

office estimate  
Min Brg = 45'

FEMA DETAILED STUDY  
No State Stormwater

Print Record

Form PDR Action PDR P/P 412

GENERAL INFO

Date 5/24/2011 Div WBS TIP # 412  
14 Proj #  
Let Date

Redelineated  
HEC-2 Model

County JACKSON Bridge # 55  
Road # SR 1552 Road Name:

Stream LONG BRANCH

Req Type Name Assigned To Checked By  
Prior Survey NO Survey Date Recommendation  
Study by Scour Section

DRAINAGE INFO

Study Type Study Date  
Flood Zone AE Panel # 7549 DETAILED 4/19/2010

IS THERE A HEC RAS TYPE MODEL



BM info  
Quad SYLVA SOUTH  
Drainage Area 1.62 Sq. Mi. DA Source QUAD  
Q25 565 cfs Q 50 677 cfs Q100 812 cfs  
METHOD USGS REGRESSION EQUATION BASIN TYPE REGION 2

270  
3 812  
6  
21  
21  
2

EXISTING INFO

Location 100 FT. SOUTH JCT. SR 1331  
GPS CO-ORD(Dec) 35.307361 83.192056  
OAL 19' B-C 8' Depth 1'  
ADT 150 95 Skew 45 Stream Slope  
STRUCTURE TYPE TIMBER DECK/ TIMBER JOISTS  
Spans 1@18'-6"

UP STREAM INFO

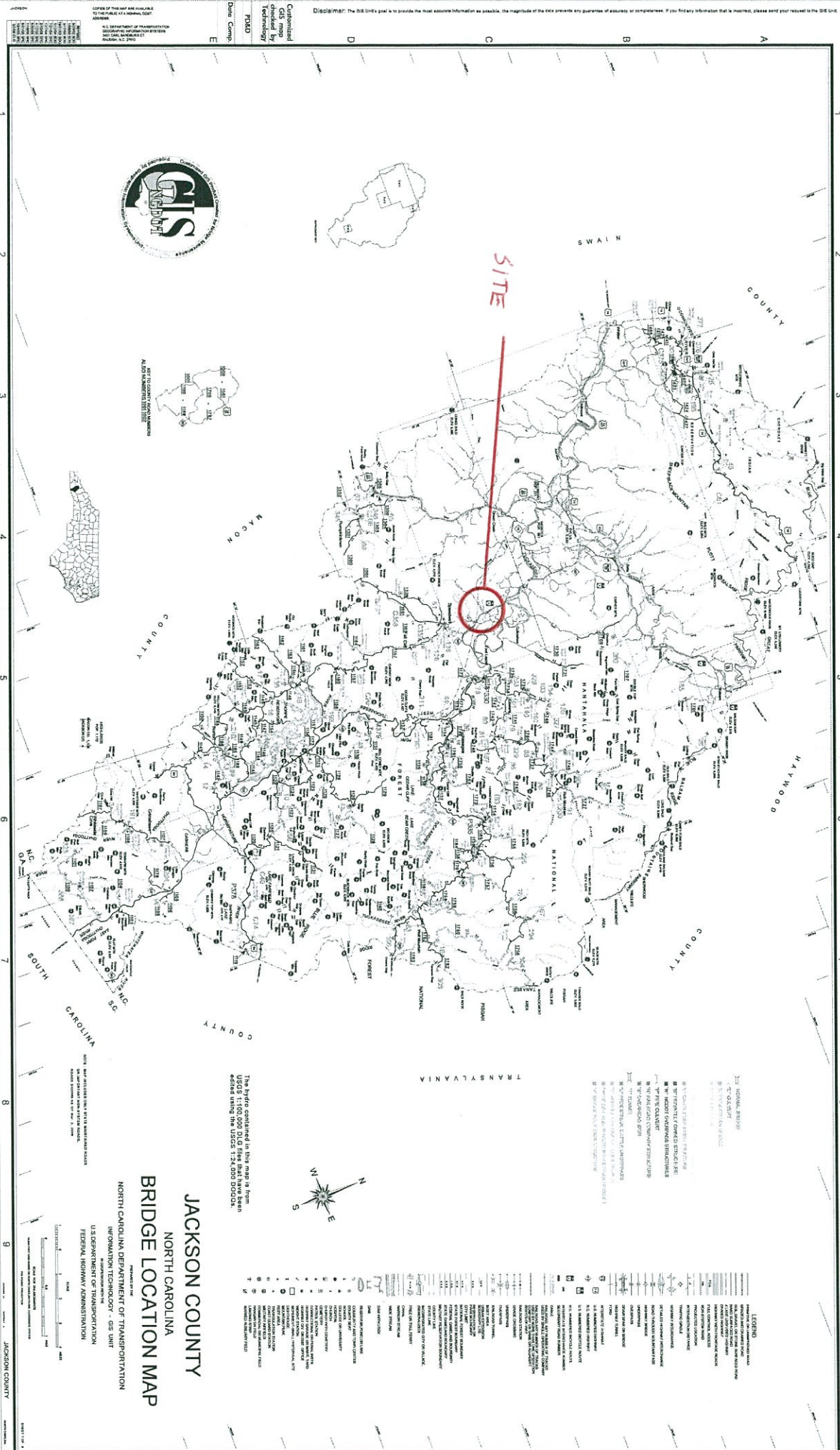
US Structure US Road #: US Str OAL  
US Location  
US B-C US Prior survey

DOWN STREAM INFO

DS Structure DS Road #: DS Str OAL  
DS Location  
DS B-C DS Prior survey SCS Watershed

ENVIRONMENTAL INFO

Trout Stream NO Anadromous Fish NO Primary Nursery Area NO  
High Quality Waters NO NUTRIENT SENSITIVE WATERS NO  
NEAR WATER SUPPLY INTAKE NO CAMA COUNTY NO  
STREAM CLASSIFICATION C  
DENR RIVER BASIN LITTLE TENNESSEE



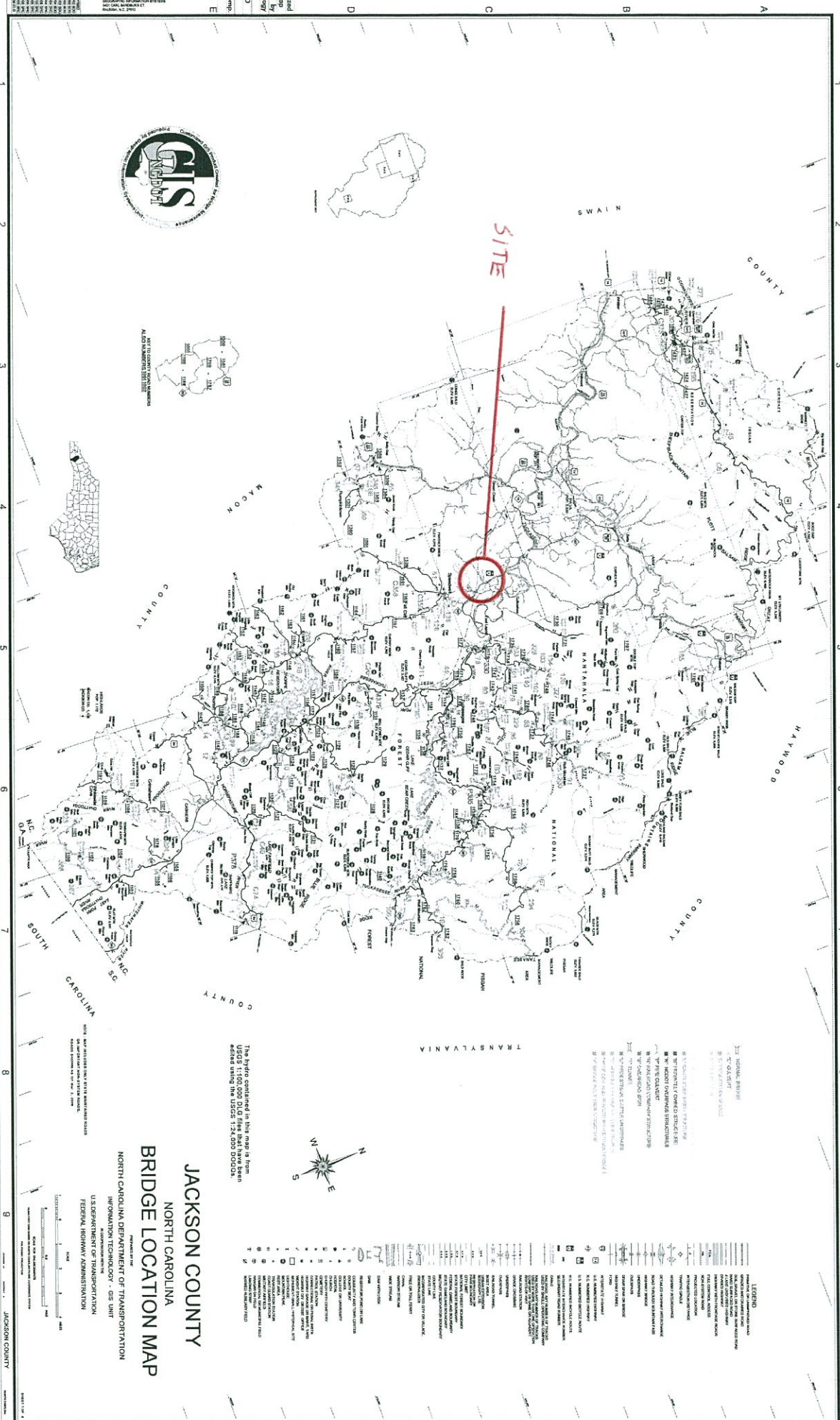
The hydro contour data was derived from the USGS 1:250,000 scale map of the area, which was digitized using the USGS 1:250,000 DOQQs.

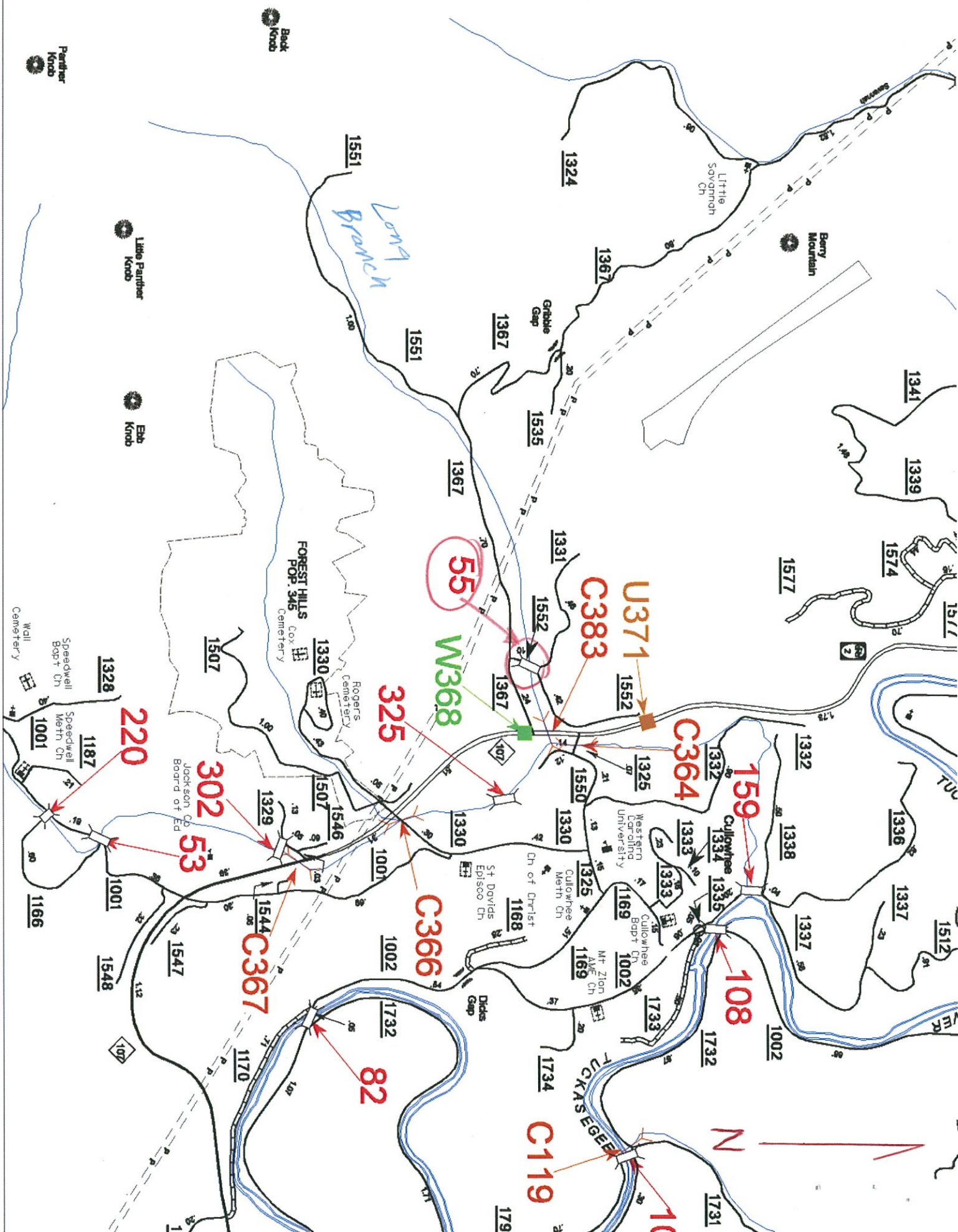


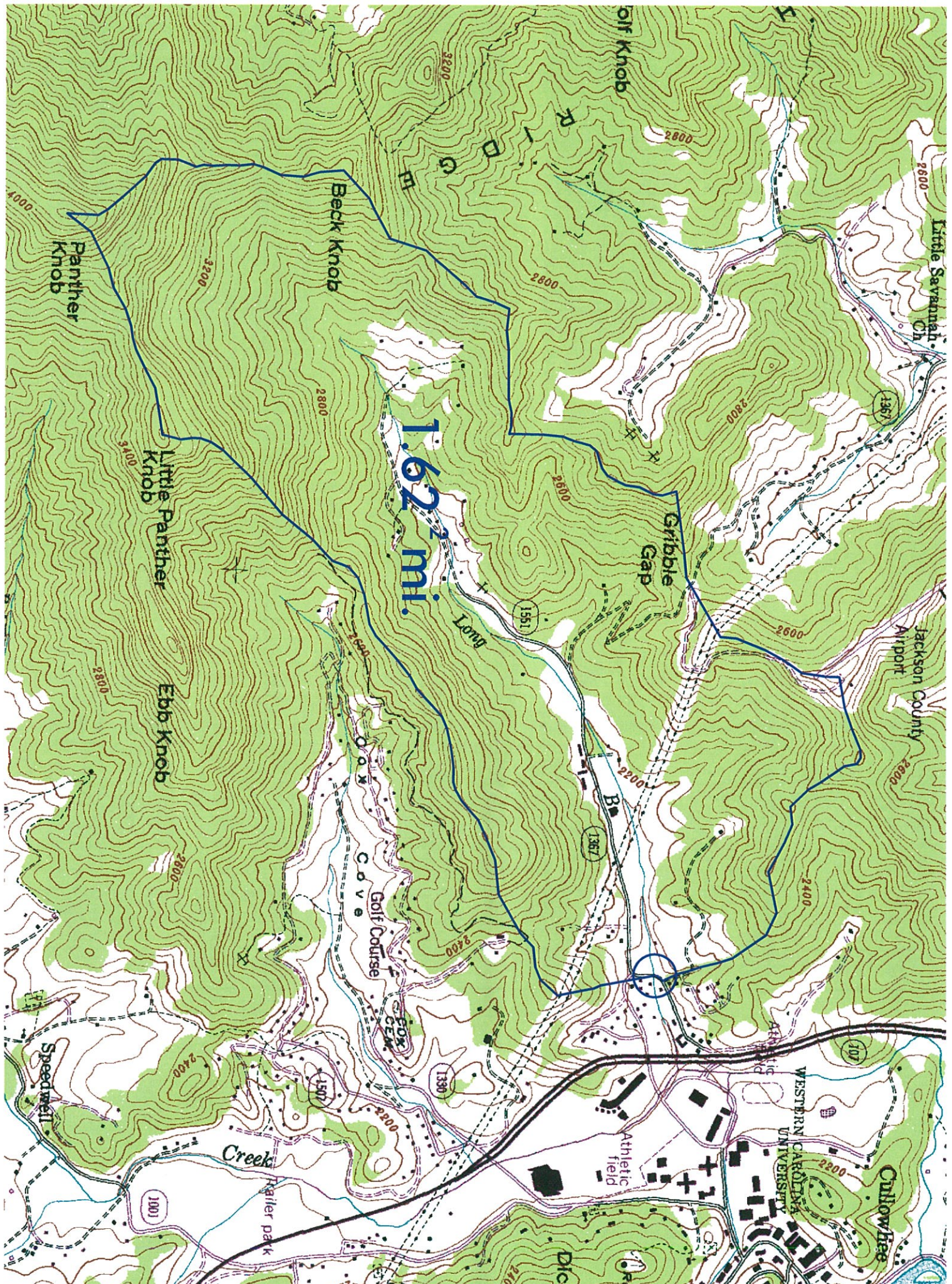
- 1. ROAD
- 2. RAILROAD
- 3. WATER
- 4. ELEVATION
- 5. BOUNDARY
- 6. PLACE NAME
- 7. ELEVATION
- 8. ELEVATION
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- 99. ELEVATION
- 100. ELEVATION

**JACKSON COUNTY**  
NORTH CAROLINA  
**BRIDGE LOCATION MAP**  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
INFORMATION TECHNOLOGY - GIS UNIT  
U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

Disclaimer: The GIS Unit's goal is to provide the most accurate information as possible, but the mapmaker does not guarantee accuracy or completeness. If you find any information that is incorrect, please send us your comments to the GIS Unit.







1.62 mi

Panther Knob

Beck Knob

Little Panther Knob

Ebb Knob

Long

Gribble Gap

Jackson County Airport

Cove

Golf Course

FOX CEM

Speedwell

Creek

Railier park

Athletic field

WESTERN CAROLINA UNIVERSITY

Cullowhee

This spreadsheet computes the 50-, 20-, 10-, 4-, 2-, 1-, 0.5-, and 0.2-percent chance exceedance flows for an ungaged site in Georgia, South Carolina, and North Carolina. The spreadsheet also includes the 95-percent prediction intervals, the minus and plus standard error of prediction intervals, and the average standard error of prediction. To use the spreadsheet, enter requested information in the yellow cells below.

Enter a site-description name:

JACKSON CO.,BRG 55, LONG BRANCH

Enter the explanatory variables:

|                                         |      |
|-----------------------------------------|------|
| Drainage area, in square miles          | 1.62 |
| Percent of basin in Hydrologic Region 1 |      |
| Percent of basin in Hydrologic Region 2 | 100  |
| Percent of basin in Hydrologic Region 3 |      |
| Percent of basin in Hydrologic Region 4 |      |
| Percent of basin in Hydrologic Region 5 |      |

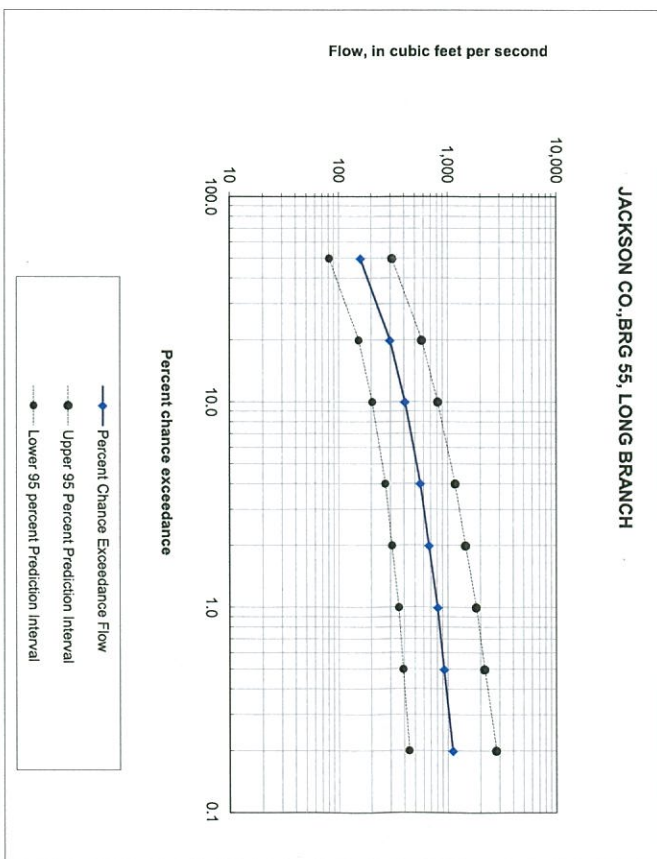
Sum of region percentages

100

Drainage area check  
DRAINAGE AREA WITHIN APPLICABLE LIMITS.

Applicable range of drainage area is 1 to 9,000 square miles.  
Hydrologic Region 1 corresponds to the USEPA Level III Ridge and Valley and Piedmont ecoregions  
Hydrologic Region 2 corresponds to the USEPA Level III Blue Ridge ecoregion  
Hydrologic Region 3 corresponds to the USEPA Level IV Sand Hills ecoregion  
Hydrologic Region 4 corresponds to the USEPA Level III Southeastern, Middle Atlantic Coastal, and Southern Coastal Plain ecoregions  
Hydrologic Region 5 corresponds to the lower portion of the USEPA Level IV Tifton Uplands ecoregion.

| Percent chance exceedance | Percent chance exceedance flow, in $\text{ft}^3/\text{s}$ | Lower 95 percent prediction interval flow, in $\text{ft}^3/\text{s}$ | Upper 95 percent prediction interval flow, in $\text{ft}^3/\text{s}$ | $-S_{PI}$ (percent) | $+S_{PI}$ (percent) | Average $S_{PI}$ (percent) |
|---------------------------|-----------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|---------------------|---------------------|----------------------------|
| 50                        | 160                                                       | 82                                                                   | 314                                                                  | -29.1               | 41.0                | 35.4                       |
| 20                        | 300                                                       | 154                                                                  | 584                                                                  | -28.8               | 40.5                | 35.0                       |
| 10                        | 411                                                       | 206                                                                  | 819                                                                  | -29.6               | 42.1                | 36.3                       |
| 4                         | 585                                                       | 271                                                                  | 1,180                                                                | -31.2               | 45.4                | 38.8                       |
| 2                         | 677                                                       | 312                                                                  | 1,470                                                                | -32.6               | 48.4                | 41.1                       |
| 1                         | 812                                                       | 359                                                                  | 1,840                                                                | -34.1               | 51.7                | 43.5                       |
| 0.5                       | 930                                                       | 393                                                                  | 2,200                                                                | -35.5               | 55.1                | 46.1                       |
| 0.2                       | 1,120                                                     | 446                                                                  | 2,810                                                                | -37.5               | 60.0                | 49.7                       |





NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
BRIDGE MANAGEMENT UNIT

ATTENTION

POST 1 THROUGH 3 AT ABUTMENT 2 HAVE BEEN  
SUPPLEMENTED SOMETIME IN THE PAST. THESE  
ARE CONSIDERED TEMP. REPAIRS.

# BRIDGE INSPECTION REPORT

INSPECTION TYPE: Routine Inspection

COUNTY JACKSON BRIDGE NUMBER 490055 INSPECTION CYCLE 2 YRS

ROUTE SR1552 ACROSS LONG BRANCH M.P. 0

LOCATION 100 FT.S.JCT.SR1331

SUPERSTRUCTURE TIMBER FLOOR ON TIMBER JOISTS

SUBSTRUCTURE E.BTS:TIM.CAPS/TIM.POST&SILLS;E.BT.2 ENC.IN CONC.@ VAR.CTS.

SPANS 1 @ 18'-6

LONGITUDE 83° 11' 31.4"

LATITUDE 35° 18' 26.5"

PRESENT CONDITION FAIR

INVENTORY RATING

INSPECTION DATE 01/21/2010

OPERATING RATING

PRESENT POSTING SV 11 TTST 18

PROPOSED POSTING

COMPUTER UPDATE

ANALYSIS DATE

POSTING LETTER DATE

SUFFICIENCY RATING

OTHER SIGNS PRESENT DELINEATORS [3] AND NARROW BRIDGE [2]



| SIGN NOTICE<br>ISSUED FOR |                 | NUMBERED<br>REQUIRED |
|---------------------------|-----------------|----------------------|
| No                        | WEIGHT LIMIT    |                      |
| Yes                       | DELINEATORS     | 1                    |
| No                        | NARROW BRIDGE   |                      |
| No                        | ONE LANE BRIDGE |                      |
| No                        | LOW CLEARANCE   |                      |

LOOKING NORTH

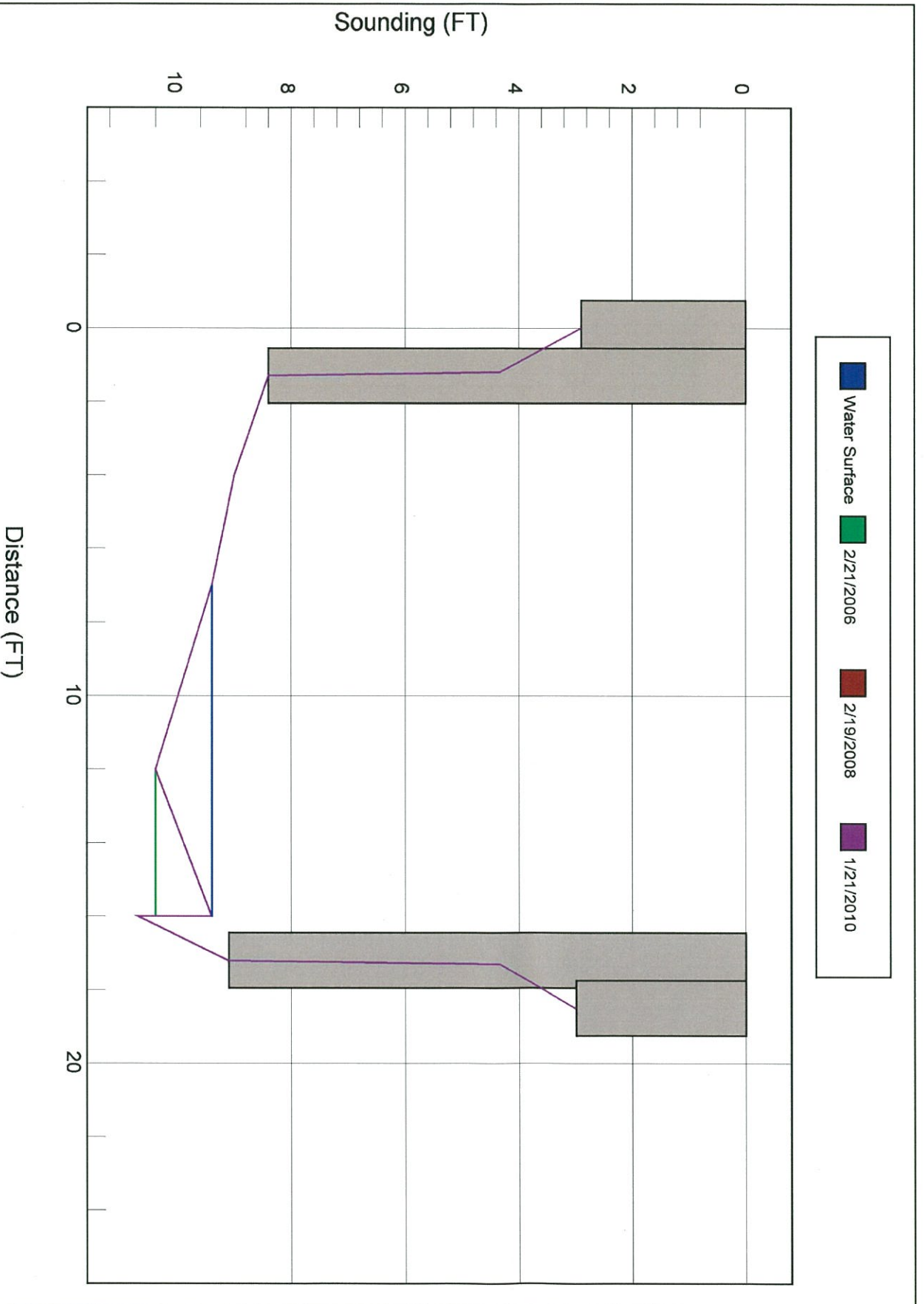
BRIDGE MANAGEMENT UNIT  
DATA ON EXISTING STRUCTURE

Run Date: 04/19/2010

|                                                                               |  |                                |  |                                      |  |                                           |  |                                   |  |
|-------------------------------------------------------------------------------|--|--------------------------------|--|--------------------------------------|--|-------------------------------------------|--|-----------------------------------|--|
| COUNTY :<br>JACKSON                                                           |  | DIV :<br>14                    |  | DIST :<br>2                          |  | STRUCTURE NUMBER :<br>490055              |  | LENGTH :<br>19 FEET               |  |
| ROUTE CARRIED :<br>SR1552                                                     |  |                                |  | FEATURE INTERSECTED :<br>LONG BRANCH |  |                                           |  |                                   |  |
| LOCATED :<br>100 FT.S.JCT.SR1331                                              |  |                                |  | BRIDGE NAME :                        |  |                                           |  |                                   |  |
| FUNC. CLASS :<br>09                                                           |  | SYST.ON :<br>NFA               |  | SYST.UNDER :<br>NFA                  |  | ADT & YR :<br>150 1995                    |  | RAIL TYPE :<br>LT 227 RT 227      |  |
| BUILT :<br>1954                                                               |  | BY :<br>BMU                    |  | PROJ :                               |  | FED.AID PROJ :                            |  | DESIGN LOAD :<br>Other or Unknown |  |
| REHAB :                                                                       |  | BY :<br>BMU                    |  | PROJ :<br>5.9651                     |  | ALIGNMENT :<br>TAN                        |  | SKREW :<br>45                     |  |
|                                                                               |  |                                |  |                                      |  |                                           |  | LANES :<br>ON 2 UNDER             |  |
| NAVIGATION :<br>VC 0.0 FT HC 0.0 FT                                           |  |                                |  | HT. CRN. TO BED :<br>8 FT            |  |                                           |  | WATER DEPTH :<br>1 FT             |  |
| SUPERSTRUCTURE :<br>TIMBER FLOOR ON TIMBER JOISTS                             |  |                                |  |                                      |  |                                           |  |                                   |  |
| SUBSTRUCTURE :<br>E.BTS:TIM.CAPS/TIM.POST&SILLS;E.BT.2 ENC.IN CONC.@ VAR.CTS. |  |                                |  |                                      |  |                                           |  |                                   |  |
| SPANS :<br>1 @ 18'-6                                                          |  |                                |  |                                      |  |                                           |  |                                   |  |
| BEAMS OR GIRDERS :<br>10 LINES 6X12 TIMBER JOISTS @ 2' CENTERS                |  |                                |  |                                      |  |                                           |  |                                   |  |
| FLOOR :<br>4X8 TIM/1.5 AWS                                                    |  | ENCROACHMENT :                 |  |                                      |  | DECK (OUT TO OUT) :<br>20.0 FT            |  |                                   |  |
| CLEAR ROADWAY :<br>19.0 FT                                                    |  | BETWEEN RAILS :<br>19.8 FT     |  |                                      |  | SIDEWALK OR CURB :<br>LT 0.4 FT RT 0.4 FT |  |                                   |  |
| VERT.CL.OVER :<br>99 FT 99 IN                                                 |  | VERT.CL.UNDER :<br>00 FT 00 IN |  |                                      |  | HOR.CL.UNDER :<br>0.0 FT                  |  |                                   |  |
| INV.RTG. :<br>HS-1                                                            |  | OPE.RTG. :<br>HS-1             |  | CONTR.MEMBER :<br>Int.jsts           |  | POSTED :<br>SV 11                         |  | TTST 18 DATE 04/25/2006           |  |
| SYSTEM :<br>Secondary S.R. Route                                              |  |                                |  |                                      |  | GREEN LINE ROUTE :<br>N                   |  |                                   |  |
| 2ND OPENING :                                                                 |  | 3RD OPENING :                  |  | 4TH OPENING :                        |  | 5TH OPENING :                             |  |                                   |  |
| REMARKS :                                                                     |  |                                |  |                                      |  |                                           |  |                                   |  |

Top of Rail = 0 FT (Sounding)

### STREAMBED PROFILE (Downstream)



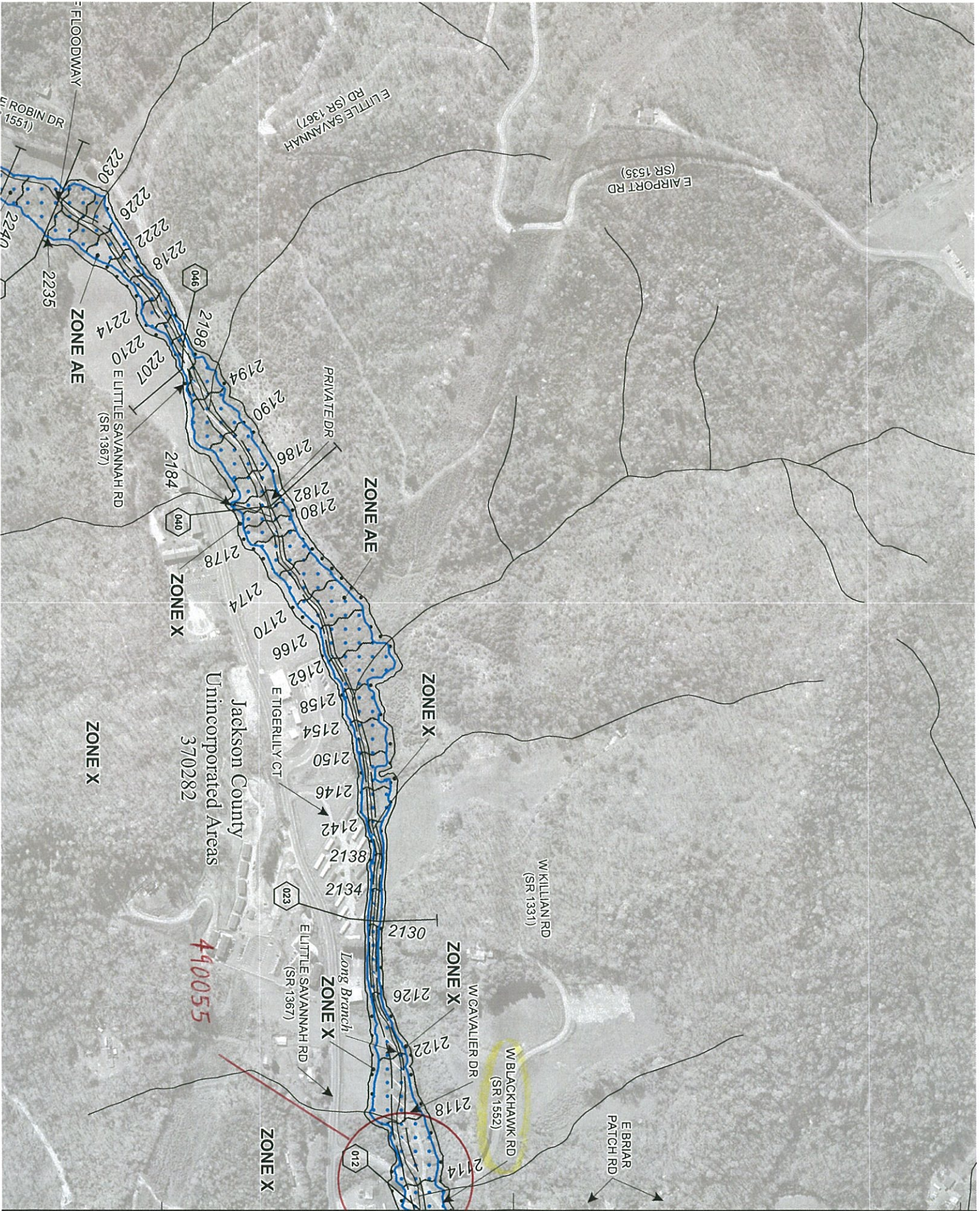


DOWNSTREAM



UPSTREAM





JOINS PANEL 7559

39° 10' 00" M

35° 18' 30"

39° 09' 00" M

| FLOODING SOURCE |                       | FLOODWAY        |                                     |                                          | BASE FLOOD<br>WATER-SURFACE ELEVATION<br>(FEET NAVD 88) |                     |                  |          |
|-----------------|-----------------------|-----------------|-------------------------------------|------------------------------------------|---------------------------------------------------------|---------------------|------------------|----------|
| CROSS SECTION   | DISTANCE <sup>1</sup> | WIDTH<br>(FEET) | SECTION<br>AREA<br>(SQUARE<br>FEET) | MEAN<br>VELOCITY<br>(FEET PER<br>SECOND) | REGULATORY                                              | WITHOUT<br>FLOODWAY | WITH<br>FLOODWAY | INCREASE |
| Culowhee Creek  |                       |                 |                                     |                                          |                                                         |                     |                  |          |
| 082             | 8,231                 | 170             | 1,138                               | 4.0                                      | 2,098.2                                                 | 2,098.2             | 2,099.2          | 1.0      |
| 089             | 8,932                 | 113             | 792                                 | 6.0                                      | 2,100.7                                                 | 2,100.7             | 2,101.6          | 0.9      |
| 092             | 9,249                 | 87              | 777                                 | 6.0                                      | 2,103.7                                                 | 2,103.7             | 2,104.4          | 0.7      |
| 095             | 9,478                 | 125             | 1,133                               | 4.0                                      | 2,104.6                                                 | 2,104.6             | 2,105.4          | 0.8      |
| 096             | 9,599                 | 112             | 1,348                               | 4.0                                      | 2,106.6                                                 | 2,106.6             | 2,107.4          | 0.8      |
| 105             | 10,546                | 121             | 495                                 | 10.0                                     | 2,113.0                                                 | 2,113.0             | 2,113.0          | 0.0      |
| 114             | 11,406                | 96              | 747                                 | 6.0                                      | 2,117.4                                                 | 2,117.4             | 2,117.9          | 0.5      |
| 116             | 11,601                | 96              | 800                                 | 6.0                                      | 2,118.9                                                 | 2,118.9             | 2,119.5          | 0.6      |
| 119             | 11,874                | 190             | 1,484                               | 3.0                                      | 2,120.7                                                 | 2,120.7             | 2,121.2          | 0.5      |
| 123             | 12,277                | 160             | 1,135                               | 4.0                                      | 2,120.9                                                 | 2,120.9             | 2,121.6          | 0.7      |
| 132             | 13,211                | 161             | 682                                 | 7.0                                      | 2,124.3                                                 | 2,124.3             | 2,125.0          | 0.7      |
| Long Branch     |                       |                 |                                     |                                          |                                                         |                     |                  |          |
| 002             | 211                   | 60              | 296                                 | 3.3                                      | 2,093.0                                                 | 2,093.0             | 2,094.0          | 1.0      |
| 012             | 1,162                 | 80              | 254                                 | 3.6                                      | 2,112.5                                                 | 2,112.5             | 2,113.2          | 0.7      |
| 023             | 2,323                 | 25              | 69                                  | 11.9                                     | 2,130.3                                                 | 2,130.3             | 2,130.3          | 0.0      |
| 040             | 4,013                 | 40              | 168                                 | 4.3                                      | 2,182.9                                                 | 2,182.9             | 2,183.5          | 0.6      |
| 046             | 4,594                 | 40              | 336                                 | 2.0                                      | 2,205.2                                                 | 2,205.2             | 2,206.2          | 1.0      |
| 055             | 5,544                 | 30              | 61                                  | 10.2                                     | 2,234.6                                                 | 2,234.6             | 2,234.6          | 0.0      |

<sup>1</sup>Feet above mouth

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY  
JACKSON COUNTY, NC  
AND INCORPORATED AREAS

FLOODWAY DATA

CULLOWHEE CREEK – LONG BRANCH

NC Department of Transportation  
Division of Highways  
Highway Building  
1 S. Wilmington Street  
Raleigh, NC 27601

SUBJECT 490055 PROJECT \_\_\_\_\_  
PDR Jackson COUNTY  
PREPARED BY ADAB DATE 5/25/11 STATION \_\_\_\_\_  
CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_ STR NO \_\_\_\_\_ SHEET \_\_\_\_\_ OF \_\_\_\_\_

DA = 1.92 Sq. Mi.  
Q25 = 570 cfs Detailed Study

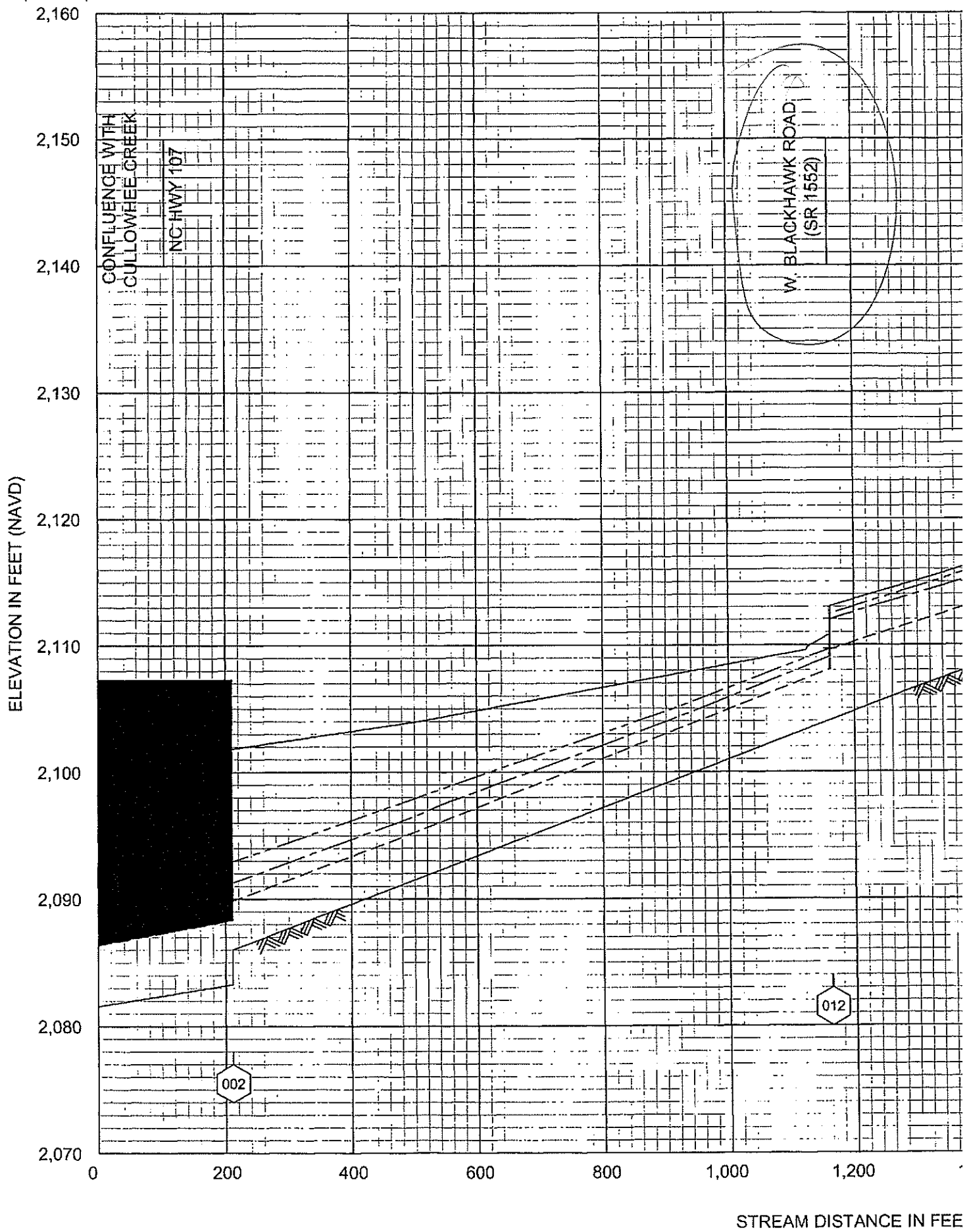
Channel bed = 8'

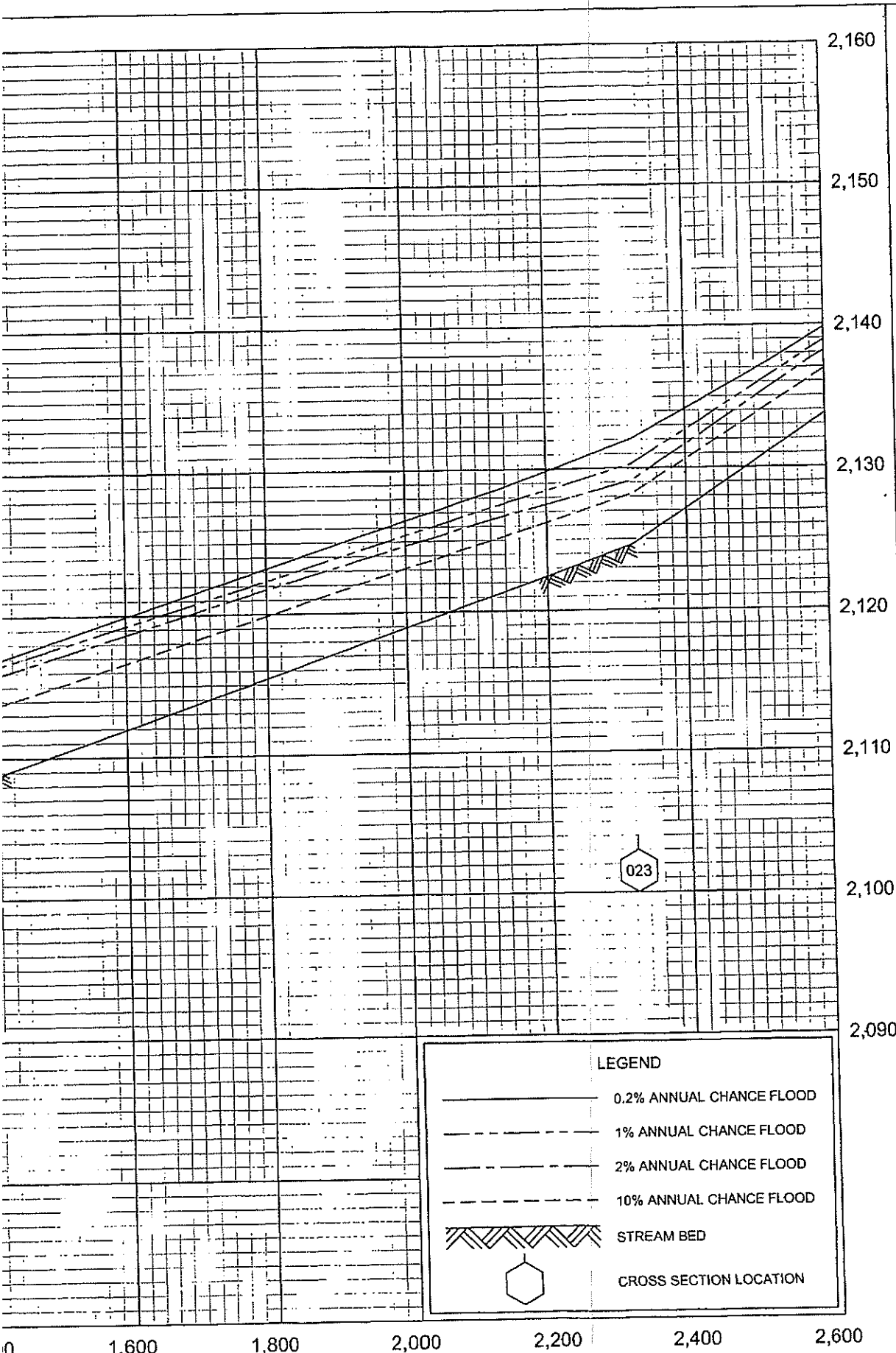
Avg Len = 19'

Bx1.5 = 12'

12'  
—  
43'

Min Brg = 45'





FLOOD PROFILES

LONG BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

JACKSON COUNTY, NC  
AND INCORPORATED AREAS

LEGEND

0.2% ANNUAL CHANCE FLOOD

1% ANNUAL CHANCE FLOOD

2% ANNUAL CHANCE FLOOD

10% ANNUAL CHANCE FLOOD

STREAM BED

CROSS SECTION LOCATION

BOVE MOUTH

06P