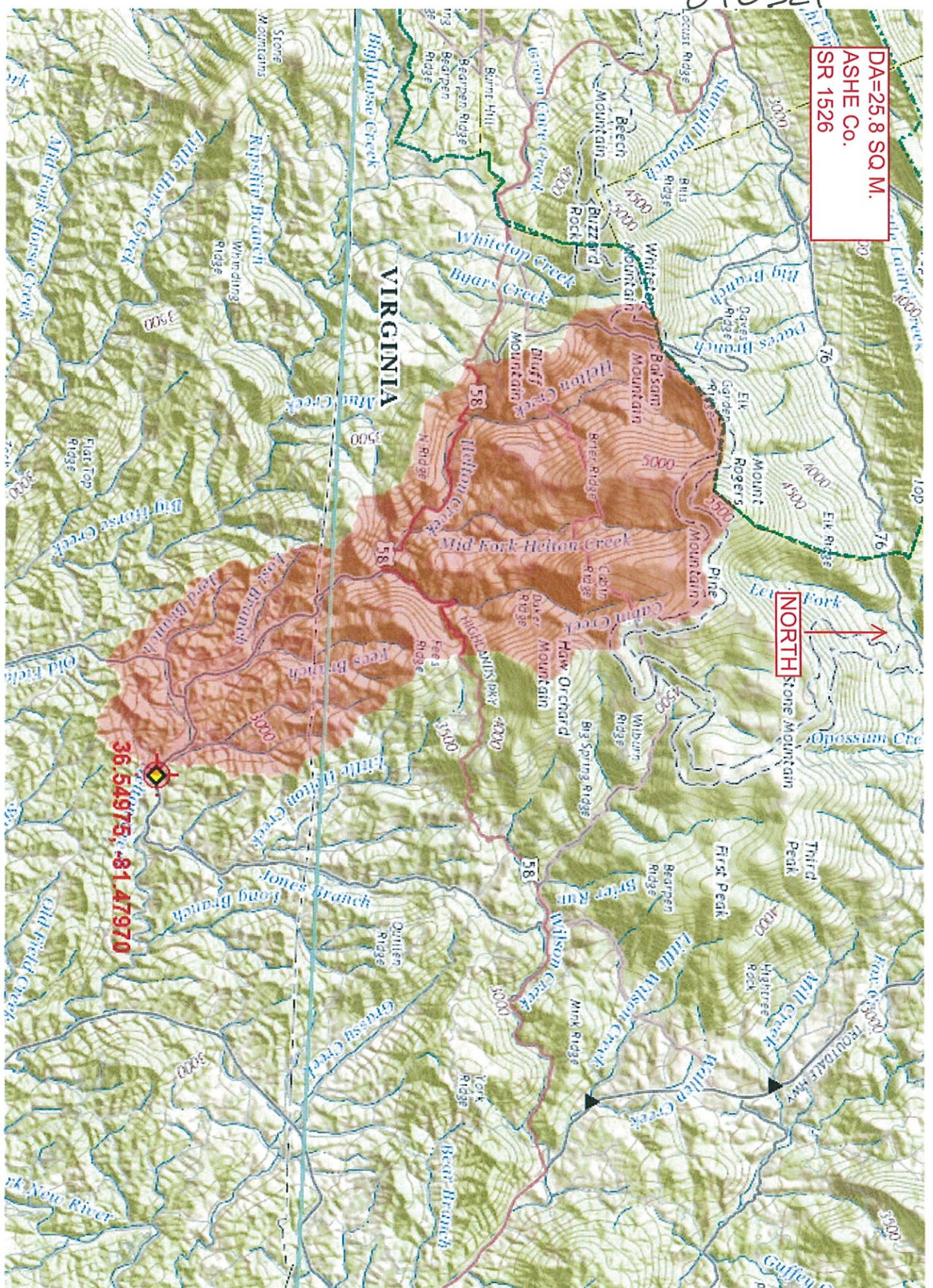
Scale: 0 5 10 Miles

North Arrow



040321

DA=25.8 SQ M.
ASHE Co.
SR 1526



StreamStats Version 3.0

Flow Statistics Ungaged Site Report

040321

Date: Wed July 20, 2016 4:03:25 PM GMT-4
 Study Area: North Carolina
 NAD 1983 Latitude: 36.5497 (36 32 59)
 NAD 1983 Longitude: -81.4796 (-81 28 47)
 Drainage Area: 25.8 mi²

Peak Flows Region Grid Basin Characteristics			
100% Peak Southeast US over 1 sqmi 2009 5158 (25.8 mi ²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	25.8	1	9000
Percent Area in Region 1 (percent)	0.000	0	100
Percent Area in Region 2 (percent)	100.000	0	100
Percent Area in Region 3 (percent)	0.000	0	100
Percent Area in Region 4 (percent)	0.000	0	100
Percent Area in Region 5 (percent)	0.000	0	100

Urban Flows Region Grid Basin Characteristics			
Area in square miles=25.8			
Percent imperviousness of basin area 2006 NLCD=0.17			
Percentage of impervious area determined from NLCD 2011 impervious dataset=0.17			
100% Region 2 Urban Blue Ridge FS007-00 (25.8 mi ²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	25.8	0.04	41
Percent Impervious NLCD2011 (percent)	0.17 (below min value 2)	2	54.6

Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

Peak Flows Region Grid Statistics						
Statistic	Value	Unit	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
					Min	Max
PK2	1380	ft ³ /s	35		793	2400
PK5	2380	ft ³ /s	34		1380	4120
PK10	3150	ft ³ /s	35		1790	5550
PK25	4190	ft ³ /s	38		2300	7630
PK50	4940	ft ³ /s	40		2620	9290
PK100	5840	ft ³ /s	42		3000	11400
PK200	6620	ft ³ /s	44		3280	13400
PK500	7830	ft ³ /s	48		3690	16600

<http://pubs.usgs.gov/sir/2009/5158/> (<http://pubs.usgs.gov/sir/2009/5158/>)

Weaver, J.C., Feaster, T.D., and Gotvald, A.J., 2009. Magnitude and frequency of rural floods in the Southeastern United States through 2006—Volume 2. North Carolina: U.S. Geological Survey Scientific Investigations Report 2009-5158, 111 p.

Urban Flows Region Grid Statistics						
Statistic	Value	Unit	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
					Min	Max
PK2U	109	ft ³ /s				



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGE MANAGEMENT UNIT

ATTENTION

040321 (1 of 6)

BRIDGE INSPECTION REPORT

INSPECTION TYPE: Routine Inspection - Contract

COUNTY ASHE BRIDGE NUMBER 040321 INSPECTION CYCLE 0 YRS
ROUTE SR1526 ACROSS HELTON CREEK M.P. 0

LOCATION 50 FT.S.JCT.NC194

SUPERSTRUCTURE TIMBER FLOOR ON I-BEAMS

SUBSTRUCTURE E.BTS:TIMBER POST&SILLS;PIERS:MASSIVE CONCRETE

SPANS 1 @ 25'-5';1 @ 38';1 @ 8'-8

LONGITUDE 81° 28' 46.76"

LATITUDE 36° 32' 59.13"

INSPECTION DATE 05/23/2014

PRESENT CONDITION FAIR

PRESENT POSTING Y

SV 17 TTST 21

PROPOSED POSTING

OTHER SIGNS PRESENT DELINEATORS (4)



SOUTH APPROACH LOOKING NORTH

Fracture Critical	<u>No</u>
Temporary Shoring	<u>No</u>
Scour Critical	<u>No</u>
Scour POA	<u>No</u>

SIGN NOTICE ISSUED FOR	NUMBERED REQUIRED
<u>No</u> WEIGHT LIMIT	<u> </u>
<u>No</u> DELINEATORS	<u> </u>
<u>No</u> NARROW BRIDGE	<u> </u>
<u>No</u> ONE LANE BRIDGE	<u> </u>
<u>No</u> LOW CLEARANCE	<u> </u>

BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE

Run Date: 06/26/2014

COUNTY : ASHE DIVISION : 11 DISTRICT : 3 STRUCTURE NUMBER : 040321 LENGTH : 72 FEET

ROUTE CARRIED : SR1526 FEATURE INTERSECTED : HELTON CREEK

LOCATED : 50 FT.S.JCT.NC194 BRIDGE NAME : CITY :

FUNC. CLASS : 09 SYST.ON : NFA SYST.UNDER : NFA ADT & YR : 40 2000 RAIL TYPE : LT 227 RT 227

BUILT : 1965 BY : BMU PROJ : FED.AID PROJ : DESIGN LOAD : Unknown

REHAB : BY : BMU PROJ : 5.7151 ALIGNMENT : TAN SKEW : 90 LANES : ON 2 UNDER 0

NAVIGATION : VC 0 FT HC 0 FT HT. CRN. TO BED : 11 FT WATER DEPTH : 2 FT

SUPERSTRUCTURE : TIMBER FLOOR ON I-BEAMS

SUBSTRUCTURE : E.BTS:TIMBER POST&SILLS;PIERS:MASSIVE CONCRETE

SPANS : 1 @ 25'-5;1 @ 38';1 @ 8'-8

BEAMS OR GIRDERS : SPN1&3:9 LNS.12 I-BEAMS;SPN2:9 LNS.15 I-BEAMS @ 2'-4 CTS.

FLOOR : 4X8 TIM/.5 AWS ENCROACHMENT : DECK (OUT TO OUT) : 20 FT

CLEAR ROADWAY : 19 FT BETWEEN RAILS : 19.667 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.bm(B) POSTED : SV 17 TTST 21 DATE 07/26/2012

SYSTEM : Secondary S.R. Route GREEN LINE ROUTE : N

UNDER ROUTES AND CLEARANCES

REMARKS :

Bridge: 040321

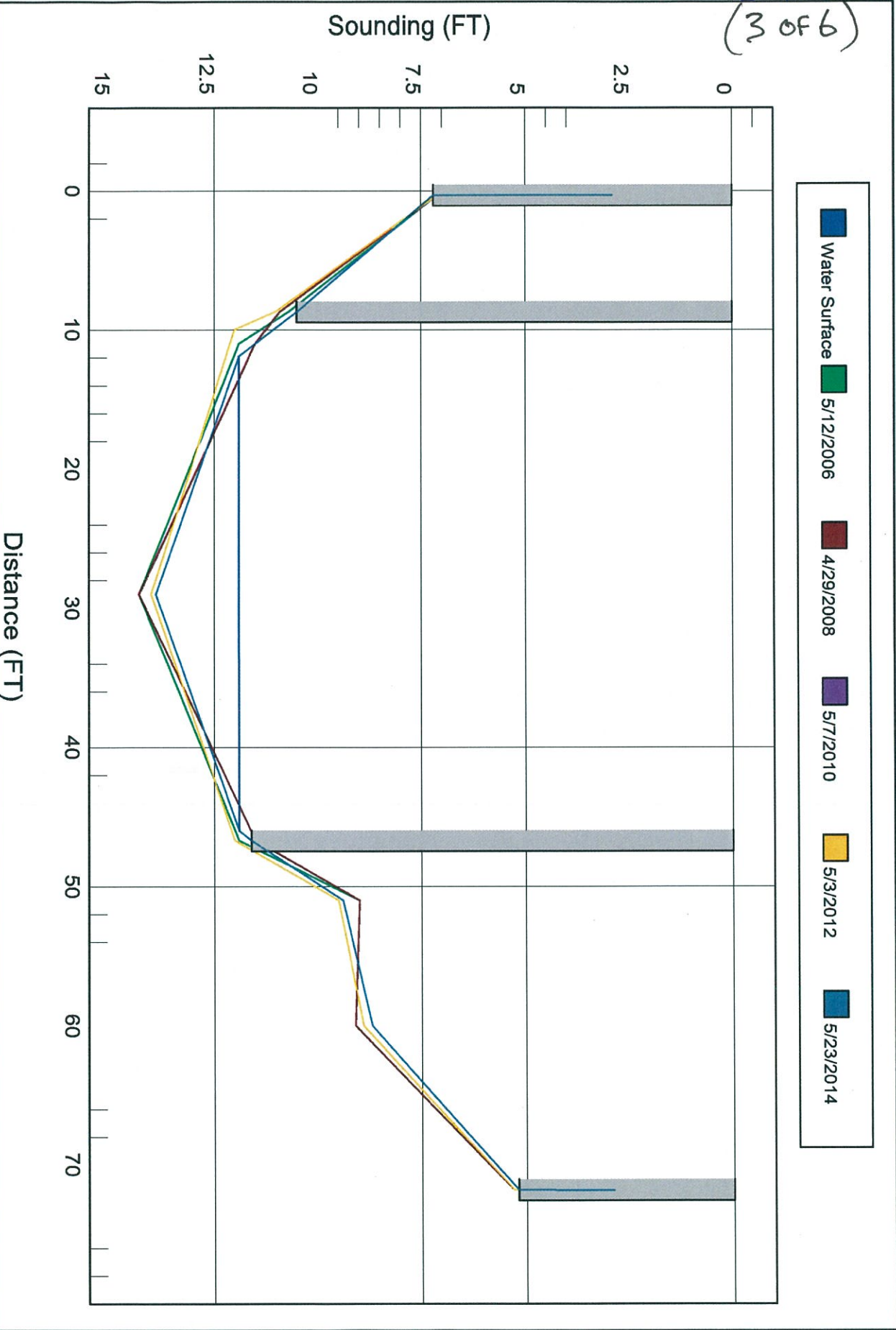
County ASHE

Date: 05/23/2014

Top of Rail = 0 FT (Sounding)

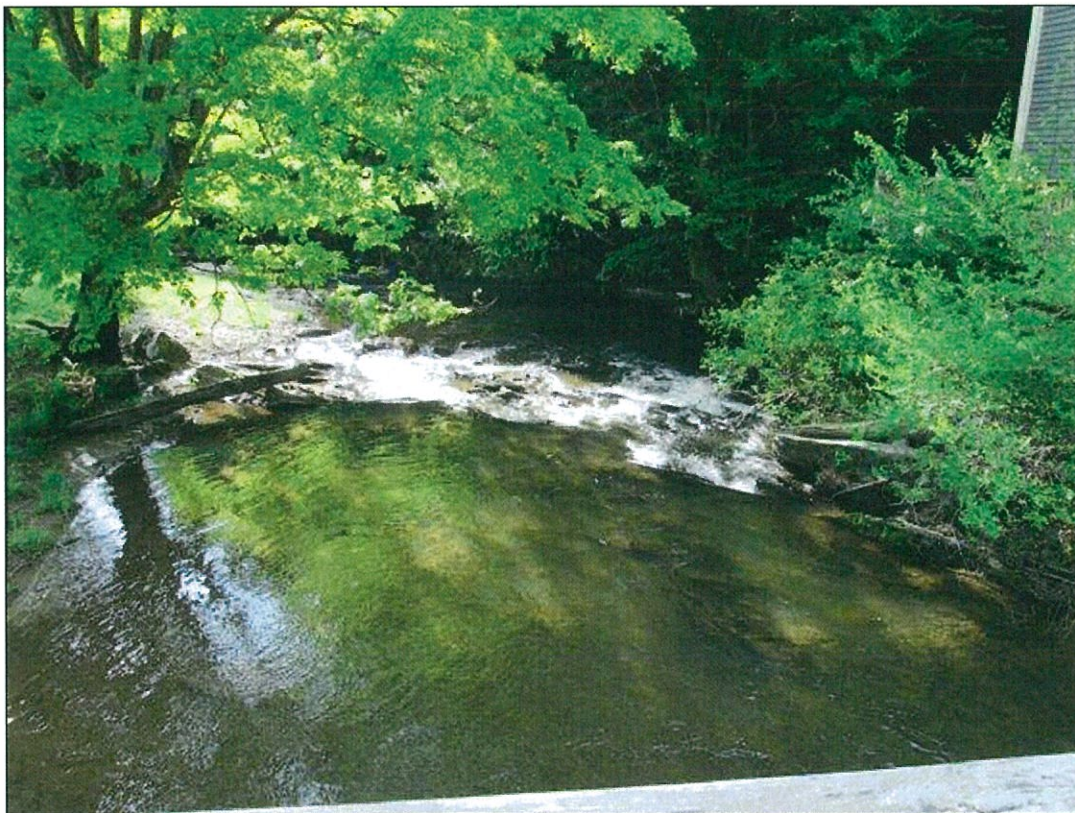
STREAMBED PROFILE (Downstream)

040321
(3 of 6)





DOWNSTREAM STRUCTURE ELEVATION



LOOKING DOWNSTREAM

Structure 040032

County ASHE

Date: 05/19/2014

Structure Photos

U/S STR FOR

040321

(5 of 6)



UNDERSIDE SPAN 2 (ALL SPANS SIMILAR)



BENT 2 LOOKING NORTH (ALL BENTS SIMILAR)

DS STR FOR

Structure 040483

County ASHE

Date: 05/14/2014

040321
Structure Photos

(6 of 6)



LOOKING EAST



LOOKING EAST AT APPROACH ROADWAY

040321 (1 of 2)



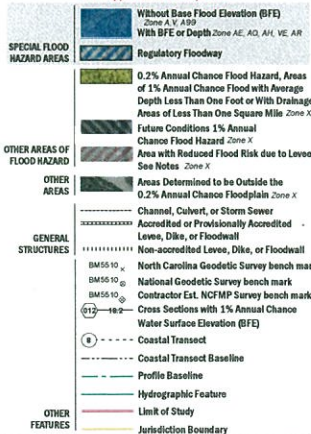
#321



This 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 approach to floodplain management to decrease the risk to the associated with flooding. This is demonstrated by the State's commitment to the flood hazard areas of the state and as a part of this effort, the State of North Carolina has joined in a Cooperative Flood Insurance Rate Map 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://FRIS.NC.GOV/FRIS](http://FRIS.NC.GOV/FRIS)



NOTES TO USERS

For information and questions about this map, available products, associated with the FIRM including historic versions of the FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eReference at 1-877-FEMA-MAP (1-877-366-2677) or visit the FEMA Map Service Center website at fema.gov. An accompanying Flood Insurance Study report, Letter of Map Amendment (LOMA) or Letter of Map Amendment (LOMA) revising portions of this panel, and digital versions of this FIRM may be available. Visit the North Carolina Floodplain Mapping Program website at <http://www.ncfloodplain.org> or contact the FEMA Map Service Center.

Community mapping and/or adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM data. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide 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 1-800-654-6622.

New map information shown on this FIRM was provided in digital format by the North Carolina Floodplain Mapping Program (NCFMP). The source of this information can be determined from the metadata available in the digital FIRM database and in the Technical Support Data Notebook (TSDN).

ACCREDITED LEVEE NOTES TO USERS: If an accredited levee note appears on this panel check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1 percent annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection. To mitigate flood risk in residential areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA website at <http://www.fema.gov/floodinsurance>.

PROVISIONALLY ACCREDITED LEVEE NOTES TO USERS: If a Provisionally Accredited Levee (PAL) note appears on this panel, check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1 percent annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection. To mitigate flood risk in residential areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA website at <http://www.fema.gov/floodinsurance>.

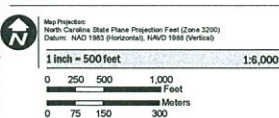
LIMIT OF MODERATE WAVE ACTION (LIMWA) NOTE: For some coastal flooding from the ACE Zone category has been divided by a Limit of Moderate Wave Action (LIMWA). The LIMWA represents the approximate limit of the 1.5 foot cresting wave. 1.5 meters wave height between the VE Zone and the LIMWA. For information on the LIMWA for areas where VE Zones are not identified, visit www.fema.gov or call the FEMA Map Service Center at 1-800-344-6622.

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 newly built or substantially improved or after the date(s) indicated on the map. For more information visit <http://www.fema.gov/floodinsurance>. Contact the FEMA Map Service Center at 1-800-344-6622.

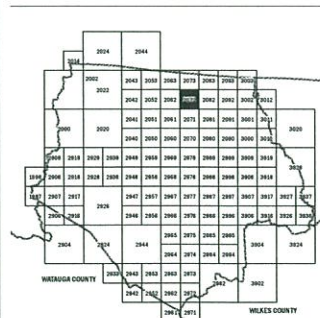
Legend:

- CBRS Area
- Otherwise Protected Area

SCALE



PANEL LOCATOR



NATIONAL FLOOD INSURANCE PROGRAM

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTH CAROLINA

Panel 2072

Panel Contains:

COMMUNITY

ASHE COUNTY

CID PANEL SUFFIX

370007 2072 J

MAP NUMBER

371.1207200J

MAP REVISED

11/4/2009

1030000 FEET

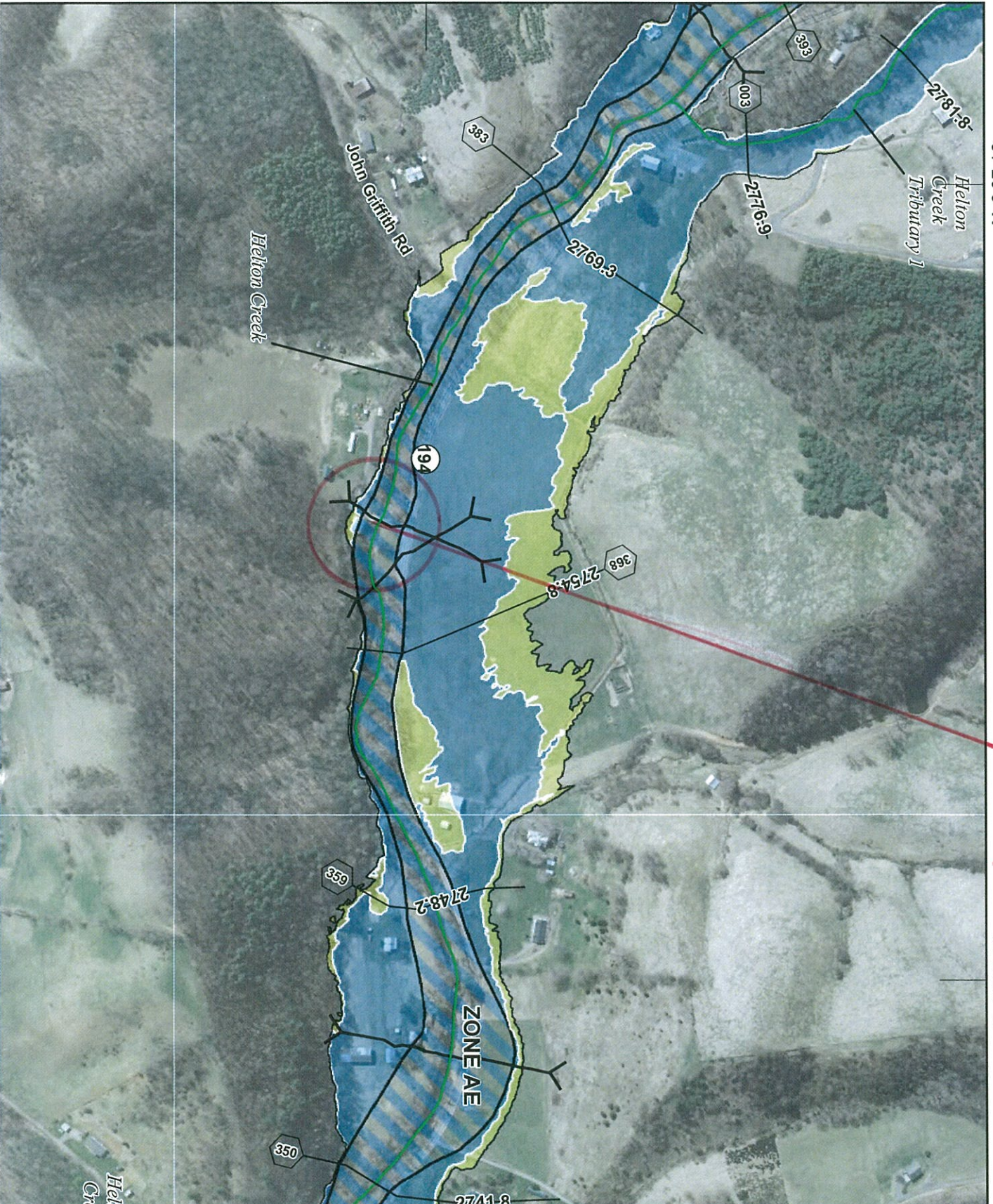
1270000 FEET

81°29'0"W

81°28'30"W

040321 (2 of 2)

36°33'0"N



040321

