

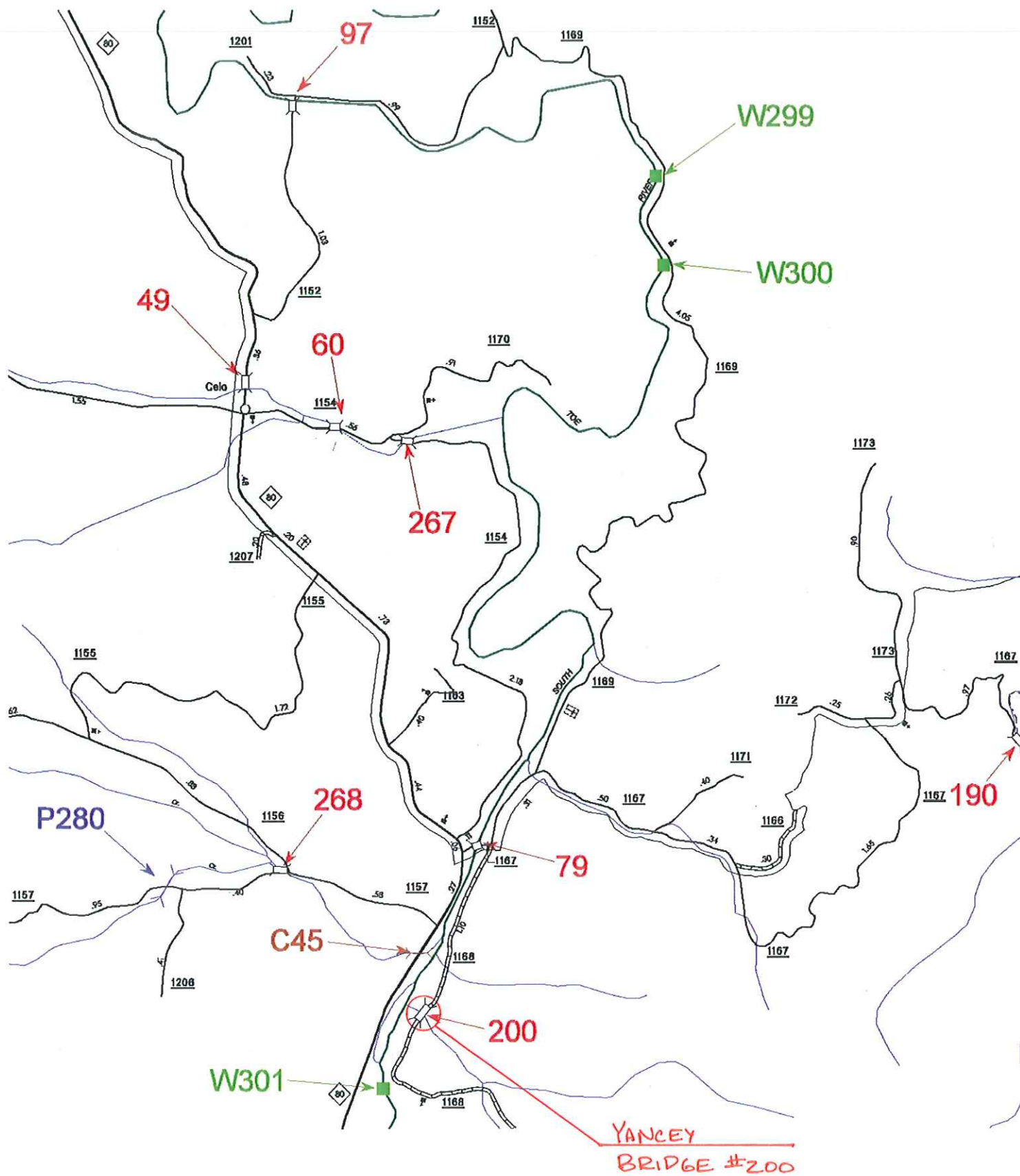
Office Estimate	<u>65' Bridge</u>	Project#	<u> </u>
MOA Required	<u>Yes</u>	TIP#	<u> </u>
		Let Date	<u> </u>
	PREDESIGN-PRESURVEY REPORT	WBS#	<u>17BP.13.R.87</u>
		Bridge#	<u>990200</u>
County	<u>Yancey</u>	Road#	<u>SR 1168</u>
		Name	<u>Hannah Branch</u>
		Stream	<u>Shuford Creek</u>
Type Of Request: POC	Force Account	TIP	NCMA
Date	<u>8/19/11</u>	Name	<u>MLH (Mulkey, Inc.)</u>
Checked By	<u>KBA/JKS (Mulkey, Inc.)</u>	Assigned To	<u>Mulkey, Inc.</u>
Prior Survey Date	<u>N/A</u>	(attach copy of prior survey)	
Study By Scour Section	<u>N/A</u>		
Flood Zone	<u>Yes</u>	Detail Study	<u>*No</u>
		Date	<u>June 2, 2009</u>
		Panel#	<u>0757</u>
B.M. Info	<u>SUSIE ZY0789</u>	<u>*Stream is in backwater from South Toe River</u>	
Quad Map	<u>Celo</u>	Drainage Area	<u>2.2 Sq. Mi.</u>
		From	<u>USGS Quad Map</u>
Q25	<u>700 cfs</u>	Q50	<u>850 cfs</u>
		Q100	<u>1000 cfs</u>
		Method	<u>USGS Regression</u>

EXISTING BRIDGE INFORMATION

Location	<u>0.7 Mi. S. Jct. SR 1167</u>		
Average Daily Traffic	<u>310 - Yr. 2000</u>		
Length	<u>19 Ft.</u>	Bed- To Crown	<u>8 Ft.</u>
		Water Depth	<u>1 Ft.</u>
Type Structure	<u>Timber Floor on Timber Joists; E. BTS: Timber Caps/Timber Post & Sills</u>		
Type Spans	<u>1@18'-6"</u>		
Upstream Structure	<u>N/A</u>		
Location	<u> </u>		
Bed- To Crown	<u> </u>	Prior Survey	<u> </u>
Downstream Structure	<u>N/A</u>		
Location	<u> </u>		
Bed- To Crown	<u> </u>	Prior Survey	<u> </u>
SCS Watershed	<u>N/A</u>		

ENVIRONMENTAL

Trout Stream	<u>Yes</u>	Anadromous Fish	<u>No</u>	Primary Nursery Area	<u>No</u>
High Quality Waters	<u>No</u>	Nutrient Sensitive Waters	<u>No</u>		
Near Water Supply Intake	<u>No</u>	CAMA County	<u>No</u>		
Stream Classification	<u>B; Tr; ORW</u>				
DENR River Basin Info.	<u>French Broad</u>				
State Stormwater Permit Required	<u>Yes</u>				





NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGE MANAGEMENT UNIT

ATTENTION PRIORITY MAINTENANCE

BRIDGE INSPECTION REPORT

INSPECTION TYPE: Routine Inspection

COUNTY YANCEY

BRIDGE NUMBER 990200

INSPECTION CYCLE 2 YRS

ROUTE SR1168

ACROSS SHUFORD CREEK

M.P. 0

LOCATION .7 MI.S.JCT.SR1167

SUPERSTRUCTURE TIMBER FLOOR ON TIMBER JOISTS

SUBSTRUCTURE E.BTS:TIMBER CAPS/TIMBER POST&SILLS @ 6' CENTERS

SPANS 1 @ 18'-6"

LONGITUDE 82° 11' 12.7"

LATITUDE 35° 49' 28.5"

PRESENT CONDITION FAIR

INVENTORY RATING

INSPECTION DATE 07/26/2011

OPERATING RATING

PRESENT POSTING SV 11 TTST 19

PROPOSED POSTING

COMPUTER UPDATE

ANALYSIS DATE

POSTING LETTER DATE

SUFFICIENCY RATING

OTHER SIGNS PRESENT DELINEATORS



NORTH

SIGN NOTICE
ISSUED FOR

NUMBERED
REQUIRED

No

WEIGHT LIMIT

No

DELINEATORS

No

NARROW BRIDGE

No

ONE LANE BRIDGE

No

LOW CLEARANCE

BRIDGE MANAGEMENT UNIT
DATA ON EXISTING STRUCTURE

Run Date: 08/08/2011

COUNTY : YANCEY		DIV : 13		DIST : 2		STRUCTURE NUMBER : 990200		LENGTH : 19 FEET	
ROUTE CARRIED : SR1168				FEATURE INTERSECTED : SHUFORD CREEK					
LOCATED : .7 MI.S.JCT.SR1167				BRIDGE NAME :				CITY :	
FUNC. CLASS : 09		SYST.ON : NFA		SYST.UNDER : NFA		ADT & YR : 310 2000		RAIL TYPE : LT 227 RT 227	
BUILT : 1963		BY : BMU		PROJ :		FED.AID PROJ :		DESIGN LOAD : Other or Unknown	
REHAB :		BY :		PROJ :		ALIGNMENT : TAN		SKEW : 90	
								LANES : ON 2 UNDER	
NAVIGATION : VC 0.0 FT HC 0.0 FT				HT. CRN. TO BED : 8 FT				WATER DEPTH : 1 FT	
SUPERSTRUCTURE : TIMBER FLOOR ON TIMBER JOISTS									
SUBSTRUCTURE : E.BTS:TIMBER CAPS/TIMBER POST&SILLS @ 6' CENTERS									
SPANS : 1 @ 18'-6"									
BEAMS OR GIRDERS : 11 LINES 6X12 TIMBER JOISTS @ 1'-9.625" CENTERS									
FLOOR : 4X8 TIM/2.5 AWS		ENCROACHMENT :				DECK (OUT TO OUT) : 20.1 FT			
CLEAR ROADWAY : 19.1 FT		BETWEEN RAILS : 19.8 FT				SIDEWALK OR CURB : LT 0.3 FT RT 0.3 FT			
VERT.CL.OVER : 99 FT 99 IN		VERT.CL.UNDER : 00 FT 00 IN				HOR.CL.UNDER : 0.0 FT			
INV.RTG. : HS-2		OPE.RTG. : HS-4		CONTR.MEMBER : Int. jsts7-8 &10		POSTED : SV 4 TTST 0		DATE 08/08/2011	
SYSTEM : Secondary S.R. Route						GREEN LINE ROUTE : N			
2ND OPENING :		3RD OPENING :		4TH OPENING :		5TH OPENING :			
REMARKS :									

Stream Bed Soundings

(See next sheet for profile sketch)

Bridge No: 990200 County: YANCEY Date: 07/26/2011 By: RWS

Record sounding from top of rail. Other location if needed: _____

Distance from Highwater Mark to top of rail: _____ Location of Highwater Mark: _____

DOWNSTREAM			UPSTREAM		
Distance (Station) (ft)	Sounding (ft)	Description	Distance (Station) (ft)	Sounding (ft)	Description
0	2.8				
0.3	2.8				
0.3	4.4				
1.3	4.4				
1.3	8.5				
4.3	8.5				
4.3	9.8	Water Surface/Water Edge (WSWE)			
4.3	10.5				
7.3	10.6				
11.3	10.5				
14.25	10.3				
14.3	9.8	Water Surface/Water Edge (WSWE)			
17.3	8.2				
17.301	4.4				
18.3	4.4				
18.301	2.8				
18.6	2.8				

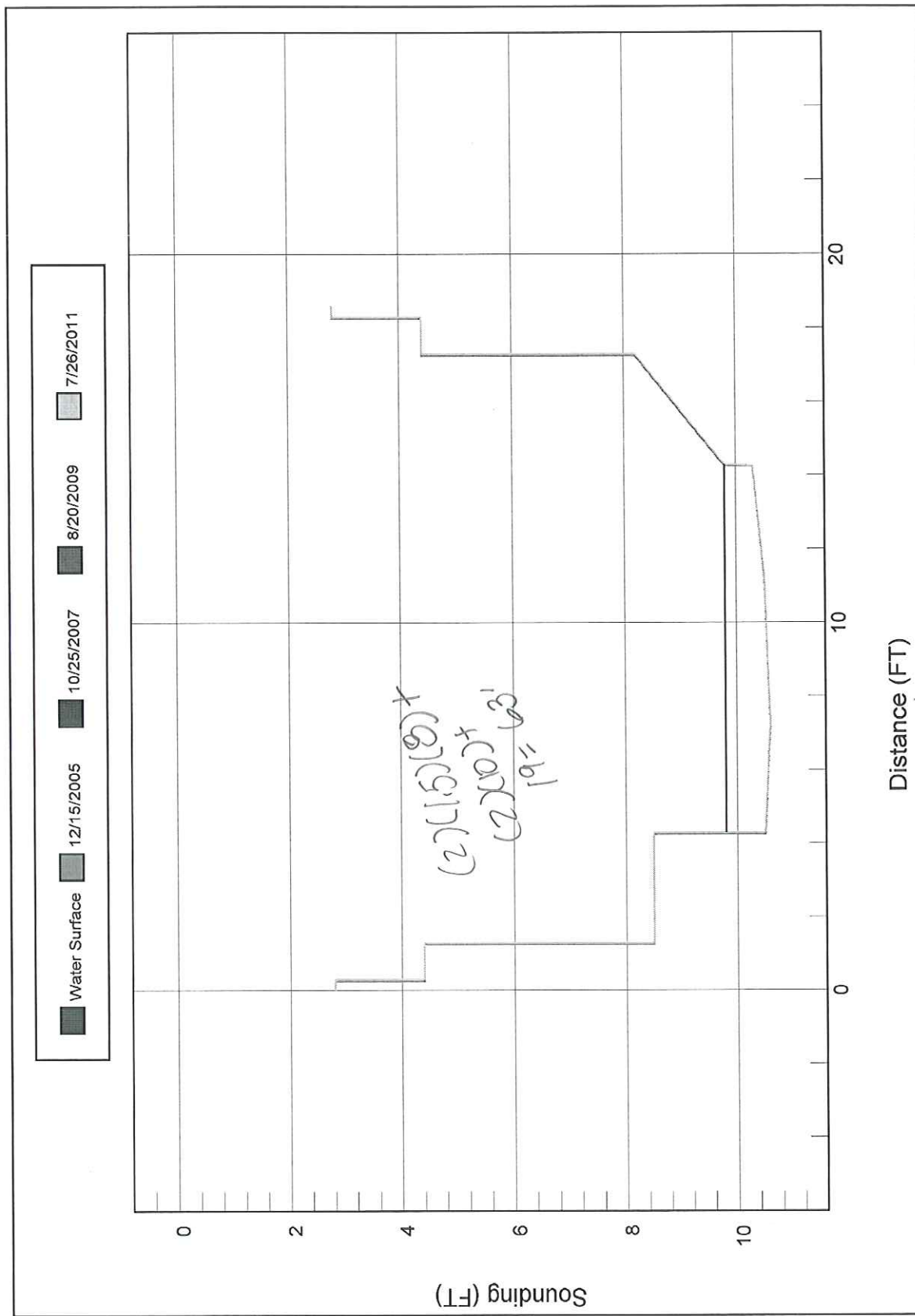
Bridge: 990200

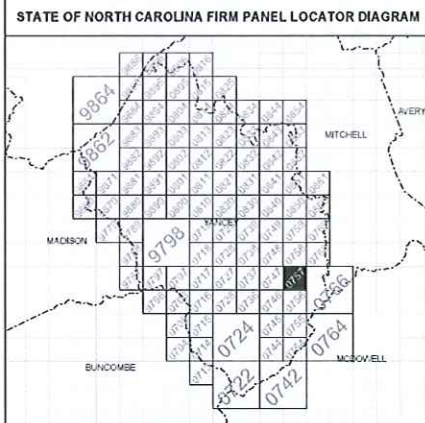
County YANCEY

Date: 07/26/2011

STREAMBED PROFILE (Downstream)

Top of Rail = 0 FT (Sounding)





DATUM INFORMATION

The projection used in the preparation of this map was the North Carolina State Plane (FIPSZONE 3200). The horizontal datum was the North American Datum of 1983, GRS80 ellipsoid. Differences in datum, ellipsoid, projection, or Universal Transverse Mercator zones used in the production of FIRM maps for adjacent jurisdictions may result in slight positional differences in map features across jurisdictional boundaries. These differences do not affect the accuracy of this FIRM. All coordinates on this map are in U.S. Survey Feet, where 1 U.S. Survey Foot = 1200/3937 Meters.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988 (NAVD 88). These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. An average offset between NAVD 88 and the National Geodetic Vertical Datum of 1929 (NGVD 29) has been computed for each North Carolina county. This offset was then applied to the NGVD 29 flood elevations that were not revised during the creation of this statewide format FIRM. The offsets for each county shown on this FIRM panel are shown in the vertical datum offset table below. Where a county boundary and a flooding source with unrevised NGVD 29 flood elevations are coincident, an individual offset has been calculated and applied during the creation of this statewide format FIRM. See Section 6.1 of the accompanying Flood Insurance Study report to obtain further information on the conversion of elevations between NAVD 88 and NGVD 29. To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the North Carolina Geodetic Survey at the address shown below. You may also contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

North Carolina Geodetic Survey
121 West Jones Street
Raleigh, NC 27601
(919) 733-3339
<http://www.ngs.noaa.gov>

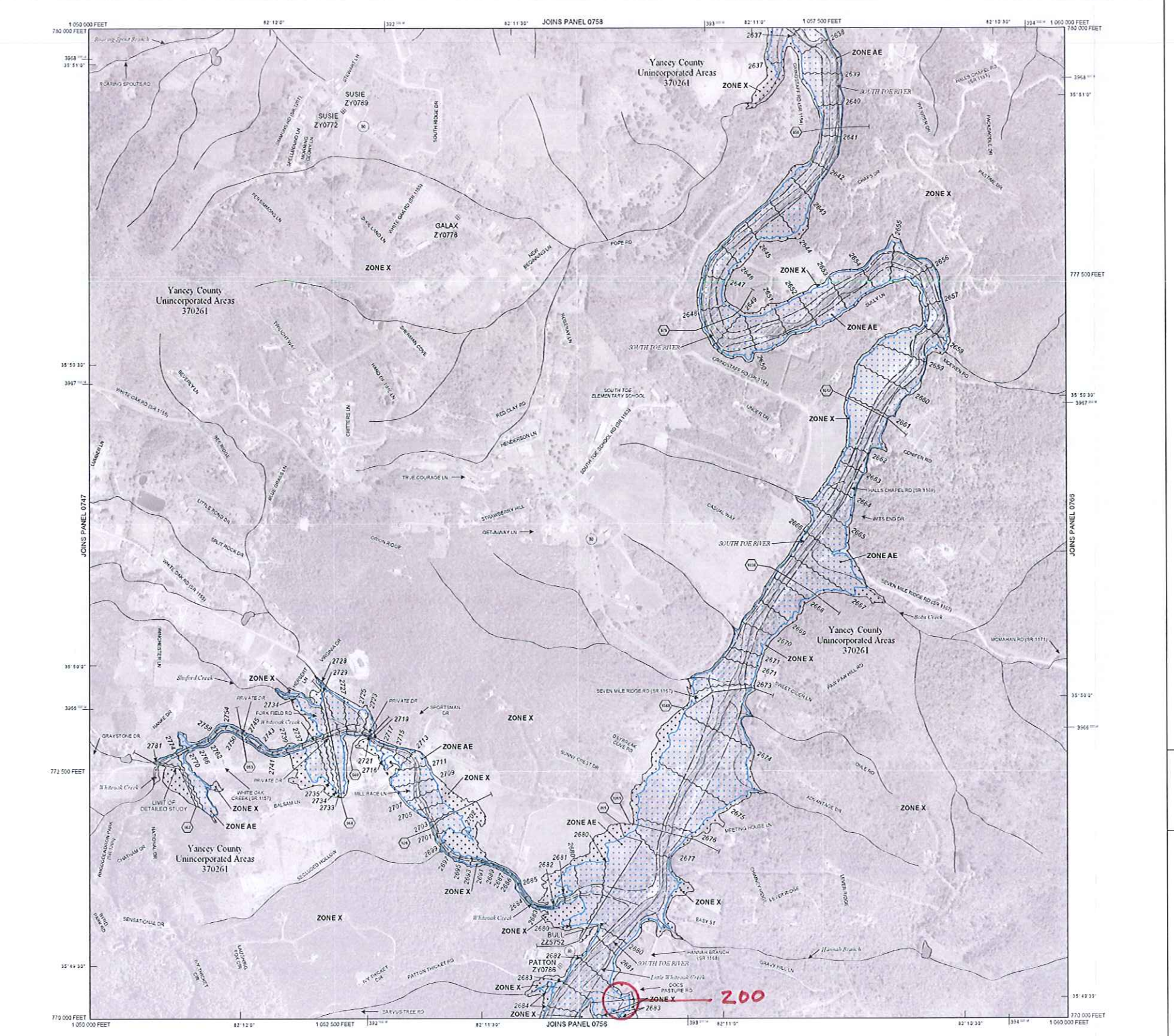
County	Vertical Datum Offset (ft)
Yancey	-0.15

Example: NAVD 88 = NGVD 29 + (-0.15)

All streams listed in the Flood Hazard Data Table below were studied by detailed methods using field survey. Other flood hazard data shown on this map may have been derived using either a coastal analysis or limited detailed riverine analysis. More information on the flooding sources studied by these analyses is contained in the Flood Insurance Study report.

FLOOD HAZARD DATA TABLE					Floodway Width (feet)
Cross Section	Stream Station	Flood Discharge (cfs)	1% Annual Chance (100-year) Water Surface Elevation (feet NAVD 88)	1% Annual Chance (100-year) Flood Depth (feet NAVD 88)	Left/Right Distance From The Center of Stream to Encroachment Boundary (feet NAVD 88)
SOUTH TOE RIVER					
950	95.040	NA	2,541.2	150	
975	97.522	NA	2,548.8	173	
1017	101.693	NA	2,651.1	130	
1036	103.646	NA	2,567.9	150	
1048	104.755	NA	2,672.9	350	
1065	106.426	NA	2,676.1	250	
WHITEOAK CREEK					
005	528	NA	2,580.0	95	
025	2,640	NA	2,702.4	40	
040	3,590	NA	2,721.4	80	
044	4,382	NA	2,733.0	35	
053	5,290	NA	2,748.0	25	
062	6,178	NA	2,781.2	40	

*Field check notes:
Direction includes topographic effects from South Toe River.
Value is inaccurate, as the floodway has been adjusted in this area to match topographic-based floodplain boundaries.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood) also known as the base flood is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AO, AR, AH, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently derelict. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE AR9 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction, no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain. Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations. Flood depths or flood velocities.

Base Flood Elevation line and value, elevation in feet*

Base Flood Elevation value where uniform within zone, elevation in feet*

*Referenced to the North American Vertical Datum of 1988

Cross section line

Transect line

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)

4276 M

1000-meter Universal Transverse Mercator grid ticks, zone 17

2500-foot grid values North Carolina State Plane coordinate system (FIPSZONE 3200, State Plane NAD 83 feet)

North Carolina Geodetic Survey bench mark (for more information visit <http://www.ngs.noaa.gov>)

National Geodetic Survey bench mark (for more information visit <http://www.ngs.noaa.gov>)

NGS-56 GPS 2.5 cm Vertical Control Marks or Contractor-Established NGMIP Bench Marks (for more information visit <http://www.ngs.noaa.gov>)

BM5510

BM5510

BM5510

M 1.5

GRID NORTH

MAP SCALE 1" = 500' (1 : 6,000)

250 0 500 1000 FEET

150 0 150 300 METERS

Cooperating Technical State

FEMA'S COOPERATING TECHNICAL STATE

This digital Flood Insurance Rate Map (FIRM) was produced through a unique cooperative partnership between the State of North Carolina and the Federal Emergency Agency (FEMA). The State of North Carolina has implemented a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the State's commitment to map floodplain areas at the local level. As a part of this effort, the State of North Carolina has joined in a Cooperating Technical State agreement with FEMA to produce and maintain this digital FIRM.

www.ncfloodmaps.com

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or Floodway Widths have been determined, users are encouraged to consult the Flood Profiles, Floodway Data, Limited Detailed Flood Hazard Data, and/or Summary of Submitter Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded values. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Boundaries of regulatory floodways shown on the FIRM for flooding sources studied by detailed methods were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data for flooding sources studied by detailed methods as well as non-encroachment widths for flooding sources studied by limited detailed methods are provided in the FIS report for this jurisdiction. The FIS report also provides instructions for determining a floodway using non-encroachment widths for flooding sources studied by limited detailed methods.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 4.4 "Flood Protection Measures" of the Flood Insurance Study report for information on the flood control structures in this jurisdiction.

Base map information and geospatial data used to develop this FIRM were obtained from various organizations, including the participating local community(ies), state and federal agencies, and/or other sources. The primary base for this FIRM is aerial imagery acquired by the State. The time period of collection for the State imagery is 2006 and 2008. Information and geospatial data supplied by the local community(ies) that met FEMA base map specifications were considered the preferred source for development of the base map. See geospatial metadata for the associated digital FIRM for additional information about base map preparation.

Base map features shown on this map, such as corporate limits, are based on the most up-to-date data available at the time of publication. Changes in the corporate limits may have occurred since this map was published. Map users should consult the appropriate community official or website to verify current conditions of jurisdictional boundaries and base map features. This map may contain roads that were not considered in the hydraulic analysis of streams where no new hydraulic model was created during the production of this statewide format FIRM.

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

If you have questions about this map, or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-365-2627) or visit the FEMA website at <http://www.fema.gov>.

An accompanying Flood Insurance Study report, Letter of Map Revision (LOMR) 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.ncfloodmaps.com> or contact the FEMA Map Service Center at 1-800-358-5618 for information on all related products associated with this FIRM. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov>.

MAP REPOSITORY

Refer to listing of Map Repositories on Map Index or visit <http://www.ncfloodmaps.com>.

EFFECTIVE DATE OF FLOOD INSURANCE RATE MAP PANEL

JUNE 2, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to statewide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent, the North Carolina Division of Emergency Management or the National Flood Insurance Program at the following phone numbers or websites:

NC Division of Emergency Management
(919) 715-8000 <http://www.ncemergency.com>

National Flood Insurance Program
1-800-638-6622 <http://www.fema.gov/businessinfo>

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0757J

FIRM

FLOOD INSURANCE RATE MAP

NORTH CAROLINA

PANEL 0757

(SEE LOCATOR DIAGRAM OR MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY YANCEY COUNTY

CID No. 370261

PANEL 0757

SUFFIX J

EFFECTIVE DATE

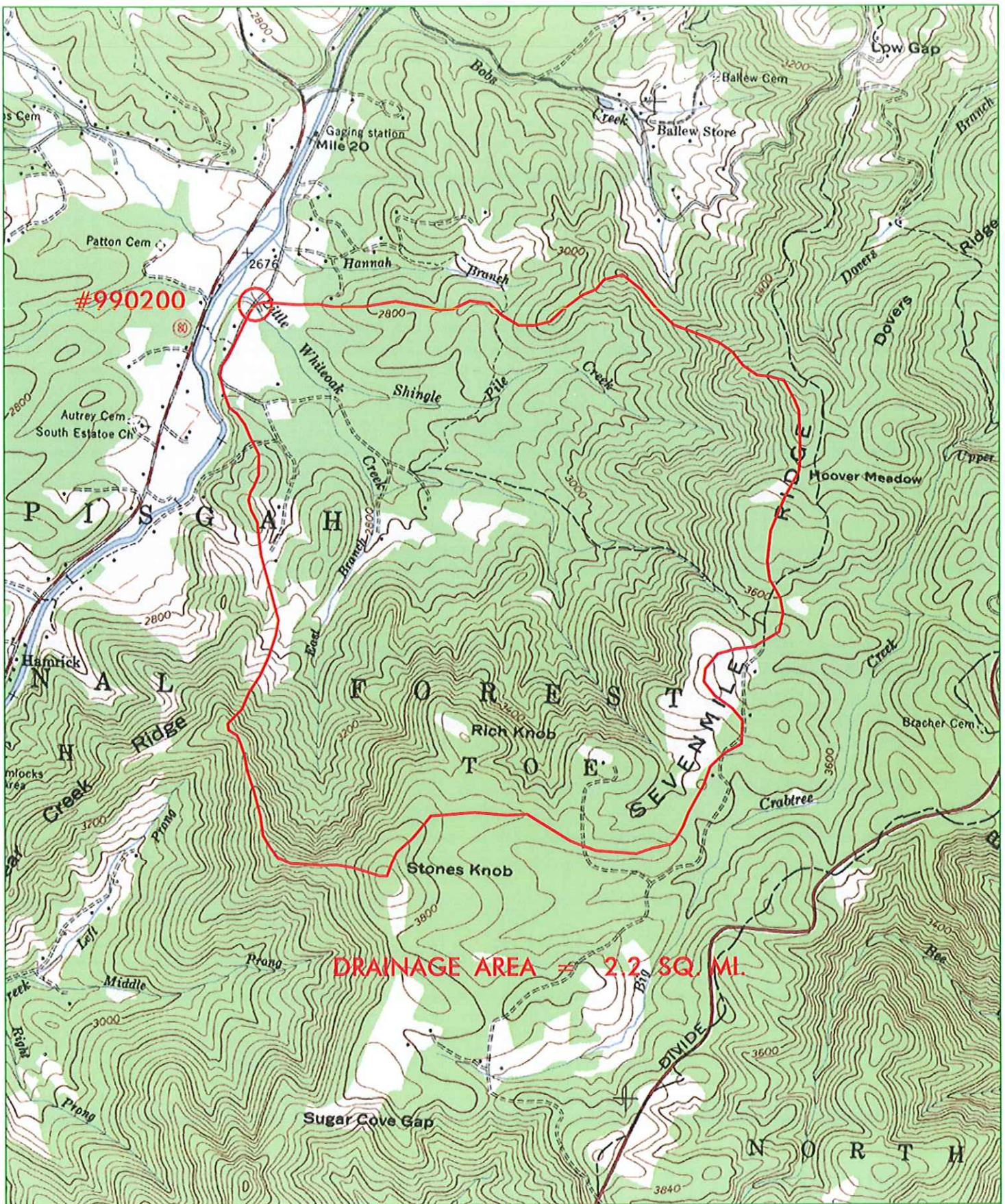
JUNE 2, 2009

MAP NUMBER

371007500J

Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

State of North Carolina
Federal Emergency Management Agency



QUAD MAP - BRIDGE #990200

