

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

Date: _____

County: _____ Stream: _____

Road #: _____ Road Name: _____

Division: _____ Location: _____

Latitude: _____ Longitude: _____ Decimal degrees, a min of 5 decimal points

Assigned to: _____

Prepared By: _____

Hydro Reviewer: _____

Project Type: _____

Existing Structure

Structure Type: _____ Yr Built: _____

Span Arrangement: _____ OAL (ft): _____ Skew: _____ Abutment Type: _____

Number of Barrels: _____ @ Span (ft): _____ x Rise (ft): _____

Bed to Crown (ft): _____ Clear Roadway (ft): _____ Water Depth (ft): _____ Superstructure Depth: _____

ADT: _____ Year ADT: _____ Scour Code (item113): _____ Prior Survey Completed: _____ Survey Date: _____

Drainage Area: _____ Drainage Area Source: _____ Roadway Overtops at Q100: _____

Discharge Method: _____ USGS Region: _____ Stream Gage Number(if applicable): _____

Q10 (cfs): _____ Q25 (cfs): _____ Q50 (cfs): _____ Q100 (cfs): _____ QBFE (cfs): _____

Structure in Flood Hazard Zone: _____ Panel #: _____ Panel Date: _____ Type of FIS: _____ Date of FIS: _____

Enviromental

Quad Map: _____ River Basin: _____ Buffer Rule: _____

Primary Stream Classification

☐ Class B ☐ Class C ☐ SA ☐ SB

☐ SC ☐ SWL ☐ WL ☐ WS I

☐ WS II ☐ WS III ☐ WS IV ☐ WS V

Supplemental Stream Classification

☐ FWS ☐ HQW ☐ NSW ☐ ORW

☐ Sw ☐ Tr ☐ UWL ☐ w/in 0.5mi. of CA

Other Stream Classification

☐ Anadromous Fish ☐ Area of Environmental Concern

☐ CAMA County ☐ Federal Wild & Scenic Rivers

☐ HSB Required ☐ NC Natural & Scenic Rivers

☐ Impaired [303d] ☐ Primary Nursery Area

☐ TVA ☐ Designated Shellfish Harvesting Area

☐ Designated Public Mountain Trout Waters

Up/Down Stream Features

Upstream Feature: _____

Location: _____

Structure #: _____ Route: _____

Latitude: _____ Longitude: _____

Prior Survey Completed: _____ Survey Date: _____

Structure Type: _____

Span Arrangement: _____ OAL (ft): _____

Number of Barrels: _____ @ Span (ft): _____ x Rise (ft): _____

Bed to Crown (ft): _____ Year Built: _____

Downstream Feature: _____

Location: _____

Structure #: _____ Route: _____

Latitude: _____ Longitude: _____

Prior Survey Completed: _____ Survey Date: _____

Structure Type: _____

Span Arrangement: _____ OAL (ft): _____

Number of Barrels: _____ @ Span (ft): _____ x Rise (ft): _____

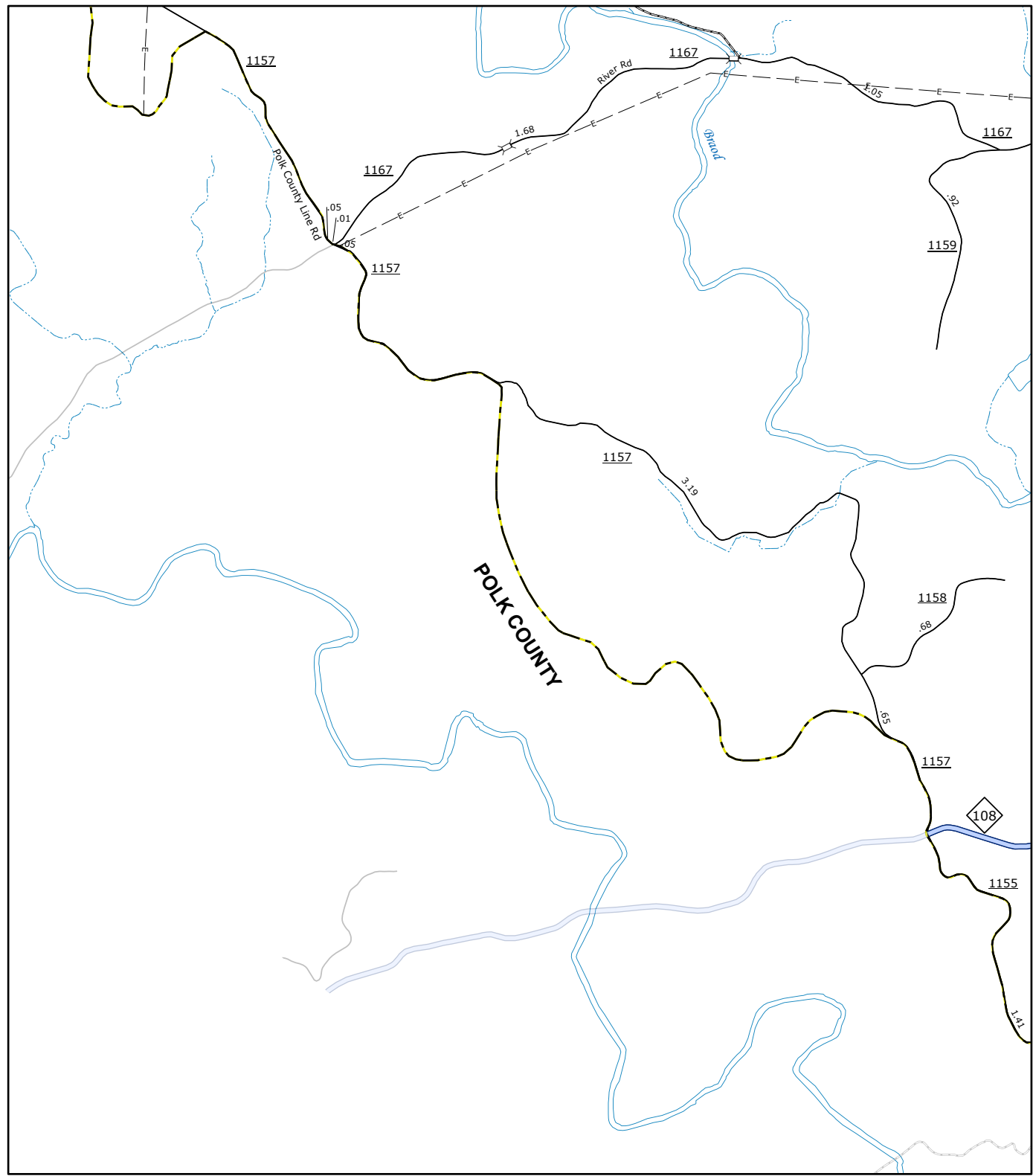
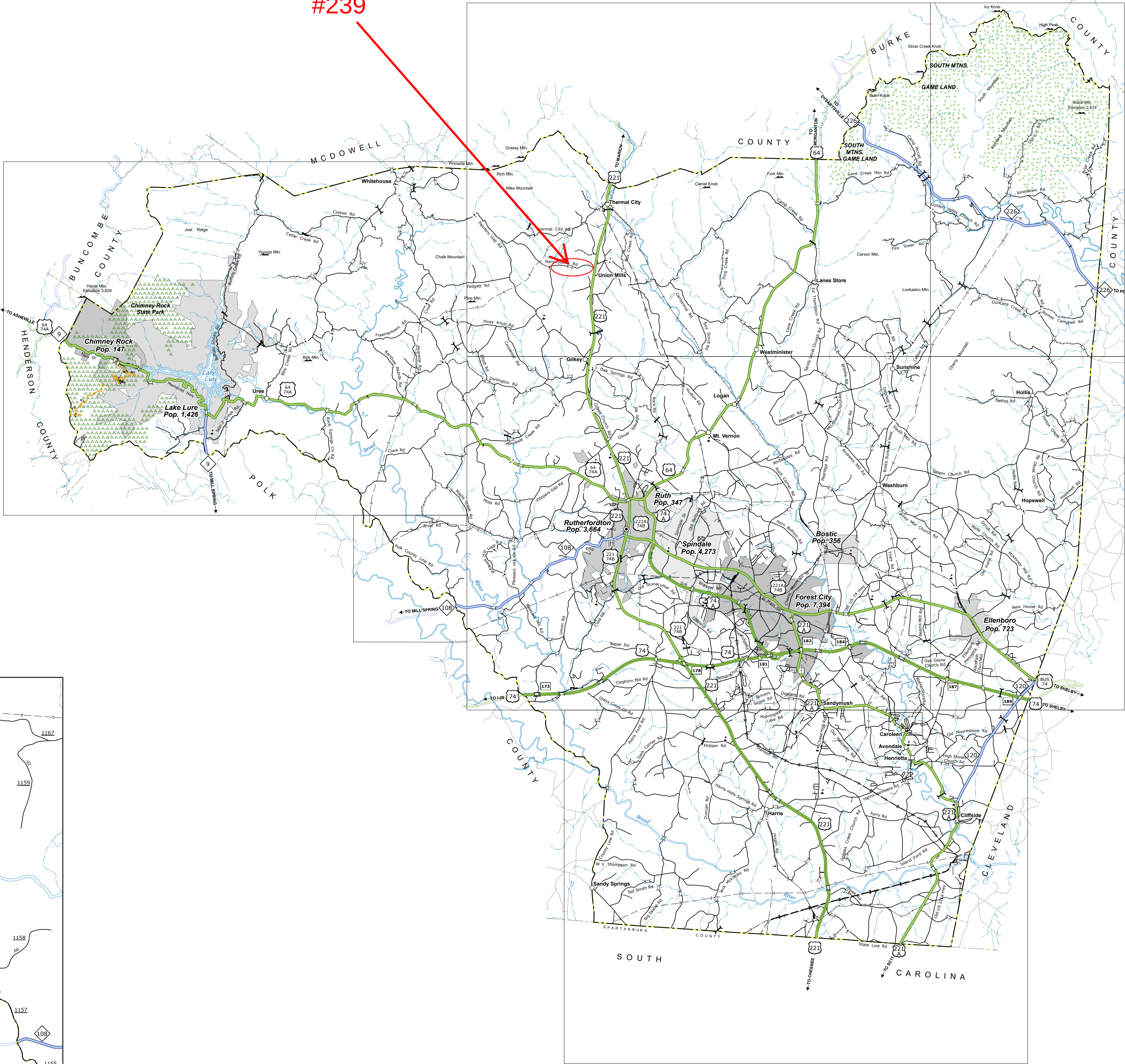
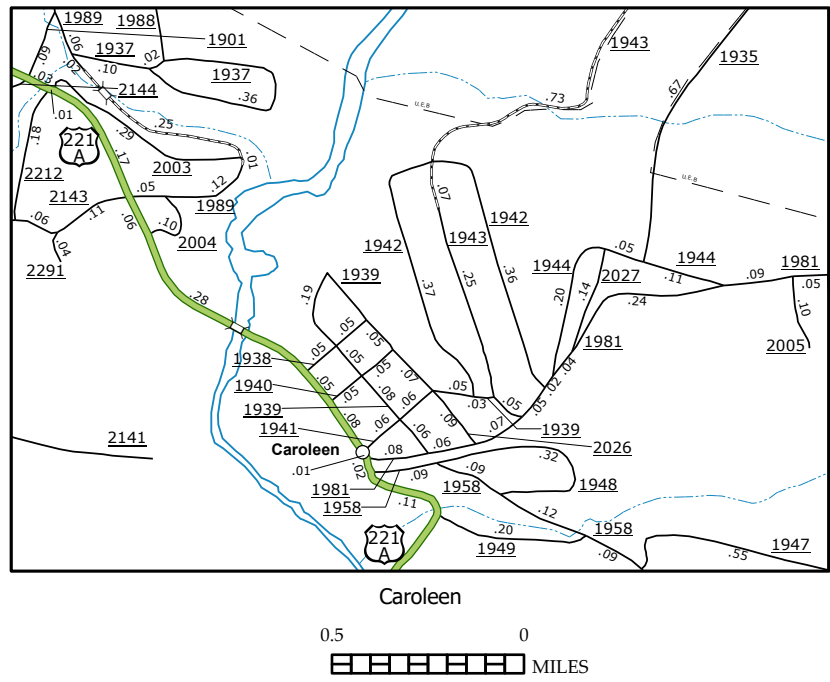
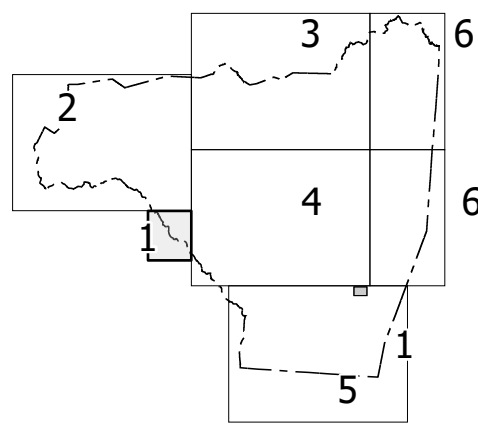
Bed to Crown (ft): _____ Year Built: _____

Preliminary Structure Estimate [Office Estimate]

Structure Type: _____ Skew: _____

Dimensions/Spans: _____

Notes



West of Rutherford

LEGEND

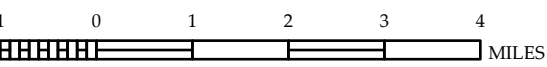
- INTERSTATE US NC Divided Hwy Undivided Hwy
- BLUE RIDGE PARKWAY
- CONCRETE BRICKED ROAD
- HARD SURFACED ROAD
- NON-SYSTEM ROAD
- PROVISIONALLY BRICKED ROAD
- PROJECTED LOCATION
- INTERSECTION DISTANCE
- STANDARD ROAD BRIDGE
- RAILROAD BRIDGE
- BEAM SPAN ON BRIDGE
- PEDESTRIAN BRIDGE
- PEDESTRIAN UNDERPASS
- VEHICULAR UNDERPASS
- TUNNEL
- CLUBFEET
- PIPE
- INTERSTATE HIGHWAY
- U.S. NUMBERED HIGHWAY
- N.C. NUMBERED HIGHWAY
- U.S. NUMBERED BICYCLE ROUTE
- N.C. NUMBERED BICYCLE ROUTE
- INTERSTATE INTERCHANGE NUMBER
- SECONDARY ROAD NUMBER
- UTILITY LINES
- RAILROAD LINE
- RAILROAD STATION
- STATE LINE
- COUNTY LINE
- SUBDIVISION URBAN BOUNDARIES
- CITY LIMITS
- FERRY ROUTE AND KAMP
- NARROW CREEK OR STREAM
- WIDE RIVER OR CREEK
- RESERVOIR, POND OR LAKE W/ ISLAND
- DAM OR DAM WITH LOCK
- WATERFALL
- SWAMP
- COMMUNITY
- COUNTY SEAT
- SCHOOL
- COLLEGE OR UNIVERSITY
- HOSPITAL
- COAST GUARD STATION
- CHURCH
- CHURCH WITH CEMETERY
- CEMETERY
- PATROL STATION
- CORRECTION OR PENAL INSTITUTION
- OF ARMY
- MINE OR PIT
- HIGHWAY GARAGE OR MAINT. YARD
- HIGHWAY DIV. OR DIST. OFFICE
- MILITARY POST
- WEIR OR STATION
- FARMGROUNDS
- HISTORICAL SITE
- POST OFFICE
- STATE FOREST
- LIGHTHOUSE
- WATERMOUNT SUMMIT
- MOUNTAIN GAP
- OVERLOOK
- REST AREA
- VISITOR CTR/REST AREA
- WELCOME CTR/REST AREA
- AIRPORT
- MILITARY AIRPORT
- NATIONAL / STATE FOREST BOUNDARY
- WILDLIFE REFUGE
- NATIONAL / STATE PARK BOUNDARY
- GAME LANDS BOUNDARY
- MILITARY RESERVATION BOUNDARY
- INDIAN RESERVATION BOUNDARY



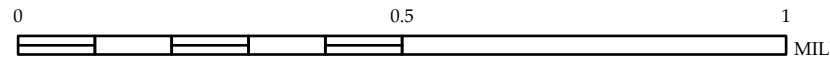
RUTHERFORD COUNTY
NORTH CAROLINA

PREPARED BY THE
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
OPERATIONS PROGRAM MANAGEMENT UNIT - MAPPING SECTION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

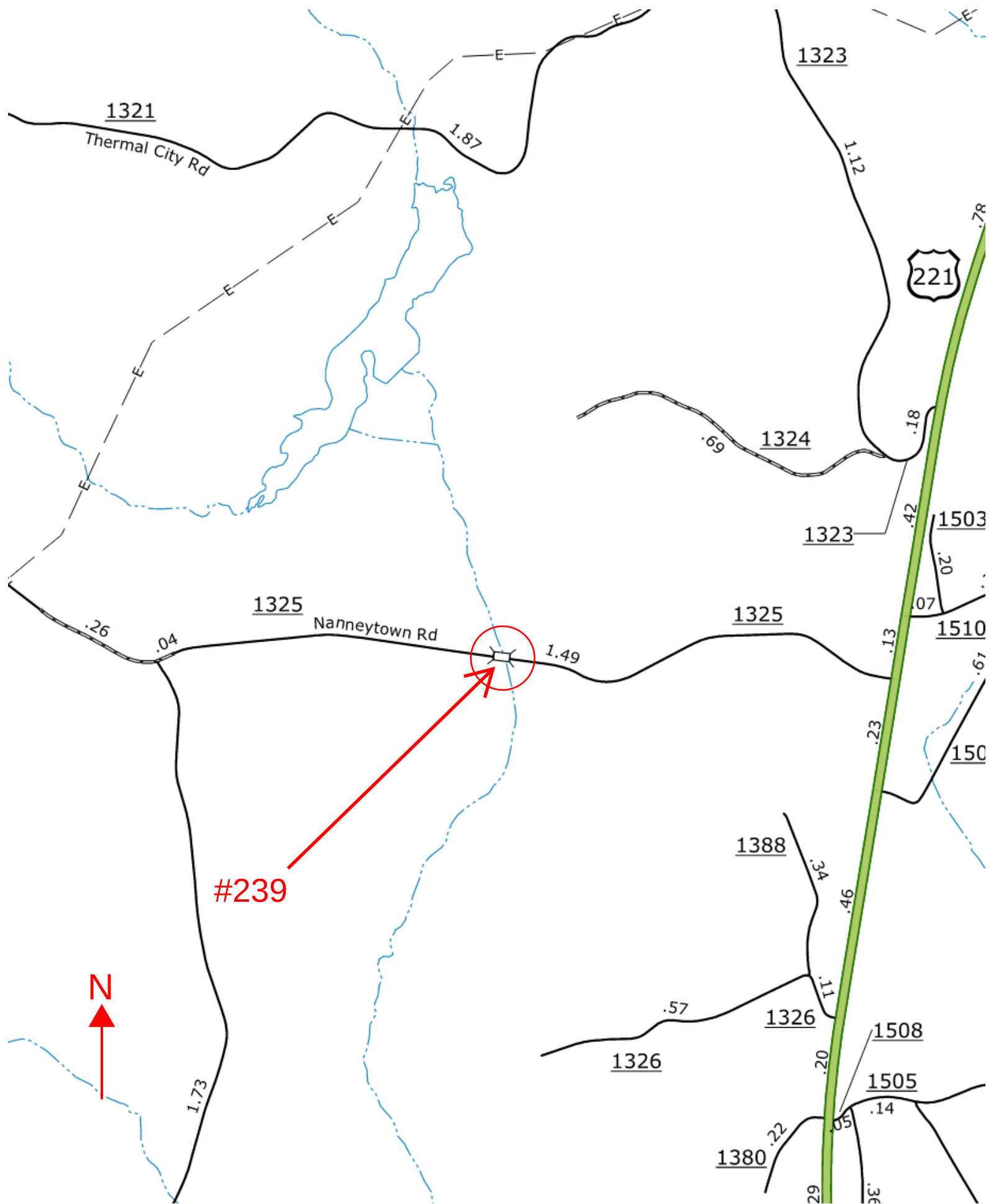
SCALE



SCALE FOR ENLARGEMENTS

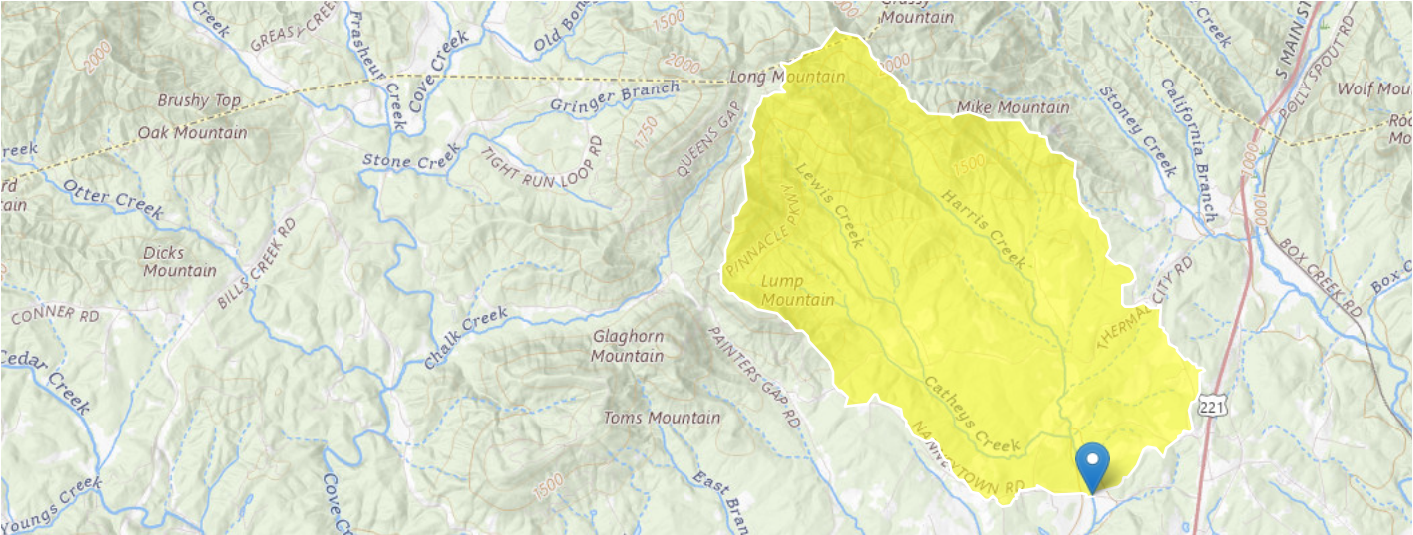


NORTH CAROLINA PLANE COORDINATE SYSTEM
LAMBERT CONFORMAL CONIC PROJECTION



StreamStats Report

Region ID: NC
Clicked Point (Latitude, Longitude): 35.48928, -81.99335
Time: 2026-01-27 12:28:28 -0500



StreamStats Update

Starting with version 4.30.0, the StreamStats application uses services that were redeveloped with open-source software components. Users may observe minor variations in computed results when compared to those from previous versions. These differences are expected and do not reflect errors in the underlying data or analytical methods. Users are advised to consider these potential variations when interpreting or comparing results generated across different versions of StreamStats. Please email streamstats@usgs.gov with any questions or concerns. A full list of changes can be found at <https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release> (<https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release>).

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	6.87	square miles
LC06IMP	Percentage of impervious area determined from NLCD 2006 impervious dataset	0.15	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	0.15	percent
PCTREG1	Percentage of drainage area located in Region 1 - Piedmont / Ridge and Valley	50.51	percent
PCTREG2	Percentage of drainage area located in Region 2 - Blue Ridge	49.49	percent
PCTREG3	Percentage of drainage area located in Region 3 - Sandhills	0	percent
PCTREG4	Percentage of drainage area located in Region 4 - Coastal Plains	0	percent
PCTREG5	Percentage of drainage area located in Region 5 - Lower Tifton Uplands	0	percent

Peak-Flow Statistics

Region_1_Piedmont_rural_under_1_sqmi_2014_5030 equations are not appropriate for this location and have been removed from the final report. This region does not meet the following criteria: (DRNAREA<1.0).

Peak-Flow Statistics Parameters [Peak Southeast US NC 2023 5006]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	6.87	square miles	0.08	8902
PCTREG1	Percent Area in Region 1 - Piedmont / Ridge and Valley	50.51	percent	0	100
PCTREG2	Percent Area in Region 2 - Blue Ridge	49.49	percent	0	100
PCTREG3	Percent Area in Region 3 - Sandhills	0	percent	0	100
PCTREG4	Percent Area in Region 4 - Coastal Plains	0	percent	0	100
PCTREG5	Percent Area in Region 5 - Lower Tifton Uplands	0	percent	0	100

Peak-Flow Statistics Flow Report [Peak Southeast US NC 2023 5006]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	PIL	PIU	ASEp
50-percent AEP flood	429	ft^3/s	236	779	36.8
20-percent AEP flood	768	ft^3/s	434	1360	35.8
10-percent AEP flood	1050	ft^3/s	589	1870	36.3
4-percent AEP flood	1430	ft^3/s	770	2660	38.4
2-percent AEP flood	1770	ft^3/s	944	3320	39.8
1-percent AEP flood	2100	ft^3/s	1100	4020	41.3
0.5-percent AEP flood	2460	ft^3/s	1260	4810	42.8
0.2-percent AEP flood	2930	ft^3/s	1460	5860	44.4

Peak-Flow Statistics Citations

Feaster, T.D., Gotvald, A.J., Musser, J.W., Weaver, J.C, Kolb, K.R., Veilleux, A.G., and Wagner, D.M.2023, Magnitude and frequency of floods for rural streams in Georgia, South Carolina, and North Carolina, 2017—Results: U.S. Geological Survey Scientific Investigations Report 2023-5006, 75 p. (<https://pubs.er.usgs.gov/publication/sir20235006>)

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Application Version: 4.30.0
SSHydro Services Version: 1.0.0
SSDelineate Services Version: 1.0.0
NSS Services Version: 2.2.1
GageStats Services Version: 1.2.1
Pourpoint Services Version: 1.2.0
Batch Processor Version: 1.6.0



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STRUCTURE MANAGEMENT UNIT

ATTENTION: PRIORITY ACTION REQUEST, CHANGE TO
STRUCTURE DATA

Structure Safety Report

Routine Element Inspection - Contract

STRUCTURE NUMBER: 800239 SAP STRUCTURE NO: 0810239 FHWA STRUCTURE NO: 000000001610239
DIVISION: 13 COUNTY: RUTHERFORD INSPECTION DATE: 01/24/2025 FREQUENCY: 24 MONTHS
FACILITY CARRIED: SR1325 MILE POST: _____
LOCATION: .8 MI.W.JCT.US221
FEATURE INTERSECTED: CATHEYS CREEK
LATITUDE: 35° 29' 21.85" LONGITUDE: 81° 59' 36.16"
SUPERSTRUCTURE: TIMBER FLOOR ON I-BEAMS
SUBSTRUCTURE: E.BTS.&INT.BTS:TIM.CAPS/TIM PILES @ 9'-3" CTS.
SPANS: 3 SPANS. SEE SPAN PROFILE SHEET FOR SPAN DETAILS
☐ FRACTURE CRITICAL ☐ TEMPORARY SHORING ☐ SCOUR CRITICAL ☒ SCOUR PLAN OF ACTION
GRADES: (Inspector/NBI Coding) DECK 5 / 5 SUPERSTRUCTURE 3 / 3 SUBSTRUCTURE 5 / 5 CULVERT N / N
POSTED SV: 7 POSTED TTST: 7

OTHER SIGNS PRESENT: (2) NARROW BRIDGE SIGNS (4) DELINEATORS



LOOKING EAST

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

DIRECTION OF INSPECTION W-E

DIRECTION MATCHES PLANS NO PLANS

INSPECTED BY MATTHEW TOM	SIGNATURE <i>Matthew Tom</i>	ASSISTED BY DALTON KAISER
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NATIONAL BRIDGE INVENTORY ----- STRUCTURE INVENTORY AND APPRAISAL

04/01/2025

IDENTIFICATION							
(1) STATE NAME	NORTH CAROLINA	BRIDGE	800239	SUFFICIENCY RATING			17.18
(8) STRUCTURE NUMBER (FEDERAL)			1610239	STATUS =		Structurally Deficient	
(5) INVENTORY ROUTE (ON/UNDER)	ON		131013250	CLASSIFICATION		CODE	
(2) STATE HIGHWAY DEPARTMENT DISTRICT			13	(112) NBIS BRIDGE SYSTEM			YES
(3) COUNTY CODE (FEDERAL)	161	(4) PLACE CODE	00000	(104) HIGHWAY SYSTEM	Inventory Route not on NHS		0
(6) FEATURE INTERSECTED	CATHEYS CREEK			(26) FUNCTIONAL CLASS	Rural Local		09
(7) FACILITY CARRIED	SR1325			(100) STRAHNET HIGHWAY	Not a STRAHNET Route		0
(9) LOCATION	.8 MI.W.JCT.US221			(101) PARALLEL STRUCTURE	No parallel structure exists		N
(11) MILEPOINT			0.0	(102) DIRECTION OF TRAFFIC	2-way traffic		2
(12) BASE HIGHWAY NETWORK			0	(103) TEMPORARY STRUCTURE			
(13) LRS INVENTORY ROUTE & SUBROUTE				(110) DESIGNATED NATIONAL NETWORK - on national network for trucks			0
(16) LATITUDE	35° 29' 21.85"	(17) LONGITUDE	81° 59' 36.16"	(20) TOLL	On Free Road		3
(98) BORDER BRIDGE STATE CODE		PERCENT SHARED		(21) MAINT -			01
(99) BORDER BRIDGE STRUCTURE NUMBER				(22) OWNER -			01
STRUCTURE TYPE AND MATERIAL				(37) HISTORICAL SIGNIFICANCE -			5
(43) STRUCTURE TYPE MAIN			Steel	CONDITION		CODE	
TYPE	Stringer/Multi-beam or girder	CODE	302	(58) DECK			5
(44) STRUCTURE TYPE APPROACH				(59) SUPERSTRUCTURE			3
TYPE		CODE		(60) SUBSTRUCTURE			5
(45) NUMBER OF SPANS IN MAIN UNIT			3	(61) CHANNEL & CHANNEL PROTECTION			6
(46) NUMBER OF SPANS IN APPROACH			0	(62) CULVERTS			N
(107) DECK STRUCTURE TYPE		CODE	8	LOAD RATING AND POSTING		CODE	
(108)WEARING SURFACE/PROTECTIVE SYSTEM				(31) DESIGN LOAD	Unknown		0
(A) TYPE OF WEARING SURFACE		CODE	6	(63) OPERATING RATING METHOD -	Load Factor		1
(B) TYPE OF MEMBRANE		CODE	0	(64) OPERATING RATING -	HS-8		14
(C) TYPE OF DECK PROTECTION		CODE	0	(65) INVENTORY RATING METHOD -			1
AGE AND SERVICE				(66) INVENTORY RATING	HS-5		9
(27) YEAR BUILT			1951	(70) BRIDGE POSTING	Posting Required		0
(106) YEAR RECONSTRUCTED			0	(41) STRUCTURE OPEN, POSTED, OR CLOSED			P
(42) TYPE OF SERVICE ON -		Highway		DESCRIPTION	Posted for Load		
OFF -		Waterway	CODE 15	APPRAISAL		CODE	
(28) LANES ON STRUCTURE	2	LANES UNDER STRUCTURE	0	(67) STRUCTURAL EVALUATION			3
(29) AVERAGE DAILY TRAFFIC			450	(68) DECK GEOMETRY			2
(30) YEAR OF ADT	2022	(109) TRUCK ADT PCT	6	(69) UNDERCLEARANCES, VERT & HORIZ			N
(19) BYPASS OR DETOUR LENGTH			8.0	(71) WATERWAY ADEQUACY			7
GEOMETRIC DATA				(72) APPROACH ROADWAY ALIGNMENT			8
(48) LENGTH OF MAXIMUM SPAN			25.0	(36) TRAFFIC SAFETY FEATURES			0000
(49) STRUCTURE LENGTH			76.0	(113) SCOUR CRITICAL BRIDGES			U
(50) CURB OR SIDEWALK: LEFT	0.4	RIGHT	0.4	PROPOSED IMPROVEMENTS		CODE	
(51) BRIDGE ROADWAY WIDTH, CURB TO CURB			19.1	(75) TYPE OF WORK			
(52) DECK WIDTH OUT TO OUT			20.1	(76) LENGTH OF STRUCTURE IMPROVEMENT			
(32) APPROACH ROADWAY WIDTH (W/ SHOULDERS)			17.0	(94) BRIDGE IMPROVEMENT COST			
(33) BRIDGE MEDIAN	No median	CODE	0	(95) ROADWAY IMPROVEMENT COST			
(34) SKEW	20	(35) STRUCTURE FLARED	0	(96) TOTAL PROJECT COST			
(10) INVENTORY ROUTE MIN VERT CLEAR			999.9	(97) YEAR OF IMPROVEMENT COST ESTIMATE			
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR			19.1	(114) FUTURE ADT	900	YEAR OF FUTURE ADT	2040
(53) MIN VERT CLEAR OVER BRIDGE RDWY			999.9	INSPECTION			
(54) MIN VERT UNDERCLEAR: REFERENCE			0.0	(90) INSPECTION DATE	01/25	(91) FREQUENCY	12
(55) MIN LAT UNDERCLEARANCE RT: REFERENCE		N	0.0	(92) CRITICAL FEATURE INSPECTION		(93) CFI DATE	
(56) MIN LAT UNDERCLEARANCE LT:			0.0	A) FRACTURE CRIT DETAIL		A)	
NAVIGATION DATA				B) UNDERWATER INSP		B)	
(38) NAVIGATION CONTROL -		CODE	0	C) OTHER SPECIAL INSP		C)	
(111) PIER PROTECTION		CODE		SCOUR			
(39) NAVIGATION VERTICAL CLEARANCE			0.0				
(116) VERT - LIFT BRIDGE NAV MIN VERT CLEAR			0.0				
(40) NAVIGATION HORIZONTAL CLEARANCE			0.0				

BRIDGE MANAGEMENT UNIT

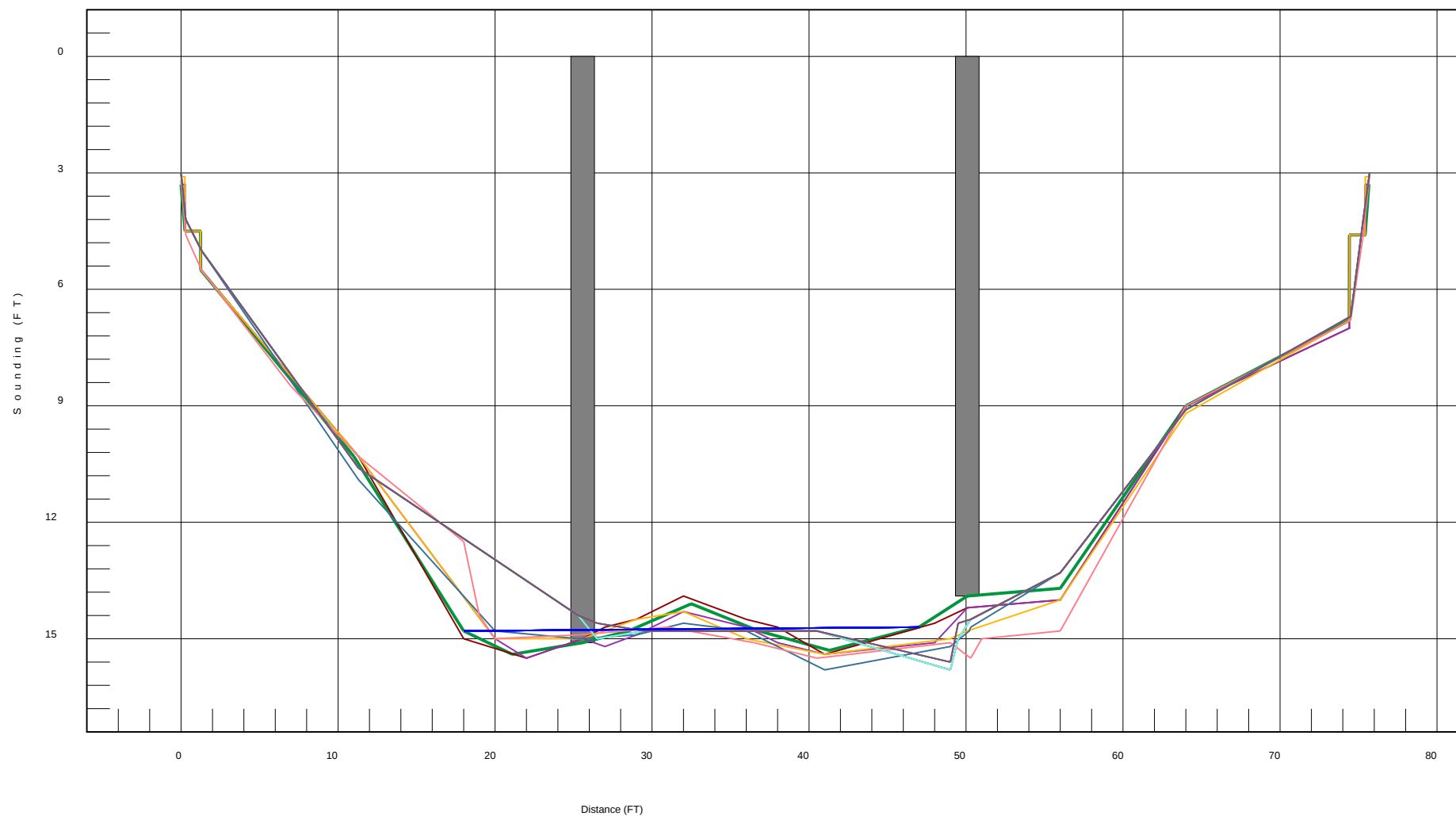
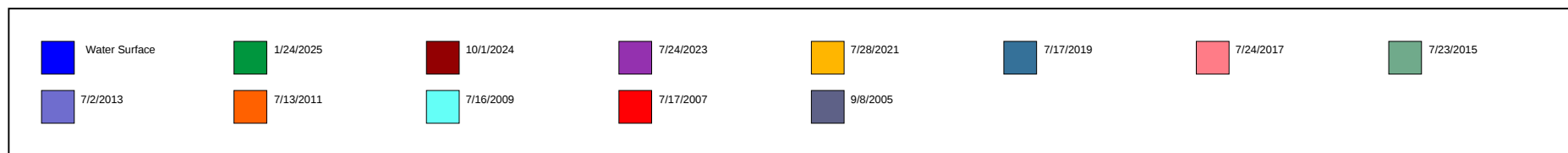
DATA ON EXISTING STRUCTURE

Update Date: 04/19/2016

COUNTY :	DIVISION :	DISTRICT :	STRUCTURE NUMBER :	LENGTH :	
RUTHERFORD	13	1	800239	76	FEET
ROUTE CARRIED :		FEATURE INTERSECTED :			
SR1325		CATHEYS CREEK			
LOCATED :		BRIDGE NAME :		CITY :	
.8 MI.W.JCT.US221					
FUNC. CLASS :	SYST.ON :	SYST.UNDER :	ADT & YR :	RAIL TYPE :	
09	NFA	NFA	480 2013	LT 227	RT 227
BUILT :	BY :	PROJ :	FED.AID PROJ :	DESIGN LOAD :	
1951	BMU			Unknown	
REHAB :	BY :	PROJ :	ALIGNMENT :	SKEW :	LANES :
			TAN	70	ON 2 UNDER 0
NAVIGATION :		HT. CRN. TO BED :		WATER DEPTH :	
VC 0 FT	HC 0 FT	13 FT		1 FT	
SUPERSTRUCTURE : TIMBER FLOOR ON I-BEAMS					
SUBSTRUCTURE : E.BTS.&INT.BTS:TIM.CAPS/TIM PILES @ 9'-3 CTS.					
SPANS : 1 @ 25'-7 ,1 @ 24'-6 ,1 @ 25'-7					
BEAMS OR GIRDERS : 10 LINES 12 I-BEAMS @ 2' CTS.					
FLOOR :	ENCROACHMENT :		DECK (OUT TO OUT) :		
3X4 TIM/4.5 AWS			20.083 FT		
CLEAR ROADWAY :	BETWEEN RAILS :		SIDEWALK OR CURB :		
19.083 FT	19.833 FT		LT .3 FT	RT .3 FT	
VERT.CL.OVER : 999.9 FT					
INV.RTG. :	OPE.RTG. :	CONTR.MEMBER :	POSTED :	TTST	DATE
HS-4	HS-12	Pile	SV 16	19	10/11/2008
SYSTEM : Secondary S.R. Route			GREEN LINE ROUTE : N		
UNDER ROUTES AND CLEARANCES					
REMARKS :					

STREAMBED PROFILE (Downstream)

Top of Rail = 0FT (Sounding)





UPSTREAM ELEVATION LOOKING SOUTH



DOWNSTREAM ELEVATION LOOKING NORTH

Tools

Map View:

Effective

Preliminary

TOOLS



Overview

Layers

Map Selection

Flood Information



496-498 Nanneytown Rd, Union Mills, North Carolina, 28167

This panel's status is Effective.

Flood Zone:

(Zone X) Minimal Flood Risk

Map marker is outside of the special flood hazard area.

Flood Source: Catheys Creek
Base Flood Elevation: n/a
LIMWA Area: No
County: Rutherford
Political Area: Rutherford County
CID: 370217
Panel: 1604
Map Number: 3710160400J
Panel Effective Date: 7/2/2008
Latitude: 35.489403
Longitude: -81.993329

Flood Risk Information



FIS Tables & Reports



Engineering Models & Reports



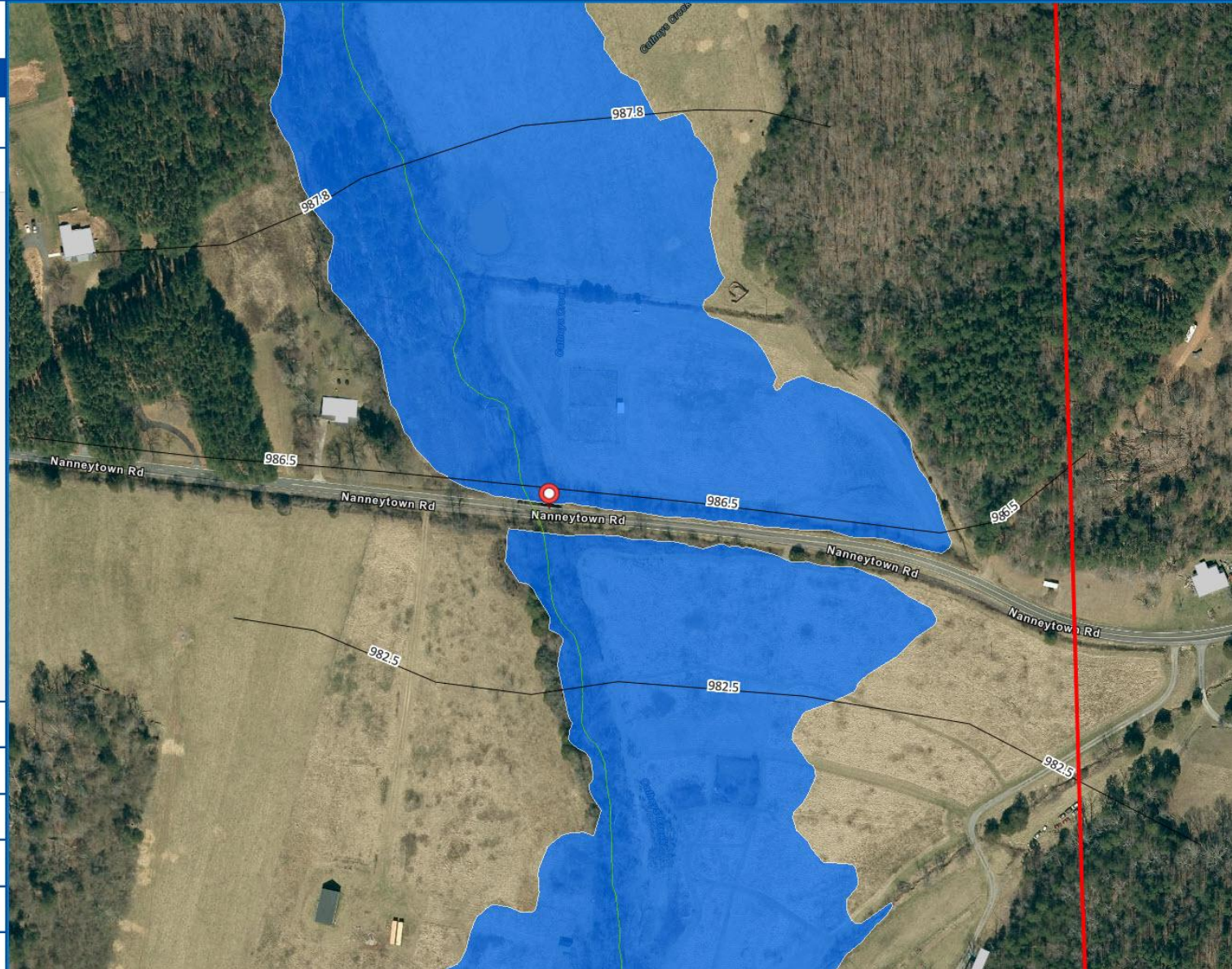
LOMR

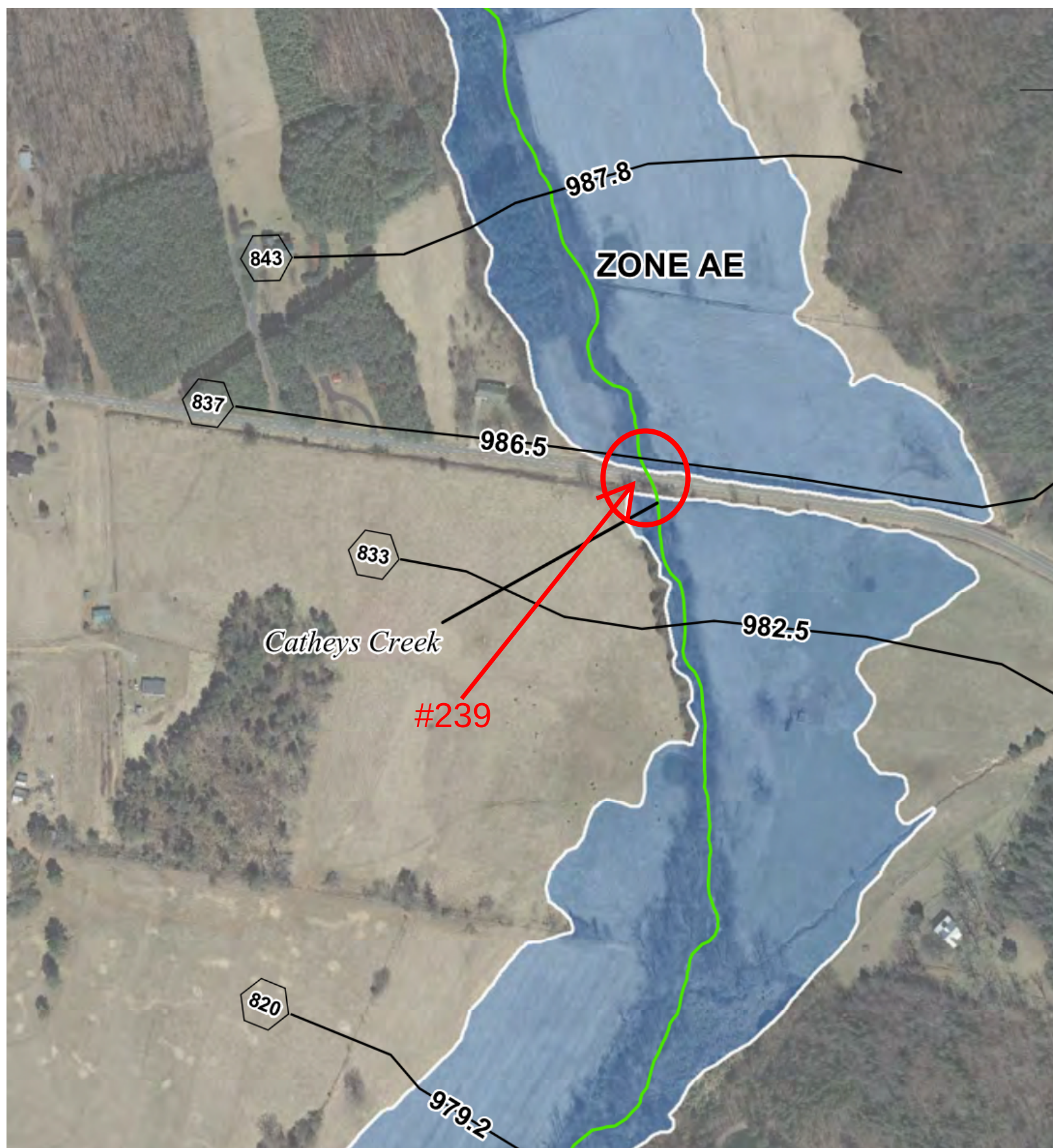


Cross Section



Geodetic Monuments





Catheys Creek Limited Detail Study Plan: Floodway Run 1/27/2026

Catheys_Crk_XS274Structure ID: Nannytown Rd. SR-1325Approximat

