

OFFICE ESTIMATE

1 @ 45' Bridge

Project# 1.7BP.11.R.103

TIP# _____

Let Date _____

WBS# _____

PREDESIGN-PRESURVEY REPORT

County WATAUGA (Div. 11)

Bridge# 940.26.1 B-C

Road# SR 1304 ✓ MARION THOMAS ROAD

Stream COVE CREEK ✓

Type Of Request: POC Force Account TIP NCMA

Date 4/15/14 Name Wsh

Assigned To RCH ✓

Checked By MJY - 4/22/14

Prior Survey Date NONE (attach copy of prior survey) BRN: NO CO. FILE NO

Study By Scour Section NO

Flood Zone AE Detail Study LIMITED Date 12/3/09 Panel# 1984 ☐

B.M. Info N/A

Quad Map SHERWOOD Drainage Area = 8.5 SQ MI From STREAM STATS

Q25 = 1900 cfs Q50 = 2200 cfs Q100 = 2600 cfs Method REG. EQU. RURAL
REGION 2

LONG 81°45'56.83" LAT. 36°18'34.26"

81.76579 36.31007

EXISTING BRIDGE INFORMATION

Location 125 FT. E. JCT. SR 1233

Average Daily Traffic 40 (2000) (0% TRK NOT GIVEN)

Length 36' Bed-To Crown 6' Water Depth 1'

Type Structure TIMBER FLR. ON I BEAMS, TIMBER CAPS, POST, SILLS, E. BTS.

Type Spans 1 @ 35' 6"

Upstream Structure 940110 (SINGLE 24' - 3" x 5'-6" ALUM. PL ARCH. (40' 6" ALONG E. CULVERT))

Location SR 1303 ON COVE CREEK (10' E. JCT SR 1233)

Bed-To Crown 6' (1' DEEP) Prior Survey _____

Downstream Structure 940108 (1 @ 45' 6") TIMBER FLR. CAPS, POST, CONC SILLS.

Location SR 1305 ON COVE CRK. (150' E. JCT. SR 1233). (L = 46')

Bed-To Crown 12' (2' DEEP) Prior Survey _____

SCS Watershed N/A

YES - N.C. WILDLIFE RESOURCES

ENVIRONMENTAL

TVA: YES

ESM:

HATCHERY

Trout Stream NO - DWQ Anadromous Fish NO Primary Nursery Area YES

High Quality Waters NO Nutrient Sensitive Waters NO

SUPPORTED WATER

Near Water Supply Intake NO CAMA County NO

Stream Classification C # 8-15 (FROM SOURCE TO)

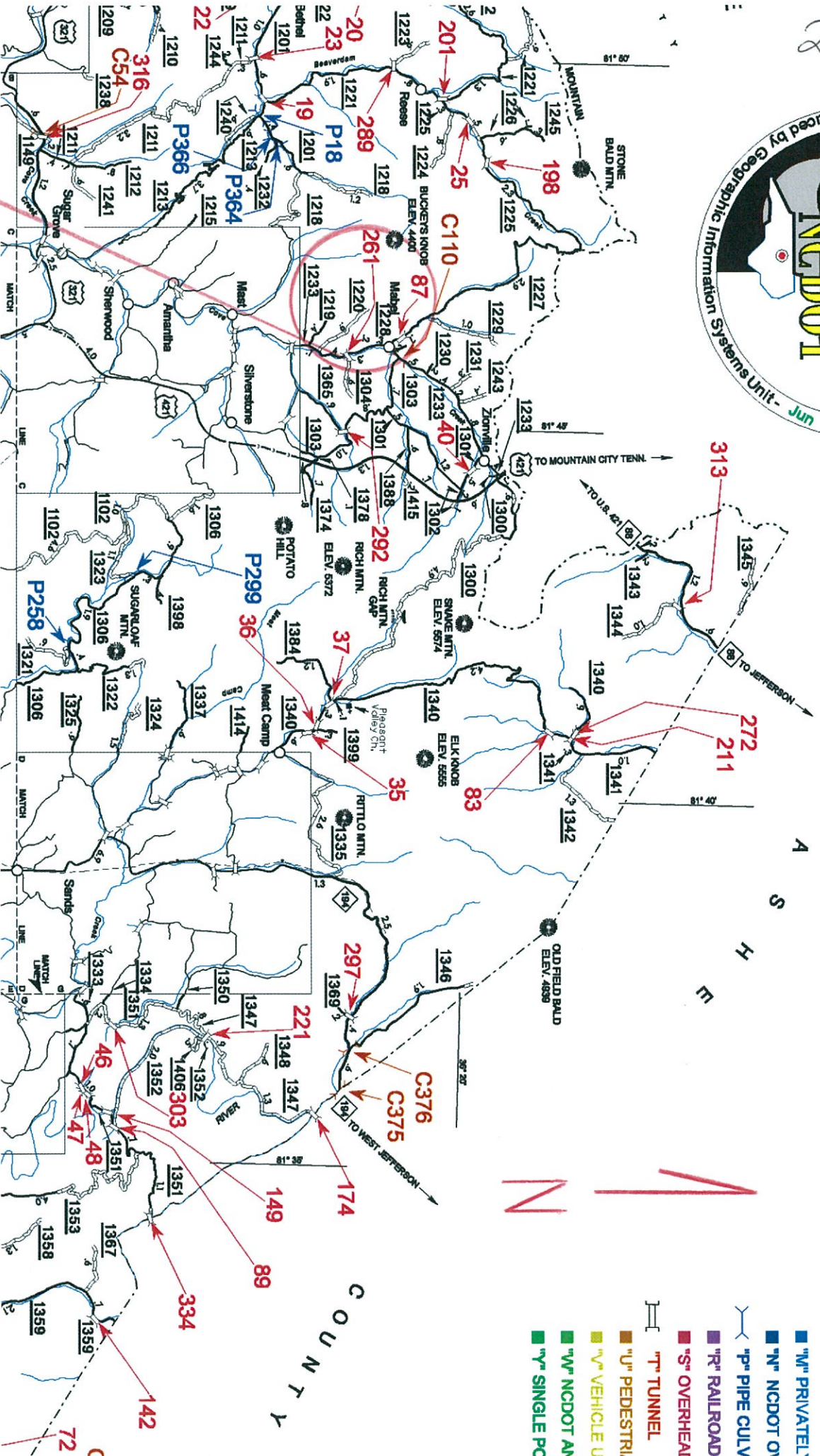
DENR River Basin Info. WATAUGA

(WATAUGA RIVER)

1, 4, 20, 30

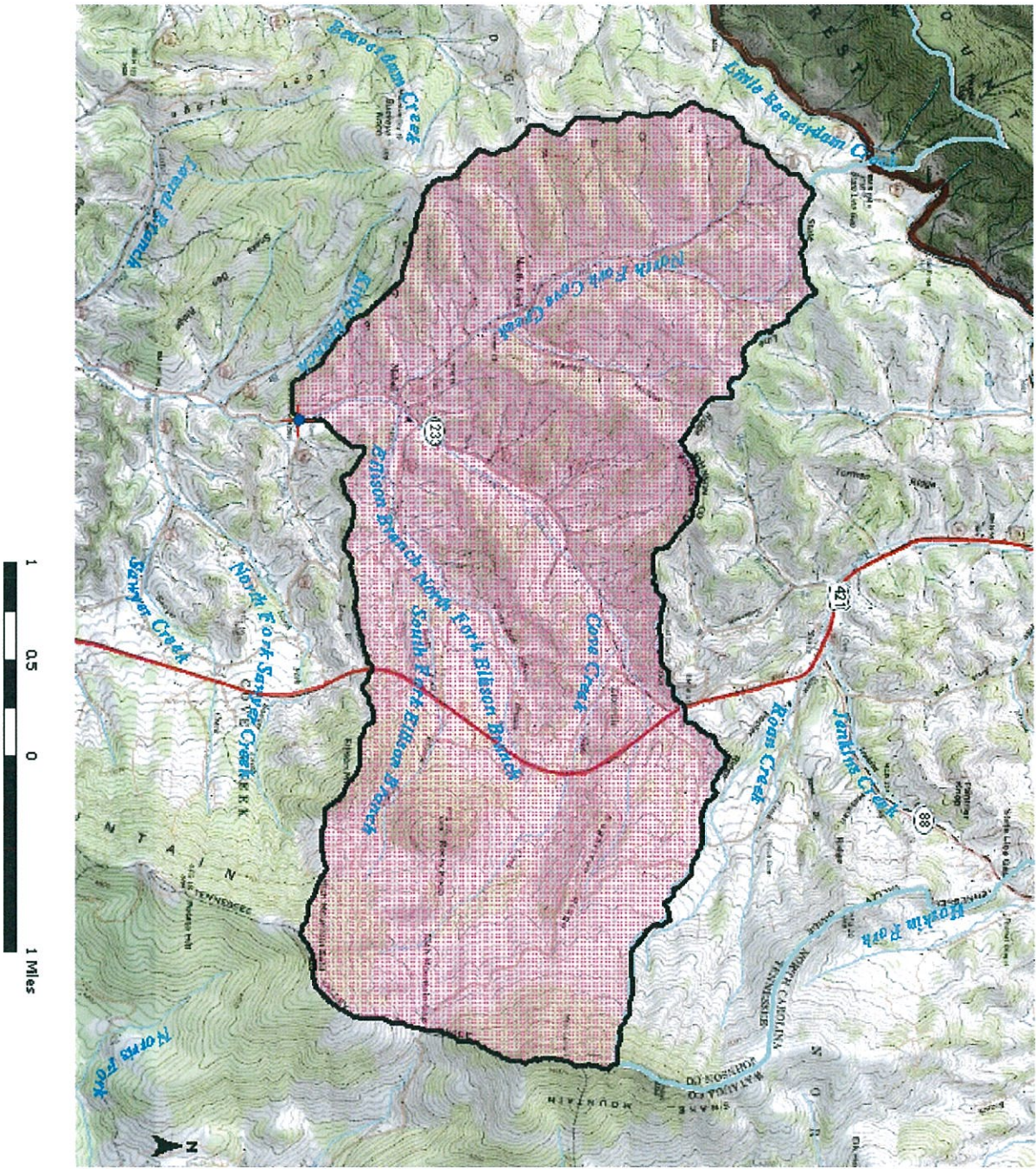


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#261

WATAUGA 940261
DA = 8.5 SQ. MI.





North Carolina StreamStats

Streamstats Ungaged Site Report

Date: Wed Apr 16 2014 09:17:50 Mountain Daylight Time

Site Location: North_Carolina

NAD27 Latitude: 36.3100 (36 18 36)

NAD27 Longitude: -81.7661 (-81 45 58)

NAD83 Latitude: 36.3102 (36 18 37)

NAD83 Longitude: -81.7659 (-81 45 57)

Drainage Area: 8.54 mi²

Percent Urban: 5.5 %

Percent Impervious: 0.4 %

Peak Flows Region Grid Basin Characteristics			
100% Peak Southeast US 2009 5158 (8.54 mi ²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	8.54	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			
100% Peak urban Blue Ridge-Piedmont FS007-00 (8.54 mi ²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	8.54	0.04	41
Area of Impervious Surfaces (percent)	0.40 (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 Streamflow Statistics					
Statistic	Flow (ft ³ /s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
PK2	583	35		334	1020
PK5	1040	34		600	1810
PK10	1400	35		792	2470
PK25	1880	38		1030	3450
PK50	2230	40		1180	4220
PK100	2660	42		1360	5200
PK200	3020	44		1490	6140
PK500	3600	48		1680	7670

Urban Flows Region Grid Streamflow Statistics					
Statistic	Flow (ft ³ /s)	Standard Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
PK2U	86.7				
PK5U	201				
PK10U	310				
PK25U	567				
PK50U	749				
PK100U	961				

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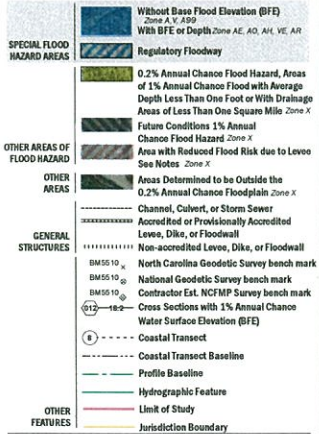


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This digital Flood Insurance Rate Map (FIRM) was produced through a unique cooperative partnership between the State of North Carolina and the Federal Emergency Management Agency (FEMA). The State of North Carolina has requested a map series approach to floodplain management to decrease the risk associated with flooding. This is demonstrated by the State's commitment to map flood hazard areas at the local level. As a part of this effort, the State of North Carolina has entered into a Cooperative Technical 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://FRIS.NC.GOV/FRIS](http://FRIS.NC.GOV/FRIS)



NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, line to order products or the National Flood Insurance Program in general, please visit the FEMA Map Information Center at <http://www.fema.gov>. An accompanying Flood Insurance Study report, Letter of Map Amendment (LOMA) or Letter of Map Amendment (LOMA) is available at the FEMA Map Information Center at <http://www.fema.gov>. For more information on flood insurance, interested parties should visit the FEMA website at <http://www.fema.gov>.

Communities seeking flood insurance on 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.

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

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, individual risk assessment and other protective measures. For more information on flood insurance, interested parties should visit the FEMA website at <http://www.fema.gov>.

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, individual risk assessment and other protective measures. For more information on flood insurance, interested parties should visit the FEMA website at <http://www.fema.gov>.

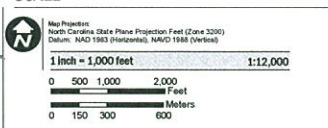
LIMIT OF MODERATE WAVE ACTION NOTES TO USERS: For some coastal flooding zones the AE Zone category has been divided by a Limit of Moderate Wave Action (LMWA). The LMWA represents the approximate landward limit of the 1.5-foot breaking wave. The effects of waves hazards between the VE Zone and the LMWA (or between the shoreline and the LMWA for areas where VE Zones are not identified) will be similar to, but less severe than those in the VE Zone.

Limit of Moderate Wave Action (LMWA)

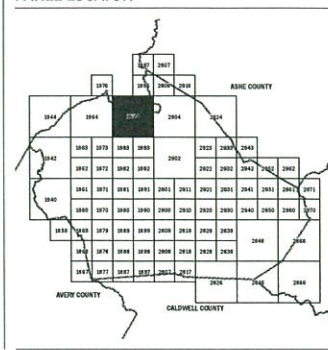
COASTAL BARRIER RESOURCES SYSTEM (CBRS) NOTE
This map may include approximate boundaries of the CBRS for informational purposes only. Flood insurance is not indicated on the map. For more information see <http://www.fema.gov> publications on coastal barriers, the U.S. Fish and Wildlife Service Coastal Service Center at 1-800-344-6852.

CBRS Area **Otherwise Protected Area**

SCALE



PANEL LOCATOR



National Flood Insurance Program

NORTH CAROLINA FLOODPLAIN MAPPING PROGRAM
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

NORTH CAROLINA

PANEL 1984

Panel Contains:
COMMUNITY
WAZUGA COUNTY

CID PANEL SUFFIX
370261 1984

MAP NUMBER
37103198400J
MAP REVISED
12/3/2009

940261

WATAUGA COUNTY
UNINCORPORATED AREAS

370251

36°19'0"N

36°18'30"N

三十一

1180000 FEET

81°46'30"W

81°46'0"W

81°45'30"W

81°45'0"W

81°44'30"W

26/1

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NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGE MANAGEMENT UNIT

ATTENTION

PRIORITY MAINTENANCES
TEMPORARY REPAIR

BRIDGE INSPECTION REPORT

INSPECTION TYPE: Routine Inspection - Contract

COUNTY WATAUGA BRIDGE NUMBER 940261 INSPECTION CYCLE 0 YRS
ROUTE SR1304 ACROSS COVE CREEK M.P. 0

LOCATION 125 FT.E.JCT.SR1233

SUPERSTRUCTURE TIMBER FLOOR ON I-BEAMS(LOW WATER TYPE)

SUBSTRUCTURE E.BTS: TIMBER CAPS/TIMBER POST&SILL @ 5'-10 CENTERS

SPANS 1 @ 35'-6

LONGITUDE 81° 45' 56.83" LATITUDE 36° 18' 36.26"

INSPECTION DATE 07/02/2013 PRESENT CONDITION POOR

PRESENT POSTING Y SV 21 TTST 27 PROPOSED POSTING

OTHER SIGNS PRESENT (4) DELINEATORS, (2) ONE LANE BRIDGE



WEST APPROACH LOOKING EAST

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>

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BRIDGE MANAGEMENT UNIT

DATA ON EXISTING STRUCTURE

Run Date: 08/15/2013

COUNTY : WATAUGA DIVISION : 11 DISTRICT : 2 STRUCTURE NUMBER : 940261 LENGTH : 36 FEET

ROUTE CARRIED : SR1304 FEATURE INTERSECTED : COVE CREEK

LOCATED : 125 FT.E.JCT.SR1233 BRIDGE NAME : CITY :

FUNC. CLASS : 09 SYST.ON : NFA SYST.UNDER : NFA ADT & YR : 40 2000 RAIL TYPE : LT 0 RT 0

BUILT : 1966 BY : BMU PROJ : FED.AID PROJ : DESIGN LOAD : Unknown

REHAB : BY : PROJ : ALIGNMENT : TAN SKEW : 90 LANES : ON 1 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(LOW WATER TYPE)

SUBSTRUCTURE : E.BTS: TIMBER CAPS/TIMBER POST&SILL @ 5'-10 CENTERS

SPANS : 1 @ 35'-6

BEAMS OR GIRDERS : 6 LINES 15 I-BEAMS @ 2'-5.5 CENTERS

FLOOR : 4X8 TIM/.5 AWS ENCROACHMENT : DECK (OUT TO OUT) : 14 FT

CLEAR ROADWAY : 13 FT BETWEEN RAILS : 0 FT SIDEWALK OR CURB : LT .5 FT RT .5 FT

VERT.CL.OVER : 999.9 FT

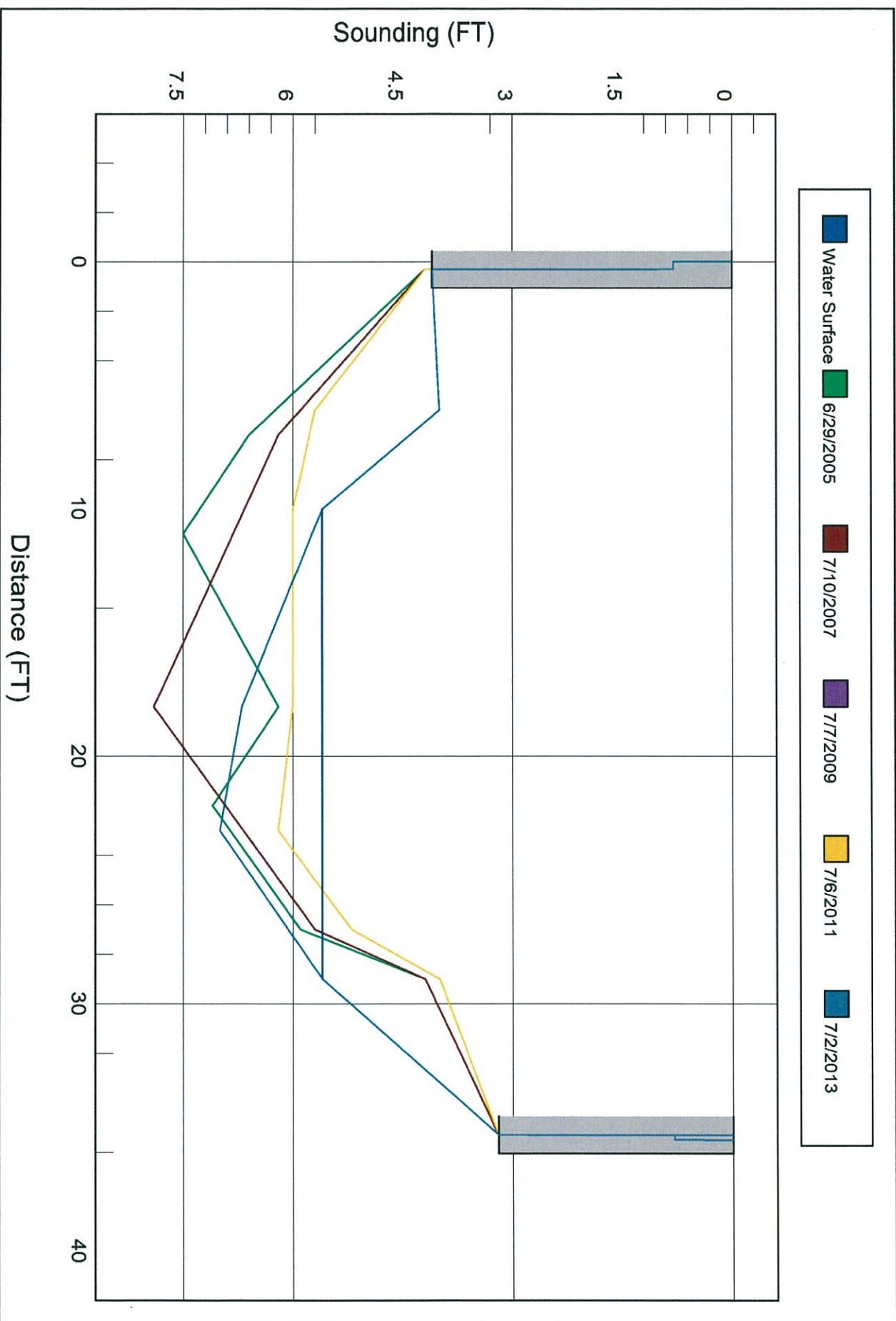
INV.RTG. : HS-1 OPE.RTG. : HS-1 CONTR.MEMBER : Int.bms POSTED : SV 21 TTST 27 DATE 03/29/2011

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

UNDER ROUTES AND CLEARANCES

REMARKS :

STREAMBED PROFILE (Downstream)





SOUTH BRIDGE ELEVATION



NORTH BRIDGE ELEVATION

Section 5.0 – Engineering Methods

Table 10—Limited Detailed Flood Hazard Data

Cross Section ¹	Stream Station ²	Flood Discharge (cfs)	1% Annual Chance Water-Surface Elevation (feet NAVD 88)	Non-Encroachment Width ³ (feet)
COVE CREEK				
340	33,999	6,883	2,756.8	205 / 61
343	34,283	6,883	2,758.1	29 / 199
345	34,519	6,883	2,759.2	35 / 100
347	34,681	6,883	2,760.2	22 / 77
350	35,043	6,883	2,765.1	70 / 85
357	35,685	6,523	2,771.2	71 / 75
360	35,986	6,523	2,772.0	24 / 111
363	36,320	6,523	2,773.0	22 / 109
368	36,750	6,523	2,775.0	22 / 218
373	37,344	5,834	2,779.5	204 / 25
378	37,771	5,834	2,781.6	181 / 21
381	38,062	5,834	2,783.6	67 / 32
384	38,396	5,834	2,786.8	250 / 18
387	38,715	5,834	2,788.9	192 / 17
388	38,834	5,834	2,790.1	178 / 17
393	39,296	5,834	2,795.5	18 / 71
395	39,496	5,834	2,797.9	145 / 18
398	39,755	5,834	2,799.1	181 / 86
400	39,964	5,834	2,799.9	75 / 125
402	40,227	5,834	2,801.9	44 / 94
405	40,491	5,834	2,804.7	16 / 130
407	40,737	5,834	2,806.4	16 / 148
410	40,957	5,834	2,808.4	16 / 162
412	41,151	5,834	2,809.7	16 / 149
415	41,489	5,834	2,812.4	70 / 44
419	41,858	5,175	2,819.3	33 / 151
420	41,996	5,175	2,819.4	16 / 95
422	42,225	5,175	2,820.2	100 / 19
430	42,952	5,175	2,826.9	13 / 136
432	43,226	5,027	2,828.6	15 / 90
434	43,440	5,027	2,832.1	126 / 69
440	43,967	4,910	2,843.6	32 / 32
441	44,147	4,910	2,850.3	17 / 83
445	44,523	4,910	2,859.7	24 / 85
448	44,805	4,910	2,869.1	30 / 99
450	45,040	4,910	2,875.7	24 / 26
454	45,359	4,910	2,882.7	27 / 98
456	45,560	4,910	2,884.8	211 / 46
458	45,778	4,773	2,885.6	376 / 47
465	46,523	4,773	2,893.5	411 / 55
468	46,758	4,773	2,896.8	409 / 23
472	47,204	4,773	2,902.8	278 / 71
474	47,408	4,773	2,904.2	262 / 86
476	47,643	4,773	2,906.8	309 / 50
479	47,874	4,773	2,909.9	264 / 80
481	48,125	4,773	2,914.0	199 / 50
485	48,471	4,773	2,919.7	47 / 200
488	48,846	4,773	2,926.1	24 / 156

R. @ RIVER
1. 46066

RIVER STA. 46066 BR U

Cove Creek Limited Detail Study Plan: Floodway Run 4/24/2007
Marion Thomas Rd (CC) forStructure ID: LDS_CC_09Approximate Su

